3GPP TSG CN Plenary Meeting #27 **NP-050029**
9th – 11th March 2005 Tokyo, JAPAN.

Source: TSG CN WG4

Title: Corrections on TEI4

Agenda item: 7.11

Document for: APPROVAL

Doc-2nd-Level	Spec	CR	Rev	Phase	Subject	Cat	Ver_C
N4-050040	29.232	096		Rel-4	Corrections to table 14.2	F	4.10.0
N4-050041	29.232	097		Rel-5	Corrections to table 14.2	A	5.9.0
N4-050042	29.232	098		Rel-6	Corrections to table 14.2	A	6.0.0
N4-050046	29.232	102		Rel-4	Completion of specification of UMTS Packages	F	4.10.0
N4-050387	29.232	103	1	Rel-5	Completion of specification of UMTS Packages	F	5.9.0
N4-050388	29.232	104	1	Rel-6	Completion of specification of UMTS Packages	A	6.0.0
N4-050232	29.232	159		Rel-4	VPF Type Removal	F	4.10.0
N4-050233	29.232	160		Rel-5	VPF Type Removal	A	5.9.0
N4-050234	29.232	161		Rel-6	VPF Type Removal	A	6.0.0
N4-050235	29.232	162		Rel-4	Alignment of TFO Actvation Procedure and associated parameters	F	4.10.0
N4-050236	29.232	163		Rel-5	Alignment of TFO Actvation Procedure and associated parameters	A	5.9.0
N4-050237	29.232	164		Rel-6	Alignment of TFO Actvation Procedure and associated parameters	A	6.0.0
N4-050384	29.232	099	1	Rel-4	Requirements for support of H.248 packages	F	4.10.0
N4-050385	29.232	100	1	Rel-5	Requirements for support of H.248 packages	F	5.9.0
N4-050386	29.232	101	1	Rel-6	Requirements for support of H.248 packages	A	6.0.0
N4-050480	29.232	118	2	Rel-4	Requirements for support of procedures	F	4.10.0
N4-050481	29.232	119	2	Rel-5	Requirements for support of procedures	A	5.9.0
N4-050482	29.232	120	2	Rel-6	Requirements for support of procedures	A	6.0.0

3GPP TSG-CN WG4 Meeting #26 **N4-050040**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **096** ⌘ **rev** **-** ⌘ Current version: **4.10.0** ⌘

*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:	⌘	Corrections to table 14.2
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	04/01/05
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:

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:	⌘	Table 14.2 does not reflect the correct information related to the commands which are referenced out of Q.1950. Also, there are commands missing from the table which are included in the subsequent subsections and one command that is not defined in 29.232 is included. **This is an essential correction**
Summary of change:	⌘	The data in table 14.2 is corrected, so that the full set of specs (29.232 and Q.1950) are aligned.
Consequences if not approved:	⌘	29.232 refers to commands that do not exist in Q.1950

Clauses affected:	⌘	14.2
Other specs affected:	⌘	Y / N ☐ / ☒ Other core specifications ☐ / ☒ Test specifications ☐ / ☒ 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 (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	
Digit Detected~~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 failed~~ure~~	Bearer Modified Failed	
Tunnel (MGC-MGW)	Tunnel Information Down	
Tunnel (MGW-MGC)	Tunnel Information Up	
Insert _Tone	Stop Tone	
Insert _Announcement	Stop Announcement	
Detect_-Digit~~s~~	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~~Rate Change	
Not defined	Bearer Modification Support	
Not defined	Protocol Negotiation Result	
Reserve_Char	Reserve Bearer Characteristics	
Confirm_Char	Confirm Bearer Characteristics	

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).

3GPP TSG-CN WG4 Meeting #26 **N4-050041**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **097** ⌘ **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:	⌘	Corrections to table 14.2
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	04/01/05
Category:	⌘	**A**
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:	⌘	Table 14.2 does not reflect the correct information related to the commands which are referenced out of Q.1950. Also, there are commands missing from the table which are included in the subsequent subsections and one command that is not defined in 29.232 is included. **This is an essential correction**
Summary of change:	⌘	The data in table 14.2 is corrected, so that the full set of specs (29.232 and Q.1950) are aligned.
Consequences if not approved:	⌘	29.232 refers to commands that do not exist in Q.1950

Clauses affected:	⌘	14.2

	Y	N		
Other specs affected: ⌘		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.

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	
Digit Detected~~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 failed~~ure~~	Bearer Modified Failed	
Tunnel (MGC-MGW)	Tunnel Information Down	
Tunnel (MGW-MGC)	Tunnel Information Up	
Insert_~~-~~Tone	Stop Tone	
Insert_~~-~~Announcement	Stop Announcement	
Detect_~~-~~Digit~~s~~	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~~Rate Change	
Not defined	Bearer Modification Support	
Not defined	CTM report	
Not defined	Prepare IP transport	
Not defined	Modify IP transport address	
Not defined	Protocol Negotiation Result	
Reserve_Char	Reserve Bearer Characteristics	
Confirm_Char	Confirm Bearer Characteristics	
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).		

3GPP TSG-CN WG4 Meeting #26 **N4-050042**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **098** ⌘ **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:	⌘	Corrections to table 14.2
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	04/01/05
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:	⌘	Table 14.2 does not reflect the correct information related to the commands which are referenced out of Q.1950. Also, there are commands missing from the table which are included in the subsequent subsections and one command that is not defined in 29.232 is included. **This is an essential correction**
Summary of change:	⌘	The data in table 14.2 is corrected, so that the full set of specs (29.232 and Q.1950) are aligned.
Consequences if not approved:	⌘	29.232 refers to commands that do not exist in Q.1950

Clauses affected:	⌘	14.2

		Y	N		
Other specs affected:	⌘		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.

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	
Digit Detected~~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 failed~~ure~~	Bearer Modified Failed	
Tunnel (MGC-MGW)	Tunnel Information Down	
Tunnel (MGW-MGC)	Tunnel Information Up	
Insert_~~-~~Tone	Stop Tone	
Insert_~~-~~Announcement	Stop Announcement	
Detect_~~-~~Digit~~s~~	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~~Rate Change	
Not defined	Bearer Modification Support	
Not defined	CTM report	
Not defined	Prepare IP transport	
Not defined	Modify IP transport address	
Not defined	Protocol Negotiation Result	
Reserve_Char	Reserve Bearer Characteristics	
Confirm_Char	Confirm Bearer Characteristics	
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).		

3GPP TSG-CN WG4 Meeting #26 **N4-050046**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **102** ⌘ **rev** **-** ⌘ Current version: **4.10.0** ⌘

*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:	⌘	Completion of specification of UMTS Packages
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	05/01/05
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:

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:	⌘	The list of packages defined by 3GPP specifically for UMTS in Chapter 15 is incomplete. Also, in Chapter 13 of 29.232, Q.1950 packages that are to be supported are separated out in to those which are mandatory (section 13.1) and those which are optional (section 13.2). A similar separation of the UMTS packages that are to be supported has not been made – currently all are listed as mandatory by default in section 15.1, but some are not essential to BICN operation. As a result, it is not clear if the UMTS packages identified are all mandatory, all optional or a mixture of the two. This makes it very difficult to implement an interoperable Mc interface since the required guidance is missing.
Summary of change:	⌘	The list of UMTS packages is completed and whether an UMTS package is to be supported mandatorially or optionally is identified. **This is an essential correction.**
Consequences if not approved:	⌘	No possibility of vendor interoperability on the Mc interface due to a large number of possible implementations.

Clauses affected:	⌘	10, 15.1, 15.1.2, 15.1.3, 15.1.4, 15.1.5, 15.1.6, 15.2			
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.

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 15.2.11~~.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 15.2.11~~.2~~.1
Coding	Local control	As for the property " GSM channel coding" in subclause 15.2.11~~.2~~.1
Tfoenable	Local control	As for the property " TFO activity control" in subclause 15.2.21~~.3~~.1
Codeclist	Local control	As for the property" TFO Codec List" in subclause 15.2.21~~.3~~.1
Result	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Protocol Negotiation Result" in subclause 15.2.11~~.2~~.2
Cause	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Protocol Negotiation Result" in subclause 15.2.11~~.2~~.2
Rate	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Rate Change" in subclause 15.2.11~~.2~~.2
Optimalcodec	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Optimal Codec Type" in subclause 15.2.21~~.3~~.2
Distlist	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Distant TFO List" in subclause 15.2.21~~.3~~.2
On/Off	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]
Bearer Modification Support	EventDescriptor	As for the EventsDescriptor in "Bearer Modification Support" in subclause 15.2.31~~.4~~.2.
Bearer modification possible	ObservedEvent descriptor	As for the ObserverdEventDescriptor in “Bearer Modification Support” in subclause 15.2.31~~.4~~.2.
Bitrate	Local control	As for the property" Bitrate" in subclause 15.2.51~~.7~~.1

****** *Next Changed Section* ******

15 UMTS packages

15.1 Mandatory UMTS packages

The following package~~s~~ shall be supported ~~are required~~ for the UMTS Bearer Independent Circuit-Switched Core Network:

- 3GUP (User Plane) package (see subclause 15.1.1).~~;~~

~~- Circuit Switched Data package (see subclause 15.1.2);~~

~~- TFO package (see subclause 15.1.3).~~

****** *Next Changed Section* ******

15.1.2 ~~Circuit Switched Data package~~Void

~~PackageID: threegcsd (0x0030)~~

~~Version: 1~~

~~Extends: None~~

~~This package contains the information needed to be able to support GSM and UMTS Circuit Switched Data from the media gateway.~~

~~15.1.2.1 Properties~~

~~PLMN BC~~

~~PropertyID: plmnbc (0x0001)~~

~~Description: The PLMN Bearer Capability.~~

~~Type: Octet string~~

~~Possible values:~~

~~Specified in the subclause "Bearer capability" in 3GPP TS 24.008 [3].~~

~~Defined in: Local Control Descriptor~~

~~Characteristics: Read/Write~~

~~GSM channel coding~~

~~PropertyID: gsmchancod (0x0002)~~

~~Description: Channel information needed for GSM.~~

~~Type: Octet string~~

~~Possible values:~~

~~The second octet of Chosen Channel as specified in the subclause "Chosen Channel" in 3GPP TS 48.008 [9].~~

~~Defined in: Local Control Descriptor~~

~~Characteristics: Read/Write~~

~~15.1.2.2 Events~~

~~Protocol Negotiation Result~~

~~EventID: protres (0x0001)~~

~~Description: This event is used to report the result of the protocol negotiation.~~

~~EventsDescriptor Parameters: None~~

~~ObservedEventsDescriptor Parameters:~~

~~Negotiation Result~~

~~ParameterId: result (0x0001)~~

~~Description: reports whether the protocol negotiation has been successful.~~

~~Type: Enumeration~~

Possible Values:

"Success" (0x0001): the protocol negotiation on the termination has been successful,

"Failure" (0x0000): the protocol negotiation on the termination has failed.

Possible Failure Cause

ParameterId: cause (0x0002)

Description: indicates the possible failure cause

Type: Enumeration

Possible Values:

"Unsp" (0x0001): the protocol negotiation has failed for an unspecified reason,

"V8V34" (0x0002): the V.8 or the V.34 protocol negotiation has failed (modem termination only).

Rate Change

EventID: ratechg (0x0002)

Description: This event is used to report a rate change.

EventsDescriptor Parameters: None

ObservedEventsDescriptor Parameters:

New Rate

ParameterId: rate (0x0001)

Description: reports the new rate for the termination.

Type: Integer.

Possible Values:
transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).

15.1.2.3 Signals

Activate Protocol

SignalID: actprot (0x0001)

Description: Activate the higher layer protocol.

Signal type: Brief

Duration: N/A

Additional parameter:

Local Peer Role

ParameterID: localpeer (0x0001)

Type: Enumeration

Possible values:

"Orig" (0x0000): originating

"Term" (0x0001): terminating

~~Description:~~

~~This parameter is optional, but is required for modem and fax calls. It is used to inform the modem whether it should act as originating or terminating peer.~~

~~15.1.2.4 Statistics~~

~~None~~

~~15.1.2.5 Procedures~~

~~This package is used to set up data calls within the CS domain. For more information on the IWF, refer to 3GPP TS 29.007 [6].~~

~~When the Media Gateway Controller initiates the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure, it shall provide the PLMN BC ("plmnbc" property above) for the termination on the mobile side and the ISDN BC (standard H.248 properties, chapter "Bearer Capabilities") for the termination on the fixed side. For a mobile-to-mobile call, it shall provide the PLMN BC on both terminations.~~

~~The presence of the PLMN BC property may trigger the use of the IWF.~~

~~Once the bearer has been established, after B-answer, the "Activate Interworking Function" procedure is used to activate the IWF. The Activate Protocol signal ("actprot") will start the negotiation of the layer 2 protocols on both sides. If a modem or fax service is requested, the signal shall contain the Local Peer Role parameter ("localpeer"), to tell the modem whether it should act as originating or terminating peer.~~

~~NOTE: The Activate Protocol signal is needed only after B-answer as described above, to activate the protocol timers at the correct time. This is the only time when this signal is needed (specifically, the signal is not used after a handover sequence or for lawful interception).~~

~~The IWF Protocol Indication notifications are used by the MGW to inform the MSC server about IWF protocol events. The MSC has to request the detection of the events "Protocol Negotiation Result" and "Rate Change" in the "Activate IWF" procedure, the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure.~~

~~For handover to GSM, or change of channel characteristics within the GSM network, the property GSM Channel Coding ("gsmchancod"), which contains the information about the channel type and the number of channels, shall be transmitted to the termination on the mobile side in the "Establish Bearer", the "Prepare Bearer" and the "Reserve Circuit" procedures together with the PLMN BC. The presence of the GSM Channel Coding property also indicates that the termination is using a GSM access network.~~

15.1.3 ~~TFO package~~Void

~~The addition of text encoding for the TFO codec list is for further study.~~

~~PackageID: threegtfoc (0x0031)~~

~~Version: 1~~

~~Extends: None~~

~~This package defines events and properties for Tandem Free Operation (TFO) control. TFO uses inband signalling and procedures for Transcoders to enable compressed speech to be maintained between a tandem pair of transcoders. This package allows an MGW which has inserted a transcoder to support TFO.~~

~~15.1.3.1 Properties~~

~~TFO Activity Control~~

~~PropertyID: tfoenable (0x0001)~~

~~Description: Defines if TFO is enabled or not.~~

Type: Enumeration

Possible Values:

"On" (0x0001): TFO is enabled, TFO protocol is supported

"Off" (0x0002): TFO is not enabled, TFO protocol is not initiated or terminated

Defined in: Local Control descriptor

Characteristics: Read/Write

TFO Codec List

PropertyID: codeclist (0x0002)

Description: List of codecs for use in TFO protocol, the Local Used Codec (see 3GPP TS 28.062 [5]) is always the first entry in the list.

Type: Octet string

Possible Values:

List of codec types; each entry:

As defined in Q.765.5, for single codec information (Figure 14/Q.765.5), where the Codec Information is defined either in Q.765.5 or in another specification for the given Organisation Identifier.

Defined in: Local Control descriptor

Characteristics: Read/Write

15.1.3.2 Events

Optimal Codec Event

EventID: codec_modify (0x0010)

Description:
The event is used to notify the MGC that TFO negotiation has resulted in an optimal codec type being proposed.

EventsDescriptor Parameters: None

ObservedEventsDescriptor Parameters:

Optimal Codec Type

ParameterID: optimalcodec (0x0011)

Description: indicates which is the proposed codec type for TFO

Type: Octet string

Possible Values:

Codec Type:

As defined in Q.765.5, for single codec information (Figure 14/Q.765.5), where the Codec Information is defined either in Q.765.5 or in another specification for the given Organisation Identifier.

Codec List Event

EventID: distant codec_list (0x0012)

Description: The event is used to notify the MGC of the distant TFO partner's supported codec list..

EventsDescriptor Parameters: None

ObservedEventsDescriptor Parameters:

Distant Codec List

ParameterID: distlist(0x0013)

Description: indicates the codec list for TFO

Type: Octet string

Possible Values:

List of codecs of type Codec Type:

As defined in Q.765.5, for single codec information (Figure 14/Q.765.5), where the Codec Information is defined either in Q.765.5 or in another specification for the given Organisation Identifier.

The first Codec Type in the list is the Distant Used Codec, received from the distant TFO partner (see 3GPP TS 28.062 [5]).

15.1.3.3 Signals

None

15.1.3.4 Statistics

None

15.1.3.5 Procedures

For the procedures for TFO see 3GPP TS 28.062 [5].

The use of the properties in this package is applicable only when the MGW Termination to which the package properties are applied has the media stream property for Codec Type set to ITU-T G.711 (see Annex C of ITU-T Recommendation H.248). Furthermore, the package properties are applicable only if the Codec Type property of the media stream at the opposing MGW Termination is not set to ITU G.711.

15.1.4 Void3G Expanded Call Progress Tones Generator Package

PackageID: threegxcg(0x0032)

Version: 1

Extends: xcg version1

This package extends "Expanded Call Progress Tones Generator Package", as defined in ITU-T Recommendation Q.1950 (see 3GPP TS 29.205 [7]). The package adds a new toneId for CAMEL prepaid warning tone.

