3GPP/PCG Meeting#14
Cancun, Mexico
21 April 2005

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13 April 2005
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Source: **Leaving 3GPP TSG GERAN Chairman**

Title: **TSG-GERAN Management Report**

Agenda item: 4.7

Document for:

Decision	
Discussion	
Information	**X**

1 Main events since last meeting

In the period October 2004 (PCG#13) to April 2005 (PCG#14) TSG-GERAN have held three TSG-GERAN plenary meeting, TSG-GERAN#22 November 2004 in Cape Town, South Africa, TSG-GERAN#23 January 2005 in Tampa, Florida, US, and TSG-GERAN#24 April 2005 in Dublin Ireland. Further to TSG-GERAN plenaries, a number of meetings of the TSG-GERAN working groups and ad-hoc meetings have taken place.

The internal structure of TSG GERAN is unchanged since TSG GERAN#14 and the following working groups are established:

TSG GERAN WG1 – Radio Aspects, Base Station Testing and O&M

TSG GERAN WG2 – Protocol Aspects

TSG GERAN WG3 – Terminal Testing

This structure is well functioning and the terms of references for the TSG GERAN Working Groups are unchanged since TSG GERAN#15.

At TSG GERAN#24 an election of TSG GERAN officials took place with the following result:

TSG GERAN elected *Mr. Andrew Howell, Motorola Ltd (ETSI)* by acclamation for recommendation to the 3GPP PCG for the formal appointment as the new Chairman of TSG GERAN

Similarly TSG GERAN elected by acclamation for recommendation to the 3GPP PCG for formal appointment as new Vice Chairmen of TSG GERAN *Mr Jürgen Hofmann, Siemens AG (ETSI), Mr. Guillaume Sébire, Nokia Corporation (ETSI) and Mr Marc Grant, Cingular Wireless LLC (ATIS)*.

The PCG is invited to appoint the new TSG GERAN leadership.

2 Releases

No major problems have been found in relation to Release 5 and TSG GERAN therefore considers release 5 stabile. It is perhaps worth recalling that regarding earlier releases TSG-GERAN have issued a

technical specification documenting very late changes to the Release 97 and Release 98 specifications for GPRS. This in order to ensure that documentation of the behaviour already existing mobiles exist when it has been found necessary to update the specifications for Release 97 and Release 98. TSG GERAN have found it necessary due to ambiguity found in the standard in the area under responsibility of TSG CT WG1 to update this technical specification to all releases from release 97 to and including Release 6. As all releases of the document would be identical, TSG GERAN decided to replace all pre-Release 6 versions with a pointer to the latest version.

As reported earlier TSG GERAN are looking into performing enhancements to the A/Gb mode of operation in order to be able to provide (a subset of) IMS services over the A/Gb interfaces and thereby enable the IMS service on a larger base of GSM legacy networks. Originally TSG GERAN decided to perform a feasibility study on the subject of A/Gb-mode enhancement in order better to plan for any such enhancement as well as evaluating the interaction with Iu-mode. This feasibility study proceeded and some work items, such as support of multiple TBF, streaming QoS was early spun off. The main item for which feasibility was evaluated and debated longest was the potential for provision of conversational class services in A/Gb mode. TSG GERAN has made significant progress and completed most of the work within Release 6. The only part which has been postponed for release is the Support of Conversational Services in A/Gb mode via the PS domain, this has been split of as a work item separate from the work on support of PS handover which is being included in Release 6.

Of other key activity completed for Release 6 is the Feasibility study of Flexible Layer One and Single Antenna Interference Cancellation (SAIC), leading to completed core specification of Downlink Advanced Receiver Performance (DARP). The corresponding test specifications are well under way. TSG GERAN is also been progressing and completed the work on MBMS for Release 6.

As reported at the previous meeting of PCG TSG GERAN received a proposal for a feasibility study on Generic Access to the A/Gb interface. The outcome of feasibility study was positive and TSG GERAN has approved work items to continue the work. The work on drafting the core specifications has now been completed. The work has been performed in consultation with TSG SA WG1, WG2 and WG3 and thus the security is based on reuse of the work done for I-WLAN. The work on test cases for generic Access is also well underway and can be expected within the usual 3 month delay after completion of the core specification.

