3GPP TSG_CN **Tdoc NP-000480**
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Source:	**3GPP CN WG 4 Chairman**
Title:	**Status Report N4 to TSG CN#09**
Agenda item:	**6.4.**
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1 Introduction

Two N4 meetings has been held since TSG CN#08, which were chaired by Yun-Chao Hu (LM Ericsson AB) and assisted by Franco Settimo (MCC). The N4#03 meeting has been held on 17-21 July in Helsinki, hosted by Nokia (Finland). The meeting reviewed ***125*** documents and produced ***39*** CRs, ***5*** outgoing Liaison Statements and ***6*** other output documents. The meeting was attended by 38 participants and finished one day prior to allocated meeting time. The meeting agenda also allocated a vice-chairman election and Mr. Teemu Mäkinen (Nokia, Finland) was elected by proclamation as vice chairman of N4.

The N4#04 meeting has been held on 28 August – 1 September 2000 in Seattle (USA), hosted by the "North American Friends of 3GPP". The meeting reviewed ***216*** documents and produced ***73*** CRs, 4 Liaison Statements and 4 other output documents. Thirty-nine participants attended the meeting and they had long working days due to the number of documents to be reviewed and the 1½ days allocated to the TrFO Workshop.

Despite the successful outcome of the N4 meetings, one sad thing is to be mentioned. After a very good and enthusiastic assistance from Franco Settimo since the beginning of the 3GPP (N2 and N4 WGs), he is going to leave us and has taken a job outside MCC. Again a lot of thanks for the assistance Franco has been provided to us (N4) and myself.

2 Change Requests

2.1 ASCI

One corrective CR has been approved for ASCI on the correction of the Follow Me service code since the specification 23.094 still referred to a temporary service code. The ASCI CR is documented within ***NP-000481***

2.2 CAMEL

One corrective CR (Category 3) has been approved for CAMEL Phase 2 (97) on the issue of a redirection of the call to a different destination. Mirror CRs to R98 and R99 has been provided as well. The CAMEL Phase 2 CRs are documented in ***NP-000482***

CAMEL Phase 3 introduced a number of corrective CRs on the issues of interaction with supplementary services and the management of CAMEL Subscription data. The CAMEL Phase 3 (R99) CRs are documented in ***NP-000483.***

Since TS 29.002 has a R'00 version, the R'99 CAMEL CRs to 29.002 need to be mirrored to the 29.002 version for R'00. These CAMEL Phase 3 (R00) CRs are documented in ***NP-000484***

2.3 Security

A corrective CR has been agreed that corrected a number of issues for the MAP security WI:
1. The current text seems to indicate that a secure MAP transport error carries two copies of the security header.
2. Decisions whether unsecured transport is allowed needs to be described.
3. The responding entity needs also to check whether the protection mode for secure transport is acceptable.
4. Two editorial errors in the SDL diagrams MAP_SRSSM3 and MAP_PSSM2 are corrected.

This CR is documented in ***NP-000485***

A corrective CR has been agreed to correct the missing support for the MAP Security capabilities to the GLR specification. This CR is documented in ***NP-000494***.

A corrective CR has been agreed that aligned the AUTS and AUTN parameters within the MAP protocol with the stage 2 descriptions of these parameters within TS 33.103, which was agreed by S3#13 in Yokohama. Unfortunately, S3 missed to communicate this change to N4 and just by checking of the N4 participants this misalignment could be corrected.

A corrective CR has been agreed to align the MAP operation Authentication Failure Report with the stage 2 requirement described in TS 33.102. This CR correct the behaviour of the MAP operation into a notification event on application level, but the protocol operation is specified as a class 1 operation (acknowledgement of results and errors) for forward compatibility reasons.

These two CRs has been documented for Security (R99) in ***NP-000497*** and mirrored in Security (R00) in ***NP-000498***.

2.4 Gateway Location Register

One corrective CR corrects the missing support for Authentication Failure Report capabilities to the GLR specification. This CR is documented within ***NP-000486***.

2.5 GPRS and GTP Enhancements

Three corrective CRs have been agreed for ***GPRS R'97*** dealing with the following issues:

- Alignment of the IMSI. Currently TS 09.60 references the IMSI from TS 04.08. However, a number of fields are not used by the GTP protocol. Therefore, the IMSI description is corrected and uses a similar format as described in TS 09.02.
- Addition of MS Not Reachable Reason within the SRI for GPRS Response. This corrects a misalignment of the TS 09.60 with the specifications TS 03.60 and TS 09.02
- MM Context Information clarification; The current TS 09.60 describes the coding of DRX parameter and MS Network Capability parameter ambiguously. This CR provides the necessary clarification. The spirit of the CR is already described in R'99 however textual alignment needs to take place and is assumed to be available at the next CN Plenary

These three CRs are categorised as C3 and are mirrored for R'98 and R'99 (except MM Context Information within R'99 as described above).

