

5.1.2 Detail Specification of the Radio Interface

The standards contained in this section are derived from the global core specifications for IMT-2000 contained at <http://www.itu.int/brsg/ties/imt-2000/index.html>.

NOTE 1 – The asterisks of the tables from § 5.1.2.1.1 to 5.1.2.1.6.9 are as follows:

* The relevant SDOs should make their reference material available from their Web site.

** This information was supplied by the recognized external organizations and relates to their own deliverables of the transposed global core specification. [To be included in this table, the recognized external organizations must have completed the transposition and publication process by 1 April 2000 before the ITU Radiocommunication Assembly in May 2000.]

5.1.2.1 25.200 Series

5.1.2.1.1 25.201 Physical layer – General description

This specification gives general description of the physical layer of the UTRA radio interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.1.2 25.211 Physical channels and mapping of transport channels onto physical channels (FDD)

This specification describes the characteristics of the Layer 1 transport channels and physical channels in the FDD mode of UTRA. The main objectives of the document are to be a part of the full description of the UTRA Layer 1, and to serve as a basis for the drafting of the actual technical specification (TS).

Attention: This is not an ITU publication made available to the public, but an **internal ITU Document** intended only for use by the Member States of the ITU and by its Sector Members and their respective staff and collaborators in their ITU related work. It shall not be made available to, and used by, any other persons or entities without the prior written consent of the ITU.

		Doc. Number	Version	Status	Issued Date	Location*
Standard**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.1.3 25.212 Multiplexing and channel coding (FDD)

This specification describes the characteristics of the Layer 1 multiplexing and channel coding in the FDD mode of UTRA.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.1.4 25.213 Spreading and modulation (FDD)

The present document describes spreading and modulation for UTRA Physical Layer FDD mode.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.1.5 25.214 Physical layer procedures (FDD)

This document specifies and establishes the characteristics of the physicals layer procedures in the FDD mode of UTRA.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.1.6 25.215 Physical layer – Measurements (FDD)

This Telecommunication Specification TS contains the description of the measurements done at the UE and network in order to support operation in idle mode and connected mode for FDD mode.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.2 25.300 Series

5.1.2.2.1 25.301 Radio Interface Protocol Architecture

The present document shall provide an overview and overall description of the UE-UTRAN radio interface protocol architecture. Details of the radio protocols will be specified in companion documents.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.2.2 25.302 Services provided by the Physical Layer

The present document is a technical specification of the services provided by the physical layer of UTRA to upper layers.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.2.3 25.303 Interlayer Procedures in Connected Mode

This document includes informative interlayer procedures to perform the required tasks.

This document attempts to provide a comprehensive overview of the different states and transitions within the connected mode of a UMTS terminal.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.2.4 25.304 UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode

The present document shall describe the overall idle mode process for the UE and the functional division between the non-access stratum and access stratum in the UE. The UE is in idle mode when the connection of the UE is closed on all layers, e.g. there is neither an MM connection nor an RRC connection.

This document presents also examples of inter-layer procedures related to the idle mode processes and describes idle mode functionality of a dual mode UMTS/GSM UE.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.2.5 25.321 Medium Access Control (MAC) Protocol Specification

The scope of this description is the specification of the MAC protocol.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.2.6 25.322 Radio Link Control (RLC) Protocol Specification

The scope of this description is to describe the RLC protocol.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.2.7 25.331 Radio Resource Control (RRC) Protocol Specification

The scope of this specification is to describe the Radio Resource Control protocol for the radio system. The scope of this Specification contains also the information to be transported in a transparent container between source RNC and target RNC in connection to SRNC relocation.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3 25.400 Series

5.1.2.3.1 25.401 UTRAN Overall Description

This document describes the overall architecture of the UTRAN, including internal interfaces and assumptions on the radio and Iu interfaces.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.2 25.410 UTRAN Iu Interface: General Aspects and Principles

The present document is an introduction to the 25.41x series of Technical Specifications that define the Iu interface for the interconnection of Radio Network Controller (RNC) component of the UTRAN to the Core Network.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.3 25.411 UTRAN Iu interface Layer 1

The present document specifies the standards allowed to implement Layer 1 on the I_u interface.

The specification of transmission delay requirements and O&M requirements are not in the scope of this document.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.4 25.412 UTRAN Iu Interface Signalling Transport

The present document specifies the standards for user data transport protocols and related signalling protocols to establish user plane transport bearers.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.5 25.413 UTRAN Iu Interface RANAP Signalling

Specifies the signalling between the CN and the UTRAN over the Iu interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.6 25.414 UTRAN Iu Interface Data Transport and Transport Signalling

The present document specifies the standards for user data transport protocols and related signalling protocols to establish user plane transport bearers.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.7 25.415 UTRAN Iu Interface User Plane Protocols

This Technical Specification defines the protocols being used to transport and control over the Iu interface, the Iu User Data Streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.8 25.420 UTRAN Iur Interface: General Aspects and Principles

The present document is an introduction to the TSG RAN TS 25.42x series of Technical Specifications that define the Iur Interface. It is a logical interface for the interconnection of two Radio Network Controller (RNC) components of the UTRAN.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.9 25.421 UTRAN Iur Interface Layer 1

The present document specifies the standards allowed to implement Layer 1 on the I_{ur} interface.

The specification of transmission delay requirements and O&M requirements are not in the scope of this document.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.10 25.422 UTRAN Iur Interface Signalling Transport

The present document specifies the standards for user data transport protocols and related signalling protocols to establish user plane transport bearers.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.11 25.423 UTRAN Iur Interface RNSAP Signalling

The present document specifies the radio network layer signalling procedures between RNCs in UTRAN.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.12 25.424 UTRAN Iur Interface Data Transport and Transport Signalling for Common Transport Channel Data Streams

This document shall provide a description of the UTRAN RNS-RNS (Iur) interface Data Transport and Transport Signalling for Common Transport Channel data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.13 25.425 UTRAN Iur Interface User Plane Protocols for Common Transport Channel Data Streams

This document shall provide a description of the UTRAN RNS-RNS (Iur) interface user plane protocols for Common Transport Channel data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.14 25.426 UTRAN Iur and Iub Interface Data Transport and Transport Signalling for DCH Data Streams

The scope of this Technical Specification is to specify the transport bearers for the DCH data streams on UTRAN Iur and Iub interfaces. The corresponding Transport Network Control plane is also specified. The physical layer for the transport bearers is outside the scope of this TS.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.15 25.427 UTRAN Iur and Iub interface user plane protocols for DCH data streams

This document shall provide a description of the UTRAN Iur and Iub interfaces user plane protocols for Dedicated Transport Channel data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.16 25.430 UTRAN Iub Interface: General Aspects and Principles

The present document is an introduction to the TSG RAN TS 25.43x series of UMTS Technical Specifications that define the Iub Interface. The Iub interface is a logical interface for the interconnection of Node B and Radio Network Controller (RNC) components of the UTRAN.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.17 25.431 UTRAN Iub Interface Layer 1

The present document specifies the standards allowed to implement Layer 1 on the I_{ub} interface.

