4.6 Default NG-RAN RRC message and information elements contents

4.6.0 General

4.6.0.1 Global conditions

Groups of RRC and 5GMM conditions including always one and only one condition set to trueper table, unless explicitly stated.

Table 4.6.0.1-1: Signalling, RF/RRM/Performance

Condition	Explanation
SIG	Used for signalling test cases
RF	Used for RF/Performance test cases
RRM	Used for RRM test cases

Table 4.6.0.1-2: NR operating bands

Condition	Explanation
FR1	410 MHz – 7125 MHz
FR2	24250 MHz – 52600 MHz

Table 4.6.0.1-3: FDD/TDD

Condition	Explanation
FDD	Frequency Division Duplex
TDD	Time Division Duplex

Table 4.6.0.1-4: Subcarrier spacing

Condition	Explanation
SCS15	15kHz
SCS30	30kHz
SCS60	60kHz
SCS120	120kHz
SCS240	240kHz

Table 4.6.0.1-5: SST

Condition	Explanation
SST_eMBB	Slice suitable for the handling of 5G enhanced Mobile Broadband.
SST_URLLC	Slice suitable for the handling of ultra- reliable low latency communications.
SST_MIoT	Slice suitable for the handling of massive IoT.
SST_V2X	Slice suitable for the handling of V2X services.
NOTE: For the conditions in this table, one or more conditions are set to true.	

Table 4.6.0.1-6: Channel bandwidth

Condition	Explanation
BW5	5mhz
BW10	10mhz
BW15	15mhz
BW20	20mhz
BW25	25mhz
BW30	30mhz
BW40	40mhz
BW50	50mhz
BW60	60mhz
BW80	80mhz
BW100	100mhz

4.6.1 Contents of RRC messages

– *CounterCheck*

Table 4.6.1-1: *CounterCheck*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CounterCheck ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
counterCheck SEQUENCE {			
drb-CountMSB-InfoList SEQUENCE (SIZE (1..maxDRB)) OF DRB-CountMSB-Info	1 entry		
DRB-CountMSB-Info[1] SEQUENCE {		entry 1	
drb-Identity	DRB-Identity		
countMSB-Uplink	0		
countMSB-Downlink	0		
}			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *CounterCheckResponse*

Table 4.6.1-2: *CounterCheckResponse*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CounterCheckResponse ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
counterCheckResponse SEQUENCE {			
drb-CountInfoList SEQUENCE (SIZE (0..maxDRB)) OF DRB-CountInfo {	1 entry		
DRB-CountInfo[1] SEQUENCE {		entry 1	
drb-Identity	DRB-Identity		
count-Uplink	Not checked		
count-Downlink	Not checked		
}			
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *DedicatedSIBRequest*

Table 4.6.1-2A: *DedicatedSIBRequest*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DedicatedSIBRequest-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
dedicatedSIBRequest-r16 SEQUENCE {			
onDemandSIB-RequestList-r16 SEQUENCE {			
requestedSIB-List-r16	Not checked		
requestedPosSIB-List-r16	Not checked		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *DLDedicatedMessageSegment*

Table 4.6.1-2B: *DLDedicatedMessageSegment*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DLDedicatedMessageSegment-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
dlDedicatedMessageSegment-r16 SEQUENCE {			
segmentNumber-r16	0		firstSegment
	1		lastSegment
rrc-MessageSegmentContainer-r16	Set according to specific message content	OCTET STRING including segmented RRCReconfiguration or RRCResume message	
rrc-MessageSegmentType-r16	notLastSegment		firstSegment
	lastSegment		lastSegment
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
firstSegment	The first segment of the RRCReconfiguration or RRCResume message
lastSegment	The last segment of the RRCReconfiguration or RRCResume message

– *DLInformationTransfer*

Table 4.6.1-3: *DLInformationTransfer*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DLInformationTransfer ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
dlInformationTransfer SEQUENCE {			
dedicatedNAS-Message	DedicatedNAS-Message		
lateNonCriticalExtension SEQUENCE {	Not present		
referenceTimeInfo-r16	ReferenceTimeInfo		
nonCriticalExtension	Not present		
}			
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
TSC	For test cases requiring TSC (Time Sensitive Communication) functions enabled.

– *DLInformationTransferMRDC*

Table 4.6.1-3A: *DLInformationTransferMRDC*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DLInformationTransferMRDC-r16 ::= SEQUENCE {			
FFS			
}			

– *FailureInformation*

Table 4.6.1-4: *FailureInformation*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FailureInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
failureInformation SEQUENCE {			
failureInfoRLC-Bearer SEQUENCE {			
cellGroupId	Not checked		
logicalChannelIdentity	Not checked		
failureType	Not checked		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			DAPS_HOF
failureInfoDAPS-r16 SEQUENCE {			
failureType-r16	daps-failure	Indicate handover failure type is DAPS handover failure	
}			
nonCriticalExtension	Not checked		
}			
}			
}			
}			

Condition	Explanation
DAPS_HOF	DAPS handover failure

– *IABOtherInformation*

Table 4.6.1-4A: *IABOtherInformation*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
IABOtherInformation-r16 ::= SEQUENCE {			
FFS			
}			

– *LocationMeasurementIndication*

Table 4.6.1-5: *LocationMeasurementIndication*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LocationMeasurementIndication ::= SEQUENCE {			
criticalExtensions CHOICE {			
locationMeasurementIndication SEQUENCE {			
measurementIndication CHOICE {			
setup	LocationMeasurementInfo		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *LoggedMeasurementConfiguration*

Table 4.6.1-5AA: *LoggedMeasurementConfiguration* (Thres1)

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LoggedMeasurementConfiguration-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
loggedMeasurementConfiguration-r16 SEQUENCE {			
traceReference-r16 SEQUENCE {			
plmn-Identity-r16	plmn-Identity in USIM	MCC/MNC=MCC/ MNC in USIM	
traceId-r16	'0EF'H	OCTET STRING (SIZE (3))	
}			
traceRecordingSessionRef-r16	'1A'H	OCTET STRING (SIZE (2))	
tce-Id-r16	'5'H	OCTET STRING (SIZE (1))	
absoluteTimeInfo-r16	Set to value corresponding to the absolute time when the message is sent	BIT STRING (SIZE (48))	
areaConfiguration-r16	Not present		
plmn-IdentityList-r16	Not present		
bt-NameList-r16	Not present		
wlan-NameList-r16	Not present		
sensor-NameList-r16	Not present		
loggingDuration-r16	min120		
reportType CHOICE {			
periodical SEQUENCE {			PERIODICAL
loggingInterval-r16	ms2560	2.56s	
}			
eventTriggered SEQUENCE {			EVENT
eventType-r16 CHOICE {			
outOfCoverage	NULL		OUT-OF-COVERAG
eventL1 SEQUENCE {			EVENTL1
l1-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
hysteresis	0		
timeToTrigger	ms100	0.1s	
}			
}			
loggingInterval-r16	ms2560	2.56s	
}			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
	LoggedMeasurementConfiguration-v1700-IEs		LOG-MEAS-R17
}			
}			
}			

Condition	Explanation
PERIODICAL	Configuration of LoggedPeriodicalReport
EVENT	Configuration of LoggedEventTrigger
OUT-OF-COVERAGE	Configuration of outOfCoverage
EVENTL1	Configuration of eventL1
LOG-MEAS-R17	Configuration of LoggedMeasurement in R17

– *MBSBroadcastConfiguration*

Table 4.6.1-5ABA: *MBSBroadcastConfiguration*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MBSBroadcastConfiguration-r17 ::= SEQUENCE {			
criticalExtensions CHOICE {			
mbsBroadcastConfiguration-r17 SEQUENCE {			
mbs-SessionInfoList-r17	MBS-SessionInfoList		
mbs-NeighbourCellList-r17	Not present		
drx-ConfigPTM-List-r17	Not present		
drx-ConfigPTM-List-r17 SEQUENCE (SIZE (1..maxNrofDRX-ConfigPTM-r17)) OF DRX-ConfigPTM-r17 {	1 entry		DRX_MBS_Broadcast
DRX-ConfigPTM-r17[1]	DRX-ConfigPTM	entry 1	
}			
pdsch-ConfigMTCH-r17	Not present		
mtch-SSB-MappingWindowList-r17	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
DRX_MBS_Broadcast	DRX is used for MBS Broadcast test

– *MBSInterestIndication*

Table 4.6.1-5ABB: *MBSInterestIndication*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MBSInterestIndication-r17 ::= SEQUENCE {			
criticalExtensions CHOICE {			
mbsInterestIndication-r17 SEQUENCE {			
mbs-FreqList-r17[n] SEQUENCE (SIZE (1..maxFreqMBS-r17)) OF ARFCN-ValueNR	The number of entries is set according to specific message content.		
mbs-Priority-r17	Not checked		
mbs-ServiceList-r17	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *MCGFailureInformation*

Table 4.6.1-5AB: *MCGFailureInformation*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MCGFailureInformation-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasurementReport*

Table 4.6.1-5A: *MeasurementReport*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasurementReport ::= SEQUENCE {			
criticalExtensions CHOICE {			
measurementReport SEQUENCE {			
measResults	MeasResults		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *MIB*

Table 4.6.1-6: *MIB*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MIB ::= SEQUENCE {			
systemFrameNumber	A valid value as defined in TS 38.331 [6]		
subCarrierSpacingCommon	scs15or60	For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1.	SCS15or60
	scs30or120	For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1.	SCS30or120
ssb-subcarrierOffset	Set to the integer value of the 4 LSB of kSSB defined for the frequency of the cell	For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1.	
dmrs-TypeA-Position	pos2		
pdcch-ConfigSIB1	PDCCH-ConfigSIB1		
cellBarred	notBarred		
intraFreqReselection	allowed		
spare	0		
}			

Condition	Explanation
SCS15or60	SCS is 15kHz or 60kHz
SCS30or120	SCS is 30kHz or 120kHz.

– *MobilityFromNRCommand*

Table 4.6.1-8: *MobilityFromNRCommand*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MobilityFromNRCommand ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
mobilityFromNRCommand SEQUENCE {			
targetRAT-Type	eutra		
	utra-fdd-v1610		HO-TO-UTRA_FDD
targetRAT-MessageContainer	OCTET STRING including the RRCConnectionReconfiguration message according TS 36.508 [2], table 4.6.1-8 with condition HO-TO-EUTRA		
	OCTET STRING including the Handover TO UTRAN message specified in TS 36.508 [2] Table 4.7B.1-1 with condition UTRA FDD PS RB		HO-TO-UTRA_FDD
nas-SecurityParamFromNR	The 4 LSB of the downlink NAS COUNT		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
HO-TO-UTRA_FDD	For Handover from NR to UTRA FDD

– *Paging*

Table 4.6.1-9: *Paging*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Paging ::= SEQUENCE {			
pagingRecordList SEQUENCE (SIZE(1..maxNrofPageRec)) OF PagingRecord {	1 entry		
PagingRecord[1] SEQUENCE {		entry 1	
ue-Identity CHOICE {			
ng-5G-S-TMSI	NG-5G-S-TMSI		
fullI-RNTI	I-RNTI-Value		NR_RRC_RESUME
}			
accessType	Not present		
}			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			

Condition	Explanation
NR_RRC_RESUME	To page a UE in RRC_INACTIVE state to request RRC connection resumption

– *RRCReestablishment*

Table 4.6.1-10: *RRCReestablishment*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReestablishment ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcReestablishment SEQUENCE {			
nextHopChainingCount	NextHopChainingCount		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *RRCReestablishmentComplete*

Table 4.6.1-11: *RRCReestablishmentComplete*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReestablishmentComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcReestablishmentComplete SEQUENCE {			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *RRCReestablishmentRequest*

Table 4.6.1-12: *RRCReestablishmentRequest*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReestablishmentRequest ::= SEQUENCE {			
ue-Identity SEQUENCE {			
c-RNTI	RNTI-Value		
physCellId	PhysCellId	The physical cell identity of the PCell the UE was connected to prior to the failure	
shortMAC-I	ShortMAC-I		
}			
reestablishmentCause	Not checked		
spare	Present but contents not checked		
}			

– *RRCReconfiguration*

Table 4.6.1-13: *RRCReconfiguration*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	Not present		
	RadioBearerConfig with conditions SRB2 and DRB1		NR, NR-DC
	RadioBearerConfig with conditions SRB2 and REEST		REEST
secondaryCellGroup	CellGroupConfig	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC
	CellGroupConfig with condition NR-DC_SCG	OCTET STRING (CONTAINING CellGroupConfig)	NR-DC_SCG
	CellGroupConfig with conditions EN-DC and PSCell_change	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC_HO
	CellGroupConfig with condition MEAS	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC_MEAS
	CellGroupConfig with condition SCell_add	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC_SCell_add
	Not present		
measConfig	Not present		
	MeasConfig	Measurements configuration	NR_MEAS, EN-DC_MEAS, IRAT_MEAS
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			NR, SCell_add, NR_MEAS, NR-DC, SIDELINK, DAPS_HO_ReleaseSource, CHO, CPC, REEST
masterCellGroup	CellGroupConfig with condition SRB2_DRB1	OCTET STRING (CONTAINING CellGroupConfig)	NR, NR-DC
	CellGroupConfig with condition SCell_add	OCTET STRING (CONTAINING CellGroupConfig)	SCell_add
	CellGroupConfig with condition MEAS	OCTET STRING (CONTAINING CellGroupConfig)	NR_MEAS
	CellGroupConfig with condition REEST	OCTET STRING (CONTAINING CellGroupConfig)	REEST
fullConfig	Not present		
dedicatedNAS-MessageList	Not present		
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {	1 entry		NR

DedicatedNAS-Message[1]	DedicatedNAS-Message	entry 1 A sequence of OCTET STRING (s) containing one or more DedicatedNAS-Message(s)	
}			
masterKeyUpdate	Not present		
masterKeyUpdate SEQUENCE {			MasterKeyChange
keySetChangeIndicator	true		
nextHopChainingCount	NextHopChainingCount		
nas-Container	Not present		
	OCTET STRING including the 10 Octets value generated according to TS 24.501 [28] clause 9.11.2.9		Inter_Sys_HO
}			
dedicatedSIB1-Delivery	Not present		
dedicatedSystemInformationDelivery	Not present		
otherConfig	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			NR-DC, SIDELINK, DAPS_HO_ReleaseSource, CHO, CPC, NE-DC
otherConfig-v1540	Not present		
nonCriticalExtension SEQUENCE {			
mrdc-SecondaryCellGroupConfig	Not present		
mrdc-SecondaryCellGroupConfig CHOICE {			NR-DC, NE-DC
setup SEQUENCE {			
mrdc-ReleaseAndAdd	Not present		
mrdc-SecondaryCellGroup CHOICE {			
nr-SCG	RRCReconfiguration with condition NR-DC_SCG	OCTET STRING (CONTAINING RRCReconfiguration)	NR-DC
eutra-SCG	RRCConnectionReconfiguration according TS 36.508 [2], table 4.6.1-8 with condition NE-DC	OCTET STRING (CONTAINING RRCConnectionReconfiguration)	NE-DC
}			
}			
}			
radioBearerConfig2	Not present		NE-DC
	RadioBearerConfig with condition DRBn and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig)	NR-DC
sk-Counter	SK-Counter		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			SIDELINK, DAPS_HO_ReleaseSource, CHO, CPC
otherConfig-v1610	Not present		
bap-Config-r16	Not present		
iab-IP-AddressConfigurationList-r16	Not present		

conditionalReconfiguration-r16	Not present		
	ConditionalReconfiguration		CHO, CPC
daps-SourceRelease-r16	Not present		
	true		DAPS_HO_ReleaseSource
t316-r16	Not present		
needForGapsConfigNR-r16	Not present		
onDemandSIB-Request-r16	Not present		
dedicatedPosSysInfoDelivery-r16	Not present		
sl-ConfigDedicatedNR-r16	Not present		
sl-ConfigDedicatedNR-r16 CHOICE {			SIDELINK
setup	SL-ConfigDedicatedNR-r16		
}			
sl-ConfigDedicatedEUTRA-Info-r16	Not present		
smtc-r16	Not present		
nonCriticalExtension	Not present		
}			
}			
}			
}			
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
EN-DC_MEAS	An EN-DC measurement is configured
IRAT_MEAS	An IRAT measurement is configured in the NR PCell
NR_MEAS	A NR measurement is configured
NR	NR connected to 5GC
NR-DC	NR-NR Dual Connectivity is configured
NR-DC_SCG	Add SCG side configuration (NR-DC)
EN-DC_HO	NR PSCell change (EN-DC)
SCell_add	Add SCell
EN-DC_SCell_add	Add Scell (EN-DC)
MasterKeyChange	MasterKeyUpdate when peforming ReconfigurationWithSync and indicating a change of the AS security algorithms associated to the master key
Inter_Sys_HO	Used during inter-system handover to NR procedure
REEST	The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure
SIDELINK	For NR sidelink dedicated configuration
DAPS_HO_ReleaseSource	The source cell part of DAPS operation is to be stopped and the source cell part of DAPS configuration is to be released.
CHO	Conditional handover
CPC	Conditional PSCell change
NE-DC	NR E-UTRA Dual Connectivity

– *RRCReconfigurationComplete*

Table 4.6.1-14: *RRCReconfigurationComplete*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfigurationComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	Not checked		
criticalExtensions CHOICE {			
rrcReconfigurationComplete SEQUENCE {			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			NR-DC, NE-DC
uplinkTxDirectCurrentList	Not checked		
nonCriticalExtension SEQUENCE {			
scg-Response CHOICE {			
nr-SCG-Response	RRCReconfigurationComplete	OCTET STRING (CONTAINING RRCReconfigurationComplete)	NR-DC
eutra-SCG-Response	RRCConnectionReconfigurationComplete	OCTET STRING	NE-DC
}			
nonCriticalExtension	Not checked		
}			
}			
nonCriticalExtension	Not checked		
}			
}			
}			

Condition	Explanation
NR-DC	Used in NR-DC configuration
NE-DC	NR E-UTRA Dual Connectivity is configured

– *RRCReject*

Table 4.6.1-15: *RRCReject*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReject ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReject SEQUENCE {			
waitTime	1		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *RRCRelease*

Table 4.6.1-16: *RRCRelease*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCRelease ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcRelease SEQUENCE {			
redirectedCarrierInfo	Not present		
cellReselectionPriorities	Not present		
suspendConfig	Not present		
suspendConfig SEQUENCE {			NR_RRC_INACTIVE
fullI-RNTI	I-RNTI-Value		
shortI-RNTI	ShortI-RNTI-Value		
ran-PagingCycle	rf32		
ran-NotificationAreaInfo CHOICE {			
cellList SEQUENCE (SIZE (1..maxPLMNIdentities)) OF PLMN-RAN-AreaCell {	1 entry		
PLMN-RAN-AreaCellList[1] SEQUENCE {		entry 1	
plmn-Identity	Not present		
ran-AreaCells SEQUENCE (SIZE (1..32)) OF CellIdentity {	1 entry		
CellIdentity[1]	CellIdentity	entry 1 Cellidentity for the used cell.	
}			
}			
}			
}			
t380	Not present		
nextHopChainingCount	NextHopChainingCount		
sl-UEIdentityRemote-r17	Not present		
sdt-Config-r17	Not present		
sdt-Config-r17 CHOICE {			SDT
setup SEQUENCE {			
sdt-DRB-List-r17 SEQUENCE (SIZE (0..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity	DRB-Identity using condition DRB1		
}			
sdt-SRB2-Indication-r17	Not present		
	allowed		pc_srb_SDT_r17
sdt-MAC-PHY-CG-Config-r17 CHOICE {			
setup SEQUENCE {			
cg-SDT-ConfigLCH-RestrictionToAddModList-r17 SEQUENCE (SIZE(1..maxLC-ID)) OF CG-SDT-Config-LCH-restriction-r17 {	1 entry		
logicalChannelIdentity-r17	LogicalChannelIdentity with condition DRB1		
configuredGrantType1Allowed-r17	true		
allowedCG-List-r17	Not present		
}			
cg-SDT-ConfigLCH-RestrictionToReleaseList-r17	Not present		
cg-SDT-ConfigInitialBWP-NUL-r17	Not present		
cg-SDT-ConfigInitialBWP-SUL-r17	Not present		
cg-SDT-ConfigInitialBWP-DL-r17	Not present		
cg-SDT-TimeAlignmentTimer-r17	ms750		
cg-SDT-RSRP-ThresholdSSB-r17	66		
cg-SDT-TA-ValiditationConfig-r17	Not present		
cg-SDT-CS-RNTI-r17	Not present		
}			
}			
sdt-DRB-ContinueROHC-r17	Not present		

}			
}			
srs-PosRRC-Inactive-r17	Not present		
ran-ExtendedPagingCycle-r17	Not present		
}			
deprioritisationReq	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
NR_RRC_INACTIVE	NR RRC state RRC_INACTIVE
SDT	For SDT test cases

– *RRCResume*

Table 4.6.1-17: RRCResume

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCResume ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcResume SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition RESUME		
masterCellGroup	CellGroupConfig with condition RESUME	OCTET STRING (CONTAINING CellGroupConfig)	
measConfig	Not present		
fullConfig	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *RRCResumeComplete*

Table 4.6.1-18: *RRCResumeComplete*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCResumeComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcResumeComplete SEQUENCE {			
dedicatedNAS-Message	Not checked		
selectedPLMN-Identity	Not checked		
uplinkTxDirectCurrentList	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *RRCResumeRequest*

Table 4.6.1-19: *RRCResumeRequest*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCResumeRequest ::= SEQUENCE {			
rrcResumeRequest SEQUENCE {			
resumeIdentity	ShortI-RNTI-Value		
resumeMAC-I	Not checked		
resumeCause	ResumeCause		
spare	Not checked		
}			
}			

– *RRCResumeRequest1*

Table 4.6.1-20: *RRCResumeRequest1*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCResumeRequest1 ::= SEQUENCE {			
rrcResumeRequest1 SEQUENCE {			
resumeIdentity	I-RNTI-Value		
resumeMAC-I	Not checked		
resumeCause	ResumeCause		
spare	Not checked		
}			
}			

– *RRCSetup*

Table 4.6.1-21: *RRCSetup*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetup ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcSetup SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition SRB1		
masterCellGroup	CellGroupConfig with condition SRB1	OCTET STRING (CONTAINING CellGroupConfig)	
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *RRCSetupComplete*

Table 4.6.1-22: *RRCSetupComplete*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcSetupComplete SEQUENCE {			
selectedPLMN-Identity	Not checked		
registeredAMF	Not checked		
guami-Type	Not checked		
s-nssai-List	Not checked		
dedicatedNAS-Message	DedicatedNAS-Message		
ng-5G-S-TMSI-Value	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *RRCSetupRequest*

Table 4.6.1-23: *RRCSetupRequest*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
ue-Identity CHOICE {			
randomValue	Not checked		
}			
establishmentCause	Not checked		
spare	Not checked		
}			
}			

– *RRCSystemInfoRequest*

Table 4.6.1-24: *RRCSystemInfoRequest*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSystemInfoRequest ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcSystemInfoRequest SEQUENCE {			
requested-SI-List	Not checked		
spare	Not checked		
}			
}			
}			

– *SCGFailureInformation*

Table 4.6.1-24A: *SCGFailureInformation*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SCGFailureInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
scgFailureInformation SEQUENCE {			
failureReportSCG	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *SCGFailureInformationEUTRA*

Table 4.6.1-24B: *SCGFailureInformationEUTRA*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SCGFailureInformationEUTRA ::= SEQUENCE {			
criticalExtensions CHOICE {			
scgFailureInformationEUTRA SEQUENCE {			
failureReportSCG-EUTRA	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *SecurityModeCommand*

Table 4.6.1-25: *SecurityModeCommand*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SecurityModeCommand ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
securityModeCommand SEQUENCE {			
securityConfigSMC SEQUENCE {			
securityAlgorithmConfig	SecurityAlgorithmConfig		
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *SecurityModeComplete*

Table 4.6.1-26: *SecurityModeComplete*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SecurityModeComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
securityModeComplete SEQUENCE {			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *SecurityModeFailure*

Table 4.6.1-27: *SecurityModeFailure*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SecurityModeFailure ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
securityModeFailure SEQUENCE {			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *SIB1*

Table 4.6.1-28: *SIB1*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB1 ::= SEQUENCE {			
cellSelectionInfo SEQUENCE {			
q-RxLevMin	-70	-140 dBm	RF OR RRM
	-55	-110 dBm	SIG AND FR1
	ROUND((-110+Delta(NRfs))/2)	-110+Delta(NRfs)	SIG AND FR2
q-RxLevMinOffset	Not present		
q-RxLevMinSUL	Not Present		
	-70	-140 dBm	SUL AND (RF OR RRM)
	-55	-110 dBm	SUL AND SIG
q-QualMin	-20	-20dB	QBASED
	Not present		
q-QualMinOffset	Not present		
}			
cellAccessRelatedInfo	CellAccessRelatedInfo		
connEstFailureControl	ConnEstFailureControl		
si-SchedulingInfo	Not present		NR_1
	SI-SchedulingInfo		
servingCellConfigCommon	ServingCellConfigCommonSIB		
ims-EmergencySupport	Not present		
	true	Indicates the cell supports IMS emergency bearer services for UEs in limited service mode.	SIG
eCallOverIMS-Support	Not present		
	true	Support of eCall over IMS services	eCalloverIMSforNR
ue-TimersAndConstants	UE-TimersAndConstants		
uac-BarringInfo	Not present		
useFullResumeID	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			EMR_EUTRA, EMR_NR, posSIB, pc_RedCap_r17, SDT
idleModeMeasurementsEUTRA-r16	Not present		
	true		EMR_EUTRA
idleModeMeasurementsNR-r16	Not present		
	true		EMR_NR
posSI-SchedulingInfo-r16	PosSI-SchedulingInfo-r16		
	PosSI-SchedulingInfo-r16		posSIB
nonCriticalExtension SEQUENCE {			
uac-BarringInfo-v1630	Not present		
nonCriticalExtension SEQUENCE {			
hsdn-Cell-r17	Not present		
uac-BarringInfo-v1700	Not present		
sdt-ConfigCommon-r17	Not present		
sdt-ConfigCommon-r17 SEQUENCE {			SDT
sdt-RSRP-Threshold-r17	66		
sdt-LogicalChannelSR-DelayTimer-r17	Not present		
sdt-DataVolumeThreshold-r17	byte1000		

t319a-r17	ms1000		
}			
redCap-ConfigCommon-r17	Not present		
redCap-ConfigCommon-r17 SEQUENCE {			pc_halfDuplexFDD_TypeA_RedCap_r17 AND FDD
halfDuplexRedCapAllowed-r17	true		
cellBarredRedCap-r17	Not present		
}			
featurePriorities-r17	Not present		
si-SchedulingInfo-v1700	Not present		
hyperSFN-r17	Not present		
eDRX-AllowedIdle-r17	Not present		
eDRX-AllowedInactive-r17	Not present		
intraFreqReselectionRedCap-r17	Not present		
	allowed		pc_RedCap_r17
cellBarredNTN-r17	Not present		
nonCriticalExtension	Not present		
}			
}			
}			
}			
NOTE 1: Delta(NRfs) is derived based on calibration procedure defined in the clause 6.1.3.3. NRfs is NR frequency on which SIB1 is broadcasted. NOTE 2: ROUND is rounded off to the nearest integer. As an example, '1 to 1.49' set to '1' while '1.5 to 2' to '2' and '-2.0 to 1.5' set to '-2' while '-1.49 to -1' set to '-1'.			

Condition	Explanation
SUL	For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from q-RxLevMinSUL.
QBASED	This condition applies to Quality based signalling test cases.
NR_1	System information combination NR-1 according table 4.4.3.1.2-1 is applied.
SIG	Used for signalling test cases.
eCalloverIMSforNR	Used for eCall over IMS test cases (TS 38.523-1[12], TS 34.229-5[47])
posSIB	For test cases using posSIBs in system information.
EMR_EUTRA	For E-UTRA idle/inactive measurement test cases.
EMR_NR	For NR idle/inactive measurement test cases.
SDT	For SDT test cases

– *SidelinkUEInformationNR*

Table 4.6.1-28A: *SidelinkUEInformationNR*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SidelinkUEInformationNR-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
sidelinkUEInformationNR-r16 SEQUENCE {			
sl-RxInterestedFreqList-r16	Not present		
sl-RxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER {	1 entry		SIDELINK_RX
INTEGER[1]	1	entry 1	
}			
sl-TxResourceReqList-r16	Not present		
sl-TxResourceReqList-r16 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-r16 {	1 entry		SIDELINK_TX
SL-TxResourceReq-r16[1] SEQUENCE {		entry 1	
sl-DestinationIdentity-r16	SL-DestinationIdentity-r16		
sl-CastType-r16	unicast		
sl-RLC-ModeIndicationList-r16	Not present		
sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16 {	1 entry		
SL-QoS-Info-r16[1] SEQUENCE {		entry 1	
sl-QoS-FlowIdentity-r16	SL-QoS-FlowIdentity-r16		
sl-QoS-Profile-r16	SL-QoS-Profile-r16		
}			
}			
sl-TypeTxSyncList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16 {	1 entry		
SL-TypeTxSync-r16[1]	SL-TypeTxSync-r16	entry 1	
}			
sl-TxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER {	1 entry		
INTEGER[1]	1	entry 1	
}			
sl-CapabilityInformationSidelink-r16[1]	Not present		
}			
}			
sl-FailureList-r16	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
SIDELINK_TX	Used when UE indicates its interest on sidelink transmission.
SIDELINK_RX	Used when UE indicates its interest on sidelink reception.

– *SystemInformation*

Table 4.6.1-29: *SystemInformation*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
systemInformation SEQUENCE {			
sib-TypeAndInfo SEQUENCE (SIZE (1..maxSIB)) OF CHOICE	See subclause 4.4.3.1.3		
sibX	"X" denotes the SIB number		
...			
sibY	"Y" denotes the SIB number		
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
criticalExtensionsFuture-r16 CHOICE {			posSIB
posSystemInformation-r16	PosSystemInformation-r16-IEs		
}			
}			
}			

Condition	Explanation
posSIB	For test cases using posSIBs in system information.

– *UEAssistanceInformation*

Table 4.6.1-30: *UEAssistanceInformation*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UEAssistanceInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
ueAssistanceInformation SEQUENCE {			
delayBudgetReport CHOICE {			
type1	Not checked		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			SIDELINK
overheatingAssistance	Not checked		
nonCriticalExtension SEQUENCE {			
idc-Assistance-r16	Not checked		
drx-Preference-r16	Not checked		
maxBW-Preference-r16	Not checked		
maxCC-Preference-r16	Not checked		
maxMIMO-LayerPreference-r16	Not checked		
minSchedulingOffsetPreference-r16	Not checked		
releasePreference-r16	Not checked		
sl-UE-AssistanceInformationNR-r16	Not checked		
sl-UE-AssistanceInformationNR-r16 SEQUENCE (SIZE (1..maxNrofTrafficPattern-r16)) OF SL-TrafficPatternInfo-r16 {	1 entry		SIDELINK
SL-TrafficPatternInfo-r16[1] SEQUENCE {		entry 1	
trafficPeriodicity-r16	FFS		
timingOffset-r16	FFS		
messageSize-r16	FFS		
sl-QoS-FlowIdentity-r16	SL-QoS-FlowIdentity-r16		
}			
}			
referenceTimeInfoPreference-r16	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			SDT
ul-GapFR2-Preference-r17	Not checked		
musim-Assistance-r17	Not checked		
overheatingAssistance-r17	Not checked		
maxBW-PreferenceFR2-2-r17	Not checked		
maxMIMO-LayerPreferenceFR2-2-r17	Not checked		
minSchedulingOffsetPreferenceExt-r17	Not checked		
rlm-MeasRelaxationState-r17	Not checked		
bfd-MeasRelaxationState-r17	Not checked		
nonSDT-DataIndication-r17 SEQUENCE {			SDT
resumeCause-r17	mo-Data		
}			
scg-DeactivationPreference	Not checked		
uplinkData-r17	Not checked		
rrm-MeasRelaxationFulfilment-r17	Not checked		
propagationDelayDifference-r17	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			
}			
}			

Condition	Explanation
SIDELINK	For NR sidelink dedicated configuration
SDT	For SDT test cases

– *UECapabilityEnquiry*

Table 4.6.1-31: *UECapabilityEnquiry*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UECapabilityEnquiry ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueCapabilityEnquiry SEQUENCE {			
ue-CapabilityRAT-RequestList	UE-CapabilityRAT-RequestList		
lateNonCriticalExtension	Not present		
ue-CapabilityEnquiryExt	Not present		
}			
}			
}			

– *UECapabilityInformation*

Table 4.6.1-32: *UECapabilityInformation*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UECapabilityInformation ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueCapabilityInformation SEQUENCE {			
ue-CapabilityRAT-ContainerList	UE-CapabilityRAT-ContainerList		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *UEInformationRequest*

Table 4.6.1-32A: *UEInformationRequest*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UEInformationRequest-r16 ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueInformationRequest-r16 SEQUENCE {			
idleModeMeasurementReq-r16	Not present		
	true		IDLE
logMeasReportReq-r16	Not present		
	true		LOG
connEstFailReportReq-r16	true		
ra-ReportReq-r16	Not present		
	true		RA
rlf-ReportReq-r16	Not present		
	true		RLF
mobilityHistoryReportReq-r16	Not present		
	true		HISTORY
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
IDLE	Idle/inactive measurement information reporting
LOG	Logged measurement information reporting
RA	Random access procedure information reporting
RLF	Radio link failure information reporting
HISTORY	Mobility history information reporting

– *UEInformationResponse*

Table 4.6.1-32B: *UEInformationResponse*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UEInformationResponse-r16 ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueInformationResponse-r16 SEQUENCE {			
measResultIdleEUTRA-r16	Not checked		
measResultIdleNR-r16	Not checked		
logMeasReport-r16	Not checked		
connEstFailReport-r16	Not checked		
ra-ReportList-r16	Not checked		
rlf-Report-r16	Not checked		
mobilityHistoryReport-r16	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *ULDedicatedMessageSegment*

Table 4.6.1-32C: *ULDedicatedMessageSegment*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ULDedicatedMessageSegment-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
ulDedicatedMessageSegment-r16 SEQUENCE {			
segmentNumber-r16	Any allowed value between 0 to 15		
rrc-MessageSegmentContainer-r16	Not Checked	OCTET STRING including segmented UECapabilityInformation message	
rrc-MessageSegmentType-r16	Not Checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *ULInformationTransfer*

Table 4.6.1-33: *ULInformationTransfer*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ULInformationTransfer ::= SEQUENCE {			
criticalExtensions CHOICE {			
ulInformationTransfer SEQUENCE {			
dedicatedNAS-Message	DedicatedNAS-Message		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *ULInformationTransferIRAT*

Table 4.6.1-33A: *ULInformationTransferIRAT*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ULInformationTransferIRAT-r16 ::= SEQUENCE {			
FFS			
}			

– *ULInformationTransferMRDC*

Table 4.6.1-34: *ULInformationTransferMRDC*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ULInformationTransferMRDC ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
ulInformationTransferMRDC SEQUENCE {			
ul-DCCH-MessageNR	Not checked		
ul-DCCH-MessageEUTRA	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			

4.6.1A Contents of PC5 RRC messages

– *MasterInformationBlockSidelink*

Table 4.6.1A-1: *MasterInformationBlockSidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MasterInformationBlockSidelink ::= SEQUENCE {			
sl-TDD-Config-r16	111111111111		
inCoverage-r16	true		RX AND (GNSS_SYNC OR NB_SYNC)
	false		RX AND (UE_SYNC OR INTERNAL_SYNC)
	Not Checked		TX
directFrameNumber-r16	DFN of the radio frame in which the S-SSB containing this message is transmitted		
slotIndex-r16	slot index of the slot in which the S-SSB containing this message is transmitted		
reservedBits-r16	00		
}			

Condition	Explanation
GNSS_SYNC	GNSS is used as the synchronization reference source
NB_SYNC	gNB or eNB is used as the synchronization reference source
UE_SYNC	SyncRef UE is used as the synchronization reference source
INTERNAL_SYNC	Internal clock is used as the synchronization reference source
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *MeasurementReportSidelink*

Table 4.6.1A-2: *MeasurementReportSidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasurementReportSidelink ::= SEQUENCE {			
criticalExtensions CHOICE {			
measurementReportSidelink-r16 SEQUENCE {			
sl-measResults-r16 SEQUENCE {			
sl-MeasId-r16	1		
sl-MeasResult-r16 SEQUENCE {			
sl-ResultDMRS-r16 SEQUENCE {			
sl-RSRP-r16	(0..127)		TX
	71	actuall value is (71-156) = -85dBm	RX
}			
}			
}			
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *RRCReconfigurationSidelink*

Table 4.6.1A-3: *RRCReconfigurationSidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfigurationSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		RX
	(0..3)		TX
criticalExtensions CHOICE {			
rrcReconfigurationSidelink-r16 SEQUENCE {			
slrb-ConfigToAddModList-r16	Not present		
slrb-ConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SLRB-Config-r16 {	1 entry		SL_DRB
SLRB-Config-r16[1] SEQUENCE {		entry 1	
slrb-PC5-ConfigIndex-r16	Not checked		TX
	1		RX
sl-SDAP-ConfigPC5-r16	Set according to parameter given in test case		TX
sl-SDAP-ConfigPC5-r16 SEQUENCE {			RX
sl-MappedQoS-FlowsToAddList-r16 SEQUENCE (SIZE (1.. maxNrofSL-QFIsPerDest-r16)) OF SL-PQFI-r16 {	1 entry		
SL-PQFI-r16[1]	1	entry 1	
}			
sl-MappedQoS-FlowsToReleaseList-r16	Not present		
sl-SDAP-Header-r16	absent		
}			
sl-PDCP-ConfigPC5-r16	Set according to parameter given in test case		TX
sl-PDCP-ConfigPC5-r16 SEQUENCE {			RX
sl-PDCP-SN-Size-r16	len12bits		
sl-OutOfOrderDelivery-r16	Not present		
}			
sl-RLC-ConfigPC5-r16	Set according to parameter given in test case		TX
sl-RLC-ConfigPC5-r16 CHOICE {			RX
sl-AM-RLC-r16 SEQUENCE {			
sl-SN-FieldLengthAM-r16	size12		
}			
}			
sl-MAC-LogicalChannelConfigPC5-r16	Set according to parameter given in test case		TX
sl-MAC-LogicalChannelConfigPC5-r16 SEQUENCE {			RX
sl-LogicalChannelIdentity-r16	LogicalChannelIdentity with condition DRB1		
}			
}			
}			
slrb-ConfigToReleaseList-r16	Not present		
sl-MeasConfig-r16	Not present		
sl-MeasConfig-r16 CHOICE {			SL_MEAS
setup	Set according to parameter given in test case		TX
setup SEQUENCE {			RX
sl-MeasObjectToRemoveList-r16	Not present		
sl-MeasObjectToAddModList-r16	SL-MeasObjectList-		
sl-ReportConfigToRemoveList-r16	Not present		
sl-ReportConfigToAddModList-r16	SL-ReportConfigList		
sl-MeasIdToRemoveList-r16	Not present		
sl-MeasIdToAddModList-r16	SL-MeasIdList		
sl-QuantityConfig-r16	SL-QuantityConfig		
}			

}			
sl-CSI-RS-Config-r16	Not present		
sl-CSI-RS-Config-r16 CHOICE {			SL_CSI
setup	Set according to parameter given in test case		TX
setup SEQUENCE {			RX
sl-CSI-RS-FreqAllocation-r16 CHOICE {			
sl-OneAntennaPort-r16	000000000001		
}			
sl-CSI-RS-FirstSymbol-r16	6		
}			
}			
sl-ResetConfig-r16	Not present		
sl-LatencyBoundCSI-Report-r16	Not present		
	160		SL_CSI
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
SL_DRB	To provide peer UE SL DRB related configuration via PC5 RRC
SL_MEAS	To provide peer UE SL RSRP measurement and reporting related configuration via PC5 RRC
SL_CSI	To provide peer UE SL CSI reporting related configuration via PC5 RRC
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *RRCReconfigurationCompleteSidelink*

Table 4.6.1A-4: *RRCReconfigurationCompleteSidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfigurationCompleteSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		TX
	Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding RRCConfigurationSidelink message		RX
criticalExtensions CHOICE {			
rrcReconfigurationCompleteSidelink-r16 SEQUENCE {			
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *RRCReconfigurationFailureSidelink*

Table 4.6.1A-5: *RRCReconfigurationFailureSidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfigurationFailureSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		TX
	Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding RRCConfigurationSidelink message		RX
criticalExtensions CHOICE {			
rrcReconfigurationFailureSidelink-r16 SEQUENCE {			
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *UECapabilityEnquirySidelink*

Table 4.6.1A-6: *UECapabilityEnquirySidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UECapabilityEnquirySidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		RX
	(0..3)		TX
criticalExtensions CHOICE {			
ueCapabilityEnquirySidelink-r16 SEQUENCE {			
frequencyBandListFilterSidelink-r16	Not checked		TX
frequencyBandListFilterSidelink-r16 SEQUENCE (SIZE (1..maxBandsMRDC)) OF FreqBandInformation {	1 entry		RX
FreqBandInformation[1] CHOICE {		entry 1	
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR of the PC5 operating band		
maxBandwidthRequestedDL	Not present		
maxBandwidthRequestedUL	Not present		
maxCarriersRequestedDL	Not present		
maxCarriersRequestedUL	Not present		
}			
}			
}			
ue-CapabilityInformationSidelink-r16	Not present		
	Not checked		TWO_WAY_ENQUIRY AND TX
	OCTET STRING containing UECapabilityInformationSidelink specified in Table 4.6.1A-7 with condition RX		TWO_WAY_ENQUIRY AND RX
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TWO_WAY_ENQUIRY	For two-way SL UE capability enquiry procedure
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *UECapabilityInformationSidelink*

Table 4.6.1A-7: *UECapabilityInformationSidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UECapabilityInformationSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		TX
	Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding UECapabilityEnquirySidelink message		RX
criticalExtensions CHOICE {			
ueCapabilityInformationSidelink-r16 SEQUENCE {			
accessStratumReleaseSidelink-r16	rel16		
pdcp-ParametersSidelink-r16	Not checked		TX
pdcp-ParametersSidelink-r16 SEQUENCE {			RX
outOfOrderDeliverySidelink-r16	supported		
}			
rlc-ParametersSidelink-r16	Not checked		TX
rlc-ParametersSidelink-r16 SEQUENCE {			RX
am-WithLongSN-Sidelink-r16	supported		
um-WithLongSN-Sidelink-r16	supported		
}			
supportedBandCombinationListSidelinkNR-r16	Not checked		TX
supportedBandCombinationListSidelinkNR-r16 SEQUENCE (SIZE (1..maxBandComb)) OF BandCombinationParametersSidelinkNR-r16 {	1 entry		RX
BandCombinationParametersSidelinkNR-r16[1] SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BandParametersSidelink-r16 {	1 entry	entry 1	
BandParametersSidelink-r16[1] SEQUENCE {		entry 1	
freqBandSidelink-r16	first FreqBandIndicatorNR contained in frequencyBandListFilterSidelink-r16 of corresponding UECapabilityEnquirySidelink message		
}			
}			
}			
supportedBandListSidelink-r16	Not checked		TX
supportedBandListSidelink-r16 SEQUENCE (SIZE (1..maxBands)) OF BandSidelinkPC5-r16 {	1 entry		RX
BandSidelinkPC5-r16[1] SEQUENCE {		entry 1	
freqBandSidelink-r16	first FreqBandIndicatorNR contained in frequencyBandListFilterSidelink-r16 of corresponding UECapabilityEnquirySidelink message		
sl-Reception-r16 SEQUENCE {			
harq-RxProcessSidelink-r16	n16		
pscch-RxSidelink-r16	value1		
scs-CP-PatternRxSidelink-r16 CHOICE {			
fr1-r16 SEQUENCE {			
scs-15kHz-r16	0101011000000000		
scs-30kHz-r16	0101011000000000		
scs-60kHz-r16	0101011000000000		
}			
}			
extendedCP-RxSidelink-r16	supported		
}			

sl-Tx-256QAM-r16	supported		
lowSE-64QAM-MCS-TableSidelink-r16	supported		
csi-ReportSidelink-r16 SEQUENCE {			
csi-RS-PortsSidelink-r16	p2		
}			
rankTwoReception-r16	supported		
sl-openLoopPC-RSRP-ReportSidelink-r16	supported		
sl-Rx-256QAM-r16	supported		
}			
}			
appliedFreqBandListFilter-r16	Not checked		TX
	Set to the same value as the frequencyBandListFilterSidelink-r16 of corresponding UECapabilityEnquirySidelink message		RX
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

4.6.2 System information blocks

– *SIB2*

Table 4.6.2-1: *SIB2*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB2 ::= SEQUENCE {			
cellReselectionInfoCommon SEQUENCE {			
nrofSS-BlocksToAverage	2		
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	RSRP-Range	Table 4.6.3-152	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
rangeToBestCell	dB0		
q-Hyst	dB0	To reduce interference between intra-frequency multiple cells	
speedStateReselectionPars	Not present		
}			
cellReselectionServingFreqInfo SEQUENCE {			
s-NonIntraSearchP	Not present		
s-NonIntraSearchQ	Not present		
threshServingLowP	0	Actual value of threshold = field value * 2 [dB]	
threshServingLowQ	Not present		
	3	3dB	QBASED
cellReselectionPriority	4	A middle value in the range has been selected	
cellReselectionSubPriority	Not present		
}			
intraFreqCellReselectionInfo SEQUENCE {			
q-RxLevMin	-70	-140dBm	
	-55	-110dBm	SIG
q-RxLevMinSUL	Not Present		
	-70	-140dBm	SUL

	-55	-110dBm	SUL AND SIG
q-QualMin	Not present		
	-20	-20dB	QBASED
s-IntraSearchP	31	Actual value of threshold = field value * 2 [dB]	
s-IntraSearchQ	Not present		
t-ReselectionNR	0		
frequencyBandList	Not present		
frequencyBandListSUL	Not present		
p-Max	Not present		
smtc	SSB-MTC	Table 4.6.3-185	
ss-RSSI-Measurement	Not present		
ssb-ToMeasure	SSB-ToMeasure		
deriveSSB-IndexFromCell	false		FDD
	true		TDD
}			
t-ReselectionNR-SF	Not present		
smtc2-LP-r16	Not present		
ssb-PositionQCL-Common-r16	Not present		
}			
relaxedMeasurement-r16	Not present		

Condition	Explanation
SUL	For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from *q-RxLevMin-sul.*
QBASED	This condition applies to Quality based signalling test cases.

– *SIB3*

Table 4.6.2-2: *SIB3*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB3 ::= SEQUENCE {			
intraFreqNeighCellList	Not present	Not required unless Qoffset configuration is tested. When Qoffset configuration is tested, see table 6.3.1.1-1	
intraFreqBlackCellList	Not present	Not required unless Blacklisted cell list configuration is tested. When Blacklisted cell list configuration is tested, see table 6.3.1.1-1	
lateNonCriticalExtension	Not present		
}			

– *SIB4*

Table 4.6.2-3: *SIB4*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB4 ::= SEQUENCE {			
interFreqCarrierFreqList SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo {	The same number of entries as the configured inter-freq carriers defined in table 6.3.1.2-1	*n* denotes the index of the entry	
InterFreqCarrierFreqInfo[n] SEQUENCE {		entry n	
dl-CarrierFreq	Downlink NR SSB ARFCN. See table 6.3.1.2-1		
frequencyBandList	MultiFrequencyBandList NR-SIB		
frequencyBandListSUL	Not present		
nrofSS-BlocksToAverage	2		
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	RSRP-Range	Table 4.6.3-152	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
smtc	SSB-MTC	Table 4.6.3-185	
ssbSubcarrierSpacing	SubcarrierSpacing	Table 4.6.3-188	
ssb-ToMeasure	SSB-ToMeasure		
deriveSSB-IndexFromCell	false		FDD
	true		TDD
ss-RSSI-Measurement	Not present		
q-RxLevMin	-70	-140dBm	
	-55	-110dBm	SIG and FR1
	ROUND((-110+Delta(NRfn))/2)	NOTE1 and NOTE2.	SIG and FR2
q-RxLevMinSUL	-70	-140dBm, For RF/RRM test cases	SUL
	Not present		
	-55	-110dBm	SUL and SIG
q-QualMin	Not present		
	-20	-20dB	QBASED
p-Max	Not present		
t-ReselectionNR	0		
t-ReselectionNR-SF	Not present	Not required unless speed-dependent cell re-selection is tested.	
threshX-HighP	2	4dB, this value should be higher than threshServingLow of the serving cell to avoid ping-pong with lower priority cells.	
threshX-LowP	1	2dB	
threshX-Q	Not present		
threshX-Q SEQUENCE {			QBASED
threshX-HighQ	5	5dB	
threshX-LowQ	5	5dB	
}			
cellReselectionPriority	4	The same priority as the one used for serving cell in SIB 2.	

cellReselectionSubPriority	Not present	The same subpriority as the one used for serving cell in SIB 2.	
q-OffsetFreq	dBXY with XY = (FLOOR((Delta(NRfn) – Delta(NRfs))/2))*2 (NOTE 3)	This value is type of Q-OffsetRange in TS 38.331 [6] which must be even value when its absolute value is larger than dB5.	FR2 AND NOT AbsoluteValue_Within_dB5
	dBXY with XY = Delta(NRfn) – Delta(NRfs)		FR2 AND AbsoluteValue_Within_dB5
	dB0		
interFreqNeighCellList	Not present	Not required unless Qoffset configuration is tested.	
interFreqBlackCellList	Not present	Not required unless Blacklisted cell list configuration is tested.	
}			
}			
lateNonCriticalExtension	Not present		
}			

NOTE 1: Delta(NRfn) and Delta(NRfs) is derived based on calibration procedure defined in the clause 6.1.3.3. NRfn and NRfs are NR frequencies in dl-CarrierFreq[n] and serving cell frequency on which SIB4 is broadcasted.
NOTE 2: ROUND is rounded off to the nearest integer. As an example, '1 to 1.49' set to '1' while '1.5 to 2' to '2' and '-2.0 to 1.5' set to '-2' while '-1.49 to -1' set to '-1'.
NOTE 3: FLOOR is rounded off to the smaller integer. As an example, '1.0 to 1.99' set to 1, '-1.01 to -2.00' set to -2.

Condition	Explanation
SUL	For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from *q-RxLevMin-sul.*
QBASED	This condition applies to Quality based signalling test cases.
AbsoluteValue_Within_dB5	-5dB <= (Delta(NRfn) – Delta(NRfs)) <= 5dB.

– *SIB5*

Table 4.6.2-4: *SIB5*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB5 ::= SEQUENCE {			
carrierFreqListEUTRA SEQUENCE (SIZE (1..maxEUTRA-Carrier)) OF CarrierFreqEUTRA {	The same number of entries as the configured E-UTRA carriers. For Signalling test cases, see table 6.3.1.3-1.	*n* denotes the index of the entry	
CarrierFreqEUTRA[n] SEQUENCE {		entry n	
carrierFreq	Downlink E-UTRA ARFCN under test. For Signalling test cases, see table 6.3.1.3-1.		
eutra-multiBandInfoList	Not present		
eutra-FreqNeighCellList	Not present	Not required unless EUTRA Qoffset configuration is tested.	
eutra-BlackCellList	Not present	Not required unless Blacklisted cell list configuration is tested.	
allowedMeasBandwidth	*EUTRA*-AllowedMeasBandwidth	The value of *EUTRA*-AllowedMeasBandwidth in Table 4.6.5-1.	
presenceAntennaPort1	FALSE		
	TRUE	At least two cell-specific antenna ports are used in all neighbouring cells.	All neighCells with port1
cellReselectionPriority	3		
cellReselectionSubPriority	Not Present		
threshX-High	2 (4 dB)		
threshX-Low	1 (2 dB)		
q-RxLevMin	-70 (-140 dBm)	For RF/RRM test cases	
	-55(-110dBm)	For signalling test cases	
q-QualMin	-20 (-20dB)		
p-MaxEUTRA	23		
threshX-Q	Not present		
threshX-Q SEQUENCE {			QBASED
threshX-HighQ	9 (9dB)		
threshX-LowQ	9 (9dB)		
}			
}			
}			
t-ReselectionEUTRA	0		
t-ReselectionEUTRA-SF	Not present	Not required unless speed-dependent cell re-selection is tested.	
lateNonCriticalExtension	Not present		
}			

Condition	Explanation
QBASED	This condition applies to Quality based cell (re)selection signalling test cases.
All neighCells with port1	Used for all neighbouring cells with at least two cell-specific antenna ports

– *SIB6*

Table 4.6.2-5: *SIB6*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB6 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningType	'0000 0101 1000 0000'B	Note 2	
lateNonCriticalExtension	Not present		
}			

Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',
Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',
Popup (Octet 1 bit 4) set to 'Activate popup',
Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].

Note 2: Warning Type Value (Octet 1 bit 7 ~ 1) set to 'Earthquake and Tsunami',
Emergency User Alert (Octet 1 bit 0) set to 'Activate emergency user alert',
Popup (Octet 2 bit 7) set to 'Activate Popup', see TS 23.041 [25],
Padding (Octet 2 bit 6 ~ 0) set to '000 0000'B.

– *SIB7*

Table 4.6.2-6: *SIB7* (1st Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB7 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	0		
warningMessageSegment	Octetstring of N	Where N ≥ 1 and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Bitstring (8) ID of the alphabet/coding and the applied language	see TS 23.041 [25]	Segment 1
lateNonCriticalExtension	Not present		
}			

Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',
Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',
Popup (Octet 1 bit 4) set to 'Activate popup',
Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].

Condition	Explanation
Segment1	The field is mandatory present in the first segment of SIB7, otherwise it is not present.

Table 4.6.2-7: *SIB7* (2nd Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB7 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	1		
warningMessageSegment	Octetstring of N	Where N ≥ 1 and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

Table 4.6.2-8: *SIB7* (3rd Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB7 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	LastSegment		
warningMessageSegmentNumber	2		
warningMessageSegment	Octetstring of N	Where N ≥ 1 and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

– *SIB8*

Table 4.6.2-9: *SIB8* (1st Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB8 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0001 0010'B	CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	0		
warningMessageSegment	Octetstring of N	Where N ≥ 1 and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Bitstring (8) ID of the alphabet/coding and the applied language	see TS 23.041 [25]	Segment 1
warningAreaCoordinatesSegment	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

Condition	Explanation
Segment1	The field is mandatory present in the first segment of SIB8, otherwise it is not present.

Table 4.6.2-10: *SIB8* (2nd Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB8 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0001 0010'B	CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	1		
warningMessageSegment	Octetstring of N	Where N ≥ 1 and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
warningAreaCoordinatesSegment	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

Table 4.6.2-11: *SIB8* (3rd Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB8 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0001 0010'B	CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	LastSegment		
warningMessageSegmentNumber	2		
warningMessageSegment	Octetstring of N	Where N ≥ 1 and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
warningAreaCoordinatesSegment	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

– *SIB9*

Table 4.6.2-11A: *SIB9*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB9 ::= SEQUENCE {			
timeInfo ::= SEQUENCE {			
FFS			
}			
lateNonCriticalExtension	Not present		
referenceTimeInfo-r16	ReferenceTimeInfo		TSC
}			

Condition	Explanation
TSC	For test cases requiring TSC (Time Sensitive Communication) functions enabled.

– *SIB10*

Table 4.6.2-12: *SIB10*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB10-r16 ::= SEQUENCE {			
hrnn-List-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF HRNN-r16 {			
HRNN-r16[1] SEQUENCE {		1 entry	
hrnn-r16	"3gppTest"	charstring "3gppTest" converted to OCTETSTRING	
}			
}			
lateNonCriticalExtension	Not present		
}			

– *SIB11*

Table 4.6.2-13: *SIB11*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB11-r16 ::= SEQUENCE {			
measIdleConfigSIB-r16 SEQUENCE {			
measIdleCarrierListNR-r16	Not present		
measIdleCarrierListNR-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierNR-r16 {	The same number of entries as NR cells configured for measurements	Serving cell not included	EMR_NR_SIB4, EMR_NR_SIB11
MeasIdleCarrierNR-r16[n] SEQUENCE {		entry n	
carrierFreq-r16	ARFCN value of configured NR cell		
ssbSubcarrierSpacing-r16	SubcarrierSpacing	Table 4.6.3-188	
frequencyBandList	Not present		
measCellListNR-r16	Not present		
reportQuantities-r16	both		
qualityThreshold-r16	Not present		
ssb-MeasConfig-r16	Not present		EMR_NR_SIB4
ssb-MeasConfig-r16 SEQUENCE {			EMR_NR_SIB11
nrofSS-BlocksToAverage-r16	2		
absThreshSS-BlocksConsolidation-r16 SEQUENCE {			
thresholdRSRP	RSRP-Range	Table 4.6.3-152	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
smtc-r16	SSB-MTC	Table 4.6.3-185	
ssb-ToMeasure-r16	SSB-ToMeasure	Table 4.6.3-187	
deriveSSB-IndexFromCell-r16	false		
	true		FR1_TDD, FR2_TDD
ss-RSSI-Measurement-r16	Not present		
}			
beamMeasConfigIdle-r16	Not present		
}			
}			
measIdleCarrierListEUTRA-r16	Not present		
measIdleCarrierListEUTRA-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierEUTRA-r16 {	The same number of entries as E-UTRA cells configured for measurements	Serving cell not included	EMR_EUTRA_SIB11
MeasIdleCarrierEUTRA-r16[n] SEQUENCE {		entry n	
carrierFreqEUTRA-r16	ARFCN value of configured E-UTRA cell		
allowedMeasBandwidth-r16	EUTRA-AllowedMeasBandwidth	Table 4.6.5-1.	
measCellListEUTRA-r16 SEQUENCE (SIZE (1..maxCellMeasIdle-r16)) OF EUTRA-PhysCellIdRange {			
EUTRA-PhysCellIdRange[n] SEQUENCE {		entry n	
start	EUTRA-PhysCellId corresponding to E-UTRA cell		
range	Not present		
}			
}			
reportQuatitiesEUTRA-r16	both		
qualityThresholdEUTRA-r16	Not present		
}			
}			
lateNonCriticalExtension	Not present		
}			

– *SIB12*

Table 4.6.2-14: *SIB12*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB12-r16 ::= SEQUENCE {			
segmentNumber-r16	index of the segment contained in segmentContainer-r16		
segmentType-r16	notLastSegment		NOT_LAST_SEG
	lastSegment		LAST_SEG
segmentContainer-r16	OCTET STRING (CONTAINING SIB12-IEs or segment of SIB12-IEs)	Note 1	
}			
Note 1: Size of the SIB12-IEs-r16 or segment of SIB12-IEs-r16 contained in segmentContainer-r16 shall not exceed the maximum TBS size of the SI. For signalling test cases, the size is defined in TS 38.523-3[23] clause 7.3.3.2.			

Condition	Explanation
NOT_LAST_SEG	Used when SIB12-IEs is segmented and the segment contained in segmentContainer-r16 is not the last segment
LAST_SEG	Used when SIB12-IEs is not segmented, or SIB12-IEs is segmented and the segment contained in segmentContainer-r16 is the last segment

Table 4.6.2-14A: *SIB12-IEs*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB12-IEs-r16 ::= SEQUENCE {			
sl-ConfigCommonNR-r16 SEQUENCE {			
sl-FreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 {	1 entry		
SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon	entry 1	
}			
sl-UE-SelectedConfig-r16	SL-UE-SelectedConfig		
sl-NR-AnchorCarrierFreqList-r16	Not present		
sl-EUTRA-AnchorCarrierFreqList-r16	Not present		
sl-RadioBearerConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 {	1 entry		
SL-RadioBearerConfig-r16[1]	SL-RadioBearerConfig	entry 1	
}			
sl-RLC-BearerConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 {	1 entry		
SL-RLC-BearerConfig-r16[1]	SL-RLC-BearerConfig	entry 1	
}			
sl-MeasConfigCommon-r16	SL-MeasConfigCommon		
sl-CSI-Acquisition-r16	Not present		
sl-OffsetDFN-r16	Not present		
t400-r16	ms1000		
sl-MaxNumConsecutiveDTX-r16	Not present		
sl-SSB-PriorityNR-r16	1		
}			
lateNonCriticalExtension	Not present		
}			

– *SIB13*

Table 4.6.2-15: *SIB13*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB13-r16 ::= SEQUENCE {			
FFS			
}			

– *SIB14*

Table 4.6.2-16: *SIB14*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB14-r16 ::= SEQUENCE {			
FFS			
}			

– *SIB15*

Table 4.6.2-17: *SIB15*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB15-r17 ::= SEQUENCE {			
FFS			
}			

– *SIB16*

Table 4.6.2-18: *SIB16*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB16-r17 ::= SEQUENCE {			
freqPriorityListSlicing-r17 SEQUENCE (SIZE (1..maxFreqPlus1)) OF FreqPrioritySlicing-r17 {	2 entries		
FreqPrioritySlicing-r17[1] SEQUENCE{		entry 1	
dl-ImplicitCarrierFreq-r17	1	The first frequency indicated by the *InterFreqCarrierFreqList* in SIB4	
sliceInfoList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF SliceInfo-r17 {	1 entry		
SliceInfo-r17[1] SEQUENCE {		entry 1	
nsag-IdentityInfo-r17 SEQUENCE {			
nsag-ID-r17	Set to the corresponding NSAG value used in the test case		
trackingAreaCode-r17	Not present		
}			
nsag-CellReselectionPriority-r17	5		
nsag-CellReselectionSubPriority-r17	Not present		
sliceCellListNR-r17	Not present		
}			
}			
}			
FreqPrioritySlicing-r17[2] SEQUENCE{		entry 2	
dl-ImplicitCarrierFreq-r17	2	The second frequency indicated by the *InterFreqCarrierFreqList* in SIB4	
sliceInfoList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF SliceInfo-r17 {	1 entry		
SliceInfo-r17[1] SEQUENCE {		entry 1	
nsag-IdentityInfo-r17 SEQUENCE {			
nsag-ID-r17	Set to the corresponding NSAG value used in the test case		
trackingAreaCode-r17	Not present		
}			
nsag-CellReselectionPriority-r17	4		
nsag-CellReselectionSubPriority-r17	Not present		
sliceCellListNR-r17	Not present		
}			
}			
}			
}			
lateNonCriticalExtension	Not present		
}			

– *SIB20*

Table 4.6.2-19: *SIB20*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB20-r17 ::= SEQUENCE {			
mcch-Config-r17 SEQUENCE {			
mcch-RepetitionPeriodAndOffset-r17 CHOICE {			
rf2-r17	0		
}			
mcch-WindowStartSlot-r17	2		
mcch-WindowDuration-r17	sl8		
mcch-ModificationPeriod-r17	rf8		
}			
cfr-ConfigMCCH-MTCH-r17	Not present		
lateNonCriticalExtension	Not present		
}			

– *SIB21*

Table 4.6.2-20: *SIB21*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB21-r17 ::= SEQUENCE {			
mbs-FSAI-IntraFreq-r17 SEQUENCE (SIZE (1..maxFSAI-MBS-r17)) OF MBS-FSAI-r17 {	1 entry		
MBS-FSAI-r17[1]	'000000'H	entry 1 OCTET STRING (SIZE (3))	
}			
mbs-FSAI-InterFreqList-r17	Not present		
mbs-FSAI-InterFreqList-r17 SEQUENCE (SIZE (1..maxFreq)) OF MBS-FSAI-InterFreq-r17 {	1 entry		MBS_interFreq
MBS-FSAI-InterFreq-r17[1] SEQUENCE {		entry 1	
dl-CarrierFreq-r17	ARFCN-ValueNR with condition DL_SSB		
mbs-FSAI-List-r17 SEQUENCE (SIZE (1..maxFSAI-MBS-r17)) OF MBS-FSAI-r17 {	1 entry		
MBS-FSAI-r17[1]	'000001'H	entry 1 OCTET STRING (SIZE (3))	
}			
}			
}			
lateNonCriticalExtension	Not present		
}			

Condition	Explanation
MBS_interFreq	SIB21 transmitted for a MBS inter-frequency cell environment (MBS service provided on multiple frequencies within a band).

