3GPP TSG CN Plenary Meeting #17 **NP-020574**
4th – 6th december 2002 New Orleans, USA.

Source: TSG CN WG4

Title: LSs after CN#17

Agenda item: 6.4.1

Document for: Information

Introduction:

This document contains 16 LSs that have been agreed by TSG CN WG4 after CN#17, and are forwarded to TSG CN Plenary meeting #16 for information.

TDOC N4-02xxxx	Subject	To	Cc
1254	LS on Questions from the European Numbering Forum	SA1, CN1, T3	
1255	LS on Use of Identifiers in GPRS & UMTS Environments	TSG European Numbering Forum	CN, SA, T3
1259	LS on Status of protocol work on Ze interface	SA3	
1306	Response LS on Clarification on IP "Modify Bearer" Procedure	RAN3	
1311	LS on Call Barring for SMS in PS domain	SA1	
1317	Reply LS on Handling of Multiple Deferred Mobile Terminating Location Request	SA2	
1320	LS Response on persistent dialogs for unregistered users	SA2	CN1
1321	Reply LS to LS from SA2 on MMS charges based upon the roamed to network.	SA2	T2, SA5, GSMA-BARG, GSMA-CPWP
1322	Handling of Unsuccessful RAB assignment modify	RAN3	
1497	LS on "Proposed TR for the architectural aspects of early UE handling"	SA2	CN1
1498	LS on Comments to LS from SA4 on Maximum Rate Control and Guaranteed bit rate	SA2, RAN3	RAN2, SA4
1499	LS on proposed list of core IMS specifications for Access Independence	SA2	CN1, CN3
1503	LS on the protocol development for the GMLC – PPR, Lpp-interface	SA2, OMA location group	CN
1521	LS on requirements for one AS to be able to read and/or modify the initial filter criteria of another AS	CN1, SA2	
1525	Reply LS on CS data services for GERAN Iu-mode	SA2, CN3, GERAN2, CN1	
1566	LS on Use of E164 numbers for emerging mobile systems	SA1, SA2	CN1, T3

3GPP TSG CN WG4 Meeting #16 ***N4-021254***
Miami, USA, 23rd – 27th September 2002

Title: LS on Questions from the European Numbering Forum

Source: TSG CN WG4
To: TSG SA WG1; TSG CN WG1; TSG T WG3

Contact Person:
Name: **Ian Park**
Tel. Number: +44 1635 673 527
E-mail Address: ian.park@vf.vodafone.co.uk

Attachments: N4-021225 [Liaison statement from the European Numbering Forum: "Use of Identifiers in GPRS & UMTS Environments"].

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1. Overall Description:

CN WG4 received the attached liaison statement (N4-021225) on "Use of Identifiers in GPRS & UMTS Environments" from the European Numbering Forum. Of the three questions posed in this liaison statement, the first is within CN WG4's competence to answer.

However the second question, related to a possible requirement to be able to originate an emergency call from a mobile terminal which is in a data-only, always-on state, seems to CN WG4 to be a service issue which is the remit of SA1. Accordingly, CN WG4 kindly request SA WG1 to consider the second question in the attached liaison statement, and respond to the European Numbering Forum.

The third question, related to the expected growth in demand for important publicly-managed identifiers used in the provision of GPRS and UMTS services, seems to CN WG4 to come within the remit of CN WG1 and T WG3. Accordingly, CN WG4 kindly request CN WG1 and T WG3 to consider the third question in the attached liaison statement, and respond to the European Numbering Forum.

It is CN WG4's understanding that authority from 3GPP PCG will be required to send the response liaison statements to the European Numbering Forum. CN WG4 have submitted a request to 3GPP PCG to grant that authority.

2. Actions:

To TSG SA WG1.

ACTION: CN WG4 kindly request TSG SA WG1 to consider the second question in the attached liaison statement from the European Numbering Forum, and respond directly to the European Numbering Forum.

To TSG CN1 & T3 WG1.

ACTION: CN WG4 kindly request TSG CN WG1 and TSG T WG3 to consider the third question in the attached liaison statement from the European Numbering Forum, and respond directly to the European Numbering Forum.

3. Date of Next CN4 Meetings:

CN4 #17	11th Nov. – 15th Nov. 2002	Bangkok, Thailand
CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, Eire

3GPP TSG CN WG4 Meeting #16
Miami, USA, 23rd – 27th September 2002

N4-021225

Mr Ian Park
Chairman, 3GPP TSG CN WG4
ETSI Mobile Competence Centre
650, route des Lucioles
06921 Sophia-Antipolis Cedex
France

cc: Mr Kimmo Kymalainen, Secretary, 3GPP TSG CN WG4

Our ref: 2-179 / VHU
Date: 24 May 2002

Dear Mr Park

Use of Identifiers in GPRS & UMTS Environments

I write to you on behalf of the European Numbering Forum to seek the advice of 3GPP on three matters directly and indirectly related to the use of identifiers in the GPRS and UMTS environments.

The European Numbering Forum is a pan-European body that promotes the exchange of information and expertise and facilitates consultation on numbering and addressing issues. This request to 3GPP arises from discussions in the European Numbering Forum on the various regulatory issues identified in the December 2000 report of the UMTS Forum entitled "Naming, Addressing and Identification Issues for UMTS". The three issues on which we seek the advice of CN4 are described in detail below.

(1) Assignment of E.164 numbers to GPRS or UMTS terminals operating in data-only mode

Technical specification 3GPP TS 23.003 version 4.3.0 release 4 — UMTS: Numbering, Addressing and Identification — contains a requirement that all mobile terminals must be assigned a telephone number (see clause 3.1, "…the assignment of an MSISDN to a mobile station is mandatory.").

The European Numbering Forum appreciates the logic of such a requirement while the assumption that all mobile terminals may be used for voice services remains valid. However, the use of UMTS terminals for data-only applications — possibly accompanied by the emergence of terminals with data capabilities only — may challenge this assumption. Examples of data-only applications that may emerge include communications functionality built into personal digital assistants and telemetry from vending machines.

Were such applications to become widespread — for example, significant numbers of vending machines possessing built-in UMTS capability — it would imply the assignment of very large quantities of E.164 numbers for mobile services. Such a scenario leads to the question of whether currently designated stocks of mobile numbers might become exhausted.

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Given this background, the European Numbering Forum requests a clarification from CN4 on the rationale for the requirement specified in TS 23.003 for UMTS mobile terminals to be assigned E.164 numbers.

(2) Capability to contact emergency services from GPRS and UMTS terminals while in data-only, always-on state

The European Numbering Forum has discussed some of the implications of the capability of GPRS and UMTS terminals to operate in a data-only, always-on state. One such implication is the possible need to contact emergency services while a terminal is in such a state, rather than by establishing a voice connection.

Accordingly, the European Numbering Forum would appreciate having an assessment from CN4 on whether it is anticipated that a capability to contact emergency services while a mobile terminal is in a data-only, always-on state will be required. If the assessment of CN4 is that such a capability will be required, any views of CN4 on the most appropriate means by which emergency services could be contacted while in such a state would also be welcome.

(3) Demand for publicly managed identifiers related to GPRS and UMTS services

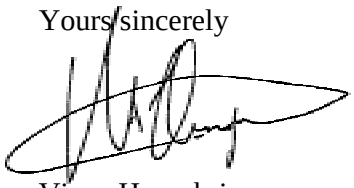
You may be aware that the European Numbering Forum and the GSM Association have undertaken work over the last two years relating to a possible escalation of demand for E.212 mobile network codes. This work has recently concluded with a finding that the level of demand for mobile network codes, at present and in the foreseeable future, will not produce a shortage of this resource.

This work has revealed the importance of developing a thorough understanding of the use of publicly-managed identifiers that are important in the provision of mobile services. Such an understanding is necessary to ensure that any future problems and challenges relating to demand for and use of these identifiers are properly recognised by national regulatory authorities and other bodies that are responsible for their management. One example of such an identifier that is used in provision of mobile services, for which the nature of future demand is as yet unclear, is the E.118 issuer identifier number (see clause 10.1.1 of 3GPP TS 11.11 version 8.6.0 release 1999).

Accordingly, the European Numbering Forum would welcome receiving the assessment of CN4 on whether demand for important publicly-managed identifiers used in the provision of GPRS and UMTS services is likely to experience significant growth.

The assistance of 3GPP CN4 in providing advice on the above matters will be invaluable in allowing the European Numbering Forum, and its constituent organisations, to properly consider the implications for management and use of numbers, addresses and other identifiers arising from the introduction of GPRS and UMTS services. Please do not hesitate to contact me on telephone +45 33 89 63 03, fax +45 33 89 63 30 or e-mail "humphries@ero.dk" if you wish to discuss these matters before CN4 provides a response.

Yours sincerely



Vince Humphries
European Radiocommunications Office

Secretary, European Numbering Forum

3GPP TSG CN WG4 Meeting #17 ***N4-021525***
Bangkok, THAILAND, 11th – 15th November 2002

Title:	**Reply LS on CS data services for GERAN Iu-mode**
Response to:	LS (N3-020838/ *S2-022625*) on CS data services for GERAN Iu-mode from SA2.
Release:	Release 5.
Work Item:	GERAN Iu mode.
Source:	CN4
To:	SA2, CN3, GERAN2, CN1
Cc:	

Contact Person:

Name:	Peter Schmitt
Tel. Number:	+496621 169 152
E-mail Address:	Peter.Schmitt@gksag.de

Attachments: None

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1. Overall Description:

CN4 thanks CN3 (SA2) for their LS on CS data services for GERAN Iu-mode.

Concerning the specification of the various handover scenarios addressed by SA2, CN4 would like to inform SA2 and CN3 that CN4 has introduced a new parameter “GERAN-Classmark” and the related procedure descriptions in the specifications (29.002, 29.010, 23.205, 23.153). The related CRs were agreed at CN4#15 (CN#17).

2. Actions:

ACTION:

None.

3. Date of Next CN4 Meetings:

CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, EIRE
CN4 #19	19th May – 23th May 2003	TBD, USA

3GPP TSG CN WG4 Meeting #17 ***N4-021521***
Bangkok, THAILAND, 11th – 15th November 2002

Title: LS on requirements for one AS to be able to read and/or modify the initial filter criteria of another AS
Release: Rel-5
Work Item: IMS-CCR

Source: CN4
To: CN1, SA2
Cc:

Contact Person:
Name: Ulrich Wiehe
Tel. Number: +496621169139
E-mail Address: ulrich.wiehe@gksag.de

Attachments: None

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1. Overall Description:

CN4 would like to ask CN1 and SA2 what the exact requirements are with respect to reading and updating (adding/modifying/deleting) of Initial Filter Criteria by Application Server via the Sh interface.
Is the read and/or update access of an AS to Initial Filter Criteria stored in the HSS limited to those Initial Filter Criteria which identify the reading/modifying AS as the one to be contacted when the trigger points are met, or is an unlimited read and/or update access to all Initial Filter Criteria required?
Is the modify access of an AS to Initial Filter Criteria limited to specific sub-parameters of the Initial Filter Criteria, or is an unlimited update access to all sub-parameters required?

2. Actions:

To CN1, SA2

ACTION: CN4 kindly ask CN1 and SA2 to clarify the exact requirements with respect to reading and updating of Initial Filter Criteria via the Sh interface.

3. Date of Next CN4 Meetings:

CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, EIRE
CN4 #19	19th May – 23th May 2003	TBD, USA

3GPP TSG CN WG4 Meeting #17 ***N4-021503***
Bangkok, THAILAND, 11th – 15th November 2002

Title: **LS on the protocol development for the GMLC – PPR, Lpp-interface**
Response to: **S2-023040 (N4-021473), LS on the protocol development for the GMLC – PPR, Lpp-interface**

Source: **CN WG4**
To: **SA WG2; OMA Location Group**
Cc: **TSG CN**

Contact Person:
Name: **Ian Park**
Tel. Number: +44 1635 673527
E-mail Address: ian.park@vf.vodafone.co.uk

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1. Overall Description:

CN4 thank SA2 for their liaison statement (S2-023040) on the protocol development for the GMLC – PPR, Lpp-interface. SA2's proposal to ask OMA Location Group to undertake the development of the protocol for the GMLC – PPR, Lpp-interface is acceptable to CN4; the expertise in the development of protocols specific to location services lies in OMA Location Group.

