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

NP-020615

Source: TSG CN WG3

Title: CRs on R99 Work Item TEI, [CR Pack 3]

Agenda item: 7.11

Document for: APPROVAL

Introduction:

This document contains 3 CRs on R99 WI TEI, including the corresponding mirror CRs (as required).

These CRs have been agreed by TSG CN WG3 and are forwarded to TSG CN Plenary meeting #18 for approval.

WG_tdoc	Title	Spec	CR	Re	Cat	Rel	Version_old
N3-020841	Correction on mapping of BC-IE	29.007	062		F	R99	3.10.0
N3-020842	Correction on mapping of BC-IE	29.007	063		Α	Rel-4	4.5.0
N3-020811	Correction on mapping of BC-IE	29.007	059		Α	Rel-5	5.3.0

3GPP TSG-CN WG3 Meeting #25 Miami, USA, 23rd - 27th September 2002.

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How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

10.2.2.6 Mapping Functions

The following tables (7A + 7B) show that only the ISDN BC is used for mapping (exceptions are indicated).

NOTE: The ISDN/PLMN BC-IE mapping shall be performed as specified in tables 7A and 7B. This shall be done to allow setup of a compatible end-to-end connection between two UEs or one UE and an ISDN terminal.

In the following tables 7A and 7B the comparison is drawn between parameters in the PLMN call set up request message and that of the ISDN call set up request message. In some cases no comparable values are available and these will be marked as such. In these cases reference will need to be made to the table of network interworking in 3GPP TS 29.007 to identify the appropriate choice. In some cases it is not necessary to support a particular option, and in this case those parameters will be annotated appropriately.

The PLMN parameters and values are as in 3GPP TS 24.008 in combination as in 3GPP TS 27.001. The ISDN parameters and values are as in Q.931 (05/98).

Table 7A: Comparable setting of parameters in PLMN and ISDN: Mobile Originated

Octet	PLMN BC parameter value	Octet	ISDN BC parameter value
1	Bearer Capability IEI	1	Bearer Capability IEI
2	Length of BC contents	2	Length of BC contents
3	Radio channel requirement		No comparable field
#76	half rate channel		140 comparable field
	full rate channel		
	dual, full, rate preferred		
	dual, half rate preferred		
3	Coding Standard	3	Coding Standard
#5	GSM standard coding	#76	CCITT standardized coding
3	Transfer mode	4	Transfer mode
#4	circuit mode	#76	circuit mode
	packet mode (note7)		packet mode
3	Information transfer capability	3	Information transfer capability
#31	speech	#51	speech
	unrestricted digital		unrestricted digital
	3,1 kHz audio ex PLMN		3,1 kHz audio
	facsimile group 3 (note 1)		3,1 kHz audio
	other ITC (see octet 5a)		no comparable value
5a	Other ITC		
#76	restricted digital		(note 18)
4	Compression (note 14)		No comparable field
#7	data compression allowed		·
	data compression not allowed		
4	Structure	4a	Structure (note 4)
#65	SDU integrity	#75	
	unstructured		
4	Duplex mode	5d	Duplex mode
#4	half duplex	#7	half duplex
	full duplex		full duplex
4	Configuration	4a	Configuration (note 4)
#3	point to point	#43	
4	Establishment	4a	Establishment (note 4)
#1	demand	#21	
4	NIRR (note 12)		
	no meaning		No comparable field
	Data ≤ 4.8kbit/s, FR nt,		
	6kbit/s radio interface is requested		
5	Rate adaptation	5	User information layer 1 protocol
#54	no rate adaptation (note 2)	#51	no comparable value
	V.110, I.460/X.30 rate adaptation		CCITT standardized rate adaption
			V.110, I.460/X.30
	CCITT X.31 flag stuffing (note 25)		(note 25)
			Recommendation G.711 μ-law
	No comparable value(note 11)		Recommendation G.711 A-law (note
	No comparable value(note 11)		3)
	No compareble value/sets 44)		Recommendation G.721 32 kbit/s
	No comparable value(note 11)		ADPCM and I.460
	other rate adentation (accorded 55)		No comparable value
F 0	other rate adaptation (see octet 5a)	 	
5a #5 4	Other rate adaptation		No comparable value
#54	V.120 (note 17)		No comparable value
	PIAFS (note 27)		H 222 8 H 245 (note 26)
5	H.223 & H.245 Signalling access protocol		H.223 & H.245 (note 26)
5 #31	1.440/1.450		No comparable field
πJ I	X.21 (note 24)		
	X.28, ded.PAD, indiv.NUI (note 24)		
	X.28, ded PAD, univ.NUI (note 24)		
	X.28, non-ded PAD (note 24)		
	X.32 (note 24)		
6	Synchronous/asynchronous	5a	Synchronous/asynchronous
#1	synchronous	#7	synchronous
l '	asynchronous	["	asynchronous
6	User info. layer 1 protocol	5	User info. layer 1 protocol
	protocol	<u> </u>	processing and a processing

Octet	PLMN BC parameter value	Octet	ISDN BC parameter value
#52	default layer 1 protocol	#51	see section under rate adaptation for
	, ,		3GPP TS 24.008 above
6a	Number of stop bits	5c	Number of stop bits
#7	1 bit	#76	1 bit
_	2 bits		2 bits
6a	Negotiation	5a	Negotiation
#6	In band neg. not possible	#6	In band neg. not possible
0-	no comparable value Number of data bits		In band neg. possible (note 10)
6a #5	Number of data bits	5c #54	Number of data bits excluding parity if present
#5	7 bits	#54	7 bits
	8 bits		8 bits
6a	User rate	5a	User rate
#41	0.3 kbit/s	#51	0.3 kbit/s
	1.2 kbit/s		1.2 kbit/s
	2.4 kbit/s		2.4 kbit/s
	4.8 kbit/s		4.8 kbit/s
	9.6 kbit/s		9.6 kbit/s
	12 kbit/s (note 7)		12 kbit/s
	1.2 kbit/s / 75 bit/s (note 24)		75 bit/s / 1.2 kbit/s
	any value no comparable value		19.2 kbit/s (note 14) Ebits or inband negotiation
	no comparable value		(note 10)
6b	Intermediate rate	5b	Intermediate rate (note 13)
#76	8 kbit/s	#76	8 kbit/s or not used
	16 kbit/s		16 kbit/s or not used
	any value		32 kbit/s or not used (note 14)
6b	NIC on Tx	5b	NIC on Tx
#5	does not require	#5b	does not require
	requires (note7)		requires (note 8)
6b	NIC on Rx	5b	NIC on Rx
#4	cannot accept	#4	cannot accept
Ch	can accept (note 7)	r-	can accept (note 8)
6b #31	Parity information odd	5c #31	Parity information odd
#31	even	#31	even
	none		none
	forced to 0		forced to 0
	forced to 1		forced to 1
6c	Connection element		No comparable field
#76	transparent		
	non-transparent (RLP)		
	both, transp. preferred		
60	both, non-transp. preferred Modem type	5d	Modem type
6c #51	none	#61	no comparable value (note 5)
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	V.21	#O 1	V.21
	V.22		V.22
	V.22bis		V.22bis
	V.23 (note 24)		V.23
	V.26ter		V.26ter
	V.32		V.32
	modem for undef. interface		No comparable value (note 5)
	autobauding type 1		No comparable value (note 5,
7	User info. layer 2 protocol	6	note 10) User info.layer 2 prot. (note 6)
/ #51	X.25 link level (note 24)	U	X.25 link level
	ISO 6429, codeset 0		no comparable value
	COPnoFICt		no comparable value
	videotex profile 1 (note 7)		no comparable value
	X.75 layer 2 modified (CAPI) (note 24)		X.25 link level
6d	Fixed network user rate (note 15)	5a	User rate
#51	FNUR not applicable (note 7)	#51	no comparable value
	9,6 kbit/s		9,6 kbit/s
	12 kbit/s (note 7)		12 kbit/s
	14,4 kbit/s		14,4 kbit/s

