

3GPP TSG SA #61  
Porto, Portugal,  
Sep. 9 – 11, 2013



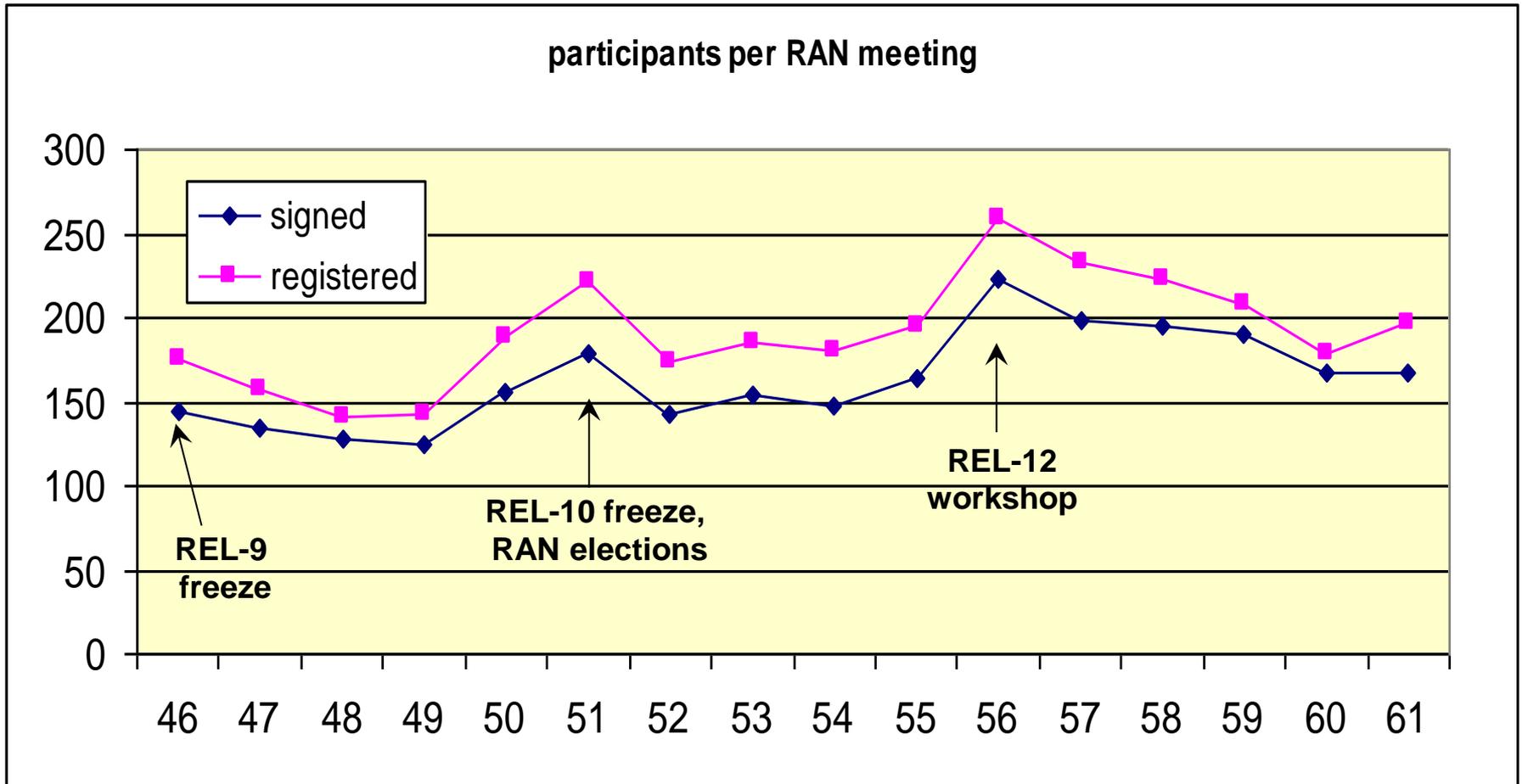
# RAN#61 Status Report

Dino Flore  
TSG-RAN Chairman

