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CE CYBER SECURITY REPORT

Equipment : MiniHub Pro Indoor Gateway

Model No. : WLRRTES102

Standard : EN 18031-1

Self-Declaration of Conformity :

This document serves as a declaration that the equipment described herein has been evaluated in accordance with the requirements of the CE Radio Equipment Directive — Essential Assessment (RED-EA) and has been found to be in compliance with all applicable essential requirements. The assessment has been carried out based on the decision trees, criteria, and procedures defined in the relevant RED-EA guidance documents. The results summarized in this report confirm that the equipment meets the applicable performance, safety, and security requirements, enabling its placement on the market within the European Economic Area (EEA) bearing the CE marking.

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History of this test report

Report ID.	Issued Date	Description
.001	Sep. 02, 2025	Self-Declaration Test Report

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1. Summary of Test Procedure and Test Verdicts

1.1 Applicable Standards

The measurements shown in this test report were made in accordance with the procedures given in EUROPEAN COUNCIL DIRECTIVE 2014/53/EU.
EN 18031-1:2024, BS EN 18031-1:2024

Standard Section Reference		Test Item	Verdict
6.1 Access control mechanism	Provision 6.1.1	ACM-1	PASS
	Provision 6.1.2	ACM-2	PASS
6.2 Authentication mechanism	Provision 6.2.1.1	AUM-1-1	PASS
	Provision 6.2.1.2	AUM-1-2	PASS
	Provision 6.2.2	AUM-2	PASS
	Provision 6.2.3	AUM-3	PASS
	Provision 6.2.4	AUM-4	PASS
	Provision 6.2.5.1	AUM-5-1	PASS
	Provision 6.2.5.2	AUM-5-2	N/A
	Provision 6.2.6	AUM-6	PASS
6.3 Secure update mechanism	Provision 6.3.1	SUM-1	PASS
	Provision 6.3.2	SUM-2	PASS
	Provision 6.3.3	SUM-3	PASS
6.4 Secure storage mechanism	Provision 6.4.1	SSM-1	PASS
	Provision 6.4.2	SSM-2	PASS

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	Provision 6.4.3	SSM-3	PASS
6.5 Secure communication mechanism	Provision 6.5.1	SCM-1	PASS
	Provision 6.5.2	SCM-2	PASS
	Provision 6.5.3	SCM-3	PASS
	Provision 6.5.4	SCM-4	PASS
6.6 Resilience mechanism	Provision 6.6.1	RLM-1	PASS
6.7 Network monitoring mechanism	Provision 6.7.1	NMM-1	N/A
6.8 Traffic control mechanism	Provision 6.8.1	TCM-1	N/A
6.9 Confidential cryptographic keys	Provision 6.9.1	CCK-1	PASS
	Provision 6.9.2	CCK-2	PASS
	Provision 6.9.3	CCK-3	PASS
6.10 General equipment capabilities	Provision 6.10.1	GEC-1	N/A
	Provision 6.10.2	GEC-2	PASS
	Provision 6.10.3	GEC-3	N/A
	Provision 6.10.4	GEC-4	PASS
	Provision 6.10.5	GEC-5	PASS
	Provision 6.10.6	GEC-6	N/A
6.11 Cryptography	Provision 6.11.1	CRY-1	PASS

The support column following notations are used:

PASS : Overall Conformance

FAIL: Requirement Not Met

N/A : The item verdict NOT APPLICABLE / NOT NECESSARY / NOT SUPPORT / NONE

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2. Test Configuration of Device Under Test

2.1 Feature of Device Under Test

Version	**1.1.37**
Communication interface	Wi-Fi
Connections	TypeC USB Connector x1
IPv4 Address	192.168.4.1

DUT **Front View**	

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DUT **Rear View**	
DUT **I/O ports**	

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DUT Label No./ Serial No.	

2.2 Test Software

Tool	Version
WireShark	Version 4.0.7 (v4.0.7-0-g0ad1823cc090)
Zenmap	7.95
sslscan	2.0.7

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2.3 Description of Test System

Equipment	Brand	Model	Length/Type	Power cord/Length/Type
Notebook	Lenovo	T480	N/A	Adapter / 1.8m / B

2.4 General Information of Test

Test Site	**Browan Communications Inc** Address: No.15-1 Zhonghua Road, Hsinchu Industrial Park, Hukou, Hsinchu,Taiwan, 30352, Taiwan (R.O.C.) Tel:+886-3-6006-899

Test period	Tested By
2025/08/09 ~2025/08/15	Joey Ho

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3. The assessment

【Conceptual assessment】

The verdict is established in accordance with the decision tree applied to each item.

【Functional Completeness Assessment】

Purpose: To conduct a functional verification that all aspects covered by the requirement's scope—including security assets, network interfaces, and vulnerabilities—are comprehensively and correctly documented.

Assessment Criteria:

PASS: Every relevant item discovered during functional verification is duly documented in compliance with the specified requirements.

FAIL: During functional verification, an item that falls within the required documentation scope is identified but not recorded in the provided information.

NOT APPLICABLE: An assessment is categorized as Not Necessary when the requirement is already encompassed by the Functional Sufficiency Assessment of the mechanism's applicability, or when the mechanism is mandated as compulsory.

Exceptions/Conditions: Requirements primarily addressing appropriateness rather than the mechanism's presence or applicability are typically classified as Not Necessary. Such requirements may include preconditions that demand a defined equipment state, such as factory default.

【Functional Sufficiency Assessment】

Purpose: The objective is to functionally assess the implemented security requirements and mechanisms to determine whether they are correctly operating, sufficiently robust, and effective in delivering the documented security properties.

Assessment Criteria:

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PASS: Functional testing validates that the implementation performs in accordance with the documentation and effectively provides the required security, with no evidence of malfunction or deviation detected.

FAIL:Functional testing demonstrates that the implementation is inconsistent with the documentation or fails to provide the mandated security property, for instance, when a security control is ineffective.

NOT APPLICABLE: This designation is explicitly applied to certain requirements where conducting functional validation is impractical or outside the scope of the intended assessment—for example, in the validation of confidential key generation or in the assessment of specific physical interfaces.

Exceptions/Conditions: The assessment requires the equipment to be in an active operational state. It involves a series of functional tests, possibly supported by specialized tools, to evaluate both effectiveness and conformity with documentation. Depending on the technical implementation, customized test procedures may apply.

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4. Test Verdict and Data

4.1 [ACM] Access control mechanism

[ACM-1] Applicability of access control mechanisms

【Requirement】

The equipment shall use access control mechanisms to manage entities' access to security assets and network assets, except for access to security assets or network assets where:

— public accessibility is the equipment’s intended functionality; or

— physical or logical measures in the equipment’s targeted operational environment limit their

accessibility to authorized entities; or

— legal implications do not allow for access control mechanisms.

【ACM-1 Assets】

Asset No.	Assets	Type	Access Mechanism
ACMA-A	administrator password	Security	Web GUI
ACMA-B	TLS certificate	Security	Web GUI
ACMA-C	Private key for the HTTPS web interface	Security	Web GUI
ACMA-D	HTTPS service	Network	Web GUI

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【ACM-1 Conceptual assessment】

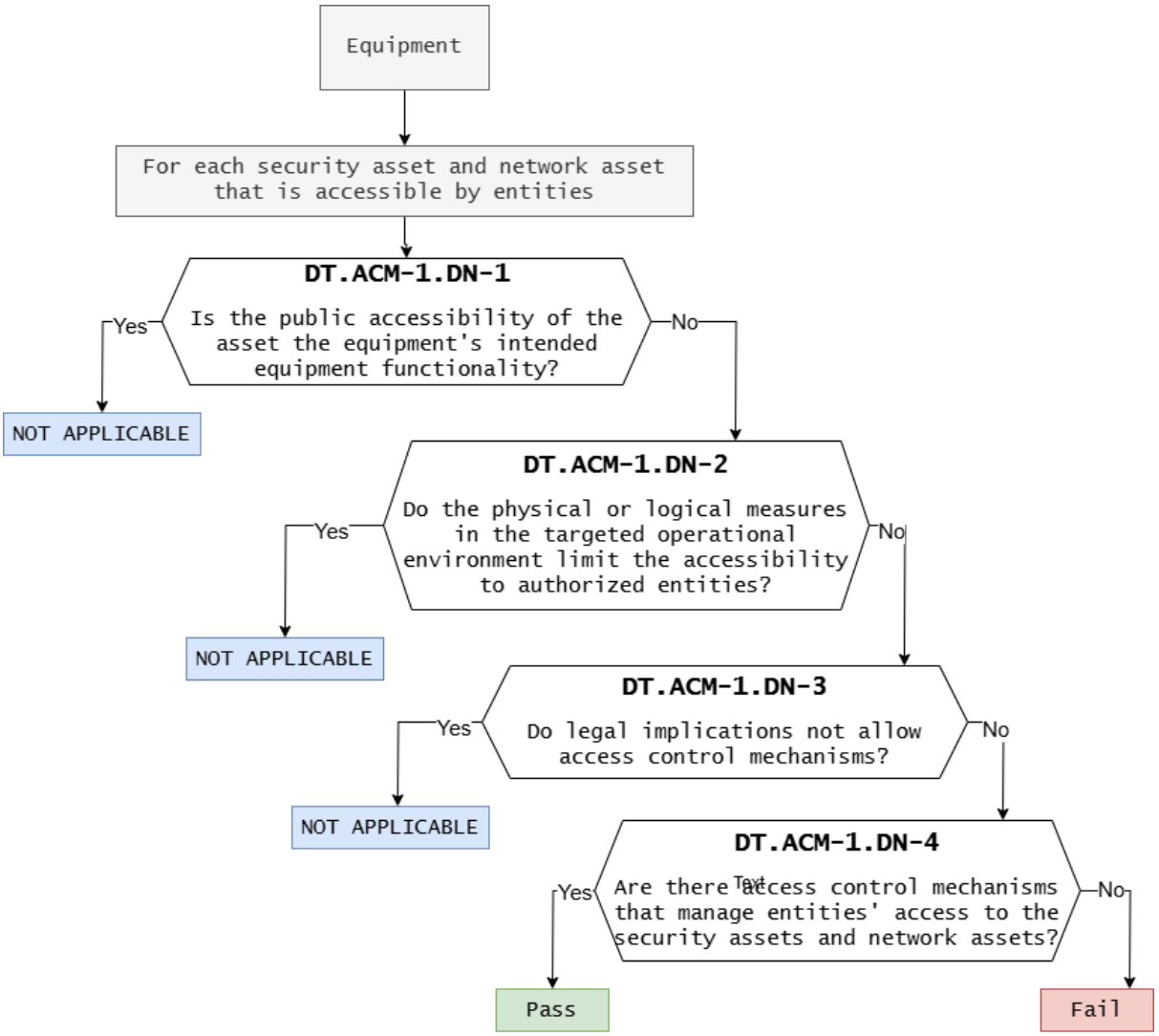

Figure 1 – Decision Tree for requirement ACM-1

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.ACM-1)
ACMA-A ACMA-B ACMA-C ACMA-D	DT.ACM-1.DN-1	No	The DUT cannot be accessed publicly.
	DT.ACM-1.DN-2	No	The DUT does not implement logical or physical controls to ensure access is limited to authorized entities.

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	DT.ACM-1.DN-3	No	Legally, the implementation of access control mechanisms is allowed.
	DT.ACM-1.DN-4	Yes	Access to the DUT requires user authentication.

Verdict : PASS

【ACM-1 Functional completeness assessment】

Asset No.	Document Verification
ACMA-A	Y
ACMA-B	Y
ACMA-C	Y
ACMA-D	Y

Verdict : PASS

【ACM-1 Functional sufficiency assessment】

Asset No.	Implemented
ACMA-A	Y
ACMA-B	Y
ACMA-C	Y
ACMA-D	Y

Verdict : PASS

【Supporting Evidence】

The DUT is accessible only after user authentication

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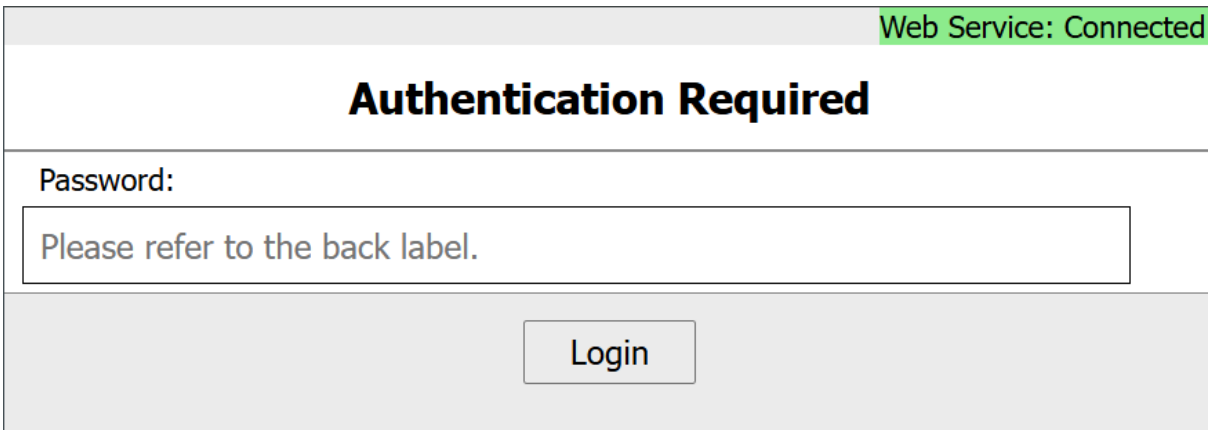

ACM-1 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

[ACM-2] Appropriate access control mechanisms

【Requirement】

Access control mechanisms that are required per ACM-1 shall ensure that only authorized entities have access to the protected security assets and network assets.

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【ACM-2 Conceptual assessment】

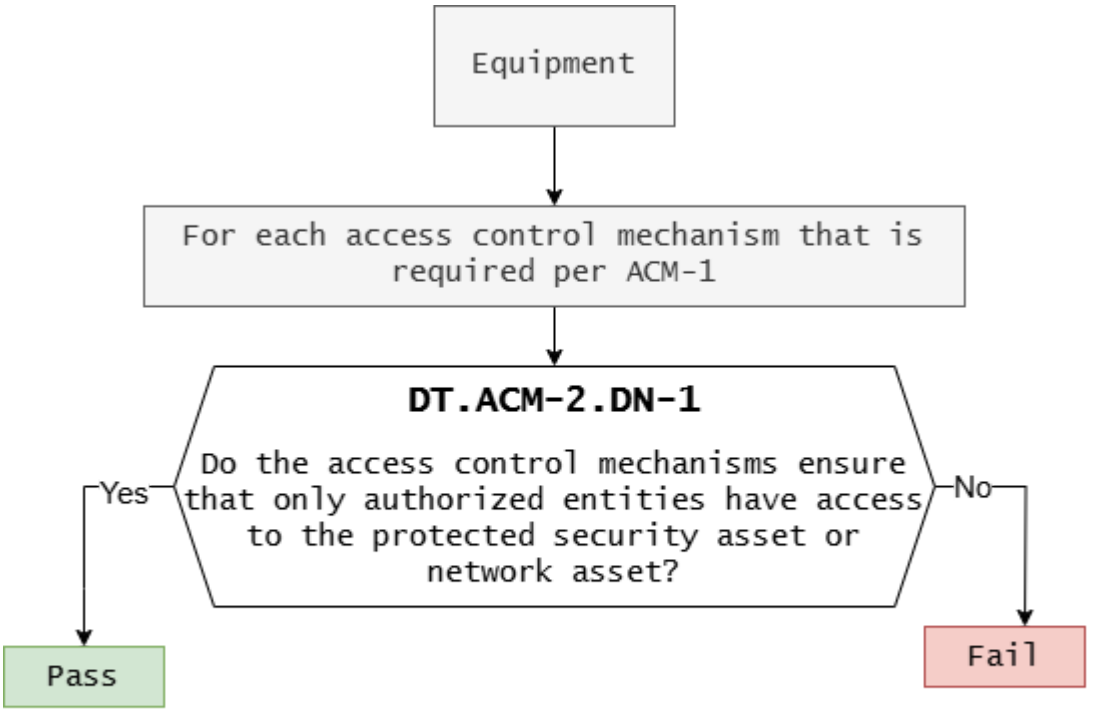

Figure 2 – Decision Tree for requirement ACM-2

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.ACM-2)
ACMA-A ACMA-B ACMA-C ACMA-D	DT.ACM-2.DN-1	Yes	Secure and network assets are accessed via password authentication.

Verdict : PASS

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【ACM-2 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the access control mechanism's applicability.

Therefore, the functional completeness assessment in ACM-2 is Not Necessary.

Verdict : NOT NECESSARY

【ACM-2 Functional sufficiency assessment】

Asset No.	Implemented
ACMA-A	Y
ACMA-B	Y
ACMA-C	Y
ACMA-D	Y

Verdict : PASS

【Supporting Evidence】

Follow ACM-1

ACM-2 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

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4.2 [AUM]Authentication mechanism

[AUM-1] Applicability of authentication mechanisms

[AUM-1-1] Requirement network interface

【Requirement】

Access control mechanisms required per ACM-1 shall use authentication mechanisms for managing entities' access via network interfaces that allow to:

— read confidential network function configuration or confidential security parameters; or

— modify sensitive network function configuration or sensitive security parameters; or

— use network functions or security functions,

except for access:

— to network functions or network function configuration where the absence of authentication is required for the equipment's intended functionality; or

— via networks where physical or logical measures in the equipment's targeted operational environment limit accessibility to authorized entities.

【AUM-1-1 Assets】

Asset No.	Assets	Type	Access Mechanism
AUMA-A	Web GUI	Security	Network/User interface

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【AUM-1-1 Conceptual assessment】

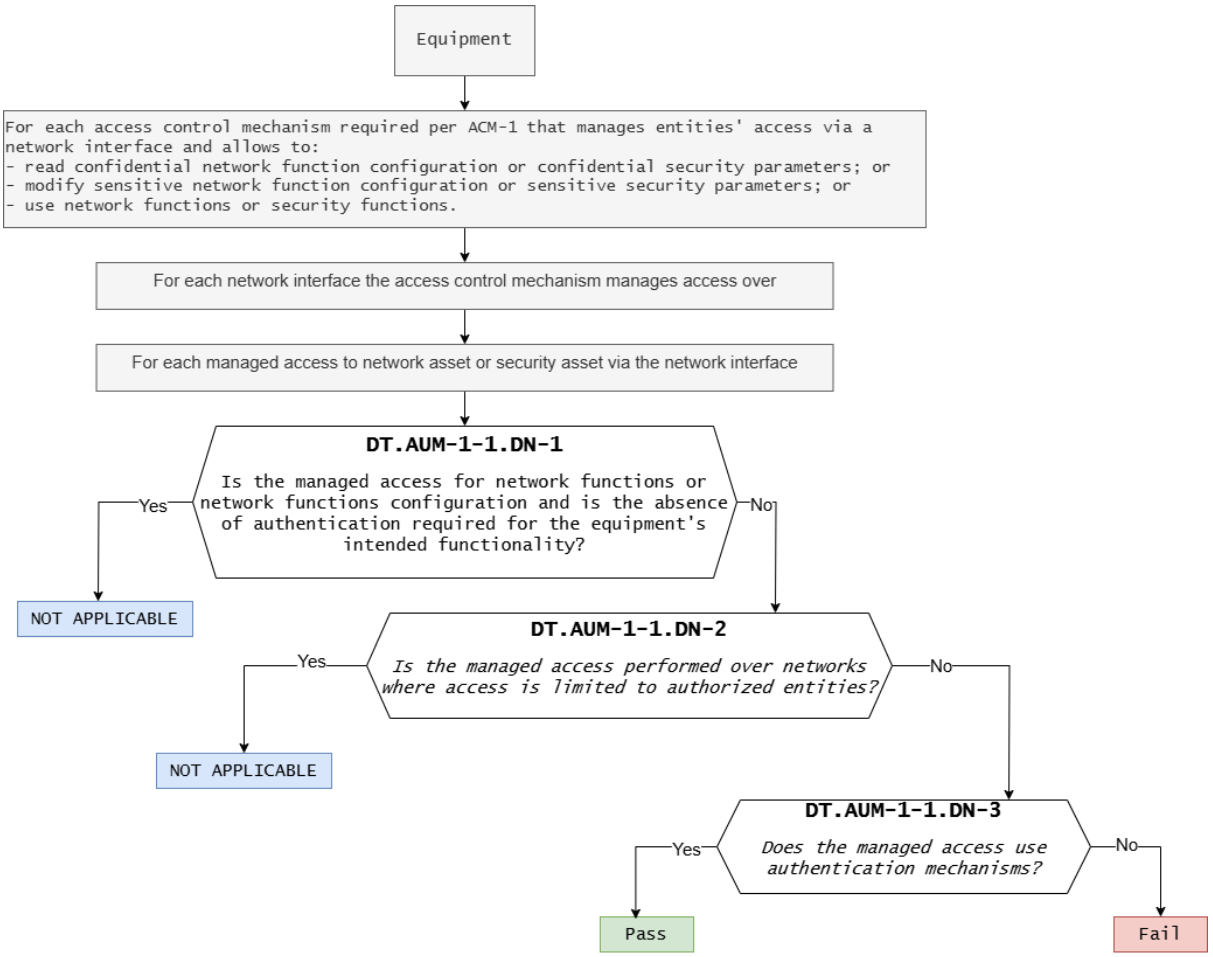

Figure 3 — Decision Tree for requirement AUM-1-1

【Assessment】

Asset	Decision Node	Decision	Justification (E.just.DT.AUM-1-1)
AUMA-A	DT.AUM-1-1.DN-1	No	The system requires user authentication through a password or equivalent credentials.
	DT.AUM-1-1.DN-2	No	No logical or physical safeguards have been implemented.
	DT.AUM-1-1.DN-3	Yes	The system includes an

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			authentication mechanism.