4.6.2A Positioning System information blocks

– *PosSystemInformation-r16-IEs*

Table 4.6.2a-1: *PosSystemInformation-r16-IEs*

Derivation Path: TS 38.331 [6], clause 6.3.1a			
Information Element	**Value/remark**	**Comment**	**Condition**
PosSystemInformation-r16-IEs ::= SEQUENCE {			
posSIB-TypeAndInfo-r16 SEQUENCE (SIZE (1..maxSIB))	n entries	The number of entries depends on the sub-test, as specified in TS 37.571-2 [40]	
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			

– *PosSI-SchedulingInfo*

Table 4.6.2a-2: *PosSI-SchedulingInfo*

Derivation Path: TS 38.331 [6], clause 6.3.1a			
Information Element	**Value/remark**	**Comment**	**Condition**
PosSI-SchedulingInfo-r16 ::= SEQUENCE {			
posSchedulingInfoList-r16 SEQUENCE (SIZE (1..maxSI-Message)) OF PosSchedulingInfo-r16 {	n entries	The size of PosSchedulingInfo-r16 is depending on the sub-tests, as specified in TS 37.571-2 [40]	
PosSchedulingInfo-r16[n] SEQUENCE {		entry n	
offsetToSI-Used-r16	Not present		
posSI-Periodicity-r16	rf32		
posSI-BroadcastStatus-r16	broadcasting		
posSIB-MappingInfo-r16 SEQUENCE (SIZE (1..maxSIB)) OF PosSIB-Type-r16 {	n entries	The number of entries depends on the sub-test, as specified in TS 37.571-2 [40]	
PosSIB-Type-r16[n]			
}			
}			
}			
posSI-RequestConfig-r16	Not present		
posSI-RequestConfigSUL-r16	Not present		
}			

– *SIBpos*

Table 4.6.2a-3: *SIBpos*

Derivation Path: TS 38.331 [6], clause 6.3.1a			
Information Element	**Value/remark**	**Comment**	**Condition**
SIBpos-r16 ::= SEQUENCE {			
assistanceDataSIB-Element-r16	OCTET STRING containing AssistanceDataSIBelement as spepcified in TS 37.571-2 [40]		
lateNonCriticalExtension	Not present		
}			

4.6.3 Radio resource control information elements

– *AdditionalSpectrumEmission*

Table 4.6.3-1: *AdditionalSpectrumEmission*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
AdditionalSpectrumEmission	0		

– *Alpha*

Table 4.6.3-2: *Alpha*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Alpha	alpha0		

– *AMF-Identifier*

Table 4.6.3-3: *AMF-Identifier*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
AMF-Identifier	FFS		

– *ARFCN-ValueEUTRA*

Table 4.6.3-4: *ARFCN-ValueEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ARFCN-ValueEUTRA	FFS		

– *ARFCN-ValueNR*

Table 4.6.3-5: *ARFCN-ValueNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ARFCN-ValueNR	absoluteFrequencySSB as defined for the frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	DL_SSB
	absoluteFrequencyPointA as defined for the DL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	DL_PointA
	absoluteFrequencyPointA as defined for the UL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	UL_PointA
	sl-absoluteFrequencySSB as defined for the SL NRf1 carrier	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_SSB
	sl-AbsoluteFrequencyPointA as defined for the SL NRf1 carrier	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_PointA

Condition	Explanation
DL_SSB	IE absoluteFrequencySSB for downlink
SL_SSB	IE sl-absoluteFrequencySSB for sidelink
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink
SL_PointA	IE sl-absoluteFrequencyPointA for sidelink

– *ARFCN-ValueUTRA-FDD*

Table 4.6.3-5A: *ARFCN-ValueUTRA-FDD*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ARFCN-ValueUTRA-FDD-r16	FFS		

– *AvailabilityCombinationsPerCell*

Table 4.6.3-5B: *AvailabilityCombinationsPerCell*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
AvailabilityCombinationsPerCell-r16 ::= SEQUENCE {			
FFS			
}			

– *AvailabilityIndicator*

Table 4.6.3-5C: *AvailabilityIndicator*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
AvailabilityIndicator-r16 ::= SEQUENCE {			
FFS			
}			

– *BAP-Routing-ID*

Table 4.6.3-5D: *BAP-Routing-ID*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BAP-Routing-ID-r16 ::= SEQUENCE {			
FFS			
}			

– *BeamFailureRecoveryConfig*

Table 4.6.3-6: *BeamFailureRecoveryConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BeamFailureRecoveryConfig SEQUENCE {			
rootSequenceIndex-BFR	Set according to the PRACH-rootSequenceIndex given in Table 4.4.2-2		
rach-ConfigBFR	RACH-ConfigGeneric		
rsrp-ThresholdSSB	57	Actual value = 100 dBm	
candidateBeamRSList SEQUENCE (SIZE(1..maxNrofCandidateBeams)) OF PRACH-ResourceDedicatedBFR {	1 entry		
PRACH-ResourceDedicatedBFR[1] CHOICE {		entry 1	
ssb SEQUENCE {			SSB
ssb	SSB-Index for BFR		
ra-PreambleIndex	56		
}			
}			
csi-rs[1] SEQUENCE {			CSI-RS
csi-rs	NZP-CSI-RS-ResourceId for BFR		
ra-OccasionList	Not present	The RA occasion associated with the SSB that is QCLed with this CSI-RS is used	
ra-PreambleIndex	Not present	The preamble index associated with the SSB that is QCLed with CSI-RS is used	
}			
}			
ssb-perRACH-Occasion	one		
ra-ssb-OccasionMaskIndex	0		
recoverySearchSpaceId	searchSpaceId for BFR search space	The CORESET associated with the BFR search space can not be associated with another search space according to 38.331 [6]	
ra-Prioritization	RA-Prioritization		
beamFailureRecoveryTimer	ms200		
msg1-SubcarrierSpacing	SubcarrierSpacing		
}			

Condition	Explanation
SSB	SSB is used as reference signal for BFR
CSI-RS	CSI-RS is used as reference signal for BFR

– *BeamFailureRecoverySCellConfig*

Table 4.6.3-6AA: *BeamFailureRecoverySCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BeamFailureRecoverySCellConfig-r16 ::= SEQUENCE {			
FFS			
}			

– *BeamFailureRecoveryServingCellConfig*

Table 4.6.3-6AB: *BeamFailureRecoveryServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BeamFailureRecoveryServingCellConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *BetaOffsets*

Table 4.6.3-6A: *BetaOffsets*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BetaOffsets ::= SEQUENCE {			
betaOffsetACK-Index1	9		
betaOffsetACK-Index2	9		
betaOffsetACK-Index3	9		
betaOffsetCSI-Part1-Index1	6		
betaOffsetCSI-Part1-Index2	6		
betaOffsetCSI-Part2-Index1	6		
betaOffsetCSI-Part2-Index2	6		
}			

– *BetaOffsetsCrossPri*

Table 4.6.3-6BA: *BetaOffsetsCrossPri*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BetaOffsetsCrossPri-r17	FFS		

– *BH-RLC-ChannelConfig*

Table 4.6.3-6B: *BH-RLC-ChannelConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BH-RLC-ChannelConfig-r16 ::= SEQUENCE {			
FFS			
}			

– *BH-LogicalChannelIdentity*

Table 4.6.3-6C: *BH-LogicalChannelIdentity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BH-LogicalChannelIdentity-r16 ::= CHOICE {			
FFS			
}			

– *BH-LogicalChannelIdentity-Ext*

Table 4.6.3-6D: *BH-LogicalChannelIdentity-Ext*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BH-LogicalChannelIdentity-Ext-r16	FFS		

– *BH-RLC-ChannelID*

Table 4.6.3-6E: *BH-RLC-ChannelID*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BH-RLC-ChannelID-r16	FFS		

– *BSR-Config*

Table 4.6.3-7: *BSR-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BSR-Config ::= SEQUENCE {			
periodicBSR-Timer	sf1		
retxBSR-Timer	sf80		
logicalChannelSR-DelayTimer	Not present		
}			

– *BWP*

Table 4.6.3-8: *BWP*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP ::= SEQUENCE {			
locationAndBandwidth	Set to value of locationAndBandwidth in Table 4.3.1.0D-1 for the bandwidth and subcarrier spacing under test		FR1
	Set to value of locationAndBandwidth in Table 4.3.1.0D-2 for the bandwidth and subcarrier spacing under test		FR2
subcarrierSpacing	SubcarrierSpacing		
cyclicPrefix	Not present		
}			

– *BWP-Downlink*

Table 4.6.3-9: *BWP-Downlink*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-Downlink ::= SEQUENCE {			
bwp-Id	BWP-Id with condition BWP-Id1		
bwp-Common	BWP-DownlinkCommon with condition BWP-Id1		
bwp-Dedicated	BWP-DownlinkDedicated		
}			

– *BWP-DownlinkCommon*

Table 4.6.3-10: *BWP-DownlinkCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-DownlinkCommon ::= SEQUENCE {			
genericParameters	BWP		
pdcch-ConfigCommon CHOICE {			
setup	PDCCH-ConfigCommon		
	PDCCH-ConfigCommon with condition SCell_add		SCell_Add
	PDCCH-ConfigCommon with condition InitialBWP_SIB		InitialBWP_SIB
	PDCCH-ConfigCommon with condition BWP-Id1		BWP-Id1
}			
pdsch-ConfigCommon CHOICE {			
setup	PDSCH-ConfigCommon		
}			
}			

Condition	Explanation
InitialBWP_SIB	Configured via DownlinkConfigCommonSIB
BWP-Id1	Additional BWP 1

– *BWP-DownlinkDedicated*

Table 4.6.3-11: *BWP-DownlinkDedicated*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-DownlinkDedicated ::= SEQUENCE {			
pdcch-Config CHOICE {			
setup	PDCCH-Config		
}			
pdsch-Config CHOICE {			
setu	PDSCH-Config		
}			
sps-Config	Not present		
radioLinkMonitoringConfig	Not present		Scell_Add
radioLinkMonitoringConfig CHOICE {			
setup	RadioLinkMonitoringConfig		
}			
sps-ConfigToAddModList-r16	Not present		
sps-ConfigToReleaseList-r16	Not present		
sps-ConfigDeactivationStateList-r16	Not present		
beamFailureRecoverySCellConfig-r16	Not present		
sl-PDCCH-Config-r16	Not present		
sl-PDCCH-Config-r16 CHOICE {			SIDELINK
setup	PDCCH-Config		
}			
sl-V2X-PDCCH-Config-r16	Not present		
}			

Condition	Explanation
SIDELINK	Used for sidelink communication
Scell_Add	Add SCell

– *BWP-Id*

Table 4.6.3-12: *BWP-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-Id	0	Initial BWP	
	1		BWP-Id1

Condition	Explanation
BWP-Id1	Additional BWP 1

– *BWP-Uplink*

Table 4.6.3-13: *BWP-Uplink*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-Uplink ::= SEQUENCE {			
bwp-Id	BWP-Id with condition BWP-Id1		
bwp-Common	BWP-UplinkCommon		
bwp-Dedicated	BWP-UplinkDedicated		
}			

– *BWP-UplinkCommon*

Table 4.6.3-14: *BWP-UplinkCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-UplinkCommon ::= SEQUENCE {			
genericParameters	BWP		
rach-ConfigCommon CHOICE {			
setup	RACH-ConfigCommon		
}			
rach-ConfigCommon	Not present		SUL_SUL AND (RF OR RRM), RF AND SCell_Add
pusch-ConfigCommon CHOICE {			
setup	PUSCH-ConfigCommon		
}			
pucch-ConfigCommon CHOICE {			
setup	PUCCH-ConfigCommon		
}			
pucch-ConfigCommon	Not present		RF AND SCell_Add
}			

Condition	Explanation
SUL_SUL	On the SUL carrier when supplementary carrier is configured
SCell_Add	Add SCell

– *BWP-UplinkDedicated*

Table 4.6.3-15: *BWP-UplinkDedicated*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-UplinkDedicated ::= SEQUENCE {			
pucch-Config CHOICE {			
setup	PUCCH-Config		
}			
pucch-Config	Not present		SUL_NUL, RF AND Scell_Add
pusch-Config	Not present		RESUME
pusch-Config CHOICE {			
setup	PUSCH-Config		
}			
configuredGrantConfig	Not present		
srs-Config	Not present		Short_DCI
	SRS-Config		
beamFailureRecoveryConfig	Not present		
sl-PUCCH-Config-r16	Not present		
sl-PUCCH-Config-r16 CHOICE {			SIDELINK
setup	PUCCH-Config		
}			
cp-ExtensionC2-r16	Not present		
cp-ExtensionC3-r16	Not present		
useInterlacePUCCH-PUSCH-r16	Not present		
pucch-ConfigurationList-r16	Not present		
lbt-FailureRecoveryConfig-r16	Not present		
configuredGrantConfigToAddModList-r16	Not present		
configuredGrantConfigToReleaseList-r16	Not present		
configuredGrantConfigType2DeactivationStateList-r16	Not present		
}			

Condition	Explanation
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS
SUL_NUL	On the NUL carrier when supplementary carrier is configured
RESUME	Used in RRCResume Message
SIDELINK	Used for sidelink communication
SCell_add	Add Scell

– *CandidateBeamRS*

Table 4.6.3-15A: *CandidateBeamRS*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CandidateBeamRS-r16 ::= SEQUENCE {			
FFS			
}			

– *CellAccessRelatedInfo*

Table 4.6.3-16: *CellAccessRelatedInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellAccessRelatedInfo ::= SEQUENCE {			
plmn-IdentityInfoList	PLMN-IdentityInfoList		
cellReservedForOtherUse	Not present		
	true		SNPN, CAG
cellReservedForFutureUse-r16	Not present		
npn-IdentityInfoList-r16	Not present		
	NPN-IdentityInfoList-r16		SNPN, CAG
}			

Condition	Explanation
SNPN	Standalone NPN cell
CAG	PNI-NPN

– *CellAccessRelatedInfo-EUTRA-5GC*

Table 4.6.3-17: *CellAccessRelatedInfo-EUTRA-5GC*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellAccessRelatedInfo-EUTRA-5GC ::= SEQUENCE {			
FFS			
}			

– *CellAccessRelatedInfo-EUTRA-EPC*

Table 4.6.3-18: *CellAccessRelatedInfo-EUTRA-EPC*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellAccessRelatedInfo-EUTRA-EPC ::= SEQUENCE {			
FFS			
}			

– *CellGroupConfig*

Table 4.6.3-19: *CellGroupConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupConfig ::= SEQUENCE {			
cellGroupId	CellGroupId		
	CellGroupId condition NR-DC_SCG		NR-DC_SCG
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1 entry		EN-DC
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and DRB2	entry 1	
	RLC-BearerConfig with conditions AM and DRB2 and Re-establish_RLC		PSCell_change
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1 entry		SRB1
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB1	entry 1	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2 entries		SRB2_DRB1
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with conditions AM and DRB1	entry 2	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2 entries		SRB2_DRB2
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with conditions AM and DRB2	entry 2	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1 entry		DRBn, NR-DC_SCG
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and DRBn	entry 1 DRBn is allocated according to internal TTCN mapping	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	3 entries		PCell_change
RLC-BearerConfig[1]	RLC-BearerConfig with conditions SRB1 and Re-establish_RLC	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with conditions SRB2 and Re-establish_RLC	entry 2	
RLC-BearerConfig[3]	RLC-BearerConfig with conditions AM, DRB1 and Re-establish_RLC	entry 3	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1+n entries	n is the number of DRBs established before RRC resume	RESUME
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2 and RESUME	entry 1	
RLC-BearerConfig[k+1, k=1..n]	RLC-BearerConfig with condition DRBk and RESUME	entry [k+1, k=1..n]	
}			

rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2+n entries	n is the number of DRBs established before RRC re-establishement	REEST
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB1	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with condition SRB2 and Re-establish_RLC	entry 2	
RLC-BearerConfig[k+2, k=1..n]	RLC-BearerConfig with condition DRBk and Re-establish_RLC	entry [k+2, k=1..n]	
}			
rlc-BearerToAddModList	Not present		
rlc-BearerToReleaseList	Not present		
mac-CellGroupConfig	MAC-CellGroupConfig		
	Not present		SRB2_DRB1, MEAS, SRB2_DRB2, SCell_add
physicalCellGroupConfig	PhysicalCellGroupConfig		
	Not present		SRB2_DRB1, MEAS, SRB2_DRB2, SCell_add
spCellConfig	Not present		SRB2_DRB1, SRB2_DRB2, SCell_add
spCellConfig SEQUENCE {			
servCellIndex	Not present		
	ServCellIndex		EN-DC, EN-DC AND MEAS
	ServCellIndex with condition NR-DC_SCG		NR-DC_SCG
reconfigurationWithSync	Not present		
reconfigurationWithSync SEQUENCE {			EN-DC, PCell_change, PSCell_change, NR-DC_SCG
spCellConfigCommon	ServingCellConfigCommon		
newUE-Identity	RNTI-Value		
	RNTI-Value with condition NR-DC_SCG		NR-DC_SCG
t304	ms1000		
rach-ConfigDedicated	Not present		
rach-ConfigDedicated CHOICE {			CFRA
uplink	RACH-ConfigDedicated		
supplementaryUplink	RACH-ConfigDedicated		SUL AND SIG
}			
}			
rlf-TimersAndConstants CHOICE {			
setup	RLF-TimersAndConstants		
}			
rlf-TimersAndConstants	Not present		MEAS, RESUME
rlmInSyncOutOfSyncThreshold	Not present		

spCellConfigDedicated	ServingCellConfig		EN-DC, SRB1, PCell_change, PSCell_change, NR-DC_SCG, REEST
	Not present		
	ServingCellConfig with condition MEAS		MEAS
	ServingCellConfig with condition RESUME		RESUME
}			
sCellToAddModList	Not present		
sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig {	1 entry		SCell_add
SCellConfig[1] SEQUENCE {		entry 1	
sCellIndex	SCellIndex		
sCellConfigCommon	ServingCellConfigCommon with condition No_UL		
	ServingCellConfigCommon		RF AND UL_CA
sCellConfigDedicated	ServingCellConfig with condition No_UL and Scell_Add		
	ServingCellConfig with condition Scell_Add		RF AND UL_CA
}			
}			
sCellToReleaseList	Not present		
reportUplinkTxDirectCurrent	Not present		
bap-Address-r16	Not present		
bh-RLC-ChannelToAddModList-r16	Not present		
bh-RLC-ChannelToReleaseList-r16	Not present		
f1c-TransferPath-r16	Not present		
simultaneousTCI-UpdateList1-r16	Not present		
simultaneousTCI-UpdateList2-r16	Not present		
simultaneousSpatial-UpdatedList1-r16	Not present		
simultaneousSpatial-UpdatedList2-r16	Not present		
uplinkTxSwitchingOption-r16	Not present		
uplinkTxSwitchingPowerBoosting-r16	Not present		
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
CFRA	This condition applies when CFRA is configured
SUL	Supplementary Uplink
SRB1	Establishment of SRB1
SRB2_DRB1	Establishment of SRB2 and DRB1
SRB2_DRB2	Establishment of SRB2 and DRB2
DRBn	Establishment of DRBn
PCell_change	Intra-NR PCell change NR)
PSCell_change	NR PSCell change (EN-DC)
SCell_add	Add SCell
MEAS	A NR or EN-DC measurement is configured
NR-DC_SCG	Add SCG (NR-DC)
RESUME	Used in RRCResume Message
REEST	The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure.
UL_CA	Uplink CA

– *CellGroupId*

Table 4.6.3-20: *CellGroupId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupId	0		
	1		EN-DC, NR-DC_SCG

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
NR-DC_SCG	Add SCG (NR-DC)

– *CellIdentity*

Table 4.6.3-21: *CellIdentity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellIdentity	Set to NR Cell Identifier defined in table 4.4.2-2	BIT STRING (SIZE (36))	

– *CellReselectionPriority*

Table 4.6.3-22: *CellReselectionPriority*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellReselectionPriority	FFS		

– *CellReselectionSubPriority*

Table 4.6.3-23: *CellReselectionSubPriority*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellReselectionSubPriority	FFS		

– *CFR-ConfigMulticast*

Table 4.6.3-23AA: *CFR-ConfigMulticast*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CFR-ConfigMulticast-r17 ::= SEQUENCE {			
FFS			
}			

– *CGI-InfoEUTRA*

Table 4.6.3-23A: *CGI-InfoEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CGI-InfoEUTRA	FFS		

– *CGI-InfoEUTRALogging*

Table 4.6.3-23B: *CGI-InfoEUTRALogging*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CGI-InfoEUTRALogging ::= SEQUENCE {			
FFS			
}			

– *CGI-InfoNR*

Table 4.6.3-24: *CGI-InfNRo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CGI-InfoNR	FFS		

– *CGI-Info-Logging*

Table 4.6.3-24A: *CGI-Info-Logging*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CGI-Info-Logging-r16 ::= SEQUENCE {			
FFS			
}			

– *CLI-RSSI-Range*

Table 4.6.3-24B: *CLI-RSSI-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CLI-RSSI-Range-r16	FFS		

– *CodebookConfig*

Table 4.6.3-25: *CodebookConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
typeI-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			2TX
twoTX-CodebookSubsetRestriction	111111		
}			
moreThanTwo SEQUENCE {			
n1-n2 CHOICE {			
two-one-TypeI-SinglePanel-Restriction	11111111		FR2
four-one-TypeI-SinglePanel-Restriction	11111111 11111111		FR1
}			
typeI-SinglePanel-codebookSubsetRestriction-i2	Not present		
}			
}			
typeI-SinglePanel-ri-Restriction	11111111		
}			
}			
codebookMode	1		
}			
}			
}			

Condition	Explanation
2TX	2 Tx CSI-RS configuration.

– *CommonLocationInfo*

Table 4.6.3-25A: *CommonLocationInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CommonLocationInfo-r16 ::= SEQUENCE {			
gnss-TOD-msec-r16	Not checked	OCTET STRING	
locationTimestamp-r16	Not checked	OCTET STRING	
locationCoordinate-r16	Not checked	OCTET STRING	
locationError-r16	Not checked	OCTET STRING	
locationSource-r16	Not checked	OCTET STRING	
velocityEstimate-r16	Not checked	OCTET STRING	
}			

– *CondReconfigId*

Table 4.6.3-25B: *CondReconfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CondReconfigId-r16	1		

– *CondReconfigToAddModList*

Table 4.6.3-25C: *CondReconfigToAddModList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CondReconfigToAddModList-r16 ::= SEQUENCE (SIZE (1.. maxNrofCondCells-r16)) OF CondReconfigToAddMod-r16 {	1 entry		
CondReconfigToAddMod-r16[1] ::= SEQUENCE {		entry 1	
condReconfigId-r16	CondReconfigId-r16		
condExecutionCond-r16::= SEQUENCE {			
MeasId [1]	1	identify a measurement configuration	
}			
condRRCReconfig-r16	RRCReconfiguration-HO	Table 4.8.1-1A	
}			

– *ConditionalReconfiguration*

Table 4.6.3-25D: *ConditionalReconfiguration*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ConditionalReconfiguration-r16::= SEQUENCE {			
attemptCondReconfig-r16	true		
condReconfigToRemoveList-r16	Not present		
condReconfigToAddModList-r16	CondReconfigToAddMod List-r16		
}			

– *ConfiguredGrantConfig*

Table 4.6.3-26: *ConfiguredGrantConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ConfiguredGrantConfig ::= SEQUENCE {			
FFS			
}			

– *ConfiguredGrantConfigIndex*

Table 4.6.3-26A: *ConfiguredGrantConfigIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ConfiguredGrantConfigIndex-r16	FFS		

– *ConfiguredGrantConfigIndexMAC*

Table 4.6.3-26B: *ConfiguredGrantConfigIndexMAC*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ConfiguredGrantConfigIndexMAC-r16	FFS		

– *ConnEstFailureControl*

Table 4.6.3-27: *ConnEstFailureControl*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ConnEstFailureControl ::= SEQUENCE {			
connEstFailCount	n1		
connEstFailOffsetValidity	s30		
connEstFailOffset	1		
}			

– *ControlResourceSet*

Table 4.6.3-28: *ControlResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	11110000 00000000 00000000 00000000 00000000 00000	CORESET to use the least significant 24 RBs of the BWP	
duration	2	SearchSpace duration of 2 symbols	
cce-REG-MappingType CHOICE {			
nonInterleaved	null		
}			
precoderGranularity	sameAsREG-bundle		
tci-StatesPDCCH-ToAddList	Not present		
tci-StatesPDCCH-ToReleaseList	Not present		
tci-PresentInDCI	Not present		
pdcch-DMRS-ScramblingID	Not present		
rb-Offset-r16	Not present		
tci-PresentDCI-1-2-r16	Not present		
coresetPoolIndex-r16	Not present		
controlResourceSetId-v1610	Not present		
}			

– *ControlResourceSetId*

Table 4.6.3-29: *ControlResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ControlResourceSetId	1		
	0		Common0

Condition	Explanation
Common0	CommonCORESET#0

– *ControlResourceSetZero*

Table 4.6.3-30: *ControlResourceSetZero*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ControlResourceSetZero	Set to CORESET#0 Index as defined for the frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	

– *CrossCarrierSchedulingConfig*

Table 4.6.3-31: *CrossCarrierSchedulingConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CrossCarrierSchedulingConfig ::= SEQUENCE {			
FFS			
}			

– *CSI-AperiodicTriggerStateList*

Table 4.6.3-32: *CSI-AperiodicTriggerStateList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF CSI-AperiodicTriggerState {	1 entry		
CSI-AperiodicTriggerState[1] SEQUENCE {		entry 1	
associatedReportConfigInfoList SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF CSI-AssociatedReportConfigInfo {	1 entry		
CSI-AssociatedReportConfigInfo[1] SEQUENCE {		entry 1	
reportConfigId	CSI-ReportConfigId		
resourcesForChannel CHOICE {			
nzp-CSI-RS SEQUENCE {			
resourceSet	8		FR1
	16		FR2
qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId {	1 entry		
TCI-StateId[1]	TCI-StateId	entry 1	
}			
}			
}			
csi-IM-ResourcesforInteference	8		FR1
	16		FR2
nzp-CSI-RS-ResourcesforInterference	8		FR1
	16		FR2
}			
}			
}			
}			

– *CSI-FrequencyOccupation*

Table 4.6.3-33: *CSI-FrequencyOccupation*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-FrequencyOccupation ::= SEQUENCE {			
startingRB	0		
nrofRBs	160		FR1 AND BW60
	216		FR1 AND BW80
	108		FR1 AND BW40
	52		FR1 AND BW10
	276		FR1 AND BW100
	64		FR2 AND BW100
	52		TRS
	40		TRS AND ((FR1 AND BW15 AND SCS30) OR (FR1 AND BW30AND SCS60))
	32		TRS AND ((FR1 AND BW25 AND SCS60) OR (FR2 AND BW50 AND SCS120))
	28		TRS AND FR1 AND BW5 AND SCS15
	24		TRS AND ((FR1 AND BW5 AND SCS30) OR (FR1 AND BW10 AND SCS30) OR (FR1 AND BW10 AND SCS60) OR (FR1 AND BW15 AND SCS60) OR (FR1 AND BW20 AND SCS60))
	64		
}			

Condition	Explanation
TRS	Tracking-Reference Signal

– *CSI-IM-Resource*

Table 4.6.3-34: *CSI-IM-Resource*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
pattern1 SEQUENCE {			
subcarrierLocation-p1	s4		
symbolLocation-p1	3		FR1
	4		FR2
}			
}			
freqBand	CSI-FrequencyOccupation		
periodicityAndOffset	Not present		
}			

– *CSI-IM-ResourceId*

Table 4.6.3-35: *CSI-IM-ResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-IM-ResourceId	7		FR1
	31		FR2

– *CSI-IM-ResourceSet*

Table 4.6.3-36: *CSI-IM-ResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) OF CSI-IM-ResourceId {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId	entry 1	
}			
}			

– *CSI-IM-ResourceSetId*

Table 4.6.3-37: *CSI-IM-ResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-IM-ResourceSetId	0		

– *CSI-MeasConfig*

Table 4.6.3-38: *CSI-MeasConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-MeasConfig::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	1 entry		
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource	entry 1	
}			
nzp-CSI-RS-ResourceToReleaseList	Not present		
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet	entry 1	
}			
nzp-CSI-RS-ResourceSetToReleaseList	Not present		
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource	entry 1	
}			
csi-IM-ResourceToReleaseList	Not present		
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet	entry 1	
}			
csi-IM-ResourceSetToReleaseList	Not present		
csi-SSB-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet {	1 entry		
CSI-SSB-ResourceSet[1]	CSI-SSB-ResourceSet	entry 1	
}			
csi-SSB-ResourceSetToReleaseList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	1 entry		
CSI-ResourceConfig[1]	CSI-ResourceConfig	entry 1	
}			
csi-ResourceConfigToReleaseList	Not present		
csi-ReportConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ReportConfigurations)) OF CSI-ReportConfig {	1 entry		
CSI-ReportConfig[1]	CSI-ReportConfig	entry 1	
}			
csi-ReportConfigToReleaseList	Not present		
reportTriggerSize	0		
aperiodicTriggerStateList CHOICE {			
setup	CSI-AperiodicTriggerStateList		
}			
semiPersistentOnPUSCH-TriggerStateList	Not present		
reportTriggerSizeDCI-0-2-r16	Not present		
}			

– *CSI-ReportConfig*

Table 4.6.3-39: *CSI-ReportConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId		
nzp-CSI-RS-ResourcesForInterference	CSI-ResourceConfigId		
reportConfigType CHOICE {			
aperiodic SEQUENCE {			
reportSlotOffsetList SEQUENCE (SIZE (1..maxNrofUL-Allocations)) OF INTEGER {	1 entry		
INTEGER[1]	14	entry 1	
}			
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	NULL,		FR1
cri-RI-LI-PMI-CQI	NULL		FR2
}			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
csi-ReportingBand	Not present		
}			
timeRestrictionForChannelMeasurements	notConfigured		
timeRestrictionForInterferenceMeasurements	notConfigured		
codebookConfig	CodebookConfig		
dummy	Not present		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	n1		
}			
}			
cqi-Table	table1	64QAM	
	table2		256QAM
subbandSize	value2		
non-PMI-PortIndication	Not present		
semiPersistentOnPUSCH-v1530	Not present		
semiPersistentOnPUSCH-v1610	Not present		
aperiodic-v1610	Not present		
reportQuantity-r16	Not present		
codebookConfig-r16	Not present		
}			

Condition	Explanation
256QAM	Test cases using 256QAM for PDSCH

– *CSI-ReportConfigId*

Table 4.6.3-40: *CCSI-ReportConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ReportConfigID	0		

– *CSI-ResourceConfig*

Table 4.6.3-41: *CSI-ResourceConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	2 entries		
NZP-CSI-RS-ResourceSetId[1]	0	entry 1	
NZP-CSI-RS-ResourceSetId[2]	1	entry 2	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

– *CSI-ResourceConfigId*

Table 4.6.3-42: *CSI-ResourceConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ResourceConfigId	0		

– *CSI-ResourcePeriodicityAndOffset*

Table 4.6.3-43: *CSI-ResourcePeriodicityAndOffset*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots80	10		FR1
slots320	40		FR2
}			

– *CSI-RS-ResourceConfigMobility*

Table 4.6.3-44: *CSI-RS-ResourceConfigMobility*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-RS-ResourceConfigMobility ::= SEQUENCE {			
subcarrierSpacing	SubcarrierSpacing		
csi-RS-CellList-Mobility	FFS		
}			

– *CSI-RS-ResourceMapping*

Table 4.6.3-45: *CSI-RS-ResourceMapping*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	1000		(FR1 AND TRS) OR (FR2 AND TRS)
row4	010		FR2
other	011110		FR1
}			
nrofPorts	p8		FR1
	p4		FR2
	p1		(FR1 AND TRS) OR (FR2 AND TRS)
firstOFDMSymbolInTimeDomain	3		FR1
	13		FR2
	4		(FR1 AND TRS) OR (FR2 AND TRS)
firstOFDMSymbolInTimeDomain2	Not present		
cdm-Type	fd-CDM2		
	noCDM		TRS
density CHOICE {			
one	NULL		
three	NULL		TRS
}			
freqBand	CSI-FrequencyOccupation		
}			

Condition	Explanation
TRS	Tracking-Reference Signal is configured.

– *CSI-SemiPersistentOnPUSCH-TriggerStateList*

Table 4.6.3-46: *CSI-SemiPersistentOnPUSCH-TriggerStateList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-SemiPersistentOnPUSCH-TriggerStateList ::= SEQUENCE {			
FFS			
}			

– *CSI-SSB-ResourceSet*

Table 4.6.3-47: *CSI-SSB-ResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-SSB-ResourceSet ::= SEQUENCE {			
csi-SSB-ResourceSetId	CSI-SSB-ResourceSetId		
csi-SSB-ResourceList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index {	1 entry		
SSB-Index[1]	SSB-Index	entry 1	
}			
}			

– *CSI-SSB-ResourceSetId*

Table 4.6.3-48: *CSI-SSB-ResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-SSB-ResourceSetId	0		

Table 4.6.3-48A:*Void*

– *DedicatedNAS-Message*

Table 4.6.3-49: *DedicatedNAS-Message*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DedicatedNAS-Message	Set according to specific message content		

– *DL-PRS-ProcessingWindowPreConfig*

Table 4.6.3-49A: *DL-PRS-ProcessingWindowPreConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DL-PRS-ProcessingWindowPreConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *DMRS-BundlingPUCCH-Config*

Table 4.6.3-49B: *DMRS-BundlingPUCCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DMRS-BundlingPUCCH-Config-r17 ::= SEQUENCE {			
FFS			
}			

– *DMRS-BundlingPUSCH-Config*

Table 4.6.3-49C: *DMRS-BundlingPUSCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DMRS-BundlingPUSCH-Config-r17 ::= SEQUENCE {			
FFS			
}			

– *DMRS-DownlinkConfig*

Table 4.6.3-50: *DMRS-DownlinkConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DMRS-DownlinkConfig ::= SEQUENCE {			
dmrs-Type	Not present	DMRS type 1	
dmrs-AdditionalPosition	pos1		FR1
	pos0		FR2
maxLength	Not present	len1	
scramblingID0	Not present		
scramblingID1	Not present		
phaseTrackingRS	Not present		FR1
phaseTrackingRS CHOICE {			FR2
setup	PTRS-DownlinkConfig		
}			
}			

– *DMRS-UplinkConfig*

Table 4.6.3-51: *DMRS-UplinkConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DMRS-UplinkConfig ::= SEQUENCE {			
dmrs-Type	Not present	DMRS type 1	
dmrs-AdditionalPosition	pos1		FR1
	pos0		FR2
phaseTrackingRS	Not present		
phaseTrackingRS CHOICE {			PTRS_UL_ CONFIG
setup	PTRS-UplinkConfig		
}			
maxLength	Not present	len1	
transformPrecodingDisabled SEQUENCE {			
scramblingID0	Not present		
scramblingID1	Not present		
}			
transformPrecodingEnabled	Not present		
}			

Condition	Explanation
PTRS_UL_CONFIG	When PTRS Uplink is configured

– *DownlinkConfigCommon*

Table 4.6.3-52: *DownlinkConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DownlinkConfigCommon ::= SEQUENCE {			
frequencyInfoDL	FrequencyInfoDL		
initialDownlinkBWP	BWP-DownlinkCommon		
	BWP-DownlinkCommon with condition SCell_add		SCell_Add
}			

– *DownlinkConfigCommonSIB*

Table 4.6.3-53: *DownlinkConfigCommonSIB*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DownlinkConfigCommonSIB ::= SEQUENCE {			
frequencyInfoDL	FrequencyInfoDL-SIB		
initialDownlinkBWP	BWP-DownlinkCommon with condition InitialBWP_SIB		
bcch-Config SEQUENCE {			
modificationPeriodCoeff	n4		
}			
pcch-Config SEQUENCE {			
defaultPagingCycle	rf128		
nAndPagingFrameOffset CHOICE {			
halfT	0		
}			
ns	one		
firstPDCCH-MonitoringOccasionOfPO	Not present		
nrofPDCCH-MonitoringOccasionPerSSB-InPO-r16	Not present		
}			
}			

– *DownlinkPreemption*

Table 4.6.3-54: *DownlinkPreemption*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DownlinkPreemption ::= SEQUENCE {			
FFS			
}			

– *DRB-Identity*

Table 4.6.3-55: *DRB-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DRB-Identity	n		DRBn

Condition	Explanation
DRBn	DRB-Identity n

– *DRX-Config*

Table 4.6.3-56: *DRX-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DRX-Config ::= SEQUENCE {			
drx-onDurationTimer CHOICE {			
milliSeconds	ms6		
}			
drx-InactivityTimer	ms1280		
drx-HARQ-RTT-TimerDL	56		
drx-HARQ-RTT-TimerUL	56		
drx-RetransmissionTimerDL	sl16		FR1
	sl64		FR2
drx-RetransmissionTimerUL	sl16		FR1
	sl64		FR2
drx-LongCycleStartOffset CHOICE {			
ms10240	0		
}			
shortDRX	not present		
drx-SlotOffset	0		
}			

– *DRX-ConfigSecondaryGroup*

Table 4.6.3-56A: *DRX-ConfigSecondaryGroup*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DRX-ConfigSecondaryGroup ::= SEQUENCE {			
FFS			
}			

– *DRX-ConfigSL*

Table 4.6.3-56B: *DRX-ConfigSL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RX-ConfigSL-r17 ::= SEQUENCE {			
FFS			
}			

– *EphemerisInfo*

Table 4.6.3-56C: *EphemerisInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
EphemerisInfo-r17 ::= SEQUENCE {			
FFS			
}			

– *FeatureCombination*

Table 4.6.3-56D: *FeatureCombination*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureCombination-r17 ::= SEQUENCE {			
redCap-r17	Not present		
smallData-r17	Not present		
nsag-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF NSAG-ID-r17{	n entries	n is the number of NSAG values associated with the preambles indicated in FeatureCombinationPreambles	Slice_RACH
NSAG-ID-r17[k, k=1..n]	Set to the corresponding NSAG value used in the test case	entry [k, k=1..n]	
}			
msg3-Repetitions-r17	Not present		
}			

Condition	Explanation
Slice_RACH	Slice specific RACH configuration

– *FeatureCombinationPreambles*

Table 4.6.3-56E: *FeatureCombinationPreambles*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureCombinationPreambles-r17 ::= SEQUENCE {			
featureCombination-r17	FeatureCombination-r17		
startPreambleForThisPartition-r17	FFS		
numberOfPreamblesPerSSB-ForThisPartition-r17	FFS		
ssb-SharedRO-MaskIndex-r17	Not present		
groupBconfigured-r17	Not present		
separateMsgA-PUSCH-Config-r17	Not present		
msgA-RSRP-Threshold-r17	RSRP-Range		
rsrp-ThresholdSSB-r17	RSRP-Range		
deltaPreamble-r17	Not present		
}			

– *FilterCoefficient*

Table 4.6.3-57: *FilterCoefficient*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FilterCoefficient	fc4		

– *FreqBandIndicatorNR*

Table 4.6.3-58: *FreqBandIndicatorNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqBandIndicatorNR	Operating band of the frequency as specified in Table 4.4.2-1		
	Secondary band under test		CA-InterBand, NR-DC-SecondaryBand

Condition	Explanation
CA-InterBand	Used in CA interBand test cases
NR-DC-SecondaryBand	Used in NR-DC test cases

– *FreqPriorityListNRSlicing*

Table 4.6.3-58A: *FreqPriorityListNRSlicing*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqPriorityListNRSlicing-r17 ::= SEQUENCE {			
FFS			
}			

– *FrequencyInfoDL*

Table 4.6.3-59: *FrequencyInfoDL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FrequencyInfoDL::= SEQUENCE {			
absoluteFrequencySSB	ARFCN-ValueNR with condition DL_SSB		
frequencyBandList	MultiFrequencyBandListNR		
absoluteFrequencyPointA	ARFCN-ValueNR with condition DL_PointA		
scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition DL_PointA	entry 1	
}			
}			

– *FrequencyInfoDL-SIB*

Table 4.6.3-60: *FrequencyInfoDL-SIB*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FrequencyInfoDL-SIB ::= SEQUENCE {			
frequencyBandList	MultiFrequencyBandList NR-SIB		
offsetToPointA	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.		
scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition DL_PointA	entry 1	
}			
}			

– *FrequencyInfoUL*

Table 4.6.3-61: *FrequencyInfoUL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FrequencyInfoUL::= SEQUENCE {			
frequencyBandList	MultiFrequencyBandList NR		FDD
	Not present		TDD
absoluteFrequencyPointA	ARFCN-ValueNR with condition UL_PointA		FDD
	Not present		TDD
scs-SpecificCarriers SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier1	SCS-SpecificCarrier with condition UL_PointA	entry 1	
}			
additionalSpectrumEmission	AdditionalSpectrumEmission		
p-Max	P-Max		
frequencyShift7p5khz	Not present		
	true		DSS
}			

Condition	Explanation
DSS	Dynamic Spectrum Sharing

– *FrequencyInfoUL-SIB*

Table 4.6.3-62: *FrequencyInfoUL-SIB*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FrequencyInfoUL-SIB ::= SEQUENCE {			
frequencyBandList	MultiFrequencyBandList NR-SIB		FDD
	Not present		TDD
absoluteFrequencyPointA	ARFCN-ValueNR with condition UL_PointA		FDD
	Not present		TDD
scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition UL_PointA	entry 1	
}			
p-Max	P-Max		
frequencyShift7p5khz	Not present		
	true		DSS
}			

– *GapPriority*

Table 4.6.3-62AA: *GapPriority*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
GapPriority-r17	FFS		

– *HighSpeedConfig*

Table 4.6.3-62A: *HighSpeedConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
HighSpeedConfig-r16 ::= SEQUENCE {			
highSpeedMeasFlag-r16	Not present		
highSpeedDemodFlag-r16	Not present		
}			

– *Hysteresis*

Table 4.6.3-63: *Hysteresis*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Hysteresis	4		

– *HysteresisLocation*

Table 4.6.3-63AA: *HysteresisLocation*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
HysteresisLocation-r17	FFS		

– *InvalidSymbolPattern*

Table 4.6.3-63A: *InvalidSymbolPattern*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
InvalidSymbolPattern-r16 ::= SEQUENCE {			
FFS			
}			

– *I-RNTI-Value*

Table 4.6.3-64: *I-RNTI-Value*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
I-RNTI-Value	SS arbitrarily selects a value between '00 0000 0001'H and 'FF FFFF FFFF'H.	BIT STRING (SIZE(40))	

– *LBT-FailureRecoveryConfig*

Table 4.6.3-64A: *LBT-FailureRecoveryConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LBT-FailureRecoveryConfig-r16 ::= SEQUENCE {			
lbt-FailureInstanceMaxCount-r16	n8		
lbt-FailureDetectionTimer-r16	ms20		
}			

– *LocationInfo*

Table 4.6.3-64B: *LocationInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LocationInfo-r16 ::= SEQUENCE {			
commonLocationInfo-r16	CommonLocationInfo-r16		MDT_LocationInfo
bt-LocationInfo-r16	LogMeasResultListBT-r16		MDT_BT
wlan-LocationInfo-r16	LogMeasResultListWLAN-r16		MDT_WLAN
sensor-LocationInfo-r16	Sensor-LocationInfo-r16		MDT_Sensor
}			

Condition	Explanation
MDT_LocationInfo	Used for CommonLocationInfo included in MDT (Minimized Driving Test)
MDT_BT	Used for Bluetooth measurement in MDT (Minimized Driving Test) services
MDT_WLAN	Used for WLAN measurement in MDT (Minimized Driving Test) services
MDT_Sensor	Used for Sensor measurement in MDT (Minimized Driving Test) services

– *LocationMeasurementInfo*

Table 4.6.3-65: *LocationMeasurementInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LocationMeasurementInfo ::= CHOICE {			
eutra-RSTD SEQUENCE (SIZE (1..maxInterRAT-RSTD-Freq)) OF EUTRA-RSTD-Info {	1 entry		
EUTRA-RSTD-Info[1] SEQUENCE {		entry 1	
carrierFreq	ARFCN-ValueEUTRA		
measPRS-Offset	FFS		
}			
}			
}			

– *LoggedMeasurementConfiguration*

Table 4.6.3-65A: *LoggedMeasurementConfiguration-v1700-IEs*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LoggedMeasurementConfiguration-v1700-IEs::= SEQUENCE {			
sigLoggedMeasType-r17	Not present		
	true		SigLogMDT
earlyMeasIndication-r17	Not present		
	true		EarlyMeas
areaConfiguration-v1700	Not present		
nonCriticalExtension	Not present		
}			

Condition	Explanation
SigLogMDT	Signalling based logged measurements
EarlyMeas	Log measurements on early measurement

– *LogicalChannelConfig*

Table 4.6.3-66: *LogicalChannelConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LogicalChannelConfig ::= SEQUENCE {			
ul-SpecificParameters SEQUENCE {			
priority	1		
	3		SRB2
prioritisedBitRate	infinity		
bucketSizeDuration	ms50		
allowedServingCells	Not present		
allowedSCS-List	Not present		
maxPUSCH-Duration	Not present		
configuredGrantType1Allowed	Not present		
logicalChannelGroup	1		HI
	2		LO
	0		SRB1, SRB2, SRB3
schedulingRequestID	SchedulingRequestId		
logicalChannelSR-Mask	false		
logicalChannelSR-DelayTimerApplied	false		
bitRateQueryProhibitTimer	Not present		
}			
}			

Condition	Explanation
HI	Used for DRBs with high logical channel priority
LO	Used for DRBs with low logical channel priority
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3

– *LogicalChannelIdentity*

Table 4.6.3-67: *LogicalChannelIdentity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LogicalChannelIdentity	1		SRB1
LogicalChannelIdentity	2		SRB2
LogicalChannelIdentity	3		SRB3
LogicalChannelIdentity	n+3		DRBn

Condition	Explanation
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3
DRBn	Establishment of DRBn; n=1..29

– *MAC-CellGroupConfig*

Table 4.6.3-68: *MAC-CellGroupConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MAC-CellGroupConfig ::= SEQUENCE {			
drx-Config	Not present		
drx-Config CHOICE {			DRX
setup	DRX-Config		
}			
schedulingRequestConfig	SchedulingRequest-Config		
bsr-Config	BSR-Config		
tag-Config	TAG-Config		
phr-Config CHOICE {			
setup	PHR-Config		
}			
skipUplinkTxDynamic	false		
csi-Mask	Not present		
dataInactivityTimer	Not present		
usePreBSR-r16	Not present		
schedulingRequestID-LBT-SCell-r16	Not present		
lch-BasedPrioritization-r16	Not present		
schedulingRequestID-BFR-SCell-r16	Not present		
drx-ConfigSecondaryGroup-r16	Not present		
enhancedSkipUplinkTxDynamic-r16	Not present		
enhancedSkipUplinkTxConfigured-r16	Not present		
}			

Condition	Explanation
DRX	This condition applies when DRX is configured

– *MeasConfig*

Table 4.6.3-69: *MeasConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasConfig ::= SEQUENCE {			
measObjectToRemoveList	Not present		
measObjectToAddModList	MeasObjectToAddModList		
reportConfigToRemoveList	Not present		
reportConfigToAddModList	ReportConfigToAddModList		
measIdToRemoveList	Not present		
measIdToAddModList	MeasIdToAddModList		
s-MeasureConfig	Not present		
quantityConfig	QuantityConfig		
measGapConfig	Not present		
measGapSharingConfig	Not present		
}			

– *MeasGapConfig*

Table 4.6.3-70: *MeasGapConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasGapConfig ::= SEQUENCE {			
gapFR2	Not present		
gapFR2 CHOICE {			GAP_FR2
setup SEQUENCE {			
gapOffset	159		
mgl	ms3dot5		
mgrp	ms160		
mgta	ms0		
}			
}			
gapFR1	Not present		
gapFR1 CHOICE {			GAP_FR1
setup SEQUENCE {			
gapOffset	39		
	9		SIG AND INTER-FREQ_ODD
mgl	ms6		
mgrp	ms40		
mgta	ms0		
}			
gapUE	Not present		GAP_FR1 OR GAP_FR2
gapUE CHOICE {			
setup SEQUENCE {			
gapOffset	39		
	9		SIG AND INTER-FREQ_ODD
mgl	ms6		
mgrp	ms40		
mgta	ms0		
}			
}			
}			

Condition	Explanation
GAP_FR1	Configuration for FR1 per-FR gaps
GAP_FR2	Configuration for FR2 per-FR gaps
INTER-FREQ_ODD	When the SFNoffset of inter frequency neighbour cell is odd number. SFNoffset is defined in TS 38.523-3 [23]Table 7.1.5.2-1

– *MeasGapId*

Table 4.6.3-70A: *MeasGapId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasGapId-r17	FFS		

– *MeasGapSharingConfig*

Table 4.6.3-71: *MeasGapSharingConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasGapSharingConfig ::= SEQUENCE {			
gapSharingFR2	Not present		
}			

– *MeasId*

Table 4.6.3-72: *MeasId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasId	1		

– *MeasIdleConfig*

Table 4.6.3-72A: *MeasIdleConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasIdleConfigSIB-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasIdToAddModList*

Table 4.6.3-73: *MeasIdToAddModList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasIdToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasIdToAddMod {	1 entry		
MeasIdToAddMod[1] SEQUENCE {		entry 1	
measId	MeasId		
measObjectId	MeasObjectId		
reportConfigId	ReportConfigId		
}			

– *MeasObjectCLI*

Table 4.6.3-73A: *MeasObjectCLI*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectCLI-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasObjectEUTRA*

Table 4.6.3-74: *MeasObjectEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectEUTRA ::= SEQUENCE {			
carrierFreq	Downlink EARFCN for Freq		
allowedmeasBandwidth	Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell	row 'measurement Bandwidth'	
cellsToRemoveListEUTRAN	Not present		
cellsToAddModListEUTRAN	Not present		
blackCellsToRemoveListEUTRAN	Not present		
blackCellsToAddModListEUTRAN	Not present		
eutra-PresenceAntennaPort1	false		
	true	at least two cell-specific antenna ports are used in all neighbouring cells	All neighCells with port1
eutra-Q-OffsetRange	Not present		
widebandRSRQ-Meas	false		
}			

Condition	Explanation
All neighCells with port1	Used for all neighbouring cells with at least two cell-specific antenna ports

– *MeasObjectId*

Table 4.6.3-75: *MeasObjectId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectId	1		

– *MeasObjectNR*

Table 4.6.3-76: *MeasObjectNR*(Thres)

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectNR ::= SEQUENCE {			
ssbFrequency	ARFCN-ValueNR with condition DL_SSB		
ssbSubcarrierSpacing	SubcarrierSpacing		
smtc1	SSB-MTC		
smtc2	Not present		
refFreqCSI-RS	Not present		
referenceSignalConfig SEQUENCE {			
ssb-ConfigMobility SEQUENCE {			
ssb-ToMeasure CHOICE {			
setup	SSB-ToMeasure		
}			
deriveSSB-IndexFromCell	false		FDD
	true		TDD
ssb-PositionQCL-Common-r16	Not present		
	SSB-PositionQCL-Relation		SharedSpectrum
ssb-PositionQCL-CellsToAddModList-r16	Not present		
ssb-PositionQCL-CellsToRemoveList-r16	Not present		
ss-RSSI-Measurement	Not present		
}			
csi-rs-ResourceConfigMobility	Not present		
}			
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
absThreshCSI-RS-Consolidation	Not present		
nrofSS-BlocksToAverage	2		
nrofCSI-RS-ResourcesToAverage	Not present		
quantityConfigIndex	1		
offsetMO SEQUENCE {			
rsrpOffsetSSB	dB0		
rsrqOffsetSSB	dB0		
sinrOffsetSSB	dB0		
rsrpOffsetCSI-RS	dB0		
rsrqOffsetCSI-RS	dB0		
sinrOffsetCSI-RS	dB0		
}			
cellsToRemoveList	Not present		
cellsToAddModList	Not present		
blackCellsToRemoveList	Not present		
blackCellsToAddModList	Not present		
whiteCellsToRemoveList	Not present		
whiteCellsToAddModList	Not present		
freqBandIndicatorNR	FreqBandIndicatorNR		
rmtc-Config-r16	Not present		
	RMTC-Config		SharedSpectrum
}			

Condition	Explanation
SharedSpectrum	Operation with shared spectrum channel access

– *MeasObjectNR-SL*

Table 4.6.3-76A: *MeasObjectNR-SL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectNR-SL-r16 ::= SEQUENCE {			
tx-PoolMeasToRemoveList-r16	Not present		
tx-PoolMeasToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-PoolToMeasureNR-r16)) OF SL-ResourcePoolID-r16{	1 entry		
SL-ResourcePoolID-r16[1]	1	entry 1	
}			
}			

– *MeasObjectRxTxDiff*

Table 4.6.3-76B: *MeasObjectRxTxDiff*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectRxTxDiff-r17 ::= SEQUENCE {			
FFS			
}			

– *MeasObjectToAddModList*

Table 4.6.3-77: *MeasObjectToAddModList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasObjectToAddMod {	1 entry		
MeasObjectToAddMod[1] SEQUENCE {		entry 1	
measObjectId	MeasObjectId		
measObject CHOICE {			
measObjectNR	MeasObjectNR		
}			
}			
}			
MeasObjectToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasObjectToAddMod {	2 entries		InterRAT
MeasObjectToAddMod[1] SEQUENCE {		entry 1	
measObjectId	1		
measObject CHOICE {			
measObjectNR	MeasObjectNR		
}			
}			
MeasObjectToAddMod[2] SEQUENCE {		entry 2	
measObjectId	2		
measObject CHOICE {			
measObjectEUTRA	MeasObjectEUTRA		
}			
}			
}			

Condition	Explanation
InterRAT	Configuration with at least one NR PCell and one or more E-UTRA neighbour cell(s)

– *MeasObjectUTRA-FDD*

Table 4.6.3-77A: *MeasObjectUTRA-FDD*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectUTRA-FDD-r16 ::= SEQUENCE {			
carrierFreq-r16	ARFCN-ValueUTRA-FDD-r16		
utra-FDD-Q-OffsetRange-r16	UTRA-FDD-Q-OffsetRange-r16		
cellsToRemoveList-r16	Not present		
cellsToAddModList-r16	Not present		
}			

– *MeasResultCellListSFTD-NR*

Table 4.6.3-78: *MeasResultCellListSFTD-NR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultCellListSFTD-NR ::= SEQUENCE {			
FFS			
}			

– *MeasResultCellListSFTD-EUTRA*

Table 4.6.3-78A: *MeasResultCellListSFTD-EUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultCellListSFTD-EUTRA ::= SEQUENCE {			
FFS			
}			

– *MeasResultForRSSI*

Table 4.6.3-78AA: *MeasResultForRSSI*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultForRSSI ::= SEQUENCE {			
rssi-Result-r16	FFS		
channelOccupancy-r16	FFS		
}			

– *MeasResults*

Table 4.6.3-79: *MeasResults*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResults ::= SEQUENCE {			
measId	MeasId		
measResultServingMOList	Not checked		SFTD_NEIGHBOUR or SFTD_PSCELL
measResultServingMOList SEQUENCE (SIZE (1..maxNrofServingCells)) OF MeasResultServMO {	1 entry		
MeasResultServMO[1] SEQUENCE {		entry 1	
servCellId	ServCellIndex		
measResultServingCell SEQUENCE {			
physCellId	PhysCellId		
measResult SEQUENCE {			
cellResults SEQUENCE {			
resultsSSB-Cell SEQUENCE {			
rsrp	Not checked		
rsrq	Not checked		
sinr	Not checked		
}			
resultsCSI-RS-Cell	Not present		
}			
rsIndexResults	Not present		
}			
cgi-Info	Not present		
}			
measResultBestNeighCell	Not present		
}			
}			
measResultNeighCells	Not present		A1, A2, SFTD_NEIGHBOUR or SFTD_PSCELL
measResultNeighCells CHOICE {			
measResultListNR	Set according to specific message content		A3, A4, A5, A6
measResultListEUTRA	Set according to specific message content		B1, B2
measResultListUTRA-FDD-r16	Set according to specific message content		B1_UTRA, B2_UTRA
}			
measResultServFreqListEUTRA-SCG	Not present		
measResultServFreqListNR-SCG	Not checked		
measResultSFTD-EUTRA	Not present		
measResultSFTD-NR	Not present		
measResultSFTD-NR SEQUENCE {			SFTD_PSCELL
physCellId	PhysCellId of PSCell		
sfn-OffsetResult	Not checked		
frameBoundaryOffsetResult	Not checked		
rsrp-Result	Not checked		
}			
measResultCellListSFTD-NR	Not present		
measResultCellListSFTD-NR SEQUENCE (SIZE (1..maxCellSFTD)) OF MeasResultCellSFTD-NR {	1 entry		SFTD_NEIGHBOUR
MeasResultCellSFTD-NR[1] SEQUENCE {		entry 1	
physCellId	PhysCellId		
sfn-OffsetResult	Not checked		
frameBoundaryOffsetResult	Not checked		
rsrp-Result	Not checked		
}			
}			

measResultForRSSI-r16	Not present		
	MeasResultForRSSI		SharedSpectrum
locationInfo-r16	Not present		
ul-PDCP-DelayValueResultList-r16	Not present		
measResultsSL-r16	Not present		
measResultCLI-r16	Not present		
}			

Condition	Explanation
A1	If event trigger Id in corresponding Measurement Configuration was Event A1
A2	If event trigger Id in corresponding Measurement Configuration was Event A2
A3	If event trigger Id in corresponding Measurement Configuration was Event A3
A4	If event trigger Id in corresponding Measurement Configuration was Event A4
A5	If event trigger Id in corresponding Measurement Configuration was Event A5
A6	If event trigger Id in corresponding Measurement Configuration was Event A6
B1	If event trigger Id in corresponding Measurement Configuration was Event B1
B2	If event trigger Id in corresponding Measurement Configuration was Event B2
B1_UTRA	If event trigger Id in corresponding Measurement Configuration was Event B1-UTRA-FDD
B2_UTRA	If event trigger Id in corresponding Measurement Configuration was Event B2-UTRA-FDD
SFTD_NEIGHBOUR	Measurement reporting triggered by SFTD measurement on NR neighbour
SFTD_PSCELL	Measurement reporting triggered by SFTD measurement on NR PSCell
SharedSpectrum	Operation with shared spectrum channel access

– *MeasResult2EUTRA*

Table 4.6.3-79A: *MeasResult2EUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResult2EUTRA ::= SEQUENCE {			
FFS			
}			

– *MeasResult2NR*

Table 4.6.3-79B: *MeasResult2NR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResult2NR ::= SEQUENCE {			
FFS			
}			

– *MeasResultIdleEUTRA*

Table 4.6.3-79C: *MeasResultIdleEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultIdleEUTRA-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasResultIdleNR*

Table 4.6.3-79D: *MeasResultIdleNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultIdleNR-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasResultRxTxTimeDiff*

Table 4.6.3-79E: *MeasResultRxTxTimeDiff*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultRxTxTimeDiff-r17 ::= SEQUENCE {			
FFS			
}			

– *MeasResultSCG-Failure*

Table 4.6.3-80: *MeasResultSCG-Failure*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultSCG-Failure ::= SEQUENCE {		*measResultPerMOList* for each *MeasOjectNR* for which a *measId* is configured (by the NR *RRCConfiguration message*) and measurement results are available include an entry	
measResultPerMOList SEQUENCE (SIZE (1..maxFreq)) OF MeasResult2NR {	*n* entries of MeasResult2NR	MOList [1] *n* denotes the number of non-serving frequencies being measured	
MeasResult2NR[1] SEQUENCE {		entry 1	
ssbFrequency	ARFCN-ValueNR with condition DL_SSB	the ARFCN if there is a *measId* configured with the *MeasObjectNR* and a *reportConfig* which has *rsType* set to *ssb*	
refFreqCSI-RS	INTEGER (0..3279165)	the ARFCN if there is a *measId* configured with the *MeasObjectNR* and a *reportConfig* which has *rsType* set to *csi-rs*	
measResultServingCell SEQUENCE {		if a serving cell is associated with the *MeasObjectNR*	
physCellId	INTEGER (0..1007)	the *physCellId* configured for this serving cell	
measResult SEQUENCE {			
cellResults SEQUENCE {			
resultsSSB-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
resultsCSI-RS-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	

sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
rsIndexResults SEQUENCE {			
resultsSSB-Indexes SEQUENCE (SIZE (1..maxNrofSSBs)) OF ResultsPerSSB-Index {	*n* entires of ResultsPerSSB-Index	*ResultsPerSSB-IndexList*	
ResultsPerSSB-Index[1] SEQUENCE {		entry 1	
ssb-Index	SSB-Index	an SS-Block within an SS-Burst	
ssb-Results SEQUENCE {		*MeasQuantityResults*	
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
		ResultsPerSSB-Index entry [x] if any	
}			
resultsCSI-RS-Indexes SEQUENCE (SIZE (1..maxNrofCSI-RS)) OF ResultsPerCSI-RS-Index {	*n* entires of ResultsPerCSI-RS-Index	*ResultsPerCSI-RS-IndexList*	
ResultsPerCSI-RS-Index[1] SEQUENCE {		entry 1	
csi-RS-Index	INTEGER (0..maxNrofCSI-RS-ResourcesRRM-1)	CSI-RS resource index associated to the measurement information to be reported	
csi-RS-Results SEQUENCE {		*MeasQuantityResults*	
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
		ResultsPerCSI-RS-Index entry [x] if any	
}			
}			
}			
}			

measResultNeighCellListNR SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultNR {	*n* entires of MeasResultNR	include the best measured cells, ordered such that the best cell is listed first, and based on measurements collected up to the moment the UE detected the failure	
MeasResultNR[1] SEQUENCE {		entry 1	
physCellId	INTEGER (0..1007)	the *physCellId* configured for the measured cell	
measResult SEQUENCE {			
cellResults SEQUENCE {			
resultsSSB-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
resultsCSI-RS-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
}			
}			
		MeasResultNR entry [x] if any	
}			
		MeasResult2NR entry [x] if any	
}			
		MOList [x] if any	
}			
}			

– *MeasResultsSL*

Table 4.6.3-80A: *MeasResultsSL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultsSL-r16 ::= SEQUENCE {			
measResultsListSL-r16 CHOICE {			
measResultNR-SL-r16 SEQUENCE {			
measResultListCBR-NR-r16 SEQUENCE (SIZE (1.. maxNrofSL-PoolToMeasureNR-r16)) OF MeasResultCBR-NR-r16 {	1 entry		
MeasResultCBR-NR-r16[1] SEQUENCE {		entry 1	
sl-poolReportIdentity-r16	1		
sl-CBR-ResultsNR-r16	(0..100)		
}			
}			
}			
}			
}			

– *MeasRSSI-ReportConfig*

Table 4.6.3-80AA: *MeasRSSI-ReportConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasRSSI-ReportConfig-r16 ::= SEQUENCE {			
channelOccupancyThreshold-r16	FFS		
}			

– *MeasTriggerQuantityEUTRA*

Table 4.6.3-80B: *MeasTriggerQuantityEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasTriggerQuantityEUTRA-r16 ::= SEQUENCE {			
FFS			
}			

– *MobilityStateParameters*

Table 4.6.3-81: *MobilityStateParameters*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MobilityStateParameters ::= SEQUENCE {			
FFS			
}			

– *MRB-Identity*

Table 4.6.3-81AA: *MRB-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MRB-Identity-r17	FFS		

– *MsgA-ConfigCommon*

Table 4.6.3-81A: *MsgA-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MsgA-ConfigCommonL-r16 ::= SEQUENCE {			
rach-ConfigCommonTwoStepRA-r16	RACH-ConfigCommonTwoStepRA		
msgA-PUSCH-Config-r16	MsgA-PUSCH-Config		
}			

– *MsgA-PUSCH-Config*

Table 4.6.3-81B: *MsgA-PUSCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MsgA-PUSCH-Config-r16 ::= SEQUENCE {			
MsgA-PUSCH-Resource-r16 SEQUENCE {			
msgA-MCS-r16	1		
nrofSlotsMsgA-PUSCH-r16	1		
nrofMsgA-PO-PerSlot-r16	one		
msgA-PUSCH-TimeDomainOffset-r16	4		
msgA-PUSCH-TimeDomainAllocation-r16	Not present		
startSymbolAndLengthMsgA-PO-r16	32		
mappingTypeMsgA-PUSCH-r16	typeA		
guardPeriodMsgA-PUSCH-r16	0		
guardBandMsgA-PUSCH-r16	0		
frequencyStartMsgA-PUSCH-r16	1		
nrofPRBs-PerMsgA-PO-r16	1		
nrofMsgA-PO-FDM-r16	one		
msgA-IntraSlotFrequencyHopping-r16	Not present		
msgA-HoppingBits-r16	Not present		
MsgA-DMRS-Config-r16 SEQUENCE {			
msgA-DMRS-AdditionalPosition-r16	pos0		
msgA-MaxLength-r16	Len2		
msgA-PUSCH-DMRS-CDM-Group-r16	0		
msgA-PUSCH-NrofPorts-r16	0		
msgA-ScramblingID0-r16	Not present		
msgA-ScramblingID1-r16	Not present		
}			
nrofDMRS-Sequences-r16	1		
msgA-Alpha-r16	alpha0		
interlaceIndexFirstPO-MsgA-PUSCH-r16	1		
nrofInterlacesPerMsgA-PO-r16	1		
}			
msgA-PUSCH-ResourceGroupB-r16	Not present		
msgA-TransformPrecoder-r16	enabled		
msgA-DataScramblingIndex-r16	Not present		
msgA-DeltaPreamble-r16	1		
}			

– *MultiFrequencyBandListNR*

Table 4.6.3-82: *MultiFrequencyBandListNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MultiFrequencyBandListNR ::= SEQUENCE (SIZE (1..maxNrofMultiBands)) OF FreqBandIndicatorNR {	1 entry		
FreqBandIndicatorNR[1]	FreqBandIndicatorNR	entry 1	
}			

– *MultiFrequencyBandListNR-SIB*

Table 4.6.3-82A: *MultiFrequencyBandListNR-SIB*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MultiFrequencyBandListNR-SIB ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF NR-MultiBandInfo {	1 entry		
NR-MultiBandInfo[1] SEQUENCE {		entry 1	
freqBandIndicatorNR	FreqBandIndicatorNR		
nr-NS-PmaxList	NR-NS-PmaxList		
}			
}			

– *MUSIM-GapConfig*

Table 4.6.3-82BA: *MUSIM-GapConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MUSIM-GapConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *MUSIM-GapID*

Table 4.6.3-82BB: *MUSIM-GapID*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MUSIM-GapID-r17	FFS		

– *MUSIM-GapInfo*

Table 4.6.3-82BC: *MUSIM-GapInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MUSIM-GapInfo-r17 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapsConfigNR*

Table 4.6.3-82B: *NeedForGapsConfigNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NeedForGapsConfigNR-r16 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapsInfoNR*

Table 4.6.3-82C: *NeedForGapsInfoNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NeedForGapsInfoNR-r16 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapNCSG-ConfigEUTRA*

Table 4.6.3-82D: *NeedForGapNCSG-ConfigEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NeedForGapNCSG-ConfigEUTRA-r17 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapNCSG-ConfigNR*

Table 4.6.3-82E: *NeedForGapNCSG-ConfigNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NeedForGapNCSG-ConfigNR-r17 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapNCSG-InfoEUTRA*

Table 4.6.3-82F: *NeedForGapNCSG-InfoEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NeedForGapNCSG-InfoEUTRA-r17 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapNCSG-InfoNR*

Table 4.6.3-82G: *NeedForGapNCSG-InfoNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NeedForGapNCSG-InfoNR-r17 ::= SEQUENCE {			
FFS			
}			

– *NextHopChainingCount*

Table 4.6.3-83: *NextHopChainingCount*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NextHopChainingCount	0		

– *NG-5G-S-TMSI*

Table 4.6.3-84: *NG-5G-S-TMSI*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NG-5G-S-TMSI	Set to the value of the NG-5G-S-TMSI of the UE	BIT STRING (SIZE(40))	

– *NonCellDefiningSSB*

Table 4.6.3-84AAA: *NonCellDefiningSSB*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NonCellDefiningSSB-r17 ::= SEQUENCE {			
FFS			
}			

– *NPN-Identity*

Table 4.6.3-84AA: *NPN-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NPN-Identity-r16 ::= CHOICE {			
pni-npn-r16 SEQUENCE {			CAG
plmn-Identity-r16	PLMN-Identity		
cag-IdentityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF CAG-IdentityInfo-r16 {	1 entry		
cag-Identity-r16[1]	1	cag-Identity is coded as a 32 bit BITSTRING	
manualCAGselectionAllowed-r16	true		
}			
snpn-r16 SEQUENCE {			SNPN
plmn-Identity-r16	PLMN-Identity		
nid-List-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NID-r16{	1 entry		
NID-r16[1]	See table 4.4.2-4	NID is coded as a BITSTRING based on TS 38.508-1 Table 4.4.2-4	
}			
}			
}			
}			

Condition	Explanation
CAG	PNI-NPN
SNPN	Standalone NPN cell

– *NPN-IdentityInfoList*

Table 4.6.3-84AB: *NPN-IdentityInfoList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NPN-IdentityInfoList-r16 ::= SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-IdentityInfo-r16 {	1 entry		
NPN-IdentityInfo-r16[1] SEQUENCE {			
npn-IdentityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-Identity-r16 {	1 entry		
NPN-Identity-r16[1]	NPN-Identity with condition CAG		CAG
	NPN-Identity with condition SNPN		SNPN
}			
trackingAreaCode-r16	TrackingAreaCode		
ranac-r16	RAN-AreaCode		
cellIdentity-r16	CellIdentity		
cellReservedForOperatorUse-r16	notReserved		
}			
}			

Condition	Explanation
CAG	PNI-NPN
SNPN	Standalone NPN cell

– *NR-DL-PRS-PDC-Info*

Table 4.6.3-84AC: *NR-DL-PRS-PDC-Info*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NR-DL-PRS-PDC-Info-r17 ::= SEQUENCE {			
FFS			
}			

– *NR-NS-PmaxList*

Table 4.6.3-84A: *NR-NS-PmaxList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NR-NS-PmaxList ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF NR-NS-PmaxValue {	1 entry		
NR-NS-PmaxValue[1] SEQUENCE {		entry 1	
additionalPmax	Not present		
additionalSpectrumEmission	AdditionalSpectrumEmission		
}			
}			

– *NSAG-IdentityInfo*

Table 4.6.3-84B: *NSAG-IdentityInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NSAG-IdentityInfo-r17 ::= SEQUENCE {			
FFS			
}			

– *NTN-Config*

Table 4.6.3-84C: *NTN-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NTN-Config-r17 ::= SEQUENCE {			
FFS			
}			

– *NZP-CSI-RS-Resource*

Table 4.6.3-85: *NZP-CSI-RS-Resource*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId		
resourceMapping	CSI-RS-ResourceMapping		
powerControlOffset	-3		
powerControlOffsetSS	Not present		
scramblingID	ScramblingId		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-StateId		
}			

– *NZP-CSI-RS-ResourceId*

Table 4.6.3-86: *NZP-CSI-RS-ResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NZP-CSI-RS-ResourceId	0		

– *NZP-CSI-RS-ResourceSet*

Table 4.6.3-87: *NZP-CSI-RS-ResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp-CSI-ResourceSetId	NZP-CSI-RS-ResourceSetId		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	1 entry		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId	entry 1	
}			
repetition	off		
	Not present		TRS
aperiodicTriggeringOffset	Not present		
trs-Info	Not present		
	true		TRS
}			

Condition	Explanation
TRS	Tracking-Reference Signal

– *NZP-CSI-RS-ResourceSetId*

Table 4.6.3-88: *NZP-CSI-RS-ResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NZP-CSI-RS-ResourceSetId	0		

– *P-Max*

NOTE: Exceptions in clause 5.4.1 shall be appied for RF test cases.