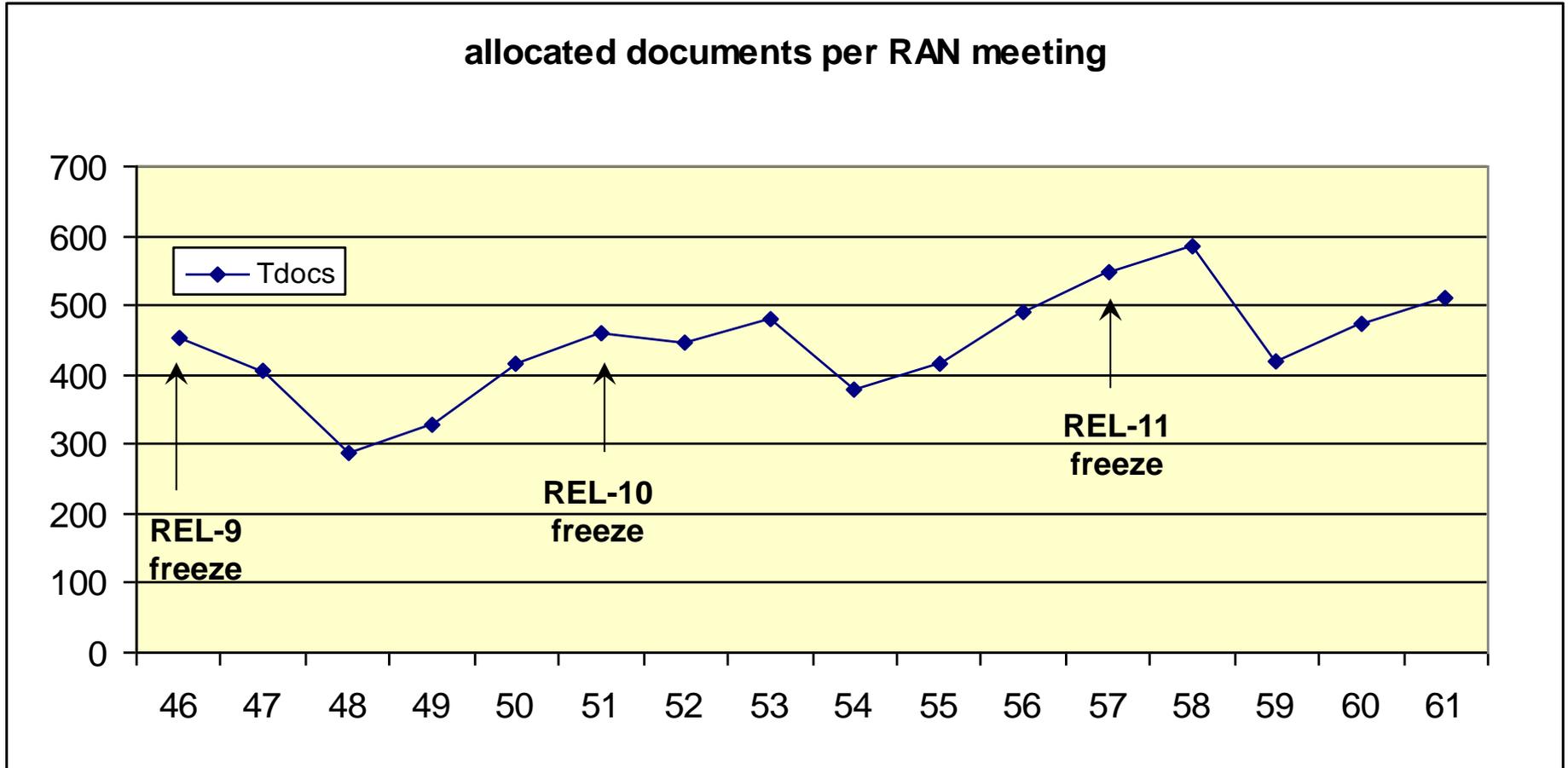
# Outline

-  Stats
-  WG Status Reports
-  UE capabilities
-  Notable discussions on existing WI/SIs
-  New WI/SIs
-  ITU-R related activities
-  Others

