3GPP TSG CN Plenary **Tdoc NP-000603**
Meeting #10, Bangkok, Thailand
6th – 8th December 2000

Source: **TSG CN WG 3**

Title: **All LSs send from CN3 since TSG CN#9**

Agenda item: **6.3.1**

Document for: **Information**

Introduction:

The following LSs have been sent by CN3 since the last CN Plenary.
These are forwarded to TSG CN Plenary meeting #10 for information only.

TDoc #	Tdoc Title	LS to	LS cc	Attachment
N3-000542	Problems in understanding with SA1's CRs to 22.001 for SMWOP	SA1	-	none
N3-000545	Response LS on Service Modification without pre-notification	SA1, SA2	-	S2-001518
N3-000546	Request for requesting clarification on QoS work distribution	SA2	-	N3-000512
N3-000549	Intersystem handover problem	CN1, CN4	-	N3-000497
N3-000599	Removal of TS61 and TS62 in NT mode from GSM in Rel-4 and later releases	SA1	-	none
N3-000607	CS Bearers	SA1	RAN3	none
N3-000610	RTCP responsibility	CN1	-	none
N3-000613	Proposed enhancements to Mc specification	CN4, RAN3		N3-000563

3GPP TSG-CN3
Meeting #13, Stuttgart, Germany
16th – 20th October 2000

Tdoc N3-000497

Source:	**Nokia**
Title:	**Intersystem handover problem**
Agenda item:	**TEI**
Document for:	**Discussion / approval**

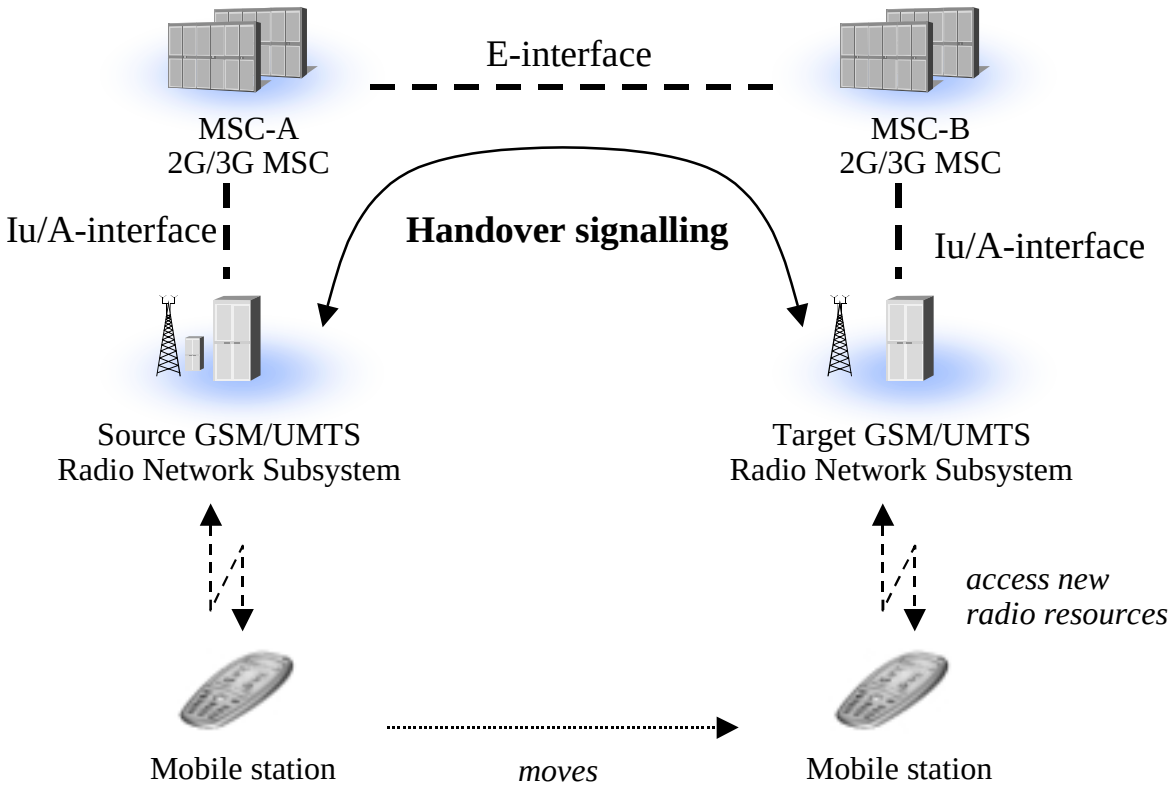
Introduction

The purpose of this paper is to provide an overview of a problem associated with intersystem handovers occuring within relay MSC (MSC-B) in a CS data call, and to propose actions to be taken to have the problem solved.

Basic inter-MSC handover

The basic inter-MSC handover is a handover between radio network subsystems connected to different MSCs. The radio network subsystem may be either a GSM BSS or a UMTS RNS.

The following figure illustrates the inter-MSC handover:



In the inter-MSC handover case, the MSC-A controls the call and the mobility management of the MS during the call, before, during and after a basic or subsequent handover. When BSSAP procedures related to dedicated resources have to be performed towards the MS, they are initiated and driven by the MSC-A. During a basic inter-MSC handover, MSC-A intiates and controls the handover procedure, from its initiation until its completion.

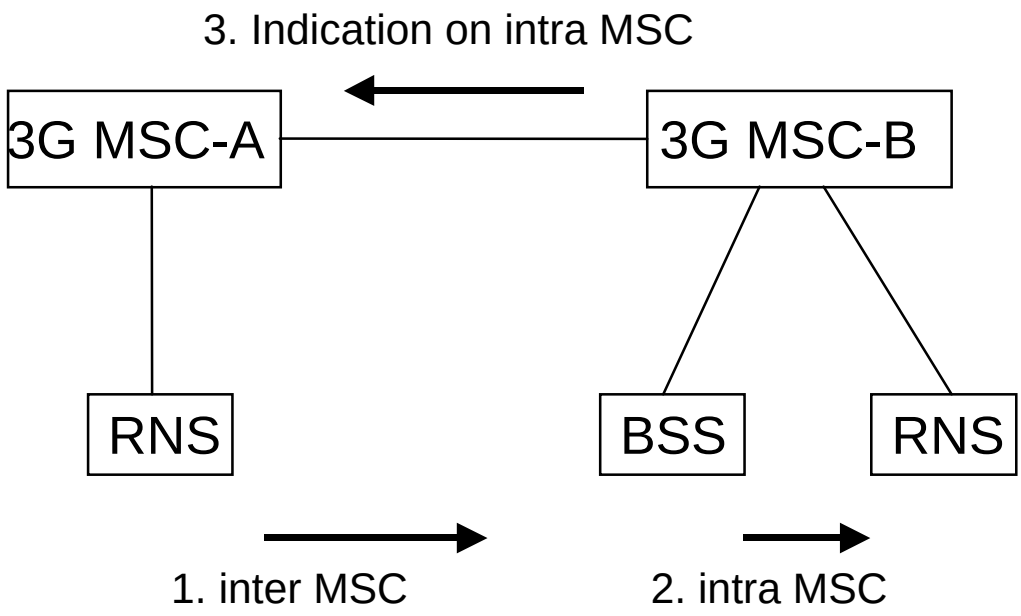
If the handover is made from 3G to 3G, the access network protocol used in E-interface is RANAP. The E-interface works as a 3G MSC – RNC interface for a subset of RANAP procedures. Depending on whether the transport network is ATM or TDM, the user plane format is either Iu or ATRAU' respectively.

