CR-Form-v7.1

CHANGE REQUEST

⌘	**27.001** CR **111**	⌘**rev** **2** ⌘	Current version: **3.15.0** ⌘

*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 **X** Radio Access Network ☐   Core Network **X**

Title:	⌘	Correction of NA value for Data Compression
Source:	⌘	NTT DoCoMo
Work item code:⌘	TEI	**Date:** ⌘ 03/06/2005

Category:	⌘	**F**		**Release:** ⌘ R99

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:	⌘	**This is an essential correction.**

NP-000605, which proposed to set the default setting of field value (NA) for Data Compression to "NO.. compression not possible/allowed" for R99 and Rel-4, was approved in CN#10. However, due to misimplemention of the CR only for R99, R99 specifies that NA value for DC to be "DC.. compression possible/allowed". Consequently, the NA value for DC is different between R99 and Rel-4 onward. This leads to serious interoperability problems. Therefore, the NA value for DC in R99 needs to be corrected.

Furthermore, since vendors may have already implemented the "incorrect" NA value, rejections which occur between MSs and networks with different NA values for DC need to be prevented.

Summary of change:⌘	

- NA value for DC in Table B.5 is corrected to "NO.. compression not possible/allowed".
- A note is added to Table B.1 to take into account backward compatibility.

Consequences if not approved:	⌘	Call setup requests would be rejected unexpectedly.

Clauses affected:	⌘	B.1.1.2

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.

====== **FIRST MODIFIED SECTION** ======

B.1.1.2   Interpretation of the Diagrams

The purpose of the subsequent diagrams is to achieve unambiguous representation of the individual contents of the PLMN BC-IE for the various occurrences during the call set-up phase, covering all bearer services and teleservices according to 3GPP TS 22.002 and 3GPP TS 22.003.

The basic principle adopted is a graphic scheme, or mask, wherein the ordinate designates the individual parameters of the PLMN BC-IE and the abscissa gives the possible field values of these parameters. The abbreviations used in these sections are defined in table B.5. The allowed content of any PLMN BC-IE is represented by a number of graphs connecting parameter values (abscissa points) of all parameters (ordinate points). Each graphic scheme is subdivided into two independent parts:

- "Layer/Protocol related" part; and

- "Radio Channel related" part.

The generation of all PLMN BC-IEs in all call set-up messages shall be in accordance with these graphs. Subclauses B.1.2 through B.1.11 show individual sets of graphs for each service group (BS/TS) and for each type of applicable Information Transfer Capability.

In addition, the following rules apply:

- Those parameters which have only one possible field value for all recognized services are shown in table B.5, where they are marked accordingly in the column "common setting of field values". They are not represented in the graphic scheme.

- Not all parameters of the PLMN BC-IE are relevant for each service (BS/TS). This is represented by specific abscissa points with a value of "NA" (Not Applicable) allocated to these parameters. The graphs pass through these points for each such parameter. The actual field value to be used in the PLMN BC-IE is marked in the column "default setting of field values (NA)" of table B.5. An abscissa point with a value of "NAV" (Not AVailable) indicates that the entire octet carrying this parameter (ref. table B.2 "General Structure of the PLMN BC-Information Element") shall be omitted.

- Unless FTM is applied, there is a particular dependency of the parameters "User Information Layer 2 Protocol (UIL2P)" and "Connection Element (CE)":

  - If the MS sends a PLMN BC-IE with a CE value other than "Transparent (T)", the parameter UIL2P is essential. Its field value must be set as indicated in the applicable graph.

  - If the MSC sends a PLMN BC-IE in the SETUP message, the parameter UIL2P may also be absent in the case of the CE parameter value being other than "Transparent (T)".

- In case FTM is applied, the PLMN BC-IE shows a CE value "non-transparent", SA value "asynchronous", and RA value X.31 flag stuffing. The UIL2P is not available.

- Certain parameters of the PLMN BC-IE may be negotiated during the connection establishment phase. Table B.1 shows these parameters and the relations of their values in the SETUP message and in the CALL CONFIRMED/CALL PROCEEDING message, respectively, both for the mobile-originated and mobile-terminated case. A parameter may indicate a field value of one of the following types:

  - "requested value" indicating a request which cannot be changed by the responding entity;

  - "offered value" indicating a proposal which may be changed by the responding entity;

  - a particular choice value leaving it up to the responding entity which value ultimately applies;

  - "as requested" indicating that the requested value applies and is confirmed (by returning it);

  - "selected value" indicating that a particular value applies either out of the offered set or as a free choice out of the defined set of values;

  - "supported value" indicating a value supported by the responding entity.

