

TLN WRO Specification type Document

< Requirement specification for AO STB interactive
Data Return path subsystem to enable usage of TLN
AIDTV >



Document Housekeeping

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i(DTV)	SPEC	TLN-WRO-TA-I-S-PIAE	Specification type documents (-SPEC) are documents specifying logical / physical interfaces / protocols, etc..., to which AO equipment/systems need to comply

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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:

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 CAT: iDTV: TLN-WRO-TA-I-C-PIAE

Reference 2: TLN WRO CAT: iDTV: TLN-WRO-TA-I-S-PAAD

Reference 3: TLN WRO CAT: iDTV: TLN-WRO-TA-I-S-PIAA

Reference 4: TLN WRO CAT: Broadband: TLN-WRO-TA-B-S-PAAD

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1 Abstract

This document describes the iDTV interactive data return path building block an AO STB must have in order to be able to allow IP communication between the AO STB, the AO iDTV back-end systems and the TLN IP network components involved in delivering service to the AO STB.

This document has a corresponding certification document with reference: **TLN-WRO-TA-I-C-PIAE** which is used to test AO WO equipment compliance against this specification.

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 Glossary and Abbreviations

VoD: Video On Demand
CDN: Content Delivery Network
VDP: Video Data Pump
NCP: Network Control Platform
VHE: Video Head-End
AAA: Authentication, Authorization and Accounting
CRM: Customer Relationship Management
CPPS: CAS Proxy Provisioning Server
CAS: Conditional Access System
CPE: Customer Premises Equipment
BSS: Business Support Systems
OSS: Operations Support Systems
HFC : Hybrid Fiber Coax
GRE : Generic Routing Encapsulation
HGW : Home Gateway
NIU : Network Interface Unit
CMTS : Cable Modem Termination System
NOC-M :Network Operations Center-Mechelen
NOC-H :Network Operations Center-Hoboken
POI: Point of Interconnect
UTP: Unshielded Twisted Pair

3 AO STB interactive Data Return path Functional Description

- (1) The function of the iDTV interactive Data Return Path (see red-dotted area in figure below) is to allow IP communication between the AO STB, the AO iDTV back-end systems and the TLN IP network components involved in delivering service (e.g. TLN Video Data pumps in TLN CDN) to the AO STB.