The specification of transmission delay requirements and O&M requirements is not in the scope of this document.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.18 25.432 UTRAN Iub Interface: Signalling Transport

The present document specifies the signalling transport related to NBAP signalling to be used across the Iub Interface. The Iub interface is a logical interface for the interconnection of Node B and Radio Network Controller (RNC) components of the UTRAN. The radio network control signalling between these nodes is based on the Node B application part (NBAP).

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.19 25.433 UTRAN Iub Interface NBAP Signalling

The present document specifies the standards for NBAP specification to be used over Iub Interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.20 25.434 UTRAN Iub interface data transport and transport signalling for Common Transport Channel data streams

This document shall provide a description of the UTRAN RNC-Node B (Iub) interface Data Transport and Transport Signalling for CCH data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.21 25.435 UTRAN Iub interface user plane protocols for Common Transport Channel data streams

This document shall provide a description of the UTRAN RNC-Node B(Iub) interface user plane protocols for Common Transport Channel data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.3.22 25.442 UTRAN Implementation Specific O&M Transport

The present document specifies the transport of implementation specific O&M signalling between Node B and the Management Platform in case that the transport is routed via the RNC.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.4 25.100 Series

5.1.2.4.1 25.101 UE Radio transmission and reception (FDD)

~~This document establishes the minimum RF characteristics of the FDD mode of UTRA. This document establishes the minimum RF characteristics of the UTRA User Equipment (UE) operating in the FDD mode. The values in the TS make no allowance for measurement uncertainty in conformance testing. Test limits to be used for conformance testing are specified separately in the UE conformance test specifications TS 34.121.~~

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.4.2 25.133 Requirements for Support of Radio Resource Management (FDD)

This Technical Specification shall describe the requirements for support of Radio Resource Management for FDD including requirements on measurements in UTRAN and the UE as well as on node dynamic behaviour and interaction, in terms of delay and response characteristics.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.4.3 25.104 BTS Radio transmission and reception (FDD)

This document establishes the Base Station minimum RF characteristics of the FDD mode of UTRA. The values in the TS make no allowance for measurements uncertainties in conformance testing. Test limit to be used for conformance testing are specified separately in the BS conformance test Specification TS 25.141.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.4.4 25.141 Base station conformance testing (FDD)

The present document specifies the Radio Frequency (RF) test methods and conformance requirements for UTRA Base Transceiver Stations (BTS) operating in the FDD mode. These have been derived from, and are consistent with, the core UTRA specifications specified in the requirements reference subclause of each test. The maximum acceptable measurement uncertainty is specified in the TS for each test, where appropriate.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.4.5 25.113 Base station EMC³

The present document covers the assessment of base stations and associated ancillary equipment in respect of ElectroMagnetic Compatibility (EMC).

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.5 34.100 Series

5.1.2.5.1 34.121. Terminal Conformance Specification, Radio Transmission and Reception (FDD)

This document specifies the Radio Frequency (RF) test methods and conformance requirements for UTRA User Equipment (UE) operating in the FDD mode. These have been derived from, and are consistent with, the core UTRA specifications. The maximum acceptable measurement uncertainty is specified in the TS for each test, where appropriate.

		Doc. Number	Version	Status	Issued Date	Location*
**	<u>ARIB</u>					
	<u>ETSI</u>					
	<u>T1</u>					
	<u>TTA</u>					
	<u>CWTS</u>					

*, **: see Note 1, § 5.1.2.

5.1.2.5.6 Core Network Aspects

5.1.2.5.6.1 23.108 Mobile Radio Interface Layer 3 specification Core Network Protocols - Stage 2

This specification shall specify the procedures used at the radio interface for Call Control (CC), Mobility Management (MM) and Session Management (SM). It shall hold examples of the structured procedures.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

³ This specification does not include the antenna port immunity and emissions.

5.1.2.5.6.2 23.110 UMTS Access Stratum Services and Functions

This document shall be the basis of the detailed specifications of the protocols which rule the information flows, both control and user data, between the Access Stratum and the parts of UMTS outside the Access Stratum, and of the detailed specifications of the UTRAN. These detailed specifications are to be found in other Technical Specifications.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.5.6.3 24.007 Mobile Radio Interface Signalling Layer 3 - General Aspects

This Technical Specification (TS) defines the principal architecture of layer 3 and its sublayers on the GSM Um interface, i.e. the interface between Mobile Station (MS) and network; for the CM sublayer, the description is restricted to paradigmatic examples, call control, supplementary services, and short message services for non-GPRS services. It also defines the basic message format and error handling applied by the layer 3 protocols.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.5.6.4 24.008 Mobile Radio Interface Layer 3 specification; Core Network Protocols - Stage 3

This specification shall specify the procedures used at the radio interface for Call Control (CC), Mobility Management (MM) and Session Management (SM).

The procedures currently described are for the call control of circuit-switched connections, session management for GPRS services, mobility management and radio resource management for circuit-switched and GPRS services.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.5.6.5 24.011 Point-to-Point Short Message Service (SMS) support on mobile radio interface

This Specification specifies the procedures used across the mobile radio interface by the signalling layer 3 function Short Message Control (SMC) and Short Message Relay function (SM-RL) for both circuit switched GSM and GPRS.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.5.6.6 24.012 Short Message Service Cell Broadcast (SMSCB) support on the mobile radio interface

This document describes how the Short Message Service Cell Broadcast (SMSCB) is supported over the mobile radio interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.5.6.7 23.060 General Packet Radio Service (GPRS) Service description - Stage 2

This document shall provide a general overview over the GPRS Architecture as well as a more detailed overview of the MS - Core Network protocol architecture. Details of the protocols will be specified in companion documents.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.5.6.8 24.022 Radio Link Protocol (RLP) for Circuit Switched Bearer and Teleservices

This Specification shall specify the Radio Link Protocol (RLP) for data transmission over the UMTS PLMN. RLP covers the Layer 2 functionality of the ISO OSI Reference Model (IS 7498). It is based on ideas contained in IS 3309, IS 4335 and IS 7809 (HDLC of ISO) as well as ITU-T Recommendations X.25, Q.921 and Q.922 (LAP-B and LAP-D, respectively.) RLP has been tailored to the special needs of digital radio transmission. RLP provides to its users the OSI Data Link Service (IS 8886).

