3GPP TSG CN Plenary Meeting #14 **Tdoc NP-010571**
Kyoto, Japan. 12th - 14th December 2001.

Source: **TSG CN WG3**

Title: **CRs on R99 Work Item CS Bearers**

Agenda item: **7.20**

Document for: **APPROVAL**

Introduction:

This document contains **2** CRs on **R99** Work Item **"CS Bearers"**, that have been agreed by TSG CN WG3, and are presented to TSG CN Plenary meeting #14 for approval.

NP Doc	WG Doc	Subject	Spec	CR	Rev	Cat	C_Ver	Phase	Work item
NP-010571	N3-010401	Removal of SIWF	29.007	042		F	3.8.0	R99	CS Bearer
NP-010571	N3-010402	Removal of SIWF	29.007	043		A	4.2.0	Rel-4	CS Bearer

3GPP TSG-CN WG3 Meeting #19
Brighton, U.K. 15th - 19th September 2001

Tdoc N3-010401

CR-Form-v4

CHANGE REQUEST

⌘ **29.007** **CR** **042** ⌘ ev **-** ⌘ Current version: **3.8.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Removal of Shared IWF
Source:	⌘	CN3
Work item code:	⌘	TEI [CS Bearers]
Date:	⌘	08.10.01
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:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The concept of Shared IWF was removed from UMTS R99 onwards (CN#13)
Summary of change:	⌘	
Consequences if not approved:	⌘	
Clauses affected:	⌘	See attached pages
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

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[4] ITU-T Recommendation Q.922 (1992): "DSS 1 Data link layer: ISDN data link layer specification for frame mode bearer services".

[5] ITU-T Recommendation Q.931 (05/98): "DSS 1 - ISDN user network interface layer 3 specification for basic call control".

[6] ITU-T Recommendation V.22: "1200 bits per second duplex modem standardized for use in the general switched telephone network and on point-to-point 2-wire leased telephone-type circuits".

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[10] ITU-T Recommendation V.32bis: "A duplex modem operating at data signalling rates of up to 14 400 bit/s for use on the general switched telephone network and on leased point-to-point 2-wire telephone-type circuits"

[11] ITU-T Recommendation V.34: "A modem operating at data signalling rates of up to 33 600 bit/s for use on the general switched telephone network and on leased point-to-point 2-wire telephone-type circuits".

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[16] ITU-T Recommendation V.120: "Support by an ISDN of data terminal equipment with V-Series type interfaces with provision for statistical multiplexing".

[17] ETR 018: "Integrated Services Digital Network (ISDN); Application of the Bearer Capability (BC), High Layer Compatibility (HLC) and Low Layer Compatibility (LLC) information elements by terminals supporting ISDN services".

[18] ETS 300 102-1 Edition 1 (1990): "Integrated Services Digital Network (ISDN); User-network interface layer 3 Specifications for basic call control".

[19] EN 300 403-1 V1.2.2 (1998-04): "Integrated Services Digital Network (ISDN); Digital Sunscriber Signalling System No. One (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification".

[20] 3GPP TS 01.01: "Digital cellular telecommunication system (Phase 2+); GSM Release 1999 Specifications".

[21] 3GPP TS 01.04: "Digital cellular telecommunication system (Phase 2+); Abbreviations and acronyms".

[22] 3GPP TS 02.01: "Digital cellular telecommunication system (Phase 2+); Principles of telecommunication services supported by a GSM Public Land Mobile Network (PLMN)".

[23] 3GPP TS 02.03: "Digital cellular telecommunications system (Phase 2+); Teleservices supported by a GSM Public Land Mobile Network (PLMN)".

[24] 3GPP TR 03.10: "Digital cellular telecommunications system (Phase 2+); GSM PLMN Connection types".

[25] 3GPP TS 03.45: "Digital cellular telecommunications system (Phase 2+); Technical realization of facsimile group 3 transparent".

[26] 3GPP TS 03.50: "Digital cellular telecommunications system (Phase 2+); Transmission planning aspects of the speech service in the GSM Public Land Mobile Network (PLMN) system".