Octet	PLMN BC parameter value	Octet	ISDN BC parameter value
	19,2 kbit/s		19,2 kbit/s
	28,8 kbit/s		28,8 kbit/s
	32.0 kbit/s		32.0 kbit/s
	33.6 kbit/s		no comparable value
	38,4 kbit/s		38,4 kbit/s
	48,0 kbit/s		48,0 kbit/s
	56,0 kbit/s		56,0 kbit/s
	64,0 kbit/s		no comparable value (note 16)
6e	Maximum number of traffic channels		No comparable field
#31	1 TCH		
	2 TCH		
	3 TCH		
	4 TCH		
	5 TCH		
	6 TCH		
	7 TCH (note 7)		
	8 TCH (note 7)		
6f	Wanted air interface user rate (note 23)		No comparable field
#41	air interface user rate not applicable (note		
	7)		
	9,6 kbit/s		
	14,4 kbit/s		
	19,2 kbit/s		
	28,8 kbit/s		
	38,4 kbit/s		
	43,2 kbit/s		
	57,6 kbit/s		
	interpreted by the network as 38.4 kbit/s		
	(note 7)		
6d	Other modem type (note 15)	5d	Modem type
#76	No other modem type	#61	no comparable value
	V.34		V.34
6e	Acceptable channel coding(s)		No comparable field
#74	TCH/F4.8 acceptable (note 19)		
	TCH/F9.6 acceptable		
04	TCH/F14.4 acceptable		NI
6f	User initiated modification indicator		No comparable field
#75	(note 23) User initiated modification not		
	required		
	User initiated modification upto 1		
	TCH/F may be requested User initiated modification upto 2		
	TCH/F may be requested		
	User initiated modification upto 3		
	TCH/F may be requested		
	User initiated modification upto 4		
	TCH/F may be requested		
60	Acceptable channel coding(s) (note 20)	1	No comparable field
6g #75	TCH/F28.8 acceptable		140 comparable field
π15	TCH/F26.6 acceptable		
	TCH/F32.0 acceptable (note 22)		
60	Asymmetry preference indication (Note	1	No comparable field
6g #4 2			No comparable field
#43	23)		
	no preference		
	up link biased asymmetry preference down link biased asymmetry preference		
	Juown link biased asymmetry preference		

General Notes

The application rules for coding the information elements ISDN-BC/LLC/HLC as set out in ETR 018 and Q.931 (05/98) shall apply.

Other field values in the ISDN BC-IE not supported in 3GPP TS 24.008 are:

Information transfer rate: In this case default 64 kbit/s is selected.

Flow control on transmission:

Flow control on reception: This shall be selected if outband flow control applies. Outband flow control

is indicated by the absence of the UIL2P parameter for non-transparent

connections.

User information layer 3 protocol: Octet 7 shall not be sent unless specific application rules are given for

particular cases (to be defined by PLMN). End-to-end significant User

Information layer 3 protocol shall be sent by LLC.

Notes regarding particular entries in table 7A:

NOTE 1: If the PLMN BC "Information Transfer Capability" indicates "Facsimile group 3" and only a single PLMN BC is contained in the call set-up request then this shall be mapped to an ISDN BC with:

- coding standard: CCITT;

information transfer capability: 3,1 kHz audio;

transfer mode: circuit;

- information transfer rate: 64 kbit/s;

- user layer 1 protocol: G711 A-law or μ-law (PCS-1900); and

- if an HLC is not present, the network will insert a "Facsimile group 2/3" HLC;

- if an HLC element is present, the network will pass it through unmodified.

If the PLMN BC "Information Transfer Capability" indicates "Facsimile group 3" and two PLMN BCs are contained in the call set-up request, then the same ISDN BC as mentioned above is created. If the first PLMN BC indicates "facsimile group 3" an HLC "facsimile group 2/3" will be inserted by the network (if not received from the UE). However if the first PLMN BC indicates "speech", the network will not send a HLC, irrespective where a HLC was received from the UE or not.

- NOTE 2: This value is present in combination with information transfer capability parameter value "3,1 kHz audio Ex PLMN" or "facsimile group 3" and will therefore be mapped to the value "Recommendation G.711 A-law" or Recommendation G.711 μ -law" (PCS-1900) of the Q.931 (05/98) parameter user layer 1 protocol (see note 3).
- NOTE 3: The value "Recommendation G.711 A-law" or "Recommendation G.711 μ-law" (PCS-1900) applies only when the Q.931 (05/98) parameter information transfer capability indicates "3,1 kHz audio" or "speech".
- NOTE 4: When interworking with an ISDN according to ETS 300 102-1 octets 4a and 4b shall not be included because default values apply. In an ISDN according to Q.931 (05/98) these octets no more exist.
- NOTE 5: In this case octet 5d shall not be included.
- NOTE 6: Octet 6 shall not be sent unless specific application rules are given for a particular case (PLMN specified). End-to-end significant user information layer 2 protocol shall be sent by LLC.
- NOTE 7: Not used for currently defined Bearer Services and Teleservices.
- NOTE 8: These values will only be set if the "Information Transfer Capability" indicates "3,1 kHz audio", synchronous data transmission is used and octet 5b of the ISDN BC is present.
- NOTE 9: (VOID).
- NOTE 10:The PLMN BC-IE parameter value "autobauding modem type 1" will be mapped to the ISDN BC-IE parameter values "inband negotiation possible" and "user rate indicated by E-bits specified in ITU-T Recommendation I.460 or may be negotiated inband" (octet 5a of ISDN BC-IE). If data compression is used, high speed modems, like V.32bis, V.34 and/or V.90 may be used in the IWF. Autobauding may also be used to support user rates less than 9.6 kbit/s towards the PSTN.
- NOTE 11: The ITC value of the PLMN BC-IE "speech", "3,1 kHz audio Ex PLMN" will indicate these requirements.

NOTE 12: For the use of NIRR see 3GPP TS 27.001.

NOTE 13:The value of the Intermediate Rate field of the ISDN Bearer Capability information element shall only depend on the values of the User Rate and the Information Transfer Capability in the same information element. The correspondence is:

Intermediate Rate = not used if User Rate > than 19.2 kbit/s.

Intermediate Rate = 32 kbit/s if User Rate = 19,2 kbit/s or 14.4 kbit/s.

Intermediate Rate = 16 kbit/s if User Rate = 9,6 kbit/s.

Intermediate Rate = 8 kbit/s otherwise.

For Audio calls the value of the Intermediate Rate may be set to "not used".

NOTE 14:If compression is supported by the MSC and "data compression allowed" is indicated, then the ISDN user rate for UDI calls shall be set as follows. If the parameter "FNUR" is present the ISDN user rate shall be set to this value. Otherwise the PLMN user rate shall be mapped to an equal or any higher ISDN user rate value (for V.110 the highest ISDN user rate shall be 19,2 kbit/s). The Intermediate Rate shall be set to an appropriate value.(see subclause 10.2.4.11).

For "3,1 kHz audio" the modem shall try to negotiate data compression and flow control (see subclause 9.2.4.11). For "autobauding type 1" high speed modems may be used (see note 10).

NOTE 15:User rate of the PLMN -BC is overridden by the fixed network user rate of the PLMN BC-IE if available. When the MT indicates "autobauding", "modem for undefined interface" or "none", the other modem type shall be set to "no other modem type"; any other value of the modem type is overridden by the other modem type value (see 3GPP TS 27.001). In Iu mode, if octet 6d is not present in the PLMN BC, the MSC shall reject the call. The support of user rates lower than 9.6 kbit/s in Iu mode are only possible in the scope of autobauding (see note 10).

NOTE 16:In the case Other rate adaptation = H.223 & H.245 the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T

Information Transfer capability: UDI

Transfer mode: circuit

Information transfer rate: 64 kbit/s

User information layer 1 protocol: H.223 & H.245

In all the other cases t The ISDN-BC will consist of the octets 1 to 4 only, coded:

Coding standard: CCITT
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

NOTE 17:V.120 interworking is selected.

