**3GPP TSG-RAN WG3 Meeting #112-e *R3-212733***

**17 – 28 May 2021**

|  |
| --- |
| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.413** | **CR** |   **0547** | **rev** | **2** | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **x** | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Supporting use of UE Radio Capability for Paging in RRC\_INACTIVE |
|  |  |
| ***Source to WG:*** | Qualcomm Incorporated, ZTE, Ericsson, Nokia, Nokia Shanghai Bell, Deutsche Telekom, LG Electronics, Huawei |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_newRAT-Core, TEI16 |  | ***Date:*** | 2020-05-01 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)Rel-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | The *UE Radio Capability for Paging* IE can be used in Xn RAN PAGING message (and it is essential in some cases e.g. eMTC) but is not always available in the anchor node. It is often possible to reconstruct this IE from the UE capabilities, but this is rather inefficient. In addition, such reconstruction is not always fully possible (as not all information is in the UE capabilities), and for future proofing it is preferable not to rely on such reconstruction. |
|  |  |
| ***Summary of change:*** | The *UE Radio Capability for Paging* IE is added to the *Core Network Assistance Information for RRC INACTIVE* IE, so it can always be made available to the anchor node when RAN paging is triggered.Impact analysis: This CR has isolated impact towards the previous version of the specification (same release). The impact can be considered isolated because it only provides an optional capability in RRC INACTIVE signalling. |
|  |  |
| ***Consequences if not approved:*** | IE needs to be reconstructed at every instance of RAN paging, and potential incorrect operation if such reconstruction is not fully possible (if required information is not available in the capabilities container). |
|  |  |
| ***Clauses affected:*** | 9.3.1.15, 9.4.5 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Rev2: Added co-signer |

#### 9.3.1.15 Core Network Assistance Information for RRC INACTIVE

This IE provides assistance information for e.g. RRC\_INACTIVE configuration.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| UE Identity Index Value | M |  | 9.3.3.23 |  | - |  |
| UE Specific DRX | O |  | Paging DRX9.3.1.90 |  | - |  |
| Periodic Registration Update Timer | M |  | 9.3.3.24 |  | - |  |
| MICO Mode Indication | O |  | 9.3.1.23 |  | - |  |
| **TAI List for RRC Inactive** |  | *1* |  |  | - |  |
| **>TAI List for RRC Inactive Item** |  | *1..<maxnoofTAIforInactive>* |  |  | - |  |
| >>TAI | M |  | 9.3.3.11 |  | - |  |
| Expected UE Behaviour | O |  | 9.3.1.93 |  | - |  |
| Paging eDRX Information | O |  | 9.3.1.154 |  | YES | ignore |
| Extended UE Identity Index Value | O |  | 9.3.3.52 |  | YES | reject |
| UE Radio Capability for Paging | O |  | 9.3.1.68 |  | YES | ignore |

