

# Status Report RAN WG6 to TSG-RAN #80

RAN6 Chair:

Juergen Hofmann (NOKIA)

RAN6 Secretary:

Paolino Usai (ETSI MCC)

A GLOBAL INITIATIVE

# Meetings

 Meetings held since RAN#79 plenary

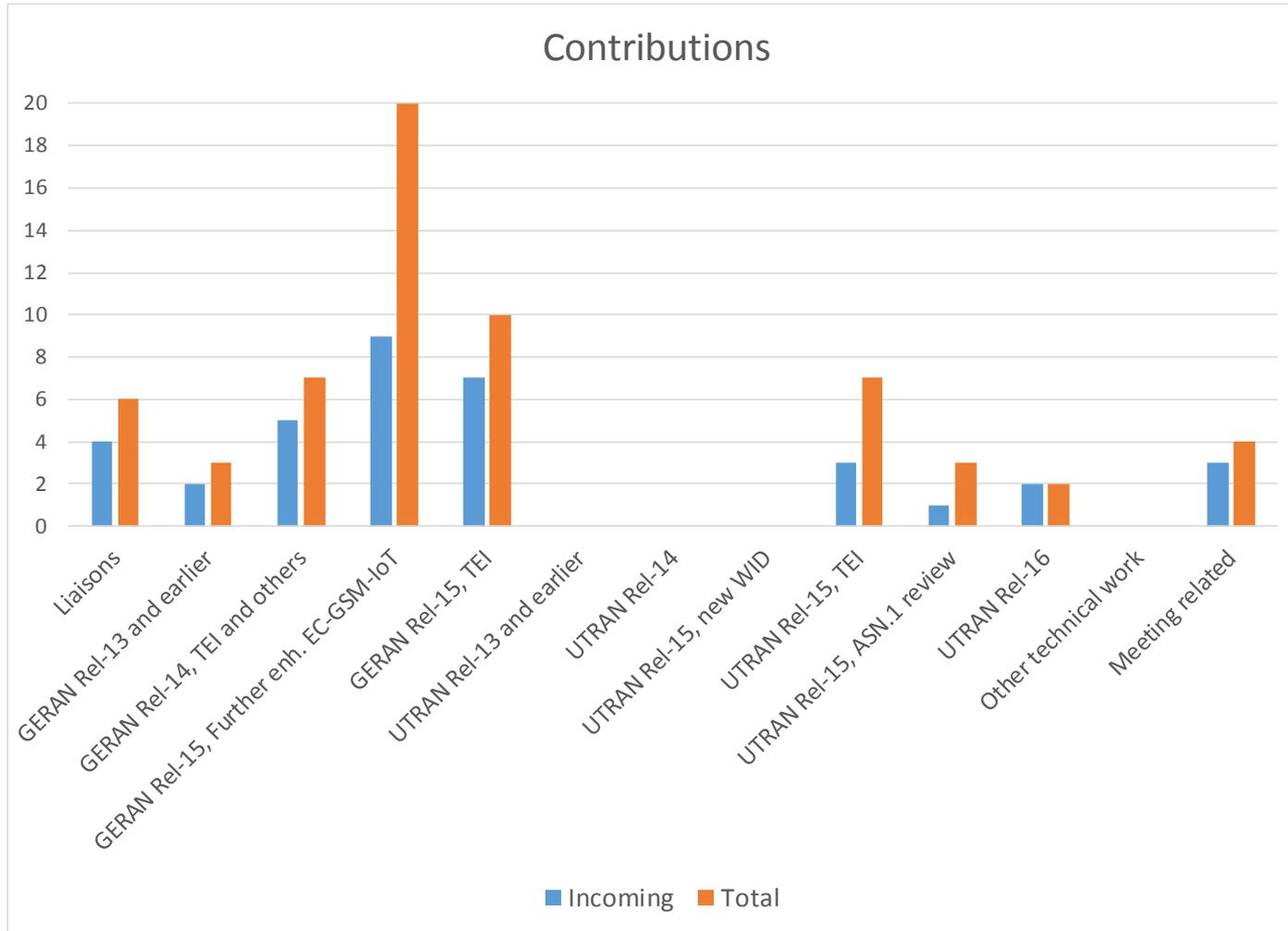
RAN6 #8	21 – 25 May, 2018	Busan, Korea	Samsung
RAN #80	11 – 14 June, 2018	La Jolla, USA	NAF3

