3GPP TSG CN Plenary Meeting #27 **NP-050034**
9th – 11th March 2005 Tokyo, JAPAN.

Source: TSG CN WG4

Title: Corrections on OoBTC/TrFO

Agenda item: 8.8

Document for: APPROVAL

Doc-2nd-Level	Spec	CR	Rev	Phase	Subject	Cat	Ver_C
N4-050157	23.153	088		Rel-5	Correction of the condition for the insertion of a transcoder	F	5.9.0
N4-050158	23.153	089		Rel-6	Correction of the condition for the insertion of a transcoder	A	6.0.0
N4-050472	23.205	051	2	Rel-5	Stage 2 Procedure for Emergency Call Indication	F	5.7.0
N4-050473	23.205	052	2	Rel-6	Stage 2 Procedure for Emergency Call Indication	A	6.0.0
N4-050474	29.232	121	2	Rel-5	Procedure for Emergency Call Indication	F	5.9.0
N4-050475	29.232	122	2	Rel-6	Procedure for Emergency Call Indication	A	6.0.0

3GPP TSG-CN WG4 Meeting #26 **N4-050157**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.153** **CR** **088** ⌘ **rev** **-** ⌘ Current version: **5.9.0** ⌘

*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 of the condition for the insertion of a transcoder
Source:	⌘	CN4
Work item code:	⌘	OoBTC
Date:	⌘	27/01/2005
Category:	⌘	**F**
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:

Ph2	*(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)*
Rel-7	*(Release 7)*

Reason for change:	⌘	**Essential correction** In CR 080 (N4-041702) the words "the MGW" were missing; therefore, it is now unclear which entity is responsible for the coordination of rate control requests when the AMR-WB is used with two different, but TFO-compatible Active Codec mode Sets (ACS) at two opposite terminations. Furthermore, it needs to be clarified that in a certain case it is a requirement for the MGW, not a recommendation, to coordinate the rate control requests.
Summary of change:	⌘	Addition of the missing words. Removal of a superfluous editior's note.
Consequences if not approved:	⌘	Incomplete specification. If the MGW does not coordinate the rate control requests, the RNC on one side can receive a RATE CONTROL messsage from the RNC on the other side indicating codec modes as allowed that were never initialised. The receiving RNC will therefore reject the rate control request (and all repetitions of the request); the procedure will fail; and, dependent on the implementation, in the worst case the call will be released.

Clauses affected:	⌘	5.3, 5.6.2

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
		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.

5.3 Media Gateway Control for Codec Handling

The general handling of MGW control procedures are detailed in [8]. Specific handling related to the control of the speech encoding is detailed in Figure. 5.3/1. The terms context, termination, streams and stream properties are described in the ITU-T H.248 "Media Gateway Control Protocol" [13].

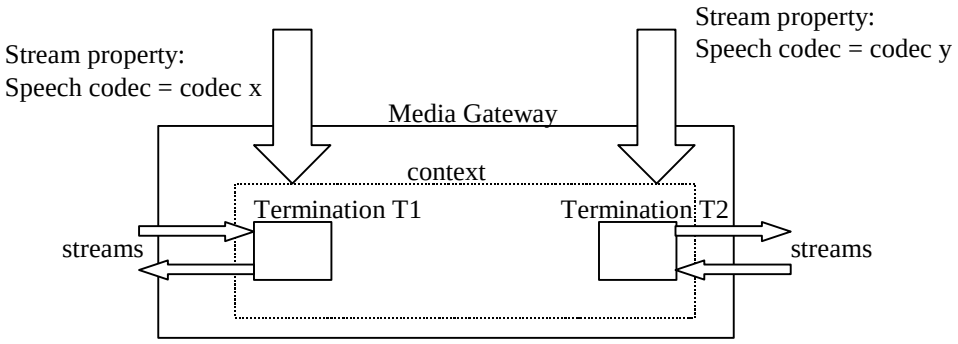

Figure 5.3/1. MGW control for speech codec

The handling of transcoding between one codec type (media stream property applied at one termination) and another codec type (media stream property at other termination) is a function of the MGW. The media stream property for Audio Codec Type is defined in Annex C of the ITU-T MGW control protocol, H.248.