[27] 3GPP TS 04.21: "Digital cellular telecommunications system (Phase 2+); Rate adaption on the Mobile Station - Base Station System (MS - BSS) interface".

[28] 3GPP TS 08.20: "Digital cellular telecommunication system (Phase 2+); Rate adaption on the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".

[29] 3GPP TS 08.60: "Digital cellular telecommunications system (Phase 2+); Inband control of remote transcoders and rate adaptors for Enhanced Full Rate (EFR) and full rate traffic channels".

[30] 3GPP TS 09.02 V3.x.y: "Digital cellular telecommunications system (Phase 2+); Mobile Application Part (MAP) specification".

[31] 3GPP TS 09.03: "Digital cellular telecommunication system (Phase 2+); Signalling requirements on interworking between the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN) and the Public Land Mobile Network (PLMN)".

[32] 3GPP TS 21.101: "3rd Generation Partnership Project; Technical Specification Group: Release 1999 Specifications".

[33] 3GPP TS 22.002: " Bearer Services (BS) supported by a GSM Public Land Mobile Network (PLMN)".

[34] 3GPP TS 22.004: "General on supplementary services".

[35] 3GPP TS 23.003: "Numbering, addressing and identification".

[36] 3GPP TS 23.008: "Organization of subscriber data".

[37] 3GPP TS 23.011: "Technical realization of supplementary services".

[38] Void

[39] ~~3GPP TS 23.054: "Description for the use of a Shared Inter Working Function in a GSM PLMN; Stage 2".~~Void

[40] 3GPP TS 24.008: "Mobile radio interface layer 3 specification".

[41] 3GPP TS 24.022: "Radio Link Protocol (RLP) for data and telematic services on the Mobile Station - Base Station System (MS - BSS) interface and the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".

[42] 3GPP TS 25.415: "Iu Interface CN-UTRAN User Plane Protocols".

[43] 3GPP TS 27.001: "General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS)".

[44] 3GPP TS 27.002: "Terminal Adaptation Functions (TAF) for services using asynchronous bearer capabilities".

[45] 3GPP TS 27.003: "Terminal Adaptation Functions (TAF) for services using synchronous bearer capabilities".

[46] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[47] 3GPP TS 29.006: "Interworking between a Public Land Mobile Network (PLMN) and a Packet Switched Public Data Network/Integrated Services Digital Network (PSPDN/ISDN) for the support of packet switched data transmission services".

[48] ISO/IEC 3309: "Telecommunications and information exchange between systems - High-level data link control (HDLC) procedures - Frame structure".

[49] IETF RFC 1662: "PPP in HDLC-like framing".

[50] Mobile Internet Access Forum: "PIAFS Specification Ver. 1.1, 2.1".

[51] ITU-T Recommendation V.8: "Procedures for starting sessions of data transmission over the public switched telephone network".

[52] TS 26.111: "Codec for Circuit Switched Multimedia Telephony Service; Modifications to H.324".

[53] 3GPP TR 23.910: " Circuit Switched Data Bearer Services".

[54] ITU-T Recommendation H.223: "Multiplexing protocol for low bit rate multimedia communication".

[55] ITU-T Recommendation H.223, Annex A: "Multiplexing protocol for low bit rate multimedia communication over low error-prone channels".

[56] ITU-T Recommendation H.223, Annex B: "Multiplexing protocol for low bit rate multimedia communication over moderate error-prone channels".

[57] ITU-T Recommendation H.223, Annex C: "Multiplexing protocol for low bit rate multimedia communication over highly error-prone channels".

[58] ITU-T Recommendation H.324: "Terminal for low bit-rate multimedia communication".

Next section modified

9.2.1.1 Selection of interworking function

The interworking function will need to negotiate with the user to establish the appropriate modem selection e.g. data rate, modulation scheme, etc. In addition, it will also be required to convert the signalling format, from a combination of out of band and in band, to that suitable for controlling the modem and the autocalling line procedure function where applicable. In the following modem selection procedures it is assumed that the interworking function and modems will be associated with each MSC. ~~As an alternative, a centralized interworking function is possible as a network provider option. This is specified in 3GPP TS 23.054.~~

For a data call originated by a circuit mode data terminal on the PLMN, the modem selection is done by using the element "modem type" in the call set-up message (bearer capability).

