SP-140491
TSG GERAN#63 STATUS REPORT

TSG GERAN Chair
Olof Liberg
Ericsson

TSG GERAN ORGANISATION

TSG GERAN officials

- Chairman:
  - Mr. Olof Liberg
    (Ericsson / ETSI)
- Vice chairs:
  - Mr. Davide Sorbara
    (Telecom Italia S.p.A / ETSI)
  - Mr Xinhui Wang
    (ZTE Corporation / CCSA)
  - Mr Zhixi Wang
    (Huawei Technologies Co Ltd / ATIS)
- MCC support: Paolo Usai

TSG GERAN WGs officials

- TSG GERAN WG1
  - Chairman: Mr. Olof Liberg
    (Ericsson / ETSI)
  - MCC support: Paolo Usai
- TSG GERAN WG2
  - Chairlady: Ms Yang Zhao
    (Huawei Technologies Co., Ltd / CCSA)
  - MCC support: Gert Thomasen
- TSG GERAN WG3new
  - Chairman: Mr Rémi Lascoux
    (Sierra Wireless, S.A. / ETSI)
  - MCC support: Ingbert Sigovich

GERAN#63 OVERVIEW

- 292 submitted documents
  - 6 incoming & 5 outgoing liaisons
  - 38 Change Requests approved
    - 7 from WG1
    - 13 from WG2
    - 18 from WG3new
  - Most input submitted under agenda item *Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things* (FS_IoT_LC).
- 14 work items ongoing
  - 8 Features/Building blocks/Work tasks
    - 1 Work task completed, Exception sheets approved for 2 Features.
  - 6 study items
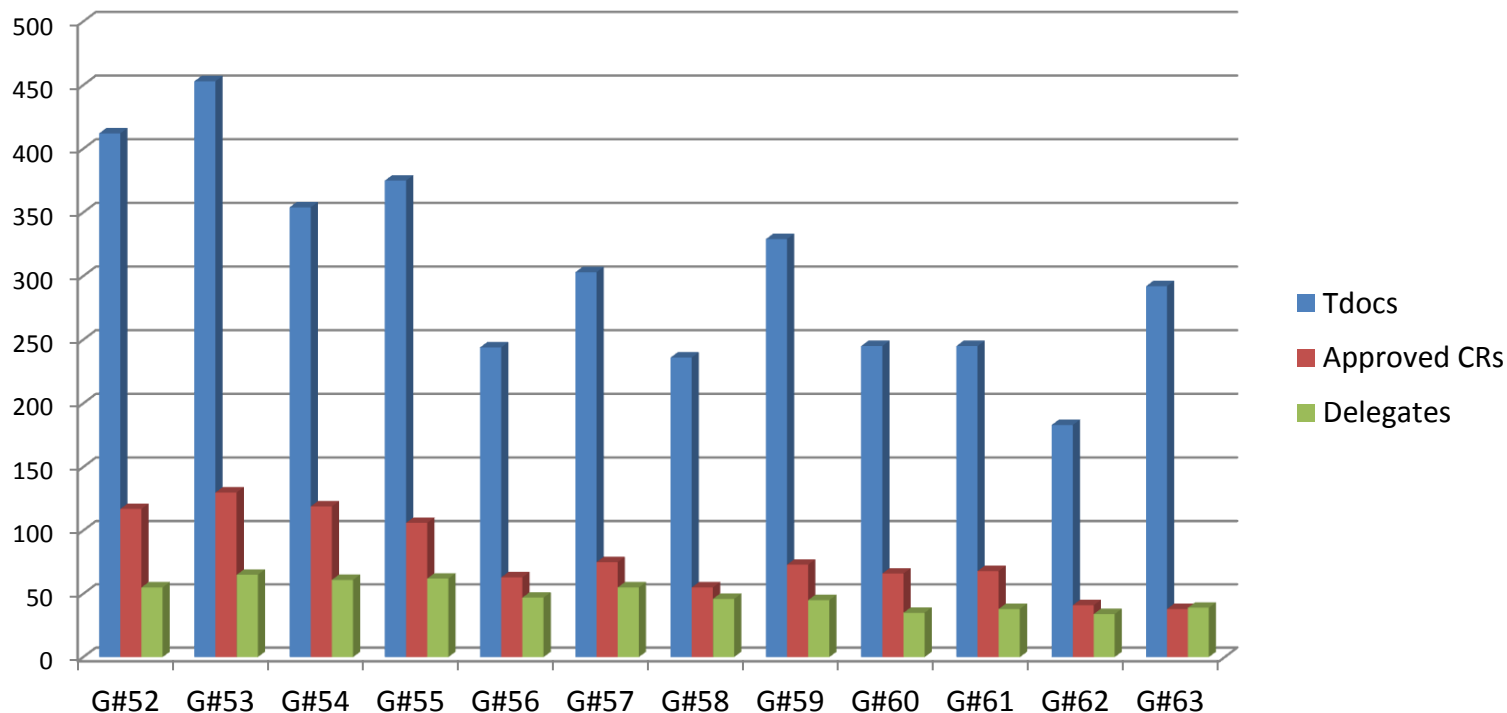   - 1 TR approved in version 2.0.0.
- 39 delegates, representing 35 individual members, participated.