If TFO-incompatible codec types are applied at different terminations of the same context, the MGW shall insert a transcoder. For the definition of TFO-compatibility between 3GPP codec types and codec configurations see [10], clauses 11 and 12.

Between codecs of the AMR codec family, the MGW need not insert a transcoder, if the codec types are TFO-compatible according to [10], table 11-1, and

- the codecs use the same ACS; or
- the ACSs are TFO-compatible and the use of codec modes is restricted to a common subset of the ACSs by means of maximum rate control. In this case the MGW shall~~ould~~ coordinate the rate control request.

Between codecs of the AMR-WB codec family, the MGW need not insert a transcoder, if

- the codecs use the same ACS; or
- the use of codec modes is restricted to a common subset of the ACSs by means of maximum rate control. In this case the MGW shall~~should~~ coordinate the rate control request.

********** NEXT MODIFIED SECTION **********

5.6.2 Node originating the OoBTC codec negotiation

The node originating the OoBTC codec negotiation shall implement the procedures described in Q.1902.4, subclause 8.3.1 [6]. Additionally, the following applies:

In UTRAN or GERAN Iu mode, when constructing the codec configurations for AMR or AMR-WB codecs in the Supported Codecs List (BICC), the MSC Server should take the codec types and codec configurations supported by the RNC or BSC into account (see subclause 5.6.6). The MSC may include more than one Single codec element indicating the same codec type, but different configurations, in the Supported Codecs List (BICC) (see [5]).

NOTE: This may be necessary if the RNC supports for an AMR codec different sets of codec modes, e.g., (a, b, c, d) and (e, f, g), which are not subsets of each other, and the RNC does not support combinations of these sets, e.g. (a, b, c, d, e, f, g).

~~*[Editor's note: moved to subclause 5.6.6.]*~~

For AMR codecs the originating CN node shall use the "Optimization Mode" parameter in the Single Codec information element in the Supported Codec List (BICC) (see [5]) to indicate whether or not other nodes may change the offered ACS.

EXAMPLE: An RNC implementing only the prioritised RABs for interoperability testing specified in [18] will support for the UMTS_AMR_2 codec e.g. the set of codec modes (12.2, 7.4, 5.9, 4.75), but none of its subsets containing 2 or 3 codec modes. If the MSC Server connected to this RNC includes the codec configuration (12.2, 7.4, 5.9, 4.75) in the Supported Codecs List (BICC), it will therefore set the OM parameter of the respective Single Codec information element to "Optimization of the ACS not supported".

For AMR codecs, if the OM is set to "Optimization of the ACS supported", the originating CN node shall indicate the maximum number of codec modes (MACS) that may be selected for the ACS during speech codec negotiation. This maximum number of codec modes may depend on optimization strategies applied by the originating CN node. The recommended value is 4 (see [10]).

For AMR-WB codecs the "Optimization Mode" is defined implicitly by the configuration parameter "Config-WB-Codec" in the Single Codec information element (see [5]). If for a configuration the OM is set to "Optimization of the ACS supported", then the configuration may be changed to any other allowed configuration specified in [5].

In order to support interworking with 2G systems it is recommended that MGWs support 2G EFR codecs (GSM_EFR, PDC_EFR, TDMA_EFR). In order to avoid modifications during handover between 2G and 3G systems the MSC nodes may give preference to a suitable 2G codec.

Whenever one or several TrFO links have been already established and initialised, the CN node (e.g. the serving CN in case of Call Hold scenarios, the visited CN node in case of Call Forwarding scenarios, etc.) initiating a subsequent codec negotiation on a new call leg or a mid-call codec negotiation on an established and initialised TrFO link, should give the already negotiated Selected Codec (BICC), including its ACS, highest preference to reduce the probability of having to perform a bearer re-establishment or UP re-initialisation of the already established and initialised TrFO links.

