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Digital cellular telecommunications system (Phase 2+) (GSM); Specification of the GEA5 encryption and GIA5 integrity algorithms for General Packet Radio Service (GPRS); Design conformance test data (3GPP TS 55.253 version 13.0.0 Release 13)

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GSM® GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS

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Foreword

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Contents

Foreword

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

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

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Introduction

The present document has been prepared by the 3GPP Task Force, and gives a detailed specification of the 3GPP encryption algorithm GEA5 and integrity algorithm GIA5.

The present document is the second of three, which between them form the entire specification of the 3GPP encryption algorithm GEA5 and integrity algorithm GIA5:

- 3GPP TS 55.251: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Specification of the GEA5 encryption and GIA5 integrity algorithms for GPRS; GEA5 and GIA5 specification".
- 3GPP TS 55.252: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Specification of the GEA5 encryption and GIA5 integrity algorithms for GPRS; Implementers' test data".
- **3GPP TS 55.253: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Specification of the GEA5 encryption and GIA5 integrity algorithms for GPRS; Design conformance test data".**

1 Scope

The present document defines the design conformance test data of the 3GPP encryption algorithm GEA5 and integrity algorithm GIA5.

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] 3GPP TS 55.251: "Specification of the GEA5 and GIA5 encryption algorithms for GPRS; GEA5 and GIA5 specification".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

4 Introductory information

4.1 Introduction

The confidentiality algorithm GEA5 is a stream cipher that is used to encrypt/decrypt blocks of data under a confidentiality key KC128. The block of data may be between 1 and 65536 octets long. The algorithm uses SNOW 3G [2] as a keystream generator

The integrity algorithm GIA5 computes a 32-bit MAC (Message Authentication Code) of a given input message using an integrity key KI128. The approach adopted uses SNOW 3G.