If the handover is made from 2G to 2G or is an intersystem handover, the access network protocol is BSSMAP. The E-interface works as a 2G MSC – BSS interface for a subset of BSSMAP procedures. Depending on whether the handover was performed to GSM or UMTS, the user plane format is ATRAU/TRAU or ATRAU' respectively.

Subsequent intra-MSC intersystem handover in MSC-B

The intra-MSC handover is a handover between radio network subsystems (BSS/RNS) connected to the same MSC. If the handover occurs within MSC-B, the MSC-B keeps the control of the whole intra-MSC handover procedure.

The MSC-B may notify the MSC-A on intra-MSC handovers as illustrated in the figure below. The notification is performed at access network protocol level, and only BSSMAP supports it.

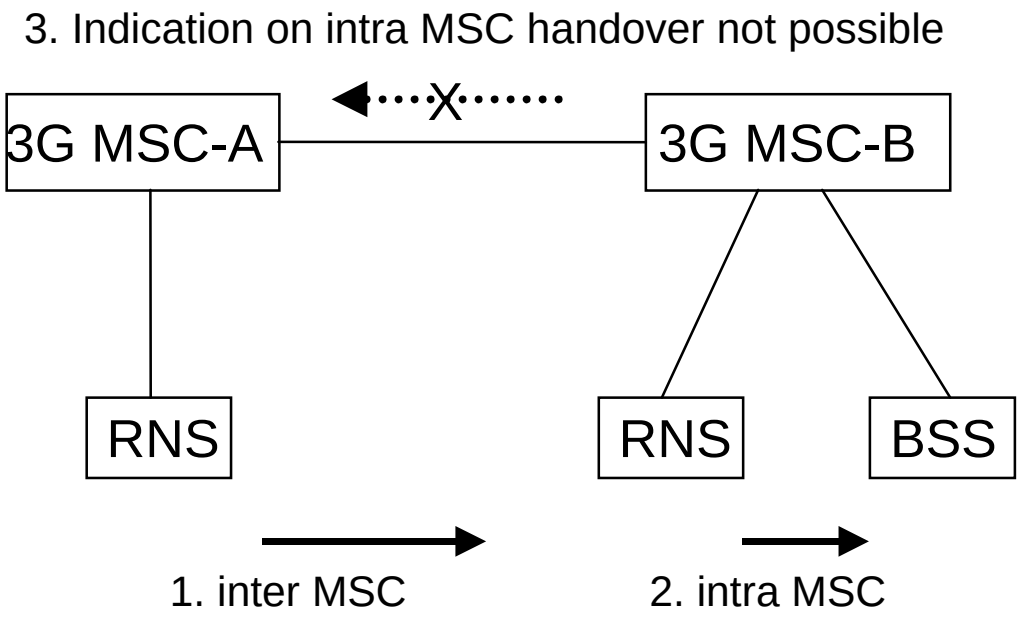


3G MSC-B notifies MSC-A on successful intra-MSC handover.

3G MSC-B notifies MSC-A on successful 3G->2G and 2G->2G intra-MSC handover only when the access network protocol used over the E-interface is BSSMAP.

Problem

If a 3G->3G inter-MSC handover has been made, the access network protocol in the E interface is RANAP. When a subsequent intra-MSC 3G->2G intersystem handover is made, the IWF in the MSC-A does not get any indication of the change of the user plane format (from ATRAU' to ATRAU/TRAU when TDM is used in the E interface). Consequently, the data transmission fails after the handover.



Since the RANAP is used on the E-interface, 3G MSC-B can not notify MSC-A on successful intra-MSC handover.

Conclusion

N3 is requested to study the issue and initiate corrective measures, e.g. to send a liaison statement to the groups responsible for the handover related signaling to make them aware of the problem and get a correction in the signaling.

3GPP TSG-CN WG3
Meeting #13, Stuttgart, Germany
16th – 20th October 2000

Tdoc N3-000512

Agenda item: **6.2**

Document for: **INFORMATION**

3GPP TSG_CN
Plenary Meeting #9, Oahu, Hawaii
20th – 22nd September 2000.

Tdoc NP-~~000428~~000553

Source:	*CN Chairman*
Title:	*Allocation of IM work to CN WGs*
Agenda item:	*10.1*
Document for:	*INFORMATION / APPROVAL*

As a result of the S2 architectural work on the IM domain approaches stability, CN will be tasked with turning the S2 architecture into concrete protocols. SIP has so far been the most visible output of the S2 work, but it is only one of many protocols that must be specified in order to support the IM domain. This upcoming protocol work differs from the traditional CN protocol work in a few fundamental ways:
- The protocols are in most cases end-to-end so the usual protocol segmentation we have in CN doesn't work well.
- We will act as stewards of the protocol (analyzing it, validating it, extending it if necessary, clarifying how it is used, specifying packages and parameter values), but we don't own the protocol (at least that is the goal).

I would like to keep the CN working groups as they are now. The division of responsibility for the CS and PS domains work well and there is still much work to do in these areas. However, for the IM domain, the normal allocation by interface does not work well. As a protocol steward it is desirable to keep the responsibility for a protocol in one group, regardless of which interfaces it crosses. In IETF, most of the protocols address a specific functionality, so it is desirable to allocate the IM protocol responsibility to groups that have historically dealt with that function.
The following work allocation is proposed:

- N1: SIP (Call control) including SIP supplementary services, SDP (Session Definition Protocol)
- N2: CAMEL extensions for VoIP and multimedia(although I personally have some reservations on whether this makes sense)
- N3: ~~SDP (Session Definition Protocol),~~ QoS protocols (such as RSVP), RTP (CRPT should probably be in R3).
- N4: Name to Address translation functions, AAA protocols, security protocols, , subscriber data management in HSS and the HSS to CSCF protocols to support this~~AAA protocols, security protocols, non-application layer protocols and protocol stacks (use of IPv6, SS7 over IP), subscriber data management in HSS, naming and addressing functions~~.
- N5: extension of OSA (or whatever it's new name is) to VoIP and multimedia

This allocation would mean for example that all SIP protocol issues would be addressed by N1 regardless of which interfaces it was carried over. In many cases this means that N1 will be addressing issues that would traditionally been the remit of N4.
Many of these protocols must be used in concert to provide the required mobility functionality. For this reason, it is desirable that the CN WGs co-locate as many meeting as possible during the first half of 2001.

