

# **TLN WRO Architecture type Document**

< High level network and service architecture  
overview of the TLN TV (ROTV) Wholesale  
Reference Offer >



## Document Housekeeping

### Document Category and type

CAT	TYPE	DOC ID	Comment
TV	ARCH	TLN-WRO-TA-A-A-PAAA	Architecture type documents (ARCH) mainly have an informational/explanatory purpose to highlight the overall technical set-up.

### Document Authorization

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### Document Effective Date

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.

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None.

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# 1 **Abstract**

This document provides a high level network and service architecture overview of the Telenet Basic TV Wholesale Reference Offer. It describes the main building blocks that support the transmission of analog signals on the Telenet network on a conceptual level.

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**

AAA: Authentication, Authorization and Accounting  
AOTC: AO Testing and Compliance  
CAS: Conditional Access System  
CMTS: Cable Modem Terminating System  
DTV: (non-interactive) Digital Television  
HFC: Hybrid Fiber Coax  
IP: Internet Protocol  
IT: Information Technologies  
MUX: Multiplexer  
NCP: Network Control Platform  
NE: Network Element  
NIU: Network Interface Unit  
OAM: Operations and Maintenance  
STB: Set-top-box  
VHE: Video Head-end  
WO: Wall Outlet

### 3 TLN WRO Overall Reference Architecture

This section displays in figure 1 below the overall architecture and block diagram of the Telenet Wholesale Reference Offer technical set-up. This figure is repeated in each “service specific” architecture document with as purpose to have a clear common reference and a strict application of naming conventions on building blocks and building blocks which are then further described in “specification” type documents which will allow the beneficiaries to implement the required building blocks on their end-user equipment, network and IT CRM systems.

#### Naming Conventions:

Each Network building block on the overall (General) level has a unique reference naming in the format: NE.G.xy, where xy is the number of the block. (xy <= 50 means TLN Network Element(NE) and xy >= 60 means AO NE

Each Network Building block on the overall (General) level has a unique reference naming in the format: IF.G.xy, where xy is the number of the building block.

#### Four main domains are defined:

- Wholesale Operator (TLN) domain: this is the set of all systems that are/will be present in the Telenet infrastructure to implement the TLN Wholesale reference offer. Per convention they will always be depicted as boxes with yellow borders in all documents.
- Alternative Operator (AO) domain: this is the set of all systems that are/will have to be present in the AO infrastructure to make use of the TLN Wholesale reference offer. Per convention they will always be depicted as boxes with green borders in all documents. Obviously TLN does not impose by any means how the AO should organize its own infrastructure, hence the AO domain components must be mainly seen as an example how the AO could organize its infrastructure to make use of the TLN WRO and for clarity of the TLN WRO by describing clearly the building blocks.
- Household domain: this is the set of all systems that are/will have to be present in the customer home to make use of the TLN Wholesale reference offer. Per convention they will be depicted as boxes with yellow or green borders in all documents, depending if they are TLN owned and/or provided equipments or AO owned and/or provided equipments. Obviously additional equipment may be present in the household, typically owned by the customer and where relevant for the technical explanations these equipments have been depicted as boxes with black borders. The household domain is for clarity reasons always bordered by red dotted lines. Obviously TLN does not impose by any means how the AO should organize its own household equipment, hence the AO elements in this domain components must be mainly seen as an example how the AO could organize this to make use of the TLN WRO and for clarity of the TLN WRO by describing clearly the building blocks.
- Third party domain (3<sup>rd</sup> party): this is the set of all systems that will be provided and operated by third parties on common behalf of the AO's and that require interfacing with TLN systems to enable use of the TLN Wholesale reference offer by AO. Per convention they will always be depicted as boxes with blue borders in all documents. Currently only the AO CAS system belongs to this category.

