How DVB unifies IP-centric media delivery

Agenda

DVB's shift in focus

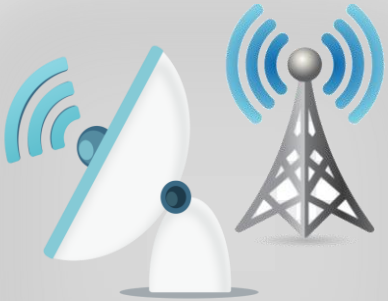
From hermetic silos to a converged media delivery ecosystem

Native IP (DVB-NIP) for media streaming over broadcast

Useful links, webinars & demos

In the internet Age, is DVB moving away from broadcast?

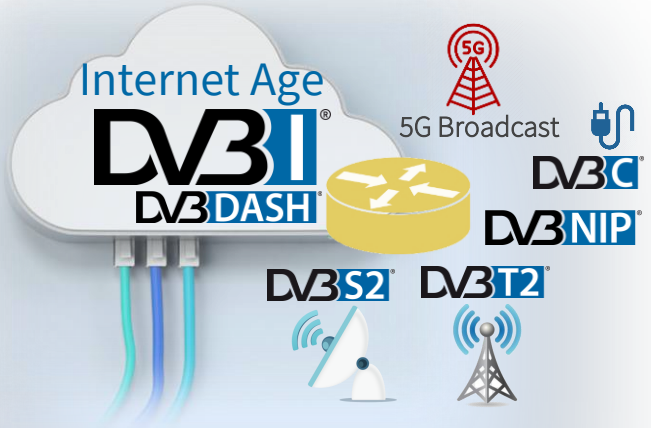
Digitalisation Age



DVB T/T2/C/S/S2/S2X

Service **delivery** was the key issue

- Defining reliable and efficient transport networks



Service **discovery** is the new hot topic

- Common discovery mecanism across networks
- Hybrid delivery mecanism made seamless
- Smooth migrations to IP facilitated

DVB is building tools that get the best out of both worlds.

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Broadcast and broadband used to be hermetic silos