		Doc. Number	Version	Status	Issued Date	Location *
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.5.6.9 24.010 Mobile Radio Interface Layer 3 - Supplementary Services Specification - General Aspects

In this specification the general aspects of the specification of supplementary services at the layer 3 radio interface shall be given. Details will be specified in other documents.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

**5.1.2.5.6.10 24.080 Mobile radio interface Layer 3 - Supplementary Services specification -
Formats and coding**

This technical specification shall contain the coding of information necessary for support of supplementary service operation on the mobile radio interface layer 3. Details will be specified in other documents.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.76 Terminal Aspects

5.1.2.76.1 21.111 USIM and IC Card Requirements

This document defines the requirements of the USIM (Universal Subscriber Identity Module) and the IC card (UICC). These are derived from the service and security requirements defined in the respective specifications. The document is the basis for the detailed specification of the USIM and the UICC, and the interface to the terminal.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.76.2 23.038 Alphabets and Language specific information

This TS defines the language-specific requirements for the terminals including character coding.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.76.3 23.040 Technical realization of SMS Point to Point

This TS describes the point-to-point Short Message Service (SMS).

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.76.4 23.041 Technical realization of Cell Broadcast Service (CBS)

This TS describes the point-to-multipoint Cell Broadcast Service (CBS).

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.76.5 23.042 Compression algorithm for text messaging services

This TS describes the compression algorithm for text messaging services.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.76.6 27.005 Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Cell Broadcast Service (CBS)

This TS defines three interface protocols for control of SMS functions within a GSM mobile telephone from a remote terminal via an asynchronous interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.76.7 27.007 AT command set for the User Equipment (UE)

This TS specifies a profile of AT commands and recommends that this profile be used for controlling Mobile Equipment (ME) functions and GSM network services from a Terminal Equipment (TE) through Terminal Adaptor (TA).

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.76.8 27.010 Terminal Equipment to Mobile Station (TE-MS) multiplexer protocol

This TS defines a multiplexing protocol between a mobile station and an external data terminal for the purposes of enabling multiple channels to be established for different purposes (e.g. simultaneous SMS and data call).

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 1, § 5.1.2.

5.1.2.76.9 27.103 Wide Area Network Synchronization Standard

This specification provides a definition of a Wide Area Synchronization protocols. The synchronization protocol is based upon IrMC Level 4.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*, ** see Note 1, §5.1.2

5.1.2.87 System Aspects

IMT-2000 CDMA Direct Spread Specification also includes the following documents which are useful and related to this Recommendation.

5.1.2.87.1 TS 23.002 UMTS Release 1999 Network Architecture

The purpose of this Technical Specification is to present the possible architectures of the mobile system.

5.1.2.87.2 TS 23.101 General UMTS Architecture

This TS defines the basic physical and functional separation of UMTS. The content of this specification is limited to those features that are common to all UMTS networks independent of their origin. It identifies and names the reference points and functional groupings appearing at this level.

5.1.2.87.3 TS 23.107 QoS Concept and Architecture

Scope of this document is to provide the framework for Quality of Service in UMTS. The document shall be used as a living document which will cover all issues related Quality of Service in UMTS.

5.1.2.87.4 TS 23.110 UMTS Access Stratum

This document specifies the services provided by the Access Stratum to the rest of the system. This document describes the main functions visible at the boundary between the Access Stratum and the rest of the system, it describes in general terms the information flows, both control and user data, over this boundary and relevant for the Access Stratum.

5.1.2.87.5 TS 23.121 Architectural Requirements for Release 1999

The present document covers Architectural Requirements for Release 1999 related to the evolution of the GSM platform towards UMTS with the overall goal of fulfilling the UMTS service requirements, support of roaming and support of new functionality, signalling systems and interfaces.

5.1.2.87.6 TR 23.930 Iu Principles

This report identifies the requirements on the Iu and studies relevant principles to guide further standardization of the related interface(s).

5.1.2.87.7 TS 22.002 Bearer Services Supported by a GSM PLMN

This 3G TS defines a set of Bearer Services to be provided to 3G subscribers by a 3G network itself and in connection with other networks. This document is also be used as a reference for defining the corresponding required mobile network capabilities which are specified by means of the connection type concept.

5.1.2.87.8 TS 22.004 General on Supplementary Services

The purpose of this document is to define a recommended set of supplementary services to the Teleservices and Bearer services which will be supported by a 3G network in connection with other networks as a basis for the definition of the network capabilities required.

5.1.2.87.9 TS 22.011 Service Accessibility

The purpose of this TS is to describe the service access procedures as presented to the user. The document contains definitions and procedures are provided for international roaming, national roaming and regionally provided service. These are mandatory in relation to the technical realization of the User Equipment.

5.1.2.87.10 TS 22.016 International Mobile Equipment Identities (IMEI)

The present document defines the principal purpose and use of unique Equipment Identities.

5.1.2.87.11 TS 22.022 Personalization of GSM ME Mobile functionality Specification - Stage 1

The present document provides functional specifications of five features to personalize User Equipment. These features are called:

- Network personalization;
- Network subset personalization;
- Service Provider (SP) personalization;
- Corporate personalization;
- UMTS Subscriber Identity Module (USIM) personalization.

The present document specifies requirements for User Equipment, which provide these personalization features.

5.1.2.87.12 TS 22.024 Description of Charge Advice Information (CAI)

This document gives an overall view of how the charging advice supplementary service shall operate both in the network and within the user equipment. The charging supplementary service is described in TS 22.086.

5.1.2.87.13 TS 22.030 Man-Machine Interface (MMI) of the Mobile Station (MS)

This document defines the requirements for and gives guidelines on the MMI for calls on the 3G user equipment. This includes the requirements of the user procedures for call control and supplementary service control, the requirements on the physical input media and the output, such as indications and displayed information.

5.1.2.87.14 TS 22.034 High Speed Circuit Switched Data (HSCSD) - Stage 1

This document specifies the Stage 1 description of High Speed Circuit Switched Data (HSCSD). HSCSD is a feature that allows users subscribing to the General Bearer Services to access user rates that can be achieved with one or more traffic channel. HSCSD also defines a flexible use of air interface resources, which makes efficient and flexible use of higher user rates feasible.

5.1.2.87.15 TS 22.038 SIM application toolkit (SAT) - Stage 1

This document defines the stage one description of the SIM application Toolkit (SAT) primarily from the subscriber's and serving environment's points of view, and does not deal with the details of the human interface itself. It includes information applicable to network operators, serving environments and terminal, switch and database manufacturers and contains the core requirements for a SIM application Toolkit (SAT) which are sufficient to provide a complete service.

5.1.2.87.16 TS 22.041 Operator Determined Call Barring

The feature Operator Determined Barring (ODB) allows the network operator or service provider to regulate, by means of an exceptional procedure, access by the subscribers to 3G services, by the barring of certain categories of outgoing or incoming calls or of roaming. ODB shall take effect immediately and shall terminate ongoing calls and bar future calls. The purpose of this network feature is to be able to limit the service provider's financial exposure to new subscribers, or to those who have not promptly paid their bills. It may only be applied to the service provider's own subscribers.