The CN4 chairman and the chairman of the OMA Location Group will maintain close contact to monitor and report the progress of this protocol development work for the CN and SA plenary meetings.

2. Actions:

To SA WG2:

None required.

3. Date of Next CN4 Meetings:

CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, EIRE
CN4 #19	19th May – 23rd May 2003	USA

3GPP TSG CN WG4 Meeting #17 ***N4-021499***
Bangkok, THAILAND, 11th – 15th November 2002

Title:	**LS on list of core IMS specifications for Access Independence**
Response to:	**LS S2-023124rev1 (*N4-021484)* on proposed list of core IMS specifications for Access Independence from SA2.**
Release:	**Rel-6**
Work Item:	**IMS Access Independence and Commonality**
Source:	**CN4**
To:	**SA2**
Cc:	**CN1, CN3**

Contact Person:
Name: **Nigel Berry – Lucent Technologies**
Tel. Number: +44 (0)1793 88 3245
E-mail Address: nhberry@lucent.com

Attachments: **None**

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1. Overall Description:

CN4 thanks SA2 for their LS on proposed list of core IMS specifications for Access Independence. CN4 have reviewed the list of core IMS specifications provided by SA2 and agree that the following are within CN4's responsibility and are part of the core IMS set:

1. 3GPP TS 29.228: IP Multimedia (IM) Subsystem Cx Interface; Signalling flows and message contents
2. 3GPP TS 29.229: Cx Interface based on the Diameter protocol; Protocol details
3. 3GPP TS 29.328: IP Multimedia Subsystem (IMS) Sh Interface; Signalling flows and message contents
4. 3GPP TS 29.329: Sh interface based on the Diameter protocol; Protocol details
5. 3GPP TS 29.332: Media Gateway Controller Function (MGCF) – IM-Media Gateway (MGW) interface; Stage 3

Note that the number has now been allocated to the last specification.

In addition CN4 has identified the following Mp interface specification which is being produced for release 6 and should be added to the core IMS list.

6. 3GPP TS 29.333: Multimedia Resource Function Controller (MRFC) – Multimedia Resource Function Processor (MRFP) Mp Interface; Stage 3

Note that the number has also just been allocated to the last specification.

2. Actions:

To SA2 group.

ACTION: CN4 asks SA2 to:

To take note of the list of the CN4 specifications provided for the core IMS list.

3. Date of Next CN4 Meetings:

CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, EIRE
CN4 #19	19th May – 23th May 2003	TBD, USA

3GPP TSG CN WG4 Meeting #17 ***N4-021498***
Bangkok, THAILAND, 11th – 15th November 2002

Title: LS on Comments to LS from SA4 on Maximum Rate Control and Guaranteed bit rate
Response to: LS (N4-021478) on Maximum Rate Control and Guaranteed bit rate from WG SA4.
Release: Rel4, Rel5
Work Item: OoBTC

Source: CN WG4
To: SA2, RAN3,
Cc: RAN2, SA4

Contact Person: Phil Hodges
Name:
Tel. Number: +61 3 9301 3414
E-mail Address: philip.hodges@ericsson.com.au

Attachments:

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1. Overall Description:

CN4 discussed the LS sent as informational copy to our WG and felt it was pertinent to indicate our opinion on this issue. From a Core-Network viewpoint the MSC Server is indicating the Guaranteed bitrate in the RAB Assignment with the understanding that this shall be the lowest rate that will be used. The definition in TS 25.413 states the Guaranteed bitrate to be:

"..Conditional valuefor the case of Support Mode for pre-defined SDU sizes: Set to highest not rate controllable bitrate.."

CN4 assumes from this that no rate control of any mode below or equal to the mode that corresponds to the Guaranteed bitrate as indicated by the MSC shall occur. This would mean that if the Guaranteed bitrate was set to some value between the lowest rate mode in the Active Codec Set (ACS) and the Maximum Bitrate mode then it would not expect the lower rates to be used – as they are below the guaranteed bitrate for which the QoS attributes are fulfilled (as defined by SA2). Therefore from the MSC point of view it would seem pointless to define a mode other that the lowest mode to be used as the Guaranteed.

From a TrFO aspect – indicating the ACS through the network in the OoBTC procedures means to each node that any mode in the ACS (maximum mode to minimum mode) may be used. If one MSC would indicate to the RNC that it cannot reduce the rate below an arbitrary mode in the ACS (i.e. setting guranteed bitrate higher than the lowest mode as indicated by the RAN3 LS) this cannot be known by other nodes in the network. If for some application or call intervention in the core-network an entity is added that does not support the highest modes in the ACS it could issue a new Maximum Rate Control procedure toward both RNCs, however if an RNC has received Guaranteed Bitrate as some value higher than the minimum mode this may infact be a request below the Guaranteed Bitrate, in which case the RNC could not accept this.

For this reason, for TrFO an MSC shall indicate that the Guaranteed Bitrate shall be the lowest mode to be used in the ACS.

2. Actions:

To group. SA2, RAN3

ACTION: CN4 kindly requests SA2 & RAN3 to take this requirement into account when replying on this issue to SA4.

3. Date of Next CN4 Meetings:

CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, EIRE

3GPP TSG CN WG4 Meeting #17 ***N4-021497***
Bangkok, THAILAND, 11th – 15th November 2002

Title:	LS on "Proposed TR for the architectural aspects of early UE handling"
Response to:	LS (S2-023102/N4-021475) on "Proposed TR for the architectural aspects of early UE handling"
Source:	3GPP TSG CN WG4
To:	3GPP TSG SA WG2
Cc:	3GPP TSG CN WG1

Contact Person:
Name: Nick Russell
Tel. Number: +44 1635 682 699
E-mail Address: Nick.Russell@vodafone.co.uk

Attachments:

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1. Overall Description:

CN4 thanks SA2 for their LS on "Proposed TR for the architectural aspects of early UE handling" in TDoc S2-023102/N4-021475. In this LS, SA2 asked the following question:

> *"At inter-MSC location updating, can the MAP signalling between MSC/VLRs that obtains the IMSI be easily extended to also obtain an IMEISV stored in the old VLR?"*

After some discussion, CN4 came to the conclusion that updating the MAP signalling between MSC/VLRs would not be sufficient for SA2's needs. This is because the stored IMEI is reliable only when the MS performs a *periodic* location update. For an IMSI Attach or a "normal" Location Update, the handset could have been powered down and the SIM card could have been swapped out into a different UE. Since an inter-VLR location update is by definition a "normal" location update, the stored IMEI could be out of date.

In CN4's understanding, the only way to be certain that the VLR always stores the up-to-date IMEISV is for the MSC/VLR to retrieve the IMEISV from the mobile at every IMSI attach and every "normal" location update.

2. Actions:

To SA2 group.

ACTION: CN4 asks SA2 to note the above answer to their question posed in TDoc S2-023102/N4-021475.

3. Date of Next CN4 Meetings:

CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, Ireland
CN4 #19	19th May – 23rd May 2003	TBD, USA

3GPP TSG CN WG4 Meeting #16 **N4-021322**
Miami, USA, 23rd – 27th September 2002

Title: **Handling of Unsuccessful RAB assignment modify**
Release: Release 4 and later.

Source: CN4
To: RAN3

Contact Person:
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Tel. Number: +49 89 722 47315
E-mail Address: Thomas.Belling@icn.siemens.de

Attachments: N4-021284 (CR 23.153 on codec modification)

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1. Overall Description:

CN4 has agreed CRs on codec modification procedures to TS 23.153, the release 4 version is attached for information.

In case of a codec modification procedure that terminates in the radio access network, the RNC is requested by a “RAB assignment request” to modify the RAB accordingly.

CN4 also describes the error handling in the case of unsuccessful codec modification, e.g. because resources are not available.

According to the RANAP TS 25.413 if the RNC is unable to modify the RAB it returns a specific cause code, the following is an extract from the TS:

When UTRAN reports unsuccessful establishment/modification of a RAB, the cause value should be precise enough to enable the core network to know the reason for unsuccessful establishment/modification. Typical cause values are: "Requested Traffic Class not Available", "Invalid RAB Parameters Value", "Requested Maximum Bit Rate not Available", "Requested Maximum Bit Rate for DL not Available", "Requested Maximum Bit Rate for UL not Available", "Requested Guaranteed Bit Rate not Available", "Requested Guaranteed Bit Rate for DL not Available", "Requested Guaranteed Bit Rate for UL not Available", "Requested Transfer Delay not Achievable", "Invalid RAB Parameters Combination", "Condition Violation for SDU Parameters", "Condition Violation for Traffic Handling Priority", "Condition Violation for Guaranteed Bit Rate", "User Plane Versions not Supported", "Iu UP Failure", "Iu Transport Connection Failed to Establish".

However it is not clear to CN4 what the RNC does with the Radio Access Bearer.

The following situations should be considered separately:

1. The RNC discovers that the desired modification is not possible without performing an actual change, or the RNC aborts desired modification during the modification process and reverts the RAB to its old state. The core network should in this case also revert to the old codec, but the core network does not need to perform further action at the Iu interface.
2. The RNC aborts the desired modification during the modification process, but does not revert the RAB to its old state. The core network should in this case also revert to the old codec, and the core network needs to perform further action at the Iu interface to revert the RAB to its old state.
3. The RNC aborts the modification due to unrecoverable errors and clears the connection to the UE, as well as the RAB. The core network should also clear the call.
4. The RNC aborts the modification due to unrecoverable errors, but does not clear the RAB. The core network should clear the call, and should clear the RAB.

From studying the RANAP specification CN4 has made the assumption that the MSC Server shall behave according to case 1 when it receives a RAB Assignment (modify) Response indicating an error regardless of the cause code returned. Further CN4 has assumed that cases 2, 3 and 4 are indicated to the MSC by a RAB Release or other such RANAP release message in addition to the RAB Assignment (modify) failure message.

2. Actions:

To RAN3 group.

ACTION: CN4 asks RAN3 group to confirm that our assumptions are correct and indicate if there are other scenarios that we have not considered.

3. Date of Next CN4 Meetings:

CN4 #17	11th Nov. – 15th Nov. 2002	Bangkok, Thailand
CN4 #18	14th Feb. – 18th Feb. 2003	Dublin, Eire

3GPP TSG CN WG4 Meeting #16
Miami, USA, 23rd – 27th September 2002

N4-021284

CR-Form-v7

CHANGE REQUEST

⌘ **23.153** **CR** **038** ⌘**rev** **2** ⌘ Current version: **4.5.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Correction/clarification to Codec Modification Procedures
Source:	⌘	LM Ericsson, Siemens AG
Work item code:	⌘	OoBTC
Date:	⌘	29/08/02
Category:	⌘	**F**
Release:	⌘	REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The modification procedures are misleading and contain some errors regarding the MGW control and behaviour, the IuUP handling is not described. **This is a category F CR and is essential for Codec Modification to be implemented in Rel-4.**
Summary of change:	⌘	The Modification chapter is updated to describe more clearly how the ITU-T procedures are applied to codec modification with Iu framing protocol. Part of the existing procedure is removed as it was misleading.
Consequences if not approved:	⌘	Codec modification could be interpreted in different ways by different manufacturers and interworking would fail.