In addition, other elements of the call setup will indicate the user rate, etc. to be used via that modem. The use of this information however means that the network is only able to select a modem from the modem pool which conforms to the speed which the terminal is utilizing at the DTE/DCE interface at the MS (e.g. V.22 for 1 200 bps). The exception to this is where the user has selected the non transparent service in which case either an autobauding or multi self selecting speed modem (e.g. V.32) may be used.

In case the PLMN-BC(s) received with the set-up message indicated a multislot, 14.4kbit/s, and EDGE-operation (refer to 3GPP TS 27.001) and the network does not support any of the required such services, the PLMN-BC(s) sent with the call proceeding message shall not contain the "fixed network user rate", "other modem type" and "user initiated modification indicator" parameters - the MSC shall discard the multislot or 14.4kbit/s and/or EDGE-related parameters and use the fall-back bearer service indicated by the remaining parameters of the PLMN-BS(s) on a singleslot configuration (refer to 3GPP TS 08.20 and 3GPP TS 04.21) on the MSC/IWF-BSS link. The MSC/IWF shall modify the relevant parameters in a possibly present LLC accordingly.

If the MSC supports the multislot, 14.4kbit/s and/or EDGE-operation, the PLMN-BC(s) shall include the "fixed network user rate", "other modem type" and if applicable the "user initiated modification indicator" parameters. The MSC shall apply a singleslot configuration when the "maximum number of traffic channels" indicates '1 TCH' and the "user initiated modification indicator" indicates either 'user initiated modification not requested' or 'user initiated modification up to 1 TCH/F requested', otherwise a multislot configuration (refer to 3GPP TS 08.20 and 3GPP TS 04.21) shall be used on the MSC/IWF-BSS link. 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.

In case the PLMN-BC(s) received with the set-up message did not indicate a multislot, 14.4kbit/s or EDGE-operation, the MSC shall not include the "fixed network user rate", "other modem type" and "user initiated modification indicator" parameters in the PLMN-BC(s) of the call proceeding message - the MSC shall use a singleslot configuration on the MSC/IWF-BSS link.

The MSC may negotiate parameters with the MS according to the rules defined in 3GPP TS 27.001. For multislot, 14,4 kbit/s, and EDGE-operations the MSC/IWF shall modify the relevant parameters in a possibly present LLC accordingly.

3GPP TSG-CN WG3 Meeting #19
Brighton, U.K. 15th - 19th September 2001

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CHANGE REQUEST

⌘ **29.007** **CR** **043** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Removal of Shared IWF
Source:	⌘	CN3
Work item code:	⌘	TEI [CS Bearers]
Date:	⌘	08.10.01
Category:	⌘	**A**
Release:	⌘	REL-4

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Reason for change:	⌘	The concept of Shared IWF was removed from UMTS R99 onwards (CN#13)
Summary of change:	⌘	
Consequences if not approved:	⌘	

Clauses affected:	⌘	See attached pages
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[20] 3GPP TS 41.001: "Digital cellular telecommunication system (Phase 2+); GSM Release 1999 Specifications".

[21] 3GPP TS 41.004: "Digital cellular telecommunication system (Phase 2+); Abbreviations and acronyms".

[22] 3GPP TS 42.001: "Digital cellular telecommunication system (Phase 2+); Principles of telecommunication services supported by a GSM Public Land Mobile Network (PLMN)".

[23] 3GPP TS 42.003: "Digital cellular telecommunications system (Phase 2+); Teleservices supported by a GSM Public Land Mobile Network (PLMN)".

[24] 3GPP TR 43.010: "Digital cellular telecommunications system (Phase 2+); GSM PLMN Connection types".

[25] 3GPP TS 43.045: "Digital cellular telecommunications system (Phase 2+); Technical realization of facsimile group 3 transparent".

[26] 3GPP TS 43.050: "Digital cellular telecommunications system (Phase 2+); Transmission planning aspects of the speech service in the GSM Public Land Mobile Network (PLMN) system".