3GPP TSG-CN WG4 Meeting #26 **N4-050158**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.153** **CR** **089** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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 of the condition for the insertion of a transcoder
Source:	⌘	CN4
Work item code:	⌘	OoBTC
Date:	⌘	27/01/2005
Category:	⌘	**A**
Release:	⌘	Rel-6

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:

Ph2	*(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)*
Rel-7	*(Release 7)*

Reason for change:	⌘	**Essential correction** In CR 080 (N4-041702) the words "the MGW" were missing; therefore, it is now unclear which entity is responsible for the coordination of rate control requests when the AMR-WB is used with two different, but TFO-compatible Active Codec mode Sets (ACS) at two opposite terminations. Furthermore, it needs to be clarified that in a certain case it is a requirement for the MGW, not a recommendation, to coordinate the rate control requests.
Summary of change:	⌘	Addition of the missing words. Removal of a superfluous editior's note.
Consequences if not approved:	⌘	Incomplete specification. If the MGW does not coordinate the rate control requests, the RNC on one side can receive a RATE CONTROL messsage from the RNC on the other side indicating codec modes as allowed that were never initialised. The receiving RNC will therefore reject the rate control request (and all repetitions of the request); the procedure will fail; and, dependent on the implementation, in the worst case the call will be released.

Clauses affected:	⌘	5.3, 5.6.2			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			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.

5.3 Media Gateway Control for Codec Handling

The general handling of MGW control procedures are detailed in [8]. Specific handling related to the control of the speech encoding is detailed in Figure. 5.3/1. The terms context, termination, streams and stream properties are described in the ITU-T H.248 "Media Gateway Control Protocol" [13].

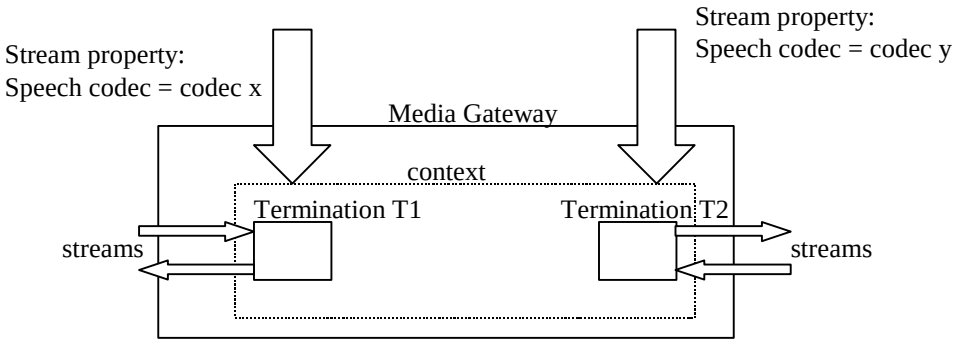

Figure 5.3/1. MGW control for speech codec

The handling of transcoding between one codec type (media stream property applied at one termination) and another codec type (media stream property at other termination) is a function of the MGW. The media stream property for Audio Codec Type is defined in Annex C of the ITU-T MGW control protocol, H.248.

If TFO-incompatible codec types are applied at different terminations of the same context, the MGW shall insert a transcoder. For the definition of TFO-compatibility between 3GPP codec types and codec configurations see [10], clauses 11 and 12.

Between codecs of the AMR codec family, the MGW need not insert a transcoder, if the codec types are TFO-compatible according to [10], table 11-1, and

- the codecs use the same ACS; or
- the ACSs are TFO-compatible and the use of codec modes is restricted to a common subset of the ACSs by means of maximum rate control. In this case the MGW shall~~ould~~ coordinate the rate control request.

Between codecs of the AMR-WB codec family, the MGW need not insert a transcoder, if

- the codecs use the same ACS; or
- the use of codec modes is restricted to a common subset of the ACSs by means of maximum rate control. In this case the MGW shall~~should~~ coordinate the rate control request.

********** NEXT MODIFIED SECTION **********

5.6.2 Node originating the OoBTC codec negotiation

The node originating the OoBTC codec negotiation shall implement the procedures described in Q.1902.4, subclause 8.3.1 [6]. Additionally, the following applies:

In UTRAN or GERAN Iu mode, when constructing the codec configurations for AMR or AMR-WB codecs in the Supported Codecs List (BICC), the MSC Server should take the codec types and codec configurations supported by the

RNC or BSC into account (see subclause 5.6.6). The MSC may include more than one Single codec element indicating the same codec type, but different configurations, in the Supported Codecs List (BICC) (see [5]).

NOTE: This may be necessary if the RNC supports for an AMR codec different sets of codec modes, e.g., (a, b, c, d) and (e, f, g), which are not subsets of each other, and the RNC does not support combinations of these sets, e.g. (a, b, c, d, e, f, g).