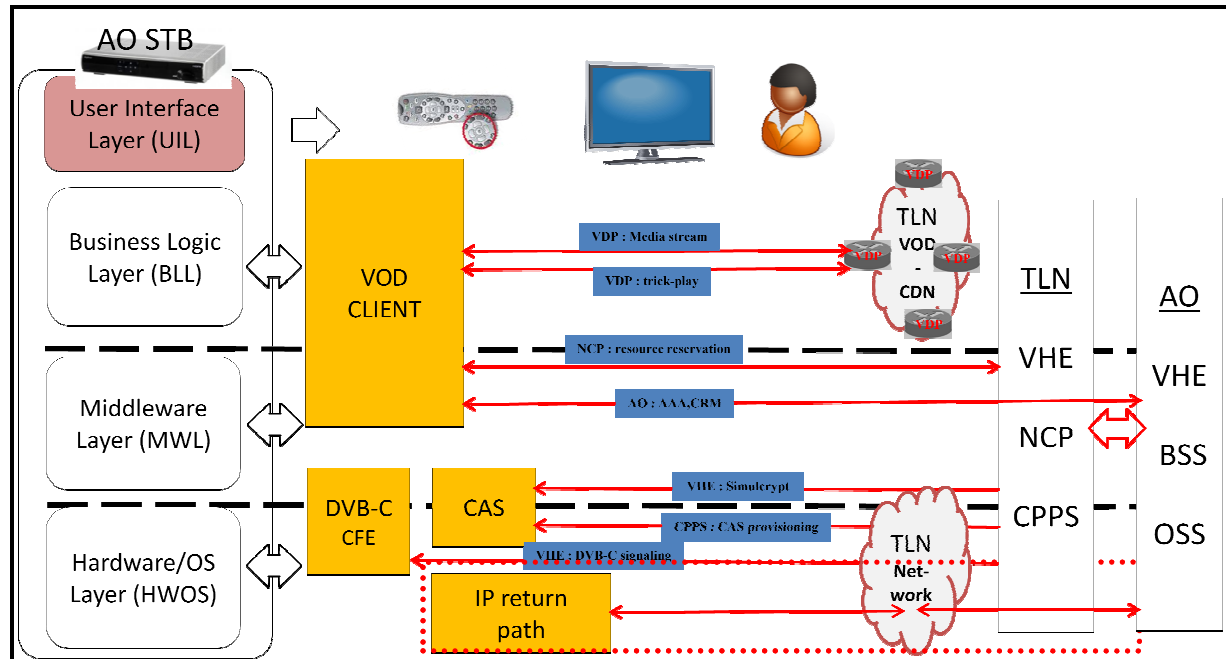


Figure 3-1

4 AO STB interactive Data Return path Functional Requirements

4.1 iDTV interactive Data Return Path General Characteristic

4.1.1 iDTV interactive Data Return Path via Telenet Network

- (2) The Network Interface Unit(NIU) is the point of connection to Telenet HFC network. The AO STB and Modem are connected to the NIU via a coax cable and the AO STB is connected to the AO Modem typically via an Ethernet port.

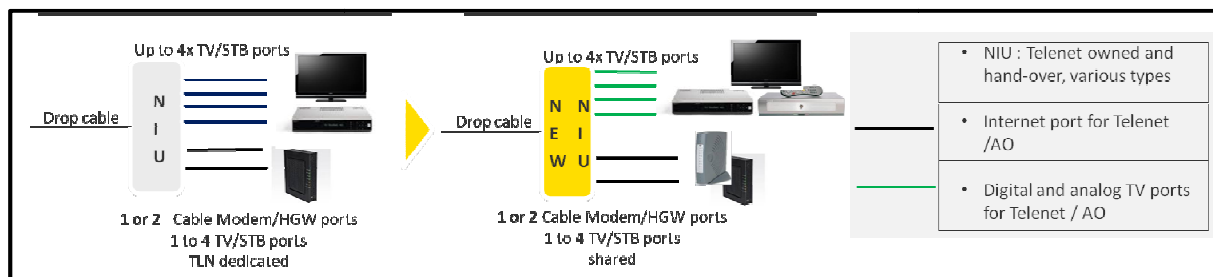


Figure 4-1

- (3) STB IP traffic is forwarded to the Modem and encapsulated by the Modem in a separate and dedicated STB GRE tunnel(not default tunnel). STB MAC addresses are pre-registered in the Telenet Network in order to enable forwarding traffic in the correct tunnel. The modem configuration file contains the end point parameters of the GRE tunnel (TLN tunnel concentrator address and credentials) to enable delivery of the traffic at the correct AO point of interconnect.

