3GPP TSG CN Plenary Meeting #18 **NP-020597**
4th – 6th December 2002 New Orleans, USA.

Source: TSG CN WG4

Title: Small Technical Enhancements and Improvements for Rel-5 ETRAN-IPtrans

Agenda item: 8.8

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
23.205	031	3	N4-021554	Rel-5	Iu-cs over IP related corrections for 23.205	B	5.3.0
29.232	042	3	N4-021555	Rel-5	New Procedures/Package for handling IP transport for Iu interface	B	5.3.0

3GPP TSG CN WG4 Meeting #17 ***N4-021554***
Bangkok, Thailand, 11th – 15th September 2002 **(Revision of N4-021340)**

CR-Form-v7

CHANGE REQUEST

⌘ **23.205** **CR** **031** ⌘ **rev** **3** ⌘ Current version: **5.3.0** ⌘

*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 **X**

Title:	⌘	Iu-cs over IP related corrections for 23.205
Source:	⌘	CN4
Work item code:	⌘	TEI5
Date:	⌘	14/11/2002
Category:	⌘	**B**
Release:	⌘	Rel-5

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:	⌘	Introduction of optional support for IP on Iu for CS, impacts to MSC for independent call and bearer for transparent mode operation. In Rel5 RAN3 have introduced an IP bearer solution for CS services which requires out-of-band signalling of the RNC sink address to the CN MGW via MSC. The reason for this is that the solution for IP bearer establishment chosen by RAN3 in Rel5 relies on the exchange of IP addresses being sent in the packet header. For Iu CS on IP in support mode the RNC always sends the first data packet (control PDU for IuUP Initialisation) and can thus include its IP address in this packet to the MGW. In the transparent mode case the first data packet may need to be sent from the MGW to the RNC and thus it needs to receive the RNC IP address via alternative means. The proposed solution by RAN3 is to include this address in the RANAP RAB Assignment response and Relocation Request Response messages.
Summary of change:	⌘	New chapters are introduced to desribe this specific handling for Iu CS on IP when transparent mode of opration is required. A new package is defined for indicating the RNC IP address to the MGW.
Consequences if not approved:	⌘	Iu CS on IP for Transparent Mode of operation is not defined for the MSC/MGW.

Clauses affected:	⌘	4.2, 6.1.3, 6.2.3, 8.1.5, 8.3.5, 16.2.47, 16.2.48			
		Y	**N**		
Other specs	⌘	**X**		Other core specifications	⌘ TS 29.232-042, 25.415, 25.413, 25.414-039,
Affected:			**X**	Test specifications	
			X	O&M Specifications	

Other comments: ⌘	

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

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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.

****** First Modified Section ******

4.2 Bearer-Independent Call Control

The protocol used on the Nc interface shall be a call control protocol supporting IP and ATM transports in a bearer-independent manner for the ISDN service set, allowing the physical separation of the call control entities from the bearer control entities.

An exception to this bearer independence concept is if Iu interface is on IP and the IP addresses are to be exchanged via call control plane signalling (known by the MSC due to configuration data). In this case the specific handling is described separately.

****** Second Modified Section ******

6.1.3 Originating Call Establishment For Iu Interface on IP

If IuCS on IP is supported by the MSC server, the Core Network side procedures described in 6.1.1 or 6.1.2 shall apply. For the access side termination, the exchange of IP addresses via call control procedures is described in this chapter.

Before the MSC server starts the access bearer assignment, the MSC server requests the MGW to prepare for the access bearer using the Prepare IP Transport procedure. The MSC server requests the MGW to provide an IP Transport Address and a Iu UDP Port and provides the MGW with the bearer characteristics. For speech calls, the MSC server shall provide the MGW with the speech coding information and conditionally GTT related information in accordance with 3GPP TS 23.226 [28]. For a non-speech call the MSC server also provides the MGW with a PLMN Bearer Capability [4]. After the MGW has replied with the IP address and UDP Port the MSC server requests access bearer assignment using the provided IP address and UDP Port in accordance with 3GPP TS 25.413 [26]. The IP addresses and UDP Ports of the MGW and the RNC are exchanged via the RANAP procedures. If the bearer transport is IP and IuUP mode is Transparent, when the MSC receives the RANAP RAB assignment response it shall send the RNC IP address and UDP Port to the MGW Access bearer termination using the Modify IP Transport Address procedure.

If the bearer transport is IP and IuUP mode is Support, the MGW shall use the source IP address and UDP Port of the IuUP Init packet received from the radio access network as the destination address for subsequent downlink packets.

The sequence is shown in Figure 6.1.3/1.

