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Digitalni celiļ ni telekomunikacijski sistem (faza 2) ï Znotrajpasovno krmiljenje oddaljenih prekodirnikov in prilagodilnikov hitrosti za izboljġane prometne kanale za govor s polno hitrostjo (EFR) in za prometne kanale za govor s polno hitrostjo (GSM 08.60, razliļ ica 4.4.1)

Digital cellular telecommunications system (Phase 2) (GSM); In-band control of remote transcoders and rate adaptors for Enhanced Full Rate (EFR) and full rate traffic channels (GSM 08.60 version 4.4.1)

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Digital cellular telecommunications system (Phase 2); Inband control of remote transcoders and rate adaptors for Enhanced Full Rate (EFR) and full rate traffic channels (GSM 08.60 version 4.4.1)

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Foreword

This third edition European Telecommunication Standard (ETS) has been produced by the Special Mobile Group (SMG) of the European Telecommunications Standards Institute (ETSI).

This ETS specifies the inband control of remote transcoders and rate adaptors for full rate speech, Enhanced Full rate speech and full rate data within the digital cellular telecommunications system (Phase 2).

The specification from which this ETS has been derived was originally based on CEPT documentation, hence the presentation of this ETS may not be entirely in accordance with the ETSI/PNE Rules.

Transposition dates	
Date of adoption of this ETS:	3 April 1998
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1 Scope

When 64 kbit/s traffic channels are used on the Abis interface, the speech shall be coded according to CCITT Recommendation G.711 and the data rate adaptation shall be as specified in GSM 04.21 and GSM 08.20.

In the case where 16 kbit/s traffic channels are used for full rate speech or enhanced full rate speech or full rate data service, then this specification shall apply for frame structure and for control of remote transcoders and additional rate adaptors.

The use and general aspects of the Abis interface are given in GSM 08.51.

NOTE: This ETS should be considered together with the GSM 06 series of specifications, GSM 04.21 (Rate Adaptation on the MS-BSS Interface) and GSM 08.20 (Rate Adaptation on the BS/MSC Interface).

1.1 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

[1] GSM 01.04 (ETR 100): "Digital cellular telecommunications system (Phase 2); Abbreviations and acronyms".

[2] GSM 04.06 (ETS 300 555): "Digital cellular telecommunications system (Phase 2); Mobile Station - Base Station System (MS - BSS) interface Data Link (DL) layer specification".

[3] GSM 04.21 (ETS 300 562): "Digital cellular telecommunications system (Phase 2); Rate adaption on the Mobile Station - Base Station System (MS - BSS) interface".

[4] GSM 06.01 (ETS 300 580-1): "Digital cellular telecommunications system (Phase 2); Full rate speech processing functions".

[5] GSM 06.10 (ETS 300 580-2): "Digital cellular telecommunications system (Phase 2); Full rate speech transcoding".

[6] GSM 06.11 (ETS 300 580-3): "Digital cellular telecommunications system (Phase 2); Substitution and muting of lost frames for full rate speech channels".

[7] GSM 06.12 (ETS 300 580-4): "Digital cellular telecommunications system (Phase 2); Comfort noise aspect for full rate speech traffic channels".

[8] GSM 06.31 (ETS 300 580-5): "Digital cellular telecommunications system (Phase 2); Discontinuous Transmission (DTX) for full rate speech traffic channel".

[9] GSM 06.32 (ETS 300 580-6): "Digital cellular telecommunications system (Phase 2); Voice Activity Detection (VAD)".

[10] GSM 08.20 (ETS 300 591): "Digital cellular telecommunications system (Phase 2); Rate adaption on the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".

[11] GSM 08.51 (ETS 300 592): "Digital cellular telecommunications system (Phase 2); Base Station Controller - Base Transceiver Station (BSC - BTS) interface General aspects".

[12] GSM 08.54 (ETS 300 594): "Digital cellular telecommunications system (Phase 2); Base Station Controller - Base Transceiver Station (BSC - BTS) interface Layer 1 structure of physical circuits".