5.1.2.87.17 TS 22.042 Network Identity and Time Zone (NITZ) - Stage 1

The feature Network Identity and Timezone (NITZ) provides the means for serving networks to transfer current identity, time, Daylight Saving Time and the local timezone to user equipment storage and use.

5.1.2.87.18 TS 22.043 Support of Localized Service Area (SoLSA) - Stage 1

This document specifies a mechanism, which can be used as a platform for providing special tariffs and/or special set of service features for certain subscribers within a regionally restricted area or areas. The motivation for this concept is to create means for network operators to build new service and tariff packages, which take into account subscriber groups and their needs.

5.1.2.87.19 TS 22.057 Mobile Station Application Execution Environment (MExE) - Stage 1

This document defines the stage one description of the Mobile Application Execution Environment (MExE).

5.1.2.87.20 TS 22.060 General Packet Radio Service (GPRS) - Stage 1

This document defines the stage one description of the General Packet Radio Service (GPRS).

5.1.2.87.21 TS 22.066 Support of Mobile Number Portability (MNP) - Stage 1

This document defines the stage one description of the Support of Mobile Number Portability between networks in the same country. It is in response to a study mandate agreed between the European Commission and ETSI under order voucher ETSI/97/M-251.

5.1.2.87.22 TS 22.067 Priority Set-up Service; Stage 1(ASCI spec)

The present document specifies the stage 1 description of the enhanced Multi-Level Precedence and Pre-emption Service (eMLPP). This service has two parts: precedence and pre-emption. Precedence involves assigning a priority level to a call in combination with fast call set-up. Pre-emption involves the seizing of resources, which are in use by a call of a lower precedence, by a higher level precedence call in the absence of idle resources. Pre-emption can also involve the disconnection of an on-going call of lower precedence to accept an incoming call of higher precedence.

5.1.2.87.23 TS 22.071 Location Services (LCS) - Stage 1

Location Services is a network provided enabling technology consisting of standardized service capabilities which enables the provision of location applications. This application may be service provider specific. The description of the numerous and varied possible location applications which are enabled by this technology are outside the scope of this specification. However, clarifying examples of how the functionality being specified may be used to provide specific location services is included in various sections of the specification.

5.1.2.87.24 TS 22.072 Call Deflection (CD) - Stage 1

Call Deflection (CD) enables the served mobile subscriber to respond to an incoming call offered by the network by requesting redirection of this call to another number specified in the response. The CD supplementary service can only be invoked before the connection is established by the served mobile subscriber, i.e. in response to the offered call, or during the period that the served subscriber is being informed of the call. The served subscriber's ability to originate calls is unaffected by the CD supplementary service.

5.1.2.87.25 TS 22.078 CAMEL - Stage 1

This standard specifies the stage 1 description for CAMEL feature (Customized Applications for Mobile network Enhanced Logic) which provides the mechanisms to support services consistently independently of the serving network. The CAMEL features shall facilitate service control of operator specific services external from the serving network. The CAMEL feature is a network feature and not a supplementary service. It is a tool to help the network operator to provide the subscribers with the operator specific services even when roaming outside the home network.

5.1.2.87.26 TS 22.079 Support of Optimal Routing - Stage 1

Support of Optimal Routing is a network feature to reduce the number of unnecessary inter-network call legs when the subscriber is roaming.

5.1.2.87.27 TS 22.081 Line Identification Supplementary Services - Stage 1

The present document describes the Supplementary Services belonging to the group Line Identification Supplementary Services. The group of Line Identification Supplementary Services is divided into the following four Supplementary Services:

- CLIP - Calling line identification presentation (clause 1);
- CLIR - Calling line identification restriction (clause 2);
- COLP - Connected line identification presentation (clause 3);
- COLR - Connected line identification restriction (clause 4).

5.1.2.87.28 TS 22.082 Call Forwarding (CF) Supplementary Services - Stage 1

This document describes the supplementary services belonging to the group Call Offering Supplementary Services.

The group of supplementary services Call Offering Supplementary Services is divided into four different supplementary services:

- Call forwarding unconditional (section 1);
- Call forwarding on mobile subscriber busy (section 2);
- Call forwarding on no reply (section 3);
- Call forwarding on mobile subscriber not reachable (section 4).

5.1.2.87.29 TS 22.083 Call Waiting (CW) and Call Hold (HOLD) Supplementary Services - Stage 1

The present document describes the Supplementary Services belonging to the group Call Completion Supplementary Services which are divided into the following two Supplementary Services:

- Call waiting (clause 1);
- Call hold (clause 2).

5.1.2.87.30 TS 22.084 MultiParty (MPTY) Supplementary Service - Stage 1

This Supplementary Service provides a mobile subscriber with the ability to have a multi-connection call, i.e. a simultaneous communication with more than one party.

5.1.2.87.31 TS 22.085 Closed User Group (CUG) Supplementary Services - Stage 1

The Closed User Group (CUG) Supplementary Service enables subscribers, connected to a network and possibly also other networks, to form closed user groups (CUGs) to and from which access is restricted. A specific user may be a member of one or more CUGs. Members of a specific CUG can communicate among each other but not, in general, with users outside the group.

5.1.2.87.32 TS 22.086 Advice of Charge (AoC) Supplementary Services - Stage 1

These services are designed to supply to a mobile user sufficient information to allow a real-time estimate to be made of the bill which will eventually be levied in the home PLMN on the Mobile Station (MS) subscriber.

5.1.2.87.33 TS 22.087 User-to-user signalling (UUS) - Stage 1

The User-to-User Signalling (UUS) supplementary service allows a mobile subscriber to send/receive a limited amount of information to/from another network or ISDN subscriber over the signalling channel in association with a call to the other subscriber.

5.1.2.87.34 TS 22.088 Call Barring (CB) Supplementary Services - Stage 1

The Call Restriction supplementary services allow the possibility for a mobile subscriber to have barring of certain categories of outgoing or incoming calls at the mobile subscribers access.

The group of Call Restriction Services includes two supplementary services:

- barring of outgoing calls;
- barring of incoming calls.

By use of subscription options, the mobile subscriber can at provision time select a set of one or more barring programs to determine the categories of calls to be barred. The following categories are defined:

- all outgoing calls;
- outgoing international calls;
- outgoing international calls except those directed to the home PLMN country;
- all incoming calls;
- incoming calls when roaming outside the home PLMN country.

5.1.2.87.35 TS 22.090 Unstructured Supplementary Service Data (USSD) - Stage 1

There are two modes of USSD: MMI-mode and application mode. MMI-mode USSD is for the transparent transport of MMI strings entered by the user to the network and for the transparent transport of text strings from the network that are displayed by the mobile for user information.

Application mode USSD is for the transparent transport of data between the network and the mobile station. Application mode USSD is intended to be used by applications in the network and their peer applications in the user equipment.

