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MLS Voice Guard 1.1.15

CERTIFICATION REPORT - SERTIT STANDARD REPORT TEMPLATE ST 009E VERSION 2.5 15.05.2018

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Mutual recognition under SOGIS MRA applies to components up to EAL 4.

Contents

Certification Statement

MLS Voice Guard (MVG) provides voice connectivity (including signalling) between two connected security domains (High/Low) in an MLS Voice System (MVS).

MVG software version 1.1.15 has been evaluated under the terms of the Norwegian Certification Authority for IT Security [8] and has met the Common Criteria Part 3 (ISO/IEC 15408) [3] conformant components of Evaluation Assurance Level (EAL) 4 augmented with ALC_FLR.3 and AVA_VAN.4 for the specified Common Criteria Part 2 (ISO/IEC 15408) [2] conformant functionality in the specified environment when running on the platforms specified in Annex A.

The evaluation addressed the security functionality claimed in the ST Public [10] with reference to the assumed operating environment specified by the ST Public [10]. The evaluated configuration was that specified in Chapters 1, 2 and Annex A. Prospective consumers are advised to check that this matches their identified requirements and give due consideration to the recommendations and caveats of this report.

Certification does not guarantee that the IT product is free from security vulnerabilities. This Certification Report and the belonging Certificate only reflect the view of SERTIT at the time of certification. It is furthermore the responsibility of users (both existing and prospective) to check whether any security vulnerabilities have been discovered since the date shown in this report. This Certification Report is not an endorsement of the IT product by SERTIT or any other organization that recognizes or gives effect to this Certification Report, and no warranty of the IT product by SERTIT or any other organization that recognizes or gives effect to this Certification Report is either expressed or implied.

Certifier	Øystein Hole, SERTIT
Date approved	31 May 2024
Expiry date	31 May 2029

1 Executive Summary

Prospective consumers are advised to read this report in conjunction with the ST Public [10] which specifies the functional, environmental and assurance evaluation components.

The version of the product evaluated was MVG 1.1.15.

This product is also described in this report as the Target of Evaluation (TOE). The developer was Thales Norway AS.

The TOE is part of the Thales MLS Voice Platform (MVP) for use in military and mission critical environments. The TOE provides voice connectivity, including signalling traffic, between two connected networks with different security levels. The high security level network contains all operator positions within the MVP, and one or more MVGs provide connectivity towards lower security level networks. The TOE provides a trusted information flow control mechanism for VoIP audio streams (RTP/SRTP), as well as signalling for call management (SIP), radio control, and SNMP.