15.1.4.1 Properties

None

15.1.4.2 Events

None

15.1.4.3 Signals

CAMEL Prepaid Warning Tone

~~SignalID: cpwt (0x004f)~~

~~Description:~~

~~Generate CAMEL prepaid warning tone to inform the party that the Max Call Period Duration is about to expire. CAMEL prepaid warning tone is defined in TS 23.078. The physical characteristic of CAMEL prepaid warning tone is available in the gateway.~~

~~Signal type: Brief~~

~~Duration: Provisioned, Not Auditable~~

~~Additional parameters:~~

~~Tone Direction~~

~~ParameterID: td (0x0010)~~

~~Type: Enumeration~~

~~Values:~~

~~"Ext" (0x01): external,~~

~~"Int" (0x02): internal,~~

~~"Both" (0x03): Both~~

~~Default: "Ext"~~

~~15.1.4.4 Statistics~~

~~None~~

~~15.1.4.5 Procedures~~

~~None~~

15.1.5 Void~~Modification Of Link Characteristics Bearer Capability~~

~~PackageName: Modification of Link Characteristics Bearer Capability~~

~~PackageID: threegmlc(0x0046)~~

~~Description: This package contains an event that when requested by the MGC will cause the MG to notify the MGC that modification of the link characteristics is allowed. This notification is typically generated when the bearer has been established.~~

~~Version: 1~~

~~Extends: None~~

~~15.1.5.1 Properties~~

~~None~~

~~15.1.5.2 Events~~

~~Bearer Modification Support Event~~

~~EventID: mod_link_supp (0x0001)~~

~~Description:~~

~~The event is used to notify the MGC that modification of the link characteristics of the current bearer connection is permitted.~~

~~EventsDescriptor Parameters: None~~

~~ObservedEventsDescriptor Parameters: None~~

~~15.1.5.3 Signals~~

~~None~~

~~15.1.5.4 Statistics~~

~~None~~

~~15.1.5.5 Procedures~~

~~If the MGC is interested in determining whether or not the bearer associated with a termination supports modification of its link characteristics it shall send a request (Add/Modify/Move) with the Bearer Modification Support Event. When the bearer is established the MG will indicate in a Notify request to the MGC if modification of link characteristics is supported. A notify will NOT be generated if modification is NOT supported on the bearer.~~

15.1.6 Void

15.1.7 ~~Enhanced Circuit Switched Data package~~Void

~~PackageID: threegcsden (0x0082)~~

~~Version: 1~~

~~Extends: threegcsd (0x030) Version 1~~

~~This package extends "Circuit Switched Data Package", as defined in clause 15.1.2. This package adds a new property to define the user bitrate at a Nb/Iu termination.~~

~~15.1.7.1 Properties~~

~~Bitrate~~

~~PropertyID: bitrate (0x0003)~~

~~Description: user bitrate~~

~~Type: Integer.~~

~~Possible Values:~~
~~transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).~~

~~Defined in: Local Control Descriptor~~

~~Characteristics: Read/Write~~

~~15.1.7.2 Events~~

~~None~~

~~15.1.7.3 Signals~~

~~None.~~

~~15.1.7.4 Statistics~~

~~None~~

~~15.1.7.5 Procedures~~

~~This package is used in addition to the 3GCSD package for CS data calls. It is used for indicating the user data rates for Inter-MSC SRNS Relocation and handover cases. If the Bitrate is not 64kb/s at one termination in the MGW but its opposing termination has properties that define its bitrate to be 64kb/s (e.g. TMR=UDI) then A-TRAU' protocol shall be applied by the MGW. For further details see 3G TS 29.007 [6].~~

****** *Next Changed Section* ******

15.2 Optional UMTS packages

The following packages may be supported by the UMTS Bearer Independent Circuit-Switched Core Network as required by the network services deployed in the network:

- Circuit Switched Data package (see subclause 15.2.1);
- TFO Package (see 15.2.2);
- 3G Expanded Call Progress Tones Generator package (see subclause 15.2.3);
- Modification of Link Characteristics Bearer Capabiltity package (see subclause 15.2.4);
- Enhanced Circuit Switched Data package (see subclause 15.2.5).

15.2.1 Circuit Switched Data package

PackageID: threegcsd (0x0030)

Version: 1

Extends: None

This package contains the information needed to be able to support GSM and UMTS Circuit Switched Data from the media gateway.

15.2.1.1 Properties

PLMN BC

PropertyID: plmnbc (0x0001)

Description: The PLMN Bearer Capability.

Type: Octet string

Possible values:

Specified in the subclause "Bearer capability" in 3GPP TS 24.008 [3].

Defined in: Local Control Descriptor

Characteristics: Read/Write

GSM channel coding

PropertyID: gsmchancod (0x0002)

Description: Channel information needed for GSM.

Type: Octet string

Possible values:

The second octet of Chosen Channel as specified in the subclause "Chosen Channel" in 3GPP TS 48.008 [9].

Defined in: Local Control Descriptor

Characteristics: Read/Write

15.2.1.2 Events

Protocol Negotiation Result

EventID: protres (0x0001)

Description: This event is used to report the result of the protocol negotiation.

EventsDescriptor Parameters: None

ObservedEventsDescriptor Parameters:

Negotiation Result

ParameterId: result (0x0001)

Description: reports whether the protocol negotiation has been successful.

Type: Enumeration

Possible Values:

"Success" (0x0001): the protocol negotiation on the termination has been successful,

"Failure" (0x0000): the protocol negotiation on the termination has failed.

Possible Failure Cause

ParameterId: cause (0x0002)

Description: indicates the possible failure cause

Type: Enumeration

Possible Values:

"Unsp" (0x0001): the protocol negotiation has failed for an unspecified reason,

"V8V34" (0x0002): the V.8 or the V.34 protocol negotiation has failed (modem termination only).

Rate Change

EventID: ratechg (0x0002)

Description: This event is used to report a rate change.

EventsDescriptor Parameters: None

ObservedEventsDescriptor Parameters:

New Rate

ParameterId: rate (0x0001)

Description: reports the new rate for the termination.

Type: Integer.

Possible Values:
transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).

15.2.1.3 Signals

Activate Protocol

SignalID: actprot (0x0001)

Description: Activate the higher layer protocol.

Signal type: Brief

Duration: N/A

Additional parameter:

Local Peer Role

ParameterID: localpeer (0x0001)

Type: Enumeration

Possible values:

"Orig" (0x0000): originating

"Term" (0x0001): terminating

Description:
This parameter is optional, but is required for modem and fax calls. It is used to inform the modem whether it should act as originating or terminating peer.

15.2.1.4 Statistics

None

15.2.1.5 Procedures

This package is used to set up data calls within the CS domain. For more information on the IWF, refer to 3GPP TS 29.007 [6].

When the Media Gateway Controller initiates the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure, it shall provide the PLMN BC ("plmnbc" property above) for the termination on the mobile side and the ISDN BC (standard H.248 properties, chapter "Bearer Capabilities") for the termination on the fixed side. For a mobile-to-mobile call, it shall provide the PLMN BC on both terminations.

The presence of the PLMN BC property may trigger the use of the IWF.

Once the bearer has been established, after B-answer, the "Activate Interworking Function" procedure is used to activate the IWF. The Activate Protocol signal ("actprot") will start the negotiation of the layer 2 protocols on both sides. If a modem or fax service is requested, the signal shall contain the Local Peer Role parameter ("localpeer"), to tell the modem whether it should act as originating or terminating peer.

NOTE: The Activate Protocol signal is needed only after B-answer as described above, to activate the protocol timers at the correct time. This is the only time when this signal is needed (specifically, the signal is not used after a handover sequence or for lawful interception).

The IWF Protocol Indication notifications are used by the MGW to inform the MSC server about IWF protocol events. The MSC has to request the detection of the events "Protocol Negotiation Result" and "Rate Change" in the "Activate

IWF" procedure, the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure.

For handover to GSM, or change of channel characteristics within the GSM network, the property GSM Channel Coding ("gsmchancod"), which contains the information about the channel type and the number of channels, shall be transmitted to the termination on the mobile side in the "Establish Bearer", the "Prepare Bearer" and the "Reserve Circuit" procedures together with the PLMN BC. The presence of the GSM Channel Coding property also indicates that the termination is using a GSM access network.

15.2.2 TFO package

The addition of text encoding for the TFO codec list is for further study.

PackageID: threegtfoc (0x0031)

Version: 1

Extends: None

This package defines events and properties for Tandem Free Operation (TFO) control. TFO uses inband signalling and procedures for Transcoders to enable compressed speech to be maintained between a tandem pair of transcoders. This package allows an MGW which has inserted a transcoder to support TFO.

15.2.2.1 Properties

TFO Activity Control

PropertyID: tfoenable (0x0001)

Description: Defines if TFO is enabled or not.

Type: Enumeration

Possible Values:

"On" (0x0001): TFO is enabled, TFO protocol is supported

"Off" (0x0002): TFO is not enabled, TFO protocol is not initiated or terminated

Defined in: Local Control descriptor

Characteristics: Read/Write

TFO Codec List

PropertyID: codeclist (0x0002)

Description: List of codecs for use in TFO protocol, the Local Used Codec (see 3GPP TS 28.062 [5]) is always the first entry in the list.

Type: Octet string

Possible Values:

List of codec types; each entry:

As defined in Q.765.5, for single codec information (Figure 14/Q.765.5), where the Codec Information is defined either in Q.765.5 or in another specification for the given Organisation Identifier.

Defined in: Local Control descriptor

Characteristics: Read/Write

15.2.2.2 Events

Optimal Codec Event

EventID: codec_modify (0x0010)

Description:
The event is used to notify the MGC that TFO negotiation has resulted in an optimal codec type being proposed.

EventsDescriptor Parameters: None

ObservedEventsDescriptor Parameters:

Optimal Codec Type

ParameterID: optimalcodec (0x0011)

Description: indicates which is the proposed codec type for TFO

Type: Octet string

Possible Values:

Codec Type:

As defined in Q.765.5, for single codec information (Figure 14/Q.765.5), where the Codec Information is defined either in Q.765.5 or in another specification for the given Organisation Identifier.

Codec List Event

EventID: distant codec_list (0x0012)

Description: The event is used to notify the MGC of the distant TFO partner's supported codec list..

EventsDescriptor Parameters: None

ObservedEventsDescriptor Parameters:

Distant Codec List

ParameterID: distlist(0x0013)

Description: indicates the codec list for TFO

Type: Octet string

Possible Values:

List of codecs of type Codec Type:

As defined in Q.765.5, for single codec information (Figure 14/Q.765.5), where the Codec Information is defined either in Q.765.5 or in another specification for the given Organisation Identifier.

The first Codec Type in the list is the Distant Used Codec, received from the distant TFO partner (see 3GPP TS 28.062 [5]).

15.2.2.3 Signals

None

15.2.2.4 Statistics

None

15.2.2.5 Procedures

For the procedures for TFO see 3GPP TS 28.062 [5].

The use of the properties in this package is applicable only when the MGW Termination to which the package properties are applied has the media stream property for Codec Type set to ITU-T G.711 (see Annex C of ITU-T Recommendation H.248). Furthermore, the package properties are applicable only if the Codec Type property of the media stream at the opposing MGW Termination is not set to ITU G.711.

15.2.3 3G Expanded Call Progress Tones Generator Package

PackageID: threegxcg(0x0032)

Version: 1

Extends: xcg version1

This package extends "Expanded Call Progress Tones Generator Package", as defined in ITU-T Recommendation Q.1950 (see 3GPP TS 29.205 [7]). The package adds a new toneId for CAMEL prepaid warning tone.

15.2.3.1 Properties

None

15.2.3.2 Events

None

15.2.3.3 Signals

CAMEL Prepaid Warning Tone

SignalID: cpwt (0x004f)

Description:
Generate CAMEL prepaid warning tone to inform the party that the Max Call Period Duration is about to expire. CAMEL prepaid warning tone is defined in TS 23.078. The physical characteristic of CAMEL prepaid warning tone is available in the gateway.

Signal type: Brief

Duration: Provisioned, Not Auditable

Additional parameters:

Tone Direction

ParameterID: td (0x0010)

Type: Enumeration

Values:

"Ext" (0x01): external,

"Int" (0x02): internal,

"Both" (0x03): Both

Default: "Ext"

15.2.3.4 Statistics

None

15.2.3.5 Procedures

None

15.2.4 Modification Of Link Characteristics Bearer Capability

PackageName: Modification of Link Characteristics Bearer Capability

PackageID: threegmlc(0x0046)

Description: This package contains an event that when requested by the MGC will cause the MG to notify the MGC that modification of the link characteristics is allowed. This notification is typically generated when the bearer has been established.

Version: 1

Extends: None

15.2.4.1 Properties

None

15.2.4.2 Events

Bearer Modification Support Event

EventID: mod_link_supp (0x0001)

Description:
The event is used to notify the MGC that modification of the link characteristics of the current bearer connection is permitted.

EventsDescriptor Parameters: None

ObservedEventsDescriptor Parameters: None

15.2.4.3 Signals

None

15.2.4.4 Statistics

None

15.2.4.5 Procedures

If the MGC is interested in determining whether or not the bearer associated with a termination supports modification of its link characteristics it shall send a request (Add/Modify/Move) with the Bearer Modification Support Event. When the bearer is established the MG will indicate in a Notify request to the MGC if modification of link characteristics is supported. A notify will NOT be generated if modification is NOT supported on the bearer.

15.2.5 Enhanced Circuit Switched Data package

PackageID: threegcsden (0x0082)

Version: 1

Extends: threegcsd (0x030) Version 1

This package extends "Circuit Switched Data Package", as defined in clause 15.1.2. This package adds a new property to define the user bitrate at a Nb/Iu termination.

15.2.5.1 Properties

Bitrate

PropertyID: bitrate (0x0003)

Description: user bitrate

Type: Integer.

Possible Values:
transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).

Defined in: Local Control Descriptor

Characteristics: Read/Write

15.2.5.2 Events

None

15.2.5.3 Signals

None.

15.2.5.4 Statistics

None

15.2.5.5 Procedures

This package is used in addition to the 3GCSD package for CS data calls. It is used for indicating the user data rates for Inter-MSC SRNS Relocation and handover cases. If the Bitrate is not 64kb/s at one termination in the MGW but its opposing termination has properties that define its bitrate to be 64kb/s (e.g. TMR=UDI) then A-TRAU' protocol shall be applied by the MGW. For further details see 3G TS 29.007 [6].

3GPP TSG-CN WG4 Meeting #26 **N4-050232**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** 159 ⌘ **rev** **-** ⌘ Current version: **4.10.0** ⌘

*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:	⌘	Removal Of VPF type
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	31/01/2005
Category:	⌘	**F**
Release:	⌘	Rel4

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:	⌘	Activate Voice Processing Function procedure still contains the parameter VPFType but this is not defined and only EC control is used by this procedure so the parameter should be deleted. **ESSENTIAL CORRECTION**
Summary of change:	⌘	VPFtype parameter deleted from Activate Voice Processing Function Procedure
Consequences if not approved:	⌘	Undefined parameter included in Mc Profile.

Clauses affected:	⌘	14.2.17

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.

14.2.17 Activate Voice Processing Function

When the procedure "Activate Voice Processing Function" (VPF) is required the following procedure is initiated:

The MGC sends an ADD.req, MOD.req or MOV.req command with the following information.

1 ADD.req/MOD.req/MOV.req (…, Activate Voice Processing Function) MGC to MGW

Address Information	Control information	Bearer information
	Transaction ID = z Context ID = c1 Termination ID = bearer1 ~~VPF Type~~ ActivateVPF "ec" = on/off	

When the MGW receives the command, it shall associate the relevant voice processing function resources with the specified termination.

When the processing of command (1) is complete, the MGW may initiate the "Voice Processing Function Ack" procedure.

2 ADD.resp/MOD.resp/MOV.resp (Voice Processing Function Ack) MGW to MGC

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

3GPP TSG-CN WG4 Meeting #26 **N4-050233**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** 160 ⌘ **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:	⌘	Removal Of VPFtype
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	31/01/2005
Category:	⌘	**A**
Release:	⌘	Rel5

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:	⌘	Activate Voice Processing Function procedure still contains the parameter VPFType but this is not defined and only EC control is used by this procedure so the parameter should be deleted. **ESSENTIAL CORRECTION**
Summary of change:	⌘	VPFtype parameter deleted from Activate Voice Processing Function Procedure
Consequences if not approved:	⌘	Undefined parameter included in Mc Profile.

Clauses affected:	⌘	14.2.17

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.

14.2.17 Activate Voice Processing Function

When the procedure "Activate Voice Processing Function" (VPF) is required the following procedure is initiated:

The MGC sends an ADD.req, MOD.req or MOV.req command with the following information.

1 ADD.req/MOD.req/MOV.req (…, Activate Voice Processing Function) MGC to MGW

Address Information	Control information	Bearer information
	Transaction ID = z Context ID = c1 Termination ID = bearer1 ~~VPF Type~~ ActivateVPF "ec"= on/off	

When the MGW receives the command, it shall associate the relevant voice processing function resources with the specified termination.

When the processing of command (1) is complete, the MGW may initiate the "Voice Processing Function Ack" procedure.

3GPP TSG-CN WG4 Meeting #26 **N4-050234**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** 161 ⌘ **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:	⌘	Removal Of VPF type
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	31/01/2005
Category:	⌘	**A**
Release:	⌘	Rel6

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:	⌘	Activate Voice Processing Function procedure still contains the parameter VPFType but this is not defined and only EC control is used by this procedure so the parameter should be deleted. **ESSENTIAL CORRECTION**
Summary of change:	⌘	VPFtype parameter deleted from Activate Voice Processing Function Procedure
Consequences if not approved:	⌘	Undefined parameter included in Mc Profile.

Clauses affected:	⌘	14.2.17

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.

14.2.17 Activate Voice Processing Function

When the procedure "Activate Voice Processing Function" (VPF) is required the following procedure is initiated:

The MGC sends an ADD.req, MOD.req or MOV.req command with the following information.

1 ADD.req/MOD.req/MOV.req (…, Activate Voice Processing Function) MGC to MGW

Address Information	Control information	Bearer information
	Transaction ID = z Context ID = c1 Termination ID = bearer1 ~~VPF Type~~ ActivateVPF "ec"= on/off	

When the MGW receives the command, it shall associate the relevant voice processing function resources with the specified termination.

When the processing of command (1) is complete, the MGW may initiate the "Voice Processing Function Ack" procedure.

3GPP TSG-CN WG4 Meeting #26 **N4-050235**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** 162 ⌘ **rev** **-** ⌘ Current version: **4.10.0** ⌘

*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:	⌘	Alignment of TFO Actvation Procedure and associated parameters
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	31/01/2005
Category:	⌘	**F**
Release:	⌘	Rel4

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:	⌘	The TFO package defines properties for the TFO Activation procedure but these properties are not named/used correctly and in the procedure the value used is off/value which has been deleted from the formats and codes section. **ESSENTIAL CORRECTION**
Summary of change:	⌘	TFO Activity Control corrected and value correctly linked to package and formats and codes section.
Consequences if not approved:	⌘	Incorrect/Undefined code value referenced from TFO Activation procedure.

Clauses affected:	⌘	10, 14.2.31

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.

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~~tfoactvalue	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
On/Off	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]
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.
Bitrate	Local control	As for the property" Bitrate" in subclause 15.1.7.1

14.2.31 TFO Activation

When the procedure "TFO activation" is required the following procedure is initiated:

The MGC sends a MOD.req command with the following information.