Table 4.6.3-89: *P-Max*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
P-Max	23		NR OR (EN-DC AND pc_dynamicPowerSharing)
	20		EN-DC AND (NOT pc_dynamicPowerSharing)

Condition	Explanation
NR	NR connected to 5GC
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC

– *PCI-List*

Table 4.6.3-90: *PCI-List*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-List ::= SEQUENCE {			
FFS			
}			

– *PCI-Range*

Table 4.6.3-91: *PCI-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-Range ::= SEQUENCE {			
start	PhysCellId		
range	FFS		
}			

– *PCI-RangeElement*

Table 4.6.3-92: *PCI-RangeElement*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-RangeElement ::= SEQUENCE {			
FFS			
}			

– *PCI-RangeIndex*

Table 4.6.3-93: *PCI-RangeIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-RangeIndex	0		

– *PCI-RangeIndexList*

Table 4.6.3-94: *PCI-RangeIndexList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-RangeIndexList ::= SEQUENCE {			
FFS			
}			

– *PDCCH-Config*

Table 4.6.3-95: *PDCCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCCH-Config ::= SEQUENCE {			
controlResourceSetToAddModList	Not present		EN-DC
controlResourceSetToAddModList SEQUENCE(SIZE (1..3)) OF ControlResourceSet {	1 entry		
ControlResourceSet[1]	ControlResourceSet	entry 1	
}			
controlResourceSetToReleaseList	Not present		
searchSpacesToAddModList SEQUENCE(SIZE (1..10)) OF SearchSpace {	1 entry		
SearchSpace[1]	SearchSpace with condition USS	entry 1	
}			
searchSpacesToReleaseList	Not present		
downlinkPreemption	Not present		
tpc-PUSCH	Not present		
tpc-PUCCH	Not present		
tpc-SRS	Not present		
controlResourceSetToAddModListSizeExt-v1610	Not present		
controlResourceSetToReleaseListSizeExt-r16	Not present		
searchSpacesToAddModListExt-r16	Not present		
uplinkCancellation-r16	Not present		
monitoringCapabilityConfig-r16	Not present		
searchSpaceSwitchConfig-r16	Not present		
}			

– *PDCCH-ConfigCommon*

Table 4.6.3-96: *PDCCH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCCH-ConfigCommon ::= SEQUENCE {			
controlResourceSetZero	ControlResourceSetZero	Initial BWP	
	Not present		SCell_Add InitialBWP_ SIB, BWP-Id1
commonControlResourceSet	ControlResourceSet		EN-DC
	Not present		
searchSpaceZero	SearchSpaceZero	Initial BWP	
	Not present		SCell_Add InitialBWP_ SIB, BWP-Id1
commonSearchSpaceList SEQUENCE (SIZE (1..4)) OF SearchSpace {	2 entries		
SearchSpace[1]	SearchSpace with condition CSS	entry 1	
SearchSpace[2]	SearchSpace with condition SISS	entry 2	
}			
commonSearchSpaceList SEQUENCE (SIZE (1..4)) OF SearchSpace {	1 entry		EN-DC
SearchSpace[1]	SearchSpace with condition CSS	entry 1	
}			
commonSearchSpaceList	Not present		SCell_Add
searchSpaceSIB1	0		
	Not present		EN-DC, SCell_Add
searchSpaceOtherSystemInformation	SearchSpaceId with condition SISS		
	Not present		EN-DC, SCell_Add
pagingSearchSpace	0		
	Not present		EN-DC, SCell_Add
ra-SearchSpace	SearchSpaceId with condition CSS		
	Not present		SCell_Add
firstPDCCH-MonitoringOccasionOfPO	Not present		
commonSearchSpaceListExt-r16	Not present		
sdt-SearchSpace-r17	Not present		
sdt-SearchSpace-r17 CHOICE {			SDT
existingSearchSpace	SearchSpaceId with condition CSS		
}			
searchSpaceMCCH-r17	Not present		
searchSpaceMTCH-r17	Not present		
commonSearchSpaceListExt2-r17	Not present		
firstPDCCH-MonitoringOccasionOfPO-v1710	Not present		
pei-ConfigBWP-r17	Not present		
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
SCell_Add	Add SCell
InitialBWP_SIB	Configured via DownlinkConfigCommonSIB
BWP-Id1	Additional BWP 1
SDT	For SDT test cases

– *PDCCH-ConfigSIB1*

Table 4.6.3-97: *PDCCH-ConfigSIB1*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCCH-ConfigSIB1 ::= SEQUENCE {			
controlResourceSetZero	ControlResourceSetZero		
searchSpaceZero	SearchSpaceZero		
}			

– *PDCCH-ServingCellConfig*

Table 4.6.3-98: *PDCCH-ServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCCH-ServingCellConfig ::= SEQUENCE {			
slotFormatIndicator	Not present		
}			

– *PDCP-Config*

Table 4.6.3-99: *PDCP-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCP-Config ::= SEQUENCE {			
drb SEQUENCE {			
discardTimer	infinity		
pdcp-SN-Size-UL	len18bits		
	len12bits		pc_RedCap_r17
pdcp-SN-Size-DL	len18bits len12bits		pc_RedCap_r17
headerCompression CHOICE {			
notUsed	NULL		
}			
integrityProtection	Not present		
statusReportRequired	true	AM is default	
	Not present		UM
outOfOrderDelivery	Not present		
}			
drb	Not present		SRB, Split_SRB
moreThanOneRLC	Not present		
moreThanOneRLC SEQUENCE {			Split, Split_SRB, NR_split
primaryPath SEQUENCE {			
cellGroup	CellGroupId		
	0	MCG path	Split_SRB, NR_split
logicalChannel	LogicalChannelIdentity		
}			
ul-DataSplitThreshold	infinity		
	Not present		Split_SRB
pdcp-Duplication	false		
	Not present	one UL path	Split_SRB
}			
t-Reordering	Not present		
	80ms		UM
cipheringDisabled	Not present		
discardTimerExt-r16	Not present		
moreThanTwoRLC-DRB-r16	Not present		
ethernetHeaderCompression-r16	Not present		
survivalTimeStateSupport-r17	Not present		
uplinkDataCompression-r17	Not present		
uplinkDataCompression-r17 CHOICE {			UDC
setup CHOICE {			
newSetup CHOICE {			
bufferSize-r17	kbyte2		
dictionary-r17	Not present		
}			
}			
}			
discardTimerExt2-r17	Not present		
multicastHFN-AndRefSN-r17	Not present		
}			

Condition	Explanation
Split	More than one RLC
SRB	SRB
UM	RLC UM DRB
Split_SRB	SRB with more than one RLC
NR_split	MCG and split for NR-DC.
UDC	RLC AM DRB with uplinkDataCompression

– *PDSCH-Config*

Table 4.6.3-100: *PDSCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPDSCH	0		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {			
setup	DMRS-DownlinkConfig		
}			
dmrs-DownlinkForPDSCH-MappingTypeB	Not present		
tci-StatesToAddModList SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF TCI-State {	1 entry		
TCI-State[1]	TCI-State	entry 1	
}			
tci-StatesToReleaseList	Not present		
vrb-ToPRB-Interleaver	Not present		
resourceAllocation	resourceAllocationType1		
	resourceAllocationType0		Used_for_Type0
pdsch-TimeDomainAllocationList	Not present		
pdsch-AggregationFactor	Not present		
rateMatchPatternToAddModList	Not present		
rateMatchPatternToReleaseList	Not present		
rateMatchPatternGroup1	Not present		
rateMatchPatternGroup2	Not present		
rbg-Size	config1		
mcs-Table	Not present	qam64 per default	
maxNrofCodeWordsScheduledByDCI	Not present		
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	wideband		
}			
}			
zp-CSI-RS-ResourceToAddModList	Not present		
zp-CSI-RS-ResourceToReleaseList	Not present		
aperiodic-ZP-CSI-RS-ResourceSetsToAddModList	Not present		
aperiodic-ZP-CSI-RS-ResourceSetsToReleaseList	Not present		
sp-ZP-CSI-RS-ResourceSetsToAddModList	Not present		
sp-ZP-CSI-RS-ResourceSetsToReleaseList	Not present		
p-ZP-CSI-RS-ResourceSet	Not present		
maxMIMO-Layers-r16	Not present		
minimumSchedulingOffsetK0-r16	Not present		
antennaPortsFieldPresenceDCI-1-2-r16	Not present		
aperiodicZP-CSI-RS-ResourceSetsToAddModListDCI-1-2-r16	Not present		
aperiodicZP-CSI-RS-ResourceSetsToReleaseListDCI-1-2-r16	Not present		
dmrs-DownlinkForPDSCH-MappingTypeA-DCI-1-2-r16	Not present		
dmrs-DownlinkForPDSCH-MappingTypeB-DCI-1-2-r16	Not present		
dmrs-SequenceInitializationDCI-1-2-r16	Not present		
harq-ProcessNumberSizeDCI-1-2-r16	Not present		
mcs-TableDCI-1-2-r16	Not present		
numberOfBitsForRV-DCI-1-2-r16	Not present		
pdsch-TimeDomainAllocationListDCI-1-2-r16	Not present		
prb-BundlingTypeDCI-1-2-r16	Not present		
priorityIndicatorDCI-1-2-r16	Not present		
rateMatchPatternGroup1DCI-1-2-r16	Not present		
rateMatchPatternGroup2DCI-1-2-r16	Not present		
resourceAllocationType1GranularityDCI-1-2-r16	Not present		
vrb-ToPRB-InterleaverDCI-1-2-r16	Not present		
referenceOfSLIVDCI-1-2-r16	Not present		
resourceAllocationDCI-1-2-r16	Not present		
priorityIndicatorDCI-1-1-r16	Not present		
dataScramblingIdentityPDSCH2-r16	Not present		
pdsch-TimeDomainAllocationList-r16	Not present		

repetitionSchemeConfig-r16	Not present		
repetitionSchemeConfig-v1630	Not present		
}			

Condition	Explanation
Used_for_Type0	Used for RF performance test cases

– *PDSCH-ConfigCommon*

Table 4.6.3-101: *PDSCH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDSCH-ConfigCommon ::= SEQUENCE {			
pdsch-TimeDomainAllocationList	PDSCH-TimeDomainResourceAllocationList		
}			

– *PDSCH-ServingCellConfig*

Table 4.6.3-102: *PDSCH-ServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
xOverhead	Not present		
nrofHARQ-ProcessesForPDSCH	n4		RF AND FDD
	n16		RRM AND FDD
	Not present	Default value: 8 HARQ processes	
pucch-Cell	Not present		
maxMIMO-Layers	Not present		
processingType2Enabled	Not present		
pdsch-CodeBlockGroupTransmissionList-r16	Not present		
}			

– *PDSCH-TimeDomainResourceAllocationList*

Table 4.6.3-103: *PDSCH-TimeDomainResourceAllocationList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	2 entries		FR1
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
k0	Not present		
mappingType	typeA		
startSymbolAndLength	53	Start symbol(S)=2, Length(L)=12	
}			
PDSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2	
k0	Not present		
mappingType	typeA		
startSymbolAndLength	72	S=2, L=6	
}			
}			
PDSCH-TimeDomainResourceAllocationList SEQUENCE (SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	1 entry		FR2
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
k0	Not present		
mappingType	typeA		
startSymbolAndLength	53	S=2, L=12	
}			
}			

– *PHR-Config*

Table 4.6.3-104: *PHR-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PHR-Config ::= CHOICE {			
setup SEQUENCE {			
phr-PeriodicTimer	sf10		
phr-ProhibitTimer	sf0		
phr-Tx-PowerFactorChange	dB1		
multiplePHR	false		
	true		MR-DC OR NR-CA
dummy	false		
Phr-Type2OtherCell	false		
phr-ModeOtherCG	real		
}			
}			

Condition	Explanation
MR-DC	EN-DC, NGEN-DC, NE-DC or NR-DC.
NR-CA	UL CA for NR

– *PhysCellId*

Table 4.6.3-105: *PhysCellId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PhysCellId	Set according to table 4.4.2-2 for the NR Cell.		

– *PhysicalCellGroupConfig*

Table 4.6.3-106: *PhysicalCellGroupConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PhysicalCellGroupConfig ::= SEQUENCE {			
harq-ACK-SpatialBundlingPUCCH	Not present		
harq-ACK-SpatialBundlingPUSCH	Not present		
p-NR-FR1	P-Max		
pdsch-HARQ-ACK-Codebook	dynamic		
tpc-SRS-RNTI	Not present		
tpc-PUCCH-RNTI	Not present		
tpc-PUSCH-RNTI	Not present		
sp-CSI-RNTI	Not present		
cs-RNTI	Not present		
dcp-Config-r16	Not present		
dcp-Config-r16 CHOICE {			DCP
setup SEQUENCE {			
ps-RNTI-r16	RNTI-Value		
ps-Offset-r16	120		
sizeDCI-2-6-r16	6		
ps-PositionDCI-2-6-r16	0		
ps-WakeUp-r16	Not present		
ps-TransmitPeriodicL1-RSRP-r16	Not present		
ps-TransmitOtherPeriodicCSI-r16	Not present		
}			
}			
harq-ACK-SpatialBundlingPUCCH-secondaryPUCCHgroup-r16	Not present		
harq-ACK-SpatialBundlingPUSCH-secondaryPUCCHgroup-r16	Not present		
pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup-r16	Not present		
p-NR-FR2-r16	Not present		
p-UE-FR2-r16	Not present		
nrdc-PCmode-FR1-r16	Not present		
nrdc-PCmode-FR2-r16	Not present		
pdsch-HARQ-ACK-Codebook-r16	Not present		
nfi-TotalDAI-Included-r16	Not present		
ul-TotalDAI-Included-r16	Not present		
pdsch-HARQ-ACK-OneShotFeedback-r16	Not present		
pdsch-HARQ-ACK-OneShotFeedbackNDI-r16	Not present		
pdsch-HARQ-ACK-OneShotFeedbackCBG-r16	Not present		
downlinkAssignmentIndexDCI-0-2-r16	Not present		
downlinkAssignmentIndexDCI-1-2-r16	Not present		
pdsch-HARQ-ACK-CodebookList-r16	Not present		
ackNackFeedbackMode-r16	Not present		
pdcch-BlindDetectionCA-CombIndicator-r16	Not present		
pdcch-BlindDetection2-r16	Not present		
pdcch-BlindDetection3-r16	Not present		
bdFactorR-r16	Not present		
}			

Condition	Explanation
DCP	This condition applies when DCP is configured

– *PLMN-Identity*

Table 4.6.3-107: *PLMN-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PLMN-Identity ::= SEQUENCE {			
mcc SEQUENCE (SIZE (3)) OF MCC-MNC-Digit	See table 4.4.2-3		
mnc SEQUENCE (SIZE (2..3)) OF MCC-MNC-Digit	See table 4.4.2-3		
}			

– *PLMN-IdentityInfoList*

Table 4.6.3-108: *PLMN-IdentityInfoList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PLMN-IdentityInfoList ::= SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-IdentityInfo {	1 entry		
PLMN-IdentityInfo[1] SEQUENCE {		entry 1	
plmn-IdentityList SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-Identity {	1 entry		
PLMN-Identity[1]	PLMN-Identity	entry 1	
}			
trackingAreaCode	TrackingAreaCode		
ranac	RAN-AreaCode		
cellIdentity	CellIdentity		
cellReservedForOperatorUse	notReserved		
}			
}			

– *PLMN-IdentityList2*

Table 4.6.3-108A: *PLMN-IdentityList2*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PLMN-IdentityList2-r16 ::= SEQUENCE {			
FFS			
}			

– *PRB-Id*

Table 4.6.3-109: *PRB-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PRB-Id	0		
	Set to value of the *L_RBs - nrofPRBs* where *L_RBs* is found in Table 4.3.1.0D-1 or Table 4.3.1.0D-2 for the bandwidth and SCS configured and *nrofPRBs* is defined for the corresponding *PUCCH-Resource* (1 otherwise).		secondHop PRB

Condition	Explanation
secondHopPRB	The IE secondHopPRB in PUCCH-Resource is now set.

– *PTRS-DownlinkConfig*

Table 4.6.3-110: *PTRS-DownlinkConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PTRS-DownlinkConfig ::= SEQUENCE {			
frequencyDensity	Not present		
timeDensity	Not present		
epre-Ratio	0		
resourceElementOffset	Not present		
}			

– *PTRS-UplinkConfig*

Table 4.6.3-111: *PTRS-UplinkConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PTRS-UplinkConfig ::= SEQUENCE {			
transformPrecoderDisabled SEQUENCE {			
frequencyDensity	Not present		
timeDensity	Not present		
maxNrofPorts	n1		
resourceElementOffset	Not present		
ptrs-Power	p00		
}			
transformPrecoderEnabled SEQUENCE {			
sampleDensity SEQUENCE (SIZE (5)) OF INTEGER {	5 entries		
INTEGER[1]	1	entry 1	
INTEGER[2]	8	entry 2	
INTEGER[3]	32	entry 3	
INTEGER[4]	32	entry 4	
INTEGER[5]	108	entry 5	
}			
timeDensityTransformPrecoding	Not present		
}			
}			

– *PUCCH-Config*

Table 4.6.3-112: *PUCCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-Config ::= SEQUENCE {			
resourceSetToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-ResourceSets)) OF PUCCH-ResourceSet {	2 entries		
PUCCH-ResourceSet[1] SEQUENCE {		entry 1	
pucch-ResourceSetId	0		
resourceList SEQUENCE (SIZE (0..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId {	8 entries		
PUCCH-ResourceId[1]	0	entry 1	
PUCCH-ResourceId[2]	1	entry 2	
PUCCH-ResourceId[3]	2	entry 3	
PUCCH-ResourceId[4]	3	entry 4	
PUCCH-ResourceId[5]	4	entry 5	
PUCCH-ResourceId[6]	5	entry 6	
PUCCH-ResourceId[7]	6	entry 7	
PUCCH-ResourceId[8]	7	entry 8	
}			
maxPayloadSize	Not present		
}			
PUCCH-ResourceSet[2] SEQUENCE {		entry 2	
pucch-ResourceSetId	1		
resourceList SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId {	8 entries		
PUCCH-ResourceId[1]	8	entry 1	
PUCCH-ResourceId[2]	9	entry 2	
PUCCH-ResourceId[3]	10	entry 3	
PUCCH-ResourceId[4]	11	entry 4	
PUCCH-ResourceId[5]	12	entry 5	
PUCCH-ResourceId[6]	13	entry 6	
PUCCH-ResourceId[7]	14	entry 7	
PUCCH-ResourceId[8]	15	entry 8	
}			
maxPayloadSize	Not present		
}			
}			
resourceSetToReleaseList	Not present		
resourceToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-Resources)) OF PUCCH-Resource {	16 entries		
PUCCH-Resource[1] SEQUENCE {		entry 1	
pucch-ResourceId	0		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	0		
}			
}			
}			
PUCCH-Resource[2] SEQUENCE {		entry 2	
pucch-ResourceId	1		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		

nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
}			
PUCCH-Resource[3] SEQUENCE {		entry 3	
pucch-ResourceId	2		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			
}			
PUCCH-Resource[4] SEQUENCE {		entry 4	
pucch-ResourceId	3		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
}			
PUCCH-Resource[5] SEQUENCE {		entry 5	
pucch-ResourceId	4		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
}			
PUCCH-Resource[6] SEQUENCE {		entry 6	
pucch-ResourceId	5		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	10		
}			
}			
}			
PUCCH-Resource[7] SEQUENCE {		entry 7	
pucch-ResourceId	6		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		

secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
}			
PUCCH-Resource[8] SEQUENCE {		entry 8	
pucch-ResourceId	7		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format1 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	14		
startingSymbolIndex	0		
timeDomainOCC	0		
}			
}			
}			
PUCCH-Resource[9] SEQUENCE {		entry 9	
pucch-ResourceId	8		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	0		
}			
}			
}			
PUCCH-Resource[10] SEQUENCE {		entry 10	
pucch-ResourceId	9		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
}			
PUCCH-Resource[11] SEQUENCE {		entry 11	
pucch-ResourceId	10		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			

}			
PUCCH-Resource[12] SEQUENCE {		entry 12	
pucch-ResourceId	11		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
}			
PUCCH-Resource[13] SEQUENCE {		entry 13	
pucch-ResourceId	12		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
}			
PUCCH-Resource[14] SEQUENCE {		entry 14	
pucch-ResourceId	13		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBsinitial	6		
nrofSymbols	2		
startingSymbolIndex	10		
}			
}			
}			
PUCCH-Resource[15] SEQUENCE {		entry 15	
pucch-ResourceId	14		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
}			
PUCCH-Resource[16] SEQUENCE {		entry 16	
pucch-ResourceId	15		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format3 SEQUENCE {			
nrofPRBs	1		

nrofSymbols	14		
startingSymbolIndex	0		
}			
}			
}			
}			
resourceToReleaseList	Not present		
format1CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	Not Present		
maxCodeRate	Not Present		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	Not Present		
}			
}			
format2 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	Not Present		
additionalDMRS	Not Present		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	True		
}			
}			
format3 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	True		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	true		
}			
}			
format4	Not present		
schedulingRequestResourceToAddModList SEQUENCE (SIZE (1..maxNrofSR-Resources)) OF SchedulingRequestResourceConfig {	1 entry		
SchedulingRequestResourceConfig[1]	SchedulingRequestResourceConfig	entry 1	
}			
schedulingRequestResourceToReleaseList	Not present		
multi-CSI-PUCCH-ResourceList	Not present		
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	8 entries		
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	5	entry 4	
INTEGER[5]	6	entry 5	
INTEGER[6]	7	entry 6	
INTEGER[7]	8	entry 7	
INTEGER[8]	9	entry 8	
}			
dl-DataToUL-ACK	Not present		Short_DCI
spatialRelationInfoToAddModList	Not present		
spatialRelationInfoToReleaseList	Not present		
pucch-PowerControl	PUCCH-PowerControl		
resourceToAddModListExt-r16	Not present		
dl-DataToUL-ACK-r16	Not present		
ul-AccessConfigListDCI-1-1-r16	Not present		
subslotLengthForPUCCH-r16	Not present		
dl-DataToUL-ACK-DCI-1-2-r16	Not present		

numberOfBitsForPUCCH-ResourceIndicatorDCI-1-2-r16	Not present		
dmrs-UplinkTransformPrecodingPUCCH-r16	Not present		
spatialRelationInfoToAddModListSizeExt-v1610	Not present		
spatialRelationInfoToReleaseListSizeExt-v1610	Not present		
spatialRelationInfoToAddModListExt-v1610	Not present		
spatialRelationInfoToReleaseListExt-v1610	Not present		
resourceGroupToAddModList-r16	Not present		
resourceGroupToReleaseList-r16	Not present		
sps-PUCCH-AN-List-r16	Not present		
schedulingRequestResourceToAddModListExt-v1610	Not present		
}			

Condition	Explanation
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS

– *PUCCH-ConfigCommon*

Table 4.6.3-113: *PUCCH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-ConfigCommon ::= SEQUENCE {			
pucch-ResourceCommon	0		
pucch-GroupHopping	enable		
hoppingId	Not present		
p0-nominal	-90		
}			

– *PUCCH-ConfigurationList*

Table 4.6.3-113A: *PUCCH-ConfigurationList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-ConfigurationList-r16 ::= SEQUENCE {			
FFS			
}			

– *PUCCH-PathlossReferenceRS-Id*

Table 4.6.3-114: *PUCCH-PathlossReferenceRS-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-PathlossReferenceRS-Id	0		

– *PUCCH-PowerControl*

Table 4.6.3-115: *PUCCH-PowerControl*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-PowerControl ::= SEQUENCE {			
deltaF-PUCCH-f0	0		
deltaF-PUCCH-f1	0		
deltaF-PUCCH-f2	0		
deltaF-PUCCH-f3	0		
deltaF-PUCCH-f4	0		
p0-Set	Not present		
pathlossReferenceRSs SEQUENCE (SIZE (1..maxNrofPUCCH-PathlossReferenceRSs)) OF PUCCH-PathlossReferenceRS {	1 entry		
PUCCH-PathlossReferenceRS[1] SEQUENCE {		entry 1	
pucch-PathlossReferenceRS-Id	PUCCH-PathlossReferenceRS-Id		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
}			
}			
}			
twoPUCCH-PC-AdjustmentStates	Not present		
}			

– *PUCCH-SpatialRelationInfo*

Table 4.6.3-116: *PUCCH-SpatialRelationInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-SpatialRelationInfo ::= SEQUENCE {			
pucch-SpatialRelationInfoId	1		
servingCellId	ServCellIndex		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
}			
pucch-PathlossReferenceRS-Id	PUCCH-PathlossReferenceRS-Id		
p0-PUCCH-Id	1		
closedLoopIndex	i0		
}			

– *PUCCH-SpatialRelationInfo-Id*

Table 4.6.3-116A: *PUCCH-SpatialRelationInfo-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-SpatialRelationInfoId ::= SEQUENCE {			
FFS			
}			

– *PUCCH-TPC-CommandConfig*

Table 4.6.3-117: *PUCCH-TPC-CommandConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-TPC-CommandConfig ::= SEQUENCE {			
FFS			
}			

– *PUSCH-Config*

Table 4.6.3-118: *PUSCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPUSCH	Not present		
txConfig	Not Present		Short_DCI
	codebook		
dmrs-UplinkForPUSCH-MappingTypeA CHOICE {			
setup	DMRS-UplinkConfig		
}			
dmrs-UplinkForPUSCH-MappingTypeB	Not present		
pusch-PowerControl	PUSCH-PowerControl		
frequencyHopping	Not present		
frequencyHoppingOffsetLists	Not present		
resourceAllocation	resourceAllocationType1		
pusch-TimeDomainAllocationList	Not present		
pusch-AggregationFactor	Not present		
mcs-Table	Not present		
mcs-TableTransformPrecoder	Not present		
transformPrecoder	enabled		TRANSFORM_PRECODER_ENABLED
	Not present	TRANSFORM_PRECODER_DISABLED	
codebookSubset	Not present		Short_DCI
	nonCoherent		
maxRank	Not present		Short_DCI
	1		
	2		2TX_UL_MIMO
rbg-Size	Not present		
uci-OnPUSCH CHOICE {			
setup SEQUENCE {			
betaOffsets CHOICE {			
semiStatic	BetaOffsets		
}			
scaling	f1		
}			
}			
tp-pi2BPSK	Not present		
minimumSchedulingOffsetK2-r16	Not present		
ul-AccessConfigListDCI-0-1-r16	Not present		
harq-ProcessNumberSizeDCI-0-2-r16	Not present		
dmrs-SequenceInitializationDCI-0-2-r1	Not present		
numberOfBitsForRV-DCI-0-2-r16	Not present		
antennaPortsFieldPresenceDCI-0-2-r16	Not present		
dmrs-UplinkForPUSCH-MappingTypeA-DCI-0-2-r16	Not present		
dmrs-UplinkForPUSCH-MappingTypeB-DCI-0-2-r16	Not present		
frequencyHoppingDCI-0-2-r16	Not present		
frequencyHoppingOffsetListsDCI-0-2-r16	Not present		
codebookSubsetDCI-0-2-r16	Not present		
invalidSymbolPatternIndicatorDCI-0-2-r16	Not present		
maxRankDCI-0-2-r16	Not present		
mcs-TableDCI-0-2-r16	Not present		
mcs-TableTransformPrecoderDCI-0-2-r16	Not present		
priorityIndicatorDCI-0-2-r16	Not present		
pusch-RepTypeIndicatorDCI-0-2-r16	Not present		
resourceAllocationDCI-0-2-r16	Not present		
resourceAllocationType1GranularityDCI-0-2-r16	Not present		
uci-OnPUSCH-ListDCI-0-2-r16	Not present		
pusch-TimeDomainAllocationListDCI-0-2-r16	Not present		
pusch-TimeDomainAllocationListDCI-0-1-r16	Not present		
invalidSymbolPatternIndicatorDCI-0-1-r16	Not present		
priorityIndicatorDCI-0-1-r16	Not present		
pusch-RepTypeIndicatorDCI-0-1-r16	Not present		

frequencyHoppingDCI-0-1-r16	Not present		
uci-OnPUSCH-ListDCI-0-1-r16	Not present		
invalidSymbolPattern-r16	Not present		
pusch-PowerControl-v1610	Not present		
ul-FullPowerTransmission-r16	Not present		
pusch-TimeDomainAllocationListForMultiPUSCH-r16	Not present		
numberOfInvalidSymbolsForDL-UL-Switching-r16	Not present		
}			

Condition	Explanation
TRANSFORM_PRECODER_ENABLED	Transform precoding is enabled (DFT-s-OFDM UL waveform is configured)
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS

– *PUSCH-ConfigCommon*

Table 4.6.3-119: *PUSCH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-ConfigCommon ::= SEQUENCE {			
groupHoppingEnabledTransformPrecoding	Not present		
pusch-TimeDomainAllocationList	PUSCH-TimeDomainResourceAllocationList		
msg3-DeltaPreamble	1		
p0-NominalWithGrant	-90		
}			

– *PUSCH-PowerControl*

Table 4.6.3-120: *PUSCH-PowerControl*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-PowerControl ::= SEQUENCE {			
tpc-Accumulation	Not present		
msg3-Alpha	alpha08		
p0-NominalWithoutGrant	-90		
p0-AlphaSets SEQUENCE (SIZE (1..maxNrofP0-PUSCH-AlphaSets)) OF P0-PUSCH-AlphaSet {	1 entry		
P0-PUSCH-AlphaSet[1] SEQUENCE {		entry 1	
p0-PUSCH-AlphaSetId	0		
p0	0		
alpha	alpha08		
}			
}			
pathlossReferenceRSToAddModList SEQUENCE (SIZE (1..maxNrofPUSCH-PathlossReferenceRSs)) OF PUSCH-PathlossReferenceRS {	1 entry		
PUSCH-PathlossReferenceRS[1] SEQUENCE {		entry 1	
pusch-PathlossReferenceRS-Id	0		
referenceSignal CHOICE{			
ssb-Index	SSB-Index		
}			
}			
}			
pathlossReferenceRSToReleaseList	Not present		
twoPUSCH-PC-AdjustmentStates	Not present		
deltaMCS	Not present		
sri-PUSCH-MappingToAddModList SEQUENCE (SIZE (1..maxNrofSRI-PUSCH-Mappings)) OF SRI-PUSCH-PowerControl {	1 entry		
SRI-PUSCH-PowerControl[1] SEQUENCE {		entry 1	
sri-PUSCH-PowerControlId	0		
sri-PUSCH-PathlossReferenceRS-Id	0		
sri-P0-PUSCH-AlphaSetId	0		
sri-PUSCH-ClosedLoopIndex	i0		
}			
}			
sri-PUSCH-MappingToReleaseList	Not present		
}			

– *PUSCH-ServingCellConfig*

Table 4.6.3-121: *PUSCH-ServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
rateMatching	Not present		
xOverhead	Not present		
maxMIMO-Layers	Not present		
processingType2Enabled	Not present		
maxMIMO-LayersDCI-0-2-r16	Not present		
}			

– *PUSCH-TimeDomainResourceAllocationList*

Table 4.6.3-122: *PUSCH-TimeDomainResourceAllocationList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	2 entries		
PUSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
k2	4		
	2		(RF OR RRM) AND (FR1 AND (SCS15 OR SCS30)) OR (FR2 AND SCS60 AND (DL OR RRM))
	3		((RF AND DL) OR RRM) AND FR2 AND SCS120
	6		((RF AND DL) OR RRM) AND FR1 AND SCS60
	4		RF AND FR2 AND SCS60 AND UL
	8		RF_FR2_120kHz_UL
mappingType	typeA		
startSymbolAndLength	27	Start symbol(S)=0, Length(L)=14	
}			
PUSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2 addressed by Msg3 PUSCH time resource allocation field of the Random Access Response acc. to TS 38.213 [22] Table 8.2-1.	
k2	Not present		
	2	K2+ Δ=4 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)	FR1 AND SCS15
	6	K2+ Δ=9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)	FR1 AND SCS30
	3	K2+ Δ=9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)	FR2
mappingType	typeA		
startSymbolAndLength	27	Start symbol(S)=0, Length(L)=14	
}			
}			

NOTE 1: Values are chosen so that first slot of a TDD-UL-DL slot configuration period can be used for the Random Access Response and the last slot (of the same or another period) for the corresponding Msg3.

Condition	Explanation
DL	RF Rx measurements.
UL	RF UL measurements.

– *PUSCH-TPC-CommandConfig*

Table 4.6.3-123: *PUSCH-TPC-CommandConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-TPC-CommandConfig ::= SEQUENCE {			
tpc-Index	Not present		
tpc-IndexSUL	Not present		
targetCell	Not present		
}			

– *Q-OffsetRange*

Table 4.6.3-124: *Q-OffsetRange*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Q-OffsetRange	dB0		

– *Q-QualMin*

Table 4.6.3-125: *Q-QualMin*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Q-QualMin	FFS		

– *Q-RxLevMin*

Table 4.6.3-126: *Q-RxLevMin*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Q-RxLevMin	FFS		

– *QuantityConfig*

Table 4.6.3-127: *QuantityConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
QuantityConfig ::= SEQUENCE {			
quantityConfigNR-List SEQUENCE (SIZE (1..maxNrofQuantityConfig)) OF QuantityConfigNR {	2 entries		
QuantityConfigNR[1] SEQUENCE {		entry 1	
quantityConfigCell SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigRS-Index SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
}			
QuantityConfigNR[2] SEQUENCE {		entry 2	
quantityConfigCell SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigRS-Index SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
}			
}			
quantityConfigEUTRA	Not present		
quantityConfigEUTRA SEQUENCE {			INTER-RAT
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
quantityConfigUTRA-FDD-r16	Not present		

quantityConfigUTRA-FDD-r16 SEQUENCE {			INTER-RAT_UTRA
filterCoefficientRSCP-r16	FilterCoefficient		
filterCoefficientEcNO-r16	FilterCoefficient		
}			
quantityConfigCLI-r16	Not present		
}			

Condition	Explanation
INTER-RAT	Configuration for EUTRA inter-RAT measurements
INTER-RAT_UTRA	Configuration for UTRA inter-RAT measurements

– *RACH-ConfigCommon*

Table 4.6.3-128: *RACH-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RACH-ConfigCommon ::= SEQUENCE {			
rach-ConfigGeneric	RACH-ConfigGeneric		
totalNumberOfRA-Preambles	Not present		
ssb-perRACH-OccasionAndCB-PreamblesPerSSB CHOICE {			
one	n8		FR1
	n4		FR2
}			
groupBconfigured	Not present		
ra-ContentionResolutionTimer	sf64		
rsrp-ThresholdSSB	RSRP-Range		
rsrp-ThresholdSSB-SUL	Not present		
	RSRP-Range		SUL
prach-RootSequenceIndex CHOICE {			
l139	Set according to table 4.4.2-2 for the NR Cell.		
}			
msg1-SubcarrierSpacing	SubcarrierSpacing		
restrictedSetConfig	unrestrictedSet		
msg3-transformPrecoder	Not present	transform precoding is disabled for Msg3 PUSCH transmission and any PUSCH transmission scheduled with DCI format 0_0	
ra-PrioritizationForAccessIdentity-r16	Not present		
prach-RootSequenceIndex-r16	Not present		
ra-PrioritizationForSlicing-r17	Not present		
	RA-PrioritizationForSlicing-r17		Slice_RACH
featureCombinationPreambles-r17 SEQUENCE (SIZE(1..maxFeatureCombPreamblesPerRACHResource-r17)) OF FeatureCombinationPreambles-r17{}	Not present		
	FeatureCombinationPreambles-r17		Slice_RACH
}			

Condition	Explanation
SUL	Supplementary uplink
Slice_RACH	Slice specific RACH configuration

– *RACH-ConfigCommonTwoStepRA*

Table 4.6.3-128A: *RACH-ConfigCommonTwoStepRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RACH-ConfigCommonTwoStepRA-r16 ::= SEQUENCE {			
rach-ConfigGenericTwoStepRA-r16	RACH-ConfigGenericTwoStepRA		
msgA-TotalNumberOfRA-Preambles-r16	Not present		
msgA-SSB-PerRACH-OccasionAndCB-PreamblesPerSSB-r16 CHOICE {	Not present		
one	n8		FR1
	n4		FR2
}			
msgA-CB-PreamblesPerSSB-PerSharedRO-r16	Not present		
msgA-SSB-SharedRO-MaskIndex-r16	Not present		
groupB-ConfiguredTwoStepRA-r16	Not present		
msgA-PRACH-RootSequenceIndex-r16 CHOICE {}	Not present		
msgA-TransMax-r16	N8		
msgA-RSRP-Threshold-r16	RSRP-Range		
msgA-RSRP-ThresholdSSB-r16	RSRP-Range		
msgA-SubcarrierSpacing-r16	Not present		
msgA-RestrictedSetConfig-r16	Not present		
ra-PrioritizationForAccessIdentityTwoStep-r16 SEQUENCE {			
ra-Prioritization-r16	RA-Prioritization		
ra-PrioritizationForAI-r16	'10'B		
}			
ra-ContentionResolutionTimer-r16	sf32		
}			

– *RACH-ConfigDedicated*

Table 4.6.3-129: *RACH-ConfigDedicated*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RACH-ConfigDedicated ::= SEQUENCE {			
cfra SEQUENCE {			
occasions SEQUENCE {			
rach-ConfigGeneric	RACH-ConfigGeneric		
ssb-perRACH-Occasion	one		
}			
resources CHOICE {			
ssb SEQUENCE {			
ssb-ResourceList SEQUENCE (SIZE(1..maxRA-SSB-Resources)) OF CFRA-SSB-Resource {	1 entry		
CFRA-SSB-Resource[1] SEQUENCE {		entry 1	
ssb	SSB-Index		
ra-PreambleIndex	8		
}			
}			
ra-ssb-OccasionMaskIndex	0		
}			
}			
}			
ra-Prioritization	Not present		
ra-PrioritizationTwoStep-r16	Not present		
cfra-TwoStep-r16 SEQUENCE {	Not present		
			2-step RA
occasionsTwoStepRA-r16 SEQUENCE {			
rach-ConfigGenericTwoStepRA-r16	RACH-ConfigGenericTwoStepRA		
ssb-PerRACH-OccasionTwoStepRA-r16			
}			
msgA-CFRA-PUSCH-r16	MsgA-PUSCH-Resource		
msgA-TransMax-r16	N10		
resourcesTwoStep-r16 SEQUENCE {			
ssb-ResourceList SEQUENCE (SIZE(1..maxRA-SSB-Resources)) OF CFRA-SSB-Resource {			
ssb	0		
ra-PreambleIndex	52	Randomly selected	
msgA-PUSCH-Resource-Index-r16	Not present		
}			
ra-ssb-OccasionMaskIndex	0		
}			
}			
}			

Condition	Explanation
2-step RA	2-step RA type Random Access

– *RACH-ConfigGeneric*

Table 4.6.3-130: *RACH-ConfigGeneric*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RACH-ConfigGeneric ::= SEQUENCE {			
prach-ConfigurationIndex	160		FR1
	149		FR2
msg1-FDM	four		FR1
	one		FR2
msg1-FrequencyStart	0		
zeroCorrelationZoneConfig	15		
preambleReceivedTargetPower	-118		
preambleTransMax	n7		
powerRampingStep	dB4		
ra-ResponseWindow	sl20		
	sl10		FR1 AND SCS15
}			

– *RACH-ConfigGenericTwoStepRA*

Table 4.6.3-130A: *RACH-ConfigGenericTwoStepRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RACH-ConfigGenericTwoStepRA-r16 ::= SEQUENCE {			
msgA-PRACH-ConfigurationIndex-r16	120		
msgA-RO-FDM-r16	four		
msgA-RO-FrequencyStart-r16	0		
msgA-ZeroCorrelationZoneConfig-r16	15		
msgA-PreamblePowerRampingStep-r16	dB0		
msgA-PreambleReceivedTargetPower-r16	-118		
msgB-ResponseWindow-r16	sl2		
preambleTransMax-r16	n10		
}			

– *RA-Prioritization*

Table 4.6.3-131: *RA-Prioritization*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RA-Prioritization::= SEQUENCE {	0		
powerRampingStepHighPriority	dB0		
	FFS		Slice_RACH
scalingFactorBI	zero	zero corresponds to 0	
	FFS		Slice_RACH
}			

Condition	Explanation
Slice_RACH	Slice specific RACH configuration

– *RA-PrioritizationForSlicing*

Table 4.6.3-131A: *RA-PrioritizationForSlicing*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RA-PrioritizationForSlicing-r17::= SEQUENCE {			
ra-PrioritizationSliceInfoList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF RA-PrioritizationSliceInfo-r17 {	1 entry		
RA-PrioritizationSliceInfo-r17[1] SEQUENCE{		entry 1	
nsagIDList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF NSAG-ID-r17 {	n entries	n is the number of NSAG values associated with the configured set of RA resources	
NSAG-ID-r17[k, k=1..n]	Set to the corresponding NSAG value used in the test case	entry [k, k=1..n]	
}			
ra-Prioritization-r17	RA-Prioritization		
}			
}			
}			

– *RadioBearerConfig*

Table 4.6.3-132: *RadioBearerConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
srb-ToAddModList	Not present		
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	1 entry		SRB1
SRB-ToAddMod[1] SEQUENCE {		entry 1	
SRB-Identity	SRB-Identity with condition SRB1		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	1 entry		SRB2, RESUME
SRB-ToAddMod[1] SEQUENCE {		entry 1	
SRB-Identity	SRB-Identity with condition SRB2		
reestablishPDCP	Not present		
	true		RESUME
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	1 entry		SRB3
SRB-ToAddMod[1] SEQUENCE {		entry 1	
srb-Identity	SRB-Identity with condition SRB3		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	2 entries		SRB_NR_PDCP REEST
SRB-ToAddMod[1] SEQUENCE {		entry 1	
SRB-Identity	SRB-Identity with condition SRB1		
reestablishPDCP	Not present		
	true		SRB_NR_PDCP AND Re-establish_PDCP
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
SRB-ToAddMod[2] SEQUENCE {		entry 2	
SRB-Identity	SRB-Identity with condition SRB2		
reestablishPDCP	Not present		
	true		SRB_NR_PDCP AND Re-establish_PDCP, REEST
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
}			
srb3-ToRelease	Not present		
drb-ToAddModList	Not present		

drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		EN-DC_DRB
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
eps-BearerIdentity	6		
}			
drb-Identity	DRB-Identity using condition DRB2		
reestablishPDCP	Not present		
	true		EN-DC_DRB AND Re-establish_PDCP
recoverPDCP	Not present		
	true		EN-DC_DRB AND Recover_PDCP
pdcp-Config	PDCP-Config		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		MCG_NR_PDCP
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
eps-BearerIdentity	12	EPS Bearer Id of default MCG DRB	
}			
drb-Identity	8	DRB Id of default MCG DRB	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		DRB1
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
}			
drb-Identity	DRB-Identity using condition DRB1		
reestablishPDCP	Not present		
	true		DRB1 AND Re-establish_PDCP
recoverPDCP	Not present		
	true		DRB1 AND Recover_PDCP
pdcp-Config	PDCP-Config		
daps-Config-r16	Not present		
	true		DRB1 AND DAPS_PDCP
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		DRB2
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		

}			
drb-Identity	DRB-Identity using condition DRB2		
reestablishPDCP	Not present		
	true		DRB2 AND Re-establish_PDCP
recoverPDCP	Not present		
	true		DRB2 AND Recover_PDCP
pdcp-Config	PDCP-Config		
daps-Config-r16	Not present		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	n entries	n is the number of DRBs established before RRC resume or RRC re-establishment	RESUME, REEST
DRB-ToAddMod[k, k=1..n] SEQUENCE {		entry [k, k=1..n]	
cnAssociation	Not present		
drb-Identity	DRB-Identity with condition DRBk		
reestablishPDCP	true		
recoverPDCP	Not present		
pdcp-Config	Not present		
daps-Config-r16	Not present		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		DRBn
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
	SDAP-Config with conditionNo-defaultDRB		SCG_DRB
}			
drb-Identity	DRB-Identity with condition DRBn		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
	PDCP-Config with condition Split		Split
}			
}			
drb-ToReleaseList	Not present		
securityConfig	Not present		SRB1
securityConfig SEQUENCE {			
securityAlgorithmConfig	SecurityAlgorithmConfig		
keyToUse	master		
	secondary		SRB3, EN-DC_DRB, SecondaryKeys
}			
}			

Condition	Explanation
SRB3	Establishment of SRB3
MCG_NR_PDCP	EN-DC MCG DRB configured or reconfigured with NR PDCP
SRB_NR_PDCP	EN-DC SRB1 and SRB2 configured with NR PDCP
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
DRB1	Establishment of DRB1
DRB2	Establishment of DRB2
DRBn	Establishment of DRBn
EN-DC_DRB	EN-DC DRB configured on SCG
Re-establish_PDCP	Re-establishment of PDCP
Recover_PDCP	Recovery of PDCP
RESUME	Used in RRCResume Message
REEST	The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure.
SecondaryKeys	NR-DC SCG or MCG DRB configured or reconfigured with secondary security keys
Split	Split PDCP: more than one RLC
DAPS_PDCP	Used when the bearer is configured as DAPS bearer
SCG_DRB	Used when the bearer is configured as an SCG bearer in either NR-DC or NE-DC

– *RadioLinkMonitoringConfig*

Table 4.6.3-133: *RadioLinkMonitoringConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioLinkMonitoringConfig ::= SEQUENCE {			
failureDetectionResourcesToAddModList SEQUENCE (SIZE(1..maxNrofFailureDetectionResources)) OF RadioLinkMonitoringRS {	1 entry		
RadioLinkMonitoringRS[1] SEQUENCE {		entry 1	
radioLinkMonitoringRS-Id	RadioLinkMonitoringRS-Id		
purpose	rlf		
detectionResource CHOICE {			
ssb-Index	SSB-Index		
}			
}			
}			
failureDetectionResourcesToReleaseList	Not present		
beamFailureInstanceMaxCount	Not present		
beamFailureDetectionTimer	Not present		
}			

– *RadioLinkMonitoringRS-Id*

Table 4.6.3-134: *RadioLinkMonitoringRS-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioLinkMonitoringRS-Id	0		

– *RAN-AreaCode*

Table 4.6.3-135: *RAN-AreaCode*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RAN-AreaCode	1		

– *RateMatchPattern*

Table 4.6.3-136: *RateMatchPattern*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RateMatchPattern ::= SEQUENCE {			
rateMatchPatternId	RateMatchPatternId		
patternType CHOICE {			
controlResourceSet	ControlResourceSetId		
}			
subcarrierSpacing	SubcarrierSpacing		
dummy	semiStatic	Dummy IE value	
}			

– *RateMatchPatternId*

Table 4.6.3-137: *RateMatchPatternId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RateMatchPatternId	0		

– *RateMatchPatternLTE-CRS*

Table 4.6.3-138: *RateMatchPatternLTE-CRS*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RateMatchPatternLTE-CRS ::= SEQUENCE {			
FFS			
}			

– *ReferenceTimeInfo*

Table 4.6.3-138A: *ReferenceTimeInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReferenceTimeInfo-r16 ::= SEQUENCE {			
time-r16 ::= SEQUENCE {			
refDays-r16	obtained from the local clock		
refSeconds-r16	obtained from the local clock		
refMilliSeconds-r16	obtained from the local clock		
refTenNanoSeconds-r16	obtained from the local clock		
}			
uncertainty-r16	not present		
timeInfoType-r16	localClock		
referenceSFN-r16	SFN of PCell		
}			

– *RejectWaitTime*

Table 4.6.3-139: *RejectWaitTime*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RejectWaitTime	1		

– *RepetitionSchemeConfig*

Table 4.6.3-139A: *RepetitionSchemeConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RepetitionSchemeConfig-r16 ::= CHOICE {			
FFS			
}			

– *ReportConfigId*

Table 4.6.3-140: *ReportConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigId	1		

– *ReportConfigInterRAT*

Table 4.6.3-141: *ReportConfigInterRAT (InterRAT-Thres, NR-Thres)*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigInterRAT ::= SEQUENCE {			
reportType CHOICE {			
periodical SEQUENCE {			PERIODICAL OR PERIODICAL_UTRA
reportInterval	ReportInterval		
reportAmount	infinity		
reportQuantity SEQUENCE {		UE shall ignore the value(s) provided in reportQuantity if reportQuantityUTRA-FDD-r16 is configured.	
rsrp	true		
rsrq	true		
sinr	false		
}			
maxReportCells	8		
reportQuantityUTRA-FDD-r16	Not present		
reportQuantityUTRA-FDD-r16 SEQUENCE {			PERIODICAL_UTRA
cpich-RSCP	true		
cpich-EcN0	false		
}			
includeCommonLocationInfo-r16	Not present		
includeBT-Meas-r16	Not present		
includeWLAN-Meas-r16	Not present		
}			
eventTriggered SEQUENCE {			EVENT_B1 OR EVENT_B2 OR EVENT_B1_UTRA OR EVENT_B2_UTRA
eventId CHOICE {			
eventB1 SEQUENCE {			EVENT_B1
b1-ThresholdEUTRA CHOICE {			
rsrp	InterRAT-Thres	INTEGER (0..97)	
}			
reportOnLeave	false		
Hysteresis	0 (0 dB)	The actual value is field value * 0.5 dB	
timeToTrigger	ms0		
}			
eventB2 SEQUENCE {			EVENT_B2
b2-Threshold1 CHOICE {			
rsrp	*NR-Thres*	INTEGER(0..127)	
}			
b2-Threshold2EUTRA CHOICE {			
rsrp	InterRAT-Thres	INTEGER (0..97)	
}			
reportOnLeave	FALSE		
Hysteresis	3 (1.5dB)	The actual value is field value * 0.5 dB	
timeToTrigger	ms1024		
}			

eventB1-UTRA-FDD-r16 SEQUENCE {			EVENT_B1_UTRA
b1-ThresholdUTRA-FDD-r16 CHOICE {			
utra-FDD-EcN0-r16	InterRAT-Thres		
}			
reportOnLeave-r16	false		
hysteresis-r16	0		
timeToTrigger-r16	ms0		
}			
eventB2-UTRA-FDD-r16 SEQUENCE {			EVENT_B2_UTRA
b2-Threshold1-r16 CHOICE {			
rsrp	NR-Thres	INTEGER(0..127)	
}			
b2-Threshold2UTRA-FDD-r16 CHOICE {			
utra-FDD-EcN0-r16	InterRAT-Thres		
}			
reportOnLeave-r16	false		
hysteresis-r16	0		
timeToTrigger-r16	ms0		
}			
}			
rsType	ssb		
reportInterval	ms120		
reportAmount	r2		
reportQuantity SEQUENCE {		UE shall ignore the value(s) provided in reportQuantity if reportQuantityUTRA-FDD-r16 is configured.	
Rsrp	true		
rsrq	true		
sinr	false		
}			
maxReportCells	8		
reportQuantityUTRA-FDD-r16	Not present		
reportQuantityUTRA-FDD-r16 SEQUENCE {			EVENT_B1_UTRA OR EVENT_B2_UTRA
cpich-RSCP	false		
cpich-EcN0	true		
}			
includeCommonLocationInfo-r16	Not present		
includeBT-Meas-r16	Not present		
includeWLAN-Meas-r16	Not present		
includeSensor-Meas-r16	Not present		
}			
reportCGI SEQUENCE {			CGI
cellForWhichToReportCGI	EUTRA-PhysCellId		
}			
}			
}			

Condition	Explanation
EVENT_B1	Configuration of Event B1 on E-UTRA carrier
EVENT_B2	Configuration of Event B2 on E-UTRA carrier
EVENT_B1_UTRA	Configuration of Event B1 on UTRA carrier
EVENT_B2_UTRA	Configuration of Event B2 on UTRA carrier
CGI	Configuration of CGI measurement
PERIODICAL	Configuration of periodical reporting on E-UTRA carrier
PERIODICAL_UTRA	Configuration of periodical reporting on UTRA carrier

– *ReportConfigNR*

Table 4.6.3-142: *ReportConfigNR*(Thres1, Thres2)

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigNR ::= SEQUENCE {			
reportType CHOICE {			
periodical SEQUENCE {			PERIODICAL
rsType	ssb		
reportInterval	ReportInterval		
reportAmount	infinity		
reportQuantityCell SEQUENCE {			
rsrp	true		
rsrq	true		
sinr	false		
	true		pc_ss_SINR_Meas
}			
maxReportCells	8		
reportQuantityRS-Indexes	Not present		
maxNrofRS-IndexesToReport	Not present		
includeBeamMeasurements	false		
useWhiteCellList	false		
measRSSI-ReportConfig-r16	Not present		
includeCommonLocationInfo-r16	Not present		
includeBT-Meas-r16	Not present		
includeBT-Meas-r16 CHOICE {			MDT_BT
setup	BT-NameList		
}			
includeWLAN-Meas-r16	Not present		
includeWLAN-Meas-r16 CHOICE {			MDT_WLAN
setup	WLAN-NameList		
}			
includeSensor-Meas-r16	Not present		
includeSensor-Meas-r16 CHOICE {			MDT_SENSOR
setup	Sensor-NameList		
}			
ul-DelayValueConfig-r16	Not present		
ul-DelayValueConfig-r16 CHOICE {			MDT_DELAY
setup	UL-DelayValueConfig		
}			
reportAddNeighMeas-r16	Not present		
}			
eventTriggered SEQUENCE {			
eventId CHOICE {			
eventA1 SEQUENCE {			EVENT_A1
a1-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
eventA2 SEQUENCE {			EVENT_A2
a2-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		

}			
eventA3 SEQUENCE {			EVENT_A3
a3-Offset CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	false		
}			
eventA4 SEQUENCE {			EVENT_A4
a4-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	false		
}			
eventA5 SEQUENCE {			EVENT_A5
a5-Threshold1 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
a5-Threshold2 CHOICE {			
rsrp	Thres2	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	false		
}			
eventA6 SEQUENCE {			EVENT_A6
a6-Offset CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	false		
}			
}			
rsType	ssb		
reportInterval	ReportInterval		
reportAmount	r2		
reportQuantityCell SEQUENCE {			
rsrp	true		
rsrq	true		
sinr	false		
	true		pc_ss_SINR_Meas
}			

maxReportCells	8		
reportQuantityRS-Indexes	Not present		
maxNrofRS-IndexesToReport	Not present		
includeBeamMeasurements	false		
reportAddNeighMeas	Not present		
measRSSI-ReportConfig-r16	Not present		
	MeasRSSI-ReportConfig		SharedSpectrum
useT312-r16	Not present		
includeCommonLocationInfo-r16	Not present		MDT
includeBT-Meas-r16	Not present		
includeBT-Meas-r16 CHOICE {			MDT_BT
setup	BT-NameList		
}			
includeWLAN-Meas-r16	Not present		
includeWLAN-Meas-r16 CHOICE {			MDT_WLAN
setup	WLAN-NameList		
}			
includeSensor-Meas-r16	Not present		
includeSensor-Meas-r16 CHOICE {			MDT_SENSOR
setup	Sensor-NameList		
}			
}			
reportCGI SEQUENCE {			CGI
cellForWhichToReportCGI	PhysCellId		
}			
reportSFTD SEQUENCE {			SFTD_NEIGHBOUR or SFTD_PSCELL
reportSFTD-Meas	false		SFTD_NEIGHBOUR
	true		SFTD_PSCELL
reportRSRP	false		
reportSFTD-NeighMeas	true		SFTD_NEIGHBOUR
	Not present		SFTD_PSCELL
drx-SFTD-NeighMeas	Not present		
cellsForWhichToReportSFTD	Not present		
}			
condTriggerConfig SEQUENCE {			CHO, CPC
condEventId CHOICE {			
condEventA3 SEQUENCE {			CHO AND EVENT_A3
a3-Offset CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
condEventA5 SEQUENCE {			CHO AND EVENT_A5
a5-Threshold1 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
a5-Threshold2 CHOICE {			

rsrp	Thres2	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
}			
rsType-r16	ssb		
}			
}			
}			

Condition	Explanation
EVENT_A1	Configuration of Event A1
EVENT_A2	Configuration of Event A2
EVENT_A3	Configuration of Event A3
EVENT_A4	Configuration of Event A4
EVENT_A5	Configuration of Event A5
EVENT_A6	Configuration of Event A6
PERIODICAL	Configuration of periodical reporting
CGI	Configuration of CGI measurement
CHO	Configuration of conditional handover
CPC	Conditional PScell change
MDT	Configuration of MDT
MDT_BT	Configuration of MDT including Bluetooth measurements
MDT_WLAN	Configuration of MDT including WLAN measurements
MDT_SENSOR	Configuration of MDT including Sensor measurements
MDT_DELAY	Configuration of UL PDCP Packet Delay per DRB
SFTD_NEIGHBOUR	Configurations of SFTD measurement on NR neighbour
SFTD_PSCELL	Configurations of SFTD measurement on NR PSCell
SharedSpectrum	Operation with shared spectrum channel access

– *ReportConfigNR-SL*

Table 4.6.3-142A: *ReportConfigNR-SL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigNR-SL-r16 ::= SEQUENCE {			
reportType-r16 CHOICE {			
periodical-r16 SEQUENCE {			PERIODICAL
reportInterval-r16	ReportInterval		
reportAmount-r16	r2		
reportQuantity-r16 SEQUENCE {			
cbr-r16	true		
}			
eventTriggered-r16 SEQUENCE {			EVENT_C1, EVENT_C2
eventId-r16 CHOICE {			
eventC1 SEQUENCE {			EVENT_C1
c1-Threshold-r16	SL-CBR-r16		
hysteresis-r16	Hysteresis		
timeToTrigger-r16	TimeToTrigger		
}			
eventC2 SEQUENCE {			EVENT_C2
c2-Threshold-r16	SL-CBR-r16		
hysteresis-r16	Hysteresis		
timeToTrigger-r16	TimeToTrigger		
}			
}			
}			
}			
}			

Condition	Explanation
PERIODICAL	Configuration of periodical reporting
EVENT_C1	Configuration of Event C1
EVENT_C2	Configuration of Event C2

– *ReportConfigToAddModList*

Table 4.6.3-143: *ReportConfigToAddModList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigToAddModList ::= SEQUENCE(SIZE (1..maxReportConfigId)) OF ReportConfigToAddMod {	1 entry		
ReportConfigToAddMod[1] SEQUENCE {		entry 1	
reportConfigId	ReportConfigId		
reportConfig CHOICE {			
reportConfigNR	ReportConfigNR		
reportConfigInterRAT	ReportConfigInterRAT		InterRAT
}			
}			
}			

Condition	Explanation
InterRAT	Configuration with at least one NR PCell and one or more E-UTRA neighbour cell(s)

– *ReportInterval*

Table 4.6.3-144: *ReportInterval*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportInterval	ms480		

– *ReselectionThreshold*

Table 4.6.3-145: *ReselectionThreshold*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReselectionThreshold	FFS		

– *ReselectionThresholdQ*

Table 4.6.3-146: *ReselectionThresholdQ*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReselectionThresholdQ	FFS		

– *ResumeCause*

Table 4.6.3-147: *ResumeCause*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ResumeCause	mt-Access		

– *RLC-BearerConfig*

Table 4.6.3-148: *RLC-BearerConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RLC-BearerConfig ::= SEQUENCE {			
logicalChannelIdentity	LogicalChannelIdentity with condition DRBn		DRBn
	LogicalChannelIdentity with condition SRB1		SRB1
	LogicalChannelIdentity with condition SRB2		SRB2
	LogicalChannelIdentity with condition SRB3		SRB3
servedRadioBearer CHOICE {			
srb-Identity	SRB-Identity with condition SRB1		SRB1
	SRB-Identity with condition SRB2		SRB2
	SRB-Identity with condition SRB3		SRB3
drb-Identity	DRB-Identity with condition DRBn		DRBn
}			
servedRadioBearer	Not present		RESUME
reestablishRLC	Not present		
	true		Re-establish_RLC, RESUME
rlc-Config	RLC-Config using condition AM		AM
	RLC-Config using condition UM.		UM
	Not present	Use default parameters as per TS 38.331 [6] clause 9.2.1	SRB1, SRB2, SRB3, RESUME
mac-LogicalChannelConfig	LogicalChannelConfig using condition HI		AM
	LogicalChannelConfig using condition LO		UM
	LogicalChannelConfig using condition SRBn	n= 1, 2, 3 for SRB1, SRB2, SRB3 resp.	SRB1, SRB2, SRB3, RESUME
rlc-Config-v1610	Not present		
}			

Condition	Explanation
AM	RLC AM DRB
UM	RLC UM DRB
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3
DRBn	Establishment of DRBn
Re-establish_RLC	Re-establishment of RLC
RESUME	Used in RRCResume Message

– *RLC-Config*

Table 4.6.3-149: *RLC-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RLC-Config ::= CHOICE {			
am SEQUENCE {			AM
ul-AM-RLC SEQUENCE {			
sn-FieldLength	size18		
	size12		pc_RedCap_r17
t-PollRetransmit	ms80		FR1
	ms30		FR2
pollPDU	p32768		
pollByte	kB750		
maxRetxThreshold	t8		
}			
dl-AM-RLC SEQUENCE {			
sn-FieldLength	size18		
t-Reassembly	ms80		FR1
	ms30		FR2
t-StatusProhibit	ms30		
}			
}			
um-Bi-Directional SEQUENCE {			UM
ul-UM-RLC SEQUENCE {			
sn-FieldLength	size12		pc_um_WIthLongSN
	size6		NOT pc_um_WIthLongSN AND pc_um_WithShortSN
}			
dl-UM-RLC SEQUENCE {			
sn-FieldLength	size12		pc_um_WIthLongSN
	size6		NOT pc_um_WIthLongSN AND pc_um_WithShortSN
t-Reassembly	ms80		FR1
	ms30		FR2
}			
}			
}			

Condition	Explanation
AM	RLC AM
UM	RLC UM

– *RLF-TimersAndConstants*

Table 4.6.3-150: *RLF-TimersAndConstants*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RLF-TimersAndConstants ::= SEQUENCE {			
t310	ms1000		
n310	n1		
n311	n1		
t311	ms1000		
}			

– *RMTC-Config*

Table 4.6.3-150A: RMTC-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RMTC-Config-r16 ::= SEQUENCE {			
rmtc-Periodicity-r16	FFS		
rmtc-SubframeOffset-r16	FFS		
}			

– *RNTI-Value*

Table 4.6.3-151: *RNTI-Value*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RNTI-Value	SS arbitrarily selects a value between '0001'H and 'FFEF'H		
	SS arbitrarily selects a value between '0001'H and 'FFEF'H different from the MCG RNTI-Value.		NR-DC_SCG

Condition	Explanation
NR-DC_SCG	Add SCG (NR-DC)

– *RSRP-Range*

Table 4.6.3-152: *RSRP-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RSRP-Range	0	For measurements, 0 means L3 SS-RSRP<-156dBm according to Table 10.1.6.1-1 in TS 38.133 [13]. For thresholds, 0 means -156dBm.	

– *RSRQ-Range*

Table 4.6.3-153: *RSRQ-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RSRQ-Range	0	For measurements, 0 means SS-RSRQ<-43dB according to Table 10.1.11.1-1 in TS 38.133 [14]. For thresholds, 0 means -43.5dB.	

– *RSSI-Range*

Table 4.6.3-153A: *RSSI-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RSSI-Range-r16	FFS		

– *RxTxTimeDiff*

Table 4.6.3-153B: *RxTxTimeDiff*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RxTxTimeDiff-r17 ::= SEQUENCE {			
FFS			
}			

– *SCellActivationRS-Config*

Table 4.6.3-153C: *SCellActivationRS-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SCellActivationRS-Config-r17 ::= SEQUENCE {			
FFS			
}			

– *SCellActivationRS-ConfigId*

Table 4.6.3-153D: *SCellActivationRS-ConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SCellActivationRS-ConfigId-r17	FFS		

– *SCellIndex*

Table 4.6.3-154: *SCellIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SCellIndex	1		
	2		EN-DC

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC

– *SchedulingRequestConfig*

Table 4.6.3-155: *SchedulingRequestConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestConfig ::= SEQUENCE {			
schedulingRequestToAddModList SEQUENCE (SIZE(1..maxNrofSR-ConfigPerCellGroup)) OF SSchedulingRequestToAddMod {	1 entry		
SchedulingRequestToAddMod[1] SEQUENCE {		entry 1	
schedulingRequestId	SchedulingRequestId		
sr-ProhibitTimer	Not present		
sr-TransMax	n16		
}			
}			
schedulingRequestToReleaseList	Not present		
}			

– *SchedulingRequestId*

Table 4.6.3-156: *SchedulingRequestId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestId	0		

– *SchedulingRequestResourceConfig*

Table 4.6.3-157: *SchedulingRequestResourceConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestResourceConfig ::= SEQUENCE {			
schedulingRequestResourceId	SchedulingRequestResourceId		
schedulingRequestID	SchedulingRequestId		
periodicityAndOffset CHOICE {			
sl10	9	With SCS = kHz15 results in repetition every 10 ms	SCS15
sl20	9	With SCS = kHz30 results in repetition every 10 ms	SCS30
sl40	19	With SCS = kHz60 results in repetition every 10 ms	FR1 AND SCS60
	9	With SCS = kHz60 results in repetition every 10 ms	FR2 AND SCS60
sl80	9	With SCS = kHz120 results in repetition every 10 ms	SCS120
}			
resource	0	ID of the PUCCH resource as configured by PUCCH-Config (Table 4.6.3-84)	
}			

– *SchedulingRequestResourceId*

Table 4.6.3-158: *SchedulingRequestResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestResourceId	1		

– *ScramblingId*

Table 4.6.3-159: *ScramblingId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ScramblingId	0		

– *SCS-SpecificCarrier*

Table 4.6.3-160: *SCS-SpecificCarrier*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SCS-SpecificCarrier ::= SEQUENCE {			
offsetToCarrier	offsetToCarrier as defined for the DL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	DL_PointA
	offsetToCarrier as defined for the UL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	UL_PointA
	offsetToCarrier as defined for the SL NRf1 frequency	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_PointA
subcarrierSpacing	SubcarrierSpacing		
carrierBandwidth	carrierBandwidth as defined for the frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	
txDirectCurrentLocation	Not present		
}			

Condition	Explanation
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink
SL_PointA	IE absoluteFrequencyPointA for sidelink

– *SDAP-Config*

Table 4.6.3-161: *SDAP-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SDAP-Config ::= SEQUENCE {			
pdu-Session	The same value as the PDU session ID IE of the contained message		
sdap-HeaderDL	absent		
sdap-HeaderUL	present		
defaultDRB	true		
	false		No-defaultDRB
mappedQoS-FlowsToAdd SEQUENCE (SIZE (1..maxNrofQFIs)) OF QFI {	n entries		
QFI[n]	The list of QFIs of the Authorized QoS flow descriptions IE of the contained 5GSM message	entry n	
}			
mappedQoS-FlowsToRelease	Not present		
}			

Condition	Explanation
No-defaultDRB	The defaultDRB value is false.

– *SearchSpace*

Table 4.6.3-162: *SearchSpace*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SearchSpace ::= SEQUENCE {			
searchSpaceId	SearchSpaceId with condition CSS		CSS
	SearchSpaceId with condition USS		USS
	SearchSpaceId with condition SISS		SISS
controlResourceSetId	ControlResourceSetId		
	ControlResourceSetId with condition Common0		CSS, SISS
monitoringSlotPeriodicityAndOffset CHOICE {			
sl1	NULL		
sl10	5		SISS
}			
duration	Not present	1 slot per default	
	2		SISS
monitoringSymbolsWithinSlot	10000000000000		
nrofCandidates SEQUENCE {			
aggregationLevel1	n0		
aggregationLevel2	n4		FR1
	n3		FR2
aggregationLevel4	n2		
aggregationLevel8	n1		
aggregationLevel16	n0		
}			
searchSpaceType CHOICE {			
common SEQUENCE {			CSS, SISS
dci-Format0-0-AndFormat1-0 SEQUENCE {			
}			
dci-Format2-0	Not present		
dci-Format2-1	Not present		
dci-Format2-2	Not present		
dci-Format2-3	Not present		
}			
ue-Specific SEQUENCE {			USS
dci-Formats	formats0-0-And-1-0		Short_DCI
dci-Formats	formats0-1-And-1-1		
}			
}			
}			

Condition	Explanation
CSS	Common SearchSpace
USS	UE-Specific SearchSpace
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS
SISS	SearchSpace for SI

– *SearchSpaceId*

Table 4.6.3-163: *SearchSpaceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SearchSpaceID	1		CSS
	2		USS
	3		SISS

Condition	Explanation
CSS	Common SearchSpace
USS	UE-Specific SearchSpace
SISS	SearchSpace for SI

– *SearchSpaceZero*

Table 4.6.3-164: *SearchSpaceZero*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SearchSpaceZero	0	Index addressing SearchSpace#0 parameter set in Tables 13.11 .. 13.15 of TS 38.213 [22]	

– *SecurityAlgorithmConfig*

Table 4.6.3-165: *SecurityAlgorithmConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SecurityAlgorithmConfig ::= SEQUENCE {			
cipheringAlgorithm	nea0		RF OR RRM
	Set according to PIXIT px_NR_CipheringAlgorithm	see TS 38.523-3 [23]	SIG
integrityProtAlgorithm	nia2		
	Set according to PIXIT px_NR_IntegrityProtAlgorithm	see TS 38.523-3 [23]	SIG
}			

– *SemiStaticChannelAccessConfig*

Table 4.6.3-165A: *SemiStaticChannelAccessConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SemiStaticChannelAccessConfig-r16 ::= SEQUENCE {			
FFS			
}			

– *SemiStaticChannelAccessConfigUE*

Table 4.6.3-165BA: *SemiStaticChannelAccessConfigUE*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SemiStaticChannelAccessConfigUE-r17 ::= SEQUENCE {			
FFS			
}			

– *Sensor-LocationInfo*

Table 4.6.3-165B: *Sensor-LocationInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Sensor-LocationInfo-r16 ::= SEQUENCE {			
sensor-MeasurementInformation-r16	Not checked	OCTET STRING	
sensor-MotionInformation-r16	Not checked	OCTET STRING	
}			

– *ServCellIndex*

Table 4.6.3-166: *ServCellIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServCellIndex	0		
	1		EN-DC, NR-DC_SCG

Condition	**Explanation**
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
NR-DC_SCG	Add SCG (NR-DC)

– *ServingCellConfig*

Table 4.6.3-167: *ServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServingCellConfig ::= SEQUENCE {			
tdd-UL-DL-ConfigurationDedicated	Not present		
initialDownlinkBWP	BWP-DownlinkDedicated		
	BWP-DownlinkDedicated with condition Scell_Add		Scell_Add
	Not present		MEAS, RESUME
downlinkBWP-ToReleaseList	Not present		
downlinkBWP-ToAddModList	Not present		
firstActiveDownlinkBWP-Id	BWP-Id		
	Not present		MEAS
bwp-InactivityTimer	Not present		
defaultDownlinkBWP-Id	BWP-Id		
	Not present		MEAS, RESUME
uplinkConfig	Not present		MEAS, No_UL
uplinkConfig SEQUENCE {			
initialUplinkBWP	BWP-UplinkDedicated		
	BWP-UplinkDedicated with condition SUL_NUL		PUSCH_PUCCH_ON_SUL
	BWP-UplinkDedicated with condition RESUME		RESUME
uplinkBWP-ToReleaseList	Not present		
uplinkBWP-ToAddModList	Not present		
firstActiveUplinkBWP-Id	BWP-Id		
pusch-ServingCellConfig	Not present		RESUME
pusch-ServingCellConfig CHOICE {			
setup	PUSCH-ServingCellConfig		
}			
carrierSwitching	Not present		
powerBoostPi2BPSK	Not present		
uplinkChannelBW-PerSCS-List	Not present		
enablePL-RS-UpdateForPUSCH-SRS-r16	Not present		
enableDefaultBeamPL-ForPUSCH0-0-r16	Not present		
enableDefaultBeamPL-ForPUCCH-r16	Not present		
enableDefaultBeamPL-ForSRS-r16	Not present		
uplinkTxSwitching-r16	Not present		
mpr-PowerBoost-FR2-r16	Not present		
}			
supplementaryUplink	Not present		
supplementaryUplink SEQUENCE {			PUSCH_PUCCH_ON_SUL
initialUplinkBWP	BWP-UplinkDedicated		
	BWP-UplinkDedicated with condition RESUME		RESUME
uplinkBWP-ToReleaseList	Not present		
uplinkBWP-ToAddModList	Not present		
firstActiveUplinkBWP-Id	BWP-Id		
pusch-ServingCellConfig CHOICE {			
setup	PUSCH-ServingCellConfig		
}			
carrierSwitching	Not present		
powerBoostPi2BPSK	Not present		
uplinkChannelBW-PerSCS-List	Not present		
enablePL-RS-UpdateForPUSCH-SRS-r16	Not present		
enableDefaultBeamPL-ForPUSCH0-0-r16	Not present		
enableDefaultBeamPL-ForPUCCH-r16	Not present		
enableDefaultBeamPL-ForSRS-r16	Not present		
uplinkTxSwitching-r16	Not present		

mpr-PowerBoost-FR2-r16	Not present		
}			
pdcch-ServingCellConfig CHOICE {			
setup	PDCCH-ServingCellConfig		
}			
pdcch-ServingCellConfig	Not present		MEAS, RESUME
pdsch-ServingCellConfig CHOICE {			
setup	PDSCH-ServingCellConfig		
}			
pdsch-ServingCellConfig	Not present		MEAS, RESUME
csi-MeasConfig	Not present		
sCellDeactivationTimer	Not present		
crossCarrierSchedulingConfig	Not present		
tag-Id	0		
dummy1	Not present		
pathlossReferenceLinking	Not present		
servingCellMO	Not present		
	MeasObjectId		MEAS
}			

Condition	Explanation
PUSCH_PUCCH_ON_SUL	For the purpose of SUL test under condition that supplementary uplink is configured with both PUSCH and PUCCH on SUL carrier.
MEAS	A NR or EN-DC measurement is configured.
No_UL	No uplink CA
RESUME	Used in RRCResume Message
Scell_Add	Add SCell

– *ServingCellConfigCommon*

Table 4.6.3-168: *ServingCellConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServingCellConfigCommon ::= SEQUENCE {			
physCellId	PhysCellId		
downlinkConfigCommon	DownlinkConfigCommon		
	DownlinkConfigCommon with condition SCell_add		SCell_add
uplinkConfigCommon	UplinkConfigCommon		
	Not present		No_UL
supplementaryUplinkConfig	Not present		
n-TimingAdvanceOffset	Not present		
ssb-PositionsInBurst CHOICE {			
shortBitmap	0100		FR1 AND SSB#1 AND (2.3GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.3 GHZ)
	1000		FR1 AND SSB#0 AND (2.3GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.3 GHz)
mediumBitmap	01000000		FR1 AND SSB#1 AND (2.3GHz<FREQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GHz)
	10000000		FR1 AND SSB#0 AND (2.3GHz<FREQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GHz)
longBitmap	01000000000000000000000000000000000000000000000000000000000000000000000000000000		FR2 AND SSB#1
	10000000000000000000000000000000000000000000000000000000000000000000000000000000		FR2 AND SSB#0
}			
ssb-periodicityServingCell	ms20		
dmrs-TypeA-Position	pos2		
lte-CRS-ToMatchAround	Not present		
rateMatchPatternToAddModList	Not present		
rateMatchPatternToReleaseList	Not present		

ssbSubcarrierSpacing	SubcarrierSpacing	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. Value SS block SCS.	
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL-ConfigCommon		TDD
	Not present		FDD
ss-PBCH-BlockPower	0		
channelAccessMode-r16	Not present		
channelAccessMode-r16 CHOICE {			SharedSpectrum
dynamic	NULL		
}			
discoveryBurstWindowLength-r16	Not present		
ssb-PositionQCL-r16	Not present		
	SSB-PositionQCL-Relation-r16		SharedSpectrum
highSpeedConfig-r16	Not present		
	HighSpeedConfig-r16		HST
}			

Condition	Explanation
FREQ<=2.3GHz	Frequency range <= 2.3GHz
2.3GHz<FREQ<=3GHz	Frequency range > 2.3GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
No_UL	No uplink CA
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2
SharedSpectrum	Operation with shared spectrum channel access
HST	For HST test

– *ServingCellConfigCommonSIB*

Table 4.6.3-169: *ServingCellConfigCommonSIB*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServingCellConfigCommonSIB ::= SEQUENCE {			
downlinkConfigCommon	DownlinkConfigCommon SIB		
uplinkConfigCommon	UplinkConfigCommonSIB		
supplementaryUplink	Not present		
	UplinkConfigCommonSIB with condition SUL_SUL		SUL
n-TimingAdvanceOffset	Not present		
ssb-PositionsInBurst SEQUENCE {			
inOneGroup	'0100 0000'B	When carrier frequency is smaller than or equal to 3 GHz, only the 4 leftmost bits are valid	SSB#1
	'1000 0000'B		SSB#0
groupPresence	Not present		FR1
	'1000 0000'B		FR2
}			
ssb-PeriodicityServingCell	ms20		
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL-ConfigCommon		TDD
	Not present		FDD
ss-PBCH-BlockPower	0		
channelAccessMode-r16	Not present		
channelAccessMode-r16 CHOICE {			SharedSpectrum
dynamic	NULL		
}			
discoveryBurstWindowLength-r16	Not present		
highSpeedConfig-r16	Not present		
	HighSpeedConfig-r16		HST
}			

Condition	Explanation
SUL	Supplementary uplink
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2
SharedSpectrum	Operation with shared spectrum channel access
HST	For HST test

– *ShortI-RNTI-Value*

Table 4.6.3-170: *ShortI-RNTI-Value*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ShortI-RNTI-Value	SS arbitrarily selects a value between '00 0001'H and 'FF FFFF'H.	BIT STRING (SIZE(24))	

– *ShortMAC-I*

Table 4.6.3-171: *ShortMAC-I*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ShortMAC-I	The 16 least significant bits of the MAC-I calculated using the security configuration of the source PCell.		