# RAN attendance



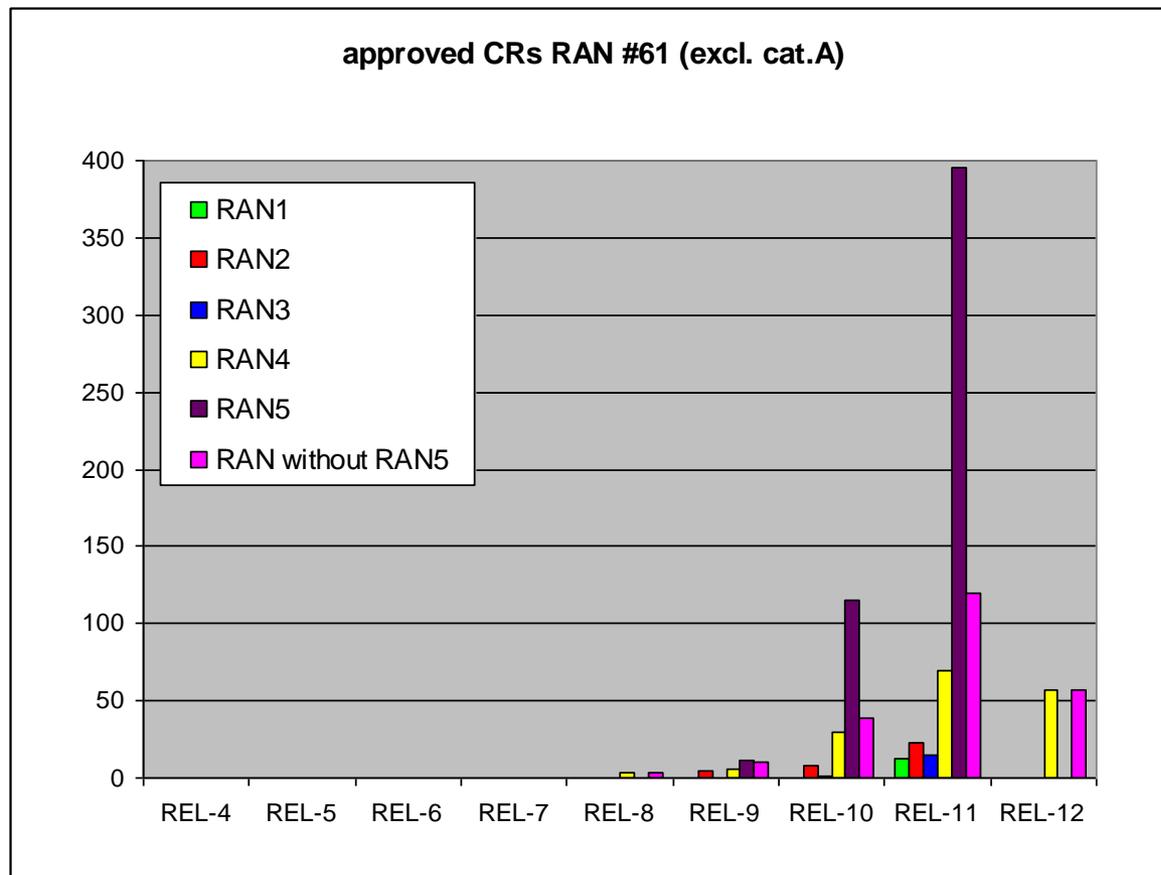
# RAN contributions stats



# Approved CR @ RAN #61 Stats (excluding cat.A CRs)

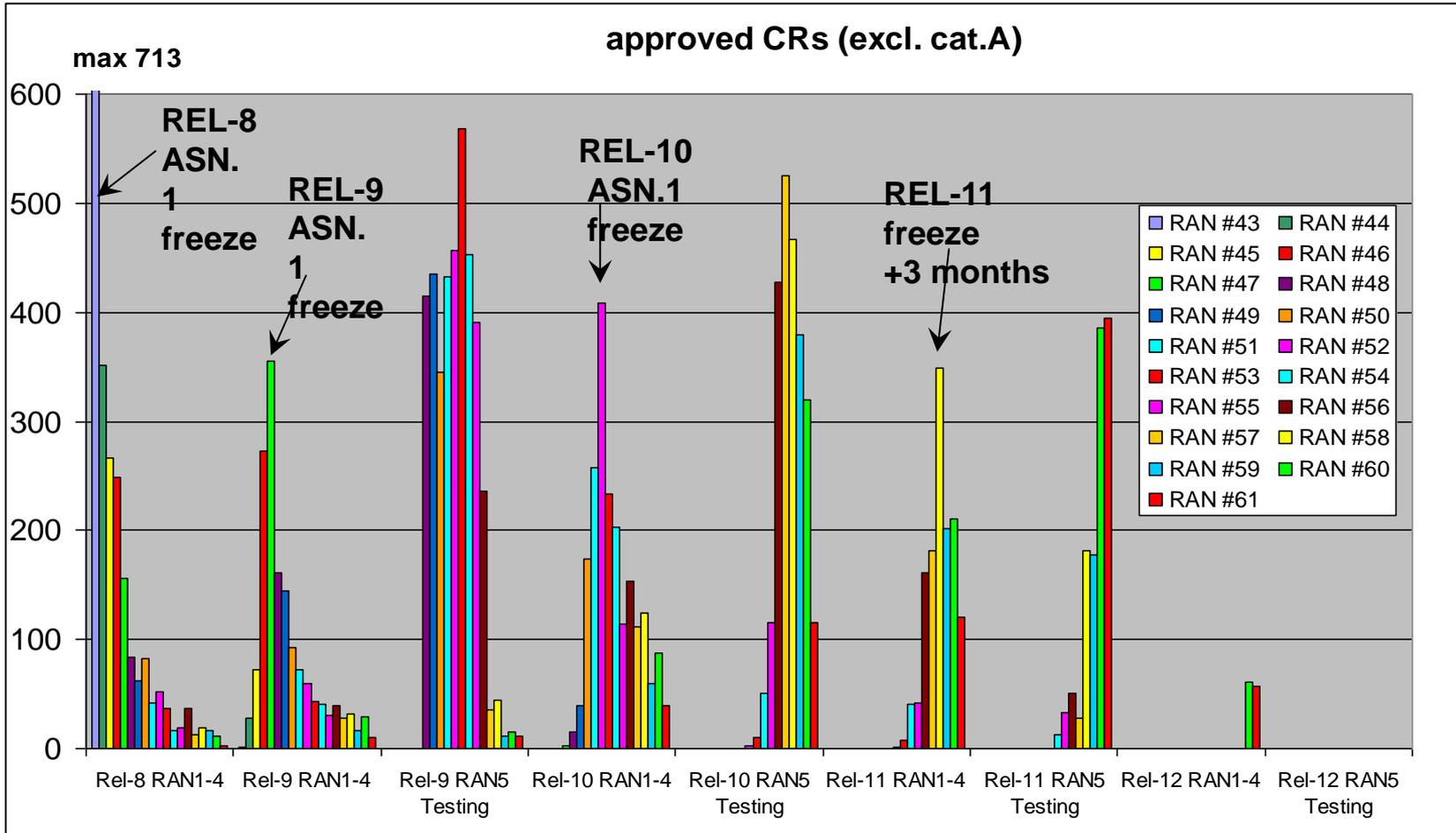
- 📶 Rel-8:
  - 3 RAN4 CRs only
  
- 📶 Rel-9:
  - 10 CRs on core functionalities (4 RAN2, 6 RAN4)
  - 11 RAN5 testing CRs to 34.229-3
  
- 📶 Rel-10:
  - 39 CRs on core functionalities (8 RAN2, 1 RAN3, 30 RAN4 CRs)
  - 115 RAN5 testing CRs (86 34.xxx, 10 36.xxx, 19 37.571-x CRs)
  
- 📶 Rel-11:
  - 120 CRs on core functionalities (13 RAN1, 23 RAN2, 15 RAN3, 69 RAN4 CRs)
  - 395 RAN5 testing CRs (37 34.xxx, 356 36.xxx, 2 37.xxx CRs)
  
- 📶 Rel-12:
  - 57 RAN4 CRs (mainly on spectrum related WIs)