1 MOD.req (TFO activation) MGC to MGW

Address Information	Control information	Bearer information
	Transaction ID = z Context ID = c1 Termination ID = bearer1 t~~T~~foenable = tfoactvalue~~Off / value~~	

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

2 MOD.resp (TFO activation) MGW to MGC

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

3GPP TSG-CN WG4 Meeting #26 **N4-050236**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** 163 ⌘ **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:	⌘	Alignment of TFO Actvation Procedure and associated parameters
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	31/01/2005
Category:	⌘	**A**
Release:	⌘	Rel5

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:	⌘	The TFO package defines properties for the TFO Activation procedure but these properties are not named/used correctly and in the procedure the value used is off/value which has been deleted from the formats and codes section. **ESSENTIAL CORRECTION**
Summary of change:	⌘	TFO Activity Control corrected and value correctly linked to package and formats and codes section.
Consequences if not approved:	⌘	Incorrect/Undefined code value referenced from TFO Activation procedure.

Clauses affected:	⌘	10, 14.2.31,

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.

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 [23] (see 3GPP TS 29.205 [7]).

The coding rules applied in ITU-T Recommendation H.248.1 [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 erroneous 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 " Initialization 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~~tfoactvalue	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
On/Off	Local control	As for the property "Echo cancelling" in subclause E.13.1 in ITU-T Recommendation H.248.1 [10]
Error	Error descriptor	As defined in the subclause "Command error code" in ITU-T Recommendation H.248.1 [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 15.1.8.1
UDPport	Local control	As for the property" UDP port " in subclause 15.1.8.1
Flextone	Local control	As for the signal "Flexible Tone " in subclause 15.1. 9.1

14.2.31 TFO Activation

When the procedure "TFO activation" is required the following procedure is initiated:

The MGC sends a ADD.req, MOD.req or MOV.req command with the following information.

1 ADD.req/MOD.req/MOV.req (TFO activation) MGC to MGW

Address Information	Control information	Bearer information
	Transaction ID = z Context ID = c1 Termination ID = bearer1 t~~T~~foenable ~~= Off / value~~= tfoactvalue	

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

2 ADD.resp/MOD.resp/MOV.resp (TFO activation) MGW to MGC

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

3GPP TSG-CN WG4 Meeting #26 **N4-050237**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** 164 ⌘ **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:	⌘	Alignment of TFO Actvation Procedure and associated parameters
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	31/01/2005
Category:	⌘	**A**
Release:	⌘	Rel6

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:	⌘	The TFO package defines properties for the TFO Activation procedure but these properties are not named/used correctly and in the procedure the value used is off/value which has been deleted from the formats and codes section. **ESSENTIAL CORRECTION**
Summary of change:	⌘	TFO Activity Control corrected and value correctly linked to package and formats and codes section.
Consequences if not approved:	⌘	Incorrect/Undefined code value referenced from TFO Activation procedure.

Clauses affected:	⌘	10, 14.2.31,

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.

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 [23] (see 3GPP TS 29.205 [7]).

The coding rules applied in ITU-T Recommendation H.248.1 [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 erroneous 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 " Initialization 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~~tfoactvalue	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
On/Off	Local control	As for the property "Echo cancelling" in subclause E.13.1 in ITU-T Recommendation H.248.1 [10]
Error	Error descriptor	As defined in the subclause "Command error code" in ITU-T Recommendation H.248.1 [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 15.1.8.1
UDPport	Local control	As for the property" UDP port " in subclause 15.1.8.1
Flextone	Local control	As for the signal "Flexible Tone " in subclause 15.1. 9.1

14.2.31 TFO Activation

When the procedure "TFO activation" is required the following procedure is initiated:

The MGC sends a ADD.req, MOD.req or MOV.req command with the following information.

1 ADD.req/MOD.req/MOV.req (TFO activation) MGC to MGW

Address Information	Control information	Bearer information
	Transaction ID = z Context ID = c1 Termination ID = bearer1 t~~T~~foenable ~~= Off / value~~= tfoactvalue	

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

2 ADD.resp/MOD.resp/MOV.resp (TFO activation) MGW to MGC

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

3GPP TSG-CN WG4 Meeting #26 **N4-050384**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **099** ⌘ **rev** **1** ⌘ Current version: **4.10.0** ⌘

*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:	⌘	Requirements for support of H.248 packages
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	05/01/2005
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:
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:	⌘	In Chapter 13 of 29.232, Q.1950 packages that are to be supported are separated out in to those which are mandatory (section 13.1) and those which are optional (section 13.2). A similar separation of the packages from H.248 that are to be supported has not been made. As a result, it is not clear if the H.248 packages identified are all mandatory, all optional or a mixture of the two. This makes it very difficult to implement an interoperable Mc interface since the required guidance is missing. Additionally, the Call Progress Tones Generator Package in H.248 is not required on the Mc interface since the Q.1950 Call Progress Tones Generator Package with Directionality (identified in section 13.2) supercedes it. The includion of the H.248 package leads to confusing implementation guidance.
Summary of change:	⌘	Whether an H.248 package is to be supported mandatorially or optionally is identified. Call Progress Tones Generator Package is removed. **This is an essential correction.**
Consequences if not approved:	⌘	No possibility of vendor interoperability on the Mc interface due to a large number of possible implementations.

Clauses affected:	⌘	14

Y N

Other specs affected:	⌘		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.

14 H.248 standard packages

The following H.248 packages ~~are used~~ shall be supported by this UMTS Capability Set:

- Generic v1 (see [10] Annex E.1);
- Base Root Package v1 (see [10] Annex E.2);
- ~~Tone Generator Package v1 (see [10] Annex E.3);~~
- Tone Detection Package v1 (see [10] Annex E.4);
- Basic DTMF Generator Package v1 (see [10] Annex E.5);
- DTMF Detection Package v1 (see [10] Annex E.6);
- ~~Call Progress Tones Generator Package v1 (see [10] Annex E.7);~~
- Generic Announcement Package v1 (see [10] Annex K) – Fixed Announcements;
- TDM Circuit Package v1 (see [10] Annex E.13).

The following H.248 packages may be supported by this UMTS Capability Set as required by the network services deployed in the network:

- Tone Generator Package v1 (see [10] Annex E.3);
- Generic Announcement Package v1 (see [10] Annex K) – Variable Announcements.

3GPP TSG-CN WG4 Meeting #26 **N4-050385**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **100** ⌘ **rev** **1** ⌘ 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:	⌘	Requirements for support of H.248 packages
Source:	⌘	CN4
Work item code:	⌘	TEI5
Date:	⌘	04/01/05
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:	⌘	In Chapter 13 of 29.232, Q.1950 packages that are to be supported are separated out in to those which are mandatory (section 13.1) and those which are optional (section 13.2). A similar separation of the packages from H.248 that are to be supported has not been made. As a result, it is not clear if the H.248 packages identified are all mandatory, all optional or a mixture of the two. This makes it very difficult to implement an interoperable Mc interface since the required guidance is missing. Additionally, the Call Progress Tones Generator Package in H.248 is not required on the Mc interface since the Q.1950 Call Progress Tones Generator Package with Directionality (identified in section 13.2) supercedes it. The includion of the H.248 package leads to confusing implementation guidance. Finally, for Announcement Variants within the Generic Announcement Package, it is specified that the use of these is optional (even though Fixed Announcements are Mandatory).
Summary of change:	⌘	Whether an H.248 package is to be supported mandatorially or optionally is identified. Call Progress Tones Generator Package is removed. **This is an essential correction.**
Consequences if not approved:	⌘	No possibility of vendor interoperability on the Mc interface due to a large number of possible implementations.

Clauses affected:	⌘	12, 14			
		Y	**N**		
Other specs affected:	⌘		**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.

12 General on Packages and Transactions

The base root package (0x0002) properties shall be provisioned in the MGW.

Event Buffering shall not be supported.

DigitMaps shall not be supported.

H.248 Statistics shall not be audited via the Mc interface and shall be suppressed in the replies to Subtract commands, except where specific 3GPP packages define their use.

Embedded Signals or Embedded Events shall not be supported on the Mc interface.

Only a single media stream per Termination shall be supported.

The use of "Overspecified" (e.g. range of values) and "Underspecifed" (e.g. "?") parameter specification shall not be permitted except where explicitly indicated in or referenced by the Mc interface specification.

The use of the Announcement Variant parameter is optional for both Fixed Announcements and Variable Announcements.

****** *Next Changed Section* ******

14 H.248 standard packages

The following H.248 packages ~~are used~~ shall be supported by this UMTS Capability Set:

- Generic v1 (see ITU-T Recommendation H.248.1 [10] annex E.1).
- Base Root Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.2).
- ~~Tone Generator Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.3).~~
- Tone Detection Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.4).
- Basic DTMF Generator Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.5).
- DTMF Detection Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.6).
- ~~Call Progress Tones Generator Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.7).~~
- Generic Announcement Package v1 (see ITU-T Recommendation H.248.7 [28]) – Fixed Announcements.
- TDM Circuit Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.13).
- Media Gateway Resource Congestion Handling Package v1 (see ITU-T Recommendation H.248.10 [15]).
- ~~Text Telephony Package (see ITU-T Recommendation H.248.2 [17]).~~
- ~~Call Discrimination package (see ITU-T Recommendation H.248.2 [17]).~~

The following H.248 packages may be supported by this UMTS Capability Set as required by the network services deployed in the network:

- Tone Generator Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.3).
- Generic Announcement Package v1 (see ITU-T Recommendation H.248.7 [28]) – Variable Announcements.
- Text Telephony Package (see ITU-T Recommendation H.248.2 [17]).
- Call Discrimination package (see ITU-T Recommendation H.248.2 [17]).

3GPP TSG-CN WG4 Meeting #26 **N4-050386**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **101** ⌘ **rev** **1** ⌘ 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:	⌘	Requirements for support of H.248 packages		
Source:	⌘	CN4		
Work item code:	⌘	TEI5	***Date:*** ⌘	04/01/05
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:	⌘	In Chapter 13 of 29.232, Q.1950 packages that are to be supported are separated out in to those which are mandatory (section 13.1) and those which are optional (section 13.2). A similar separation of the packages from H.248 that are to be supported has not been made. As a result, it is not clear if the H.248 packages identified are all mandatory, all optional or a mixture of the two. This makes it very difficult to implement an interoperable Mc interface since the required guidance is missing. Additionally, the Call Progress Tones Generator Package in H.248 is not required on the Mc interface since the Q.1950 Call Progress Tones Generator Package with Directionality (identified in section 13.2) supercedes it. The includion of the H.248 package leads to confusing implementation guidance. Finally, for Announcement Variants within the Generic Announcement Package, it is specified that the use of these is optional (even though Fixed Announcements are Mandatory).
Summary of change:	⌘	Whether an H.248 package is to be supported mandatorially or optionally is identified. Call Progress Tones Generator Package is removed. **This is an essential correction.**
Consequences if not approved:	⌘	No possibility of vendor interoperability on the Mc interface due to a large number of possible implementations.

Clauses affected:	⌘	12, 14			
		Y	**N**		
Other specs affected:	⌘		**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.

12 General on Packages and Transactions

The base root package (0x0002) properties shall be provisioned in the MGW.

Event Buffering shall not be supported.

DigitMaps shall not be supported.

H.248 Statistics shall not be audited via the Mc interface and shall be suppressed in the replies to Subtract commands, except where specific 3GPP packages define their use.

Embedded Signals or Embedded Events shall not be supported on the Mc interface.

Only a single media stream per Termination shall be supported.

The use of "Overspecified" (e.g. range of values) and "Underspecifed" (e.g. "?") parameter specification shall not be permitted except where explicitly indicated in or referenced by the Mc interface specification.

The use of the Announcement Variant parameter is optional for both Fixed Announcements and Variable Announcements.

****** *Next Changed Section* ******

14 H.248 standard packages

The following H.248 packages ~~are used~~ shall be supported by this UMTS Capability Set:

- Generic v1 (see ITU-T Recommendation H.248.1 [10] annex E.1).
- Base Root Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.2).
- ~~Tone Generator Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.3).~~
- Tone Detection Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.4).
- Basic DTMF Generator Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.5).
- DTMF Detection Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.6).
- ~~Call Progress Tones Generator Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.7).~~
- Generic Announcement Package v1 (see ITU-T Recommendation H.248.7 [28]) – Fixed Announcements.
- TDM Circuit Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.13).
- Media Gateway Resource Congestion Handling Package v1 (see ITU-T Recommendation H.248.10 [15]).
- ~~Text Telephony Package (see ITU-T Recommendation H.248.2 [17]).~~
- ~~Call Discrimination package (see ITU-T Recommendation H.248.2 [17]).~~

The following H.248 packages may be supported by this UMTS Capability Set as required by the network services deployed in the network:

- Tone Generator Package v1 (see ITU-T Recommendation H.248.1 [10] annex E.3).
- Generic Announcement Package v1 (see ITU-T Recommendation H.248.7 [28]) – Variable Announcements.
- Text Telephony Package (see ITU-T Recommendation H.248.2 [17]).
- Call Discrimination package (see ITU-T Recommendation H.248.2 [17]).

3GPP TSG-CN WG4 Meeting #26 **N4-050387**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **103** ⌘ **rev** **1** ⌘ 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:	⌘	Completion of specification of UMTS Packages
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	05/01/05
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:	⌘	The list of packages defined by 3GPP specifically for UMTS in Chapter 15 is incomplete. Also, in Chapter 13 of 29.232, Q.1950 packages that are to be supported are separated out in to those which are mandatory (section 13.1) and those which are optional (section 13.2). A similar separation of the UMTS packages that are to be supported has not been made – currently all are listed as mandatory by default in section 15.1, but some are not essential to BICN operation. As a result, it is not clear if the UMTS packages identified are all mandatory, all optional or a mixture of the two. This makes it very difficult to implement an interoperable Mc interface since the required guidance is missing.
Summary of change:	⌘	The list of UMTS packages is completed and whether an UMTS package is to be supported mandatorially or optionally is identified. **This is an essential correction.**
Consequences if not approved:	⌘	No possibility of vendor interoperability on the Mc interface due to a large number of possible implementations.

Clauses affected:	⌘	10, 15.1, 15.1.3, 15.1.4, 15.1.5, 15.1.6, 15.1.8, 15.1.9, 15.2

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.

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 [23] (see 3GPP TS 29.205 [7]).

The coding rules applied in ITU-T Recommendation H.248.1 [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 15.2.1~~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 erroneous 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 " Initialization Direction" in subclause 15.1.1.1
PLMN bearer capability	Local control	As for the property "PLMN BC" in subclause 15.2.1~~1.2~~.1
Coding	Local control	As for the property " GSM channel coding" in subclause 15.2.1~~1.2~~.1
Tfoenable	Local control	As for the property " TFO activity control" in subclause 15.2.2~~1.3~~.1
Codeclist	Local control	As for the property" TFO Codec List" in subclause 15.2.2~~1.3~~.1
Result	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Protocol Negotiation Result" in subclause 15.2.1~~1.2~~.2
Cause	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Protocol Negotiation Result" in subclause 15.2.1~~1.2~~.2
Rate	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Rate Change" in subclause 15.2.1~~1.2~~.2
Optimalcodec	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Optimal Codec Type" in subclause 15.2.2~~1.3~~.2
Distlist	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Distant TFO List" in subclause 15.2.2~~1.3~~.2
On/Off	Local control	As for the property "Echo cancelling" in subclause E.13.1 in ITU-T Recommendation H.248.1 [10]
Error	Error descriptor	As defined in the subclause "Command error code" in ITU-T Recommendation H.248.1 [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 15.2.3~~1.4~~.2.
Bearer modification possible	ObservedEvent descriptor	As for the ObserverdEventDescriptor in "Bearer Modification Support" in subclause 15.2.3~~1.4~~.2.
Ctmstate	TerminationState	As for the TerminationState "Text termination connection state" in subclause 15.2.6~~1.6~~.1.
Ctmtransport	Local control	As for the property "Text Transport" in subclause 15.~~1.6~~2.6.1.
Ctmtext version	Local control	As for the property " Text Protocol Version" in subclause 15.~~1.6~~2.6.1.
Connchng	ObservedEventDescriptor	As for the ObservedEventDescriptor " Connection State Change in subclause 15.~~1.6~~2.6.2
Ctmbits	Statistics descriptor	As for the Statistics descriptor "Characters Transferred" in subclause 15.~~1.6~~2.6.4
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.~~1.8~~2.7.1
UDPport	Local control	As for the property" UDP port " in subclause 15.~~1.8~~2.7.1
Flextone	Local control	As for the signal "Flexible Tone " in subclause 15.~~1. 9~~2.8.1

******* Next Changed Section *******

15 UMTS packages

15.1 Mandatory UMTS packages

The following package~~s~~ shall be supported ~~are required~~ for the UMTS Bearer Independent Circuit-Switched Core Network:

- 3GUP (User Plane) package (see subclause 15.1.1).~~;~~

~~- Circuit Switched Data package (see subclause 15.1.2);~~

~~- TFO package (see subclause 15.1.3).~~

****** *Next Changed Section* ******

15.1.2 ~~Circuit Switched Data package~~Void

~~PackageID: threegcsd (0x0030)~~

~~Version: 1~~

~~Extends: None~~

~~This package contains the information needed to be able to support GSM and UMTS Circuit Switched Data from the media gateway.~~

~~15.1.2.1 Properties~~

~~PLMN BC:~~

~~- PropertyID: plmnbc (0x0001).~~

~~- Description: The PLMN Bearer Capability.~~

~~- Type: Octet string.~~

~~- Possible values:~~

~~- Specified in the subclause "Bearer capability" in 3GPP TS 24.008 [3].~~

~~- Defined in: Local Control Descriptor.~~

~~- Characteristics: Read/Write.~~

~~GSM channel coding:~~

~~- PropertyID: gsmchancod (0x0002).~~

~~- Description: Channel information needed for GSM.~~

~~- Type: Octet string.~~

~~- Possible values:~~

~~- The second octet of Chosen Channel as specified in the subclause "Chosen Channel" in 3GPP TS 48.008 [9].~~

~~- Defined in: Local Control Descriptor.~~

~~- Characteristics: Read/Write.~~

15.1.2.2 Events

Protocol Negotiation Result:

- EventID: protres (0x0001).
- Description: This event is used to report the result of the protocol negotiation.
- EventsDescriptor Parameters: None.
- ObservedEventsDescriptor Parameters:
  - Negotiation Result:
    - ParameterId: result (0x0001).
    - Description: reports whether the protocol negotiation has been successful.
    - Type: Enumeration.
    - Possible Values:
      - o"Success" (0x0001): the protocol negotiation on the termination has been successful.
      - o"Failure" (0x0000): the protocol negotiation on the termination has failed.
  - Possible Failure Cause:
    - ParameterId: cause (0x0002).
    - Description: indicates the possible failure cause.
    - Type: Enumeration.
    - Possible Values:
      - o"Unsp" (0x0001): the protocol negotiation has failed for an unspecified reason.
      - o"V8V34" (0x0002): the V.8 or the V.34 protocol negotiation has failed (modem termination only).