# RAN6 #8 Meeting Schedule

 The meeting schedule for RAN6 #8 was agreed.

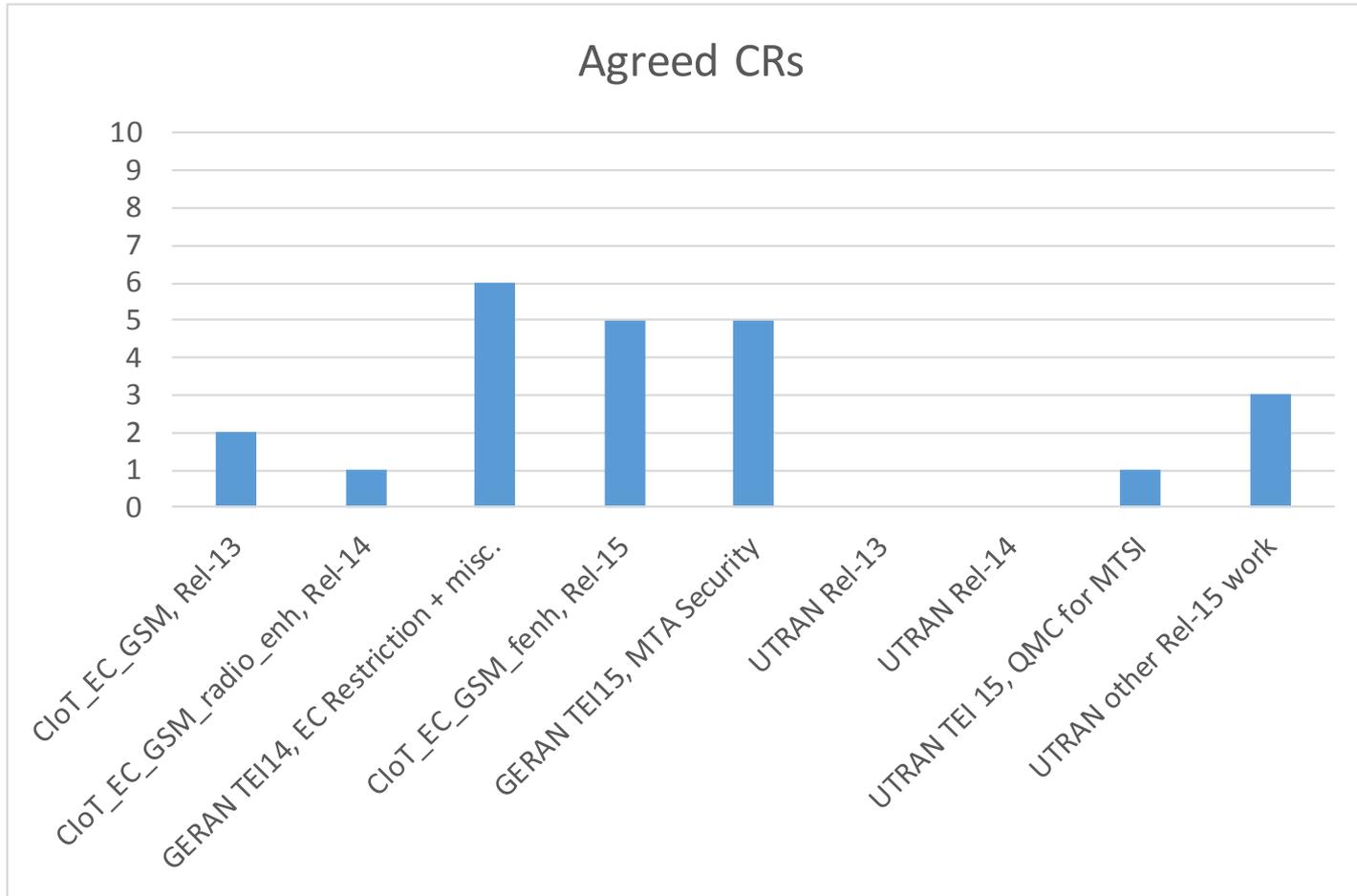
	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 AM		GERAN Rel-15 [5.3.1]			Come backs (GERAN / UTRAN)
10:30 AM					Other Technical work [8]
	Break		Break	Break	Break
11:00 AM					LS out [9] Work plan [10]
		GERAN Rel-14 [5.2.3]			Future Meetings, AOB, Closure [11-13]
12:30 PM		GERAN Rel-13 [5.1]			
	Lunch	Lunch, restart: 1.30 PM	Lunch	Lunch	Lunch
2:00 PM	Opening, Agenda/Report approval, Meeting matters [1-3]	UTRAN Rel-16 [7]			
	Liaisons [4]				
3:00 PM		UTRAN Rel-15 [6.3.3]	GERAN Rel-13 [5.1]		
4:00 PM	UTRAN Rel-15 [6.3.3]	UTRAN Rel-15 [6.3.4]	GERAN Rel-14 [5.2.3]		
		Come backs (UTRAN)	GERAN Rel-14 [5.2.4]	Break	Break
4:30 PM			GERAN Rel-15 [5.3.1]		
			GERAN Rel-14 [5.3.3]		
6:30 PM			Come backs (GERAN)		

