

PCG#34_06
Sophia Antipolis, France
April 28th, 2015



PCG#34_06
TSG GERAN#64 & #65 REPORT TO PCG#34

TSG GERAN Chair
Olof Liberg
Ericsson

A GLOBAL INITIATIVE

TSG GERAN ORGANISATION



TSG GERAN officials

- Chairman:
 - Mr Olof Liberg
(Ericsson LM / 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 / ETSI)
- MCC support: Mr Paolo Usai

TSG GERAN WGs officials

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

 TSG chair and Vice chairs were re-elected at GERAN#65.

Planned WG elections;

- G1 & G2 at GERAN#66
- G3new at GERAN#67

GERAN#64 & 65 OVERVIEW

GERAN#64 statistics

- 271 documents
- 78 Change Requests approved
 - 7 from WG1
 - 12 from WG2
 - 59 from WG3
- 5 incoming & 4 outgoing liaisons
- 40 delegates at TSG plenary.

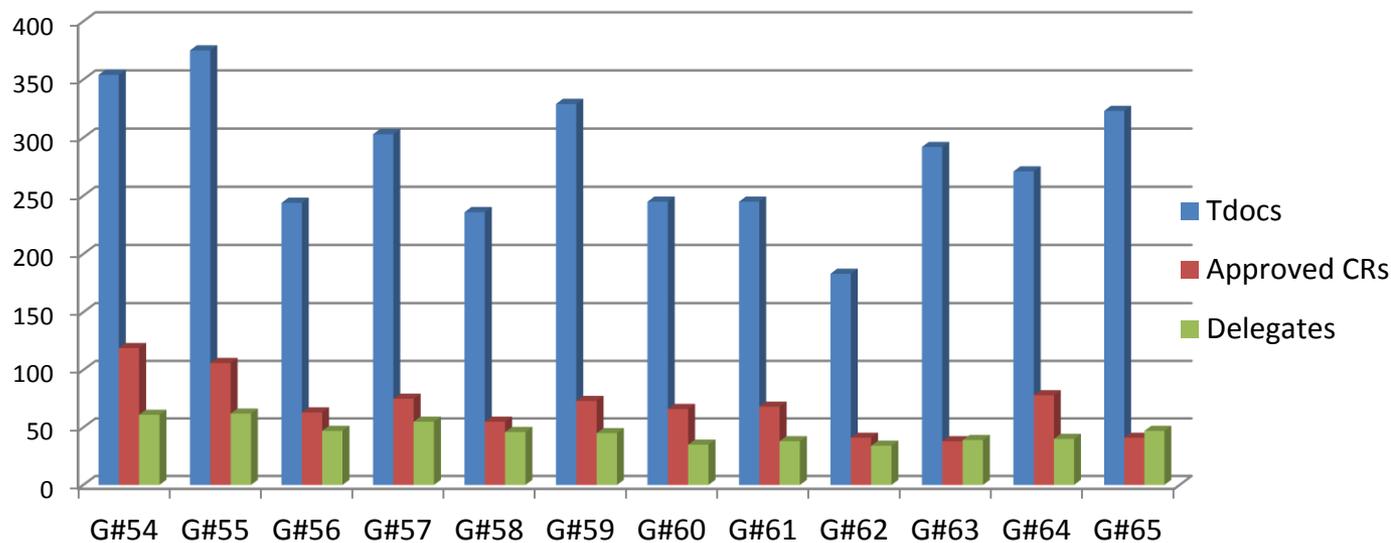
TSG GERAN#65 statistics

- 323 documents
- 41 Change Requests approved
 - 3 from WG1
 - 8 from WG2
 - 30 from WG3new
- 9 incoming & 7 outgoing liaisons
- 47 delegates at TSG plenary.
- TSG chairman and vice chairmen was re-elected.