[27] 3GPP TS 44.021: "Digital cellular telecommunications system (Phase 2+); Rate adaption on the Mobile Station - Base Station System (MS - BSS) interface".

[28] 3GPP TS 48.020: "Digital cellular telecommunication system (Phase 2+); Rate adaption on the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".

[29] 3GPP TS 48.060: "Digital cellular telecommunications system (Phase 2+); Inband control of remote transcoders and rate adaptors for Enhanced Full Rate (EFR) and full rate traffic channels".

[30] 3GPP TS 49.002 : "Digital cellular telecommunications system (Phase 2+); Mobile Application Part (MAP) specification".

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[34] 3GPP TS 22.004: "General on supplementary services".

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[36] 3GPP TS 23.008: "Organization of subscriber data".

[37] 3GPP TS 23.011: "Technical realization of supplementary services".

[38] 3GPP TS 23.146: "Technical realization of facsimile group 3 non-transparent".

[39] ~~3GPP TS 23.054: "Description for the use of a Shared Inter Working Function in a GSM PLMN; Stage 2"~~void.

[40] 3GPP TS 24.008: "Mobile radio interface layer 3 specification".

[41] 3GPP TS 24.022: "Radio Link Protocol (RLP) for circuit switched Bearer and Teleservices ".

[42] 3GPP TS 25.415: "Iu Interface CN-UTRAN User Plane Protocols".

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[44] 3GPP TS 27.002: "Terminal Adaptation Functions (TAF) for services using asynchronous bearer capabilities".

[45] 3GPP TS 27.003: "Terminal Adaptation Functions (TAF) for services using synchronous bearer capabilities".

[46] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[47] 3GPP TS 24.002: " GSM - UMTS Public Land Mobile Network (PLMN) access reference configuration "..

[48] ISO/IEC 3309: "Telecommunications and information exchange between systems - High-level data link control (HDLC) procedures - Frame structure".

[49] IETF RFC 1662: "PPP in HDLC-like framing".

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[57] ITU-T Recommendation H.223, Annex C: "Multiplexing protocol for low bit rate multimedia communication over highly error-prone channels".

[58] ITU-T Recommendation H.324: "Terminal for low bit-rate multimedia communication".

[59] ITU-T Recommendation H.221: “Frame structure for a 64 to 1920 kbit/s channel in audiovisual teleservices”.

[60] ITU-T Recommendation H.242: “System for establishing communication between audiovisual terminals using digital channels up to 2 Mbit/s”.

[61] ITU-T Recommendation H.245: “Control protocol for multimedia communication”.

[62] ITU-T Recommendation V.8 bis: “Procedures for the identification and selection of common modes of operation between data circuit-terminating equipments (DCEs) and between data terminal equipments (DTEs) over the public switched telephone network and on leased point-to-point telephone-type circuits”.

[63] ITU-T Recommendation V.21: "300 bits per second duplex modem standardized for use in the general switched telephone network".

[64] ITU-T Recommendation V.22bis (1988): "2400 bits per second duplex modem using the frequency division technique standardized for use on the general switched telephone network and on point-to-point 2-wire leased telephone-type circuits".

[65] ITU-T Recommendation V.23: “600/1200-baud modem standardized for use in the general switched telephone network”.

[66] ITU-T Recommendation V.26: “2400 bits per second modem standardized for use on 4-wire leased telephone-type circuits”.

[67] ITU-T Recommendation V.26 bis: “2400/1200 bits per second modem standardized for use in the general switched telephone network”.

[68] ITU-T Recommendation V.26 ter: "2400 bits per second duplex modem using the echo cancellation technique standardized for use on the general switched telephone network and on point-to-point 2-wire leased telephone-type circuits".

[69] ITU-T Recommendation V.27: “4800 bits per second modem with manual equalizer standardized for use on leased telephone-type circuits”.

[70] ITU-T Recommendation V.27 bis: “4800/2400 bits per second modem with automatic equalizer standardized for use on leased telephone-type circuits”.

[71] ITU-T Recommendation V.29: "9 600 bits per second modem standardized for use on point-to-point 4-wire leased telephone-type circuits".

[72] ITU-T Recommendation Q.921: “ISDN user-network interface - Data link layer specification”.