EVOLUTION OF WORKLOAD
FROM GERAN#52 TO GERAN#63

Observations at GERAN#63

- Increased workload mainly due to high interest in FS_IoT_LC.
- Number of CRs declining.
- Number of delegates seems stable.

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ONGOING WORK ITEMS
NAME [ACRONYM] / RESPONSIBLE GROUP(S) / COMPLETION LEVEL

Study items		
Solutions for GSM/EDGE BTS Energy Saving [BTSEnergy]	WG1	90%
Downlink MIMO [DOMIMO]	WG1	50%
GERAN Enhancements for Mobile Data Applications [GERANEMDA]	WG2	100%
Study of Power Saving for MTC Devices [uPoD]	WG2	30%
Uplink MU-MIMO [UL_MU-MIMO]	WG2	20%
Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things [FS_IoT_LC]	WG1	15%
Rel-12 Features/Building Blocks/Work Tasks		
Downlink Multi Carrier GERAN [DMCG]	WG2	100%
Downlink Multi Carrier GERAN – MS Conformance Testing [DMCG_Mstest]	WG3new	35%
MSRD for VAMOS [MSRD_VAMOS]	WG1	95%
MSRD for VAMOS – MS Conformance Test [MSRD_VAMOS-TEST]	WG3new	85%
Support for BeiDou Navigation Satellite System (BDS) for LCS [LCS_BDS_GERAN]	WG2	100%
Support for BeiDou Navigation Satellite System (BDS) for LCS in GERAN3new [LCS_BDS_GERAN-GERAN3new]	WG3new	25%
Support of Power Saving Mode in GERAN [MTCe-UEPCOP-GERAN]	WG1	100%
New Training Sequence Codes for GERAN [NewToN]	WG1	80%

APPROVED CHANGE REQUESTS

- DMCG & DMCG_Mstest
  - WG1 approved 2 CRs, WG2 approved 2 CRs, WG3New approved 5 CRs
- MSRD_VAMOS & MSRD_VAMOS-TEST
  - WG1 approved 2 CRs, WG3New approved 1 CR
- LCS_BDS_GERAN & LCS_BDS_GERAN-GERAN3new
  - WG1 approved 1 CR, WG2 approved 4 CRs
- TEI X (X<12)
  - WG2 approved 5 CRs, WG3New approved 12 CRs
- TEI 12:
  - WG1 approved 1 CR, WG2 approved 2 CRs
- MTCe-UEPCOP-GERAN
  - WG1 approved 1 CR

SA GUIDANCE & INFORMATION

🔊 Guidance

- None

🔊 Information

- In FS_IoT_LC GERAN is studying the feasibility of significantly extending the GERAN coverage by 20 dB to cater for devices in the category of Internet of Things.
  - Among the proposed candidate solutions are one narrow band proposal that if, at a later stage, standardized may require an update of the GERAN Terms of Reference.
- GERAN Management Team is working hard to follow recommendation from PCG#31 to co-locate meetings with RAN WGs.
  - So far this has only been accomplished at GERAN#64 & #68.
- On the GERAN ways of working it was agreed to (0483);
  - Introduce a deadline (Wednesday morning at 04:00 a.m. during the week preceding the meeting) for tdoc submission to the Opening plenary.
  - Align the unique deadlines of WG1, WG2 and WG3new with this new deadline.