Clauses affected:	⌘				
		Y	**N**		
Other specs	⌘	**Y**		Other core specifications	⌘ TS 29.232 – CR045 (N4-021286), New procedures based on Confirm_Char and Reserve_Char with 3GUP package properties added.
affected:			**X**	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.8 Modification Procedures

The OoBTC procedures shall support the following modification mechanisms:

i) ~~modify~~ Modification of Selected Codec.
(The codec type of the Selected Codec may be switched to another type within the Available Codec List, and/or the Active Codec Set of the Selected Codec may be modified, and/or the Supported Codec Set of the Selected Codec may be reduced.)

ii) Modification of~~modify~~ Available Codec List
~~(~~The~~reduction of~~ Available Codec List may be reduced by removing codec types and modes)

iii) ~~mid~~Mid-call ~~codec~~ Codec ~~negotiation~~Negotiation
(The Available Codec List is re-negotiated, allowing the addition and removal of codec types and modes compared to the previous Available Codec List, and a new~~,~~ Selected Codec is chosen out of the new Available Codec List)~~codec type and available codec list~~

The specific call flows when such procedures may be required are detailed in Clause 6. Further information on the Available Codec List and the Selected Codec is provided in Section 5.2. Further information on codec types, codec modes, a Supported Codec Set and an Active Codec Set is provided in TS 26.103 [5]. The basic codec negotiation principles are defined by the BICC Call Control Procedures (see [6]) but the explicit Mc interface procedures are added.

5.8.1 Modification of Selected Codec

The codec modification procedures shall support the following changes:

i) change to currently selected codec type

ii) reduction of the currently selected codec type's available codec set (ACS)

iii) reduction of the currently selected codec type's supported codec set (SCS)

iv) reduction of the ACS of any codec in the Supported Codecs List (in addition to any change of the selected codec).

v) reduction of the SCS of any codec in the Supported Codecs List(in addition to any change of the selected codec).

vi) reduction of the codec types in the Supported Codecs List (in addition to any change of the selected codec).

The procedures described in Q.1902.4, clauses 10.4.1 to 10.4.3 [6] shall apply.

In Figure 5.8.1/1 and 5.8.1/2 the basic codec modification procedure is shown. ~~The principle is that the request for modification is made from one node through the network.~~ This Figure is an example; the codec modification procedure may be initiated by any node within the call. ~~Each node with an MGW connection indicates to its MGW that a codec modification may occur with a " reserve characteristics" procedure. This prepares the MGW for a bearer modification (based on the bearer requirements of the new codec) and reserves the resources for the new codec. When the far end node is reached and the modification can be accepted, Modify Acknowledgement is returned. If the bearer must be increased then (as shown in the Figure 5.8.1/1, actions 4,7,9,16) each MGW performs the required bearer modification, "modify characteristics" procedure, back to the preceding node prior to the server sending on the request for modification to the succeeding node. If bearer decrease is needed then no change to the bearer shall be made at this stage.~~

Upon Reception of a Modify Codec message (action 5 and 9 in Figure 5.8.1/1), a server node shall check if the Selected Codec is altered according to the criteria above. If the Selected Codec is not altered, the procedures in Section 5.8.2 (Modification of the Available Codec List) apply, otherwise the server node shall send a “Reserve Characteristics” procedure to the attached MGW for the corresponding termination (action 6 and 10 in Figure 5.8.1/1

To perform a modification of the selected codec at an Iu interface, the MSC server shall send a “Modify Bearer Characteristics” procedure to the attached MGW (action 1 and 12 in Figure 5.8.1/1). Upon completion of the “Modify Bearer Characteristics” procedure, the server node shall send a “RAB Assignment Request” to the radio access network (action 2 and 13 in Figure 5.8.1/1). The MSC server shall then wait to receive a corresponding “RAB Assignment Response” message from the radio access network (action 3 and 14 in Figures 5.8.1/2 and 5.8.1/3) before continuing the modification procedure.

An MSC server shall use the “Reserve Characteristic” procedure for the termination towards the preceeding node (with respect to the Modify Codec message) to perform the necessary bearer level modification. The MGW shall respond for that termination with the “Bearer Modified” procedure to indicate that the possible bearer modification to increase bandwidth was successful. The MGW shall not wait until the Iu UP initialisation is complete before replying with the “Bearer Modified” procedure. Each server shall not send forward the modify request to the succeeding node until the indication from its MGW that any necessary bearer level modification has been completed (BNC Modified notification). The MSC server shall use the “Confirm Characteristics” procedure to confirm the modification at that termination.

An MSC server shall use the “Modify Characteristic” procedure for the termination towards the succeeding node (with respect to the Modify Codec message) to confirm the codec modification.

The specific handling of the Iu UP initialisation is decsribed in Section 5.8.4.

Error Cases are described in Section 5.8.5.

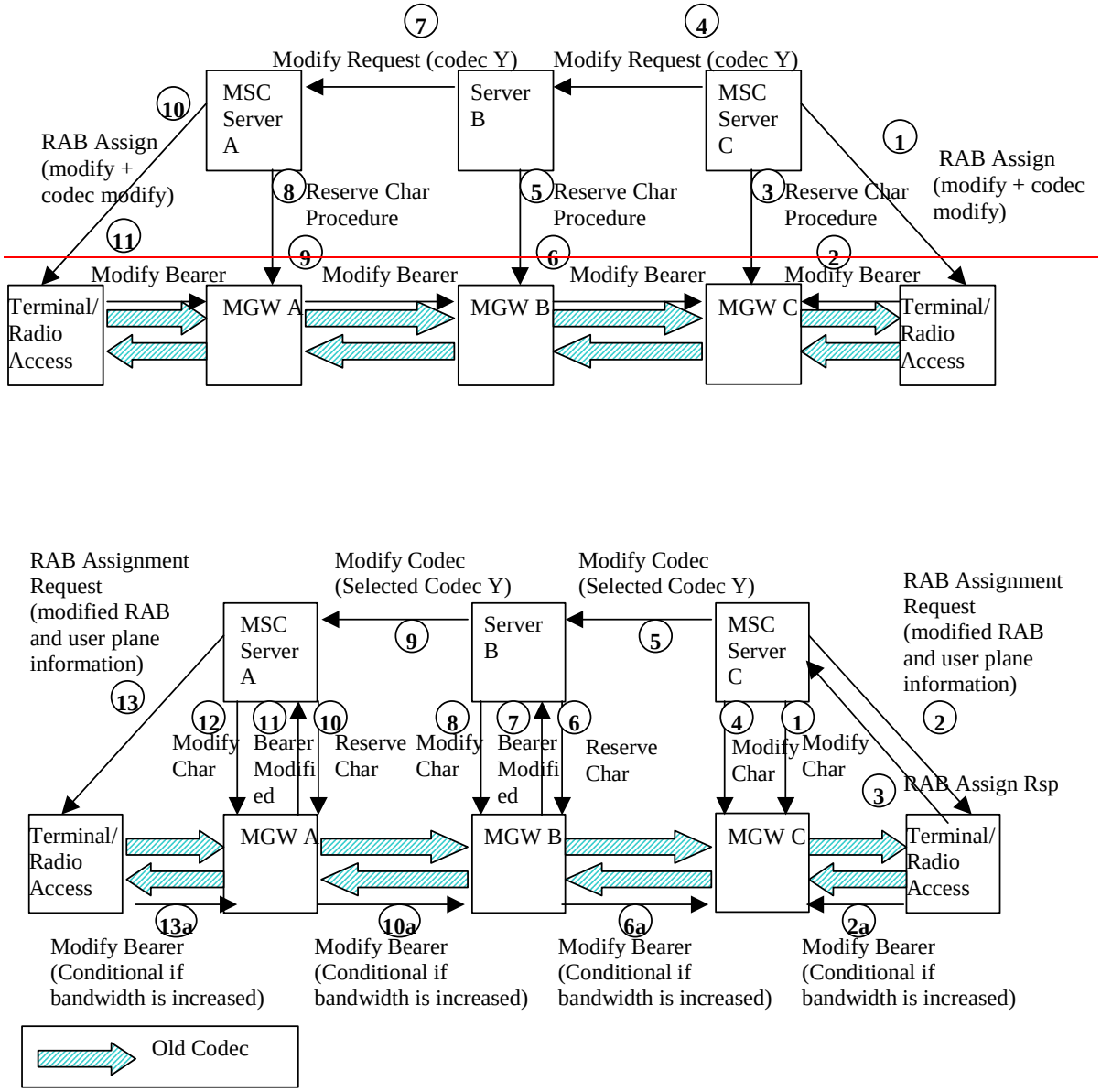
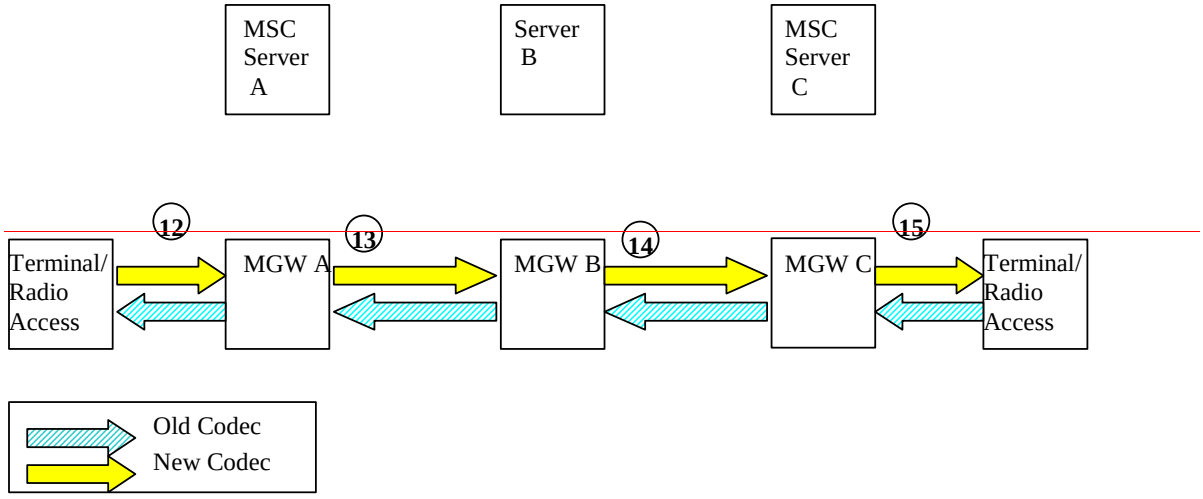


Figure 5.8.1/1: Codec Modification Control Procedures

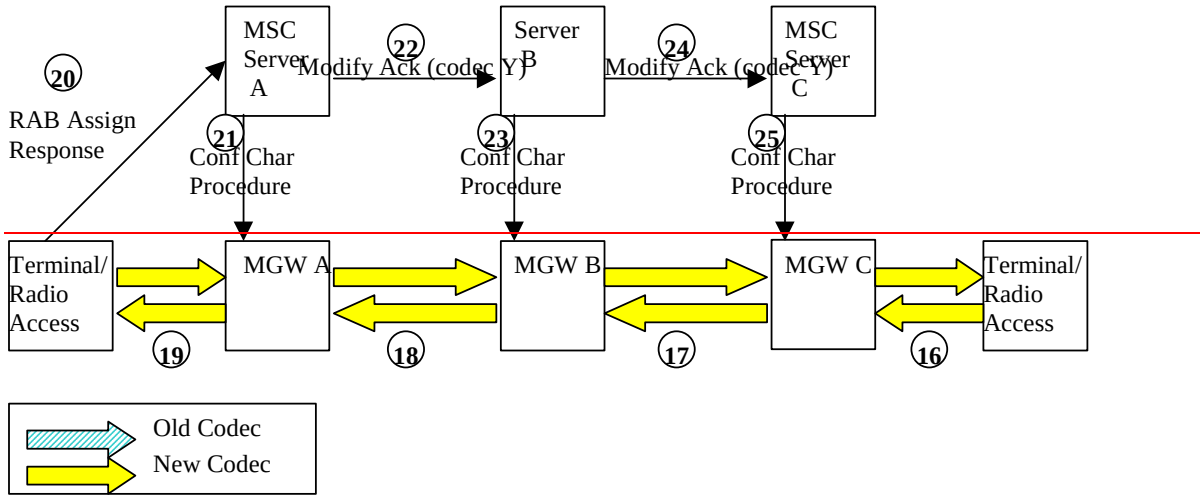
~~When the node terminating the Codec Modification receives the Modify request it requests the bearer modification and the codec modification. The MGWs are at this stage only monitoring for new codec type. As shown in Figure 5.8.1/2 the modification of the codec is performed as separate operation for Uplink and Downlink, this ensures that both the codec modification and bearer modification are synchronised.~~



