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TECHNICAL SPECIFICATION

**Digital cellular telecommunications system (Phase 2+);
Release independent Downlink Advanced Receiver
Performance (DARP);
Implementation guidelines
(3GPP TS 45.015 version 12.0.0 Release 12)**

**GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS**

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650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00   Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

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In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**may not**", "**need**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

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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 specifies requirements on MSs supporting Downlink Advanced Receiver Performance (DARP) that are independent of release. TSG GERAN has agreed that the standardisation of DARP be independent of a release. However, in order to implement an MS that conforms to a particular release but supports DARP, which is specified in a later release, it is necessary to specify some extra requirements.

DARP - phase II is contained in the Release 7 specifications. In order to implement an MS conforming to Release 5 but supporting DARP – phase II, it is necessary for the MS to additionally conform to some parts of the Release 7 specifications, such as the radio frequency requirements for DARP and some signalling extensions relating to the MS Classmark and radio access capabilities.

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]   (void)

[2]   (void)

[3]   3GPP TS 45.005: "Radio transmission and reception (Release 7)".

[4]   3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core Network protocols; Stage 3 (Release 7)".

3 Definitions and abbreviations

Unless listed below, all definitions and abbreviations used in the present document are listed in documents referenced in clause 2.

3.1 Abbreviations

For the purposes of the present document, the following abbreviations apply:

DARP   Downlink Advanced Receiver Performance
SAIC   Single Antenna Interference Cancellation, also known as DARP - phase I
MSRD   Mobile Station Receive Diversity, also known as DARP - phase II

4 Void

5 DARP Phase II MS Independent of Release

MSs that conform to Release 5 and support DARP - phase II shall support the following requirements in Release 7.

5.1 RF Requirements

The MS shall comply with the RF requirements for DARP - phase II specified in [3]. These requirements are:

Section 6.2: Reference sensitivity level.

Section 6.3: Reference interference level.

5.2 Signalling Requirements

The MS shall support the following information elements specified in [4]:

Section 10.5.1.7 Mobile Station Classmark 3, with the following exceptions:

- Fields *T-GSM 400 Bands Supported / T-GSM 400 Associated Radio Capability, T-GSM 900 Associated Radio Capability, DTM GPRS High Multi Slot Class / Offset required / DTM EGPRS High Multi Slot Class, GSM 710 Associated Radio Capability, T-GSM 810 Associated Radio Capability, and Multislot Capability Reduction for Downlink Dual Carrier* shall be indicated as not present since they are not defined in Release 5. This is done by setting the related indication bit to '0'.

- Parameter *DTM Enhancement Capability, Repeated ACCH Capability* and *Ciphering Mode Setting Capability* shall be indicated as not supported since it is not defined in Release 5. This is done by setting the bit value '0' for this parameter.

Section 10.5.5.12a MS Radio Access Capability, with the following exceptions:

- Fields *DTM GPRS High Multi Slot Class / DTM EGPRS High Multi Slot Class, Multislot Capability Reduction for Downlink Dual Carrier,* and *Downlink Dual Carrier for DTM Capability* shall be indicated as not present since they are not defined in Release 5. This is done by setting the related indication bit to '0'.

- Parameters *Multiple TBF Capability, Extended RLC/MAC Control Message Segmentation Capability, DTM Enhancements Capability, PS Handover Capability,* and *DTM Handover Capability* shall be indicated as not supported since they are not defined in Release 5. This is done by setting the bit value '0' for each of these parameters.

- In addition, for *Access Technology Type*, the values '1001' through to '1101' shall not be used since GSM T 380, GSM T 410, GSM T 900, GSM 710 and GSM T 810 are not supported in Release 5.

NOTE: The lack of one or more of the fields following the Downlink Advanced Receiver Performance field in Mobile Station Classmark 3 IE or MS Radio Access Capability IE should not be considered as an error by the network. In this case the meaning "not supported" or "not present" should be assumed as indicated above.

Annex A (informative): Change history

Change history								
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment		Old	New
2004-11	22	GP-042854			Version for Release 5			5.0.0
2006-01	28	GP-060330	0004	2	Release independent DARP Implementation guidelines update		5.0.0	5.1.0
2007-05	34	GP-071051	0005	1	Release independent DARP Implementation guidelines update		5.1.0	5.2.0
2007-05	34	GP-07105	0006	1	Release independent DARP Implementation guidelines update		5.2.0	6.1.0
2007-08	35				Version for Release 7		6.1.0	7.0.0
2008-12	40				Version for Release 8		7.0.0	8.0.0
2009-12	44				Version for Release 9		8.0.0	9.0.0
2011-03	49				Version for Release 10		9.0.0	10.0.0
2012-09	55				Version for Release 11		10.0.0	11.0.0
2014-09	63				Version for Release 12 (frozen at SP-65)		11.0.0	12.0.0

History

Document history		
V12.0.0	October 2014	Publication