EVOLUTION OF WORKLOAD

FROM GERAN#54 TO 65

- Increased workload mainly due to high interest in Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things [FS_IoT_LC] study item.
- Note that a first adhoc meeting on FS_IoT_LC was held between G#64 and G#65 with 88 input documents.
- GERAN3new is experiencing a period of low work load.



NEW WORK AND STUDY ITEMS



New Features/Building blocks/Work tasks

- RAN aspects for improvements to CS/PS coordination in GERAN Shared Networks [CSPS_Coord_GERAN]
 - Approved as [building block](#) in the SA2 WI Improvements to CS/PS coordination in UTRAN/GERAN Shared Networks.
 - Targets the coordination of MS registration in CS and PS domains when Network Sharing is supported by the network.

COMPLETED WORK AND STUDY ITEMS



Completed Features/Building blocks/Work tasks

- Downlink Multi Carrier GERAN – MS Conformance Testing [DMCG_Mstest]
- MSRD for VAMOS [MSRD_VAMOS]
- MSRD for VAMOS – MS Conformance Test [MSRD_VAMOS-TEST]
- Support for BeiDou Navigation Satellite System (BDS) for LCS in GERAN3new [LCS_BDS_GERAN-GERAN3new]
- New Training Sequence Codes for GERAN [NewToN]

WORK ITEMS @ END OF GERAN#65



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

Study items

Solutions for GSM/EDGE BTS Energy Saving [BTSEnergy]	G1	95%
Downlink MIMO [FS_DOMIMO]	G1	65%
Study of Power Saving for MTC Devices [FS_uPoD]	G2	60%
Uplink MU-MIMO [FS_UL_MU-MIMO]	G2	20%
Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things [FS_IoT_LC]	G1	60%

Features/Building Blocks/Work Tasks

Downlink Multi Carrier GERAN – MS Conformance Testing [DMCG_Mstest]	G3new	100%
Support for BeiDou Navigation Satellite System (BDS) for LCS in GERAN3new [LCS_BDS_GERAN-GERAN3new]	G3new	100%
RAN aspects for improvements to CS/PS coordination in GERAN Shared Networks [CSPS_Coord_GERAN]	G2	0%

APPROVED CHANGE REQUESTS

GERAN#64

NewToN

- G1 approved 5 CRs, G2 approved 2 CRs

DMCG_Mstest

- G3new approved 12 CRs

MSRD_VAMOS(_VAMOS-TEST)

- G1 approved 1 CRs, G3new approved 1 CR

LCS_BDS_GERAN-GERAN3new

- G3new approved 34 CRs

TEI 12

- G1 approved 1 CR, G2 approved 2 CRs

Pre-release 12

- G2 approved 10 CRs, G3new approved 12 CRs

APPROVED CHANGE REQUESTS

GERAN#65

NewToN

- G1 approved 2 CRs, G2 approved 2 CRs

DMCG_Mstest

- G3new approved 7 CRs

MSRD_VAMOS

- G1 approved 1 CRs

LCS_BDS_GERAN(-GERAN3new)

- G2 approved 1 CRs, G3new approved 2 CRs

GELTE

- G3new approved 4 CRs

Pre-release 13

- G2 approved 5 CRs, G3new approved 17 CRs

GENERAL INFORMATION

WG1 & WG2 FEATURES/BUILDING BLOCKS/WORK TASKS



REL 12 and earlier

- MSRD_VAMOS
 - Implementing VAMOS support for dual antenna mobiles.
 - [Exception sheet](#) approved to extend work over GERAN#64 fulfilled.
 - Feature completed.
- NewToN
 - Improved training sequences for CS and PS domain.
 - [Exception sheet](#) approved to extend work over GERAN#64 fulfilled.
 - Feature completed.
- EARFCN extension
 - CRs to 44.060 and 44.018 to support extended EARFCN value range in GERAN were approved.
 - Draft CR to 24.008 endorsed, and a LS sent to CT1.

GENERAL INFORMATION

WG1 & WG2 FEATURES/BUILDING BLOCKS/WORK TASKS



REL 13

- CSPS_Coord_GERAN
 - New [WI](#) approved on the coordination between MS registration in CS and PS domains in case of Network Sharing.