GENERAL INFORMATION
WG1 & WG2 FEATURES/BUILDING BLOCKS/WORK TASKS

- **TEI10, 11 & 12**
  - Extension of EARFCN value range in GERAN presented (0631) with CRs to TS 44.060 (0691,0692), 44.018 (0625,0626), 48.018 (0694,0695), 48.008 (0693), 45.002 (0495,0496) and 45.008 (0638,0639) which were postponed.
  - CRs to TS 48.008 (0699,0709) and 48.018 (0701,0710,0711) were approved to include Source Cell ID, with Tracking Area ID & E-UTRAN CGI, in INFORMATION REQUEST message.
  - MFBI support in idle mode presented (0488) and CRs approved to TS 44.018 & 44.060 (0704,0707) to signal ARFCN values corresponding to different bands but designating the same physical UTRAN/E-UTRAN frequency.

- **DMCG**
  - Improved EMSR signalling approved in TS 44.06 (0621). Correction CR to TS 45.002 (0554) and removal of brackets from performance requirements CR to TS 45.005 (0586) approved.
  - Work in WG1&2 completed.

GENERAL INFORMATION
WG1 & WG2 FEATURES/BUILDING BLOCKS/WORK TASKS

MSRD_VAMOS

- CR to TS 45.005 (0577) approved to include RBER performance requirements within brackets.

- Exception sheet approved to extend work over GERAN#64 (0579), to remove brackets from RBER requirements in TS 45.005

NewToN

- TSC design framework presented along with a system level performance evaluation (0646, 0589). Discussion paper on the relation between NewToN and VAMOS (0588).

- CRs presented to TS 44.018,44.060,45.001, 45.002, 45.008, 45.009, 45.050 & 24.008 (0619,0658,0674,0675,0676,0677,0678,0679) were postponed.

- Exception sheet approved to extend work over GERAN#64 (0539). What remains is a VAMOS performance evaluation.

GENERAL INFORMATION
WG1 & WG2 FEATURES/BUILDING BLOCKS/WORK TASKS

- **LCS_BDS_GERAN**
  - CR to TS 44.031,44.071,48.031,49.031 & 45.005 presented and approved (0698,0438,0439,0440,0436).
  - Work in WG1&2 completed.
- **MTCe-UEPCOP-GERAN**
  - In Work task on *Support of Power Saving Mode in GERAN* a CR to 43.022 (0540) was approved. Work completed.
  - An LS on the introduction of Power Saving Mode in GERAN was sent to SA2 (0541).

GENERAL INFORMATION

WG1 & WG2 STUDY ITEMS

- GERANEMDA

  - TR 43.802 approved in version 2.0.0 (0696). Study completed with recommendation on normative work on the Implicit TBF release solution.

- BTSEnergy

  - Updated system simulation results shown (0500).

- DOMIMO

  - Investigation on transmission mode adaptation presented (0581).

- UL_MU-MIMO

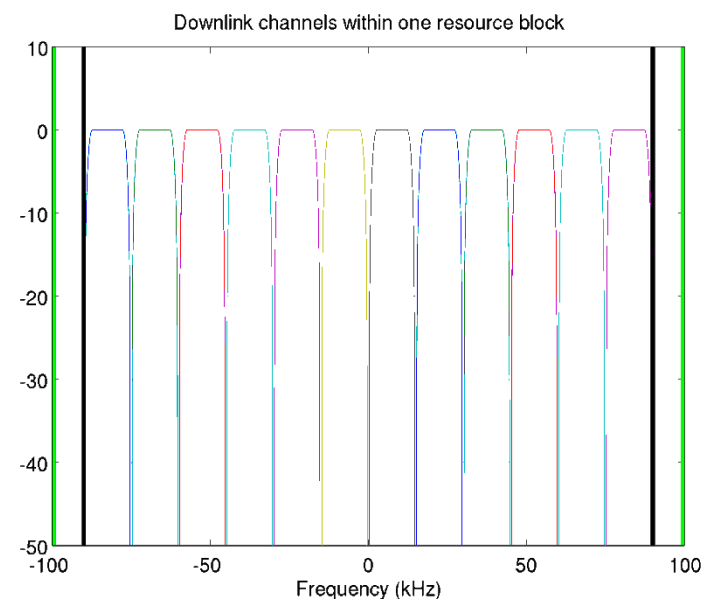 - pCR to TR 45.876 on pairing scheme agreed (0553)

- uPoD

  - New use cases and traffic models agreed (0708). Updated draft TR presented (0663).