If an LLC element is not present, the network will insert an LLC. If an LLC is present it may be modified. The PLMN -BC parameters negotiated with the UE shall be mapped to the LLC parameters. The LLC parameter Rate Adaptation will be set to "V.120".

When interworking with unrestricted 64 kbit/s networks the ISDN BC shall be coded according to note 16.

NOTE 18: When the MSC is directly connected to a restricted 64 kbit/s network, the ISDN BC-IE is coded with an ITC = RDI.

When indirectly interworking with a restricted 64 kbit/s network the ISDN BC-IE shall be coded according to ETR 018, as shown below:

Coding standard: CCITT
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s
User information layer 1 protocol: V.110/X.30
Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 56 kbit/s

If an LLC element is not present, the network will insert an LLC. If an LLC is present it may be modified. The PLMN -BC parameters negotiated with the UE shall be mapped to the LLC parameters according to the rules in this table. The LLC parameter Information Transfer Capability will be set to "restricted digital"

- NOTE 19:If the UE signals an ACC containing TCH/F4.8 only and the network does not support TCH/F4.8 channel coding, then the MSC may act as if TCH/F9.6 were included in the ACC.
- NOTE 20: Extension of the 'Acceptable channel codings' field in octet 6e if EDGE channel codings are supported.
- NOTE 21: Void
- NOTE 22: Only applicable for non-transparent services.
- NOTE 23: This parameter shall be included if EDGE channel codings are indicated in ACC. In cases where this parameter would not otherwise be included, the value is set to 'Air interface user rate not applicable' or 'User initiated modification not requested' or 'No preference'.
- NOTE 24: This value was used by services defined for former PLMN releases and does not need to be supported.
- NOTE 25:The case of FTM is identified by Rate adaptation in the PLMN BC-IE set to "CCITT X.31 flag stuffing", Connection element set to "non-transparent", and Synchronous/asynchronous set to "asynchronous". The MSC applies one of the following alternatives:
 - 1) IF FNUR=64 kbit/s
 - the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

- the LLC-IE shall be coded according to ETR 018 as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: (CCITT standardized rate adaptation

X.31 HDLC flag stuffing) (note: the absence of octet 5 indicates that HDLC flag

stuffing applies)

User information layer 2 protocol: Recommendation X.25, link layer User information layer 3 protocol: Recommendation X.25, packet layer

If user information layer 1 protocol is indicated by absence of octet 5 user information layer 2/3 protocol are also absent.

- 2) If FNUR=56 kbit/s and the MSC is directly connected to a restricted 64 kbit/s network:
- the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: RDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

- the LLC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: RDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: (CCITT standardized rate adaptation

X.31 HDLC flag stuffing) (note: the

absence of octet 5 indicates that HDLC flag

stuffing applies)

User information layer 2 protocol: Recommendation X.25, link layer
User information layer 3 protocol: Recommendation X.25, packet layer

If user information layer 1 protocol is indicated by absence of octet 5 user information layer 2/3 protocol are also absent.

3) If FNUR=56 kbit/s and the MSC is indirectly interworking with a restricted 64 kbit/s network:

- the ISDN BC-IE shall be coded according to ETR 018, as shown below:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s
User information layer 1 protocol: V.110/X.30
Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 56 kbit/s

- If an LLC element is not present, the network will insert an LLC. If an LLC is present it may be modified. The PLMN -BC parameters negotiated with the MS shall be mapped to the LLC parameters according to the rules in this table. The LLC parameter Information Transfer Capability will be set to "restricted digital" and the LLC parameter User information layer 1 protocol will be set to "X.31 flag stuffing".

NOTE 26:If FNUR=64 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: H.223 and H.245

If FNUR=56 kbit/s the ISDN BC-IE shall be coded as in note 18.

If FNUR=32 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: V.110, I.460 & X.30

Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 32 kbit/s

If FNUR=28.8 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: 3,1 kHz Audio
Transfer mode: circuit

Information transfer rate: 64 kbit/s
User information layer 1 protocol: G.711 A-law or μ-law

Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

Modem type: V.34
User rate: 28.8 kbit/s

If FNUR=33.6 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T

Information Transfer capability: 3,1 kHz Audio

Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: G.711 A-law or μ-law

NOTE 27:If FNUR=32 kbit/s the ISDN BC-IE shall be coded for PIAFS as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: V.110, I.460 and X.30

Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 32 kbit/s

If FNUR=64 kbit/s the ISDN BC-IE shall be coded for PIAFS as in note 16.

3GPP TSG-CN WG3 Meeting #25 Miami, USA, 23rd - 27th September 2002.

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Consequences if not approved:	ж				BC into IS roperatbili				entation depen	dent,
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Other comments:	\mathfrak{H}					_				

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

10.2.2.6 Mapping Functions

The following tables (7A + 7B) show that only the ISDN BC is used for mapping (exceptions are indicated).

NOTE: The ISDN/ PLMN BC-IE mapping shall be performed as specified in tables 7A and 7B. This shall be done to allow setup of a compatible end-to-end connection between two MSs or one MS and an ISDN terminal.

In the following tables 7A and 7B the comparison is drawn between parameters in the PLMN call set up request message and that of the ISDN call set up request message. In some cases no comparable values are available and these will be marked as such. In these cases reference will need to be made to the table of network interworking in 3GPP TS 29.007 to identify the appropriate choice. In some cases it is not necessary to support a particular option, and in this case those parameters will be annotated appropriately.

The PLMN parameters and values are as in 3GPP TS 24.008 in combination as in 3GPP TS 27.001. The ISDN parameters and values are as in Q.931 (05/98).

Table 7A: Comparable setting of parameters in PLMN and ISDN: Mobile Originated

Octet	PLMN BC parameter value	Octet	ISDN BC parameter value
1	Bearer Capability IEI	1	Bearer Capability IEI
2	Length of BC contents	2	Length of BC contents
3	Radio channel requirement		No comparable field
#76	half rate channel		•
	full rate channel		
	dual, full, rate preferred		
	dual, half rate preferred		
3	Coding Standard	3	Coding Standard
#5	GSM standard coding	#76	ITU-T standardized coding
3	Transfer mode	4	Transfer mode
#4	circuit mode	#76	circuit mode
	packet mode (note7)		packet mode
3	Information transfer capability	3	Information transfer capability
#31	speech	#51	speech
	unrestricted digital		unrestricted digital
	3,1 kHz audio ex PLMN		3,1 kHz audio
	facsimile group 3 (note 1)		3,1 kHz audio
	other ITC (see octet 5a)		no comparable value
5a	Other ITC		
#76	restricted digital		(note 18)
4	Compression (note 14)		No comparable field
#7	data compression allowed		
	data compression not allowed		
4	Structure	4a	Structure (note 4)
#65	SDU integrity	#75	
	unstructured		
4	Duplex mode	5d	Duplex mode
#4	half duplex	#7	half duplex
	full duplex		full duplex
4	Configuration	4a	Configuration (note 4)
#3	point to point	#43	
4	Establishment	4a	Establishment (note 4)
#1	demand	#21	
4	NIRR (note 12)		
	no meaning		No comparable field
	Data ≤ 4.8kbit/s, FR nt,		·
	6kbit/s radio interface is requested		
	1		

Table 7A (continued): Comparable setting of parameters in PLMN and ISDN: Mobile Originated

