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**Universal Mobile Telecommunications System (UMTS);  
LTE;  
Specification of the 3GPP Confidentiality and Integrity  
Algorithms EEA3 & EIA3;  
Document 2: ZUC specification  
(3GPP TS 35.222 version 17.0.0 Release 17)**



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**Reference**

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# Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**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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# Foreword

This Technical Specification has been produced by the 3<sup>rd</sup> 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.

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# 1 Scope

The present document specifies the 3GPP confidentiality and integrity algorithms known as EEA3 and EIA3.

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# 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] ETSI TC SAGE "Specification of the 3GPP Confidentiality and Integrity Algorithms 128-EEA3 & 128-EIA3; Document 2: ZUC Specification" version 1.6.

NOTE: Reference [2] is available via <http://www.etsi.org/WebSite/OurServices/Algorithms/3gppalgorithms.aspx> and is subject to licensing conditions described at this site.

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# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and in the SAGE Specification [2] apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

## 3.2 Symbols

For the purposes of the present document, the symbols defined in the SAGE Specification [2] apply.

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [2] and in the SAGE Specification [2] apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

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# 4 Technical provisions

The technical provisions of the current document are contained in the SAGE Specification [2].

## Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
2011-07	SA-53	SP-110501	--	--	Submission for Information and Approval	---	1.0.0
2011-09	SA-53	SP-110569	--	--	Submission for Information and Approval - correction of cover sheet and update of TSG Doc. field in Change History	1.0.0	1.0.1
2012-01	--	--	--	--	Publication	1.0.1	11.0.0
2012-05	--	--	--	--	Reference 2 now to specific version	11.0.0	11.0.1
2014-09	-	-	-	-	Update to Rel-12 version (MCC)	11.0.1	<b>12.0.0</b>
2016-01	-	-	-	-	Update to Rel-13 version (MCC)	12.0.0	<b>13.0.0</b>
2017-03	SA#75	-	-	-	Promotion to Release 14 without technical change	13.0.0	<b>14.0.0</b>
2018-06	-	-	-	-	Update to Rel-15 version (MCC)	14.0.0	<b>15.0.0</b>
2020-07	-	-	-	-	Update to Rel-16 version (MCC)	15.0.0	<b>16.0.0</b>
2022-03	-	-	-	-	Update to Rel-17 version (MCC)	16.0.0	<b>17.0.0</b>

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# History

<b>Document history</b>		
V17.0.0	April 2022	Publication