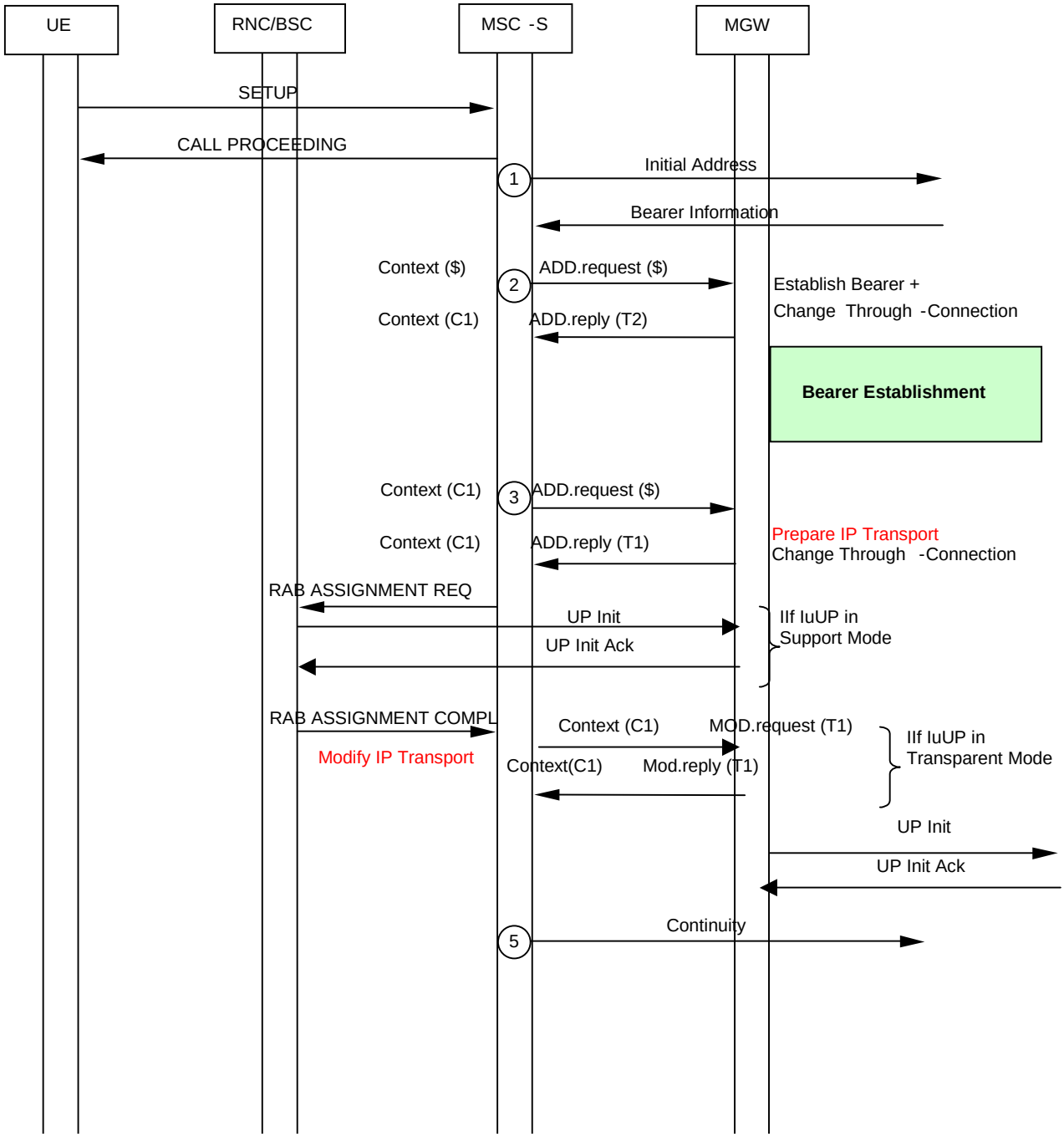


Figure 6.1.3/1: Call Establishment for Iu on IP

****** Third Modified Section ******

6.2.3 Terminating Call Establishment For Iu Interface on IP

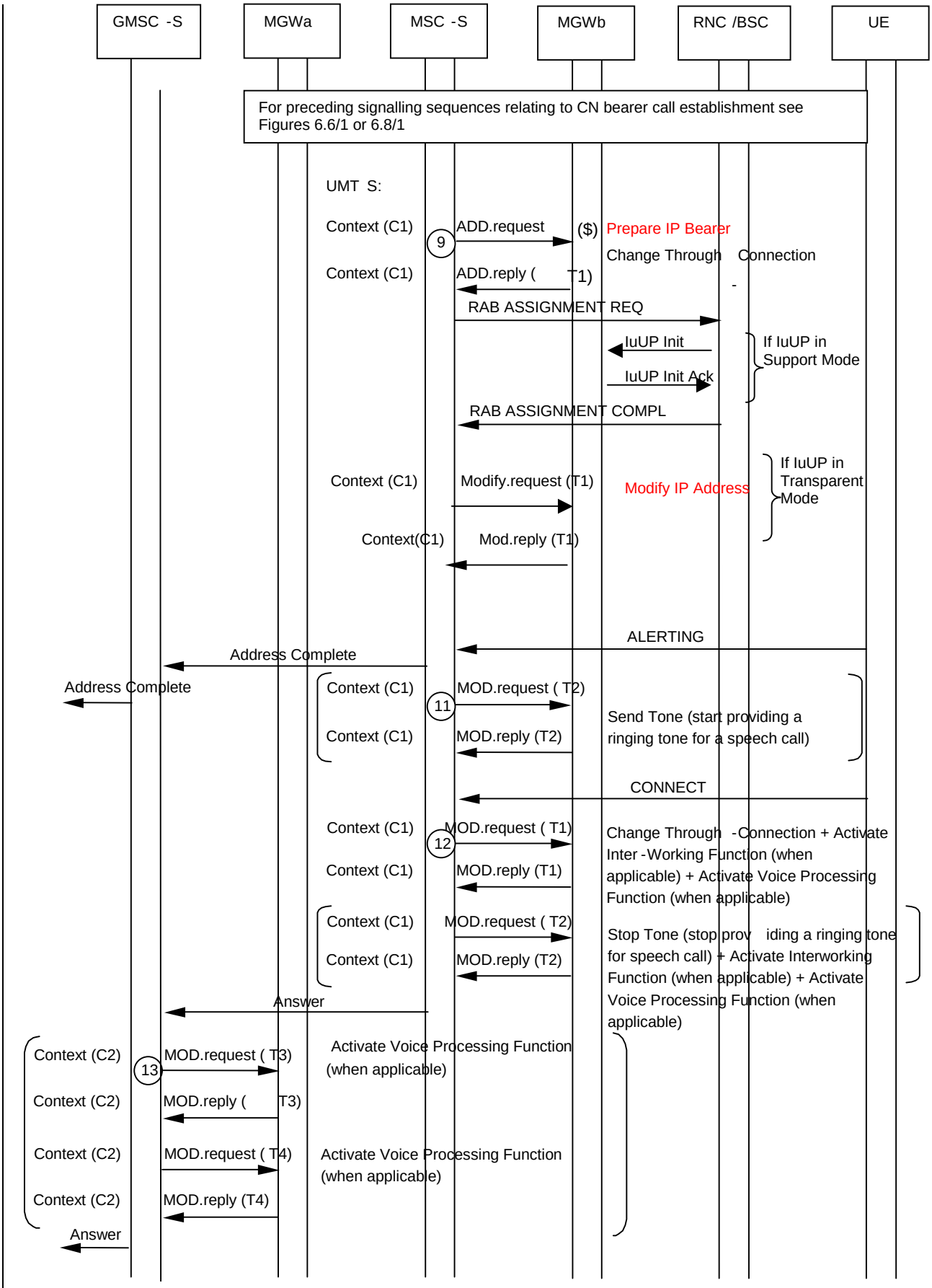
If IuCS on IP is supported by the MSC server, the Core Network side procedures described in 6.2.1 or 6.2.2 shall apply. For the access bearer termination, the exchange of IP addresses via call control procedures is described in this chapter.

Before the MSC server starts the access bearer assignment, the MSC server requests the MGW to prepare for the access bearer using the Prepare_IP_Transport procedure. The MSC server requests the MGW to provide an IP Transport Address and UDP Port and provides the MGW with the bearer characteristics. For speech calls, the MSC server shall provide the MGW with the speech coding information and conditionally GTT related information in accordance with

3GPP TS 23.226 [28]. For a non-speech call the MSC server also provides the MGW with a PLMN Bearer Capability [4]. After the MGW has replied with the IP address and UDP Port the MSC server requests access bearer assignment using the provided IP address and UDP Port in accordance with 3GPP TS 25.413 [26]. The IP addresses and UDP Ports of the MGW and the RNC are exchanged via the RANAP procedures. If the bearer transport is IP and IuUP mode is Transparent, when the MSC receives the RANAP RAB assignment response it shall send the RNC IP address and UDP Port to the MGW Access bearer termination using the Modify_IP_Transport_Address procedure.

If the bearer transport is IP and IuUP mode is Support, the MGW shall use the source IP address and UDP Port of the IuUP Init packet received from the radio access network as the destination address for subsequent downlink packets.