# RAN6 #8 Statistics (1/3)



Incoming: 36  
Total: 62  
(+1 withdrawn)

# RAN6 #8 Statistics (2/3)



Total agreed CRs: 23  
endorsed CRs: 1

# RAN6 #8 Statistics (3/3)



- 📶 Total number of participants attending: 9 (registered for the meeting: 19)
- 📶 Note, one delegate attended but did not register, another contributed remotely.

# Executive Summary (1/2)

- 📶 In total 23 CRs agreed: to GERAN specs (19), to UTRAN specs (4). 1 CR endorsed for GERAN.
  - 📶 Liaisons: 4 incoming LS (UTRAN/GERAN related), 1 fun LS and 1 outgoing LS (GERAN related).
  - 📶 GERAN, Rel-13: 2 CRs agreed for CloT\_EC\_GSM.
  - 📶 GERAN, Rel-14: 1 CR agreed on Radio Interface Enhancements for EC-GSM-IoT and 1 CR on miscellaneous corrections for EC-GSM and enhanced positioning. 5 CRs agreed on TEI 14 matter EC Restriction and the related work was completed.
  - 📶 GERAN, Rel-15: Work item 'Further enhancements for EC-GSM-IoT' focussing on energy savings in idle mode:
    - Working assumptions for paging indication channel and system info acquisition enhancements agreed for EC-GSM-IoT devices; Stage-2 functional description agreed.
    - Major part of Stage-3 normative work was completed for Core WI Part for both enhancements.
    - Remaining work: bit sequences and channel coding used for paging indication channel and related performance requirements need to be specified.
    - Completion level: 80%. Completion foreseen at RAN #81 by means of an extension cycle.
- Related to TEI-15: Work on enhanced security for Multilateration Timing Advance positioning for networks without LLC security completed with 5 agreed CRs and 1 endorsed CR. LS sent to CT1.