# Approved CRs @ RAN #61 by WG & REL

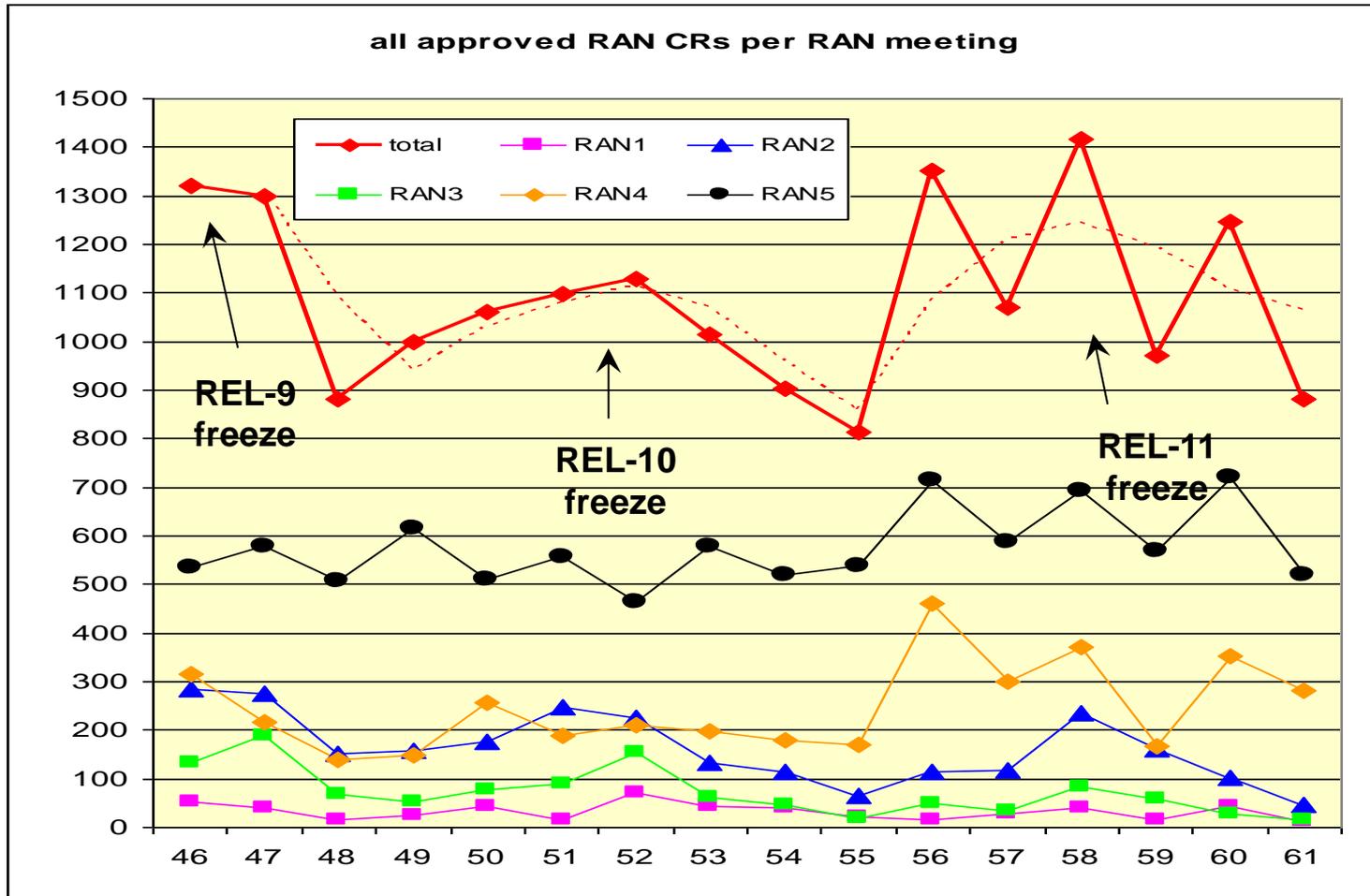


- 📶 RAN1/RAN2/RAN3 busy with REL-12 and no CRs yet for REL-12
- 📶 RAN4: still a lot of pre-REL-12 CRs => 80 cat.A REL-12 CRs due to early REL-12 specs!
- 📶 RAN5: peak in REL-11 CRs

# History of approved CRs by Release



# History of approved RAN CRs by WG



# WG Status Reports

 RAN1: [RP-130927](#)

 RAN2: [RP-130929](#)

 RAN3: [RP-130931](#)

 RAN4: [RP-130933](#)

 RAN5: [RP-130935](#)

 MCC TF160: [RP-130937](#)

# UE capabilities

# Rel-9 Feature Group Indicators

## FGI #9 (SRVCC to GSM) and #23 (GERAN measurements)

- After further discussion, RAN finally decided to postpone the RAN2 CRs mandating the two features, with the intention to approve them in RAN#62
- RAN5 was tasked to prepare the corresponding testing CRs for the two feature for RAN#62

## In general, RAN decided that when dealing with FGI bits it will approve the corresponding RAN2 CRs **6 months after** IOT availability has been declared in RAN

- The current approach to approve the CRs **within 6 months** was generating lengthy, and unnecessary, discussions

# Rel-11 UE capabilities

- Operator survey in [RP-131263](#) was used as an input to decide which Rel-11 feature will be made mandatory
- RAN decisions is summarized in the table below
  - Mandatory features will have a corresponding FGI bit to be turned to TRUE when IOT availability has been established

#	FDD	Proposal	#	TDD	Proposal
1 <sup>st</sup>	CRS interference handling	<b>Mandatory</b>	1 <sup>st</sup>	CRS interference handling	<b>Mandatory</b>
2 <sup>nd</sup>	Multiple-TA	<b>Mandatory</b>	2 <sup>nd</sup>	SS and common channel interference handling	<b>FFS</b>
3 <sup>rd</sup>	EPDCCH	<b>Optional</b>		DL CoMP with 1 CSI process	<b>Optional</b>
4 <sup>th</sup>	SS and common channel interference handling	<b>Optional</b>	4 <sup>th</sup>	Multiple-TA	<b>Optional</b>
5 <sup>th</sup>	DL CoMP with 1 CSI process	<b>Optional</b>	5 <sup>th</sup>	EPDCCH	<b>Optional</b>
6 <sup>th</sup>	Wideband RSRQ measurements	<b>Optional</b>	6 <sup>th</sup>	Wideband RSRQ measurements	<b>Optional</b>