As reported earlier, TSG GERAN has elaborated a quite detailed work plan utilizing the Feature, Building Block and Work Task philosophy, as used by the other TSGs. This work plan is integrated in the overall 3GPP work plan. TSG-GERAN are keeping its work item updated, in order to ensure that the correctly reflect the planned work and align with the general structure in the overall 3GPP work plan.

3   Management issues

The leadership of TSG GERAN working groups has changed in the period, as a new TSG GERAN Working Group 2 chairman – Guillaume Sébire, Nokia Corporation (ETSI) was elected in April when Diana Edwin, Siemens step down. It is also to be noted that the position as TSG GERAN WG1 chairman is vacant. Assuming that the PCG confirms the result of the election of TSG GERAN leadership, the TSG GERAN leadership is as follows:

TSG GERAN Chairman	Andrew Howell, Motorola Ltd
TSG GERAN Vice Chariman	Marc Grant, Cingular Wireless LLC
TSG GERAN Vice Chairman	Jürgen Hofmann, Siemens AG
TSG GERAN Vice Chairman	Guillaume Sébire, Nokia Corporation
TSG GERAN WG1 Chairman	Vacant
TSG GERAN WG2 Chairman	Guillaume Sébire, Nokia Corporation

TSG GERAN WG3 Convenor   Ilya Gonorovsky, Motorola Ltd

As the structure of TSG GERAN is unchanged, the support team for TSG GERAN still only need for three different MCC secretaries to support TSG GERAN. More generally TSG GERAN believes that the support requirement for 2006 can be considered as being the same as for 2004/2005.

Annex I: Detailed Work Progamme for TSG GERAN

Work Plan for 3GPP TSG GERAN – Reviewed at TSG GERAN #24

This list reflects the open work items running under the responsibility of TSG GERAN.

	Work items in this colour are closed or building blocks.

Feature	Building block	Work task	Level of completion	Start Date	Date of completion	Status
Enhanced Power Control (EPC) GP-012748	Realization of Enhanced power control and signaling support GP-012749	• Concept • Changes to 43.051 • Changes to 44.004 • Changes to 44.018 • Changes to 48.058 • Changes to 45.001 • Changes to 45.002 • Changes to 45.003 • Changes to 45.008			Nov 2001	Ready for Rel 5. Closed
	GERAN MS Conformance test for Enhanced Power Control GP-012750	• MS test	0%			Open
	GERAN BTS Conformance test for Enhanced Power Control GP-012751	• BTS test	0%			Open
8PSK AMR HR (8PSK-AH) GP-012752	Definition of channel coding, performance requirements and signaling support GP-012753	• Concept • Changes to 44.018 • Changes to 45.001 • Changes to 45.002 • Changes to 45.003 • Changes to 45.005 • Changes to 24.008 • Changes to 48.058		Dec 2001	Jun 2002	Ready for R5. Closed
	GERAN MS Conformance test for 8PSK HR GP-012754	• MS test	0%			
	GERAN BTS Conformance test for 8PSK HR GP-012755	• BTS test	100%		Dec 2002	
Wideband telephony services (UMTS)	Support of WB AMR in GERAN (GAMRWB) GP-000453	• GMSK and 8PSK WB FR / HR support • Channel coding in 45.003 • Signalling for A interface • Signalling for Iu • Link adaptation in 45.009 • Receiver performance in 45.005		January 2000	Apr 2002 Nov 2001 Jun 2002	Ready for R5. Closed

Feature	Building block	Work task	Level of completion	Start Date	Date of completion	Status
	GERAN MS Conformance test for WB AMR GP-000454	• MS test	0%			Open
REPLACED BY GP-051160 and GP-051164	GERAN BTS Conformance test for WB AMR GP-000455	• BTS test	100%		Dec 2002	Closed
		•				
		•				
		•				
		•				
		•				
		•				
Support of Packet-switched Handover for GERAN A/Gb mode (SPSHAGB) GP-051160	Stage 2 (SPSHAGB – Stage 2)	• PS handover • Definition of radio resource management functionality	90%	April 2005	June 2005	Originally Started Nov 2003 as GP-030443
	Support of Packet-switched Handover for GERAN A/Gb mode – Stage 2 (GP-051161)		90%	April 2005	June 2005	
	Support of Packet-switched Handover for GERAN A/Gb mode – PS Handover (GP-051162)		90%	April 2005	June 2005	
	Support of Packet-switched Handover for GERAN A/Gb mode – Definition of radio resource management functionality (GP-051163)		90%	April 2005	June 2005	