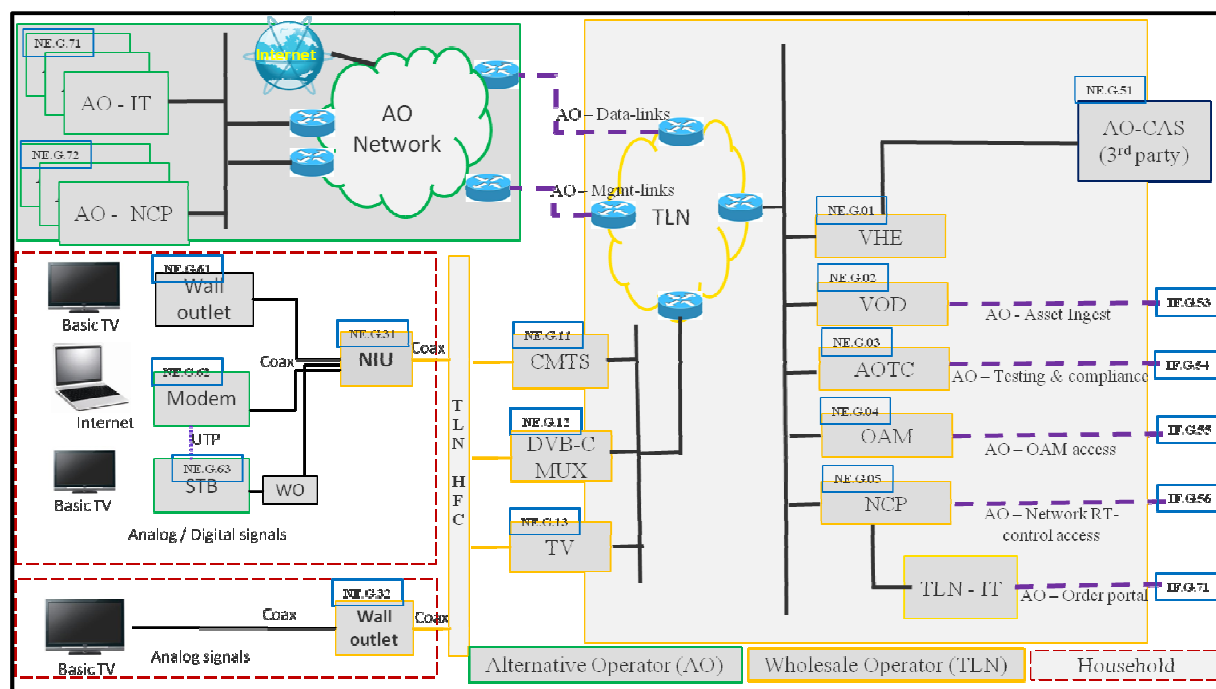


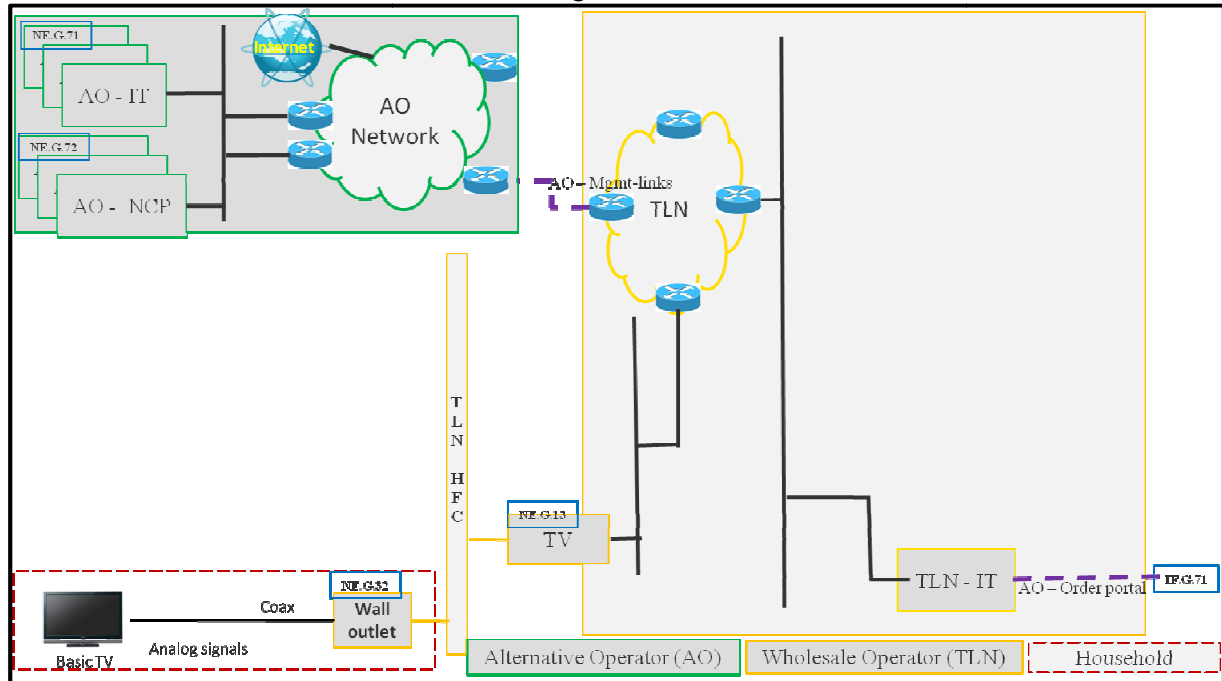
Figure 3-1



## 4 TLN ROTV Reference Architecture

- (1) This section provides a high level network and service architecture overview of the Telenet Basic TV Wholesale Reference Offer. It shows how the distribution of the analogue TV signals fits in the overall architecture referenced in section 3 above in this document.

Figure 4-1



4-1

### 4.1 General Approach

- (2) The generic approach (see figure above) that has been chosen is to offer the existing TLN analogue channel offer as well as its potential future evolutions as is towards AO's.
- (3) This implies that no technical interaction between TLN network and AO network components need to be set-up as the TLN analogue TV signal is standard available on the wall outlets in the customer premises.

## 4.2 Key Analogue TV signal Network Elements

- (4) This section gives a brief overview of the purpose and function of some key building blocks involved in the implementation of the Analog TV signal distribution which have not yet been explained in the overall architecture document

### 4.2.1 *TV Head-end (NE G.13)*

- (5) The TV Head-ends are equipped with modulators that convert and prepare the analogue TV and FM radio signals for transmission on the HFC network. The source signals are fed into the Head-ends over the TLN analogue TV signal distribution backbone, which transports the signals from the original source signal acquisition points.
- (6) As the standard analogue TV signal is available on the wall outlets, no interaction from AO systems is required with those Telenet network elements.

### 4.2.2 *Rest of network element*

- (7) The rest of the network elements functions have already been discussed in the overall architecture document