

TLN WRO Certification type Document

< General certification procedure for AO STB to
enable usage of TLN AIDTV >



Document Housekeeping

Document Category and type

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

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This document has come into effect as of xx/xx/2012 and remains valid until a valid subsequent Telenet Wholesale Reference offer, substituting this document is published.

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List of Appendixes

This document may refer to further detailed documents that are added in Appendixes to this document.

A reference to an appendix is in this document highlighted with grey background.

The list with appendixes of this document:

A. Appendix A, < APP-I-C-PIAA-A > contains :

1) Appendix A1 - <Test List>

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 CAT: i(DTV): TLN-WRO-TA-I-S-PIAA

Reference 2: TLN WRO CAT: General: TLN-WRO-TA-G-C-PDAA

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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 TLN 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 TLN infrastructure according to the relevant specifications. The same types of certification documents and procedures are also applicable for TLN network to AO network level of interconnections.

Generic sections specifying certification procedures applicable to all AO CPE or network equipment that will be connected to the TLN network are described in General Certification Procedures Document [TLN-WRO-TA-G-C-PDAA](#).

Section 2 defines the specific test set applicable to the AO CPE or network equipment which is the subject of this specific document.

The feasibility of the technical designs and methods described in this document are subject to verification by a Proof of Concept (POC) test organized by Telenet and may be changed or updated depending on the outcome of this POC.

2 Test Specifications for the general certification procedure for AO STB to enable usage of TLN AIDTV

2.1 Introduction

- (1) The tests will cover all of the requirements specified by TLN in the specification document with identification **TLN_WRO_TA_I_C_PIAA**.

2.2 Test list

- (2) The test list for this AO equipment is included in **Appendix A1** to this document

2.3 Test score card

CONFORMANCE TEST SCORE CARD					
Conformance Test Score Card Number	TLN-WRO-TA-TSC-C-PIAA				
Test Identification					
Test Execution Date					
Test Run Type	Full / Reduced _(without OOS cases)				
Device / Equipment / Interface Name					
Device / Equipment / Interface Type / Class					
AO Device / Equipment / Interface Identification					
Software Version					
Tested by					
Overall Result Status	Pass / Fail				
Applicability	Select 1 or more : ROTV / ROBB / AIDTV				
CONFORMANCE TEST ITEM LIST					
Test Cases Summary	FORMAT	IN SCOPE	MAN	PASS/FAIL	REM
			"Y/N"	"P/F"	(*xy)
4. AO STB General Functional Requirements	HO				
4.1. AO STB Hardware and OS	NA		Y		
4.2. AO STB Middleware	NA		Y		
4.3. AO STB Business Logic Layer	NA		Y		
4.4. AO STB User Interface Layer	NA		Y		
4.5. AO STB DVB-C Cable Front End			Y		
4.6. AO STB CAS Subsystem			Y		
4.7. IP Return Path			Y		
4.8. VOD Client Subsystem			Y		
4.9. AO Device Management by TLN Requirements			Y		
5. AO STB General Non-Functional Requirements	HO				
5.1. Mechanical Requirements			Y		
5.2. Environmental Requirements			Y		
5.3. Safety Requirements			Y		
5.4. EU Consumer Goods Label Requirements			Y		
Remarks					
(*xy) : "Remark explanation comes here"					

Appendix A1

Test list for the general certification procedure for AO STB to enable usage of TLN AIDTV, reference code: TLN-WRO-TA-I-C-PIAA.