Feature	Building block	Work task	Level of completion	Start Date	Date of completion	Status
Support of Conversational Services in A/Gb mode via the PS domain (SCSAGB) GP-051164	Support of Conversational Service in A/Gb mode via the PS Domain	1. Definition of radio resource management functionality 2. Modifications to FLO 4. Radio channel support				
	Support of Conversational Services in A/Gb mode via the PS domain - Modifications to FLO (GP-051165)	3.	10%	April 2005	April 2006	
	Support of Conversational Services in A/Gb mode via the PS domain - Radio Channel Support (GP-051166)		10%	April 2005	April 2006	
	Support of Conversational Services in A/Gb mode via the PS domain - Definition of radio resource management functionality (GP-051167)		10%	April 2005	April 2006	
Alignment between the test-regimes for GERAN capable MS GP-032236		Determine the controversial test cases in the different test regimes and align them with 3GPP GERAN test specifications. Such test cases to be added to TS 51.010.	80%	June 2003	September 2004	Started
Downlink Advanced Receiver Performance (DARP) GP-041966	DARP test scenarios GP-041967	Interference test cases for 45.005	100%	November 2003	September 2004	Started
	DARP for GMSK modulated voice services GP-041968	Performance Requirements in 45.005 Radio subsystem link control in 45.008	100%	February 2004	November 2004	Started
	DARP for GPRS and EGPRS MCS1-MCS4 GP-041969	Performance Requirements in 45.005 Radio subsystem link control in 45.008	100%	February 2004	November 2004	Started
	DARP Capability signalling GP-041970	Modification of 24.008 for signalling of MS ARP capability	100%	November 2003	September 2004	Started
	GERAN MS Conformance test for ARP GP-041971	MS Test in 51.010	60%	August 2004	August 2005	Started

Feature	Building block	Work task	Level of completion	Start Date	Date of completion	Status
Reduction of PS service interruption in Dual Transfer Mode (PSintDTM) GP-032548	Reduction of PS service interruption in Dual Transfer Mode / Use case and requirement definition (PSintDTM-Req) GP-032549	Study of use cases and requirements. Areas for investigation are: • Cell change scenarios • CS channel establishment during PS session • CS channel release during PS session	100%	November 2003	April 2004	Started
	Reduction of PS service interruption in Dual Transfer Mode / Performance Study of Current Procedures (PSintDTM-Perf) GP-032550	Analyse performance of the common use cases to determine to what extent improvements are needed to the DTM procedures in GPRS.	100%	November 2003	April 2004	Started
	Reduction of PS service interruption in Dual Transfer Mode / Reduction of service interruption times and packet loss during Dual Transfer Mode and mobility procedures (PSintDTM-Reduct) GP-032551	Investigate changes needed to improve DTM procedures identified in this work item.	100%	February 2004	November 2004	Started
	Reduction of PS service interruption in Dual Transfer Mode / MS Conformance testing	MS Conformance testing (51.010)	0%	June 2004		Ongoing
						Ongoing
FS: Generic Access to A/Gb Interface (GP-041592) (GAAG)	Generic Access to A/Gb Interface	Determine the feasibility of generic IP based access to A/Gb interface.	100%	January 2005	January 2005	Completed
Global Navigation Satellite Systems (GNSS) (GP-0422268)	Support for GNSS in GERAN	To include the capability of Assisted GALILEO as an Assisted GNSS into the GERAN.	0%	April 2005	August 2005	Not Started