GENERAL INFORMATION

WG1 & WG2 STUDY ITEMS



BTSEnergy

- BTS energy savings performance evaluation presented, along with [TR 45.926](#) update.
- Low progress.

FS_DOMIMO

- [TR 45.871](#) text proposal on performance evaluation agreed.
- Low progress.

FS_UL_MU-MIMO

- MS energy consumption modelled agreed, along with [TR 45.876](#) updated
- Low progress.

FS_uPoD

- Discussion papers on e.g. accelerated system access, eDRX, PSM, synch procedures, event triggered measurements , device identification, MS energy consumption and paging presented.
- [TR 43.869](#) v1.0.0 presented for information.

GENERAL INFORMATION

WG1 & WG2 STUDY ITEMS

FS_IOT_LC

- Technical report
 - [TR 45.820](#) v1.0.0 presented for information.
 - Most evaluation assumptions have been agreed.
 - Three candidate proposals are currently captured in the TR.
- At GERAN#65, in total six competing candidate techniques were presented.
 - GSM Evolution candidate proposals :
 - *EC-GSM (earlier presented as GSM Evolution),*
 - *Narrowband Hybrid Modulation,*
 - New radio access proposals:
 - *Narrowband M2M,*
 - *Narrowband OFDMA,*
 - *Cooperative Ultra Narrowband*
 - *Combined Narrowband and Chirp Spread Spectrum*
- Updated work plan presented where GERAN have scheduled two ad-hoc meetings in April and June/July. Discussion started on dense meeting schedule for the remainder of Rel-13.

GENERAL INFORMATION

WG1 & WG2 STUDY ITEMS



FS_IOT_LC cont.

- EC-GSM
 - A concept description and discussion papers on synchronization, RACH, BCCH, CCCH mapping, sensitivity to frequency offset, system access, paging, battery life, IR and chase combining, device aspects, L2S mapping, system simulations and latency presented.
 - TR was updated to capture progress
- Narrowband Hybrid Modulation
 - Discussion papers on coexistence with GPRS, NB-SCH, NB-PDTCH and link layer aspects presented.
- Narrowband M2M
 - Discussion papers on e.g. pilot & CBS design, coverage, interference and L2S modelling, system level/coexistence evaluations, synchronization & cell search, FH hopping, measurement design, power control, battery life was presented.
 - TR was updated to capture progress.

GENERAL INFORMATION

WG1 & WG2 STUDY ITEMS



FS_IOT_LC cont.

- Narrowband OFDMA
 - Discussion papers on Tone-Phase-Shift Keying modulation, frame structure, link budget, synchronization, channel hopping, resource block, paging, system information, battery life and system level performance presented.
 - TR was updated to capture progress.
- Cooperative ultra narrowband
 - Discussion papers on performance and physical layer presented.
- Combined narrowband and chirp spread spectrum
 - Concept paper, and discussion paper on coverage and capacity presented.

GENERAL INFORMATION

WG1 & WG2 STUDY ITEMS



FS_IOT_LC cont.

- Core network aspects
 - GSM evolution tracks will be based on the Gb interface.
 - For Clean slate tracks the following has been agreed;
 - Evaluations on legacy Gb, legacy S1 are necessary.
 - Evaluations on optimized Gb and S1 is optional.
 - To request SA2's view on optimized Gb/S1 to help GERAN conclude the interface selection before SI completion.
 - Various input on paging of devices in extended coverage presented.
- Joint GERAN/SA sessions
 - Letters sent to TSG SA and SA3 on security and system aspects triggered;
 - A joint session between GERAN#64 and SA3#77.
 - A joint session between GERAN#65 and SA#67.
 - Outcome is that SA#67 initiated two SA3 SIs and one SA2 SI on Cellular IoT aspects. For details please see the TSG SA#67 [meeting report](#).