3GPP TSG-CN3 **Tdoc N3-000542**
Meeting #13, Stuttgart, Germany
16th – 20th October 2000

Title: **LS on SA1's CR for Bearer Modification without Pre-notification**

Source: **TSG_CN WG3**

To: **TSG_SA WG1**

Contact Person:

Name: **Daisuke Igarashi**
E-mail Address: **igarashi@nw.yrp.nttdocomo.co.jp**
Tel. Number: +81 468 40 3970

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1. Overall Description:

During the CN3#13 meeting in Stuttgart, CN3 studied SA1's CRs on Bearer Modification without pre-notification that were approved in the SA#9 meeting. In order to fully understand the service requirements for this functionality CN3 has some questions to SA1 concerning the CR against TS 22.001. The original text says:

> *For mobile originated/terminated calls, the subscription checking shall be performed if re-negotiation of bearer/QoS is necessary during CS calls. And it shall be possible to perform before re-negotiating. If the subscriber checking is negative, it shall be able to return to previous bearer/QoS attributes.*

CN3 thinks that the call set-up direction is irrelevant for the bearer modification. Further, CN3 thinks that the text should clearly state that the call remains unchanged if the subscription check fails. Please confirm if the following text accurately reflects the requirements:

> *A subscription check shall be performed prior to re-negotiation of bearer/QoS attributes. If the subscription check is negative, the bearer/QoS attributes shall be left unchanged.*

The original text says further:

> *When TS61 is requested in service modification and the subscription check for TS61 is negative, but a subscription check for TS62 is positive, then the call shall proceed according to the TS 22.003 [6]and TS 27.001 [8]. If a subscription check for both TS61 and TS62 is negative, then the call mode shall not be modified.*

CN3 thinks that it is not possible to request TS61 in a service modification. A service modification can only request facsimile or speech but not the alternate speech/fax service.

The proposed text in SA1's CR says that the call shall proceed according to TS 22.003 and TS 27.001 when the subscription check is negative against TS61 but positive against TS62. However, the existing text in TS 22.003 and TS 27.001 is only applicable for the call set-up phase but not for service modification.

CN3 agrees that a service modification without pre-notification to facsimile should be possible when the subscription check is positive for TS62. However, CN3 requests guidance from SA1 concerning TS61:

- should TS61 remain unchanged, i.e., service modification with pre-notification at call set-up only,
- or should TS61 also be applicable for service modification without pre-notification?

2. Actions:

ACTION 1: CN3 asks SA1 to confirm CN3's understanding of application of the subscription check to service modification without pre-notification as described in CN3's proposed text.

ACTION 2: CN3 asks SA1 to give guidance on whether TS61 should remain unchanged or should be applicable also for service modification without pre-notification.

ACTION 3 CN3 asks SA1 to review the text in TS 22.001 to ensure a clear explanation of the requirements.

3. Attachments:

none

3GPP TSG-CN3 **Tdoc N3-000545**
Meeting #13, Stuttgart, Germany
16th – 20th October 2000

Title: **Reply to "LS on Service Modification without pre-notification"**

Source: **TSG_CN WG3**

To: **TSG_SA WG2, TSG_SA WG1**

Cc:

Contact Person:

Name: **Masahiko Yahagi**
E-mail Address: **yamasa@mvc.biglobe.ne.jp**
Tel. Number: +81 (471) 85 7163

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1. Overall Description:

CN3 would like to thank SA2 for their liaison statement (S2-001518) regarding service modification without pre-notification.

SA2 asked CN3 to clarify which actions on this issue are required from SA2 regarding bearer modification because of radio conditions.

CN3 and SA1 have produced WIDs for service modification without pre-notification, SA1 for the service definition, CN3 for the provision of the service. However, SA1's WID has a wider scope than CN3's WID. The WID produced by CN3 does not include service modification without pre-notification because of radio conditions.

CN3 understands that service modification without pre-notification because of radio conditions is outside the scope of CN3.

2. Actions:

CN3 is of the opinion that SA1 should advise SA2 what actions are required on this issue.

3. Attachments:

S2-001518

3GPP TSG SA WG 2 Meeting #14 S2-001518
Bristol, UK, 04.09.-08.09.2000

Title: Reply to "LS on Service Modification without pre-notification"

SOURCE: 3GPP TSG SA WG2

TO: 3GPP TSG SA WG1, 3GPP TSG CN WG3

S2 would like to thank S1 and N3 for their liaison statements regarding service modification without pre-notification.

N3 asked S2 to confirm that N3's working assumption is acceptable that N3 considers the provision of modification between speech and UDI multimedia based on BICC. S2 found this to be acceptable.

However, S2 was also asked by N3 and S1 to investigate the provision of bearer modification because of radio conditions. This issue was discussed in S2, but it was not clear which actions are required from S2. S2 would like to ask N3 and S1 to clarify which actions on this issue are required from S2.

3GPP TSG-CN3 **Tdoc N3-000546**
Meeting #13, Stuttgart, Germany
16th – 20th October 2000

Title: **LS requesting clarification on QoS work distribution**

Source: **TSG CN WG3**

To: **TSG SA WG2**

Cc:

Contact Person:

Name: **Juha Räsänen**
E-mail Address: **Juha.a.rasanen@nokia.fi**
Tel. Number: +358 40 543 90 58

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1. Overall Description:

TSG-CN#9 has allocated the IM work to TSG-CN WGs (ref. to the attached NP-000553/N3-000512). CN3 was allocated "QoS protocols (such as RSVP), RTP".

Since CN3 is not aware of the status and planned coverage of the QoS work being done in TSG-SA2 and the QoS ad hoc group and is consequently not able to start working on QoS related issues, CN3 would like to request for a clarification from SA2.

CN3 sees various possibilities to synchronize with SA2 in the QoS work allocation issue:

- A briefing by the SA2 QoS rapporteur in a CN3 meeting,
- A joint CN3 & QoS ad hoc meeting,
- A QoS status report from SA2 to CN3.

CN3 would also appreciate any other way convenient for SA2.

2. Actions:

To TSG SA WG 2:

ACTION: **TSG CN WG3** asks **TSG SA WG2** to consider the above request and inform CN3 about their view on how to proceed with the issue.

