**Technical Specification Group Core Network**
*TSGN#11(01)0028*
**Meeting #11, Palm Springs, USA, 14 – 16 March 2001**
**Technical Specification Group Radio Access Network**
*TSGR#11(01)0180*
**Meeting #11, Palm Springs, USA, 13 – 16 March 2001**
**Technical Specification Group Terminals**
*TSGT#11(01)0053*
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**Technical Specification Group Services and System Aspects** *TSGS#11(01)0068*
**Meeting #11, Palm Springs, USA, 19 – 22 March 2001**

| | |
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| **Source:** | **MCC** |
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| **Title:** | **3GPP TS 21.102:** |
| | **3rd Generation mobile system Release 4 Specifications** |
| **Document for:** | **CN:** **information** |
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| | **T:** **7** |
| | **SA:** **10** |

Attached is the latest draft of this specification. Note that it does not yet include the specifications which are expected to be approved at the present meeting. These are listed in a separate contribution. It is envisaged that a version 2.1.0 of 21.102 will be produced including those, towards the end of the TSG-SA#11 meeting.

# 3GPP TS 21.102 V2.2.0 (2001-03)

*Technical Specification*

**3rd Generation Partnership Project;**
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**(Release 4)**

| Keywords |
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# Contents

# Foreword

This Technical Specification (TS) has been produced by the 3$^{rd}$ Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

# 1 Scope

The present document identifies the 3$^{rd}$ generation mobile system specifications for Release 4. The specifications and reports of 3G Release 4 have a major version number 4 (e.g. 4.x.y).

Release 4 Technical Specifications and Technical Reports will be functionally frozen at the 10$^{th}$ Technical Specification Group meetings (TSG#10) in December 2000.

> NOTE 1: Functionally frozen means that no further functionality/features may be incorporated into the set of specifications, and that only corrective Change Requests (CRs) are to be accepted and agreed.

> NOTE 2: It can be expected that corrective CRs will be introduced into the Release 4 version 4.x.y specifications throughout 2001.

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] (void)

[3] 3GPP TR 21.900: "3GPP working procedures".

[4] (void)

[5] 3GPP TS 21.101: "3rd Generation mobile system Release 1999 Specifications".

# 3 Abbreviations

For the purposes of the present document, the terms and definitions given in 3GPP TS 21.905 [1] apply.

# 4 General

Release 4 consists of 3G-only specifications and the GSM Core Network specifications developed for both GSM Release 4 and Release 4 of the 3$^{rd}$ Generation mobile system.

The present document identifies the 3G system set of specifications required to implement Release 4.

> NOTE: The corresponding list of specifications for Release 1999 can be found in 3GPP TS 21.101 [5].

The numbering scheme for specifications is described in 3GPP TR 21.900 [3].

# 5 Specifications and Reports of 3G Release 4

NOTE 1: (void)

NOTE 2: The final column of the table below indicates whether or not the documents are intended for adoption by the partner Standards Development Organizations as their own publications. Those marked "no" are internal working documents of the 3GPP TSGs.

NOTE 3: The algorithm specifications in the 35-series are available only under licence.

NOTE 4: "Type" indicates Technical Specification (TS) or Technical Report (TR).

