



**Universal Mobile Telecommunications System (UMTS);  
LTE;  
Specification of the TUAK algorithm set: A second example  
algorithm set for the 3GPP authentication and  
key generation functions  $f_1$ ,  $f_1^*$ ,  $f_2$ ,  $f_3$ ,  $f_4$ ,  $f_5$  and  $f_5^*$ ;  
Document 6: Security assessment  
(3GPP TR 35.936 version 13.0.0 Release 13)**



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**Reference**

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# Contents

Intellectual Property Rights .....	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	4
1 Scope .....	5
2 References .....	5
3 Definitions, symbols and abbreviations .....	5
3.1 Definitions.....	5
4 Security assessment of the Tuak algorithm set.....	5
<b>Annex A: Change history .....</b>	<b>6</b>
History .....	7

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# Foreword

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- 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 provides a reference to an independent security assessment of the Tuak algorithm set carried out by the University of Waterloo, Canada.

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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 TS 35. 231: "Specification of the Tuak algorithm set: A second example algorithm set for the 3GPP authentication and key generation functions f1, f1\*, f2, f3, f4, f5 and f5\*"; Document 1: Algorithm specification "

[2] "Security Assessment of TUAk Algorithm Set"; Guang Gong, Kalikinkar Mandal, Yin Tan, TengWu; Department of Electrical and Computer Engineering University of Waterloo, Canada (available at [http://www.3gpp.org/ftp/Specs/archive/35\\_series/35.935/SAGE\\_report/Secassessment.zip](http://www.3gpp.org/ftp/Specs/archive/35_series/35.935/SAGE_report/Secassessment.zip))

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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 TS 35.231 apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TS 35.231 [1].

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# 4 Security assessment of the Tuak algorithm set

The security assessment of the Tuak algorithm set [1] can be found here: [2].

## Annex A: Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Nov 2014					First TR version		0.1.0
Dec 2014	SA#66	SP-140818			Version for information and approval	0.1.0	1.0.0
					Version after approval	1.0.0	12.0.0
Jun 2015	SA#68	SP-150302	001	-	Correction of clause title and text referring to wrong subject	12.0.0	12.1.0
Jan 2016	SA#70				Upgrade to Rel-13 (MCC)	12.1.0	13.0.0

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# History

<b>Document history</b>		
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