Feature	Building block	Work task	Level of completion	Start Date	Date of completion	Status
FS of enhanced support of Video Telephony (GP-042221) (VIDGER)	Feasibility study of enhanced support for video telephony service over GERAN via the A interface	To enhance performance of video telephony service over GERAN via the A interface.	35%	January 2005	August 2005	Started
Generic Access to the A/Gb Interface (GP-042247) (GAAI)	Generic IP based Access to A/Gb interface – Stage 2	Stage 2 for Generic Access to the A/Gb Interface	100%	April 2005	April 2005	Complete
	Generic IP based Access to A/Gb interface – Stage 3	Stage 3 for Generic Access to the A/Gb Interface	100%	April 2005	April 2005	Completed
	MS Conformance Test for Generic Access to A/Gb Interface	MS Conformance Test for Generic Access to A/Gb Interface	20%	April 2005	June 2005	Started
Enhancements of VGCS in public networks for communication of public authority officials GP-041837 (EVGCS)	Enhancements of VGCS in public networks for communication of public authority officials	Enhancements of VGCS in public networks for communication of public authority officials	5%	January 2005	August 2005	Started
MS Antenna Performance Evaluation Method and Requirements	Define MS antenna minimal performance requirements	Define MS antenna minimal performance requirements	0%	January 2005	November 2005	Started
Lower 700 MHz Inclusion in the GERAN Specifications (GSM710)	To include the 698 – 746 MHz band into GERAN	To include the 698 – 746 MHz band into GERAN	70%	January 2005	June 2005	Started
Addition of new frequency band to GSM GP-05945 (T-GSM810)		The T-GSM 810 operates in the following frequency band: - 806 MHz to 821 MHz: mobile transmit, base receive; - 851 MHz to 866 MHz: base transmit, mobile receive.		April 2005	June 2005	
	Addition of new frequency band to GSM (T-GSM810) – Changes to core specification (GP-05946)		0%	April 2005	June 2005	
	Addition of new frequency band to GSM (T-GSM810) – Changes to MS testing specification (GP-05947		0%	April 2005	August 2005	

Feature	Building block	Work task	Level of completion	Start Date	Date of completion	Status
	Addition of new frequency band to GSM (T-GSM810) – Changes to BTS testing specification		0%	April 2005	August 2005	
Handover of dedicated and shared resources while in dual transfer mode GP-050979 (HO-DSRDTM)	Handover of dedicated and shared resources while in dual transfer mode		0%	April 2005	March 2006	Not Started
	MS Conformance Testing		0%	April 2005	November 2006	Not Started
	BS Conformance Testing		0%	April 2005	November 2006	Not Started
Future GERAN Evolution GP-051052 (FGE)	Feasibility Study for Future GERAN Evolution		5%	April 2005	November 2005	Started
LCS Enhancements Related to Location-Based Services GP-050265 (LCSLBS)	LCS Enhancements Related to Location-Based Services	4. Linked to SP-040682 Location Services Enhancements Rel-7 (LCS-R7)	10%	January 2005	November 2005	Started

2   Completed or Terminated Work items

This list reflects work items that have been completed or terminated.

Feature	Building block	Work task	Level of completion	Start Date	Date of completion	Status
GERAN/UTRAN interface evolution 1 GP-000481	Evolution of Iu ps	• Identification of GERAN requirements on Iu ps • Update of specifications			Nov 2001 Mar 2002	Ready for R5. Closed
GERAN/UTRAN interface evolution 2 GP-010417	Evolution of Iu cs GP-000430	• Identification of GERAN requirements on Iu cs • Update of specifications			Apr 2002 Jun 2002	Ready for R5. Closed
Low chip rate TDD option (UTRAN)	Low chiprate TDD interworking with GERAN GP-000432	• Handover and Cell Selection / Reselection to UTRA 1.28Mcps TDD				Ready for R4. Closed
GERAN improvements 1 GP-000433	Gb over IP GP-000434	IP-fication of Gb • Concept • Changes to 08.16, 08.18				Ready for R4. Closed

GERAN improvements 3 GP-010909	Evolution of the transport for A GP-010910	• *Definition of a new A/Ater Interface Transport Layer option based on the Iu Interface Transport Layer* • Adaptation of the Layer 3 BSSMAP procedures as required.	0%		Dec 2002	Terminated. Not standardised
GERAN Improvements 4 GP-010363	Gb enhancements 2 GP-010363	Stage 2 Stage 3 (changes in 44.060) • Definition of enhanced countdown procedure • Definition of enhanced TBF release procedure				Ready for R4. Closed
GERAN Inter BSC NACC improvements over the Gb Interface GP-012313	Modification of Gb protocols for GERAN Inter BSC NACC over the Gb interface GP-012314	*Stage 3 (changes to)* *48.018*			Apr 2002	Ready for R5. Closed
	Modification of core network protocols for GERAN Inter BSC NACC for Gb interface GP-011877	Stage 2 • Concept • 23.060 change – Definition of Inter BSC NACC Stage 3 (changes to) • 29.060			Nov 2001 Apr 2002	
GERAN support for IP multimedia GP-010420	GERAN Header adaptation GP-010421	Header adaptation: • Definition of compression for PDCP protocol • Conceptual description in stage 2 • Necessary changes on stage 3	100%		Sept 2000 Oct 2001 Dec 2002	Ready for Rel-5. Closed
	GERAN Radio access bearer design for IP multimedia GP-010422	MuM control signalling for conversational multimedia services. • Identification of requirements • Necessary modifications due to SIP	?%		Feb 2002 Dec 2002	Terminated. Not standardised
	GERAN MS Conformance test for support of IP multimedia GP-010424	• MS test	0%		Dec 2002	Terminated. Not standardised
	GERAN BTS Conformance test for support of IP multimedia GP-010425	• BTS test	0%		Dec 2002	Terminated. Not standardised