3. Attachments:

Tdoc N3-000512, [NP-000553]

3GPP TSG-CN3 **Tdoc N3-000549**
Meeting #13, Stuttgart, Germany
16th – 20th October 2000

Title: **Intersystem handover problem**

Source: **TSG-CN WG3**

To: **TSG-CN WG1, TSG-CN WG4**

Cc:

Contact Person:

Name: **Juha Räsänen**
E-mail Address: **Juha.a.rasanen@nokia.fi**
Tel. Number: +358 40 543 90 58

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1. Overall Description:

TSG-CN WG3 has identified the following intersystem handover problem with CS data calls:

- First an inter-MSC handover is made between 3G-MSCs (from MSC-A to MSC-B, the used IWF consequently residing with MSC-A).
- Then an intra-MSC intersystem handover from UTRAN to GERAN is made within MSC-B.
- The IWF is not informed about the type of the GERAN channel, because there is no standardized mechanism to transport the GSM channel type between 3G-MSCs. Consequently, the data transmission fails after the handover.

There is a more detailed description in the attached tdoc **N3-000497**.

To CN3's understanding the problem can technically be solved either with an inband action in IWF or with outband signalling between the MSCs (e.g. RANAP, BSSMAP). Currently the outband solution is supported by BSSMAP but not by RANAP.

CN3 regards an outband signalling solution as more harmonized and consistent with the existing handover practices.

2. Actions:

To TSG CN WG1 and TSG CN WG4:

ACTION: **TSG-CN WG3** asks **TSG CN WG1** and **TSG CN WG4** to verify CN3's understanding of the problem and investigate possibilities to develop a solution based on signalling between the MSCs.

3. Attachments:

Tdoc N3-000497

3GPP TS 29.415 V0.1.0 (2000-11)

Technical Specification

3rd Generation Partnership Project;
Technical Specification Group Core Network;
DRAFT Core Network Nb User Plane Protocols
(Release 4)

Select keywords from list provided in specs database.

Keywords
<keyword[, keyword]>

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document specifies the protocols used between Media Gateways in the Core Network. These protocols are referenced herein for short as the Nb UP. The Nb UP is for a large part identical to the Iu UP (see 3GPP TS 25.415), and specified such as to take into account a decission by the 3GPP TSG-CN to use "the Iu UP" for transmission in the Core Network. Therefor, ample reference to 3GPP TS 25.415 is made, and differences between the two are specified only.

1 Scope

The present document specifies the bearer transport and bearer control protocols used between MGWs within the Core Network, called the Nb User Plane protocols (Nb UP). It assumes that the implementation of the split of call control and bearer transport and control, is as specified in 3GPP TS 23.205, see Figure 1.

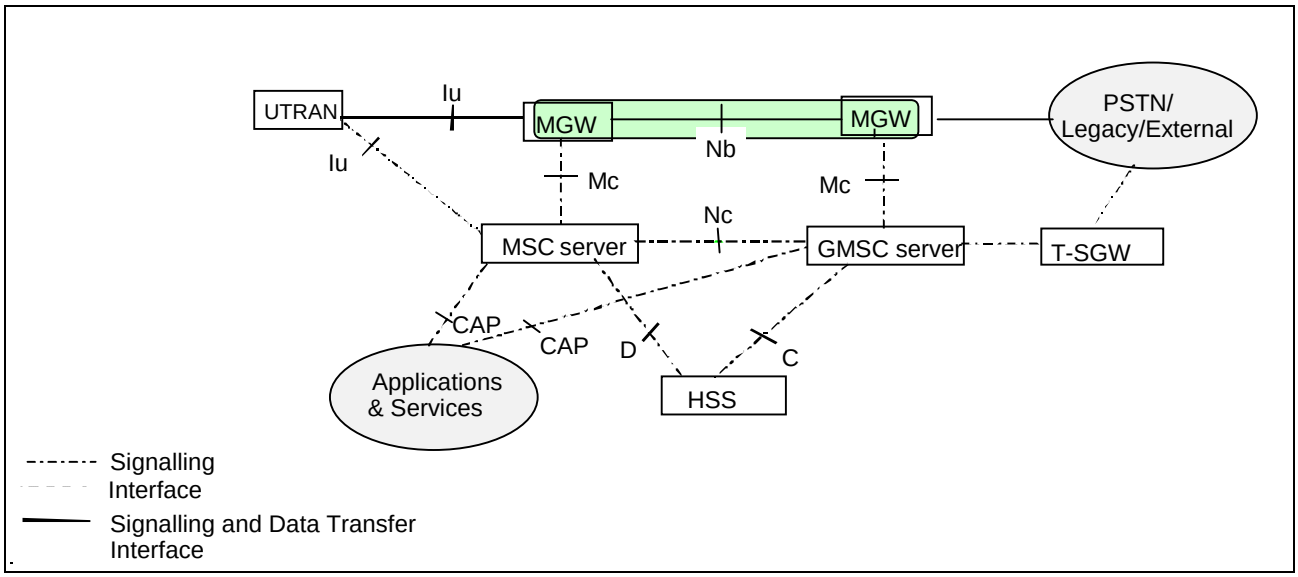

Figure 1: CS core network logical architecture

Editor's note: Application of the Nb UP to the PS subsystem is an item FFS and dependent on the progress of the work on the split of the support nodes (SGSN and GGSN).

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

This specification may contain references to pre-Release-4 GSM specifications. These references shall be taken to refer to the Release 4 version where that version exists. Conversion from the pre-Release-4 number to the Release 4 (onwards) number is given in subclause 6.1 of 3GPP TR 41.001.

[<seq>] <doctype> <#>[([up to and including]{yyyy[-mm]|V<a[.b[.c]]>}[onwards])]: "<Title>".

[] 3GPP TS 23.205: "Bearer Independent CS Core Network; Stage 2"

[] 3GPP TS 26.102: "AMR speech codec; Interface to Iu and Uu"

[] 3GPP TS 29.232: "Media Gateway Controller; Media Gateway interface; Stage 3"

[] 3GPP TR 41.001: "GSM Release specifications".

[] 3GPP TR 21.905: "3G Vocabulary"

[] 3GPP TR 21.912 (V3.1.0): "Example 2, using fixed text".

[] IETF Internet Draft: "Multiprotocol Label Switching Architecture"

[] IETF RFC 791: "Internet Protocol"

[] IETF RFC 1889: "RTP A Transport Protocol for Real Time Applications"

[] IETF RFC 1890: "RTP Profile for Audio and Video Conferences with Minimal Control "

[] IETF RFC 2327: "SDP: Session Description Protocol"

[] IETF RFC 2460: "Internet Protocol, Version 6 (IPv6)"

[] IETF RFC 2508: "Compressing IP/UDP/RTP Headers for Low-Speed Serial Links"

[] IETF RFC 2833: "RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals"

[] ITU-T H.248: "Media Gateway Control Protocol"

[] ITU-T I.363.2: "B-ISDN ATM Adaptation layer specification: Type 2 AAL"

[] ITU-T I.366.1: "Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL type 2"

[] ITU-T I.366.2: "AAL type 2 service specific convergence sublayer for trunking"

[] ITU-T Q.1901.1 "Bearer independent call control protocol (Capability set 1)"

[] ITU-T Q.2630.1: "AAL Type 2 Signalling Protocol (Capability Set 1)"

[] ITU-T Q.2630.2: "AAL Type 2 Signalling Protocol (Capability Set 2)"

[] ITU-T TRQ.3010: "Operation of the bearer independent call control (BICC) protocol with AAL type 2 signalling protocol (CS1)"

3 Definitions, symbols and abbreviations

Delete from the above heading those words which are not applicable.