Rate Change:

- EventID: ratechg (0x0002).
- Description: This event is used to report a rate change.
- EventsDescriptor Parameters: None.
- ObservedEventsDescriptor Parameters:
  - New Rate:
    - ParameterId: rate (0x0001).
    - Description: reports the new rate for the termination.
    - Type: Integer.
    - Possible Values: transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).

15.1.2.3 Signals

Activate Protocol:

- SignalID: actprot (0x0001).
- Description: Activate the higher layer protocol.

- Signal type: Brief.
- Duration: N/A.
- Additional parameter:
  - Local Peer Role:
    - ParameterID: localpeer (0x0001).
    - Type: Enumeration.
    - Possible values:
      - "Orig" (0x0000): originating.
      - "Term" (0x0001): terminating.
    - Description: This parameter is optional, but is required for modem and fax calls. It is used to inform the modem whether it should act as originating or terminating peer.

15.1.2.4 Statistics

None.

15.1.2.5 Procedures

This package is used to set up data calls within the CS domain. For more information on the IWF, refer to 3GPP TS 29.007 [6].

When the Media Gateway Controller initiates the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure, it shall provide the PLMN BC ("plmnbc" property above) for the termination on the mobile side and the ISDN BC (standard H.248 properties, subclause "Bearer Capabilities") for the termination on the fixed side. For a mobile-to-mobile call, it shall provide the PLMN BC on both terminations.

The presence of the PLMN BC property may trigger the use of the IWF.

Once the bearer has been established, after B-answer, the "Activate Interworking Function" procedure is used to activate the IWF. The Activate Protocol signal ("actprot") will start the negotiation of the layer 2 protocols on both sides. If a modem or fax service is requested, the signal shall contain the Local Peer Role parameter ("localpeer"), to tell the modem whether it should act as originating or terminating peer.

NOTE: The Activate Protocol signal is needed only after B-answer as described above, to activate the protocol timers at the correct time. This is the only time when this signal is needed (specifically, the signal is not used after a handover sequence or for lawful interception).

The IWF Protocol Indication notifications are used by the MGW to inform the MSC server about IWF protocol events. The MSC has to request the detection of the events "Protocol Negotiation Result" and "Rate Change" in the "Activate IWF" procedure, the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure.

For handover to GSM, or change of channel characteristics within the GSM network, the property GSM Channel Coding ("gsmchancod"), which contains the information about the channel type and the number of channels, shall be transmitted to the termination on the mobile side in the "Establish Bearer", the "Prepare Bearer" and the "Reserve Circuit" procedures together with the PLMN BC. The presence of the GSM Channel Coding property also indicates that the termination is using a GSM access network.

15.1.3 TFO packageVoid

The addition of text encoding for the TFO codec list is for further study.

PackageID: threegtfoc (0x0031)

Version: 1

Extends: None

This package defines events and properties for Tandem Free Operation (TFO) control. TFO uses inband signalling and procedures for Transcoders to enable compressed speech to be maintained between a tandem pair of transcoders. This package allows an MGW which has inserted a transcoder to support TFO.

15.1.3.1 Properties

TFO Activity Control:

- PropertyID: tfoenable (0x0001).
- Description: Defines if TFO is enabled or not.
- Type: Enumeration.
- Possible Values:
  - "On" (0x0001): TFO is enabled, TFO protocol is supported.
  - "Off" (0x0002): TFO is not enabled, TFO protocol is not initiated or terminated.
- Defined in: Local Control descriptor.
- Characteristics: Read/Write.

TFO Codec List:

- PropertyID: codeclist (0x0002).
- Description: List of codecs for use in TFO protocol, the Local Used Codec (see 3GPP TS 28.062 [5]) is always the first entry in the list.
- Type: Octet string.
- Possible Values:
  - List of codec types; each entry:
    - As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].
- Defined in: Local Control descriptor.
- Characteristics: Read/Write.

15.1.3.2 Events

Optimal Codec Event:

- EventID: codec_modify (0x0010).
- Description: The event is used to notify the MGC that TFO negotiation has resulted in an optimal codec type being proposed.
- EventsDescriptor Parameters: None.
- ObservedEventsDescriptor Parameters:
  - Optimal Codec Type.
    - ParameterID: optimalcodec (0x0011).

- Description: indicates which is the proposed codec type for TFO.

- Type: Octet string.

- Possible Values:

oCodec Type: As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].

Codec List Event:

- EventID: distant codec_list (0x0012).

- Description: The event is used to notify the MGC of the distant TFO partner's supported codec list.

- EventsDescriptor Parameters: None.

- ObservedEventsDescriptor Parameters:

- Distant Codec List:

- ParameterID: distlist(0x0013).

- Description: indicates the codec list for TFO.

- Type: Octet string.

- Possible Values:

oList of codecs of type Codec Type: As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].

- The first Codec Type in the list is the Distant Used Codec, received from the distant TFO partner (see 3GPP TS 28.062 [5]).

15.1.3.3 Signals

None.

15.1.3.4 Statistics

None.

15.1.3.5 Procedures

For the procedures for TFO see 3GPP TS 28.062 [5].

The use of the properties in this package is applicable only when the MGW Termination to which the package properties are applied has the media stream property for Codec Type set to ITU-T Recommendation G.711 [25] (see annex C of ITU-T Recommendation H.248 [10]). Furthermore, the package properties are applicable only if the Codec Type property of the media stream at the opposing MGW Termination is not set to ITU-T Recommendation G.711 [25].

15.1.4 Void3G Expanded Call Progress Tones Generator Package

PackageID: threegxcg(0x0032)

Version: 1

Extends: xcg version1

~~This package extends "Expanded Call Progress Tones Generator Package", as defined in ITU-T Recommendation Q.1950 [23] (see 3GPP TS 29.205 [7]). The package adds a new toneId for CAMEL prepaid warning tone.~~

~~15.1.4.1 Properties~~

~~None.~~

~~15.1.4.2 Events~~

~~None.~~

~~15.1.4.3 Signals~~

~~CAMEL Prepaid Warning Tone:~~

~~SignalID: cpwt (0x004f).~~

~~Description: Generate CAMEL prepaid warning tone to inform the party that the Max Call Period Duration is about to expire. CAMEL prepaid warning tone is defined in 3GPP TS 23.078 [22]. The physical characteristic of CAMEL prepaid warning tone is available in the gateway.~~

~~Signal type: Brief.~~

~~Duration: Provisioned, Not Auditable.~~

~~Additional parameters:~~

~~Tone Direction.~~

~~ParameterID: td (0x0010).~~

~~Type: Enumeration.~~

~~Values:~~

~~"Ext" (0x01): external.~~

~~"Int" (0x02): internal.~~

~~"Both" (0x03): Both.~~

~~Default: "Ext".~~

~~15.1.4.4 Statistics~~

~~None.~~

~~15.1.4.5 Procedures~~

~~None.~~

15.1.5 Void~~Modification Of Link Characteristics Bearer Capability~~

~~PackageName: Modification of Link Characteristics Bearer Capability~~

~~PackageID: threegmlc(0x0046)~~

~~Description: This package contains an event that when requested by the MGC will cause the MG to notify the MGC that modification of the link characteristics is allowed. This notification is typically generated when the bearer has been established.~~

~~Version: 1~~

Extends: None

15.1.5.1 Properties

None.

15.1.5.2 Events

Bearer Modification Support Event.

EventID: mod_link_supp (0x0001).

Description: The event is used to notify the MGC that modification of the link characteristics of the current bearer connection is permitted.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters: None.

15.1.5.3 Signals

None.

15.1.5.4 Statistics

None.

15.1.5.5 Procedures

If the MGC is interested in determining whether or not the bearer associated with a termination supports modification of its link characteristics it shall send a request (Add/Modify/Move) with the Bearer Modification Support Event. When the bearer is established the MG will indicate in a Notify request to the MGC if modification of link characteristics is supported. A notify will NOT be generated if modification is NOT supported on the bearer.

15.1.6 VoidCellular Text telephone Modem Text Transport

PackageName: CTM Text Transport

PackageID: threegctm (0x0068)

Description: The CTM text transport package is intended for enabling robust real-time text conversation through a voice channel primarily intended for communication over mobile networks. This package includes the mechanisms needed to transport T.140 text conversation streams [19] in a voice channel environment, using the CTM Cellular Text Telephone Modem specified in 3GPP TS 26.226 [18]. The transport mechanism allows for alternating transport of voice and text.

Version: 1

Extends: None

15.1.6.1 Properties

Text termination connection state:

PropertyID: connstate (0x0001).

Description: The connection state property is used to reflect details of the achieved text connection. For each new session connstate should be reset to "Prepare".

Type: Enumeration.

Possible values:

- "Idle" (0x0001) meaning that CTM availability negotiation has failed; CTM is disabled except for monitoring the incoming line for CTM signals.
- "Prepare" (0x0002) for CTM being enabled, monitoring for CTM signals and ready to send CTM signals.
- "Connected" (0x0006) for CTM being enabled and to have detected CTM availability in the current session.

- Defined in: TerminationState.
- Characteristics: Read/Write.

Text Transport:

- PropertyID: trpt (0x0002)
- Description: The transport parameter reflects the transport mechanism selected for the Text Conversation termination. In 3GPP, one possible transport mechanism is the Cellular Text Telephone Modem as in 3GPP TS 26.226 [18]. It is used when it is desired to transport the text conversation in a voice channel. CTM enables alternating use of the voice channel for voice and text during the call.
- Type: Enumeration.
- Possible values:
  - "ctm" (0x0008) for text transport in mobile voice channel as in 3GPP TS 26.226 [18].
- Defined in: LocalControl.
- Characteristics: Read/Write.

Text Protocol Version:

- PropertyID: textproto (0x0003).
- Description: The version of the ITU-T Recommendation T.140 [19] protocol used in the connection.
- Type: Integer.
- Possible values:
  - Any integer corresponding to a T.140 version number (currently 1) as in ITU-T Recommendation H.248 .2 [17].
- Defined in: LocalControl.
- Characteristics: Read/Write.

15.1.6.2 Events

Connection State Change:

- EventID: connchange (0x0001).
- Description:
  - This event will occur when the text connection state for the termination has changed.
  - The parameter values are the same as the Connection State property.
  - If a CTM availability request timed out, the state is returned to Idle.

EventDescriptorParameters:

- None.

ObservedEventDescriptorParameters:

- ParameterName: Connection Change.

- ParameterID: connchng (0x0001).
- Type: Enumeration.
- Possible Values: As property threegctm/connstate.

15.1.6.3 Signals

None.

15.1.6.4 Statistics

Characters Transferred:

- StatisticsID: chartrans (0x0001).
- Description: Number of bytes of ITU-T Recommendation T.140 [19] data transferred through the termination.
- Units: count.

15.1.6.5 Procedures

If the MGC detects a CTM indication it shall send a request (Add/Modify/Move) with the CTM Transport property. Upon receivable of it, the MGW shall allocate a termination with CTM capabilities. Normal usage is that the CTM enabled termination handles one text stream and one voice stream and alternates between transporting voice and text in the voice channel according to the functionality of CTM. This termination could for example be combined in a context with a termination with the txp and ctyp packages for gateway functionality between PSTN text telephony and mobile CTM based text telephony. These packages are described in ITU-T Recommendation H.248.2 [17].

The CTM algorithm has states. The states defined in the text termination connection state property are mapped into CTM states in the following way:

- Idle: CTM disabled because of an unsuccessful CTM availability negotiation.
- Prepare: normal initial state with CTM monitoring active.
- Connected: CTM negotiation is completed.

For each new call, the CTM termination shall be put in the Prepare state.

When the CTM availability negotiation is completed, the state is Connected.

The state transitions are automatic, except for setting Prepare state as described above.

15.1.7 Enhanced Circuit Switched Data packageVoid

PackageID: threegcsden (0x0082)

Version: 1

Extends: threegcsd (0x030) Version 1

This package extends "Circuit Switched Data Package", as defined in subclause 15.1.2. This package adds a new property to define the user bitrate at a Nb/Iu termination.

15.1.7.1 Properties

Bitrate

- PropertyID: bitrate (0x0003).
- Description: user bitrate.
- Type: Integer.

~~Possible Values: transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).~~

~~Defined in: Local Control Descriptor.~~

~~Characteristics: Read/Write.~~

~~15.1.7.2 Events~~

~~None.~~

~~15.1.7.3 Signals~~

~~None.~~

~~15.1.7.4 Statistics~~

~~None.~~

~~15.1.7.5 Procedures~~

~~This package is used in addition to the 3GCSD package for CS data calls. It is used for indicating the user data rates for Inter MSC SRNS Relocation and handover cases. If the Bitrate is not 64 kb/s at one termination in the MGW but its opposing termination has properties that define its bitrate to be 64 kb/s (e.g. TMR=UDI) then A-TRAU' protocol shall be applied by the MGW. For further details see 3GPP TS 29.007 [6].~~

15.1.8 Void~~IP transport package~~

~~PackageID: threegiptra (0x0083)~~

~~Version: 1~~

~~Extends: None~~

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

~~15.1.8.1 Properties~~

~~IP transport address:~~

~~PropertyID: ipv4trans (0x0001).~~

~~Description: IP V4 transport address.~~

~~Type: 32 bits IPv4Address.~~

~~Possible values:~~

~~Specified as Transport Layer Address in 3GPP TS 25.413 [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 3GPP TS 25.413 [20].~~

~~Defined in: Local Control Descriptor.~~

~~Characteristics: Read/Write.~~

~~UDP port:~~

~~PropertyID: UDport (0x0003).~~

~~Description: UDP port.~~

~~Type: Unsigned integer.~~

~~Possible values: 0…65535.~~

~~Specified as Iu transport Association in 3GPP TS 25.413 [20].~~

~~Defined in: Local Control Descriptor.~~

~~Characteristics: Read/Write.~~

~~15.1.8.2 Events~~

~~None.~~

~~15.1.8.3 Signals~~

~~None.~~

~~15.1.8.4 Statistics~~

~~None3~~

~~15.1.8.5 Procedures~~

~~When the MSC Server knows that it shall apply the set up procedure in accordance with 3GPP TS 25.414 [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 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.~~

15.1.9 Void~~Flexible Tone Generator Package~~

~~PackageID: threegflex (0x0084)~~

~~Version: 1~~

~~Extends: threegxcg version 1~~

~~This package extends "3G Expanded Call Progress Tones Generator Package", as defined in chapter 15.1.4 above. This package adds a new tone for call duration control in CAMEL phase 4, supporting variable sequence of tones and burst list.~~

15.1.9.1 Properties

None.

15.1.9.2 Events

None.

15.1.9.3 Signals

- Signal Name: Flexible Tone.
- SignalID: ft (0x0050).
- Description: Generate flexible 900 Hz tone. The physical characteristics of Flexible Tone is not described in the additional parameters. It shall be available in the Media Gateway.
- SignalType: Brief.
- Duration: Provisioned.
- Additional Parameters:
  - Parameter Name: Burst List Direction
  - Description: Used to indicate the direction the tone is to be sent. External indicates that the tone is sent from the MG to an external point. Internal indicates that the tone is played into the Context to the other terminations. Both way indicates both internal and external behaviour.
  - ParameterID: bld (0x0001).
  - Type: Enumeration.
  - Possible Values:
    - "Ext" (0x01): External.
    - "Int" (0x02): Internal.
    - "Both" (0x03): Both way.
    - Default: "Ext" (0x01).
  - Parameter Name: numberOfBursts.
  - Description: Number of bursts in the burst list.
  - ParameterID: nob (0x0002).
  - Type: Integer.
  - Possible values: 1 to 3.
  - Default: 1.
  - Parameter Name: burstInterval.
  - Description: Time interval between two consecutive bursts expressed in amount of 100 ms units.
  - ParameterID: bi (0x0003).
  - Type: Integer.
  - Possible values: 1 to 20.
  - Default: 2.

~~Parameter Name: numberOfTonesInBurst.~~

~~Description: Number of tones to be played in each burst.~~

~~ParameterID: notib (0x0004).~~

~~Type: Integer.~~

~~Possible values: 1 to 3.~~

~~Default: 3.~~

~~Parameter Name: toneDuration.~~

~~Description: Duration of each tone in a burst expressed in amount of 100 ms units.~~

~~ParameterID: td (0x0005).~~

~~Type: Integer.~~

~~Possible values: 1 to 20.~~

~~Default: 2.~~

~~Parameter Name: toneInterval.~~

~~Description: Time interval between two consecutive tones in a burst expressed in amount of 100 ms units.~~

~~ParameterID: ti (0x0006).~~

~~Type: Integer.~~

~~Possible values: 1 to 20.~~

~~Default: 2.~~

~~15.1.9.4 Statistics~~

~~None.~~

~~15.1.9.5 Procedures~~

~~The MGW should generate the tones using the above mentioned parameters as specified in 3GPP TS 23.078 [22] subclause 4.5.7.1.2~~

~~In case MGC requests to generate a flexible tone specifying a signal type "Timeout" and a "Duration" longer than the time needed to play the whole Burst List no action will be taken on the incoming stream to fill the gap. I.e. if any user plane stream is received on one side of the termination after the end of the burst list, it will be present, unchanged, on the other side of the termination as well (transparent mode).~~

15.2 Optional UMTS packages

~~Void.~~ The following packages may be supported by the UMTS Bearer Independent Circuit-Switched Core Network as required by the network services deployed in the network:

- Circuit Switched Data package (see subclause 15.2.1);
- TFO package (see subclause 15.2.2);
- 3G Expanded Call Progress Tones Generator package (see subclause 15.2.3);
- Modification of Link Characteristics Bearer Capabiltity package (see subclause 15.2.4);
- Enhanced Circuit Switched Data package (see subclause 15.2.5);

- Cellular Text telephone Modem Text Transport package (see subclause 15.2.6);
- IP transport package (see subclause 15.2.7);
- Flexible Tone Generator Package (see subclause 15.2.8).
-

15.2.1 Circuit Switched Data package

PackageID: threegcsd (0x0030)

Version: 1

Extends: None

This package contains the information needed to be able to support GSM and UMTS Circuit Switched Data from the media gateway.

15.2.1.1 Properties

PLMN BC:

PropertyID: plmnbc (0x0001).

Description: The PLMN Bearer Capability.

Type: Octet string.

Possible values:

- Specified in the subclause "Bearer capability" in 3GPP TS 24.008 [3].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

GSM channel coding:

PropertyID: gsmchancod (0x0002).

Description: Channel information needed for GSM.