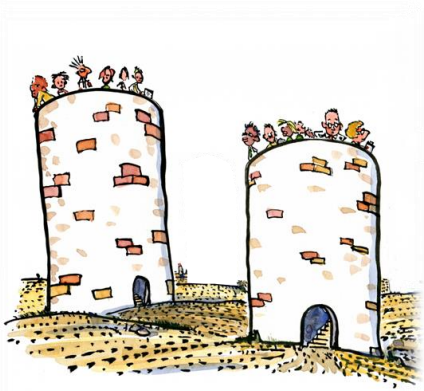
Broadcast

DVB AVC

PES

MPEG-2 TS

DVB S2/S2X/T2



Broadband

MPEG H264/HEVC/VVC, AV1 etc

MPEG-DASH, HLS, etc

HTTP

TCP

IP

Data Link Layer

Physical Layer

Service discovery

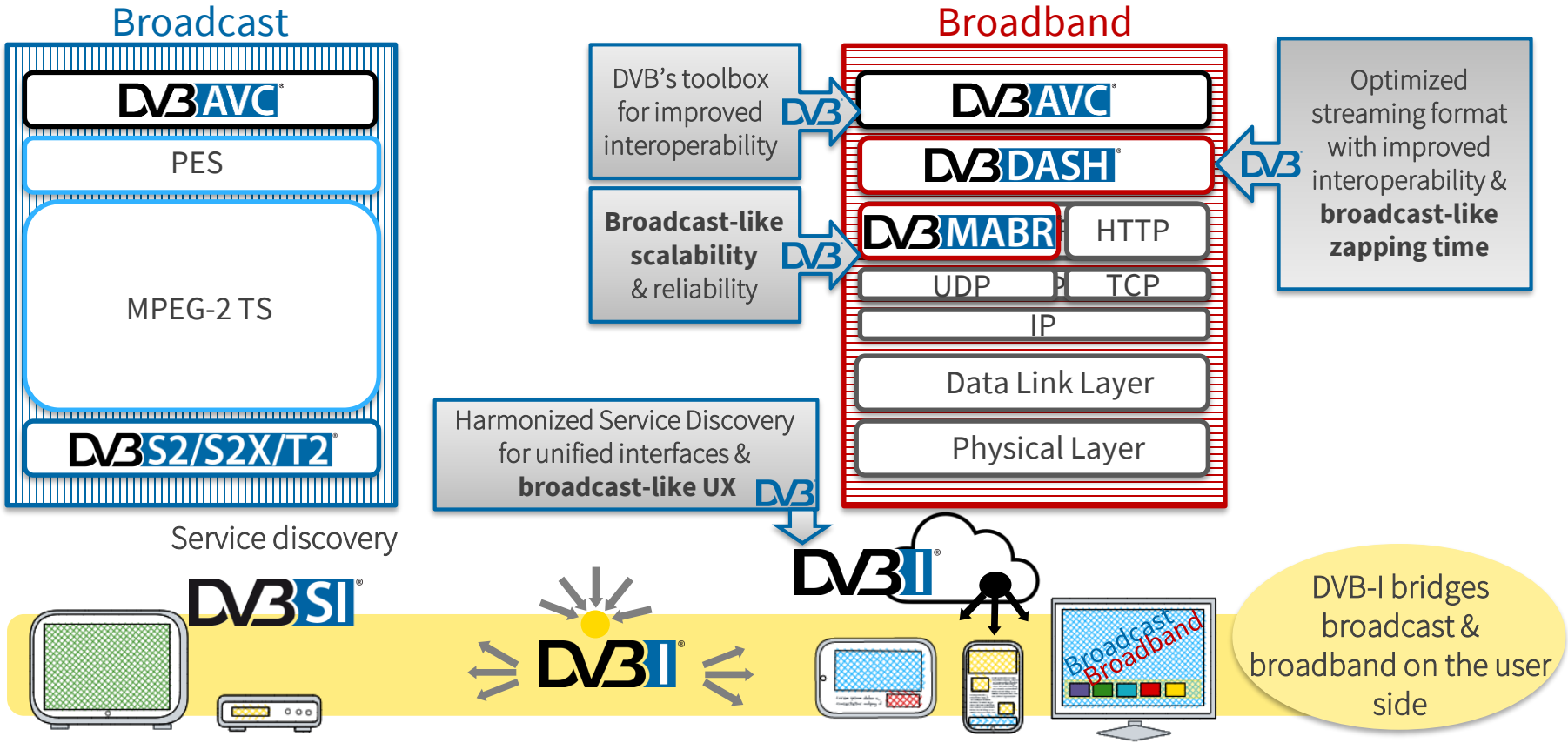
DVB SI

+1 billion receivers

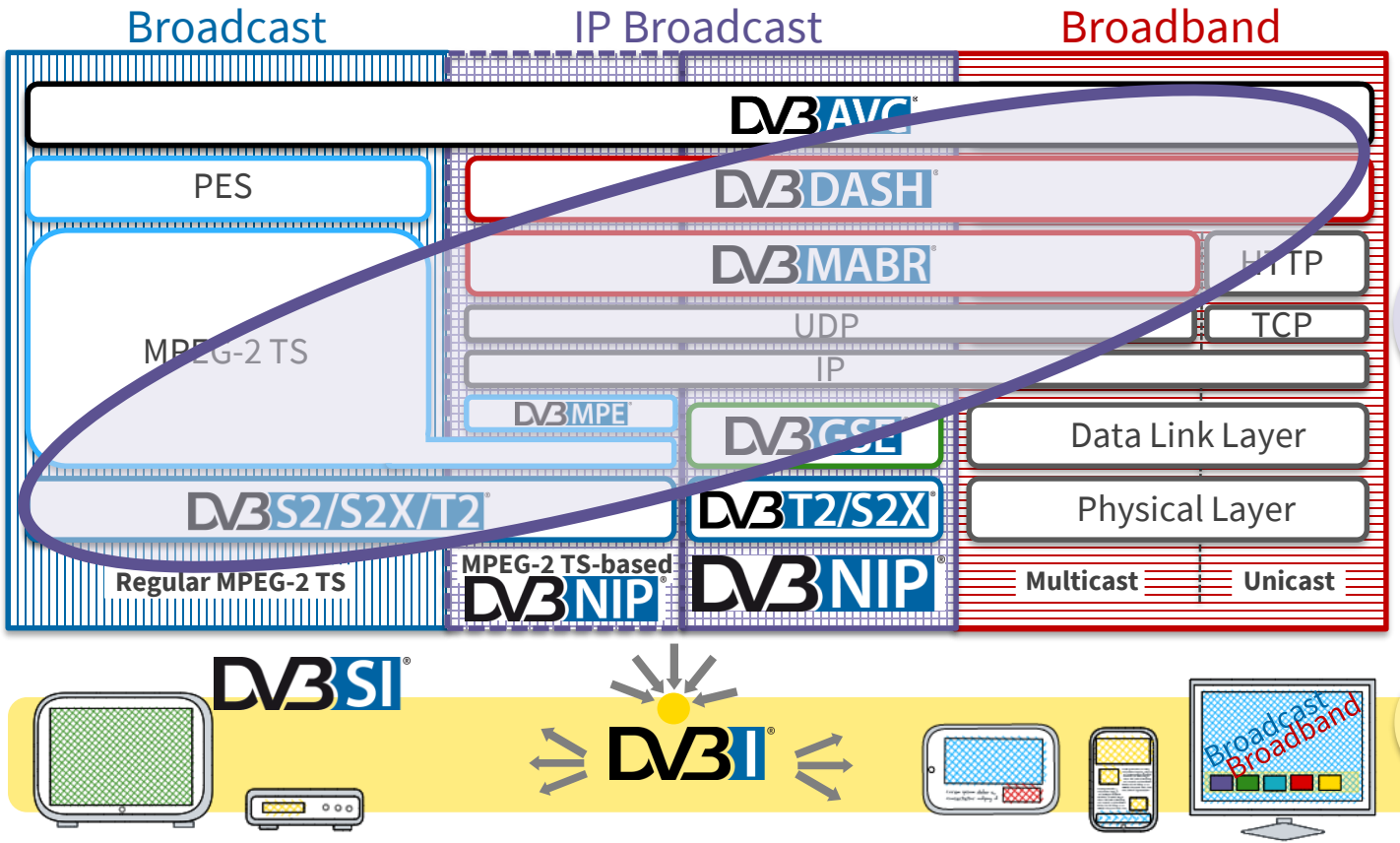
Service discovery ??