[13] GSM 08.58 (ETS 300 596): "Digital cellular telecommunications system (Phase 2); Base Station Controller - Base Transceiver Station (BSC - BTS) interface Layer 3 specification".

[14] GSM 12.21 (ETS 300 623): "Digital cellular telecommunications system (Phase 2); Network Management (NM) procedures and message on the A-bis interface".

[15] CCITT Recommendation G.711: "Pulse Code Modulation (PCM) of voice frequencies".

[16] CCITT Recommendation I.460: "Multiplexing, rate adaption and support of existing interfaces".

[17] CCITT Recommendation V.110: "Support of Data Terminal Equipments (DTEs) with V-Series interfaces by an Integrated Services Digital Network (ISDN)".

[18] GSM 06.51 (EN 301 243): "Digital cellular telecommunications system (Phase 2); Enhanced Full rate speech processing functions".

[19] GSM 06.60 (EN 301 245): "Digital cellular telecommunications system (Phase 2); Enhanced Full rate speech transcoding".

[20] GSM 06.61 (EN 301 246): "Digital cellular telecommunications system (Phase 2); Substitution and muting of lost frames for Enhanced Full rate speech channels".

[21] GSM 06.62 (EN 301 247): "Digital cellular telecommunications system (Phase 2); Comfort noise aspect for Enhanced Full rate speech traffic channels".

[22] GSM 06.81 (EN 301 248): "Digital cellular telecommunications system (Phase 2); Discontinuous Transmission (DTX) for Enhanced Full rate speech traffic channel".

[23] GSM 06.82 (EN 301 249): "Digital cellular telecommunications system (Phase 2); Voice Activity Detection (VAD)".

1.2 Abbreviations

Abbreviations used in this ETS are listed in GSM 01.04

2 General Approach

When the transcoders/rate adaptors are positioned remote to the BTS, the information between the Channel Codec Unit (CCU) and the remote Transcoder/Rate Adaptor Unit (TRAU) is transferred in frames with a fixed length of 320 bits (20 ms). In this specification, these frames are denoted "TRAU frames". Within these frames, both the speech/data and the TRAU associated control signals are transferred.

The Abis interface should be the same if the transcoder is positioned 1) at the MSC site of the BSS or if it is positioned 2) at the BSC site of the BSS. In case 1), the BSC should be considered as transparent for 16 kbit/s channels.

When data is adapted to the 320 bit frames, a conversion function is required in addition to the conversion/rate adaption specified in GSM 08.20. This function constitute the RAA.

The TRAU is considered a part of the BSC, and the signalling between the BSC and the TRAU (e.g. detection of call release, hand over and transfer of O&M information) may be performed by using BSC internal signals. The signalling between the CCU and the TRAU, using TRAU frames as specified in this specification, is mandatory when the Abis interface is applied.

NOTE: If standard 64 kbit/s switching is used in the BSC, multiplexing according to CCITT Recommendation I.460 should apply at both sides of the switch.

In figure 2.1, a possible configuration of the TRAU and the CCU is shown.