~~**Figure 5.8.1/2: Codec Modification inband procedure**~~

~~Once the modifcation of the codec is complete the terminating end replies to the preceding nodes with Modify Ack and indicates to the MGW that the procedure is complete with Conf Char.~~

~~If the procedure was unsucessful then Modfiy Fail is return to the preceding nodes which then indicate to the MGWs to return to the previous codec selection.~~



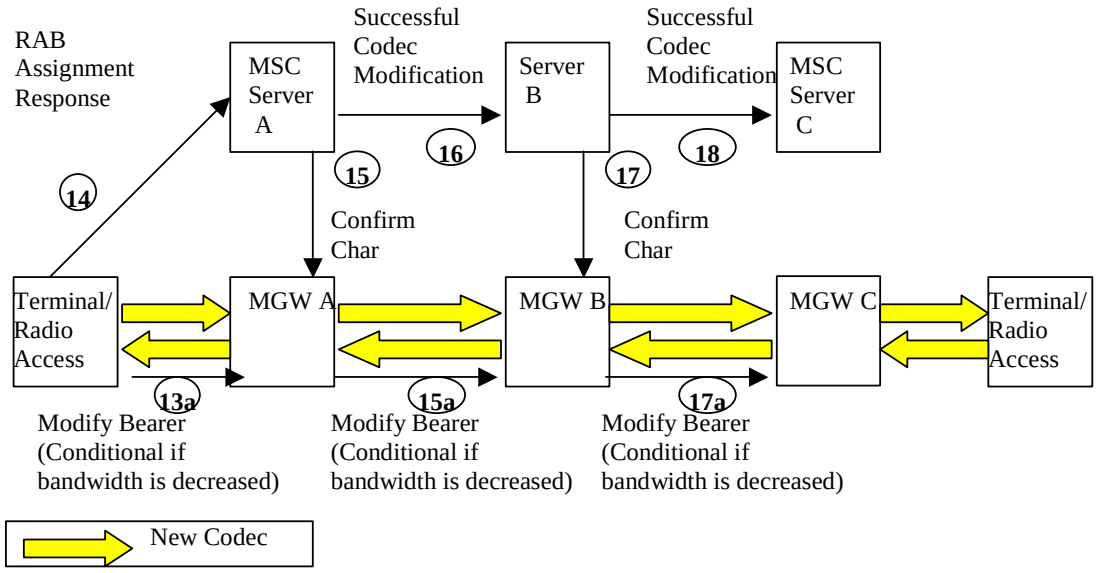


Figure 5.8.1/23: Codec Modification ~~inband procedure and~~ acknowledgement

5.8.2 Modification of Available Codec List

The modification of the Available Codec List shall support the following changes:

i) reduction of the ACS of any codec in the Supported Codecs List

ii) reduction of the SCS of any codec in the Supported Codecs List

iii) reduction of the codec types in the Supported Codecs List

~~Codec List modification may occur by "puncturing" of codec types or modes from the current Available Codec List.~~ T~~Note t~~his shall not include removal~~puncturing~~ of modes from the selected codec, as this would require Selected Codec modification as described in 5.8.1.

The procedures described in Q.1902.4, clauses 10.4.1 to 10.4.3 [6] shall apply.

No modification of the user plane and signalling towards the MGWs and radio access network is required,

In Figure 5.8.2/1 the basic “modification of available codec list” procedure is shown. This Figure is an example; the codec modification procedure may be initiated by any node within the call.

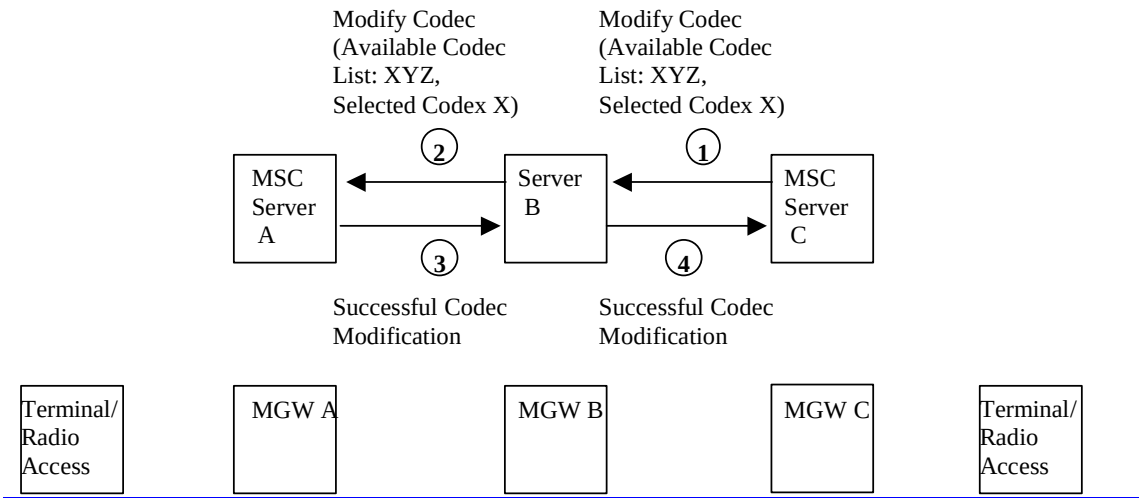


Figure 5.8.2/1: Modification of Available Codec List

~~If a node performs a procedure (e.g. call forwarding) which results in a reduction to the list of Available Codecs then it shall send the new Available Codecs List to all preceding nodes indicating Codec List Modification.~~

5.8.3 Mid-call Codec negotiation

The ~~selected~~ Selected ~~codec~~ Codec and the ~~available~~ Available ~~codec~~ Codec ~~list~~ List can be (re-~~negotiated~~) negotiated during the call using the "Mid Call Codec Negotiation" mechanism~~, when necessary~~. The Mid-Call Codec Negotiation mechanism results in a new Available Codec List, where new codec types or modes not within the previous Available Codec List may be included. The codec negotiation procedure is performed as for call set-up.

The procedures described in Q.1902.4, clauses 10.4.4 to 10.4.6 [6] shall apply.

The sequence is shown in Figure 5.8.3/1. Starting with the Modify to Selected Codec message, the remaining sequence is the same as for the Codec Modification in Section 5.8.1 except that the message name for the modify request is "Modify To Selected Codec" (instead of "Modify Codec") in order to allow collisions between the two procedures to be resolved. Everything stated in Section 5.8.1 shall also aply for the Mid-Call Codec Negotiation procedure.

The node initiating the "Mid Call Codec Negotiation" mechanism~~procedure~~ (MSC Server A in Figure 5.8.3/1) shall ~~sends a~~ select a Preferred Codec and a Supported Codecs List, which may contain new codecs and also may not contain ~~previous~~ codecs from the previous Available Codecs List. If the list no longer contains the previous Selected Codec, then a new codec ~~must~~ shall be selected as Preferred Codec. If the previous~~current selected~~ Selected ~~codec~~ Codec exists within the Supported Codecs List, ~~then~~ this codec~~it~~ should be ~~kept~~ selected as the ~~preferred~~ Preferred ~~codec~~Codec.

~~The codec negotiation procedure is performed as for set-up, each node may reduce the codec list and pass on the "punctured" list. The last node in the negotiation selects the preferred codec that is left in the remaining Supported Codecs List~~.

If a server node removes the Preferred Codec, from the Supported Codec List, the node shall select a new Preferred Codec.

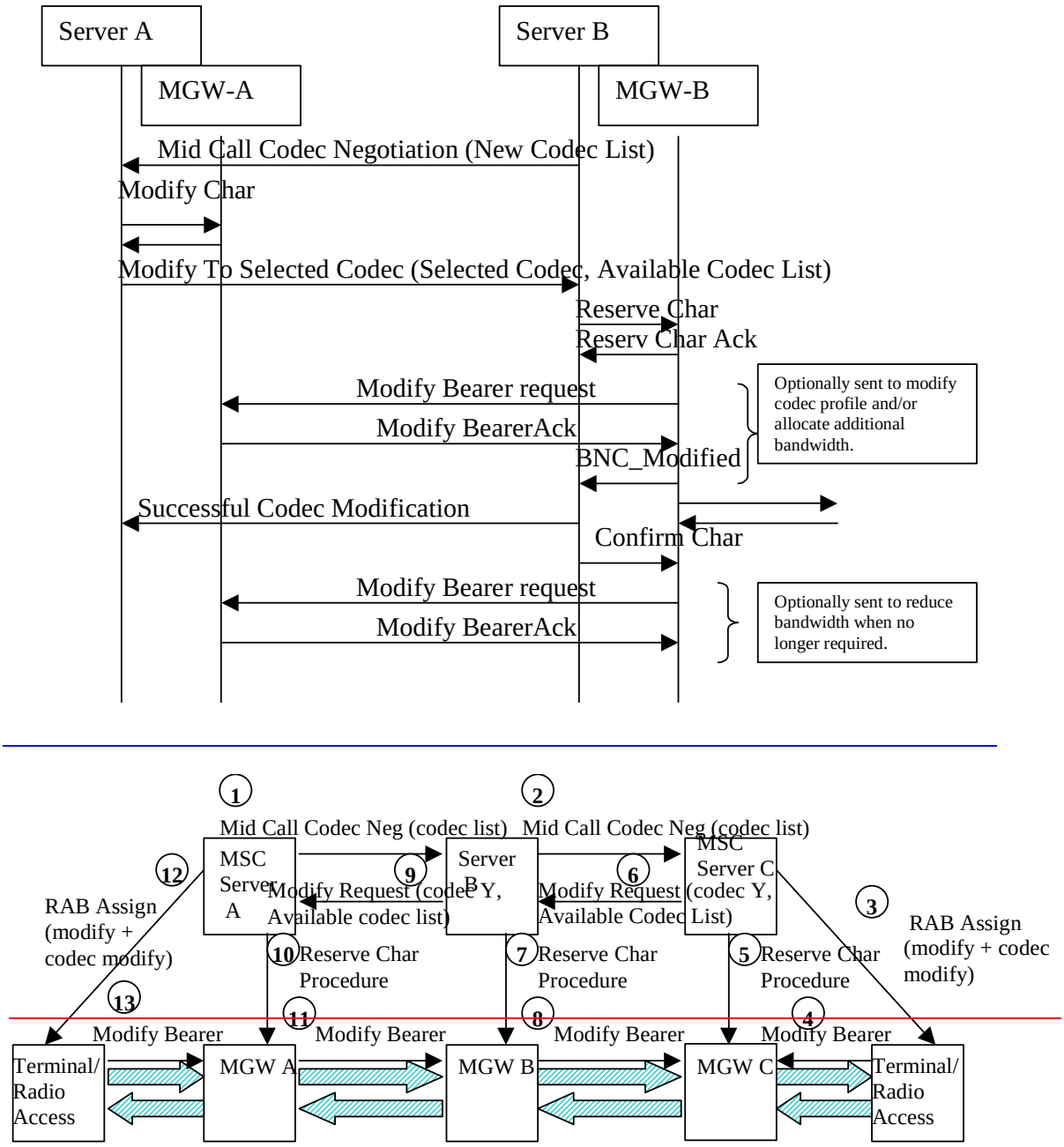


Figure 5.8.3/1: Mid Call Codec Negotiation

~~The modification to a new Available Codecs List and Selected Codec then follows the procedures described in clause 5.8.1/1 & 5.8.1/2,and 5.8.1/3 initiated by the last node receiving the Mid Call Codec Negotiation procedure.~~

5.8.4 Detailed Procedures For Iu Framing Protocol & Codec Modification

The IuFP must be initialised sequentially from one end to the other in order to store new RFCIs in each node to allow TrFO to resume. The IuFP shall be initialised in the backward direction with respect to the Codec Modification/Modify To Selected Codec message as shown in Figure 5.8.4/1.