Verdict: PASS

【AUM-1-1 Functional completeness assessment】

Asset No.	Document Verification
AUMA-A	Y

Verdict: PASS

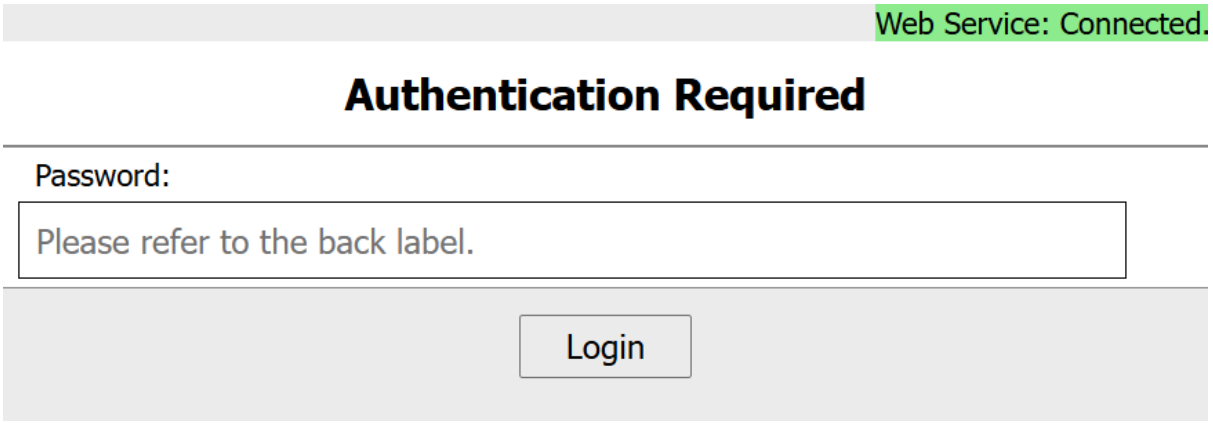
【AUM-1-1 Functional sufficiency assessment】

Asset No.	Implemented
AUMA-A	Y

Verdict: PASS

【Supporting Evidence】

Web GUI



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AUM-1-1 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

[AUM-1-2] Requirement user interface

【Requirement】

Access control mechanisms required per ACM-1 shall use authentication mechanisms for managing entities' access via user interfaces that allow to:

— read confidential network function configuration or confidential security parameters; or

— modify sensitive network function configuration or sensitive security parameters; or

— use network functions or security functions,

except for access:

— where physical or logical measures in the equipment's targeted operational environment limit accessibility to authorized entities;

and except for read only access to network functions or network functions configuration where access without authentication is needed:

— to enable the intended equipment functionality; or

— because legal implications do not allow for authentication mechanisms.

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【AUM-1-2 Conceptual assessment】

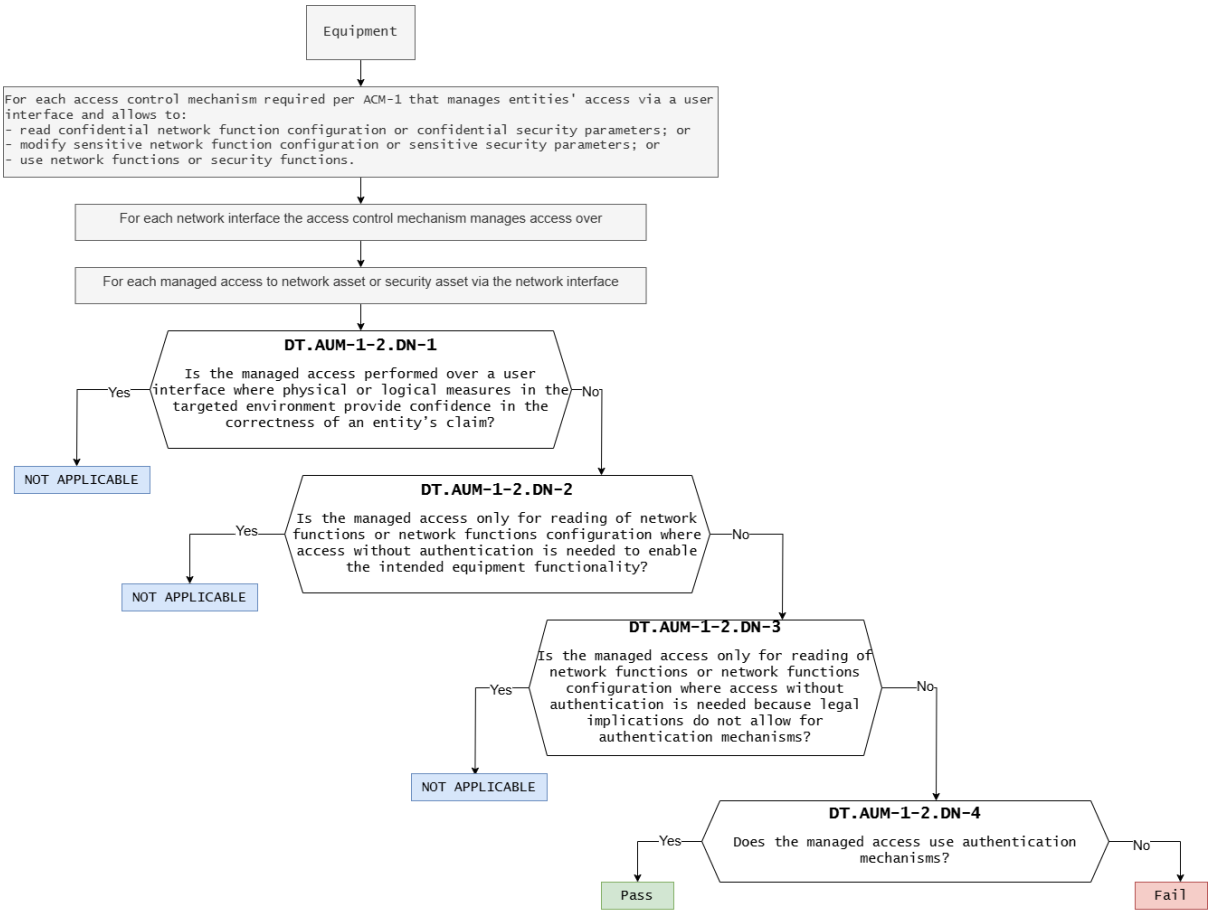

Figure 4 — Decision Tree for requirement AUM-1-2

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.AUM-1-2)
AUMA-A	DT.AUM-1-2.DN-1	No	Authentication is required to access the DUT.
	DT.AUM-1-2.DN-2	No	Authentication is required to access network functions.
	DT.AUM-1-2.DN-3	No	Network access requires authentication as a security

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			measure, not a legal one.
	DT.AUM-1-2.DN-4	Yes	Apply authentication for access.

Verdict: PASS

【AUM-1-2 Functional completeness assessment】

Asset No.	Document Verification
AUMA-A	Y

Verdict: PASS

【AUM-1-2 Functional sufficiency assessment】

Asset No.	Implemented
AUMA-A	Y

Verdict: PASS

【Supporting Evidence】

Follow AUM-1-1

AUM-1-2 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

[AUM-2] Appropriate authentication mechanisms

【Requirement】

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Authentication mechanisms that are required per AUM-1-1 (network interface) or AUM-1-2 (user interface) shall verify an entity's claim based on examining evidence from at least one element of the categories knowledge, possession and inherence (one factor authentication).

【AUM-2 Conceptual assessment】

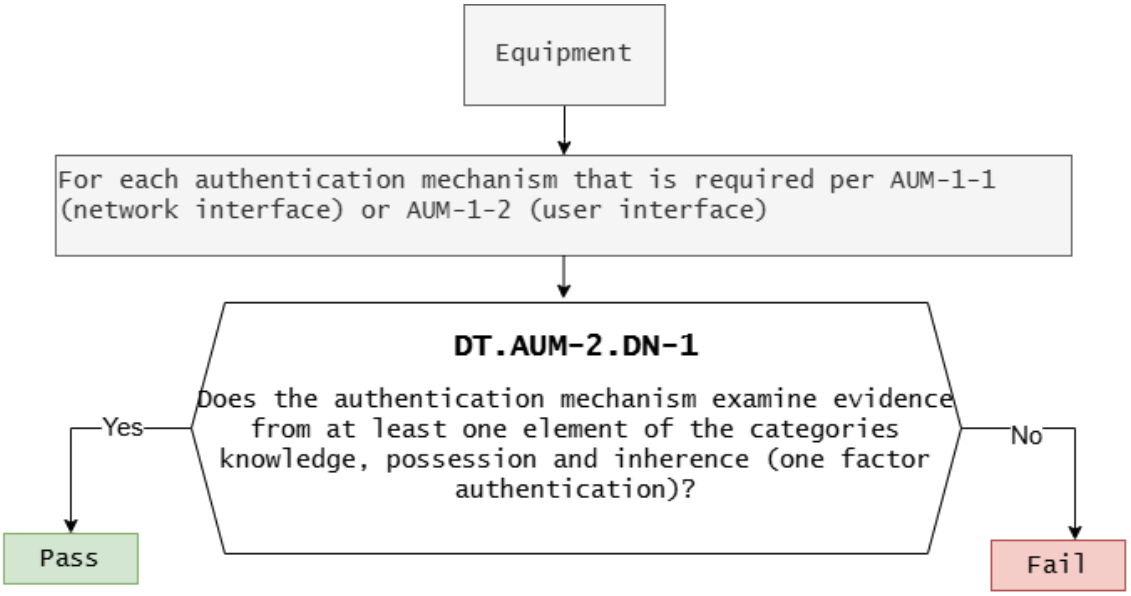

Figure 5 – Decision Tree for requirement AUM-2

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.AUM-2)
AUMA-A	DT.AUM-2.DN-1	Yes	Authentication is performed using a password.

Verdict: PASS

【AUM-2 Functional completeness assessment】

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Functional completeness assessment is covered by the functional sufficiency assessment of the access control mechanism's applicability. Therefore, the functional completeness assessment in ACM-2 is Not Necessary according to the sources.

Verdict: NOT NECESSARY

【AUM-2 Functional sufficiency assessment】

Asset No.	Implemented
AUMA-A	Y

Verdict: PASS

【Supporting Evidence】

Follow AUM-1-1

AUM-2 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

[AUM-3] Authenticator validation

【Requirement】

Authentication mechanisms that are required per AUM-1-1 (network interface) or AUM-1-2(user interface) shall validate all relevant properties of the used authenticators, dependent on the available information in the operational environment of use.

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【AUM-3 Conceptual assessment】

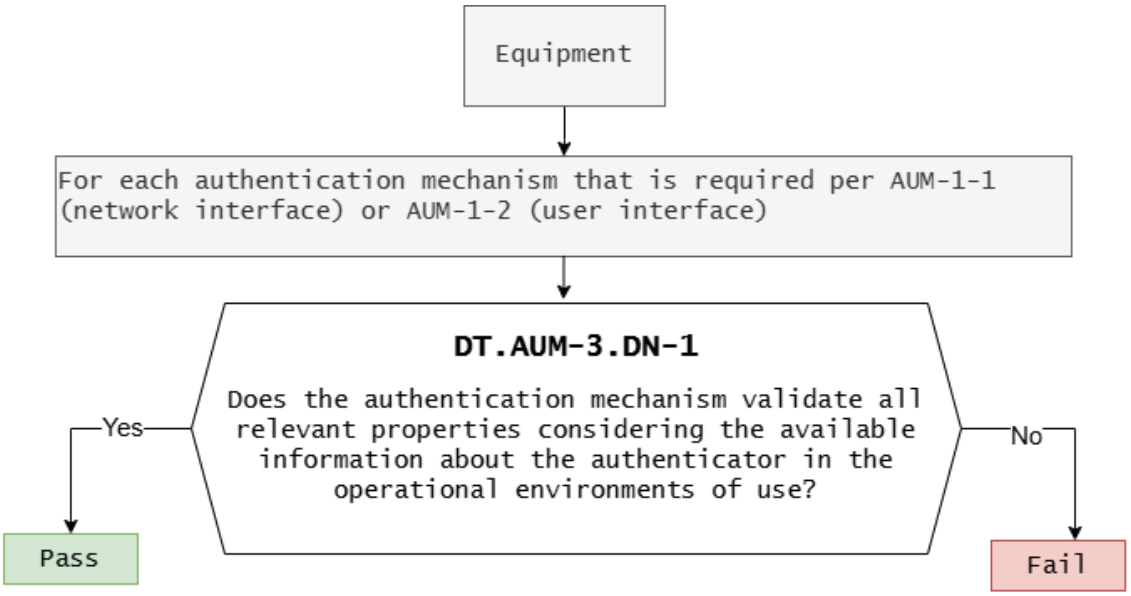

Figure 6 — Decision Tree for requirement AUM-3

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.AUM-3)
AUMA-A	DT.AUM-3.DN-1	Yes	Authentication is performed using a password.

Verdict: PASS

【AUM-3 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the authentication mechanism's applicability. Therefore, this functional completeness assessment is Not Necessary.

Verdict : NOT NECESSARY

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【AUM-3 Functional sufficiency assessment】

Asset No.	Implemented
AUMA-A	Y

Verdict: PASS

【Supporting Evidence】

Follow AUM-1-1

AUM-3 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

[AUM-4] Changing authenticators

【Requirement】

Authentication mechanisms that are required per AUM-1-1 or AUM-1-2 shall allow for changing the authenticator except for authenticators where conflicting security goals do not allow for a change.

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【AUM-4 Conceptual assessment】

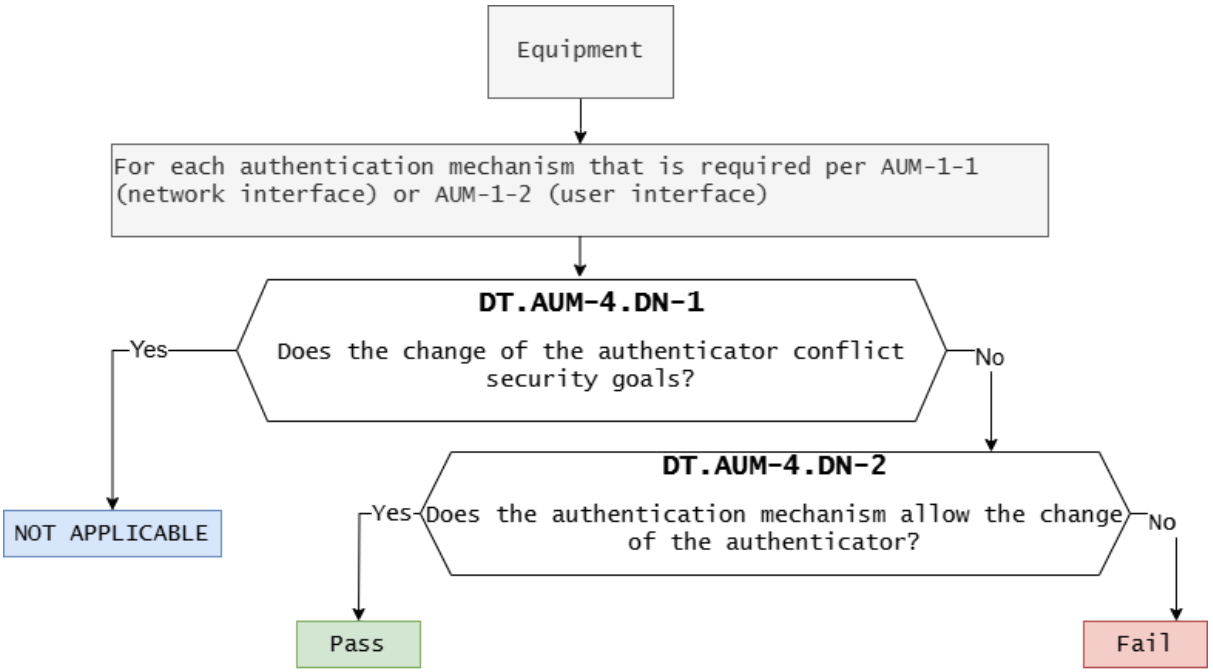

Figure 7 — Decision Tree for requirement AUM-4

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.AUM-4)
AUMA-A	DT.AUM-4.DN-1	No	Since no conflicting security requirements are present, modification of the authenticator is allowed.
	DT.AUM-4.DN-2	Yes	Modification of the authenticator is permitted.

Verdict: PASS

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【AUM-4 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the authentication mechanism's applicability. Therefore, this functional completeness assessment is Not Necessary.

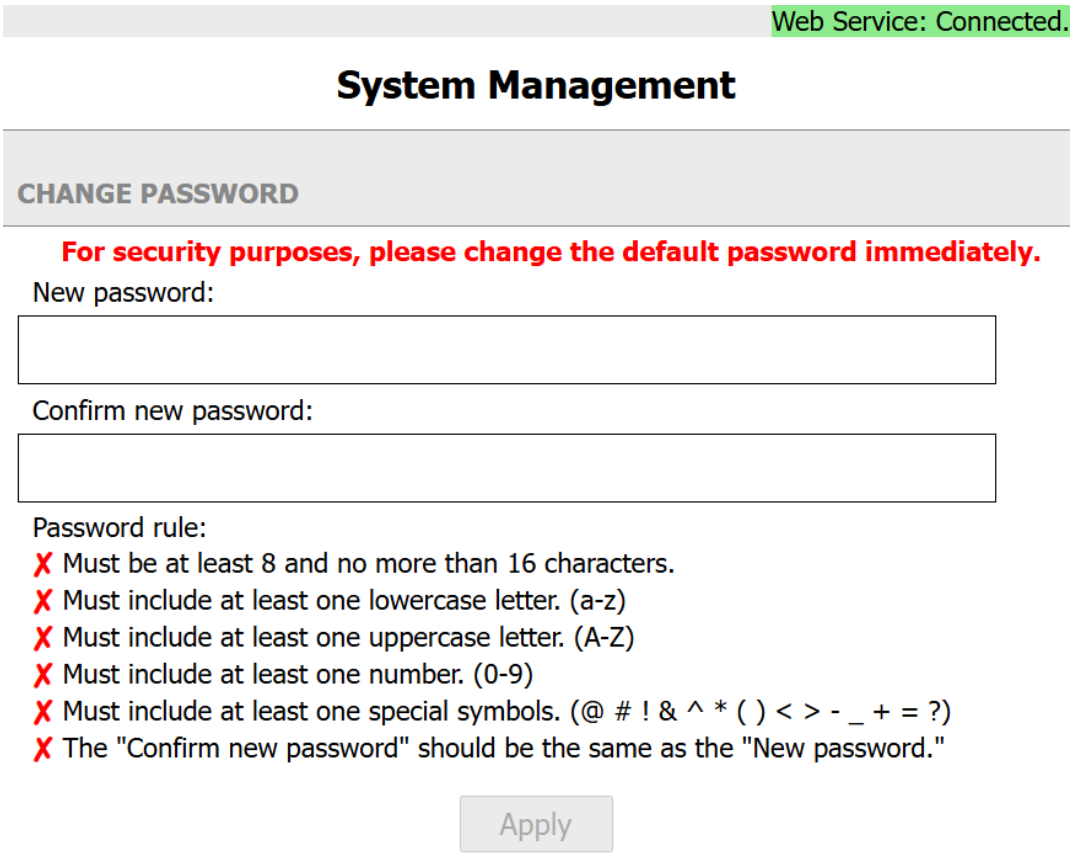
Verdict : NOT NECESSARY

【AUM-4 Functional sufficiency assessment】

Asset No.	Implemented
AUMA-A	Y

Verdict: PASS

【Supporting Evidence】



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AUM-4 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

[AUM-5] Password strength

[AUM-5-1] Requirement for factory default passwords

【Requirement】

If factory default passwords are used by an authentication mechanism that is required per AUM-1-1 or AUM-1-2, they shall:

— be unique per equipment; and

— follow best practice concerning strength; or

— be enforced to be changed by the user before or on first use.

NOTE: The user can choose to not use any password

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【AUM-5-1 Conceptual assessment】

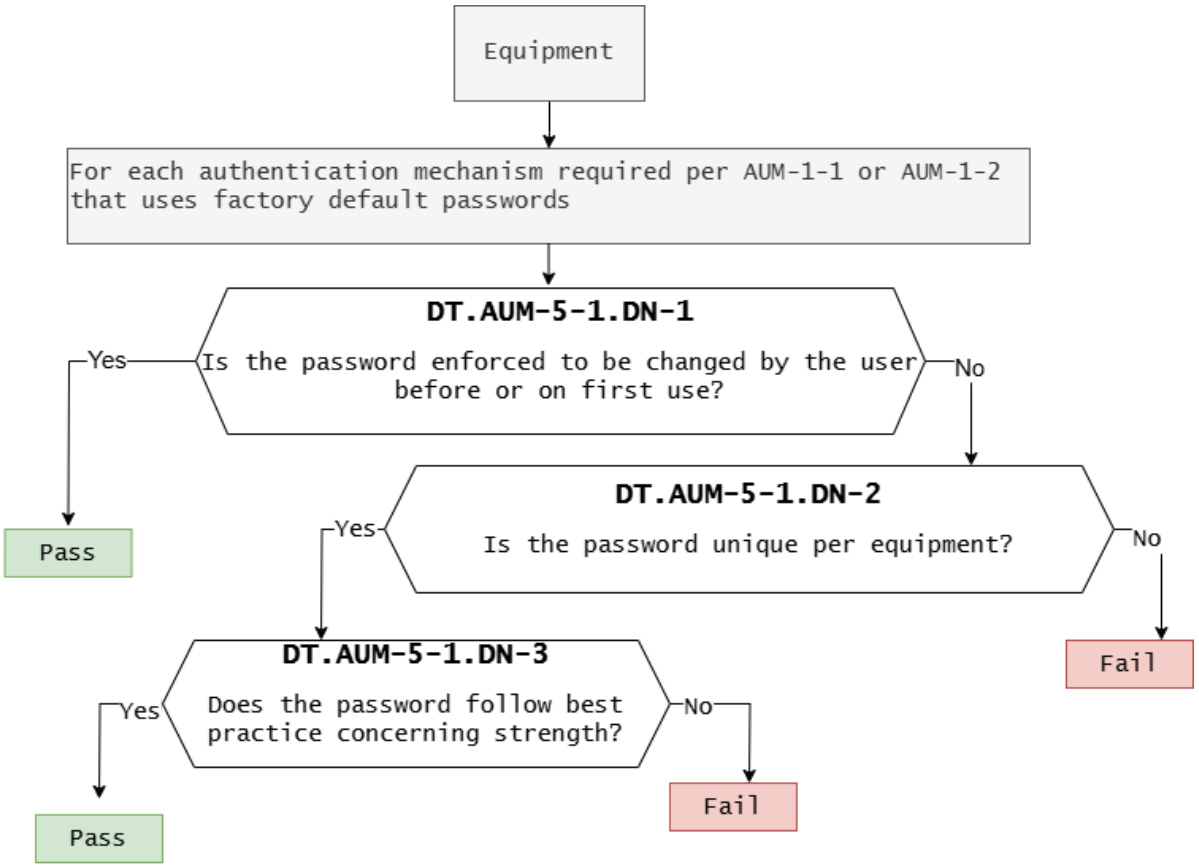

Figure 8 — Decision Tree for requirement AUM-5-1

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.AUM-5-1)
AUMA-A	DT.AUM-5-1.DN-1	No	Users are not required to change their passwords upon initial use.
	DT.AUM-5-1.DN-2	Yes	The password is unique, with each device assigned a different value.
	DT.AUM-5-1.DN-3	Yes	The password policy mandates a

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			minimum length of 8 characters and must include a mix of uppercase, lowercase, numeric, and special characters.