Type: Octet string.

Possible values:

- The second octet of Chosen Channel as specified in the subclause "Chosen Channel" in 3GPP TS 48.008 [9].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

15.2.1.2 Events

Protocol Negotiation Result:

EventID: protres (0x0001).

Description: This event is used to report the result of the protocol negotiation.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters:

- Negotiation Result:

- ParameterId: result (0x0001).
- Description: reports whether the protocol negotiation has been successful.
- Type: Enumeration.
- Possible Values:
  - "Success" (0x0001): the protocol negotiation on the termination has been successful.
  - "Failure" (0x0000): the protocol negotiation on the termination has failed.

- Possible Failure Cause:

- ParameterId: cause (0x0002).
- Description: indicates the possible failure cause.
- Type: Enumeration.
- Possible Values:
  - "Unsp" (0x0001): the protocol negotiation has failed for an unspecified reason.
  - "V8V34" (0x0002): the V.8 or the V.34 protocol negotiation has failed (modem termination only).

Rate Change:

EventID: ratechg (0x0002).

Description: This event is used to report a rate change.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters:

- New Rate:

- ParameterId: rate (0x0001).
- Description: reports the new rate for the termination.
- Type: Integer.
- Possible Values: transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).

15.2.1.3 Signals

Activate Protocol:

SignalID: actprot (0x0001).

Description: Activate the higher layer protocol.

Signal type: Brief.

Duration: N/A.

Additional parameter:

- Local Peer Role:

- ParameterID: localpeer (0x0001).
- Type: Enumeration.

- Possible values:
  - "Orig" (0x0000): originating.
  - "Term" (0x0001): terminating.
- Description: This parameter is optional, but is required for modem and fax calls. It is used to inform the modem whether it should act as originating or terminating peer.

15.2.1.4 Statistics

None.

15.2.1.5 Procedures

This package is used to set up data calls within the CS domain. For more information on the IWF, refer to 3GPP TS 29.007 [6].

When the Media Gateway Controller initiates the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure, it shall provide the PLMN BC ("plmnbc" property above) for the termination on the mobile side and the ISDN BC (standard H.248 properties, subclause "Bearer Capabilities") for the termination on the fixed side. For a mobile-to-mobile call, it shall provide the PLMN BC on both terminations.

The presence of the PLMN BC property may trigger the use of the IWF.

Once the bearer has been established, after B-answer, the "Activate Interworking Function" procedure is used to activate the IWF. The Activate Protocol signal ("actprot") will start the negotiation of the layer 2 protocols on both sides. If a modem or fax service is requested, the signal shall contain the Local Peer Role parameter ("localpeer"), to tell the modem whether it should act as originating or terminating peer.

NOTE: The Activate Protocol signal is needed only after B-answer as described above, to activate the protocol timers at the correct time. This is the only time when this signal is needed (specifically, the signal is not used after a handover sequence or for lawful interception).

The IWF Protocol Indication notifications are used by the MGW to inform the MSC server about IWF protocol events. The MSC has to request the detection of the events "Protocol Negotiation Result" and "Rate Change" in the "Activate IWF" procedure, the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure.

For handover to GSM, or change of channel characteristics within the GSM network, the property GSM Channel Coding ("gsmchancod"), which contains the information about the channel type and the number of channels, shall be transmitted to the termination on the mobile side in the "Establish Bearer", the "Prepare Bearer" and the "Reserve Circuit" procedures together with the PLMN BC. The presence of the GSM Channel Coding property also indicates that the termination is using a GSM access network.

15.2.2 TFO package

The addition of text encoding for the TFO codec list is for further study.

PackageID: threegtfoc (0x0031)

Version: 1

Extends: None

This package defines events and properties for Tandem Free Operation (TFO) control. TFO uses inband signalling and procedures for Transcoders to enable compressed speech to be maintained between a tandem pair of transcoders. This package allows an MGW which has inserted a transcoder to support TFO.

15.2.2.1 Properties

TFO Activity Control:

PropertyID: tfoenable (0x0001).

Description: Defines if TFO is enabled or not.

Type: Enumeration.

Possible Values:

- "On" (0x0001): TFO is enabled, TFO protocol is supported.
- "Off" (0x0002): TFO is not enabled, TFO protocol is not initiated or terminated.

Defined in: Local Control descriptor.

Characteristics: Read/Write.

TFO Codec List:

PropertyID: codeclist (0x0002).

Description: List of codecs for use in TFO protocol, the Local Used Codec (see 3GPP TS 28.062 [5]) is always the first entry in the list.

Type: Octet string.

Possible Values:

- List of codec types; each entry:
  - As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].

Defined in: Local Control descriptor.

Characteristics: Read/Write.

15.2.2.2 Events

Optimal Codec Event:

EventID: codec_modify (0x0010).

Description: The event is used to notify the MGC that TFO negotiation has resulted in an optimal codec type being proposed.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters:

- Optimal Codec Type.
  - ParameterID: optimalcodec (0x0011).
  - Description: indicates which is the proposed codec type for TFO.
  - Type: Octet string.

- Possible Values:
  - Codec Type: As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].

Codec List Event:

EventID: distant codec_list (0x0012).

Description: The event is used to notify the MGC of the distant TFO partner's supported codec list.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters:

- Distant Codec List:
  - ParameterID: distlist(0x0013).
  - Description: indicates the codec list for TFO.
  - Type: Octet string.
  - Possible Values:
    - List of codecs of type Codec Type: As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].
  - The first Codec Type in the list is the Distant Used Codec, received from the distant TFO partner (see 3GPP TS 28.062 [5]).

15.2.2.3 Signals

None.

15.2.2.4 Statistics

None.

15.2.2.5 Procedures

For the procedures for TFO see 3GPP TS 28.062 [5].

The use of the properties in this package is applicable only when the MGW Termination to which the package properties are applied has the media stream property for Codec Type set to ITU-T Recommendation G.711 [25] (see annex C of ITU-T Recommendation H.248 [10]). Furthermore, the package properties are applicable only if the Codec Type property of the media stream at the opposing MGW Termination is not set to ITU-T Recommendation G.711 [25].

15.2.3 3G Expanded Call Progress Tones Generator Package

PackageID: threegxcg(0x0032)

Version: 1

Extends: xcg version1

This package extends "Expanded Call Progress Tones Generator Package", as defined in ITU-T Recommendation Q.1950 [23] (see 3GPP TS 29.205 [7]). The package adds a new toneId for CAMEL prepaid warning tone.

15.2.3.1 Properties

None.

15.2.3.2 Events

None.

15.2.3.3 Signals

CAMEL Prepaid Warning Tone:

SignalID: cpwt (0x004f).

Description: Generate CAMEL prepaid warning tone to inform the party that the Max Call Period Duration is about to expire. CAMEL prepaid warning tone is defined in 3GPP TS 23.078 [22]. The physical characteristic of CAMEL prepaid warning tone is available in the gateway.

Signal type: Brief.

Duration: Provisioned, Not Auditable.

Additional parameters:

- Tone Direction.
- ParameterID: td (0x0010).
- Type: Enumeration.
- Values:
  - "Ext" (0x01): external.
  - "Int" (0x02): internal.
  - "Both" (0x03): Both.
- Default: "Ext".

15.2.3.4 Statistics

None.

15.2.3.5 Procedures

None.

15.2.4 Modification Of Link Characteristics Bearer Capability

PackageName: Modification of Link Characteristics Bearer Capability

PackageID: threegmlc(0x0046)

Description: This package contains an event that when requested by the MGC will cause the MG to notify the MGC that modification of the link characteristics is allowed. This notification is typically generated when the bearer has been established.

Version: 1

Extends: None

15.2.4.1 Properties

None.

15.2.4.2 Events

Bearer Modification Support Event.

EventID: mod_link_supp (0x0001).

Description: The event is used to notify the MGC that modification of the link characteristics of the current bearer connection is permitted.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters: None.

15.2.4.3 Signals

None.

15.2.4.4 Statistics

None.

15.2.4.5 Procedures

If the MGC is interested in determining whether or not the bearer associated with a termination supports modification of its link characteristics it shall send a request (Add/Modify/Move) with the Bearer Modification Support Event. When the bearer is established the MG will indicate in a Notify request to the MGC if modification of link characteristics is supported. A notify will NOT be generated if modification is NOT supported on the bearer.

15.2.5 Enhanced Circuit Switched Data package

PackageID: threegcsden (0x0082)

Version: 1

Extends: threegcsd (0x030) Version 1

This package extends "Circuit Switched Data Package", as defined in subclause 15.1.2. This package adds a new property to define the user bitrate at a Nb/Iu termination.

15.2.5.1 Properties

Bitrate

PropertyID: bitrate (0x0003).

Description: user bitrate.

Type: Integer.

Possible Values: transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

15.2.5.2 Events

None.

15.2.5.3 Signals

None.

15.2.5.4 Statistics

None.

15.2.5.5 Procedures

This package is used in addition to the 3GCSD package for CS data calls. It is used for indicating the user data rates for Inter-MSC SRNS Relocation and handover cases. If the Bitrate is not 64 kb/s at one termination in the MGW but its opposing termination has properties that define its bitrate to be 64 kb/s (e.g. TMR=UDI) then A-TRAU' protocol shall be applied by the MGW. For further details see 3GPP TS 29.007 [6].

15.2.6 Cellular Text telephone Modem Text Transport

PackageName: CTM Text Transport

PackageID: threegctm (0x0068)

Description: The CTM text transport package is intended for enabling robust real time text conversation through a voice channel primarily intended for communication over mobile networks. This package includes the mechanisms needed to transport T.140 text conversation streams [19] in a voice channel environment, using the CTM Cellular Text Telephone Modem specified in 3GPP TS 26.226 [18]. The transport mechanism allows for alternating transport of voice and text.

Version: 1

Extends: None

15.2.6.1 Properties

Text termination connection state:

PropertyID: connstate (0x0001).

Description: The connection state property is used to reflect details of the achieved text connection. For each new session connstate should be reset to "Prepare".

Type: Enumeration.

Possible values:

- "Idle" (0x0001) meaning that CTM availability negotiation has failed; CTM is disabled except for monitoring the incoming line for CTM signals.
- "Prepare" (0x0002) for CTM being enabled, monitoring for CTM signals and ready to send CTM signals.
- "Connected" (0x0006) for CTM being enabled and to have detected CTM availability in the current session.

Defined in: TerminationState.

Characteristics: Read/Write.

Text Transport:

PropertyID: trpt (0x0002)

Description: The transport parameter reflects the transport mechanism selected for the Text Conversation termination. In 3GPP, one possible transport mechanism is the Cellular Text Telephone Modem as in 3GPP TS 26.226 [18]. It is used when it is desired to transport the text conversation in a voice channel. CTM enables alternating use of the voice channel for voice and text during the call.

Type: Enumeration.

Possible values:

- "ctm" (0x0008) for text transport in mobile voice channel as in 3GPP TS 26.226 [18].

Defined in: LocalControl.

Characteristics: Read/Write.

Text Protocol Version:

PropertyID: textproto (0x0003).

Description: The version of the ITU-T Recommendation T.140 [19] protocol used in the connection.

Type: Integer.

Possible values:

- Any integer corresponding to a T.140 version number (currently 1) as in ITU-T Recommendation H.248 .2 [17].

Defined in: LocalControl.

Characteristics: Read/Write.

15.2.6.2 Events

Connection State Change:

EventID: connchange (0x0001).

Description:

- This event will occur when the text connection state for the termination has changed.
- The parameter values are the same as the Connection State property.
- If a CTM availability request timed out, the state is returned to Idle.

EventDescriptorParameters:

None.

ObservedEventDescriptorParameters:

ParameterName: Connection Change.

ParameterID: connchng (0x0001).

Type: Enumeration.

Possible Values: As property threegctm/connstate.

15.2.6.3 Signals

None.

15.2.6.4 Statistics

Characters Transferred:

StatisticsID: chartrans (0x0001).

Description: Number of bytes of ITU-T Recommendation T.140 [19] data transferred through the termination.

Units: count.

15.2.6.5 Procedures

If the MGC detects a CTM indication it shall send a request (Add/Modify/Move) with the CTM Transport property. Upon receivable of it, the MGW shall allocate a termination with CTM capabilities. Normal usage is that the CTM enabled termination handles one text stream and one voice stream and alternates between transporting voice and text in the voice channel according to the functionality of CTM. This termination could for example be combined in a context with a termination with the txp and ctyp packages for gateway functionality between PSTN text telephony and mobile CTM based text telephony. These packages are described in ITU-T Recommendation H.248.2 [17].

The CTM algorithm has states. The states defined in the text termination connection state property are mapped into CTM states in the following way:

- Idle: CTM disabled because of an unsuccessful CTM availability negotiation.
- Prepare: normal initial state with CTM monitoring active.
- Connected: CTM negotiation is completed.

For each new call, the CTM termination shall be put in the Prepare state.

When the CTM availability negotiation is completed, the state is Connected.

The state transitions are automatic, except for setting Prepare state as described above.

15.2.7 IP transport package

PackageID: threegiptra (0x0083)

Version: 1

Extends: None

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

15.2.7.1 Properties

IP transport address:

PropertyID: ipv4trans (0x0001).

Description: IP V4 transport address.

Type: 32 bits IPv4Address.

Possible values:

- Specified as Transport Layer Address in 3GPP TS 25.413 [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 3GPP TS 25.413 [20].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

UDP port:

PropertyID: UDport (0x0003).

Description: UDP port.

Type: Unsigned integer.

Possible values: 0…65535.

- Specified as Iu transport Association in 3GPP TS 25.413 [20].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

15.2.7.2 Events

None.

15.2.7.3 Signals

None.

15.2.7.4 Statistics

None3

15.2.7.5 Procedures

When the MSC Server knows that it shall apply the set up procedure in accordance with 3GPP TS 25.414 [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 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.

15.2.8 Flexible Tone Generator Package

PackageID: threegflex (0x0084)

Version: 1

Extends: threegxcg version 1

This package extends "3G Expanded Call Progress Tones Generator Package", as defined in chapter 15.1.4 above. This package adds a new tone for call duration control in CAMEL phase 4, supporting variable sequence of tones and burst list.

15.2.8.1 Properties

None.

15.2.8.2 Events

None.

15.2.8.3 Signals

Signal Name: Flexible Tone.

SignalID: ft (0x0050).

Description: Generate flexible 900 Hz tone. The physical characteristics of Flexible Tone is not described in the additional parameters. It shall be available in the Media Gateway.

SignalType: Brief.

Duration: Provisioned.

Additional Parameters:

- Parameter Name: Burst List Direction

Description: Used to indicate the direction the tone is to be sent. External indicates that the tone is sent from the MG to an external point. Internal indicates that the tone is played into the Context to the other terminations. Both way indicates both internal and external behaviour.

ParameterID: bld (0x0001).

Type: Enumeration.

Possible Values:

- "Ext" (0x01): External.
- "Int" (0x02): Internal.
- "Both" (0x03): Both way.
- Default: "Ext" (0x01).

Parameter Name: numberOfBursts.

Description: Number of bursts in the burst list.

ParameterID: nob (0x0002).

Type: Integer.

Possible values: 1 to 3.

Default: 1.

Parameter Name: burstInterval.

Description: Time interval between two consecutive bursts expressed in amount of 100 ms units.

ParameterID: bi (0x0003).

Type: Integer.

Possible values: 1 to 20.

Default: 2.

Parameter Name: numberOfTonesInBurst.

Description: Number of tones to be played in each burst.

ParameterID: notib (0x0004).

Type: Integer.

Possible values: 1 to 3.

Default: 3.

Parameter Name: toneDuration.

Description: Duration of each tone in a burst expressed in amount of 100 ms units.

ParameterID: td (0x0005).

Type: Integer.

Possible values: 1 to 20.

Default: 2.

Parameter Name: toneInterval.

Description: Time interval between two consecutive tones in a burst expressed in amount of 100 ms units.

ParameterID: ti (0x0006).

Type: Integer.

Possible values: 1 to 20.

Default: 2.

15.2.8.4 Statistics

None.

15.2.8.5 Procedures

The MGW should generate the tones using the above mentioned parameters as specified in 3GPP TS 23.078 [22] subclause 4.5.7.1.2

In case MGC requests to generate a flexible tone specifying a signal type "Timeout" and a "Duration" longer than the time needed to play the whole Burst List no action will be taken on the incoming stream to fill the gap. I.e. if any user plane stream is received on one side of the termination after the end of the burst list, it will be present, unchanged, on the other side of the termination as well (transparent mode).

3GPP TSG-CN WG4 Meeting #26 **N4-050388**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **104** ⌘ **rev** **1** ⌘ 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:	⌘	Completion of specification of UMTS Packages
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	05/01/05
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:	⌘	The list of packages defined by 3GPP specifically for UMTS in Chapter 15 is incomplete. Also, in Chapter 13 of 29.232, Q.1950 packages that are to be supported are separated out in to those which are mandatory (section 13.1) and those which are optional (section 13.2). A similar separation of the UMTS packages that are to be supported has not been made – currently all are listed as mandatory by default in section 15.1, but some are not essential to BICN operation. As a result, it is not clear if the UMTS packages identified are all mandatory, all optional or a mixture of the two. This makes it very difficult to implement an interoperable Mc interface since the required guidance is missing.
Summary of change:	⌘	The list of UMTS packages is completed and whether an UMTS package is to be supported mandatorially or optionally is identified. **This is an essential correction.**
Consequences if not approved:	⌘	No possibility of vendor interoperability on the Mc interface due to a large number of possible implementations.

Clauses affected:	⌘	10, 15.1, 15.1.3, 15.1.4, 15.1.5, 15.1.6, 15.1.8, 15.1.9, 15.2

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.

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 [23] (see 3GPP TS 29.205 [7]).