# Executive Summary (2/2)

- 📶 UTRAN, Rel-13 / Rel-14: No contributions.
- 📶 UTRAN, Rel-15: Work on QMC reporting for new service type (MTSI) completed with 1 agreed CR.
- 📶 UTRAN, Rel-15: 3 CRs agreed on ASN.1 changes resulting from the ASN.1 review and addition of Rel-15 Access Stratum indicator in RRC messages.
- 📶 UTRAN, Rel-16: For SRVCC from NG-RAN to UTRAN, the return after CS voice call release was discussed based on incoming LS from SA2. Further study of options (i.e. network / UE based solutions) is foreseen until RAN6#9 where a reply to SA2 is planned.
- 📶 Transfer of rapporteur responsibilities for UTRAN 25.xxx and GERAN 4x.xxx and 5x.xxx specs: no further progress, will be taken care of by the leadership until RAN6#9.
- 📶 List of agreed CRs for block approval at RAN#78 is found in [RP-180614](#).

# General Matters/RAN6 #7 Report Approval



- 📶 Report of 3GPP TSG RAN WG6 meeting #7, [R6-180088](#) was approved.
- 📶 The Secretary informed the delegates about the updated WI Exception template available in the templates folder on the FTP server.

## Liaisons (1/2)

- 📶 Five incoming LSs were received.
- 📶 **R6-180059** Reply LS on NR interworking with GSM and UMTS (source: RAN4)
  - RAN4 confirms to TSG RAN that GSM/UMTS interworking with NR is enabled in EN-DC and will be supported in Rel-15. LS was noted.
- 📶 **R6-180060** Return from UTRAN to NG-RAN for SRVCC from 5GS to UTRAN (source: SA2)
  - In its ongoing feasibility study on SRVCC from NR to 3G, SA2 investigates options for the return from 3G to NR after CS voice call release.
  - RAN6 has started discussion on possible options (network based / UE based solutions) at RAN6#8 and has agreed to allow for studying this further until RAN6#9.
  - LS was postponed to RAN6#9 where RAN6 plans to send a reply to SA2.
- 📶 **R6-180061** Reply LS on adding new service type in QMC reporting (source: SA4)
  - The LS contains a reply from SA4 to RAN2, where SA4 backs its view to place the service type outside the containers, visible to RAN. This solution was already agreed between SA4 and RAN2. The LS was noted.

## Liaisons (2/2)

- 📶 **R6-180089** LS on Removal of LTE specific terminology from Group Communication System Enablers TS 22.468 (source: SA1)
  - SA1 have decided to replace the term 'LTE' by '3GPP' in regard to Mission Critical services to allow that these services can be supported in 5G and future generations. SA1 asks groups to update their specs to the latest version of TS 22.468. RAN6 will finalize this work at RAN6#9. LS was postponed to RAN6#9 where RAN6 considers to send a reply.
- 📶 **R6-180100** Reply LS on significant alienation of layer independent group dynamics (source: RAN3)
  - RAN3 celebrated their 100th meeting and invited other delegates to join the party. The LS was noted without presentation.
- 📶 One outgoing LS was sent.
- 📶 **R6-180115** LS on Introduction of capability support for Security for MTA in network configuration without LLC security (To: CT1, Cc: -)
  - The LS informs about the completed work on enhanced security for the Multilateration Timing Advance (MTA) positioning procedure in network configurations without LLC security for Rel-15 and asks CT1 to update TS 24.008 for Rel-15 as per the attached endorsed CR.

## CRs to features in Rel-13 or earlier (GERAN)

# EC-GSM-IoT (Rel-13) (1/1)

## CloT\_EC\_GSM, Performance aspects

- Cleaning done for MS and BTS performance requirements.
- **CR 45.005-0614 Correction to Annex S for 2 TS EC-RACH** agreed in [R6-180084](#). Testing procedure for MS phase and amplitude coherency is added for 2TS EC-RACH case.
- **CR 51.021-0295 rev 1 Removal of TU 1.2 SFH testing for EC-GSM-IoT** agreed in [R6-180101](#). Radio channel (TU, hopping, 1.2 km/h) removed for BTS conformance testing in alignment to previous features.