~~*[Editor's note: moved to subclause 5.6.6.]*~~

For AMR codecs the originating CN node shall use the "Optimization Mode" parameter in the Single Codec information element in the Supported Codec List (BICC) (see [5]) to indicate whether or not other nodes may change the offered ACS.

EXAMPLE: An RNC implementing only the prioritised RABs for interoperability testing specified in [18] will support for the UMTS_AMR_2 codec e.g. the set of codec modes (12.2, 7.4, 5.9, 4.75), but none of its subsets containing 2 or 3 codec modes. If the MSC Server connected to this RNC includes the codec configuration (12.2, 7.4, 5.9, 4.75) in the Supported Codecs List (BICC), it will therefore set the OM parameter of the respective Single Codec information element to "Optimization of the ACS not supported".

For AMR codecs, if the OM is set to "Optimization of the ACS supported", the originating CN node shall indicate the maximum number of codec modes (MACS) that may be selected for the ACS during speech codec negotiation. This maximum number of codec modes may depend on optimization strategies applied by the originating CN node. The recommended value is 4 (see [10]).

For AMR-WB codecs the "Optimization Mode" is defined implicitly by the configuration parameter "Config-WB-Codec" in the Single Codec information element (see [5]). If for a configuration the OM is set to "Optimization of the ACS supported", then the configuration may be changed to any other allowed configuration specified in [5].

In order to support interworking with 2G systems it is recommended that MGWs support 2G EFR codecs (GSM_EFR, PDC_EFR, TDMA_EFR). In order to avoid modifications during handover between 2G and 3G systems the MSC nodes may give preference to a suitable 2G codec.

Whenever one or several TrFO links have been already established and initialised, the CN node (e.g. the serving CN in case of Call Hold scenarios, the visited CN node in case of Call Forwarding scenarios, etc.) initiating a subsequent codec negotiation on a new call leg or a mid-call codec negotiation on an established and initialised TrFO link, should give the already negotiated Selected Codec (BICC), including its ACS, highest preference to reduce the probability of having to perform a bearer re-establishment or UP re-initialisation of the already established and initialised TrFO links.

3GPP TSG-CN WG4 Meeting #26 **N4-050472**
Sydney, Australia, 14th to 18th February 2005

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.205** **CR** **051** ⌘ **rev** **2** ⌘ Current version: **5.7.0** ⌘

*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:	⌘	Stage 2 Procedure for Emergency Call Indication
Source:	⌘	CN4
Work item code:	⌘	TEI5
Date:	⌘	18/02/2005
Category:	⌘	**F**
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:
Ph2 (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)
Rel-7 (Release 7)

Reason for change:	⌘	Stage 2 specification for Emergency Calls is missing. Emergency Calls should be also indicated to the MGW . ESSENTIAL CORRECTION
Summary of change:	⌘	Adding of a paragraph for emergency calls and a procedure for the emergency call indication.
Consequences if not approved:	⌘	Missing possibility to indicate to MGW that a preferred handling of emergency call is needed may result in failure of emergency calls

Clauses affected:	⌘	14.X (new), 16.2.YY (new)

Other specs affected:	⌘	Y	N		⌘
		X		Other core specifications	29.232CR121
			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.

14.7 Global Text Telephony

3GPP TS 23.226 [26] describes the high level architecture and functionality of GTT. When text based conversation is needed by a subscriber, the call is established with general call control functions like any other call. Within the call control transactions MT might indicate the need for text conversation (see 3GPP TS 24.008 [4]), which then requires actions in a core network where the pooling mechanism is chosen for GTT feature. This section describes only the option where the CTM pool is provided in the Media Gateway in the Core Network.

MSC Server indicated by MT about the need of text conversation, allocates terminations in MGW with CTM (Cellular Text telephony Modem) capabilities for the detection of CTM signals from radio access network. The default action of the call path in the CTM-detection/conversion function in MGW is to transfer audio transparently while monitoring for text telephone signals. When valid text telephone signals are detected, the converting action of the channel takes effect. The path converts between the detected CTM and PSTN text telephone methods. This mode of operation continues until text signalling ceases. Then transparent audio transport is re-established, again monitoring for text signals.