The sequence is shown in Figure 6.2.3/1.



****** Fifth Modified Section ******

8.1.5 SRNS/SBSS Relocation with Iu on IP

If IuCS on IP is supported by the MSC server, the Core Network side procedures described in 8.1.1, 8.1.2, 8.1.3 & 8.1.4 shall apply. For the access bearer termination, the exchange of IP addresses via call control procedures is described in this chapter.

Before the MSC server starts the access bearer assignment, the MSC server requests the MGW to prepare for the access bearer using the Prepare_IP_Transport procedure. The MSC server requests the MGW to provide an IP Transport address and UDP Port and provides the MGW with the bearer characteristics. For speech calls, the MSC server shall provide the MGW with the speech coding information and conditionally GTT related information in accordance with 3GPP TS 23.226 [28] for the bearer. For a non-speech call the MSC server also provides the MGW with a PLMN Bearer Capability [4]. After the MGW has replied with the IP address and UDP Port the MSC server requests access bearer assignment using the provided IP address and UDP Port in accordance with 3GPP TS 25.413 [26]. The IP addresses and UDP Ports of the MGW and the RNC are exchanged via the RANAP procedures. If the bearer transport is IP and IuUP mode is Transparent, when the MSC receives the RANAP Iu Relocation Request response, it shall send the RNC IP address and UDP Port to the MGW Access bearer termination using the Modify_IP_Transport_Address procedure.

If the bearer transport is IP and IuUP mode is Support, the MGW shall use the source IP address and UDP Port of the IuUP Init packet received from the radio access network as the destination address for subsequent downlink packets.

The sequence is shown in Figure 8.1.5/1.