Flow control supporting an MS with multiple data flows with different QoS over the Gb interface GP-021767	Update of stage 2 specifications	• Concept document 23.060 (changes to) – Flow Control			June 2002 June 2002	Closed
	Modification of BSSGP protocol GP-021508	Stage 3 (changes to) • 48.018			June 2002	Ready for release 5. Closed
GERAN enhancements for streaming services 1 GP-010429	GERAN enhancements for streaming services 1 GP-010429	• Concept • RLC protocol enhancement (SDU Discard)			Oct 2001 Nov 2001????	Ready for R5. Closed
GERAN enhancements for streaming services 2 GP-010430	GERAN enhancements for streaming services 2 GP-010430	Usage of ECSD Stage 2 Stage 3 • RLC PDU formats • MAC header			Jun 2001 Jun 2002	Ready for R5. Closed
Intra Domain Connection of RAN Nodes to Multiple CN Nodes: Overall System Architecture SA2 Feature	GERAN work for Intra Domain Connection of RAN Nodes to Multiple CN Nodes GP-020492	Stage 2 (changes to) • 43.051 Introduction of support for IDNNS in GERAN Iu mode Stage 3 (changes to) • 48.016 Use of Gb interface concepts when a network applies IDNNS • 48.018 Include MSC/VLR identity in CS IMSI paging			Jun 2002	Ready for R5. Closed, accept changes for Gb over IP
Real Time QoS for packet services including VoIP (UTRAN)	HOs: maintenance of real-time QoS while moving between cells in the PLMN including inter-SGSN change and SRNS relocation or possibly other mechanisms (UTRAN) GP-010431	Handover for the packet switched domain • Stabile RT handover report 25.936 including header removal • Update of stage 2 • Update of relevant stage 3 specs			Nov 2001	Closed
Uplink TDOA feasibility study GP-012794	Uplink TDOA feasibility study GP-012794	• Performing of a feasibility study			Jun 2002	*Closed for R6.*
700 MHz spectrum support GP-000449	GERAN support for the 700 MHz band	• Signaling support • Physical layer definitions • Receiver performance and RF budget				Ready for R4. Closed

	GERAN MS Conformance test for 700 MHz band GP-000451	• MS test			Jun 2001	Closed
	GERAN BTS Conformance test for GERAN interface evolution GP-000452	• BTS test	100%		Dec 2002	Closed
Enhanced A/Gb feasibility study **GP-022565**	Enhanced A/Gb feasibility study GP-022565	• Requirements for the support of conversational services • Identification of the different building blocks for the provision of conversational services on the existing A/Gb protocol stack • Outline of impact and feasibility of these building blocks and their different solutions • Impact on 3GPP architecture and requirement to co-ordinate with other TSGs (CN, SA) • Standardisation effort • Dependency to other features	100%		Nov 2002	Closed at GERAN #13
MS Conformance Testing of Dual Transfer Mode **GP-023236**	MS Conformance Testing of Dual Transfer Mode	• MS Conformance Testing of Dual Transfer Mode	100%		Feb 2003	*Closed at GERAN #14*
Location service (UMTS)	LCS interoperability aspects to GERAN GP-000456	• Co-ordinated development of GSM LCS Phase 2 and UMTS LCS, S2 and GERAN				Ready for R5. Closed
	Location service for GERAN R4 GP-010932	• Work for aligning LCS R4 CN and GERAN				Ready for R4. Closed
	Location Services (LCS) for GERAN in A/Gb Mode GP-011925	• GERAN LCS Stage Two • Gb interface support for LCS • L3 protocol support for LCS • Stage 3 specifications			Feb. 2002	Ready for Rel-5. Closed