[73] ITU-T Recommendation X.21: “Interface between Data Terminal Equipment and Data Circuit-terminating Equipment for synchronous operation on public data networks”.

[74] ITU-T Recommendation X.25: "Interface between data terminal equipment (DTE) and data circuit - terminating equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit".

[75] ITU-T Recommendation X.28: "DTE/DCE interface for a start-stop mode Data Terminal Equipment accessing the Packet Assembly/Disassembly facility (PAD) in a public data network situated in the same country".

[76] ITU-T Recommendation X.31: “Support of packet mode terminal equipment by an ISDN”.

[77] ITU-T Recommendation X.75: “Packet-switched signalling system between public networks providing data transmission services”.

[78] ISO 2110: "Data communication - 25-pole DTE/DCE interface connector and contact number assignments".

[79] ISO/IEC 6429: "Information technology - Control functions for coded character sets".

[80] 3GPP TS 29.415: "Core Network Nb Interface User Plane Protocols"

[81] ITU-T I.366.2: "AAL type 2 service specific convergence sublayer for trunking".

[82] 3GPP TS 29.232: "Media Gateway Controller; Media Gateway interface; Stage 3"

Next section modified

9.2.1.1 Selection of interworking function

The interworking function will need to negotiate with the user to establish the appropriate modem selection e.g. data rate, modulation scheme, etc. In addition, it will also be required to convert the signalling format, from a combination of out of band and in band, to that suitable for controlling the modem and the autocalling line procedure function where applicable. In the following modem selection procedures it is assumed that the interworking function and modems will

be associated with each MSC. ~~As an alternative, a centralized interworking function is possible as a network provider option. This is specified in 3GPP TS 23.054.~~

For a data call originated by a circuit mode data terminal on the PLMN, the modem selection is done by using the element "modem type" in the call set-up message (bearer capability).

In addition, other elements of the call setup will indicate the user rate, etc. to be used via that modem. The use of this information however means that the network is only able to select a modem from the modem pool which conforms to the speed which the terminal is utilizing at the DTE/DCE interface at the MS (e.g. V.22 for 1 200 bps). The exception to this is where the user has selected the non transparent service in which case either an autobauding or multi self selecting speed modem (e.g. V.32) may be used.

In case the PLMN-BC(s) received with the set-up message indicated a multislot, 14.4kbit/s, and EDGE-operation (refer to 3GPP TS 27.001) and the network does not support any of the required such services, the PLMN-BC(s) sent with the call proceeding message shall not contain the "fixed network user rate", "other modem type" and "user initiated modification indicator" parameters - the MSC shall discard the multislot or 14.4kbit/s and/or EDGE-related parameters and use the fall-back bearer service indicated by the remaining parameters of the PLMN-BS(s) on a singleslot configuration (refer to 3GPP TS 48.020 and 3GPP TS 44.021) on the MSC/IWF-BSS link. The MSC/IWF shall modify the relevant parameters in a possibly present LLC accordingly.

If the MSC supports the multislot, 14.4kbit/s and/or EDGE-operation, the PLMN-BC(s) shall include the "fixed network user rate", "other modem type" and if applicable the "user initiated modification indicator" parameters. The MSC shall apply a singleslot configuration when the "maximum number of traffic channels" indicates '1 TCH' and the "user initiated modification indicator" indicates either 'user initiated modification not requested' or 'user initiated modification up to 1 TCH/F requested', otherwise a multislot configuration (refer to 3GPP TS 48.020 and 3GPP TS 44.021) shall be used on the MSC/IWF-BSS link. 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.

In case the PLMN-BC(s) received with the set-up message did not indicate a multislot, 14.4kbit/s or EDGE-operation, the MSC shall not include the "fixed network user rate", "other modem type" and "user initiated modification indicator" parameters in the PLMN-BC(s) of the call proceeding message - the MSC shall use a singleslot configuration on the MSC/IWF-BSS link.

The MSC may negotiate parameters with the MS according to the rules defined in 3GPP TS 27.001. For multislot, 14,4 kbit/s, and EDGE-operations the MSC/IWF shall modify the relevant parameters in a possibly present LLC accordingly.