Table B.1: BC-Parameters subject to negotiation procedure

Mobile Originated Call:

BC-parameter	Message	
	SETUP	CALL PROC
NDB	Requested value	as requested
NPB	Requested value	as requested
NSB	Requested value	as requested
CE	Requested value (T/NT)	as requested
	"both" with the preferred value indicated (e.g. both NT)	selected value (T/NT)
UIL2P	Requested value [9] or NAV [1]	as requested or NAV [4]
User Rate	Requested value	as requested
DC	Requested value [2]	as requested or "NO" [7]
FNUR	Requested value	supported value
Other MT	Requested value	supported value
UIMI	Requested value	supported value

Mobile Terminated Call:

BC-parameter	Message	
	SETUP	CALL CONF
NDB	Offered value	selected value (free choice)
NPB	offered value	selected value (free choice)
NSB	offered value	selected value (free choice)
CE	requested value (T/NT)	as requested or selected value (T/NT) (free choice) [3]
	"both" with the preferred value indicated (e.g. both NT)	selected value (T/NT)
Sync/ Asynchronous	requested value	as requested or selected value [10]
Rate adaptation/Other rate adaptation	requested value	as requested or selected value [11]
UIL2P	offered value [2] or NAV [4]	selected or NAV [1]
User Rate	offered value	selected value [5]
DC	requested value [2]	as requested or "NO" [7]
FNUR	offered value	selected value [6]
Other MT	offered value	selected value [6]
UIMI	offered value	selected value [8]

1)   For CE:T only, out-band flow control, or RA:X.31 flag stuffing requested by the MS.
2)   Not for CE:T.
3)   When the SETUP message contains no BC-IE (single numbering scheme).
4)   "NAV" shall not be interpreted as an out-band flow control request by the MS.
5)   The modification of User Rate must be in conjunction with Modem Type and Intermediate Rate.
6)   The modification of the Fixed Network User Rate shall be in conjunction with the Modem Type and/or Other Modem Type.
7)   In case of a Mobile Terminated Call, if the SETUP message does not contain a BC-IE, the MS shall behave as if the DC is set to "data compression not possible".
        If a sending entity, based on an earlier version of the protocol, sends a SETUP message containing "DC.. compression possible/ allowed" instead of the default value "NO.. compression not possible/allowed"as defined in Table B.5 then the receiving MS or the receiving network may ignore the DC value and may return either "NO.. compression not possible/allowed" or "DC.. compression possible/allowed" in the CALL CONF/CALL PROC message.
        In case of a MO CALL or a MT CALL where no BC-IE is included in the CALL PROCEEDING or CALL CONFIRMED message, respectively, the MS or the network shall behave as if the DC was set to "data compression not possible" or "data compression not allowed", respectively.
8)   Less or equal to the offered value.
9)   Not for CT:T or FTM (i.e., CE:NT, SA:A, RA:X.31 flag stuffing).
10)   For FTM and PIAFS, this parameter may be negotiated. See Table B.4e for details.

11)   For FTM, PIAFS and Multimedia, this parameter may be negotiated. See Table B.4f for details.

Table B.2: General Structure of the BC-Information Element

OCTET	INFORMATION ELEMENT FIELD	
3	Radio channel requirements Coding standard Transfer mode Information Transfer Capability	
4	Structure Duplex mode Configuration Establishment Negotiation of Intermediate Rate Requested Compression	2)
5	Rate adaption Signalling access protocol	2)
5a	Other ITC Other rate adaption	2) 7)
5b	Rate adaption header / no header Multiple frame establishment support in data link Mode of operation Logical link identifier negotiation Assignor / assignee In-band / out-band negotiation	2) 3)
6	User information layer 1 protocol Synchronous / asynchronous	2)
6a	Number of stop bits Negotiation Number of data bits User rate	2)
6b	Intermediate rate NIC on transmission NIC on reception Parity information	2)
6c	Connection element Modem type	2)
6d	Fixed network user rate Other modem type	4)
6e	Maximum number of traffic channels Acceptable channel codings	4)
6f	Wanted air interface user rate User initiated modification indication	4)
6g	Acceptable Channel codings 5) Asymmetry preference indication 6)	
7	User information layer 2 protocol	1) 2)

1)   Octets optional.
2)   Octets only available if the parameter "Information Transfer Capability" does not indicate "Speech".
3)   For V.120 rate adaption only.
4)   Optional octets available only if the parameter "Information Transfer Capability" does not indicate "Speech".
5)   Extension of the 'Acceptable channel codings' field in octet 6e in case EDGE channel codings are supported.
6)   Only used if EDGE channels are among the 'Acceptable channel codings'. The value shall be set to 'no preference' in case the connection element is T.
7)   For ITC=RDI or UIL1P=V.120, PIAFS, and 'H.223 and H.245' only.