Octet	PLMN BC parameter value	Octet	ISDN BC parameter value
5	Rate adaptation	5	User information layer 1 protocol
#54	no rate adaptation (note 2)	#51	no comparable value
	V.110, I.460/X.30 rate adaptation		ITU-T standardized rate adaption
			V.110, I.460/X.30
	ITU-T X.31 flag stuffing (note 25)		ITU-T standardized rate adaption X.31
			flag stuffing
	No comparable value(note 11)		Recommendation G.711 μ-law
	No comparable value(note 11)		Recommendation G.711 A-law (note
	No comparable value (note 44)		3) Recommendation G.721 32 kbit/s
	No comparable value(note 11)		ADPCM and I.460
	other rate adaptation (see octet 5a)		No comparable value
5a	Other rate adaptation Other rate adaptation		No comparable value
#54	V.120 (note 17)		No comparable value
#54	PIAFS (note 27)		INO Comparable value
	H.223 & H.245		H.223 & H.245 (note 26)
5	Signalling access protocol	1	No comparable field
#31	1.440/l.450		Somparable nord
	X.21		
	X.28, ded.PAD, indiv.NUI (note 24)		
	X.28, ded PAD, univ.NUI (note 24)		
	X.28, non-ded PAD		
	X.32		
6	Synchronous/asynchronous	5a	Synchronous/asynchronous
#1	synchronous	#7	synchronous
	asynchronous		asynchronous
6	User info. layer 1 protocol	5	User info. layer 1 protocol
#52	default layer 1 protocol	#51	see section under rate adaptation for
	No. 1 and 1		3GPP TS 24.008 above
6a	Number of stop bits 1 bit	5c	Number of stop bits
#7	2 bits	#76	1 bit 2 bits
60		Fo	
6a #6	Negotiation In band neg. not possible	5a #6	Negotiation In band neg. not possible
#0	no comparable value	#* ⁰	In band neg. not possible (note 10)
6a	Number of data bits	5c	Number of data bits excluding
#5	ויטוואטו טו עמנמ אונס	#54	parity if present
	7 bits	#5 -1	7 bits
	8 bits		8 bits
6a	User rate	5a	User rate
#41	0.3 kbit/s	#51	0.3 kbit/s
	1.2 kbit/s		1.2 kbit/s
	2.4 kbit/s		2.4 kbit/s
	4.8 kbit/s		4.8 kbit/s
	9.6 kbit/s		9.6 kbit/s
	12 kbit/s (note 7)		12 kbit/s
	1.2 kbit/s / 75 bit/s (note 24)		75 bit/s / 1.2 kbit/s
	any value		19.2 kbit/s (note 14)
	no comparable value		Ebits or inband negotiation
	, <u>,</u> .	1 ,	(note 10)
	(conti	nued)	

Table 7A (continued): Comparable setting of parameters in PLMN and ISDN: Mobile Originated

PLMN BC parameter value mediate rate t/s pit/s value on Tx not require res (note7) on Rx ot accept accept (note 7) y information d to 0 d to 1 nection element parent transparent (RLP)	5b #76 5b #5b 5b #4 5c #31	Intermediate rate (note 13) 8 kbit/s or not used 16 kbit/s or not used 32 kbit/s or not used (note 14) NIC on Tx does not require requires (note 8) NIC on Rx cannot accept can accept (note 8) Parity information odd even none forced to 0
oit/s //alue on Tx not require res (note7) on Rx ot accept accept (note 7) y information d to 0 d to 1 nection element parent	5b #5b 5b #4	16 kbit/s or not used 32 kbit/s or not used (note 14) NIC on Tx does not require requires (note 8) NIC on Rx cannot accept can accept (note 8) Parity information odd even none forced to 0
value on Tx not require res (note7) on Rx ot accept accept (note 7) y information d to 0 d to 1 nection element parent	5b #5b 5b #4	32 kbit/s or not used (note 14) NIC on Tx does not require requires (note 8) NIC on Rx cannot accept can accept (note 8) Parity information odd even none forced to 0
on Tx not require res (note7) on Rx ot accept accept (note 7) y information d to 0 d to 1 nection element parent	#5b 5b #4	NIC on Tx does not require requires (note 8) NIC on Rx cannot accept can accept (note 8) Parity information odd even none forced to 0
on Tx not require res (note7) on Rx ot accept accept (note 7) y information d to 0 d to 1 nection element parent	#5b 5b #4	NIC on Tx does not require requires (note 8) NIC on Rx cannot accept can accept (note 8) Parity information odd even none forced to 0
not require res (note7) on Rx ot accept accept (note 7) y information d to 0 d to 1 nection element parent	#5b 5b #4	does not require requires (note 8) NIC on Rx cannot accept can accept (note 8) Parity information odd even none forced to 0
res (note7) on Rx ot accept accept (note 7) y information d to 0 d to 1 nection element parent	5b #4	requires (note 8) NIC on Rx cannot accept can accept (note 8) Parity information odd even none forced to 0
on Rx ot accept accept (note 7) y information d to 0 d to 1 nection element parent	#4 5c	NIC on Rx cannot accept can accept (note 8) Parity information odd even none forced to 0
ot accept accept (note 7) y information d to 0 d to 1 nection element parent	#4 5c	cannot accept can accept (note 8) Parity information odd even none forced to 0
d to 0 d to 1 nection element parent	5c	can accept (note 8) Parity information odd even none forced to 0
y information d to 0 d to 1 nection element parent		Parity information odd even none forced to 0
d to 0 d to 1 nection element parent		odd even none forced to 0
d to 0 d to 1 nection element parent	#31	even none forced to 0
d to 0 d to 1 nection element parent		none forced to 0
d to 0 d to 1 nection element parent		forced to 0
d to 1 nection element parent		
nection element parent		e 1. 4
nection element parent		forced to 1
parent		No comparable field
		The second second second
ransnarent (RLP)		
transp. preferred		
non-transp. preferred		
	F -1	Madam tura
em type	5d	Modem type
	#61	no comparable value (note 5)
		V.21
		V.22
bis		V.22bis
(note 24)		V.23
ter		V.26ter
		V.32
em for undef. interface		No comparable value (note 5)
pauding type 1		No comparable value (note 5,
sadag type :		note 10)
info. layer 2 protocol	6	User info.layer 2 prot. (note 6)
link level	١٥	X.25 link level
6429, codeset 0		no comparable value
noFICt		no comparable value
otex profile 1 (note 7)		no comparable value
layer 2 modified (CAPI)		X.25 link level
d network user rate (note 15)	5a	User rate
R not applicable (note 7)	#51	no comparable value
bit/s		9,6 kbit/s
pit/s (note 7)		12 kbit/s
		14,4 kbit/s
		19,2 kbit/s
		28,8 kbit/s
		32.0 kbit/s
VNIN2		no comparable value
		38,4 kbit/s
kbit/s		48,0 kbit/s
kbit/s kbit/s		56,0 kbit/s
kbit/s kbit/s kbit/s		no comparable value (note 16)
k k	cbit/s	cbit/s

Table 7A (concluded): Comparable setting of parameters in PLMN and ISDN: Mobile Originated

Octet	PLMN BC parameter value	Octet	ISDN BC parameter value
6e	Maximum number of traffic channels		No comparable field
#31	1 TCH		no companació nela
	2 TCH		
	3 TCH		
	4 TCH		
	5 TCH		
	6 TCH		
	7 TCH (note 7)		
	8 TCH (note 7)		
6f	Wanted air interface user rate (note 23)		No comparable field
#41	air interface user rate not applicable (note		ne comparable nota
l" ···· ·	7)		
	9,6 kbit/s		
	14,4 kbit/s		
	19,2 kbit/s		
	28,8 kbit/s		
	38,4 kbit/s		
	43,2 kbit/s		
	57,6 kbit/s		
	interpreted by the network as 38.4 kbit/s		
	(note 7)		
64	Other modem type (note 15)	5d	Modem type
6d #76	No other modern type (note 13)	#61	no comparable value
#10	V.34	#01	V.34
6e	Acceptable channel coding(s)		No comparable field
#74	TCH/F4.8 acceptable (note 19)		ino comparable field
#14			
	TCH/F9.6 acceptable TCH/F14.4 acceptable		
Cf	User initiated modification indicator		No comparable field
6f #75			No comparable field
#15	(note 23) User initiated modification not		
	required		
	User initiated modification upto 1		
	TCH/F may be requested		
	User initiated modification upto 2		
	TCH/F may be requested		
	User initiated modification upto 3		
	TCH/F may be requested		
	User initiated modification upto 4		
0	TCH/F may be requested		No company to the first of
6g	Acceptable channel coding(s) (note 20)		No comparable field
#75	TCH/F28.8 acceptable		
1	TCH/F32.0 acceptable		
	TCH/F43.2 acceptable (note 22)	1	N
6g	Asymmetry preference indication (Note		No comparable field
#43	23)		
	no preference		
1	up link biased asymmetry preference		
	down link biased asymmetry preference	l	

The application rules for coding the information elements ISDN-BC/LLC/HLC as set out in ETR 018 and Q.931 (05/98) shall apply.