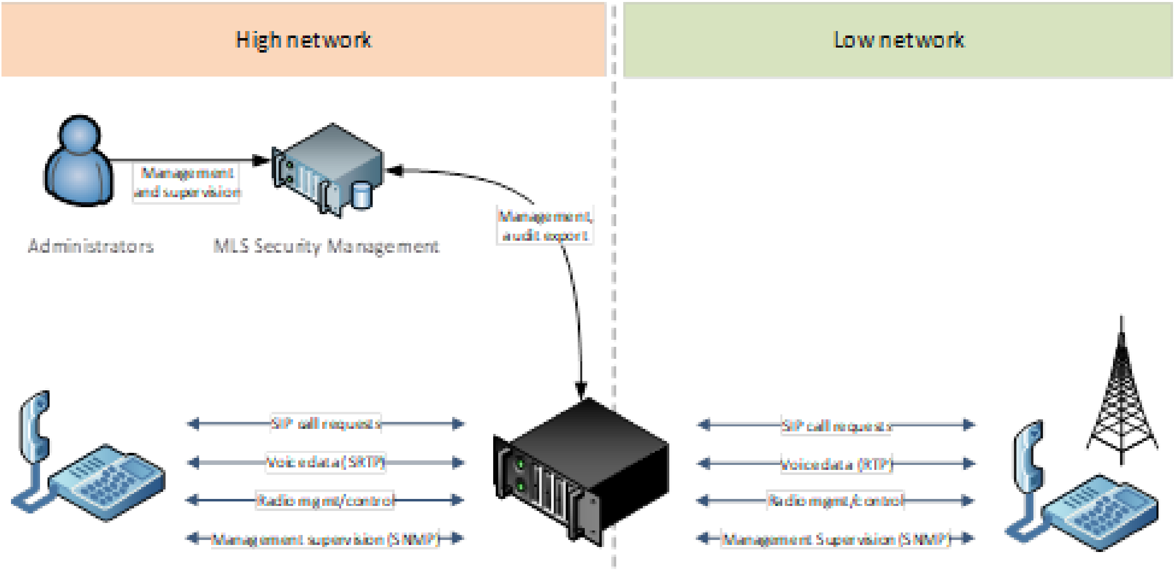


Figure 1

No Protection Profiles are claimed.

Regarding the usage and the operational environment of the TOE, five assumptions are made in the ST Public [10]. In order to counter thirteen threats as described in the ST Public [10], the TOE relies on the assumptions made. Details can be found in Chapter 3 Assumptions and Clarification of Scope.

The evaluation was performed by the ITSEF Nemko System Sikkerhet AS. The evaluation was performed in accordance with the requirements of the

Norwegian Certification Scheme for IT Security as described in the document SD001E [8], as well as the Common Criteria (CC) Part 3 [3] and the Common Evaluation Methodology (CEM) [4].

The evaluation was performed at the assurance level EAL 4 augmented with ALC_FLR.3 and AVA_VAN.4.

Nemko System Sikkerhet AS is an authorised ITSEF under the Norwegian Certification Authority for IT Security (SERTIT). Nemko System Sikkerhet AS is an accredited ITSEF according to the standard ISO/IEC 17025 for Common Criteria evaluation. The sponsor for this evaluation was Thales Norway AS.

The evaluation activities were monitored by the certification body. The security claims stated in the ST [9] was confirmed during the evaluation for the selected assurance level.

The basis for producing this Certification Report is the ST Public [10] and the ETR [11].

2 TOE overview and Security Policy

The TOE (MVG) is an integral part of the MLS Voice Platform (MVP). The MVP consists of end user terminals, a complete VoIP service, audio recording and radio controls. The TOE provides a trusted information flow control mechanism for VoIP connections (SIP/SRTP) with radio management and signalling support. Each TOE may connect a higher security domain with a lower level one. This allows the users of the MVP to communicate towards radios and VoIP phones in a range of different security levels and networks.

The TOE is comprised of software running on top of a separation kernel on underlying hardware, where the TOE can run on two hardware instances (of the Voice Guard HW) with physical separation. The TOE runs within virtualized environments (partitions) provided by the hypervisor.

The TOE provides the following main security features:

- Controlled data flow
- Tamper proof and non-bypassable security functions
- Domain isolation with covert channel mitigation
- Audit logs
- Secure configuration, management and supervision
- Call setup and packet flow management
- Stream packet filtering

The security checks are supported by non-bypassable and self-protecting security functions that ensure the security checks are performed in a controlled and predictable way. The platform separates different parts of the TOE from each other to minimize the chance of interference between processed signalling traffic, and between functions of different criticality. A dedicated information flow control mechanism further restricts internal communication between the different parts of the TOE.

Auditing is performed to allow administrators of the MVG to observe its security performance and to track security relevant events.

The MVG is furthermore designed to maintain a secure state, including controlled start-up and transition between operating states. Self-testing allows verification of the system’s operational state and integrity of its configuration.

3 Assumptions and Clarification of Scope

3.1 Assumptions

The following five assumptions made regarding the usage and the operational environmental environment of the TOE are:

- CORRECT_CONFIGURATION
- NETWORK_PROTECTED
- PHYSICAL_ACCESS_MANAGED
- TRUSTED_AND_TRAINED_ADMIN
- TRUSTED_MARKING

For details on these assumptions, the reader is advised to look at chapter 3.1 in the ST Public [10].