Table B.3a: Selection of flow control method (for CE:NT with SA:A only)

information element	flow control method		
	in-band	out-band (3)	none
number of data bits	7 or 8	7 or 8	7 or 8
user information layer 2 protocol	ISO 6429 (1)	NAV	COPnoFICt (2)
1) ISO6429 stands for "ISO 6429, codeset 0, DC1/DC3" and is applicable for 7 and 8 bit codes. 2) COPnoFICt stands for a character oriented protocol with no flow control mechanism (no reserved characters for flow control). 3) "out-band" flow control requires V.42 in case of PSTN or V.110 in case of ISDN. If the V.110 flow control mechanism is not supported, where required, the call pending shall be terminated. If the V.42 functionality is not supported by the modem in the IWF or in the fixed network, the call will be supported with a fallback to the non-V.42 mode. In this case the IWF will release the call if due to temporary throughput problems on the radio interface or initiation of flow control by the MS and the inability to flow control the fixed network modem an overflow of the L2R buffers occurs. Note that a phase 1 network may release the call, if the V.42 functionality is not provided by the IWF or the fixed network modem. As V.42 does not apply to V.21 modems, outband flow control can not be supported for these modem types.			

Table B.3b: Selection of PLMN Profile (for CE:NT with SA:S only)

Mobile Terminated Call:

BC-parameter	Message SETUP	Message CALL CONF
UIL2P	X.25	X.25 or X.75

Table B.4a: Modem Type subject to negotiation procedure

Mobile Originated Call:

BC-parameter CE	BC-parameter MT and OMT [6]	
	Message SETUP	**Message CALL PROC**
T	V-series	V-series
NT	V-series	V-series
	autobauding type 1	autobauding type 1 or V-series [1]
bothT or bothNT	V-series	V-series
	autobauding type 1	autobauding type 1 or V-series [1][2]

Mobile Terminated Call:

BC-parameter CE	BC-parameter MT and OMT [6]	
	Message SETUP	**Message CALL CONF**
T	V-series	V-series
NT	V-series	V-series or autobauding type 1 [3]
	autobauding type 1	autobauding type 1 or V-series [4]
bothT or bothNT	V-series	V-series
	autobauding type 1	autobauding type 1 or V-series [4][5]

1) No autobauding capability in the IWF:MSC.
2) CE:T selected by IWF/MSC.
3) Free choice if the SETUP contains no BC-IE (single numbering scheme).
   If the IWF/MSC has no autobauding capability, a V-series modem type is used.
4) When the MS does not allow the use of autobauding capability.
5) CE:T selected by the MS.
6) When the MT indicates "autobauding" , "modem for undefined interface" or "none", the OMT shall be set to "no other modem type". Any other values of the MT is overridden by the OMT value.

Table B.4b: Intermediate Rate negotiation procedure

If the user rate is 9.6 kbit/s the intermediate rate negotiation procedure is not applicable and NIRR shall be set to "No meaning".

Recipient of SETUP supports full rate, non transparent, 6 kbit/s radio interface rate and the user rate is up to/equal 4,8 kbit/s:

BC-parameter	Message SETUP	Message CALL CONF or CALL PROC
NIRR	6 kbit/s	6 kbit/s
IR	16 kbit/s	8 kbit/s
User Rate	up to/equal 4,8 kbit/s	as requested

NOTE 1: In case of a Mobile Terminated Call, if the SETUP message does not contain a BC-IE, the MS shall behave as if NIRR set to "No meaning".

In case of a MO CALL or a MT CALL where no BC-IE is included in the CALL PROCEEDING or CALL CONFIRMED message, respectively, the MS or the network shall behave as if the NIRR was set to "No meaning".

Recipient of SETUP does support full rate, non transparent, but not in connection with 6 kbit/s radio interface rate:

BC-parameter	Message SETUP	Message CALL CONF or CALL PROC
NIRR	6 kbit/s	No meaning
IR	16 kbit/s	16 kbit/s
User Rate	up to/equal 4,8 kbit/s	as requested

NOTE 2: If no other parameter needs negotiation, the CALL CONF/PROC message need not contain any BC-IE.

In case of a MO CALL or a MT CALL where no BC-IE is included in the CALL PROCEEDING or CALL CONFIRMED message, respectively, the MS or the network shall behave as if the NIRR was set to "No meaning".