GENERAL INFORMATION

WG3NEW GENERAL INFORMATION



G3new is experiencing a period of low activity

- Electronic meetings were held both at GERAN#64 & #65.
- G3new would like to meet electronically also at GERAN#66 & #67
 - They have no active work items, and have only maintenance work.
 - They expect increased work load first if FS_IoT_LC triggers a Rel-13 WI.
 - They have an election planned at GERAN#67.

Three building blocks have been completed since GERAN#63

- Downlink Multi Carrier GERAN – MS Conformance Testing [DMCG_Mstest]
- MSRDL for VAMOS – MS Conformance Test [MSRD_VAMOS-TEST]
- Support for BeiDou Navigation Satellite System (BDS) for LCS in GERAN3new [LCS_BDS_GERAN-GERAN3new]

Incoming/outgoing LSs:

- In an incoming [LS](#) GCF was seeking feedback from G3 on the removal of a set of test cases from their certification process.
- G3 provided their feedback in the [Reply LS](#) on Test Case Optimization - removal of GERAN test cases.

FUTURE PLANNED MEETINGS

PLENARY AND AD-HOC MEETINGS



- 📶 Adhoc on FS_IoT_LC#2, 20th-23rd April 2015, Sophia Antipolis
- 📶 GERAN#66, 25th-29th May 2015, Vilnius, Lithuania
- 📶 Adhoc on FS_IoT_LC#2, June 29th - July 2nd, 2015, Kista, Sweden
- 📶 GERAN#67, 10th-14th Aug 2015, Yin Chuan, China
- 📶 GERAN#68, 16th-20th Nov 2015, Anaheim, USA [Co-located with RAN WGs]
- 📶 GERAN#69, 15th-19th Feb 2016, Malta, Europe [Co-located with RAN WGs]

PCG GUIDANCE & INFORMATION



For information

- At GERAN1#66 and GERAN2#66 elections for G1 and G2 chair positions will be held.
- GERAN3new#69 and RAN5#70 meetings may collide in Feb, 2016. Since Mr Ingbert Sigovich is the secretary in both groups, a solution is needed to handle this situation.

For guidance#1: On G3new elections

- Background
 - At GERAN3new#67 an election for G3 chair position is planned.
 - At the same time G3new have low activity level, few delegates are attending their meetings, and they would like to meet electronically at GERAN3new#67.
- Proposal
 - As an exception from the 3GPP working procedures it is proposed to;
 - Allow GERAN3new#67 to meet electronically.
 - To handle the G3new elections at the TSG GERAN opening plenary.
 - To establish quorum based on the TSG GERAN voting list.

For guidance#2: On the GERAN ToR

- Background
 - At GERAN#62 the [FS IoT LC](#) study item (SI) was started.
 - Among the objectives are improved coverage, increased network capacity, extended battery life time and reduced device complexity
 - The study is planned to be concluded at GERAN#67 (Aug, 2015).
 - Among the proposed candidate solutions presented at GERAN#65 are four new radio access proposals, connected to the core network either via the Gb or S1 interface (decision is pending).
 - If one of these proposals meet the SI objectives, and qualify for normative work, it is expected that the [TSG GERAN ToR](#) needs to be updated in case this work is to be performed within GERAN.
- Guidance needed
 - At TSG GERAN#65 the TSG GERAN chair was tasked to ask PCG for advice on how GERAN shall handle a potential update of the GERAN ToR in case GERAN wishes to go ahead with normative work on a new radio access technology.

Cellular System Support for Ultra Low Complexity and Low Throughput Internet of Things [FS_IoT_LC]



BACKGROUND & TIMELINE

- FS_IoT_LC [SID](#) was approved at GERAN#62.
 - A [LS](#) was sent to TSG SA, SA2 & SA3 for information.
- It is the preference of the SI Rapporteur to proceed to normative work within Rel-13.
 - It is therefore expected that TSG GERAN will see one or more work item proposals at GERAN#67.
- Timeline according to current best knowledge;