Other field values in the ISDN BC-IE not supported in 3GPP TS 24.008 are:

Information transfer rate: In this case default 64 kbit/s is selected.

Flow control on transmission: This shall be selected if outband flow control applies.

Flow control on reception: This shall be selected if outband flow control applies.

Tr.

NOTE 0: Outband flow control is indicated by the absence of the UIL2P parameter for non-transparent connections.

User information layer 3 protocol: Octet 7 shall not be sent unless specific application rules are given for

particular cases (to be defined by PLMN). End-to-end significant User

Information layer 3 protocol shall be sent by LLC.

NOTE 1: In the case where PLMN BC "Information Transfer Capability" indicates "Facsimile group 3" and only a single PLMN BC is contained in the call set-up request then this shall be mapped to an ISDN BC with:

- coding standard: ITU-T;

information transfer capability: 3,1 kHz audio;

- transfer mode: circuit;

- information transfer rate: 64 kbit/s;

- user layer 1 protocol: G711 A-law or μ-law (PCS-1900); and

- if an HLC is not present, the network will insert a "Facsimile group 2/3" HLC;

- if an HLC element is present, the network will pass it through unmodified.

In the case where PLMN BC "Information Transfer Capability" indicates "Facsimile group 3" and two PLMN BCs are contained in the call set-up request, then the same ISDN BC as mentioned above is created. If the first PLMN BC indicates "facsimile group 3" an HLC "facsimile group 2/3" will be inserted by the network (if not received from the MS). However if the first PLMN BC indicates "speech", the network will not send a HLC, irrespective where a HLC was received from the MS or not.

- NOTE 2: This value is present in combination with information transfer capability parameter value "3,1 kHz audio Ex PLMN" or "facsimile group 3" and will therefore be mapped to the value "Recommendation G.711 A-law" or Recommendation G.711 μ -law" (PCS-1900) of the Q.931 (05/98) parameter user layer 1 protocol (see note 3).
- NOTE 3: The value "Recommendation G.711 A-law" or "Recommendation G.711 μ -law" (PCS-1900) applies only when the Q.931 (05/98) parameter information transfer capability indicates "3,1 kHz audio" or "speech".
- NOTE 4: When interworking with an ISDN according to ETS 300 102-1 octets 4a and 4b shall not be included because default values apply. In an ISDN according to Q.931 (05/98) these octets no more exist.
- NOTE 5: In this case octet 5d shall not be included.
- NOTE 6: Octet 6 shall not be sent unless specific application rules are given for a particular case (PLMN specified). End-to-end significant user information layer 2 protocol shall be sent by LLC.
- NOTE 7: Not used for currently defined Bearer Services and Teleservices.
- NOTE 8: These values will only be set if the "Information Transfer Capability" indicates "3,1 kHz audio", synchronous data transmission is used and octet 5b of the ISDN BC is present.
- NOTE 9: (VOID).
- NOTE 10:The PLMN BC-IE parameter value "autobauding modem type 1" will be mapped to the ISDN BC-IE parameter values "inband negotiation possible" and "user rate indicated by E-bits specified in ITU-T Recommendation I.460 or may be negotiated inband" (octet 5a of ISDN BC-IE). In case of data compression high speed modems, like V.32bis, V.34 and/or V.90 may be used in the IWF. Autobauding may also be used to support user rates less than 9.6 kbit/s towards the PSTN.
- NOTE 11:The ITC value of the PLMN BC-IE "speech", "3,1 kHz audio Ex PLMN" will indicate these requirements.
- NOTE 12: For the use of NIRR see 3GPP TS 27.001.
- NOTE 13:The value of the Intermediate Rate field of the ISDN Bearer Capability information element shall only depend on the values of the User Rate and the Information Transfer Capability in the same information element. The correspondence is:

Intermediate Rate = not used if User Rate > than 19.2 kbit/s.

Intermediate Rate = 32 kbit/s if User Rate = 19,2 kbit/s or 14.4 kbit/s.

Intermediate Rate = 16 kbit/s if User Rate = 9,6 kbit/s.

Intermediate Rate = 8 kbit/s otherwise.

In case of Audio calls the value of the Intermediate Rate may be set to "not used".

NOTE 14:If compression is supported by the MSC and "data compression allowed" is indicated, then the ISDN user rate for UDI calls shall be set as follows. If the parameter "FNUR" is present the ISDN user rate shall be set to this value. Otherwise the PLMN user rate shall be mapped to an equal or any higher ISDN user rate value (in case of V.110 the highest ISDN user rate shall be 19,2 kbit/s). The Intermediate Rate shall be set to an appropriate value.(see subclause 10.2.4.11).

In case of "3,1 kHz audio" the modem shall try to negotiate data compression and flow control (see subclause 9.2.4.11). In case of "autobauding type 1" high speed modems may be used (see note 10).

NOTE 15:User rate of the PLMN -BC is overridden by the fixed network user rate of the PLMN BC-IE if available. When the MT indicates "autobauding", "modem for undefined interface" or "none", the other modem type shall be set to "no other modem type"; any other value of the modem type is overridden by the other modem type value (see 3GPP TS 27.001). In UMTS, if octet 6d is not present in the PLMN BC, the MSC shall reject the call. The support of user rates lower than 9.6 kbit/s in UMTS are only possible in the scope of autobauding (see note 10).

NOTE 16:In the case other rate adaptation = H.223 & H.245 the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T

Information Transfer capability: UDI

Transfer mode: circuit

Information transfer rate: 64 kbit/s

User information layer 1 protocol: H.223 & H.245

<u>In all the other cases t</u>The ISDN-BC will consist of the octets 1 to 4 only, coded:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

NOTE 17: V.120 interworking is selected.

If an LLC element is not present, the network will insert an LLC. If an LLC is present it may be modified. The PLMN -BC parameters negotiated with the MS shall be mapped to the LLC parameters. The LLC parameter Rate Adaptation will be set to "V.120".

When interworking with unrestricted 64 kbit/s networks the ISDN BC shall be coded according to note 16.

NOTE 18: When the MSC is directly connected to a restricted 64 kbit/s network, the ISDN BC-IE is coded with an ITC = RDI.

When indirectly interworking with a restricted 64 kbit/s network the ISDN BC-IE shall be coded according to ETR 018, as shown below:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s
User information layer 1 protocol: V.110/X.30
Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 56 kbit/s

If an LLC element is not present, the network will insert an LLC. If an LLC is present it may be modified. The PLMN -BC parameters negotiated with the MS shall be mapped to the LLC parameters according to the rules in this table. The LLC parameter Information Transfer Capability will be set to "restricted digital"

- NOTE 19:In case the MS signals an ACC containing TCH/F4.8 only and the network does not support TCH/F4.8 channel coding, then the MSC may act as if TCH/F9.6 were included in the ACC.
- NOTE 20:Extension of the 'Acceptable channel codings' field in octet 6e in case EDGE channel codings are supported.
- NOTE 21: Void
- NOTE 22: Only applicable for non-transparent services.
- NOTE 23:This parameter shall be included if EDGE channel codings are indicated in ACC. In cases where this parameter would not otherwise be included, the value is set to 'Air interface user rate not applicable' or 'User initiated modification not requested' or 'No preference'.
- NOTE 24: This value was used by services defined for former GSM releases and does not need to be supported.
- NOTE 25:The case of FTM is identified by Rate adaptation in the PLMN BC-IE set to "ITU-T X.31 flag stuffing", Connection element set to "non-transparent", and Synchronous/asynchronous set to "asynchronous". The MSC applies one of the following alternatives:
 - 1) In the case FNUR=64 kbit/s
 - the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

- the LLC-IE shall be coded according to ETR 018 as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: (CCITT standardized rate adaptation

X.31 HDLC flag stuffing) (note: the

absence of octet 5 indicates that HDLC flag

stuffing applies)

User information layer 2 protocol: Recommendation X.25, link layer User information layer 3 protocol: Recommendation X.25, packet layer

If user information layer 1 protocol is indicated by absence of octet 5 user information layer 2/3 protocol are also absent.