➔ User-friendly UX (EPG etc)

DVB brings broadcast-like experience to broadband



A converged media delivery ecosystem is enabled thanks to DVB-NIP & DVB-I



DVB-NIP bridges broadcast & broadband on the transport layer

DVB-I bridges broadcast & broadband on the user side

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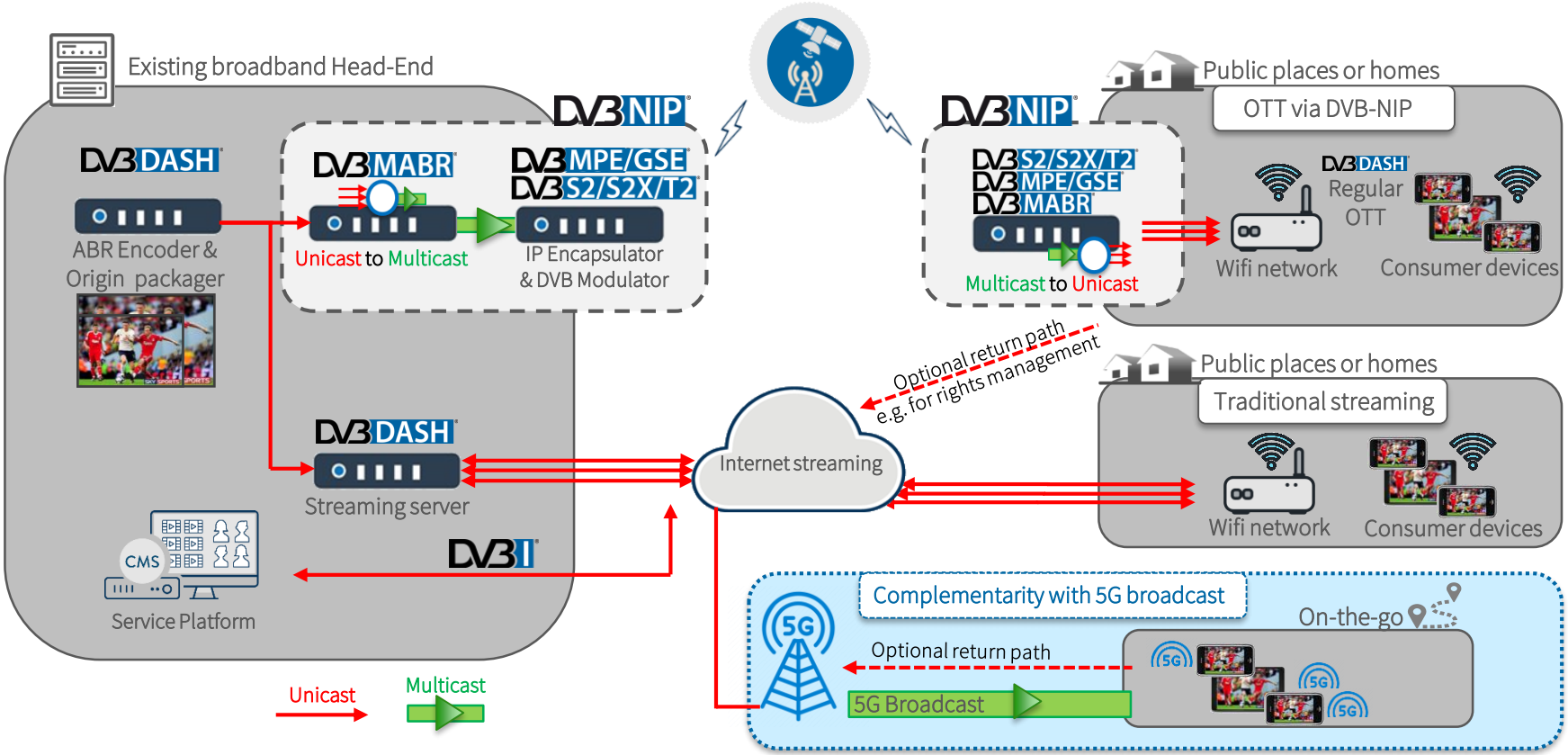
DVB Native IP can easily offload IP networks and fill gaps