Verdict: PASS

【AUM-5-1 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the authentication mechanism's applicability. Therefore, this functional completeness assessment is not necessary.

Verdict: NOT NECESSARY

【AUM-5-1 Functional sufficiency assessment】

Asset No.	Implemented
AUMA-A	Y

Verdict: PASS

【Supporting Evidence】

- Each device is provisioned with a unique default password that is randomly generated through a secure method.
- The password meets established complexity requirements and is user-modifiable.
- The product implements best practices by ensuring every device is assigned a distinct default password.
- This measure effectively reduces the risk of credential reuse and unauthorized exposure.

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AUM-5-1 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

[AUM-5-2] Requirement for non-factory default passwords

【Requirement】

If passwords other than factory default passwords are used by an authentication mechanism required per AUM-1-1 or AUM-1-2, they shall:

— be enforced to be set by the user before or on first use and before the equipment is logically connected to a network; or

— be defined by an authorized entity within a network where access is limited to authorized entities; or

— be generated by the equipment using best practice concerning strength and only communicated to an authorized entity within a network where access is limited to authorized entities.

NOTE: The user can choose to not use any password

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【AUM-5-2 Conceptual assessment】

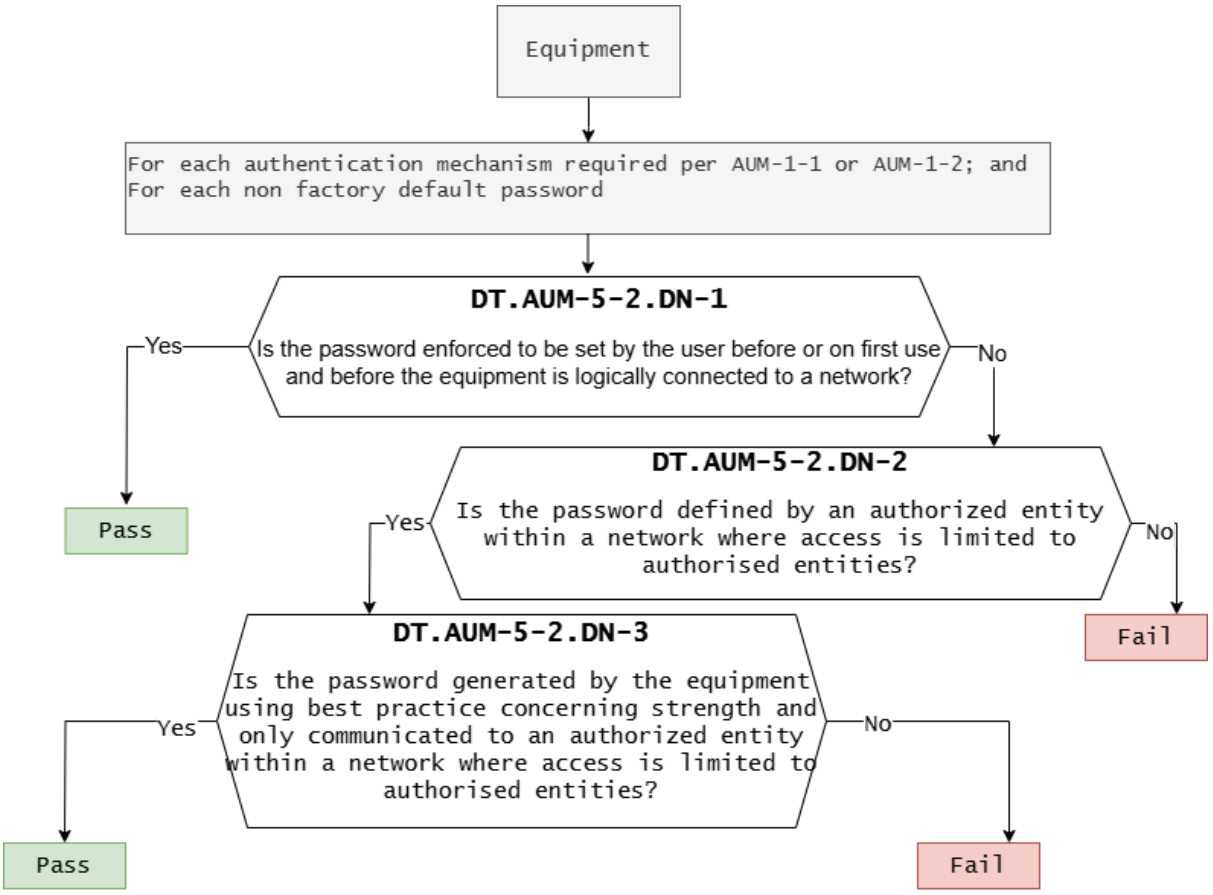

Figure 9 — Decision Tree for requirement AUM-5-2

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.AUM-5-2)
AUMA-A	DT.AUM-5-2.DN-1	-	The Device Under Test (DUT) includes an accessible factory default account.
	DT.AUM-5-2.DN-2	-	-
	DT.AUM-5-2.DN-3	-	-

Verdict: NOT APPLICABLE

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【AUM-5-2 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the authentication mechanism's applicability. Therefore, this functional completeness assessment is Not Necessary.

Verdict : NOT NECESSARY

【AUM-5-2 Functional sufficiency assessment】

Asset No.	Implemented
AUMA-A	N/A

Verdict: NOT APPLICABLE

【Supporting Evidence】

The DUT factory default account available

AUM-5-2 Summary Assessment	Verdict
Conceptual assessment	NOT APPLICABLE
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	NOT APPLICABLE

[AUM-6] Brute force protection

【Requirement】

Authentication mechanisms required per AUM-1-1 or AUM-1-2 shall be resilient against brute force attacks.

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【AUM-6 Conceptual assessment】

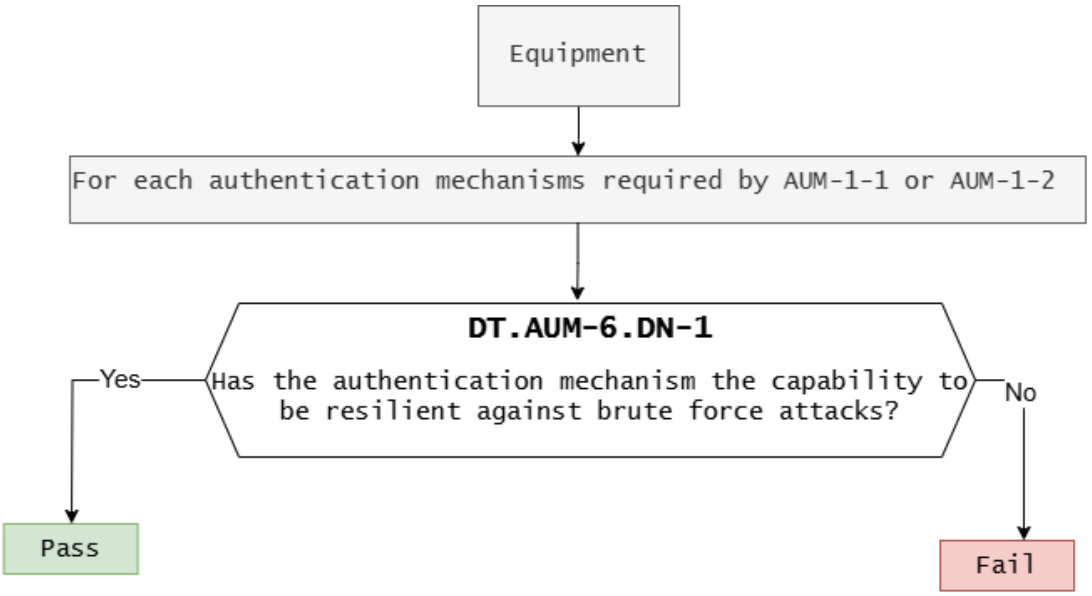

Figure 10 — Decision Tree for requirement AUM-6

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.AUM-6)
AUMA-A	DT.AUM-6.DN-1	Yes	A protective mechanism against brute force cracking attempts is in place.

Verdict: PASS

【AUM-6 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the authentication mechanism's applicability.

Therefore, this functional completeness assessment is Not Necessary.

Verdict: NOT NECESSARY

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【AUM-6 Functional sufficiency assessment】

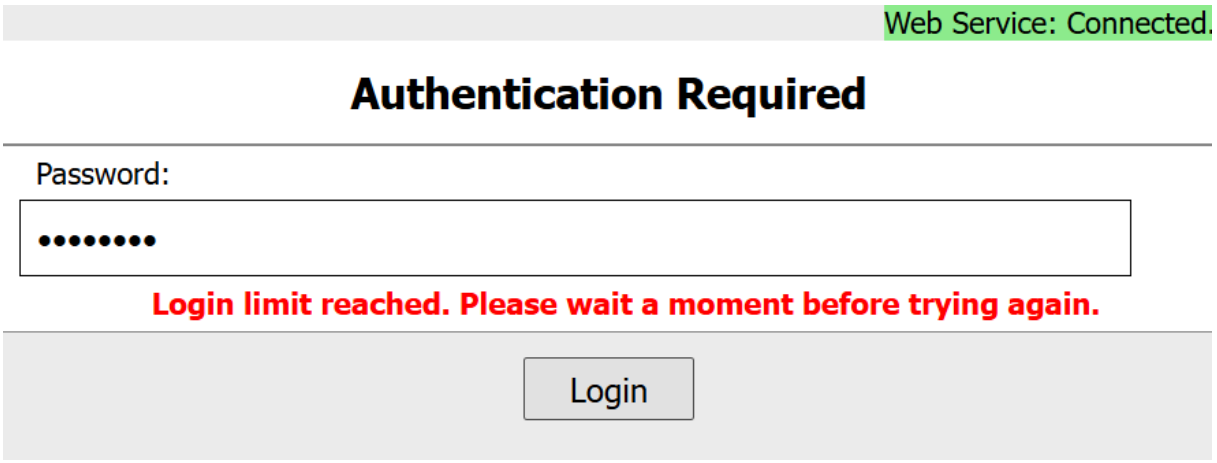
Asset No.	Implemented
AUMA-A	Y

Verdict: PASS

【Supporting Evidence】

There are time delays and login limits

GUI



AUM-6 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

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4.3 [SUM]Secure update mechanism

[SUM-1] Applicability of update mechanisms

【Requirement】

The equipment shall provide at least one update mechanism for updating software, including firmware, affecting security assets and/or network assets, except for software:

— where functional safety implications do not allow updatability; or

— which is immutable; or

— where alternative measures protect the affected security assets and/or network assets during the entire lifecycle of the equipment.

【SUM-1 Assets】

Asset No.	Asset	Update mechanisms
SUMA-A	Update function	The update mechanism includes automatic update or manual update

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【SUM-1 Conceptual assessment】

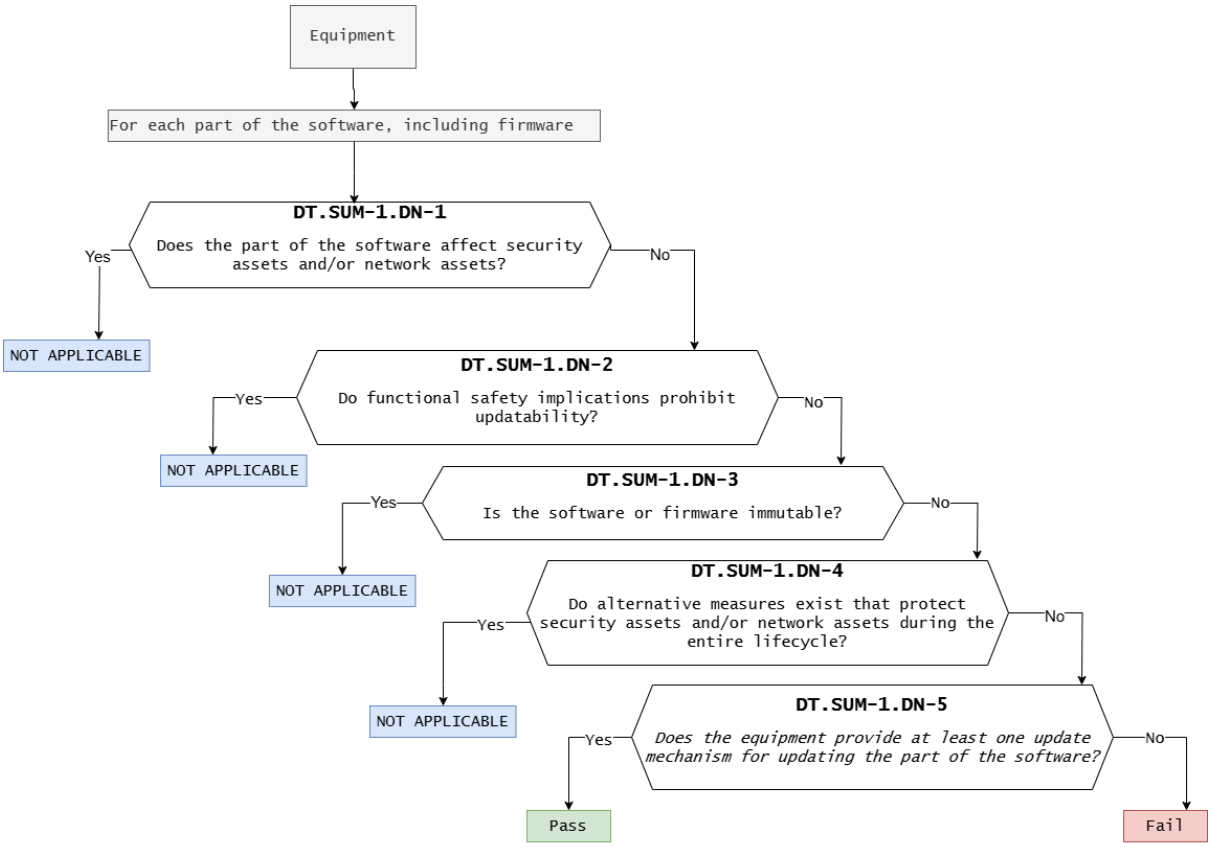

Figure 11 — Decision Tree for requirement SUM-1

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SUM-1)
SUMA-A	DT.SUM-1.DN-1	No	The update will affect assets
	DT.SUM-1.DN-2	No	Updates are permitted since functional safety requirements impose no restrictions.
	DT.SUM-1.DN-3	No	The system supports modifications to both software and firmware.
	DT.SUM-1.DN-4	No	Continuous software updates are

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			supported, removing the necessity for backup or contingency mechanisms.
	DT.SUM-1.DN-5	Yes	The device has an update mechanism

Verdict: PASS

【SUM-1 Functional completeness assessment】

NONE

Verdict: NONE

【SUM-1 Functional sufficiency assessment】

Asset No.	Implemented
SUMA-A	Y

Verdict: PASS

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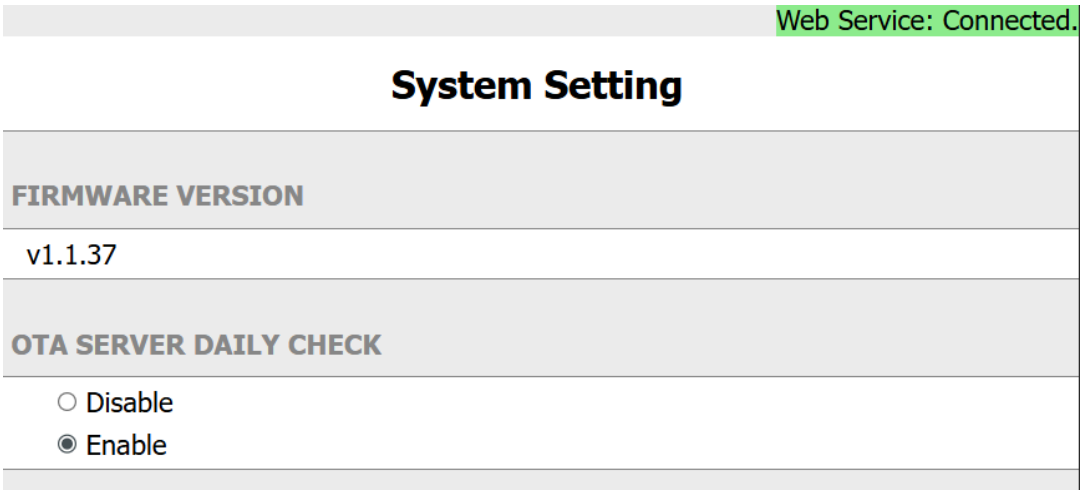
【Supporting Evidence】



SUM-1 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NONE
Functional sufficiency assessment	PASS

[SUM-2] Secure updates

【Requirement】

Each update mechanism as required per SUM-1 shall only install software whose integrity and authenticity are valid at the time of the installation.

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【SUM-2 Conceptual assessment】

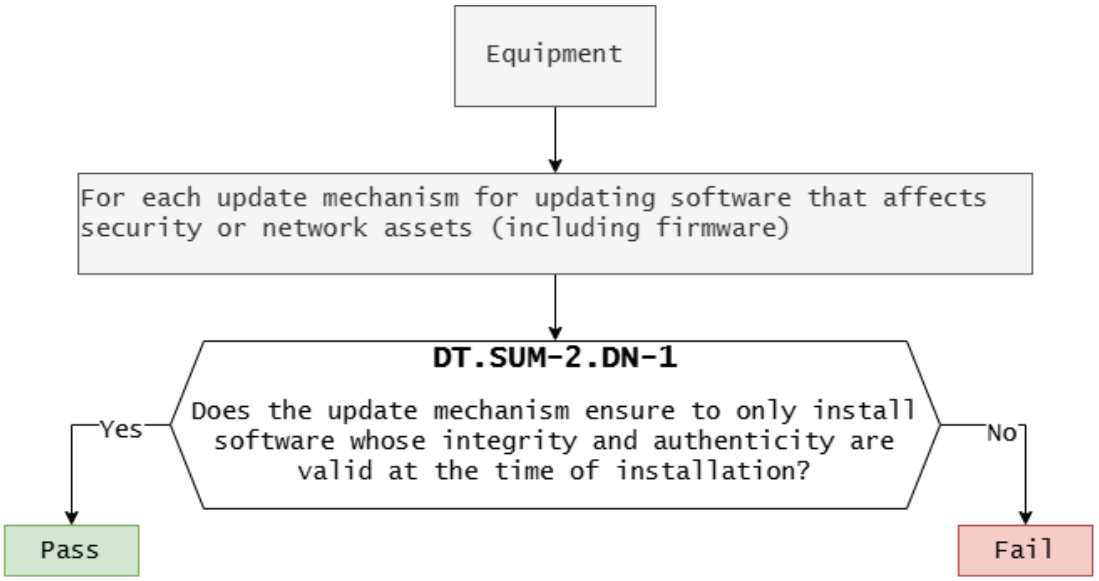

Figure 12 — Decision Tree for requirement SUM-2

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SUM-2)
SUMA-A	DT.SUM-2.DN-1	Yes	The software includes a verification mechanism to ensure its integrity.

Verdict: PASS

【SUM-2 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the secure update mechanism's applicability.

Therefore, this functional completeness assessment is Not Necessary.

Verdict : NOT NECESSARY

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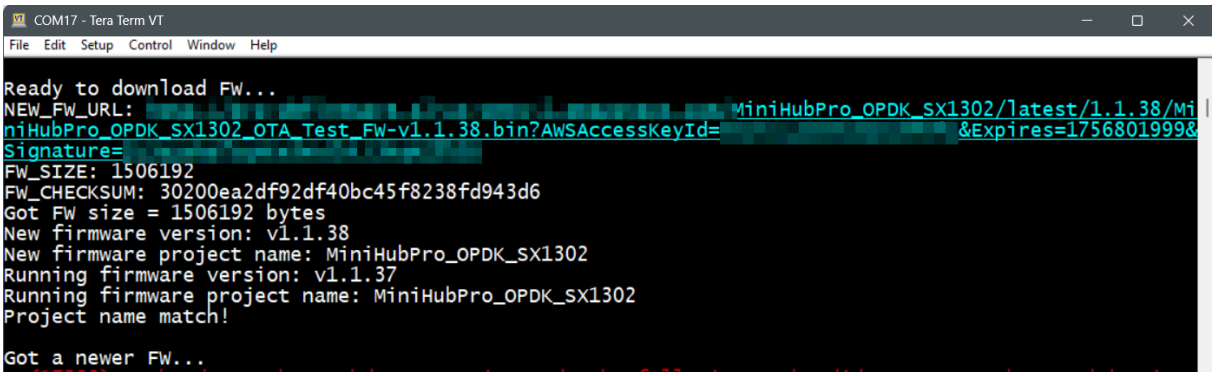
【SUM-2 Functional sufficiency assessment】

Asset No.	Implemented
SUMA-A	Y

Verdict: PASS

【Supporting Evidence】

Before the firmware update process begins, the system verifies the checksum of the downloaded firmware file to ensure its integrity.



SUM-2 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

[SUM-3] Automated updates

【Requirement】

Each update mechanism that is required per SUM-1 shall be capable of updating the software:

— without human intervention at the equipment; or

— via scheduling the installation of an update under human approval; or

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— via triggering the installation of an update under human approval or supervision where there is the need to prevent any unexpected damage in the operational environment.