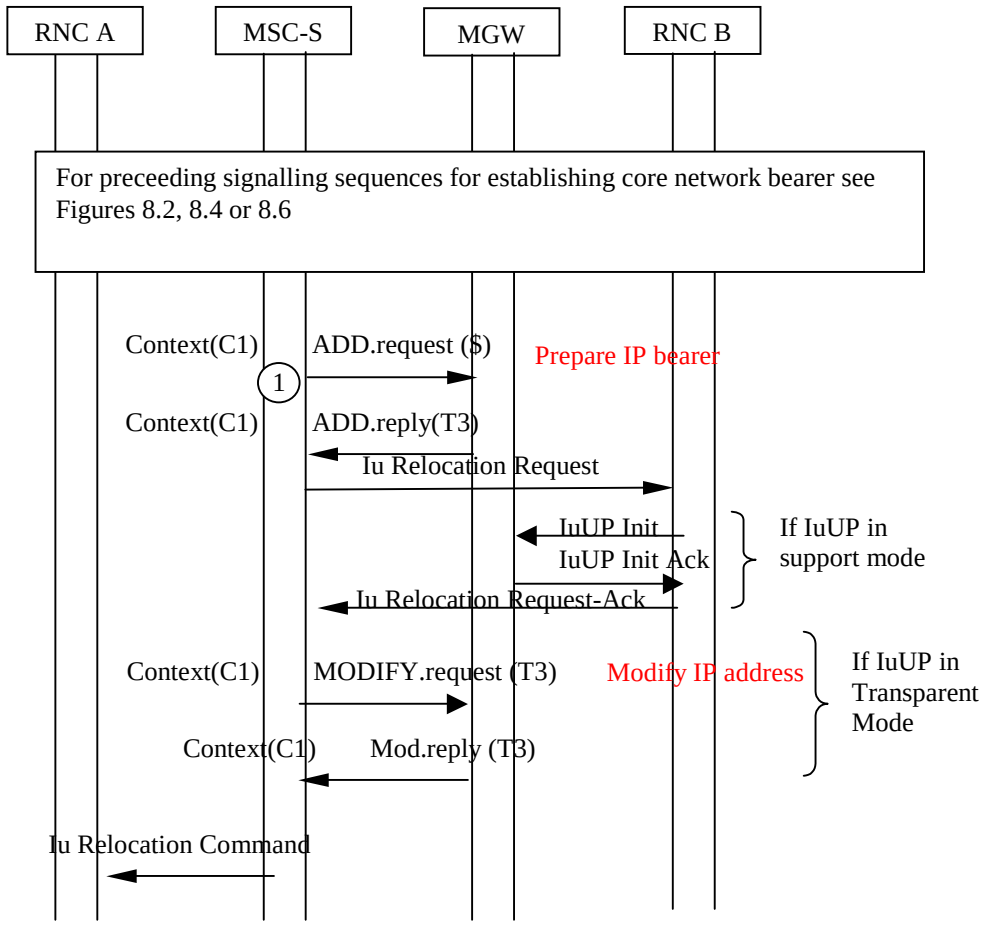


Figure 8.1.5/1 SRNS Relocation with Iu on IP

****** Sixth Modified Section ******

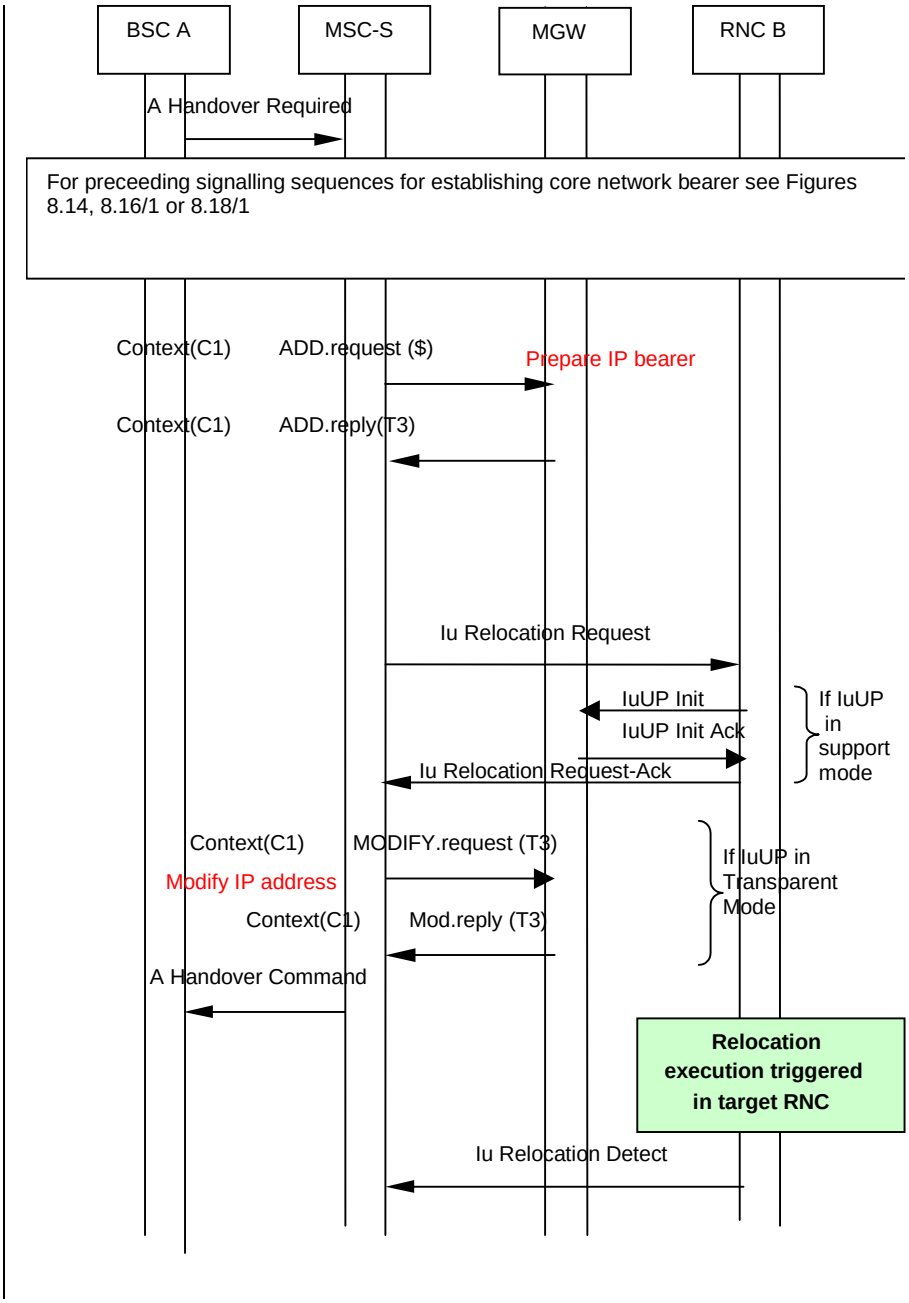
8.3.5 GSM to UMTS Handover with Iu on IP