GENERAL INFORMATION
WG1 & WG2 STUDY ITEMS - FS_IoT_LC

📶 Technical report

- A first version of the TR including skeleton and objectives was agreed ([0714](#)).
- Objectives include improved coverage & capacity, as well as reduced MS power consumption & complexity.
- The initial design for the Clean Slate candidate solutions has been outlined.
    - The entire system fits within 200 kHz.
    - Channel spacing of 15 kHz in DL & 5 kHz in UL.
    - Repetition & spreading used to boost coverage.
    - On architecture it is agreed not to use the Iu interface and that it is desirable that both a "flat-RAN" based architecture and a "BSC" based architecture are supported, if shown feasible.
- In case of the GSM Evolution candidate solution the Gb interface should be used.
- It is anticipated that SA3 will lead the work to develop a security framework including features like mutual authentication, integrity protection and ciphering.

GENERAL INFORMATION
WG1 & WG2 STUDY ITEMS - FS_IoT_LC cont.

- Working assumptions and proposals
  - Assumptions on traffic models (0681), system and link level simulations (0647), radio propagation channel models (0566, 0608) and methods for evalution (0682) discussed and progress was made.

- Narrowband candidate solutions
  - A first concept on Clean Slate was outlined (0435,0563). Link budget (0480), capacity (0481) and power consumption (0482) were discussed. The TR was updated to capture this candidate solution (0567).
  - A second concept on Narrow band Hybrid modulation was presented (0583).

- GSM Evo candidate solution
  - Contributions on coverage (0558), capacity (0609,0642) and initial investigations on FCCH, SCH, BCCH, AGCH, PCH and RACH were presented (0689,0602,0603,0604,0605,0606).

GENERAL INFORMATION
WG1 & WG2 STUDY ITEMS - FS_IoT_LC cont.

Protocol aspects

- Initial design proposals for narrow band Clean slate (aka NB M2M) candidate solution presented (0571, 0572, 0570, 0569)
- Enhancements on RACH, PCH, BCCH/System information for GSM Evolution candidate solution presented (0602, 0603, 0604, 0605, 0606, 0624, 0609, 0607).

Architecture & Security aspects

- LS sent to SA3 to inform them about the study, and ask them to develop a security framework and provide their guidance before Feb 2nd 2015 (0717).
- Proposals and discussions on achitecture, e.g. choice between Gb and S1 interface, (0568) and various security considerations (0478,0615).

Workplan (0538)

- 5 telcos and 2 adhoc meetings agreed.
- Target is to conclude FS_IoT_LC at GERAN#67.

GENERAL INFORMATION
WG3NEW BUILDING BLOCKS

- **DMCG_Mstest**

  - Four new test cases added in approved CRs to 51.010-1,-2 (0508, 0509, 0525, 0532, 0533).

  - 20 TCs remains to be specified.

- **MSRD_VAMOS-TEST**

  - CR to 51.0101 replacing [TBD] with specified dB and dBM values approved (0516).

- **LCS_BDS_GERAN-GERAN3new**

  - 32 CRs to 51.010-1,-2 presented and postponed.

- **TEI**

  - Correction to test cases on RACH Power Reduction and Implicit Reject in TS 51.010-1 approved (0527,0526).

GENERAL INFORMATION

WG3NEW BUILDING BLOCKS

🔴 GCF Test Case reduction

- The GCF technical group has started a task to reduce the number of test cases to be executed in order to go through their Certification process (0518).

- An liaison was sent to GCF to inform them about the potential involvement of G3new in this task (0535).

FUTURE PLANNED MEETINGS
PLENARY AND AD-HOC MEETINGS

- GERAN#64, 17-21 Nov 2014, San Francisco, USA [Co-located with RAN WGs]
  - Adhoc on FS_IoT_LC#1, 2-5 Feb, 2015, Sophia Antipolis
- GERAN#65, 9-13 March 2015, Shanghai, China
  - Adhoc on FS_IoT_LC#2, 20-23 April 2015, Sophia Antipolis
- GERAN#66, 25-29 May 2015, Europe
- GERAN#67, 10-14 Aug 2015, TBC
- GERAN#68, 16-20 Nov 2015, USA [Co-located with RAN WGs]

THANK YOU

Olof Liberg
3GPP TSG GERAN Chairman