**>>>> NEXT CHANGE <<<<**

### 9.4.5 Information Element Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- Information Element Definitions

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

NGAP-IEs {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

 id-AdditionalDLForwardingUPTNLInformation,

 id-AdditionalULForwardingUPTNLInformation,

 id-AdditionalDLQosFlowPerTNLInformation,

 id-AdditionalDLUPTNLInformationForHOList,

 id-AdditionalNGU-UP-TNLInformation,

 id-AdditionalRedundantDL-NGU-UP-TNLInformation,

 id-AdditionalRedundantDLQosFlowPerTNLInformation,

 id-AdditionalRedundantNGU-UP-TNLInformation,

 id-AdditionalRedundantUL-NGU-UP-TNLInformation,

 id-AdditionalUL-NGU-UP-TNLInformation,

 id-AlternativeQoSParaSetList,

 id-BurstArrivalTimeDownlink,

 id-Cause,

 id-CNPacketDelayBudgetDL,

 id-CNPacketDelayBudgetUL,

 id-CNTypeRestrictionsForEquivalent,

 id-CNTypeRestrictionsForServing,

 id-CommonNetworkInstance,

 id-ConfiguredTACIndication,

 id-CurrentQoSParaSetIndex,

 id-DAPSRequestInfo,

 id-DAPSResponseInfoList,

 id-DataForwardingNotPossible,

 id-DataForwardingResponseERABList,

 id-DirectForwardingPathAvailability,

 id-DL-NGU-UP-TNLInformation,

 id-EndpointIPAddressAndPort,

 id-ExtendedPacketDelayBudget,

 id-ExtendedRATRestrictionInformation,

 id-ExtendedSliceSupportList,

 id-ExtendedTAISliceSupportList,

 id-ExtendedUEIdentityIndexValue,

 id-GlobalCable-ID,

 id-GlobalRANNodeID,

 id-GlobalTNGF-ID,

 id-GlobalTWIF-ID,

 id-GlobalW-AGF-ID,

 id-GUAMIType,

 id-LastEUTRAN-PLMNIdentity,

 id-LocationReportingAdditionalInfo,

 id-MaximumIntegrityProtectedDataRate-DL,

 id-MDTConfiguration,

 id-NetworkInstance,

 id-NID,

 id-NPN-MobilityInformation,

 id-NPN-PagingAssistanceInformation,

 id-NPN-Support,

 id-OldAssociatedQosFlowList-ULendmarkerexpected,

 id-PagingAssisDataforCEcapabUE,

 id-PagingeDRXInformation,

 id-PDUSessionAggregateMaximumBitRate,

 id-PDUSessionResourceFailedToSetupListCxtFail,

 id-PDUSessionResourceReleaseResponseTransfer,

 id-PDUSessionType,

 id-PSCellInformation,

 id-QosFlowAddOrModifyRequestList,

 id-QosFlowFeedbackList,

 id-QosFlowParametersList,

 id-QosFlowSetupRequestList,

 id-QosFlowToReleaseList,

 id-QosMonitoringRequest,

 id-QosMonitoringReportingFrequency,

 id-RAT-Information,

 id-RedundantCommonNetworkInstance,

 id-RedundantDL-NGU-TNLInformationReused,

 id-RedundantDL-NGU-UP-TNLInformation,

 id-RedundantDLQosFlowPerTNLInformation,

 id-RedundantPDUSessionInformation,

 id-RedundantQosFlowIndicator,

 id-RedundantUL-NGU-UP-TNLInformation,

 id-SCTP-TLAs,

 id-SecondaryRATUsageInformation,

 id-SecurityIndication,

 id-SecurityResult,

 id-SgNB-UE-X2AP-ID,

 id-S-NSSAI,

 id-SONInformationReport,

 id-TNLAssociationTransportLayerAddressNGRAN,

 id-TargetRNC-ID,

 id-TraceCollectionEntityURI,

 id-TSCTrafficCharacteristics,

 id-UEHistoryInformationFromTheUE,

 id-UERadioCapabilityForPagingOfNB-IoT,

 id-UL-NGU-UP-TNLInformation,

 id-UL-NGU-UP-TNLModifyList,

 id-ULForwarding,

 id-ULForwardingUP-TNLInformation,

 id-UsedRSNInformation,

 id-UserLocationInformationTNGF,

 id-UserLocationInformationTWIF,

 id-UserLocationInformationW-AGF,

 id-UERadioCapabilityForPaging,

 maxnoofAllowedAreas,

 maxnoofAllowedCAGsperPLMN,

 maxnoofAllowedS-NSSAIs,

 maxnoofBluetoothName,

 maxnoofBPLMNs,

 maxnoofCAGSperCell,

 maxnoofCandidateCells,

 maxnoofCellIDforMDT,

 maxnoofCellIDforWarning,

\*\*\* skip unchanged text in same section \*\*\*

######

CoreNetworkAssistanceInformationForInactive ::= SEQUENCE {

 uEIdentityIndexValue UEIdentityIndexValue,

 uESpecificDRX PagingDRX OPTIONAL,

 periodicRegistrationUpdateTimer PeriodicRegistrationUpdateTimer,

 mICOModeIndication MICOModeIndication OPTIONAL,

 tAIListForInactive TAIListForInactive,

 expectedUEBehaviour ExpectedUEBehaviour OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {CoreNetworkAssistanceInformationForInactive-ExtIEs} } OPTIONAL,

 ...

}

CoreNetworkAssistanceInformationForInactive-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 { ID id-PagingeDRXInformation CRITICALITY ignore EXTENSION PagingeDRXInformation PRESENCE optional }|

 { ID id-ExtendedUEIdentityIndexValue CRITICALITY reject EXTENSION ExtendedUEIdentityIndexValue PRESENCE optional }|

 { ID id-UERadioCapabilityForPaging CRITICALITY ignore EXTENSION UERadioCapabilityForPaging PRESENCE optional},

 ...

}

COUNTValueForPDCP-SN12 ::= SEQUENCE {

 pDCP-SN12 INTEGER (0..4095),

 hFN-PDCP-SN12 INTEGER (0..1048575),

 iE-Extensions ProtocolExtensionContainer { {COUNTValueForPDCP-SN12-ExtIEs} } OPTIONAL,

 ...

}

COUNTValueForPDCP-SN12-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

**>>>> END OF CHANGES <<<<**