Test reference or description	OK/KO /NA	Comment
4 AO STB Functional Requirements		
4.1 AO STB HW and OS	NA	
4.2 AO STB Middleware	NA	
4.3 AO STB Business Logic Layer	NA	
4.4 AO STB User Interface Layer	NA	
4.5 AO STB DVB-C cable front-end		
4.5.1 QAM tuner module		
4.5.1.1 Check if AO STB QAM Tuner Module supports 64 QAM modulation		
4.5.1.2 Check if AO STB QAM Tuner Module tunes to signal in 64 QAM Modulation		
4.5.1.3 Check if AO STB QAM Tuner Module supports 256 QAM modulation		
4.5.1.4 Check if AO STB QAM Tuner Module tunes to signal in 256 QAM Modulation		
4.5.2 MPTS DEMUX module		
4.5.2.1 Check if AO STB MPTS Module de-multiplexes TV Channels from a specific MUX		
4.5.2.2 Check if AO STB MPTS Module de-multiplexes Radio Channels from a specific MUX		
4.5.2.3 Check if AO STB MPTS Module de-multiplexes Data Channels from a specific MUX		
4.5.2.4 Check if Selected TV Channels from a specific MUX are displayed properly		
4.5.2.5 Check if Selected Radio Channels from a specific MUX are displayed properly		
4.5.2.6 Check if Selected Data Channels from a specific MUX are displayed properly		
4.5.2.7 Check if AO STB MPTS Module de-multiplexes variable bit rate data streams (digital TV - digital audio) in one fixed bit-rate transport stream (on a MUX)		
4.5.3 DVB-C PSI/SI signalling decoding module		
4.5.3.1 Check if AO STB PSI/SI Module decodes the correct TS id from several Transport Streams		
4.5.3.2 Check if AO STB PSI/SI Module decodes the correct program number of the selected service within a specific Transport Stream		
4.6 AO STB CAS Subsystem		
4.6.1.1 Check if AO STB descrambles encrypted channels of a specific package with authorized smart card (SC)		
4.6.1.2 Check if AO STB does not descramble encrypted channels of a specific package with unauthorized or invalid smart card (SC)		
4.6.1.3 Check if Provisioned AO STB descrambles encrypted channels of a specific package in a Software Smart Card (Smartcard-less) solution		

4.6.1.4	Check if Not Provisioned AO STB does not descramble encrypted channels of a specific package in a Software Smart Card (Smartcard-less) solution		
4.7	IP Return Path		
4.7.1.1	Check if Link Status is UP for the Modem port to which STB is connected - REMARK: We should check if it is possible with SNMP		
4.7.1.2	Check if GRE IP Tunnel for STB is up when it is checked from GTC		
4.7.1.3	Check if Resolved MAC Address from GTC side belongs to the AO STB - REMARK: We should check if this is possible or this test option could be added to the Modem Tests		
4.7.1.4	Check if GTC pings the tunnel end point of GRE IP Tunnel for STB		
4.7.1.5	Check if IP Return Path is not used for Interactivity Services (i.e. Video Web Services) from AO STB - REMARK: We should check if it is possible to check via GTC Accounting Function		
4.7.1.6	Check if all the Return Path traffic diverted into TLN Network with a specific Interconnection mechanism at the RPOIs for Non cable Solution - REMARK: We should check how this condition will work when exchanging SNMP traffic		
4.8	VOD Client Subsystem		
4.8.1.1	Check if VOD Asset can be purchased properly by using AO STB VOD Subsystem		
4.8.1.2	Check if VOD Asset starts properly within a specific period of time after a Play command		
4.8.1.3	Check if VOD Asset pauses properly after a Pause command		
4.8.1.4	Check if VOD Asset is released if the pause period exceeds the limited amount of time		
4.8.1.5	Check if VOD Asset continues properly after resending Pause/Play Command		
4.8.1.6	Check if Slow Motion Function works properly		
4.8.1.7	Check if Fast Forward Function works properly		
4.8.1.8	Check if Rewind Function works properly		
4.8.1.9	Check if AO STB reports the error in case of any problem - REMARK: We should check that any problem could be related to the network, authentication and resource only by ingesting example error into the network		
4.9	AO Device Management by TLN Requirements		
4.9.1	Concept and Purpose	NA	
4.9.2	Device Management Functions		
4.9.2.1	Check if STB Data-Link Loopback Test - (Ethernet) is successful REMARK: (i.e. Ping Test from AO-NCP to STB is successful without packet loss)		
4.9.2.2	Check if STB Data-Link Loopback Test - (SNR) is successful REMARK: (i.e. SNR rates are compatible within specified rates)		
4.9.2.3	Check if STB Data-Link Loopback Test - (BER) is successful REMARK: (i.e. BER rates are compatible within specified rates)		
4.9.2.4	Check if STB Data-Link Loopback Test - (ERRPKT) is successful REMARK: (i.e. ERRPKT rates are compatible within specified rates)		
4.9.2.5	Check if STB Data-Link Loopback Test - (LOCK MODE) is successful REMARK: (i.e. Rates in LOCK MODE are compatible within specified rates)		