【SUM-3 Conceptual assessment】

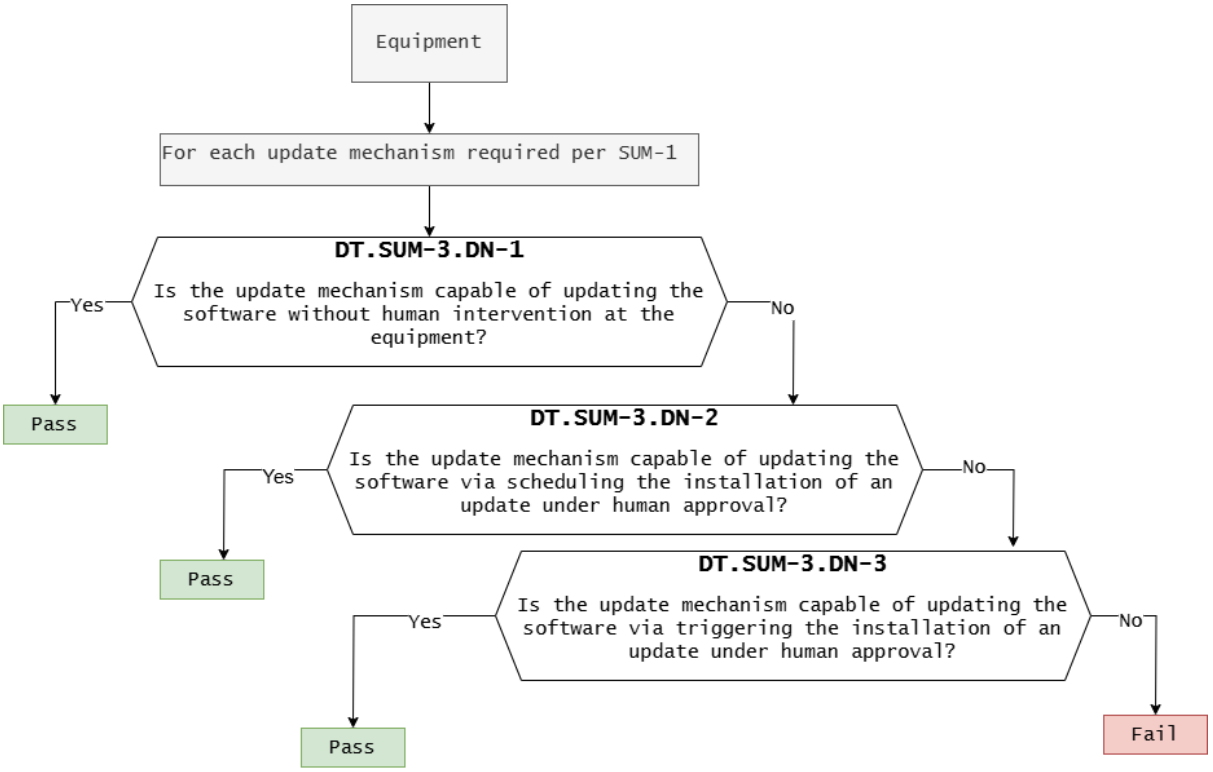

Figure 13 — Decision Tree for requirement SUM-3

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SUM-3)
SUMA-A	DT.SUM-3.DN-1	Yes	The device supports online automatic updates
	DT.SUM-3.DN-2	-	-
	DT.SUM-3.DN-3	-	-

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Verdict: PASS

【SUM-3 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the secure update mechanism's applicability.

Therefore, this functional completeness assessment is Not Necessary.

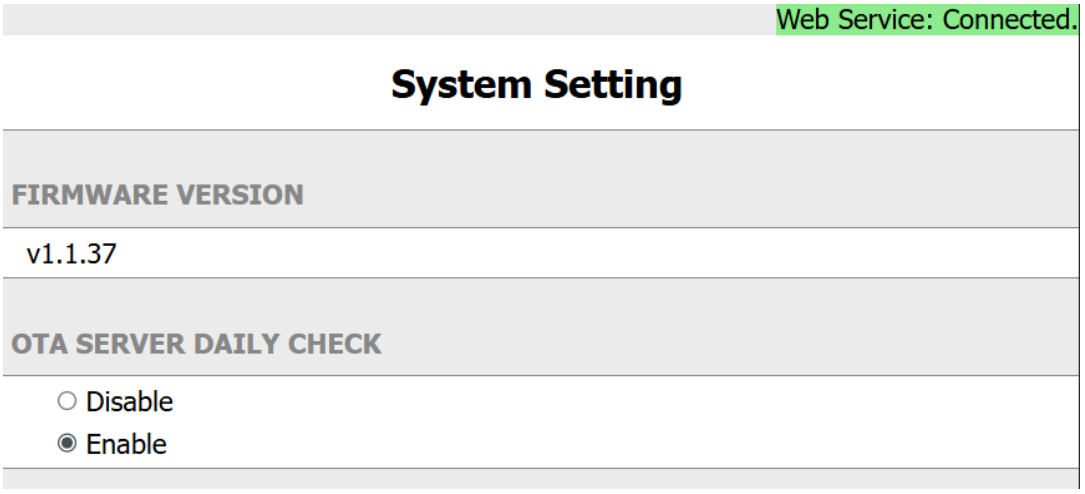
Verdict: NOT NECESSARY

【SUM-3 Functional sufficiency assessment】

Asset No.	Implemented
SUMA-A	Y

Verdict: PASS

【Supporting Evidence】



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SUM-3 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

4.4 [SSM] Secure storage mechanism

[SSM-1] Applicability of secure storage mechanisms

【Requirement】

The equipment shall always use secure storage mechanisms for protecting the security assets and network assets persistently stored on the equipment, except for persistently stored security assets or network assets where:

— the physical or logical measures in the target environment ensures the security asset or network asset stored on the equipment accessibility is limited to authorized entities.

【SSM-1 Assets】

Asset No.	Asset	Type	Store Mechanism
SSMA-A	TLS private key and certificate	Security	Web GUI
SSMA-B	Web login password	Security	Web GUI

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【SSM-1 Conceptual assessment】

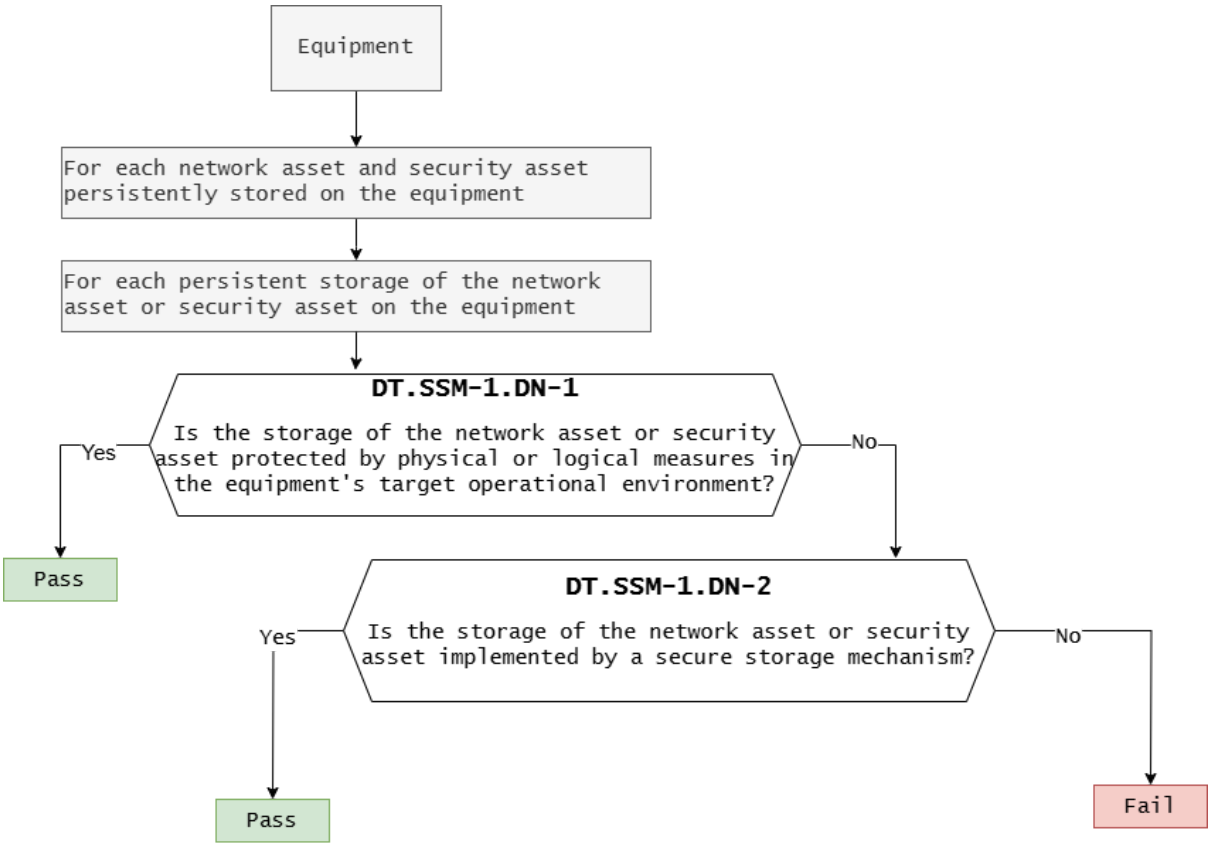

Figure 14 — Decision Tree for requirement SSM-1

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SSM-1)
SSMA-A SSMA-B	DT.SSM-1.DN-1	Yes	No logical or physical protection measures are present in the DUT.
	DT.SSM-1.DN-2	-	Assets are stored in flash and encrypted with the secure mechanism

Verdict: PASS

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【SSM-1 Functional completeness assessment】

Asset No.	Document Verification
SSMA-A	Y
SSMA-B	Y

Verdict: PASS

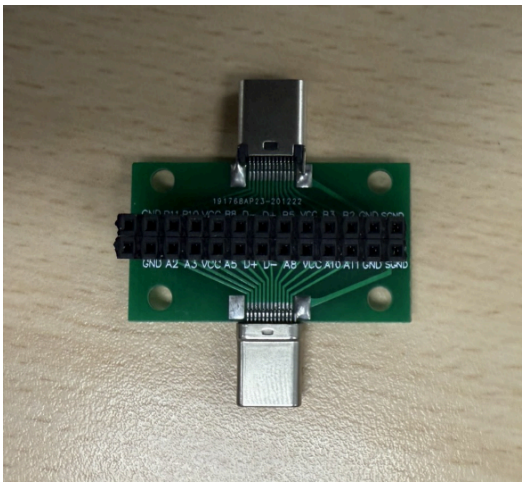
【SSM-1 Functional sufficiency assessment】

Asset No.	Implemented
SSMA-A	Y
SSMA-B	Y

Verdict: PASS

【Supporting Evidence】

The data stored on the DUT cannot be accessed through normal operational interfaces; it requires the use of specialized hardware tools to attempt extraction. This physical restriction provides an effective protection mechanism for the stored information.



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SSM-1 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

[SSM-2] Appropriate integrity protection for secure storage mechanisms

【Requirement】

Each secure storage mechanism that is required per SSM-1 shall protect the integrity of security assets and network assets it stores persistently.

【SSM-2 Conceptual assessment】

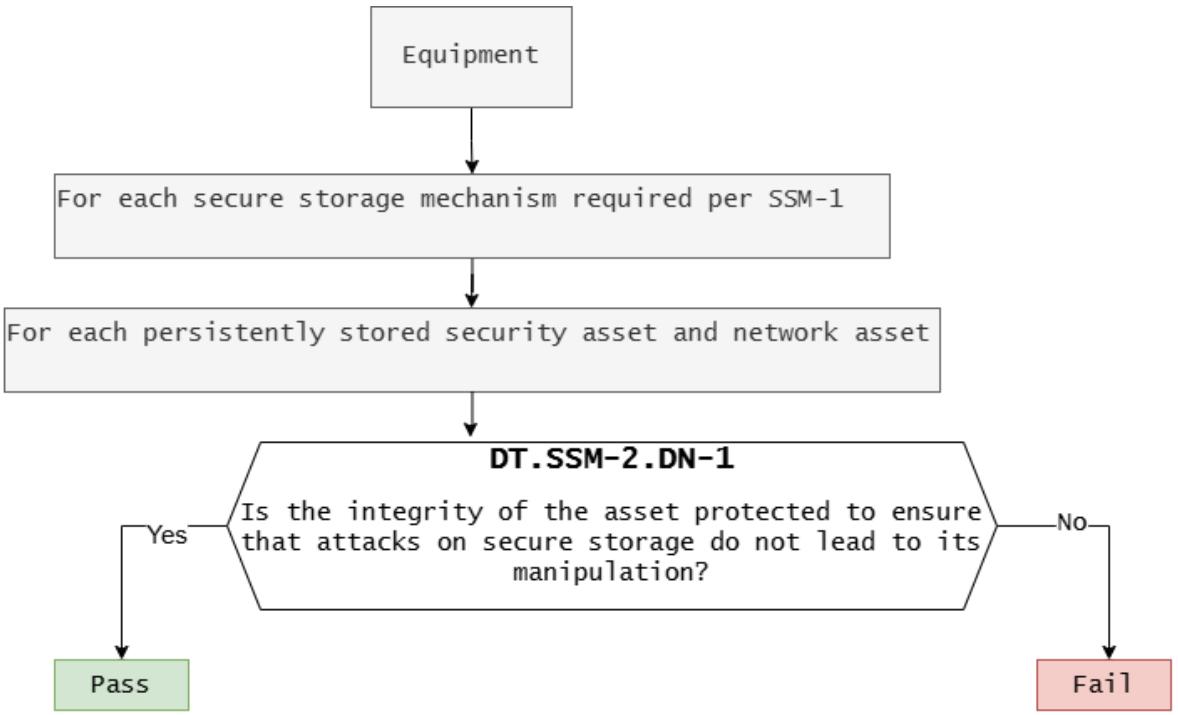

Figure 15 — Decision Tree for requirement SSM-2

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【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SSM-2)
SSMA-A SSMA-B	DT.SSM-2.DN-1	Yes	Assets are stored in flash memory, and access is only possible through the use of dedicated hardware tools, providing physical protection against unauthorized extraction.

Verdict: PASS

【SSM-2 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the secure storage mechanism’s applicability.

Therefore, this functional completeness assessment is Not Necessary.

Verdict : NOT NECESSARY

【SSM-2 Functional sufficiency assessment】

Asset No.	Implemented
SSMA-A	Y
SSMA-B	Y

Verdict: PASS

【Supporting Evidence】

Follow SSM-1

SSM-2 Summary Assessment	Verdict

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Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

[SSM-3] Appropriate confidentiality protection for secure storage mechanisms

【Requirement】

Each secure storage mechanism that is required per SSM-1 shall protect the secrecy of confidential security parameter and confidential network function configuration it stores persistently.

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【SSM-3 Conceptual assessment】

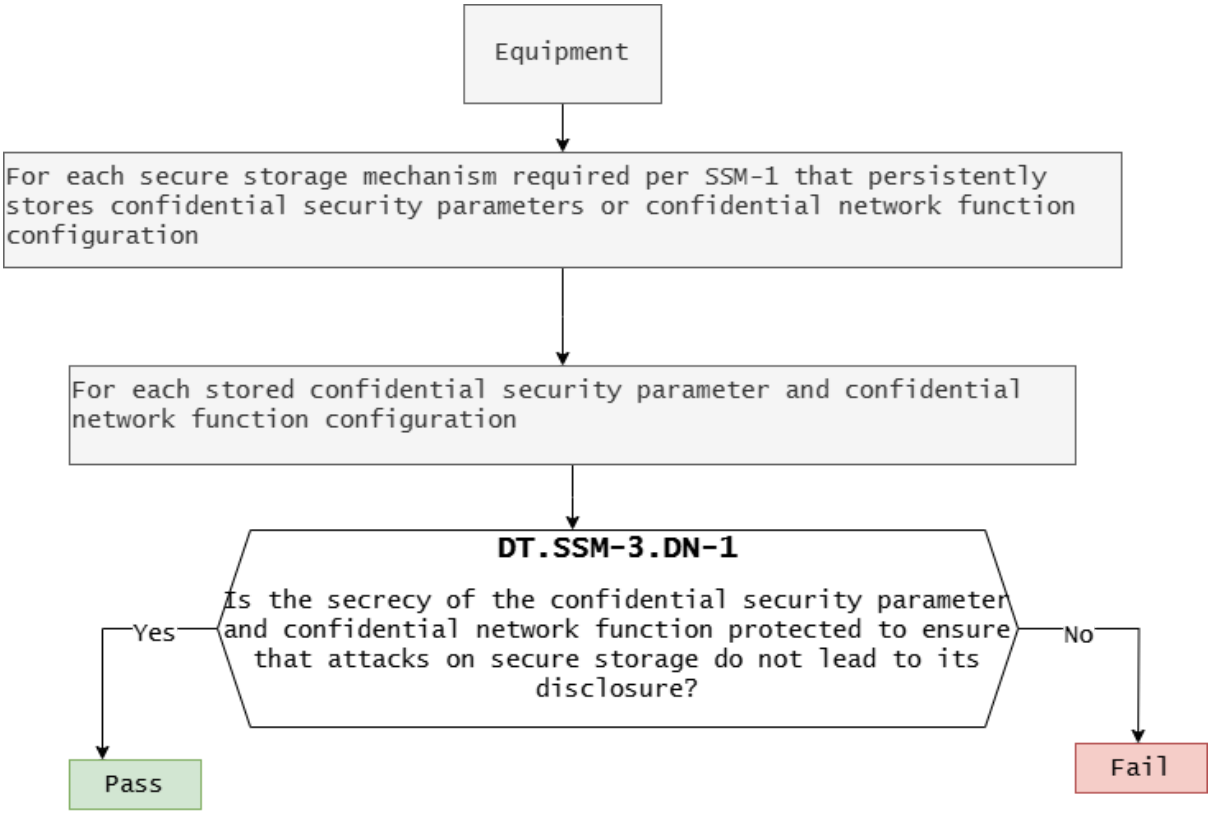

Figure 16 — Decision Tree for requirement SSM-3

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SSM-3)
SSMA-A SSMA-B	DT.SSM-3.DN-1	Yes	Assets are stored in flash memory, and access is only possible through the use of dedicated hardware tools, providing physical protection against unauthorized extraction.

Verdict: PASS

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【SSM-3 Functional completeness assessment】

Asset No.	Document Verification
SSMA-A	Y
SSMA-B	Y

Verdict: PASS

【SSM-3 Functional sufficiency assessment】

Asset No.	Implemented
SSMA-A	Y
SSMA-B	Y

Verdict: PASS

【Supporting Evidence】

Follow SSM-1

SSM-3 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

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4.5 [SCM] Secure communication mechanism

【Requirement】

The equipment shall always use secure communication mechanisms for communicating security assets and network assets with other entities via network interfaces, except for:

— communicating security assets or network assets whose transfer is protected by physical or logical measures in the targeted environment that ensure that network assets or security assets are not exposed to unauthorized entities; or

— communicating security assets or network assets whose exposure is part of establishing or managing a connection combined with additional measures to authenticate the connection or trust relation.

【SCM-1 Assets】

Asset No.	Asset	Type	Connect Mechanism
SCMA-A	Wi-Fi	Network	Network interface

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【SCM-1 Conceptual assessment】

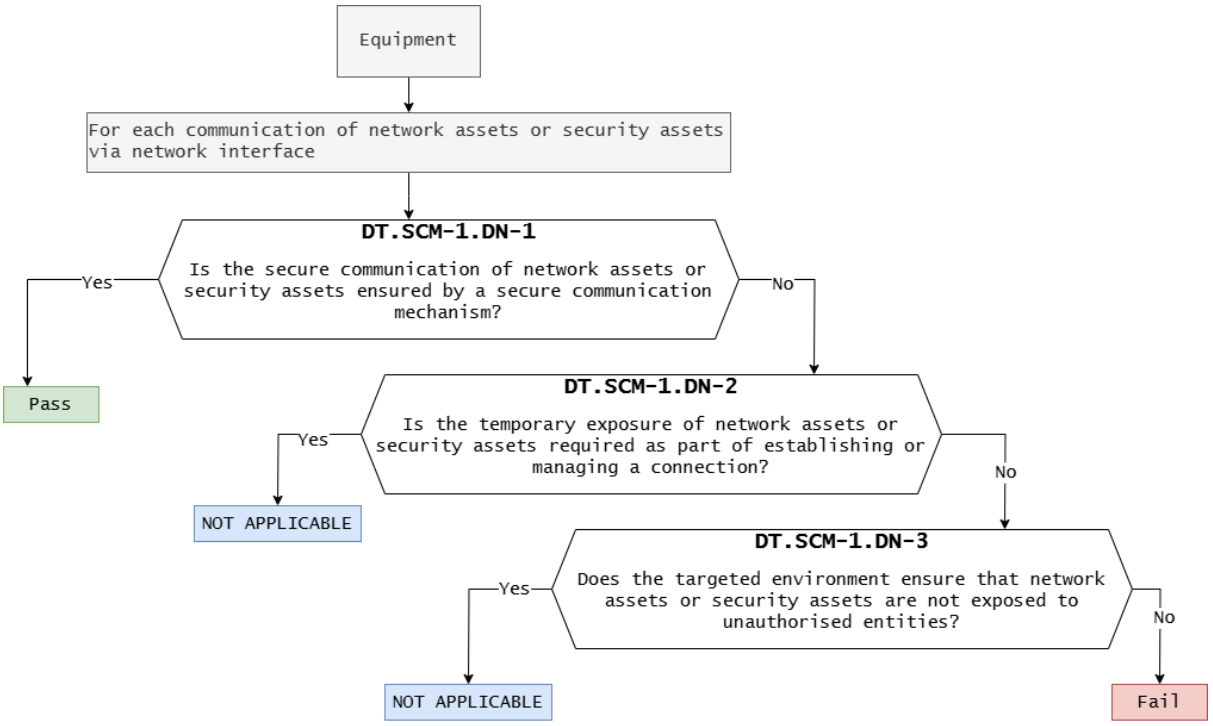

Figure 17 — Decision Tree for requirement SCM-1

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SCM-1)
SCMA-A	DT.SCM-1.DN-1	Yes	Measurement data transmission is protected through TLS 1.2 encryption.
	DT.SCM-1.DN-2	-	-
	DT.SCM-1.DN-3	-	-

Verdict: PASS

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【SCM-1 Functional completeness assessment】

Asset No.	Document Verification
SCMA-A	Y

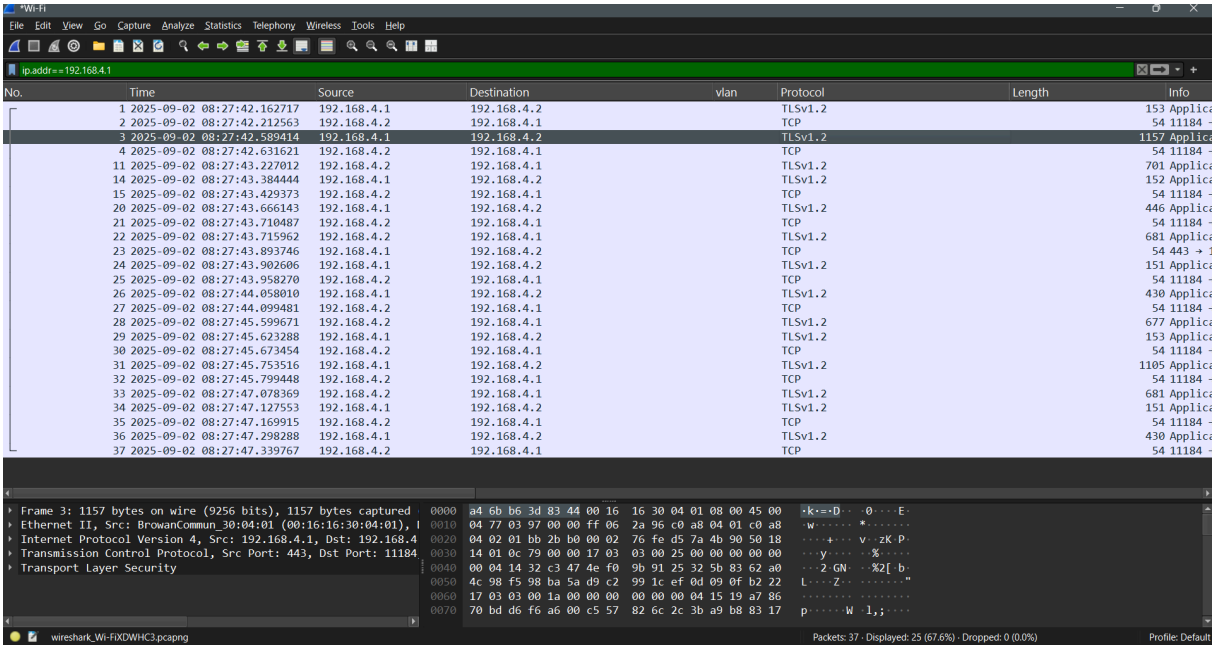
Verdict : PASS

【SCM-1 Functional sufficiency assessment】

Asset No.	Implemented
SCMA-A	Y

Verdict : PASS

【Supporting Evidence】



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SCM-1 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

[SCM-2] Appropriate integrity and authenticity protection for secure communication mechanisms

【Requirement】

Each secure communication mechanism that is required per SCM-1 shall apply best practices to protect the integrity and authenticity of the security assets and network assets communicated, except for communicating security assets or network assets where:

— a deviation from best practice for integrity or authenticity protection is required for interoperability reasons.