| Type | Number | Title | WG prime | For pub-lication |
|------|--------|-------|----------|-------------------|
| TS | 21.102 | 3rd Generation mobile system Release 4 Specifications | SP | Yes |
| TR | 21.801 | 3GPP drafting rules | SP | Yes |
| TR | 21.905 | 3G Vocabulary | S1 | Yes |
| TS | 22.001 | Principles of circuit telecommunication services supported by a Public Land Mobile Network (PLMN) | S1 | Yes |
| TS | 22.002 | Circuit Bearer Services Supported by a PLMN | S1 | Yes |
| TS | 22.003 | Circuit Teleservices supported by a Public Land Mobile Network (PLMN) | S1 | Yes |
| TS | 22.011 | Service accessibility | S1 | Yes |
| TS | 22.038 | SIM application toolkit (SAT); Stage 1 | S1 | Yes |
| TS | 22.041 | Operator Determined Call Barring | S1 | Yes |
| TS | 22.057 | Mobile Station Application Execution Environment (MExE); Stage 1 | S1 | Yes |
| TS | 22.060 | General Packet Radio Service (GPRS); Stage 1 | S1 | Yes |
| TS | 22.067 | enhanced Multi-Level Precedence and Pre-emption service (eMLPP) ; Stage 1 | S1 | Yes |
| TS | 22.071 | Location Services (LCS); Stage 1 | S1 | Yes |
| TS | 22.078 | CAMEL; Stage 1 | S1 | Yes |
| TS | 22.101 | UMTS Service principles | S1 | Yes |
| TS | 22.105 | Services & Service capabilities | S1 | Yes |
| TS | 22.112 | USIM toolkit interpreter; Stage 1 | T3 | Yes |
| TS | 22.121 | Provision of Services in UMTS - The Virtual Home Environment ; Stage 1 | S1 | Yes |
| TS | 22.127 | Service Requirement for the Open Services Access (OSA) ; Stage 1 | S1 | Yes |
| TS | 22.129 | Handover Requirements between UMTS and GSM or other Radio Systems | S1 | Yes |
| TS | 22.140 | Multimedia Messaging Service; Stage 1 | S1 | Yes |
| TS | 22.226 | Global text telephony; Stage 1: Service description | S1 | Yes |
| TS | 22.227 | Service requirements for the Open Service Access (OSA) | S1 | Yes |
| TR | 22.976 | Study on PS domain services and capabilities | S1 | Yes |
| TS | 23.002 | Network Architecture | S2 | Yes |
| TS | 23.018 | Basic Call Handling - Technical realisation | N4 | Yes |
| TS | 23.038 | Alphabets & Language | T2 | Yes |
| TS | 23.040 | Technical realisation of Short Message Service | T2 | Yes |
| TS | 23.057 | Mobile Station Application Execution Environment (MExE) | T2 | Yes |
| TS | 23.067 | Enhanced Multi-Level Precedence and Preemption Service (EMLPP) ; Stage 2 | N4 | Yes |
| TS | 23.079 | Support of Optimal Routeing - Phase 1 ; Stage 2 | N4 | Yes |
| TS | 23.083 | Call Waiting (CW) and Call Hold (HOLD) Supplementary Service ; Stage 2 | N4 | Yes |
| TS | 23.093 | Call Completion to Busy Subscriber (CCBS) ; Stage 2 | N4 | Yes |
| TS | 23.107 | Quality of Service, Concept and Architecture | S2 | Yes |
| TS | 23.127 | Virtual Home Environment; Stage 2 | S2 | Yes |
| TS | 23.135 | Multicall ; Stage 2 | N4 | Yes |
| TS | 23.140 | Multimedia Messaging Service (MMS) | T2 | Yes |
| TS | 23.146 | Technical realisation of facsimile Group 3 service - non-transparent | N3 | Yes |
| TS | 23.153 | Out of Band Transcoder Control ; Stage 2 | N4 | Yes |
| TS | 23.205 | Bearer-independent circuit-switched core network; Stage 2 | N4 | Yes |
| TS | 23.207 | End to end quality of service concept and architecture | S2 | Yes |
| TS | 23.221 | Architectural requirements | S2 | Yes |
| TS | 23.226 | Global text telephony; Stage 2: Architecture | N4 | Yes |
| TS | 23.227 | Terminal local model | T2 | Yes |
| TS | 23.271 | Functional stage 2 description of location services | S2 | Yes |
| TR | 23.821 | Architecture Principles for Relase 2000 | S2 | No |
| TR | 23.873 | Feasibility study fro transport and control separation in the PS CN domain | S2 | No |
| TR | 23.874 | Feasibility study of architecture for network requested PDP context activation | S2 | No |

