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Digitalni celiļ ni telekomunikacijski sistem (faza 2) ï Vmesnik med krmilnikom bazne postaje in bazno sprejemno-oddajno postajo (BSC-BTS) ï Naļ ela za vmesnik (GSM 08.52)

Digital cellular telecommunications system (Phase 2) (GSM); Base Station Controller - Base Transceiver Station (BSC - BTS) interface; Interface principles (GSM 08.52)

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Foreword

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

This ETS defines the interface principles of the Base Station Controller (BSS) to Base Transceiver Station (BTS) interface. This ETS corresponds to GSM technical specification GSM 08.52 version 4.2.0.

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.

Reference is made within this ETS to GSM-TSs (note).

NOTE: TC-SMG has produced documents which give the technical specifications for the implementation of the European digital cellular telecommunications system. Historically, these documents have been identified as GSM Technical Specifications (GSM-TSs). These TSs may have subsequently become I-ETSs (Phase 1), or ETSs (Phase 2), whilst others may become ETSI Technical Reports (ETRs). GSM-TSs are, for editorial reasons, still referred to in GSM ETSs.

Transposition dates	
Date of adoption of this ETS:	31 January 1996
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1 Introduction

1.1 Scope

The use and general aspects of the A-bis interface are given in Technical Specification GSM 08.51.

This European Telecommunication Standard (ETS) gives the principle basis for the rest of the specifications specifying the interface between the Base Station Controller, (BSC), and the Base Transceiver Station, (BTS), with its transceivers, (TRX). These components together form the Base Station System, (BSS). (The interface between MSC and the BSS is specified in Technical Specifications GSM 08.01 - 08.20).

The intention with this interface is to get a unified way of connecting remotely located BTSs/TRXs to a BSC allowing for the interconnection of BSCs and BTSs/TRXs from different manufacturers.

In order to keep the BTS as simple as possible, BTS contains only those functions which have to recide close to the radio interface.

1.2 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): "European digital cellular telecommunications system (Phase 2); Abbreviations and acronyms".

[2] GSM 08.01 (ETS 300 587-1): "European digital cellular telecommunications system (Phase 2); Base Station System - Mobile services Switching Centre (BSS - MSC) interface General aspects".

[3] GSM 08.02 (ETS 300 587-2): "European digital cellular telecommunications system (Phase 2); Base Station System - Mobile-services Switching Centre (BSS - MSC) interface principles".

[4] GSM 08.04 (ETS 300 588): "European digital cellular telecommunications system (Phase 1); Base Station System - Mobile-services Switching Centre (BSS - MSC) interface Layer 1 specification".

[5] GSM 08.06 (ETS 300 589): "European digital cellular telecommunications system (Phase 2); Signalling transport mechanism specification for the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".

[6] GSM 08.08 (ETS 300 590): "European digital cellular telecommunications system (Phase 2); Mobile Switching Centre - Base Station System (MSC - BSS) interface Layer 3 specification".

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

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

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

[10] GSM 08.60 (ETS 300 597): "European digital cellular telecommunications system (Phase 2); Inband control of remote transcoders and rate adaptors".

[11] GSM 08.61 (ETS 300 598): "European digital cellular telecommunications system (Phase 2); Inband control of remote transcoders and rate adaptors (half rate)".

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

2 Definitions and abbreviations

Abbreviations used in this specification are listed in GSM 01.04

2.1 Base Station System, BSS

The system of base station equipment (transceivers, controllers, etc.) which is viewed by the MSC through a single interface as defined by the GSM 08 0x series of recommendations, as being the entity responsible for communicating with Mobile Stations in a certain area. The radio equipment of a BSS may cover one or more cells. A BSS may consist of one or more base stations. If an internal interface according to the GSM 08.5x series at recommendations is implemented, then the BSS shall consist of one Base Station Controller (BSC) and several Base Transceiver Stations (BTSs).

The functionality is described in Recommendation GSM 08.02.

2.2 Base Station Controller, BSC

A network component in the PLMN with the functions for control of one or more Base Transceiver Stations (BTSs).