## New UE categories

-  Proposal to standardize new UE categories was presented in [RP-131162](#), including:
  - New UE categories to take into account the additional peak rates achievable with Carrier Aggregation (e.g. thanks to the 3 DL CA work started in RAN#60) or with techniques being studied in Rel-12 (e.g. 256 QAM)
  - Decoupling of UL / DL categories to take into account that requirements for DL and UL are not necessarily evolving at the same time and may differ depending on the specific applications
  
-  As companies needed more time to check internally, the proposal was postponed to RAN#62

# Notable discussions on existing items

## New Carrier Type WI

 The Way Forward on the NCT WI was discussed

- For additional information, see input documents in [RP-131172](#), [RP-131192](#), [RP-131154](#) and [RP-131199](#)

 After some discussion RAN decided to:

- Stop NCT work (close current WI)
- Continue discussion in RAN on usecases and requirements for a New Carrier Type in LTE (beyond Rel-12)
- Ask Ericsson to provide a document at RAN#62 summarizing the NCT work done so far

## LTE Small Cells – PHY enhancements SI

-  The SI was extended of one quarter, now targeting completion at RAN#62, as some companies questioned the level of completion of the study
  
-  It was also decided to focus the study on the completion of the following (high priority) areas
  - Higher order modulation, i.e., 256QAM, in the downlink transmission
  - Support of semi-static small cell on/off mechanisms for interference avoidance and coordination among small cells adapting to varying traffic
  - Further assess the radio interface based inter-cell synchronization
  
-  Note approved SR in [RP-131373](#)

# LTE Small Cells – upper layer enhancements SI

- 📶 Study was extended of one quarter, now targeting completion at RAN#62, to complete the evaluation of U-plane architecture solutions for the dual connectivity feature
- 📶 Priorities and time allocations for the work in RAN2 and RAN3 in the next quarter were agreed in [RP-131374](#)

# LTE TDD-FDD joint operation WI

-  RAN1 will continue work on the TR to document scenarios and solutions for joint FDD-TDD operations
  
-  In parallel, RAN1 will start normative work for the support of LTE TDD-FDD CA in Rel-12, given the following high level requirements:
  - Either FDD or TDD carrier can be configured as Primary Cell (Pcell)
  - UEs supporting FDD and TDD carrier aggregation operation shall be able to access both legacy FDD and legacy TDD single mode carriers
  - Legacy FDD UEs and UEs supporting FDD and TDD CA operation may camp on and connect the FDD carrier, which is part of the jointly operated FDD/TDD network
  - Legacy TDD UEs and UEs supporting FDD and TDD CA operation may camp on and connect the TDD carrier, which is part of the jointly operated FDD/TDD network
  
-  Approved revised WID in [RP-131399](#)

# 3GPP/WiFi Radio Interworking SI

- The SI on 3GPP/WiFi Radio Interworking was extended of one quarter, now targeting completion at RAN#62, to allow further convergence
  - Three solutions have been identified, as summarized in [RP-131236](#)
  
- RAN agreed the following guidance for RAN2:
  - Deployments scenarios with and without ANDSF shall be addressed by WLAN/3GPP Radio Interworking SI
  - RAN recommends that RAN2 communicate with SA2/CT1 once solutions details that may have CN impact have been worked out sufficiently.
    - By RAN2#83bis meeting RAN2 should identify potential issues with end-to-end solutions to be clarified with SA2/CT1
  - The solution for WLAN/3GPP Radio Interworking should be testable
  - RAN2 should complete the work in the Study Item for each of the 3 solutions

## MTC signaling enhancements SI

-  RAN completed the SI on MTC signaling enhancements to achieve signaling and power reduction
  - See approved SR in [RP-131081](#) and TR in [RP-131150](#)
  
-  A WI proposal in [RP-131356](#) was noted, covering
  - UE Power Consumption Optimizations
  - Signalling Overhead Reduction
  
-  Some companies felt that more progress from SA2 on corresponding items would be beneficial, before RAN can proceed with a WI

## Inter-TSG coord: ProSe, GCSE, UPCON

- 📶 In [RP-130924](#), RAN was requested to provide input for SA#61 regarding which of the listed features (of ProSe, GCSE and UPCON) RAN would target to complete in Rel-12
- 📶 After discussion on existing items as well the approval of new items, RAN endorsed the response document in [RP-131335](#) (more on the following slides)
- 📶 See also summary of RAN decisions on system level features in [SP-130470](#)

## Public Safety priorities for Rel-12

-  RAN endorsed the Public Safety related usecase priorities for Rel-12 in [RP-131377](#)
-  RAN WGs were asked to take these priorities into consideration in their study and design work on LTE Device to Device Proximity Services
  - See LS in [RP-131405](#)