3.2 Threats Countered

The threats and threat agents met by the TOE are diverse and depend on where the TOE is deployed. The following thirteen threats are countered by the TOE:

- ADMIN_MASQUERADE
- AUDIT_COMPROMISE
- OBJECT_TAMPERING
- COVERT_CHANNEL
- DOS
- INSECURE_STATE
- MALWARE_INJECTION
- METADATA_LEAK
- NETWORK_ATTACK
- RECONNAISSANCE
- TSF_COMPROMISE
- UNAUTHORIZED_ACCESS
- UNNOTICED_ATTACK

For details on these threats, the reader is advised to look at chapter 3.2.4 in the ST Public [10]. The reader should also have a look at the description of the threat agents in chapter 3.2.3 in the ST Public [10].

3.3 Threats Countered by the TOE environment

There are no threats countered by the environment.

3.4 Organisational Security Policies

During the evaluation of the TOE the following two Organisational Security Policies have been considered:

- CRYPTOGRAPHY

- MINIMAL_POSTURE

All of the policies are compliant with applicable parts of Norwegian security policy [16] and NATO security policy [17]. The TOE Organizational Security Policies are detailed in Chapter 3.3 of the ST Public [10].

4 Vulnerability Analysis and Testing

4.1 Vulnerability Analysis

The evaluators' vulnerability analysis was based on both public domain sources and the visibility of the TOE given by the evaluation process. The search for publicly known vulnerabilities was conducted in 20 October 2023, and found several pages on the Internet discussing the legendary Meltdown and Spectre vulnerabilities from 2018. All Intel chips are affected by the flaws (dubbed "Meltdown" and "Spectre"), where cache timing side-channel attacks can be exploited. The developer has in the CC Analysis [18] Section 4.3.1.1 made a review of how to mitigate CPU cache timing flaws.

No exploitable vulnerabilities were found, but see chapter 7 in this report for recommendations for secure usage of the TOE.

4.2 Developer's Tests

The evaluation showed that the Developer has tested the TOE Security Functionality Interfaces (TSFI) as described in the Design Specifications, and that the developer's test coverage evidence shows correspondence between the tests identified in the test documentation and the TSFIs described in the functional specification. The developer has tested all the SFR-enforcing modules against functional specifications and against the TOE design.

4.3 Evaluators' Tests

The evaluators performed independent testing of a subset of the TOE Security Functionality (TSF) and verified that the TOE behaves as specified in the design documentation. Confidence in the developer's test results were gained by performing a sample of the developer's tests.

The evaluators devised penetration tests, based on the independent search for potential vulnerabilities and the security functions from the ST.

Testing was conducted in the week of 11-14 December 2023.

5 Evaluated Configuration

The evaluated TOE, as described in chapters 1, 2 and Annex A, is SW only. The TOE is typically hosted on COTS hardware, and in protected VM compartments realised with a hypervisor. The HW and VM platform is not part of the TOE.

Installation of the TOE must be performed completely in accordance with the guidance documents [12], [13], [14], [15] provided by the developer. The TOE should be used in the operational environment as specified in the ST Public [10], as well as the guidance documents referenced in this chapter.

6 Evaluation Results

The evaluation addressed the requirements specified in the ST Public [10]. The ITSEF reported the results of this work in the ETR [11] on the 12 February 2024.

The evaluators examined the following assurance classes and components taken from CC Part 3 [3]. These classes comprise the EAL 4 assurance package augmented with ALC_FLR.3 and AVA_VAN.4.

Assurance class	Assurance components	
Development	ADV_ARC.1	Security architecture description
	ADV_FSP.4	Complete functional specification
	ADV_IMP.1	Implementation representation of the TSF
	ADV_TDS.3	Basic modular design
Guidance documents	AGD_OPE.1	Operational user guidance
	AGD_PRE.1	Preparative procedures
Life-cycle support	ALC_CMC.4	Production support, acceptance procedures and automation
	ALC_CMS.4	Problem tracking CM coverage
	ALC_DEL.1	Delivery procedures
	ALC_DVS.1	Identification of security measures
	ALC_LCD.1	Developer defined life-cycle model
	ALC_TAT.1	Well-defined development tools
	ALC_FLR.3	Systematic flaw remediation
Security Target evaluation	ASE_CCL.1	Conformance claims
	ASE_ECD.1	Extended components definition
	ASE_INT.1	ST introduction
	ASE_OBJ.2	Security objectives
	ASE_REQ.2	Derived security requirements
	ASE_SPD.1	Security problem definition
	ASE_TSS.1	TOE summary specification
Tests	ATE_COV.2	Analysis of coverage
	ATE_DPT.1	Testing: basic design