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【SCM-2 Conceptual assessment】

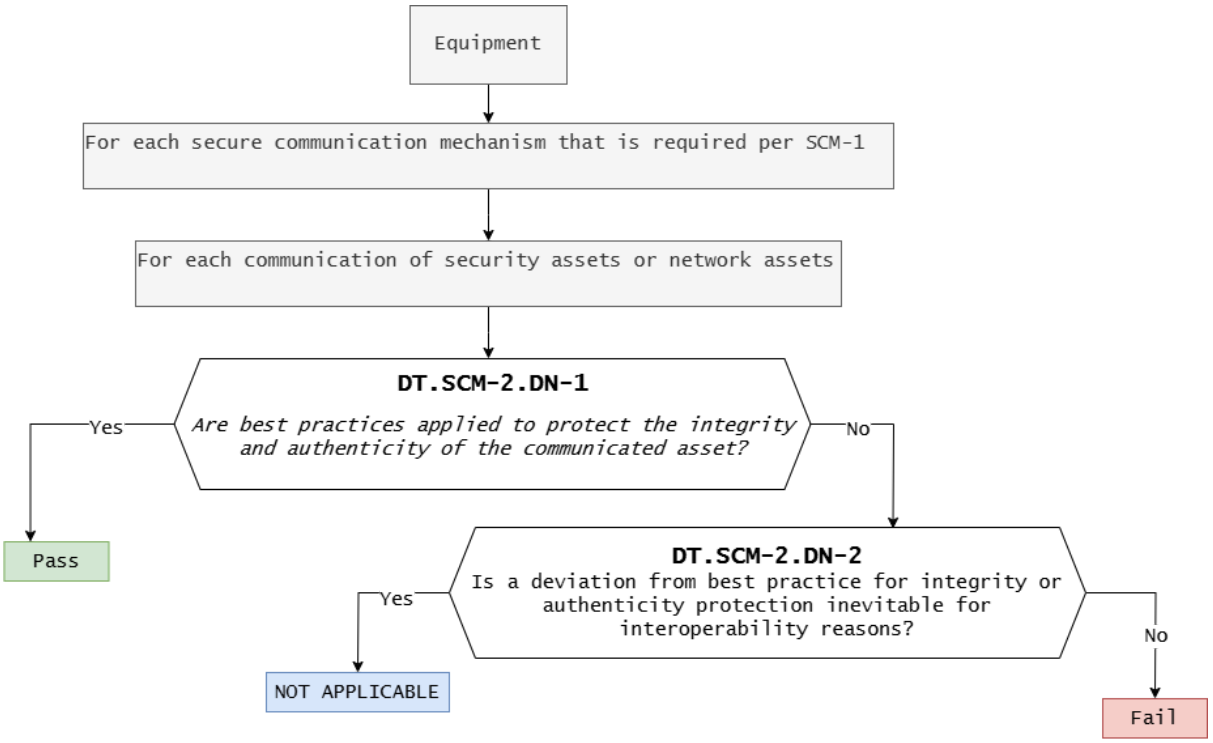

Figure 18 — Decision Tree for requirement SCM-2

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SCM-2)
SCMA-A	DT.SCM-2.DN-1	Yes	Measurement data transmission is protected through TLS 1.2 encryption.
	DT.SCM-2.DN-2	-	-

Verdict: PASS

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【SCM-2 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the secure communication mechanism's applicability. Therefore, this functional completeness assessment is Not Necessary.

Verdict : NOT NECESSARY

【SCM-2 Functional sufficiency assessment】

Asset No.	Implemented
SCMA-A	Y

Verdict : PASS

【Supporting Evidence】

Follow SCM-1

SCM-2 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

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[SCM-3] Appropriate confidentiality protection for secure communication mechanisms

【Requirement】

Each secure communication mechanism that is required per SCM-1 shall apply best practices to protect the confidentiality of communicated network assets and security assets where confidentiality protection of those is needed, except for communicating security assets or network assets where:

— a deviation from best practice for protecting confidentiality is required for interoperability reasons.

【SCM-3 Conceptual assessment】

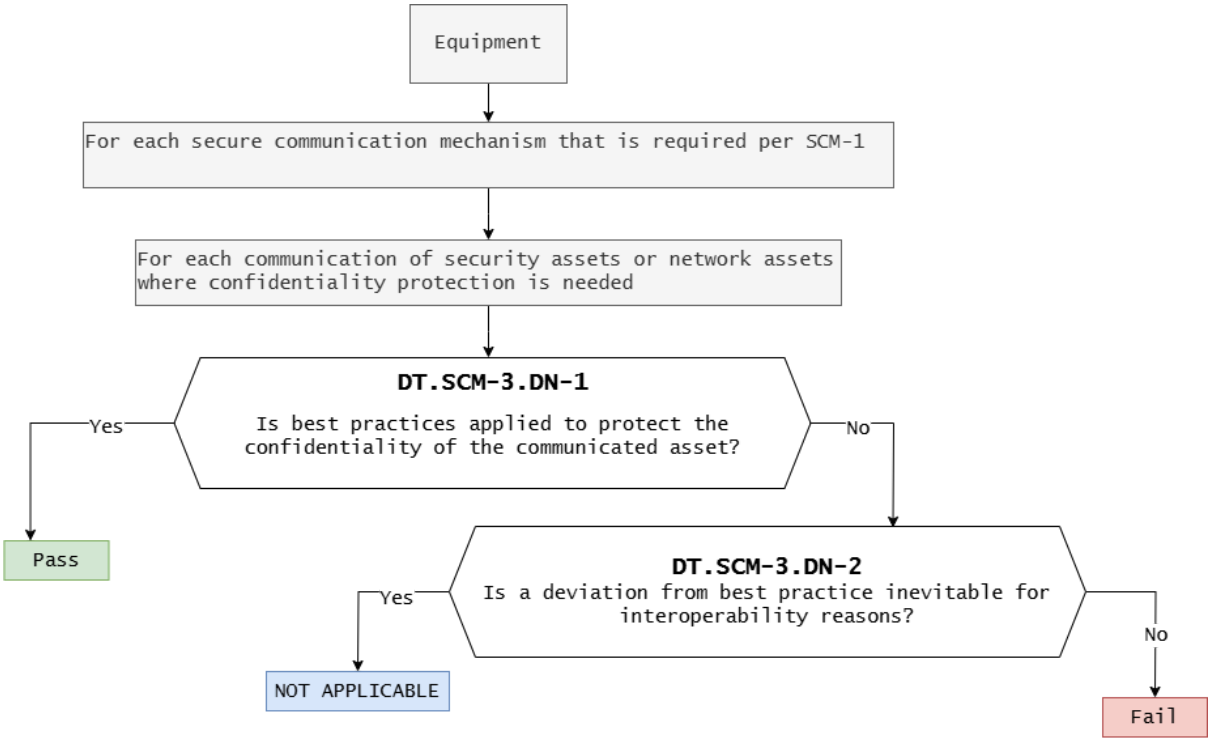

Figure 19 — Decision Tree for requirement SCM-3

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【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SCM-3)
SCMA-A	DT.SCM-3.DN-1	Yes	Measurement data transmission is protected through TLS 1.2 encryption.
	DT.SCM-3.DN-2	-	-

Verdict: PASS

【SCM-3 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the secure communication mechanism's applicability. Therefore, this functional completeness assessment is Not Necessary.

Verdict: NOT NECESSARY

【SCM-3 Functional sufficiency assessment】

Asset No.	Implemented
SCMA-A	Y

Verdict : PASS

【Supporting Evidence】

Follow SCM-1

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SCM-3 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

[SCM-4] Appropriate replay protection for secure communication mechanisms

【Requirement】

Each secure communication mechanism that is required per SCM-1 shall apply best practices to protect the security assets and the network assets communicated against replay attacks, except for communicating security assets or network assets where:

— a duplicate transfer does not impose a threat of a replay attack; or

— a deviation from best practice for replay protection is required for interoperability reasons.

【SCM-4 Assets】

Asset No.	Asset	Type	Connect Mechanism
SCMA-C	Web GUI login	Network	Web GUI

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【SCM-4 Conceptual assessment】

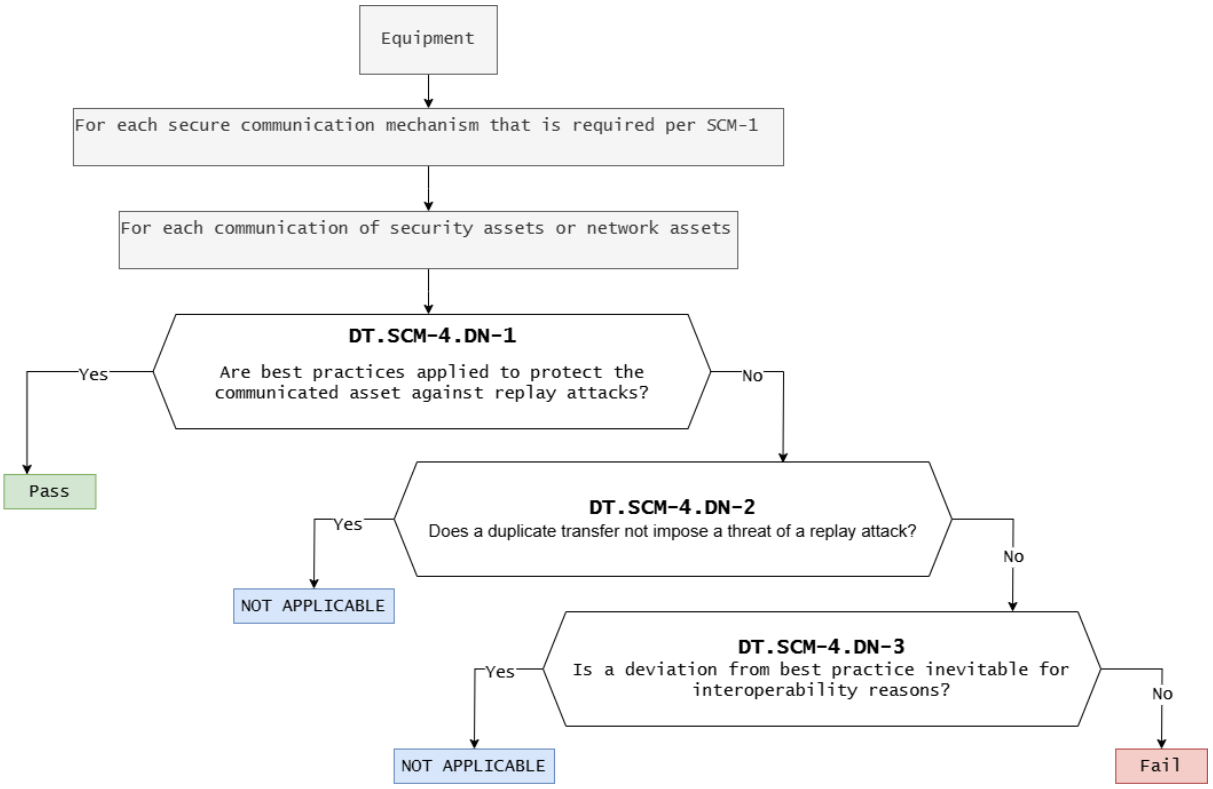

Figure 20 — Decision Tree for requirement SCM-4

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.SCM-4)
SCMA-C	DT.SCM-4.DN-1	Yes	Randomized access attempts result in 400/401/403 unauthorized access responses, with variable response lengths..
	DT.SCM-4.DN-2	-	-
	DT.SCM-4.DN-3	-	-

Verdict: PASS

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【SCM-4 Functional completeness assessment】

The functional completeness assessment is covered by the functional sufficiency assessment of the secure communication mechanism's applicability. Therefore, this functional completeness assessment is not necessary.

Verdict: NOT NECESSARY

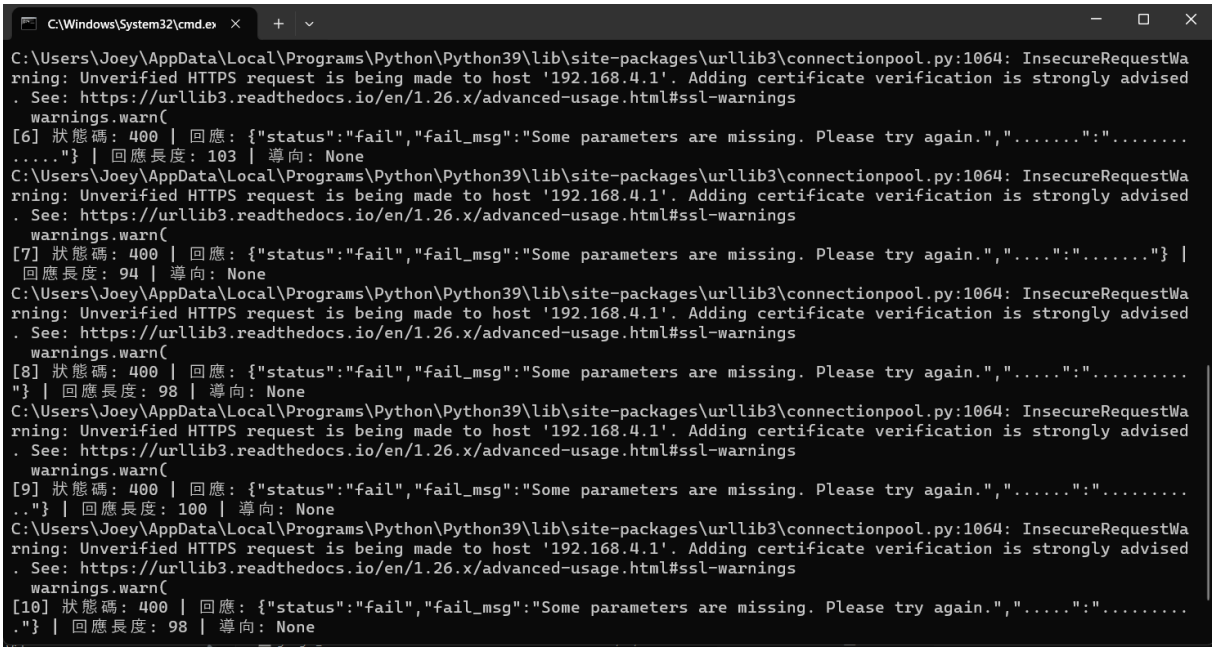
【SCM-4 Functional sufficiency assessment】

Asset No.	Implemented
SCMA-C	Y

Verdict : PASS

【Supporting Evidence】

replay attack test



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SCM-4 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	PASS

4.6 [RLM] Resilience mechanism

[RLM-1] Applicability and appropriateness of resilience mechanisms

【Requirement】

The equipment shall use resilience mechanisms to mitigate the effects of Denial of Service (DoS) Attacks on the network interfaces and return to a defined state after the attack except for:

— network interfaces that are only used in a local network that do not interoperate with other networks; or

— network interfaces where other devices in the network provide sufficient protection against DoS attacks and loss of essential functions for network operations.

【RLM-1 Assets】

Asset No.	Asset	Type	Connect Mechanism
RLMA-A	Wi-Fi	Network	Network interface

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【RLM-1 Conceptual assessment】

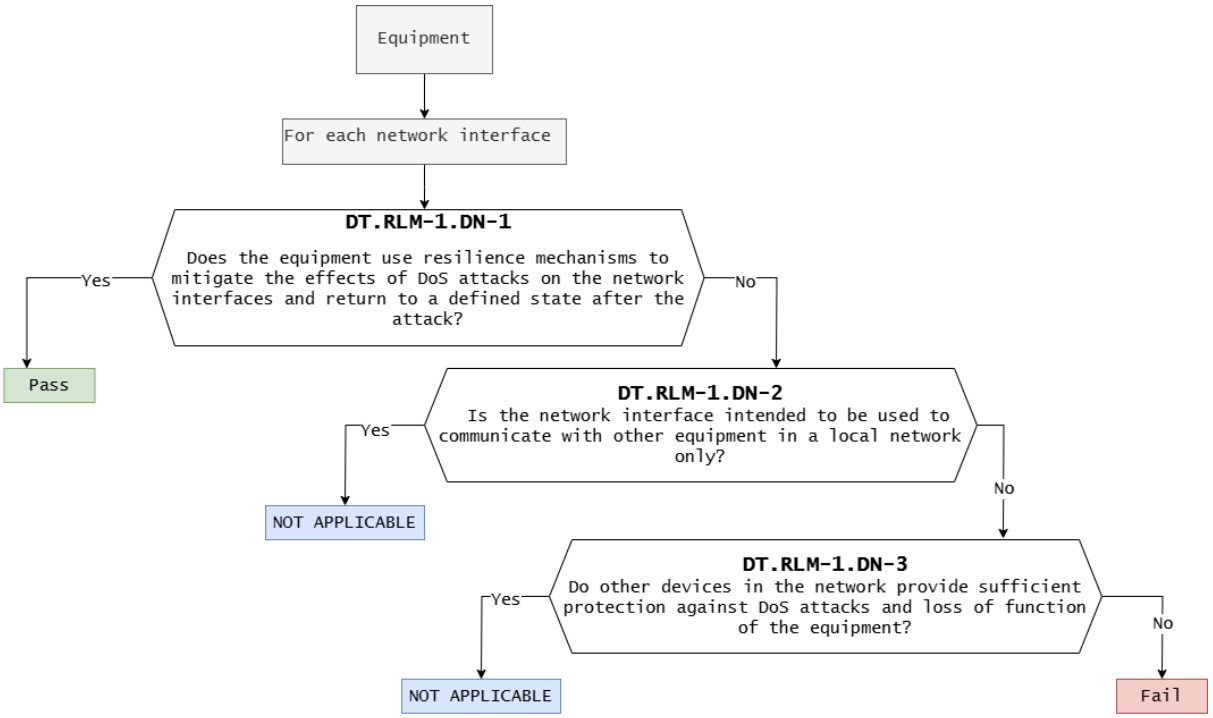

Figure 21 — Decision Tree for requirement RLM-1

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.RLM-1)
RLMA-A	DT.RLM-1.DN-1	No	There is a recovery mechanism, and the log will record logs (DROP SYN FLOOD or DROP TCP PORT 0 tag).
	DT.RLM-1.DN-2	No	The network interface is intended solely for communication with devices in the local network.
	DT.RLM-1.DN-3	Yes	The equipment is protected by upstream router and firewall, which provide sufficient defense against DoS attacks and maintain normal

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			functionality.

Verdict: PASS

【RLM-1 Functional completeness assessment】

Asset No.	Document Verification
RLMA-A	Y

Verdict : PASS

【RLM-1 Functional sufficiency assessment】

Asset No.	Implemented
RLMA-A	Y

Verdict : PASS

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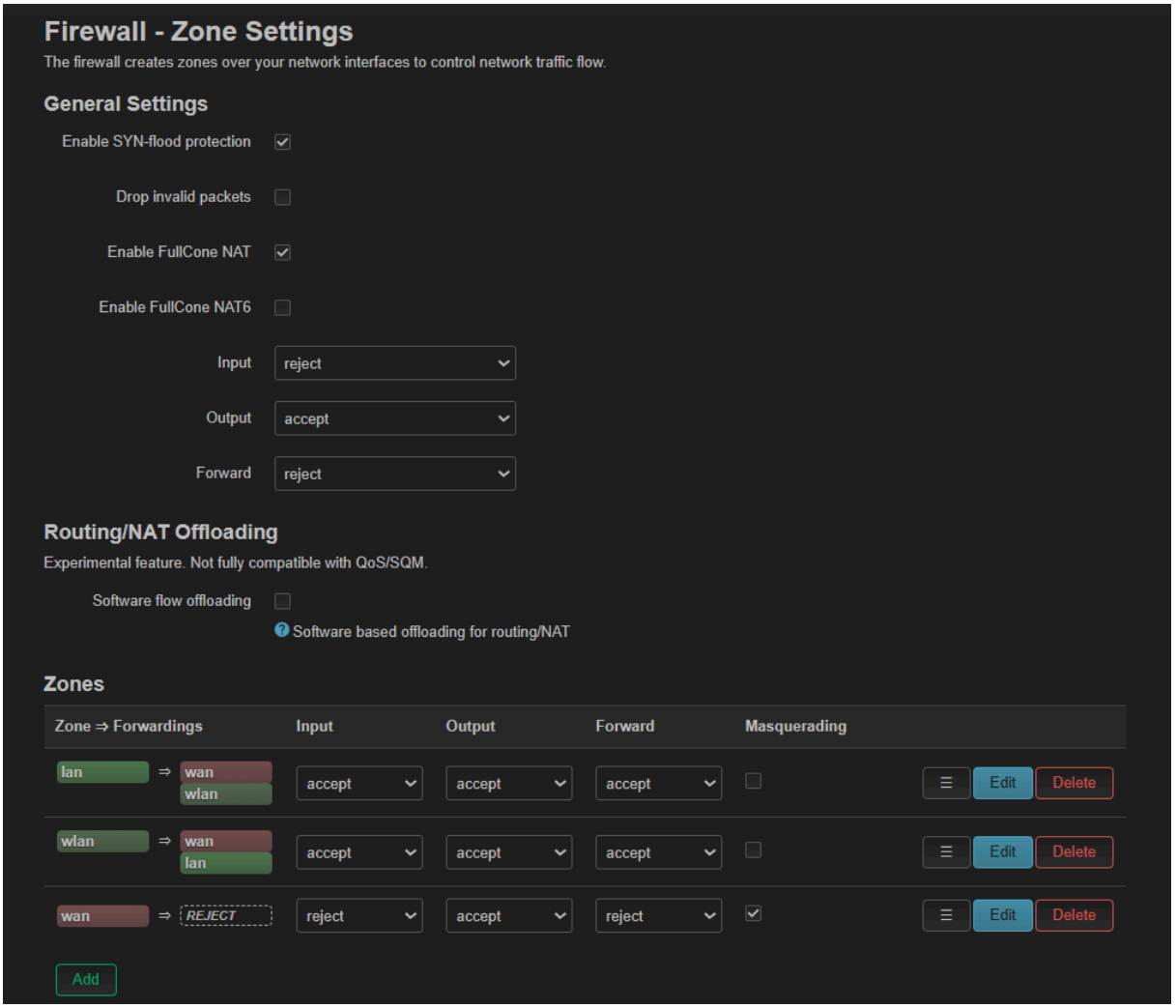
【Supporting Evidence】

The firewall of the upstream router.