## CRs for Approval

-  The agreed CRs are collected in [RP-180823](#) for block approval at RAN #80.

## Rel-14 features (GERAN)

# Radio Interface Enhancements for EC-GSM-IoT (Rel-14) (1/1)

## CloT\_EC\_GSM\_radio\_enh, Performance aspects

- Cleaning done for MS performance requirements.
- **CR 45.005-0615 Corrections to normalized coherency error for EDAB and to Annex S** agreed in [R6-180085](#). Normalized coherency error for EDAB corrected and testing procedure for MS phase and amplitude coherency is added for 2TS EC- RACH and EDAB cases.

## CR for Approval

-  The agreed CR is submitted in [RP-180824](#) for block approval at RAN#80.

## Any other Rel-14 documents (1/2)

### Restricted Use of Enhanced Coverage (EC Restriction)

- At RAN6#8 work for EC Restriction was continued and finalized for Rel-14.
- Modification agreed to Stage-2 to signal the removal of the EC Restriction status only in the paging request towards the MS and not in connected mode. In addition, the BSS gets an indication of the EC Restriction status of the device from the SGSN in the DL UNITDATA PDU to use this info for coverage class adaptation in connected mode. Corresponding stage 3 changes were also agreed and MS behavior clarified in case no CE\_AUTH\_OFFSET parameter is broadcasted.
- **CR 43.064-0118 Changes to Restricted Use of Enhanced Coverage** agreed in [R6-180081](#).
- **CR 44.018-1081 rev 2 Introduction of Restricted Use of Enhanced Coverage** agreed in [R6-180082](#), Rel-15 mirror in [R6-180096](#).
- **CR 45.008-0661 Correction to restricted use of Enhanced Coverage** agreed in [R6-180112](#).

## Any other Rel-14 documents (2/2)

### Restricted Use of Enhanced Coverage (EC Restriction, cont'd)

- CR 48.018-0443 rev 2 Introduction of Restricted Use of Enhanced Coverage agreed in [R6-180083](#).

### Miscellaneous corrections (TEI14)

- CR 51.021-0296 Miscellaneous corrections for EC-GSM-IoT and Extended AB agreed in [R6-180087](#). Radio channel (hopping, 1.2 km/h) removed for BTS conformance testing and Extended AB performance finalized.

### CR for Approval

-  The agreed CRs are collected in [RP-180825](#) for block approval at RAN #80.

## Other Rel-14 items (GERAN)

- 📶 No contributions to work item ePOS\_GERAN.
- 📶 No contributions to work item DECOR\_GERAN.

# Rel-15 features (GERAN)

# Further enhancements for EC-GSM-IoT (Rel-15) (1/4)

Work item approved at RAN#79 in [RP-180541](#).

**Concept design for 2 WI enhancements: paging indication channel and energy efficient system information acquisition presented and agreed at RAN6 #8:**

 **Paging Indication Channel, Concept Design** , [R6-180093](#), agreed

- Design aspects of the new logical channel (EC-PICH) for conveying a paging indication including the burst format, location of the logical channel within 51-multiframes and the mapping to the EC-CCCH blocks are described.
- All working assumptions on support of EC-PICH channel for CC3 and CC4 coverage classes, number of information bits per each EC-PICH block for CC3 and CC4 and mapping of EC-PICH block to paging block which form the basis of the specification changes were agreed. MS capability support is foreseen for this enhancement.

 **Performance Evaluation for EC-PICH Channel** , [R6-180094](#), noted

- Link level performance of the paging indication channel is evaluated.
- The working assumption defining the target error performance for EC-PICH channel was agreed as basis for defining performance requirements in TS 45.005.