	ATE_FUN.1	Functional testing
	ATE_IND.2	Independent testing - sample
Vulnerability assessment	AVA_VAN.4	Methodical vulnerability analysis

After due consideration of the ETR [11], produced by the Evaluators, and the conduct of the evaluation, as witnessed by the certification team, SERTIT has determined that MVT 1.1.10 meets the specified Common Criteria Part 3 conformant components of Evaluation Assurance Level EAL 4 augmented with ALC_FLR.3 and AVA_VAN.4 for the specified Common Criteria Part 2 conformant functionality in the specified environment, when running on platforms specified in Annex A.

7 Recommendations

Prospective consumers of MVG 1.1.15 should understand the specific scope of the certification by reading this report in conjunction with the ST Public [10]. The TOE should be used in accordance with a number of environmental considerations as specified in the ST Public [10].

Only the evaluated TOE configuration should be installed. This is specified in Annex A with further relevant information given above in Chapters 1 and 2.

The TOE should be installed and operated in accordance with the supporting guidance documentation [12], [13], [14], [15] included in the evaluated configuration.

8 Security Target

The complete Security Target [9] used for the evaluation performed is sanitised for the purpose of publishing. The Public version (Security Target Public [10]) is provided as a separate document. Sanitisation was performed according to the CCRA framework – ST sanitising for publication [5].

9 Glossary

CC	Common Criteria for Information Technology Security Evaluation (ISO/IEC 15408)
CCRA	Arrangement on the Recognition of Common Criteria Certificates in the Field of Information Technology Security
CEM	Common Methodology for Information Technology Security Evaluation
EAL	Evaluation Assurance Level
ETR	Evaluation Technical Report
EVIT	Evaluation Facility under the Norwegian Certification Scheme for IT Security
ISO/IEC 15408	Information technology –- Security techniques –- Evaluation criteria for IT security
ITSEF	IT Security Evaluation Facility under the Norwegian Certification Scheme
MVG	MLS Voice Guard
MVP	MLS Voice Platform
MVS	MLS Voice System
MVT	MLS Voice Terminal
OCP	Operator Terminal
PP	Protection Profile
SERTIT	Norwegian Certification Authority for IT Security
SFR	Security Functional Requirement
SOGIS MRA	SOGIS Mutual Recognition Agreement of Information Technology Security Evaluation Certificates
SPM	Security Policy Model
ST	Security Target
TOE	Target of Evaluation
TSF	TOE Security Functions
TSFI	TSF Interface
TSP	TOE Security Policy
VM	Virtual Machine

10 References

[1] CCRA (2017), *Common Critera for Information Technology Security Evaluation, Part 1: Introduction and general model*, CCMB-2017-04-001, Version 3.1 R5, CCRA, April 2017.

[2] CCRA (2017), *Common Criteria for Information Technology Security Evaluation, Part 2: Security functional components*, CCMB-2017-04-002, Version 3.1 R5, CCRA, April 2017.

[3] CCRA (2017), *Common Criteria for Information Technology Security Evaluation, Part 3: Security assurance components*, CCMB- 2017-04-003, Version 3.1 R5, CCRA, April 2017.

[4] CCRA (2017), *Common Methodology for Information Technology Security Evaluation, Evaluation Methodology*, CCMB-2017-04-004, Version 3.1 R5, CCRA, April 2017.

[5] CCRA (2006), *ST sanitising for publication*, 2006-04-004, CCRA, April 2006.

[6] SOGIS Management Committee (2010), *Mutual Recognition Agreement of Information Technology Security Evaluation Certificates*, Version 3.0, SOGIS MC, January 8th 2010.

[7] CCRA (2014), *Arrangement on the Recognition of Common Criteria Certificates In the field of Information Technology Security*, CCRA, July 2nd 2014.

[8] SERTIT (2020), *The Norwegian Certification Scheme*, SD001E, Version 10.5, SERTIT, 03 December 2020.