NOTE 3: In case a GBS-operation is requested and acknowledged, the MS indicates the acceptable channel codings. The indicated acceptance of TCH/F4.8 is equivalent to the support of 6 kbit/s radio interface rate per TCH/F and therefore overrides the NIRR parameter.

Table B.4c Negotiation of fixed network user rate

BC-parameter	Message SETUP	Message CALL PROC/CONFIRMED
FNUR	requested value	equal or lower than the requested value

The network might accept the modified value or reject the call.

Table B.4d Negotiation of user initiated modification indication

BC-parameter	Message SETUP	Message CALL PROC/CONFIRMED
UIMI	offered value	equal to or a value indicating a request for modification to a lower number of traffic channels than offered

Table B.4e: Negotiation of Synchronous/Asynchronous

Mobile Terminated Call:

	BC-parameter Synchronous/Asynchronous	
Bearer type	Message SETUP	Message CALL CONF
FTM[1]	Synchronous	Asynchronous
PIAFS[2]	Synchronous	Asynchronous

1)   This negotiation is possible, only if ITC=UDI or RDI, FNUR=64 or 56 kbit/sand CE=NT or "both" is signalled in the SETUP message. The MS shall signal FTM as specified in B.1.2.3 .

2)   This negotiation is possible, only if ITC=UDI, FNUR=32 kbit/s and CE= "both" is signalled in the SETUP message. The UE shall signal PIAFS as specified in B.1.2.4

Table B.4f: Negotiation of Rate adaptation/Other rate adaptation

Mobile Terminated Call:

	BC-parameter Rate adaptation/Other rate adaptation	
Bearer type	Message SETUP	Message CALL CONF
FTM[1]	V.110, I.460 and X.30	X.31 flag stuffing
PIAFS[2]	V.110, I.460 and X.30	PIAFS
Multimedia	V.110, I.460 and X.30[3]	H.223 and H.245
	No rate adaptation[5] [6]	H.223 and H.245

1)   This negotiation is possible, only if ITC=UDI or RDI, FNUR=64 or 56 kbit/s and CE=NT or "both" is signalled in the SETUP message. The MS shall signal FTM as specified in B.1.2.3.

2) This negotiation is possible, only if ITC=UDI, FNUR=32 kbit/s and CE= "both" is signalled in the SETUP message. The UE shall signal PIAFS as specified in B.1.2.4.

3) This negotiation is possible, only if ITC=UDI or RDI, FNUR=32 or 56 kbit/s and CE=T or "both" is signalled in the SETUP message. The MS shall signal 3G-H.324/M as specified in B.1.3.1.3, B.1.3.1.4 and B.1.3.1.6.

4) Void.

5) This negotiation is possible, if ITC=3,1 kHz, FNUR=28.8 kbit/s, MT=V.34 and CE=T or "both" is signalled in the SETUP message. The MS shall signal 3G-H.324/M as specified in B.1.3.2.3.

6) This negotiation is possible, if ITC=UDI or RDI, FNUR=64 or 56 kbit/s and CE=T is signalled in the SETUP message. The MS shall signal 3G-H.324/M as specified in B.1.3.1.3, B.1.3.1.4, and B.1.3.1.5

Table B.5: BC parameter setting (part 1)

Abbreviations for Parameters and Values	common setting of field values		
	default setting of field values (NA)	V	V
ITC...Information Transfer Capability:	- Speech - UDI..Unrestricted Digital - FAX3..Group 3 Facsimile - 3,1 kHz..3,1 kHz Ex PLMN - RDI..Restricted Digital		
TM....Transfer Mode:	- ci..Circuit	X	X
S.....Structure:	- SDU..Service Data Unit Integrity - Unstructured	X	
C.....Configuration:	- pp..Point to point	X	X
E.....Establishment:	- de..Demand	X	X
SA....Sync/Async:	- S..Synchronous - A..Asynchronous		
N.....Negotiation	- ibn..in band negotiation not possible	X	X
UR....User Rate:	- 0.3..0.3 kbit/s - 1.2..1.2 kbit/s - 2.4..2.4 kbit/s - 4.8..4.8 kbit/s - 9.6..9.6 kbit/s	X	
IR....Intermediate Rate:	- 8.. 8 kbit/s - 16.. 16 kbit/s	X	
NICT..Network Independent Clock on Tx:	- not_required.. Not required - required	X	X
NICR..Network Independent Clock on Rx:	- not_accepted..not accepted - accepted	X	X
NSB...Number of Stop Bits:	- 1..1 bit - 2..2 bit	X	
NDB...Number of Data Bits Excluding Parity If Present:	- 7.. 7 bit - 8.. 8 bit	X	
NPB...Parity Information:	- Odd - Even - None - 0.. Forced to 0 - 1.. Forced to 1	X	
UIL1P.User Information Layer 1 Protocol	- def..default layer 1 protocol	X	X