- 2) In the case FNUR=56 kbit/s and the MSC is directly connected to a restricted 64 kbit/s network,
- the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: RDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

- the LLC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: RDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: (CCITT standardized rate adaptation

X.31 HDLC flag stuffing) (note: the

absence of octet 5 indicates that HDLC flag

stuffing applies)

User information layer 2 protocol: Recommendation X.25, link layer
User information layer 3 protocol: Recommendation X.25, packet layer

If user information layer 1 protocol is indicated by absence of octet 5 user information layer 2/3 protocol are also absent.

3) In the case FNUR=56 kbit/s and the MSC is indirectly interworking with a restricted 64 kbit/s network,

- the ISDN BC-IE shall be coded according to ETR 018, as shown below:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s
User information layer 1 protocol: V.110/X.30
Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 56 kbit/s

- If an LLC element is not present, the network will insert an LLC. If an LLC is present it may be modified. The PLMN -BC parameters negotiated with the MS shall be mapped to the LLC parameters according to the rules in this table. The LLC parameter Information Transfer Capability will be set to "restricted digital" and the LLC parameter User information layer 1 protocol will be set to "X.31 flag stuffing".

NOTE 26: In the case FNUR=64 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: H.223 and H.245

In the case FNUR=56 kbit/s the ISDN BC-IE shall be coded as in note 18.

In the case FNUR=32 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: V.110, I.460 & X.30

Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 32 kbit/s

In the case FNUR=28.8 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T

Information Transfer capability: 3,1 kHz Audio
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: G.711 A-law or μ -law

Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

Modem type: V.34
User rate: 28.8 kbit/s

In the case FNUR=33.6 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T

Information Transfer capability: 3,1 kHz Audio

Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: G.711 A-law or μ-law

NOTE 27:In the case the FNUR=32 kbit/s the ISDN BC-IE shall be coded for PIAFS as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: V.110, I.460 and X.30

Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 32 kbit/s

In the case of a FNUR=64 kbit/s the ISDN BC-IE shall be coded for PIAFS as in note 16.

3GPP TSG-CN WG3 Meeting #25 Miami, USA, 23rd - 27th September 2002.

			CH	IANG	E RE	QUE	ST				CR-Form-v7
*	29	.007	CR 06	3	жrev	-	ж	Current ve	ersion:	4.5.0	¥
For <u>HELP</u> on	using	this for	m, see bo	ttom of th	nis page o	or look	at the	e pop-up te	ext over	rthe ¥ syr	mbols.
Proposed change affects: UICC apps ME Radio Access Network Core Network X											
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Source:	€ TS	G_CN	WG3 [Hu	tchison 3	G, Ericss	on]					
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Other specs affected:	ж	Y N X X	Other co Test spe O&M Sp		S	Ж					
Other comments:	ж										

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

10.2.2.6 Mapping Functions

The following tables (7A + 7B) show that only the ISDN BC is used for mapping (exceptions are indicated).

NOTE: The ISDN/ PLMN BC-IE mapping shall be performed as specified in tables 7A and 7B. This shall be done to allow setup of a compatible end-to-end connection between two MSs or one MS and an ISDN terminal.

In the following tables 7A and 7B the comparison is drawn between parameters in the PLMN call set up request message and that of the ISDN call set up request message. In some cases no comparable values are available and these will be marked as such. In these cases reference will need to be made to the table of network interworking in 3GPP TS 29.007 to identify the appropriate choice. In some cases it is not necessary to support a particular option, and in this case those parameters will be annotated appropriately.

The PLMN parameters and values are as in 3GPP TS 24.008 in combination as in 3GPP TS 27.001. The ISDN parameters and values are as in Q.931 (05/98).

Table 7A: Comparable setting of parameters in PLMN and ISDN: Mobile Originated

Octet	PLMN BC parameter value	Octet	ISDN BC parameter value
1	Bearer Capability IEI	1	Bearer Capability IEI
2	Length of BC contents	2	Length of BC contents
3	Radio channel requirement		No comparable field
#76	half rate channel		'
	full rate channel		
	dual, full, rate preferred		
	dual, half rate preferred		
3	Coding Standard	3	Coding Standard
#5	GSM standard coding	#76	CCITT standardized coding
3	Transfer mode	4	Transfer mode
#4	circuit mode	#76	circuit mode
	packet mode (note7)		packet mode
3	Information transfer capability	3	Information transfer capability
#31	speech	#51	speech
	unrestricted digital		unrestricted digital
	3,1 kHz audio ex PLMN		3,1 kHz audio
	facsimile group 3 (note 1)		3,1 kHz audio
	other ITC (see octet 5a)		no comparable value
5a	Other ITC		·
#76	restricted digital		(note 18)
4	Compression (note 14)		No comparable field
#7	data compression allowed		, and the second
	data compression not allowed		
4	Structure	4a	Structure (note 4)
#65	SDU integrity	#75	(1010-1)
	unstructured		
4	Duplex mode	5d	Duplex mode
#4	half duplex	#7	half duplex
	full duplex		full duplex
4	Configuration	4a	Configuration (note 4)
#3	point to point	#43	Comiguration (note 1)
4	Establishment	4a	Establishment (note 4)
"	demand	#21	Lotabilotimont (noto 1)
4	NIRR (note 12)	<i>""</i> 21	
	no meaning		No comparable field
	Data ≤ 4.8kbit/s, FR nt,		140 comparable field
	6kbit/s radio interface is requested		
5	Rate adaptation	5	User information layer 1 protocol
#54	no rate adaptation (note 2)	#51	no comparable value
#54	V.110, I.460/X.30 rate adaptation	#51	CCITT standardized rate adaption
	7.110, 1.400/X.30 Tate adaptation		V.110, I.460/X.30
	CCITT X.31 flag stuffing (note 25)		(note 25)
	Corr r X.or mag staming (note 25)		Recommendation G.711 µ-law
	No comparable value(note 11)		Recommendation G.711 A-law (note
	No comparable value(note 11)		3)
	The comparable value (note 11)		Recommendation G.721 32 kbit/s
	No comparable value(note 11)		ADPCM and I.460
	,		No comparable value
	other rate adaptation (see octet 5a)		
5a	Other rate adaptation		
#54	V.120 (note 17)		No comparable value
	PIAFS (note 27)		
	H.223 & H.245		H.223 & H.245 (note 26)
5	Signalling access protocol		No comparable field
#31	1.440/1.450		
	X.21 (note 24)		
	X.28, ded.PAD, indiv.NUI (note 24)		
	X.28, ded PAD, univ.NUI (note 24)		
	X.28, non-ded PAD (note 24)		
	X.32 (note 24)		
6	Synchronous/asynchronous	5a	Synchronous/asynchronous
#1	synchronous	# 7	synchronous
	asynchronous		asynchronous
6	User info. layer 1 protocol	5	User info. layer 1 protocol
	Coor miloritayor i protocor	U	poor mioriayor i protocoi