The communication over the radio interface takes place on the signalling channels using short dialogues with peak data throughput rate capabilities of up to approximately 600 bits/s outside of a call and 1000 bits/s during a call.

5.1.2.87.36 TS 22.091 Explicit Call Transfer (ECT) Supplementary Service - Stage 1

The ECT supplementary service enables the served mobile subscriber (subscriber A) who has two calls, each of which can be an incoming or outgoing call, to connect the other parties in the two calls and release the served mobile subscribers own connection.

5.1.2.87.37 TS 22.093 Call Completion to Busy Subscriber (CCBS) - Stage 1

In the situation when subscriber A encounters a Network Determined User Busy (NDUB) destination B, the subscriber A can request the CCBS supplementary service (i.e. activate a CCBS Request against destination B). The network will then monitor the wanted destination B for becoming idle.

When the wanted destination B becomes idle, then the network will wait a short time in order to allow destination B to make an outgoing call. If destination B does not make any outgoing call within this time, then the network shall automatically recall subscriber A.

5.1.2.87.38 TS 22.096 Calling Name Presentation (CNAP) - Stage 1

The CNAP supplementary service enables the called party to receive the calling name information of the calling party.

5.1.2.87.39 TS 22.097 Multiple Subscriber Profile (MSP) - Stage 1

Multiple Subscriber Profile is an optional service to enable mobile subscribers to have several profiles associated with a single SIM and a single IMSI, with each profile being a subscription option. Each profile may be used for mobile originated and mobile terminated calls.

Up to four different profiles can be provisioned against a subscriber using the MSP feature. This will allow the subscriber to separate her telecommunication service needs into different identities (e.g. business and home).

5.1.2.87.40 TS 22.100 UMTS phase 1 capabilities

This document contains how the definition of the UMTS system will be achieved in a phased approach. This document also specifies the requirements for Release 99 of UMTS. Some requirements which are necessary to ensure a smooth transition to later releases are also indicated. This document should, however, be read in conjunction with the other 22.000 series documents which provide a complete description of the requirements for UMTS Release '99 and beyond.

5.1.2.87.41 TS 22.101 UMTS service principles

This document describes the Service Principles of the Universal Mobile Telecommunications System (UMTS).

5.1.2.87.42 TS 22.105 Services and service capabilities

Pre-UMTS systems have largely standardized the complete sets of bearer services, teleservices and supplementary services which they provide. One major difference between UMTS and pre-UMTS systems is that service capabilities rather than services are standardized for UMTS, allowing service differentiation and system continuity. This document describes how and what kind of services the UMTS user has access to.

5.1.2.87.43 TS 22.115 Service aspects: charging and billing

This document describes the Service Aspects of charging and billing of the Universal Mobile Telecommunications System (UMTS).

This standard is not intended to duplicate existing standards or standards being developed by other groups on these topics, and will reference these where appropriate. This standard will elaborate on the charging requirements described in the Charging Principles in UMTS 22.01 Service Principles. It will allow the generation of accurate charging information to be used in the commercial and contractual relationships between the parties concerned.

5.1.2.87.44 TS 22.121 Virtual home environment

This document specifies the content of the stage one requirement for realization of VHE. Virtual Home Environment (VHE) is defined as a concept for personal service environment (PSE) portability across network boundaries and between terminals. The concept of the VHE is such that users are consistently presented with the same personalized features, User Interface customization and services in whatever network and whatever terminal (within the capabilities of the terminal and the network), wherever the user may be located.

A key feature to support VHE is the ability to build services using a standardized application interface.

5.1.2.87.45 TS 22.129 Handover requirements between UMTS and GSM or other radio systems

The scope of this document includes service requirements for handover (terms are defined below) within UMTS systems and between UMTS, other IMT-2000 family members and 2nd generation systems. Particular emphasis has been placed on the description of requirements for handover between UMTS and GSM but requirements specific to other systems are incorporated as required.

5.1.2.87.46 TS 22.135 Multicall

This document presents multicall scenarios and requirements for UMTS phase 1 release '99.

Multicall feature specifies functionality and interactions related to usage of several simultaneous bearers between a terminal and a network. Multicall features allows both circuit switched call(s) and packet session(s) to exist simultaneously.

5.1.2.87.47 TR 22.960 Mobile multimedia services including mobile intranet and internet services

This document discusses the issues related to mobile multimedia in UMTS environment. Specifically the foreseen mobile multimedia applications and their special requirements are referred briefly. The major technical challenges faced in the provision of multimedia services and Internet and Intranet access are discussed and highlighted in order to give guidance for UMTS system standardization.

This document contains various views into these future topics and cannot be regarded as complete.

5.1.2.87.48 TR 22.971 Automatic establishment of roaming relations

This document outlines a proposed framework for commercial and technical interworking between UMTS Home Environments and Serving Networks who have no direct prior commercial agreements with each other.

This document is applicable to UMTS standardization within ETSI, and is produced with the intent to clarify the concepts involved, and identify those areas which require standardization.

5.1.2.87.49 TR 22.975 Advanced addressing

This document defines the requirements for numbering and addressing for UMTS. This technical report is aimed at generating discussion and should be agreed with ETSI WG NA2. The responsibility for developing of Numbering and Addressing schemes for all networks being in ETSI NA2.

5.1.2.87.50 TS 21.133 Security Threats and Requirements

Detailed security requirements.

5.1.2.87.51 TS 33.102 Security Architecture

Provides a specification of all security mechanisms and protocols, except algorithms.

5.1.2.87.52 TS 33.103 Security Integration Guidelines

5.1.2.87.53 TS 33.105 Cryptographic Algorithm requirements

Defines requirements for standard cipher and integrity algorithm.

5.1.2.87.54 TS 33.106 Lawful interception requirements

Defines all requirements for network based lawful interception.

5.1.2.87.55 TS 33.120 Security Objectives and Principles

Elaborates on the basic principles underlying the security.

5.1.2.87.56 TR 33.901 Criteria for cryptographic Algorithm design process

Describes process used to design cipher and integrity algorithm.

5.1.2.87.57 TR 33.902 Formal Analysis of the 3G Authentication Protocol with Modified Sequence number Management

Formal analysis using BAN and Temporal Logic of authentication mechanism.

5.1.2.87.58 TS 26.071 AMR Speech Codec: General Description

This specification provides an introduction to the set of the AMR specifications.

5.1.2.87.59 TS 26.090 AMR Speech Codec: Transcoding Functions

This specification contains a detailed description of the AMR Speech Codec Transcoding Functions.

5.1.2.87.60 TS 26.091 AMR Speech Codec: Error Concealment of Lost Frames

This specification provides example procedures for the error concealment, also called frame substitution or muting procedure, of lost speech or silence indicator frames.