If IuCS on IP is supported by the MSC server, the Core Network side procedures described in 8.3.1, 8.3.2, 8.3.3, 8.3.4 shall apply. For the access bearer termination, the exchange of IP addresses via call control procedures is described in this chapter.

Before the MSC server starts the access bearer assignment, the MSC server requests the MGW to prepare for the access bearer using the Prepare_IP_Transport procedure. The MSC server requests the MGW to provide an IP Transport address and UDP Port and provides the MGW with the bearer characteristics. For speech calls, the MSC server shall provide the MGW with the speech coding information and conditionally GTT related information in accordance with 3GPP TS 23.226 [28] for the bearer. For a non-speech call the MSC server also provides the MGW with a PLMN Bearer Capability [4]. After the MGW has replied with the IP address and UDP Port the MSC server requests access bearer assignment using the provided IP address and UDP Port in accordance with 3GPP TS 25.413 [26]. The IP addresses and UDP Ports of the MGW and the RNC are exchanged via the RANAP procedures. If the bearer transport is IP and IuUP mode is Transparent, when the MSC receives the RANAP Iu Relocation Request response, it shall send the RNC IP address and UDP Port to the MGW Access bearer termination using the Modify_IP_Transport_Address procedure.

If the bearer transport is IP and IuUP mode is Support, the MGW shall use the source IP address and UDP Port of the IuUP Init packet received from the radio access network as the destination address for subsequent downlink packets.

The sequence is shown in Figure 8.3.5/1.


BSC A
MSC-S
MGW
RNC B
A Handover Required
For preceeding signalling sequences for establishing core network bearer see Figures 8.14, 8.16/1 or 8.18/1
Context(C1)
ADD.request ($)
Prepare IP bearer
Context(C1)
ADD.reply(T3)
Iu Relocation Request
IuUP Init
IuUP Init Ack
If IuUP in support mode
Iu Relocation Request-Ack
Context(C1)
MODIFY.request (T3)
Modify IP address
Context(C1)
Mod.reply (T3)
If IuUP in Transparent Mode
A Handover Command
Relocation execution triggered in target RNC
Iu Relocation Detect

16.2.47 Prepare_IP_Transport

This procedure is used to prepare for a bearer establishment when IuCS on IP is supported by the MSC.

Table 16.22: Procedures between (G)MSC server and MGW: Prepare_IP_Transport

Procedure	Initiated	Information element name	Information element required	Information element description
Prepare_IP_Transport	(G)MSC-S	Context/Context Request	M	This information element indicates the existing context or requests a new context for the IP Access bearer termination.
		Bearer Termination Request	M	This information element requests a new bearer termination for the IP Access bearer to be established.
		Iu UDP Port Request	M	This information element requests the Iu UDP Port in the MGW~~.~~
		IP Transport Address Request	M	This information element requests the IP address of the MGW.
		Bearer Characteristics/ Bearer Characteristics Requests	M	This information element indicates the preferred characteristics of the bearer connection or requests the MGW to select and provide the bearer characteristics.
		Bearer Service Characteristics	C	This information element indicates the bearer service requested by the user. This information element is included if neither Codec information element nor Circuit Switched Data information elements are provided.
		Circuit Switched Data	C	This information element indicates the PLMN bearer capabilities and when applicable GSM channel coding. This information element is included for a non-speech call by the MSC server, or by the anchor-MSC in case of inter-MSC handover, for a radio access network side bearer termination.
		Codec	C	This information element indicates the speech coding format to be used for the bearer. This information element is included for a speech call for a radio access network side bearer termination.
		Framing Protocol	O	This information element indicates the framing protocol to be used for the bearer.
		Cellular Text telephony modem	C	This information element indicates the need of CTM function.
Prepare IP Transport Ack	MGW	Context	M	This information element indicates the context where the command was executed.
		Bearer Termination	M	This information element indicates the bearer termination where the command was executed.
		IP Transport Address	M	This information element indicates the IP address of the MGW
		Iu UDP Port	M	This information element requests the Iu UDP Port in the MGW