# Further enhancements for EC-GSM-IoT (Rel-15) (2/4)



## **Deferred System Information Acquisition, Concept Design** , [R6-180068](#) , agreed

- Deferred system information acquisition for MS reselecting to a new cell belonging to a group of cells, having common system information parameters related to idle mode mobility configuration, is proposed. The cell group identifier and change mark for the common cell group information are sent in the EC-SCH information message, so that EC-GAM-IoT capable MS may decide on whether there is a need to read further system information in the new cell after cell reselection to this cell. This is expected to contribute to lower energy consumption in idle mode.
- All working assumptions related to information carried in the EC-SCH channel to include the common cell group related information and EC System Information message changes in order to define the common cell group parameters were agreed. MS capability indication is not foreseen for this enhancement.

# Further enhancements for EC-GSM-IoT (Rel-15) (3/4)

## Normative Work

### Stage-2

- CR 43.064-0117 rev 2 Energy efficiency enhancements for EC-GSM-IoT MS in idle mode (Rel-15) agreed in [R6-180102](#).

### Stage-3

- CR 44.018-1082 rev 1 Energy efficiency enhancements for EC-GSM-IoT MS in idle mode agreed in [R6-180104](#).
- CR 45.002-0214 rev 3 Energy efficiency enhancements for EC-GSM-IoT MS in idle mode agreed in [R6-180114](#).
- CR 45.008-0660 rev 1 Energy efficiency enhancements for EC-GSM-IoT MS in idle mode agreed in [R6-180106](#).
- CR 48.018-0445 rev 1 Energy efficiency enhancements for EC-GSM-IoT MS in idle mode agreed in [R6-180107](#).

## CRs for Approval

-  The agreed CRs are collected in [RP-180821](#) for block approval at RAN #80.

# Further enhancements for EC-GSM-IoT (Rel-15) (4/4)



## Work Plan

- 📶 **Work plan for WI Further enhancements for EC-GSM-IoT** agreed in [R6-180075](#)
  - Telco scheduled for 21st June, 13.00 CEST (host: Nokia) to progress the remaining matters prior to RAN6#9.

## WI Status Report to RAN #80

- 📶 **Status Report for WI Further enhancements for EC-GSM-IoT** in [RP-181003](#)

## WI Exception Request to RAN #80

- 📶 **Rel-15 Work Item Exception for Further enhancements for Extended Coverage GSM for support of Cellular Internet of Things (CloT\_EC\_GSM\_fenh)** in [RP-180826](#)
  - agreed by RAN6 in [R6-180108](#)

# TEI15 (GERAN) (1/2)

## Enhanced security for MTA in network configurations without LLC security

- At RAN6#8 this TEI15 work was continued and finalized for Rel-15.
- 5 CRs to Stage-2 (editorial correction) and Stage-3 descriptions (implementing additional IE's for supporting this feature in the network and on the radio interface) agreed and 1 CR endorsed related to MS capability support.
- **CR 43.059-0089 Editorial corrections to Security Enhancement for MTA in network configuration without LLC security** agreed in [R6-180076](#).
- **CR 44.031-0234 Security Enhancement for MTA in network configuration without LLC security** agreed in [R6-180077](#).
- **CR 44.060-1648 rev 2 Security Enhancement for MTA in network configuration without LLC security** agreed in [R6-180111](#).

## TEI15 (GERAN) (2/2)

### Enhanced security for MTA in network configurations without LLC security (cont'd)

- CR 48.018-0444 rev 1 Security Enhancement for MTA in network configuration without LLC security agreed in [R6-180079](#).
- CR 49.031-0072 rev 1 Security Enhancement for MTA RLC Data Block method agreed in [R6-180110](#).
- Draft CR 24.008 Introduction of capability support for Security for MTA in network configuration without LLC security endorsed in [R6-180113](#).  
Combined indication for support of MTA Access Security method and BSS Duplication Detection method is added to MSRAC.