# UMTS items

- 📶 UMTS Heterogeneous Networks SI
  - Approved SR in [RP-131347](#), TR in [RP-131186](#)
  - SI was extended till RAN#62 to close few open study area
    - Combined Cells, NAIC and E-DCH decoupling
  - Follow-up WI was approved in [RP-131348](#) with focus on mobility improvements:
    - Small cell discovery, high speed UEs, dense small cells, range expansion & multiframe
  
- 📶 DCH enhancements SI
  - SI was completed; Approved SR in [RP-131073](#), TR in [RP-131344](#)
  - Follow-up WI was approved in [RP-131357](#), with focus on
    - DCH enhancements toward UL&DL Frame Early Terminations
  
- 📶 Scalable UMTS SI
  - SI was extended of one quarter to complete the remaining open issues
  - SR revision was approved in [RP-131346](#)

# MIMO OTA WI

 Way forward in [RP-131400](#) was agreed providing guidance to RAN4 for the work in the next quarter

 See also revised SR approved in [RP-131401](#)

# New Rel-12 items

# New items - core features (I)

- Many competing new LTE items were proposed
- After lengthy discussions, and the use of an informative «show of hands», the following new items were approved (see Annex for more information):

WID	Title	Target	Rapporteur
<a href="#">RP-130848</a>	Low cost & enhanced coverage MTC UE for LTE WI *	RAN#63	Vodafone
<a href="#">RP-131382</a>	Group Communication for LTE SI	RAN#63	ALU
<a href="#">RP-131397</a>	Smart Congestion Mitigation in E-UTRAN SI	RAN#63	LG
<a href="#">RP-131369</a>	Further MBMS Operations Support for E-UTRAN WI*	RAN#64	Verizon

\* RAN1 tasks/budget already approved in RAN#60; RAN2 and RAN4 tasks/budgets now approved as well

\*\* Approved only RAN1 tasks/allocations

- Given the difficult discussions we had in RAN#61 and the variety of requirements coming from the industry, RAN#62 will also discuss the possibility to increase WG processing power to help address more items that are relevant to the industry

## New items - core features (II)

### Summary of the new HSPA items approved

WID	Title	Target	Rapporteur
<a href="#">RP-131348</a>	UMTS Heterogeneous Networks WI	RAN#64	Huawei
<a href="#">RP-131357</a>	DCH Enhancements for UMTS WI	RAN#64	Qualcomm
<a href="#">RP-131386</a>	Enhanced Broadcast of System Information SI	RAN#62	Ericsson

# New items- spectrum related

## Inter-band 2-DL CA

WID	Title	Target	Rapporteur
<a href="#">RP-131354</a>	Inter-band CA of Band 1 and Band 11 WI	RAN#64	SoftBank
<a href="#">RP-131355</a>	Inter-band CA of Band 8 and Band 11 WI	RAN#64	SoftBank
<a href="#">RP-131365</a>	Inter-band CA of Band 5 and Band 7 WI	RAN#63	LG UPlus
<a href="#">RP-131343</a>	Inter-band CA of Band 5 and Band 25 WI	RAN#62	US Cellular
<a href="#">RP-131307</a>	Inter-band CA of Band 7 and Band 28 WI	RAN#63	Huawei

## Intra-band contiguous 3DL CA

WID	Title	Target	Rapporteur
<a href="#">RP-131244</a>	Intra-band contiguous in Band 41 WI for 3DL	RAN#64	Alcatel Lucent

## Intra-band non-contiguous 2DL CA

WID	Title	Target	Rapporteur
<a href="#">RP-131366</a>	Intra-band non-contiguous CA in Band 2	RAN#64	Verizon

# New items- conformance tests

## New conformance tests items approved

WID	Title	Target	Rapporteur
<a href="#">RP-131341</a>	System Improvements for Machine-Type Communications	RAN#63	Ericsson
<a href="#">RP-131210</a>	Further Configurations for LTE CA of Intra-band and Inter-band	RAN#65	Nokia

# ITU-R related activities

# ITU-R related activities (I)

- Status Report from ITU-R Ad-hoc: [RP-130445](#)
  
- Notable LS activities / actions required by other TSGs
  - LS from WP5D on STUDY ON IMT VISION FOR 2020 AND BEYOND (RP-130352)
    - Received at RAN#59 – decided to start an e-mail discussion to prepare an answer
    - Understanding that 3GPP is working on mid-term technology RAN answered in TSG#61 that “3GPP is not going to contribute”
    - See LTI to SA in [RP-131395](#)
  