2.3 Base Transceiver Station, BTS

A network component which serves one cell, and is controlled by a Base Station Controller. The BTS can consist of one or more TRXs with or without common control equipment.

2.4 Cell

See TS GSM 03.02.

2.5 Transceiver, TRX

The Transceiver, TRX, in the GSM PLMN is the functional entity which supports the 8 basic radio channels of the same TDMA-frame.

2.6 Base Control Function, BCF

A functional entity which handles common control functions within a BTS, e.g. frequency hopping sequences etc.

At a multi BTS site, one of the BCFs can also be chosen to perform functions common to the site (e.g. external alarms, power supply, time base).

3 General

Technical Specifications GSM 08.01 - 08.20 specify the functional split and interface between MSC and the Base Station System, BSS, the A- interface.

The BSS can be further subdivided into one BSC controlling one or more BTSs, each consisting of one or more TRXs. The interface treated by this specification is the interface between a BSC and a BTS. It is denoted the A-bis-interface.

The A-bis-interface is capable of supporting three different internal BTS configurations:

- one single TRX,
- a collection of TRXs where all are served by a common physical connection,
- a collection of TRXs, each served by its own physical connection.

Figure 3.1 shows some possible configurations.

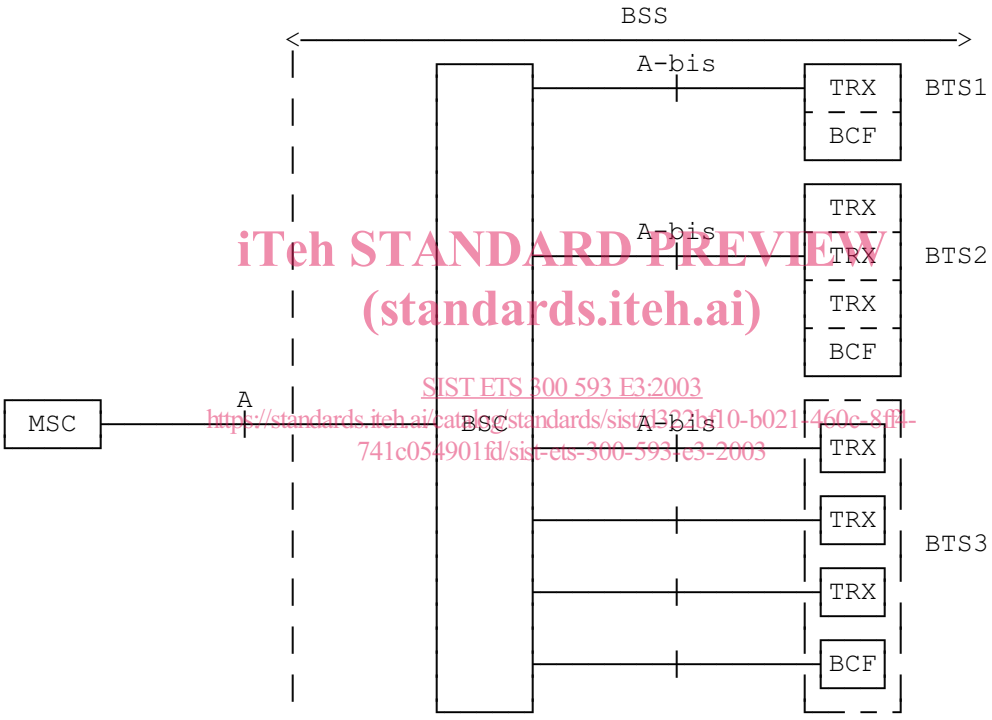

Figure 3.1/08.52: BSS Subdivision and Interfaces.

This specification is based on the use of digital transmission system interfaces, either at 2048 kbit/s or at 64 kbit/s. Furthermore, the use of a subrate of 16 kbit/s and/or 8 kbit/s is supported for coded speech or rate adapted data.

This interface will support the transcoder positioned either inside or outside BTS. In the latter case, remote control (synchronisation) of the transcoder is used.