### CR for Approval

-  The agreed CRs are collected in [RP-180822](#) for block approval at RAN #80.

## Other Rel-15 items (GERAN)

- 📶 No contributions to “Study items for Rel-15”.
- 📶 No contributions to “Any other Rel-15 documents”.

## CRs to features in Rel-13 or earlier (UTRAN)

No contributions.

## Rel-14 features (UTRAN)

No contributions.

## Rel-15 features (UTRAN)

# Simplified HS-SCCH for UMTS (1/1)



 No contributions.

# TEI15 (UTRAN) (1/1)

## QoE Measurement Collection for MTSI services

- At RAN6#9 the TEI15 work related to support of QoE measurement collection for MTSI services was completed.
- **CR 25.331-5954 Introduction of QoE Measurement Collection for MTSI services**, postponed at RAN6#7 was revised and agreed in [R6-180097](#).
- The new MTSI service type is included in the Measurement capability as part of the UE Radio Access Capability as well as in Application Layer Measurement Configuration / Reporting messages and is visible to RAN.

## Addition of Rel-15 parameter for Access Stratum release indicator

- **CR 25.306-0524 rev 2 Addition of REL-15 parameter value for Access Stratum release indicator** , agreed in [R6-180099](#).
- **CR 25.331-5956 rev 1 Addition of REL-15 parameter value for Access Stratum release indicator** , agreed in [R6-180091](#).

## CRs for Approval

-  The agreed CRs are collected in [RP-180820](#) for block approval at RAN #80.

# RRC message and ASN.1 review

## Report of RRC ASN.1 Issues, [R6-180056](#)

- ASN.1 review was completed according to plan agreed at RAN6#7.
- Rapporteur informed no severe errors were detected. Proposed corrections to ASN.1 to restructure information elements according to order of releases in order to improve the readability are proposed in this contribution.
- The document was revised in [R6-180098](#). Proposal 1, to agree on the depicted changes, was agreed.
- Corresponding **CR 25.331-5958 ASN.1 corrections based upon Rel-15 ASN.1 review work** was agreed in [R6-180109](#).

## CRs for Approval

-  The agreed CR is submitted in [RP-180820](#) for block approval at RAN #80.

## Other Rel-15 items (UTRAN)

- 📶 No contributions to “New Work or Study item proposals”
- 📶 No contributions to “Any other Rel-15 documents”

# Common GERAN / UTRAN matters and matters related to Release 16 (1/3)



## Discussion on incoming LS on Return from UTRAN to NG-RAN for SRVCC from 5GS to UTRAN from SA2 , [R6-180060](#)

- SA2 had asked RAN6 on guidance in their ongoing Feasibility Study **FS\_5G-SRVCC** for possible options, after performing SRVCC from NG-RAN to UTRAN and terminating the CS voice call via the RRC Connection Release procedure, in order to allow for a fast return to NG-RAN or E-UTRA.

## SRVCC from 5GS to UTRAN CS – Return to NG-RAN, [R6-180062](#), noted

- Contains discussion on options for return from NG-RAN to UTRAN
- Proposal 1: *RAN6 acknowledges SA2's working assumption that PS handover from UTRAN to NG-RAN is not supported and that return back to NG-RAN occurs in idle mode, following the release of the RRC Connection. [Proposal 1 was agreed.](#)*
- Proposal 2: *UTRAN specifications shall be kept unchanged; no redirection mechanism is specified to return to NG-RAN/NR from UTRAN upon RRC Connection Release. Redirection to NG-RAN/E-UTRA is supported by means of existing redirection to E-UTRAN/E-UTRA, with no distinction specified between NG-RAN and E-UTRAN target info. [Proposal 2 was not agreed.](#)*