RLM-1 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

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4.7 [NMM] Network monitoring mechanism

[NMM-1] Applicability and appropriateness of network monitoring mechanisms

【Requirement】

If the equipment is a network equipment, the equipment shall provide network monitoring mechanism(s) to detect for indicators of DoS attacks in the network traffic between networks which it processes.

【NMM-1 Assets】

Asset No.	Asset	Type	Connect Mechanism
NMMA-A	Web GUI	Network	Network interface

【NMM-1 Conceptual assessment】

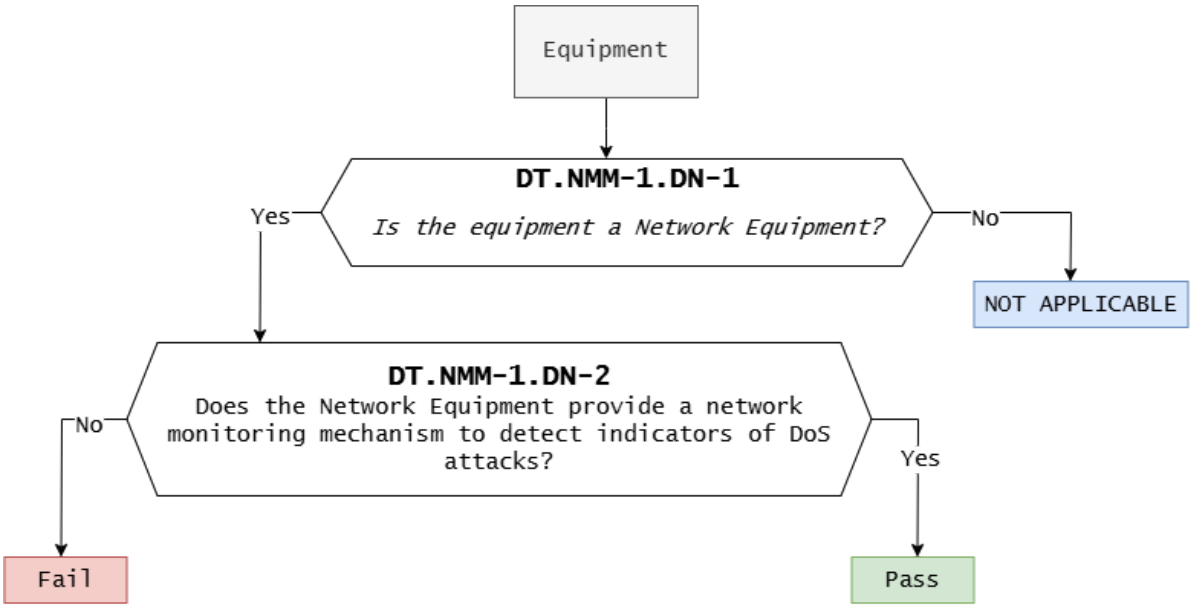

Figure 22 — Decision Tree for requirement NMM-1

【Assessment】

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Asset ID	Decision Node	Decision	Justification (E.just.DT.NMM-1)
NMMA-A	DT.NMM-1.DN-1	No	DUT is network equipment
	DT.NMM-1.DN-2	-	A network monitoring mechanism is implemented in the system.

Verdict: NOT APPLICABLE

【NMM-1 Functional completeness assessment】

Functional completeness assessment is Not Necessary in this clause since the network monitoring mechanism is always mandatory for network equipment.

Verdict : NOT NECESSARY

【NMM-1 Functional sufficiency assessment】

Asset No.	Document Verification
NMMA-A	Y

Verdict : PASS

【Supporting Evidence】

The DUT provides network connectivity only for the purpose of forwarding LoRaWAN packets to a designated LoRaWAN Network Server. It does not perform routing, switching, or traffic exchange between different networks, nor does it provide Internet sharing functionality. Accordingly, while the device is network-connected, it is not considered a “network equipment” under the scope of this requirement, and the obligation to implement network monitoring mechanisms for DoS detection is not applicable.

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NMM-1 Summary Assessment	Verdict
Conceptual assessment	NOT APPLICABLE
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	NOT APPLICABLE

4.8 [TCM] Traffic control mechanism

[TCM-1] Applicability of and appropriate traffic control mechanisms

【Requirement】

If the equipment is a network equipment, the equipment shall provide network traffic control mechanism(s).

【TCM-1 Assets】

Asset No.	Asset	Type	Connect Mechanism
TCMA-A	Web GUI	Network	Network interface

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【TCM-1 Conceptual assessment】

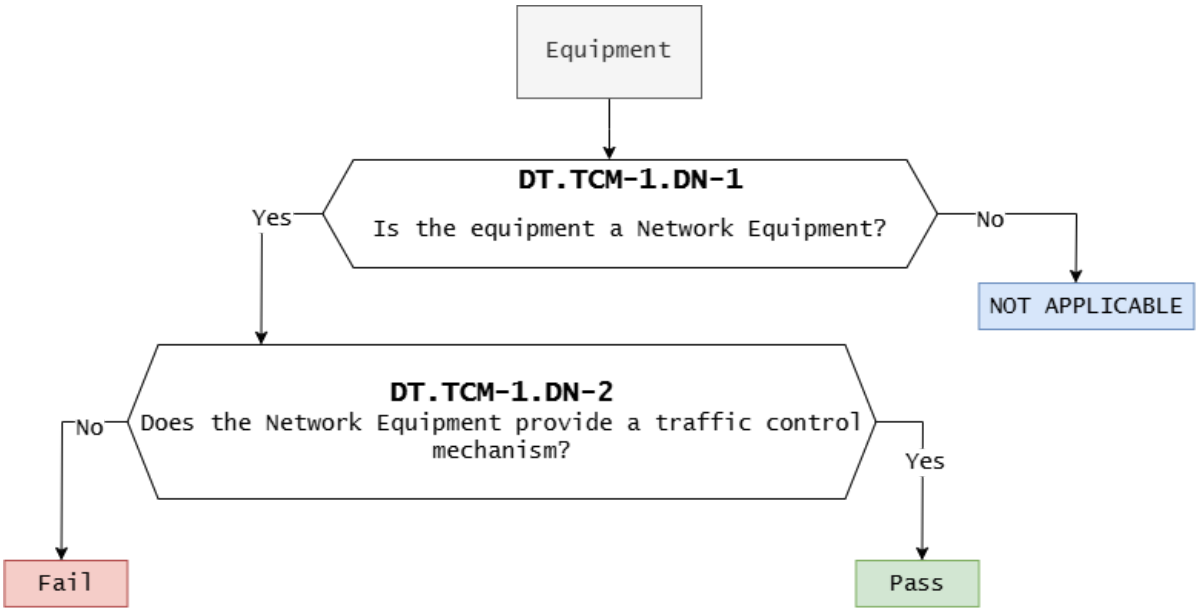

Figure 23 — Decision Tree for requirement TCM-1

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.TCM-1)
TCMA-A	DT.TCM-1.DN-1	No	DUT is network equipment
	DT.TCM-1.DN-2	-	A traffic control mechanism is implemented in the DUT.

Verdict: NOT APPLICABLE

【TCM-1 Functional completeness assessment】

Functional completeness assessment is Not Necessary in this clause since the traffic control mechanism is always mandatory for network equipment.

Verdict : NOT NECESSARY

【TCM-1 Functional sufficiency assessment】

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Asset No.	Document Verification
TCMA-A	N/A

Verdict : PASS

【Supporting Evidence】

The DUT functions solely as a protocol bridge between LoRaWAN end devices and a LoRaWAN Network Server. It does not provide routing, switching, or traffic control between networks. Therefore, it is not considered “network equipment” under this requirement, and the obligation to provide network traffic control mechanisms is not applicable.

TCM-1 Summary Assessment	Verdict
Conceptual assessment	NOT APPLICABLE
Functional completeness assessment	NOT NECESSARY
Functional sufficiency assessment	NOT APPLICABLE

4.9 [CCK] Confidential cryptographic keys

[CCK-1] Appropriate CCKs

【Requirement】

Confidential cryptographic keys that are preinstalled or generated by the equipment during its use, shall support a minimum security strength of 112-bits, except for:

— CCKs that are solely used by a specific security mechanism, where a deviation is identified and justified under the terms of sections ACM or AUM or SCM or SUM or SSM.

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NOTE 1: Confidential cryptographic key is a defined term. Other secrets, whose disclosure cannot be used to harm the network or its functioning or for the misuse of network resources, such as secrets solely protecting intellectual property are not covered by the definition of confidential cryptographic key.

NOTE 2: The requirement refers to all confidential cryptographic keys chosen by the equipment manufacturer either directly or imposed by a protocol. For instance, the manufacturer directly chooses/configures the cipher suite of TLS protocol to be used by the device, other protocols can impose one single option for cryptographic algorithms and their respective keys.

【CCK-1 Assets】

Asset No.	Asset	Type
CCKA-A	TLS key	Security

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【CCK-1 Conceptual assessment】

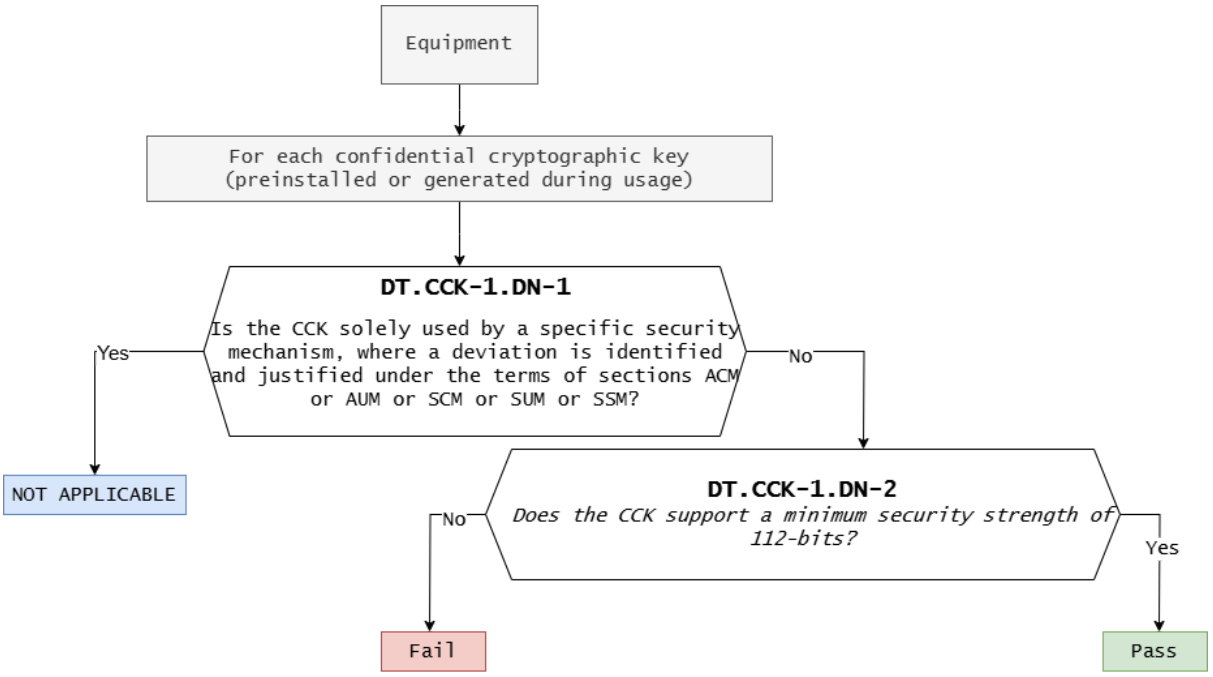

Figure 24 — Decision Tree for requirement CCK-1

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.TCM-1)
CCKA-A	DT.CCK-1.DN-1	No	Not used in specific security mechanisms
	DT.CCK-1.DN-2	Yes	TLS certificate uses RSA 2048-bit; supported key exchange groups offer 112–260 bits of security.

Verdict : PASS

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【CCK-1 Functional completeness assessment】

Asset No.	Document Verification
CCKA-A	Y

Verdict : PASS

【CCK-1 Functional sufficiency assessment】

Asset No.	Implemented
CCKA-A	Y

Verdict : PASS

【Supporting Evidence】

sslscan

```
  Supported Server Cipher(s):
Preferred TLSv1.2  256 bits  ECDHE-RSA-AES256-GCM-SHA384   Curve P-521 DHE 521
Accepted  TLSv1.2  256 bits  ECDHE-RSA-AES256-SHA384       Curve P-521 DHE 521
Accepted  TLSv1.2  256 bits  ECDHE-RSA-AES256-SHA          Curve P-521 DHE 521
Accepted  TLSv1.2  128 bits  ECDHE-RSA-AES128-GCM-SHA256   Curve P-521 DHE 521
Accepted  TLSv1.2  128 bits  ECDHE-RSA-AES128-SHA256       Curve P-521 DHE 521
Accepted  TLSv1.2  128 bits  ECDHE-RSA-AES128-SHA          Curve P-521 DHE 521

  Server Key Exchange Group(s):
TLSv1.2  112 bits  secp224k1
TLSv1.2  112 bits  secp224r1
TLSv1.2  128 bits  secp256k1
TLSv1.2  128 bits  secp256r1 (NIST P-256)
TLSv1.2  192 bits  secp384r1 (NIST P-384)
TLSv1.2  260 bits  secp521r1 (NIST P-521)
TLSv1.2  128 bits  brainpoolP256r1

  SSL Certificate:
Signature Algorithm: sha256WithRSAEncryption
RSA Key Strength:    2048

Subject:  *.browan.com
Altnames: IP Address:192.168.4.1, IP Address:192.168.55.20
Issuer:   Browan Communications Inc

Not valid before: Aug 26 06:58:01 2025 GMT
Not valid after:  Aug  2 06:58:01 2125 GMT
```

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CCK-1 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

[CCK-2] CCK generation mechanisms

【Requirement】

The generation of confidential cryptographic keys shall adhere to best practice cryptography, except for:

— the generation of CCKs for a specific security mechanism, where a deviation is identified and justified under the terms of sections ACM or AUM or SCM or SUM or SSM.

NOTE: Confidential cryptographic key is a defined term. Other secrets, whose disclosure cannot be used to harm the network or its functioning or for the misuse of network resources, such as secrets solely protecting intellectual property are not covered by the definition of confidential cryptographic key.

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【CCK-2 Conceptual assessment】

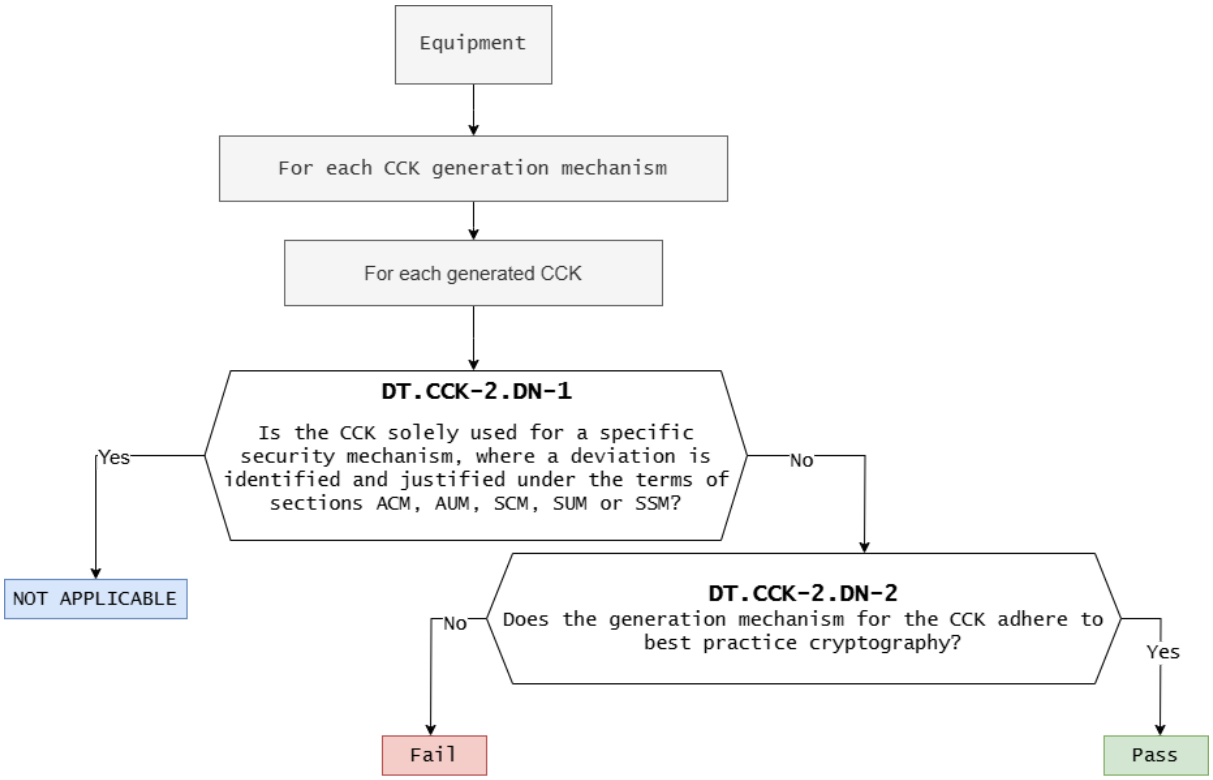

Figure 25 — Decision Tree for requirement CCK-2

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.CCK-2)
CCKA-A	DT.CCK-2.DN-1	No	Not utilized in specific security mechanisms.
	DT.CCK-2.DN-2	Yes	The generation mechanism adheres to established cryptographic best practices.

Verdict: PASS

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【CCK-2 Functional completeness assessment】

Asset No.	Document Verification
CCKA-A	Y

Verdict : PASS

【CCK-2 Functional sufficiency assessment】

There is significant complexity surrounding the validation of cryptographic key generation mechanisms and typically they will be implemented by a third party with significant cryptographic expertise, who is unlikely to share details of such key generation processes. Given these considerations, no functional sufficiency assessment is provided for this requirement.

Verdict : NOT NECESSARY

【Supporting Evidence】

The TLS key pair is generated using secure random number generation and conforms to industry standards with a 2048-bit RSA key length and SHA-256 signature algorithm, thereby adhering to established cryptographic best practices.