– *SINR-Range*

Table 4.6.3-172: *SINR-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SINR-Range	0	For measurements, 0 means SS-SINR<-23dB according to Table 10.1.16.1-1 in TS 38.133 [14]. For thresholds, 0 means -23dB.	

– *SI-RequestConfig*

Table 4.6.3-172A: *SI-RequestConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SI-RequestConfig ::= SEQUENCE {			
FFS			
}			

– *SI-SchedulingInfo*

Table 4.6.3-173: *SI-SchedulingInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SI-SchedulingInfo ::= SEQUENCE {			
schedulingInfoList SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo {	n entries See subclause 4.4.3.1		
SchedulingInfo[n] SEQUENCE {		entry n	
si-BroadcastStatus	broadcasting		
si-Periodicity	See subclause 4.4.3.1		
sib-MappingInfo SEQUENCE (SIZE (1..maxSIB)) OF SIB-TypeInfo {	n entries		
SIB-TypeInfo[1] SEQUENCE {		entry n	
type	See subclause 4.4.3.1		
valueTag	0		
areaScope	Not present		
}			
}			
}			
}			
si-WindowLength	s80		FR1
	s160		FR2
si-RequestConfig	Not present		
si-RequestConfigSUL	Not present		
systemInformationAreaID	’0000 0000 0000 0000 0000 0001’B		
}			

– *SK-Counter*

Table 4.6.3-173A: *SK-Counter*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SK-Counter	0		

– *SlotFormatCombinationsPerCell*

Table 4.6.3-174: *SlotFormatCombinationsPerCell*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SlotFormatCombinationsPerCell ::= SEQUENCE {			
FFS			
}			

– *SlotFormatIndicator*

Table 4.6.3-175: *SlotFormatIndicator*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SlotFormatIndicator ::= SEQUENCE {			
FFS			
}			

– *S-NSSAI*

Table 4.6.3-176: *S-NSSAI*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
S-NSSAI ::= CHOICE {			
FFS			
}			

– *SpeedStateScaleFactors*

Table 4.6.3-177: *SpeedStateScaleFactors*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SpeedStateScaleFactors ::= SEQUENCE {			
FFS			
}			

– *SPS-Config*

Table 4.6.3-179: *SPS-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SPS-Config ::= SEQUENCE {			
FFS			
}			

– *SPS-ConfigIndex*

Table 4.6.3-179A: *SPS-ConfigIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SPS-ConfigIndex-r16	FFS		

– *SPS-PUCCH-AN*

Table 4.6.3-179B: *SPS-PUCCH-AN*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SPS-PUCCH-AN-r16 ::= SEQUENCE {			
FFS			
}			

– *SPS-PUCCH-AN-List*

Table 4.6.3-179C: *SPS-PUCCH-AN-List*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SPS-PUCCH-AN-List-r16 ::= SEQUENCE {			
FFS			
}			

– *SRB-Identity*

Table 4.6.3-180: *SRB-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SRB-Identity	1		SRB1
	2		SRB2
	3		SRB3

Condition	Explanation
SRB1	SRB1
SRB2	SRB2
SRB3	SRB3

– *SRS-CarrierSwitching*

Table 4.6.3-181: *SRS-CarrierSwitching*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-CarrierSwitching ::= SEQUENCE {			
FFS			
}			

– *SRS-Config*

Table 4.6.3-182: *SRS-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-Config ::= SEQUENCE {			
srs-ResourceSetToReleaseList	Not present		
srs-ResourceSetToAddModList SEQUENCE (SIZE(0..maxNrofSRS-ResourceSets)) OF SRS-ResourceSet {	1 entry		
SRS-ResourceSet[1] SEQUENCE {		entry 1	
srs-ResourceSetId	0		
srs-ResourceIdList SEQUENCE (SIZE(1..maxNrofSRS-ResourcesPerSet)) OF SRS-ResourceId {	1 entry		
SRS-ResourceId[1]	0	entry 1	
}			
resourceType CHOICE {			
aperiodic SEQUENCE {			
aperiodicSRS-ResourceTrigger	1		
csi-RS	Not present		
slotOffset	7		FR1
	4		FR2
}			
}			
usage	codebook		
alpha	Alpha		
p0	0		
pathlossReferenceRS CHOICE {			
ssb-Index	SSB-Index		
}			
srs-PowerControlAdjustmentStates	Not present		
}			
}			
srs-ResourceToReleaseList	Not present		
srs-ResourceToAddModList SEQUENCE (SIZE(1..maxNrofSRS-Resources)) OF SRS-Resource {	1 entry		
SRS-Resource[1] SEQUENCE {		entry 1	
srs-ResourceId	0		
nrofSRS-Ports	ports2		2TX_UL_MIMO
	port1		
ptrs-PortIndex	Not present		
transmissionComb CHOICE {			
n2 SEQUENCE {			
combOffset-n2	0		
cyclicShift-n2	0		
}			
}			
resourceMapping SEQUENCE {			
startPosition	0		
nrofSymbols	n1		
repetitionFactor	n1		
}			
freqDomainPosition	0		
freqDomainShift	0		
freqHopping SEQUENCE {			
c-SRS	0		
	63		FR1_100MHz
	17		FR2_100MHz
b-SRS	0		
b-hop	0		
}			
groupOrSequenceHopping	groupHopping		
resourceType CHOICE {			
aperiodic SEQUENCE {			

} }			
sequenceId	0		
spatialRelationInfo SEQUENCE {	SRS-SpatialRelationInfo		
servingCellId	Not present		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
} } } }			
tpc-Accumulation	Not present		
srs-RequestDCI-1-2-r16	Not present		
srs-RequestDCI-0-2-r16	Not present		
srs-ResourceSetToAddModListDCI-0-2-r16	Not present		
srs-ResourceSetToReleaseListDCI-0-2-r16	Not present		
srs-PosResourceSetToReleaseList-r16	Not present		
srs-PosResourceSetToAddModList-r16	Not present		
srs-PosResourceToReleaseList-r16	Not present		
srs-PosResourceToAddModList-r16	Not present		
}			

Condition	Explanation
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
FR1_100MHz	FR1 is used under the test. CBW is set to 100MHz.
FR2_100MHz	FR2 is used under the test. CBW is set to 100MHz.

– *SRS-RSRP-Range*

Table 4.6.3-182A: *SRS-RSRP-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-RSRP-Range-r16	FFS		

– *SRS-TPC-CommandConfig*

Table 4.6.3-183: *SRS-TPC-CommandConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-TPC-CommandConfig ::= SEQUENCE {			
FFS			
}			

– *SSB-Index*

Table 4.6.3-184: *SSB-Index*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SSB-Index	Set according to Table 4.4.2-2 for the NR Cell		

– *SSB-MTC*

Table 4.6.3-185: *SSB-MTC*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SSB-MTC ::= SEQUENCE {			
periodicityAndOffset CHOICE {			
sf20	0		
	10		SIG AND INTER-FREQ_ODD
}			
duration	sf2		FR1
	sf3		FR2
}			

Condition	Explanation
INTER-FREQ_ODD	When the (SFNoffset of inter frequency neighbour cell - SFNoffset of serving cell) is odd number. SFNoffset is defined in TS 38.523-3 [23] Table 7.1.5.2-1

Table 4.6.3-186: *SSB-MTC2*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SSB-MTC2 ::= SEQUENCE {			
FFS			
}			

– *SSB-PositionQCL-Relation*

Table 4.6.3-186A: *SSB-PositionQCL-Relation*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SSB-PositionQCL-Relation-r16	n1		

– *SSB-ToMeasure*

Table 4.6.3-187: *SSB-ToMeasure*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SSB-ToMeasure ::= CHOICE {			
shortBitmap	1100		FR1 AND (2.3GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.3 GHZ)
mediumBitmap	11000000		FR1 AND (2.3GHz<FREQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GHz)
longBitmap	11000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000		FR2
}			

Condition	Explanation
FREQ<=2.3GHz	Frequency range <= 2.4GHz
2.3GHz<FREQ<=3GHz	Frequency range > 2.3GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz

– *SS-RSSI-Measurement*

Table 4.6.3-187A: *SS-RSSI-Measurement*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SS-RSSI-Measurement ::= SEQUENCE {			
FFS			
}			

– *SubcarrierSpacing*

Table 4.6.3-188: *SubcarrierSpacing*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SubcarrierSpacing	According to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise.		

– *TAG-Config*

Table 4.6.3-189: *TAG-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TAG-Config ::= SEQUENCE {			
tag-ToReleaseList	Not present		
tag-ToAddModList SEQUENCE (SIZE (1..maxNrofTAGs)) OF TAG {	1 entry		
TAG[1] SEQUENCE {		entry 1	
tag-Id	0		
timeAlignmentTimer	infinity		
}			
}			
}			

– *TCI-Info*

Table 4.6.3-189A: *TCI-Info*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TCI-Info ::= SEQUENCE {			
FFS			
}			

– *TCI-State*

Table 4.6.3-190: *TCI-State*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TCI-State ::= SEQUENCE {			
tci-StateId	TCI-StateId		
qcl-Type1 SEQUENCE {			
cell	Not present		
bwp-Id	Not present		
referenceSignal CHOICE {			
ssb	SSB-Index		
}			
qcl-Type	typeD		
}			
qcl-Type2	Not present		
}			

– *TCI-StateId*

Table 4.6.3-191: *TCI-StateId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TCI-StateId	0		

– *TDD-UL-DL-ConfigCommon*

Table 4.6.3-192: *TDD-UL-DL-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TDD-UL-DL-ConfigCommon ::= SEQUENCE {			
referenceSubcarrierSpacing	SubcarrierSpacing		
pattern1 SEQUENCE {			
dl-UL-TransmissionPeriodicity	ms5		FR1
	ms0p625		SIG AND FR2
	ms2		RF AND FR2
nrofDownlinkSlots	7		(FR1 AND SCS30) OR (RF AND FR2 AND SCS120)
	3		(FR1 AND SCS15) OR (FR2 AND SCS60) OR (SIG AND FR2 AND SCS120)
	14		FR1 AND SCS60
nrofDownlinkSymbols	6		FR1 AND SCS30
	10		(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))
	12		(FR1 AND SCS60) OR (RF AND FR2 AND SCS120)
	4		RF AND FR2 AND SCS60
nrofUplinkSlots	2		FR1 AND SCS30
	1		(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))
	4		(FR1 AND SCS60) OR ((RF AND FR2 AND SCS60)
	8		RF AND FR2 AND SCS120
nrofUplinkSymbols	4		(FR1 AND SCS30) OR (RF AND FR2 AND SCS60)
	2		(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))

	8		FR1 AND SCS60
	0		RF AND FR2 AND SCS120
}			
pattern2	Not present		
}			

– *TDD-UL-DL-ConfigDedicated*

Table 4.6.3-192A: *TDD-UL-DL-ConfigDedicated*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TDD-UL-DL-ConfigDedicated ::= SEQUENCE {			
FFS			
}			

– *TrackingAreaCode*

Table 4.6.3-193: *TrackingAreaCode*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TrackingAreaCode	See table 4.4.2-3	BIT STRING (SIZE (24))	

– *T-Reselection*

Table 4.6.3-194: *T-Reselection*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
T-Reselection	FFS		

– *TimeToTrigger*

Table 4.6.3-195: *TimeToTrigger*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TimeToTrigger	ms320		

– *UAC-BarringInfoSetIndex*

Table 4.6.3-196: *UAC-BarringInfoSetIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UAC-BarringInfoSetIndex	FFS		

– *UAC-BarringInfoSetList*

Table 4.6.3-197: *UAC-BarringInfoSetList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UAC-BarringInfoSetList	FFS		

– *UAC-BarringPerCatList*

Table 4.6.3-198: *UAC-BarringPerCatList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UAC-BarringPerCatList	FFS		

– *UAC-BarringPerPLMN-List*

Table 4.6.3-199: *UAC-BarringPerPLMN-List*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UAC-BarringPerPLMN-List	FFS		

– *UE-TimersAndConstants*

Table 4.6.3-200: *UE-TimersAndConstants*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-TimersAndConstants ::= SEQUENCE {			
t300	ms1000		
t301	ms1000		
t310	ms1000		
n310	n1		
t311	ms30000		
n311	n1		
t319	ms1000		
}			

– *UE-TimersAndConstantsRemoteUE*

Table 4.6.3-200AA: *UE-TimersAndConstantsRemoteUE*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-TimersAndConstantsRemoteUE-r17 ::= SEQUENCE {			
FFS			
}			

– *UL-DelayValueConfig*

Table 4.6.3-200A: *UL-DelayValueConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UL-DelayValueConfig-r16 ::= SEQUENCE {			
delay-DRBlist	Set according to specific message content		
}			

– *UL-ExcessDelayConfig*

Table 4.6.3-200BA: *UL-ExcessDelayConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UL-ExcessDelayConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *UL-GapFR2-Config*

Table 4.6.3-200BB: *UE UL-GapFR2-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UL-GapFR2-Config-r17 ::= SEQUENCE {			
FFS			
}			

– *UplinkCancellation*

Table 4.6.3-200B: *UplinkCancellation*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UplinkCancellation-r16 ::= SEQUENCE {			
FFS			
}			

– *UplinkConfigCommon*

Table 4.6.3-201: *UplinkConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UplinkConfigCommon ::= SEQUENCE {			
frequencyInfoUL	FrequencyInfoUL		
initialUplinkBWP	BWP-UplinkCommon		
timeAlignmentTimerCommon	infinity		
}			

– *UplinkConfigCommonSIB*

Table 4.6.3-202: *UplinkConfigCommonSIB*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UplinkConfigCommonSIB SEQUENCE {			
frequencyInfoUL	FrequencyInfoUL-SIB		
initialUplinkBWP	BWP-UplinkCommon		
	BWP-UplinkCommon with confition SUL_SUL		SUL_SUL
timeAlignmentTimerCommon	infinity		
}			

Condition	Explanation
SUL_SUL	On the SUL carrier when supplementary carrier is configured

– *Uplink-PowerControl*

Table 4.6.3-202A: *Uplink-PowerControl*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Uplink-PowerControl-r17 ::= SEQUENCE {			
FFS			
}			

– *Uu-RelayRLC-ChannelConfig*

Table 4.6.3-202B: *Uu-RelayRLC-ChannelConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Uu-RelayRLC-ChannelConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *Uu-RelayRLC-ChannelID*

Table 4.6.3-202C: *Uu-RelayRLC-ChannelID*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Uu-RelayRLC-ChannelID-r17	FFS		

– *UplinkTxDirectCurrentList*

Table 4.6.3-203: *UplinkTxDirectCurrentList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UplinkTxDirectCurrentList ::= SEQUENCE (SIZE (1..maxNrofServingCells)) OF UplinkTxDirectCurrentCell {	1 entry		
UplinkTxDirectCurrentCell[1] SEQUENCE {		entry 1	
FFS			
}			
}			

– *ZP-CSI-RS-Resource*

Table 4.6.3-204: *ZP-CSI-RS-Resource*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ZP-CSI-RS-Resource ::= SEQUENCE {			
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId		
resourceMapping	CSI-RS-ResourceMapping		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
}			

– *ZP-CSI-RS-ResourceId*

Table 4.6.3-204A: ZP-CSI-RS-ResourceId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ZP-CSI-RS-ResourceId	0		

– *ZP-CSI-RS-ResourceSet*

Table 4.6.3-205: *ZP-CSI-RS-ResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp-CSI-RS-ResourceSetId	ZP-CSI-RS-ResourceSetId		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE(1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId {	1 entry		
ZP-CSI-RS-ResourceId[1]	FFS	entry 1	
}			
}			

– *ZP-CSI-RS-ResourceSetId*

Table 4.6.3-206: ZP-CSI-RS-ResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ZP-CSI-RS-ResourceSetId	0		

4.6.4 UE capability information elements

– *AccessStratumRelease*

Table 4.6.4-1: AccessStratumRelease

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
AccessStratumRelease	Same as indicated in TC applicability in TS 38.523-2 [19]		

– *AppLayerMeasParameters*

Table 4.6.4-1A: *AppLayerMeasParameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
AppLayerMeasParameters-r17 ::= SEQUENCE {			
FFS			
}			

– *BandCombinationList*

Table 4.6.4-2: BandCombinationList

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
BandCombinationList::= SEQUENCE (SIZE (1..maxBandComb)) OF BandCombination {	At least 1 entry		
BandCombination[1] SEQUENCE {		entry 1	
bandList SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BandParameters {	1 entry		
BandParameters[1] CHOICE {		entry 1	
eutra SEQUENCE {			
bandEUTRA	FreqBandIndicatorEUTRA		
ca-BandwidthClassDL-EUTRA	Not checked		
ca-BandwidthClassUL-EUTRA	Not checked		
}			
nr SEQUENCE {			
bandNR	FreqBandIndicatorNR		
ca-BandwidthClassDL-NR	Not checked		
ca-BandwidthClassUL-NR	Not checked		
}			
}			
}			
featureSetCombination	Not checked		
ca-ParametersEUTRA	Not checked		
ca-ParametersNR	Not checked		
mrdc-Parameters	Not checked		
supportedBandwidthCombinationSet	BIT STRING (SIZE (1..32))		
powerClass-v1530	Not Checked		
}			
}			

– *BandCombinationListSidelinkEUTRA-NR*

Table 4.6.4-2A: *BandCombinationListSidelinkEUTRA-NR*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
BandParametersSidelinkEUTRA-NR-r16 ::= SEQUENCE {			
FFS			
}			

– *CA-BandwidthClassEUTRA*

Table 4.6.4-3: CA-BandwidthClassEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CA-BandwidthClassEUTRA	Not checked		

– *CA-BandwidthClassNR*

Table 4.6.4-4: CA-BandwidthClassNR

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CA-BandwidthClassNR	Not checked		

– *CA-ParametersEUTRA*

Table 4.6.4-5: CA- ParametersEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CA-ParametersEUTRA ::= SEQUENCE {			
multipleTimingAdvance	Not checked		
simultaneousRx-Tx	Not checked		
supportedNAICS-2CRS-AP	Not checked		
additionalRx-Tx-PerformanceReq	Not checked		
ue-CA-PowerClass-N	Not checked		
supportedBandwidthCombinationSetEUTRA-v1530	Not checked		
}			

– *CA-ParametersNR*

Table 4.6.4-6: CA- ParametersNR

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CA-ParametersNR ::= SEQUENCE {			
dummy	Not checked		
parallelTxSRS-PUCCH-PUSCH	Not checked		
parallelTxPRACH-SRS-PUCCH-PUSCH	Not checked		
simultaneousRxTxInterBandCA	Not checked		
simultaneousRxTxSUL	Not checked		
diffNumerologyAcrossPUCCH-Group	Not checked		
diffNumerologyWithinPUCCH-GroupSmallerSCS	Not checked		
supportedNumberTAG	Not checked		
}			

– *CA-ParametersNRDC*

Table 4.6.4-6AA: CA- ParametersNRDC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CA-ParametersNRDC ::= SEQUENCE {			
ca-ParametersNR-ForDC	Not checked		
ca-ParametersNR-ForDC-v1540	Not checked		
ca-ParametersNR-ForDC-v1550	Not checked		
ca-ParametersNR-ForDC-v1560	Not checked		
featureSetCombinationDC	Not checked		
}			

– *CarrierAggregationVariant*

Table 4.6.4-6AB: *CarrierAggregationVariant*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CarrierAggregationVariant ::= SEQUENCE {			
FFS			
}			

– *CodebookParameters*

Table 4.6.4-6A: CodebookParameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CodebookParameters ::= SEQUENCE {			
type1 SEQUENCE {			
singlePanel SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
modes	Not checked		
maxNumberCSI-RS-PerResourceSet	Not checked		
}			
multiPanel SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
modes	Not checked		
nrofPanels	Not checked		
maxNumberCSI-RS-PerResourceSet	Not checked		
}			
}			
type2 SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
parameterLx	Not checked		
amplitudeScalingType	Not checked		
amplitudeSubsetRestriction	Not checked		
}			
type2-PortSelection SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
parameterLx	Not checked		
amplitudeScalingType	Not checked		
}			
}			

– *FeatureSetCombination*

Table 4.6.4-7: FeatureSetCombination

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetCombination ::= SEQUENCE (SIZE (1..maxSimultaneousBands)) OF FeatureSetsPerBand {	1 entry		
FeatureSetsPerBand[1] SEQUENCE (SIZE (1..maxFeatureSetsPerBand)) OF FeatureSet {	1 entry	entry 1	
FeatureSet[1] CHOICE {		entry 1	
nr SEQUENCE {			
downlinkSetNR	Not checked		
uplinkSetNR	Not checked		
}			
}			
}			
}			

– *FeatureSetCombinationId*

Table 4.6.4-8: FeatureSetCombinationId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetCombinationId	Not checked		

– *FeatureSetDownlink*

Table 4.6.4-9: FeatureSetDownlink

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetDownlink ::= SEQUENCE {			
featureSetListPerDownlinkCC SEQUENCE (SIZE (1..maxNrofServingCells)) OF FeatureSetDownlinkPerCC-Id {	1 entry		
FeatureSetDownlinkPerCC-Id[1]	Not checked	entry 1	
}			
intraBandFreqSeparationDL	FreqSeparationClass		
scalingFactor	Not checked		
crossCarrierSchedulingDL-OtherSCS	Not checked		
scellWithoutSSB	Not checked		
csi-RS-MeasSCellWithoutSSB	Not checked		
dummy1	Not checked		
type1-3-CSS	Not checked		
pdcchMonitoringAnyOccasions	Not checked		
dummy2	Not checked		
ue-SpecificUL-DL-Assignment	Not checked		
searchSpaceSharingCA-DL	Not checked		
timeDurationForQCL SEQUENCE {			
scs-60kHz	Not checked		
scsh-120kHz	Not checked		
}			
pdsch- ProcessingType1-DifferentTB-PerSlot SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
dummy3	Not checked		
dummy4	Not checked		
dummy5	Not checked		
dummy6	Not checked		
dummy7	Not checked		
}			

– *FeatureSetDownlinkId*

Table 4.6.4-10: FeatureSetDownlinkId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetDownlinkId	Not checked		

– *FeatureSetDownlinkPerCC*

Table 4.6.4-11: FeatureSetDownlinkPerCC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetDownlinkPerCC ::= SEQUENCE {			
supportedSubcarrierSpacingDL	Not checked		
supportedBandwidthDL	SupportedBandwidth		
channelBW-90mhz	Not checked		
maxNumberMIMO-LayersPDSCH	MIMO-LayersDL		
supportedModulationOrderDL	ModulationOrder		
}			

– *FeatureSetDownlinkPerCC-Id*

Table 4.6.4-12: FeatureSetDownlinkPerCC-Id

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetDownlinkPerCC-Id	Not checked		

– *FeatureSetEUTRA-DownlinkId*

Table 4.6.4-13: FeatureSetEUTRA-DownlinkId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetEUTRA-DownlinkId	Not checked		

– *FeatureSetEUTRA-UplinkId*

Table 4.6.4-14: FeatureSetEUTRA-UplinkId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetEUTRA-UplinkId	Not checked		

– *FeatureSets*

Table 4.6.4-15: *FeatureSets*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSets ::= SEQUENCE {			
featureSetsDownlink SEQUENCE (SIZE (1..maxDownlinkFeatureSets)) OF FeatureSetDownlink {	1 entry		
FeatureSetDownlink[1]	FeatureSetDownlink	entry 1	
}			
featureSetsDownlinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetDownlinkPerCC {	1 entry		
FeatureSetDownlinkPerCC[1]	FeatureSetDownlinkPerCC	entry 1	
}			
featureSetsUplink SEQUENCE (SIZE (1..maxUplinkFeatureSets)) OF FeatureSetUplink {	1 entry		
FeatureSetUplink[1]	FeatureSetUplink	entry 1	
}			
featureSetsUplinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetUplinkPerCC {	1 entry		
FeatureSetUplinkPerCC[1]	FeatureSetUplinkPerCC	entry 1	
}			
}			

– *FeatureSetUplink*

Table 4.6.4-16: FeatureSetUplink

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetUplink ::= SEQUENCE {			
featureSetListPerUplinkCC SEQUENCE (SIZE (1.. maxNrofServingCells)) OF FeatureSetUplinkPerCC-Id {	1 entry		
FeatureSetUplinkPerCC-Id[1]	Not checked	entry 1	
}			
scalingFactor	Not checked		
crossCarrierSchedulingUL-OtherSCS	Not checked		
intraBandFreqSeparationUL	FreqSeparationClass		
searchSpaceSharingCA-UL	Not checked		
dummy1	Not checked		
supportedSRS-Resources SEQUENCE {			
maxNumberAperiodicSRS-PerBWP	Not Checked		
maxNumberAperiodicSRS-PerBWP-PerSlot	Not Checked		
maxNumberPeriodicSRS-PerBWP	Not Checked		
maxNumberPeriodicSRS-PerBWP-PerSlot	Not Checked		
maxNumberSemiPersistentSRS-PerBWP	Not Checked		
maxNumberSemiPersistentSRS-PerBWP-PerSlot	Not Checked		
maxNumberSRS-Ports-PerResource	Not Checked		
}			
twoPUCCH-Group	Not checked		
dynamicSwitchSUL	Not checked		
pusch- ProcessingType1-DifferentTB-PerSlot SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
dummy2	Not checked		
}			

– *FeatureSetUplinkId*

Table 4.6.4-17: FeatureSetUplinkId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetUplinkId	Not checked		

– *FeatureSetUplinkPerCC*

Table 4.6.4-18: FeatureSetUplinkPerCC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetUplinkPerCC ::= SEQUENCE {			
supportedSubcarrierSpacingUL	Not checked		
supportedBandwidthUL	SupportedBandwidth		
channelBW-90mhz	Not checked		
mimo-CB-PUSCH SEQUENCE {			
maxNumberMIMO-LayersCB-PUSCH	MIMO-LayersUL		
maxNumberSRS-ResourcePerSet	Not checke		
}			
maxNumberMIMO-LayersNonCB-PUSCH	MIMO-LayersUL		
supportedModulationOrderUL	ModulationOrder		
}			

– *FeatureSetUplinkPerCC-Id*

Table 4.6.4-19: FeatureSetUplinkPerCC-Id

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetUplinkPerCC-Id	Not checked		

– *FreqBandIndicatorEUTRA*

Table 4.6.4-20: FreqBandIndicatorEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqBandIndicatorEUTRA	EUTRA Operating band under test		

– *FreqBandList*

Table 4.6.4-21: *FreqBandList*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqBandList::= SEQUENCE (SIZE (1..maxBandsMRDC)) OF FreqBandInformation {	Number of entries depends on the conditions		
FreqBandInformation[1] CHOICE {		entry 1	EN-DC, NE-DC
bandInformationEUTRA SEQUENCE {			
bandEUTRA	FreqBandIndicatorEUTRA		
ca-BandwidthClassDL-EUTRA	Not checked		
ca-BandwidthClassUL-EUTRA	Not checked		
}			
}			
FreqBandInformation[2] CHOICE {		entry 2	
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			
FreqBandInformation[3] CHOICE {		entry 3	EN-DC AND CA-InterBand
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR with condition CA-InterBand		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			
FreqBandInformation[1] CHOICE {		entry 1	NR
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			
FreqBandInformation[2] CHOICE {		entry 2	NR AND CA-InterBand
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR with condition CA-InterBand		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			
FreqBandInformation[2] CHOICE {		entry 2	NR-DC
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR with condition NR-DC-SecondaryBand		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		

maxCarriersRequestedUL	Not checked		
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
CA-InterBand	Used in NR CA Inter-band test cases
NR	NG-RAN NR Radio Access
NR-DC	NR-NR Dual Connectivity
NE-DC	NR E-UTRA Dual Connectivity

– *FreqSeparationClass*

Table 4.6.4-22: *FreqSeparationClass*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqSeparationClass	Not checked		

– *FreqSeparationClassDL-Only*

Table 4.6.4-22A: *FreqSeparationClassDL-Only*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqSeparationClassDL-Only-r16	FFS		

– *FR2-2-AccessParamsPerBand*

Table 4.6.4-22BA: *FR2-2-AccessParamsPerBand*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FR2-2-AccessParamsPerBand-r17 ::= SEQUENCE {			
FFS			
}			

– *HighSpeedParameters*

Table 4.6.4-22B: *HighSpeedParameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
HighSpeedParameters-r16 ::= SEQUENCE {			
FFS			
}			

– *IMS-Parameters*

Table 4.6.4-23: *IMS-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
IMS-Parameters ::= SEQUENCE {			
ims-ParametersCommon SEQUENCE {			
voiceOverEUTRA-5GC	Not Checked		
}			
ims-ParametersFRX-Diff SEQUENCE {			
voiceOverNR	Not Checked		
}			
}			

– *InterRAT-Parameters*

Table 4.6.4-24: *InterRAT-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
InterRAT-Parameters ::= SEQUENCE {			
eutra SEQUENCE {			
supportedBandListEUTRA SEQUENCE (SIZE (1..maxBandsEUTRA)) OF FreqBandIndicatorEUTRA {	1 entry		
FreqBandIndicatorEUTRA[1]	FreqBandIndicatorEUTRA	entry 1	
}			
eutra-ParametersCommon SEQUENCE {			
mfbi-EUTRA	Not Checked		
modifiedMPR-BehaviorEUTRA	Not Checked		
multiNS-Pmax-EUTRA	Not Checked		
rs-SINR-MeasEUTRA	Not Checked		
ne-DC	Not Checked		
nr-HO-ToEN-DC-r16	Not Checked		>=Rel16
}			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not Checked		
}			
}			
}			

– *MAC-Parameters*

Table 4.6.4-25: *MAC-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
MAC-Parameters ::= SEQUENCE {			
mac-ParametersCommon SEQUENCE {			
lcp-Restriction	Not checked		
dummy	Not checked		
lch-ToSCellRestriction	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		
multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
}			

– *MeasAndMobParameters*

Table 4.6.4-26: *MeasAndMobParameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasAndMobParameters::= SEQUENCE {			
measAndMobParametersCommon SEQUENCE {			
supportedGapPattern	Not checked		
ssb-RLM	Not checked		
ssb-AndCSI-RS-RLM	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
MeasAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			

– *MeasAndMobParametersMRDC*

Table 4.6.4-27: *MeasAndMobParametersMRDC*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasAndMobParametersMRDC::= SEQUENCE {			
measAndMobParametersMRDC-Common SEQUENCE {			
independentGapConfig	Not checked		
}			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			

– *MIMO-Layers*

Table 4.6.4-28: *MIMO-Layers*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
MIMO-LayersDL	Not checked		
MIMO-LayersUL	Not checked		

– *MIMO-ParametersPerBand*

Table 4.6.4-29: *MIMO-ParametersPerBand*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
MIMO-ParametersPerBand ::= SEQUENCE {			
tci-StatePDSCH SEQUENCE {			
maxNumberConfiguredTCIstatesPerCC	Not checked		
maxNumberActiveTCI-PerBWP	Not checked		
}			
additionalActiveTCI-StatePDCCH	Not checked		
pusch-TransCoherence	Not checked		
beamCorrespondenceWithoutUL-BeamSweeping	Not checked		
periodicBeamReport	Not checked		
aperiodicBeamReport	Not checked		
sp-BeamReportPUCCH	Not checked		
sp-BeamReportPUSCH	Not checked		
dummy1	Not checked		
maxNumberRxBeam	Not checked		
maxNumberRxTxBeamSwitchDL SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
scs-240kHz	Not checked		
}			
maxNumberNonGroupBeamReporting	Not checked		
groupBeamReporting	Not checked		
uplinkBeamManagement SEQUENCE {			
maxNumberSRS-ResourcePerSet	Not checked		
maxNumberSRS-ResourceSet	Not checked		
}			
maxNumberCSI-RS-BFD	Not checked		
maxNumbeSSB-BFD	Not checked		
maxNumberCSI-RS-SSB-CBD	Not checked		
dummy2	Not checked		
twoPortsPTRS-UL	Not checked		
dummy5	Not checked		
dummy3	Not checked		
beamReportTiming SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
ptrs-DensityRecommendationSetDL SEQUENCE {			
scs-15kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
scs-30kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
scs-60kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
scs-120kHz			

frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
}			
ptrs-DensityRecommendationSetUL SEQUENCE {			
scs-15kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
}			
scs-30kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
scs-60kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
scs-120kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
}			
dummy4	Not checked		
aperiodicTRS	Not checked		
}			

– *ModulationOrder*

Table 4.6.4-30: *ModulationOrder*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
ModulationOrder	Not checked		

– *MRDC-Parameters*

Table 4.6.4-31: *MRDC-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
MRDC-Parameters ::= SEQUENCE {			
singleUL-Transmission	Not checked		
dynamicPowerSharingENDC	Not checked		
tdm-Pattern	Not checked		
ul-SharingEUTRA-NR	Not checked		
ul-SwitchingTimeEUTRA-NR	Not checked		
simultaneousRxTxInterBandENDC	Not checked		
asyncIntraBandENDC	Not checked		
}			

– *NRDC-Parameters*

Table 4.6.4-31A: *NRDC-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
NRDC-Parameters ::= SEQUENCE {			
measAndMobParametersNRDC	Not checked		
generalParametersNRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA	Not checked		
}			
fdd-Add-UE-NRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA-v1530	Not checked		
}			
}			
tdd-Add-UE-NRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA-v1530	Not checked		
}			
}			
fr1-Add-UE-NRDC-Capabilities SEQUENCE {	UE-MRDC-CapabilityAddFRX-Mode		
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
fr2-Add-UE-NRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			

– *NTN-Parameters*

Table 4.6.4-31BA: *NTN-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
NTN-Parameters-r17 ::= SEQUENCE {			
FFS			
}			

– *OLPC-SRS-Pos*

Table 4.6.4-31B: *OLPC-SRS-Pos*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
OLPC-SRS-Pos-r16 ::= SEQUENCE {			
FFS			
}			

– *PDCP-Parameters*

Table 4.6.4-32: *PDCP-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCP-Parameters ::= SEQUENCE {			
supportedROHC-Profiles SEQUENCE {			
profile0x0000	Not checked		
profile0x0001	Not checked		
profile0x0002	Not checked		
profile0x0003	Not checked		
profile0x0004	Not checked		
profile0x0006	Not checked		
profile0x0101	Not checked		
profile0x0102	Not checked		
profile0x0103	Not checked		
profile0x0104	Not checked		
}			
maxNumberROHC-ContextSessions	Not checked		
uplinkOnlyROHC-Profiles	Not checked		
continueROHC-Context	Not checked		
outOfOrderDelivery	Not checked		
shortSN	Not checked		
pdcp-DuplicationSRB	Not checked		
pdcp-DuplicationMCG-OrSCG-DRB	Not checked		
}			

– *PDCP-ParametersMRDC*

Table 4.6.4-33: *PDCP-ParametersMRDC*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCP-ParametersMRDC ::= SEQUENCE {			
pdcp-DuplicationSplitSRB	Not checked		
pdcp-DuplicationSplitDRB	Not checked		
}			

– *Phy-Parameters*

Table 4.6.4-34: *Phy-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Phy-Parameters ::= SEQUENCE {			
phy-ParametersCommon SEQUENCE {			
csi-RS-CFRA-ForHO	Not checked		
dynamicPRB-BundlingDL	Not checked		
sp-CSI-ReportPUCCH	Not checked		
sp-CSI-ReportPUSCH	Not checked		
nzp-CSI-RS-IntefMgmt	Not checked		
type2-SP-CSI-Feedback-LongPUCCH	Not checked		
precoderGranularityCORESET	Not checked		
dynamicHARQ-ACK-Codebook	Not checked		
semiStaticHARQ-ACK-Codebook	Not checked		
spatialBundlingHARQ-ACK	Not checked		
dynamicBetaOffsetInd-HARQ-ACK-CSI	Not checked		
pucch-Repetition-F1-3-4	Not checked		
ra-Type0-PUSCH	Not checked		
dynamicSwitchRA-Type0-1-PDSCH	Not checked		
dynamicSwitchRA-Type0-1-PUSCH	Not checked		
pdsch-MappingTypeA	Not checked		
pdsch-MappingTypeB	Not checked		
interleavingVRB-ToPRB-PDSCH	Not checked		
interSlotFreqHopping-PUSCH	Not checked		
type1-PUSCH-RepetitionMultiSlots	Not checked		
type2-PUSCH-RepetitionMultiSlots	Not checked		
pusch-RepetitionMultiSlots	Not checked		
pdsch-RepetitionMultiSlots	Not checked		
downlinkSPS	Not checked		
configuredUL-GrantType1	Not checked		
configuredUL-GrantType2	Not checked		
pre-EmptIndication-DL	Not checked		
cbg-TransIndication-DL	Not checked		
cbg-TransIndication-UL	Not checked		
cbg-FlushIndication-DL	Not checked		
dynamicHARQ-ACK-CodeB-CBG-Retx-DL	Not checked		
rateMatchingResrcSetSemi-Static	Not checked		
rateMatchingResrcSetDynamic	Not checked		
bwp-SwitchingDelay	Not checked		
}			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
dummy1	Not checked		
twoFL-DMRS	Not checked		
dummy2	Not checked		
dummy3	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
freqHoppingPUCCH-F0-2	Not checked		
freqHoppingPUCCH-F1-3-4	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH- MultiPerSlot	Not checked		
uci-CodeBlockSegmentation	Not checked		

onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdcch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
phy-ParametersFR1 SEQUENCE {			
pdcchMonitoringSingleOccasion	Not checked		
scs-60kHz	Not checked		
pdsch-256QAM-FR1	Not checked		
pdsch-RE-MappingFR1- PerSymbol	Not checked		
}			
phy-ParametersFR2 SEQUENCE {			
dummy	Not checked		
pdsch-RE-MappingFR2- PerSymbol	Not checked		
}			
}			

– *Phy-ParametersMRDC*

Table 4.6.4-35: *Phy-ParametersMRDC*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Phy-ParametersMRDC ::= SEQUENCE {			
naics-Capability-List SEQUENCE (SIZE (1..maxNrofNAICS-Entries)) OF NAICS-Capability-Entry {	1 entry		
NAICS-Capability-Entry[1] SEQUENCE {		entry 1	
numberOfNAICS-CapableCC	Not checked		
numberOfAggregatedPRB	Not checked		
}			
}			

– *Phy-ParametersSharedSpectrumChAccess*

Table 4.6.4-35AA: *Phy-ParametersSharedSpectrumChAccess*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Phy-ParametersSharedSpectrumChAccess-r16 ::= SEQUENCE {			
FFS			
}			

– *PosSRS-RRC-Inactive-OutsideInitialUL-BWP-r17*

Table 4.6.4-35AB: *PosSRS-RRC-Inactive-OutsideInitialUL-BWP-r17*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
PosSRS-RRC-Inactive-OutsideInitialUL-BWP-r17 ::= SEQUENCE {			
FFS			
}			

– *PowSav-Parameters*

Table 4.6.4-35A: *PowSav-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
PowSav-Parameters-r16 ::= SEQUENCE {			
FFS			
}			

– *ProcessingParameters*

Table 4.6.4-36: *ProcessingParameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
ProcessingParameters ::= SEQUENCE {			
fallback	Not checked		
differentTB-PerSlot SEQUENCE {			
upto1	Not checked		
upto2	Not checked		
upto4	Not checked		
upto7	Not checked		
}			
}			

– *RAT-Type*

Table 4.6.4-37: *RAT-Type*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
RAT-Type	nr		
	eutra-nr		EN-DC, NE-DC

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
NE-DC	NR E-UTRA Dual Connectivity

– *RedCapParameters*

Table 4.6.4-37A: *RedCapParameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
RedCapParameters-r17 ::= SEQUENCE {			
FFS			
}			

– *RF-Parameters*

Table 4.6.4-38: *RF-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
RF-Parameters ::= SEQUENCE {			
supportedBandListNR SEQUENCE (SIZE (1..maxBands)) OF BandNR {	At least 1 entry		
BandNR[1] SEQUENCE {		entry 1	
bandNR	FreqBandIndicatorNR with condition NR		
modifiedMPR-Behaviour	Not checked		
mimo-ParametersPerBand	Not checked		
extendedCP	Not checked		
multipleTCI	Not checked		
bwp-WithoutRestriction	Not checked		
bwp-SameNumerology	Not checked		
bwp-DiffNumerology	Not checked		
crossCarrierScheduling-SameSCS	Not checked		
pdsch-256QAM-FR2	Not checked		
pusch-256QAM	Not checked		
ue-PowerClass	Not checked		
rateMatchingLTE-CRS	Not checked		
channelBWs-DL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
channelBWs-UL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
}			
BandNR[2] SEQUENCE {		entry 2	NR-DC-SecondaryBand NR_CA-InterBand
bandNR	FreqBandIndicatorNR with condition NR-DC-SecondaryBand		NR-DC-SecondaryBand
	FreqBandIndicatorNR with condition NR_CA-InterBand		NR_CA-InterBand
modifiedMPR-Behaviour	Not checked		
mimo-ParametersPerBand	Not checked		
extendedCP	Not checked		
multipleTCI	Not checked		
bwp-WithoutRestriction	Not checked		
bwp-SameNumerology	Not checked		
bwp-DiffNumerology	Not checked		
crossCarrierScheduling-SameSCS	Not checked		
pdsch-256QAM-FR2	Not checked		
pusch-256QAM	Not checked		
ue-PowerClass	Not checked		
rateMatchingLTE-CRS	Not checked		
channelBWs-DL CHOICE {			

fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
channelBWs-UL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
}			
}			
maxUplinkDutyCycle-PC2-FR1	Not checked		
pucch-SpatialRelInfoMAC-CE	Not checked		
powerBoosting-pi2BPSK	Not checked		
maxUplinkDutyCycle-FR2	Not checked		
channelBWs-DL-v1590	Not checked		
channelBWs-UL-v1590	Not checked		
asymmetricBandwidthCombinationSet	Not checked		
sharedSpectrumChAccessParamsPerBand-r16	Not checked		
cancelOverlappingPUSCH-r16	Not checked		
multipleRateMatchingEUTRA-CRS-r16	Not checked		
overlapRateMatchingEUTRA-CRS-r16	Not checked		
pdsch-MappingTypeB-Alt-r16	Not checked		
oneSlotPeriodicTRS-r16	Not checked		
olpc-SRS-Pos-r16	Not checked		
spatialRelationsSRS-Pos-r16	Not checked		
simulSRS-MIMO-TransWithinBand-r16	Not checked		
channelBW-DL-IAB-r16	Not checked		
channelBW-UL-IAB-r16	Not checked		
rasterShift7dot5-IAB-r16	Not checked		
ue-PowerClass-v1610	Not checked		
condHandover-r16	Not checked		
condHandoverFailure-r16	Not checked		
condHandoverTwoTriggerEvents-r16	Not checked		
condPSCellChange-r16	Not checked		
condPSCellChangeTwoTriggerEvents-r16	Not checked		
mpr-PowerBoost-FR2-r16	Not checked		
activeConfiguredGrant-r16	Not checked		
maxNumberConfigsPerBWP-r16	Not checked		
maxNumberConfigsAllCC-r16	Not checked		
jointReleaseConfiguredGrantType2-r16	Not checked		
sps-r16	Not checked		
maxNumberConfigsPerBWP-r16	Not checked		
maxNumberConfigsAllCC-r16	Not checked		
jointReleaseSPS-r16	Not checked		
simulSRS-TransWithinBand-r16	Not checked		
trs-AdditionalBandwidth-r16	Not checked		
handoverIntraF-IAB-r16	Not checked		
simulTX-SRS-AntSwitchingIntraBandUL-CA-r16	Not checked		
sharedSpectrumChAccessParamsPerBand-v1630	Not checked		
handoverUTRA-FDD-r16	Not checked		
enhancedUL-TransientPeriod-r16	Not checked		

sharedSpectrumChAccessParamsPerBand-v1640	Not checked		
type1-PUSCH-RepetitionMultiSlots-v1650	Not checked		
type2-PUSCH-RepetitionMultiSlots-v1650	Not checked		
pusch-RepetitionMultiSlots-v1650	Not checked		
configuredUL-GrantType1-v1650	Not checked		
configuredUL-GrantType2-v1650	Not checked		
sharedSpectrumChAccessParamsPerBand-v1650	Not checked		
enhancedSkipUplinkTxConfigured-v1660	Not checked		
enhancedSkipUplinkTxDynamic-v1660	Not checked		
maxUplinkDutyCycle-PC1dot5-MPE-FR1-r16	Not checked		
supportedBandCombinationList	Not checked		
appliedFreqBandListFilter	Not present		
	FreqBandList		FILTER_REQUESTED
}			

Condition	Explanation
FILTER_REQUESTED	This condition shall be set to true when UE is requested to filter the information via 'capabilityRequestFilter' IE in the NR5GC UECapabilityEnquiry message or via 'requestedFreqBandsNR-MRDC' IE in the EN-DC UECapabilityEnquiry message
NR-DC-SecondaryBand	Used in NR-DC test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases

– *RF-ParametersMRDC*

Table 4.6.4-39: RF-ParametersMRDC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
RF-ParametersMRDC ::= SEQUENCE {			
supportedBandCombinationList	BandCombinationList		
appliedFreqBandListFilter	FreqBandList with condition EN-DC		EN-DC
	FreqBandList with condition NE-DC		NE-DC
	FreqBandList with condition EN-DC and CA-InterBand		ENDC_CA-InterBand
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity used in NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity

– *RLC-Parameters*

Table 4.6.4-40: *RLC-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
RLC-Parameters ::= SEQUENCE {			
am-WithShortSN	Not checked		
um-WithShortSN	Not checked		
um-WIthLongSN	Not checked		
}			

– *SDAP-Parameters*

Table 4.6.4-41: *SDAP-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SDAP-Parameters::= SEQUENCE {			
as-ReflectiveQoS	Not checked		
}			

– *SidelinkParameters*

Table 4.6.4-41A: *SidelinkParameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SidelinkParameters-r16 ::= SEQUENCE {			
FFS			
}			

– *SON-Parameters*

Table 4.6.4-41B: *SON-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SON-Parameters-r16 ::= SEQUENCE {			
FFS			
}			

– *SpatialRelationsSRS-Pos*

Table 4.6.4-41C: *SpatialRelationsSRS-Pos*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SpatialRelationsSRS-Pos-r16 ::= SEQUENCE {			
FFS			
}			

– *SRS-AllPosResourcesRRC-Inactive*

Table 4.6.4-41D: *SRS-AllPosResourcesRRC-Inactive*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-AllPosResourcesRRC-Inactive-r17 ::= SEQUENCE {			
FFS			
}			

– *SRS-SwitchingTimeNR*

Table 4.6.4-42: *SRS-SwitchingTimeNR*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-SwitchingTimeNR::= SEQUENCE {			
switchingTimeDL	Not checked		
switchingTimeUL	Not checked		
}			

– *SRS-SwitchingTimeEUTRA*

Table 4.6.4-43: *SRS-SwitchingTimeEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SRS-SwitchingTimeEUTRA ::= SEQUENCE {			
switchingTimeDL	Not checked		
switchingTimeUL	Not checked		
}			

– *SupportedBandwidth*

Table 4.6.4-44: SupportedBandwidth

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SupportedBandwidth ::= CHOICE {			
fr1	Not checked		FR1
fr2	Not checked		FR2
}			

– *UE-BasedPerfMeas-Parameters*

Table 4.6.4-44A: *UE-BasedPerfMeas-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-BasedPerfMeas-Parameters-r16 ::= SEQUENCE {			
FFS			
}			

– *UE-CapabilityRAT-ContainerList*

Table 4.6.4-45: UE-CapabilityRAT-ContainerList

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-CapabilityRAT-ContainerList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Container {	n entries		
UE-CapabilityRAT-Container[1] SEQUENCE {		entry 1	
rat-Type	RAT-Type		
ue-CapabilityRAT-Container	UE-NR-Capability with condition NR		
	UE-NR-Capability with condition NR-DC		NR-DC
	UE-NR-Capability with condition NR_CA-InterBand		NR_CA-InterBand
}			
UE-CapabilityRAT-Container[2] SEQUENCE {		entry 2	EN-DC, NE-DC, EN-DC_CA-InterBand
rat-Type	RAT-Type with condition NE-DC		
ue-CapabilityRAT-Container	UE-MRDC-Capability with condition EN-DC		EN-DC
	UE-MRDC-Capability with condition NE-DC		NE-DC
	UE-MRDC-Capability with condition EN-DC_CA-InterBand		EN-DC_CA-InterBand
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases
NR-DC	Used in NR-DC test cases

– *UE-CapabilityRAT-RequestList*

Table 4.6.4-46: *UE-CapabilityRAT-RequestList*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-CapabilityRAT-RequestList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Request {	n entries		
UE-CapabilityRAT-Request[1] SEQUENCE {		entry 1	NR, NR-DC, NR_CA-InterBand
rat-Type	RAT-Type		
capabilityRequestFilter	UE-CapabilityRequestFilterNR with condition NR	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
	UE-CapabilityRequestFilterNR with condition NR-DC	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	NR-DC
	UE-CapabilityRequestFilterNR with condition NR_CA-InterBand	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	NR_CA-InterBand
}			
UE-CapabilityRAT-Request[1] SEQUENCE {		entry 1	NE-DC, EN-DC, EN-DC_CA-InterBand
rat-Type	RAT-Type with condition NR		
capabilityRequestFilter	UE-CapabilityRequestFilterNR with condition NR	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
}			
UE-CapabilityRAT-Request[2] SEQUENCE {		entry 2	NE-DC
rat-Type	RAT-Type with condition NE-DC		
capabilityRequestFilter	UE-CapabilityRequestFilterNR with condition NE-DC	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
}			
UE-CapabilityRAT-Request[2] SEQUENCE {		entry 2	EN-DC, EN-DC_CA-InterBand
rat-Type	RAT-Type with condition EN-DC		
capabilityRequestFilter	UE-CapabilityRequestFilterNR with condition EN-DC	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
	UE-CapabilityRequestFilterNR with condition EN-DC_CA-InterBand		
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases
NR	NG-RAN NR Radio Access
NR-DC	Used in NR-DC test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity

– *UE-CapabilityRequestFilterCommon*

Table 4.6.4-46A: *UE-CapabilityRequestFilterCommon*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-CapabilityRequestFilterCommon ::= SEQUENCE {			
mrdc-Request SEQUENCE {			
omitEN-DC	Not checked		
includeNR-DC	Not checked		
includeNE-DC	Not checked		
}			
}			

– *UE-CapabilityRequestFilterNR*

Table 4.6.4-47: *UE-CapabilityRequestFilterNR*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-CapabilityRequestFilterNR ::= SEQUENCE {			
frequencyBandListFilter	FreqBandList with condition NR		NR
	FreqBandList with condition EN-DC		EN-DC
	FreqBandList with condition EN-DC AND CA-InterBand		EN-DC_CA-InterBand
	FreqBandList with condition NR AND CA-InterBand		NR_CA-InterBand
	FreqBandList with condition NR and NR-DC		NR-DC
	FreqBandList with condition NR and NE-DC		NE-DC
nonCriticalExtension SEQUENCE {	Not present		
srs-SwitchingTimeRequest	Not present		
nonCriticalExtension SEQUENCE {			
srs-SwitchingTimeRequest	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases
NR	NG-RAN NR Radio Access
NR-DC	Used in NR-DC test cases
NE-DC	NR E-UTRA Dual Connectivity

– *UE-MRDC-Capability*

Table 4.6.4-48: UE-MRDC-Capability

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-MRDC-Capability ::= SEQUENCE {			
measAndMobParametersMRDC	Not checked		
phy-ParametersMRDC-v1530	Not checked		
rf-ParametersMRDC	RF-ParametersMRDC with condition EN-DC		
	RF-ParametersMRDC with condition NE-DC		NE-DC
	RF-ParametersMRDC with condition EN-DC_CA-InterBand		EN-DC_CA-InterBand
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA	Not checked		
}			
fdd-Add-UE-MRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA-v1530	Not checked		
}			
}			
tdd-Add-UE-MRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA-v1530	Not checked		
}			
}			
fr1-Add-UE-MRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
fr2-Add-UE-MRDC-Capabilities			
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
featureSetCombinations	Not checked		
pdcp-ParametersMRDC-v1530	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			
UE-MRDC-Capability-v1560 SEQUENCE {			
receivedFilters	Not checked		
measAndMobParametersMRDC-v1560 SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE {			

sftd-MeasPSCell-NEDC	Not checked		
}			
}			
fdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE {			
sftd-MeasPSCell-NEDC	Not checked		
}			
}			
tdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE {			
sftd-MeasPSCell-NEDC	Not checked		
}			
}			
nonCriticalExtension	Not checked		
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity used in NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity

– *UE-NR-Capability*

Table 4.6.4-49: UE-NR-Capability

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-NR-Capability ::= SEQUENCE {			
accessStratumRelease	AccessStratumRelease		
pdcp-Parameters	Not checked		
rlc-Parameters	Not checked		
mac-Parameters	Not checked		
phy-Parameters	Not checked		
rf-Parameters	RF-Parameters		
	RF-Parameters with condition NR-DC		NR-DC
	RF-Parameters with condition NR_CA-InterBand		NR_CA-InterBand
measAndMobParameters	Not checked		
fdd-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		
multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
}			
tdd-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		
multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
fr1-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
oneFL-DMRS-TwoAdditionalDMRS	Not checked		
twoFL-DMRS	Not checked		
twoFL-DMRS-TwoAdditionalDMRS	Not checked		
oneFL-DMRS-ThreeAdditionalDMRS	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		

csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
freqHoppingPUCCH-F0-2	Not checked		
freqHoppingPUCCH-F1-3-4	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH	Not checked		
uci-CodeBlockSegmentation	Not checked		
onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdcch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
measAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			
fr2-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {	Not checked		
dynamicSFI	Not checked		
oneFL-DMRS-TwoAdditionalDMRS	Not checked		
twoFL-DMRS	Not checked		
twoFL-DMRS-TwoAdditionalDMRS	Not checked		
oneFL-DMRS-ThreeAdditionalDMRS	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
freqHoppingPUCCH-F0-2	Not checked		
freqHoppingPUCCH-F1-3-4	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH	Not checked		
uci-CodeBlockSegmentation	Not checked		
onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdcch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		

tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
measAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			
featureSets	Not checked		
featureSetCombinations	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			
fdd-Add-UE-NR-Capabilities-1530 SEQUENCE {			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not checked		
}			
}			
tdd-Add-UE-NR-Capabilities-v1530 SEQUENCE {			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA Not Checked			
}			
}			
dummy	Not checked		
interRAT-Parameters	Not checked		
inactiveState	Not checked		
delayBudgetReporting	Not checked		
nonCriticalExtension SEQUENCE {			
sdap-Parameters	Not checked		
overheatingInd	Not checked		
ims-Parameters	Not checked		
fr1-Add-UE-NR-Capabilities-v1540 SEQUENCE {			
ims-ParametersFRX-Diff SEQUENCE {			
voiceOverNR	Not checked		
}			
}			
fr2-Add-UE-NR-Capabilities-v1540 SEQUENCE {			
ims-ParametersFRX-Diff SEQUENCE {			
voiceOverNR	Not checked		
}			
}			
fr1-fr2-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
dummy1	Not checked		
twoFL-DMRS	Not checked		
dummy2	Not checked		
dummy3	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		

twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
freqHoppingPUCCH-F0-2	Not checked		
freqHoppingPUCCH-F1-3-4	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH- MultiPerSlot	Not checked		
uci-CodeBlockSegmentation	Not checked		
onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdcch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
measAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			
nonCriticalExtension SEQUENCE {	Not checked		
reducedCP-Latency	Not checked		
nonCriticalExtension SEQUENCE {			
nrdc-Parameters	Not checked		
receivedFilters	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			
}			

Condition	Explanation
NR-DC	Used in NR-DC test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases

– *UE-RadioPagingInfo*

Table 4.6.4-49A: *UE-RadioPagingInfo*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-RadioPagingInfo-r17 ::= SEQUENCE {			
FFS			
}			

– *SharedSpectrumChAccessParamsPerBand*

Table 4.6.4-50: *SharedSpectrumChAccessParamsPerBand*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SharedSpectrumChAccessParamsPerBand-r16 ::= SEQUENCE {			
FFS			
}			

4.6.5 Other information elements

– *AbsoluteTimeInfo*

Table 4.6.5-0A: *AbsoluteTimeInfo*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
AbsoluteTimeInfo-r16	FFS		

– *AppLayerMeasConfig*

Table 4.6.5-0BA: *AppLayerMeasConfig*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
AppLayerMeasConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *AreaConfiguration*

Table 4.6.5-0B: *AreaConfiguration*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
AreaConfiguration-r16 ::= SEQUENCE {			
FFS			
}			

– *BT-NameList*

Table 4.6.5-0C: *BT-NameList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
BT-NameList-r16 ::= SEQUENCE (SIZE (1..maxBT-Name-r16)) OF {	1 entry		
BT-Name-r16[1]	Set according to specific message content	OCTET STRING (SIZE (1..248))	
}			

– *DedicatedInfoF1c*

Table 4.6.5-0D: *DedicatedInfoF1c*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
DedicatedInfoF1c-r17	FFS		

– *EUTRA-AllowedMeasBandwidth*

Table 4.6.5-1: *EUTRA-AllowedMeasBandwidth*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-AllowedMeasBandwidth	Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell	row 'measurement Bandwidth'	

– *EUTRA-MBSFN-SubframeConfigList*

Table 4.6.5-2: *EUTRA-MBSFN-SubframeConfigList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-MBSFN-SubframeConfigList ::= SEQUENCE (SIZE (1..maxMBSFN-Allocations)) OF EUTRA-MBSFN-SubframeConfig {	1 entry		
MBSFN-SubframeConfig[1] SEQUENCE {		entry 1	
radioframeAllocationPeriod	FFS		
radioframeAllocationOffset	FFS		
subframeAllocation1 CHOICE {			
oneFrame	FFS		
fourFrames	FFS		
}			
subframeAllocation2 CHOICE {			
oneFrame	FFS		
fourFrames	FFS		
}			
}			
}			

– *EUTRA-MultiBandInfoList*

Table 4.6.5-3: *EUTRA-MultiBandInfoList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-MultiBandInfoList ::= SEQUENCE (SIZE (1..maxMultiBands)) OF EUTRA-MultiBandInfo {	1 entry		
EUTRA-MultiBandInfo[1] SEQUENCE {		entry 1	
eutra-FreqBandIndicator	FreqBandIndicatorEUTRA		
eutra-NS-PmaxList	EUTRA-NS-PmaxList		
}			
}			

– *EUTRA-NS-PmaxList*

Table 4.6.5-4: *EUTRA-NS-PmaxList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-NS-PmaxList ::= SEQUENCE (SIZE (1..maxEUTRA-NS-Pmax)) OF EUTRA-NS-PmaxValue {	1 entry		
EUTRA-NS-PmaxValue[1] SEQUENCE {		entry 1	
additionalPmax	FFS		
additionalSpectrumEmission	FFS		
}			
}			

– *EUTRA-PhysCellId*

Table 4.6.5-5: *EUTRA-PhysCellId*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-PhysCellId	Set according to TS 36.508 [2] Table 4.4.2-1A for E-UTRA cell		

– *EUTRA-PhysCellIdRange*

Table 4.6.5-6: *EUTRA-PhysCellIdRange*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-PhysCellIdRange ::= SEQUENCE {			
start	EUTRA-PhysCellId		
Range	FFS		
}			

– *EUTRA-PresenceAntennaPort1*

Table 4.6.5-7: *EUTRA-PresenceAntennaPort1*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-PresenceAntennaPort1	FFS		

– *EUTRA-Q-OffsetRange*

Table 4.6.5-8: *EUTRA-Q-OffsetRange*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-Q-OffsetRange	FFS		

Table 4.6.5-9: *Void*

Table 4.6.5-10: *Void*

– *IAB-IP-Address*

Table 4.6.5-10A: *IAB-IP-Address*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
IAB-IP-Address-r16 ::= SEQUENCE {			
FFS			
}			

– *IAB-IP-AddressIndex*

Table 4.6.5-10B: *IAB-IP-AddressIndex*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
IAB-IP-AddressIndex-r16	FFS		

– *IAB-IP-Usage*

Table 4.6.5-10C: *IAB-IP-Usage*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
IAB-IP-Usage-r16	FFS		

– *LoggingDuration*

Table 4.6.5-10D: *LoggingDuration*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
LoggingDuration-r16	FFS		

– *LoggingInterval*

Table 4.6.5-10E: *LoggingInterval*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
LoggingInterval-r16	FFS		

– *LogMeasResultListBT*

Table 4.6.5-10F: *LogMeasResultListBT*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
LogMeasResultListBT-r16 ::= SEQUENCE {			
LogMeasResultBT-r16 ::= SEQUENCE {			
bt-Addr-r16	Not checked	BIT STRING (SIZE (48))	
rssi-BT-r16	Not checked	INTEGER (-128..127)	
}			
}			

– *LogMeasResultListWLAN*

Table 4.6.5-10G: *LogMeasResultListWLAN*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
LogMeasResultListWLAN-r16 ::= SEQUENCE {SIZE (1..maxWLAN-Id-Report-r16)) OF LogMeasResultWLAN-r16 {			
LogMeasResultWLAN-r16 SEQUENCE {			
wlan-Identifiers-r16 SEQUENCE {			
ssid-r16	Not checked	OCTET STRING (SIZE (1..32))	
bssid-r16	Not checked	OCTET STRING (SIZE (6))	
hessid-r16	Not checked	OCTET STRING (SIZE (6))	
}			
rssiWLAN-r16	Not checked	INTEGER(0..141)	
rtt-WLAN-r16 SEQUENCE {			
rttValue-r16	Not checked	INTEGER (0..16777215)	
rttUnits-r16	Not checked		
rttAccuracy-r16	Not checked	INTEGER (0..255)	
}			
}			

– *MeasConfigAppLayerId*

Table 4.6.5-10H: *MeasConfigAppLayerId*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasConfigAppLayerId-r17	FFS		

– *OtherConfig*

Table 4.6.5-11: *OtherConfig*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
OtherConfig ::=SEQUENCE {			
delayBudgetReportingConfig CHOICE{			
release	FFS		
setup SEQUENCE {			
delayBudgetReportingProhibitTimer	FFS		
}			
}			
}			

– *PhysCellIdUTRA-FDD*

Table 4.6.5-11A: *PhysCellIdUTRA-FDD*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
PhysCellIdUTRA-FDD-r16	FFS		

– *RRC-TransactionIdentifier*

Table 4.6.5-12: *RRC-TransactionIdentifier*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
RRC-TransactionIdentifier	0		

– *Sensor-NameList*

Table 4.6.5-13: *Sensor-NameList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
Sensor-NameList-r16 ::= SEQUENCE {			
measUncomBarPre-r16	Set according to specific message content		
measUeSpeed	Set according to specific message content		
measUeOrientation	Set according to specific message content		
}			

– *TraceReference*

Table 4.6.5-14: *TraceReference*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
TraceReference-r16 ::= SEQUENCE {			
FFS			
}			

– *UE-MeasurementsAvailable-r16*

Table 4.6.5-15: *UE-MeasurementsAvailable-r16*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-MeasurementsAvailable-r16 ::= SEQUENCE {			
..logMeasAvailable-r16	Not checked		
	true		LOG
..logMeasAvailableBT-r16	Not checked		
	true		BT
..logMeasAvailableWLAN-r16	Not checked		
	true		WLAN
..connEstFailInfoAvailable-r16	Not checked		
	true		CEF
..rlf-InfoAvailable-r16	Not checked		
	true		RLF
}			

Condition	Explanation
LOG	Logged measurement information reporting
BT	Bluetooth measurement information reporting
WLAN	WLAN measurement information reporting
CEF	Connection failure information reporting
RLF	Radio link failure information reporting

– *UTRA-FDD-Q-OffsetRange*

Table 4.6.5-16: *UTRA-FDD-Q-OffsetRange*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
UTRA-FDD-Q-OffsetRange-r16	dB0		

– *VisitedCellInfoList*

Table 4.6.5-17: *VisitedCellInfoList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
VisitedCellInfoList-r16 ::= SEQUENCE {			
FFS			
}			

– *WLAN-NameList*

Table 4.6.5-18: *WLAN-NameList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
WLAN-NameList-r16 ::= SEQUENCE (SIZE (1..maxWLAN-Name-r16)) OF {	1 entry		
WLAN-Name-r16[1]	Set according to specific message content	OCTET STRING (SIZE (1..32))	
}			

4.6.6 Sidelink information elements

– *SL-BWP-Config*

Table 4.6.6-1: *SL-BWP-Config*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-BWP-Config-r16 ::= SEQUENCE {			
sl-BWP-Id	BWP-Id		
sl-BWP-Generic-r16 SEQUENCE {			
sl-BWP-r16	BWP		
sl-LengthSymbols-r16	sym14	All symbols in slot are used for SL	
	sym12	All symbols in slot are used for SL	EXTENDED
sl-StartSymbol-r16	sym0		
sl-PSBCH-Config-r16	Not present		
sl-TxDirectCurrentLocation-r16	Not present		
}			
sl-BWP-PoolConfig-r16	SL-BWP-PoolConfig with condition SCHEDULING		
}			

Condition	Explanation
EXTENDED	When cyclicPrefix is configured in sl-BWP-r16, i.e. extended CP is used

– *SL-BWP-ConfigCommon*

Table 4.6.6-2: *SL-BWP-ConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-BWP-ConfigCommon-r16 ::= SEQUENCE {			
sl-BWP-Generic-r16 SEQUENCE {			
sl-BWP-r16	BWP		
sl-LengthSymbols-r16	sym14	All symbols in slot are used for SL	
	sym12	All symbols in slot are used for SL	EXTENDED
sl-StartSymbol-r16	sym0		
sl-PSBCH-Config-r16	Not present		
sl-TxDirectCurrentLocation-r16	Not present		
}			
sl-BWP-PoolConfigCommon-r16	SL-BWP-PoolConfigCommon with RXPOOL and SELECTED		
}			

Condition	Explanation
EXTENDED	When cyclicPrefix is configured in sl-BWP-r16, i.e. extended CP is used

– *SL-BWP-PoolConfig*

Table 4.6.6-3: *SL-BWP-PoolConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-BWP-PoolConfig-r16 ::= SEQUENCE {			
sl-RxPool-r16	Not present		
sl-TxPoolSelectedNormal-r16	Not present		
sl-TxPoolSelectedNormal-r16 SEQUENCE {			SELECTED
sl-PoolToReleaseList-r16	Not present		
sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition SL_HARQ		
}			
}			
}			
sl-TxPoolScheduling-r16	Not present		
sl-TxPoolScheduling-r16 SEQUENCE {			SCHEDULING
sl-PoolToReleaseList-r16	Not present		
sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool used for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition SL_HARQ		
}			
}			
}			
sl-TxPoolExceptional-r16	Not present		
sl-TxPoolExceptional-r16 SEQUENCE {			EXCEPTIONAL
sl-ResourcePoolID-r16	2	Index of the pool used during exceptional cases	
sl-ResourcePool-r16	SL-ResourcePool with condition EXCEPTIONAL and SL_HARQ		
}			
}			

Condition	Explanation
SCHEDULING	To configure Tx resource pool for Mode 1 SL transmission
SELECTED	To configure Tx resource pool for Mode 2 SL transmission
EXCEPTIONAL	To configure Tx resource pool for exceptional cases such as HO, re-establishment etc.

– *SL-BWP-PoolConfigCommon*

Table 4.6.6-4: *SL-BWP-PoolConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-BWP-PoolConfigCommon-r16 ::= SEQUENCE {			
sl-RxPool-r16	Not present		
sl-RxPool-r16 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r16 {	1 entry		RXPOOL
SL-ResourcePool-r16[1]	SL-ResourcePool with condition SL_HARQ	entry 1	
}			
sl-TxPoolSelectedNormal-r16	Not present		
sl-TxPoolSelectedNormal-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		SELECTED
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition SL_HARQ		
}			
}			
sl-TxPoolExceptional-r16	Not present		
sl-TxPoolExceptional-r16 SEQUENCE {			EXCEPTIONAL
sl-ResourcePoolID-r16	2	Index of the resource pool used for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition EXCEPTIONAL and SL_HARQ		
}			

Condition	Explanation
RXPOOL	To configure Rx resource pool
SELECTED	To configure Tx resource pool for Mode 2 SL transmission
EXCEPTIONAL	To configure Tx resource pool for exceptional cases such as HO, re-establishment etc.