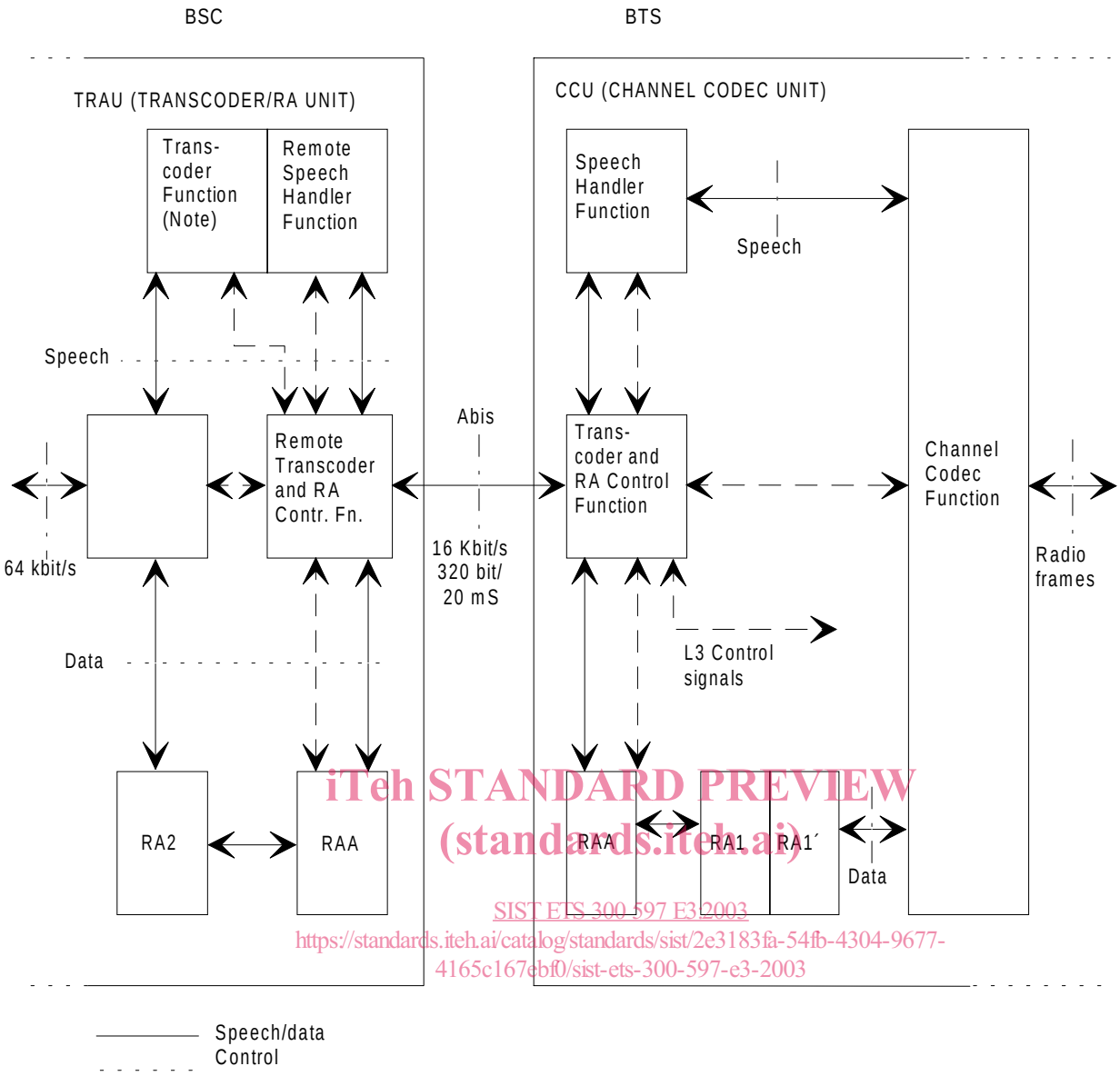
The functions inside the TRAU are:

- "Remote Transcoder and Rate Adaptor Control Function" (RTRACF);
- "Remote Speech Handler Function" (RSHF);
- The RAA function;
- The RA2 function;
- The transcoder function.

The functions inside the CCU are:

- "Transcoder and Rate Adaptor Control Function" (TRACF);
- "Speech Handler Function" (SHF);
- The RAA function;
- The RA1/RA1' function;
- The channel codec function.

This specification will not describe the procedures inside the TRAU and the CCU. The layout in figure 2.1 is only intended as a reference model.



NOTE: This recommendation assumes the DTX handler function to be a part of the Transcoder Function.

Figure GSM 08.60/2.1: Functional entities for handling of remote control of remote transcoders and rate adaptors