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TECHNICAL REPORT

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee TETRA and Critical Communications Evolution (TCCE).

Modal verbs terminology

In the present document "**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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Introduction

TETRA security is specified in ETSI EN 300 392-7 and ETSI TS 100 392-7 [i.1] (latest version of either specification applies) for Trunked Mode Operation (TMO) and in ETSI EN 300 396-6 and ETSI TS 100 392-6 [i.2] (latest version of either specification applies) for Direct Mode Operation (DMO). The security mechanisms specified in these documents have evolved over time in response to changing market needs and to perceived vulnerabilities.

Version 4.1.1 of [i.1] and version 2.1.1 of [i.2] incorporated new authentication algorithms ([i.1] only) and air interface encryption algorithms ([i.1] and [i.2]) to ensure that TETRA security remains protected against brute force attacks into the future as the cost of computing power falls over time. During development of these specifications, perceived vulnerabilities in the previous versions of these specifications were published, and so the revised specifications also include countermeasures against these perceived vulnerabilities. The perceived vulnerabilities were declared to ETSI under the ETSI CVD (Coordinated Vulnerability Disclosure) process, and all finders of perceived vulnerabilities are encouraged to use this process. ETSI TCCE have now also defined a TETRA-specific policy document which adds TCCE-specific roles and responsibilities to the ETSI process (ETSI TR 104 246 [i.3]).

The purpose of the present document is to list the updated security measures included in [i.1] from version 4.1.1 onwards and [i.2] from version 2.1.1 onwards, and the threats (or perceived vulnerabilities) against which the updates were made. This should allow users of TETRA to make their own evaluation of the threats, and to decide the necessity or urgency for implementing the countermeasures that were added to the standards in their own TETRA systems.