# Common GERAN / UTRAN matters and matters related to Release 16 (2/3)

## Discussion at RAN6#8 on return from UTRAN to NG-RAN

- Regarding different options for the return to NG-RAN (e.g. provide target RAT, target cell, target frequency list for NR, leave to UE implementation, blind redirection etc.), different views were expressed.
- In general both UE based (without signalling) and network based solutions (with signalling) should be investigated until RAN6#9, where a conclusion will be drawn and possibly a recommendation made to SA2.
- To better compare candidate solutions at RAN6#9, evaluation aspects in the scope of this investigation (not exhaustive) were discussed:
  - redirection delay between RRC Connection Release and ready for sending UL data in NR,
  - robustness for different CS call durations,
  - measurement effort for UE in terms of power consumption,
  - estimated specification impact on 3G side and
  - estimated specification impact on NR side (should be least).

# Common GERAN / UTRAN matters and matters related to Release 16 (3/3)



## Reply LS on Return from UTRAN to NG-RAN for SRVCC from 5GS to UTRAN, [R6-180063](#), noted

- Proposal to reply to not foresee specification changes for UTRAN for returning to NG-RAN at RRC Connection Release.
- No consensus reached to send the LS to SA2 (see previous pages).
- A reply is planned to be sent at RAN6#9 (Aug'18).

# Other technical work (1/1)

## Transfer of rapporteur responsibilities for UMTS 25.xxx specifications and GERAN 4x.xxx and 5x.xxx specifications

- 📶 No progress reached at RAN6#8, still under work.
- 📶 Proceeding according to agreement at RAN6#6 to distinguish between TSs with frequent changes and TSs with infrequent changes and TRs and to assign priorities accordingly for updating rapporteur responsibilities.
- 📶 Chairman will progress this until RAN6#9.

# Work Plan

 Presented in [R6-180116](#) and approved.

 Active work / study items:

Work / Study Item	Objective	Rel (Core Feature)	Completion
CloT_EC_GSM_fenh (WI)	Further enhancements for EC-GSM-IoT (Stage 2 + Stage 3)	Rel-15	80%

# RAN WG6 Schedule (2016 – 2018)

Meeting	Date	Location	Host
RAN6#1	22 – 26 August 2016	Gothenburg, Sweden	EF3
RAN#73	19 – 22 September 2016	New Orleans, US	NAF3
RAN6#2	14 – 18 November 2016	Reno, US	NAF3
RAN#74	5 – 8 December 2016	Vienna, Austria	EF3
RAN6#3	13 – 17 February 2017	Athens, Greece	EF3
RAN#75	6 – 9 March 2017	Dubrovnik, Croatia	EF3
RAN6#4	15 – 19 May 2017	Hangzhou, China	Huawei
RAN#76	5 – 8 June 2017	West Palm Beach, US	NAF3
RAN6#5	21 – 25 August 2017	Berlin, Germany	EF3
RAN#77	11 – 14 September 2017	Sapporo, Japan	ARIB, TTC
RAN6#6	27 November – 1 December 2017	Reno, US	NAF3
RAN#78	18 – 21 December 2017	Lisbon, Portugal	EF3
RAN6#7	26 February – 2 March 2018	Athens, Greece	EF3
RAN#79	19 - 22 March 2018	Chennai, India	IF3, COAI
RAN6#8	21 - 25 May 2018	Busan, Korea	Samsung
RAN#80	11 - 14 Jun 2018	La Jolla, US	NAF3
RAN6#9	20 - 24 Aug 2018	Gothenburg, Sweden	EF3
RAN#81	10 - 13 Sep 2018	Gold Coast, Australia	Telstra
RAN6#10	12 - 16 Nov 2018	Spokane, US	NAF3
RAN#82	10 - 13 Dec 2018	Sorrento, Italy	EF3

# Concluding Remarks

- 📶 A special thanks to Paolo Usai (ETSI MCC) for his efficient secretary support.
- 📶 Thanks to all delegates for their hard work.
- 📶 Thanks to the host Samsung for the convenient meeting organization (in the Wedding Hall).