16.2.48 Modify IP Transport Address

This procedure is used when IuCS on IP is supported by the MGW and IuUP in transparent mode is configured.

Table 16.23: Procedures between (G)MSC server and MGW: RNC IP address notification

Procedure	Initiated	Information element name	Information element required	Information element description
Modify IP Transport Address	MSC-S	Context	M	This information element indicates the context for the IP bearer termination.
		Bearer Termination	M	This information element indicates the IP bearer termination where the RNC IP Address is needed.
		IP Transport address	M	This information element indicates the IP address of the RNC
		Iu UDP Port	M	This information element indicates the Iu UDP Port in the RNC
Modify IP Address Ack	MGW	Context	M	This information element indicates the context where the command was executed.
		Bearer Termination	M	This information element indicates the IP bearer termination where thecommand is executed.

3GPP TSG CN WG4 Meeting #17 ***N4-021555***
Bangkok, THAILAND, 11th – 15th November 2002 **(Revision of N4-021142)**

CR-Form-v7

CHANGE REQUEST

⌘ **29.232** **CR** **042** ⌘ **rev** **3** ⌘ Current version: **5.3.0** ⌘

*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:	⌘	New Procedures/Package for handling IP transport for Iu interface
Source:	⌘	CN4
Work item code:	⌘	TEI5
Date:	⌘	30/10/02
Category:	⌘	**B**
Release:	⌘	Rel-5

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:	⌘	Introduction of optional support for IP on Iu for CS, impacts to MSC for independent call and bearer for transparent mode operation. In Rel5 RAN3 have introduced an IP bearer solution for CS services which requires out-of-band signalling of the RNC sink address to the CN MGW via MSC. The reason for this is that the solution for IP bearer establishment chosen by RAN3 in Rel5 relies on the exchange of IP addresses being sent in the packet header. For Iu CS on IP in support mode the RNC always sends the first data packet (control PDU for IuUP Initialisation) and can thus include its IP address in this packet to the MGW. In the transparent mode case the first data packet may need to be sent from the MGW to the RNC and thus it needs to receive the RNC IP address via alternative means. The proposed solution by RAN3 is to include this address in the RANAP RAB Assignment response and Relocation Request Response messages.
Summary of change:	⌘	New package for Prepare IP transport and new procedures.
Consequences if not approved:	⌘	Iu CS on IP for Transparent Mode of operation is not defined for the MSC/MGW.

Clauses affected:	⌘	2, 10, 14.2, 15.1			
Other specs Affected:	⌘	**Y** / **N**	Other core specifications	⌘	23.205-031, 25.414-039, 25.415, 25.413
		X /	Test specifications		
		/ **X**	O&M Specifications		
Other comments:	⌘				

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****** First Modified Section ******

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. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 23.153: "3rd Generation Partnership Project; Technical Specification Group Core Network; Out of Band Transcoder Control - Stage 2"

[2] 3GPP TS 23.205: "3rd Generation Partnership Project; Technical Specification Group Core Network; Bearer Independent CS Core Network – Stage 2"

[3] 3GPP TS 24.008: "3rd Generation Partnership Project; Technical Specification Group Core Network; Mobile radio interface layer 3 specification"

[4] 3GPP TS 25.415: "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; UTRAN Iu interface user plane protocols".

[5] 3GPP TS 28.062: "3rd Generation Partnership Project; Technical Specification Group Services & System Aspects; In-band Tandem Free Operation (TFO) of Speech Codecs; Stage 3 – Service Description"

[6] 3GPP TS 29.007: "3rd Generation Partnership Project; Technical Specification Group Core Network; General requirements on interworking between the Public Land Mobile Network (PLMN) and the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN)"

[7] 3GPP TS 29.205: "3rd Generation Partnership Project; Technical Specification Group Core Network; Application of Q.1900 series to Bearer Independent CS Network architecture; Stage 3"

[8] 3GPP TS 29.415: "3rd Generation Partnership Project; Technical Specification Group Core Network; CN Nb interface user plane protocols".

[9] 3GPP TS 48.008: "3rd Generation Partnership Project; Technical Specification Group GSM EDGE Radio Access Network; Mobile-services Switching Centre - Base Station System (MSC - BSS) interface; Layer 3 specification".