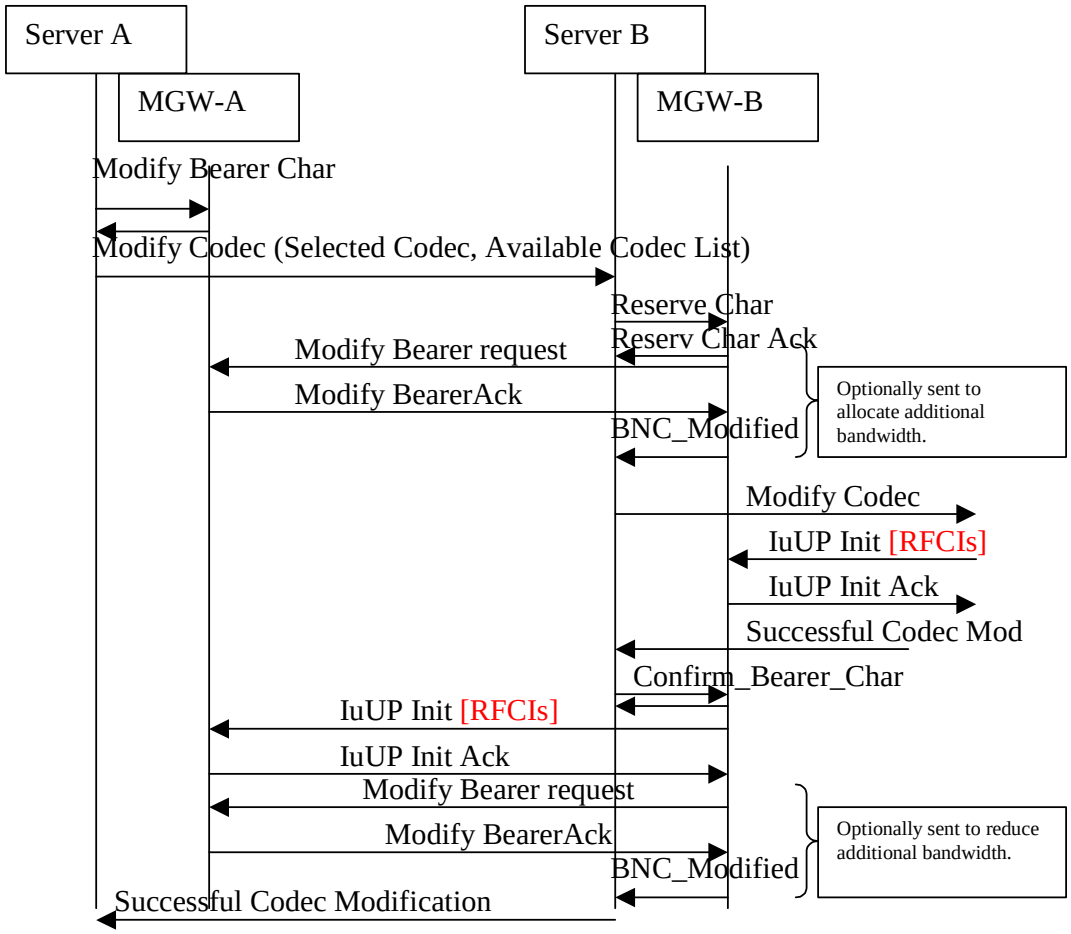


Figure 5.8.3.4/1: Successful Codec Modification including IuFP

A MGW receiving a Modify Bearer Characteristics procedure shall be prepared to receive an incoming modify bearer procedure, this may be to increase the bandwidth prior to IuUP Initialisation or to reduce the bandwidth after the IuUP Intialisation. As the new codec indicated in the Modify Bearer Characteristics procedure differs from the codec that is currently used the MGW shall be prepared to receive an IuUP Initialisation for the new codec.

Each termination receiving a Reserve_Char will initiate bearer level modification to the preceeding node if needed - i.e. if the bandwidth needs to be increased to support the new IuUP. No IuUP initialisation occurs at this point in time. If the Codec Modification Request is terminated by a MGW the IuUP init through the core-network is triggered by the setting of the 3GUP package property “initialisation direction” to “OUT” in either the Reserve_Char or the Confirm_Char procedure; the MGW shall then start the IuUP Initialisation out from that Termination. If the node terminating the modification is an RNC then it will generate a new IuUP Initialisation toward its access MGW, each Termination shall have the initialisation direction set to “IN”. Each MGW shall in turn acknowledge the IuUP Init to the succeeding node (with respect to the modification request) and forward the RFCIs in an IuUP Initialsation to the preceding MGW (as for call set-up).

After completing the Iu UP initialisation and receiving the“Confirm Characteristics” procedure, the MGW may decrease the bandwidth of the corresponding bearer performing the “Modify Bearer” procedure (if needed) - no bearer bandwidth reduction shall be initiated while the UP is still initialised for the old codec.

An example call sequence is shown in Figure 5.8.4/2.

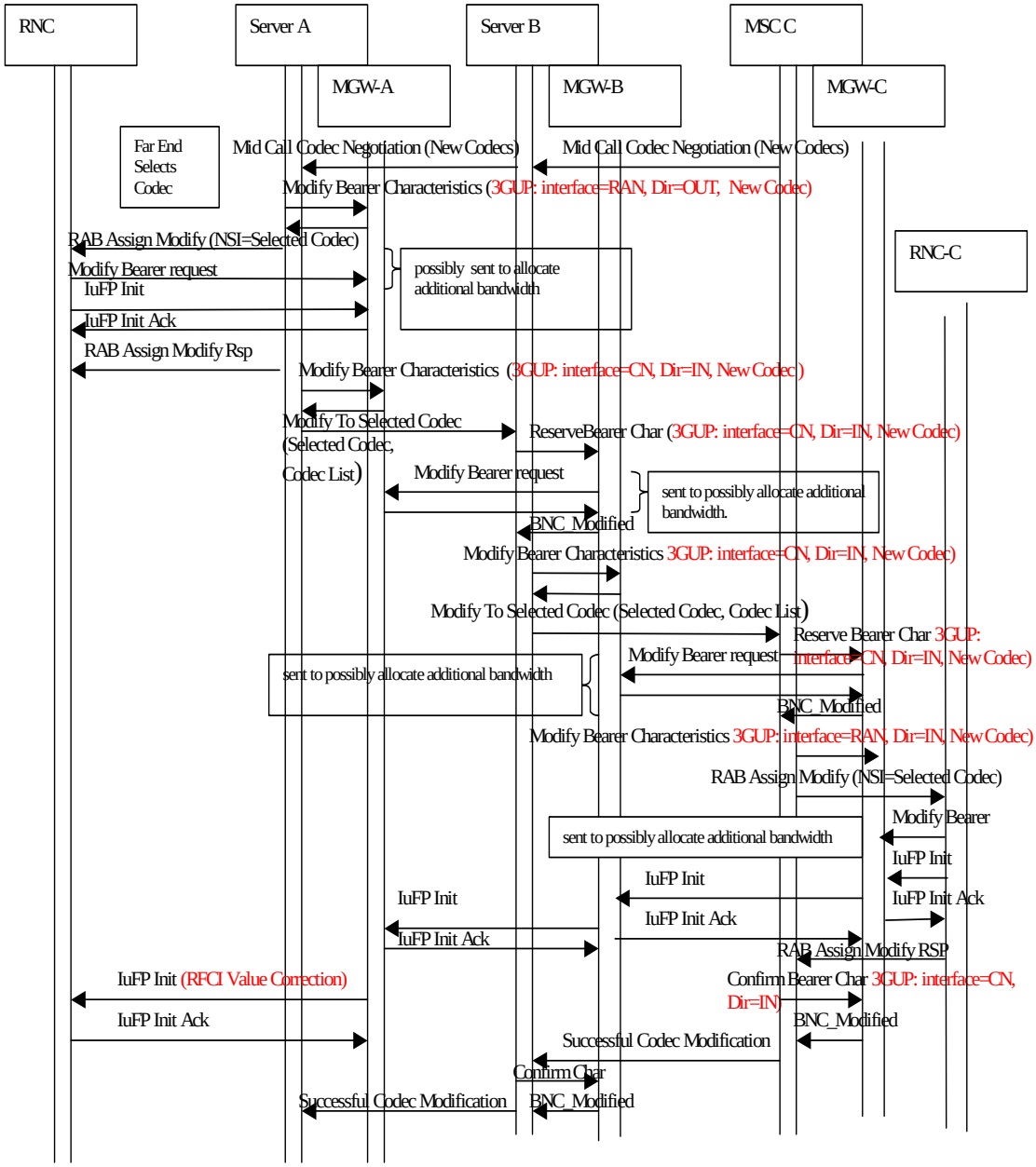


Figure 5.8.4/2: Mid Call Codec Negotiation Call Sequence

5.8.5 Unsuccessful Codec Modification

If the Codec Modification is unsuccessful at a certain node in the connection (due to the MGW rejecting a request to reserve the resources or a server rejecting the request to modify the codec) the Confirm_Char message shall be sent to a termination that previously performed a successful Reserve_Char Procedure to change the bearer back to its original bandwidth (if needed) and free up any reserved resources. However as the IuUP has not been modified, the Confirm_Char shall not trigger an IuFP re-initialisation. The basic sequence is shown in Figure 5.8.5/1 and a detailed call flow is described in Figure 5.8.5/2. A server that performed a Modify Bearer Characteristics procedure to a termination with the new codec shall perform a subsequent Modify Bearer Characteristics procedure to that termination with the old codec in the failure case. As no IuFP initialisation occurs in the unsuccessful case the IuFP currently intialised will then match the old codec restored by the subsequent Modify Bearer Char; the MGW then knows that it can return to TrFO.

The Codec Modification Failure message shall not be returned to a preceding node until notification of the bearer level modification (BNC_Modified).

RAB Assigment Modification Failure

If the reason for failed codec modification is due to an unsuccessful RAB Modification Request then the MSC shall assume that the old RAB is resumed and thus shall restore the old codec.