The coding rules applied in ITU-T Recommendation H.248.1 [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 15.2.1~~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 erroneous 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 " Initialization Direction" in subclause 15.1.1.1
PLMN bearer capability	Local control	As for the property "PLMN BC" in subclause 15.2.1~~1.2~~.1
Coding	Local control	As for the property " GSM channel coding" in subclause 15.2.1~~1.2~~.1
Tfoenable	Local control	As for the property " TFO activity control" in subclause 15.2.2~~1.3~~.1
Codeclist	Local control	As for the property" TFO Codec List" in subclause 15.2.2~~1.3~~.1
Result	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Protocol Negotiation Result" in subclause 15.2.1~~1.2~~.2
Cause	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Protocol Negotiation Result" in subclause 15.2.1~~1.2~~.2
Rate	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Rate Change" in subclause 15.2.1~~1.2~~.2
Optimalcodec	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Optimal Codec Type" in subclause 15.2.2~~1.3~~.2
Distlist	ObservedEvent descriptor	As for the ObservedEventDescriptor parameter "Distant TFO List" in subclause 15.2.2~~1.3~~.2
On/Off	Local control	As for the property "Echo cancelling" in subclause E.13.1 in ITU-T Recommendation H.248.1 [10]
Error	Error descriptor	As defined in the subclause "Command error code" in ITU-T Recommendation H.248.1 [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 15.2.3~~1.4~~.2.
Bearer modification possible	ObservedEvent descriptor	As for the ObserverdEventDescriptor in "Bearer Modification Support" in subclause 15.2.3~~1.4~~.2.
Ctmstate	TerminationState	As for the TerminationState "Text termination connection state" in subclause 15.2.6~~1.6~~.1.
Ctmtransport	Local control	As for the property "Text Transport" in subclause 15.~~1.6~~2.6.1.
Ctmtext version	Local control	As for the property " Text Protocol Version" in subclause 15.~~1.6~~2.6.1.
Connchng	ObservedEventDescriptor	As for the ObservedEventDescriptor " Connection State Change in subclause 15.~~1.6~~2.6.2
Ctmbits	Statistics descriptor	As for the Statistics descriptor "Characters Transferred" in subclause 15.~~1.6~~2.6.4
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.~~1.8~~2.7.1
UDPport	Local control	As for the property" UDP port " in subclause 15.~~1.8~~2.7.1
Flextone	Local control	As for the signal "Flexible Tone " in subclause 15.~~1. 9~~2.8.1

******* Next Changed Section *******

15 UMTS packages

15.1 Mandatory UMTS packages

The following package~~s~~ shall be supported ~~are required~~ for the UMTS Bearer Independent Circuit-Switched Core Network:

- 3GUP (User Plane) package (see subclause 15.1.1).~~;~~

~~- Circuit Switched Data package (see subclause 15.1.2);~~

~~- TFO package (see subclause 15.1.3).~~

****** *Next Changed Section* ******

15.1.2 ~~Circuit Switched Data package~~Void

~~PackageID: threegcsd (0x0030)~~

~~Version: 1~~

~~Extends: None~~

~~This package contains the information needed to be able to support GSM and UMTS Circuit Switched Data from the media gateway.~~

~~15.1.2.1 Properties~~

~~PLMN BC:~~

~~- PropertyID: plmnbc (0x0001).~~

~~- Description: The PLMN Bearer Capability.~~

~~- Type: Octet string.~~

~~- Possible values:~~

~~- Specified in the subclause "Bearer capability" in 3GPP TS 24.008 [3].~~

~~- Defined in: Local Control Descriptor.~~

~~- Characteristics: Read/Write.~~

~~GSM channel coding:~~

~~- PropertyID: gsmchancod (0x0002).~~

~~- Description: Channel information needed for GSM.~~

~~- Type: Octet string.~~

~~- Possible values:~~

~~- The second octet of Chosen Channel as specified in the subclause "Chosen Channel" in 3GPP TS 48.008 [9].~~

~~- Defined in: Local Control Descriptor.~~

~~- Characteristics: Read/Write.~~

15.1.2.2 Events

Protocol Negotiation Result:

- EventID: protres (0x0001).
- Description: This event is used to report the result of the protocol negotiation.
- EventsDescriptor Parameters: None.
- ObservedEventsDescriptor Parameters:
  - Negotiation Result:
    - ParameterId: result (0x0001).
    - Description: reports whether the protocol negotiation has been successful.
    - Type: Enumeration.
    - Possible Values:
      - o"Success" (0x0001): the protocol negotiation on the termination has been successful.
      - o"Failure" (0x0000): the protocol negotiation on the termination has failed.
  - Possible Failure Cause:
    - ParameterId: cause (0x0002).
    - Description: indicates the possible failure cause.
    - Type: Enumeration.
    - Possible Values:
      - o"Unsp" (0x0001): the protocol negotiation has failed for an unspecified reason.
      - o"V8V34" (0x0002): the V.8 or the V.34 protocol negotiation has failed (modem termination only).

Rate Change:

- EventID: ratechg (0x0002).
- Description: This event is used to report a rate change.
- EventsDescriptor Parameters: None.
- ObservedEventsDescriptor Parameters:
  - New Rate:
    - ParameterId: rate (0x0001).
    - Description: reports the new rate for the termination.
    - Type: Integer.
    - Possible Values: transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).

15.1.2.3 Signals

Activate Protocol:

- SignalID: actprot (0x0001).
- Description: Activate the higher layer protocol.

- Signal type: Brief.
- Duration: N/A.
- Additional parameter:
  - Local Peer Role:
    - ParameterID: localpeer (0x0001).
    - Type: Enumeration.
    - Possible values:
      - "Orig" (0x0000): originating.
      - "Term" (0x0001): terminating.
    - Description: This parameter is optional, but is required for modem and fax calls. It is used to inform the modem whether it should act as originating or terminating peer.

15.1.2.4 Statistics

None.

15.1.2.5 Procedures

This package is used to set up data calls within the CS domain. For more information on the IWF, refer to 3GPP TS 29.007 [6].

When the Media Gateway Controller initiates the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure, it shall provide the PLMN BC ("plmnbc" property above) for the termination on the mobile side and the ISDN BC (standard H.248 properties, subclause "Bearer Capabilities") for the termination on the fixed side. For a mobile-to-mobile call, it shall provide the PLMN BC on both terminations.

The presence of the PLMN BC property may trigger the use of the IWF.

Once the bearer has been established, after B-answer, the "Activate Interworking Function" procedure is used to activate the IWF. The Activate Protocol signal ("actprot") will start the negotiation of the layer 2 protocols on both sides. If a modem or fax service is requested, the signal shall contain the Local Peer Role parameter ("localpeer"), to tell the modem whether it should act as originating or terminating peer.

NOTE: The Activate Protocol signal is needed only after B-answer as described above, to activate the protocol timers at the correct time. This is the only time when this signal is needed (specifically, the signal is not used after a handover sequence or for lawful interception).

The IWF Protocol Indication notifications are used by the MGW to inform the MSC server about IWF protocol events. The MSC has to request the detection of the events "Protocol Negotiation Result" and "Rate Change" in the "Activate IWF" procedure, the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure.

For handover to GSM, or change of channel characteristics within the GSM network, the property GSM Channel Coding ("gsmchancod"), which contains the information about the channel type and the number of channels, shall be transmitted to the termination on the mobile side in the "Establish Bearer", the "Prepare Bearer" and the "Reserve Circuit" procedures together with the PLMN BC. The presence of the GSM Channel Coding property also indicates that the termination is using a GSM access network.

15.1.3 TFO packageVoid

The addition of text encoding for the TFO codec list is for further study.

PackageID: threegtfoc (0x0031)

Version: 1

Extends: None

This package defines events and properties for Tandem Free Operation (TFO) control. TFO uses inband signalling and procedures for Transcoders to enable compressed speech to be maintained between a tandem pair of transcoders. This package allows an MGW which has inserted a transcoder to support TFO.

15.1.3.1 Properties

TFO Activity Control:

- PropertyID: tfoenable (0x0001).
- Description: Defines if TFO is enabled or not.
- Type: Enumeration.
- Possible Values:
  - "On" (0x0001): TFO is enabled, TFO protocol is supported.
  - "Off" (0x0002): TFO is not enabled, TFO protocol is not initiated or terminated.
- Defined in: Local Control descriptor.
- Characteristics: Read/Write.

TFO Codec List:

- PropertyID: codeclist (0x0002).
- Description: List of codecs for use in TFO protocol, the Local Used Codec (see 3GPP TS 28.062 [5]) is always the first entry in the list.
- Type: Octet string.
- Possible Values:
  - List of codec types; each entry:
    - As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].
- Defined in: Local Control descriptor.
- Characteristics: Read/Write.

15.1.3.2 Events

Optimal Codec Event:

- EventID: codec_modify (0x0010).
- Description: The event is used to notify the MGC that TFO negotiation has resulted in an optimal codec type being proposed.
- EventsDescriptor Parameters: None.
- ObservedEventsDescriptor Parameters:
  - Optimal Codec Type.
    - ParameterID: optimalcodec (0x0011).

- Description: indicates which is the proposed codec type for TFO.

- Type: Octet string.

- Possible Values:

oCodec Type: As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].

Codec List Event:

- EventID: distant codec_list (0x0012).

- Description: The event is used to notify the MGC of the distant TFO partner's supported codec list.

- EventsDescriptor Parameters: None.

- ObservedEventsDescriptor Parameters:

- Distant Codec List:

- ParameterID: distlist(0x0013).

- Description: indicates the codec list for TFO.

- Type: Octet string.

- Possible Values:

oList of codecs of type Codec Type: As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].

- The first Codec Type in the list is the Distant Used Codec, received from the distant TFO partner (see 3GPP TS 28.062 [5]).

15.1.3.3 Signals

None.

15.1.3.4 Statistics

None.

15.1.3.5 Procedures

For the procedures for TFO see 3GPP TS 28.062 [5].

The use of the properties in this package is applicable only when the MGW Termination to which the package properties are applied has the media stream property for Codec Type set to ITU-T Recommendation G.711 [25] (see annex C of ITU-T Recommendation H.248 [10]). Furthermore, the package properties are applicable only if the Codec Type property of the media stream at the opposing MGW Termination is not set to ITU-T Recommendation G.711 [25].

15.1.4 Void3G Expanded Call Progress Tones Generator Package

PackageID: threegxcg(0x0032)

Version: 1

Extends: xcg version1

~~This package extends "Expanded Call Progress Tones Generator Package", as defined in ITU-T Recommendation Q.1950 [23] (see 3GPP TS 29.205 [7]). The package adds a new toneId for CAMEL prepaid warning tone.~~

~~15.1.4.1 Properties~~

~~None.~~

~~15.1.4.2 Events~~

~~None.~~

~~15.1.4.3 Signals~~

~~CAMEL Prepaid Warning Tone:~~

~~SignalID: cpwt (0x004f).~~

~~Description: Generate CAMEL prepaid warning tone to inform the party that the Max Call Period Duration is about to expire. CAMEL prepaid warning tone is defined in 3GPP TS 23.078 [22]. The physical characteristic of CAMEL prepaid warning tone is available in the gateway.~~

~~Signal type: Brief.~~

~~Duration: Provisioned, Not Auditable.~~

~~Additional parameters:~~

~~Tone Direction.~~

~~ParameterID: td (0x0010).~~

~~Type: Enumeration.~~

~~Values:~~

~~"Ext" (0x01): external.~~

~~"Int" (0x02): internal.~~

~~"Both" (0x03): Both.~~

~~Default: "Ext".~~

~~15.1.4.4 Statistics~~

~~None.~~

~~15.1.4.5 Procedures~~

~~None.~~

15.1.5 Void~~Modification Of Link Characteristics Bearer Capability~~

~~PackageName: Modification of Link Characteristics Bearer Capability~~

~~PackageID: threegmlc(0x0046)~~

~~Description: This package contains an event that when requested by the MGC will cause the MG to notify the MGC that modification of the link characteristics is allowed. This notification is typically generated when the bearer has been established.~~

~~Version: 1~~

Extends: None

15.1.5.1 Properties

None.

15.1.5.2 Events

Bearer Modification Support Event.

EventID: mod_link_supp (0x0001).

Description: The event is used to notify the MGC that modification of the link characteristics of the current bearer connection is permitted.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters: None.

15.1.5.3 Signals

None.

15.1.5.4 Statistics

None.

15.1.5.5 Procedures

If the MGC is interested in determining whether or not the bearer associated with a termination supports modification of its link characteristics it shall send a request (Add/Modify/Move) with the Bearer Modification Support Event. When the bearer is established the MG will indicate in a Notify request to the MGC if modification of link characteristics is supported. A notify will NOT be generated if modification is NOT supported on the bearer.

15.1.6 VoidCellular Text telephone Modem Text Transport

PackageName: CTM Text Transport

PackageID: threegctm (0x0068)

Description: The CTM text transport package is intended for enabling robust real-time text conversation through a voice channel primarily intended for communication over mobile networks. This package includes the mechanisms needed to transport T.140 text conversation streams [19] in a voice channel environment, using the CTM Cellular Text Telephone Modem specified in 3GPP TS 26.226 [18]. The transport mechanism allows for alternating transport of voice and text.

Version: 1

Extends: None

15.1.6.1 Properties

Text termination connection state:

PropertyID: connstate (0x0001).

Description: The connection state property is used to reflect details of the achieved text connection. For each new session connstate should be reset to "Prepare".

Type: Enumeration.

Possible values:

- "Idle" (0x0001) meaning that CTM availability negotiation has failed; CTM is disabled except for monitoring the incoming line for CTM signals.
- "Prepare" (0x0002) for CTM being enabled, monitoring for CTM signals and ready to send CTM signals.
- "Connected" (0x0006) for CTM being enabled and to have detected CTM availability in the current session.

- Defined in: TerminationState.
- Characteristics: Read/Write.

Text Transport:

- PropertyID: trpt (0x0002)
- Description: The transport parameter reflects the transport mechanism selected for the Text Conversation termination. In 3GPP, one possible transport mechanism is the Cellular Text Telephone Modem as in 3GPP TS 26.226 [18]. It is used when it is desired to transport the text conversation in a voice channel. CTM enables alternating use of the voice channel for voice and text during the call.
- Type: Enumeration.
- Possible values:
  - "ctm" (0x0008) for text transport in mobile voice channel as in 3GPP TS 26.226 [18].
- Defined in: LocalControl.
- Characteristics: Read/Write.

Text Protocol Version:

- PropertyID: textproto (0x0003).
- Description: The version of the ITU-T Recommendation T.140 [19] protocol used in the connection.
- Type: Integer.
- Possible values:
  - Any integer corresponding to a T.140 version number (currently 1) as in ITU-T Recommendation H.248 .2 [17].
- Defined in: LocalControl.
- Characteristics: Read/Write.

15.1.6.2 Events

Connection State Change:

- EventID: connchange (0x0001).
- Description:
  - This event will occur when the text connection state for the termination has changed.
  - The parameter values are the same as the Connection State property.
  - If a CTM availability request timed out, the state is returned to Idle.

EventDescriptorParameters:

- None.

ObservedEventDescriptorParameters:

- ParameterName: Connection Change.

- ParameterID: connchng (0x0001).
- Type: Enumeration.
- Possible Values: As property threegctm/connstate.

15.1.6.3 Signals

None.

15.1.6.4 Statistics

Characters Transferred:

- StatisticsID: chartrans (0x0001).
- Description: Number of bytes of ITU-T Recommendation T.140 [19] data transferred through the termination.
- Units: count.

15.1.6.5 Procedures

If the MGC detects a CTM indication it shall send a request (Add/Modify/Move) with the CTM Transport property. Upon receivable of it, the MGW shall allocate a termination with CTM capabilities. Normal usage is that the CTM enabled termination handles one text stream and one voice stream and alternates between transporting voice and text in the voice channel according to the functionality of CTM. This termination could for example be combined in a context with a termination with the txp and ctyp packages for gateway functionality between PSTN text telephony and mobile CTM based text telephony. These packages are described in ITU-T Recommendation H.248.2 [17].

The CTM algorithm has states. The states defined in the text termination connection state property are mapped into CTM states in the following way:

- Idle: CTM disabled because of an unsuccessful CTM availability negotiation.
- Prepare: normal initial state with CTM monitoring active.
- Connected: CTM negotiation is completed.

For each new call, the CTM termination shall be put in the Prepare state.

When the CTM availability negotiation is completed, the state is Connected.

The state transitions are automatic, except for setting Prepare state as described above.

15.1.7 Enhanced Circuit Switched Data packageVoid

PackageID: threegcsden (0x0082)

Version: 1

Extends: threegcsd (0x030) Version 1

This package extends "Circuit Switched Data Package", as defined in subclause 15.1.2. This package adds a new property to define the user bitrate at a Nb/Iu termination.

15.1.7.1 Properties

Bitrate

- PropertyID: bitrate (0x0003).
- Description: user bitrate.
- Type: Integer.

~~Possible Values: transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).~~

~~Defined in: Local Control Descriptor.~~

~~Characteristics: Read/Write.~~

~~15.1.7.2 Events~~

~~None.~~

~~15.1.7.3 Signals~~

~~None.~~

~~15.1.7.4 Statistics~~

~~None.~~

~~15.1.7.5 Procedures~~

~~This package is used in addition to the 3GCSD package for CS data calls. It is used for indicating the user data rates for Inter MSC SRNS Relocation and handover cases. If the Bitrate is not 64 kb/s at one termination in the MGW but its opposing termination has properties that define its bitrate to be 64 kb/s (e.g. TMR=UDI) then A-TRAU' protocol shall be applied by the MGW. For further details see 3GPP TS 29.007 [6].~~

15.1.8 Void~~IP transport package~~

~~PackageID: threegiptra (0x0083)~~

~~Version: 1~~

~~Extends: None~~

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

~~15.1.8.1 Properties~~

~~IP transport address:~~

~~PropertyID: ipv4trans (0x0001).~~

~~Description: IP V4 transport address.~~

~~Type: 32 bits IPv4Address.~~

~~Possible values:~~

~~Specified as Transport Layer Address in 3GPP TS 25.413 [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 3GPP TS 25.413 [20].~~

~~Defined in: Local Control Descriptor.~~

~~Characteristics: Read/Write.~~

~~UDP port:~~

~~PropertyID: UDport (0x0003).~~

~~Description: UDP port.~~

~~Type: Unsigned integer.~~

~~Possible values: 0…65535.~~

~~Specified as Iu transport Association in 3GPP TS 25.413 [20].~~

~~Defined in: Local Control Descriptor.~~

~~Characteristics: Read/Write.~~

~~15.1.8.2 Events~~

~~None.~~

~~15.1.8.3 Signals~~

~~None.~~

~~15.1.8.4 Statistics~~

~~None3~~

~~15.1.8.5 Procedures~~

~~When the MSC Server knows that it shall apply the set up procedure in accordance with 3GPP TS 25.414 [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 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.~~

15.1.9 Void~~Flexible Tone Generator Package~~

~~PackageID: threegflex (0x0084)~~

~~Version: 1~~

~~Extends: threegxcg version 1~~

~~This package extends "3G Expanded Call Progress Tones Generator Package", as defined in chapter 15.1.4 above. This package adds a new tone for call duration control in CAMEL phase 4, supporting variable sequence of tones and burst list.~~

15.1.9.1 Properties

None.