5.1.2.87.61 TS 26.092 AMR Speech Codec: Comfort Noise Aspects

This document gives the detailed requirements for the correct operation of the background acoustic noise evaluation, noise parameter encoding/decoding and comfort noise generation for the AMR speech codec during Source Controlled Rate (SCR) operation.

5.1.2.87.62 TS 26.093 AMR Speech Codec: Source Controlled Rate Operation

This document describes the operation of the Adaptive Multi Rate speech codec during Source Controlled Rate (SCR) operation.

5.1.2.87.63 TS 26.094 AMR Speech Codec: Voice Activity Detector

This document specifies two alternatives for the Voice Activity Detector (VAD) to be used during Source Controlled Rate (SCR) operation in conjunction with the AMR Codec.

5.1.2.87.64 TS 26.110 Codec for Circuit switched Multimedia Telephony Service: General Description

This specification provides an introduction to the set of specifications for the support of Circuit Switched 3G-324M Multimedia Telephony service.

5.1.2.87.65 TS 26.111 Codec for Circuit switched Multimedia Telephony Service: Modifications to ITU-T Recommendation H.324

This specification lists the modifications applicable to the ITU-T Recommendation H.324 Annex C for the support of Circuit Switched 3G-324M Multimedia Telephony service.

5.1.2.87.66 TR 26.911 Codec for Circuit switched Multimedia Telephony Service: Terminal Implementor's Guide

This report provides non-mandatory recommendations for the use of the different codec implementation options for the Circuit Switched 3G-324M Multimedia Telephony service based on ITU-T Recommendation H.324 Annex C. These Recommendations address issues specific to the third generation operating environment, including guaranteeing sufficient error resilience and inter-working between terminals.

5.1.2.85.1.2.9 Vocabulary

Document 25.990 is a collection of terms, definitions and abbreviations related to the baseline documents defining the objectives and systems framework. This document provides a tool for further work on the technical documentation and facilitates their understanding.

		Doc. Number	Version	Status	Issued Date	Location *
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

* The relevant SDOs should make their reference material available from their Web site.

** This information was supplied by the recognized external organizations and relates to their own deliverables of the transposed global core specification. [To be included in this table, the recognized

external organization must have completed the transposition and publication process by 1 April 2000 before the ITU Radiocommunication Assembly in May 2000].

5.1.2.109 SDO's Complete System Standard

SDO	Location
ARIB	
TTC	
ETSI	
TTA	
CWTS	

5.3.2 Detailed Specification of the Radio Interface

The standards contained in this Section are derived from the global core specifications for IMT-2000 contained at <http://www.itu.int/brsg/ties/imt/rspc/imt-2000/index.html>.

NOTE 3 – The asterisks of the tables from §5.3.2.1.1 to §5.3.2.7~~6~~.9 are as follows:

* The relevant SDOs should make their reference material available from their Web site.

** This information was supplied by the recognized external organizations and relates to their own deliverables of the transposed global core specification. [To be included in this table, the recognized external organizations must have completed the transposition and publication process by 1 April 2000 before the ITU Radiocommunication Assembly in May 2000].

5.3.2.1 25.200 Series

5.3.2.1.1 25.201 Physical layer – General description

This specification describes the documents being produced by the 3GPP TSG RAN WG 1. This specification gives also general description of the physical layer of the UTRA radio interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.1.2 25.221 Physical channels and mapping of transport channels onto physical channels (TDD)

This specification describes the characteristics of the Layer 1 transport channels and physical channels in the TDD mode of UTRA. The main objectives of the document are to be a part of the full description of the UTRA Layer 1, and to serve as a basis for the drafting of the actual technical specification (TS).

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.1.3 25.222 Multiplexing and channel coding (TDD)

This specification describes multiplexing, channel coding and interleaving for UTRA Physical Layer TDD mode.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.1.4 25.223 Spreading and modulation (TDD)

This document establishes the characteristics of the spreading and modulation in the TDD mode. The main objectives of the document are to be a part of the full description of the Layer 1, and to serve as a basis for the drafting of the actual technical specification (TS).

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					

	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.1.5 25.224 Physical Layer Procedures (TDD)

The present document describes the Physical Layer Procedures in the TDD mode of UTRA.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.1.6 25.225 Physical layer – Measurements (TDD)

This specification contains the description of the measurements done at the UE and network in order to support operation in idle mode and connected mode for TDD mode.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.2 25.300 Series

5.3.2.2.1 25.301 Radio Interface Protocol Architecture

The present document shall provide an overview and overall description of the UE-UTRAN radio interface protocol architecture. Details of the radio protocols will be specified in companion documents.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.2.2 25.302 Services provided by the Physical Layer

The present document is a technical specification of the services provided by the physical layer of UTRA to upper layers.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.2.3 25.303 Interlayer Procedures in Connected Mode

This document includes informative interlayer procedures to perform the required tasks.

This document attempts to provide a comprehensive overview of the different states and transitions within the connected mode of a UMTS terminal.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.2.4 25.304 UE procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode

The present document shall describe the overall idle mode process for the UE and the functional division between the non-access stratum and access stratum in the UE. The UE is in idle mode when the connection of the UE is closed on all layers, e.g. there is neither an MM connection nor an RRC connection.

This document presents also examples of inter-layer procedures related to the idle mode processes and describes idle mode functionality of a dual mode UMTS/GSM UE.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.2.5 25.321 Medium Access Control (MAC) Protocol Specification

The scope of this description is the specification of the MAC protocol.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.2.6 25.322 Radio Link Control (RLC) Protocol Specification

The scope of this description is to describe the RLC protocol.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.2.7 25.331 Radio Resource Control (RRC) Protocol Specification

The scope of this specification is to describe the Radio Resource Control protocol for the 3GPP radio system. The scope of this Specification contains also the information to be transported in a transparent container between source RNC and target RNC in connection to SRNC relocation.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3 25.400 Series

5.3.2.3.1 25.401 UTRAN Overall Description

This document describes the overall architecture of the UTRAN, including internal interfaces and assumptions on the radio and Iu interfaces.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.2 25.410 UTRAN Iu Interface: General Aspects and Principles

The present document is an introduction to the 25.41x series of Technical Specifications that define the Iu interface for the interconnection of Radio Network Controller (RNC) component of the UTRAN to the Core Network.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.3 25.411 UTRAN Iu interface Layer 1

The present document specifies the standards allowed to implement Layer 1 on the I_u interface. The specification of transmission delay requirements and O&M requirements are not in the scope of this document.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.4 25.412 UTRAN Iu interface signalling transport

The present document specifies the standards for user data transport protocols and related signalling protocols to establish user plane transport bearers.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.5 25.413 UTRAN Iu Interface: RANAP Signalling

Specifies the signalling between the CN and the UTRAN over the Iu interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.6 25.414 UTRAN Iu interface data transport and transport signalling

The present document specifies the standards for user data transport protocols and related signalling protocols to establish user plane transport bearers.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.7 25.415 UTRAN Iu interface user plane protocols