Subclause numbering depends on applicability and should be renumbered accordingly.

3.1 Definitions

For the purposes of the present document, the [following] terms and definitions [given in ... and the following] apply.

Definition format

***<defined term>**: <definition>.*

example: text used to clarify abstract rules by applying them literally.

3.2 Symbols

For the purposes of the present document, the following symbols apply:

Symbol format

<symbol> <Explanation>

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL	ATM Adaptation Layer
AAL2	AAL Type 2
AMR	Adaptive Multi-Rate codec
ATM	Asynchronous Transfer Mode
FFS	For Further Study
CN	Core Network
DTMF	Dual Tone Multiple Frequency
FFS	For Further Study
IPTI	Inter PDU Transmission Interval
Iu UP	Iu interface User Plane
MGW	Media GateWay
N-ISUP	
PDU	Protocol Data Unit
RTP	Real-time Transmission Protocol
SDU	Service Data Unit
SRNC	
SSCS	Service Specific Convergence Sublayer
TBD	To Be Discussed
TrFO	TranscoderFree Operation
UP	User Plane

4 General

4.1 General aspects

The Nb UP is located in the user plane of the CN over the Nb interface. It is used to convey data between MGWs, in particular, to relay data transmitted over the Iu UP protocol through the CN.

The Nb UP protocol shall be initiated at one MGW and acknowledged by an adjoining MGW.

The Nb UP is very similar to the Iu UP, 3GPP TS 25.415, and its definition is based there upon.

Editor's note: Include Figure showing the Iu UP and the Nb UP on the same layer.

4.2 Operational and Functional Aspects

Two modes of operation of the Nb UP are defined;

Transparent mode, and

Support mode for predefined SDU size.

The two modes follow the definition of the corresponding Iu UP modes of operation.

Editor's note: The need for the transparent mode of operation is FFS.

5 Transparent mode, version 1

Editor's note: TBD: Should version numbering follow that of the Iu UP?

In transparent mode, the Nb UP control procedures are essentially void. Transmission and bearer control are dependant on the underlying layer. For instance, in an ATM network, the transmission could be based on AAL2 (see ITU-T

Q.363.2), possibly using a SSCS (ITU-T I.366.1 or ITU-T I.366.2) and using AAL2 signalling (ITU-T Q.2630) for bearer control.

6 Support mode for predefined SDU sizes, version 1

6.4.4.1 Frame quality classification

FQC received from a previous UP instance (Iu UP or Nb UP instance) is relayed to the following instance (Iu UP or Nb UP instance). FFS

6.5.1 Transfer of User Data procedure

As specified for Iu UP

6.5.2 Initialisation procedure

The initialisation procedure is controlled by the MGW issuing the Establish Request, see 3G TS 23.205. The behaviour of that MGW is a specified for the SRNC in 3G TS 25.415.

6.5.3 Rate Control

In case of a user plane transmission path from RNC to RNC, then each RNC controls the rates by "Distributed Rate Decision". When the User plane is terminated in the network then the CN is simply slave to the rate control.

Editor's note: Find a better formulation.

6.5.4 Time Alignment

FFS.

6.6 Elements for Nb UP communication in Support mode

As specified for the Iu UP.

6.7 Handling of unknown, unforseen and erroneous protocol data

FFS

7 Communication Primitives for the Iu UP protocol layer

7.1 Modelling Principle

Same as for Iu UP.

7.2 Primitives towards the upper layers at the ???-SAP

Same as for Iu UP with some renaming.

7.3 Primitives towards the lower layers

7.3.1 General

7.3.2 ATM/AAL2 based Transport Layer

FFS.

7.3.3 GTP-U based Transport Layer.

Not applicable as long as the functional split is not specified for the SGSN and GGSN.

7.3.4 RTP/UDP/IP based Transport Layer

FFS

Editor's note: See tdocs N3-000562 and N3-000566

Annex A (informative): Usage of the Nb UP for different services

A.1 General

The purpose of this section is to show how the Nb UP is used for various services. It shows recommended SDU sizes, PDU types, IPTIs, for each service. The information contained in this annex is contained in other specs refencing the present spesification. For instance, the 26-series specifications specify the transmission of speech services over the Nb interface using the Nb UP.

Editor's note: TS 26.102 provides an example of how Iu UP applies to AMR. New cases to consider are 64 kbit/s digital data (N x 64 kbit/s), PCM encoded audio (speech and modem 3.1 kHz), and inband DTMF.

Annex <X> (informative): Change history

It is usual to include an annex (usually the final annex of the document) for specifications under TSG change control which details the change history of the specification using a table as follows:

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New

ETOKHL comments:

1. Make one figure for RNC to MGW to MGW to RNC

2. Make one figure for RNC to MGW to MGW to fixed network

3. Make a figure showing protocol stacks/layers used for the different alternatives

3GPP TSG CN WG3 **Tdoc N3-000599**
Meeting #14, Sophia, France
14th – 16th November 2000

Title: **Removal of TS61 and TS62 in NT mode from GSM in Rel-4 and later releases**

Source: **TSG CN WG3**

To: **TSG SA WG1**

Cc:

Contact Person:

Name: Erik Colban
E-mail Address: Erik.A.Colban@ericsson.no
Tel. Number: +47 66841844

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1. Overall Description:

CN3 has produced CRs to remove BS30 NT from their specifications. However, during this exercise, the question was raised whether TS61 NT and TS62 NT (alt speech/fax and automatic fax respectively) should be removed from GSM as well.

To CN3's knowledge, no specification mentions *explicitly* that NT TS61 and NT TS62 use BS30 NT, but these teleservices use the same components as BS30 NT. One may argue that TS61 and TS62 NT are based on BS30 NT.

NT fax for GSM is specified in TS 03.46. This specification was produced at a time when it was still unclear whether facsimile should be provided in T or NT mode in GSM. Later, the GSM community reached an agreement to deploy the T fax services only in order to avoid incompatibilities and handover problems. However, TS 03.46 was kept and still exists in version 5.0.0. This means that the specification has not been maintained to reflect the introduction of HSCSD, TCH/F14.4, EDGE, 3G, etc.