Two corrective CRs have been agreed for ***GPRS R'98*** correcting the following issues:

- The TI (transaction Identifier), used for communication with the MS, is not specified how the used TI is inserted into the PDP context IE. This CR provides the required description.
- S1 has agreed that the support of the IHOSS service is not required and therefore, the PDP type OSP becomes obsolete. It is assumed that S1 will raise CRs to remove this feature from R98, R99 and R00 stage 1 specifications. This CR deletes the references to OSP:IHOSS in 09.60 R98

Both R98 CRs are categorised as C3 and mirror CRs to R'99 has been provided as well.

Four corrective CRs and one editorial CR has been provided for ***GPRS R'99*** on miscellaneous issues. The CRS to the Work Item GPRS has been provided in ***NP-000487***.

Fourteen corrective CRs and two editorial CRs have been agreed for ***GTP Enhancements*** on miscellaneous issues. One issue needs to be mentioned since this CR on *"race conditions within GTP"* was initially presented at the CN Plenary #08 but was referred back to the CN4 WG for further considerations waiting for responses to the N4 LS from other 3GPP WGs. This issue was resolved but during its analysis more race conditions were identified and appropriate solutions provided. The CRs are documented in ***NP-000489***.

2.6 GSM-UMTS Interworking and Handover

One corrective CR was agreed for the WI GSM-UMTS Interworking to correct the following issue:

- The message type IE was redefined in 24.008 and 24.007 in R'99. The description of the Message Type IE in 24.080 has to be adapted in alignment with 24.008 and 24.007.

This CR is documented in ***NP-000488***

Three corrective CRs have been agreed for the WI Handover to correct the following issues:

- The core network passes cipher and integrity mode information and key status to the UTRAN. After inter system inter MSC handover, when BSSMAP is used in E-interface the information is transferred from MSC-A to MSC-B

with MAP_FORWARD_ACCESS_SIGNALLING message, the information includes Integrity Protection Information, Encryption Information. The Key Status is missing from 29.002.
- 29.002 and 29.010 describe the support for inter-system handover and inter-MSC relocation. However, the description when and why to use the Radio Resource Information (08.08 Channel Type) is somewhat obscure and should be clarified.

Appropriate mirror CRs have been provided for Release 2000. The CRs are documented in ***NP-000490*** and ***NP-000491***.

2.7 Location Services

Two corrective CRs have been agreed for ***LCS R'98*** to correct the following issues:
- The error type description for "PositionMethodFailure" is missing, although the error code is used in operation "LCS-MOLR". This CR is considered within the category C1.
- Currently the QoS indication defines the required horizontal and vertical accuracy using a 7 bit uncertainty code in GSM 03.32 which expresses distance. However, the definition of the related confidence is missing. Thus a clarification, that the confidence value of 67 % is added. This CR is categorised as C3.

Mirror CRs to LCS R'99 and R'00 has been provided as well.

One corrective CR to ***LCS R'99*** has been agreed on the identification of a LCS client subtype for CAMEL phase 3 – to enable an SMLC so that it correctly restricts the geographic shape description. A mirror CR to LCS R'00 has been provided as well.

The CRs are documented in ***NP-000492*** and ***NP-000493***.

2.8 Multi Call

One corrective CR has been agreed to implement the following S1 requirement:

- The UMTS network, which supports Multicall, shall accept the emergency call after tearing down existing call(s) if necessary.

One editorial CR has been agreed to correct a previously incorrect implemented CR.

Both CRs are documented in ***NP-000495***.

2.9 Pre-Paging

One corrective CR has been agreed to correct the missing part of the pre-page procedure in the Basic Call Handling specification, in the case of finishing paging handling but the radio resource is released by BSS/UTRAN (etc. radio link failure) before the MSC receives the IAM. In this case the MSC receives the Release transaction message from the BSS/UTRAN. The CR is documented in ***NP-000496***.

2.10 Technical Enhancements and Improvements

Seventeen corrective CRs has been agreed on the WI TEI. The CRs to releases earlier than 1999 are within the category C3 except one, which is in C2. Thirteen editorial CRs have been agreed on the WI TEI. R'99. Seven CRs has been agreed on the WI TEI for R'00. The CRs are documented in ***NP-000499***, ***NP-000500*** and ***NP-000501***.

3 Work Items

Three Work Item descriptions have been agreed by N4. They are addressing the following issues:
- *Out of band Transcoder Control*
- *Bearer Independent Circuit-Switched Core Network*
- *'Optimization of Signaling: Combined MAP Signaling for mobility management'*

Each Work Item description has at least 4 supporting companies and needs to deliver stage 2 and stage 3 specifications.