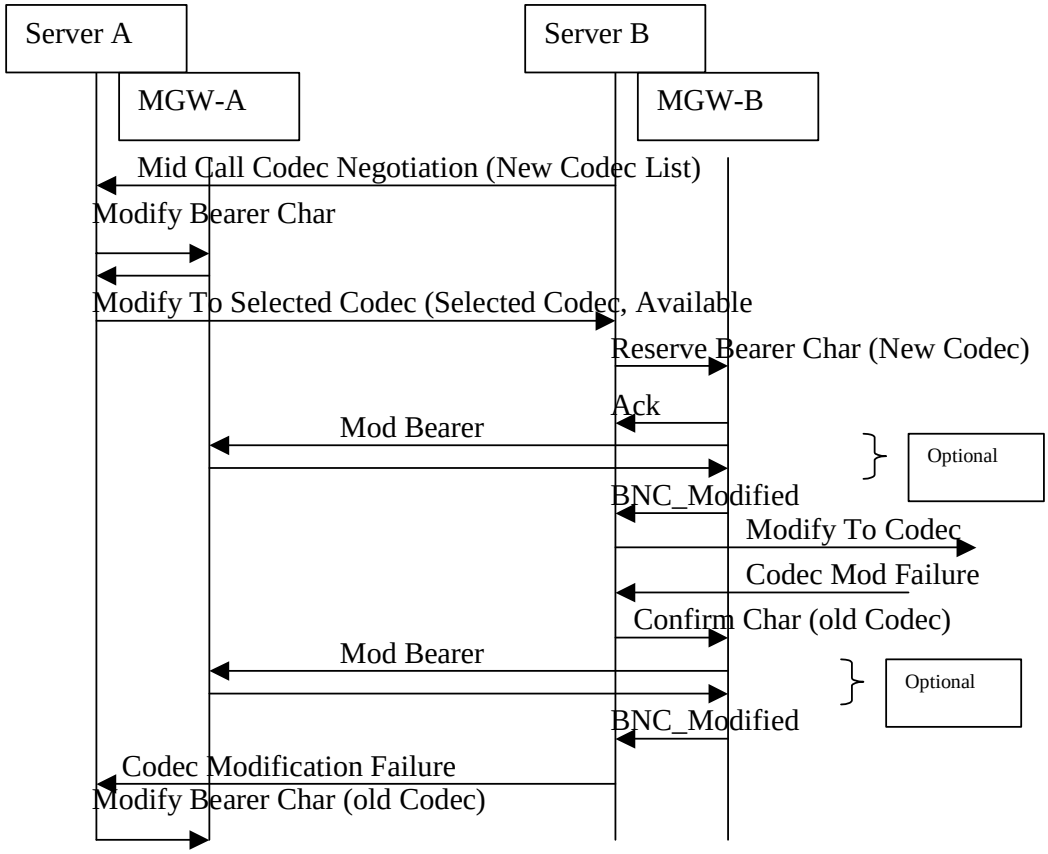


Figure 5.8.5/1: Unsuccessful Codec Modification

IuUP Initialisation Unsuccessful

If the IuUP initialisation fails (this must be due to some protocol error or transmission error because the resources have already been successfully reserved) then the UP protocol is cleared by the peers (see TS 25.415) and therefore the MGW shall notify the Server with a Bearer_Released notification, the call shall be cleared (normal MGW initiated call clearing applies – see TS 23.205 clause 7.4 [8]).

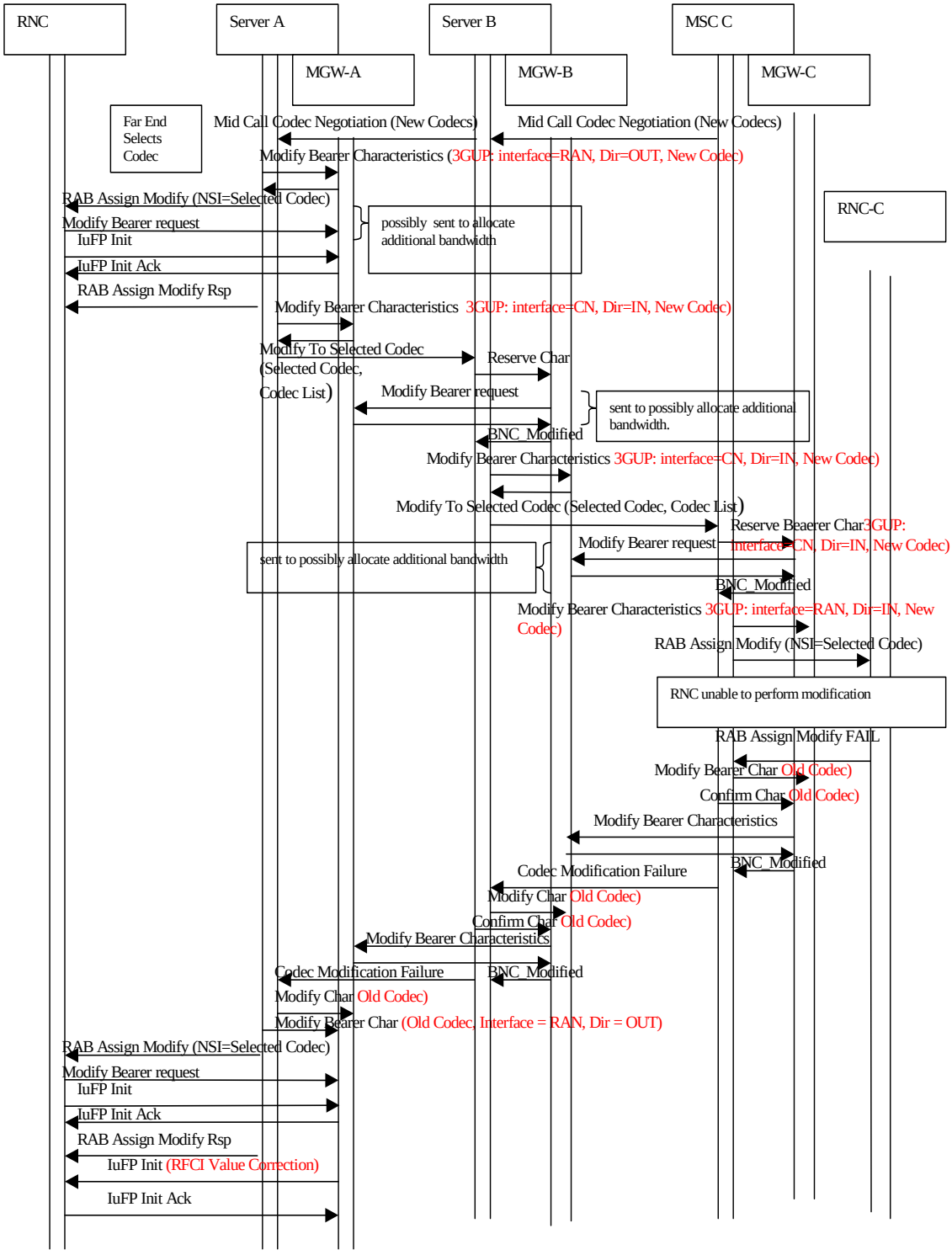


Figure5.8.5/2: Call Sequence for Unsuccessful Modification

3GPP TSG CN WG4 Meeting #16 ***N4-021321***
Miami, USA, 23rd – 27th September 2002

Title:	**LS on MMS charges based upon the roamed to network.**
Response to:	**LS (S2-022619) on MMS charges based upon the roamed to network.**
Source:	CN4
To:	3GPP-SA2
Cc:	3GPP-T2, 3GPP-SA5, GSMA-BARG, GSMA-CPWP

Contact Person:
Name: Dan Warren
Tel. Number: +44 1628 431098
E-mail Address: dlwarren@nortelnetworks.com

Attachments: <none>

---

1. Overall Description:

CN4 thanks SA2 and SA5 for their LS's with regard to the inclusion of the VPLMN-Id (MCC + MNC) in messages passed from the SGSN to the GGSN in GTP.

During CN4 #16, a number of opinions were expressed with regard to the suitable degree of granularity of Location of the MS that would be useful. It was agreed by CN4 that the SA2 proposal to include VPLMN-Id would be useful and further, that the advice of SA2 to make changes back to R97 should be adhered to.

To minimise the impact of a change to R97, it was decided by CN4 that re-use of an existing Information Element in GTP would be the best solution. As a result, RAI is to be added to CreatePDPContext Request and UpdatePDPContext Request as an optional IE.

RAI contains the MCC and MNC and also LAC and RAC. There was some discussion within CN4 with regard to whether LAC and RAC should be populated with the information for the subscriber's location or should be populated with dummy values. Two options were considered;-

1. The LAC and RAC may be populated with the correct information of the subscriber as an implementation option, or
2. The LAC and RAC shall be set to 'FFFE' and 'FF' respectively.

Option 1 is a super set of the requirement that SA2 communicated to CN4, and is considered to potentially be useful in the implementation of future services. However, there were also opinions expressed that suggest that Option 1 would break the principles of hiding from the GGSN the details of mobility management information in the SGSN. There was acceptance that if the LAC and RAC were populated with the correct information for the subscriber, this information should not be communicated beyond the bounds of the home network, that is the GGSN should not pass this information to third party devices such as RADIUS servers. CN4 would like to ask SA2 if they see any potential requirement to populate the RAC and LAC of the RAI with the correct information for a subscriber.

2. Actions:

To SA2 group.

ACTION: CN4 asks SA2 group to indicate whether they feel that the full RAI of a subscriber's current location in a roamed network would be useful information to be communicated to the GGSN.

CN4 would appreciate a response to this question in time for our next meeting.

3. Date of Next CN4 Meetings:

CN4 #17	11th Nov. – 15th Nov. 2002	Bangkok, Thailand

3GPP TSG CN WG4 Meeting #16 ***N4-021320***
Miami, USA, 23rd – 27th September 2002

Title: LS Response on persistent dialogs for unregistered users
Response to: LS (S2-022601) on LS Response on persistent dialogs for unregistered users from SA2.

Source: CN4
To: SA2
Cc: CN1

Contact Person:
Name: Ulrich Wiehe
Tel. Number: +49 6621 169 139
E-mail Address: ulrich.wiehe@icn.siemens.de

Attachments: None

---

1. Overall Description:

CN4 thank SA2 for their response LS on persistent dialogues for unregistered users (S2-022601) and outline that 29.228 allows the possibility for the I-CSCF to assign an S-CSCF different from the one currently stored in the HSS (e.g. as a result of a previous assignment for unregistered services) as follows:

At initial registration or re-registration the I-CSCF may either

- indicate to the HSS that the type of authorization is “REGISTRATION”, in which case the HSS shall return the stored S-CSCF name, or
- indicate to the HSS that the type of authorization is “REGISTRATION_AND_CAPABILITIES“, in which case the HSS shall return the list of S-CSCF capabilities although an S-CSCF name is stored for the user. Based on the received list of S-CSCF capabilities the I-CSCF then assigns an S-CSCF, which may be different from the S-CSCF stored in the HSS.

While it is clearly stated that "REGISTRATION" is the default value for initial registration and re-registration cases, there is no description on how and when the I-CSCF shall use the "REGISTRATION_AND_CAPABILITIES" value in the CN4 specifications.

Concerns have been raised in CN4 whether the outlined description could fulfill the requirements set by SA2 in the context of S-CSCF re-selection by the I-CSCF.
Further details on SA2 requirements would be needed in order to provide a more accurate technical solution.

2. Actions:

CN4 kindly ask SA2 to clarify whether the outlined behaviour could meet their requirements.

3. Date of Next CN4 Meetings:

CN4 #17	11th Nov. – 15th Nov. 2002	Bangkok, Thailand
CN4 #18	14th Feb. – 18th Feb. 2002	Dublin, Eire

3GPP TSG-CN1 Meeting #26 ***Tdoc N4-021317***
Miami Beach, Florida, USA, 23 – 27 September 2002

Title:	Reply LS on Handling of Multiple Deferred Mobile Terminating Location Request.
Response to:	LS (S2-022470) on Handling of Multiple Deferred Mobile Terminating Location Request from SA2
Release:	
Work Item:	LCS
Source:	CN4
To:	SA2
Cc:	

Contact Person: Igarashi@nw.yrp.nttdocomo.co.jp
Name: Daisuke Igarashi
Tel. Number: +468 40 3370
E-mail Address: **Igarashi@nw.yrp.nttdocomo.co.jp**

Attachments:

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1. Overall Description:

CN4 thanks SA2 for the liaison on handling of multiple deferred mobile terminating location requests (N4-021211/S2-022470).

CN4 answer to SA2 question is that it is not possible to identify the correspondence of MAP_PROVIDE_SUBSCRIBER_LOCATION message to MAP_SUBSCRIBER_LOCATION_REPORT message in the current stage 3 specification. During the discussion, it was recognized that addition of reference number to the messages is needed so that the network can identify the correspondence of two messages.
CN4 asks SA2 to decide which node (i.e. MSC/SGSN, GMLC or LCS client) assigns the reference number because it is architectural issue. Furthermore, CN4 asks SA2 to confirm whether it is essential correction and whether the change should be done in release 4 onwards.