This Technical Specification defines the protocols being used to transport and control over the Iu interface, the Iu User Data Streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.8 25.420 UTRAN Iur Interface: General Aspects and Principles

The present document is an introduction to the TSG RAN TS 25.42x series of Technical Specifications that define the Iur Interface. It is a logical interface for the interconnection of two Radio Network Controller (RNC) components of the UTRAN.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.9 25.421 UTRAN Iur interface Layer 1

The present document specifies the standards allowed to implement Layer 1 on the I_{ur} interface. The specification of transmission delay requirements and O&M requirements are not in the scope of this document.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.10 25.422 UTRAN Iur interface signalling transport

The present document specifies the standards for user data transport protocols and related signalling protocols to establish user plane transport bearers.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.11 25.423 UTRAN Iur Interface: RNSAP Signalling

The present document specifies the radio network layer signalling procedures between RNCs in UTRAN.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.12 25.424 UTRAN Iur interface data transport and transport signalling for Common Transport Channel data streams

This document shall provide a description of the UTRAN RNS-RNS (Iur) interface Data Transport and Transport Signalling for Common Transport Channel data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.13 25.425 UTRAN Iur interface user plane protocols for Common Transport Channel data streams

This document shall provide a description of the UTRAN RNS-RNS (Iur) interface user plane protocols for Common Transport Channel data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.14 25.426 UTRAN Iur & Iub interface data transport & transport signalling for DCH data streams

The scope of this Technical Specification is to specify the transport bearers for the DCH data streams on UTRAN Iur and Iub interfaces. The corresponding Transport Network Control plane is also specified. The physical layer for the transport bearers is outside the scope of this TS.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.15 25.427 UTRAN Iur & Iub interface user plane protocol for DCH data streams

This document shall provide a description of the UTRAN Iur and Iub interfaces user plane protocols for Dedicated Transport Channel data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.16 25.430 UTRAN Iub Interface: General Aspects and Principles

The present document is an introduction to the TSG RAN TS 25.43x series of UMTS Technical Specifications that define the Iub Interface. The Iub interface is a logical interface for the interconnection of Node B and Radio Network Controller (RNC) components of the UTRAN.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.17 25.431 UTRAN Iub interface Layer 1

The present document specifies the standards allowed to implement Layer 1 on the I_{ub} interface. The specification of transmission delay requirements and O&M requirements is not in the scope of this document.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2

5.3.2.3.18 25.432 UTRAN Iub interface signalling transport

The present document specifies the signalling transport related to NBAP signalling to be used across the Iub Interface. The Iub interface is a logical interface for the interconnection of Node B and Radio Network Controller (RNC) components of the UTRAN. The radio network control signalling between these nodes is based on the Node B application part (NBAP).

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2.

5.3.2.3.19 25.433 UTRAN Iub Interface: NBAP Signalling

The present document specifies the standards for NBAP specification to be used over Iub Interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2.

5.3.2.3.20 25.434 UTRAN Iub interface data transport and transport signalling for Common Transport Channel data streams

This document shall provide a description of the UTRAN RNC-Node B (Iub) interface Data Transport and Transport Signalling for CCH data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2.

5.3.2.3.21 25.435 UTRAN Iub interface user plane protocols for Common Transport Channel data streams

This document shall provide a description of the UTRAN RNC-Node B (Iub) interface user plane protocols for Common Transport Channel data streams.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2.

5.3.2.3.22 25.442 UTRAN Implementation Specific O&M Transport

The present document specifies the transport of implementation specific O&M signalling between Node B and the Management Platform in case that the transport is routed via the RNC.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.4 25.100 Series

5.3.2.4.1 25.102 UE Radio transmission and reception (TDD)

This document establishes the minimum RF characteristics of the TDD mode of UTRA for the User Equipment (UE). This document establishes the minimum RF characteristics of the UTRA User Equipment (UE) operating in the TDD mode. The values in the TS make no allowance for measurement uncertainty in conformance testing. Test limits to be used for conformance testing are specified separately in the UE conformance test specifications TS 34.122.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.4.2 25.123 Requirements for Support of Radio Resource Management (TDD)

This Technical Specification shall describe the requirements for support of Radio Resource Management for TDD including requirements on measurements in UTRAN and the UE as well as on node dynamic behaviour and interaction, in terms of delay and response characteristics.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	CWTS					

*,**: see Note 3, § 5.3.2.

5.3.2.4.3 25.105 BTS Radio transmission and reception (TDD)

This document establishes the minimum RF characteristics of the TDD mode of UTRA. The values in the TS make no allowance for measurements uncertainties in conformance testing. Test limit to be used for conformance testing are specified separately in the base station conformance test Specification TS 25.142.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,**: see Note 3, § 5.3.2.

5.3.2.4.4 25.142 Base station conformance testing (TDD)

The present document specifies the Radio Frequency (RF) test methods and conformance requirements for UTRA Base Transceiver Stations (BTS) operating in the TDD mode. These have been derived from, and are consistent with, the core UTRA specifications specified in the requirements reference subclause of each test. The maximum acceptable measurement uncertainty is specified in the TS for each test, where appropriate.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.4.5 C302 UE conformance testing

The specification describes the document being produced by the CWTS.

		Doc. Number	Version	Status	Issued Date	Location*
**	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.4.6 25.113 Base station EMC¹⁰

The present document covers the assessment of base stations and associated ancillary equipment in respect of ElectroMagnetic Compatibility (EMC).

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.4.7 C404 UE and BTS EMC

This Technical Specification shall describe RF EMC parameters and Requirements for both UE and BTS in TD-SCDMA radio system.

		Doc. Number	Version	Status	Issued Date	Location*
**	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.5 34.100 Series

5.3.2.5.1 34.122 Terminal Conformance Specification, Radio Transmission and Reception (TDD)

This document specifies the Radio Frequency (RF) test methods and conformance requirements for UTRA User Equipment (UE) operating in the TDD mode. These have been derived from, and are consistent with, the core UTRA specifications. The maximum acceptable measurement uncertainty is specified in the TS for each test, where appropriate.

¹⁰ This Specification does not include the antenna port immunity and emissions.

		<u>Doc. Number</u>	<u>Version</u>	<u>Status</u>	<u>Issued Date</u>	<u>Location*</u>
<u>**</u>	<u>ETSI</u>					
	<u>T1</u>					
	<u>TTA</u>					
	<u>CWTS</u>					

*,**: see Note 3, § 5.3.2.

5.3.2.65 Core Network Aspects

5.3.2.65.1 23.108 Mobile Radio Interface Layer 3 specification Core Network Protocols stage 2

This specification shall specify the procedures used at the radio interface for Call Control (CC), Mobility Management (MM) and Session Management (SM). It shall hold examples of the structured procedures.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

,*: see Note 3, § 5.3.2.