In order to support NT fax in GSM, CN3 has kept those components of BS30 NT that are needed to support the TSs (e.g., L2RBOP). These could otherwise have been removed. Only a reader familiar with the background described above will understand why they are kept.

Hence, CN3's agreed view is that NT fax should be removed from GSM in Rel-4. After such a change, the current situation regarding fax would be:

1. T fax as specified in TS 03.45 applies to GSM
2. NT fax as specified in TS 23.146 applies to UMTS

2. Actions:

To TSG SA WG1.

ACTION 1: CN3 asks SA1 to consider removing NT fax from GSM for Rel-4 and onwards.

ACTION 2: Should SA1 agree to remove NT fax from GSM for Rel-4 and onwards, CN3 asks SA1 to amend TS 22.003 to reflect that TS61and TS62 NT applies to UMTS only.

ACTION 3: CN3 asks SA1 to correct TS 22.003 Rel-99 and Rel-4 to reflect that TS61 and TS62 T applies to GSM only.

3. Attachments:

No attachments.

3GPP TSG CN WG3 **Tdoc N3-000607**
Meeting #14, Sophia, France
14th – 16th November 2000

3GPP TSG-CN3 *Tdoc N3-000550*
Meeting #13, Stuttgart, Germany
16th – 20th October 2000

Title: **LS requesting clarification on Circuit Switched Bearer Services in UMTS**

Source: **TSG CN WG3**

To: **TSG SA WG1**

Cc: **TSG RAN WG3**

Contact Person:

Name: **Norbert Klehn**

E-mail Address: **norbert.klehn@icn.siemens.de**
Tel. Number: +49 30 386 29090

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1. Overall Description:

CN3 has to maintain some specifications related to circuit switched bearer services, like 27.001, 23.910 and 29.007. CN3 has found some inconsistencies between these specifications but also with 22.002. Reason for the inconsistencies is mainly a confusing and unclear presentation of the information in the specifications.

CN3 found that the method in 22.002 is appropriate to get a high level overview on the services defined. However, CN3 has changed the tables in 22.002 to get a clearer view:-

- tables are again split into several ones in order to reduce the number of confusing notes
- all of tables have the same layout
- tables are grouped according to BS 20 and BS 30, respectively, and further according to transparent and non-transparent services.

CN3 thinks that such a presentation of the information gives a better and clearer overview on which services are defined under which conditions.

The tables proposed by CN3 are attached to this LS. The re-arrangements are not shown with revision marks. Due to the clearer presentation some issues raised up that CN3 would like to discuss with SA1. CN3 will make some proposals in the following. These proposals are shown in the tables with revision marks.

2. Discussion Points

2.1 Difference between GSM phase 2 and GSM phase 2+

The tables include notes that indicate which services were already defined in GSM phase 2. This was relevant for a specification for GSM phase 2+ but no more today when we are defining UMTS. These notes should be deleted.

2.2 Bit transparent services

The term “bit transparent” is not defined anywhere. It denotes a special case where the requested user rates need the whole bearer. This means that there is no rate adaptation towards the ISDN possible or necessary. The table for bit transparent services should be incorporated in the table for synchronous services for digital interworking. Further, the indication that rate adaptation for 56 kbit/s is only needed in a 64 kbit/s environment is obvious and need not to be mentioned explicitly. This is also valid for a note saying that 64 kbit/s is not applicable in a 56 kbit/s environment. These notes should be deleted.

2.3 Transparent synchronous services at 48 kbit/s

It is proposed to delete 48 kbit/s for BS 30 T UDI for UMTS because there is no appropriate Radio Access Bearer (RAB) available in order to provide this service.

2.4 Transparent synchronous services at 28.8 kbit/s

It is proposed to delete 28.8 kbit/s for BS 30 T UDI for UMTS because the idea for UMTS was to reduce the CS Bearer Services to those that are really needed. For 3.1 kHz Audio this user rate is needed because it represents the highest user rate provided by a V.34 modem that can be signalled in ISDN. For UDI this user rate is not necessary because it is possible to provide higher user rates in this case.

2.5 Handover for transparent synchronous services at 56 kbit/s

The user rate of 56 kbit/s can be supported in GSM by two configurations:

1. without IWF with the following channel codings
   - 2*TCH/F32.0
   - 5*TCH/F9.6
2. with IWF with the following channel coding
   - 4*TCH/F14.4

In UMTS this user rate is always supported by a configuration without any IWF. Therefore, a handover for 56kbit/s transparent between UMTS and GSM can be supported only for configurations without IWF.

CN3 emphasises that also handover between configurations with and without IWF cannot be supported within GSM.

These restrictions have no impact on SA1's specifications. It will be described in CN3's specifications. However, CN3 would like SA1 to confirm these restrictions.

2.6 V.110 is not applicable for RDI

The rate adaptation according to V.110 is only applicable to UDI but not to RDI because V.110 specifies the rate adaptation onto 64 kbit/s.

3. Actions:

To TSG SA WG1:

ACTION 1: **TSG CN WG3** asks **TSG SA WG1** to consider the attached tables and to confirm CN3's view on the set of circuit switched services.

ACTION 2: **TSG CN WG3** asks **TSG SA WG1** to consider and confirm the proposed changes.

ACTION 3: **TSG CN WG3** asks **TSG SA WG1** to consider and confirm the restriction for the handover for 56 kbit/s transparent services.

To TSG CN WG3:

ACTION 4: **TSG CN WG3** will update the specifications under CN3's responsibility according to **TSG SA WG1's** decision.

4. Attachments:

see next page

Table 2 contains the list of the Bearer Services and the values for the remaining attributes in the minimal set.

Table 2

Bearer Service Number	Bearer Service Name	Access Structure	Access Rate	Information Transfer Capability	QOS Attribute	
20	Asynchronous General Bearer Service	Asynch	note 1	3.1 kHz, UDI, RDI	NT / T	
30	Synchronous General Bearer Service	Synch	note 1	3.1 kHz, UDI, RDI	T	
Note1: This General Bearer is independent of any nominal rate. It is elaborated in more detail in subclause 3.1						

3.1 General bearer service user data characteristics

The tables below describe the characteristics of the General Bearer Services. The indicated fixed network user rates are possible, but support of General Bearer Service does not imply support of all rates.

