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Document 2: Kasumi specification
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Foreword

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

The 3GPP Confidentiality and Integrity Algorithms f8 & f9 have been developed through the collaborative efforts of the European Telecommunications Standards Institute (ETSI), the Association of Radio Industries and Businesses (ARIB), the Telecommunications Technology Association (TTA), the T1 Committee.

The f8 & f9 Algorithms Specifications may be used only for the development and operation of 3G Mobile Communications and services. Every Beneficiary must sign a Restricted Usage Undertaking with the Custodian and demonstrate that he fulfills the approval criteria specified in the Restricted Usage Undertaking.

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Introduction

This specification has been prepared by the 3GPP Task Force, and gives a detailed specification of the 3GPP Algorithm KASUMI. KASUMI is a block cipher that forms the heart of the 3GPP confidentiality algorithm *f8*, and the 3GPP integrity algorithm *f9*.

This document is the second of four, which between them form the entire specification of the 3GPP Confidentiality and Integrity Algorithms:

- 3GPP TS 35.201: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G Security; Specification of the 3GPP Confidentiality and Integrity Algorithms; Document 1: *f8* and *f9* Specification".
- **3GPP TS 35.202: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G Security; Specification of the 3GPP Confidentiality and Integrity Algorithms; Document 2: KASUMI Specification".**
- 3GPP TS 35.203: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G Security; Specification of the 3GPP Confidentiality and Integrity Algorithms; Document 3: Implementors' Test Data".

- 3GPP TS 35.204: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G Security; Specification of the 3GPP Confidentiality and Integrity Algorithms; Document 4: Design Conformance Test Data".

The normative part of the specification of **KASUMI** is in the main body of this document. The annexes to this document are purely informative. Annex 1 contains illustrations of functional elements of the algorithm, while Annex 2 contains an implementation program listing of the cryptographic algorithm specified in the main body of this document, written in the programming language C.

Similarly the normative part of the specification of the *f8* (confidentiality) and the *f9* (integrity) algorithms is in the main body of Document 1. The annexes of those documents, and Documents 3 and 4 above, are purely informative.

0 Scope

This specification gives a detailed specification of the 3GPP Algorithm KASUMI. KASUMI is a block cipher that forms the heart of the 3GPP confidentiality algorithm f_8 , and the 3GPP integrity algorithm f_9 .