Table B.5: BC parameter setting (part 2)

Abbreviations for Parameters and Values	common setting of field values / default setting of field values (NA)	V	V
DM....Duplex Mode:	-		
	- fd.. Full Duplex	X	X
MT....Modem Type:	- V.21		
	- V.22		
	- V.22 bis		
	- V.26 ter		
	- V.32		
	- auto1.. autobauding type 1		
	- none	X	
RCR...Radio Channel Requirement:	- FR Full Rate support only Mobile Station		
	- dual HR Dual Rate support Mobile Station/ Half Rate preferred		
	- dual FR Dual Rate support Mobile Station/ Full Rate preferred		
CE....Connection Element:	- T.. Transparent		
	- NT.. Non Transparent		
	- bothT both transparent preferred		
	- bothNT both non Transparent preferred		
UIL2P.User Information Layer 2 Protocol:	- ISO6429..ISO6429,codeset 0,DC1/DC3		
	- X.25		
	- X.75..X.75 layer 2 modified (CAPI)		
	- COPnoFlCt..Character oriented protocol with no flow control mechanism		
SAP...Signalling Access Protocol:	- I.440.. I.440/450	X	
	- X.32		
RA....Rate Adaptation:	- V.110.. V.110/X.30		
	- X.31Flag.. X.31 flagstuffing		
	- NO.. no rate adaptation	X	
	- V.120		
	- PIAFS		
	- H.223 and H.245		
CS....Coding Standard:	- GSM	X	X
NIRR..Negotiation of Intermediate Rate Requested:		X	
	NM..No Meaning associated with this value		
	6kbit/s..6kbit/s radio interface rate requested		
DC....Data Compression	- DC.. compression possible/allowed	~~X~~	
	- NO.. compression not possible/allowed	<u>X</u>	

Table B.5: BC parameter setting (part 3)

common setting of field values

Abbreviations for Parameters and Values

default setting of field values (NA)

Abbreviations for Parameters and Values		default (NA)	common
FNUR...Fixed Network User Rate	- FNUR not applicable - 9.6.. 9.6 kbit/s - 14.4.. 14.4 kbit/s - 19.2.. 19.2 kbit/s - 28.8.. 28.8 kbit/s - 32.0.. 32.0 kbit/s - 33.6.. 33.6 kbit/s - 38.4.. 38.4 kbit/s - 48.0.. 48.0 kbit/s - 56.0.. 56.0 kbit/s - 64.0.. 64.0 kbit/s		
WAIUR...Wanted Air Interface User Rate	- WAIUR not applicable - 9.6.. 9.6 kbit/s - 14.4.. 14.4 kbit/s - 19.2.. 19.2 kbit/s - 28.8.. 28.8 kbit/s - 38.4.. 38.4 kbit/s - 43.2.. 43.2 kbit/s - 57.6.. 57.6 kbit/s - int 38.4.. interpreted by the network as 38.4 kbit/s	X	
ACC.........Acceptable channel codings	- 4.8.. TCH/F4.8 acceptable - 9.6.. TCH/F9.6 acceptable - 14.4..TCH/F14.4 acceptable - 28.8..TCH/F28.8 acceptable - 32.0..TCH/F32.0 acceptable - 43.2..TCH/F43.2 acceptable - none..No channel coding (defined by selecting None of the above		
MaxNumTCH...Maximum Number of Traffic Channels	- 1.. 1 TCH - 2.. 2 TCH - 3.. 3 TCH - 4.. 4 TCH - 5.. 5 TCH - 6.. 6 TCH - 7.. 7 TCH - 8.. 8 TCH		
OMT...Other modem type	- no other MT.. no other modem type - V.34.. V.34		
User initiated modification indication	- not req.. user initiated modification not required - upto 1 TCH.. user initiated modification upto 1 TCH may be requested - upto 2 TCH.. user initiated modification upto 2 TCH may be requested - upto 3 TCH.. user initiated modification upto 3 TCH may be requested - upto 4 TCH.. user initiated modification upto 4 TCH may be requested	X	
Asymmetry preference indication	- 00 no preference - 01 up link biased asymmetry preferred - 10 down link biased asymmetry preferred		

====== END OF MODIFICATION ======