| Type | Number | Title | WG prime | For pub-lication |
|------|--------|-------|----------|------------------|
| | | with User-ID | | |
| TR | 23.907 | Quality of Service concept | S1 | Yes |
| TR | 23.910 | Circuit switched data bearer services | N3 | Yes |
| TR | 23.974 | Support of push service | S2 | Yes |
| TS | 24.008 | Mobile Radio Interface Layer 3 specification; Core Network Protocols ; Stage 3 | N1 | Yes |
| TR | 24.946 | reserved | | Yes |
| TS | 25.106 | UTRA Repeater; Radio transmission and reception | R4 | Yes |
| TS | 25.143 | UTRA Repeater; Conformance testing | R4 | Yes |
| TR | 25.834 | UTRA TDD low chip rate option; Radio protocol aspects | R2 | No |
| TR | 25.835 | Report on hybrid ARQ type II/III | R2 | No |
| TR | 25.836 | Node B synchronization for TDD | R1 | No |
| TR | 25.837 | Hybrid ARQ Type II/III (Iub/Iur aspects) | R3 | No |
| TR | 25.838 | Node B Synchronisation for TDD (Iub/Iur aspects) | R3 | No |
| TR | 25.839 | Uplink Synchronous Transmission Scheme (USTS) (Iur/Iub aspects) | R3 | No |
| TR | 25.840 | Terminal power saving features | R1 | No |
| TR | 25.841 | DSCH power control improvement in soft handover | R1 | No |
| TR | 25.843 | 1,28 Mcps TDD UE Radio Access Capabilities | R2 | No |
| TR | 25.844 | Radio acces bearer support enhancements | R2 | No |
| TR | 25.845 | FDD RACH and AICH performance requirements | R4 | No |
| TR | 25.847 | UE positioning enhancements | R2 | No |
| TR | 25.848 | Physical Layer Aspects of UTRA High Speed Downlink Packet Access | R1 | No |
| TR | 25.849 | DSCH power control improvement in soft handover | R3 | No |
| TR | 25.850 | UE positioning in UTRAN Iub/Iur protocol aspects | R3 | No |
| TR | 25.851 | RAB Quality of Service Renegotiation over Iu | R3 | No |
| TR | 25.852 | Radio access bearer support enhancements for the Iu | R3 | No |
| TR | 25.924 | Opportunity Driven Multiple Access (ODMA) | R2 | Yes |
| TR | 25.928 | 1,28Mcps UTRA TDD Physical Layer | R1 | Yes |
| TR | 25.933 | IP Transport in UTRAN | R3 | Yes |
| TR | 25.934 | AAL2 QoS optimization | R3 | Yes |
| TR | 25.935 | RRM optimisation | R3 | Yes |
| TR | 25.936 | Handover for realtime services from PS-domain | R3 | Yes |
| TR | 25.937 | UTRAN TDD low chiprate | R3 | Yes |
| TR | 25.938 | Terminal power saving features | R3 | Yes |
| TR | 25.943 | Deployment aspects | R4 | Yes |
| TR | 25.945 | RF requirements for low chip rate TDD option | R4 | Yes |
| TR | 25.946 | RAB Quality of Service Negotiation over Iu | R3 | Yes |
| TR | 25.950 | UTRA high speed downlink packet access | R2 | Yes |
| TR | 25.951 | Base Station classification (FDD) | R4 | Yes |
| TR | 25.952 | Base Station classification (TDD) | R4 | Yes |
| TR | 25.953 | TrFO/TFO | R3 | Yes |
| TR | 25.954 | Migration to modification procedure | R3 | Yes |
| TS | 26.093 | AMR speech Codec; Source Controlled Rate operation | S4 | Yes |
| TS | 26.103 | Codec lists | S4 | Yes |
| TS | 26.104 | AMR speech Codec; Floating point C-Code | S4 | Yes |
| TS | 26.110 | Codec for Circuit switched Multimedia Telephony Service; General Description | S4 | Yes |
| TS | 26.171 | AMR speech codec, wideband; General description | S4 | Yes |
| TS | 26.173 | AMR speech codec, wideband; C-source code | S4 | Yes |
| TS | 26.174 | AMR speech codec, wideband; Test sequences | S4 | Yes |
| TS | 26.190 | Mandatory Speech Codec speech processing functions AMR Wideband speech codec; Transcoding functions | S4 | Yes |
| TS | 26.191 | AMR speech codec, wideband; Error concealment of lost frames | S4 | Yes |
| TS | 26.192 | Mandatory Speech Codec speech processing functions AMR Wideband Speech Codec; Comfort noise aspects | S4 | Yes |
| TS | 26.193 | AMR speech codec, wideband; Source Controlled Rate operation | S4 | Yes |
| TS | 26.194 | Mandatory Speech Codec speech processing functions AMR Wideband speech codec; Voice Activity Detector (VAD) | S4 | Yes |
| TS | 26.201 | AMR speech codec, wideband; Frame structure | S4 | Yes |
| TS | 26.202 | AMR speech codec, wideband; Interface to Iu and Uu | S4 | Yes |
| TS | 26.226 | Global text telephony;Transport of text in the voice channel | S4 | Yes |
| TS | 26.230 | Global text telephony; Cellular text telephone modem transmitter C-code description description | S4 | Yes |