– *SL-CBR-PriorityTxConfigList*

Table 4.6.6-5: *SL-CBR-PriorityTxConfigList*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-CBR-PriorityTxConfigList -r16 ::= SEQUENCE (SIZE (1..8)) OF SL-PriorityTxConfigIndex-r16 {	8 entries		
SL-PriorityTxConfigIndex-r16[k, k=1..8] SEQUENCE {		entry k	
sl-PriorityThreshold-r16	k	priority value = k	
sl-DefaultTxConfigIndex-r16	0	PSSCH Tx configuration corresponding to the first CBR level is used by UE when UE has no available CBR results.	
sl-CBR-ConfigIndex-r16	0	1st CBR level table is used	
sl-Tx-ConfigIndexList-r16 SEQUENCE (SIZE (1.. maxCBR-Level-r16)) OF SL-TxConfigIndex-r16 {	2 entries		
SL-TxConfigIndex-r16[1]	0	entry 1 for CBR level corresponding to the first entry in sl-CBR-RangeConfigList	
SL-TxConfigIndex-r16[2]	0	entry 2 for CBR level corresponding to the second entry in sl-CBR-RangeConfigList	
}			
}			
}			

– *SL-CBR-CommonTxConfigList*

Table 4.6.6-6: *SL-CBR-CommonTxConfigList*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-CBR-CommonTxConfigList-r16 ::= SEQUENCE {			
sl-CBR-RangeConfigList-r16 SEQUENCE (SIZE (1..maxCBR-Config-r16)) OF SL-CBR-LevelsConfig-r16 {	1 entry		
SL-CBR-LevelsConfig-r16[1] SEQUENCE (SIZE (1..maxCBR-Level-r16)) OF SL-CBR-r16 {	2 entries		
SL-CBR-r16[1]	50	entry 1 0<=CBR<0.5	
SL-CBR-r16[2]	100	entry 2 0.5<=CBR<1	
}			
}			
sl-CBR-PSSCH-TxConfigList-r16 SEQUENCE (SIZE (1.. maxTxConfig-r16)) OF SL-CBR-PSSCH-TxConfig-r16 {	1 entry		
SL-CBR-PSSCH-TxConfig-r16 SEQUENCE {			
sl-CR-Limit-r16	10000	CR limit = 100%	
sl-TxParameters-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
}			
}			
}			

– *SL-ConfigDedicatedNR*

Table 4.6.6-7: *SL-ConfigDedicatedNR*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-ConfigDedicatedNR-r16 ::= SEQUENCE {			
sl-PHY-MAC-RLC-Config-r16	Not present		
sl-PHY-MAC-RLC-Config-r16 SEQUENCE {			SCHEDULING, SELECTED
sl-ScheduledConfig-r16	Not present		
sl-ScheduledConfig-r16 CHOICE {			SCHEDULING
setup	SL-ScheduledConfig		
}			
sl-UE-SelectedConfig-r16	Not present		
sl-UE-SelectedConfig-r16 CHOICE {			SELECTED
setup	SL-UE-SelectedConfig		
}			
sl-FreqInfoToReleaseList-r16	Not present		
sl-FreqInfoToAddModList-r16	Not present		
sl-FreqInfoToAddModList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfig-r16 {	1 entry		SCHEDULING, SELECTED
SL-FreqConfig-r16[1]	SL-FreqConfig	entry 1	
}			
sl-RLC-BearerToReleaseList-r16	Not present		
sl-RLC-BearerToAddModList-r16	Not present		
sl-RLC-BearerToAddModList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 {	1 entry		SL_DRB
SL-RLC-BearerConfig-r16[1]	SL-RLC-BearerConfig	entry 1	
}			
sl-MaxNumConsecutiveDTX-r16	Not present		
sl-CSI-Acquisition-r16	Not present		
	enabled		SL_CSI_REPORT
sl-CSI-SchedulingRequestId-r16	Not present		
sl-SSB-PriorityNR-r16	1		
networkControlledSyncTx-r16	off	UE doesn't send SL SSB by default	
}			
sl-RadioBearerToReleaseList-r16	Not present		
sl-RadioBearerToAddModList-r16	Not present		
sl-RadioBearerToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 {	1 entry		SL_DRB
SL-RadioBearerConfig-r16[1]	SL-RadioBearerConfig		
}			
sl-MeasConfigInfoToReleaseList-r16	Not present		
sl-MeasConfigInfoToAddModList-r16	Not present		
sl-MeasConfigInfoToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-MeasConfigInfo-r16 {	1 entry		SL_MEAS
SL-MeasConfigInfo-r16[1]	SL-MeasConfigInfo		
}			
t400-r16	ms2000		
}			

Condition	Explanation
SCHEDULING	To configure UE performing mode 1 SL transmission
SELECTED	To configure UE performing mode 2 SL transmission
SL_DRB	To establish SL DRB
SL_MEAS	To configure UE performing measurements based on RS sent by peer UE
SL_CSI_REPORT	To configure UE performing SL CSI reporting

– *SL-ConfiguredGrantConfig*

Table 4.6.6-8: *SL-ConfiguredGrantConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-ConfiguredGrantConfig-r16 ::= SEQUENCE {			
sl-ConfigIndexCG-r16	1		
sl-PeriodCG-r16 CHOICE {			
sl-PeriodCG1-r16	ms100		
}			
sl-NrOfHARQ-Processes-r16	4		
sl-HARQ-ProcID-offset-r16	1		
sl-CG-MaxTransNumList-r16 SEQUENCE (SIZE (1..8)) OF SL-CG-MaxTransNum-r16	8 entries		
SL-CG-MaxTransNum-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-MaxTransNum-r16	8	max Tx number = 8 for all priorities	
}			
}			
rrc-ConfiguredSidelinkGrant-r16	Not present	TYPE 2 CG is configured by default	
rrc-ConfiguredSidelinkGrant-r16 SEQUENCE {			TYPE 1
sl-TimeResourceCG-Type1-r16	a TRIV chosen by SS from the range 0 to 496 as specified in 38.214		
sl-StartSubchannelCG-Type1-r16	0		
sl-FreqResourceCG-Type1-r16	a FRIV chosen by SS from the range 0 to 6929 as specified in 38.214		
sl-TimeOffsetCG-Type1-r16	0		
sl-N1PUCCH-AN-r16	Not present		
	PUCCH-ResourceId		SL_HARQ_VIA_UU
sl-PSFCH-ToPUCCH-CG-Type1-r16	Not present		
	1		SL_HARQ_VIA_UU
sl-ResourcePoolID-r16	1	Resource pool for normal case is used	
sl-TimeReferenceSFN-Type1-r16	Not present	Default value sfn0 is used	
}			
}			

Condition	Explanation
TYPE 1	To configure a type 1 SL configured grant for UE
SL HARQ_VIA_UU	to report HARQ-ACK information that the UE generates based on PSFCH reception via UL

– *SL-DestinationIdentity*

Table 4.6.6-9: *SL-DestinationIdentity*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-DestinationIdentity-r16	24 bits destination ID chosen by SS		

– *SL-FreqConfig*

Table 4.6.6-10: *SL-FreqConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-FreqConfig-r16 ::= SEQUENCE {			
sl-Freq-Id-r16	1		
sl-SCS-SpecificCarrierList-r16 SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition SL_PointA	entry 1	`
}			
sl-AbsoluteFrequencyPointA-r16	ARFCN-ValueNR with condition SL_PointA		
sl-AbsoluteFrequencySSB-r16	ARFCN-ValueNR with condition SL_SSB		
frequencyShift7p5khzSL-r16	Not present		
valueN-r16	0		
sl-BWP-ToReleaseList-r16	Not present		
sl-BWP-ToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-BWPs-r16)) OF SL-BWP-Config-r16 {	1 entry		
SL-BWP-Config-r16[1]	SL-BWP-Config	entry 1	
}			
sl-SyncConfigList-r16 SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16 {	1 entry		
SL-SyncConfig-r16[1]	SL-SyncConfig	entry 1	
}			
sl-SyncPriority-r16	gnss		
}			

– *SL-FreqConfigCommon*

Table 4.6.6-11: *SL-FreqConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-FreqConfigCommon-r16 ::= SEQUENCE {			
sl-SCS-SpecificCarrierList-r16 SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition SL_PointA	entry 1	
}			
sl-AbsoluteFrequencyPointA-r16	ARFCN-ValueNR with condition SL_PointA		
sl-AbsoluteFrequencySSB-r16	ARFCN-ValueNR with condition SL_SSB		
frequencyShift7p5khzSL-r16	Not present		
valueN-r16	0		
sl-BWP-List-r16 SEQUENCE (SIZE (1..maxNrofSL-BWPs-r16)) OF SL-BWP-ConfigCommon-r16 {	1 entry		
SL-BWP-ConfigCommon-r16[1]	SL-BWP-ConfigCommon		
}			
sl-SyncPriority-r16	gnss		
sl-NbAsSync-r16	Not present		
sl-SyncConfigList-r16 SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16 {	1 entry		
SL-SyncConfig-r16[1] SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16	1 entry	entry 1	
SL-SyncConfig-r16[1]	SL-SyncConfig	entry 1	
}			
}			

– *SL-LogicalChannelConfig*

Table 4.6.6-12: *SL-LogicalChannelConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-LogicalChannelConfig-r16 ::= SEQUENCE {			
sl-Priority-r16	1		
sl-PrioritisedBitRate-r16	infinity		
sl-BucketSizeDuration-r16	ms50		
sl-ConfiguredGrantType1Allowed-r16	Not present		
sl-HARQ-FeedbackEnabled-r16	enabled		
sl-AllowedCG-List-r16	Not present		
sl-AllowedSCS-List-r16	Not present		
sl-MaxPUSCH-Duration-r16	Not present		
sl-LogicalChannelGroup-r16	1	Avoiding using LCG #0, which is reserved for SL SRB	
	5	Avoiding using LCG #0, which s reserved for SL SRB	LO
sl-SchedulingRequestId-r16	SchedulingRequestId		
sl-LogicalChannelSR-DelayTimerApplied-r16	Not present		
}			

Condition	Explanation
LO	LCG of the lower priority logical channels mapped to SL DRBs

– *SL-MeasConfigCommon*

Table 4.6.6-13: *SL-MeasConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-MeasConfigCommon-r16 ::= SEQUENCE {			
sl-MeasObjectListCommon-r16	SL-MeasObjectList		
sl-ReportConfigListCommon-r16	SL-ReportConfigList with condition PERIODICAL		
sl-MeasIdListCommon-r16	SL-MeasIdList		
sl-QuantityConfigCommon-r16	SL-QuantityConfig		
}			

– *SL-MeasConfigInfo*

Table 4.6.6-14: *SL-MeasConfigInfo*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-MeasConfigInfo-r16 ::= SEQUENCE {			
sl-DestinationIndex-r16	0	The first destination UE reported in sl-TxResourceReqList in SidelinkUEInformationNR	
sl-MeasConfig-r16 SEQUENCE {			
sl-MeasObjectToRemoveList-r16	Not present		
sl-MeasObjectToAddModList-r16	SL-MeasObjectList		
sl-ReportConfigToRemoveList-r16	Not present		
sl-ReportConfigToAddModList-r16	SL-ReportConfigList with condition PERIODICAL		
sl-MeasIdToRemoveList-r16	Not present		
sl-MeasIdToAddModList-r16	SL-MeasIdList		
sl-QuantityConfig-r16	SL-QuantityConfig		
}			
}			

– *SL-MeasIdList*

Table 4.6.6-15: *SL-MeasIdList*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-MeasIdList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-MeasId-r16)) OF SL-MeasIdInfo-r16	1 entry		
SL-MeasIdInfo-r16[1] SEQUENCE {		entry 1	
sl-MeasId-r16	1		
sl-MeasObjectId-r16	1		
sl-ReportConfigId-r16	1		
}			
}			

– *SL-MeasObjectList*

Table 4.6.6-16: *SL-MeasObjectList*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-MeasObjectList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-ObjectId-r16)) OF SL-MeasObjectInfo-r16 {	1 entry		
SL-MeasObjectInfo-r16[1] SEQUENCE {		entry 1	
sl-MeasObjectId-r16	1		
sl-MeasObject-r16 SEQUENCE {			
frequencyInfoSL-r16	ARFCN-ValueNR of the DMRS used for SL-RSRP measurement Note: How to set frequencyInfoSL-r16 is FFS.		
}			
}			
}			

– *SL-PDCP-Config*

Table 4.6.6-17: *SL-PDCP-Config*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-PDCP-Config-r16 ::= SEQUENCE {			
sl-DiscardTimer-r16	infinity		
sl-PDCP-SN-Size-r16	len12bits		
sl-OutOfOrderDelivery	Not present		
}			

– *SL-PSBCH-Config*

Table 4.6.6-18: *SL-PSBCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-PSBCH-Config-r16 ::= SEQUENCE {			
dl-P0-PSBCH-r16	0		
dl-Alpha-PSBCH-r16	Not present	Default value 1 is used	
}			

– *SL-PSSCH-TxConfigList*

Table 4.6.6-19: *SL-PSSCH-TxConfigList*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 {	1 entry		
SL-PSSCH-TxConfig-r16[1] SEQUENCE {		entry 1	
sl-TypeTxSync-r16	Not present	Applicable for all synchronization reference types	
sl-ThresUE-Speed-r16	kmph60		
sl-ParametersAboveThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	15		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
sl-ParametersBelowThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	16		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
}			
}			

– *SL-QoS-FlowIdentity*

Table 4.6.6-20: *SL-QoS-FlowIdentity*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-QoS-FlowIdentity-r16	1		

– *SL-QoS-Profile*

Table 4.6.6-21: *SL-QoS-Profile*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-QoS-Profile-r16 ::= SEQUENCE {			
sl-PQI-r16 CHOICE {			
sl-StandardizedPQI-r16	0		
}			
sl-GFBR-r16	500		
sl-MFBR-r16	1000		
sl-Range-r16	Not present		
}			

– *SL-QuantityConfig*

Table 4.6.6-22: *SL-QuantityConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-QuantityConfig-r16 ::= SEQUENCE {			
sl-FilterCoefficientDMRS-r16	fc4		
}			

– *SL-RadioBearerConfig*

Table 4.6.6-23: *SL-RadioBearerConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-RadioBearerConfig-r16 ::= SEQUENCE {			
slrb-Uu-ConfigIndex-r16	SLRB-Uu-ConfigIndex		
sl-SDAP-Config-r16	SL-SDAP-Config		
sl-PDCP-Config-r16	SL-PDCP-Config		
sl-TransRange-r16	Not present		
}			

– *SL-ReportConfigList*

Table 4.6.6-24: *SL-ReportConfigList (Thres)*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-ReportConfigList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-ReportConfigId-r16)) OF SL-ReportConfigInfo-r16 {	1 entry		
SL-ReportConfigInfo-r16[1] SEQUENCE {		entry 1	
sl-ReportConfigId-r16	1		
sl-ReportConfig-r16 SEQUENCE {			
sl-ReportType-r16 CHOICE {			
sl-Periodical-r16 SEQUENCE {			PERIODICAL
sl-ReportInterval-r16	ReportInterval		
sl-ReportAmount-r16	infinity		
sl-ReportQuantity-r16 CHOICE {			
sl-RSRP-r16	true		
}			
sl-RS-Type-r16	dmrs		
}			
sl-EventTriggered-r16 SEQUENCE {			EVENT_S1, EVENT_S2
sl-EventId-r16 CHOICE {			
eventS1-r16 SEQUENCE {			EVENT_S1
s1-Threshold-r16 CHOICE {			
sl-RSRP-r16	Thres + 156	Thres is the actual value of event S1 thresold (in dBm)	
}			
sl-ReportOnLeave-r16	false		
sl-Hysteresis-r16	Hysteresis		
sl-TimeToTrigger-r16	TimeToTrigger		
}			
eventS2-r16 SEQUENCE {			EVENT_S2
s2-Threshold-r16 CHOICE {			
sl-RSRP-r16	Thres + 156	Thres is the actual value of event S2 thresold (in dBm)	
}			
sl-ReportOnLeave-r16	false		
sl-Hysteresis-r16	Hysteresis		
sl-TimeToTrigger-r16	TimeToTrigger		
}			
}			
sl-ReportInterval-r16	ReportInterval		
sl-ReportAmount-r16	r2		
sl-ReportQuantity-r16 CHOICE {			
sl-RSRP-r16	true		
}			
sl-RS-Type-r16	dmrs		
}			
}			
}			
}			

Condition	Explanation
EVENT_S1	Configuration of event S1 triggered reprting
EVENT_S2	Configuration of event S2 triggered reprting
PERIODICAL	Configuration of periodical reporting

– *SL-ResourcePool*

Table 4.6.6-25: *SL-ResourcePool*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-ResourcePool-r16 ::= SEQUENCE {			
sl-PSCCH-Config-r16 CHOICE {			
setup SEQUENCE {			
sl-TimeResourcePSCCH-r16	n2		
sl-FreqResourcePSCCH-r16	n10		
sl-DMRS-ScrambleID-r16	0		
sl-NumReservedBits-r16	2		
}			
}			
sl-PSSCH-Config-r16 CHOICE {			
setup SEQUENCE {			
sl-PSSCH-DMRS-TimePatternList-r16 SEQUENCE (SIZE (1..3)) OF INTEGER (2..4) {	2 entries		
INTEGER[1]	2	entry 1	
INTEGER[2]	4	entry 2	
}			
sl-BetaOffsets2ndSCI-r16 SEQUENCE (SIZE (4)) OF SL-BetaOffsets-r16 {	4 entries		
SL-BetaOffsets-r16[k, k=1..4]	1	entry k	
}			
sl-Scaling-r16	f1		
}			
}			
sl-PSFCH-Config-r16	Not present		
sl-PSFCH-Config-r16 CHOICE {			SL_HARQ
setup SEQUENCE {			
sl-PSFCH-Period-r16	sl4		
sl-PSFCH-RB-Set-r16	bitstring of length n, The leftmost p*floor(m/p)*floor(n/m) bits are set to "1" and the rest are set to "0"	Note 1, Note 2, Note 3	
sl-NumMuxCS-Pair-r16	n2		
sl-MinTimeGapPSFCH-r16	sl2		
sl-PSFCH-HopID-r16	Not present	Default frequency hopping ID 0 is used	
sl-PSFCH-CandidateResourceType-r16	startSubCH		
}			
}			
sl-SyncAllowed-r16 SEQUENCE {			
gnss-Sync-r16	true		
gnbEnb-Sync-r16	true		
ue-Sync-r16	true		
}			
sl-SubchannelSize-r16	n10		
dummy	Not present		
sl-StartRB-Subchannel-r16	0	start RB of BWP	
sl-NumSubchannel-r16	floor(n/m)	Note 1, Note 2	
sl-Additional-MCS-Table-r16	Not present		
sl-ThreshS-RSSI-CBR-r16	0	actual value is -112 dBm	
sl-TimeWindowSizeCBR-r16	slot100		
sl-TimeWindowSizeCR-r16	slot1000		
sl-PTRS-Config-r16	Not present		
sl-UE-SelectedConfigRP-r16 SEQUENCE {			
sl-CBR-PriorityTxConfigList-r16	SL-CBR-PriorityTxConfigList		
sl-Thres-RSRP-List-r16	SL-Thres-RSRP-List		
sl-MultiReserveResource-r16	Not present		
sl-MaxNumPerReserve-r16	n2		
sl-SensingWindow-r16	ms100		

sl-SelectionWindowList-r16 SEQUENCE (SIZE (8)) OF SL-SelectionWindowConfig-r16 {	8 entries		
SL-SelectionWindowConfig-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-SelectionWindow-r16	n10		
}			
}			
sl-ResourceReservePeriodList-r16	Not present		
sl-RS-ForSensing-r16	pssch		
sl-CBR-PriorityTxConfigList-v1650	Not present		
}			
sl-RxParametersNcell-r16	Not present		
sl-ZoneConfigMCR-List-r16	Not present		
sl-FilterCoefficient-r16	fc4		
sl-RB-Number-r16	10*floor(n/10)	Note 1	
sl-PreemptionEnable-r16	Not present		
sl-PriorityThreshold-UL-URLLC-r16	Not present		
sl-PriorityThreshold-r16	Not present		
sl-X-Overhead-r16	Not present	Default value n0 is used	
sl-PowerControl-r16	Not present		
sl-TxPercentageList-r16 SEQUENCE (SIZE (8)) OF SL-TxPercentageConfig-r16 {	8 entries		
SL-TxPercentageConfig-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-TxPercentage-r16	p50		
}			
}			
sl-MinMaxMCS-List-r16	Not present		
sl-TimeResource-r16	1111111100	First 8 of every 10 logical slots	
	0000000011	Last 2 of every 10 logical slots	EXCEPTIONAL
}			
Note 1: n is the bandwidth of active SL BWP (in RB). n is determined in Table 4.3.1.0D-1 and Table 4.3.1.0D-2 for FR1 and FR2 respectively. Note 2: m is subchannel size configured by sl-SubchannelSize-r16. Note 3: p is the PSFCH period configured by sl-PSFCH-Period-r16			

Condition	Explanation
SL_HARQ	To enable SL HARQ feedback
EXCEPTIONAL	For exceptional resource pool

– *SL-RLC-BearerConfig*

Table 4.6.6-26: *SL-RLC-BearerConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-RLC-BearerConfig-r16 ::= SEQUENCE {			
sl-RLC-BearerConfigIndex-r16	SL-RLC-BearerConfigIndex		
sl-ServedRadioBearer-r16	SLRB-Uu-ConfigIndex		
sl-RLC-Config-r16	SL-RLC-Config with condition AM		
sl-MAC-LogicalChannelConfig-r16	SL-LogicalChannelConfig		
}			

– *SL-RLC-BearerConfigIndex*

Table 4.6.6-27: *SL-RLC-BearerConfigIndex*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-RLC-BearerConfigIndex-r16	1		

– *SL-RLC-Config*

Table 4.6.6-28: *SL-RLC-Config*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-RLC-Config-r16 ::= CHOICE {			
sl-AM-RLC-r16 SEQUENCE {			AM
sl-SN-FieldLengthAM-r16	size12		
sl-T-PollRetransmit-r16	ms80		
sl-PollPDU-r16	p32768		
sl-PollByte-r16	kB750		
sl-MaxRetxThreshold-r16	t8		
}			
sl-UM-RLC-r16 SEQUENCE {			UM
sl-SN-FieldLengthUM-r16	size6		
}			
}			

Condition	Explanation
AM	RLC AM
UM	RLC UM

– *SL-ScheduledConfig*

Table 4.6.6-29: *SL-ScheduledConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-ScheduledConfig-r16 ::= SEQUENCE {			
sl-RNTI-r16	RNTI-Value		
mac-MainConfigSL-r16 SEQUENCE {			
sl-BSR-Config-r16	BSR-Config		
ul-PrioritizationThres-r16	Not present		
sl-PrioritizationThres-r16	Not present		
}			
sl-CS-RNTI-r16	Not present		
	RNTI-Value which is different with sl-RNTI-r16		SL_CG
sl-PSFCH-ToPUCCH-r16	Not present		
sl-PSFCH-ToPUCCH-r16 SEQUENCE (SIZE (1..8)) OF INTEGER {	1 entry		SL HARQ_VIA_UU
INTEGER[1]	4	entry 1	
}			
sl-ConfiguredGrantConfigList-r16	Not present		
sl-ConfiguredGrantConfigList-r16 SEQUENCE {			SL_CG
sl-ConfiguredGrantConfigToReleaseList-r16	Not present		
sl-ConfiguredGrantConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofCG-SL-r16)) OF SL-ConfiguredGrantConfig-r16 {	1 entry		
SL-ConfiguredGrantConfig-r16[1]	SL-ConfiguredGrantConfig	entry 1	
}			
}			
sl-DCI-ToSL-Trans-r16 SEQUENCE (SIZE (1..8)) OF INTEGER {	1 entry		
INTEGER[1]	4	entry 1	
}			
}			

Condition	Explanation
SL_CG	To provide UE SL configured grant
SL HARQ_VIA_UU	to report HARQ-ACK information that the UE generates based on PSFCH reception via PUCCH/PUSCH

– *SL-SDAP-Config*

Table 4.6.6-30: *SL-SDAP-Config*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-SDAP-Config-r16 ::= SEQUENCE {			
sl-SDAP-Header-r16	present		
sl-DefaultRB-r16	true		
sl-MappedQoS-Flows-r16	Not present	All PC5 QoS flows are mapped to default SL DRB	
sl-CastType-r16	Unicast		
}			

– *SL-SyncConfig*

Table 4.6.6-31: *SL-SyncConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-SyncConfig-r16 ::= SEQUENCE {			
sl-SyncRefMinHyst-r16	dB3		
sl-SyncRefDiffHyst-r16	dB3		
sl-filterCoefficient-r16	fc4		
sl-SSB-TimeAllocation1-r16 SEQUENCE {			
sl-NumSSB-WithinPeriod-r16	n1		SCS15
	n2		SCS30, SCS60, SCS120
sl-TimeOffsetSSB-r16	0		
sl-TimeInterval-r16	Not present		SCS15
	1		SCS30, SCS60, SCS120
}			
sl-SSB-TimeAllocation2-r16 SEQUENCE {			
sl-NumSSB-WithinPeriod-r16	n1		SCS15
	n2		SCS30, SCS60, SCS120
sl-TimeOffsetSSB-r16	80		
sl-TimeInterval-r16	Not present		SCS15
	1		SCS30, SCS60, SCS120
}			
sl-SSB-TimeAllocation3-r16	Not present		
sl-SSID-r16	Arbitrarily chosen by SS from the range 1 to 335		
txParameters-r16 SEQUENCE {			
syncTxThreshIC-r16	Not present		
syncTxThreshOoC-r16	4	actual threshold is -100 dBm	
syncInfoReserved-r16	00		
}			
gnss-Sync-r16	Not present		
}			

– *SL-Thres-RSRP-List*

Table 4.6.6-32: *SL-Thres-RSRP-List*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-Thres-RSRP-List-r16 ::= SEQUENCE (SIZE (64)) OF INTEGER {	64 entries		
INTEGER[k, k=1..64]	0	entry k	
}			

– *SL-TxPower*

Table 4.6.6-33: *SL-TxPower*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-TxPower-r16 ::= CHOICE {			
txPower-r16	23	23dBm	
}			

– *SL-TypeTxSync*

Table 4.6.6-34: *SL-TypeTxSync*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-TypeTxSync-r16	gnss		

– *SL-UE-SelectedConfig*

Table 4.6.6-35: *SL-UE-SelectedConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-UE-SelectedConfig-r16 ::= SEQUENCE {			
sl-PSSCH-TxConfigList-r16	SL-PSSCH-TxConfigList		
sl-ProbResourceKeep-r16	v0		
sl-ReselectAfter-r16	n9		
sl-CBR-CommonTxConfigList-r16	SL-CBR-CommonTxConfigList		
ul-PrioritizationThres-r16	Not present		
sl-PrioritizationThres-r16	Not present		
}			

– *SL-ZoneConfig*

Table 4.6.6-36: *SL-ZoneConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-ZoneConfig-r16 ::= SEQUENCE {			
sl-ZoneLength-r16	m50		
}			

– *SLRB-Uu-ConfigIndex*

Table 4.6.6-37: *SLRB-Uu-ConfigIndex*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SLRB-Uu-ConfigIndex-r16	1		

4.6.7 MBS information elements

– *CarrierFreqListMBS*

Table 4.6.7-1: *CarrierFreqListMBS*

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
CarrierFreqListMBS-r17 ::= SEQUENCE {			
FFS			
}			

– *CFR-ConfigMCCH-MTCH*

Table 4.6.7-2: *CFR-ConfigMCCH-MTCH*

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
CFR-ConfigMCCH-MTCH-r17 ::= SEQUENCE {			
FFS			
}			

– *DRX-ConfigPTM*

Table 4.6.7-3: DRX-ConfigPTM

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
DRX-ConfigPTM-r17 ::= SEQUENCE {			
drx-onDurationTimerPTM-r17 CHOICE {			
milliSeconds	ms6		
}			
drx-InactivityTimerPTM-r17	ms1280		
drx-HARQ-RTT-TimerDL-PTM-r17	Not present		
	56		HARQ_Feedback
drx-RetransmissionTimerDL-PTM-r17	Not present		
	sl16		FR1 and HARQ_Feedback
	sl64		FR2 and HARQ_Feedback
drx-LongCycleStartOffsetPTM-r17 CHOICE {			
ms10240	0		
}			
drx-SlotOffsetPTM-r17	0		
}			

Condition	Explanation
HARQ_Feedback	HARQ feedback is enabled for a G-RNTI associated with this DRX configuration

– *MBS-NeighbourCellList*

Table 4.6.7-4: *MBS-NeighbourCellList*

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
MBS-NeighbourCellList-r17 ::= SEQUENCE {			
FFS			
}			

– *MBS-ServiceList*

Table 4.6.7-5: *MBS-ServiceList*

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
MBS-ServiceList-r17 ::= SEQUENCE {			
FFS			
}			

– *MBS-SessionInfoList*

Table 4.6.7-6: *MBS-SessionInfoList*

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
MBS-SessionInfoList-r17 ::= SEQUENCE (SIZE (0..maxNrofMBS-Session-r17)) OF MBS-SessionInfo-r17 {	1 entry		
MBS-SessionInfo-r17[1] SEQUENCE {			
mbs-SessionId-r17 SEQUENCE {			
plmn-Id-r17 CHOICE {			
plmn-Index-r17	1		
}			
serviceId-r17	'000001'H	OCTET STRING (SIZE (3))	
}			
g-RNTI-r17	RNTI-Value		
mrb-ListBroadcast-r17 SEQUENCE (SIZE (1..maxNrofMRB-Broadcast-r17)) OF MRB-InfoBroadcast-r17 {	1 entry		
MRB-InfoBroadcast-r17[1] SEQUENCE {		entry 1	
pdcp-Config-r17 SEQUENCE {			
pdcp-SN-SizeDL-r17	Not present		
headerCompression-r17 CHOICE {			
notUsed	NULL		
}			
t-Reordering-r17	Not present		
}			
rlc-Config-r17 SEQUENCE {			
logicalChannelIdentity-r17	1		
sn-FieldLength-r17	Not present		
t-Reassembly-r17	Not present		
}			
}			
}			
mtch-SchedulingInfo-r17	Not present		
	0		DRX_MBS_Broadcast
mtch-NeighbourCell-r17	Not present		
pdsch-ConfigIndex-r17	Not present		
mtch-SSB-MappingWindowIndex-r17	Not present		
}			
}			

Condition	Explanation
DRX_MBS_Broadcast	DRX is used for MBS Broadcast test

– *MTCH-SSB-MappingWindowList*

Table 4.6.7-7: *MTCH-SSB-MappingWindowList*

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
MTCH-SSB-MappingWindowList-r17 ::= SEQUENCE {			
FFS			
}			

– *PDSCH-ConfigBroadcast*

Table 4.6.7-8: *PDSCH-ConfigBroadcast*

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
PDSCH-ConfigBroadcast-r17 ::= SEQUENCE {			
FFS			
}			

– *TMGI*

Table 4.6.7-9: *TMGI*

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
TMGI-r17 ::= SEQUENCE {			
FFS			
}			

4.7 Default 5GC NAS message and information elements contents

4.7.0 General

4.7.0.1 Interpretation of IE presence and values

For Uplink NAS messages, the following terms and their meanings shall be used to determine how to test specific IEs:

- "Not present": test cases fail if IE is present.
- "Present but contents not checked": test cases fail if IE is not present. No requirements regarding contents of the IE.
- "If present: contents not checked": IE may or may not be present. No requirements regarding contents of the IE.
- "If present: <specific values>": IE may or may not be present. If present, its contents shall be as specified.
- "<specific values>": test cases fail if IE is not present. Its contents shall be as specified.
- "Present if <condition>: contents not checked: test cases fail if condition is fulfilled and IE is not present. Contents of IE are not checked, even if present.
- "Present if <condition>: <specific values>": test cases fail if condition is fulfilled and IE is not present. When IE shall be present, its contents shall be as specified.

4.7.0.2 Security protected 5GS NAS messages

In subclause 4.7.1, all 5GS NAS messages are described in the plain 5GS NAS message format.

When a 5GS NAS message is security protected, the message shall be contained by SECURITY PROTECTED 5GS NAS MESSAGE unless contained by another NAS message.

The default contents of SECURITY PROTECTED 5GS NAS MESSAGE message is defined in table 4.7.1-28.

4.7.1 Contents of 5GMM messages

– *Authentication request*

Table 4.7.1-1: AUTHENTICATION REQUEST

Derivation Path: 24.501 clause 8.2.1			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication request message identity	‘0101 0110’B		
ngKSI			
NAS key set identifier	An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists.		
TSC	'0'B	native security context (for KSI_{AMF})	
Spare half octet	'0000'B		
ABBA	‘0000 0000 0000 0000’B		
Authentication parameter RAND (5G authentication challenge)	Not Present		EAP-AKA
	An arbitrarily selected 128 bits value		5G-AKA
Authentication parameter AUTN (5G authentication challenge)	Not Present		EAP-AKA
	128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15		5G-AKA
EAP message	Not Present		5G-AKA
EAP message	EAP-request/AKA'-challenge	See Table 4.7.3.2-01	EAP-AKA

Condition	Explanation
EAP_AKA	EAP based primary authentication and key agreement procedure
5G-AKA	5G AKA based primary authentication and key agreement procedure

NOTE: Within a test execution this message is sent without integrity protection before NAS security mode control procedure has been successfully completed; and sent integrity protected and ciphered within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed. SS does not maintain information for 5GS NAS security mode control procedure after a TC is completed.

– *Authentication response*

Table 4.7.1-2: AUTHENTICATION RESPONSE

Derivation Path: 24.501 clause 8.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	5GMM		
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication response message identity	‘0101 0111’B		
Authentication response parameter	16 octets RES* value calculated according to TS 24.501 [28] subclause 9.11.3.17		5G-AKA
	Not Present		EAP-AKA
EAP message	EAP-response/AKA'-challenge	See Table 4.7.3.2-02	EAP-AKA

Condition	Explanation
EAP-AKA	EAP based primary authentication and key agreement procedure
5G-AKA	5G AKA based primary authentication and key agreement procedure

NOTE: When sent in response to an AUTHENTICATION REQUEST message which is not integrity protected and not ciphered, the AUTHENTICATION RESPONSE message is sent integrity protected when a valid security context exists and without integrity protection and ciphering otherwise.

– *Authentication result*

Table 4.7.1-3: AUTHENTICATION RESULT

Derivation Path: 24.501 clause 8.2.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	5GMM		
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication result message identity	‘0101 1010’B		
ngKSI	The same value as the last AUTHENTICATION REQUEST message		
Spare half octet	'0000'B		
EAP message	EAP-Success	See Table 4.7.3.2-03	
ABBA	‘0000 0000 0000 0000’B		

NOTE: The security protection of this message is the same as the previous AUTHENTICATION REQUEST message.

– *Authentication failure*

Table 4.7.1-4: AUTHENTICATION FAILURE

Derivation Path: 24.501 clause 8.2.4			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	5GMM		
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication failure message identity	‘0101 1001’B		
5GMM cause	Present but contents not checked		
Authentication failure parameter	If present: contents not checked		

NOTE: The security protection of this message is the same as the previous AUTHENTICATION REQUEST message.

– *Authentication reject*

Table 4.7.1-5: AUTHENTICATION REJECT

Derivation Path: 24.501 clause 8.2.5			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	5GMM		
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication reject message identity	‘0101 1000’B		
EAP message	Not present		
EAP message	EAP-Response/AKA-Authentication-Reject	See Table 4.7.3.2-04	EAP-AKA

Condition	Explanation
EAP-AKA	EAP based primary authentication and key agreement procedure

NOTE: This message is sent without integrity protection.

– *Registration request*

Table 4.7.1-6: REGISTRATION REQUEST

Derivation Path: 24.501 clause 8.2.6			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration request message identity	‘0100 0001’B		
5GS registration type			
5GS registration type value	‘001’B	Initial registration	
	‘010’B		MOBILITY
	‘011’B		PERIODIC
	‘100’B		EMERGENCY
FOR	Present but contents not checked		
FOR	'1'B	Follow-on request pending	EMERGENCY
ngKSI	Present but contents not checked		
5GS mobile identity	Present but contents not checked		
Non-current native NAS key set identifier	If present: contents not checked		NON_CLEAR TEXT_IE
5GMM capability	If present: contents not checked		NON_CLEAR TEXT_IE
UE security capability	If present: contents not checked		
Requested NSSAI	If present: contents not checked		NON_CLEAR TEXT_IE
Last visited registered TAI	If present: contents not checked		NON_CLEAR TEXT_IE
S1 UE network capability	If present: contents not checked		NON_CLEAR TEXT_IE
Uplink data status	If present: contents not checked		NON_CLEAR TEXT_IE
PDU session status	If present: contents not checked		NON_CLEAR TEXT_IE
MICO indication	If present: contents not checked		NON_CLEAR TEXT_IE
UE status	If present: contents not checked		
Additional GUTI	If present: contents not checked		
Allowed PDU session status	If present: contents not checked		NON_CLEAR TEXT_IE
UE's usage setting	If present: contents not checked		NOT pc_IMS AND NON_CLEAR TEXT_IE
UE's usage setting	Present but contents not checked		NON_CLEAR TEXT_IE
Requested DRX parameters	If present: contents not checked		NON_CLEAR TEXT_IE
EPS NAS message container	If present: contents not checked		
LADN indication	If present: contents not checked		NON_CLEAR TEXT_IE
Payload container type	If present: ‘0101’B	UE policy container	NON_CLEAR TEXT_IE
Payload container	If present: contents not checked		NON_CLEAR TEXT_IE
Network slicing indication	If present: contents not checked		NON_CLEAR TEXT_IE

5GS update type	If present: contents not checked		NON_CLEAR TEXT_IE
Mobile station classmark 2	If present: contents not checked		NON_CLEAR TEXT_IE
Supported codecs	If present: contents not checked		NON_CLEAR TEXT_IE
NAS message container	The complete, ciphered, REGISTRATION REQUEST message including all IEs.		CIPHERED_MESSAGE
EPS bearer context status	If present: contents not checked		NON_CLEAR TEXT_IE
Requested extended DRX parameters	If present: contents not checked		NON_CLEAR TEXT_IE
T3324 value	If present: contents not checked		NON_CLEAR TEXT_IE
UE radio capability ID	If present: contents not checked		NON_CLEAR TEXT_IE
Requested mapped NSSAI	If present: contents not checked		NON_CLEAR TEXT_IE
Additional information requested	If present: contents not checked		NON_CLEAR TEXT_IE
Requested WUS assistance information	If present: contents not checked		NON_CLEAR TEXT_IE
N5GC indication	If present: contents not checked		NON_CLEAR TEXT_IE
Requested NB-N1 mode DRX parameters	If present: contents not checked		NON_CLEAR TEXT_IE

Condition	Explanation
INITIAL	Initial registration
MOBILITY	Mobility registration updating
PERIODIC	Periodic registration updating
EMERGENCY	Emergency registration
NON_CLEARTEXT_IE	An information element that is not allowed to be sent in cleartext and shall only be included in the complete REGISTRATION REQUEST message in the NAS message container IE.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, and the UE has a valid 5G NAS security context, this condition applies.

NOTE: This message is sent interity protected when a valid security context exists otherwise sent without integrity protection, including only cleartext IEs.

– *Registration accept*

Table 4.7.1-7: REGISTRATION ACCEPT

Derivation Path: 24.501 clause 8.2.7			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration accept message identity	‘0100 0010’B		
5GS registration result			
5GS registration result value	‘001’B	3GPP access	
SMS allowed	‘0’B	SMS over NAS not allowed	
5G-GUTI	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
Equivalent PLMNs	Not Present		
TAI list			
Length of tracking area identity list contents	'0000 0111'B	7 octets	
Partial tracking area identity list 1			
Number of elements	'0 0000'B	1 element	
Type of list	'00'B	list of TACs belonging to one PLMN, with non-consecutive TAC values	
MCC	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
MNC	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
TAC 1	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
Allowed NSSAI			
Length of NSSAI contents	4 entries	Equal to the number of S-NSSAI values included	
S-NSSAI			
Length of S-NSSAI contents	‘0000 0001’B	SST	
SST	‘0000 0001’B	SST value 1 (eMBB)	
S-NSSAI			
Length of S-NSSAI contents	‘0000 0001’B	SST	
SST	‘0000 0010’B	SST value 2 (URLLC)	
S-NSSAI			
Length of S-NSSAI contents	‘0000 0001’B	SST	
SST	‘0000 0011’B	SST value 3 (MIoT)	
S-NSSAI			
Length of S-NSSAI contents	‘0000 0001’B	SST	
SST	‘0000 0100’B	SST value 4 (V2X)	
Rejected NSSAI	Not Present		
Configured NSSAI	Not Present		

5GS network feature support	‘0000 1101 0000 0000 0000 0000’B	IMS voice over PS session supported over 3GPP access, Emergency services supported in NR connected to 5GCN and E-UTRA connected to 5GCN. All other features set to "not supported" including the 'Interworking without N26 interface not supported'.	
5GS network feature support	Not Present		SST_URLLC OR SST_V2X OR SST_MIOT
PDU session status	The same value as the PDU session status IEof the most recently received REGISTRATION REQUEST message		
PDU session reactivation result	Not Present		
PDU session reactivation result error cause	Not Present		
LADN information	Not Present		
MICO indication	Not Present		
Network slicing indication	Not Present		
Service area list	Not Present		
T3512 value			INITIAL
Timer value	'0 0000'B		
Unit	'111'B	value indicates that the timer is deactivated	
T3512 value	Not Present		
Non-3GPP de-registration timer value	Not Present		
T3502 value	Not Present		
Emergency number list	Not Present		
Extended emergency number list	Not Present		
SOR Transparent container	Not Present		
EAP message	Not Present		
NSSAI inclusion mode	Not Present		
Operator-defined access category definitions	Not Present		
Negotiated DRX parameters	Not Present		
Non-3GPP NW policies	Not Present		
EPS bearer context status	The same value as the EPS bearer context status IE of the most recently received REGISTRATION REQUEST message		
Negotiated extended DRX parameters	Not Present		
T3447 value	Not Present		
T3448 value	Not Present		
T3324 value	Not Present		
UE radio capability ID	Not Present		

UE radio capability ID	The same value as received in UE radio capability ID; if any of the REGISTRATION REQUEST message		pc_5GC_RACS
UE radio capability ID deletion indication	Not Present		
Pending NSSAI	Not Present		
Ciphering key data	Not Present		
CAG information list	Not Present		
Truncated 5G-S-TMSI configuration	Not Present		
Negotiated WUS assistance information	Not Present		
Negotiated NB-N1 mode DRX parameters	Not Present		
Extended rejected NSSAI	Not Present		
Service-level-AA container	Not Present		
Negotiated PEIPS assistance information	Not Present		
5GS additional request result	Not Present		
NSSRG information	Not Present		
Disaster roaming wait range	Not Present		
Disaster return wait range	Not Present		
List of PLMNs to be used in disaster condition	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		
Extended CAG information list	Not Present		
NSAG information	Not Present		

Condition	Explanation
INITIAL	Initial registration

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Registration complete*

Table 4.7.1-8: REGISTRATION COMPLETE

Derivation Path: 24.501 clause 8.2.8			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration complete message identity	‘0100 0011’B		
SOR transparent container	If present: contents not checked		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Registration reject*

Table 4.7.1-9: REGISTRATION REJECT

Derivation Path: 24.501 clause 8.2.9			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration reject message identity	‘0100 0100’B		
5GMM cause	Set according to specific message content		
T3346 value	Not Present		
T3502 value	Not Present		
EAP message	Not Present		
Rejected NSSAI	Not Present		
CAG information list	Not Present		
Extended rejected NSSAI	Not Present		
Disaster return wait range	Not Present		
Extended CAG information list	Not Present		
Lower bound timer value	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		

NOTE: This message is sent without integrity protection before the secure exchange of NAS messages has been established and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after the secure exchange of NAS messages has been established.

– *UL NAS transport*

Table 4.7.1-10: UL NAS TRANSPORT

Derivation Path: 24.501 clause 8.2.10			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
UL NAS TRANSPORT message identity	‘0110 0111’B		
Payload container type	Set according to specific message content		
Payload container type	‘0001’B	N1 SM information	INITIAL_PDU_REQUEST
Spare half octet	'0000'B		
Payload container	Set according to specific message content		
Payload container	PDU SESSION ESTABLISHMENT REQUEST message		INITIAL_PDU_REQUEST
PDU session ID	If present: contents not checked		
PDU session ID	Same PDU session ID as defined in the PDU SESSION ESTABLISHMENT REQUEST message in the Payload container		INITIAL_PDU_REQUEST
Old PDU session ID	If present: contents not checked		
Request type	If present: contents not checked		
Request type	‘001’B	initial request	INITIAL_PDU_REQUEST
S-NSSAI	If present: contents not checked		
DNN	If present: contents not checked	(NOTE 1)	
Additional information	If present: contents not checked		
MA PDU session information	If present: contents not checked		
Release assistance indication	If present: contents not checked		
NOTE 1: Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account e.g. for the building the content of messages and allowing for specific UE behaviour as specified in Table 4.8.4-1.			

Condition	Explanation
INITIAL_PDU_REQUEST	The UL NAS TRANSPORT message is used to transport a PDU SESSION ESTABLISHMENT REQUEST message to establish a new PDU session.

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *DL NAS transport*

Table 4.7.1-11: DL NAS TRANSPORT

Derivation Path: 24.501 clause 8.2.11			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
DL NAS TRANSPORT message identity	‘0110 1000’B		
Payload container type	Set according to specific message content		
Payload container type	‘0001’B	N1 SM information	5GSM_MESSAGE
Spare half octet	'0000'B		
Payload container	Set according to specific message content		
Payload container	5GSM message		5GSM_MESSAGE
PDU session ID	Not Present		
PDU session ID	Set to the same value as the PDU session ID of the 5GSM message in the Payload container.		5GSM_MESSAGE
Additional information	Not Present		
5GMM cause	Not Present		
Back-off timer value	Not Present		
Lower bound timer value	Not Present		

Condition	Explanation
5GSM_MESSAGE	The DL NAS TRANSPORT message is used to transport a 5GSM message

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *De-registration request (UE originating de-registration)*

Table 4.7.1-12: DEREGISTRATION REQUEST_1

Derivation Path: 24.501 clause 8.2.12			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration request message identity	‘0100 0101’B		
De-registration type			
Switch off	‘0’B		NORMAL
	‘1’B		SWITCH_OFF
Re-registration required	‘0’B		
Access type	‘01’B	3GPP access	
ngKSI	Present but contents not checked		
5GS mobile identity	Present but contents not checked		

Condition	Explanation
NORMAL	Normal de-registration
SWITCH_OFF	Switch off

NOTE: If this message is sent as an initial NAS message, it is sent with integrity protection but without ciphering. Otherwise it is sent without integrity protection and ciphering before SS has started the ciphering and integrity and ciphered protected after SS has started the ciphering.

– *De-registration accept (UE originating de-registration)*

Table 4.7.1-13: DEREGISTRATION ACCEPT_1

Derivation Path: 24.501 clause 8.2.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration accept message identity	‘0100 0110’B		

NOTE: This message is sent using the same security protection as in the previous DETACH REQUEST message received from the UE.

– *De-registration request (UE terminated de-registration)*

Table 4.7.1-14: DEREGISTRATION REQUEST_2

Derivation Path: 24.501 clause 8.2.14			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration request message identity	‘0100 0111’B		
De-registration type	Set according to specific message content		
Spare half octet	'0000'B		
5GMM cause	Not Present		
T3346 value	Not Present		
Rejected NSSAI	Not Present		
CAG information list	Not Present		
Extended rejected NSSAI	Not Present		
Disaster return wait range	Not Present		
Extended CAG information list	Not Present		
Lower bound timer value	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *De-registration accept (UE terminated de-registration)*

Table 4.7.1-15: DEREGISTRATION ACCEPT_2

Derivation Path: 24.501 clause 8.2.15			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration accept message identity	‘0100 1000’B		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Service request*

Table 4.7.1-16: SERVICE REQUEST

Derivation Path: 24.501 clause 8.2.16			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Service request message identity	'0100 1100'B		
ngKSI			
NAS key set identifier	The valid NAS key set identifier of the UE		
TSC	'0'B	native security context (for KSI_{AMF})	
Service type	'0010'B	mobile terminated services	
5G-S-TMSI	The valid 5G-S-TMSI of the UE		
Uplink data status	If present: contents not checked		NON_CLEARTEXT_IE
PDU session status	If present: contents not checked		NON_CLEARTEXT_IE
Allowed PDU session status	If present: contents not checked		NON_CLEARTEXT_IE
NAS message container	If present, the complete, ciphered, SERVICE REQUEST message including all IEs.		CIPHERED_MESSAGE
UE request type	If present: contents not checked		NON_CLEARTEXT_IE
Paging restriction	If present: contents not checked		NON_CLEARTEXT_IE

Condition	Explanation
NON_CLEARTEXT_IE	An information element that is not allowed to be sent in cleartext and shall only be included in the complete SERIVICE REQUEST message in the NAS message container IE. NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, this condition applies. NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message.

NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

– *Service accept*

Table 4.7.1-17: SERVICE ACCEPT

Derivation Path: 24.501 clause 8.2.17			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Service accept message identity	‘0100 1110’B		
PDU session status	Not Present		
PDU session reactivation result	Not Present		
PDU session reactivation result error cause	Not Present		
EAP message	Not Present		
T3448 value	Not Present		
5GS additional request result	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Service reject*

Table 4.7.1-18: SERVICE REJECT

Derivation Path: 24.501 clause 8.2.18			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Service reject message identity	’0100 1101’B		
5GMM cause	The value is set according to specific message content		
PDU session status	Not Present		
T3346 value	Not Present		
EAP message	Not Present		
T3448 value	Not Present		
CAG information list	Not Present		
Disaster return wait range	Not Present		
Extended CAG information list	Not Present		
Lower bound timer value	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		

NOTE: This message is sent without integrity protection before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

– *Configuration update command*

Table 4.7.1-19: CONFIGURATION UPDATE COMMAND

Derivation Path: 24.501 clause 8.2.19			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Configuration update command message identity	‘0101 0100’B		
Configuration update indication	Not Present		
5G-GUTI	Not Present		
TAI list	Not Present		
Allowed NSSAI	Not Present		
Service area list	Not Present		
Full name for network	Not Present		
Short name for network	Not Present		
Local time zone	Not Present		
Universal time and local time zone	Not Present		
Network daylight saving time	Not Present		
LADN information	Not Present		
MICO indication	Not Present		
Network slicing indication	Not Present		
Configured NSSAI	Not Present		
Rejected NSSAI	Not Present		
Operator-defined access category definitions	Not Present		
SMS indication	Not Present		
T3447 value	Not Present		
CAG information list	Not Present		
UE radio capability ID	Not Present		
UE radio capability ID deletion indication	Not Present		
5GS registration result	Not Present		
Truncated 5G-S-TMSI configuration	Not Present		
Additional configuration indication	Not Present		
Extended rejected NSSAI	Not Present		
Service-level-AA container	Not Present		
NSSRG information	Not Present		
Disaster roaming wait range	Not Present		
Disaster return wait range	Not Present		
List of PLMNs to be used in disaster condition	Not Present		
Extended CAG information list	Not Present		
Updated PEIPS assistance information	Not Present		
NSAG information	Not Present		
Priority indicator	Not Present		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Configuration update complete*

Table 4.7.1-20: CONFIGURATION UPDATE COMPLETE

Derivation Path: 24.501 clause 8.2.20			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Configuration update complete message identity	'0101 0101'B		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Identity request*

Table 4.7.1-21: IDENTITY REQUEST

Derivation Path: 24.501 clause 8.2.21			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Identity request message identity	'0101 1011'B		
Identity type	Set according to specific message contents		
Spare half octet	'0000'B		

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

– *Identity response*

Table 4.7.1-22: IDENTITY RESPONSE

Derivation Path: 24.501 clause 8.2.22			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Identity response message identity	0101 1100'B		
Mobile identity	Present but contents not checked		

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

– *Notification*

Table 4.7.1-23: NOTIFICATION

Derivation Path: 24.501 clause 8.2.23			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Notification message identity	‘0110 0101’B		
Access type	‘01’B	3GPP access	
Spare half octet	'0000'B		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Notification response*

Table 4.7.1-24: NOTIFICATION RESPONSE

Derivation Path: 24.501 clause 8.2.24			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Notification response message identity	‘0110 0110’B		
PDU session status	If present: contents not checked		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Security mode command*

Table 4.7.1-25: SECURITY MODE COMMAND

Derivation Path: 24.501 clause 8.2.25			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Security mode command message identity	'0101 1101'B		
Selected NAS security algorithms			
Type of ciphering algorithm	Set according to PIXIT px_NAS_5GC_CipheringAlgorithm for default ciphering algorithm		
Type of ciphering algorithm	'0000'B	5G encryption algorithm 5G EA0 (null ciphering algorithm)	For RF
Type of integrity protection algorithm	Set according to PIXIT px_NAS_5GC_IntegrityProtAlgorithm for default integrity protection algorithm	This value should not be equal to the null integrity algorithm.	
ngKSI			
NAS key set identifier	The valid NAS key set identifier		
TSC	'0'B	native security context (for KSI_{AMF})	
Spare half octet	'0000'B		
Replayed UE security capabilities	Set according to the received UE security capabilities		
IMEISV request	Not Present		
Selected EPS NAS security algorithms	Not Present		
Selected EPS NAS security algorithms			UE_S1_SUPPORTED
Type of ciphering algorithm	Set according to PIXIT px_NAS_CipheringAlgorithm for default ciphering algorithm	The px_NAS_CipheringAlgorithm PIXIT is defined in TS 36.523-3 [x]	
Type of integrity protection algorithm	Set according to PIXIT px_NAS_IntegrityProtAlgorithmfor default integrity protection algorithm	The px_NAS_IntegrityProtAlgorithm is defined in TS 36.523-3 [x]	
Additional 5G security information	Not Present		
Additional 5G security information			NO_VALID_SS_SECURITY_CONTEXT
RINMR	'1'B	Retransmission of the initial NAS message requested	
HDP	'0'B	K_{AMF} derivation is not required	
EAP message	Not Present		
EAP message	EAP-Success	See Table 4.7.3.2-03	EAP-AKA
ABBA	'0000 0000 0000 0000'B		EAP-AKA
Replayed S1 UE security capabilities	Not Present		

Replayed S1 UE security capabilities	Set according to the received UE security capabilities in the last REGISTRATION REQUEST message		UE_S1_SUPPORTED

Condition	Explanation
NO_VALID_SS_SECURITY_CONTEXT	If the SS doesn't have a valid security context
EAP_AKA	EAP based primary authentication and key agreement procedure
For RF	Used for RF/RRM test cases
UE_S1_SUPPORTED	The UE indicated support of S1 in the last REGISTRATION REQUEST message

NOTE: This message is always sent integrity protected with new 5GS NAS security context.

– *Security mode complete*

Table 4.7.1-26: SECURITY MODE COMPLETE

Derivation Path: 24.501 clause 8.2.26			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Security mode complete message identity	'0101 1110'B		
IMEISV	Not present		
NAS message container	Not present		
	Complete initial NAS message		RINMR_INDICATED
non-IMEISV PEI	Not present		

Condition	Explanation
RINMR_INDICATED	The SS requested retransmission of the initial NAS message in the last SECURITY MODE COMMAND

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message with new 5GS NAS security context.

– *Security mode reject*

Table 4.7.1-27: SECURITY MODE REJECT

Derivation Path: 24.501 clause 8.2.27			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Security mode reject message identity	'0101 1111'B		
5GMM cause	The value is set according to specific message content		

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

– *Security protected 5GS NAS message*

Table 4.7.1-28: SECURITY PROTECTED 5GS NAS MESSAGE

Derivation Path: 24.501 clause 8.2.28			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	5GMM		
Security header type	'0001'B	Integrity protected	UNCIPHERED
	'0010'B	Integrity protected and ciphered	CIPHERED
	'0011'B	Integrity protected with new 5G NAS security context	UNCIPHERED-NEW
	'0100'B	Integrity protected and ciphered with new 5G NAS security context	CIPHERED-NEW
Spare half octet	'0000'B		
Message authentication code	The calculated value of MAC-I for this message.	The value of MAC-I is calculated by SS using Sequence number sent by UE.	SENT-BY-SS
	The same value as the XMAC-I value calculated by SS.		SENT-BY-UE
Sequence number	The internal counter of the SS		SENT-BY-SS
	Any allowed value		SENT-BY-UE
Plain 5GS NAS message	Set according to specific message content		

Condition	**Explanation**
UNCIPHERED	This condition applies to unciphered NAS message exchange
CIPHERED	This condition applies to ciphered NAS message exchange
UNCIPHERED-NEW	This condition applies to unciphered NAS message exchange with new 5G NAS security context
CIPHERED-NEW	This condition applies to ciphered NAS message exchange with new 5G NAS security context
SENT-BY-SS	Use for the message sent from SS to UE
SENT-BY-UE	Use for the message sent from UE to SS

– *5GMM status*

Table 4.7.1-29: 5GMM STATUS

Derivation Path: 24.501 clause 8.2.29			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	5GMM		
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
5GMM STATUS message identity	‘0110 0100’B		
5GMM cause	‘0110 1111’B	Protocol error, unspecified	SENT-BY-SS
	Present but contents not checked		SENT-BY-UE

Condition	Explanation
SENT-BY-SS	Use for the message sent from SS to UE
SENT-BY-UE	Use for the message sent from UE to SS

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Control plane service request*

Table 4.7.1-30: CONTROL PLANE SERVICE REQUEST

Derivation Path: 24.501 clause 8.2.30			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Control plane service request message identity	'0100 1111'B		
Control plane service type	'001'B	mobile terminated request	
ngKSI			
NAS key set identifier	The valid NAS key set identifier of the UE		
TSC	'0'B	native security context (for KSI_{AMF})	
CIoT small data container	If present: contents not checked		NON_CLEARTEXT_IE
Payload container type	If present: contents not checked		NON_CLEARTEXT_IE
Payload container	If present: contents not checked		NON_CLEARTEXT_IE
PDU session ID	If present: contents not checked		NON_CLEARTEXT_IE
PDU session status	If present: contents not checked		NON_CLEARTEXT_IE
Release assistance indication	If present: contents not checked		NON_CLEARTEXT_IE
Uplink data status	If present: contents not checked		NON_CLEARTEXT_IE
NAS message container	If present: contents not checked		CIPHERED_MESSAGE
Additional information	If present: contents not checked		NON_CLEARTEXT_IE
Allowed PDU session status	If present: contents not checked		NON_CLEARTEXT_IE
UE request type	If present: contents not checked		NON_CLEARTEXT_IE
Paging restriction	If present: contents not checked		NON_CLEARTEXT_IE

Condition	Explanation
NON_CLEARTEXT_IE	An information element that is not allowed to be sent in cleartext and shall only be included in the complete CONTROL PLANE SERIVICE REQUEST message in the NAS message container IE. NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, this condition applies. NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message.

NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

– *Network slice-specific authentication command*

Table 4.7.1-31: NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND

Derivation Path: 24.501 clause 8.2.31			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND message identity	‘0101 0000’B		
S-NSSAI	Set according to specific message content		
EAP message	Set according to Table 4.7.3.2-1	See TS 24.501 [25] subclause 9.11.2.2	

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Network slice-specific authentication complete*

Table 4.7.1-32: NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE

Derivation Path: 24.501 clause 8.2.32			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity	‘0101 0001’B		
S-NSSAI	Set according to specific message content		
EAP message	Set according to Table 4.7.3.2-2	See TS 24.501 [25] subclause 9.11.2.2	

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Network slice-specific authentication result*

Table 4.7.1-33: NETWORK SLICE-SPECIFIC AUTHENTICATION RESULT

Derivation Path: 24.501 clause 8.2.33			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity	‘0101 0010’B		
S-NSSAI	Set according to specific message content		
EAP message	EAP-Success	See Table 4.7.3.2-3	NSSAA Success
	EAP-Failure	See Table 4.7.3.2-6	NSSAA Failure

Condition	Explanation
NSSAA Success	Network slice-specific authentication succeeds
NSSAA Failure	Network slice-specific authentication fails

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Relay key request*

Table 4.7.1-34: RELAY KEY REQUEST

Derivation Path: 24.501 clause 8.2.34			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay key request message identity	‘0110 1001’B		
PRTI	FFS		
Relay key request parameters	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Relay key accept*

Table 4.7.1-35: RELAY KEY ACCEPT

Derivation Path: 24.501 clause 8.2.35			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay key accept message identity	‘0110 1010’B		
PRTI	FFS		
EAP message	FFS		
Relay key response parameters	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Relay key reject*

Table 4.7.1-36: RELAY KEY REJECT

Derivation Path: 24.501 clause 8.2.36			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay key reject message identity	‘0110 1011’B		
PRTI	FFS		
EAP message	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Relay authentication request*

Table 4.7.1-37: RELAY AUTHENTICATION REQUEST

Derivation Path: 24.501 clause 8.2.37			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay authentication request message identity	‘0110 1100’B		
PRTI	FFS		
EAP message	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Relay authentication response*

Table 4.7.1-38: RELAY AUTHENTICATION RESPONSE

Derivation Path: 24.501 clause 8.2.37			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0111 1110’B	5GS mobility management messages	
Security header type	’0000’B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay authentication response message identity	‘0110 1101’B		
PRTI	FFS		
EAP message	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

4.7.2 Contents of 5GSM messages

– *PDU session establishment request*

Table 4.7.2-1: PDU SESSION ESTABLISHMENT REQUEST

Derivation Path: 24.501 clause 8.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	Any value according to TS 24.501 [25] subclause 9.4		
PTI	Any value from 1 to 254		
PDU SESSION ESTABLISHMENT REQUEST message identity	‘1100 0001’B		
Integrity protection maximum data rate	Present but contents not checked		
PDU session type	Any value between '001'B, '010'B, '011'B and ‘101’B	The allowed values are respectively IPv4, IPv6, IPv4v6 and Ethernet (EtherType as defined in IEEE 802.3)	
SSC mode	If present: contents not checked		
5GSM capability	If present: contents not checked		
Maximum number of supported packet filters	If present: contents not checked		
Always-on PDU session requested	If present: contents not checked		
Always-on PDU session requested			SST_URLLC
APSR	‘1’B	Always-on PDU session requested	
SM PDU DN request container	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked	The SS shall remember if this IE is present and its contents because this affects subsequent SS behaviour, e.g. coding of PDU SESSION ESTABLISHMENT ACCEPT.	
Extended protocol configuration options	Present including at least the following container		DATA_OFF
Container ID n	‘0017’H	3GPP PS data off UE status	
Length of container ID n contents		1 octet	
Container ID n contents	‘01’H	‘deactivated’	
IP header compression configuration	If present: contents not checked		
DS-TT Ethernet port MAC address	If present: contents not checked		
UE-DS-TT residence time	If present: contents not checked		
Port management information container	If present: contents not checked		
Ethernet header compression configuration	If present: contents not checked		
Suggested interface identifier	If present: contents not checked		
Service-level-AA container	If present: contents not checked		

Requested MBS container	If present: contents not checked		
PDU session pair ID	If present: contents not checked		
RSN	If present: contents not checked		

Condition	Explanation
DATA_OFF	If the UE supports 3GPP PS data off as specified in TS 38.508-2 [10], Table A.4.3.7-1/xx

– *PDU session establishment accept*

Table 4.7.2-2: PDU SESSION ESTABLISHMENT ACCEPT

Derivation Path: 24.501 clause 8.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PDU SESSION ESTABLISHMENT ACCEPT message identity	‘1100 0010’B		
Selected PDU session type	'001'B		IPv4
	'010'B		IPv6
	'011'B		IPv4v6
	'101'B		Ethernet
Selected SSC mode	‘001’B	SSC mode 1	
Authorized QoS rules	5GC QoS rule of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present		
Session AMBR			
Unit for Session-AMBR for downlink	‘000 00101’	Value is incremented in multiples of 256 Kbps	
Session-AMBR for downlink	‘0000 0000 0000 0100’B	1024 Kbps	
Unit for Session-AMBR for uplink	‘000 00101’	Value is incremented in multiples of 256 Kbps	
Session-AMBR for uplink	‘0000 0000 0000 0100’B	1024 Kbps	
5GSM cause	Not Present		
PDU address			IPv4
Length of PDU address contents	5 octets		
PDU type value	‘001’B	IPv4	
PDU address information	IPv4 address	The SS provides a valid IPv4 address	NOT IPv4-DHCP
	0.0.0.0	DHCPv4 is to be used to allocate the IPv4 address	IPv4-DHCP
PDU address			IPv6
Length of PDU address contents	9 octets		
PDU type value	‘010’B	IPv6	
PDU address information	IPv6 interface identifier	The SS provides a valid IPv6 interface identifier	
PDU address			IPv4v6
Length of PDU address contents	13 octets		
PDU type value	‘011’B	IPv4v6	

PDU address information (Octets 4 to 11)	IPv6 interface identifier	The SS provides a valid IPv6 interface identifier	
PDU address information (Octets 12 to 15)	IPv4 address	The SS provides a valid IPv4 address	NOT IPv4-DHCP
	0.0.0.0	DHCPv4 is to be used to allocate the IPv4 address	IPv4-DHCP
RQ timer value	Not Present		
S-NSSAI			
Length of S-NSSAI contents	‘0000 0001’B	SST	
SST	‘0000 0001’B	SST value 1 (eMBB)	SST_eMBB
SST	‘0000 0010’B	SST value 2 (URLLC)	SST_URLLC
SST	‘0000 0011’B	SST value 3 (MIoT)	SST_MIoT
SST	‘0000 0100’B	SST value 4 (V2X)	SST_V2X
Always-on PDU session indication	Not Present		
Always-on PDU session indication			
APSI	‘0’B	Always-on PDU session not allowed	Always_On_Requested
APSI	‘1’B	Always-on PDU session required	Always_On_Requested AND SST_URLLC
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking_with_EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	‘001’B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	’0001’B	1 parameter	
Mapped EPS QoS parameters	EPC default bearer context of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present		
EAP message	Not Present		
Authorized QoS flow descriptions	The QoS flow referred to in the relevant Authorized QoS rules IE		
Extended protocol configuration options	Not Present		

Extended protocol configuration options			P-CSCF_IPv6 OR P-CSCF_IPv4
Container ID 1	'0001'H		P-CSCF_IPv6
Length of container ID 1 contents		Length value determined by testimplementation	
Container ID 1 contents	IPv6 address	P-CSCF IPv6 Address	
Container ID 2	'000C'H		P-CSCF_IPv4
Length of container ID 2 contents		Length value determined by test implementation	
Container ID 2 contents	IPv4 address	P-CSCF IPv4 Address	
Container ID 3	'0001'H		Additional_P-CSCF_IPv6
Length of container ID 3 contents		Length value determined by testimplementation	
Container ID 3 contents	IPv6 address	Additional P-CSCF IPv6 Address	
Container ID 4	'000C'H		Additional_P-CSCF_IPv4
Length of container ID 4 contents		Length value determined by test implementation	
Container ID 4 contents	IPv4 address	Additional P-CSCF IPv4 Address	
Container ID n	'0003'H	n assigned to next available number	DNS IPv6
Length of container ID n contents		Length value determined by the TTCN implementation	
Container ID n contents	IPv6 address	DNS IPv6 address	
Container ID n+1	'000D'H	n assigned to next available number	DNS IPv4
Length of container ID n contents		Length value determined by the TTCN implementation	
Container ID n contents	IPv4 address	DNS IPv4 address	
DNN	The DNN/APN ID of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present		
5GSM network feature support	Not Present		

Serving PLMN rate control	Not Present		
ATSSS container	Not Present		
Control plane only indication	Not Present		
IP header compression configuration	Not Present		
Ethernet header compression configuration	Not Present		
Service-level-AA container	Not Present		
Received MBS container	Not Present		

Condition	Explanation
IPv4	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '001'B
IPv6	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '010'B
IPv4v6	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '011'B
IPv4-DHCP	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the IE Extended protocol configuration options contains a configuration protocol option = '000BH' ("IPv4 address allocation via DHCPv4", length of contents = 0). Note: This condition is used in conjunction with IPv4 or IPv4v6 as indicated in the "PDU address information" just above.
Ethernet	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '101'B.
Always_On_Requested	If the last PDU SESSION ESTABLISHMENT REQUEST message included the Always-on PDU session requested IE
P-CSCF_IPv6	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '0001H' (“P-CSCF IPv6 Address Request", length of contents = 0)
P-CSCF_IPv4	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '000CH' (“P-CSCF IPv4 Address Request", length of contents = 0)
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.
Additional_P-CSCF_IPv6	P-CSCF_IPv6 AND SS requires to be configured with second P-CSCF Ipv6 address
Additional _P-CSCF_IPv4	P-CSCF_IPv6 AND SS requires to be configured with second P-CSCF Ipv4 address
DNS IPv6	If in the last PDU Session Establishment REQUEST the Extended protocol configuration options was included with a “DNS IPv6 Address Request”.
DNS IPv4	If in the last PDU Session Establishment REQUEST the Extended protocol configuration options was included with a “DNS IPv4 Address Request”.