[10] ITU-T Recommendation H.248 (06/00): "Media Gateway Control Protocol"

[11] ITU-T Recommendation Q.2210 (07/96): "Message transfer part level 3 functions and messages using the services of ITU-T Recommendation Q.2140"

[12] RFC 2960 "Stream Control Transmission Protocol"

[13] 3GPP TS 29.202: "SS7 signalling transport in core network"

[14] ITU-U Recommendation H.248 Annex L, "Error Codes and Service Change Reason Description"

[15] ITU-U Recommendation H.248 Annex M.2, "Media Gateway Resource Congestion Handling Package"

[16] 3GPP TS 26.103: "Speech codec list for GSM and UMTS"

[17] ITU-U Recommendation H.248 Annex F, "Facsimile, Text Conversation and Call Discrimination Packages"

[18] 3GPP TS 26.226: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Cellular Text Telephone Modem; General Description"

[19] ITU-T Recommendation T.140: "Text conversation protocol for multimedia application"

[20] 3GPP TS 25.413: " UTRAN Iu interface RANAP signalling "

[21] 3GPP TS 25.414: " UTRAN Iu interface data transport and transport signalling "

****** Next Modified Section ******

10 Formats and codes

Table 1 shows the parameters which are required, in addition to those defined in the subclause "Formats and Codes" of ITU—T Recommendation Q.1950 (see 3GPP TS 29.205 [7]).

The coding rules applied in ITU-T Recommendation H.248 [10] for the applicable coding technique shall be followed for the UMTS capability set.

Table 1: Additional parameters required

Actprot	Signal descriptor	As for the signal "Activate protocol" in subclause 15.1.2.3
Mode	Local control	As for the property "UP mode of operation" in subclause 15.1.1.1
Version	Local control	As for the property "Upversion" in subclause 15.1.1.1
Value	Local control	As for the property " Delivery of errounous SDUs" in subclause 15.1.1.1
Interface	Local control	As for the property " Interface" in subclause 15.1.1.1
Initdirection	Local control	As for the property " Initialisation Direction" in subclause 15.1.1.1
PLMN bearer capability	Local control	As for the property "PLMN BC" in subclause 15.1.2.1
Coding	Local control	As for the property " GSM channel coding" in subclause 15.1.2.1
Tfoenable	Local control	As for the property " TFO activity control" in subclause 15.1.3.1
Codeclist	Local control	As for the property" TFO Codec List" in subclause 15.1.3.1
Result	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Protocol Negotiation Result" in subclause 15.1.2.2
Cause	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Protocol Negotiation Result" in subclause 15.1.2.2
Rate	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Rate Change" in subclause 15.1.2.2
Optimalcodec	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Optimal Codec Type" in subclause 15.1.3.2
Distlist	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Distant TFO List" in subclause 15.1.3.2
Off / value	Local control	As for the property "Echo cancelling" in subclause E.13.1 in ITU-T Recommendation H.248 [10]
Error	Error descriptor	As defined in the subclause "Command error code" in ITU-T Recommendation H.248 [10]
Reduction	ObservedEvent descriptor	As for the ObserverdEventDescriptor in “MGW Resource Congestion Handling– Indication” in subclause 14.1.15.
Bearer Modification Support	EventDescriptor	As for the EventsDescriptor in "Bearer Modification Support" in subclause 15.1.4.2.
Bearer modification possible	ObservedEvent descriptor	As for the ObserverdEventDescriptor in “Bearer Modification Support” in subclause 15.1.4.2.
Ctmstate	TerminationState	As for the TerminationState “Text termination connection state” in subclause 15.1.6.1.
Ctmtransport	Local control	As for the property “Text Transport” in subclause 15.1.6.1.
Ctmtext version	Local control	As for the property ” Text Protocol Version” in subclause 15.1.6.1.
Connchng	ObservedEventDescriptor	As for the ObservedEventDescriptor ” Connection State Change in subclause 15.1.6.2
Ctmbits	Statistics descriptor	As for the Statistics descriptor “Characters Transferred” in subclause 15.1.6.4
Bitrate	Local control	As for the property" Bitrate" in subclause 15.1.7.1
Ipaddress	Local control	As for the property" IP transport address" in subclause 15.1.9.1
UDPport	Local control	As for the property" UDP port " in subclause 15.1.9.1

****** Next Modified Section ******

14.2 Call related H.248 transactions

Table 3 shows the relationship between each call-related procedure in ITU-T Recommendation Q.1950 (see 3GPP TS 29.205 [7]) and the corresponding stage 2 procedure defined in 3GPP TS 23.205 [2].

Table 3: Correspondence between Q.1950 call-related transactions and 3GPP TS 23.205 and 23.153 procedures