The CTM channel is created with Prepare bearer or Reserve circuit procedure by including Cellular Text Telephone package and Establish Bearer procedure by including Text Telephone and Call Discrimination packages (see 16.2.4, 16.2.5 and 16.2.6).

The outcome of CTM negotiation towards the CTM user in the user plane is reported in the CTM report procedure.

At release the MGW may report the number of bits of Global Text Telephony data in accordance with ITU recommendation T.140 sent for the call.

14.X Emergency Calls

Emergency Calls shall be handled as in clause 6.1 Basic Mobile Originating Call. and clause 6.2 Basic Mobile Terminating Call. The Procedure Emergency Call Indication may be used for informing the MGW about the emergency call.

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 16.49: 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 the command is executed.

16.2.YY Emergency Call Indication

This procedure is used to indicate that the call is an emergency call.

Table 16.50: Procedures between (G)MSC server and MGW: Emergency Call Indication

Procedure	Initiated	Information element name	Information element required	Information element description
Emergency Call Indication	(G)MSC-S	Context Request	M	This information element indicates the existing context or requests a new context for the bearer termination.
		Emergency Call Indicator	M	This information element indicates the emergency call information
Emergency Call Indication Ack	MGW	Context	M	This information element indicates the context where the command was executed.

3GPP TSG-CN WG4 Meeting #26 **N4-050473**
Sydney, Australia, 14th to 18th February 2005

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.205** **CR** **052** ⌘ **rev** **2** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	Stage 2 Procedure for Emergency Call Indication
Source:	⌘	CN4
Work item code:	⌘	TEI5
Date:	⌘	18/02/2005
Category:	⌘	**A**
Release:	⌘	Rel-6

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:
Ph2 (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)
Rel-7 (Release 7)

Reason for change:	⌘	Stage 2 specification for Emergency Calls is missing. Emergency Calls should be also indicated to the MGW . ESSENTIAL CORRECTION
Summary of change:	⌘	Adding of a paragraph for emergency calls and a procedure for the emergency call indication.
Consequences if not approved:	⌘	Missing possibility to indicate to MGW that a preferred handling of emergency call is needed may result in failure of emergency calls

Clauses affected:	⌘	14.X (new), 16.2.YY (new)

Other specs affected:	⌘	Y	N		⌘	
		X		Other core specifications		29.232CR122
			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.

14.7 Global Text Telephony

3GPP TS 23.226 [26] describes the high level architecture and functionality of GTT. When text based conversation is needed by a subscriber, the call is established with general call control functions like any other call. Within the call control transactions MT might indicate the need for text conversation (see 3GPP TS 24.008 [4]), which then requires actions in a core network where the pooling mechanism is chosen for GTT feature. This section describes only the option where the CTM pool is provided in the Media Gateway in the Core Network.

MSC Server indicated by MT about the need of text conversation, allocates terminations in MGW with CTM (Cellular Text telephony Modem) capabilities for the detection of CTM signals from radio access network. The default action of the call path in the CTM-detection/conversion function in MGW is to transfer audio transparently while monitoring for text telephone signals. When valid text telephone signals are detected, the converting action of the channel takes effect. The path converts between the detected CTM and PSTN text telephone methods. This mode of operation continues until text signalling ceases. Then transparent audio transport is re-established, again monitoring for text signals.

The CTM channel is created with Prepare bearer or Reserve circuit procedure by including Cellular Text Telephone package and Establish Bearer procedure by including Text Telephone and Call Discrimination packages (see 16.2.4, 16.2.5 and 16.2.6).

The outcome of CTM negotiation towards the CTM user in the user plane is reported in the CTM report procedure.

At release the MGW may report the number of bits of Global Text Telephony data in accordance with ITU recommendation T.140 sent for the call.

14.X Emergency Calls

Emergency Calls shall be handled as in clause 6.1 Basic Mobile Originating Call. and clause 6.2 Basic Mobile Terminating Call. The Procedure Emergency Call Indication may be used for informing the MGW about the emergency call.

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 16.49: 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 the command is executed.

16.2.YY Emergency Call Indication

This procedure is used to indicate that the call is an emergency call.