– *PDU session establishment reject*

Table 4.7.2-3: PDU SESSION ESTABLISHMENT REJECT

Derivation Path: 24.501 clause 8.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PDU SESSION ESTABLISHMENT REJECT message identity	‘1100 0011’B		
5GSM cause	The value is set according to specific message content		
Back-off timer value	Not Present		
Allowed SSC mode	Not Present		
EAP message	Not Present		
5GSM congestion re-attempt indicator	Not Present		
Extended protocol configuration options	Not Present		
Re-attempt indicator	Not Present		
Service-level-AA container	Not Present		

– *PDU session authentication command*

Table 4.7.2-4: PDU SESSION AUTHENTICATION COMMAND

Derivation Path: 24.501 clause 8.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	Set according to specific message content		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION AUTHENTICATION COMMAND message identity	‘1100 0101’B		
EAP message	Set according to TS 38.508 Table 4.7.3.2-1	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	Not Present		
Remote UE handling information list	Not Present		

– *PDU session authentication complete*

Table 4.7.2-5: PDU SESSION AUTHENTICATION COMPLETE

Derivation Path: 24.501 clause 8.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION AUTHENTICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION AUTHENTICATION COMPLETE message identity	‘1100 0110’B		
EAP message	Set according to TS 38.508 Table 4.7.3.2-2	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	If present: contents not checked		
Remote UE handling information list	If present: contents not checked		

– *PDU session authentication result*

Table 4.7.2-6: PDU SESSION AUTHENTICATION RESULT

Derivation Path: 24.501 clause 8.3.6			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION AUTHENTICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION AUTHENTICATION RESULT message identity	‘1100 0111’B		
EAP message	Set according to specific message content	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	Not Present		

– *PDU session modification request*

Table 4.7.2-7: PDU SESSION MODIFICATION REQUEST

Derivation Path: 24.501 clause 8.3.7			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	Any value from 1 to 254		
PDU SESSION MODIFICATION REQUEST message identity	'1100 1001'B		
5GSM capability	If present: contents not checked		
5GSM cause	If present: contents not checked		
Maximum number of supported packet filters	If present: contents not checked		
Always-on PDU session requested	If present: contents not checked		
Integrity protection maximum data rate	If present: contents not checked		
Requested QoS rules	If present: contents not checked		
Requested QoS flow descriptions	If present: contents not checked		
Mapped EPS bearer contexts	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		
Port management information container	If present: contents not checked		
IP header compression configuration	If present: contents not checked		
Ethernet header compression configuration	If present: contents not checked		
Requested MBS container	If present: contents not checked		
Service-level-AA container	If present: contents not checked		

– *PDU session modification reject*

Table 4.7.2-8: PDU SESSION MODIFICATION REJECT

Derivation Path: 24.501 clause 8.3.8			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION MODIFICATION REQUEST message.		
PTI	The value indicated in PDU SESSION MODIFICATION REQUEST message.		
PDU SESSION MODIFICATION REJECT message identity	'1100 1010'B		
5GSM cause	Set according to specific message content.		
Back-off timer value	Not Present		
5GSM congestion re-attempt indicator	Not Present		
Extended protocol configuration options	Not Present		
Re-attempt indicator	Not Present		

– *PDU session modification command*

Table 4.7.2-9: PDU SESSION MODIFICATION COMMAND

Derivation Path: 24.501 clause 8.3.9			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PDU session ID	The value indicated in PDU SESSION MODIFICATION REQUEST message.		UE_Initiated_Modification
PTI	'0000 0000'B	No procedure transaction identity assigned	
PTI	The value indicated in PDU SESSION MODIFICATION REQUEST message.		UE_Initiated_Modification
PDU SESSION MODIFICATION COMMAND message identity	'1100 1011'B		
5GSM cause	Not Present		
Session AMBR	Not Present		
RQ timer value	Not Present		
Always-on PDU session indication	Not Present		
Always-on PDU session indication			
APSI	'0'B	Always-on PDU session not allowed	Always_On_Requested
APSI	'1'B	Always-on PDU session required	Always_On_Requested AND SST_URLLC
Authorized QoS rules	Not Present		
Mapped EPS bearer contexts	Not Present		
Authorized QoS flow descriptions	Not Present		
Extended protocol configuration options	Not Present		
ATSSS container	Not Present		
IP header compression configuration	Not Present		
Port management information container	Not Present		
Serving PLMN rate control	Not Present		
Ethernet header compression configuration	Not Present		
Received MBS container	Not Present		
Service-level-AA container	Not Present		

Condition	Explanation
Always_On_Requested	If the last PDU SESSION MODIFICATION REQUEST message included the Always-on PDU session requested IE
UE_Initiated_Modification	If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE

– *PDU session modification complete*

Table 4.7.2-10: PDU SESSION MODIFICATION COMPLETE

Derivation Path: 24.501 clause 8.3.10			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION MODIFICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PTI	The value indicated in PDU SESSION MODIFICATION REQUEST message.		UE_Initiated_Modification
PDU SESSION MODIFICATION COMPLETE message identity	‘1100 1100’B		
Extended protocol configuration options	If present: contents not checked		
Port management information container	If present: contents not checked		

Condition	Explanation
UE_Initiated_Modification	If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE

– *PDU session modification command reject*

Table 4.7.2-11: PDU SESSION MODIFICATION COMMAND REJECT

Derivation Path: 24.501 clause 8.3.11			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION MODIFICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION MODIFICATION COMMAND REJECT message identity	‘1100 1101’B		
5GSM cause	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		

– *PDU session release request*

Table 4.7.2-12: PDU SESSION RELEASE REQUEST

Derivation Path: 24.501 clause 8.3.12			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	Any value from 1 to 254		
PDU SESSION RELEASE REQUEST message identity	'1101 0001'B		
5GSM cause	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		

– *PDU session release reject*

Table 4.7.2-13: PDU SESSION RELEASE REJECT

Derivation Path: 24.501 clause 8.3.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION RELEASE REQUEST message.		
PTI	The value indicated in PDU SESSION RELEASE REQUEST message.		
PDU SESSION RELEASE REJECT message identity	'1101 0010'B		
5GSM cause	Set according to specific message content.		
Extended protocol configuration options	Not Present		

– *PDU session release command*

Table 4.7.2-14: PDU SESSION RELEASE COMMAND

Derivation Path: 24.501 clause 8.3.14			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION RELEASE COMMAND message identity	‘1101 0011’B		
5GSM cause	‘0001 1010’B	Insufficient resources	
Back-off timer value	Not Present		
EAP message	Not Present		
5GSM congestion re-attempt indicator	Not Present		
Extended protocol configuration options	Not Present		
Access type	Not Present		
Service-level-AA container	Not Present		

– *PDU session release complete*

Table 4.7.2-15: PDU SESSION RELEASE COMPLETE

Derivation Path: 24.501 clause 8.3.15			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	‘0010 1110’B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION RELEASE COMMAND message.		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION RELEASE COMPLETE message identity	‘1101 0100’B		
5GSM cause	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		

– *5GSM status*

Table 4.7.2-16: 5GSM STATUS

Derivation Path: 24.501 clause 8.3.16			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
5GSM STATUS message identity	'1101 0110'B		
5GSM cause	Set according to specific message content.		

– *Service-level authentication command*

Table 4.7.2-17: SERVICE-LEVEL AUTHENTICATION COMMAND

Derivation Path: 24.501 clause 8.3.17			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
SERVICE-LEVEL AUTHENTICATION COMMAND message identity	'1101 1000'B		
Service-level-AA container	FFS		

– *Service-level authentication complete*

Table 4.7.2-18: SERVICE-LEVEL AUTHENTICATION COMPLETE

Derivation Path: 24.501 clause 8.3.18			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
SERVICE-LEVEL AUTHENTICATION COMPLETE message identity	'1101 1001'B		
Service-level-AA container	FFS		

– *Remote UE report*

Table 4.7.2-19: REMOTE UE REPORT

Derivation Path: 24.501 clause 8.3.19			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
REMOTE UE REPORT message identity	'1101 1010'B		
Remote UE context connected	FFS		
Remote UE context disconnected	FFS		

– *Remote UE report response*

Table 4.7.2-20: REMOTE UE REPORT RESPONSE

Derivation Path: 24.501 clause 8.3.20			
Information Element	**Value/remark**	**Comment**	**Condition**
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
REMOTE UE REPORT RESPONSE message identity	'1101 1011'B		
EAP message	FFS		
Remote UE handling information list	FFS		
Authorized QoS flow descriptions	FFS		

4.7.3 Contents of EAP-AKA' messages

For all the message definitions below, the acceptable order and syntax of attributes and fields within these attributes must be according to IETF RFCs where those attributes have been defined. Typically the order of attributes is not significant, but there could be well defined exceptions where the order is important.

The contents of the messages described in the present Annex is not complete - only the attributes required to be checked or generated by SS are listed here. The messages sent by the UE may contain additional attributes which are not checked and must thus be ignored by SS.

4.7.3.1 EAP-AKA' message attributes

Table 4.7.3.1-1: AT_RAND_Def

Derivation Path: IETF RFC 4187 [30] clause 10.6			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_RAND	'0000 0001'B	1	
Length	'0000 0101'B	5	
Reserved	'0000 0000 0000 0000'B		
RAND	An arbitrarily selected 128 bits value		

Table 4.7.3.1-2: AT_AUTN_Def

Derivation Path: IETF RFC 4187 [30] clause 10.7			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_AUTN	'0000 0010'B	2	
Length	'0000 0101'B	5	
Reserved	'0000 0000 0000 0000'B		
AUTN	128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15		

Table 4.7.3.1-3: AT_KDF_Def

Derivation Path: IETF RFC 5448 [31] clause 3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_KDF	'0001 1000'B	24	
Length	'0000 0001'B	1	
KDF	'0000 0000 0000 0001'	1: EAP_AKA'	

Table 4.7.3.1-4: AT_KDF_INPUT_Def

Derivation Path: IETF RFC 5448 [31] clause 3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_KDF_INPUT	'0001 0111'B	23	
Length	Set to the Length of attribute AT_KDF_INPUT in 4 bytes		
Actual Network Name Length	Set to the actual length of 'Network Name' in bytes excluding any appended all zero bytes at end		
Network Name	Value generated according to TS 24.501 [28] clause 9.12.1 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary)		

Table 4.7.3.1-5: AT_MAC_Def

Derivation Path: IETF RFC 4187 [30] clause 10.15			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_MAC	'0000 1011'B	11	
Length	'0000 0101'B	5	
Reserved	'0000 0000 0000 0000'B		
MAC	128 bits value generated according to RFC 4187 [30] subclause 10.15		

Table 4.7.3.1-6: AT_RES_Def

Derivation Path: IETF RFC 4187 [30] clause 10.08			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_RES	'0000 0011'B	3	
Length	Set to Length of AT_RES attribute in 4 bytes.	1 byte	
RES_LENGTH	Set to the actual length of 'RES' in bytes excluding any appended all zero bytes at end		
RES	RES* value calculated according to TS 24.501 [28] clause 9.11.3.17, possibly appended with 1,2 or 3 bytes of all zero bits to make lenght multiple of 4 bytes.		

Table 4.7.3.1-7: AT_AUTS_Def

Derivation Path: IETF RFC 4187 [30] clause 10.08			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_AUTS	'0000 0100'B	4	
Length	'0000 0100'B	4	
AUTS	14 octets RES* value not checked		

Table 4.7.3.1-8: AT_PERMANENT_ID_Def

Derivation Path: IETF RFC 4187 [30] clause 10.2			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_PERMANENT_ID_REQ	'0000 1010'B	10	
Length	'0000 0001'B	1	
Reserved	'0000 0000 0000 0000'B		

Table 4.7.3.1-9: AT_ANY_ID_REQ_Def

Derivation Path: IETF RFC 4187 [30] clause 10.3			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_ANY_ID_REQ	'0000 1101'B	13	
Length	'0000 0001'B	1	
Reserved	'0000 0000 0000 0000'B		

Table 4.7.3.1-10: AT_FULLAUTH_ID_Def

Derivation Path: IETF RFC 4187 [30] clause 10.4			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_FULLAUTH_ID_REQ	'0001 0001'B	17	
Length	'0000 0001'B	1	
Reserved	'0000 0000 0000 0000'B		

Table 4.7.3.1-11: AT_IDENTITY_Def

Derivation Path: IETF RFC 4187 [30] clause 10.5			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_IDENTITY	'0000 1110'B	14	
Length	Set to the Length of AT_IDENTITY attribute in 4 bytes		
Actual Identity Length	Set to the actual length of 'identity' in bytes excluding any appended all zero bytes at end		
Identity	Value generated according to TS 24.501 [28] clause 9.11.3.4 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary)		

Table 4.7.3.1-12: AT_NOTIFICATION_Def

Derivation Path: IETF RFC 4187 [30] clause 10.19			
Information Element	**Value/remark**	**Comment**	**Condition**
AT_NOTIFICATION	'0000 1100'B	12	
Length	'0000 0001'B	1	
Notification Code	16 bits value generated according to RFC 4187 [30] subclause 10.19.		

4.7.3.2 EAP-AKA' messages

Table 4.7.3.2-1: EAP-Request/AKA'-Challenge

Derivation Path: IETF RFC 4187 [30] clause 9.3, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	1	Request	
Length	Set to length of EAP packet		
Data			
AT_RAND	AT_RAND_Def		
AT_AUTN	AT_AUTN_Def		
AT_KDF	AT_KDF_Def		
AT_KDF_INPUT	AT_KDF_INPUT_Def		
AT_MAC	AT_MAC_Def		

Table 4.7.3.2-2: EAP-Response/AKA'-Challenge

Derivation Path: IETF RFC 4187 [30] clause 9.4, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	2	Response	
Length	Set to length of EAP packet		
Data			
AT_Res	AT_Res_Def		
AT_MAC	AT_MAC_Def		

Table 4.7.3.2-3: EAP-Succes

Derivation Path: IETF RFC 4187 [30] clause 6.3.4, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	3	Success	
Length	Set to length of EAP packet		
Data	Not present	Specific attributes not present	

Table 4.7.3.2-4: EAP-Response/AKA-Authentication-Reject

Derivation Path: IETF RFC 4187 [30] clause 9.5, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	4	Failure	
Length	Set to length of EAP packet		
Data	Not checked		

Table 4.7.3.2-5: EAP-Response/AKA-Synchronization-Failure

Derivation Path: IETF RFC 4187 [30] clause 9.6, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	4	Failure	
Length	Set to length of EAP packet		
Data			
AT_AUTS	AT_AUTS_Def		

Table 4.7.3.2-6: EAP-Failure

Derivation Path: IETF RFC 4187 [30] clause 6.3.3, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	4	Failure	
Length	Set to length of EAP packet		
Data	Not present	Specific attributes not present	

Table 4.7.3.2-7: EAP-Request/AKA-Identity

Derivation Path: IETF RFC 4187 [30] clause 9.1, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	1	Request	
Length	Set to length of EAP packet		
Data			
AT_PERMANENT_ID_REQ	AT_PERMANENT_ID_REQ_Def		SS requests that the UE send its permanent identity.
AT_ANY_ID_REQ	AT_ANY_ID_REQ_Def		SS does not specify which kind of an identity the UE should return.
AT_FULLAUTH_ID_REQ	AT_FULLAUTH_ID_REQ_Def		SS requests either the permanent identity or a pseudonym identity.

Table 4.7.3.2-8: EAP-Response/AKA-Identity

Derivation Path: IETF RFC 4187 [30] clause 9.2, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	2	Response	
Length	Set to length of EAP packet		
Data			
AT_IDENTITY	AT_IDENTITY_Def		

Table 4.7.3.2-9: EAP-Request/AKA-Notification

Derivation Path: IETF RFC 4187 [30] clause 9.10, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	1	Request	
Length	Set to length of EAP packet		
Data			
AT_NOTIFICATION	AT_NOTIFICATION_Def		

Table 4.7.3.2-10: EAP-Response/AKA-Notification

Derivation Path: IETF RFC 4187 [30] clause 9.11, RFC 3748 [32] clause 4			
Information Element	**Value/remark**	**Comment**	**Condition**
Code	2	Response	
Length	Set to length of EAP packet		
Data	Not present	Specific attributes not present	

4.7.4 Contents of V2X messages

Table 4.7.4-1 to -6: Void

– *DIRECT LINK ESTABLISHMENT REQUEST*

Table 4.7.4-7: DIRECT LINK ESTABLISHMENT REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.1.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK ESTABLISHMENT REQUEST message identity	'0000 0001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 01'H		
Source user info			
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 01 00'H	Application Layer ID in initiating UE side	
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
UE PC5 unicast signalling security policy	'0000 0000'B	Signalling integrity protection not needed, Signalling ciphering not needed.	
Key establishment information container	Not Present		
Nonce_1	Not Present		
MSBs of $K_{NRP\text{-}sess}$ ID	Not Present		
Target user info	Not Checked		Tx
Target user info			Rx
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application layer ID contents	'00 00 11 00'H		
K_{NRP} ID	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK ESTABLISHMENT ACCEPT*

Table 4.7.4-8: DIRECT LINK ESTABLISHMENT ACCEPT

Derivation Path: TS 24.587 [54] Table 7.3.1.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK ESTABLISHMENT ACCEPT message identity	'0000 0010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Source user info			
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 02 00'H	Application Layer ID in target UE side	
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0001'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 01'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	22	Sensor sharing, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	4		
Configuration of UE PC5 unicast user plane security protection	'0000 0000'B	User plane integrity protection and ciphering is off	
IP address configuration	Not Checked		Tx

IP address configuration			Rx
IP address configuration IEI	'57'H		
IP address configuration content	'0000 0001'B	IPv6 Router	
Link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK MODIFICATION REQUEST*

Table 4.7.4-9: DIRECT LINK MODIFICATION REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.4.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK MODIFICATION REQUEST message identity	'0000 0100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Link modification operation code	'0000 0011'B	Add new PC5 QoS flow(s) to the existing PC5 unicast link	
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0010'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 02'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	23	Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0000 1010'B	10 * 4Mbps = 40Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0001 0100'B	20 * 4Mbps = 80Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	3		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK MODIFICATION ACCEPT*

Table 4.7.4-10: DIRECT LINK MODIFICATION ACCEPT

Derivation Path: TS 24.587 [54] Table 7.3.5.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK MODIFICATION ACCEPT message identity	'0000 0101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
QoS flow descriptions			
PC5 QoS flow descriptions IEI	'79'H		
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0010'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 02'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	23	Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0000 1010'B	10 * 4Mbps = 40Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0001 0100'B	20 * 4Mbps = 80Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	3		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK RELEASE REQUEST*

Table 4.7.4-11: DIRECT LINK RELEASE REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.6.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK RELEASE REQUEST message identity	'0000 0111'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	Rx
	Not Checked		Tx
MSB of KNRP ID	Not Checked		Tx
	'00 00'H		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK RELEASE ACCEPT*

Table 4.7.4-12: DIRECT LINK RELEASE ACCEPT

Derivation Path: TS 24.587 [54] Table 7.3.7.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK RELEASE ACCEPT message identity	'0000 1000'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of KNRP ID	Not Checked		Tx
	'00 00'H		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK KEEPALIVE REQUEST*

Table 4.7.4-13: DIRECT LINK KEEPALIVE REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.8.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK KEEPALIVE REQUEST message identity	'0000 1001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Keep-alive counter	'00 00 00 00'H	Increase by 1 after each keep-alive procedure.	
Maximum inactivity period	Not Checked		Tx
Maximum inactivity period			Rx
Maximum inactivity period IEI	'55'H		
Maximum inactivity period contents	'00 00 00 06'H	6 seconds, higher value than T5003=5s	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK KEEPALIVE RESPONSE*

Table 4.7.4-14: DIRECT LINK KEEPALIVE RESPONSE

Derivation Path: TS 24.587 [54] Table 7.3.9.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK KEEPALIVE RESPONSE message identity	'0000 1010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Keep-alive counter	'00 00 00 01'H		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK AUTHENTICATION REQUEST*

Table 4.7.4-15: DIRECT LINK AUTHENTICATION REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.10.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK AUTHENTICATION REQUEST message identity	'0000 1011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Key establishment information container			
Length of key establishment information container contents	Not checked		Tx
	'00'H		Rx
Key establishment information container contents	Not checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK AUTHENTICATION RESPONSE*

Table 4.7.4-16: DIRECT LINK AUTHENTICATION RESPONSE

Derivation Path: TS 24.587 [54] Table 7.3.11.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK AUTHENTICATION RESPONSE message identity	'0000 1100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Key establishment information container			
Length of key establishment information container contents	Not checked		Tx
	'00'H		Rx
Key establishment information container contents	Not checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK AUTHENTICATION REJECT*

Table 4.7.4-17: DIRECT LINK AUTHENTICATION REJECT

Derivation Path: TS 24.587 [54] Table 7.3.12.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK AUTHENTICATION REJECT message identity	'0000 1101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause value	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK SECURITY MODE COMMAND*

Table 4.7.4-18: DIRECT LINK SECURITY MODE COMMAND

Derivation Path: TS 24.587 [54] Table 7.3.13.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK SECURITY MODE COMMAND message identity	'0000 1110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Selected security algorithms	'0000 0000'B		
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
UE PC5 unicast signalling security policy			
UE PC5 unicast signalling security policy IEI	'59'H		
Signalling integrity protection policy	'000'B	Signalling integrity protection not needed	
Signalling ciphering policy	'000'B	Signalling ciphering not needed.	
Nonce_2	Not Checked		Tx
	Not Present		Rx
LSBs of $K_{NRP-sess}$ ID	Not Checked		Tx
	Not Present		Rx
Key establishment information container	Not Checked		Tx
	Not Present		Rx
MSBs of K_{NRP} ID	Not Checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK SECURITY MODE COMPLETE*

Table 4.7.4-19: DIRECT LINK SECURITY MODE COMPLETE

Derivation Path: TS 24.587 [54] Table 7.3.14.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK SECURITY MODE COMPLETE message identity	'0000 1111'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0001'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 01'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	22	Sensor sharing, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	4		
UE PC5 unicast user plane security policy	'0000 0000'B	Signalling integrity protection not needed, Signalling ciphering not needed.	
IP address configuration	Not Checked		Tx
IP address configuration			Rx
IP address configuration IEI	'57'H		
IP address configuration content	'0000 0001'B	IPv6 Router	

Link local IPv6 address	Not Present		Rx
	Not Checked		Tx
LSBs of KNRP ID	Not Checked		Tx
	Not present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK SECURITY MODE REJECT*

Table 4.7.4-20: DIRECT LINK SECURITY MODE REJECT

Derivation Path: TS 24.587 [54] Table 7.3.15.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK SECURITY MODE REJECT message identity	'0001 0000'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK REKEYING REQUEST*

Table 4.7.4-21: DIRECT LINK REKEYING REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.16.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK REKEYING REQUEST message identity	'0001 0001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
Key establishment information container	Not Checked		
Nonce_1	Not Checked		
MSBs of $K_{NRP-sess}$ ID	Not Checked		
Re-authentication indication			
Re-authentication indication IEI	'56'H		
Re-authentication indication contents	'0000 0000'B	K_{NRP} is not requested to be refreshed	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK REKEYING RESPONSE*

Table 4.7.4-22: DIRECT LINK REKEYING RESPONSE

Derivation Path: TS 24.587 [54] Table 7.3.17.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK REKEYING RESPONSE message identity	'0001 0010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK IDENTIFIER UPDATE REQUEST*

Table 4.7.4-23: DIRECT LINK IDENTIFIER UPDATE REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.18.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK IDENTIFIER UPDATE REQUEST message identity	'0001 0011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
MSB of $K_{NRP-sess}$ ID	Not checked		Tx
	'00'H		Rx
Source layer-2 ID	'00 00 10'H		
Source user info			
Application layer ID IEI	'57'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 01 00'H	Application Layer ID in initiating UE side	
Source link local IPv6 address	Not present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK IDENTIFIER UPDATE ACCEPT*

Table 4.7.4-24: DIRECT LINK IDENTIFIER UPDATE ACCEPT

Derivation Path: TS 24.587 [54] Table 7.3.19.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK IDENTIFIER UPDATE ACCEPT message identity	'0001 0100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of $K_{NRP-sess}$ ID	Not checked		Tx
	'00'H		Rx
MSB of $K_{NRP-sess}$ ID	Not checked		Tx
	'00'H		Rx
Source layer-2 ID	'00 00 20'H		
Target layer-2 ID	'00 00 10'H		
Target user info			
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 01 00'H	Application Layer ID in initiating UE side	
Target link local IPv6 address	Not Present		
Source user info			
Application layer ID IEI	'57'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 02 00'H	Application Layer ID in target UE side	
Source link local IPv6 address	Not Present		

Condition	**Explanation**
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK IDENTIFIER UPDATE ACK*

Table 4.7.4-25: DIRECT LINK IDENTIFIER UPDATE ACK

Derivation Path: TS 24.587 [54] Table 7.3.20.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK IDENTIFIER UPDATE ACK message identity	'0001 0101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of $K_{NRP-sess}$ ID	Not checked		Tx
	'00'H		Rx
Target layer-2 ID	'00 00 20'H		
Target user info			
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 02 00'H	Application Layer ID in target UE side	
Target link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK IDENTIFIER UPDATE REJECT*

Table 4.7.4-26: DIRECT LINK IDENTIFIER UPDATE REJECT

Derivation Path: TS 24.587 [54] Table 7.3.21.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK IDENTIFIER UPDATE REJECT message identity	'0001 0110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK MODIFICATION REJECT*

Table 4.7.4-27: DIRECT LINK MODIFICATION REJECT

Derivation Path: TS 24.587 [54] Table 7.3.22.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK MODIFICATION REJECT message identity	'0000 0110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK ESTABLISHMENT REJECT*

Table 4.7.4-28: DIRECT LINK ESTABLISHMENT REJECT

Derivation Path: TS 24.587 [54] Table 7.3.23.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
DIRECT LINK ESTABLISHMENT REJECT message identity	'0000 0011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

4.7.5 V2X information elements

4.7.5.1 Void

4.7.5.2 Void

4.7.5.3 Void

4.7.5.4 V2X information elements for UE policy part

– *UE policy part when UE policy part type = {V2XP}*

Table 4.7.5.4-1: *UE policy part when UE policy part type = {V2XP}*

Derivation Path: TS 24.588 Figure 5.2.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
UE policy part contents length	Set to the actual length of 'UE policy part contents' in bytes		
UE policy part type	'0001'B	UE policy part type={ V2XP }	
Spare	'0000'B		
UE policy part contents={V2XP contents}	See Table 4.7.5.4-2		

– *V2XP contents*

Table 4.7.5.4-2: *V2XP contents*

Derivation Path: TS 24.588 Figure 5.2.1.2			
Information Element	**Value/remark**	**Comment**	**Condition**
V2XP info #1	See Table 4.7.5.4-3		
V2XP info #2	FFS		

– *V2XP info*

Table 4.7.5.4-3: *V2XP info*

Derivation Path: TS 24.588 Figure 5.3.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
V2XP info type	'0001'B	UE policies for V2X communication over PC5	
Spare	'0000'B		
Length of V2XP info contents	Set to the actual length of 'V2XP info contents' in bytes		
V2XP info contents	See Table 4.7.5.5-1		

4.7.5.5 V2X information elements of UE policies for V2X communication over PC5

– *V2XP info = {UE policies for V2X communication over PC5}*

Table 4.7.5.5-1: *V2XP info = {UE policies for V2X communication over PC5}*

Derivation Path: TS 24.588 Figure 5.3.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
V2XP info type	'0001'B	UE policies for V2X communication over PC5	
Length of V2XP info contents	Set to the actual length of 'V2XP info contents' in bytes		
Validity timer	'FF FF FF FF FF FF FF FF FF FF'H	5 bytes, Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
VSITPMRI	'1'B	'V2X service identifier to PC5 RAT and Tx profiles mapping rules' is present	
Served by E-UTRA or served by NR	See Table 4.7.5.5-2		
Not served by E-UTRA and not served by NR	See Table 4.7.5.5-6		
V2X service identifier to PC5 RAT and Tx profiles mapping rules	See Table 4.7.5.5-12		
Privacy config	See Table 4.7.5.5-15		
V2X communication over PC5 in E-UTRA-PC5	See Table 4.7.5.5-19		
V2X communication over PC5 in NR-PC5	See Table 4.7.5.5-31		

– *Served by E-UTRA or served by NR*

Table 4.7.5.5-2: *Served by E-UTRA or served by NR*

Derivation Path: TS 24.588 Figure 5.3.1.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of served by E-UTRA or served by NR contents	Set to the actual length of 'served by E-UTRA or served by NR contents' in bytes		
Authorized PLMN and RATs combinations	See Table 4.7.5.5-3		

– *Authorized PLMN and RATs combinations*

Table 4.7.5.5-3: *Authorized PLMN and RATs combinations*

Derivation Path: TS 24.588 Figure 5.3.1.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of authorized PLMN and RATs combinations contents	Set to the actual length of 'authorized PLMN and RATs combinations contents' in bytes		
Authorized PLMN and RATs combination 1	See Table 4.7.5.5-4		
Authorized PLMN and RATs combination 2	FFS		

– *Authorized PLMN and RATs combination*

Table 4.7.5.5-4: *Authorized PLMN and RATs combination*

Derivation Path: TS 24.588 Figure 5.3.1.4			
Information Element	**Value/remark**	**Comment**	**Condition**
PLMN ID	Set according to parameter given in test case		
NPIEN	'1'B	UE is authorized to use V2X communication over NR-PC5 when served by E-UTRA or served by NR	
EPIEN	'1'B	UE is authorized to use V2X communication over E-UTRA-PC5 when served by E-UTRA or served by NR	

– *PLMN ID*

Table 4.7.5.5-5: *PLMN ID*

Derivation Path: TS 24.588 Figure 5.3.1.5			
Information Element	**Value/remark**	**Comment**	**Condition**
MCC digit 1	Set according to parameter given in test case		
MCC digit 2	Set according to parameter given in test case		
MCC digit 3	Set according to parameter given in test case		
MNC digit 3	Set according to parameter given in test case		
MNC digit 1	Set according to parameter given in test case		
MNC digit 2	Set according to parameter given in test case		

– *Not served by E-UTRA and not served by NR*

Table 4.7.5.5-6: *Not served by E-UTRA and not served by NR*

Derivation Path: TS 24.588 Figure 5.3.1.6			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of not served by E-UTRA and not served by NR contents	Set to the actual length of 'not served by E-UTRA and not served by NR contents' in bytes		
VPNENNI	'1'B	UE is authorized to use V2X communication over PC5	
NPINENN	'1'B	UE is authorized to use V2X communication over NR-PC5 when not served by E-UTRA and not served by NR	
EPINENN	'1'B	UE is authorized to use V2X communication over E-UTRA-PC5 when not served by E-UTRA and not served by NR	
E-UTRA radio parameters per geographical area list	See Table 4.7.5.5-7		
NR radio parameters per geographical area list	See Table 4.7.5.5-7		

– *Radio parameters per geographical area list*

Table 4.7.5.5-7: *Radio parameters per geographical area list*

Derivation Path: TS 24.588 Figure 5.3.1.7			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of radio parameters per geographical area list contents	Set to the actual length of 'radio parameters per geographical area list contents' in bytes		
Radio parameters per geographical area info 1	See Table 4.7.5.5-8		
Radio parameters per geographical area info 2	FFS		

– *Radio parameters per geographical area info*

Table 4.7.5.5-8: *Radio parameters per geographical area info*

Derivation TS 24.588 Figure 5.3.1.8			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of radio parameters per geographical area contents	Set to the actual length of 'radio parameters per geographical area contents' in bytes		
Geographical area	See Table 4.7.5.5-9		
Radio parameters	See Table 4.7.5.5-11		
MI	'1'B	Operator managed	

– *Geographical area*

Table 4.7.5.5-9: *Geographical area*

Derivation Path: TS 24.588 Figure 5.3.1.9			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of geographical area contents	Set to the actual length of 'geographical area contents' in bytes		
Coordinate 1	See Table 4.7.5.5-10		
Coordinate 2	See Table 4.7.5.5-10		
Coordinate 3	See Table 4.7.5.5-10		

– *Coordinate area*

Table 4.7.5.5-10: *Coordinate area*

Derivation Path: TS 24.588 Figure 5.3.1.10			
Information Element	**Value/remark**	**Comment**	**Condition**
Latitude	35.753056		Coordinate 1
	35.735278		Coordinate 2
	35.744167		Coordinate 3
Longitude	139.689167		Coordinate 1
	139.689167		Coordinate 2
	139.709167		Coordinate 3

– *Radio parameters*

Table 4.7.5.5-11: *Radio parameters*

Derivation Path: TS 24.588 Figure 5.3.1.11			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of radio parameters contents	Set to the actual length of 'radio parameters contents' in bytes		
Radio parameters contents	See Table 4.10.1.1-1: SL-V2X-Preconfiguration in TS 36.508 [2]		E-UTRAN V2X
	See Table 4.10.1-1: SL-PreconfigurationNR		NR V2X

– *V2X service identifier to PC5 RAT and Tx profiles mapping rules*

Table 4.7.5.5-12: *V2X service identifier to PC5 RAT and Tx profiles mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.12			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to PC5 RAT and Tx profiles mapping rules contents	Set to the actual length of 'V2X service identifier to PC5 RAT and Tx profiles mapping rules contents' in bytes		
V2X service identifier to PC5 RAT and Tx profiles mapping rule 1	See Table 4.7.5.5-13		
V2X service identifier to PC5 RAT and Tx profiles mapping rule 2	FFS		

– *V2X service identifier to PC5 RAT and Tx profiles mapping rule*

Table 4.7.5.5-13: *V2X service identifier to PC5 RAT and Tx profiles mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to PC5 RAT and Tx profiles mapping rule contents	Set to the actual length of 'V2X service identifier to PC5 RAT and Tx profiles mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
PC5 RAT	‘00’B		E-UTRA-PC5
	‘01’B		NR-PC5
Length of E-UTRA-PC5 Tx profiles	Set to the actual length of 'E-UTRA-PC5 Tx profiles' in bytes		E-UTRA-PC5
E-UTRA-PC5 Tx profiles	rel14	UE shall use Release 14 compatible format (i.e. using MCS table in Table 8.6.1-1 with 64 QAM indices overridden by 16QAM in TS 36.213 [23] and not Rel-15 feature) to transmit the corresponding V2X packet, Refer to IE v2x-TxProfileList in TS 36.331	E-UTRA-PC5

– *V2X service identifiers*

Table 4.7.5.5-14: *V2X service identifiers*

Derivation Path: TS 24.588 Figure 5.3.1.14			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifiers contents	Set to the actual length of 'V2X service identifiers contents' in bytes		
V2X service identifier 1	'00 00 00 01'H	4 bytes for each V2X service identifier	
V2X service identifier 2	'00 00 00 02'H		

– *Privacy config*

Table 4.7.5.5-15: *Privacy config*

Derivation Path: TS 24.588 Figure 5.3.1.15			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of privacy config contents	Set to the actual length of 'privacy config contents' in bytes		
V2X services requiring privacy	See Table 4.7.5.5-16		
Privacy timer	'FF FF'H	Expressed in units of seconds, after which the UE shall change the source Layer-2 ID self-assigned by the UE	

– *V2X services requiring privacy*

Table 4.7.5.5-16: *V2X services requiring privacy*

Derivation Path: TS 24.588 Figure 5.3.1.16			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X services requiring privacy contents	Set to the actual length of 'V2X services requiring privacy contents' in bytes		
V2X service requiring privacy 1	See Table 4.7.5.5-17		
V2X service requiring privacy 2	FFS		

– *V2X service requiring privacy*

Table 4.7.5.5-17: *V2X service requiring privacy*

Derivation Path: TS 24.588 Figure 5.3.1.17			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service requiring privacy contents	Set to the actual length of 'V2X service requiring privacy contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Geographical areas	See Table 4.7.5.5-18		

– *Geographical areas*

Table 4.7.5.5-18: *Geographical areas*

Derivation Path: TS 24.588 Figure 5.3.1.18			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of geographical areas contents	Set to the actual length of 'geographical areas contents' in bytes		
Geographical area 1	See Table 4.7.5.5-9		
Geographical area 2	FFS		

– *V2X communication over PC5 in E-UTRA-PC5*

Table 4.7.5.5-19: *V2X communication over PC5 in E-UTRA-PC5*

Derivation Path: TS 24.588 Figure 5.3.1.19			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X communication over PC5 in E-UTRA-PC5 contents	Set to the actual length of 'V2X communication over PC5 in E-UTRA-PC5 contents' in bytes		
PPMR	'1'B	PPPP to PDB mapping rules field is present	
VSAPI	'1'B	V2X services authorized for PPPR field is present	
VSIEFMRI	'1'B	V2X service identifier to V2X E-UTRA frequency mapping rules field is present	
DDL2II	'1'B	Default destination layer-2 ID field is present	
V2X service identifier to destination layer-2 ID mapping rules	See Table 4.7.5.5-20		
PPPP to PDB mapping rules	See Table 4.7.5.5-22		
V2X service identifier to V2X E-UTRA frequency mapping rules	See Table 4.7.5.5-24		
V2X services authorized for PPPR	See Table 4.7.5.5-29		
Default destination layer-2 ID	'00 00 40'H	3 bytes, Random value	

– *V2X service identifier to destination layer-2 ID mapping rules*

Table 4.7.5.5-20: *V2X service identifier to destination layer-2 ID mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.20			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to destination layer-2 ID mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID mapping rule 1	See Table 4.7.5.5-21		
V2X service identifier to destination layer-2 ID mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID mapping rule*

Table 4.7.5.5-21: *V2X service identifier to destination layer-2 ID mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.21			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to destination layer-2 ID mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Destination layer-2 ID	'00 00 41'H		

– *PPPP to PDB mapping rules*

Table 4.7.5.5-22: *PPPP to PDB mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.22			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of PPPP to PDB mapping rules contents	Set to the actual length of 'PPPP to PDB mapping rules contents' in bytes		
PPPP to PDB mapping rule 1	See Table 4.7.5.5-23		
PPPP to PDB mapping rule 2	FFS		

– *PPPP to PDB mapping rule*

Table 4.7.5.5-23: *PPPP to PDB mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.23			
Information Element	**Value/remark**	**Comment**	**Condition**
PPPP	'000'B	PPPP value 1	
PDB	'00 32'H	50ms	

– *V2X service identifier to V2X E-UTRA frequency mapping rules*

Table 4.7.5.5-24: *V2X service identifier to V2X E-UTRA frequency mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.24			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to V2X E-UTRA frequency mapping rules contents	Set to the actual length of 'V2X service identifier to V2X E-UTRA frequency mapping rules contents' in bytes		
V2X service identifier to V2X E-UTRA frequency mapping rule 1	See Table 4.7.5.5-25		
V2X service identifier to V2X E-UTRA frequency mapping rule 2	FFS		

– *V2X service identifier to V2X E-UTRA frequency mapping rule*

Table 4.7.5.5-25: *V2X service identifier to V2X E-UTRA frequency mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.25			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to V2X E-UTRA frequency mapping rule contents	Set to the actual length of 'V2X service identifier to V2X E-UTRA frequency mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
V2X E-UTRA frequencies with geographical areas list	See Table 4.7.5.5-26		

– *V2X E-UTRA frequencies with geographical areas list*

Table 4.7.5.5-26: *V2X E-UTRA frequencies with geographical areas list*

Derivation Path: TS 24.588 Figure 5.3.1.26			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X E-UTRA frequencies with geographical areas list contents	Set to the actual length of 'V2X E-UTRA frequencies with geographical areas list contents' in bytes		
V2X E-UTRA frequencies with geographical areas info 1	See Table 4.7.5.5-27		
V2X E-UTRA frequencies with geographical areas info 2	FFS		

– *V2X E-UTRA frequencies with geographical areas info*

Table 4.7.5.5-27: *V2X E-UTRA frequencies with geographical areas info*

Derivation Path: TS 24.588 Figure 5.3.1.27			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X E-UTRA frequencies with geographical areas info contents	Set to the actual length of 'V2X E-UTRA frequencies with geographical areas info contents' in bytes		
V2X E-UTRA frequencies	See Table 4.7.5.5-28		
Geographical areas	See Table 4.7.5.5-18		

– *V2X E-UTRA frequencies*

Table 4.7.5.5-28: *V2X E-UTRA frequencies*

Derivation Path: TS 24.588 Figure 5.3.1.28			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X E-UTRA frequencies contents	Set to the actual length of 'V2X E-UTRA frequencies contents' in bytes		
V2X E-UTRA frequency 1	Downlink E-UTRA ARFCN under test. f5 of Table 6.2.3.5-1 in TS 36.508 [2]		SIG
	Downlink E-UTRA ARFCN under test. Mid Range EARFCN value of Table 4.3.1.2.15-1 in TS 36.508 [2].		
V2X E-UTRA frequency 2	FFS		

– *V2X services authorized for PPPR*

Table 4.7.5.5-29: *V2X services authorized for PPPR*

Derivation Path: TS 24.588 Figure 5.3.1.29			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X services authorized for PPPR contents	Set to the actual length of 'V2X services authorized for PPPR contents' in bytes		
V2X service authorized for PPPR 1	See Table 4.7.5.5-30		
V2X service authorized for PPPR 2	FFS		

– *V2X service authorized for PPPR*

Table 4.7.5.5-30: *V2X service authorized for PPPR*

Derivation Path: TS 24.588 Figure 5.3.1.30			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service authorized for PPPR contents	Set to the actual length of 'V2X service authorized for PPPR contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
PPPR	'000'B	PPPR value 1	

– *V2X communication over PC5 in NR-PC5*

Table 4.7.5.5-31: *V2X communication over PC5 in NR-PC5*

Derivation Path: TS 24.588 Figure 5.3.1.31			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X communication over PC5 in NR-PC5 contents	Set to the actual length of 'V2X communication over PC5 in NR-PC5 contents' in bytes		
VSINFMRI	'1'B	V2X service identifier to V2X NR frequency mapping rules field is present	
DDL2IBI	'1'B	Default destination layer-2 ID for broadcast field is present	
V2X service identifier to V2X NR frequency mapping rules	See Table 4.7.5.5-32		
V2X service identifier to destination layer-2 ID for broadcast mapping rules	See Table 4.7.5.5-37		
V2X service identifier to destination layer-2 ID for groupcast mapping rules	See Table 4.7.5.5-39		
V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules	See Table 4.7.5.5-41		
V2X service identifier to PC5 QoS parameters mapping rules	See Table 4.7.5.5-43		
AS configuration	See Table 4.7.5.5-45		
Default destination layer-2 ID for broadcast	'00 00 50'H		
NR-PC5 unicast security policies	See Table 4.7.5.5-49		
V2X service identifier to default mode of communication mapping rules	See Table 4.7.5.5-52		

– *V2X service identifier to V2X NR frequency mapping rules*

Table 4.7.5.5-32: *V2X service identifier to V2X NR frequency mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.32			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to V2X NR frequency mapping rules contents	Set to the actual length of 'V2X service identifier to V2X NR frequency mapping rules contents' in bytes		
V2X service identifier to V2X NR frequency mapping rule 1	See Table 4.7.5.5-33		
V2X service identifier to V2X NR frequency mapping rule 2	FFS		

– *V2X service identifier to V2X NR frequency mapping rule*

Table 4.7.5.5-33: *V2X service identifier to V2X NR frequency mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.33			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to V2X NR frequency mapping rule contents	Set to the actual length of 'V2X service identifier to V2X NR frequency mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
V2X NR frequencies with geographical areas list	See Table 4.7.5.5-34		

– *V2X NR frequencies with geographical areas list*

Table 4.7.5.5-34: *V2X NR frequencies with geographical areas list*

Derivation Path: TS 24.588 Figure 5.3.1.34			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X NR frequencies with geographical areas list contents	Set to the actual length of 'V2X NR frequencies with geographical areas list contents' in bytes		
V2X NR frequencies with geographical areas info 1	See Table 4.7.5.5-35		
V2X NR frequencies with geographical areas info 2	FFS		

– *V2X NR frequencies with geographical areas info*

Table 4.7.5.5-35: *V2X NR frequencies with geographical areas info*

Derivation Path: TS 24.588 Figure 5.3.1.35			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X NR frequencies with geographical areas info contents	Set to the actual length of 'V2X NR frequencies with geographical areas info contents' in bytes		
V2X NR frequencies	See Table 4.7.5.5-36		
Geographical areas	See Table 4.7.5.5-18		

– *V2X NR frequencies*

Table 4.7.5.5-36: *V2X NR frequencies*

Derivation Path: TS 24.588 Figure 5.3.1.36			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X NR frequencies contents	Set to the actual length of 'V2X NR frequencies contents' in bytes		
V2X NR frequency 1	ARFCN-ValueNR with condition SL_SSB in Table 4.6.3-5		
V2X NR frequency 2	FFS		

– *V2X service identifier to destination layer-2 ID for broadcast mapping rules*

Table 4.7.5.5-37: *V2X service identifier to destination layer-2 ID for broadcast mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.37			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to destination layer-2 ID for broadcast mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for broadcast mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID for broadcast mapping rule 1	See Table 4.7.5.5-38		
V2X service identifier to destination layer-2 ID for broadcast mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID for broadcast mapping rule*

Table 4.7.5.5-38: *V2X service identifier to destination layer-2 ID for broadcast mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.38			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to destination layer-2 ID for broadcast mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for broadcast mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Destination layer-2 ID for broadcast	'00 00 51'H		

– *V2X service identifier to destination layer-2 ID for groupcast mapping rules*

Table 4.7.5.5-39: *V2X service identifier to destination layer-2 ID for groupcast mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.39			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to destination layer-2 ID for groupcast mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for groupcast mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID for groupcast mapping rule 1	See Table 4.7.5.5-40		
V2X service identifier to destination layer-2 ID for groupcast mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID for groupcast mapping rule*

Table 4.7.5.5-40: *V2X service identifier to destination layer-2 ID for groupcast mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.40			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to destination layer-2 ID for groupcast mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for groupcast mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Destination layer-2 ID for groupcast	'00 00 52'H		

– *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules*

Table 4.7.5.5-41: *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.41			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule 1	See Table 4.7.5.5-42		
V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule*

Table 4.7.5.5-42: *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.42			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Destination layer-2 ID for unicast initial signalling	'00 00 53'H		

– *V2X service identifier to PC5 QoS parameters mapping rules*

Table 4.7.5.5-43: *V2X service identifier to PC5 QoS parameters mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.43			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to PC5 QoS parameters mapping rules contents	Set to the actual length of 'V2X service identifier to PC5 QoS parameters mapping rules contents' in bytes		
V2X service identifier to PC5 QoS parameters mapping rule 1	See Table 4.7.5.5-44		
V2X service identifier to PC5 QoS parameters mapping rule 2	FFS		

– *V2X service identifier to PC5 QoS parameters mapping rule*

Table 4.7.5.5-44: *V2X service identifier to PC5 QoS parameters mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.46			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to PC5 QoS parameters mapping rule contents	Set to the actual length of 'V2X service identifier to PC5 QoS parameters mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
RI	'1'B	Range field is present	
PLAMBRI	'1'B	Per-link aggregate maximum bit rate field is present	
MFBRI	'1'B	Maximum flow bit rate field is present	
GFBRI	'1'B	Guaranteed flow bit rate field is present	
PQI	22	See Table 5.4.4-1 in TS 23.287 [xx]	
Guaranteed flow bit rate	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Maximum flow bit rate	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Per-link aggregate maximum bit rate	'0000 0110 0000 0000 0000 0010'B	2 * 1Mbps = 2Mbps.	
Range	'0000 0001 1111 0100'B	500 meters	

– *AS configuration*

Table 4.7.5.5-45: *AS configuration*

Derivation Path: TS 24.588 Figure 5.3.1.46a			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of AS configuration contents	Set to the actual length of 'AS configuration contents' in bytes		
SLRB mapping rules	See Table 4.7.5.5-46		

– *SLRB mapping rules*

Table 4.7.5.5-46: *SLRB mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.47			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of SLRB mapping rules contents	Set to the actual length of 'SLRB mapping rules contents' in bytes		
SLRB mapping rule 1	See Table 4.7.5.5-47		
SLRB mapping rule 2	FFS		

– *SLRB mapping rule*

Table 4.7.5.5-47: *SLRB mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.48			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of SLRB mapping rule contents	Set to the actual length of 'SLRB mapping rule contents' in bytes		
PC5 QoS profile	See Table 4.7.5.5-48		
Length of SLRB	Set to the actual length of 'SLRB' in bytes		
SLRB	See Table 4.10.1-1		

– *PC5 QoS profile*

Table 4.7.5.5-48: *PC5 QoS profile*

Derivation Path: TS 24.588 Figure 5.3.1.49			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of PC5 QoS profile contents	Set to the actual length of 'PC5 QoS profile contents' in bytes		
MDBVI	'0'B	Maximum data burst volume field is absent	
AWI	'1'B	Averaging window field is present	
PLOI	'1'B	The octet of the priority level is present	
RI	'1'B	Range field is present	
PLAMBRI	'1'B	Per-link aggregate maximum bit rate field is present	
MFBRI	'1'B	Maximum flow bit rate field is present	
GFBRI	'1'B	Guaranteed flow bit rate field is present	
PQI	22	See Table 5.4.4-1 in TS 23.287[xx]	
Guaranteed flow bit rate	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Maximum flow bit rate	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Per-link aggregate maximum bit rate	'0000 0110 0000 0000 0000 0010'B	2 * 1Mbps = 2Mbps.	
Range	'0000 0001 1111 0100'B	500 meters	
Priority level	4		
Averaging window	'0000 0111 1101 0000'B	2000ms	
Maximum data burst volume	Not Present		

– *NR-PC5 unicast security policies*

Table 4.7.5.5-49: *NR-PC5 unicast security policies*

Derivation Path: TS 24.588 Figure 5.3.1.50			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of NR-PC5 unicast security policies contents	Set to the actual length of 'NR-PC5 unicast security policies contents' in bytes		
NR-PC5 unicast security policy 1	See Table 4.7.5.5-50		
NR-PC5 unicast security policy 2	FFS		

– *NR-PC5 unicast security policy*

Table 4.7.5.5-50: *NR-PC5 unicast security policy*

Derivation Path: TS 24.588 Figure 5.3.1.51			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of NR-PC5 unicast security policy contents	Set to the actual length of 'NR-PC5 unicast security policy contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Security policy	See Table 4.7.5.5-51		
Geographical areas	See Table 4.7.5.5-18		

– *Security policy*

Table 4.7.5.5-51: *Security policy*

Derivation Path: TS 24.588 Figure 5.3.1.52			
Information Element	**Value/remark**	**Comment**	**Condition**
Signalling integrity protection policy	'000'B	Signalling integrity protection not needed	
Spare	‘0’B		
Signalling ciphering policy	'000'B	Signalling ciphering not needed	
Spare	‘0’B		
User plane integrity protection policy	'000'B	User plane integrity protection not needed	
Spare	‘0’B		
User plane ciphering policy	'000'B	User plane ciphering not needed	
Spare	‘0’B		

– *V2X service identifier to default mode of communication mapping rules*

Table 4.7.5.5-52: *V2X service identifier to default mode of communication mapping rules*

Derivation Path: TS 24.588 Figure 5.3.1.53			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to default mode of communication mapping rules contents	‘Set to the actual length of 'V2X service identifier to default mode of communication mapping rules contents' in bytes		
V2X service identifier to default mode of communication mapping rule 1	See Table 4.7.5.5-53		
V2X service identifier to default mode of communication mapping rule 2	FFS		

– *V2X service identifier to default mode of communication mapping rule*

Table 4.7.5.5-53: *V2X service identifier to default mode of communication mapping rule*

Derivation Path: TS 24.588 Figure 5.3.1.54			
Information Element	**Value/remark**	**Comment**	**Condition**
Length of V2X service identifier to default mode of communication mapping rule contents	‘Set to the actual length of 'V2X service identifier to default mode of communication mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
DMC	'00'B	Default mode of communication is set to unicast	
Spare	‘0000 00’B		

4.7.6 Contents of UE Policy Delivery messages

– *MANAGE UE POLICY COMMAND*

Table 4.7.6-1: MANAGE UE POLICY COMMAND

Derivation Path: TS 24.501 Table D.5.1.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
PTI	Any value from 1 to 254		
MANAGE UE POLICY COMMAND message identity	’0000 0001’B	MANAGE UE POLICY COMMAND message	
UE policy section management list			
Length of UE policy section management list contents	Set to the actual length of 'UE policy section management list contents' in bytes		
UE policy section management list contents	1 entry		
UE policy section management sublist (PLMN-1)			
Length of UE policy section management sublist	Set to the actual length of 'UE policy section management sublist' in bytes		
PLMN ID	Set to the PLMN value used in the test case		
UE policy section management sublist contents			
Instruction 1			
Instruction contents length	Set to the actual length of 'Instruction contents' in bytes		
UPSC	'00 01'H	2 bytes, value set by PCF	
UE policy section contents			
UE policy part 1			
UE policy part contents length	Set to the actual length of 'UE policy part contents' in bytes		
Spare	‘0000’B		
UE policy part type	‘0001’B		URSP
	‘0010’B		ANDSP
	‘0011’B		V2XP
UE policy part contents	See Table 4.8.5.1-1		URSP
	FFS		ANDSP
	See Table 4.7.5.4-1		V2XP

Condition	Explanation
URSP	UE Route Selection Policy (URSP)
ANDSP	UE Access Network Discovery and Selection Policy (ANDSP)
V2XP	UE policies for V2X (V2XP)

– *MANAGE UE POLICY COMPLETE*

Table 4.7.6-2: MANAGE UE POLICY COMPLETE

Derivation Path: TS 24.501 Table D.5.2.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
PTI	The same value as the value set in MANAGE UE POLICY COMMAND message.		
MANAGE UE POLICY COMPLETE message identity	’0000 0010’B	MANAGE UE POLICY COMPLETE message	

– *MANAGE UE POLICY COMMAND REJECT*

Table 4.7.6-3: MANAGE UE POLICY COMMAND REJECT

Derivation Path: TS 24.501 Table D.5.3.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
PTI	The same value as the value set in MANAGE UE POLICY COMMAND message.		
MANAGE UE POLICY COMMAND REJECT message identity	’0000 0011’B	MANAGE UE POLICY COMMAND REJECT message	
UE policy section management result			
Length of UE policy section management result contents	Set to the actual length of 'UE policy section management result contents' in bytes		
UE policy section management list contents	1 entry		
UE policy section management subresult (PLMN 1)			
Number of results	1		
PLMN ID	Set to the PLMN value used in the test case		
UE policy section management subresult contents	1 entry		
Result 1			
UPSC	'00 01'H		
Failed instruction order	Set according to specific message content.		
Cause	Set according to specific message content.		

– *UE STATE INDICATION*

Table 4.7.6-4: UE STATE INDICATION

Derivation Path: TS 24.501 Table D.5.4.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
PTI	Any value from 1 to 254		
UE STATE INDICATION message identity	’0000 0100’B		
UPSI list	1 entry		
Length of UPSI list contents	Set to the actual length of 'UPSI list contents' in bytes		
UPSI sublist (PLMN 1)	1 entry		
Length of UPSI sublist	Set to the actual length of 'UPSI sublist' in bytes		
PLMN ID	Set to the PLMN value used in the test case		
UPSC 1	Set according to specific message content.		
UE policy classmark	Not checked		
Length of Policy information contents	Set to the actual length of 'Policy information contents' in bytes		
Spare	‘0000 000’B		
SupportANDSP	‘1’B		ANDSP
	Not checked		
UE OS Id			
Length of OS Id information contents	Set to the actual length of 'OS Id information contents' in bytes		
OS Id_1	Set according to parameter given in test case		

Condition	Explanation
ANDSP	UE Access Network Discovery and Selection Policy (ANDSP)

– *UE POLICY PROVISIONING REQUEST*

Table 4.7.6-5: UE POLICY PROVISIONING REQUEST

Derivation Path: TS 24.587 Table 7.2.1.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
PTI	Any value from 1 to 254		
UE POLICY PROVISIONING REQUEST message identity	’0000 0101’B		
Requested UE policies			
Length of Requested UE policies contents	2		
Requested UE policies contents	'0000 0001 0000 0000'B	UE policies for V2X communication over PC5 requested	

– *UE POLICY PROVISIONING REJECT*

Table 4.7.6-6: UE POLICY PROVISIONING REJECT

Derivation Path: TS 24.587 Table 7.2.2.1.1			
Information Element	**Value/remark**	**Comment**	**Condition**
PTI	The same value as the value set in UE POLICY PROVISIONING REQUEST message.		
UE POLICY PROVISIONING REJECT message identity	’0000 0110’B		
UPDS cause	'0001 1111'B	Request rejected, unspecified	

4.7A Default TC message and information element contents

This clause contains the default values of common TC (Test Control, see [11]) messages and information elements, which apply to all test cases unless otherwise specified. All the messages and information elements are listed in alphabetical order.

4.7A.1 Test mode messages

- *ACTIVATE TEST MODE* with the following exception:
  - The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

Same as TS 36.508 [2], Table 4.7A-1.

- *ACTIVATE TEST MODE COMPLETE*

Same as TS 36.508 [2], Table 4.7A-2.

- *DEACTIVATE TEST MODE*

Same as TS 36.508 [2], Table 4.7A-5.

- *DEACTIVATE TEST MODE COMPLETE*

Same as TS 36.508 [2], Table 4.7A-6.

4.7A.2 Test loop messages

- *CLOSE UE TEST LOOP*

Same as TS 36.508 [2], Table 4.7A-3 with the following exception:

- The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

- *CLOSE UE TEST LOOP COMPLETE*

Same as TS 36.508 [2], Table 4.7A-4.

- *OPEN UE TEST LOOP*

Same as TS 36.508 [2], Table 4.7A-7.

- *OPEN UE TEST LOOP COMPLETE*

Same as TS 36.508 [2], Table 4.7A-8.

4.7A.3 Beamlock messages

- *ACTIVATE BEAMLOCK*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.3-1: ACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.1			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 0		
UE Beamlock test Function	0 0 0 0 0 0 0 1		Tx Only
UE Beamlock test Function	0 0 0 0 0 0 1 0		Rx Only
UE Beamlock test Function	0 0 0 0 0 0 1 1		Tx and Rx

Condition	Explanation
Tx Only	Activation UE beamlock function for Tx only
Rx Only	Activation UE beamlock function for Rx only
Tx and Rx	Activation UE beamlock function for both Tx and Rx

- *ACTIVATE BEAMLOCK COMPLETE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.3-2: ACTIVATE BEAMLOCK COMPLETE

Derivation Path: 38.509 clause 6.4.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 1		

- *DEACTIVATE BEAMLOCK*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.3-3: DEACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 0		

- *DEACTIVATE BEAMLOCK COMPLETE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.3-4: DEACTIVATE BEAMLOCK COMPLETE

Derivation Path: 38.509 clause 6.4.4			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 1		

4.7A.4 UE SS-RSRP per receiver branch reporting messages

- *SS-RSRPB REPORT REQUEST*

FFS

- *SS-RSRPB REPORT RESPONSE*

FFS

4.7A.5 UE Positioning messages

- *RESET UE POSITIONING STORED INFORMATION*

FFS

- *UPDATE UE LOCATION INFORMATION*

FFS

4.7A.6 NSSAI delete messages

- *NSSAI DELETE REQUEST*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.6-1: NSSAI DELETE REQUEST

Derivation Path: 38.509 clause 6.7.1			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 0 0 0 1 1 0		
Delete NSSAI type	Set according to specific message contents		
Configured NSSAI	Set according to specific message contents		
Allowed NSSAI	Set according to specific message contents		

- *NSSAI DELETE RESPONSE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.6-2: NSSAI DELETE RESPONSE

Derivation Path: 38.509 clause 6.7.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 1 1 1		

4.7A.7 UE Power Limit Messages

- *ACTIVATE POWER LIMIT REQUEST*

This Message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.7-1: ACTIVATE POWER LIMIT REQUEST

Derivation Path: 38.509 clause 6.11.1			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 0		
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 0 1 0		TOT NR AGG BW 100
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 0 1 1		TOT NR AGG BW 150
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 0 0		TOT NR AGG BW 200
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 0 1		TOT NR AGG BW 250
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1 0		TOT NR AGG BW 300
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1 1		TOT NR AGG BW 350
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 0 0		TOT NR AGG BW 400
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 0 1		TOT NR AGG BW 450
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 1 0		TOT NR AGG BW 500
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 1 1		TOT NR AGG BW 550
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 0 0		TOT NR AGG BW 600
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 0 1		TOT NR AGG BW 650
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 1 0		TOT NR AGG BW 700
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 1 1		TOT NR AGG BW 750
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 0 0		TOT NR AGG BW 800
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 0 1		TOT NR AGG BW 850
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 1 0		TOT NR AGG BW 900
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 1 1		TOT NR AGG BW 950
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 0 0		TOT NR AGG BW 1000
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 0 1		TOT NR AGG BW 1050

TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 1 0		TOT NR AGG BW 1100
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 1 1		TOT NR AGG BW 1150
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 0 0		TOT NR AGG BW 1200
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 0 1		TOT NR AGG BW 1250
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 1 0		TOT NR AGG BW 1300
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 1 1		TOT NR AGG BW 1350
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 0 0		TOT NR AGG BW 1400
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 0 1		TOT NR AGG BW 1450
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 1 0		TOT NR AGG BW 1500
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 1 1		TOT NR AGG BW 1550
TOTAL NR AGGREGATED BANDWIDTH	0 0 1 0 0 0 0 0		TOT NR AGG BW 1600
PCELL NR BANDWIDTH	0 0 0 0 0 0 0 1		PCELL NR BW 50
PCELL NR BANDWIDTH	0 0 0 0 0 0 1 0		PCELL NR BW 100
PCELL NR BANDWIDTH	0 0 0 0 0 1 0 0		PCELL NR BW 200
PCELL NR BANDWIDTH	0 0 0 0 1 0 0 0		PCELL NR BW 400

Condition	Explanation
TOT NR AGG BW 100	Total NR aggregated Bandwidth equal to 100 MHz
TOT NR AGG BW 150	Total NR aggregated Bandwidth equal to 150 MHz
TOT NR AGG BW 200	Total NR aggregated Bandwidth equal to 200 MHz
TOT NR AGG BW 250	Total NR aggregated Bandwidth equal to 250 MHz
TOT NR AGG BW 300	Total NR aggregated Bandwidth equal to 300 MHz
TOT NR AGG BW 350	Total NR aggregated Bandwidth equal to 350 MHz
TOT NR AGG BW 400	Total NR aggregated Bandwidth equal to 400 MHz
TOT NR AGG BW 450	Total NR aggregated Bandwidth equal to 450 MHz
TOT NR AGG BW 500	Total NR aggregated Bandwidth equal to 500 MHz
TOT NR AGG BW 550	Total NR aggregated Bandwidth equal to 550 MHz
TOT NR AGG BW 600	Total NR aggregated Bandwidth equal to 600 MHz
TOT NR AGG BW 650	Total NR aggregated Bandwidth equal to 650 MHz
TOT NR AGG BW 700	Total NR aggregated Bandwidth equal to 700 MHz
TOT NR AGG BW 750	Total NR aggregated Bandwidth equal to 750 MHz
TOT NR AGG BW 800	Total NR aggregated Bandwidth equal to 800 MHz
TOT NR AGG BW 850	Total NR aggregated Bandwidth equal to 850 MHz
TOT NR AGG BW 900	Total NR aggregated Bandwidth equal to 900 MHz
TOT NR AGG BW 950	Total NR aggregated Bandwidth equal to 950 MHz
TOT NR AGG BW 1000	Total NR aggregated Bandwidth equal to 1000 MHz
TOT NR AGG BW 1050	Total NR aggregated Bandwidth equal to 1050 MHz
TOT NR AGG BW 1100	Total NR aggregated Bandwidth equal to 1100 MHz
TOT NR AGG BW 1150	Total NR aggregated Bandwidth equal to 1150 MHz
TOT NR AGG BW 1200	Total NR aggregated Bandwidth equal to 1200 MHz
TOT NR AGG BW 1250	Total NR aggregated Bandwidth equal to 1250 MHz
TOT NR AGG BW 1300	Total NR aggregated Bandwidth equal to 1300 MHz
TOT NR AGG BW 1350	Total NR aggregated Bandwidth equal to 1350 MHz
TOT NR AGG BW 1400	Total NR aggregated Bandwidth equal to 1400 MHz
TOT NR AGG BW 1450	Total NR aggregated Bandwidth equal to 1450 MHz
TOT NR AGG BW 1500	Total NR aggregated Bandwidth equal to 1500 MHz
TOT NR AGG BW 1550	Total NR aggregated Bandwidth equal to 1550 MHz
TOT NR AGG BW 1600	Total NR aggregated Bandwidth equal to 1600 MHz
PCELL NR BW 50	PCC NR Bandwidth equal to 50 MHz
PCELL NR BW 100	PCC NR Bandwidth equal to 100 MHz
PCELL NR BW 200	PCC NR Bandwidth equal to 200 MHz
PCELL NR BW 400	PCC NR Bandwidth equal to 400 MHz

- ACTIVATE POWER LIMIT RESPONSE

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.7-2: ACTIVATE POWER LIMIT RESPONSE

Derivation Path: 38.509 clause 6.11.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 1		

- DEACTIVATE POWER LIMIT REQUEST

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.7-3: DEACTIVATE POWER LIMIT REQUEST

Derivation Path: 38.509 clause 6.11.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 1 0 0 0 0		

- DEACTIVATE POWER LIMIT RESPONSE

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

- **Table 4.7A.7-3: DEACTIVATE POWER LIMIT RESPONSE**

Derivation Path: 38.509 clause 6.11.4			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 1 0 0 0 1		

4.7B Default AT Command message and information element

- *AT Command +CATM*

Same as TS 36.508 [2], Table 4.7I-1.

- *AT Command +CCUTLE*

This AT Command is sent by the SS to the UE.

Table 4.7B-1: +CCUTLE

Derivation Path: 27.007 clause 15.3			
Field	**Value/remark**	**Comment**	**Condition**
+ CCUTLE =			
<status>	1		Open
<status>	0		Close
<direction>	1		Transmit
<sl_mimo>	0		Transmit
	1		Transmit AND SL_MIMO
<direction>	0		Receive
<format>	1		Receive
<length>	1		Receive
<monitor_list>	HEX '0000AA'		Receive

Condition	Explanation
Open	Open UE test loop back mode E.
Close	Close UE test loop back mode E
Transmit	UE is configured to transmit V2X communication packets
Receive	UE is configured to receive V2X communication packets
SL_MIMO	UE is configured to transmit PSSCH with 2 spatial layers, i.e. SL MIMO

- *AT Command +CUTCR*

Same as TS 36.508 [2], Table 4.7I-3.

- *AT Command +CUSPCREQ*

Same as TS 36.508 [2], Table 4.7I-4.