Comment [Eric1]: To be closed at GERAN #14

	Location Services (LCS) for GERAN in Iu Mode GP-011926	• GERAN LCS stage 2 • Iu interface support for LCS • Iur-g interface support for LCS • RRC protocol support for LCS • Additional impacts on Broadcast of LCS data on packet channels • Stage 3 specifications			Stage 2- GERAN #8 Feb. 2002 Stage 3 – GERAN #9 Jun 2002	Ready for R5. Closed
	GERAN MS Conformance test for LCS (LCS-GERAN-Msconf) GP-000458	• Develop LCS MS test case work plan (Release 98/99/4) • Develop LCS MS test cases	100%		June 2003	Completed
	GERAN BTS Conformance test for LCS (LCS-GERAN-BTSconf) GP-000459	• Develop LCS BTS test case work plan (Release 98/99/4) • Develop LCS BTS test cases	0%		June 2004	Closed without progress at GERAN #19
Seamless support of streaming services in A/Gb mode (SSStrea) GP-022561	Identification of requirements for streaming GP-022564	• Requirements	100%	August 2002	August 2003	Completed at GERAN #16
	Performance study of cell change mechanisms GP-022562	• Performance of NACC • Performance of cell change in DTM for the PS domain • Handover	100%	August 2002	August 2003	Completed at GERAN #16
	Reduction of service interruption times and packet loss during mobility procedures GP-022563	• Optimisations of existing mechanisms/procedures • Inter-system NACC • PS Handover (within GERAN and between GERAN and UTRAN) • Dependency to other features	100%	January 2003	November 2003	Completed at GERAN #17
	MS conformance testing GP-023424	• MS conformance tests	0%	September 2003	January 2004	Closed, no work needed.
GERAN improvements 2 (GEIMP2) GP-012812	Gb enhancements GP-000436	Intra BSC NACC • Concept • Changes in 03.64 • Changes in 04.60 • Changes in 44.008		Nov 2000	June 2001	Ready for R4. Closed
	MS conformance test for Intra BSC NACC GP-012811	Changes in 51.010	100%	Nov 2001	November 2003	Completed at GERAN #17
Alignment of 3G functional split and Iu (GER3GAL)	GERAN user / control plane (GER3GAL-GUCOPL) GP-021255	• Alignment with UMTS bearer concept • Stage 2		Aug 2000	Jun 2001	Ready for R5.

GP-021256		• Adoption of the UTRAN PDCP			Dec 2001	
		• Development of RLC / MAC			Aug 2002	
		• Development of GERAN RRC			Jun 2002	
		• Ciphering and integrity protection concept paper			Apr 2002	
		• Multiple TBF or equivalent Concept paper			Feb 2002	
		• Paging concept			Apr 2002	
		• Dedicated physical subchannels. Includes traffic and control channels			Nov 2001	
		• Iu support and broadcast concept 5.			Apr 2002	
		• Impact of using RLC instead of LAPDm concept			Feb 2002	
		• Contention resolution, mobile-station identity, and access concept			Nov 2001	
		• PDCP concept			Apr 2002	
		• Downlink delayed TBF release			Aug 2002	
		• Add transparent RLC Concept			Feb 2002	