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```
  Supported Server Cipher(s):
Preferred TLSv1.2  256 bits  ECDHE-RSA-AES256-GCM-SHA384   Curve P-521 DHE 521
Accepted  TLSv1.2  256 bits  ECDHE-RSA-AES256-SHA384       Curve P-521 DHE 521
Accepted  TLSv1.2  256 bits  ECDHE-RSA-AES256-SHA          Curve P-521 DHE 521
Accepted  TLSv1.2  128 bits  ECDHE-RSA-AES128-GCM-SHA256   Curve P-521 DHE 521
Accepted  TLSv1.2  128 bits  ECDHE-RSA-AES128-SHA256       Curve P-521 DHE 521
Accepted  TLSv1.2  128 bits  ECDHE-RSA-AES128-SHA          Curve P-521 DHE 521

  Server Key Exchange Group(s):
TLSv1.2  112 bits  secp224k1
TLSv1.2  112 bits  secp224r1
TLSv1.2  128 bits  secp256k1
TLSv1.2  128 bits  secp256r1 (NIST P-256)
TLSv1.2  192 bits  secp384r1 (NIST P-384)
TLSv1.2  260 bits  secp521r1 (NIST P-521)
TLSv1.2  128 bits  brainpoolP256r1

  SSL Certificate:
Signature Algorithm: sha256WithRSAEncryption
RSA Key Strength:    2048
```

CCK-2 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	NOT NECESSARY

[CCK-3] Preventing static default values for preinstalled CCKs

【Requirement】

Preinstalled confidential cryptographic keys shall be practically unique per equipment, except for:

— CCKs that are only used for establishing initial trust relationships under conditions controlled by an authorized entity; or

— CCKS key are shared parameters required for the equipment's intended functionality.

NOTE: Confidential cryptographic key is a defined term. Other secrets, whose disclosure cannot be used to harm the network or its functioning or for the misuse of

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network resources, such as secrets solely protecting intellectual property are not covered by the definition of confidential cryptographic key.

【CCK-3 Conceptual assessment】

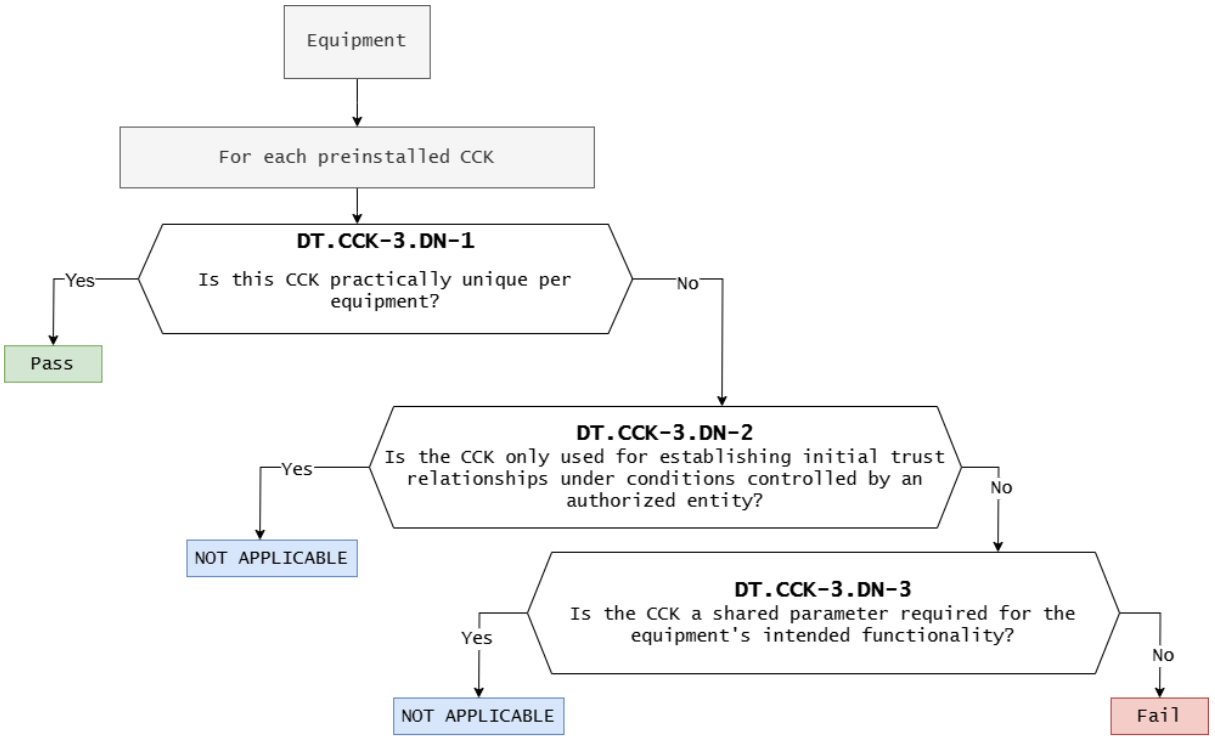

Figure 26 — Decision Tree for requirement CCK-3

【Assessment】

Asset ID	Decision Node	Decision	Justification (E.just.DT.CCK-3)
CCKA-A	DT.CCK-3.DN-1	No	The key is generated automatically upon the device's first startup, rather than being provisioned on the production line with identical keys.
	DT.CCK-3.DN-2	No	After the initial trust is established,

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			unique keys are provisioned and used for further communication.
	DT.CCK-3.DN-3	Yes	The embedded TLS key serves as a shared root parameter required for enabling TLS functionality across all units.

Verdict: PASS

【CCK-3 Functional completeness assessment】

Asset No.	Document Verification
CCKA-A	Y

Verdict : PASS

【CCK-3 Functional sufficiency assessment】

Asset No.	Implemented
CCKA-A	Y

Verdict : PASS

【Supporting Evidence】

Follow CCK-1

CCK-3 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

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4.10 [GEC] General equipment capabilities

[GEC-1] Up-to-date software and hardware with no publicly known exploitable vulnerabilities

【Requirement】

The equipment shall not include publicly known exploitable vulnerabilities that, if exploited, affect security assets and network assets, except for vulnerabilities:

— that cannot be exploited in the specific conditions of the equipment; or

— that have been mitigated to an acceptable residual risk; or

— that have been accepted on a risk basis.

【GEC-1 Assets】

Asset No.	Asset	Software/Hardware
GECA-A	WLRRTES-102	Software

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【GEC-1 Conceptual assessment】

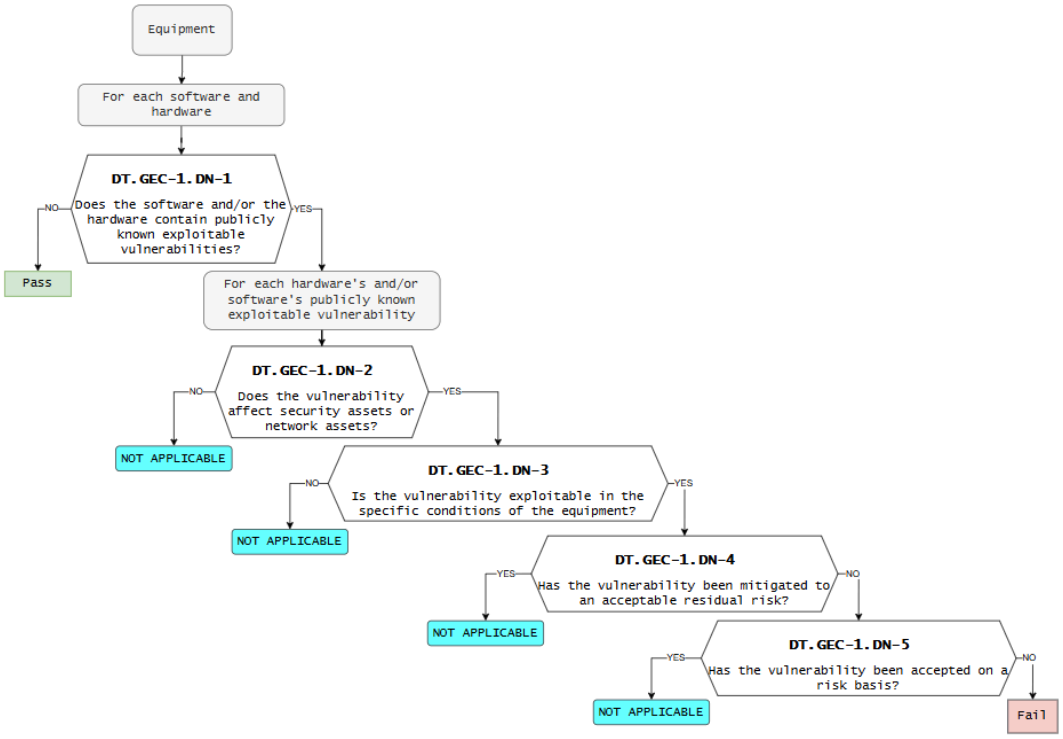

Figure 27 – Decision Tree for requirement GEC-1

【Assessment】

Asset ID	Decision Node	Decision	Justification E.just.DT.GEC-1
GECA-A	DT.GEC-1.DN-1	Yes	Vulnerabilities are identified through the use of vulnerability scanning software.
	DT.GEC-1.DN-2	Yes	Certain vulnerabilities may compromise the security or integrity of network assets.
	DT.GEC-1.DN-3	Yes	The vulnerabilities can be exploited only under specific conditions.
	DT.GEC-1.DN-4	Yes	The vulnerabilities are considered acceptable.

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	DT.GEC-1.DN-5	-	

Verdict : NOT APPLICABLE

【GEC-1 Functional completeness assessment】

Asset No.	Document Verification
GECA-A	Y

Verdict : PASS

【GEC-1 Functional sufficiency assessment】

Asset No.	Implemented
GECA-A	Y

Verdict : PASS

【Supporting Evidence】

1. *The services are not publicly accessible and do not rely on third-party trust.*
2. *The use of a self-signed certificate is intentional and expected behavior.*

Accordingly, this alert is classified as non-actionable findings and does not impact the current risk level assessment.

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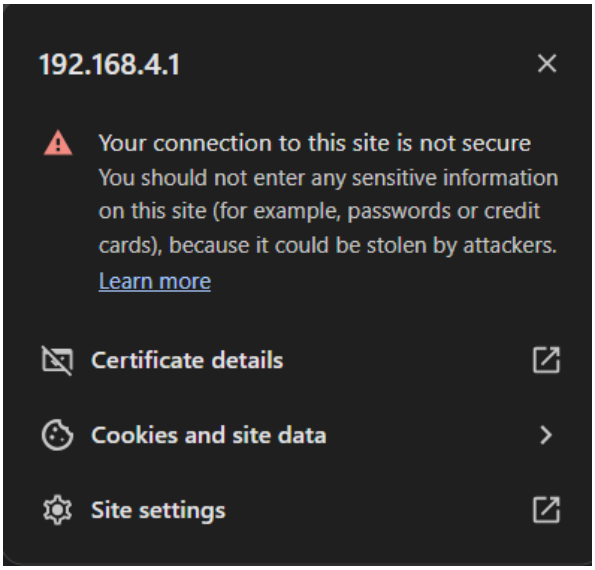

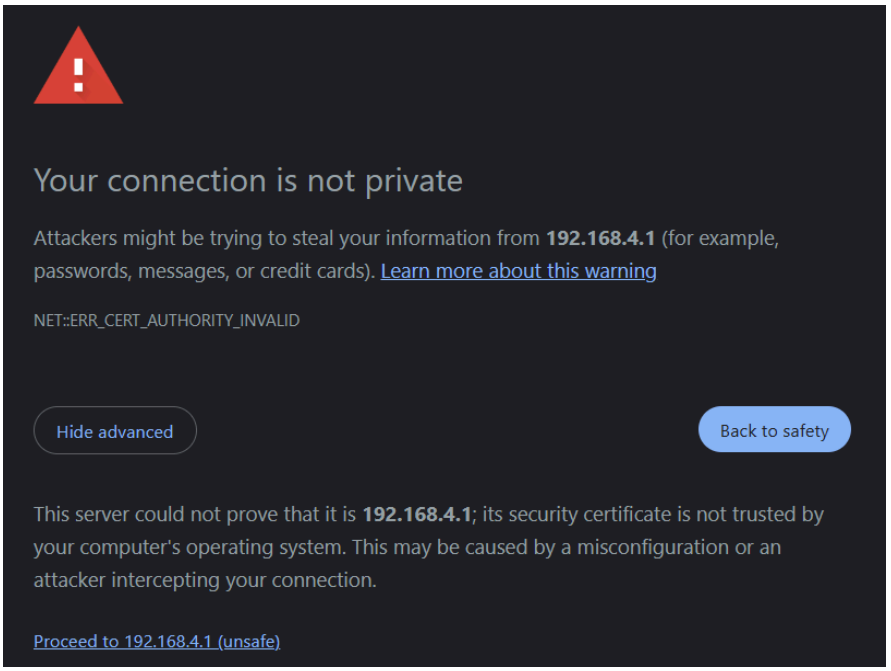

GEC-1 Summary Assessment	Verdict
Conceptual assessment	NOT APPLICABLE
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

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[GEC-2] Limit exposure of services via related network interfaces

【Requirement】

In factory default state the equipment shall only expose

— network interfaces; and

— services via network interfaces

affecting security assets or network assets which are necessary for equipment setup or for basic operation of the equipment.

【GEC-2 Assets】

Asset No.	Asset	Software/Hardware
GECA-B	Web	Software

【GEC-2 Conceptual assessment】

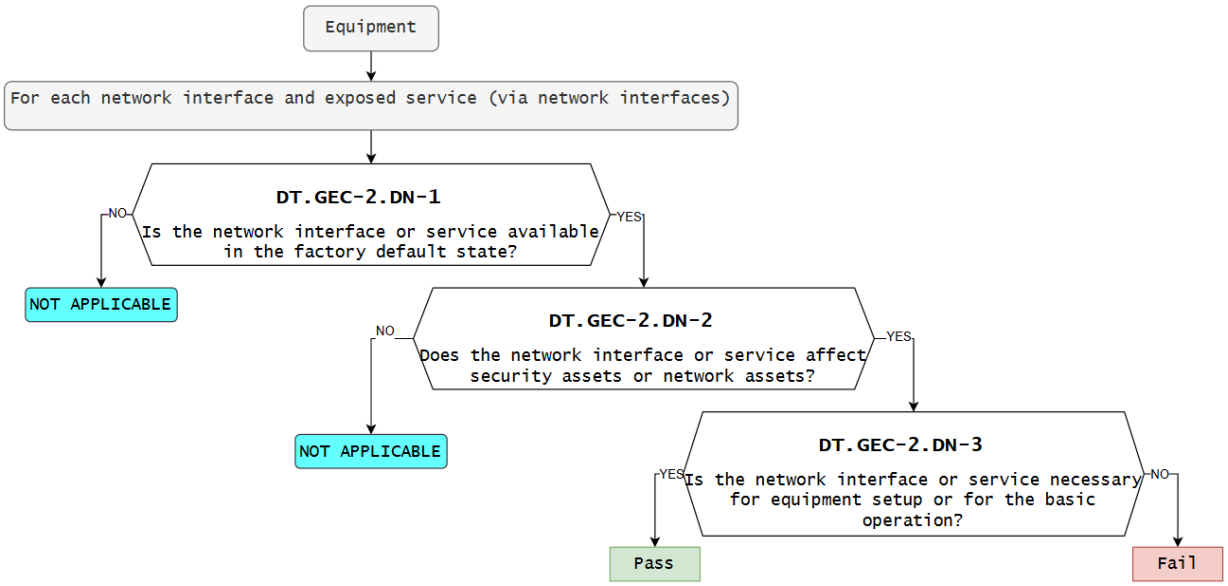

Figure 28 – Decision Tree for requirement GEC-2

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【Assessment】

Asset ID	Decision Node	Decision	Justification E.just.DT.GEC-2
GECA-B	DT.GEC-2.DN-1	No	Web service is not enabled by default.
	DT.GEC-2.DN-2	No	Web Service is limited to basic status display and does not expose or modify any security assets or network assets.
	DT.GEC-2.DN-3	Yes	Web Service is required for initial equipment setup and basic configuration

Verdict : PASS

【GEC-2 Functional completeness assessment】

Asset No.	Document Verification
GECA-B	Y

Verdict: PASS

【GEC-2 Functional sufficiency assessment】

Asset No.	Implemented
GECA-B	Y

Verdict : PASS

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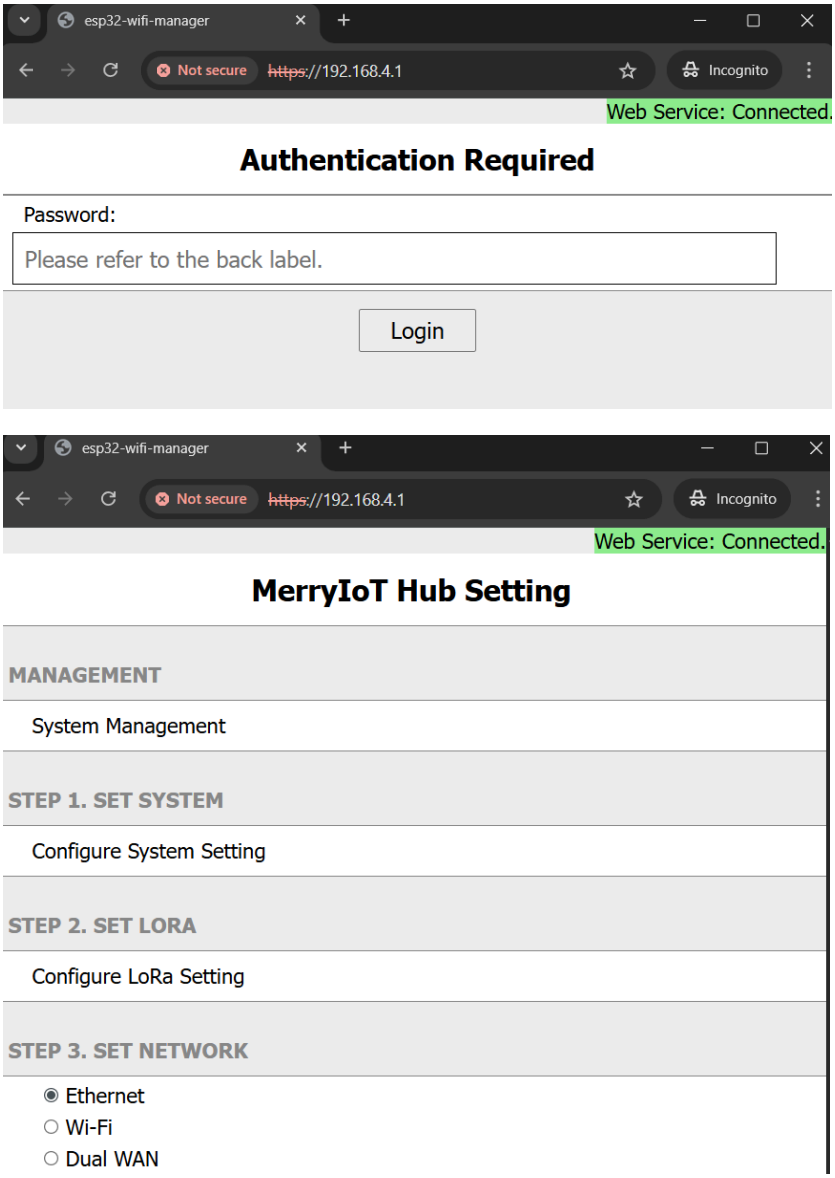
【Supporting Evidence】

The built-in Web Service is required for initial equipment setup and basic configuration in the factory default state. It is therefore considered necessary for equipment setup, leading to a Pass result.



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GEC-2 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

[GEC-3] Configuration of optional services and the related exposed network interfaces

【Requirement】

Optional network interfaces or optional services exposed via network interfaces affecting security assets or network assets, which are part of the factory default state shall have the option for an authorized user to enable and disable the network interface or service.

【GEC-3 Conceptual assessment】

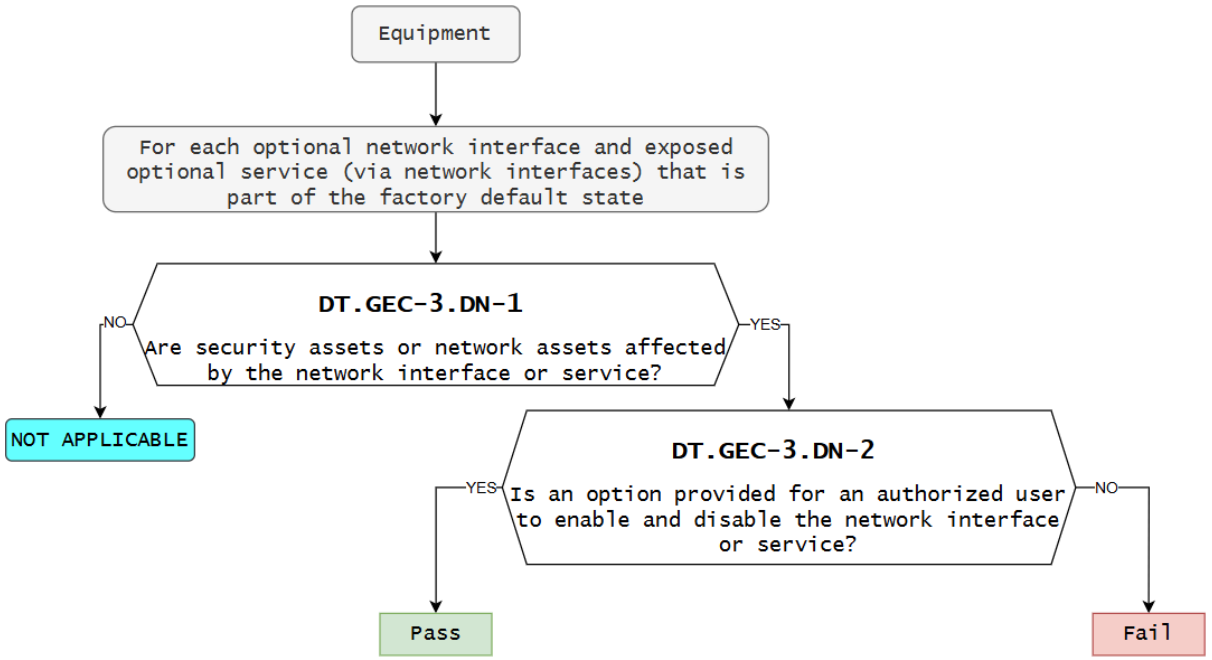

Figure 29 – Decision Tree for requirement GEC-3

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【Assessment】

Asset ID	Decision Node	Decision	Justification E.just.DT.GEC-3
GECA-B	DT.GEC-3.DN-1	-	Network-facing interfaces or services may introduce risks to security-critical and network-connected assets.
	DT.GEC-3.DN-2	-	Can enable or disable through system settings

Verdict : NOT APPLICABLE

【GEC-3 Functional completeness assessment】

Asset No.	Document Verification
GECA-B	N/A

Verdict : NOT APPLICABLE

【GEC-3 Functional sufficiency assessment】

NOT APPLICABLE

Verdict: PASS

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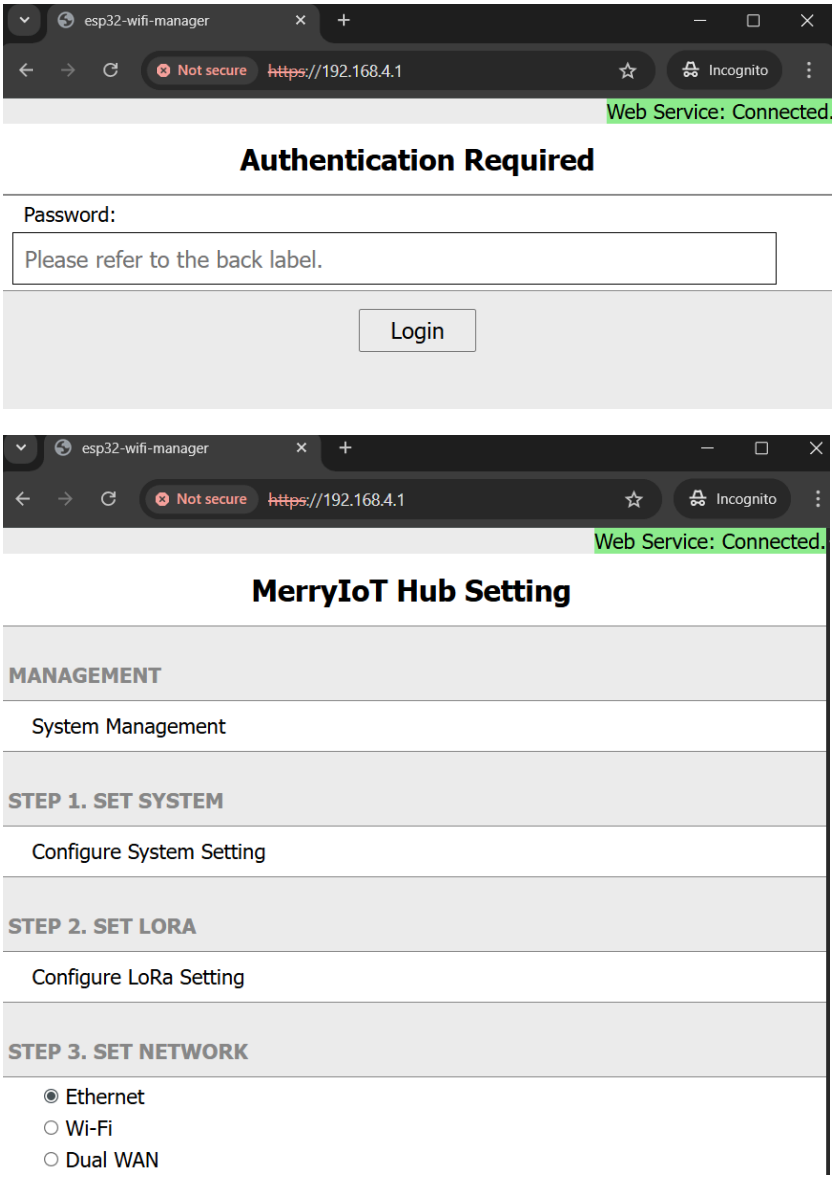
【Supporting Evidence】

The built-in Web Service is required for initial equipment setup and basic configuration in the factory default state. Once the user has completed the configuration and the network connection is established, the Web Service is automatically disabled.



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GEC-3 Summary Assessment	Verdict
Conceptual assessment	NOT APPLICABLE
Functional completeness assessment	NOT APPLICABLE
Functional sufficiency assessment	NOT APPLICABLE

[GEC-4] Documentation of exposed network interfaces and exposed services via network interfaces

【Requirement】

The equipment's user documentation shall contain a description of

— all exposed network interfaces; and

— all services exposed via network interfaces,

which are delivered as part of the factory default state.

【GEC-4 Conceptual assessment】

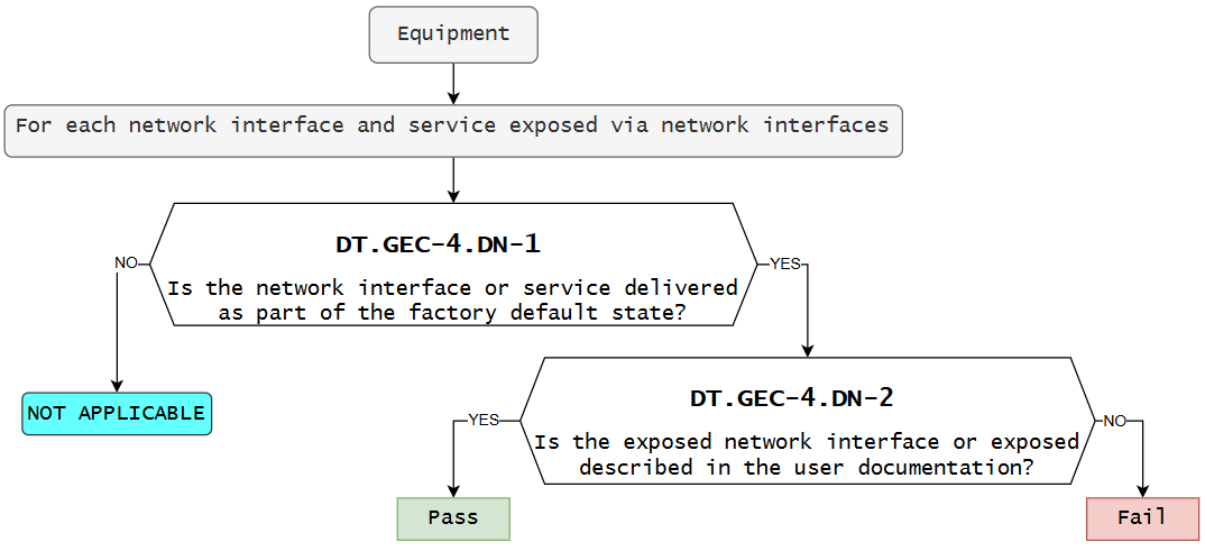

Figure 30 – Decision Tree for requirement GEC-4

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【Assessment】

Asset ID	Decision Node	Decision	Justification E.just.DT.GEC-4
GECA-B	DT.GEC-4.DN-1	Yes	Web service is available
	DT.GEC-4.DN-2	Yes	Details of the exposed network interfaces are provided in the user-facing documentation

Verdict : PASS

【GEC-4 Functional completeness assessment】

Asset No.	Document Verification
GECA-B	Y

Verdict : PASS

【GEC-4 Functional sufficiency assessment】

NONE

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【Supporting Evidence】

1.2 When connected to the SSID, the setup page will open automatically. If the web page doesn't open automatically, please use Firefox or Chrome to open ***"192.168.4.1"*** manually.

For security purposes, the user also has to input the **Password** on the back label as the GUI password to get into the settings pages.

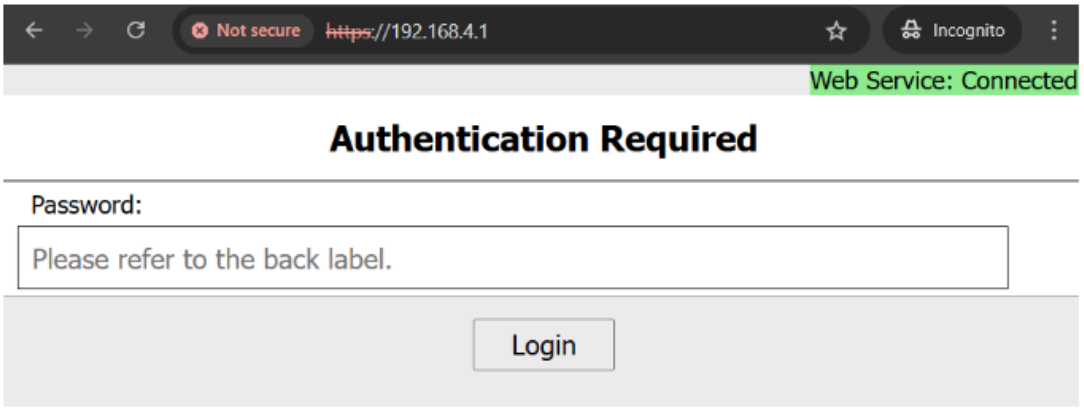

Figure 2 – WEB UI-1

GEC-4 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	NONE

[GEC-5] No unnecessary external interfaces

【Requirement】

The equipment shall only expose physical external interfaces if they are necessary for its intended functionality.

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【GEC-5 Assets】

Asset No.	Asset	Software/Hardware
GECA-C	USB TypeC Connector	Hardware
GECA-D	Reset Button	Hardware
GECA-E	Setup Button	Hardware

【GEC-5 Conceptual assessment】

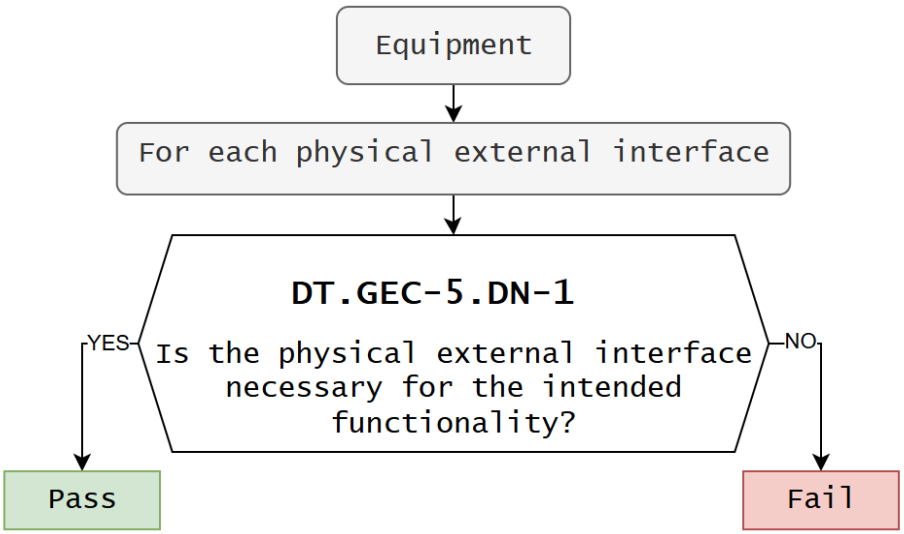

Figure 31 – Decision Tree for requirement GEC-5

【Assessment】

Asset ID	Decision Node	Decision	Justification E.just.DT.GEC-5
GECA-C GECA-D GECA-E	DT.GEC-5.DN-1	Yes	The user manual includes descriptions of all external interfaces.

Verdict : PASS

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【GEC-5 Functional completeness assessment】

Asset No.	Document Verification
GECA-C	Y
GECA-D	Y
GECA-E	Y

Verdict : PASS

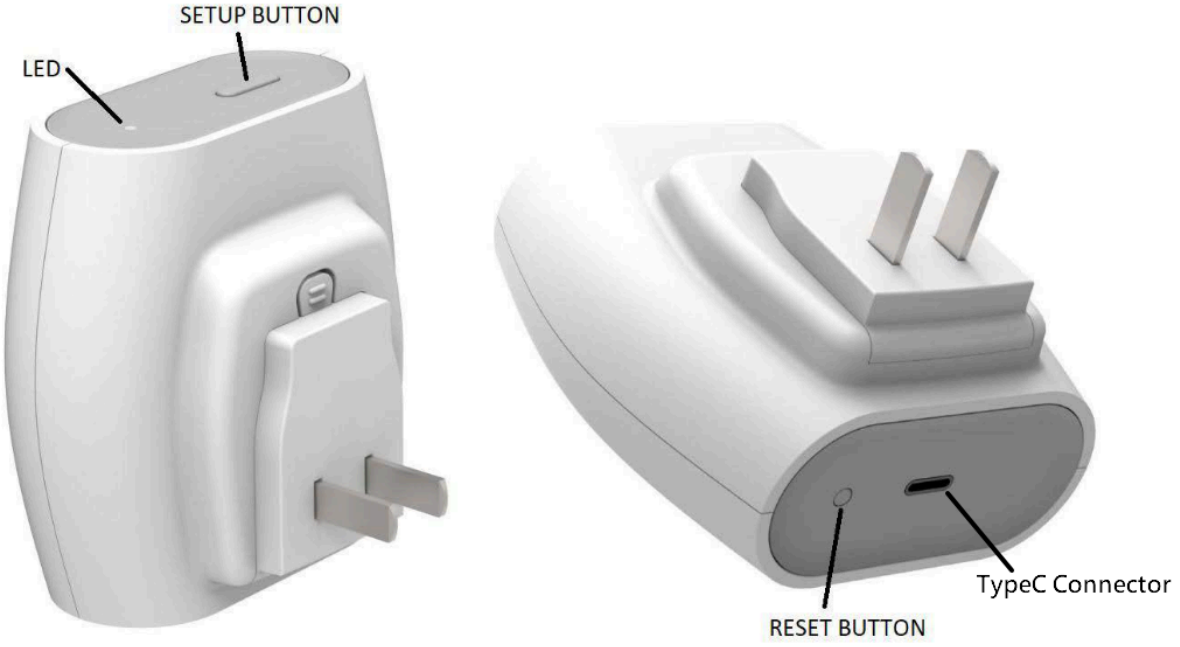
【GEC-5 Functional sufficiency assessment】

NOT APPLICABLE.

Verdict: NOT APPLICABLE

【Supporting Evidence】

The physical external interfaces are essential for the intended functionality, and these interfaces are mentioned in the user manual.



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Buttons

Port	Count.	Description
Reset Button	1	Press and hold for 5 seconds to reset the MiniHub Pro to factory default settings.
Setup Button	1	Press and hold for 5 seconds to clear the Wi-Fi cache and switch back to AP mode.

I/O Ports

Port	Count	Description
USB-C Port	1	Reserved for future development

GEC-5 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	NOT APPLICABLE

[GEC-6] Input validation

【Requirement】

The equipment shall validate input received via external interfaces if the input has potential impact on security assets and/or network assets.

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【GEC-6 Conceptual assessment】

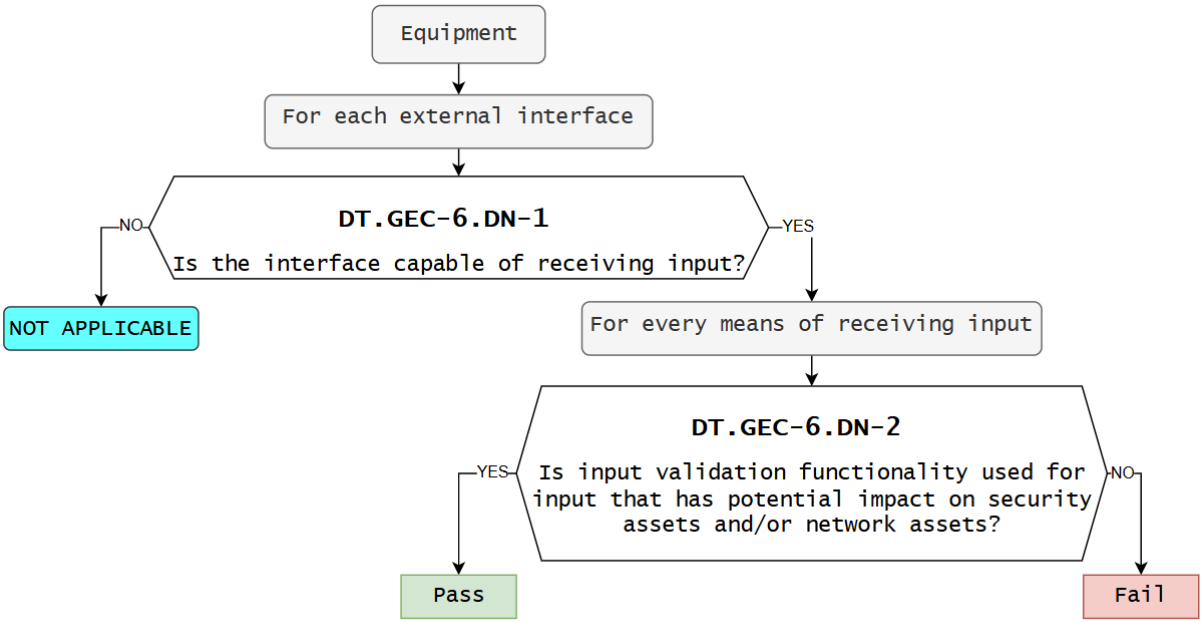

Figure 32 – Decision Tree for requirement GEC-6

【Assessment】

Asset ID	Decision Node	Decision	Justification E.just.DT.GEC-6
GECA-C GECA-D GECA-E	DT.GEC-6.DN-1	No	The WEB GUI and interfaces are available for input operations.
	DT.GEC-6.DN-2	-	Entering special characters or strings is interpreted as an incorrect password.

Verdict: NOT APPLICABLE

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【GEC-6 Functional completeness assessment】

NOT APPLICABLE

Verdict: NOT APPLICABLE

【GEC-6 Functional sufficiency assessment】

NOT APPLICABLE

Verdict: NOT APPLICABLE

【Supporting Evidence】

None.

GEC-6 Summary Assessment	Verdict
Conceptual assessment	NOT APPLICABLE
Functional completeness assessment	NOT APPLICABLE
Functional sufficiency assessment	NOT APPLICABLE

4.11 [CRY] Cryptography

[CRY-1] Best practice cryptography

【Requirement】

The equipment shall use best practice for cryptography that is used for the protection of the security assets or network assets, except for:

— cryptography used for a specific security mechanism, where a deviation is identified and justified under the terms of sections ACM or AUM or SCM or SUM or SSM.

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【CRY-1 Assets】

Asset No.	Asset	Type
CRYA-A	WLRRTES-102	Security

【CRY-1 Conceptual assessment】

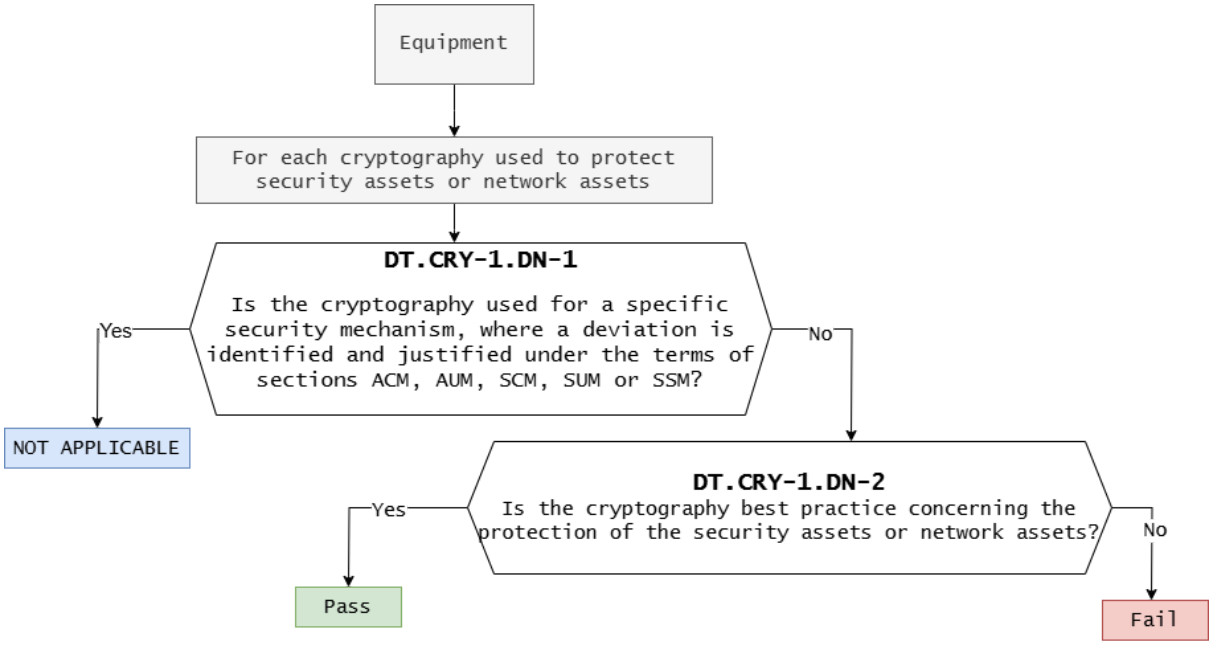

Figure 33 — Decision Tree for requirement CRY-1

【Assessment】

Asset ID	Decision Node	Decision	Justification E.just.DT.CRY-1
CRYA-A	DT.CRY-1.DN-1	No	There are no dedicated security protections implemented for ACM, AUM, SCM, SUM, or SSM
	DT.CRY-1.DN-2	Yes	Cryptographic methods following industry best

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			practices are implemented to protect the confidentiality and integrity of security and network assets.

Verdict : PASS

【CRY-1 Functional completeness assessment】

Asset No.	Document Verification
CRYA-A	Y

Verdict : PASS

【CRY-1 Functional sufficiency assessment】

Asset No.	Implemented
CRYA-A	Y

Verdict : PASS

【Supporting Evidence】

Best-practice cryptographic methods are applied in the DUT to protect assets.

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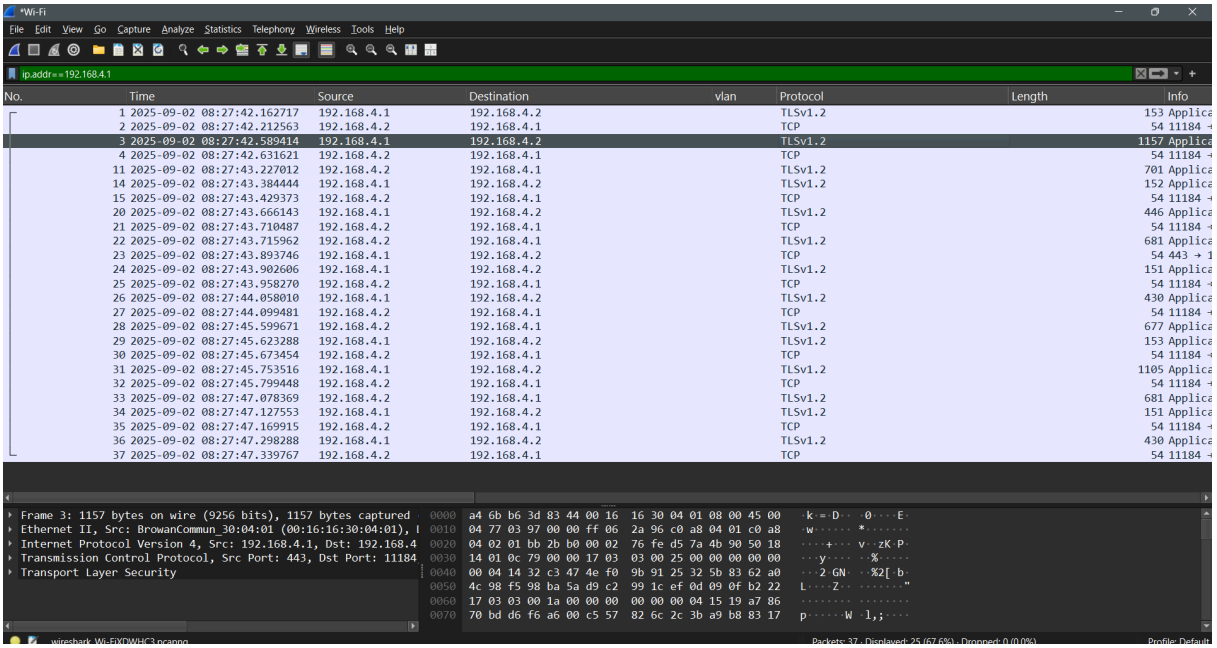