Octet	PLMN BC parameter value	Octet	ISDN BC parameter value
#52	default layer 1 protocol	#51	see section under rate adaptation for
			3GPP TS 24.008 above
6a	Number of stop bits	5c	Number of stop bits
#7	1 bit	#76	1 bit
	2 bits		2 bits
6a	Negotiation	5a	Negotiation
#6	In band neg. not possible	#6	In band neg. not possible
0-	no comparable value Number of data bits		In band neg. possible (note 10)
6a #5	Number of data bits	5c #54	Number of data bits excluding parity if present
#5	7 bits	#54	7 bits
	8 bits		8 bits
6a	User rate	5a	User rate
#41	0.3 kbit/s	#51	0.3 kbit/s
	1.2 kbit/s		1.2 kbit/s
	2.4 kbit/s		2.4 kbit/s
	4.8 kbit/s		4.8 kbit/s
	9.6 kbit/s		9.6 kbit/s
	12 kbit/s (note 7)		12 kbit/s
	1.2 kbit/s / 75 bit/s (note 24)		75 bit/s / 1.2 kbit/s
	any value		19.2 kbit/s (note 14)
	no comparable value		Ebits or inband negotiation
Ch	Intermediate rate	Ch.	(note 10) Intermediate rate (note 13)
6b #76	8 kbit/s	5b #76	8 kbit/s or not used
#10	16 kbit/s	#10	16 kbit/s or not used
	any value		32 kbit/s or not used (note 14)
6b	NIC on Tx	5b	NIC on Tx
#5	does not require	#5b	does not require
	requires (note7)		requires (note 8)
6b	NIC on Rx	5b	NIC on Rx
#4	cannot accept	#4	cannot accept
	can accept (note 7)		can accept (note 8)
6b	Parity information	5c	Parity information
#31	odd	#31	odd
	even		even
	none		none
	forced to 0 forced to 1		forced to 0 forced to 1
6c	Connection element		No comparable field
#76	transparent		No comparable field
" '	non-transparent (RLP)		
	both, transp. preferred		
	both, non-transp. preferred		
6c	Modem type	5d	Modem type
#51	none	#61	no comparable value (note 5)
	V.21		V.21
	V.22		V.22
	V.22bis		V.22bis
	V.23 (note 24)		V.23
	V.26ter V.32		V.26ter V.32
	modem for undef, interface		No comparable value (note 5)
	autobauding type 1		No comparable value (note 5)
	aniocadamig typo		note 10)
7	User info. layer 2 protocol	6	User info.layer 2 prot. (note 6)
#51	X.25 link level (note 24)	-	X.25 link level
	ISO 6429, codeset 0		no comparable value
	COPnoFICt		no comparable value
	videotex profile 1 (note 7)		no comparable value
	X.75 layer 2 modified (CAPI) (note 24)		X.25 link level
6d	Fixed network user rate (note 15)	5a	User rate
#51	FNUR not applicable (note 7)	#51	no comparable value
	9,6 kbit/s		9,6 kbit/s
	12 kbit/s (note 7)		12 kbit/s
L	14,4 kbit/s		14,4 kbit/s

Octet	PLMN BC parameter value	Octet	ISDN BC parameter value
	19,2 kbit/s		19,2 kbit/s
	28,8 kbit/s		28,8 kbit/s
	32.0 kbit/s		32.0 kbit/s
	33.6 kbit/s		no comparable value
	38,4 kbit/s		38,4 kbit/s
	48,0 kbit/s		48,0 kbit/s
	56,0 kbit/s		56,0 kbit/s
	64,0 kbit/s		no comparable value (note 16)
6e	Maximum number of traffic channels		No comparable field
#31	1 TCH		
	2 TCH		
	3 TCH		
	4 TCH		
	5 TCH		
	6 TCH		
	7 TCH (note 7)		
	8 TCH (note 7)		
6f	Wanted air interface user rate (note 23)		No comparable field
#41	air interface user rate not applicable (note		
	7)		
	9,6 kbit/s		
	14,4 kbit/s		
	19,2 kbit/s		
	28,8 kbit/s		
	38,4 kbit/s		
	43,2 kbit/s		
	57,6 kbit/s		
	interpreted by the network as 38.4 kbit/s		
	(note 7)		•••
6d	Other modem type (note 15)	5d	Modem type
#76	No other modem type	#61	no comparable value
	V.34		V.34
6e	Acceptable channel coding(s)		No comparable field
#74	TCH/F4.8 acceptable (note 19)		
	TCH/F9.6 acceptable		
04	TCH/F14.4 acceptable		No company to the first of
6f	User initiated modification indicator		No comparable field
#75	(note 23) User initiated modification not		
	required		
	User initiated modification upto 1		
	TCH/F may be requested User initiated modification upto 2		
	TCH/F may be requested		
	User initiated modification upto 3		
	TCH/F may be requested		
	User initiated modification upto 4		
	TCH/F may be requested		
60	Acceptable channel coding(s) (note 20)	1	No comparable field
6g #75	TCH/F28.8 acceptable		Two comparable field
m15	TCH/F32.0 acceptable		
	TCH/F32.0 acceptable (note 22)		
60	Asymmetry preference indication (Note	1	No comparable field
6g #43	23)		INO comparable field
π 4 3	no preference		
	up link biased asymmetry preference		
	down link biased asymmetry preference		
	Juown link biased asymmetry preference		

General Notes

The application rules for coding the information elements ISDN-BC/LLC/HLC as set out in ETR 018 and Q.931 (05/98) shall apply.

Other field values in the ISDN BC-IE not supported in 3GPP TS 24.008 are:

Information transfer rate: In this case default 64 kbit/s is selected.

Flow control on transmission:

Flow control on reception: This shall be selected if outband flow control applies. Outband flow control

is indicated by the absence of the UIL2P parameter for non-transparent

connections.

User information layer 3 protocol: Octet 7 shall not be sent unless specific application rules are given for

particular cases (to be defined by PLMN). End-to-end significant User

Information layer 3 protocol shall be sent by LLC.

Notes regarding particular entries in table 7A:

NOTE 1: In the case where PLMN BC "Information Transfer Capability" indicates "Facsimile group 3" and only a single PLMN BC is contained in the call set-up request then this shall be mapped to an ISDN BC with:

- coding standard: CCITT;

information transfer capability: 3,1 kHz audio;

- transfer mode: circuit;

- information transfer rate: 64 kbit/s;

- user layer 1 protocol: G711 A-law or μ-law (PCS-1900); and

- if an HLC is not present, the network will insert a "Facsimile group 2/3" HLC;

- if an HLC element is present, the network will pass it through unmodified.

In the case where PLMN BC "Information Transfer Capability" indicates "Facsimile group 3" and two PLMN BCs are contained in the call set-up request, then the same ISDN BC as mentioned above is created. If the first PLMN BC indicates "facsimile group 3" an HLC "facsimile group 2/3" will be inserted by the network (if not received from the MS). However if the first PLMN BC indicates "speech", the network will not send a HLC, irrespective where a HLC was received from the MS or not.