During the discussion, another concern was raised on additional serving node procedure that the SGSN/MSC may reject identical repeated deferred location request. The current stage 3 specification does not define any appropriate cause value when the SGSN/MSC reject identical repeated deferred location request. To add this error cause would require an application context version increase. Therefore, CN4 asks SA2 to reconsider the addition of the new procedure of MSC/SGSN.

2. Actions:

To SA2 group.

ACTION:
CN4 asks SA2 to decide which node assigns reference number and to confirm whether it is essential correction and whether the change should be done in release 4 onwards. Furthermore, CN4 asks SA2 to reconsider the addition of the new procedure of MSC/SGSN.

3. Date of Next TSG-CN4 Meetings:

CN4_17	11th – 15th November 2002	Bangkok, Thailand
CN4_18	10th – 14th February 2003	Dublin, Eire

3GPP TSG-CN1 Meeting #26 ***Tdoc N1-022153***
Miami Beach, Florida, USA, 23 – 27 September 2002 ***Tdoc N4-021311***

Title: LS on Call Barring for SMS in PS domain
Response to:
Release:
Work Item:
Source: CN1, CN4
To: SA1
Cc:

Contact Person:
Name: **Daisuke Igarashi**
Tel. Number: +81 468 40 3370
E-mail Address: Igarashi@nw.yrp.nttdocomo.co.jp

Attachments:

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1. Overall Description:

During the CN1#26 meeting and CN4#16 meeting, it was pointed out that the current stage 2/3 specifications do not support Call Barring for Short Message Service in PS domain even though the current stage 2/3 specifications support Call Barring for Short Message Service in CS domain.

TS22.004 version 3.3.0 Normative Annex A does not clearly specify whether the requirement SMS Call Barring is applicable to both CS domain and PS domain or not, while it clearly requires Call Barring for TS21 (Mobile Terminating SMS) and TS22 (Mobile Originating SMS).

If the requirement applied to CS and PS domains alike, then changes to current R99 onwards stage 2 and 3 specifications are needed in order to solve the contradiction.

If SA1 requires not only addition of PS domain short message barring but also PS Call Barring SS procedures such as PS domain Call Barring activation, deactivation and interrogation, then the CN1 and CN4 specifications need to be changed.

CN1/CN4 would like SA1 to answer;
- ✓ Whether SA1 requires call barring for SMS in PS domain;
- ✓ What capability need to be introduced into PS domain;
- ✓ In which release does SA1 need to introduce PS domain Call Barring (if required)

CN1 would like to avoid adding SS procedures to PS domain in frozen releases R99, Rel-4 and Rel-5.

CN4 would like to avoid adding Call Barring and SS procedures to PS domain in R99 and Rel-4

2. Action Points:

SA1:

CN1/CN4 would like SA1 to clarify the meaning of 22.004 annex A.

3. Dates of Next TSG-CN1/CN4 Meetings:

CN1_27/CN4_17	11th – 15th November 2002	Bangkok, Thailand
CN1_28/CN4_18	10th Feb. – 14th Feb. 2003	Dublin, Eire

3GPP TSG CN WG4 Meeting #16 **N4-021306**
Miami, USA, 23rd – 27th September 2002

Title:	**Response LS on Clarification on IP "Modify Bearer" Procedure**
Response to:	LS (N4-21208/ R3-022065) on Clarification on IP "Modify Bearer" Procedure from RAN3
Release:	Release 5.
Source:	CN4
To:	RAN3

Contact Person:
Name: Thomas Belling
Tel. Number: +49 89 722 47315
E-mail Address: Thomas.Belling@icn.siemens.de

---

1. Overall Description:

CN4 thanks RAN3 for their LS R3-022065 on Clarifications on the IP "Modify Bearer" Procedure and is pleased to provide the requested information.

Within this LS, RAN3 requested further information on the following question:
RAN3 would like to know what is the function that ALCAP signalling does provide when ATM transport option is used that allows to indicate that arriving PDUs transport the new or old payload within Iu-FP.

In ALCAP, the "Modify Bearer" procedure provides a trigger for the switch-over between transparent mode and support mode of the IuUP, although the mode of IuUP is not directly indicated in ALCAP signalling. The MGW and the RNC are informed by out-of-band signalling that a switch-over may occur beforehand. While the "Modify Bearer" procedure is executed, the user plane traffic is interrupted, and it is therefore guaranteed that the mode of PDUs arriving at the MGW is always known.

In the case of IP transport, no trigger is currently available to indicate when the switch-over takes place.

The foreseen problem for the CN is that in a change between transparent mode and support mode the MGW needs a given point in time where it shall start to give consideration to transparent mode data on the Iu interface.

2. Date of Next CN4 Meetings:

CN4 #17	11th Nov. – 15th Nov. 2002	Bangkok, Thailand
CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, Eire

3GPP TSG CN WG4 Meeting #16 ***N4-021259***
Miami, USA, 23rd – 27th September 2002

Title:	LS on Status of protocol work on Ze interface
Response to:	LS (S3-020398) on Status of protocol work on Ze interface from WG SA3.
Release:	Rel-6
Work Item:	Protocol definition for automatic distribution of MAP security keys
Source:	CN4
To:	SA3
Cc:	

Contact Person:
Name: Jari Jansson
Tel. Number: +358 7180 23596
E-mail Address: jari.jansson@nokia.com

Attachments: N4-021258 [WID for Protocol definition for automatic distribution of MAP security keys].

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1. Overall Description:

CN4 would like to inform SA3 that CN4 has now created work item description for the stage 3 work on Ze interface. This work item description will be submitted to CN #18 for approval. According to the work item description the stage 3 work should be ready for approval in CN #20 (June 2003).

2. Actions:

None.

3. Date of Next CN4 Meetings:

CN4 #17	11th Nov. – 15th Nov. 2002	Bangkok, Thailand
CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, Ireland

3GPP TSG CN WG4 Meeting #16 ***N4-021258***
Miami, USA, 23rd – 27th September 2002

Source: Nokia
Title: Protocol definition for automatic distribution of MAP security keys
Agenda item: 5
Document for: APPROVAL / DISCUSSION

Work Item Description

Title

Protocol definition for automatic distribution of MAP security keys

1 3GPP Work Area

	Radio Access
X	Core Network
	Services

2 Linked work items

Related WIs are:
1. *Security enhancements (1571-SA3)*

3 Justification

An identified security weakness in 2G systems is the absence of security in SS7 networks. This was formerly perceived not to be a problem, since this network was the province of a small number of large institutions. This is no longer the case, and so there is now a need for security precautions.

This work item describes ongoing work in CN4 for the stage 3 work on Ze interface for automatic key distribution for MAP security.

4 Objective

The MAP protocol is used for signaling in and between core networks. It is the objective of this work item to define the protocol used in Ze interface between KAC and MAP-NE for automatic key distribution to allow allow updating of keys and security policies more frequently and with less possibility for error than with manual updating.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

The work item is a security item.

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes				X	
No	X	X	X		X
Don't know					

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
29.xxx	MAP Security Signalling Flows for Ze Interface	CN4		CN#19	CN#20	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

Affected existing and new IETF specifications				

11 Work item raporteurs

Jari Jansson [jari.jansson@nokia.com]

12 Work item leadership

CN4

13 Supporting Companies

Nokia, Vodafone, Nortel

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14c The WI is a Work Task: parent Building Block

Rel-6 MAP application layer security *(33003-SA3)*

3GPP TSG CN WG4 Meeting #16 ***N4-021255***
Miami, USA, 23rd – 27th September 2002

Title: LS on Use of Identifiers in GPRS & UMTS Environments

Response to: LS (2-179 / VHU) on "Use of Identifiers in GPRS & UMTS Environments" from European Numbering Forum.

Source: TSG CN WG4

To: TSG European Numbering Forum

Cc: TSG CN; TSG SA; TSG T WG3

Contact Person:
Name: **Ian Park**
Tel. Number: +44 1635 673 527
E-mail Address: ian.park@vf.vodafone.co.uk

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1. Overall Description:

CN WG4 thank the European Numbering Forum for their liaison statement, reference 2-179 / VHU, on "Use of Identifiers in GPRS & UMTS Environments". Of the three questions posed in this liaison statement, the first is within CN WG4's competence to answer.

The second and third questions seem to us to be more appropriately handled by other working groups in 3GPP. We have forwarded your liaison statement to them, with a request that they respond to you directly.

On the first question, relating to Assignment of E.164 numbers to GPRS or UMTS terminals operating in data-only mode, we believe that the requirement to be able to direct voice (or indeed any circuit-switched) calls to a mobile station is not the only driver for the requirement to assign at least one MSISDN to each mobile station. The delivery of mobile terminated short messages also requires the destination MS to have an MSISDN; the short message service is a major revenue earner for virtually all mobile network operators, and 3GPP working groups and their predecessors in SMG did a lot of work to ensure that short messages could be delivered over a GPRS bearer as well as over a "GSM classic" bearer. This means that the user of a data-only terminal can make full use of the Short Message Service; indeed a PDA could be regarded as a better device for handling short messages than a more conventional GSM mobile station.

Even if the need for an MSISDN for a data-only terminal to support delivery of short messages is discounted, it would require substantial study of the 3GPP specification set to verify that GPRS and UMTS systems could be specified to operate correctly if data-only terminals are not required to have an MSISDN. We would be reluctant to undertake this work unless there is a particularly pressing need for it. Could the European Numbering Forum please indicate how pressing is the problem of potential exhaustion of E.164 numbering schemes?

2. Actions:

To The European Numbering Forum.

ACTION: CN WG4 kindly request the European Numbering Forum to note CNWG4's reason for requiring every mobile station (including those with no voice capability) to have an MSISDN.

ACTION: CN WG4 kindly request the European Numbering Forum to indicate how pressing is the problem of potential exhaustion of E.164 numbering schemes.

3. Date of Next CN4 Meetings:

CN4 #17	11th Nov. – 15th Nov. 2002	Bangkok, Thailand
CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, Eire

3GPP TSG CN WG4 Meeting #17 ***N4-021566***
Bangkok, THAILAND, 11th – 15th November 2002

Title: **LS on Use of E164 numbers for emerging mobile systems**

Source: **CN WG4**
To: **SA WG1; SA WG2**
Cc: **CN WG1; T WG3**

Contact Person:
Name: **Ian Park**
Tel. Number: +44 1635 673527
E-mail Address: ian.park@vf.vodafone.co.uk

Attachments: N4-021225 [LS from the European Numbering Forum on Use of Identifiers in GPRS & UMTS Environments]
N4-021255 [LS to the European Numbering Forum on Use of Identifiers in GPRS & UMTS Environments
N4-021472 [LS from the European Numbering Forum on Use of E164 numbers for emerging mobile systems]

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1. Overall Description:

At their meeting in September, CN4 received a liaison statement (N4-021225, attached) from the European Numbering Forum. One of the questions raised in this liaison statement concerned the use of E.164 numbers for mobile terminals which are used only for data services. CN4's response is contained in N4-021255, attached. The European Numbering Forum's response is contained in N4-021472, attached.

N4-021472 raises the question: is there a requirement for services which would allow subscriptions not to have an E.164 number associated with each subscription, to the extent that we should change the 3GPP specification (3GPP TS 23.003) which requires each subscriber to have at least one E.164 number? The examples quoted in N4-021472 are that of telemetry from vending machines and telemetry from vehicles. Clearly, if such terminals will never be used to receive terminating traffic then the IMSI would be the only identity required; however if a terminal is to be used to receive terminating traffic then a public identity is required as well.
3GPP has already agreed that every subscription (including those which handle only GPRS traffic) shall have at least one E.164 number associated with it; for subscriptions which include CS services the need is obvious, and even for subscriptions which handle only GPRS traffic there is the need for an E.164 number to support SMS (both MT and MO), as well as for customer care purposes.