3.1.1 BS 20 (asynchronous services)

3.1.1.1 BS 20 T (transparent asynchronous services)

3.1.1.1.1 BS 20 transparent in regular mode for analogue interworking

Fixed Network User Rate	Access Structure	Information Transfer Capability	Rate Adaptation	QoS attributes	Note
0.3 kbit/s	Asynch	3.1 kHz	-	T	Note 1 ~~and 2~~
1.2 kbit/s	Asynch	3.1 kHz	-	T	Note 1 ~~and 2~~
2.4 kbit/s	Asynch	3.1 kHz	-	T	Note 1 ~~and 2~~
4.8 kbit/s	Asynch	3.1 kHz	-	T	Note 1 ~~and 2~~
9.6 kbit/s	Asynch	3.1 kHz	-	T	Note 1
14.4 kbit/s	Asynch	3.1 kHz	-	T	Note 1
19.2 kbit/s	Asynch	3.1 kHz	-	T	Note 1
28.8 kbit/s	Asynch	3.1 kHz	-	T	
Note 1: Only applicable in GSM. ~~Note 2: These services are also supported by the GSM Phase 2 Specifications.~~					

3.1.1.1.2 BS 20 transparent in regular mode for digital interworking

Fixed Network User Rate	Access Structure	Information Transfer Capability	Rate Adaptation	QoS attributes	Note
0.3 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	T	Note 1 ~~and 2~~
1.2 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	T	Note 1 ~~and 2~~
2.4 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	T	Note 1 ~~and 2~~
4.8 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	T	Note 1 ~~and 2~~
9.6 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	T	Note 1
14.4 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	T	Note 1
19.2 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	T	Note 1
28.8 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	T	Note 1
38.4 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	T	Note 1
Note 1: Only applicable in GSM. ~~Note 2: These services are also supported by the GSM Phase 2 Specifications.~~					

3.1.1.2 BS 20 NT (non-transparent asynchronous services)

3.1.1.2.1 BS 20 non-transparent in regular mode for analogue interworking

Fixed Network User Rate	Access Structure	Information Transfer Capability	Rate Adaptation	QoS attributes	Note
0.3 kbit/s	Asynch	3.1 kHz	-	NT	Note 2 ~~and 3~~
1.2 kbit/s	Asynch	3.1 kHz	-	NT	Note 2 ~~and 3~~
2.4 kbit/s	Asynch	3.1 kHz	-	NT	Note 2 ~~and 3~~
4.8 kbit/s	Asynch	3.1 kHz	-	NT	Note 2 ~~and 3~~
9.6 kbit/s	Asynch	3.1 kHz	-	NT	
14.4 kbit/s	Asynch	3.1 kHz	-	NT	
19.2 kbit/s	Asynch	3.1 kHz	-	NT	
28.8 kbit/s	Asynch	3.1 kHz	-	NT	
	Asynch	3.1 kHz	-	NT	Note 1

Note 1: This is used with high speed modems such as V.90 (56kbit/s). Modem type = 'Autobauding Type 1' is selected. FNUR has no meaning in this case.

Note 2: In case of UTRAN the FNURs 300, 1200, 2400 and 4800 bit/s towards the fixed network can be provided only with modem type = 'Autobauding Type 1' is selected.

~~Note 3: These services are also supported by the GSM Phase 2 Specifications~~.

3.1.1.2.2 BS 20 non-transparent in regular mode for digital interworking

Fixed Network User Rate	Access Structure	Information Transfer Capability	Rate Adaptation	QoS attributes	Note
0.3 kbit/s	Asynch	UDI ~~/ RDI~~	V.110	NT	Note 2 ~~and 3~~
1.2 kbit/s	Asynch	UDI / RDI	V.110 / V.120	NT	Note 2 ~~and 3~~
2.4 kbit/s	Asynch	UDI / RDI	V.110 / V.120	NT	Note 2~~ and 3~~
4.8 kbit/s	Asynch	UDI / RDI	V.110 / V.120	NT	Note 2 ~~and 3~~
9.6 kbit/s	Asynch	UDI / RDI	V.110 / V.120	NT	~~Note 3~~
14.4 kbit/s	Asynch	UDI / RDI	V.110 / V.120	NT	
19.2 kbit/s	Asynch	UDI / RDI	V.110 / V.120	NT	
28.8 kbit/s	Asynch	UDI / RDI	V.110 / V.120	NT	Note 1
38.4 kbit/s	Asynch	UDI / RDI	V.110 / V.120	NT	
48 kbit/s	Asynch	UDI / RDI	V.120	NT	
56 kbit/s	Asynch	UDI	V.120	NT ~~(in a 64 kbit/s environment)~~	

Note 1: 28.8 kbit/s requires a new code point in V.120 specification to be defined.

Note 2: In case of UTRAN the FNURs 300, 1200, 2400 and 4800 bit/s towards the fixed network can be provided only for mobile terminated calls.

~~Note 3: These services are also supported by the GSM Phase 2 Specifications.~~

3.1.1.2.3 BS 20 non-transparent for PIAFS

Fixed Network User Rate	Access Structure	Information Transfer Capability	Rate Adaptation	QoS Attribute	Notes
32 kbit/s	Asynch	UDI	PIAFS	NT	Note 1
64 kbit/s	Asynch	UDI	PIAFS	NT	Note 1

Note 1: Only applicable in UTRAN.

3.1.1.2.4 BS 20 non-transparent in Frame Tunnelling Mode

Fixed Network User Rate	Access Structure	Information Transfer Capability	Rate Adaptation	QoS Attribute	Notes
56kbit/s	Asynch	RDI	X.31 flag stuffing	NT	
64 kbit/s	Asynch	UDI	X.31 flag stuffing	NT	~~Note 1~~

~~Note 1: Not applicable in a 56kbit/s environment.~~

3.1.2 BS 30 (synchronous services)

3.1.2.1 BS 30 T (transparent synchronous services)

3.1.2.1.1 BS 30 transparent in regular mode for analogue interworking

Fixed Network User Rate	Access Structure	Information Transfer Capability	Rate Adaptation	QoS attributes	Note
1.2 kbit/s	Synch	3.1 kHz	-	T	Note 1 ~~and 2~~
2.4 kbit/s	Synch	3.1 kHz	-	T	Note 1 ~~and 2~~
4.8 kbit/s	Synch	3.1 kHz	-	T	Note 1 ~~and 2~~
9.6 kbit/s	Synch	3.1 kHz	-	T	Note 1~~ and 2~~
14.4 kbit/s	Synch	3.1 kHz	-	T	Note 1
19.2 kbit/s	Synch	3.1 kHz	-	T	Note 1
28.8 kbit/s	Synch	3.1 kHz	-	T	

Note 1: Only applicable in GSM.