Table 16.50: Procedures between (G)MSC server and MGW: Emergency Call Indication

Procedure	Initiated	Information element name	Information element required	Information element description
Emergency Call Indication	(G)MSC-S	Context Request	M	This information element indicates the existing context or requests a new context for the bearer termination.
		Emergency Call Indicator	M	This information element indicates the emergency call information
Emergency Call Indication Ack	MGW	Context	M	This information element indicates the context where the command was executed.

3GPP TSG-CN WG4 Meeting #26 **N4-050474**
Sydney, Australia, 14th to 18th February 2005

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **121** ⌘ **rev** **2** ⌘ Current version: **5.9.0** ⌘

*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:	⌘	Procedure for Emergency Call Indication
Source:	⌘	CN4
Work item code:	⌘	TEI5
Date:	⌘	17/02/2005
Category:	⌘	**F**
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:
Ph2 (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)
Rel-7 (Release 7)

Reason for change:	⌘	Emergency calls need a preferred handling in the MGW concerning resource reservation. 3GPP has until now not defined how to indicate an emergency call to the MGW. Q.1950 Annex F includes already a procedure for emergency call indication, which could be used with the addition that it applies also to "Establish Bearer", "Prepare Bearer", "Reserve Circuit" and "Prepare IP transport" procedures. ESSENTIAL CORRECTION
Summary of change:	⌘	Adding of a procedure for the emergency call indication.
Consequences if not approved:	⌘	Missing possibility to indicate to MGW that a preferred handling of emergency call is needed may result in failure of emergency calls.

Clauses affected:	⌘	14.2, 14.2.XX (new)			
Other specs affected:	⌘	Y: X / N:	Other core specifications	⌘	23.205CR051
		Y: / N: X	Test specifications		
		Y: / N: 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.

14.2 Call related H.248 transactions

Table 3 shows the relationship between each call-related procedure in ITU-T Recommendation Q.1950 [23] (see 3GPP TS 29.205 [7]) and the corresponding stage 2 procedure defined in 3GPP TS 23.205 [2].

Table 3: Correspondence between ITU-T Recommendation Q.1950 [23] call-related transactions and 3GPP TS 23.205 [2] and 3GPP TS 23.153 [1] procedures

Transaction used in ITU-T Recommendation Q.1950 [23]	Procedure defined in 3GPP TS 23.205 [2] and 3GPP TS 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 repor	
Not defined	Prepare IP transport	
Not defined	Modify IP transport address	
ECS_Indication	Emergency Call Indication	
NOTE: A procedure defined in table 3 can be combined with another procedure in the same action. This means that they can share the same contextID and termination ID(s).		

14.2.44 Confirm Bearer Characteristics

This procedure is the same as that defined in the subclause "Confirm Char" in ITU-T Recommendation Q.1950 [23] (see 3GPP TS 29.205 [7]) with additions as shown below.

Address Information	Control information	Bearer information
	If framing protocol used: UP mode = mode UPversion =version Delivery of erroneous SDUs=value Interface=interface Initdirerection=initdirection	

If the "Confirm Bearer Characteristics" procedure contains a codec that is not currently in use at the Termination when it receives this procedure, and if the framing protocol is used in support mode, the MGW shall be prepared to handle a framing protocol initialisation. If the "Confirm Bearer Characteristics" contains no codec or the codec that is already in use at the Termination when it receives this procedure, the MGW does not need to be prepared to handle a framing protocol initialisation.

14.2.XX Emergency Call Indication

This procedure is the same as that defined in the subclause " ECS Indication " in ITU-T Recommendation Q.1950 Annex F [23] (see 3GPP TS 29.205 [7]) with additions as shown below.

Address Information

Or as per flow 14.2.4
Establish Bearer

Or as per flow 14.2.5
Prepare Bearer

Or as per flow 14.2.12
Play Announcement

Or as per flow 14.2.18
Reserve_Circuit

Or as per flow 14.2.41
Prepare_IP_transport

Control information

Or as per flow 14.2.4
Establish Bearer
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Or as per flow 14.2.5
Prepare Bearer
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Or as per flow 14.2.12
Play Announcement
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Or as per flow 14.2.18
Reserve_Circuit
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Or as per flow 14.2.41
Prepare_IP_transport
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Bearer information