- NOTE 2: This value is present in combination with information transfer capability parameter value "3,1 kHz audio Ex PLMN" or "facsimile group 3" and will therefore be mapped to the value "Recommendation G.711 A-law" or Recommendation G.711 μ -law" (PCS-1900) of the Q.931 (05/98) parameter user layer 1 protocol (see note 3).
- NOTE 3: The value "Recommendation G.711 A-law" or "Recommendation G.711 μ-law" (PCS-1900) applies only when the Q.931 (05/98) parameter information transfer capability indicates "3,1 kHz audio" or "speech".
- NOTE 4: When interworking with an ISDN according to ETS 300 102-1 octets 4a and 4b shall not be included because default values apply. In an ISDN according to Q.931 (05/98) these octets no more exist.
- NOTE 5: In this case octet 5d shall not be included.
- NOTE 6: Octet 6 shall not be sent unless specific application rules are given for a particular case (PLMN specified). End-to-end significant user information layer 2 protocol shall be sent by LLC.
- NOTE 7: Not used for currently defined Bearer Services and Teleservices.
- NOTE 8: These values will only be set if the "Information Transfer Capability" indicates "3,1 kHz audio", synchronous data transmission is used and octet 5b of the ISDN BC is present.
- NOTE 9: (VOID).
- NOTE 10:The PLMN BC-IE parameter value "autobauding modem type 1" will be mapped to the ISDN BC-IE parameter values "inband negotiation possible" and "user rate indicated by E-bits specified in ITU-T Recommendation I.460 or may be negotiated inband" (octet 5a of ISDN BC-IE). In case of data compression high speed modems, like V.32bis, V.34 and/or V.90 may be used in the IWF. Autobauding may also be used to support user rates less than 9.6 kbit/s towards the PSTN.
- NOTE 11: The ITC value of the PLMN BC-IE "speech", "3,1 kHz audio Ex PLMN" will indicate these requirements.

NOTE 12: For the use of NIRR see 3GPP TS 27.001.

NOTE 13:The value of the Intermediate Rate field of the ISDN Bearer Capability information element shall only depend on the values of the User Rate and the Information Transfer Capability in the same information element. The correspondence is:

Intermediate Rate = not used if User Rate > than 19.2 kbit/s.

Intermediate Rate = 32 kbit/s if User Rate = 19,2 kbit/s or 14.4 kbit/s.

Intermediate Rate = 16 kbit/s if User Rate = 9,6 kbit/s.

Intermediate Rate = 8 kbit/s otherwise.

In case of Audio calls the value of the Intermediate Rate may be set to "not used".

NOTE 14:If compression is supported by the MSC and "data compression allowed" is indicated, then the ISDN user rate for UDI calls shall be set as follows. If the parameter "FNUR" is present the ISDN user rate shall be set to this value. Otherwise the PLMN user rate shall be mapped to an equal or any higher ISDN user rate value (in case of V.110 the highest ISDN user rate shall be 19,2 kbit/s). The Intermediate Rate shall be set to an appropriate value.(see subclause 10.2.4.11).

In case of "3,1 kHz audio" the modem shall try to negotiate data compression and flow control (see subclause 9.2.4.11). In case of "autobauding type 1" high speed modems may be used (see note 10).

NOTE 15:User rate of the PLMN -BC is overridden by the fixed network user rate of the PLMN BC-IE if available. When the MT indicates "autobauding", "modem for undefined interface" or "none", the other modem type shall be set to "no other modem type"; any other value of the modem type is overridden by the other modem type value (see 3GPP TS 27.001). In UMTS, if octet 6d is not present in the PLMN BC, the MSC shall reject the call. The support of user rates lower than 9.6 kbit/s in UMTS are only possible in the scope of autobauding (see note 10).

NOTE 16:In the case other rate adaptation = H.223 & H.245 the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T

Information Transfer capability: UDI

Transfer mode: circuit

Information transfer rate: 64 kbit/s

User information layer 1 protocol: H.223 & H.245

In all the other cases t The ISDN-BC will consist of the octets 1 to 4 only, coded:

Coding standard: CCITT
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

NOTE 17:V.120 interworking is selected.

If an LLC element is not present, the network will insert an LLC. If an LLC is present it may be modified. The PLMN -BC parameters negotiated with the MS shall be mapped to the LLC parameters. The LLC parameter Rate Adaptation will be set to "V.120".

When interworking with unrestricted 64 kbit/s networks the ISDN BC shall be coded according to note 16.

NOTE 18: When the MSC is directly connected to a restricted 64 kbit/s network, the ISDN BC-IE is coded with an ITC = RDI.

When indirectly interworking with a restricted 64 kbit/s network the ISDN BC-IE shall be coded according to ETR 018, as shown below:

Coding standard: CCITT
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s
User information layer 1 protocol: V.110/X.30
Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 56 kbit/s

If an LLC element is not present, the network will insert an LLC. If an LLC is present it may be modified. The PLMN -BC parameters negotiated with the MS shall be mapped to the LLC parameters according to the rules in this table. The LLC parameter Information Transfer Capability will be set to "restricted digital"

- NOTE 19:In case the MS signals an ACC containing TCH/F4.8 only and the network does not support TCH/F4.8 channel coding, then the MSC may act as if TCH/F9.6 were included in the ACC.
- NOTE 20: Extension of the 'Acceptable channel codings' field in octet 6e in case EDGE channel codings are supported.
- NOTE 21: Void
- NOTE 22: Only applicable for non-transparent services.
- NOTE 23: This parameter shall be included if EDGE channel codings are indicated in ACC. In cases where this parameter would not otherwise be included, the value is set to 'Air interface user rate not applicable' or 'User initiated modification not requested' or 'No preference'.
- NOTE 24: This value was used by services defined for former GSM releases and does not need to be supported.
- NOTE 25:The case of FTM is identified by Rate adaptation in the PLMN BC-IE set to "CCITT X.31 flag stuffing", Connection element set to "non-transparent", and Synchronous/asynchronous set to "asynchronous". The MSC applies one of the following alternatives:
 - 1) In the case FNUR=64 kbit/s
 - the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

- the LLC-IE shall be coded according to ETR 018 as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: (CCITT standardized rate adaptation

X.31 HDLC flag stuffing) (note: the absence of octet 5 indicates that HDLC flag

stuffing applies)

User information layer 2 protocol: Recommendation X.25, link layer User information layer 3 protocol: Recommendation X.25, packet layer

If user information layer 1 protocol is indicated by absence of octet 5 user information layer 2/3 protocol are also absent.

- 2) In the case FNUR=56 kbit/s and the MSC is directly connected to a restricted 64 kbit/s network,
- the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: RDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

- the LLC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: RDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: (CCITT standardized rate adaptation

X.31 HDLC flag stuffing) (note: the

absence of octet 5 indicates that HDLC flag

stuffing applies)

User information layer 2 protocol: Recommendation X.25, link layer
User information layer 3 protocol: Recommendation X.25, packet layer

If user information layer 1 protocol is indicated by absence of octet 5 user information layer 2/3 protocol are also absent.

3) In the case FNUR=56 kbit/s and the MSC is indirectly interworking with a restricted 64 kbit/s network,

- the ISDN BC-IE shall be coded according to ETR 018, as shown below:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s
User information layer 1 protocol: V.110/X.30
Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 56 kbit/s

- If an LLC element is not present, the network will insert an LLC. If an LLC is present it may be modified. The PLMN -BC parameters negotiated with the MS shall be mapped to the LLC parameters according to the rules in this table. The LLC parameter Information Transfer Capability will be set to "restricted digital" and the LLC parameter User information layer 1 protocol will be set to "X.31 flag stuffing".

NOTE 26:In the case FNUR=64 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: H.223 and H.245

In the case FNUR=56 kbit/s the ISDN BC-IE shall be coded as in note 18.

In the case FNUR=32 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: V.110, I.460 & X.30

Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 32 kbit/s

In the case FNUR=28.8 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T

Information Transfer capability: 3,1 kHz Audio

Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: G.711 A-law or μ -law

Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

Modem type: V.34
User rate: 28.8 kbit/s

In the case FNUR=33.6 kbit/s the ISDN BC-IE shall be coded as follows:

Coding standard: ITU-T

Information Transfer capability: 3,1 kHz Audio

Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: G.711 A-law or μ-law

NOTE 27:In the case the FNUR=32 kbit/s the ISDN BC-IE shall be coded for PIAFS as follows:

Coding standard: ITU-T
Information Transfer capability: UDI
Transfer mode: circuit
Information transfer rate: 64 kbit/s

User information layer 1 protocol: V.110, I.460 and X.30

Synchronous/Asynchronous: synchronous

Negotiation: In-band negotiation not possible

User rate: 32 kbit/s

In the case of a FNUR=64 kbit/s the ISDN BC-IE shall be coded for PIAFS as in note 16.