[9] MLS Voice Guard (MVG) Security Target, Ed6, 15 December 2023

[10] Security Target Public, 02 February 2024

[11] Evaluation Technical Report for the Evaluation of MVG 1.1.15, version 1.1, 12 February 2024.

[12] MVG Technical Manual, Ed1.1.1

[13] MLS Security Management User Manual, Ed1.1.2

[14] Site Management Application Operator Manual, Ed9.1.3

[15] Version Delivery Description (VDD), Ed1.1.15

[16] Lov om nasjonal sikkerhet (Norwegian Security Act), LOV 2018-06-01 nr 24.

[17] C-M(2002)49, Security Within the North Atlantic Treaty Organisation (NATO), 17 June 2002.

[18] (B) SCD MVG Common Criteria Analysis, Ed3

Annex A: Evaluated Configuration

TOE Identification

The TOE consists of:

MVG 1.1.15 software

The TOE is typically hosted on COTS hardware, and in protected VM compartments. The TOE can be run on two separate HW instances.

Refer to the manufacturer's documentation for additional information.

TOE Documentation

The supporting guidance documents evaluated were:

[a] MVG Technical Manual, Ed1.1.1

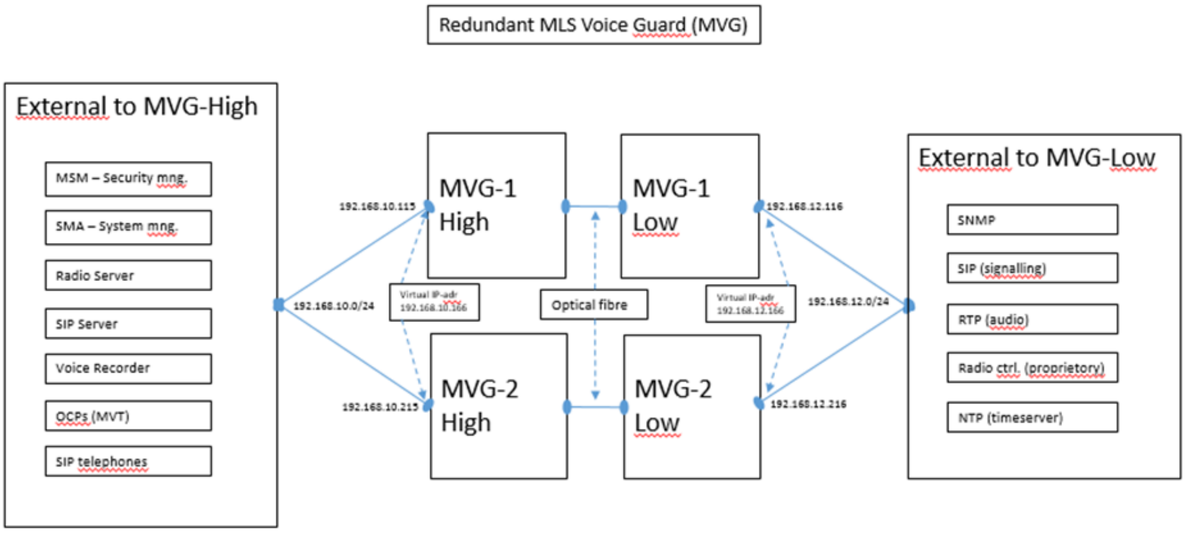
[b] MLS Security Management User Manual, Ed1.1.2

[c] Site Management Application Operator Manual, Ed9.1.3

[d] Version Delivery Description (VDD), Ed1.1.15

TOE Configuration

The following configuration was used for testing:


Redundant MLS Voice Guard (MVG)
External to MVG-High
MSM – Security mng.
SMA – System mng.
Radio Server
SIP Server
Voice Recorder
OCPs (MVT)
SIP telephones
192.168.10.115
192.168.10.0/24
192.168.10.215
Virtual IP-adr 192.168.10.166
MVG-1 High
MVG-2 High
Optical fibre
MVG-1 Low
MVG-2 Low
Virtual IP-adr 192.168.12.166
192.168.12.116
192.168.12.0/24
192.168.12.216
External to MVG-Low
SNMP
SIP (signalling)
RTP (audio)
Radio ctrl. (proprietory)
NTP (timeserver)