For applications such as vending machine and vehicle telemetry, it could be argued that a public identity other than an E.164 number could be used; the benefit of such an approach (as seen by the European Numbering Forum) is that it would reduce the demand on the E.164 numbering scheme, but the penalties are that it would require substantial changes to the 3GPP specifications. These changes go beyond the need to remove from 23.003 the requirement that every subscription has associated with it at least one E.164 number; we would need to define how mobile terminated traffic is handled using a public identity other than an E.164 number, and define the services which would use that method of routeing.

SA1 are asked to consider whether there is a need to define for 3GPP:

- Subscriptions which would require only mobile originating services other than MO SMS (and which would therefore not need any form of public identity);
- Subscriptions which would require mobile originating services other than MO SMS and only that set of mobile terminating services which could use a public identity other than an E.164 number.

SA2 are asked to consider the impacts on the 3GPP architecture of mobile terminating services which rely on the use of a public identity other than an E.164 number.

Bearing in mind the need for a co-ordinated response to the European Numbering Forum, SA1 and SA2 are asked to send their responses to CN4, so that CN4 can provide the co-ordinated response to the European Numbering Forum.

2. Actions:

To SA WG1 and SA WG2:

ACTION 1: CN4 asks SA1 to consider the need for services as described above, which would avoid the need for every subscription to have an E.164 number associated with it.

ACTION 2: CN4 asks SA2 to consider the impact on the 3GPP architecture of mobile terminating services which rely on the use of a public identity other than an E.164 number.

ACTION 3: CN4 asks SA1 and SA2 to respond to CN4, so that CN4 can provide a co-ordinated response to the European Numbering Forum.

3. Date of Next CN4 Meetings:

CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, EIRE
CN4 #19	19th May – 23rd May 2003	USA

3GPP TSG CN WG4 Meeting #16
Miami, USA, 23rd – 27th September 2002

N4-021225

Mr Ian Park
Chairman, 3GPP TSG CN WG4
ETSI Mobile Competence Centre
650, route des Lucioles
06921 Sophia-Antipolis Cedex
France

cc: Mr Kimmo Kymalainen, Secretary, 3GPP TSG CN WG4

Our ref: 2-179 / VHU
Date: 24 May 2002

Dear Mr Park

Use of Identifiers in GPRS & UMTS Environments

I write to you on behalf of the European Numbering Forum to seek the advice of 3GPP on three matters directly and indirectly related to the use of identifiers in the GPRS and UMTS environments.

The European Numbering Forum is a pan-European body that promotes the exchange of information and expertise and facilitates consultation on numbering and addressing issues. This request to 3GPP arises from discussions in the European Numbering Forum on the various regulatory issues identified in the December 2000 report of the UMTS Forum entitled "Naming, Addressing and Identification Issues for UMTS". The three issues on which we seek the advice of CN4 are described in detail below.

(1) Assignment of E.164 numbers to GPRS or UMTS terminals operating in data-only mode

Technical specification 3GPP TS 23.003 version 4.3.0 release 4 — UMTS: Numbering, Addressing and Identification — contains a requirement that all mobile terminals must be assigned a telephone number (see clause 3.1, "…the assignment of an MSISDN to a mobile station is mandatory.").

The European Numbering Forum appreciates the logic of such a requirement while the assumption that all mobile terminals may be used for voice services remains valid. However, the use of UMTS terminals for data-only applications — possibly accompanied by the emergence of terminals with data capabilities only — may challenge this assumption. Examples of data-only applications that may emerge include communications functionality built into personal digital assistants and telemetry from vending machines.

Were such applications to become widespread — for example, significant numbers of vending machines possessing built-in UMTS capability — it would imply the assignment of very large quantities of E.164 numbers for mobile services. Such a scenario leads to the question of whether currently designated stocks of mobile numbers might become exhausted.

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E-mail: *ero@ero.dk*
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Given this background, the European Numbering Forum requests a clarification from CN4 on the rationale for the requirement specified in TS 23.003 for UMTS mobile terminals to be assigned E.164 numbers.

(2) Capability to contact emergency services from GPRS and UMTS terminals while in data-only, always-on state

The European Numbering Forum has discussed some of the implications of the capability of GPRS and UMTS terminals to operate in a data-only, always-on state. One such implication is the possible need to contact emergency services while a terminal is in such a state, rather than by establishing a voice connection.

Accordingly, the European Numbering Forum would appreciate having an assessment from CN4 on whether it is anticipated that a capability to contact emergency services while a mobile terminal is in a data-only, always-on state will be required. If the assessment of CN4 is that such a capability will be required, any views of CN4 on the most appropriate means by which emergency services could be contacted while in such a state would also be welcome.

(3) Demand for publicly managed identifiers related to GPRS and UMTS services

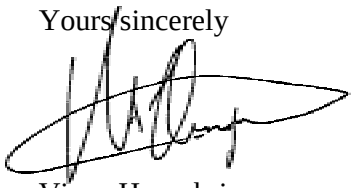
You may be aware that the European Numbering Forum and the GSM Association have undertaken work over the last two years relating to a possible escalation of demand for E.212 mobile network codes. This work has recently concluded with a finding that the level of demand for mobile network codes, at present and in the foreseeable future, will not produce a shortage of this resource.

This work has revealed the importance of developing a thorough understanding of the use of publicly-managed identifiers that are important in the provision of mobile services. Such an understanding is necessary to ensure that any future problems and challenges relating to demand for and use of these identifiers are properly recognised by national regulatory authorities and other bodies that are responsible for their management. One example of such an identifier that is used in provision of mobile services, for which the nature of future demand is as yet unclear, is the E.118 issuer identifier number (see clause 10.1.1 of 3GPP TS 11.11 version 8.6.0 release 1999).

Accordingly, the European Numbering Forum would welcome receiving the assessment of CN4 on whether demand for important publicly-managed identifiers used in the provision of GPRS and UMTS services is likely to experience significant growth.

The assistance of 3GPP CN4 in providing advice on the above matters will be invaluable in allowing the European Numbering Forum, and its constituent organisations, to properly consider the implications for management and use of numbers, addresses and other identifiers arising from the introduction of GPRS and UMTS services. Please do not hesitate to contact me on telephone +45 33 89 63 03, fax +45 33 89 63 30 or e-mail "humphries@ero.dk" if you wish to discuss these matters before CN4 provides a response.

Yours sincerely



Vince Humphries
European Radiocommunications Office

Secretary, European Numbering Forum

3GPP TSG CN WG4 Meeting #16 ***N4-021255***
Miami, USA, 23rd – 27th September 2002

Title: **[DRAFT]** LS on Use of Identifiers in GPRS & UMTS Environments

Response to: LS (2-179 / VHU) on "Use of Identifiers in GPRS & UMTS Environments" from European Numbering Forum.

Source: TSG CN WG4

To: TSG European Numbering Forum

Cc: TSG CN; TSG SA; TSG T WG3

Contact Person:
Name: **Ian Park**
Tel. Number: +44 1635 673 527
E-mail Address: ian.park@vf.vodafone.co.uk

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1. Overall Description:

CN WG4 thank the European Numbering Forum for their liaison statement, reference 2-179 / VHU, on "Use of Identifiers in GPRS & UMTS Environments". Of the three questions posed in this liaison statement, the first is within CN WG4's competence to answer.

The second and third questions seem to us to be more appropriately handled by other working groups in 3GPP. We have forwarded your liaison statement to them, with a request that they respond to you directly.

On the first question, relating to Assignment of E.164 numbers to GPRS or UMTS terminals operating in data-only mode, we believe that the requirement to be able to direct voice (or indeed any circuit-switched) calls to a mobile station is not the only driver for the requirement to assign at least one MSISDN to each mobile station. The delivery of mobile terminated short messages also requires the destination MS to have an MSISDN; the short message service is a major revenue earner for virtually all mobile network operators, and 3GPP working groups and their predecessors in SMG did a lot of work to ensure that short messages could be delivered over a GPRS bearer as well as over a "GSM classic" bearer. This means that the user of a data-only terminal can make full use of the Short Message Service; indeed a PDA could be regarded as a better device for handling short messages than a more conventional GSM mobile station.

Even if the need for an MSISDN for A data-only terminal to support delivery of short messages is discounted, it would require substantial study of the 3GPP specification set to verify that GPRS and UMTS systems could be specified to operate correctly if data-only terminals are not required to have an MSISDN. We would be reluctant to undertake this work unless there is a particularly pressing need for it. Could the European Numbering Forum please indicate how pressing is the problem of potential exhaustion of E.164 numbering schemes?

2. Actions:

To The European Numbering Forum.

ACTION: CN WG4 kindly request the European Numbering Forum to note CNWG4's reason for requiring every mobile station (including those with no voice capability) to have an MSISDN.

ACTION: CN WG4 kindly request the European Numbering Forum to indicate how pressing is the problem of potential exhaustion of E.164 numbering schemes.

3. Date of Next CN4 Meetings:

CN4 #17	11th Nov. – 15th Nov. 2002	Bangkok, Thailand
CN4 #18	10th Feb. – 14th Feb. 2003	Dublin, Eire

3GPP TSG CN WG4 Meeting #17 ***N4-021472***
Bangkok, THAILAND, 11th – 15th November 2002

Source:	European Radiocommunications Office
Title:	Liaison Statement
Agenda item:	4
Document for:	INFORMATION

Thank you for the recent response from 3GPP CN4 to the liaison from the European Numbering Forum regarding the assignment of E.164 numbers to GPRS or UMTS terminals operating in data-only mode.

The response revealed that our liaison was not as clear as it should have been, in that the reference to non-voice communications should, instead, have been to services and protocols that do not use E.164 numbers.

In our view, specialised mobile terminals are expected to be increasingly used for machine-to-machine communications, potentially including telemetry from vending machines to product distribution centres, and telemetry from vehicles. It is possible that such applications will become very common, and that the numbers of mobile terminals involved will be very great. Although the level of penetration of such applications cannot easily be estimated, it is possible that they could consume very significant quantities of E.164 numbers.

Accordingly, the European Numbering Forum would appreciate if CN4 could indicate whether E.164 numbers need to be assigned to terminals that do not support E.164 numbers and, if so, why the E.164 numbers are needed.

On a related matter, you may have an interest in a draft Recommendation of the CEPT Electronic Communications Committee (ECC), recently prepared by the ECC project team responsible for numbering, that states that E.164 numbers should not be assigned for use by data-only mobile terminals. A copy of this draft Recommendation is attached.

At its meeting last week (week 42), ETSI SPAN11 NAR also considered this issue and resolved that it did not offer any support at present to the assignment of E.164 numbers to mobile terminals that are not intended to use E.164 numbers.

Best regards...

Vince Humphries
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web: www.eto.dk; www.ero.dk
<<Rec on use of E164 numbers for emerging mobile systems.doc>>

Source : ECC – PT3

Title : Draft Recommendation – Data-Only Terminals

THE USE OF E.164 NUMBERS FOR EMERGING MOBILE SYSTEMS

CONSIDERING :
That

1. E.164 numbers are used and identify the originator or recipient of specific communications services.
2. The IMSI is used as the primary identification of the user (SIM) of a mobile network.
3. Some data services use forms of identification other than E.164 numbers.
4. There may be a rapid growth in the use of data only terminals that do not support any service that uses E.164 numbers.
5. The 3GPP standards imply that all mobile terminals have an E.164 number.

TAKING INTO ACCOUNT :

RECOMMENDS :

That E.164 numbers should be assigned to data-only terminals only where the numbers are needed for a service supported by the terminals. ECC should inform 3GPP of this recommendation.