Or as per flow 14.2.4
Establish Bearer

Or as per flow 14.2.5
Prepare Bearer

Or as per flow 14.2.12
Play Announcement

Or as per flow 14.2.18
Reserve_Circuit

Or as per flow 14.2.41
Prepare_IP_transport

3GPP TSG-CN WG4 Meeting #26 **N4-050475**
Sydney, Australia, 14th to 18th February 2005

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **122** ⌘ **rev** **2** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	Procedure for Emergency Call Indication
Source:	⌘	CN4
Work item code:	⌘	TEI5
Date:	⌘	18/02/2005
Category:	⌘	**A**
Release:	⌘	Rel-6

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:
Ph2 *(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)*
Rel-7 *(Release 7)*

Reason for change:	⌘	Emergency calls need a preferred handling in the MGW concerning resource reservation. 3GPP has until now not defined how to indicate an emergency call to the MGW. Q.1950 Annex F includes already a procedure for emergency call indication, which could be used with the addition that it applies also to "Establish Bearer", "Prepare Bearer", "Reserve Circuit" and "Prepare IP transport" procedures. ESSENTIAL CORRECTION
Summary of change:	⌘	Adding of a procedure for the emergency call indication.
Consequences if not approved:	⌘	Missing possibility to indicate to MGW that a preferred handling of emergency call is needed may result in failure of emergency calls.

Clauses affected:	⌘	14.2, 14.2.XX (new)			
Other specs affected:	⌘	**Y**	**N**		
		X		Other core specifications	⌘ 23.205CR052
			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.

14.2 Call related H.248 transactions

Table 3 shows the relationship between each call-related procedure in ITU-T Recommendation Q.1950 [23] (see 3GPP TS 29.205 [7]) and the corresponding stage 2 procedure defined in 3GPP TS 23.205 [2].

Table 3: Correspondence between ITU-T Recommendation Q.1950 [23] call-related transactions and 3GPP TS 23.205 [2] and 3GPP TS 23.153 [1] procedures

Transaction used in ITU-T Recommendation Q.1950 [23]	Procedure defined in 3GPP TS 23.205 [2] and 3GPP TS 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 repor	
Not defined	Prepare IP transport	
Not defined	Modify IP transport address	
ECS_Indication	Emergency Call Indication	
NOTE: A procedure defined in table 3 can be combined with another procedure in the same action. This means that they can share the same contextID and termination ID(s).		

14.2.44 Confirm Bearer Characteristics

This procedure is the same as that defined in the subclause "Confirm Char" in ITU-T Recommendation Q.1950 [23] (see 3GPP TS 29.205 [7]) with additions as shown below.

Address Information	Control information	Bearer information
	If framing protocol used: UP mode = mode UPversion =version Delivery of erroneous SDUs=value Interface=interface Initdirerection=initdirection	

If the "Confirm Bearer Characteristics" procedure contains a codec that is not currently in use at the Termination when it receives this procedure, and if the framing protocol is used in support mode, the MGW shall be prepared to handle a framing protocol initialisation. If the "Confirm Bearer Characteristics" contains no codec or the codec that is already in use at the Termination when it receives this procedure, the MGW does not need to be prepared to handle a framing protocol initialisation.

14.2.XX Emergency Call Indication

This procedure is the same as that defined in the subclause " ECS Indication " in ITU-T Recommendation Q.1950 Annex F [23] (see 3GPP TS 29.205 [7]) with additions as shown below.

Address Information

Or as per flow 14.2.4
Establish Bearer

Or as per flow 14.2.5
Prepare Bearer

Or as per flow 14.2.12
Play Announcement

Or as per flow 14.2.18
Reserve_Circuit

Or as per flow 14.2.41
Prepare_IP_transport

Control information

Or as per flow 14.2.4
Establish Bearer
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Or as per flow 14.2.5
Prepare Bearer
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Or as per flow 14.2.12
Play Announcement
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Or as per flow 14.2.18
Reserve_Circuit
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Or as per flow 14.2.41
Prepare_IP_transport
With the following additions:
If Context Requested & Emergency Call:
Emergency Call Indication

Bearer information

Or as per flow 14.2.4
Establish Bearer

Or as per flow 14.2.5
Prepare Bearer

Or as per flow 14.2.12
Play Announcement

Or as per flow 14.2.18
Reserve_Circuit

Or as per flow 14.2.41
Prepare_IP_transport