4.8 Reference configurations

4.8.1 Radio configurations

– *RRCReconfiguration-DRB(n, m)*

Table 4.8.1-1: RRCReconfiguration-DRB (n, m)

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-DRB-NR(n,m)		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(n, m)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *RRCReconfiguration-HO*

Table 4.8.1-1A: RRCReconfiguration-HO

Derivation Path: Table 4.6.1-13.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB_NR_PDCP and DRBn and Re-establish_PDCP		RBConfig_KeyChange
	RadioBearerConfig with conditions DRBn and Recover_PDCP		RBConfig_NoKeyChange
secondaryCellGroup	Not present		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with conditions PCell_change	OCTET STRING (CONTAINING CellGroupConfig)	
masterKeyUpdate	Not present		
masterKeyUpdate SEQUENCE {			RBConfig_KeyChange
keySetChangeIndicator	false	Horizontal key derivation	
nextHopChainingCount	NextHopChainingCount		
nas-Container	Not present		
}			
}			
}			
}			
}			

Condition	Explanation
RBConfig_KeyChange	RadioBearerConfig to perform Intra-NR handover with security key change
RBConfig_NoKeyChange	RadioBearerConfig to perform Intra-NR handover without security key change

– *RRCReconfiguration-SRB2-DRB(n, m)*

Table 4.8.1-1B: RRCReconfiguration-SRB2-DRB(n, m)

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-SRB2-DRB(n,m)		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-SRB2-DRB(n, m)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *RRCReconfiguration-NR-DC-DRB*

Table 4.8.1-1CA: RRCReconfiguration-NR-DC-DRB

Derivation Path: Table 4.6.1-13 with condition NR-DC.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	Not present		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	Not present		MCG(s) and SCG
	CellGroupConfig with condition DRB(n+m+1)	OCTET STRING (CONTAINING CellGroupConfig)	MCG(s) and split
nonCriticalExtension SEQUENCE {			
nonCriticalExtension SEQUENCE {			
radioBearerConfig2	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and SCG
	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and Split and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and split
}			
}			
}			
}			
}			
}			

– *RRCReconfiguration-NE-DC-DRB*

Table 4.8.1-1CB: RRCReconfiguration-NE-DC-DRB

Derivation Path: Table 4.6.1-13 with condition NE-DC.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	Not present		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	Not present		MCG(s) and SCG
	CellGroupConfig with condition DRB(n+m+1)	OCTET STRING (CONTAINING CellGroupConfig)	MCG(s) and split
nonCriticalExtension SEQUENCE {			
nonCriticalExtension SEQUENCE {			
radioBearerConfig2	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and SCG
	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and Split and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and split
}			
}			
}			
}			
}			
}			

– *RRCReconfiguration-Speech*

Table 4.8.1-1C: RRCReconfiguration-Speech

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-Speech		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0.1)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *RRCReconfiguration-Video*

Table 4.8.1-1D: RRCReconfiguration-Video

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-Video		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0,2)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *CellGroupConfig-DRB(n, m)*

Table 4.8.1-2: CellGroupConfig-DRB(n, m)

Derivation Path: Table 4.6.3-19: CellGroupConfig (the same conditions are applicable as for table 4.6.3-19).			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
RLC-BearerConfig[k, k=1..n]	RLC-BearerConfig with conditions AM and DRBj (with j=BID+k)	entry (1..n+1)	n>0
RLC-BearerConfig[k, k=n+1..n+m]	RLC-BearerConfig with conditions UM and DRBj (with j=BID+k)	entry (n+1..n+m)	m>0
}			
}			

Condition	Explanation
n>0	n is greater than zero
m>0	m is greater than zero

– *CellGroupConfig-SRB3*

Table 4.8.1-2A: CellGroupConfig-SRB3

Derivation Path: Table 4.6.3-19: CellGroupConfig with condition EN-DC.			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2 entries		
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and DRB2	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with condition SRB3	entry 2	
}			
}			

– *CellGroupConfig-SRB2-DRB(n, m)*

Table 4.8.1-2B: CellGroupConfig-SRB2-DRB(n, m)

Derivation Path: Table 4.6.3-19: CellGroupConfig			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1+n+m entries		
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2	entry 1	
RLC-BearerConfig[k, k=2..n+1]	RLC-BearerConfig with conditions AM and DRBj	entry (2..n+1) j is allocated according to internal TTCN mapping	n>0
...		...	
RLC-BearerConfig[k, k=n+2..n+m+1]	RLC-BearerConfig with conditions UM and DRBj	entry (n+2..n+m+1) j is allocated according to internal TTCN mapping	m>0
}			
mac-CellGroupConfig	Not present		
physicalCellGroupConfig	Not present		
spCellConfig	Not present		
}			

– *RadioBearerConfig-DRB (n, m)*

Table 4.8.1-3: RadioBearerConfig-DRB (n, m)

Derivation Path: Table 4.6.3-132 and condition EN-DC.			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
DRB-ToAddMod[k=1..n+m] SEQUENCE {		entry (1..n+m)	
cnAssociation CHOICE {			
eps-BearerIdentity	l, l=BID+5..BID+4+n+m		
}			
drb-Identity	l, l=BID+1..BID+n+m		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		k <= n
	PDCP-Config with condition UM		k > n
}			
}			
}			

- *RadioBearerConfig-DRB-NR(n, m)*

Table 4.8.1-3A: RadioBearerConfig-DRB-NR(n, m)

Derivation Path: Table 4.6.3-132.			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
DRB-ToAddMod[k=1..n+m] SEQUENCE {		entry (1..n+m)	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
}			
drb-Identity	BID+k	k=1..n+m	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		k <= n
	PDCP-Config with condition UM		k > n
}			
}			
}			

– *RadioBearerConfig-SRB2-DRB (n, m)*

Table 4.8.1-4: RadioBearerConfig-SRB2-DRB (n, m)

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	n+m entries		
DRB-ToAddMod[k=1..n+m] := SEQUENCE {		entry (1..n+m)	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config	SDAP-Config is configured according to internal TTCN mapping	
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		(1<k <= n) OR (k=1 AND NOT NR_split)
	PDCP-Config with condition UM		k > n
	PDCP-Config with condition NR_split		k=1 AND NR_split
}			
}			
}			
}			

– *RadioBearerConfig-Speech*

Table 4.8.1-5: RadioBearerConfig-Speech

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		
DRB-ToAddMod[1] SEQUENCE {			
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			
}			
}			

– *RadioBearerConfig-Video*

Table 4.8.1-6: RadioBearerConfig-Video

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	2 entries		
DRB-ToAddMod [1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			
DRB-ToAddMod [2] SEQUENCE {		entry 2	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	k	k is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			
}			
}			

4.8.2 5GC configurations

4.8.2.1 Reference QoS rules

Table 4.8.2.1-1: Reference QoS rule #1

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS rules			
QoS rule			
QoS rule identifier	‘0000 0001’B	1 (unique per PDU session)	
Rule operation code	‘001’B	Create new QoS rule	
DQR bit	‘1’B	The QoS rule is the default QoS rule.	
Number of packet filters	‘0001’B	1 packet filters	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	‘1111 1111’B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	‘0’B		
Segregation	‘0’B	Spare	
QoS flow identifier (QFI)	’00 0001’B	QFI 1 (Table 4.8.2.3-1)	

Table 4.8.2.1-2: Reference QoS rule #2

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS rules			
QoS rule			
QoS rule identifier	‘0000 0010’B	2 (unique per PDU session)	
Rule operation code	‘001’B	Create new QoS rule	
DQR bit	‘1’B	The QoS rule is the default QoS rule.	
Number of packet filters	‘0001’B	1 packet filter	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	‘1111 1111’B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	‘0’B		
Segregation	‘0’B	Spare	
QoS flow identifier (QFI)	’00 0010’B	QFI 2 (Table 4.8.2.3-2)	

Table 4.8.2.1-3: Reference QoS rule #3

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS rules			
QoS rule			
QoS rule identifier	‘0000 0011’B	3 (unique per PDU session)	
Rule operation code	‘001’B	Create new QoS rule	
DQR bit	‘0’B	The QoS rule is the non-default QoS rule.	
Number of packet filters	‘0001’B	1 packet filter	
Packet filter list	See table 4.8.2.2-2	Packet filter list #2	
QoS rule precedence	‘0000 0011’B	3 (unique per PDU session)	
Spare bit	‘0’B		
Segregation	‘0’B	Spare	
QoS flow identifier (QFI)	’00 0001’B	QFI 1 (Table 4.8.2.3-1)	

Table 4.8.2.1-4: Reference QoS rule #4

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS rules			
QoS rule			
QoS rule identifier	'0000 0100'B	4 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-3	Packet filter list #3	
QoS rule precedence	'0000 00100'B	4 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0010'B	QFI 2 (Table 4.8.2.3-2)	

Table 4.8.2.1-4a: Reference QoS rule #4a

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS rules			
QoS rule			
QoS rule identifier	'0000 1111'B	15 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule is the non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-3a	Packet filter list #3a	
QoS rule precedence	'0000 1111'B	15 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0100'B	QFI 4 (Table 4.8.2.3-2a)	

Table 4.8.2.1-5: Reference QoS rule #5

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS rules			
QoS rule			
QoS rule identifier	‘0000 0101’B	5 (unique per PDU session)	
Rule operation code	‘001’B	Create new QoS rule	
DQR bit	‘0’B	The QoS rule is the non-default QoS rule.	
Number of packet filters	‘0001’B	1 packet filter	
Packet filter list	See table 4.8.2.2-4	Packet filter list #4	
QoS rule precedence	‘0000 0101’B	5 (unique per PDU session)	
Spare bit	‘0’B		
Segregation	‘0’B	Spare	
QoS flow identifier (QFI)	’00 0101’B	QFI 5 (Table 4.8.2.3-3)	

Table 4.8.2.1-6: Reference QoS rule #6

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS rules			
QoS rule			
QoS rule identifier	‘0000 0110’B	6 (unique per PDU session)	
Rule operation code	‘001’B	Create new QoS rule	
DQR bit	‘0’B	The QoS rule is the non-default QoS rule.	
Number of packet filters	‘0001’B	1 packet filter	
Packet filter list	See table 4.8.2.2-5	Packet filter list #5	
QoS rule precedence	‘0000 0110’B	6 (unique per PDU session)	
Spare bit	‘0’B		
Segregation	‘0’B	Spare	
QoS flow identifier (QFI)	’00 0110’B	QFI 6 (Table 4.8.2.3-4)	

Table 4.8.2.1-7: Reference QoS rule #7

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS rules			
QoS rule			IMS_VOICE
QoS rule identifier	‘0000 0011’B	3 (unique per PDU session)	
Rule operation code	‘001’B	Create new QoS rule	
DQR bit	‘0’B	The QoS rule a non-default QoS rule.	
Number of packet filters	‘0001’B	1 packet filter	
Packet filter list	See table 4.8.2.2-6	Packet filter list #6	
QoS rule precedence	‘0000 0001’B	1 (unique per PDU session)	
Spare bit	‘0’B		
Segregation	‘0’B	Spare	
QoS flow identifier (QFI)	’00 0111’B	QFI 7 (Table 4.8.2.3-5)	
QoS rule			IMS_VIDEO
QoS rule identifier	‘0000 0100’B	4 (unique per PDU session)	
Rule operation code	‘001’B	Create new QoS rule	
DQR bit	‘0’B	The QoS rule a non-default QoS rule.	
Number of packet filters	‘0001’B	1 packet filter	
Packet filter list	See table 4.8.2.2-7	Packet filter list #7	
QoS rule precedence	‘0000 0010’B	2 (unique per PDU session)	
Spare bit	‘0’B		
Segregation	‘0’B	Spare	
QoS flow identifier (QFI)	’00 1000’B	QFI 8 (Table 4.8.2.3-6)	

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

Table 4.8.2.1-8: Reference QoS rule #8

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS rules			
QoS rule			
QoS rule identifier	‘0000 0111’B	7 (unique per PDU session)	
Rule operation code	‘001’B	Create new QoS rule	
DQR bit	‘1’B	The QoS rule is the default QoS rule.	
Number of packet filters	‘0001’B	1 packet filter	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	‘1111 1111’B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	‘0’B		
Segregation	‘0’B	Spare	
QoS flow identifier (QFI)	’00 1001’B	QFI 9 (Table 4.8.2.3-7)	

4.8.2.2 Reference packet filters

Table 4.8.2.2-1: Packet filter list #1

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Packet filter list			
Packet filter direction	‘11’B	bidirectional	
Packet filter identifier	‘0001’B	Id 1	
Component type 1 ID	‘0000 0001’B	Match-all type	

Table 4.8.2.2-2: Packet filter list #2

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Packet filter list			
Packet filter direction	‘11’B	bidirectional	
Packet filter identifier	‘0010’B	Id 2	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remoteIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix lenght type	remoteIPv6
Component type 1 Value	10.10.10.2 255.255.255.255	See Note 1	remoteIPv4
	C0C0:C0C0:C0C0:C002 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remoteIPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-3: Packet filter list #3

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0011'B	Id 3	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remoteIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix lenght type	remoteIPv6
Component type 1 Value	10.10.10.3 255.255.255.255	See Note 1	remoteIPv4
	C0C0:C0C0:C0C0:C003 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remoteIPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-3a: Packet filter list #3a

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1111'B	Id 15	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remoteIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix lenght type	remoteIPv6
Component type 1 Value	10.10.10.30 255.255.255.255	See Note 1	remoteIPv4
	C0C0:C0C0:C0C0:C030 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remoteIPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-4: Packet filter list #4

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0100'B	Id 4	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remoteIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix lenght type	remoteIPv6
Component type 1 Value	10.10.10.4 255.255.255.255	See Note 1	remoteIPv4
	C0C0:C0C0:C0C0:C004 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remoteIPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-5: Packet filter list #5

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0101'B	Id 5	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remoteIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix lenght type	remoteIPv6
Component type 1 Value	10.10.10.5 255.255.255.255	See Note 1	remoteIPv4
	C0C0:C0C0:C0C0:C005 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remoteIPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-6: Packet filter list #6

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Packet filter list			
Packet filter direction	‘11’B	bidirectional	
Packet filter identifier	0110’B	Id 6	
Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS speech media port as used in the SDP negotiation (RTP remote port); see Note 1	
	media port + 1	RTCP remote port; see Note 1	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Note 1: According to to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent.			

Table 4.8.2.2-7: Packet filter list #7

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	**Value/remark**	**Comment**	**Condition**
Packet filter list			
Packet filter direction	‘11’B	bidirectional	
Packet filter identifier	0111’B	Id 7	
Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS video media port as used in the SDP negotiation (RTP remote port); see Note 1	
	media port + 1	RTCP remote port; see Note 1	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Note 1: According to to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent.			

4.8.2.3 Reference QoS flow descriptions

Table 4.8.2.3-1: Reference QoS flow #1

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS flow descriptions			
QoS flow description			
QFI	‘00 0001’B	QFI 1	
Operation code	‘001’B	Create new QoS flow description	
E bit	‘1’B	Parameters list is included	
Number of parameters	’00 0001’B	1 parameter	
Number of parameters	’00 0010’B	2 parameters	Interworking_with_EPS
5QI	‘0000 1001’B	5QI 9	
EPS bearer identity	Any not yet assigned value different to '5'		Interworking_with_EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-2: Reference QoS flow #2

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS flow descriptions			
QoS flow description			
QFI	‘00 0010’B	QFI 2	
Operation code	‘001’B	Create new QoS flow description	
E bit	‘1’B	Parameters list is included	
Number of parameters	’00 0001’B	1 parameter	
Number of parameters	’00 0010’B	2 parameters	Interworking_with_EPS
5QI	‘0000 0101’B	5QI 5	
EPS bearer identity	‘0101 0000’B	EBI 5	Interworking_with_EPS
EPS bearer identity	Any not yet assigned value different from ‘5’		Emergency Session AND Interworking_with_EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.
EmergencySession	If this flow is used in the Authorized QoS flow descriptions IE of a PDU Session Establishment Accept message for an emergency PDU session

Table 4.8.2.3-2a: Reference QoS flow #2a

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS flow descriptions			
QoS flow description			
QFI	'00 0100'B	QFI 4	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0000 0101'B	5QI 5	

Table 4.8.2.3-3: Reference QoS flow #3

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS flow descriptions			
QoS flow description			
QFI	'00 0101'B	QFI 5	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0000 0101'B	5QI 5	

Table 4.8.2.3-4: Reference QoS flow #4

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS flow descriptions			
QoS flow description			
QFI	'00 0110'B	QFI 6	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0000 0101'B	5QI 5	

Table 4.8.2.3-5: Reference QoS flow #5

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS flow descriptions			
QoS flow description			
QFI	‘00 0111’B	QFI 7	
Operation code	‘001’B	Create new QoS flow description	
E bit	‘1’B	Parameters list is included	
Number of parameters	’00 0101’B	5 parameter	
Number of parameters	’00 0110’B	6 parameters	Interworking_with_EPS
5QI	‘0000 0001’B	5QI 1	
GFBR uplink	‘040002’H	128 Kbps	
GFBR downlink	‘040002’H	128 Kbps	
MFBR uplink	‘040005’H	320 Kbps	
MFBR downlink	‘040005’H	320 Kbps	
EPS bearer identity	Any not yet assigned value different to '5'	EBI 6	Interworking_with_EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-6: Reference QoS flow #6

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS flow descriptions			
QoS flow description			
QFI	‘00 1000’B	QFI 8	
Operation code	‘001’B	Create new QoS flow description	
E bit	‘1’B	Parameters list is included	
Number of parameters	’00 0101’B	5 parameter	
Number of parameters	’00 0110’B	6 parameters	Interworking_with_EPS
5QI	‘0000 0010’B	5QI 2	
GFBR uplink	‘020012’H	72 Kbps	
GFBR downlink	‘020012’H	72 Kbps	
MFBR uplink	‘030033’H	816 Kbps	
MFBR downlink	‘030033’H	816 Kbps	
EPS bearer identity	Any not yet assigned value different to '5'	EBI 7	Interworking_with_EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-7: Reference QoS flow #7

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	**Value/remark**	**Comment**	**Condition**
QoS flow descriptions			
QoS flow description			
QFI	'00 1001'B	QFI 9	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0101 0010'B	5QI 82	

4.8.3 Common test UICC and USIM parameters

This clause defines default parameters for programming the elementary files of the test UICC when running conformance test cases defined in 3GPP TS 38.523-1[12].

4.8.3.1 General

See clause 4.9.1 in 3GPP TS 36.508 [2] for the definition of test algorithm for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure, further the Derivation of MSK, EMSK and other keys shaall be as derived as clause 3.3 of IETF RFC 5448 [31], using Key derivation function HMAC-SHA-256 algorithm.

4.8.3.2 Default parameters for the test USIM and ISIM

Same as clause 4.9.2 in 3GPP TS 36.508 [2] for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

4.8.3.3 Default settings for the Elementary Files (EFs)

Same as clause 4.9.3 in 3GPP TS 36.508 [2] for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

4.8.3.3.1 Modified contents of the USIM Elementary Files

Table 4.8.3.3.1-1: EF_{UST} (USIM Service Table)

Services		Activated	Version	Condition
Service n°122	5GS Mobility Management Information	Optional		5GC
Service n°123	5GS Security Parameters	Optional		5GC
Service n°124	Subscription identifier privacy support	Optional		5GC
Service n°125	SUCI calculation by the USIM	Optional		5GC
Service n°126	UAC Access Identities Configuration	Optional		5GC
Service n°127	Control plane-based steering of UE in VPLMN	Optional		5GC
Service n°128	Call control on PDU Session by USIM	Optional		
Service n°129	5GS Operator PLMN List	Optional		
Note: Only 5GS related services indicated				

Condition	Explanation
5GC	Authentication via 5GC

4.8.3.3.2 Contents of Elementary Files at the DF_{5GS} level

This clause defines the default contents of Elementary Files (EF) that are specific for 5GS and which are grouped in Data File (DF) structure 5GS.

$EF_{5GS3GPPLOCI}$ (5GS 3GPP location information)

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF FF FF FF FF FF FF FF FF FF FF FF FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for 3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for 3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

$EF_{5GSN3GPPLOCI}$ (5GS non-3GPP location information)

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF FF FF FF FF FF FF FF FF FF FF FF FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for non-3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for non-3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

$EF_{5GS3GPPNSC}$ (5GS 3GPP Access NAS Security Context)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

$EF_{5GSN3GPPNSC}$ (5GS non-3GPP Access NAS Security Context)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

$EF_{5GAUTHKEYS}$ (5G authentication keys)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

EF_{UAC_AIC} (UAC Access Identities Configuration)

The programming of this EF is a test house option.

$EF_{SUCI\_Calc\_Info}$ (Subscription Concealed Identifier Calculation Information EF)

The programming of this EF is a test house option.

EF_{OPL5G} (5GS Operator PLMN List)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

4.8.3.3.3 Default settings of UICC and USIM for V2X

EF_{UST} (USIM Service Table):

Same as clause 4.9.3.4 of TS 36.508 [2].

EF_{VST} (V2X Service Table)

If service n°119 is "available" in the USIM Service Table, this file shall be present. This EF indicates the coding of the V2X management objects and which V2X services are available.

File size: 2 Bytes

Default values: Bytes 1 to 2 (HEX): 01 02

Coding of the V2X management objects is according to 3GPP TS 24.588 [113].

Service n°2 V2X policy configuration data over PC5 is supported.

NOTE: The default value for NR support of V2X services is different from that for LTE V2X in clause 4.9.3.4 of TS 36.508 [2].

EF_{V2XP_PC5} (V2X data policy over PC5)

If service n°2 is "available" in EF_{VST}, this file shall be present. This EF contains V2X in 5GS UE policies over PC5. The format of the V2X in 5GS UE policies over PC5 are specified in 3GPP TS 24.588 [113].

The V2X in 5GS UE policies over PC5 contents:

Table 4.8.3.3.3-1: V2X data policy over PC5

Description	Value	M/O	Length (bytes)
V2X data policy over PC5 Tag	'A0'	M	1
Length	Note 1	M	Note 2
Validity timer	'FF FF FF FF FF FF FF FF FF FF'H	M	X1
Indicator bits	'1000 0000'B	M	1
Served by E-UTRA or served by NR Tag	'80'	M	1
Length	X2	M	Note 2
Served by E-UTRA or served by NR information	See Table 4.7.5.5-2	M	X2
Not served by E-UTRA and not served by NR Tag	'81'	O	1
Length	X3	O	Note 2
Not served by E-UTRA and not served by NR information	See Table 4.7.5.5-6	O	X3
V2X service identifier to Tx profiles mapping rules Tag	'82'	O	1
Length	X4	O	Note 2
V2X service identifier to Tx profiles mapping rules information	See Table 4.7.5.5-12		X4
Privacy config Tag	'83'	O	1
Length	X5	O	Note 2
Privacy config information	See Table 4.7.5.5-15		X5
V2X communication over PC5 in E-UTRA Tag	'84'	O	1
Length	X6	O	Note 2
V2X communication over PC5 in E-UTRA information	See Table 4.7.5.5-19	O	X6
V2X communication over PC5 in NR Tag	'85	O	1
Length	X7	O	Note 2
V2X communication over PC5 in NR Information	See Table 4.7.5.5-31	O	X7
Note 1: This is the total size of the constructed TLV object. Note 2: The length is coded according to ISO/IEC 8825-1 [35].			

4.8.4 DNN/APN configurations

The present subclause provides DNN/APN configurations required for flexible PDU/PDN handling. Table 4.8.4-1 provides configurations for the types on DNN/APN handled in the present version of the test specification. If in the future new PDU types need to be handled, then new DNN/APN configuration(s) may be added.

Table 4.8.4-1: DNN/APN configurations, first set

Configurations	Config #1	Config #2	Config #3
DNN/APN type	internet	ims	urllc
DNN/APN ID	pc_APN_ID_Internet	pc_APN_ID_IMS	pc_APN_ID_URLLC
5GC QoS rule	Reference QoS rule #1 as specified in subclause 4.8.2.1.	Reference QoS rule #2 as specified in subclause 4.8.2.1.	Reference QoS rule #8 as specified in subclause 4.8.2.1.
EPC default bearer context	Reference default EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.1-1.	Reference default EPS bearer context #2 as specified in TS 36.508 [10], Table 6.6.1-1.	N/A
EPC dedicated bearer context	Reference dedicated EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.2-1.	Reference dedicated EPS bearer context #4 as specified in TS 36.508 [10], Table 6.6.2-1.	N/A
IP address allocation	Yes	Yes	Yes
IMS registration	No	Yes NOTE 1	No
SST condition (NOTE 2)	SST_eMBB	SST_eMBB	SST_URLLC
NOTE 1: For PDN establishment the Procedure for IMS signalling according to TS 36.508 [2], subclause 4.5A.3 applies; for PDU establishment the Procedure for IMS signalling according to TS 34.229-5 [47], Annex A.2 applies. NOTE 2: The possible values of the SST condition are defined in Table 4.6.0.1-5.			

Table 4.8.4-2: DNN/APN configurations, second set

Configurations	Config #4	Config #5
DNN/APN type	miot	v2x
DNN/APN ID	pc_APN_ID_MIoT	pc_APN_ID_V2X
5GC QoS rule	FFS	FFS
EPC default bearer context	N/A	N/A
EPC dedicated bearer context	N/A	N/A
IP address allocation	Yes	Yes
IMS registration	No	No
SST condition (NOTE 1)	SST_MIoT	SST_V2X
NOTE 1: The possible values of the SST condition are defined in Table 4.6.0.1-5.		

4.8.5 URSP configurations

4.8.5.1 General

FFS

4.8.5.2 UE Route Selection Policy Rules

Table 4.8.5.2-1: UE Route Selection Policy Rule #1

Derivation Path: TS 24.526, Figure 5.2.1			
Information Element	**Value/remark**	**Comment**	**Condition**
URSP rules	1 entry		
URSP rule			
Rule Precedence	1		
Traffic descriptor			
Traffic descriptor component type identifier	'1000 1000'B	DNN type	
Traffic descriptor component			
Application descriptors	Not present		
IP descriptors	Not present		
Domain descriptors	Not present		
Non-IP descriptors	Not present		
DNN	FFS		
Connection Capabilities	Not present		
List of Route Selection Descriptors	Route Selection Descriptor #1	Table 4.8.5.3-1	

4.8.5.3 Route Selection Descriptors

Table 4.8.5.3-1: Route Selection Descriptor #1

Derivation Path: TS 24.526, Figure 5.2.4			
Information Element	**Value/remark**	**Comment**	**Condition**
Route Selection Descriptor Precedence	1		
Route selection descriptor contents			
Route selection descriptor component type identifier	'0000 0010'B		S-NSSAI type
	'0000 0100'B		DNN type
Route selection descriptor component			
SSC Mode Selection	Not present		
Network Slice Selection	FFS		S-NSSAI type
DNN Selection	FFS		DNN type
PDU Session Type Selection	Not present		
Non-Seamless Offload indication	Not present		
Access Type preference	Not present		

Condition	Explanation
S-NSSAI type	The Route selection descriptor component type is S-NSSAI
DNN type	The Route selection descriptor component type is DNN

4.9 Test procedures

4.9.1 Test procedure to check user plane connectivity on DRB#n

This procedure aims at checking whether the UE User Plane Access Stratum is capable of exchanging data on DRB#n (#n is the DRB Id specified in the test case when the present procedure is called). In case the UE supports IP, it is also checked that the UE IP stack is connected to the UE User Plane Access Stratum.

Table 4.9.1-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Steps 1a1 to 1c2 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation.	-	-	-	-
1a1	IF (pc_IP_Ping = TRUE AND pc_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n.	<--	*ICMP ECHO REQUEST (NOTE 3)*	-	-
1a2	Check: Does the UE send an ICMP Echo reply on DRB#n?	-->	*ICMP ECHO REPLY*	-	P
1b1	ELSE IF (pc_IP_Ping = TRUE AND (pc_IPv4 = FALSE AND pc_IPv6 = TRUE)) THEN, the SS sends an ICMPv6 Echo request to the IPv6 address assigned to the UE on DRB#n.	<--	*ICMPv6 ECHO REQUEST (NOTE 3)*	-	-
1b2	Check: Does the UE send an ICMPv6 Echo reply on DRB#n?	-->	*ICMPv6 ECHO REPLY*	-	P
1c1	ELSE, the SS transmits one IP Packet to verify data path on DRB#n. See NOTE 1, 2.	-	-	-	-
1c2	Check: Does UE send the IP Packet on DRB#n in the uplink?	-	-	-	P

NOTE 1: A Test Loop is assumed to already have been closed.
NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4)
NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters.
When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4)
NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2.
For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41].

Table 4.9.1-1A: Test procedure sequence for Data path check for CA tests

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1 is only performed if SCell is not yet activated.	-	-	-	-
1	The SS transmits an Activation MAC control element to activate Scell.	<--	MAC PDU (Activation (C_1=1))		
-	EXCEPTION: Steps 2a1 to 2c2 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation.	-	-	-	-
2a1	IF (pc_IP_Ping = TRUE AND pc_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n on the SCell.	<--	*ICMP ECHO REQUEST (NOTE 3)*	-	-
2a2	Check: Does the UE send an ICMP Echo reply on DRB#n on the SpCell?	-->	*ICMP ECHO REPLY*	-	P
2b1	ELSE IF (pc_IP_Ping = TRUE AND (pc_IPv4 = FALSE AND pc_IPv6 = TRUE)) THEN, the SS sends an ICMPv6 Echo request to the IPv6 address assigned to the UE on DRB#n on the SCell.	<--	*ICMPv6 ECHO REQUEST (NOTE 3)*	-	-
2b2	Check: Does the UE send an ICMPv6 Echo reply on DRB#n on the SpCell?	-->	*ICMPv6 ECHO REPLY*	-	P
2c1	ELSE, the SS transmits one IP Packet to verify data path on DRB#n on the SCell. See NOTE 1, 2.	-	-	-	-
2c2	Check: Does UE send the IP Packet on DRB#n in the uplink on the SpCell?	-	-	-	P

NOTE 1: A Test Loop is assumed to already have been closed.
NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4)
NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters.
When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4)
NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2.
For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41].

4.9.2 Test procedure to activate UE Beamlock Test Function (UBF)

4.9.2.1 Initiation

UE is operating in FR2 in RRC_CONNECTED state.

4.9.2.2 Procedure

Table 4.9.2.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to activate UE beamlock function.	<--	*ACTIVATE BEAMLOCK*	-	-
2	UE confirms that UE beamlock function is activated	-->	*ACTIVATE BEAMLOCK COMPLETE*	-	-

4.9.2.3 Specific Message contents

Table 4.9.2.3-1: ACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.1			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 0		
UE Beamlock test Function	0 0 0 0 0 0 0 1		Tx Only
UE Beamlock test Function	0 0 0 0 0 0 1 0		Rx Only
UE Beamlock test Function	0 0 0 0 0 0 1 1		Tx and Rx

Condition	Explanation
Tx Only	Activation UE beamlock function for Tx only
Rx Only	Activation UE beamlock function for Rx only
Tx and Rx	Activation UE beamlock function for both Tx and Rx

Table 4.9.2.3-2: ACTIVATE BEAMLOCK COMPLETE

Derivation Path: 38.509 clause 6.4.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 1		

4.9.3 Test procedure to deactivate UE Beamlock Test Function (UBF)

4.9.3.1 Initiation

UE is operating in FR2 in RRC_CONNECTED state with UE beamlock test function activated.

4.9.3.2 Procedure

Table 4.9.3.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to deactivate UE beamlock function.	<--	*DEACTIVATE BEAMLOCK*	-	-
2	UE confirms that UE beamlock function is activated	-->	*DEACTIVATE BEAMLOCK COMPLETE*	-	-

4.9.3.3 Specific Message contents

Table 4.9.3.3-1: DEACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 0		

Table 4.9.3.3-2: DEACTIVATE BEAMLOCK COMPLETE

Derivation Path: 38.509 clause 6.4.4			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 1		

4.9.4 Test procedure to check that UE is in state 5GC RRC_IDLE on a certain NR/NGC cell

4.9.4.1 Scope

This procedure aims at checking whether the UE is in state 5GC RRC_IDLE on a certain cell (as specified in the test case).

4.9.4.2 Procedure description

4.9.4.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.4.2.2 Procedure

Table 4.9.4.2.2-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	Step 1 of Generic procedure for bringing the UE in RRC_CONNECTED state with connectivity *NR* as specified in Table 4.5.4.2-3 is performed.	-	-	-	-
2	Check: Does the UE transmit an *RRCSetupRequest* message on the cell specified in the test case?	-->	NR RRC: *RRCSetupRequest*	-	P
3-8	Steps 3-8 of Generic procedure for bringing the UE in RRC_CONNECTED state with connectivity *NR* as specified in Table 4.5.4.2-3 are performed.	-	-	-	-
-	EXCEPTION: Step 9a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
9a1	IF '*connected without release*' is not present THEN the SS transmits an *RRCRelease* message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: *RRCRelease*	-	-

4.9.4.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.5 Test procedure to check that UE is camped on a new NR/NGC cell belonging to a new TA

4.9.5.1 Scope

This procedure aims at checking whether the UE performs a mobility registration updating (Tracking Area (TA) update) procedure when it camps on a new cell (as specified in the test case) belonging to a new TA.

4.9.5.2 Procedure description

4.9.5.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.5.2.2 Procedure sequence

Table 4.9.5.2.2-1: Test procedure sequence mobility registration updating (TA update)

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an *RRCSetupRequest* message.	-->	NR RRC: *RRCSetupRequest*	-	-
2	SS transmit an *RRCSetup* message.	<--	NR RRC: *RRCSetup*	-	-
3	The UE transmits an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and a REGISTRATION REQUEST message indicating "mobility registration updating" is sent to update the registration of the actual tracking area.	-->	NR RRC: *RRCSetupComplete* 5GMM: REGISTRATION REQUEST	-	-
4	SS sends a REGISTRATION ACCEPT message containing a 5G-GUTI. (NOTE 1, NOTE 2)	<--	NR RRC: *DLInformationTransfer* 5GMM: REGISTRATION ACCEPT	-	-
5	Check: Does the UE send a REGISTRATION COMPLETE?	-->	NR RRC: *ULInformationTransfer* 5GMM: REGISTRATION COMPLETE	-	P
-	EXCEPTION: Step 6a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
6a1	IF '*connected without release*' is not present THEN the SS transmits an *RRCRelease* message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: *RRCRelease*	-	-

NOTE 1: If a PDU session status IE was included in the REGISTRATION REQUEST message then the SS includes a PDU session status IE in the REGISTRATION ACCEPT message indicating that all the PDU sessions are active.

NOTE 2: If the UE has indicated S1 mode supported then the SS shall indicate in the 5GS network feature support IE in the REGISTRATION ACCEPT message the IWK N26 bit set to "interworking without N26 not supported". The setting of the "interworking without N26 not supported" has been chosen to ensure that the UE is operating in the single-registration mode allowing for a clearly pre-determined UE behaviour.

4.9.5.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.6 Test procedures for Switch off / Power off UE

4.9.6.1 Switch off / Power off procedure in RRC_IDLE

Table 4.9.6.1-1: Switch off procedure in RRC_IDLE

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc_SwitchOnOff or [37] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE, IF pc_USIM_Removal THEN remove the USIM (Note 1)	-	-
1a2	UE transmits an *RRCSetupRequest* message.	-->	RRC: *RRCSetupRequest*
1a3	SS transmit an *RRCSetup* message.	<--	RRC: *RRCSetup*
-	EXCEPTION: Steps 1a4Aa1 to 1a4Aa5b1 specify optional behaviour if the UE has previously performed IMS registration	-	-
1a4Aa1	The UE transmits an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the IMS signalling procedure by including the SERVICE REQUEST message.	-->	RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST
1a4Aa2	The SS transmits a *SecurityModeCommand* message to activate AS security.	<--	RRC: *SecurityModeCommand*
1a4Aa3	The UE transmits a *SecurityModeComplete* message and establishes the initial security configuration.	-->	RRC: *SecurityModeComplete*
1a4Aa4	The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT
-	EXCEPTION: In parallel to the event described in step 1a4Aa5 below, the generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed.	-	-
1a4Aa5	The UE transmits an *RRCReconfigurationComplete* message.	-->	RRC: *RRCReconfigurationComplete*
-	EXCEPTION: Steps 1a4Aa5a1 - 1a4Aa5b1 may be performed depending on UE implementation	-	-
1a4Aa5a1	The UE transmits a PDU SESSION RELEASE REQUEST message.	-->	PDU SESSION RELEASE REQUEST
1a4Aa5a2	PDU session release procedure defined in clause 4.9.21 of TS 38.508-1 [4] is performed	-	-
1a4Aa5a3	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
1a4Aa5b1	The UE transmits a DEREGISTRATION REQUEST message	-	5GMM: DEREGISTRATION REQUEST
-	EXCEPTION: Step 1a4Ab1 below specifies the behaviour if the UE has not previously performed IMS registration	-	-
1a4Ab1	The UE transmits an *RRCSetupComplete* message including the DEREGISTRATION REQUEST message.	-->	RRC: *RRCSetupComplete* 5GMM: DEREGISTRATION REQUEST
1a4	Void	-	-
1a5	The SS transmits an *RRCRelease* message	<--	RRC: *RRCRelease*
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE. Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.6.2 Switch off / Power off procedure in RRC_INACTIVE

4.9.6.2.1 Procedure

Table 4.9.6.2.1-1: Switch off procedure in RRC_INACTIVE

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc_SwitchOnOff or [37] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE, IF pc_USIM_Removal THEN remove the USIM (Note 1)	-	-
1a2	UE transmits an *RRCResumeRequest* message.	-->	NR RRC: *RRCResumeRequest*
1a3	SS transmit an *RRCResume* message.	<--	NR RRC: *RRCResume*
-	EXCEPTION: Steps 1a4Aa1 to 1a4Aa5b1 specify optional behaviour if the UE has previously performed IMS registration	-	-
1a4Aa1	The UE transmits an *RRCResumeComplete* message to confirm the successful completion of the connection establishment and to initiate the IMS signalling procedure by including the SERVICE REQUEST message.	-->	RRC: *RRCResumeComplete* 5GMM: SERVICE REQUEST
1a4Aa2	The SS transmits a *SecurityModeCommand* message to activate AS security.	<--	RRC: *SecurityModeCommand*
1a4Aa3	The UE transmits a *SecurityModeComplete* message and establishes the initial security configuration.	-->	RRC: *SecurityModeComplete*
1a4Aa4	The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT
-	EXCEPTION: In parallel to the event described in step 1a4Aa5 below, the generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed.	-	-
1a4Aa5	The UE transmits an *RRCReconfigurationComplete* message.	-->	RRC: *RRCReconfigurationComplete*
-	EXCEPTION: Steps 1a4Aa5a1 - 1a4Aa5b1 may be performed depending on UE implementation	-	-
1a4Aa5a1	The UE transmits a PDU SESSION RELEASE REQUEST message.	-->	PDU SESSION RELEASE REQUEST
1a4Aa5a2	PDU session release procedure defined in clause 4.9.21 of TS 38.508-1 [4] is performed	-	-
1a4Aa5a3	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
1a4Aa5b1	The UE transmits a DEREGISTRATION REQUEST message	-	5GMM: DEREGISTRATION REQUEST
-	EXCEPTION: Step 1a4Ab1 below specifies the behaviour if the UE has not previously performed IMS registration	-	-
1a4	Void	-	-
1a5	The SS transmits an *RRCRelease* message	<--	NR RRC: *RRCRelease*
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE. Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.6.2.2 Specific Message contents

Table 4.9.6.2.2-1: RRCResumeRequest

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCResumeRequest ::= SEQUENCE {			
rrcResumeRequest SEQUENCE {			
resumeIdentity	Not checked		
resumeMAC-I	Not checked		
resumeCause	Not checked		
spare	Not checked		
}			
}			

4.9.6.3 Switch off / Power off procedure in RRC_CONNECTED

Table 4.9.6.3-1: Switch off procedure in RRC_CONNECTED

Step	Procedure	Message Sequence	
		U - S	Message
1a1-1a3	Void	-	-
2-4	Void	-	-
-	EXCEPTION: Steps 5a1 to 5b1 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if a particular implementation is under test.	-	-
5a1	IF pc_SwitchOnOff THEN switch off UE, IF pc_USIM_Removal THEN remove the USIM (Note 1)		
-	EXCEPTION : Step 5a1Aa1 to 5a2Ab1 below specifies optional behaviour if the UE has previously performed IMS registration	-	-
5a1Aa1	The UE may perform the generic test procedure described in TS 34.229-5 [47] Annex A.11	-	-
-	EXCEPTION: Steps 5a2Aa1a1 – 5a2Ab1 may be performed depending on UE implementation	-	-
5a2Aa1a1	The UE transmits a PDU SESSION RELEASE REQUEST message.	-->	PDU SESSION RELEASE REQUEST
5a2Aa1a2	PDU session release procedure defined in clause 4.9.21 of TS 38.508-1 [4] is performed	-	-
5a2Aa1a3	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
5a2Ab1	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
5a3	The SS transmits an RRCRelease message.	<--	NR RRC: *RRCRelease*
5b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE. Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.6.3A Switch off / Power off procedure in RRC_CONNECTED with T3540 started

Table 4.9.6.3A-1: Switch off procedure in RRC_CONNECTED with T3540 started

Step	Procedure	Message Sequence	
		U - S	Message

1	SS starts timer1 = T3540 (10 sec).	-	-
2	The SS locally releases the RRC connection.	-	-
3	SS waits for Timer1 expires. NOTE: On expiry of T3540 UE shall locally release the established N1 NAS signalling connection	-	-
4	The test procedure as described in Table 4.9.6.1-1: Switch off procedure in RRC_IDLE take place.	-	-

4.9.6.4 Switch off / Power off procedure in State DEREGISTERED

Table 4.9.6.4-1: Switch off procedure in State DEREGISTERED

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc_SwitchOnOff or [37] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE (Note 1)	-	-
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE. Note 2: Power off is used when UE don't support switch off or USIM removal.			

4.9.6.5 Switch off / Power off procedure in WLAN Ipsec_SA_Established

Table 4.9.6.5-1: Switch off procedure in Ipsec_SA_Established

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [30] pc_SwitchOnOff or [31] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE (Note 1)	-	-
1a2	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
1a3	The generic procedure for SS-requested IPsec Secure tunnel disconnection, specified in subclause 4.5A.5, takes place performing disconnection of security association	-	-
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE. Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.7 Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode

4.9.7.1 Scope

This procedure aims at verifying that the UE performs a Tracking Area Update (TAU) procedure when it performs inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE.

The procedure provides different security context handling options based on the condition parameters defined in Table 4.9.7.1-1.

Table 4.9.7.1-1: Condition parameters

Condition	Explanation
new security context	When this parameter is present the SS will establish and take into account a new security context.
existing EPS security context	When this parameter is present the SS will take into account an existing EPS security context. A prerequisite for using this condition is the existence of an EPS security context
NOTE 1: If none of the defined condition parameters is present when the procedure is referred to then the SS will apply mapped 5G security context. A prerequisite for using this condition is the existence of 5G security context.	

4.9.7.2 Procedure description

4.9.7.2.1 Initial conditions

System Simulator:

- 1 E-UTRA cell connected to EPC, default parameters, system information combination 31 as defined in TS 36.508 [2], subclause 4.4.3.1.1.

NOTE: Details about the NGC cell from which the UE will move to the E-UTRA cell are to be specified in the test.

User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.7.2.2 Procedure sequence

Table 4.9.7.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from N1 mode to S1 mode in EMM-IDLE mode

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an *RRCConnectionRequest* message on the cell specified in the test case.	-->	RRC: *RRCConnectionRequest*	-	-
2	SS transmits an *RRCConnectionSetup* message.	<--	RRC: *RRCConnectionSetup*	-	-
3	The UE transmits an *RRCConnectionSetupComplete* message to confirm the successful completion of the connection establishment and a TRACKING AREA UPDATE REQUEST message is sent to update the registration of the actual tracking area. For some consequences related to the content of the TRACKING AREA UPDATE REQUEST message see the Notes in Table 4.9.7.2.3-1.	-->	RRC: *RRCConnectionSetupComplete* NAS: TRACKING AREA UPDATE REQUEST	-	-
-	EXCEPTION: Steps 4a1-4b2 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
4a1	IF *'new security context'* THEN the SS transmits an AUTHENTICATION REQUEST message to initiate the EPS authentication and AKA procedure.	<--	RRC: *DLInformationTransfer* NAS: AUTHENTICATION REQUEST	-	-
4a2	The UE transmits an AUTHENTICATION RESPONSE message and establishes mutual authentication.	-->	RRC: *ULInformationTransfer* NAS: AUTHENTICATION RESPONSE	-	-
4a3	The SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.	<--	RRC: *DLInformationTransfer* NAS: SECURITY MODE COMMAND	-	-
4a4	The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.	-->	RRC: *ULInformationTransfer* NAS: SECURITY MODE COMPLETE	-	-
4b1	IF *'existing EPS security context'* THEN the SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.	<--	RRC: *DLInformationTransfer* NAS: SECURITY MODE COMMAND	-	-
4b2	The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.	-->	RRC: *ULInformationTransfer* NAS: SECURITY MODE COMPLETE	-	-
-	EXCEPTION: If none of the branches 4a or 4b takes place then the SS shall apply mapped 5G security context, otherwise the SS shall apply the security context depending on the branch.	-	-	-	-
5	SS responds with TRACKING AREA UPDATE ACCEPT message.	<--	RRC: *DLInformationTransfer* NAS: TRACKING AREA UPDATE ACCEPT	-	-
6	Check: Does the UE transmit TRACKING AREA UPDATE COMPLETE?	-->	RRC: *ULInformationTransfer* NAS: TRACKING AREA UPDATE COMPLETE	-	P
7a1	Void	-	-	-	-
-	EXCEPTION: Steps 8a1 to 8b2a8 describe a step sequence depending on test case scenario; the left-most "lower case letter" identifies a step sequence that take place if the test procedure is called in a particular scenario. (NOTE 1)	-	-	-	-

8a1	IF *Interworking without N26 interface supported* THEN The generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, takes place performing establishment of UE-requested PDN connection(s) with ExpectedNumberOfNewPDNConnections = pc_noOf_PDNsSameConnection.	-	-	-	-
-	EXCEPTION: Steps 8a2a1 to 8a2b1 describe a step sequence depending on test case scenario; the right-most "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
8a2a 1	IF pc_noOf_PDNsNewConnection>0 THEN the SS transmits an *RRCConnectionRelease* message to release RRC connection and moves the UE to RRC_IDLE.	<--	RRC: *RRCConnectionRelease*	-	-
8a2a 2	The procedure E-UTRA RRC_IDLE Unrestricted nr PDN Extension as specified in Table 4.5.2.2-6 takes place.	-	-	-	-
8a2b 1	ELSE IF *connected without release* is not present THEN, the SS transmits an *RRCConnectionRelease* message to release RRC connection and move to E-UTRA RRC_IDLE (State 2).	<--	RRC: *RRCConnectionRelease*	-	-
8b1	ELSE (i.e. 'Interworking without N26 interface not supported') The generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, takes place performing establishment of UE-requested PDN connection(s) with ExpectedNumberOfNewPDNConnections = pc_noOf_PDNsSameConnection with the exception that IF step 2b1, Table 4.5A.2B.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2).	-	-	-	-
-	EXCEPTION: Steps 8b2a1 to 8b2b1 describe a step sequence depending on test case scenario; the right-most "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
8b2a 1	IF pc_noOf_PDNsNewConnection>0 THEN the SS transmits an *RRCConnectionRelease* message to release RRC connection and moves the UE to RRC_IDLE.	<--	RRC: *RRCConnectionRelease*	-	-
8b2a 2	The procedure E-UTRA RRC_IDLE Unrestricted nr PDN Extension as specified in table 4.5.2.2-6 takes place. For the referred in step 7, Table 4.5.2.2-6, generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, IF step 2b1, Table 4.5A.2B.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2).	-	-	-	-

8b2b 1	ELSE IF *connected without release* is not present THEN, the SS transmits an *RRCConnectionRelease* message to release RRC connection and move to E-UTRA RRC_IDLE (State 2).	<--	RRC: *RRCConnectionRelease*	-	-
NOTE 1: The NWK will indicated whether Interworking without N26 interface is supported in the REGISTRATION ACCEPT message, IE '5GS network feature support', IWK N26 bit. Consequently which branch would the procedure sequence go through will depend on the content of the REGISTRATION ACCEPT message applicable to e.g. the test case which calls the present test procedure. NOTE 2: Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDU sessions into PDN connections without re-establishing those utilising the relevant mapped QoS provided in the PDU SESSION ESTABLISHMENT ACCEPT message when the UE was on the NR cell. This will result in the number of established PDNs, if any, being lower than the pc_noOf_PDNsSameConnection or the pc_noOf_PDNsNewConnection which the UE will establish upon initial attach to the EPS.					

4.9.7.2.3 Specific Message content

Default message contents as specified in TS 36.508 [2] with the following exceptions.

Table 4.9.7.2.3-1: TRACKING AREA UPDATE REQUEST (Step 3, Table 4.9.7.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-27, condition NR.			
Information Element	**Value/remark**	**Comment**	**Condition**
EPS update type			
EPS update type Value	'000'B or '001'B or '010'B	'TA updating' or 'combined TA/LA updating' or 'combined TA/LA updating with IMSI attach'	
"Active" flag	Any value		
NAS key set identifier	the eKSI indicating the 5G NAS security context value assigned at the initial registration when the UE entered N1		
Old GUTI	GUTI, mapped from the 5G-GUTI assigned at the initial registration when the UE entered N1		
Additional GUTI	Not present or any allowed value		
Last visited registered TAI	The TAI the last visited E-UTRA Cell belonged to, if any. Not included if the UE does not have last stored EPC TAI.		
UE radio capability information update needed	'1'B	UE radio capability information update needed	First-N1-to-S1
EPS bearer context status	Present, Content not checked	EBI corresponding to active PDN connections (transferred PDU Sessions) need to be set to 1 (NOTE 2)	
Old GUTI type	"Native GUTI"		
UE status	"UE is in 5GMM-REGISTERED state"		
NOTE 1: The message shall be integrity protected using the 5GS security context available in the UE. NOTE 2: There will be no PDN connection establishment nor explicit bearer configuration for the transferred PDU sessions. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDU session. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well.			

Condition	**Explanation**
First-N1-to-S1	First N1 to S1 transition following UE registration in N1 mode

Table 4.9.7.2.3-2: AUTHENTICATION REQUEST (Step 4a1, Table 4.9.7.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-7.			
Information Element	**Value/remark**	**Comment**	**Condition**
NAS key set identifier$_{ASME}$			
NAS key set identifier	An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists.	Value shall be different to the 5G NAS security context value if there is one assigned	

Table 4.9.7.2.3-3: SECURITY MODE COMMAND (Step 4a3, Table 4.9.7.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-19.			
Information Element	**Value/remark**	**Comment**	**Condition**
NAS key set identifier$_{ASME}$			
NAS key set identifier	The 4G NAS key set identifier assigned in step 4a1.		

Table 4.9.7.2.3-4: SECURITY MODE COMMAND (Step 4b1, Table 4.9.7.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-19.			
Information Element	**Value/remark**	**Comment**	**Condition**
NAS key set identifier$_{ASME}$			
NAS key set identifier	The 4G NAS key set identifier assigned in the latest Authentication procedure.		

Table 4.9.7.2.3-5: TRACKING AREA UPDATE ACCEPT (Step 5, Table 4.9.7.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-24, condition NR.			
Information Element	**Value/remark**	**Comment**	**Condition**
EPS network feature support	The IWK N26 (octet 4, bit 7) set to '1'		*Interworking without N26 interface supported*

4.9.8 Test procedure for Registration Reject

4.9.8.1 Scope

The purpose of this procedure is to reject the registration request, with a specific cause value, which may allow fields to be cleared in the USIM.

4.9.8.2 Procedure description

4.9.8.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.8.2.2 Procedure sequence

Table 4.9.8.2.2-1: Procedure for Registration Reject

St	Procedure	Message Sequence	
		U – S	Message
1	The UE transmits an *RRCSetupRequest* message.	-->	NR RRC: *RRCSetupRequest*
2	The SS transmits an *RRCSetup* message.	<--	NR RRC: *RRCSetup*
3	The UE transmits an *RRCSetupComplete* message and a REGISTRATION REQUEST message.	-->	NR RRC: *RRCSetupComplete* 5GMM: REGISTRATION REQUEST
4	The SS transmits an AUTHENTICATION REQUEST message including EAP-Request/AKA'-Challenge or 5G AKA Challenge.	<--	5GMM: AUTHENTICATION REQUEST
5	The UE transmits an AUTHENTICATION RESPONSE message including EAP-Response/AKA'-Challenge or 5G AKA Response.	-->	5GMM: AUTHENTICATION RESPONSE
6	The SS transmits a SECURITY MODE COMMAND message including EAP-Success if EAP-AKA' used.	<--	5GMM: SECURITY MODE COMMAND
7	The UE transmits a SECURITY MODE COMPLETE message.	-->	5GMM: SECURITY MODE COMPLETE
8	The SS transmits a REGISTRATION REJECT message with the cause value set to *Reject Cause*.	<--	5GMM: REGISTRATION REJECT
9	The SS transmits an *RRCRelease* message	<--	RRC: *RRCRelease*
10	Test procedure for Switch off / Power off in State DEREGISTERED as specified in subclause 4.9.6.4		

4.9.8.2.3 Specific message contents

Table 4.9.8.2.3-1: REGISTRATION REJECT

Derivation Path: table 4.7.1-9			
Information Element	**Value/remark**	**Comment**	**Condition**
5GMM cause	Set according to *Reject Cause*	*Reject Cause* set to #6 Illegal ME as default	

4.9.9 Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode

4.9.9.1 Scope

This procedure aims at verifying that the UE performs a Mobility and periodic registration update procedure when it performs inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE.

4.9.9.2 Procedure description

4.9.9.2.1 Initial conditions

System Simulator:

- 1 NGC Cell connected to 5GC, default parameters, system information combination NR-6 as defined in subclause 4.4.3.1.2.

NOTE: Details about the E-UTRA cell from which the UE will move to the NGC cell are to be specified in the test.

User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.9.2.2 Procedure sequence

Table 4.9.9.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1-3	Steps 1-3 from the mobility and periodic registration update procedure as described in Table 4.9.5.2.2-1 are performed. For some consequences related to the content of the REGISTRATION REQUEST message sent in step 1 see the Notes in Table 4.9.9.2.3-1.	-	-	-	-
4	The SS transmits a DLInformationTransfer message and an AUTHENTICATION REQUEST message.	<--	NR RRC: DLInformationTransfer 5GMM: AUTHENTICATION REQUEST	-	-
5	The UE transmits an ULInformationTransfer message and an AUTHENTICATION RESPONSE message.	-->	NR RRC: ULInformationTransfer 5GMM: AUTHENTICATION RESPONSE	-	-
6	The SS transmits a DLInformationTransfer message and a SECURITY MODE COMMAND message.	<--	NR RRC: DLInformationTransfer 5GMM: SECURITY MODE COMMAND	-	-
7	The UE transmits an ULInformationTransfer message and a SECURITY MODE COMPLETE message.	-->	NR RRC: ULInformationTransfer 5GMM: SECURITY MODE COMPLETE	-	-
8	The SS transmits a SecurityModeCommand message.	<--	NR RRC: SecurityModeCommand	-	-
9	The UE transmits a SecurityModeComplete message.	-->	NR RRC: SecurityModeComplete	-	-
10-11	Steps 4-5 of Table 4.9.5.2.2-1 of the test procedure are performed.	-	-	-	-
12a1 - 13a1	Void	-	-	-	-
-	EXCEPTION: Steps 14a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the test procedure is called in a particular scenario. (NOTE 1)	-	-	-	-
14a1	IF *Interworking without N26 interface supported* THEN The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection. The UE may attempt to transfer some of the existing in S1 PDN connection(s) in which case in the PDU SESSION ESTABLISHMENT REQUEST message the request type shall be set to "existing PDU session" (NOTE 3).	-	-	-	-
-	EXCEPTION: Steps 14a2a1 to 14a2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
14a2a1	IF pc_noOf_PDUsNewConnection > 0 THEN the SS transmits an *RRCRelease* message to release RRC connection and moves the UE to RRC_IDLE.	<--	NR RRC: *RRCRelease*	-	-
14a2a2	The procedure NR RRC_IDLE Extension as specified in table 4.5.2.2-4 takes place.	-	-	-	-

14a2 b1	ELSE IF *connected without release* is not present THEN, the SS transmits an *RRCConnectionRelease* message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: *RRCRelease*	-	-
-	EXCEPTION: In parallel to the events described in step 14b1 below, the steps specified in Table 4.9.9.2.2-2 may take place.	-	-	-	-
14b1	ELSE (i.e. 'Interworking without N26 interface not supported') The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection with the exception that IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2).	-	-	-	-
-	EXCEPTION: Steps 14b2a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
14b2 a1	IF pc_noOf_PDUsNewConnection> 0 THEN the SS transmits an *RRCRelease* message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: *RRCRelease*	-	-
14b2 a2	The procedure NR RRC_IDLE Extension as specified in Table 4.5.2.2-4 takes place. For the referred in step 8, Table 4.5.2.2-4, generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2).	-	-	-	-
14b2 b1	ELSE IF *connected without release* is not present THEN, the SS transmits an *RRCRelease* message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: *RRCRelease*	-	-

NOTE 1: The NWK will indicated whether Interworking without N26 interface is supported in the REGISTRATION ACCEPT message, IE '5GS network feature support', IWK N26 bit. Consequently which branch would the procedure sequence go through will depend on the content of the REGISTRATION ACCEPT message applicable to e.g. the test case which calls the present test procedure.

NOTE 2: Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of connection modifications, if any, being lower than the pc_noOf_PDUsSameConnection or the pc_noOf_PDUsNewConnection which the UE will establish upon initial attach to the 5GS.

NOTE 3: Since the MME does not provide the UE with the mapped PDU session for a PDN connection, the UE does not know whether interworking to 5GS is supported for a PDN connection for which the UE assigned a PDU Session identity before attempting to transfer the PDN connection from S1 mode to N1 mode. It is up to UE implementation to decide which PDN connection(s) to be attempted to transfer from S1 mode to N1 mode, e.g. based on UE policy or UE local configuration. (see TS 24.501 [22], subclause 6.1.4.2)

Table 4.9.9.2.2-2: Parallel behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. NOTE 2, NOTE 3	-	-	-	-
1	IF this is the first time in a test case that the UE moves from S1 to N1 THEN the generic procedure for Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26, specified in subclause 4.5A.2C, takes place with ExpectedNumberOfPDUSessionModifications=(pc_noOf_PDUsSameConnection+pc_noOf_PDUsNewConnection), with the exception that IF step 2b1, Table 4.5A.2C.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session modifications to take place (NOTE 1).				

NOTE 1: Depending on UE implementation and/or NWK behaviour, the UE may transfer with modification some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of session modifications, if any, being lower than the pc_noOf_PDUsSameConnection+pc_noOf_PDUsNewConnection.

NOTE 2: Whether this is the first time in a test case that the UE moves from S1 to N1 depends on the test scenario (including what happens in the preamble of the test).

NOTE 3: It is assumed that the PDU session modification for all transferred PDUs will happen on the same connection with the mobility and periodic registration update procedure.

NOTE 4: For PDN connections which will be transferred, tests calling the present procedure shall ensure that:
- For each PDN connection established during the UE registration to the EPS, the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message which corresponds to the default EPS bearer of the PDN connectivity being activated, contains the Protocol configuration options IE or the Extended protocol configuration options IE with mapped 5GS PDU a session-AMBR and QoS rule(s).

4.9.9.2.3 Specific Message content

Table 4.9.9.2.3-1: REGISTRATION REQUEST (step 1, Table 4.9.9.2.2-1; step 3, Table 4.9.5.2.2-1)

Derivation Path: Table 4.7.1-6.			
Information Element	**Value/remark**	**Comment**	**Condition**
5GS registration type	'00xxx010'	mobility registration updating x - not checked	
ngKSI			
NAS key set identifier	KSI_{AMF} that was created when the UE last registered to 5GCN		Registered_Previously_on_5GCN
	'111'B	No key	Not_Registered_Previously_on_5GCN
TSC	'0'B	native security context (for KSI_{AMF})	Registered_Previously_on_5GCN
	Not applicable	TSC does not apply for NAS key set identifier value "111"	Not_Registered_Previously_on_5GCN
5GS mobile identity	5G-GUTI mapped from the 4G-GUTI assigned when the UE last registered to EPC E-UTRA		
Non-current native NAS key set identifier	Not present		
5GMM capability	'1'	S1 mode supported	
Last visited registered TAI	The TAI the last visited NGC Cell belonged to, if any. Not included if the UE does not have last stored 5GC TAI.		
S1 UE network capability			
All octets with the exception of octet 8, bit 8 and octet 9, bit 6	Not checked		
Extended protocol configuration options (ePCO) (octet 8, bit 8)	'1'	Extended protocol configuration options IE supported	
N1 mode supported (N1mode) (octet 9, bit 6)	'1'	N1 mode supported	
PDU session status	Any allowed value	(NOTE 1)	
UE status	"UE is in EMM-REGISTERED state"		
Additional GUTI	5G-GUTI assigned when the UE last registered to 5GC N		Registered_Previously_on_5GCN
	Not present		Not_Registered_Previously_on_5GCN
EPS NAS message container	TRACKING AREA UPDATE REQUEST message	See Table 4.9.9.2.3-2	
EPS bearer context status	Not present	(NOTE 2)	

NOTE 1: The UE includes the PDU session status IE indicating the status of the PDU session(s) mapped during the inter-system change from S1 mode to N1 mode from the PDN connection(s) for which the EPS indicated that interworking to 5GS is supported, if any. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDN connection. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well.
NOTE 2: The UE is assumed NOT to have locally deactivated EPS bearer context(s) for which interworking to 5GS is supported while the UE was in S1 mode without notifying the network.

Condition	Explanation
Not_Registered_Previously_on_5GCN	UE has not_registered_previously_on_5GCN. UE does not have valid 5G NAS security context and 5G-GUTI.
Registered_Previously_on_5GCN	UE has registered_previously_on_5GCN. UE have valid 5G NAS security context and 5G-GUTI

Table 4.9.9.2.3-2: TRACKING AREA UPDATE REQUEST (Table 4.9.9.2.3-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-27.			
Information Element	**Value/remark**	**Comment**	**Condition**
EPS update type			
EPS update type Value	'000'B	TA updating	
"Active" flag	'0'B	No Bearer Establishment requested	
NAS key set identifier	the eKSI for the current EPS security context		
TSC	'0'B		
	'1'B		Mapped EPS security context
Old GUTI	4G-GUTI assigned when the UE last registered to EPC E-UTRA		
UE network capability	Not present		
Last visited registered TAI	Not present		
DRX parameter	Not present		
UE radio capability information update needed	Not present		
EPS bearer context status	Not present		
MS network capability	Not present		
Old location area identification	Not present		
TMSI status	Not present		
Mobile station classmark 2	Not present		
Mobile station classmark 3	Not present		
Supported Codecs	Not present		
Additional update type	Not present		
Voice domain preference and UE's usage setting	Not present		
Old GUTI type	Not present		
Device properties	Not present		
MS network feature support	Not present		
TMSI based NRI container	Not present		
T3324 value	Not present		
T3412 extended value	Not present		
Extended DRX parameters	Not present		
UE additional security capability	Not present		
UE status	Not present		
Additional information requested	Not present		
NOTE: The message shall be integrity protected using the current EPS security context.			

Condition	Explanation
Mapped EPS security context	When explicitly specified by the test case in which the message is used.

Table 4.9.9.2.3-3: REGISTRATION ACCEPT (step 10, Table 4.9.9.2.2-1; step 4, Table 4.9.5.2.2-1)

Derivation Path: Table 4.7.1-7.			
Information Element	**Value/remark**	**Comment**	**Condition**
5GS network feature support	The IWK N26 (octet 4, bit 7) set to '1'		*Interworking without N26 interface supported*

4.9.10 Test procedure to check that the UE is in RRC_CONNECTED state

4.9.10.1 Scope

This procedure aims at checking whether the UE is in the RRC_CONNECTED state.

4.9.10.2 Procedure description

4.9.10.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.10.2.2 Procedure

Table 4.9.10.2.2-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	The SS sends *UECapabilityEnquiry* message to the UE.	<--	NR RRC: *UECapabilityEnquiry*	-	-
2	Check: Does the UE send a *UECapabilityInformation* message?	-->	NR RRC: *UECapabilityInformation*		P

4.9.10.2.3 Specific Message content

None.

4.9.11 Test procedure for IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration

4.9.11.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call or an eCall in 5GC when the UE is in 5GMM-IDLE and when IMS emergency registration is required e.g. under Normal Service conditions.

The procedure provides different emergency or eCall establishment options based on the condition parameters defined in Table 4.9.11.1-1.

Table 4.9.11.1-1: Condition parameters

Condition	Explanation
emergency call	When this parameter is present the TC has triggered the UE to initiate an emergency call. (NOTE)
eCall	When this parameter is present the TC has triggered the UE to initiate an eCall.
NOTE: If this generic procedure is referred in test case without any condition, emergency call shall be used as default.	

The trigger to initiate MO call will be part of test case from where the generic procedure is called.

4.9.11.2 Procedure description

4.9.11.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 1N-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.11.2.2 Procedure sequence

Table 4.9.11.2.2-1: Test procedure sequence UE IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an *RRCSetupRequest* message with 'establishmentCause' set to 'emergency'.	-->	NR RRC: *RRCSetupRequest*	-	P
2	The SS transmits an *RRCSetup* message.	<--	NR RRC: *RRCSetup*	-	-
3	The UE transmits an *RRCSetupComplete* message and a SERVICE REQUEST message with 'Service type' set to 'emergency services'.	-->	NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST	-	P
4	The SS transmits a *SecurityModeCommand* message.	<--	NR RRC: *SecurityModeCommand*	-	-
5	The UE transmits a *SecurityModeComplete* message.	-->	NR RRC: *SecurityModeComplete*	-	-
6	The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: Depending upon UE implementation, steps 7 and 8 can occur in any order.	-	-	-	-
7	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-
8	The UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST.	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P
-	EXCEPTION: In parallel to the events described in steps 9-10 below the events specified in steps 1a1 to 2 of Table 4.9.11.2.2-2 take place.	-	-	-	-
9	The SS transmits an *RRCReconfiguration* message and an PDU SESSION ESTABLISHMENT ACCEPT.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
10	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-
-	EXCEPTION: In parallel to the events described in steps 11-13 below the events specified in steps 3 of Table 4.9.11.2.2-2 take place.	-	-	-	-
11	The SS transmits an RRCReconfiguration message and an PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: RRCReconfiguration 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 12 and 13 can occur in any order.	-	-	-	-
12	The UE transmits an RRCReconfigurationComplete message.	-->	NR RRC: RRCReconfigurationComplete	-	-
13	The UE transmits an ULInformationTransfer message and an PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: ULInformationTransfer 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

Table 4.9.11.2.2-2: IMS signalling and Emergency call establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1a1	The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place.	-	-	-	-
2	Generic Test Procedure for IMS Emergency registration / 5GS as defined in TS 34.229-5 [47], annex A.3 is performed.	-	-	-	-
-	EXCEPTION: Steps 3a1-3b1 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
3a1	IF '*emergency call*' THEN Generic test procedure for setting up IMS Emergency Voice Call / 5G as defined in TS 34.229-5 [47], annex A.6 is performed.	-	-	-	-
3b1	IF '*eCall*' THEN Generic test procedure for NR eCall Setup and MSD Update, steps 1-3, as defined in Annex A.23 of TS 34.229-5 [47] is performed.	-	-	-	-

4.9.11.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.11.2.3-1: *SIB1* (at any time prior and during the procedure, Table 4.9.11.2.2-1)

Derivation Path: Table 4.6.1-28.			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	Present	true	
}			

Table 4.9.11.2.3-2: *RRCSetupRequest* (step 1, Table 4.9.11.2.2-1)

Derivation Path: Table 4.6.1-23.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	emergency		
}			
}			

Table 4.9.11.2.3-3: SERVICE REQUEST (step 3, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.1-16.			
Information Element	**Value/remark**	**Comment**	**Condition**
Service type	'0011'B	emergency services	

Table 4.9.11.2.3-4: UL NAS TRANSPORT (step 8, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.1-10, condition INITIAL_PDU_REQUEST.			
Information Element	**Value/remark**	**Comment**	**Condition**
Request type	'011'B	initial emergency request	
S-NSSAI	Not Present		
DNN	Not Present		

Table 4.9.11.2.3-5: PDU SESSION ESTABLISHMENT REQUEST (step 8, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.2-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	A value that is not currently being used by another PDU session		
PTI	A value currently not used		
SSC mode	'001'B	SSC mode 1	

Table 4.9.11.2.3-6: DL NAS TRANSPORT (step 9, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.1-11, condition 5GSM_MESSAGE.

Table 4.9.11.2.3-7: PDU SESSION ESTABLISHMENT ACCEPT (step 9, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	**Value/remark**	**Comment**	**Condition**
Selected SSC mode	'001'B	SSC mode 1	
Authorized QoS rules	Reference QoS rule #2 as defined in Table 4.8.2.1-2.		
Authorized QoS flow descriptions	Reference QoS flow #2 as defined in Table 4.8.2.3-2.		
DNN	Not Present		

Table 4.9.11.2.3-8: *RRCReconfiguration* (step 9, Table 4.9.11.2.2-1)

Derivation Path: Table 4.8.1-1: RRCReconfiguration-DRB (1, 0)

Table 4.9.11.2.3-9: PDU SESSION MODIFICATION COMMAND (step 11, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

Table 4.9.11.2.3-10: *RRCReconfiguration* (step 11, Table 4.9.11.2.2-1)

Derivation Path: 4.8.1-1C RRCReconfiguration-Speech

Table 4.9.11.2.3-11: INVITE (step 3a1, Table 4.9.11.2.2-2)

Derivation Path: TS 34.229-5 [47], Annex A.6, Step 1 with conditions A7 and A28

4.9.12 Test procedure for IMS Emergency call establishment in 5GC without IMS emergency registration

4.9.12.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call in 5GC without the need for IMS emergency registration to take place beforehand e.g. under Limited Service or SIM/USIM not available, the SIM/USIM is considered invalid by the UE conditions.

4.9.12.2 Procedure description

4.9.12.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters unless specified otherwise. PLMN/TAI which the cell belongs to, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it

User Equipment:

- Whether the Test UICC shall be inserted or not, and, its settings e.g. in regard to the provision of Emergency Numbers, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12.2.2 Procedure sequence

Table 4.9.12.2.2-1: Test procedure sequence UE IMS Emergency call establishment in 5GC without IMS emergency registration

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	Check: Does the UE transmits an *RRCSetupRequest* message with 'establishmentCause' set to 'emergency'?	-->	NR RRC: *RRCSetupRequest*	-	P
2	The SS transmits an *RRCSetup* message.	<--	NR RRC: *RRCSetup*	-	-
3	Check: Does the UE transmits an *RRCSetupComplete* message and a REGISTRATION REQUEST message with 'Service type' set to 'emergency services'?	-->	NR RRC: *RRCSetupComplete* 5GMM: REGISTRATION REQUEST	-	P
4	The SS transmits a *DLInformationTransfer* message and a SECURITY MODE COMMAND message with 'Selected NAS security algorithms' set to "null integrity protection algorithm" (5G-IA0), "null ciphering algorithm" (5G-EA0).	<--	NR RRC: *DLInformationTransfer* 5GMM: SECURITY MODE COMMAND	-	-
5	The UE transmits an *ULInformationTransfer* message and a SECURITY MODE COMPLETE message.	-->	NR RRC: *ULInformationTransfer* 5GMM: SECURITY MODE COMPLETE	-	P
6	The SS transmits a *SecurityModeCommand* message with cipheringAlgorithm set to '*NULL*' ciphering algorithm (nea0) and integrityProtAlgorithm set to '*NULL*' integrity protection algorithm (nia0).	<--	NR RRC: *SecurityModeCommand*	-	-
7	The UE transmits a *SecurityModeComplete* message.	-->	NR RRC: *SecurityModeComplete*	-	P
8	The SS transmits a *UECapabilityEnquiry* message.	<--	NR RRC: *UECapabilityEnquiry*	-	-
9	The UE transmits a *UECapabilityInformation* message.	-->	NR RRC: *UECapabilityInformation*	-	-
10	The SS transmits a *DLInformationTransfer* message and a REGISTRATION ACCEPT message.	<--	NR RRC: *DLInformationTransfer* 5GMM: REGISTRATION ACCEPT	-	-
11	The UE transmits an *ULInformationTransfer* message and a REGISTRATION COMPLETE message.	-->	NR RRC: *ULInformationTransfer* 5GMM: REGISTRATION COMPLETE	-	-
12	Void	-	-	-	-
13	Check: Does the UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P
-	EXCEPTION: In parallel to the events described in steps 14-15 below the events specified in steps 1a1 of Table 4.9.12.2.2-2 take place.	-	-	-	-
14	The SS transmits an *RRCReconfiguration* message and an PDU SESSION ESTABLISHMENT ACCEPT to establish SRB2 and DRB.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
15	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-
-	EXCEPTION: In parallel to the events described in steps 16-18 below the events specified in steps 2 of Table 4.9.12.2.2-2 take place.	-	-	-	-
16	The SS transmits an RRCReconfiguration message and an PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: RRCReconfiguration 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 17 and 18 can occur in any order.	-	-	-	-
17	The UE transmits an RRCReconfigurationComplete message.	-->	NR RRC: RRCReconfigurationComplete	-	-

18	Check: Does the UE transmits an ULInformationTransfer message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: ULInformationTransfer 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

Table 4.9.12.2.2-2: IMS signalling and Emergency call establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1a1	The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place.	-	-	-	-
2	Generic test procedure for setting up IMS Emergency Voice Call as defined in TS 34.229-5 [47] annex A.6 is performed.	-	-	-	-

4.9.12.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

NOTE: Some of the specific message contents provided below assume that the UE is in the state 5GMM-DEREGISTERED.LIMITED-SERVICE or 5GMM-REGISTERED.LIMITED-SERVICE (e.g. the selected cell over 3GPP access is in a forbidden PLMN or is in a forbidden tracking area respectively), or, in 5GMM-DEREGISTERED.NO-SUPI as defined in TS 24.501 [28], subclauses 5.1.3.2.1.3.3 and 5.1.3.2.1.3.6 respectively. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

Table 4.9.12.2.3-1: *SIB1* (at any time prior and during the procedure, Table 4.9.12.2.2-1)

Derivation Path: Table 4.6.1-28.			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	Present	true	
}			

Table 4.9.12.2.3-2: *RRCSetupRequest* (step 1, Table 4.9.12.2.2-1)

Derivation Path: Table 4.6.1-23.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	emergency		
}			
}			

Table 4.9.12.2.3-3: REGISTRATION REQUEST (step 3, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-6, condition EMERGENCY.

Table 4.9.12.2.3-4: SECURITY MODE COMMAND (step 4, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-25.			
Information Element	**Value/remark**	**Comment**	**Condition**
Selected NAS security algorithms			
Type of ciphering algorithm	5G-EA0	null ciphering algorithm	
Type of integrity protection algorithm	5G-IA0	null integrity protection algorithm	
ngKSI			
NAS key set identifier	'000'B		

Table 4.9.12.2.3-5: *SecurityModeCommand* (step 6, Table 4.9.12.2.2-1)

Derivation Path: Table 4.6.1-25.			
Information Element	**Value/remark**	**Comment**	**Condition**
SecurityModeCommand ::= SEQUENCE {			
criticalExtensions CHOICE {			
securityModeCommand SEQUENCE {			
securityConfigSMC SEQUENCE {			
securityAlgorithmConfig SEQUENCE {			
cipheringAlgorithm	nea0	'*NULL*' ciphering algorithm	
integrityProtAlgorithm	nia0	'*NULL*' integrity protection algorithm	
}			
}			
}			
}			
}			

Table 4.9.12.2.3-6: REGISTRATION ACCEPT (step 10, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-7, condition EMERGENCY.

Table 4.9.12.2.3-7: UL NAS TRANSPORT (step 13, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-10, condition INITIAL_PDU_REQUEST.			
Information Element	**Value/remark**	**Comment**	**Condition**
Request type	'011'B	initial emergency request	
S-NSSAI	Not Present		
DNN	Not Present		

Table 4.9.12.2.3-8: PDU SESSION ESTABLISHMENT REQUEST (step 13, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.2-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	A value that is not currently being used by another PDU session		
PTI	A value currently not used		
SSC mode	'001'B	SSC mode 1	

Table 4.9.12.2.3-9: DL NAS TRANSPORT (step 14, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-11, condition 5GSM_MESSAGE.

Table 4.9.12.2.3-10: PDU SESSION ESTABLISHMENT ACCEPT (step 14, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	**Value/remark**	**Comment**	**Condition**
Selected SSC mode	'001'B	SSC mode 1	
Authorized QoS rules	Reference QoS rule #2 as defined in Table 4.8.2.1-2.		
Authorized QoS flow descriptions	Reference QoS flow #2 as defined in Table 4.8.2.3-2.		