```
  Supported Server Cipher(s):
Preferred TLSv1.2  256 bits  ECDHE-RSA-AES256-GCM-SHA384    Curve P-521 DHE 521
Accepted  TLSv1.2  256 bits  ECDHE-RSA-AES256-SHA384        Curve P-521 DHE 521
Accepted  TLSv1.2  256 bits  ECDHE-RSA-AES256-SHA           Curve P-521 DHE 521
Accepted  TLSv1.2  128 bits  ECDHE-RSA-AES128-GCM-SHA256    Curve P-521 DHE 521
Accepted  TLSv1.2  128 bits  ECDHE-RSA-AES128-SHA256        Curve P-521 DHE 521
Accepted  TLSv1.2  128 bits  ECDHE-RSA-AES128-SHA           Curve P-521 DHE 521

  Server Key Exchange Group(s):
TLSv1.2  112 bits  secp224k1
TLSv1.2  112 bits  secp224r1
TLSv1.2  128 bits  secp256k1
TLSv1.2  128 bits  secp256r1 (NIST P-256)
TLSv1.2  192 bits  secp384r1 (NIST P-384)
TLSv1.2  260 bits  secp521r1 (NIST P-521)
TLSv1.2  128 bits  brainpoolP256r1

  SSL Certificate:
Signature Algorithm: sha256WithRSAEncryption
RSA Key Strength:    2048
```

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CRY-1 Summary Assessment	Verdict
Conceptual assessment	PASS
Functional completeness assessment	PASS
Functional sufficiency assessment	PASS

----------THE END OF REPORT----------