4.9.2.6	Check if STB Status Parameters is read from AO STB by using specific SNMP MIBs - REMARK: We should check if we can read these using which MIB parameters		
4.9.2.7	Check if STB Status Parameters is read from AO STB on non-cable solution by using specific SNMP MIBs - REMARK: We should check if we can read these using which MIB parameters		
4.9.3	SNMP MIB specifications		
4.9.3.1	Check if every item in related SNMP MIB Definition Appendix is tested (Differs depending on AO)		
4.9.4	Reset and Factory Reset specifications		
4.9.4.1	UI menu shall allow user to make reset settings		
4.9.4.2	In PVR only devices, full disk reset is possible by means of UI menu		
4.9.4.3	In UI menu, Reset with keeping recordings shall be possible to PVR only devices		
4.9.4.4	Reset functions shall be possible via SNMP between MIB Navigator-Telenet-Trigger		
4.9.4.5	Reset functions shall be possible via SNMP between MIB Core-Core Reset		
4.9.4.6	STB shall be able to apply full factory reset and return to default settings		
4.9.4.7	STB shall give the option to PVR only devices to keep recording in factory reset		
4.9.4.8	Soft reset that keeps setting shall be applied by STB		
4.9.4.9	STB shall be able to check file system in soft reset		
4.9.4.10	Re-initialization of the STB shall run properly		
4.9.4.11	Reset shall be properly applied by means of STB		
4.9.4.12	Re-init shall be applied via front panel without needing RCU		
4.9.4.13	Reset shall be applied via front panel without needing RCU		
5 AO STB non-Functional Requirements			
5.1	Mechanical Requirements		
5.1.1	Housing	NA	
5.1.2	Diagnostic Leds		
5.1.2.1	Check if Alert led is not active during normal mode		
5.1.2.2	Check if Alert led is not active when tuned on blocked channel		
5.1.2.3	Check if Alert led is nor active when Ethernet cable is disconnected		
5.1.2.4	Check if Alert led is active when coax removed		
5.1.2.5	Check if Alert led is active when tuned on faked channel		
5.1.2.6	Check if Alert led is active when box not paired		
5.1.2.7	Check if Recording LED is active during recording		
5.1.2.8	Check if Recording Led is deactivated when recording finished		
5.1.2.9	Check if Power led is green in operational mode		
5.1.2.10	Check if Power led is orange in standby mode		

5.1.3	Labels		
5.1.3.1	Check if AO logo and STB ID is visible on the front panel of AO STB		
5.1.4	Connectors		
5.1.4.1	Check if RF connector which is connected to Wall Outlet is F Type (IEC 169-2)		
5.1.4.2	Check if AO STB's Input impedance is 75 Ohms		
5.1.4.3	Check if AO STB's return loss in band 108 - 862 MHz is 8Db		
5.1.4.4	Check if AO STB's Total Input Power for the range 80-862 MHz is lower than 90 dBμV		
5.2	Environmental Requirements		
5.3	Safety Requirements		
5.3.1	Surge and Lightning Protection		
5.3.1.1	Check if every item in related Surge and Lightning Protection Appendix is tested (Differs depending on AO)		
5.3.2	Temperature and Humidity	NA	
5.3.3	Fire Resistance	NA	
5.4	EU Consumer Goods Label Requirements		