		• Handover concept			Feb 2002	
		• Physical layer alignment with UMTS bearer concept • Control channels in 45.003 • Receiver performance in 45.005 for PDTCH/TCH and control channels			Jun 2001	
	Iu rg interface (GER3GAL-Iurg) GP-010428	• Inter BSS interface • Identification of requirements • Stage 2 • Adoption of relevant parts from Iu r • Complementation with GERAN specifics • New stage 3	Nov 2000	Jun 2002	Ready for R5. Closed
		• Inter BSS-RNS interface • Identification of requirements • Stage 2 • Adoption of relevant parts from Iu r • Complementation with GERAN specifics • New stage 3 6.			Jun 2002	Ready for R5. Closed
	Voice over GERAN PS and CS concept GP-021252	• Voice over GERAN PS and CS concept • Architecture for A, Iu cs and Iu ps • Handover • RTP payload	Nov 2000	Nov 2001	Ready for R5. Closed
Alignment of 3G functional split and Iu (GER3GAL) GP-021256	GERAN user / control plane (GER3GAL-GUCOPL) GP-021255	• Alignment with UMTS bearer concept • Stage 2	Aug 2000	Jun 2001	Ready for R5.
		• Adoption of the UTRAN PDCP			Dec 2001	
		• Development of RLC / MAC			Aug 2002	
		• Development of GERAN RRC			Jun 2002	
		• Ciphering and integrity protection concept paper			Apr 2002	
		• Multiple TBF or equivalent Concept paper			Feb 2002	
		• Paging concept			Apr 2002	
		• Dedicated physical subchannels. Includes traffic and control channels			Nov 2001	
		• Iu support and broadcast concept			Apr 2002	
		• Impact of using RLC instead of LAPDm concept			Feb 2002	
		• Contention resolution, mobile-station identity, and access concept			Nov 2001	
		• PDCP concept			Apr 2002	

		• Downlink delayed TBF release			Aug 2002	
		• Add transparent RLC Concept			Feb 2002	
		• Handover concept			Feb 2002	
		• Physical layer alignment with UMTS bearer concept • Control channels in 45.003 • Receiver performance in 45.005 for PDTCH/TCH and control channels			Jun 2001	
	Iu rg interface (GER3GAL-Iurg) GP-010428	• Inter BSS interface • Identification of requirements • Stage 2 • Adoption of relevant parts from Iu r • Complementation with GERAN specifics • New stage 3		Nov 2000	Jun 2002	Ready for R5. Closed
		• Inter BSS-RNS interface • Identification of requirements • Stage 2 • Adoption of relevant parts from Iu r • Complementation with GERAN specifics • New stage 3			Jun 2002	Ready for R5. Closed
	Voice over GERAN PS and CS concept GP-021252	• Voice over GERAN PS and CS concept • Architecture for A, Iu cs and Iu ps • Handover • RTP payload		Nov 2000	Nov 2001	Ready for R5. Closed
Multiple TBF in A/Gb mode (MULTBF) **GP-021263**	Multiple TBF in A/Gb mode (MULTBF-Agbmode) GP-021263	• Multiple TBF Concept paper • Multiple TBF Stage 2 (43.064) CRs • Multiple TBF Stage 3 (44.060) CRs	100%	April 2002	August 2003	Completed
Flexible Layer One for GERAN (FLOGER) GP-021018	Realisation of a Flexible Layer One (FLOGER-Real) GP-021019	• Technical Report • Architecture in 45.001 and 43.051 • Multiplexing in 45.002 • Channel Coding in 45.003 • Performance Requirements in 45.005 • Radio subsystem link control in 45.008 • Requirements in 44.004	100%	April 2002	April 2004	Completed
	Signalling and protocol support for a Flexible Layer One (FLOGER-SigPro) GP-021020	• Modifications to RLC/MAC in 44.060 and 44.160 • Modifications to RRC in 44.118 and 44.018	100%	October 2002	June 2004	Completed

	Security for a Flexible Layer One (FLOGER-SecFLO) GP-021021	• Ciphering in 44.160,44.118, 44.060 and 44.018	100%	February 2003	August 2003	Completed
Addition of frequency bands to GSM (TAPS) GP-022072	Addition of frequency bands to GSM – Changes to core specs (TAPS-Specs) GP-022073	• New frequency ranges • Scenarios for new frequencies • Classmark information elements • Add frequency ranges • Add frequency and channels • Add frequency ranges • 43.022 Add channels to be searched	100%	June 2002	Dec 2002	Ready for Rel-6
Uplink TDOA location determination for GPRS, PS domain GP-032774	Uplink TDOA location determination for GPRS, PS domain	Addition of U-TDOA in the PS domain	100	June 2003	November 2004	Started
Uplink TDOA location determination for GSM, CS domain GP-032773	Uplink TDOA location determination for GSM, CS domain	Addition of U-TDOA in the CS domain	100%	November 2002	April 2004	Completed
Uplink TDOA location determination for GSM, CS domain GP-032773	Uplink TDOA location determination for GSM, CS domain	Addition of U-TDOA in the CS domain	100%	November 2002	April 2004	Completed