

TLN WRO Certification type Document

< General Certification Procedures >



Document Housekeeping

Document Category and type

CAT	TYPE	DOC ID	Comment
General	CERT	TLN-WRO-TA-G-C-PAAA	Certification type documents (-CERT) describe the certification process and methodology (so not the interfaces or protocols, those are found in the specification type documents)

Document Status

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<u>2.0</u>	<u>29.12.2018</u>	<u>Final</u>

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List of Appendixes

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None

List of References

This document may refer to external documents or information sources.

A reference to an external document or information source is in this document highlighted with grey background.

The list of referred external documents or information sources in this document:

Reference 1: TLN-WRO-TA-G-M-PAAG - Test & Implementation Procedures

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1 **Abstract**

Certification type documents have as purpose to describe the roles and responsibilities in the certification process of Telenet and the AO, the test procedures and the interaction between Telenet and AO throughout the product lifecycle of AO Customer Premises Equipment (CPE) with as main goal to ensure at any moment in time correct interoperability between the AO CPE and Telenet infrastructure according to the relevant specifications. The same types of certification documents and procedures are also applicable for Telenet network to AO network level of interconnections.

All sections in this document are generic sections specifying certification procedures applicable to all AO CPE or network equipment that will be connected to the Telenet network.

2 Rules of engagement

The AO underwrites following engagements when introducing CPE or network equipment that needs direct connection with Telenet network infrastructure:

- (1) The AO informs Telenet in writing of its intention to introduce new or upgraded CPE or network equipment before planned launch date using the foreseen procedures, as described below.
- (2) The AO proves (by demonstrating prior experience of involved people) that it has sufficient technical knowledge and capabilities in the domain of the envisaged equipment.
- (3) The AO proves (by demonstrating prior experience of involved people) that it has sufficient technical knowledge and capabilities in the main cable network specific technologies (RF, Docsis, DVB-C, ...)
- (4) The AO will have the capabilities to test and (if required) update its equipments when Telenet is introducing network upgrades (enhancements, security updates, etc.) according to the typical timelines as described further in this document.
- (5) The AO will have the necessary resources to execute its obligations as described in this document.
- (6) The AO explicitly acknowledges that Telenet is by no means responsible to engineer or test the AO systems or equipments towards delivering correct end-user functionality. Certification will only verify if the AO equipment/systems behave correctly and are developed according to the specification documented in the Telenet WRO.
- (7) Telenet will require certification testing on the AO CPE and systems or part thereof in accordance with the certification procedures described. The decision to conduct certification tests in full or partial scope is at Telenet's sole discretion and shall be in no way be a waiver for AO responsibility to duly execute complete qualification testing on all relevant systems and interfaces.
- (8) For CPE equipment the Certification and the initial interoperability tests should be conducted by an external, recognized and independent certification party according to the specification of the Telenet reference offer:
 - Recognized: The external certification party is recognized by the sector for executing these kind of certifications.
 - Independent: The external certification party is operator and vendor independent.
 - Equipped: The external certification party has the needed Telenet reference infrastructure to be able to execute interoperability tests.
- (9) Telenet will need to confirm beforehand to the AO that the AO selected certification party is accepted as an external, recognized and independent certification party.

3 Confidentiality

- (10) The information that will be disclosed in the framework of the certification process will be covered by a specific NDA, being properly executed prior to the information exchange. It should be noted that Telenet might be bound by NDAs with its suppliers and that Telenet cannot guarantee that vendor NDAs can be successfully extended to include AO's.

4 New AO CPE or network equipment introduction procedures

4.1 Introduction

- (11) This section describes in brief the different generic steps that an AO will follow in order to introduce a new AO CPE or AO network equipment interacting with one or more components of the Telenet WRO and that will cause the execution of the certification tests and procedures as described in this document.
- (12) Such certification tests and procedures will be performed as described below, executed at the moment an AO introduces new equipment interacting with the Telenet Network.
- (13) The AO will communicate towards Telenet in advance its plans to introduce new AO CPE hardware or new AO network equipment and will announce towards Telenet its desired timetable for field implementation.
- (14) We distinguish three phases.
 - The initial Certification Phase where new equipment needs to be tested for compliance to the specification of the reference offer.
 - The initial interoperability test phase where the equipment is verified for correct interaction with other equipment in the Telenet network.
 - A continuous interoperability test phase where all equipment in the network is regularly regression tested to guarantee continuous correct working on the Telenet network.

4.2 Initial Certification

- (15) This initial phase is needed every time a new CPE or interface is to be introduced on the Telenet network.
- (16) The hardware and software are tested against the specifications as documented in the annexes of the Telenet reference offer.
- (17) For CPE equipment this certification is to be performed by an external, recognized and independent certification party, mutual agreed by both parties. And the tests are performed according to the Telenet specifications.
- (18) For a Eurodocsis modem the certification must always be validated by an external, recognized and independent certification party, mutual agreed by both parties..
- (19) For an (i)DTV DVB-C Decoder certification will also be needed by the vendor of the chosen 3th party CAS solution.