Table 4.9.12.2.3-11: *RRCReconfiguration* (step 14, Table 4.9.12.2.2-1)

Derivation Path: Table 4.8.1-1: RRCReconfiguration-SRB2-DRB (1, 0)

Table 4.9.12.2.3-12: PDU SESSION MODIFICATION COMMAND (step 16, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

Table 4.9.12.2.3-13: *RRCReconfiguration* (step 16, Table 4.9.12.2.2-1)

Derivation Path: 4.8.1-1C RRCReconfiguration-Speech

Table 4.9.12.2.3-14: INVITE (step 2, Table 4.9.12.2.2-2)

Derivation Path: TS 34.229-5 [47], Annex A.6, Step 1 with conditions A6 and A28

4.9.12A Test procedure for IMS MO Emergency call release

4.9.12A.1 Scope

This procedure aims at verifying the UE initiated release of an ongoing IMS Emergency call in 5GC

The procedure provides different handling options of the emergency PDU session based on the condition parameter defined in Table 4.9.12A.1-1.

Table 4.9.12A.1-1: Condition parameters

Condition	Explanation
release emergency PDU session	When this parameter is present the SS will release the emergency PDU session even if not requested by the UE after the release of the emergency call
keep emergency PDU session	When this parameter is present the SS will only release the emergency PDU session if requested by the UE, if not it will release the voice QoS after the release of the emergency call
NOTE 1: If the defined condition parameter is not present when the procedure is referred to then the default value '*release emergency PDU session'* will apply	

4.9.12A.2 Procedure description

4.9.12A.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12A.2.2 Procedure sequence

Table 4.9.12A.2.2-1: Test procedure sequence IMS MO Emergency call release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	Generic test procedure for MO Release of Voice Call / 5GS, as defined in Annex A.7 of TS 34.229-5 [47], is performed.	-	-	-	-
2-3	Void	-	-	-	-
3A1	SS starts timer T1 = 5 seconds.	-	-	-	-
-	EXCEPTION: Steps 3Ba1 to 3Bb2b3 describe a transaction that depends on the UE behaviour; the "lower case letter" identifies a step sequence that takes place if a specific behaviour happens.	-	-	-	-
3Ba1	The UE transmits a PDU SESSION RELEASE REQUEST message.	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION RELEASE REQUEST	-	-
3Ba2	Stop timer T1				
3Ba3	Test procedure for PDU Session Release specified in subclause 4.9.21 takes place	-	-	-	-
3Bb1	Timer T1 expires.	-	-	-	-
-	EXCEPTION: Steps 3Bb2a1 – 3Bb2b3 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
3Bb2a1	IF '*release emergency PDU session'* THEN test procedure for PDU Session Release specified in subclause 4.9.21 takes place.	-	-	-	-
3Bb2b1	ELSE (i.e. 'Keep emergency PDU session') THEN the SS transmits a RRCReconfiguration message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 3Bb2b2 and 3Bb2b3 can occur in any order.	-	-	-	-
3Bb2b2	The UE transmits a RRCReconfigurationComplete	-	NR RRC: *RRCReconfigurationComplete*	-	-
3Bb2b3	Check: Does the UE transmit a PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
4-5	Void	-	-	-	-

4.9.12A.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.12A.2.3-1: *RRCReconfiguration* (step 3Ba2, step 3Bb2a1, Table 4.9.12A.2.2-1; step 1 Table 4.9.21.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		
DRB-Identity[1]	DRB-Identity linked to the IMS emergency signalling bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS emergency speech bearer	entry 2	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		
logicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
logicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			
}			

Table 4.9.12A.2.3-2: PDU SESSION RELEASE COMMAND (step 3Ba2, step 3Bb2a1, Table 4.9.12A.2.2-1; step 1 Table 4.9.21.2.2-1)

Derivation Path: Table 4.7.1-14.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Set according to the Emergency session ID.		
5GSM cause	‘0010 0100’B	Regular deactivation	

Table 4.9.12A.2.3-3: PDU SESSION RELEASE REQUEST (step 3Ba1, Table 4.9.12A.2.2-1)

Derivation Path: Table 4.7.1-14.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Set according to the Emergency session ID.		
PTI	Any value from 1 to 254		

Table 4.9.12A.2.3-4: *RRCReconfiguration* (step 3Bb2b1, Table 4.9.12A.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity	DRB-Identity linked to the IMS speech bearer		
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
LogicalChannelIdentity	Same value as drb-Identity above		
}			
}			
}			
}			
}			
}			

Table 4.9.12A.2.3-5: PDU SESSION MODIFICATION COMMAND (step 3Bb2b1, Table 4.9.12A.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Set according to the Emergency session ID		
Authorized QoS rules			
QoS rule			
QoS rule identifier	‘00000011’B	QoS rule 3	
Rule operation code	‘010’B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions			
QFI	‘00000111’B	QFI 7	
Operation code	‘010’B	Delete existing QoS flow	

4.9.12B Test procedure for IMS MT Emergency call release

4.9.12B.1 Scope

This procedure aims at verifying the network initiated release of an ongoing IMS Emergency call in 5GC

The procedure provides different handling options of the emergency PDU session based on the condition parameter defined in Table 4.9.12B.1-1.

Table 4.9.12B.1-1: Condition parameters

Condition	Explanation
release emergency PDU session	When this parameter is present the SS will release the emergency PDU session after the release of the emergency call
keep emergency PDU session	When this parameter is present the SS will release the voice QoS, but not release the emergency PDU session after the release of the emergency call
NOTE 1: If the defined condition parameter is not present when the procedure is referred to then the default value '*release emergency PDU session'* will apply	

4.9.12B.2 Procedure description

4.9.12B.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12B.2.2 Procedure sequence

Table 4.9.12B.2.2-1: Test procedure sequence IMS MT Emergency call release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1-2	Generic test procedure for MT release of speech call, steps 1-2, as defined in Annex A.8 of TS 34.229-5 [47] is performed.	-	-	-	-
-	EXCEPTION: Steps 3a1 – 3b3 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
3a1	IF 'release emergency PDU session' THEN test procedure for PDU Session Release specified in subclause 4.9.21 takes place.			-	-
3b1	ELSE (i.e. 'Keep emergency PDU session') THEN the SS transmits a RRCReconfiguration message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: RRCReconfiguration 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 3b2 and 3b3 can occur in any order.	-	-	-	-
3b2	The UE transmits a RRCReconfigurationComplete	-	NR RRC: RRCReconfigurationComplete	-	-
3b3	Check: Does the UE transmit a PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: ULInformationTransfer 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
4	Void				

4.9.12B.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.12B.2.3-1: *RRCReconfiguration* (step 3a1, Table 4.9.12B.2.2-1; step 1 Table 4.9.21.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		
DRB-Identity[1]	DRB-Identity linked to the IMS emergency signalling bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS emergency speech bearer	entry 2	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			
}			

Table 4.9.12B.2.3-2: PDU SESSION RELEASE COMMAND (step 3a1, Table 4.9.12B.2.2-1; step 1 Table 4.9.21.2.2-1)

Derivation Path: Table 4.7.1-14.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Set according to the Emergency session ID.		
5GSM cause	‘0010 0100’B	Regular deactivation	

Table 4.9.12B.2.3-3: *RRCReconfiguration* (step 3b1, Table 4.9.12B.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity	DRB-Identity linked to the IMS speech bearer		
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
LogicalChannelIdentity	Same value as drb-Identity above		
}			
}			
}			
}			
}			
}			

Table 4.9.12B.2.3-4: PDU SESSION MODIFICATION COMMAND (step 3b1, Table 4.9.12B.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Set according to the Emergency session ID		
Authorized QoS rules			
QoS rule			
QoS rule identifier	‘00000011’B	QoS rule 3	
Rule operation code	‘010’B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions			
QFI	‘00000111’B	QFI 7	
Operation code	‘010’B	Delete existing QoS flow	

4.9.13 Test procedure for no response to paging

4.9.13.1 Scope

This procedure aims at checking that the UE ignores paging messages with a specified identity.

4.9.13.2 Procedure description

4.9.13.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.13.2.2 Procedure sequence

Table 4.9.13.2.2-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits a paging message using the NG-5G-S-TMSI which is specified in the referring test step, and on the cell which is specified in the referring test step.	<--	*Paging*	-	-
2	Check: Does the UE send an *RRCSetupRequest* message on the cell where the paging was transmitted within the next 3s?	-->	*RRCSetupRequest*	-	F

4.9.13.3 Specific Message content

None.

4.9.14 Void

4.9.15 Test procedure for IMS MO speech call establishment in 5GC

4.9.15.1 Scope

The purpose of this procedure is to establish an IMS MO speech call.

4.9.15.2 Procedure description

4.9.15.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.15.2.2 Procedure sequence

Table 4.9.15.2.2-1: IMS MO speech call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Make the UE attempt an IMS speech call.	-	-	-	-
2	Check: Does the UE transmit an *RRCSetupRequest* message with 'establishmentCause' set to 'mo-VoiceCall'?	-->	NR RRC: *RRCSetupRequest*	-	P
3	SS transmit an *RRCSetup* message.	<--	NR RRC: *RRCSetup*	-	-
4	Check: Does the UE transmit an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message?	-->	NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a *SecurityModeCommand* message to activate AS security.	<--	NR RRC: *SecurityModeCommand*	-	-
6	Check: Does the UE transmit a *SecurityModeComplete* message and establish the initial security configuration?	-->	NR RRC: *SecurityModeComplete*	-	P
7	The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).	<--	NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: In parallel to step 8 below, the steps specified in Table 4.9.15.2.2-2 take place.	-	-	-	-
8	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-
-	EXCEPTION: Steps 9a1 to 9b4 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a4	IF the UE is configured to use preconditions THEN steps 2-5 of Annex A.4.1 of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b4	ELSE steps 2-5 of Annex A.4.2 of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: In parallel to steps 11 and 12 below, step 13a1 or 13b1 occur.	-	-	-	-
11	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-
12	Check: Does the UE transmit an *ULInformationTransfer* message, an UL NAS TRANSPORT message and a PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b3 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1 - 13a7	IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.4.1 of TS 34.229-5 [47] take place.	-	-	-	-
13b1 - 13b3	ELSE steps 6-8 of Annex A.4.2 of TS 34.229-5 [47] take place.	-	-	-	-

Table 4.9.15.2.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
1a1	IF the UE is configured to use preconditions THEN step 1 of Annex A.4.1 of TS 34.229-5 [47] takes place.	-	-	-	-
1b1	ELSE step 1 of Annex A.4.2 of TS 34.229-5 [47] takes place.	-	-	-	-

4.9.15.3 Specific message contents

Table 4.9.15.3-1: *RRCSetupRequest* (step 2, Table 4.9.15.2.2-1)

Derivation Path: Table 4.6.1-23			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mo-VoiceCall		
}			
}			

Table 4.9.15.3-2: SERVICE REQUEST (step 4, Table 4.9.15.2.2-1)

Derivation Path: Table 4.7.1-16			
Information Element	**Value/remark**	**Comment**	**Condition**
Service type			
Service type value	‘0001’B	data	

Table 4.9.15.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.15.2.2-1)

Derivation Path: Table 4.7.2-9			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

Table 4.9.15.3-4: *RRCReconfiguration* (step 10, Table 4.9.15.2.2-1)

Derivation Path: Table 4.8.1-1C

4.9.16 Test procedure for IMS MT speech call establishment in 5GC

4.9.16.1 Scope

The purpose of this procedure is to establish an IMS MT speech call.

4.9.16.2 Procedure description

4.9.16.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.16.2.2 Procedure sequence

Table 4.9.16.2.2-1: IMS MT speech call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits a *Paging* message.	<--	NR RRC: *Paging*	-	-
2	Check: Does the UE transmit an *RRCSetupRequest* message with 'establishmentCause' set to 'mt-Access'?	-->	NR RRC: *RRCSetupRequest*	-	P
3	The SS transmits an *RRCSetup* message.	<--	NR RRC: *RRCSetup*	-	-
4	Check: Does the UE transmit an *RRCSetupComplete* message and a SERVICE REQUEST message?	-->	NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a *SecurityModeCommand* message.	<--	NR RRC: *SecurityModeCommand*	-	-
6	The UE transmits a *SecurityModeComplete* message.	-->	NR RRC: *SecurityModeComplete*	-	-
7	The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT	-	-
8	Check: Does the UE transmit an *RRCReconfigurationComplete* message?	-->	NR RRC: *RRCReconfigurationComplete*	-	P
-	EXCEPTION: Steps 9a1 to 9b5 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a5	IF the UE is configured to use preconditions THEN steps 1-5 of Annex A.5.1 of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b5	ELSE steps 1-5 of Annex A.5.2 of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 11 and 12 can occur in any order	-	-	-	-
11	The UE transmits an *RRCReconfigurationComplete* message	-->	NR RRC: *RRCReconfigurationComplete*	-	-
12	Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b7 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1 - 13a7	IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.5.1 of TS 34.229-5 [47] take place.	-	-	-	-
13b1 - 13b5	ELSE steps 6-10 of Annex A.5.2 of TS 34.229-5 [47] take place.	-	-	-	-

4.9.16.3 Specific message contents

Table 4.9.16.3-1: *RRCSetupRequest* (step 2, Table 4.9.16.2.2-1)

Derivation Path: Table 4.6.1-23			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mt-Access		
}			
}			

Table 4.9.16.3-2: SERVICE REQUEST (step 4, Table 4.9.16.2.2-1)

Derivation Path: Table 4.7.1-16			
Information Element	**Value/remark**	**Comment**	**Condition**
Service type			
Service type value	'0010'B	Mobile Terminated Services	

Table 4.9.16.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.16.2.2-1)

Derivation Path: Table 4.7.2-2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

Table 4.9.16.3-4: *RRCReconfiguration* (step 10, Table 4.9.16.2.2-1)

Derivation Path: Table 4.8.1-1C

4.9.17 Test procedure for IMS MO call release in 5GC

4.9.17.1 Scope

The purpose of this procedure is to make a UE initiated release of an ongoing IMS call.

4.9.17.2 Procedure description

4.9.17.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

4.9.17.2.2 Procedure sequence

Table 4.9.17.2.2-1: IMS MO call release in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1-2	Generic test procedure for MO release of speech call, steps 1-2, as defined in annex A.7 of TS 34.229-5 [47] are performed.	-	-	-	-
3	The SS transmits an *RRCReconfiguration* message and an PDU SESSION MODIFICATION COMMAND	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 4 and 5 can occur in any order.	-	-	-	-
4	The UE transmits an *RRCReconfigurationComplete* message	-->	NR RRC: *RRCReconfigurationComplete*	-	-
5	Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

4.9.17.2.3 Specific message contents

Table 4.9.17.2.3-1: *RRCReconfiguration* (step 3, Table 4.9.17.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		IMS_VOICE
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		IMS_VIDEO
DRB-Identity[1]	DRB-Identity linked to the IMS video bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS video bearer	entry 2	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		IMS_VOICE
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		IMS_VIDEO
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			
}			

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

Table 4.9.17.2.3-2: PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.17.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule[1]			IMS_VOICE, IMS_VIDEO
QoS rule identifier	'00000011'B	QoS rule 3	
Rule operation code	'010'B	Delete existing QoS rule	
QoS rule[2]			IMS_VIDEO
QoS rule identifier	'00000100'B	QoS rule 4	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions[1]			IMS_VOICE, IMS_VIDEO
QFI	'00000111'B	QFI 7	
Operation code	'010'B	Delete existing QoS flow	
QoS flow descriptions[2]			IMS_VIDEO
QFI	'00001000'B	QFI 8	
Operation code	'010'B	Delete existing QoS flow	

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

4.9.18 Test procedure for IMS MT call release in 5GC

4.9.18.1 Scope

The purpose of this procedure is to make the network release an ongoing IMS call.

4.9.18.2 Procedure description

4.9.18.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

4.9.18.2.2 Procedure sequence

Table 4.9.18.2.2-1: IMS MT call release in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1-2	Generic test procedure for MT release of speech call, steps 1-2, as defined in annex A.8 of TS 34.229-5 [47] are performed.	-	-	-	-
3	The SS transmits an *RRCReconfiguration* message and an PDU SESSION MODIFICATION COMMAND	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 4 and 5 can occur in any order.	-	-	-	-
4	The UE transmits an *RRCReconfigurationComplete* message	-->	NR RRC: *RRCReconfigurationComplete*	-	-
5	Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

4.9.18.2.3 Specific message contents

Table 4.9.18.2.3-1: *RRCReconfiguration* (step 3, Table 4.9.18.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		IMS_VOICE
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		IMS_VIDEO
DRB-Identity[1]	DRB-Identity linked to the IMS video bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS video bearer	entry 2	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry	entry 1	IMS_VOICE
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above		
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		IMS_VIDEO
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			
}			

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

Table 4.9.18.2.3-2: PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.18.2.2-1)

Derivation Path: Table 4.7.2-9			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule			
QoS rule identifier	'00000011'B	QoS rule 3	IMS_VOICE, IMS_VIDEO
Rule operation code	'010'B	Delete existing QoS rule	
QoS rule[2]			IMS_VIDEO
QoS rule identifier	'00000100'B	QoS rule 4	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions			
QFI	'00000111'B	QFI 7	IMS_VOICE, IMS_VIDEO
Operation code	'010'B	Delete existing QoS flow	
QoS flow descriptions[2]			IMS_VIDEO
QFI	'00001000'B	QFI 8	
Operation code	'010'B	Delete existing QoS flow	

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

4.9.19 Test procedure for IMS MO SMS in 5GC

4.9.19.1 Scope

The purpose of this procedure is to transmit an IMS MO SMS.

4.9.19.2 Procedure description

4.9.19.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.19.2.2 Procedure sequence

Table 4.9.19.2.2-1: IMS MO SMS in 5GS

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Make the UE attempt an IMS MO SMS	-	-	-	-
2	The UE transmits an *RRCSetupRequest* message with 'establishmentCause' set to 'mo-SMS'.	-->	NR RRC: *RRCSetupRequest*	-	P
3	The SS transmits an *RRCSetup* message.	<--	NR RRC: *RRCSetup*	-	-
4	The UE transmits an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message.	-->	NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a *SecurityModeCommand* message to activate AS security.	<--	NR RRC: *SecurityModeCommand*	-	-
6	The UE transmits a *SecurityModeComplete* message and establish the initial security configuration.	-->	NR RRC: *SecurityModeComplete*	-	P
7	The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).	<--	NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT	-	-
8	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	P
9-16	The steps 1-8 from the expected sequence defined in Annex A.13 of TS 34.229-5 [47] of IMS MO SMS / 5GS take place.	-	-	-	-

4.9.19.3 Specific message contents

Table 4.9.19.3-1: *RRCSetupRequest* (step 2, Table 4.9.19.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.6.1-23			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mo-SMS		
}			
}			

Table 4.9.19.3-2: SERVICE REQUEST (step 4, Table 4.9.19.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.7.1-16			
Information Element	**Value/remark**	**Comment**	**Condition**
Service type			
Service type value	'0001'B	data	

4.9.20 Test procedure for IMS MT SMS in 5GC

4.9.20.1 Scope

The purpose of this procedure is to receive an IMS MT SMS.

4.9.20.2 Procedure description

4.9.20.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.20.2.2 Procedure sequence

Table 4.9.20.2.2-1: IMS MT SMS in 5GS

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits a *Paging* message.	<--	NR RRC: *Paging*	-	-
2	The UE transmits an *RRCSetupRequest* message with 'establishmentCause' set to 'mt-Access'.	-->	NR RRC: *RRCSetupRequest*	-	P
3	The SS transmits an *RRCSetup* message.	<--	NR RRC: *RRCSetup*	-	-
4	The UE transmits an *RRCSetupComplete* message and a SERVICE REQUEST message.	-->	NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a *SecurityModeCommand* message.	<--	NR RRC: *SecurityModeCommand*	-	-
6	The UE transmits a *SecurityModeComplete* message.	-->	NR RRC: *SecurityModeComplete*	-	-
7	The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT	-	-
8	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	P
9-12	The steps 1-4 from the expected sequence defined in Annex A.14 of TS 34.229-5 [47] IMS MT SMS / 5GS take place.	-	-	-	-

4.9.20.3 Specific message contents

Table 4.9.20.3-1: *RRCSetupRequest* (step 2, Table 4.9.20.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.6.1-23			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mt-Access		
}			
}			

Table 4.9.20.3-2: SERVICE REQUEST (step 4, Table 4.9.20.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.7.1-16			
Information Element	**Value/remark**	**Comment**	**Condition**
Service type			
Service type value	'0010'B	Mobile Terminated Services	

4.9.21 Test procedure for PDU Session Release

4.9.21.1 Scope

The purpose of this procedure is to release both the PDU session and the user plane resources.

4.9.21.2 Procedure description

4.9.21.2.1 Initial conditions

The UE is in state 3N-A with PDU SESSION ACTIVE as per Table 4.4A.2-3. If this is a UE triggered PDU Session Release, this will be specified in the test case together with the sending of a PDU SESSION RELEASE REQUEST by the UE.

4.9.21.2.2 Procedure sequence

Table 4.9.21.2.2-1: Procedure for PDU Session Release

St	Procedure	Message Sequence	
		U – S	Message
1	The SS transmits an *RRCReconfiguration* message and a PDU SESSION RELEASE COMMAND	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION RELEASE COMMAND
-	EXCEPTION: Depending upon UE implementation, step 1A and 2 can occur in any order	-	-
1A	The UE transmits a *RRCReconfigurationComplete*	-	NR RRC: *RRCReconfigurationComplete*
2	The UE transmits a PDU SESSION RELEASE COMPLETE message	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION RELEASE COMPLETE

4.9.21.3 Specific message contents

The NAS message contents will be as specified in the test case.

Table 4.9.21.3-1: *RRCReconfiguration* (step 1, Table 4.9.21.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity[1]	DRB-Identity linked to the PDU Session to be released		
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
logicalChannelIdentity[1]	Same value as drb-Identity[1] above		
}			
}			
}			
}			
}			
}			

4.9.22 Test procedure for establishing unicast mode NR sidelink communication / Initiating UE side

4.9.22.1 Scope

The purpose of this procedure is to establish unicast mode sidelink communication.

4.9.22.2 Procedure description

4.9.22.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

4.9.22.2.2 Procedure sequence

Table 4.9.22.2.2-1: Procedure for establishing unicast mode sidelink communication (Initiating UE side)

St	Procedure	Message Sequence	
		U – S	Message
1	Void	-	-
-	EXCEPTION: Steps 1a1 to 1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-
1a1	IF the UE is in state 1N-B or 4-A, the UE is configured by upper layer to establish unicast mode link. NOTE: This can be done by sending AT COMMAND +CCUTLE to close test loop function.	-	-
1b1	ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message.	<--	TC: CLOSE UE TEST LOOP
1b2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message.	-->	TC: CLOSE UE TEST LOOP COMPLETE
2	The UE sends a DIRECT LINK ESTABLISHMENT REQUEST message.	-->	PC5-S: DIRECT LINK ESTABLISHMENT REQUEST
3	The NR-SS-UE sends a DIRECT LINK SECURITY MODE COMMAND message.	<--	PC5-S: DIRECT LINK SECURITY MODE COMMAND
4	The UE sends a DIRECT LINK SECURITY MODE COMPLETE message.	-->	PC5-S: DIRECT LINK SECURITY MODE COMPLETE
5	The NR-SS-UE sends a DIRECT LINK ESTABLISHMENT ACCEPT message.	<--	PC5-S: DIRECT LINK ESTABLISHMENT ACCEPT
6	The UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB. NOTE: Unless specifically specified in the test case prose, the UE shall select the DRB parameters as specified in the pre-configured parameters.	-->	PC5-RRC: RRCReconfigurationSidelink
7	The NR-SS-UE sends an RRCReconfigurationCompleteSidelink message.	<--	PC5-RRC: RRCReconfigurationCompleteSidelink
8	Void	-	-
-	EXCEPTION: Steps 8a1 to 8b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-
8a1	IF the UE is in state 1N-B or 4-A, the SS sends AT COMMAND +CCUTLE to open test loop function	-	-
8b1	ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message.	<--	TC: OPEN UE TEST LOOP
8b2	The UE transmits an OPEN UE TEST LOOP COMPLETE message.	-->	TC: OPEN UE TEST LOOP COMPLETE

4.9.22.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B with the exceptions below.

Table 4.9.22.3-1: +CCUTLE (Table 4.9.22.2.2-1, Step 1)

Derivation Path: Table 4.7B-1 with condition Close and Transmit

Table 4.9.22.3-2: CLOSE UE TEST LOOP (Table 4.9.22.2.2-1, Step 1b1)

Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E(V2X Transmission)			
Information Element	**Value/remark**	**Comment**	**Condition**
UE test loop mode E LB setup			
Communication Transmit or Receive	0 0 0 0 0 0 0 1	'01' indicates V2X UE triggered to transmit NR sidelink communication with single spatial layer.	

Table 4.9.22.3-3: DIRECT LINK ESTABLISHMENT REQUEST (Table 4.9.22.2.2-1, Step 2)

Derivation Path: Table 4.7.4-7 with condition Tx

Table 4.9.22.3-4: DIRECT LINK SECURITY MODE COMMAND (Table 4.9.22.2.2-1, Step 3)

Derivation Path: Table 4.7.4-18 with condition Rx

Table 4.9.22.3-5: DIRECT LINK SECURITY MODE COMPLETE (Table 4.9.22.2.2-1, Step 4)

Derivation Path: Table 4.7.4-19 with condition Tx

Table 4.9.22.3-6: DIRECT LINK ESTABLISHMENT ACCEPT (Table 4.9.22.2.2-1, Step 5)

Derivation Path: Table 4.7.4-8 with condition Rx

Table 4.9.22.3-7: RRCReconfigurationSidelink (Table 4.9.22.2.2-1, Step 6)

Derivation Path: Table 4.6.1A-3 with condition TX and SL_DRB			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfigurationSidelink ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfigurationSidelink-r16 SEQUENCE {			
slrb-ConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SLRB-Config-r16 {	1 entry		
SLRB-Config-r16[1] SEQUENCE {		entry 1	
sl-SDAP-ConfigPC5-r16 SEQUENCE {			
sl-MappedQoS-FlowsToAddList-r16 SEQUENCE (SIZE (1.. maxNrofSL-QFIsPerDest-r16)) OF SL-PQFI-r16 {	1 entry		
SL-PQFI-r16[1]	(1..63)	entry 1	
}			
sl-MappedQoS-FlowsToReleaseList-r16	Not present		
sl-SDAP-Header-r16	present		
}			
sl-PDCP-ConfigPC5-r16 SEQUENCE {			
sl-PDCP-SN-Size-r16	len12bits		
sl-OutOfOrderDelivery-r16	Not present		
}			
sl-RLC-ConfigPC5-r16 CHOICE {			
sl-AM-RLC-r16 SEQUENCE {			
sl-SN-FieldLengthAM-r16	size12		
}			
}			
sl-MAC-LogicalChannelConfigPC5-r16 SEQUENCE {			
sl-LogicalChannelIdentity-r16	(4..32)		
}			
}			
}			
}			
}			
}			

Table 4.9.22.3-8: RRCReconfigurationCompleteSidelink (Table 4.9.22.2.2-1, Step 7)

Derivation Path: Table 4.6.1A-4 with condition RX

Table 4.9.22.3-9: +CCUTLE (Table 4.9.22.2.2-1, Step 8a1)

Derivation Path: Table 4.7B-1 with condition Open

4.9.23 Test procedure for establishing unicast mode NR sidelink communication / Peer UE side

4.9.23.1 Scope

The purpose of this procedure is to establish unicast mode sidelink communication.

4.9.23.2 Procedure description

4.9.23.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

4.9.23.2.2 Procedure sequence

Table 4.9.23.2.2-1: Procedure for establishing unicast mode sidelink communication (Peer UE side)

St	Procedure	Message Sequence	
		U – S	Message
1	The NR-SS-UE sends a DIRECT LINK ESTABLISHMENT REQUEST message.	<--	PC5-S: DIRECT LINK ESTABLISHMENT REQUEST
2	The UE sends a DIRECT LINK SECURITY MODE COMMAND message.	-->	PC5-S: DIRECT LINK SECURITY MODE COMMAND
3	The NR-SS-UE sends a DIRECT LINK SECURITY MODE COMPLETE message.	<--	PC5-S: DIRECT LINK SECURITY MODE COMPLETE
4	The UE sends a DIRECT LINK ESTABLISHMENT ACCEPT message.	-->	PC5-S: DIRECT LINK ESTABLISHMENT ACCEPT
5	The NR-SS-UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB.	<--	PC5-RRC: RRCReconfigurationSidelink
6	The UE sends an RRCReconfigurationCompleteSidelink message.	-->	PC5-RRC: RRCReconfigurationCompleteSidelink

4.9.23.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B.

Table 4.9.23.3-1: DIRECT LINK ESTABLISHMENT REQUEST (Table 4.9.23.2.2-1, Step 1)

Derivation Path: Table 4.7.4-7 with condition Rx

Table 4.9.23.3-2: DIRECT LINK SECURITY MODE COMMAND (Table 4.9.23.2.2-1, Step 2)

Derivation Path: Table 4.7.4-18 with condition Tx

Table 4.9.23.3-3: DIRECT LINK SECURITY MODE COMPLETE (Table 4.9.23.2.2-1, Step 3)

Derivation Path: Table 4.7.4-19 with condition Rx

Table 4.9.23.3-4: DIRECT LINK ESTABLISHMENT ACCEPT (Table 4.9.23.2.2-1, Step 4)

Derivation Path: Table 4.7.4-8 with condition Tx

Table 4.9.23.3-5: RRCReconfigurationSidelink (Table 4.9.23.2.2-1, Step 5)

Derivation Path: Table 4.6.1A-3 with condition RX and SL_DRB

Table 4.9.23.3-5: RRCReconfigurationCompleteSidelink (Table 4.9.23.2.2-1, Step 6)

Derivation Path: Table 4.6.1A-4 with condition TX

4.9.24 Test procedure for IMS MO Video call establishment in 5GC

4.9.24.1 Scope

The purpose of this procedure is to establish an IMS MO Video call.

4.9.24.2 Procedure description

4.9.24.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.24.2.2 Procedure sequence

Table 4.9.24.2.2-1: IMS MO video call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Make the UE attempt an IMS Video call	-	-	-	-
2	Check: Does the UE transmit an *RRCSetupRequest* message with 'establishmentCause' set to 'mo-VideoCall'?	-->	NR RRC: *RRCSetupRequest*	-	P
3	SS transmit an *RRCSetup* message.	<--	NR RRC: *RRCSetup*	-	-
4	Check: Does the UE transmit an *RRCSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message?	-->	NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a *SecurityModeCommand* message to activate AS security.	<--	NR RRC: *SecurityModeCommand*	-	-
6	Check: Does the UE transmit a *SecurityModeComplete* message and establish the initial security configuration?	-->	NR RRC: *SecurityModeComplete*	-	P
7	The SS transmits a *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).	<--	NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: In parallel to step 8 below, the steps specified in Table 4.9.24.2.2-2 take place.	-	-	-	-
8	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-
-	EXCEPTION: Steps 9a1 to 9b4 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a4	IF the UE is configured to use preconditions, THEN steps 2-5 of Annex A.15.1 of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b4	ELSE steps 2-5 of Annex A.15.2 of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits a *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 11 and 12 can occur in any order	-	-	-	-
11	The UE transmits an *RRCReconfigurationComplete* message	-->	NR RRC: *RRCReconfigurationComplete*	-	-
12	Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b8 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1-13a7	IF the UE is configured to use preconditions, THEN steps 6-12 of Annex A.15.1 of TS 34.229-5 [47] take place.	-	-	-	-
13b1-13b3	ELSE steps 6-10 of Annex A.15.2 of TS 34.229-5 [47] take place.	-	-	-	-

Table 4.9.24.2.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
1a1	IF the UE is configured to use preconditions, THEN step 1 of Annex A.15.1 of TS 34.229-5 [47] takes place.	-	-	-	-
1b1	ELSE step 1 of Annex A.15.2 of TS 34.229-5 [47] takes place	-	-	-	-

4.9.24.3 Specific message contents

Table 4.9.24.3-1: *RRCSetupRequest* (step 2, Table 4.9.24.2.2-1)

Derivation Path: TS 38.508-1 [21], Table 4.6.1-23.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mo-VideoCall		
}			
}			

Table 4.9.24.3-2: SERVICE REQUEST (step 4, Table 4.9.24.2.2-1)

Derivation Path: TS 38.508-1 [21], Table 4.7.1-16			
Information Element	**Value/remark**	**Comment**	**Condition**
Service type			
Service type value	‘0001’B	data	

Table 4.9.24.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.24.2.2-1)

Derivation Path: TS 38.508-1 [21], Table 4.7.2-9.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in TS 38.508-1, Table 4.8.2.1-7 using conditions IMS_VOICE and IMS_VIDEO.		
Authorized QoS flow descriptions	Reference QoS flow #5 and QoS flow #6 as defined in TS 38.508-1, Table 4.8.2.3-5 & Table 4.8.2.3-6 respectively.		
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking_with_EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	‘001’B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	’0010’B	2 parameters	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #3 and #4 in TS 36.508 table 6.6.2-1		
Traffic Flow Template	See reference dedicated EPS bearer context #3 and #4 in TS 36.508 table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

Table 4.9.24.3-4: *RRCReconfiguration* (step 10, Table 4.9.24.2.2-1)

Derivation Path: TS 38.508-1 [21], Table 4.8.1-1D

4.9.25 Test procedure for UE Configuration Update for transparent UE Policy delivery

4.9.25.1 Scope

The purpose of this procedure is to transfer UE policy data to the UE.

4.9.25.2 Procedure description

4.9.25.2.1 Initial conditions

N/A

4.9.25.2.2 Procedure sequence

Table 4.9.25.2.2-1: Test procedure for UE Configuration Update for transparent UE Policy delivery

St	Procedure	Message Sequence	
		U – S	Message
1	The SS transmits a DL NAS TRANSPORT message.	<--	5GMM: DL NAS TRANSPORT
2	The UE transmits a UL NAS TRANSPORT message.	-->	5GMM: UL NAS TRANSPORT

4.9.25.3 Specific message contents

Table 4.9.25.3-1: DL NAS TRANSPORT (step 1, Table 4.9.25.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.7.1-11			
Information Element	**Value/remark**	**Comment**	**Condition**
Payload container type	'0101'B	UE policy container	
Payload container	Set according toTable 4.7.6-1 using condition URSP		

Table 4.9.25.3-2: UL NAS TRANSPORT (step 2, Table 4.9.25.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.7.1-12			
Information Element	**Value/remark**	**Comment**	**Condition**
Payload container type	'0101'B	UE policy container	
Payload container	Set according toTable 4.7.6-2		

4.9.26 Test procedure for IMS MT video call establishment in 5GC

4.9.26.1 Scope

The purpose of this procedure is to establish an IMS MT video call.

4.9.26.2 Procedure description

4.9.26.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.26.2.2 Procedure sequence

Table 4.9.26.2.2-1: IMS MT video call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits a *Paging* message.	<--	NR RRC: *Paging*	-	-
2	Check: Does the UE transmit an *RRCSetupRequest* message with 'establishmentCause' set to 'mt-Access'?	-->	NR RRC: *RRCSetupRequest*	-	P
3	The SS transmits an *RRCSetup* message.	<--	NR RRC: *RRCSetup*	-	-
4	Check: Does the UE transmit an *RRCSetupComplete* message and a SERVICE REQUEST message?	-->	NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a *SecurityModeCommand* message.	<--	NR RRC: *SecurityModeCommand*	-	-
6	The UE transmits a *SecurityModeComplete* message.	-->	NR RRC: *SecurityModeComplete*	-	-
7	The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT	-	-
8	Check: Does the UE transmit an *RRCReconfigurationComplete* message?	-->	NR RRC: *RRCReconfigurationComplete*	-	P
-	EXCEPTION: Steps 9a1 to 9b5 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a5	IF the UE is configured to use preconditions THEN steps 1-5 of Annex A.16.1 of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b5	ELSE steps 1-5 of Annex A.16.2 of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 11 and 12 can occur in any order	-	-	-	-
11	The UE transmits an *RRCReconfigurationComplete* message	-->	NR RRC: *RRCReconfigurationComplete*	-	-
12	Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b7 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1-13a7	IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.16.1 of TS 34.229-5 [47] take place.	-	-	-	-
13b1-13b5	ELSE steps 6-10 of Annex A.16.2 of TS 34.229-5 [47] take place.	-	-	-	-

4.9.26.3 Specific message contents

Table 4.9.26.3-1: *RRCSetupRequest* (step 2, Table 4.9.26.2.2-1)

Derivation Path: Table 4.6.1-23			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSetupRequest ::= SEQUENCE {			

rrcSetupRequest SEQUENCE {			
establishmentCause	mt-Access		
}			
}			

Table 4.9.26.3-2: SERVICE REQUEST (step 4, Table 4.9.26.2.2-1)

Derivation Path: Table 4.7.1-26			
Information Element	**Value/remark**	**Comment**	**Condition**
Service type			
Service type value	’0010’B	Mobile Terminated Services	

Table 4.9.26.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.26.2.2-1)

Derivation Path: TS 38.508-1 [21], Table 4.7.2-9.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in TS 38.508-1, Table 4.8.2.1-7 using conditions IMS_VOICE and IMS_VIDEO.		
Authorized QoS flow descriptions	Reference QoS flow #5 and QoS flow #6 as defined in TS 38.508-1, Table 4.8.2.3-5 & Table 4.8.2.3-6 respectively.		
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking_with_EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	‘001’B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	’0001’B	1 parameter	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #3 and EPS bearer context #4 in TS 36.508 table 6.6.2-1		
Traffic flow Template	See reference dedicated EPS bearer context #3 and EPS bearer context #4 in TS 36.508 table 6.6.2-1		

Condition	**Explanation**
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support

	Mapped EPS bearer contexts.

Table 4.9.26.3-4: *RRCReconfiguration* (step 10, Table 4.9.26.2.2-1)

Derivation Path: TS 38.508-1 [21], Table 4.8.1-1D

4.9.27 Test procedure for adding video to a speech call in 5GC

4.9.27.1 Scope

The purpose of this procedure is to add video to an established speech call.

4.9.27.2 Procedure description

4.9.27.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

4.9.27.2.2 Procedure sequence

Table 4.9.27.2.2-1: IMS video call addition in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an *RRCReconfigurationComplete* message	-->	NR RRC: *RRCReconfigurationComplete*	-	-
3	Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-

4.9.27.3 Specific message contents

Table 4.9.27.3-1: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.27.2.2-1)

Derivation Path: TS 38.508-1 [21], Table 4.7.2-9.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VIDEO and Rule operation code 011.		
Authorized QoS flow descriptions	Reference QoS flow #6		

	as defined in Table 4.8.2.3-6 respectively.		
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking_with_EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	'0001'B	1 parameter	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #3 in TS 36.508 table 6.6.2-1		
Traffic flow Template	See reference dedicated EPS bearer context#3 in TS 36.508 table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

Table 4.9.27.3-2: *RRCReconfiguration* (step 1, Table 4.9.27.2.2-1)

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-AddVideo		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0,1)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

Table 4.9.27.3-3 : RadioBearerConfig-AddVideo (Table 4.9.27.3-2)

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		
DRB-ToAddMod [1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		

}			
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			

4.9.28 Test procedure for removing video from an ongoing call in 5GC

4.9.28.1 Scope

The purpose of this procedure is to remove video from an established speech call.

4.9.28.2 Procedure description

4.9.28.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

4.9.28.2.2 Procedure sequence

Table 4.9.28.2.2-1: IMS video removal from established call in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits an *RRCReconfiguration* message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an *RRCReconfigurationComplete* message	-->	NR RRC: *RRCReconfigurationComplete*	-	-
3	Check: Does the UE transmit a *ULInformationTransfer* message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-

4.9.28.3 Specific message contents

Table 4.9.28.2.3-1: *RRCReconfiguration* (step 1, Table 4.9.28.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE	1 entry		

(1..maxDRB)) OF DRB-Identity {			
DRB-Identity[1]	DRB-Identity linked to the IMS video bearer	entry 1	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
}			
}			
}			
}			
}			
}			

Table 4.9.28.2.3-2: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.28.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	**Value/remark**	**Comment**	**Condition**
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule[1]			
QoS rule identifier	'00000100'B	QoS rule 7	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions[1]			
QFI	'00001000'B	QFI 8	
Operation code	'010'B	Delete existing QoS flow	

4.9.29 Test Procedure for eCall over IMS establishment in 5GS: eCall Only Support

4.9.29.1 Scope

The purpose of this test procedure is to allow successful completion of eCall over IMS in 5GS when UE is in 5GMM-DEREGISTERED.eCALL-INACTIVE.

The test procedure is applicable for UEs with eCall over IMS support.

Note: The trigger to initiate MO call will be part of test case from where the generic procedure is called.

4.9.29.2 Procedure description

4.9.29.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The test procedure assumes that the UE is in test state 0-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.29.2.2 Procedure sequence

The establishment of eCall over IMS in 5GS is assumed to always be mobile originated.

Table 4.9.29.2.2-1: Test procedure sequence for eCall over IMS Emergency establishment in 5GS (eCall Only Support)

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE is switched on and SS waits 15 sec to allow the UE to camp on the serving cell and enter and remain in substate 5GMM-DEREGISTERED.eCALL-INACTIVE	-	-	-	-
2	Make the UE attempt an eCall (Note)	-	-	-	-
3-20	Steps 2 to 19 of generic procedure 4.5.2.2-2 takes place.	-	-	-	-
21-26	Steps 8 to 13 of test procedure 4.9.11 takes place with condition '*eCall*'.	-	-	-	-
Note: The request to originate a manual or Automatic eCall may be performed by MMI or AT command					

4.9.29.2.3 Specific Message content

All specific message contents shall be according to subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.29.2.3-1: *SIB1* (at any time prior and during the procedure, Table 4.9.29.2.2-1)

Derivation Path: Table 4.6.1-28.			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	Present	true	
}			

4.9.30 Test procedure for releasing unicast mode NR sidelink communication

4.9.30.1 Scope

The purpose of this procedure is to release unicast mode sidelink communication.

4.9.30.2 Procedure description

4.9.30.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A with a PC5 unicast mode sidelink communication established.

4.9.30.2.2 Procedure sequence

Table 4.9.30.2.2-1: Procedure for releasing unicast mode NR sidelink communication

St	Procedure	Message Sequence	
		U – S	Message
1	The NR-SS-UE sends a DIRECT LINK RELEASE REQUEST message.	<--	PC5-S: DIRECT LINK RELEASE REQUEST
2	The UE sends a DIRECT LINK RELEASE ACCEPT message.	-->	PC5-S: DIRECT LINK RELEASE ACCEPT

4.9.30.3 Specific message contents

Table 4.9.30.3-1: DIRECT LINK RELEASE REQUEST (Step 1, Table 4.9.30.2.2-1)

Derivation Path: Table 4.7.4-11 with condition Rx

Table 4.9.30.3-2: DIRECT LINK RELEASE ACCEPT (Step 2, Table 4.9.30.2.2-1)

Derivation Path: Table 4.7.4-12 with condition Tx

4.9.31 Test procedure to check user plane connectivity on PC5 unicast link

4.9.31.1 Scope

The purpose of this procedure is to check user plane connectivity on established PC5 unicast link.

4.9.31.2 Procedure description

4.9.31.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A. The PC5 unicast link between the UE and the NR-SS-UE and corresponding AS layer connection (PC5-RRC, sidelink DRB) have been established.

4.9.31.2.2 Procedure sequence

Table 4.9.31.2.2-1: Procedure to check user plane connectivity on PC5 unicast link

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Void	-	-	-	-
-	EXCEPTION: Steps 1a1 to 1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
1a1	IF the UE is in state 1N-B or 4-A, the SS triggers UE to close UE test loop mode E (Receive Mode). NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
1b1	ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message to close UE test loop mode E (Receive Mode).	<--	TC: CLOSE UE TEST LOOP		
1b2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message.	-->	TC: CLOSE UE TEST LOOP COMPLETE		
2	The NR-SS-UE transmits one SDAP SDU on SL DRB#n NOTE: SL DRB#n is the SL DRB associated with the PC5 unicast link to be verified.	-	-	-	-
3	Void				
-	EXCEPTION: Steps 3a1 to 3b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
3a1	IF the UE is in state 1N-B or 4-A, the SS requests the UE to report the counter of successful reception of SDAP SDU packets. NOTE: Requesting the UE to report the counter of successful reception of SDAP packets may be performed by MMI or AT command (+CUSPCREQ).	-	-	-	-
3a2	Check: Does the reported counters of successful reception of SDAP SDU/PSSCH/PSCCH packets satisfiy following conditions? - Counter of SDAP SDU packets equals to 1; - Counter of PSSCH packets is greater than 0; - Counter of PSCCH packets is grater than 0; NOTE: The UE reporting the counter of successful reception of SDAP SDU/PSSCH/PSCCH packets may be performed by MMI or AT command (+CUSPCREQ).	-	-	-	P
3b1	ELSE IF the UE is in state 3N-B, the SS transmits a UE TEST LOOP NR SIDELINK COUNTER REQUEST message to request the UE to report the counter of successful reception of SDAP SDU packets.	<--	TC: UE TEST LOOP NR SIDELINK COUNTER REQUEST	-	-
3b2	Check: Does the reported counters of successful reception of SDAP SDU/PSSCH/PSCCH packets in UE TEST LOOP NR SIDELINK COUNTER RESPONSE message transmitted by the UE satisfiy following conditions? - Counter of SDAP SDU packets equals to 1; - Counter of PSSCH packets is greater than 0; - Counter of PSCCH packets is grater than 0;.	-->	TC: UE TEST LOOP NR SIDELINK COUNTER RESPONSE	-	P
4-5	Void	-	-	-	-

-	EXCEPTION: Steps 5a1 to 5b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
5a1	IF the UE is in state 1N-B or 4-A, the SS triggers UE to open UE test loop mode E. NOTE: Opening of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
5b1	ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message to open UE test loop mode E.	<--	TC: OPEN UE TEST LOOP		
5b2	The UE transmits an OPEN UE TEST LOOP COMPLETE message.	-->	TC: OPEN UE TEST LOOP COMPLETE		
6	Void	-	-	-	-
-	EXCEPTION: Steps 6a1 to 6b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
6a1	IF the UE is in state 1N-B or 4-A, the SS triggers UE to close UE test loop mode E (Transmit Mode). NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
6b1	ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message to close UE test loop mode E (Transmit Mode).	<--	TC: CLOSE UE TEST LOOP		
6b2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message.	-->	TC: CLOSE UE TEST LOOP COMPLETE		
7	Check: Does UE continuously send SDAP SDUs on SL DRB#n in the next 5 seconds? NOTE: The UE sends multiple packets. The reception of one of them is sufficient for achieving the Pass verdict.	-	-	-	P
8	Void	-	-	-	-
-	EXCEPTION: Steps 8a1 to 8b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
8a1	The SS triggers UE to open UE test loop mode E. NOTE: Opening of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
8b1	ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message to open UE test loop mode E.	<--	TC: OPEN UE TEST LOOP		
8b2	The UE transmits an OPEN UE TEST LOOP COMPLETE message.	-->	TC: OPEN UE TEST LOOP COMPLETE		

4.9.31.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B with the exceptions below.

Table 4.9.31.3-1: +CCUTLE (Table 4.9.31.2.2-1, Step 1a1)

Derivation Path: Table 4.7B-1 with condition Close and Receive

Table 4.9.31.3-2: CLOSE UE TEST LOOP (Table 4.9.31.2.2-1, Step 1b1)

Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E (V2X Reception)

Table 4.9.31.3-3: +CUSPCREQ (Table 4.9.31.2.2-1, Step 3a2)

Derivation Path: 36.508[2] Table 4.7I-4			
Field	**Value/remark**	**Comment**	**Condition**
+CUSPCREQ =			
< type1>	2	NR PSCCH transport blocks	
< format >	1		
<length1>	Not Checked		
<counter1>	Checked	Any value greater than 0	
< type2>	2	NR STCH SDAP SDU packets	
< format >	1		
<length2>	Not Checked		
<counter2>	1		
< type3>	2	NR PSSCH transport blocks	
< format >	1		
<length3>	Not Checked		
<counter3>	Checked	Any value greater than 0	

Table 4.9.31.3-4: UE TEST LOOP NR SIDELINK PACKET COUNTER REQUEST (Table 4.9.31.2.2-1, Step 3b1)

Derivation Path: 38.509 clause 6.9.1			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	‘1111’B		
Skip indicator	‘0000’B		
Message type	‘10101010’B		

Table 4.9.31.3-5: UE TEST LOOP NR SIDELINK PACKET COUNTER RESPONSE (Table 4.9.31.2.2-1, Step 3b2)

Derivation Path: 38.509 clause 6.9.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	'1111'B		
Skip indicator	'0000'B		
Message type	'10101011'B		
NR Sidelink PSCCH Packet Counter(s) Value			
NR Sidelink PSCCH Packet Counter(s) Value type	'00000001'B		
Length of NR Sidelink PSCCH Packet Counter(s) Value contents in bytes	'00000100'B	4 bytes	
NR Sidelink PSCCH Packet Counter IE #0	Checked	Any value greater than 0	
NR Sidelink STCH Packet Counter(s) Value			
NR Sidelink STCH Packet Counter(s) Value type	'00000010'B		
Length of NR Sidelink STCH Packet Counter(s) Value in bytes	'00000100'B	4 bytes	
NR Sidelink STCH Packet Counter IE #0	'00000000 00000000 00000000 00000001'B		
NR Sidelink PSSCH Packet Counter(s) Value			
NR Sidelink PSSCH Packet Counter(s) Value type	'00000011'B		
Length of NR Sidelink PSSCH Packet Counter(s) Value contents in bytes	'00000100'B	4 bytes	
NR Sidelink PSSCH Packet Counter IE #0	Checked	Any value greater than 0	

Table 4.9.31.3-6: +CCUTLE (Table 4.9.31.2.2-1, Step 5a1 and 8a1)

Derivation Path: Table 4.7B-1 with condition Open

Table 4.9.31.3-7: +CCUTLE (Table 4.9.31.2.2-1, Step 6a1)

Derivation Path: Table 4.7B-1 with condition Close and Transmit

Table 4.9.31.3-8: CLOSE UE TEST LOOP (Table 4.9.31.2.2-1, Step 6b1)

Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E(V2X Transmission)			
Information Element	**Value/remark**	**Comment**	**Condition**
UE test loop mode E LB setup			
Communication Transmit or Receive	0 0 0 0 0 0 0 1	'01' indicates V2X UE triggered to transmit NR sidelink communication with single spatial layer.	

4.9.32 Test procedure to activate UE Power Limit Function (UPLF)

4.9.32.1 Initiation

UE is operating in FR2 in RRC_CONNECTED state with UE power limit test function activated.

4.9.32.2 Procedure

Table 4.9.32.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to activate UE Power Limit Function	<--	*ACTIVATE POWER LIMIT REQUEST*	-	-
2	UE confirms that UE Power Limit Function is activated	-->	*ACTIVATE POWER LIMIT RESPONSE*	-	-

4.9.32.3 Specific Message contents

Table 4.9.32.3-1: ACTIVATE POWER LIMIT REQUEST

Derivation Path: 38.509 clause 6.11.1			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 0		
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 0 1 0		TOT NR AGG BW 100
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1		TOT NR AGG BW 150
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 0 0		TOT NR AGG BW 200
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 0 1		TOT NR AGG BW 250
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1 0		TOT NR AGG BW 300
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1 1		TOT NR AGG BW 350
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 0 0		TOT NR AGG BW 400
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 0 1		TOT NR AGG BW 450
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 1 0		TOT NR AGG BW 500
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 1 1		TOT NR AGG BW 550
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 0 0		TOT NR AGG BW 600
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 0 1		TOT NR AGG BW 650
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 1 0		TOT NR AGG BW 700
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 1 1		TOT NR AGG BW 750
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 0 0		TOT NR AGG BW 800
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 0 1		TOT NR AGG BW 850
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 1 0		TOT NR AGG BW 900
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 1 1		TOT NR AGG BW 950
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 0 0		TOT NR AGG BW 1000
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 0 1		TOT NR AGG BW 1050
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 1 0		TOT NR AGG BW 1100
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 1 1		TOT NR AGG BW 1150
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 0 0		TOT NR AGG BW 1200
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 0 1		TOT NR AGG BW 1250
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 1 0		TOT NR AGG BW 1300
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 1 1		TOT NR AGG BW 1350
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 0 0		TOT NR AGG BW 1400
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 0 1		TOT NR AGG BW 1450
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 1 0		TOT NR AGG BW 1500
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 1 1		TOT NR AGG BW 1550
TOTAL NR AGGREGATED BANDWIDTH	0 0 1 0 0 0 0 0		TOT NR AGG BW 1600

PCELL NR BANDWIDTH	0 0 0 0 0 0 0 1		PCELL NR BW 50
PCELL NR BANDWIDTH	0 0 0 0 0 0 1 0		PCELL NR BW 100
PCELL NR BANDWIDTH	0 0 0 0 0 1 0 0		PCELL NR BW 200
PCELL NR BANDWIDTH	0 0 0 0 1 0 0 0		PCELL NR BW 400

Condition	Explanation
TOT NR AGG BW 100	Total NR aggregated Bandwidth equal to 100 MHz
TOT NR AGG BW 150	Total NR aggregated Bandwidth equal to 150 MHz
TOT NR AGG BW 200	Total NR aggregated Bandwidth equal to 200 MHz
TOT NR AGG BW 250	Total NR aggregated Bandwidth equal to 250 MHz
TOT NR AGG BW 300	Total NR aggregated Bandwidth equal to 300 MHz
TOT NR AGG BW 350	Total NR aggregated Bandwidth equal to 350 MHz
TOT NR AGG BW 400	Total NR aggregated Bandwidth equal to 400 MHz
TOT NR AGG BW 450	Total NR aggregated Bandwidth equal to 450 MHz
TOT NR AGG BW 500	Total NR aggregated Bandwidth equal to 500 MHz
TOT NR AGG BW 550	Total NR aggregated Bandwidth equal to 550 MHz
TOT NR AGG BW 600	Total NR aggregated Bandwidth equal to 600 MHz
TOT NR AGG BW 650	Total NR aggregated Bandwidth equal to 650 MHz
TOT NR AGG BW 700	Total NR aggregated Bandwidth equal to 700 MHz
TOT NR AGG BW 750	Total NR aggregated Bandwidth equal to 750 MHz
TOT NR AGG BW 800	Total NR aggregated Bandwidth equal to 800 MHz
TOT NR AGG BW 850	Total NR aggregated Bandwidth equal to 850 MHz
TOT NR AGG BW 900	Total NR aggregated Bandwidth equal to 900 MHz
TOT NR AGG BW 950	Total NR aggregated Bandwidth equal to 950 MHz
TOT NR AGG BW 1000	Total NR aggregated Bandwidth equal to 1000 MHz
TOT NR AGG BW 1050	Total NR aggregated Bandwidth equal to 1050 MHz
TOT NR AGG BW 1100	Total NR aggregated Bandwidth equal to 1100 MHz
TOT NR AGG BW 1150	Total NR aggregated Bandwidth equal to 1150 MHz
TOT NR AGG BW 1200	Total NR aggregated Bandwidth equal to 1200 MHz
TOT NR AGG BW 1250	Total NR aggregated Bandwidth equal to 1250 MHz
TOT NR AGG BW 1300	Total NR aggregated Bandwidth equal to 1300 MHz
TOT NR AGG BW 1350	Total NR aggregated Bandwidth equal to 1350 MHz
TOT NR AGG BW 1400	Total NR aggregated Bandwidth equal to 1400 MHz
TOT NR AGG BW 1450	Total NR aggregated Bandwidth equal to 1450 MHz
TOT NR AGG BW 1500	Total NR aggregated Bandwidth equal to 1500 MHz
TOT NR AGG BW 1550	Total NR aggregated Bandwidth equal to 1550 MHz
TOT NR AGG BW 1600	Total NR aggregated Bandwidth equal to 1600 MHz
PCELL NR BW 50	PCC NR Bandwidth equal to 50 MHz
PCELL NR BW 100	PCC NR Bandwidth equal to 100 MHz
PCELL NR BW 200	PCC NR Bandwidth equal to 200 MHz
PCELL NR BW 400	PCC NR Bandwidth equal to 400 MHz

Table 4.9.32.3-2: ACTIVATE POWER LIMIT RESPONSE

Derivation Path: 38.509 clause 6.11.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 1		

4.9.33 Test procedure to deactivate UE Power Limit Function (UPLF)

Editor's note: The power limit request message values set by the UPLF test mode is currently applicable to equal PSD (equal channel bandwidths on all component carriers) only. Message values are pending for unequal channel bandwidths

4.9.33.1 Initiation

UE is operating in FR2 in RRC_CONNECTED state.

4.9.33.2 Procedure

Table 4.9.33.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to deactivate UE Power Limit Function	<--	*DEACTIVATE POWER LIMIT REQUEST*	-	-
2	UE confirms that UE Power Limit Function is deactivated	-->	*DEACTIVATE POWER LIMIT RESPONSE*	-	-

4.9.33.3 Specific Message contents

Table 4.9.33.3-1: DEACTIVATE POWER LIMIT REQUEST

Derivation Path: 38.509 clause 6.11.3			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 0		

Table 4.9.33.3-2: DEACTIVATE POWER LIMIT RESPONSE

Derivation Path: 38.509 clause 6.11.4			
Information Element	**Value/remark**	**Comment**	**Condition**
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 1		

4.9.34 Test procedure for MBS Multicast session join and session establishment

4.9.34.1 Scope

The purpose of this procedure is to establish a multicast MBS session.

4.9.34.2 Procedure description

4.9.34.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A.

4.9.34.2.2 Procedure sequence

Table 4.9.34.2.2-1: Procedure for MBS Multicast session join and session establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1a1 to 1b12a1 describe behaviour that depends on the UE capability the “lower case letter” identifies a step sequence that take place.	-	-	-	-
1a1	IF pc_Join_MBS_by_PDU_Modification THEN cause the UE to request establishment of associated PDU Session to the MBS DNN.(Note 1)	-	-	-	-
1a2-1a7	Steps 2-7 of expected sequence from Table 4.5.4.2-3 are performed.	-	-	-	-
-	EXCEPTION: Depending upon UE implementation, steps 1a8 and 1a9 can occur in any order	-	-	-	-
1a8	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-
1a9	The UE transmits an UL NAS TRANSPORT message and a PDU SESSION ESTABLISHMENT REQUEST without MBS session ID and join request.	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P
1a10	The SS transmits an *RRCReconfiguration* message and an PDU SESSION ESTABLISHMENT ACCEPT	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
1a11	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-
-	EXCEPTION: Step 1a12a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	
1a12a1	IF the 'IP address allocation' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1 THEN, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5A.3, takes place performing IP address allocation in the user plane.	-	-	-	-
1a13	Trigger UE to join MBS Multicast session.	-	-	-	-
1a14	The UE transmits an ULInformationTransfer message and a PDU SESSION MODIFICATION REQUEST message including MBS session ID and join request.	-->	NR RRC: ULInformationTransfer 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION REQUEST	-	P
1a15	The SS transmits an RRCReconfiguration message and a PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: RRCReconfiguration 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 1a16 and 1a17can occur in any order.	-	-	-	-
1a16	The UE transmits an RRCReconfigurationComplete message.	-->	NR RRC: RRCReconfigurationComplete	-	-
1a17	The UE transmits an ULInformationTransfer message and a PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: ULInformationTransfer 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
1b1	ELSE trigger UE to join MBS Multicast session.	-	-	-	-
1b2-1b7	Steps 2-7 of expected sequence from Table 4.5.4.2-3 are performed.	-	-	-	-
-	EXCEPTION: Depending upon UE implementation, steps 1b8 and 1b9 can occur in any order	-	-	-	-
1b8	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-

1b9	The UE transmits an UL NAS TRANSPORT message and a PDU SESSION ESTABLISHMENT REQUEST including MBS session ID and join request.	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P
1b10	The SS transmits an *RRCReconfiguration* message and a PDU SESSION ESTABLISHMENT ACCEPT	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
1b11	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*	-	-
-	EXCEPTION: Step 1b12a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1b12a1	IF the 'IP address allocation' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1 THEN, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5A.3, takes place performing IP address allocation in the user plane.	-	-	-	-
Note 1: This could be done by e.g. MMI or AT command.					

4.9.34.3 Specific message contents

Table 4.9.34.3-1: PDU SESSION ESTABLISHMENT REQUEST (step 1a9, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Requested MBS container	Not present		

Table 4.9.34.3-2: PDU SESSION MODIFICATION REQUEST (step 1a14, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-7.			
Information Element	**Value/remark**	**Comment**	**Condition**
Requested MBS container			
MBS session information			
MBS operation	'01'B	Join MBS session	
Type of MBS session ID	Not checked		
MBS session ID	Present but value not checked, the value is set according to the parameter given in the test case		

Table 4.9.34.3-3: PDU SESSION MODIFICATION COMMAND (step 1a15, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	**Value/remark**	**Comment**	**Condition**
Received MBS container			
Received MBS information			
Rejection cause	‘000’B	No additional information provided	
MSAI	‘00’B	MBS service area not included	
MD	‘010’B	MBS join is accepted	
MSCI	‘0’B	MBS security container not included	
MTI	‘00’B	No MBS timers included	
IPAE	‘0’B	Source and destination IP address information not included	
TMGI			
MBMS Service ID	‘000001’B		
MCC	See table 4.4.2-3		
MNC	See table 4.4.2-3		
Source IP address information	Not present		
Destination IP address information	Not present		
MBS service area	Not present		
MBS timers	Not present		
MBS security container	Not present		

Table 4.9.34.3-4: PDU SESSION ESTABLISHMENT REQUEST (step 1b9, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Requested MBS container			
MBS session information			
MBS operation	‘01’B	Join MBS session	
Type of MBS session ID	Not checked		
MBS session ID	Present but value not checked, the value is set according to the parameter given in the test case.		

Table 4.9.34.3-5: PDU SESSION ESTABLISHMENT ACCEPT (step 1b10, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	**Value/remark**	**Comment**	**Condition**
Received MBS container			
Received MBS information			
Rejection cause	‘000’B	No additional information provided	
MSAI	‘00’B	MBS service area not included	
MD	‘010’B	MBS join is accepted	
MSCI	‘0’B	MBS security container not included	
MTI	‘00’B	No MBS timers included	
IPAE	‘0’B	Source and destination IP address information not included	
TMGI			
MBMS Service ID	‘000001’B		
MCC	See table 4.4.2-3		
MNC	See table 4.4.2-3		
Source IP address information	Not present		
Destination IP address information	Not present		
MBS service area	Not present		
MBS timers	Not present		
MBS security container	Not present		

4.10 Reference configuration for V2X

4.10.1 Pre-configuration for V2X

– SL-PreconfigurationNR

Table 4.10.1-1: *SL-PreconfigurationNR*

Derivation Path: TS 38.331 [6], clause 9.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-PreconfigurationNR-r16 ::= SEQUENCE {			
sidelinkPreconfigNR-r16 SEQUENCE {			
sl-PreconfigFreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 {	1 entry		
SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon	entry 1	
}			
sl-PreconfigNR-AnchorCarrierFreqList-r16	Not present		
sl-PreconfigEUTRA-AnchorCarrierFreqList-r16	Not present		
sl-RadioBearerPreConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 {	1 entry		
SL-RadioBearerConfig-r16[1]	SL-RadioBearerConfig	entry 1	
}			
sl-RLC-BearerPreConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 {	1 entry		
SL-RLC-BearerConfig-r16[1]	SL-RLC-BearerConfig	entry 1	
}			
sl-MeasPreConfig-r16	Not present		
sl-OffsetDFN-r16	Not present		
t400-r16	ms1000		
sl-MaxNumConsecutiveDTX-r16	n32		
sl-SSB-PriorityNR-r16	1		
sl-PreconfigGeneral-r16 SEQUENCE {			
sl-TDD-Configuration-r16	Not present		
reservedBits-r16	00		
}			
sl-UE-SelectedPreConfig-r16 SEQUENCE {			
sl-PSSCH-TxConfigList-r16	SL-PSSCH-TxConfigList for Preconfiguration		
sl-ProbResourceKeep-r16	v0		
sl-ReselectAfter-r16	n9		
sl-CBR-CommonTxConfigList-r16	Not present		
ul-PrioritizationThres-r16	Not present		
sl-PrioritizationThres-r16	Not present		
}			
sl-CSI-Acquisition-r16	Not present		
sl-RoHC-Profiles-r16	Not present		
sl-MaxCID-r16	Not present	default value 15 is used	
}			
}			

Table 4.10.1-2: *SL-PSSCH-TxConfigList* for Preconfiguration (Table 4.10.1-1)

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	**Value/remark**	**Comment**	**Condition**
SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 {	1 entry		
sl-TypeTxSync-r16	Not present	Applicable for all synchronization reference types	
sl-ThresUE-Speed-r16	kmph60		
sl-ParametersAboveThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
sl-ParametersBelowThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
}			

4.11 GNSS Requirements for NR sidelink

4.11.1 General

This clause defines the GNSS scenarios and requirements which apply for all NR sidelink test cases that require simulated GNSS signals, unless otherwise specified.

The term SV ID used in this clause is defined as the satellite PRN for GPS and Modernized GPS, as Code Number for Galileo, as the satellite Slot Number for GLONASS and as the Ranging Code Number for BDS.

4.11.2 GNSS Scenarios

The following GNSS scenarios shall be used.

- Rinex navigation data: the required navigation data file(s) available in the GNSS orbital data sig zip file specified in TS 37.571-5 [49] Annex B are given in Table 4.11.2-1.

Table 4.11.2-1: Rinex navigation data files for NR sidelink testing

GNSS supported by UE	Rinex navigation file(s) (1)
GPS	Sig GNSS GPS 2020_9_17 Rinex.txt
GLONASS	Sig GNSS GLONASS 2020_9_17 Rinex.txt
Galileo	Sig GNSS Galileo 2020_9_17 Rinex.txt
BDS	Sig GNSS BDS 2020_9_17 Rinex.txt
Note 1: Where the UE supports more than one GNSS then all the relevant Rinex navigation data files are used	

- UE location(s) and motion:

  Latitude: the simulated latitude(s) are given in Table 4.11.2-3

  Longitude: the simulated longitude(s) are given in Table 4.11.2-3

Height: the simulated height is 30m

Motion: the simulated motion(s) are given in Table 4.11.2-2

Table 4.11.2-2: UE location(s) and motion(s) for NR sidelink testing

Scenario number and description	Step #	Action (Location details given in Table 4.11.2-3)	Notes
Scenario #1: static in Geographical area #1 Note 1	1	Static at location #1	
Scenario #2: move from inside Geographical area #1 to outside Geographical area #1 Note 1	1	Static at location #1	
	2	Trigger from test case to move in a straight line at 15m/s from current location to next location	Simulation leaves Geographical area #1 after 905 m, 60s after the trigger. An additional 1s is added to allow for UE position accuracy of +/- 15m. An additional 10s is added to allow for UE position update. Total time 71s
	3	Static at location #2	
Note 1: Geographical area #1 is defined in clause 4.7.5.5-9 and is defined by three points with the following coordinates: Point 1: latitude: 35.753056, longitude: 139.689167 Point 2: latitude: 35.735278, longitude: 139.689167 Point 3: latitude: 35.744167, longitude: 139.709167			

Table 4.11.2-3: Location descriptions for NR sidelink testing

Location number	Description for information only	Latitude (degrees)	Longitude (degrees)
#1	Approximate centre of Geographical area #1	35.74428	139.69916
#2	Approximately 1720m due west of location #1, outside Geographical area #1	35.74428	139.68017

Table 4.11.2-4: Zone id calculations for NR sidelink testing

Description	Latitude (degrees)	Longitude (degrees)	Long distance from 0,0 in m (x) Note 1	Lat distance from 0,0 in m (y) Note 1	Values for zone_id calculation (Note 2, Note 3)
Centre of zone	35.74478	139.70333	11061850	3957225	Zone_id = 2613 x_1= 53, y_1= 40
Note 1: all distances are +/- 1m Note 2: *sl-ZoneLength* is set to 50m in accordance with Table 4.6.6-36, this allows for the accuracy with which a UE can define its position which is assumed to be +/- 15m. Note 3: zone id is calculated according to TS 38.331 [6] clause 5.8.11.					

- Nominal start time:
  17th September 2020 23:40:00 (GPS time) (UTC time: 17th September 2020 23:39:42).

- Visible satellites to be simulated are given in Table 4.11.2-5 and are above 15 degrees elevation with respect to the UE. These satellites have been selected to give a reasonable HDOP for the duration of the test.

Table 4.11.2-5: Satellites to be simulated for NR sidelink testing

GNSS supported by UE	SV IDs of Satellites to be simulated (1)
GPS	3, 4, 6, 17, 19, 28
GLONASS	3, 4, 5, 10, 18, 19
Galileo	3, 5, 13, 15, 21, 27
BDS	38, 40, 42, 43, 59, 60 (2)
Note 1: Where the UE supports more than one GNSS then all the relevant satellites are simulated. Note 2: For BDS, the satellite types are as follows: GEO: 59, 60, IGSO: 38, 40, MEO: 42, 43.	

- The levels of the simulated satellites are given in Table 4.11.2-6 and shall be generated with an accuracy of +/- 3dB. These conditions are defined for when there is no GNSS assistance data available at the UE and are specified in TS 38.133 [13] clause B.4.

Table 4.11.2-6: GNSS Reference Signal Power Requirements

System	Parameters	Unit	Value
	Number of generated satellites per system	-	6
GPS(1)	Reference signal power level for all satellites	dBm	-128.5
Galileo	Reference signal power level for all satellites	dBm	-127
GLONASS	Reference signal power level for all satellites	dBm	-131
BDS	Reference signal power level for all satellites	dBm	-133
NOTE 1: "GPS" here means GPS L1 C/A, Modernized GPS, or both, dependent on UE capabilities. NOTE 2: The DUT UE does not need to support all systems. The DUT UE shall support at least one system and will be tested for the supported system(s).			

- Ionospheric model: simulated values are given in Tables 4.11.2-7 and 4.11.2-8.

Table 4.11.2-7: Klobuchar ionospheric model for GPS or GLONASS or BDS if supported by the UE

Model element	Units	Value/remark
alfa0	seconds	4.6566129 10E-9
alfa1	sec/semi-circle	1.4901161 10E-8
alfa2	sec/(semi-circle)^2	-5.96046 10E-8
alfa3	sec/(semi-circle)^3	-5.96046 10E-8
beta0	seconds	79872
beta1	sec/semi-circle	65536
beta2	sec/(semi-circle)^2	-65536
beta3	sec/(semi-circle)^3	-393216

Table 4.11.2-8: neQuick ionospheric model for Galileo if supported by the UE

Model Element	Units	Value/remark
ai0	solar flux unit	64.4
ai1	solar flux unit/degree	0
ai2	solar flux unit/degree^2	0

- Tropospheric model: STANAG with SRI equal to 324.8, as defined in STANAG 4294 [50].