Getting DVB-I to reality

Testing DVB-I in Italy – lessons learned and next steps
GETTING READY FOR DVB-I

**PHASE 1**
Proof of Concept on 1 TV set (TP Vision) & 1 PC

TO SHOW HOW IT WORKS
- Channel list DVB-I (separated from DTT)
- Zapping DVB-I channels with P+P- (separated)
- Channel banner (limited)
- Low latency simulation on PC

**PHASE 2**
Core DVB-I capabilities developed (incl. CSR), 2 TV manufacturers involved (TP Vision, LG)

TO TEST THE FLOWS E2E
- Hybrid & Unique channel list (DVB-I / DTT)
- Zapping with P+P- (integrated)
- Channel banner (limited)
- Instance priority and fallback mechanisms
- Content protection
- Low latency (DASH compliant)

**PHASE 3**
Full DVB-I capabilities developed, extended to new TV manufacturers (Vestel, ...)

TO TEST A REAL DVB-I INFRASTRUCTURE
- Channel banner (full)
- Parental control & EPG
- Centralized Service List Registry (CSR)
- Regionalisation
- DVB-T / DVB-I sync
- DVB-I on non-TV devices
- HbbTV support

**2020**
Proof of Concept (PoC)

**2021**

**2022**

**2023 (expected)**

COMMERCIAL TRIAL

TO SHOW HOW IT WORKS
IP Distribution seamlessly integrated with DTT

- With DVB-I the User can access a unique integrated list of IP and DTT channels, without changing his/her usual TV broadcast experience.
- The PoC involved 3 Mediaset channels configured both on IP and DTT instances, with different instance priority, allowing to test how different distributions could backup the transmission.

- Hybrid & Unique channel list (DVB-I / DTT)
- Zapping with P+P- (integrated)
- Channel banner (full)
- Parental control & EPG
- Instance priority and fallback mechanisms
With DVB-I the User can **access a broader offer** of channels, with **enhanced features**

The PoC included **IP-only channels** from Mediaset and 3rd parties configured to test different quality and features:
- Low latency
- Encryption
- Ultra HD 4k
Centralized Service List Registry (CSR)

- A unified trusted DTT + IP service list ensures the User can access the whole offer of channels and services.
- The PoC implemented a Centralized Service List Registry (CSR) hosted in an Internet-exposed server that could be interrogated by different TV sets to load the regional trusted and harmonized service list.

- Hybrid & Unique channel list (DVB-I / DTT)
- Centralized Service List Registry (CSR)
- Regionalisation
The PoC in phase 3 presents **all the end-to-end DVB-I components needed for a real implementation**.
The PoC is the way to move “from words to deeds”

- The key component of the PoC was the TV set, especially the different peculiarities of the different TV terminals.
- You need to harmonize the different interpretations of the Standard; that’s why key success factor of this PoC was the involvement of several manufacturers.
- The PoC highlighted the importance of Verification & Validation process to move from Standard to Implementation.
- As a result of two years of collaboration, we are now able to outline a set of technical guidelines to facilitate new partners’ start-up.
PREPARING THE GROUND FOR DVB-I TRIAL

- We are finalising the PoC phase 3 with our partners, hp. June 2022
- Our intention is to leverage DVB-I in Mediaset by offering via IP the highest accessible quality that could not be achieved via DTT
- We are thus considering to use the existing LCN channels assigned by the Italian Authority for testing new transmission standards to set up a DVB-I trial providing full HD IP channels with DTT instance in fallback
- This commercial trial would allow to assess a true DVB-I service in a real production environment with real customer experiences
- **Hybrid & Unique channel list:** the Terminal is able to provide the User a single channel list which contains both RF channel and IP services. Such a list is created during the well-known installation scan process.

- **Centralized Service Registry:** all the information needed to generate the channel list come from a Web-Server which acts as Centralized Service Registry.

- **Instances priority:** each Service in the List could provide more ways to reach the User (service-instance), i.e. DVB-T and DVB-I, the Service Owner is able to define the priority by which the service-instance is presented.

- **Zapping:** once the channel list is available the User can navigate through it in the usual way, i.e. P+/P- or channel-number, accessing DVB-T and DVB-I seamless.

- **Regionalization:** is it possible to define services subset which are presented based on the Region the User set.

- **Channel banner:** the information presented by the channel banner provide the same UX as for RF medium.

- **Parental Control:** Terminal manages parental control as for RF medium.

- **EPG:** Terminal provides EPG both for RF and I channel.

- **Fallback mechanism:** if a service provides more service-instances the Terminal switches when the current one is no more available.

- **Low-Latency:** by means of DVB-DASH specification,, Terminal implements mechanism to reduce the latency over OTT services.

- **Content Protection:** Contents delivered over IP could be protected, e.g. for contents rights and contents spilling.
  - Native: PlayReady® provides a non mandatory mechanism to allow Terminal to manage the protection at native level [Free only]
  - HbbTV support: HbbTV application to manage all DRM stuff [Free & FreeMium]

- **DVB I on non TV devices:** DVB I services are enjoyable by mobile/PC devices too by means of an Application (Android).

- **DVB T // DVB I synchronization:** by means of DVB DASH specifications Terminal implements mechanism to reduce the gap between RF & I medium.