3.1 Out of Band Transcoder Control

This WI is also referred as Transcoder Free Operations and is highly linked to the associated Wis Transcoder at the Edge and the Bearer Independent Circuit-Switched Core Network. Despite the slow progress in the TrFO Workshop, a more optimistic progress is foreseen between TSG#09 and TSG#10. Depending on the alternative to be taken this can result into more or less 3GPP standardisation effort, but with some effort it is foreseen that the stage 2 specificaitons can be finalised before the next TSG CN #10. The required stage 3 specifications are expected to be completed before TSG CN #11.

The Work Item description is documented in ***NP-000507***.

3.2 Bearer Independent Circuit-Switched Core Network

This WI addresses solely the circuit-switched bearer independence however, it has been noted that S2 is performing a feasibility study on the packet switched transport independence. These Wis will have some similarities, but due to the different WG responsibilities this is not fully analysed. **Some urgent guidance on this issue is requried before both WIs becomes distinct.**

During the N4 discussions the issue of H.248 packaging has been raised if these packages are to be studied within 3GPP TSG CN or by ITU-T (probably SG16) but a decision on this issue has not yet been taken by N4. Although no clear drive on stage 3 specification has been noted in the N4 meetings yet, but it is believed that this will take place before the next TSG CN #10. **Some guidance from the CN Plenary would be very helpful.**

An additional concern from the CN4 chairman is the lack of competence on the "non-traditional" protocols within the 3GPP specifications. It is urged to request the involved companies to send their experts on the IETF protocols and ITU-T protocols to the 3GPP meetings in general and N4 specifically.

The Work Item description is documented in ***NP-000508***.

3.3 Combined MAP Signaling for mobility management

This WI addresses the network signalling optimisation of combining the MAP operation in case of an integrated entity for packet and circuit-switched nodes (i.e. integrated MSC/SGSN). This WI has been postponed for Release 99 and was submitted again for Release 2000.

N4 has requested a feasibility study on the network feature of Combined Mobility Management with a analysis of network optimisation. Unfortunately, due to time constraints, the analysis seems not consider all the network scenarios

In addition, the architectural impacts have been identified and guidance from WG SA2 has been requested, but unfortunately no response has been received in time. Since the WI was supported by at least 4 companies (all Japanese), it was accepted according the working procedures in 3GPP.

The WI was submitted very late and will consume some effort (mainly by the supporting companies) but the N4 community did not see this as a concern, except the chairman. However, the work is expected to be completed for TSG #11.

The Work Item description is documented in ***NP-000509***.

4 Work Organisation

The N4 meetings are organised in sequence (i.e. no parallel meetings) and it hosted two TrFO Workshops. Despite the recent workload (i.e. meetings till after 09:00 PM) it was understood that this was partly caused by the sequential meetings of N4 and the TrFO workshop. Since the TrFO workshop will be separated from the N4 meeting in the future, the N4 community was confident that they will be able to take the additional work onboard that is required for the IP MM Subsystem. Their response on the division of the IP MM protocols is documented in ***NP-000503***.
The Terms of Reference for N4 has been modified at the N4#03 meeting based on the comments provided by TSG CN#08. In addition the N4 agreed extensions for the IP MM protocols has been provided as revision marks to the agreed Terms of Reference from N4#03 at the N4#04 meeting. The final set of Terms of Reference of 3GPP CN WG4 are documented in ***NP-000506***.

N4 has also commented again to the Project Plan of 3GPP. Their comments seems already be incorporated into the latest Project Plan. Therefore, the comments as documented in ***NP-000513*** and ***NP-000514*** are provided for information.

5 N4 Calendar

3GPP N4 Meeting	Date	Place	Host
N4#06	15-19 January 2001	Melbourne, Australia	Ericsson, Australia
N4#07	26 February -2 March 2001	T.B.D	T.B.D
N4#08	14-18 May 2001	USA?	The North American Friends of 3GPP
N4#09	09-13 July 2001	Dusseldorf, Germany	Mannesmann
N4#10	15-19 October 2001	UK	Vodafone, BT
N4#11	26-30 November 2001	T.B.D	T.B.D

6 Acknowledgements

I would like to thank Teemu Mäkinen for his volunteership to the vice-chairmanship of N4. This is extremely important role, since chairmen are also human beings and can be required to skip meetings because of illness, or other reasons.

I would like to thank Franco Settimo for his excellent support to the N4 community and me specifically. Despite all the unsociable working hours his spirit was still up to top and was even most times very active after the meetings.

I would like to thank all the participants and still wonders how they survive the long working hours and keep still attending. This has proven to me that the N4 community is dedicated to their work and I thank them for this.

And at last but not least I would like to thank all the hosts for their excellent arrangements for our meetings and I hope that we can still rely on the volunteership of the hosts for future meetings. Without the co-operation of the hosts the 3GPP N4 meetings would be less effective and efficient in performing their tasks to deliver the specifications according to time schedule.