4.3 Initial Interoperability tests

- (20) With the initial interoperability tests it is verified how the certified product will behave in regard to interaction with other systems in the Telenet network.
- (21) This interaction of equipment is both hardware and software dependent.
- (22) The beneficiary will conduct this interoperability tests for CPE equipment by an external, recognized and independent certification party. Under the strict conditions that this party has a test environment matching the Telenet reference offer network.
- (23) For network equipment these tests are part of the test and implementation phase that is set up between Telenet and the AO.

4.4 Continuous Interoperatibilty tests

- (24)After a new CPE device has passed the certification and initial interoperatibilty test phases with success, the CPE will be included in the continuous interoperatibilty test environment from Telenet.
- (25)In this environment regularly regression tests are executed involving all CPE devices present in the Telenet network. This is to guarantee stable network performance at all times.
- (26)These tests are to ensure that the CPE behaves correct towards the network and does not introduce any interference for other equipment or any load on the network (e.g. constant rebooting). These tests do not test the application on the CPE device itself.
- (27)In order for Telenet to perform these tests, the AO will deliver a minimal amount of 5 certified and final CPE versions towards Telenet.
- (28)After successfull completion of these tests Telenet will provision the CPE in the network so that the AO can start a roll out with its end users. Note that the SW for the CPE is downloaded to the CPE via the Telenet network.
- (29)This test cycle will need a minimal duration of 1 month to be successfull.
- (30)The AO will need to alter the HW/SW needed on the CPE to make sure that this stability test is successful. Telenet has the right to deactivate and forbid any equipment versions that cause instability on its network.

5 AO CPE or network equipment upgrade procedures

- (31) This section describes in brief the different generic steps that an AO will need to follow in order to introduce an upgrade to an AO CPE or AO network equipment interacting with one or more components of the Telenet WRO and that will cause the execution of the certification tests and procedures as described in this document.
- (32) Such certification tests and procedures will also be performed whenever an AO desires to perform one of the following actions during the commercial operation of its service after successful implementation of the initial implementation project:
- Introduction of a new software version on an existing AO CPE hardware
 - Introduction of small hardware revision variants to an existing AO CPE that do not modify the functionality
 - Introduction of new software versions on AO network equipment hardware interfacing with the Telenet network
 - Introduction of small hardware revisions on AO network equipment hardware interfacing with the Telenet network
 - Introduction of new interface type cards with similar functionalities on AO network equipment hardware interfacing with the Telenet network
- (33) The AO will communicate towards Telenet in advance its plans for upgrades on AO CPE software / hardware or upgrades on AO network equipment software / hardware and will announce towards Telenet its desired timetable for field implementation.
- (34) Based on the information provided by the AO, Telenet will determine which parts of the full certification test specifications are applicable to the specific upgrades as being proposed by the AO.
- (35) The decision of what tests are in scope or out of scope for upgrades is at the sole discretion of Telenet.
- (36) For CPE equipment the requested re-certification and/or interoperability tests must be performed by an external, recognized and independent certification party.
- (37) In any case Telenet can, if it notices during the execution of the certification tests, that more changes have been introduced than originally communicated by the AO, decide at its own discretion to make the full test specification applicable, or even introduce additional certification test cases compared to the original list, if it has reasonable doubts that the modification on the AO CPE or network equipment could negatively impact the Telenet network and services in domains not previously discovered.
- (38) For CPE equipment after the re-certification (as mentioned in paragraph 34) and interoperability tests are concluded successfully by the external party, the AO must provide the updated HW/SW to Telenet to start the Continuous Interoperability test as described in 4.4.

6 Telenet network upgrade procedures

- (39) Telenet is executing from time to time upgrades to its network to keep it in pace with technological evolutions.
- (40) During such upgrade programs Telenet will do its best endeavors to keep the network interfaces backward compatible so that the CPE and network interfaces from the AO are not impacted by the network upgrades.
- (41) However this backward compatibility may not always be possible, e.g. during major technology step ups (e.g. the former upgrade from Docsis 2.0 to Docsis 3.0).
- (42) In addition, even if upgrades are assumed to be backward compatible, re-testing of certain interfaces may be required.
- (43) Telenet will perform the continuous interoperability test with all CPE devices included and the specific network component that is upgraded in a lab environment.
- (44) Telenet will determine the re-certification requirements, against the specifications as documented in the annexes of the Telenet reference offer, towards the AO caused by Telenet network upgrades and communicate those towards the AO.
- (45) The re-certification tests will be issued according to the procedures as described in section 5 of this document.
- (46) In the event that a certain AO-CPE needs an update to cope with the network upgrade, Telenet assumes that the AO will implement it in a 3 months timeframe. After that date Telenet will decide what to do, but an AO can by no means halt the network upgrade process from Telenet to happen.