15.1.9.2 Events

None.

15.1.9.3 Signals

- Signal Name: Flexible Tone.
- SignalID: ft (0x0050).
- Description: Generate flexible 900 Hz tone. The physical characteristics of Flexible Tone is not described in the additional parameters. It shall be available in the Media Gateway.
- SignalType: Brief.
- Duration: Provisioned.
- Additional Parameters:
  - Parameter Name: Burst List Direction
  - Description: Used to indicate the direction the tone is to be sent. External indicates that the tone is sent from the MG to an external point. Internal indicates that the tone is played into the Context to the other terminations. Both way indicates both internal and external behaviour.
  - ParameterID: bld (0x0001).
  - Type: Enumeration.
  - Possible Values:
    - "Ext" (0x01): External.
    - "Int" (0x02): Internal.
    - "Both" (0x03): Both way.
    - Default: "Ext" (0x01).
  - Parameter Name: numberOfBursts.
  - Description: Number of bursts in the burst list.
  - ParameterID: nob (0x0002).
  - Type: Integer.
  - Possible values: 1 to 3.
  - Default: 1.
  - Parameter Name: burstInterval.
  - Description: Time interval between two consecutive bursts expressed in amount of 100 ms units.
  - ParameterID: bi (0x0003).
  - Type: Integer.
  - Possible values: 1 to 20.
  - Default: 2.

~~Parameter Name: numberOfTonesInBurst.~~

~~Description: Number of tones to be played in each burst.~~

~~ParameterID: notib (0x0004).~~

~~Type: Integer.~~

~~Possible values: 1 to 3.~~

~~Default: 3.~~

~~Parameter Name: toneDuration.~~

~~Description: Duration of each tone in a burst expressed in amount of 100 ms units.~~

~~ParameterID: td (0x0005).~~

~~Type: Integer.~~

~~Possible values: 1 to 20.~~

~~Default: 2.~~

~~Parameter Name: toneInterval.~~

~~Description: Time interval between two consecutive tones in a burst expressed in amount of 100 ms units.~~

~~ParameterID: ti (0x0006).~~

~~Type: Integer.~~

~~Possible values: 1 to 20.~~

~~Default: 2.~~

~~15.1.9.4 Statistics~~

~~None.~~

~~15.1.9.5 Procedures~~

~~The MGW should generate the tones using the above mentioned parameters as specified in 3GPP TS 23.078 [22] subclause 4.5.7.1.2~~

~~In case MGC requests to generate a flexible tone specifying a signal type "Timeout" and a "Duration" longer than the time needed to play the whole Burst List no action will be taken on the incoming stream to fill the gap. I.e. if any user plane stream is received on one side of the termination after the end of the burst list, it will be present, unchanged, on the other side of the termination as well (transparent mode).~~

15.2 Optional UMTS packages

~~Void.~~ The following packages may be supported by the UMTS Bearer Independent Circuit-Switched Core Network as required by the network services deployed in the network:

- Circuit Switched Data package (see subclause 15.2.1);
- TFO package (see subclause 15.2.2);
- 3G Expanded Call Progress Tones Generator package (see subclause 15.2.3);
- Modification of Link Characteristics Bearer Capabiltity package (see subclause 15.2.4);
- Enhanced Circuit Switched Data package (see subclause 15.2.5);

- Cellular Text telephone Modem Text Transport package (see subclause 15.2.6);
- IP transport package (see subclause 15.2.7);
- Flexible Tone Generator Package (see subclause 15.2.8).
-

15.2.1 Circuit Switched Data package

PackageID: threegcsd (0x0030)

Version: 1

Extends: None

This package contains the information needed to be able to support GSM and UMTS Circuit Switched Data from the media gateway.

15.2.1.1 Properties

PLMN BC:

PropertyID: plmnbc (0x0001).

Description: The PLMN Bearer Capability.

Type: Octet string.

Possible values:

- Specified in the subclause "Bearer capability" in 3GPP TS 24.008 [3].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

GSM channel coding:

PropertyID: gsmchancod (0x0002).

Description: Channel information needed for GSM.

Type: Octet string.

Possible values:

- The second octet of Chosen Channel as specified in the subclause "Chosen Channel" in 3GPP TS 48.008 [9].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

15.2.1.2 Events

Protocol Negotiation Result:

EventID: protres (0x0001).

Description: This event is used to report the result of the protocol negotiation.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters:

- Negotiation Result:

- ParameterId: result (0x0001).
- Description: reports whether the protocol negotiation has been successful.
- Type: Enumeration.
- Possible Values:
  - "Success" (0x0001): the protocol negotiation on the termination has been successful.
  - "Failure" (0x0000): the protocol negotiation on the termination has failed.

- Possible Failure Cause:

- ParameterId: cause (0x0002).
- Description: indicates the possible failure cause.
- Type: Enumeration.
- Possible Values:
  - "Unsp" (0x0001): the protocol negotiation has failed for an unspecified reason.
  - "V8V34" (0x0002): the V.8 or the V.34 protocol negotiation has failed (modem termination only).

Rate Change:

EventID: ratechg (0x0002).

Description: This event is used to report a rate change.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters:

- New Rate:

- ParameterId: rate (0x0001).
- Description: reports the new rate for the termination.
- Type: Integer.
- Possible Values: transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).

15.2.1.3 Signals

Activate Protocol:

SignalID: actprot (0x0001).

Description: Activate the higher layer protocol.

Signal type: Brief.

Duration: N/A.

Additional parameter:

- Local Peer Role:

- ParameterID: localpeer (0x0001).
- Type: Enumeration.

- Possible values:
  - "Orig" (0x0000): originating.
  - "Term" (0x0001): terminating.
- Description: This parameter is optional, but is required for modem and fax calls. It is used to inform the modem whether it should act as originating or terminating peer.

15.2.1.4 Statistics

None.

15.2.1.5 Procedures

This package is used to set up data calls within the CS domain. For more information on the IWF, refer to 3GPP TS 29.007 [6].

When the Media Gateway Controller initiates the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure, it shall provide the PLMN BC ("plmnbc" property above) for the termination on the mobile side and the ISDN BC (standard H.248 properties, subclause "Bearer Capabilities") for the termination on the fixed side. For a mobile-to-mobile call, it shall provide the PLMN BC on both terminations.

The presence of the PLMN BC property may trigger the use of the IWF.

Once the bearer has been established, after B-answer, the "Activate Interworking Function" procedure is used to activate the IWF. The Activate Protocol signal ("actprot") will start the negotiation of the layer 2 protocols on both sides. If a modem or fax service is requested, the signal shall contain the Local Peer Role parameter ("localpeer"), to tell the modem whether it should act as originating or terminating peer.

NOTE: The Activate Protocol signal is needed only after B-answer as described above, to activate the protocol timers at the correct time. This is the only time when this signal is needed (specifically, the signal is not used after a handover sequence or for lawful interception).

The IWF Protocol Indication notifications are used by the MGW to inform the MSC server about IWF protocol events. The MSC has to request the detection of the events "Protocol Negotiation Result" and "Rate Change" in the "Activate IWF" procedure, the "Establish Bearer" procedure, the "Prepare Bearer" procedure, the "Modify Bearer" procedure or the "Reserve Circuit" procedure.

For handover to GSM, or change of channel characteristics within the GSM network, the property GSM Channel Coding ("gsmchancod"), which contains the information about the channel type and the number of channels, shall be transmitted to the termination on the mobile side in the "Establish Bearer", the "Prepare Bearer" and the "Reserve Circuit" procedures together with the PLMN BC. The presence of the GSM Channel Coding property also indicates that the termination is using a GSM access network.

15.2.2 TFO package

The addition of text encoding for the TFO codec list is for further study.

PackageID: threegtfoc (0x0031)

Version: 1

Extends: None

This package defines events and properties for Tandem Free Operation (TFO) control. TFO uses inband signalling and procedures for Transcoders to enable compressed speech to be maintained between a tandem pair of transcoders. This package allows an MGW which has inserted a transcoder to support TFO.

15.2.2.1 Properties

TFO Activity Control:

PropertyID: tfoenable (0x0001).

Description: Defines if TFO is enabled or not.

Type: Enumeration.

Possible Values:

- "On" (0x0001): TFO is enabled, TFO protocol is supported.
- "Off" (0x0002): TFO is not enabled, TFO protocol is not initiated or terminated.

Defined in: Local Control descriptor.

Characteristics: Read/Write.

TFO Codec List:

PropertyID: codeclist (0x0002).

Description: List of codecs for use in TFO protocol, the Local Used Codec (see 3GPP TS 28.062 [5]) is always the first entry in the list.

Type: Octet string.

Possible Values:

- List of codec types; each entry:
  - As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].

Defined in: Local Control descriptor.

Characteristics: Read/Write.

15.2.2.2 Events

Optimal Codec Event:

EventID: codec_modify (0x0010).

Description: The event is used to notify the MGC that TFO negotiation has resulted in an optimal codec type being proposed.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters:

- Optimal Codec Type.
  - ParameterID: optimalcodec (0x0011).
  - Description: indicates which is the proposed codec type for TFO.
  - Type: Octet string.

- Possible Values:
  - Codec Type: As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].

Codec List Event:

EventID: distant codec_list (0x0012).

Description: The event is used to notify the MGC of the distant TFO partner's supported codec list.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters:

- Distant Codec List:
  - ParameterID: distlist(0x0013).
  - Description: indicates the codec list for TFO.
  - Type: Octet string.
  - Possible Values:
    - List of codecs of type Codec Type: As defined in ITU-T Recommendation Q.765.5 [24], for single codec information (figure 14/Q.765.5), where the Codec Information is defined either in ITU-T Recommendation Q.765.5 [24] or in another specification for the given Organization Identifier. For 3GPP codecs these are defined in 3GPP TS 26.103 [16].
  - The first Codec Type in the list is the Distant Used Codec, received from the distant TFO partner (see 3GPP TS 28.062 [5]).

15.2.2.3 Signals

None.

15.2.2.4 Statistics

None.

15.2.2.5 Procedures

For the procedures for TFO see 3GPP TS 28.062 [5].

The use of the properties in this package is applicable only when the MGW Termination to which the package properties are applied has the media stream property for Codec Type set to ITU-T Recommendation G.711 [25] (see annex C of ITU-T Recommendation H.248 [10]). Furthermore, the package properties are applicable only if the Codec Type property of the media stream at the opposing MGW Termination is not set to ITU-T Recommendation G.711 [25].

15.2.3 3G Expanded Call Progress Tones Generator Package

PackageID: threegxcg(0x0032)

Version: 1

Extends: xcg version1

This package extends "Expanded Call Progress Tones Generator Package", as defined in ITU-T Recommendation Q.1950 [23] (see 3GPP TS 29.205 [7]). The package adds a new toneId for CAMEL prepaid warning tone.

15.2.3.1 Properties

None.

15.2.3.2 Events

None.

15.2.3.3 Signals

CAMEL Prepaid Warning Tone:

SignalID: cpwt (0x004f).

Description: Generate CAMEL prepaid warning tone to inform the party that the Max Call Period Duration is about to expire. CAMEL prepaid warning tone is defined in 3GPP TS 23.078 [22]. The physical characteristic of CAMEL prepaid warning tone is available in the gateway.

Signal type: Brief.

Duration: Provisioned, Not Auditable.

Additional parameters:

- Tone Direction.
- ParameterID: td (0x0010).
- Type: Enumeration.
- Values:
  - "Ext" (0x01): external.
  - "Int" (0x02): internal.
  - "Both" (0x03): Both.
- Default: "Ext".

15.2.3.4 Statistics

None.

15.2.3.5 Procedures

None.

15.2.4 Modification Of Link Characteristics Bearer Capability

PackageName: Modification of Link Characteristics Bearer Capability

PackageID: threegmlc(0x0046)

Description: This package contains an event that when requested by the MGC will cause the MG to notify the MGC that modification of the link characteristics is allowed. This notification is typically generated when the bearer has been established.

Version: 1

Extends: None

15.2.4.1 Properties

None.

15.2.4.2 Events

Bearer Modification Support Event.

EventID: mod_link_supp (0x0001).

Description: The event is used to notify the MGC that modification of the link characteristics of the current bearer connection is permitted.

EventsDescriptor Parameters: None.

ObservedEventsDescriptor Parameters: None.

15.2.4.3 Signals

None.

15.2.4.4 Statistics

None.

15.2.4.5 Procedures

If the MGC is interested in determining whether or not the bearer associated with a termination supports modification of its link characteristics it shall send a request (Add/Modify/Move) with the Bearer Modification Support Event. When the bearer is established the MG will indicate in a Notify request to the MGC if modification of link characteristics is supported. A notify will NOT be generated if modification is NOT supported on the bearer.

15.2.5 Enhanced Circuit Switched Data package

PackageID: threegcsden (0x0082)

Version: 1

Extends: threegcsd (0x030) Version 1

This package extends "Circuit Switched Data Package", as defined in subclause 15.1.2. This package adds a new property to define the user bitrate at a Nb/Iu termination.

15.2.5.1 Properties

Bitrate

PropertyID: bitrate (0x0003).

Description: user bitrate.

Type: Integer.

Possible Values: transmission rate in bits per second, rounded to the nearest integer value. The value must be a valid bitrate (e.g. 33 600, 28 800).

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

15.2.5.2 Events

None.

15.2.5.3 Signals

None.

15.2.5.4 Statistics

None.

15.2.5.5 Procedures

This package is used in addition to the 3GCSD package for CS data calls. It is used for indicating the user data rates for Inter-MSC SRNS Relocation and handover cases. If the Bitrate is not 64 kb/s at one termination in the MGW but its opposing termination has properties that define its bitrate to be 64 kb/s (e.g. TMR=UDI) then A-TRAU' protocol shall be applied by the MGW. For further details see 3GPP TS 29.007 [6].

15.2.6 Cellular Text telephone Modem Text Transport

PackageName: CTM Text Transport

PackageID: threegctm (0x0068)

Description: The CTM text transport package is intended for enabling robust real time text conversation through a voice channel primarily intended for communication over mobile networks. This package includes the mechanisms needed to transport T.140 text conversation streams [19] in a voice channel environment, using the CTM Cellular Text Telephone Modem specified in 3GPP TS 26.226 [18]. The transport mechanism allows for alternating transport of voice and text.

Version: 1

Extends: None

15.2.6.1 Properties

Text termination connection state:

PropertyID: connstate (0x0001).

Description: The connection state property is used to reflect details of the achieved text connection. For each new session connstate should be reset to "Prepare".

Type: Enumeration.

Possible values:

- "Idle" (0x0001) meaning that CTM availability negotiation has failed; CTM is disabled except for monitoring the incoming line for CTM signals.
- "Prepare" (0x0002) for CTM being enabled, monitoring for CTM signals and ready to send CTM signals.
- "Connected" (0x0006) for CTM being enabled and to have detected CTM availability in the current session.

Defined in: TerminationState.

Characteristics: Read/Write.

Text Transport:

PropertyID: trpt (0x0002)

Description: The transport parameter reflects the transport mechanism selected for the Text Conversation termination. In 3GPP, one possible transport mechanism is the Cellular Text Telephone Modem as in 3GPP TS 26.226 [18]. It is used when it is desired to transport the text conversation in a voice channel. CTM enables alternating use of the voice channel for voice and text during the call.

Type: Enumeration.

Possible values:

- "ctm" (0x0008) for text transport in mobile voice channel as in 3GPP TS 26.226 [18].

Defined in: LocalControl.

Characteristics: Read/Write.

Text Protocol Version:

PropertyID: textproto (0x0003).

Description: The version of the ITU-T Recommendation T.140 [19] protocol used in the connection.

Type: Integer.

Possible values:

- Any integer corresponding to a T.140 version number (currently 1) as in ITU-T Recommendation H.248 .2 [17].

Defined in: LocalControl.

Characteristics: Read/Write.

15.2.6.2 Events

Connection State Change:

EventID: connchange (0x0001).

Description:

- This event will occur when the text connection state for the termination has changed.
- The parameter values are the same as the Connection State property.
- If a CTM availability request timed out, the state is returned to Idle.

EventDescriptorParameters:

None.

ObservedEventDescriptorParameters:

ParameterName: Connection Change.

ParameterID: connchng (0x0001).

Type: Enumeration.

Possible Values: As property threegctm/connstate.

15.2.6.3 Signals

None.

15.2.6.4 Statistics

Characters Transferred:

StatisticsID: chartrans (0x0001).

Description: Number of bytes of ITU-T Recommendation T.140 [19] data transferred through the termination.

Units: count.

15.2.6.5 Procedures

If the MGC detects a CTM indication it shall send a request (Add/Modify/Move) with the CTM Transport property. Upon receivable of it, the MGW shall allocate a termination with CTM capabilities. Normal usage is that the CTM enabled termination handles one text stream and one voice stream and alternates between transporting voice and text in the voice channel according to the functionality of CTM. This termination could for example be combined in a context with a termination with the txp and ctyp packages for gateway functionality between PSTN text telephony and mobile CTM based text telephony. These packages are described in ITU-T Recommendation H.248.2 [17].

The CTM algorithm has states. The states defined in the text termination connection state property are mapped into CTM states in the following way:

- Idle: CTM disabled because of an unsuccessful CTM availability negotiation.
- Prepare: normal initial state with CTM monitoring active.
- Connected: CTM negotiation is completed.

For each new call, the CTM termination shall be put in the Prepare state.

When the CTM availability negotiation is completed, the state is Connected.

The state transitions are automatic, except for setting Prepare state as described above.

15.2.7 IP transport package

PackageID: threegiptra (0x0083)

Version: 1

Extends: None

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

15.2.7.1 Properties

IP transport address:

PropertyID: ipv4trans (0x0001).

Description: IP V4 transport address.

Type: 32 bits IPv4Address.

Possible values:

- Specified as Transport Layer Address in 3GPP TS 25.413 [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 3GPP TS 25.413 [20].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

UDP port:

PropertyID: UDport (0x0003).

Description: UDP port.

Type: Unsigned integer.

Possible values: 0…65535.

- Specified as Iu transport Association in 3GPP TS 25.413 [20].

Defined in: Local Control Descriptor.

Characteristics: Read/Write.

15.2.7.2 Events

None.

15.2.7.3 Signals

None.

15.2.7.4 Statistics

None3

15.2.7.5 Procedures

When the MSC Server knows that it shall apply the set up procedure in accordance with 3GPP TS 25.414 [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 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.

15.2.8 Flexible Tone Generator Package

PackageID: threegflex (0x0084)

Version: 1

Extends: threegxcg version 1

This package extends "3G Expanded Call Progress Tones Generator Package", as defined in chapter 15.1.4 above. This package adds a new tone for call duration control in CAMEL phase 4, supporting variable sequence of tones and burst list.