~~Note 2: These services are also supported by the GSM Phase 2 Specifications.~~

3.1.2.1.2 BS 30 transparent in regular mode for digital interworking

Fixed Network User Rate	Access Structure	Information Transfer Capability	Rate Adaptation	QoS attributes	Note
1.2 kbit/s	Synch	UDI ~~/ RDI~~	V.110	T	Note 1 ~~and 2~~
2.4 kbit/s	Synch	UDI ~~/ RDI~~	V.110	T	Note 1 ~~and 2~~
4.8 kbit/s	Synch	UDI ~~/ RDI~~	V.110	T	Note 1 ~~and 2~~
9.6 kbit/s	Synch	UDI ~~/ RDI~~	V.110	T	Note 1 ~~and 2~~
14.4 kbit/s	Synch	UDI ~~/ RDI~~	V.110	T	Note 1
19.2 kbit/s	Synch	UDI ~~/ RDI~~	V.110	T	Note 1
28.8 kbit/s	Synch	UDI ~~/ RDI~~	V.110	T	Note 1
38.4 kbit/s	Synch	UDI ~~/ RDI~~	V.110	T	Note 1
48 kbit/s	Synch	UDI ~~/ RDI~~	V.110	T	Note 1
56 kbit/s	Synch	UDI	V.110	T ~~(in a 64 kbit/s environment)~~	
56 kbit/s	Synch	RDI	-	T	
64 kbit/s	Synch	UDI	-	T	

Note 1: Only applicable in GSM.

~~Note 2: These services are also supported by the GSM Phase 2 Specifications.~~

~~**3.1.5 BS 30 in Bit Transparent Mode**~~

~~Fixed Network User Rate~~	~~Access Structure~~	~~Information Transfer Capability~~	~~Rate Adaptation~~	~~QoS Attribute~~	~~Notes~~
~~56 kbit/s~~	~~Synch~~	~~RDI~~	~~Bit transparent~~	~~T (in a 56 kbit/s environment)~~	
~~64 kbit/s~~	~~Synch~~	~~UDI~~	~~Bit transparent~~	~~T (in a 64 kbit/s environment)~~	

3.1.2.1.3 BS 30 transparent for Multimedia

Fixed Network User Rate	Access Structure	Information Transfer Capability	Rate Adaptation	QoS Attribute	Notes
28.8 kbit/s	Synch	3.1kHz Audio	H.223 & H.245	T	
32.0 kbit/s	Synch	UDI	H.223 & H.245	T	
33.6 kbit/s	Synch	3.1kHz Audio	H.223 & H.245	T	Note 1
56 kbit/s	Synch	RDI	H.223 & H.245	T	
64 kbit/s	Synch	UDI	H.223 & H.245	T	

Note 1: 33.6kbit/s FNURs is applicable only for UTRAN.

3GPP TSG CN WG3 **Tdoc N3-000610**
Meeting #14, Sophia, France
14th – 16th November 2000

Title: **Response to LS on RTCP responsibility**

Source: **TSG CN WG3**

To: **TSG CN WG1**

Cc:

Contact Person:

Name: Erik Colban
E-mail Address: Erik.A.Colban@ericsson.no
Tel. Number: +47 66841844

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1. Overall Description:

CN3 thanks CN1 SiP ad-hoc for their LS. CN3 has not yet begun work on the IM CN subsystem, and has therefor not yet a definite opinion on how the work split between CN1 and itself should be. However, it seems reasonable to place RTCP under the responsibility of CN3, as this is a bearer control protocol.

CN3 would like to propose that the two WGs meet during CN WGs meetings in January next year, to discuss collaboration and interactions between them.

2. Actions:

To TSG CN WG1.

ACTION: TSG CN WG3 asks TSG CN WG1 to assess the benefits of a joint session during the CN WGs January meeting, which purpose would be to clarify interactions between the two groups related to work on the IM CN subsystem

To the chairmen of TSG CN WG1 and WG3.

ACTION: Should TSG CN WG1 agree to meet TSG CN WG3, TSG CN WG3 asks the chairmen of the two groups to agree on an appropriate time slot for an ad hoc session.

3. Attachments:

None.

3GPP TSG CN WG3 **Tdoc N3-000613**
Meeting #14, Sophia, France
14th – 16th November 2000

Title: **Reply to LS on Proposed enhancements to Mc specification**

Source: **TSG CN WG3**

To: **TSG CN WG4, TSG RAN WG3**

Contact Person:

Name: Erik Colban
E-mail Address: Erik.A.Colban@ericsson.no
Tel. Number: +47 66841844

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1. Overall Description:

CN3 thanks TSG_TrFO/TFO Harmonisation Workshop for its LS on the Mc enhancements [N4-001102].

CN3 would like to inform CN4 and RAN3 that CN3 has begun its work on a new TS 29.415 "Core Network Nb User Plane protocols", see attachment. The rapporteur of this specification is David Sanders from Vodafone. Although this work is at a very early stage, certain working assumption can be identified.

1) The term "Iu UP" should be used to refer to the user plane protocols used over Iu interface only. Any wording such as "Iu UP in the CN" is to be regarded as a self-contradiction. The user plane protocols used over the Nb interface shall be properly termed Nb UP. This is to avoid ambiguities and confusions in other specifications. It also defines the responsibility of RAN3 and CN3; RAN3 is responsible for the Iu UP, CN3 is responsible for the Nb UP.
2) The Nb UP shall be specified as similar to the Iu UP as possible. Only where needed, e.g., where the Iu UP specification identifies the SRNC to perform a certain role in a procedure, shall the Nb UP protocol specification differ from the Iu UP.
3) The Nb UP transparent mode shall, if possible, be avoided, thus making the usage independent of the underlying technology (IP or ATM).
4) It is proposed, but not finally agreed, to use the same version numbering for Nb UP and Iu UP.
5) In addition to the requirements of the Iu UP, Nb UP shall enable transport of N x 64 kbit/s data, PCM encoded speech, PCM encoded modem signals, inband DTMF. At present, it is not clear whether this will require enhancements of the Nb UP relatively to the Iu UP. It may rather be other specifications (e.g. the 26-series for speech) that specify how to use the Nb UP, which will need to be enhanced, e.g., by specifying new SDU sizes, IPTIs, etc. for these services.

Given these working assumptions, an immediate comment to the received LS is that CN4 may need to specify an additional "Nb UP" package, or at the very minimum rename the package.

Otherwise, CN3 welcomes comments from CN4 and RAN3 on its work. CN3 would like to suggest a joint session with CN4 during the CN WGs' meeting in January next year, in order to review the entire set of BICSCN (stage 2 and stage 3) specifications to ensure consistency and completeness.

2. Actions:

To CN4 group.

ACTION 1: CN3 asks CN4 to assess the benefits of a joint session during the January CN WGs meeting.

ACTION 2: Should CN4 agree to meet with CN3, CN3 asks the chairmen of the two groups to agree on a time slot for an ad hoc session.

ACTION 3: CN3 asks CN4 and RAN3 to provide comments to the above-mentioned working assumptions and to the attached documents.

ACTION 4: CN3 asks CN4 to use the terms Iu UP and Nb UP consistently in its documents.

3. Attachments:

N3-000563 TS 29.415 "Core Network Nb User Plane Protocols"