5.3.2.65.2 23.110 UMTS Access Stratum; Services and Functions

This document shall be the basis of the detailed specifications of the protocols which rule the information flows, both control and user data, between the Access Stratum and the parts of UMTS outside the Access Stratum, and of the detailed specifications of the UTRAN. These detailed specifications are to be found in other Technical Specifications.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

,*: see Note 3, § 5.3.2.

5.3.2.65.3 23.022 Functions related to Mobile Stations (MS) in idle mode and group receive mode

This specification shall give an overview of the tasks undertaken by a Mobile Station (MS) when in idle mode, that is, switched on but not having a dedicated channel allocated, e.g. not making or receiving a call, or when in group receive mode, that is, receiving a group call or broadcast call but not having a dedicated connection. It also describes the corresponding network functions.

		Doc. Number	Version	Status	Issued Date	Location*
	T1					
	TTA					

*,** : see Note 3, § 5.3.2.

5.3.2.65.4 24.007 Mobile Radio Interface Signalling Layer 3 - General Aspects

This Technical Specification (TS) defines the principal architecture of layer 3 and its sublayers on the GSM Um interface, i.e. the interface between Mobile Station (MS) and network; for the CM sublayer, the description is restricted to paradigmatic examples, call control, supplementary services, and short message services for non-GPRS services. It also defines the basic message format and error handling applied by the layer 3 protocols.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.65.5 24.008 Mobile Radio Interface Layer 3 specification; Core Network Protocols - Stage 3

This specification shall specify the procedures used at the radio interface for Call Control (CC), Mobility Management (MM) and Session Management (SM).

The procedures currently described are for the call control of circuit-switched connections, session management for GPRS services, mobility management and radio resource management for circuit-switched and GPRS services.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.65.6 24.011 Point-to-Point (PP) Short Message Service (SMS); support on mobile radio interface

This Specification specifies the procedures used across the mobile radio interface by the signalling layer 3 function Short Message Control (SMC) and Short Message Relay function (SM-RL) for both circuit switched GSM and GPRS.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.65.7 24.012 Short Message Cell Broadcast; Support on Mobile Radio Interface

This document describes how the Short Message Service Cell Broadcast (SMSCB) is supported over the mobile radio interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,**: see Note 3, § 5.3.2.

5.3.2.65.8 23.060 General Packet Radio Service (GPRS) Service description - Stage 2

This document shall provide a general overview over the GPRS Architecture as well as a more detailed overview of the MS - Core Network protocol architecture. Details of the protocols will be specified in companion documents.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,**: see Note 3, § 5.3.2.

5.3.2.65.9 24.022 Radio Link Protocol (RLP) for Circuit switched bearer and television

This Specification shall specify the Radio Link Protocol (RLP) for data transmission over the UMTS PLMN. RLP covers the Layer 2 functionality of the ISO OSI Reference Model (IS 7498). It is based on ideas contained in IS 3309, IS 4335 and IS 7809 (HDLC of ISO) as well as ITU-T Recommendations X.25, Q.921 and Q.922 (LAP-B and LAP-D of CCITT, respectively). RLP has been tailored to the special needs of digital radio transmission. RLP provides to its users the OSI Data Link Service (IS 8886).

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,**: see Note 3, § 5.3.2.

5.3.2.65.10 24.010 Mobile Radio Interface Layer 3 - Supplementary Services Specification - General Aspects

In this specification the general aspects of the specification of supplementary services at the layer 3 radio interface shall be given. Details will be specified in other documents.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,**: see Note 3, § 5.3.2.

5.3.2.65.11 24.080 Mobile radio interface Layer 3 Supplementary Service specification - Formats and coding

This Technical Specification shall contain the coding of information necessary for support of supplementary service operation on the mobile radio interface layer 3. Details will be specified in other documents.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.76 Terminal Aspects

5.3.2.76.1 21.111 USIM and IC Card Requirements

This document defines the requirements of the USIM (Universal Subscriber Identity Module) and the IC card (UICC). These are derived from the service and security requirements defined in the respective specifications. The document is the basis for the detailed specification of the USIM and the UICC, and the interface to the terminal.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.76.2 23.038 Alphabets and Language specific information

This TS defines the language-specific requirements for the terminals including character coding.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2.

5.3.2.76.3 23.040 Technical realization of the Short Message Service (SMS)

This TS describes the point-to-point Short Message Service (SMS).

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2.

5.3.2.76.4 23.041 Technical realization of Cell Broadcast Service (CBS)

This TS describes the point-to-multipoint Cell Broadcast Service (CBS).

		Doc. Number	Version	Status	Issued Date	Location *
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2.

5.3.2.76.5 23.042 Compression algorithm for text messaging services

This TS describes the compression algorithm for text messaging services.

		Doc. Number	Version	Status	Issued Date	Location *
**	ETSI					
	T1					
	TTA					
	CWTS					

*, **: see Note 3, § 5.3.2.

5.3.2.76.6 27.005 Use of Data Terminal Equipment - Data Circuit terminating; Equipment (DTE-DCE) interface for Cell Broadcast Service (CBS)

This TS defines three interface protocols for control of SMS functions within a GSM mobile telephone from a remote terminal via an asynchronous interface.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,**: see Note 3, § 5.3.2.

5.3.2.76.7 27.007 AT command set for the User Equipment (UE)

This TS specifies a profile of AT commands and recommends that this profile be used for controlling Mobile Equipment (ME) functions and GSM network services from a Terminal Equipment (TE) through Terminal Adaptor (TA).

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,**: see Note 3, § 5.3.2.

5.3.2.76.8 27.010 Terminal Equipment to Mobile Station (TE-MS) multiplexer protocol

This TS defines a multiplexing protocol between a mobile station and an external data terminal for the purposes of enabling multiple channels to be established for different purposes (e.g. simultaneous SMS and data call).

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.76.9 27.103 Wide Area Network Synchronization Standard

This specification provides a definition of a Wide Area Synchronization protocols. The synchronization protocol is based upon IrMC Level 4.

		Doc. Number	Version	Status	Issued Date	Location*
**	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.87 System Aspects

IMT-2000 CDMA TDD Specification also includes the following documents which are useful and related to this Recommendation.

See Sections from 5.1.2.87.1 to 5.1.2.87.66.

5.3.2.98 Vocabulary

5.3.2.98.1 25.990 Vocabulary

Document 25.990 is a collection of terms and abbreviations related to the baseline documents defining the objectives and systems framework. This document provides a tool for further work on the technical documentation and facilitates their understanding.

		Doc. Number	Version	Status	Issued Date	Location*
**	ARIB					
	ETSI					
	T1					
	TTA					
	CWTS					

*,** : see Note 3, § 5.3.2.

5.3.2.109 SDO's Complete System Standard

SDO	Location
CWTS	
ETSI	

TTA	
-----	--