15.2.8.1 Properties

None.

15.2.8.2 Events

None.

15.2.8.3 Signals

Signal Name: Flexible Tone.

SignalID: ft (0x0050).

Description: Generate flexible 900 Hz tone. The physical characteristics of Flexible Tone is not described in the additional parameters. It shall be available in the Media Gateway.

SignalType: Brief.

Duration: Provisioned.

Additional Parameters:

- Parameter Name: Burst List Direction

Description: Used to indicate the direction the tone is to be sent. External indicates that the tone is sent from the MG to an external point. Internal indicates that the tone is played into the Context to the other terminations. Both way indicates both internal and external behaviour.

ParameterID: bld (0x0001).

Type: Enumeration.

Possible Values:

- "Ext" (0x01): External.
- "Int" (0x02): Internal.
- "Both" (0x03): Both way.
- Default: "Ext" (0x01).

Parameter Name: numberOfBursts.

Description: Number of bursts in the burst list.

ParameterID: nob (0x0002).

Type: Integer.

Possible values: 1 to 3.

Default: 1.

Parameter Name: burstInterval.

Description: Time interval between two consecutive bursts expressed in amount of 100 ms units.

ParameterID: bi (0x0003).

Type: Integer.

Possible values: 1 to 20.

Default: 2.

Parameter Name: numberOfTonesInBurst.

Description: Number of tones to be played in each burst.

ParameterID: notib (0x0004).

Type: Integer.

Possible values: 1 to 3.

Default: 3.

Parameter Name: toneDuration.

Description: Duration of each tone in a burst expressed in amount of 100 ms units.

ParameterID: td (0x0005).

Type: Integer.

Possible values: 1 to 20.

Default: 2.

Parameter Name: toneInterval.

Description: Time interval between two consecutive tones in a burst expressed in amount of 100 ms units.

ParameterID: ti (0x0006).

Type: Integer.

Possible values: 1 to 20.

Default: 2.

15.2.8.4 Statistics

None.

15.2.8.5 Procedures

The MGW should generate the tones using the above mentioned parameters as specified in 3GPP TS 23.078 [22] subclause 4.5.7.1.2

In case MGC requests to generate a flexible tone specifying a signal type "Timeout" and a "Duration" longer than the time needed to play the whole Burst List no action will be taken on the incoming stream to fill the gap. I.e. if any user plane stream is received on one side of the termination after the end of the burst list, it will be present, unchanged, on the other side of the termination as well (transparent mode).

3GPP TSG-CN WG4 Meeting #26 **N4-050480**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **118** ⌘ **rev** **2** ⌘ Current version: **4.10.0** ⌘

*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:	⌘	Requirements for support of procedures
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	06/01/2005
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:

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:	⌘	In order to have an interoperable Mc interface, it is necessary for vendors to have guidance on the minimum set of functionality (ie mandatory requirements) that is required. Currently this level of detail is not provided in 29.232 with regard to the requirements for support of the procedures defined in sections 14.1 and 14.2.
Summary of change:	⌘	Whether support of procedures is optional, conditional or mandatory for successful implementation of the Mc interface is identified. **This is an essential correction**
Consequences if not approved:	⌘	No guidance is provided about the required procedure set to make the Mc interface successful and interoperable. Vendor implementations will vary widely resulting intervendor interoperability being unsuccessful and the functionality of the BICN network being severly compromised.

Clauses affected:	⌘	14.1, 14.2

Other specs affected: ⌘	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

⌘

Other comments:	⌘	This CR is based on the assumption that CR096 to 29.232 has been approved, and takes the content of that CR as it's baseline for section 14.2.

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.

14.1 Call independent H.248 transactions

Table 2 shows the relationship between each non 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], as well as specifying the requirement for support of each procedure on the Mc interface.

For further description of error codes and service change reasons, refer to ITU-T Recommendation H.248 Annex L [14].

Table 2: Correspondence between Q.1950 non call-related transactions and TS 23.205 procedures

Transaction used in Q.1950	Procedure defined in 3GPP TS 23.205 [2]	Support	Comments
BIWF_Service_Cancellation_Indication	MGW Out of Service	Mandatory	
BIWF_Lost_Communication	MGW Communication Up	Mandatory	
BIWF_Service_Restoration_Indication	MGW Restoration	Mandatory	
BIWF_Registration	MGW Register	Mandatory	
BIWF_Re-Registration	MGW Re-register	Mandatory	
CCU Ordered BIWF Re-Registration	(G)MSC Server Ordered Re-register	Mandatory	
CCU Initiated Service Restoration	(G)MSC Server Restoration	Optional	
CCU Initiated Service Cancellation	(G)MSC Server Out of Service	Optional	
BIWF_Service_Cancellation_Indication	Termination Out-of-Service	Mandatory	Is a part of BIWF Service cancellation in Q.1950
BIWF_Service_Restoration_Indication	Termination Restoration	Mandatory	Is a part of BIWF Service cancellation in Q.1950
Audit_Values	Audit Value	FFS	
Audit_Capabilities	Audit Capability	Optional	
BIWF_Capability_Change	Capability Update	Optional	

****** *Next Changed 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], as well as specifying the requirement for support of each procedure on the Mc interface.

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]	Support	Comments
Change_Topology	Change Flow Direction	Mandatory	
Join	Join Bearer Termination	Mandatory	
Isolate	Isolate Bearer Termination	Mandatory	
Establish_BNC_Notify+(tunnel)	Establish Bearer	Mandatory	
Prepare_BNC_Notify+(tunnel)	Prepare Bearer	Mandatory	
Cut_Through	Change Through Connection	Mandatory	
Not defined in Q.1950	Activate Interworking Function	Optional	
Cut_BNC (include several procedures).	Release Bearer (Release Bearer and Release termination)	Mandatory	
BNC Established	Bearer Established	Mandatory	
BNC Release	Bearer Released	Mandatory	
Insert_Tone	Send Tone	Mandatory	
Insert_Annoucement	Play Announcement	Mandatory	
Signal Completion	Announcement Completed	Mandatory	
Detect_Digit	Detect DTMF	Mandatory	
Insert_Digit	Send DTMF	Mandatory	
Digit Detected	Report DTMF	Mandatory	
Confirm_Char	Confirm Char	Optional	
Modify_Char	Modify Char	Optional	
Reserve_Char	Reserve Char	Optional	
BNC Modified	Bearer Modified	Optional	
Echo Canceller	Activate Voice Processing Function	Mandatory	
BNC Modification failed	Bearer Modified Failed	Optional	
Tunnel (MGC-MGW)	Tunnel Information Down	Optional	Shall be supported if the Nb interface transport protocol is IP
Tunnel (MGW-MGC)	Tunnel Information Up	Optional	Shall be supported if the Nb interface transport protocol is IP
Insert _Tone	Stop Tone	Mandatory	
Insert _Announcement	Stop Announcement	Mandatory	
Detect_Digit	Stop DTMF Detection	Optional	
Insert_Digit	Stop DTMF	Mandatory	
Signal Completion	Tone Completed	Optional	
Not defined	Reserve Circuit	Mandatory	
Not defined	Command Rejected	Mandatory	
Not defined	TFO Activation	Optional	
Not defined	Codec Modify	Optional	
Not defined	Optimal Codec and Distant List_Notify	Optional	
Not defined	Distant Codec List	Optional	
Modify_Char	Modify Bearer Characteristics	Mandatory	
Not defined	Rate Change	Optional	
Not defined	Bearer Modification Support	Optional	
Not defined	Protocol Negotiation Result	Optional	
Reserve_Char	Reserve Bearer Characteristics	Optional	
Confirm_Char	Confirm Bearer Characteristics	Optional	

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).

3GPP TSG-CN WG4 Meeting #26 **N4-050481**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **119** ⌘ **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:	⌘	Requirements for support of procedures
Source:	⌘	Vodafone, Ericsson, Nokia, Nortel
Work item code:	⌘	TEI4
Date:	⌘	06/01/2005
Category:	⌘	**A**
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:	⌘	In order to have an interoperable Mc interface, it is necessary for vendors to have guidance on the minimum set of functionality (ie mandatory requirements) that is required. Currently this level of detail is not provided in 29.232 with regard to the requirements for support of the procedures defined in sections 14.1 and 14.2.
Summary of change:	⌘	Whether support of procedures is optional, conditional or mandatory for successful implementation of the Mc interface is identified. **This is an essential correction**
Consequences if not approved:	⌘	No guidance is provided about the required procedure set to make the Mc interface successful and interoperable. Vendor implementations will vary widely resulting intervendor interoperability being unsuccessful and the functionality of the BICN network being severly compromised.

Clauses affected:	⌘	14.1, 14.2

Other specs affected: ⌘	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

⌘

Other comments:	⌘	This CR is based on the assumption that CR097 to 29.232 has been approved, and takes the content of that CR as it's baseline for section 14.2.

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.

14.1 Call independent H.248 transactions

Table 2 shows the relationship between each non 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], as well as specifying the requirement for support of each procedure on the Mc interface.

For further description of error codes and service change reasons, refer to ITU-T Recommendation H.248.8 [14].

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

Transaction used in ITU-T Recommendation Q.1950 [23]	Procedure defined in 3GPP TS 23.205 [2]	Support	Comments
BIWF_Service_Cancellation_Indication	MGW Out of Service	Mandatory	
BIWF_Lost_Communication	MGW Communication Up	Mandatory	
BIWF_Service_Restoration_Indication	MGW Restoration	Mandatory	
BIWF_Registration	MGW Register	Mandatory	
BIWF_Re-Registration	MGW Re-register	Mandatory	
CCU Ordered BIWF Re-Registration	(G)MSC Server Ordered Re-register	Mandatory	
CCU Initiated Service Restoration	(G)MSC Server Restoration	Optional	
CCU Initiated Service Cancellation	(G)MSC Server Out of Service	Optional	
BIWF_Service_Cancellation_Indication	Termination Out-of-Service	Mandatory	Is a part of BIWF Service cancellation in Q.1950
BIWF_Service_Restoration_Indication	Termination Restoration	Mandatory	Is a part of BIWF Service cancellation in Q.1950
Audit_Values	Audit Value	FFS	
Audit_Capabilities	Audit Capability	Optional	
BIWF_Capability_Change	Capability Update	Optional	
	MGW Resource Congestion Handling - Activate	Mandatory	
	MGW Resource Congestion Handling - Indication	Mandatory	

****** *Next Changed Section* ******

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], as well as specifying the requirement for support of each procedure on the Mc interface.

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]	Support	Comments
Change_Topology	Change Flow Direction	Mandatory	
Join	Join Bearer Termination	Mandatory	
Isolate	Isolate Bearer Termination	Mandatory	
Establish_BNC_Notify+(tunnel)	Establish Bearer	Mandatory	
Prepare_BNC_Notify+(tunnel)	Prepare Bearer	Mandatory	
Cut_Through	Change Through-Connection	Mandatory	
Not defined in Q.1950	Activate Interworking Function	Optional	
Cut_BNC (include several procedures).	Release Bearer (Release Bearer and Release termination)	Mandatory	
BNC Established	Bearer Established	Mandatory	
BNC Release	Bearer Released	Mandatory	
Insert_Tone	Send Tone	Mandatory	
Insert_Annoucement	Play Announcement	Mandatory	
Signal Completion	Announcement Completed	Mandatory	
Detect_Digit	Detect DTMF	Mandatory	
Insert_Digit	Send DTMF	Mandatory	
Digit Detected	Report DTMF	Mandatory	
Confirm_Char	Confirm Char	Optional	
Modify_Char	Modify Char	Optional	
Reserve_Char	Reserve Char	Optional	
BNC Modified	Bearer Modified	Optional	
Echo Canceller	Activate Voice Processing Function	Mandatory	
BNC Modification failed	Bearer Modified Failed	Optional	
Tunnel (MGC-MGW)	Tunnel Information Down	Optional	Shall be supported if the Nb interface transport protocol is IP
Tunnel (MGW-MGC)	Tunnel Information Up	Optional	Shall be supported if the Nb interface transport protocol is IP
Insert_Tone	Stop Tone	Mandatory	
Insert_Announcement	Stop Announcement	Mandatory	
Detect_Digit	Stop DTMF Detection	Optional	
Insert_Digit	Stop DTMF	Mandatory	
Signal Completion	Tone Completed	Optional	
Not defined	Reserve Circuit	Mandatory	
Not defined	Command Rejected	Mandatory	
Not defined	TFO Activation	Optional	
Not defined	Codec Modify	Optional	
Not defined	Optimal Codec and Distant List_Notify	Optional	
Not defined	Distant Codec List	Optional	
Modify_Char	Modify Bearer Characteristics	Mandatory	
Not defined	Rate Change	Optional	
Not defined	Bearer Modification Support	Optional	
Not defined	CTM report	Optional	
Not defined	Prepare IP transport	Optional	
Not defined	Modify IP transport address	Optional	
Not defined	Protocol Negotiation Result	Optional	
Reserve_Char	Reserve Bearer Characteristics	Optional	
Confirm_Char	Confirm Bearer Characteristics	Optional	
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).			

3GPP TSG-CN WG4 Meeting #26 **N4-050482**
Sydney, AUSTRALIA. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.232** **CR** **120** ⌘ **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:	⌘	Requirements for support of procedures
Source:	⌘	CN4
Work item code:	⌘	TEI4
Date:	⌘	06/01/2005
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:	⌘	In order to have an interoperable Mc interface, it is necessary for vendors to have guidance on the minimum set of functionality (ie mandatory requirements) that is required. Currently this level of detail is not provided in 29.232 with regard to the requirements for support of the procedures defined in sections 14.1 and 14.2.
Summary of change:	⌘	Whether support of procedures is optional, conditional or mandatory for successful implementation of the Mc interface is identified. **This is an essential correction**
Consequences if not approved:	⌘	No guidance is provided about the required procedure set to make the Mc interface successful and interoperable. Vendor implementations will vary widely resulting intervendor interoperability being unsuccessful and the functionality of the BICN network being severly compromised.

Clauses affected:	⌘	14.1, 14.2

Other specs affected: ⌘	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

⌘

Other comments:	⌘	This CR is based on the assumption that CR097 to 29.232 has been approved, and takes the content of that CR as it's baseline for section 14.2.

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.

14.1 Call independent H.248 transactions

Table 2 shows the relationship between each non 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], as well as specifying the requirement for support of each procedure on the Mc interface.

For further description of error codes and service change reasons, refer to ITU-T Recommendation H.248.8 [14].

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

Transaction used in ITU-T Recommendation Q.1950 [23]	Procedure defined in 3GPP TS 23.205 [2]	Support	Comments
BIWF_Service_Cancellation_Indication	MGW Out of Service	Mandatory	
BIWF_Lost_Communication	MGW Communication Up	Mandatory	
BIWF_Service_Restoration_Indication	MGW Restoration	Mandatory	
BIWF_Registration	MGW Register	Mandatory	
BIWF_Re-Registration	MGW Re-register	Mandatory	
CCU Ordered BIWF Re-Registration	(G)MSC Server Ordered Re-register	Mandatory	
CCU Initiated Service Restoration	(G)MSC Server Restoration	Optional	
CCU Initiated Service Cancellation	(G)MSC Server Out of Service	Optional	
BIWF_Service_Cancellation_Indication	Termination Out-of-Service	Mandatory	Is a part of BIWF Service cancellation in Q.1950
BIWF_Service_Restoration_Indication	Termination Restoration	Mandatory	Is a part of BIWF Service cancellation in Q.1950
Audit_Values	Audit Value	FFS	
Audit_Capabilities	Audit Capability	Optional	
BIWF_Capability_Change	Capability Update	Optional	
	MGW Resource Congestion Handling - Activate	Mandatory	
	MGW Resource Congestion Handling - Indication	Mandatory	

****** *Next Changed Section* ******

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], as well as specifying the requirement for support of each procedure on the Mc interface.

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]	Support	Comments
Change_Topology	Change Flow Direction	Mandatory	
Join	Join Bearer Termination	Mandatory	
Isolate	Isolate Bearer Termination	Mandatory	
Establish_BNC_Notify+(tunnel)	Establish Bearer	Mandatory	
Prepare_BNC_Notify+(tunnel)	Prepare Bearer	Mandatory	
Cut_Through	Change Through-Connection	Mandatory	
Not defined in Q.1950	Activate Interworking Function	Optional	
Cut_BNC (include several procedures).	Release Bearer (Release Bearer and Release termination)	Mandatory	
BNC Established	Bearer Established	Mandatory	
BNC Release	Bearer Released	Mandatory	
Insert_Tone	Send Tone	Mandatory	
Insert_Annoucement	Play Announcement	Mandatory	
Signal Completion	Announcement Completed	Mandatory	
Detect_Digit	Detect DTMF	Mandatory	
Insert_Digit	Send DTMF	Mandatory	
Digit Detected	Report DTMF	Mandatory	
Confirm_Char	Confirm Char	Optional	
Modify_Char	Modify Char	Optional	
Reserve_Char	Reserve Char	Optional	
BNC Modified	Bearer Modified	Optional	
Echo Canceller	Activate Voice Processing Function	Mandatory	
BNC Modification failed	Bearer Modified Failed	Optional	
Tunnel (MGC-MGW)	Tunnel Information Down	Optional	Shall be supported if the Nb interface transport protocol is IP
Tunnel (MGW-MGC)	Tunnel Information Up	Optional	Shall be supported if the Nb interface transport protocol is IP
Insert_Tone	Stop Tone	Mandatory	
Insert_Announcement	Stop Announcement	Mandatory	
Detect_Digit	Stop DTMF Detection	Optional	
Insert_Digit	Stop DTMF	Mandatory	
Signal Completion	Tone Completed	Optional	
Not defined	Reserve Circuit	Mandatory	
Not defined	Command Rejected	Mandatory	
Not defined	TFO Activation	Optional	
Not defined	Codec Modify	Optional	
Not defined	Optimal Codec and Distant List_Notify	Optional	
Not defined	Distant Codec List	Optional	
Modify_Char	Modify Bearer Characteristics	Mandatory	
Not defined	Rate Change	Optional	
Not defined	Bearer Modification Support	Optional	
Not defined	CTM report	Optional	
Not defined	Prepare IP transport	Optional	
Not defined	Modify IP transport address	Optional	
Not defined	Protocol Negotiation Result	Optional	
Reserve_Char	Reserve Bearer Characteristics	Optional	
Confirm_Char	Confirm Bearer Characteristics	Optional	
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).			