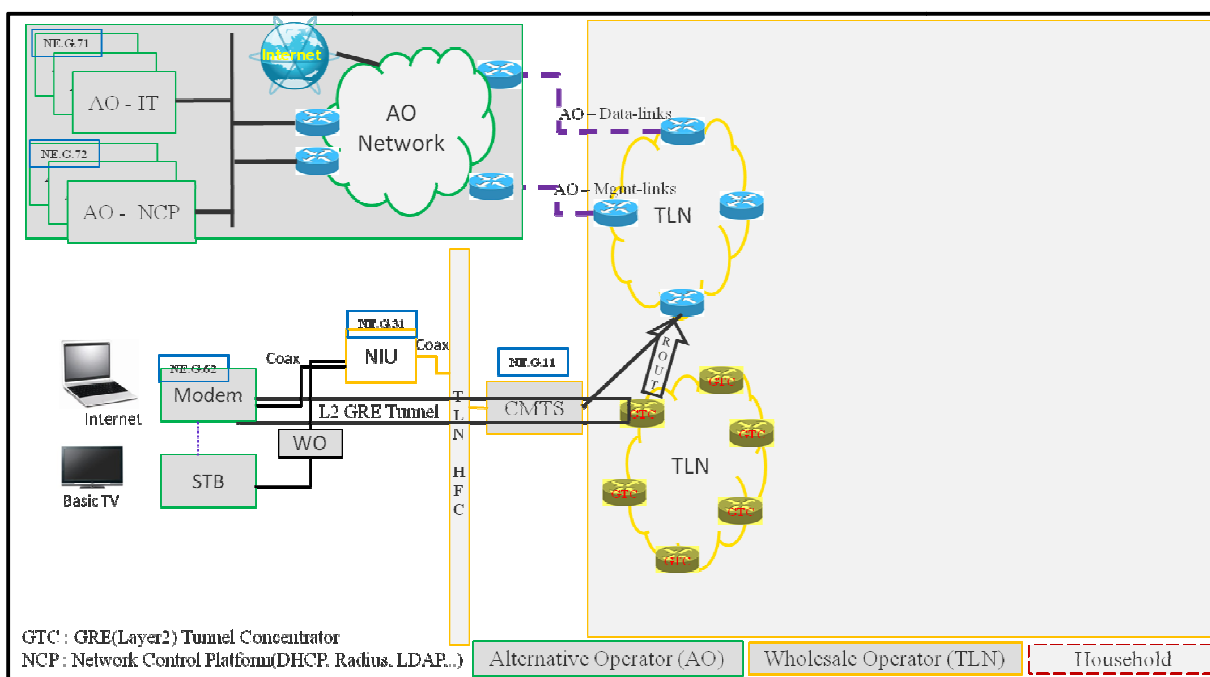


Figure 4-2

4.1.2 iDTV interactive Data Return Path via other(non cable) network

- (4) The option exists for an AO to provide its own iDTV data return path over an alternative (non cable)access infrastructure. In this case TLN and the AO will set-up a managed interconnect link to allow communication at NOC-M and/or NOC-H POI where the AO aggregates all alternative return path traffic for which interaction is required with the Telenet Network (e.g. VoD stream management (trick play, ...)). The details of this aggregated alternative return data path link are further discussed in the document [TLN-WRO-TA-B-S-PAAD](#).

4.2 Physical Transport Connection

4.2.1 iDTV interactive Data Return Path via TLN cable network

- (5) The AO Modem is interconnected via a coax jumper cable towards the NIU. The AO STB will be typically connected to the AO Modem via a UTP cable.
In case AO users prefer not to place any new wires at home, the AO Modem can be connected to a power socket using a Powerline adapter so that the LAN side ethernet signal of the Modem is carried on the electricity cables inside home and can be extracted via a second Powerline adapter at another place in the home for connection to the STB.
- (6) The physical transport session must be setup by the user CPE, in order to allow the bridge to learn the source MAC address. Sessions initiated via the network are not allowed by the Modem. It is not allowed to place a router in between the STB Ethernet port and the Ethernet port of the Modem it is connected to.

4.2.2 iDTV interactive Data Return Path via other(non cable) network

- (7) In this case TLN does not impose any specific requirements on the connection.

4.3 Restrictions

- (8) Value added services on the iDTV return path, like (but not limited to) extended EPG data (2 weeks), STB management and supervision, VoD trick-play control management, etc. are not provided. As the return path offers a direct IP connection path between the AO STB and the AO back-end, the AO has the freedom to implement this by its own means.
- (9) Traffic management rules and policies, as well as bandwidth restrictions will apply on the IP Data return path over the Telenet cable network and its use is strictly limited to providing TV related interactivity services in the framework of the ROTV.

4.4 AO Device Management by TLN Requirements

(10) The applicable requirements are described in **TLN-WRO-TA-I-S-PIAA.**

5 AO STB interactive Data Return path - Non Functional Requirements

(11) The applicable requirements are described in **TLN-WRO-TA-I-S-PIAA.**