Transaction used in Q.1950	Procedure defined in 3GPP TS 23.205 [2] and 23.153 [1]	Comments
Change_Topology	Change Flow Direction	
Join	Join Bearer Termination	
Isolate	Isolate Bearer Termination	
Establish_BNC_Notify+(tunnel)	Establish Bearer	
Prepare_BNC_Notify+(tunnel)	Prepare Bearer	
Cut_Through	Change Through-Connection	
Not defined in Q.1950	Activate Interworking Function	
Cut_BNC (include several procedures).	Release Bearer (Release Bearer and Release termination)	
BNC Established	Bearer Established	
BNC Release	Bearer Released	
Insert_Tone	Send Tone	
Insert_Annoucement	Play Announcement	
Signal Completion	Announcement Completed	
Detect_Digit	Detect DTMF	
Insert_Digit	Send DTMF	
Detected digit(BIWF)	Report DTMF	
Confirm_Char	Confirm Char	
Modify_ Char	Modify Char	
Reserve_Char_Notify	Reserve Char	
BNC Modified	Bearer Modified	
Echo Canceller	Activate Voice Processing Function	
BNC Connected	**[Editors note: No definition yet]**	
BNC Modification failure	Bearer Modified Failed	
Tunnel (MGC-MGW)	Tunnel Information Down	
Tunnel (MGW-MGC)	Tunnel Information Up	
Insert Tone	Stop Tone	
Insert Announcement	Stop Announcement	
Detect Digits	Stop DTMF Detection	
Insert Digit	Stop DTMF	
Signal.Completion	Tone Completed	
Not defined	Reserve Circuit	
Not defined	Command Rejected	
Not defined	TFO Activation	
Not defined	Codec_Modify	
Not defined	Optimal Codec and Distant List_Notify	
Not defined	Distant Codec List	
Modify Char	Modify Bearer Characteristics	
Not defined	IWF Protocol Indication	
Not defined	Bearer Modification Support	
Not defined	CTM report	
Not defined	Prepare IP transport	
Not defined	Modify IP transport address	

****** Next Modified Section ******

14.2.4X Prepare IP transport

This procedure is activated when the "Prepare IP transport" procedure is initiated.

An ADD.req, MOD.req or MOV.req command is sent with the following information.

1 ADD.req/MOD.req/MOV.req (Prepare IP transport) MGC to MGW

Address Information	Control information	Bearer information
IP Transport Address=? UDP port =?	Transaction ID = z Termination ID = ? Logical Port ID = y If Context Requested: Context ID = ? If Context Provided: Context ID = c1 UP mode = mode UP version = version Delivery of erroneous SDUs = value Interface = interface Initdirerection = initdirection State= ctmstate Transport= ctmtransport Version= ctmtext version Bitrate = bitrate	PLMN bearer capability = PLMN capability GSM channel coding = coding

When the processing of command (1) is complete, the MGW initiates the following procedure.

2 ADD.resp/MOD.resp/MOV.resp (Prepare IP transport) MGW to MSC

Address Information	Control information	Bearer information
IP-Transport Address=Ipaddress UDP port =UDPport	Transaction ID = z Context ID = c1 Termination ID = bearer1	

****** Next Modified Section ******

14.2.4Y Modify IP transport address

This procedure is activated when the "Modify IP transport address" procedure is initiated.

A MOD.req command is sent with the following information.

1 MOD.req (Modify IP transport address) MSC to MGW

Address Information	Control information	Bearer information
IP-Transport Address=Ipaddress UDP port =UDP port	Transaction ID = z Context ID = c1 Termination ID = bearer1	

When the processing of command (1) is complete, the MGW initiates the following procedure.

2 MOD.resp (Modify Ip transport address) MGW to MGC

Address Information	Control information	Bearer information
	Transaction ID = z Context ID = c1 TerminationID=bearer1	

******Last Modified Section ******

15.1.x~~9~~ IP transport package

PackageID: threegiptra (0x00XX)Editors note: needs to be registered with IANA.

Version: 1

Extends: None

This package contains the information needed to be able to support IP transport from RAN to the media gateway.

15.1.9.1 Properties

IP transport address

PropertyID: ipv4trans (0x0001)

Description: IP V4 transport address

Type: 32 bits IPv4Address

Possible values:

Specified as Transport Layer Address in [20]

Defined in: Local Control Descriptor

Characteristics: Read/Write

PropertyID: ipv6trans (0x0002)

Description: IP V6 transport address

Type: 128 bits Ipv6Address

Possible values:

Specified as Transport Layer Address in [20]

Defined in: Local Control Descriptor

Characteristics: Read/Write

UDP port

PropertyID: UDport (0x0001)

Description: UDP port

Type: Unsigned integer

Possible values: 0…65535

Specified as Iu transport Association in [20]

-Defined in: Local Control Descriptor

Characteristics: Read/Write

None

15.1.9.3 Signals

None

15.1.9.4 Statistics

None

15.1.9.5 Procedures

When the MSC Server knows that it shall apply the set up procedure in accordance with [21]-, this package is used to set up an IP transport between the RAN and the CN.

When the Media Gateway Controller initiates the "prepare IP bearer transport" procedure towards the RAN side, it shall request the IP transport address and the UDP port from the MGW. The MGW shall provide the MSC Server with the IP transport address of the MGW and an UDP Port. At the receipt of these information elements the MSC Server shall insert the information elements in the RAB Assignment/ Relocation message.

When the MSC Server receives the RAB assignment acknowledge or Iu relocation request response, (which includes the IP transport address of the RNC and the UDP port) and the User Plane mode is Transparent, it shall initiate the Modify IP transport address procedure towards the MGW before the first data packet is to be sent from the MGW.

The MGW shall use the IP address and and UDP port if received from the MSC Server to route the user data to the RNC regardless if IP addresses and UDP ports were previously exchanged in the User Plane.