| Type | Number | Title | WG prime | For pub-lication |
|------|--------|-------|----------|------------------|
| TS | 26.233 | End-to-end transparent streaming service; General description | S4 | Yes |
| TS | 26.234 | End-to-end transparent streaming service; Protocols and codecs | S4 | Yes |
| TS | 26.235 | Packet switched conversational multimedia applications; Default codecs | S4 | Yes |
| TR | 26.901 | AMR Wideband Speech Codec Feasibility Study Report | S4 | Yes |
| TR | 26.911 | Codec for Circuit switched Multimedia Telephony Service;Terminal Implementor's Guide | S4 | Yes |
| TS | 27.001 | General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS) | N3 | Yes |
| TS | 27.002 | Terminal Adaptation Functions (TAF) for services using Asynchronous bearer capabilities | N3 | Yes |
| TS | 27.003 | Terminal Adaptation Functions (TAF) for services using Synchronous bearer capabilities | N3 | Yes |
| TS | 27.007 | AT command set for 3G User Equipment (UE) | T2 | Yes |
| TS | 27.104 | vObjects and other constructs for data synchronization | T2 | Yes |
| TS | 27.226 | Global Text telephony;Terminal aspects | T2 | Yes |
| TS | 28.020 | Rate Adaptation on the Base Station System - Mobile Service Switching Centre (BSS-MSC) Interface | - | Yes |
| TS | 28.062 | Inband Tandem Free Operation (TFO) of Speech Codecs; Service Description; Stage 3 | S4 | Yes |
| TS | 29.002 | Mobile Application Part (MAP) | N4 | Yes |
| TS | 29.007 | General requirements on Interworking between the PLMN and the ISDN or PSTN | N3 | Yes |
| TS | 29.120 | Mobile Application Part (MAP) specification for Gateway Location Register (GLR); Stage 3 | N4 | Yes |
| TS | 29.202 | SS7 signalling transport in Core Network; stage 3 | N4 | Yes |
| TS | 29.205 | Application of Q.1900 series to bearer-independent circuit-switched core network architecture; Stage 3 | N4 | Yes |
| TS | 29.226 | reserved | N4 | Yes |
| TS | 29.232 | Media gateway controller - media gateway interface; Stage 3 | N4 | Yes |
| TS | 29.414 | Core network Nb nata transport and transport signalling | N3 | Yes |
| TS | 29.415 | Nb user plane protocols | N3 | Yes |
| TR | 30.504 | Work Plan and Study Items - RAN WG4 | R4 | No |
| TR | 30.801 | Overall Project  Plan | S2 | No |
| TR | 30.802 | Project plan on Bearer Services and QoS | S2 | No |
| TR | 30.804 | Project plan on GSM/UMTS Interoperation and Mobility Management | S2 | No |
| TR | 30.806 | Project plan on Location based services | S2 | No |
| TR | 30.808 | Project plan on Packet Architecture and Circuit Architecture | S2 | No |
| TR | 30.810 | Project plan on Security | S2 | No |
| TR | 30.812 | Project plan on Services and Service platforms | S2 | No |
| TS | 31.111 | USIM Application Toolkit (USAT) | T3 | Yes |
| TS | 32.105 | 3G charging and billing; Stage 2 description | S5 | Yes |
| TS | 32.140 | 3G Service Management Requirements & Framework | S5 | Yes |
| TR | 32.800 | Management level procedures and interaction with UTRAN | S5 | Yes |
| TS | 33.200 | Network Domain Security | S3 | Yes |
| TR | 33.800 | Principles for Network Domain Security | S3 | No |
| TR | 33.903 | Access Security for IP based services | S3 | Yes |
| TR | 33.904 | Report on the Evaluation of 3GPP Standard Confidentiality and Integrity Algorithms | S3 | Yes |
| TR | 34.910 | Conformance Test specifications – Relevant for Regulatory use | T1 | Yes |
| TR | 34.926 | Table of International EMC requirements | R4 | Yes |

# Annex A (void)

# Annex A (void)

# Annex B (informative):
# Document change history

| Date | Version | Information about changes |
|------|---------|---------------------------|
| June 2000 | 0.0.0 | 1st draft created by MCC |
| June 2000 | 1.0.0 | Minor corrections, presentation to SA#8. |
| December 2000 | 1.1.0 | Table of specs refreshed; change from "Release 2000" terminology to "Release 4". Presentation to SA#10 |
| March 2001 | 2.0.0 | Table of specs refreshed. Presentation to SA#11. |

| Change history | | | | | |
|---|---|---|---|---|---|
| TSG SA # | Version | CR | Tdoc SA | New Version | Subject/Comment |
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