  - LS from WP5D on STUDY ON FUTURE TECHNOLOGY TRENDS FOR TERRESTRIAL IMT SYSTEMS (RP-130353)
    - Received at RAN#59
    - Provide to ITU-R a description of approved Rel-12 RAN features.
    - See LTI to SA in [RP-131393](#)
  
  - LS ON THE TECHNOLOGIES FOR PUBLIC PROTECTION AND DISASTER RELIEF COMMUNICATIONS ASSOCIATED WITH WORK ON WRC-15 AGENDA ITEM 1.3
    - Feedback from SA1 included in RAN answer to ITU-R WP5A
    - See LTI to SA in [RP-131394](#)

## ITU-R related activities (II)

-  Notable LS activities / actions required by other TSGs (cont'd)
  - LS Letter to ITU on Update submission for IMT-2000 CDMA DS and IMT-2000 CDMA TDD toward Rev. 12 of Rec. ITU-R M.1457
    - Description of 3GPP activities defined in Release 11 to be submitted to ITU-R for inclusion in Revision 12 of the Recommendation
    - See LTI to SA in [RP-131363](#);
    - Submission to PCG and ITU-R by ATI
  - Letter to ITU-R WP5D on the completion of the submission of LTE-Advanced toward Revision 1 of Rec. ITU-R M.2012
    - Input from 3GPP included in ITU-R Recommendation. To conclude the process actions are required by 3GPP OPs (under ATIS coordination). Reminder to the OPs:
      - the version of 3GPP Specifications to be transposed for the Release 11 Tables by OPs is the one related to 3GPP Rel 11, March 2013 version.
      - the hyperlinks for newly added Release 10 Tables shall also be provided to ITU-R related to 3GPP Rel 10, March 2013 version.”
    - No action required to SA
  - Note: deadline for submission to ITU-R WP5D is October 3°. PCG approval required by September 27, 2013

# Others

# Others

- 📶 LS to WBA on Carrier Wi-Fi
  - Response LS from RAN on Carrier WiFi in [RP-131367](#)
  - To be complete by SA and sent to WBA
  
- 📶 Workplan:
  - Endorsed timeplan for ongoing RAN1-4 activities on core features is available in [RP-131408](#)
  
- 📶 Leadership Change
  - RAN1
    - Satoshi Nagata from DoCoMo was elected to the role of RAN1 Chairman (replacing Matthew Baker from Alcatel Lucent)
    - Wanshi Chen from Qualcomm was elected to the role of RAN1 Vice Chairman (replacing Charlie Zhang from Samsung)
  - RAN2
    - Diana Pani from Interdigital was elected to the role of RAN2 Vice Chairman (replacing Simone Proveddi from Huawei)
  - RAN5
    - Nick Baustert from Sprint was elected to the role of RAN5 Chairman (replacing Phil Brown from DoCoMo)

# Summary

- 📶 Lengthy discussions on the approval of new items
  - RAN#62 to also discuss possible ways to increase WG capacity in order to address the different industry needs
  
- 📶 Finalized the discussion on UE R11 capabilities
  
- 📶 Rel-12 progress
  - Two normative items started for UMTS (HetNet and DCH enhancements)
  - Started normative work on LTE FDD/TDD CA, while multiple studies were extended or closed
  - The bulk of LTE normative items to be approved in RAN#62 and RAN#63
  
- 📶 RAN to continue the discussion on usecases and requirements for a New Carrier Type in LTE (beyond Rel-12)
  
- 📶 Actions to SA
  - LTI on ITU-R
  - LS from RAN on Carrier WiFi (to be complete by SA and sent to WBA)
  - Take into account RAN#61 decisions on system level features in SP-130470

# Annex

## Outcome of the 'show of hands' for new proposals competing for WG resources

WID	Title	# of supp.
<a href="#">RP-131382</a>	Group Communication for LTE SI	17
<a href="#">RP-130848</a>	Low cost & enhanced coverage MTC UE for LTE WI	16
<a href="#">RP-131397</a>	Smart Congestion Mitigation in E-UTRAN SI	11
<a href="#">RP-131369</a>	Further MBMS Operations Support for E-UTRAN WI*	10
<a href="#">RP-131375</a>	Mobile Relays SI **	4
<a href="#">RP-130833</a>	LTE coverage enhancements WI ***	3
<a href="#">RP-131353</a>	RAN Aspects of UPCON WI	3
<a href="#">RP-131254</a>	Enhancement 2 of MDT for E-UTRAN WI	2

 Approved

\* Approved only RAN1 tasks/time budget allocations

\*\* Previously approved SI ; remains on hold (no time budget allocated to the remaining RAN1 task)

\*\*\* Previously approved SI; will continue only RAN1 task (no time budget allocated to the RAN2 task)