Leveraging **existing** broadband and broadcast infrastructures

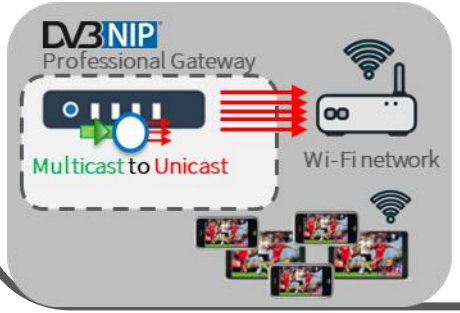


DVB-NIP opens up new business models for B2B segment…

Public places

Live TV is enabled in poor connectivity and TV-less environments

- Sports channels in bars
- Premium channels in hotels
- E-Learning programs, malls
- Maritime deployments



- Entertainment for captive audience in buses…

- Educational channels in rural villages

… and enables a truly converged media delivery ecosystem

Homes

The same P-based streams feed all screens

- TV platforms are unified
- Higher reach inside homes
- Multiscreen
- Multiroom

All will gain with Native IP leveraging the **existing** infrastructures & mobile devices proliferation

OPERATORS

Can launch OTT services
in rural areas & public places

SATELLITE PROVIDERS

Can sell additional bandwidth for OTT
and stay relevant with the future DTH 2.0

OTT PROVIDERS

Can scale down infrastructure costs
and extend their market reach

ALL

Also benefit from:

- ✓ **Content personalization** made easier, e.g. localized insertion of ads or other

- ✓ Live and push TV served with **broadcast quality** even in low connectivity areas

- ✓ A more **sustainable digital world** thanks to the power consumption impact reduced

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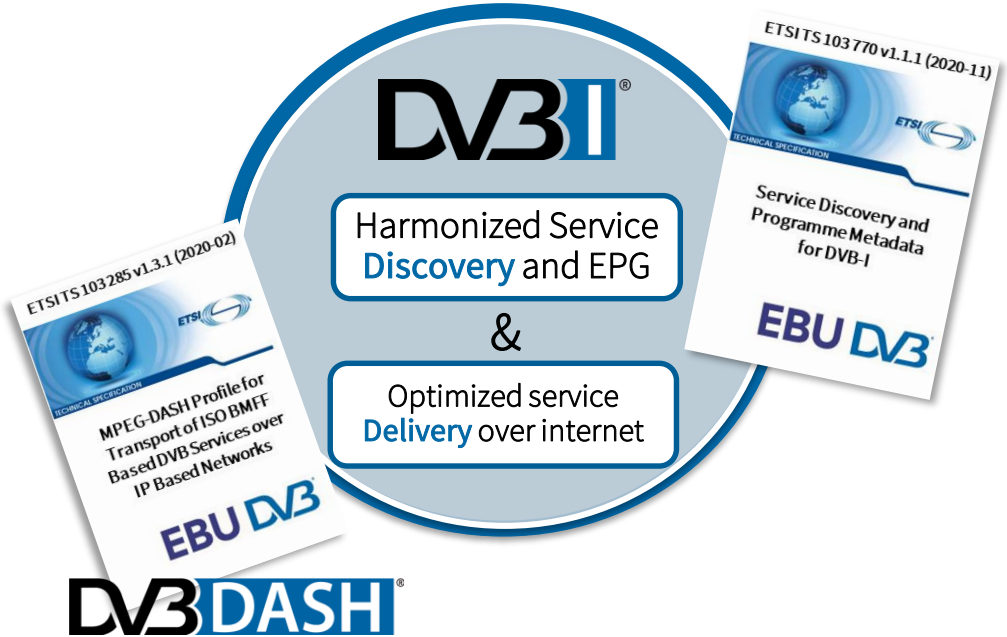
DVB-I, a harmonized and network-agnostic service layer

Useful links, webinars & demos

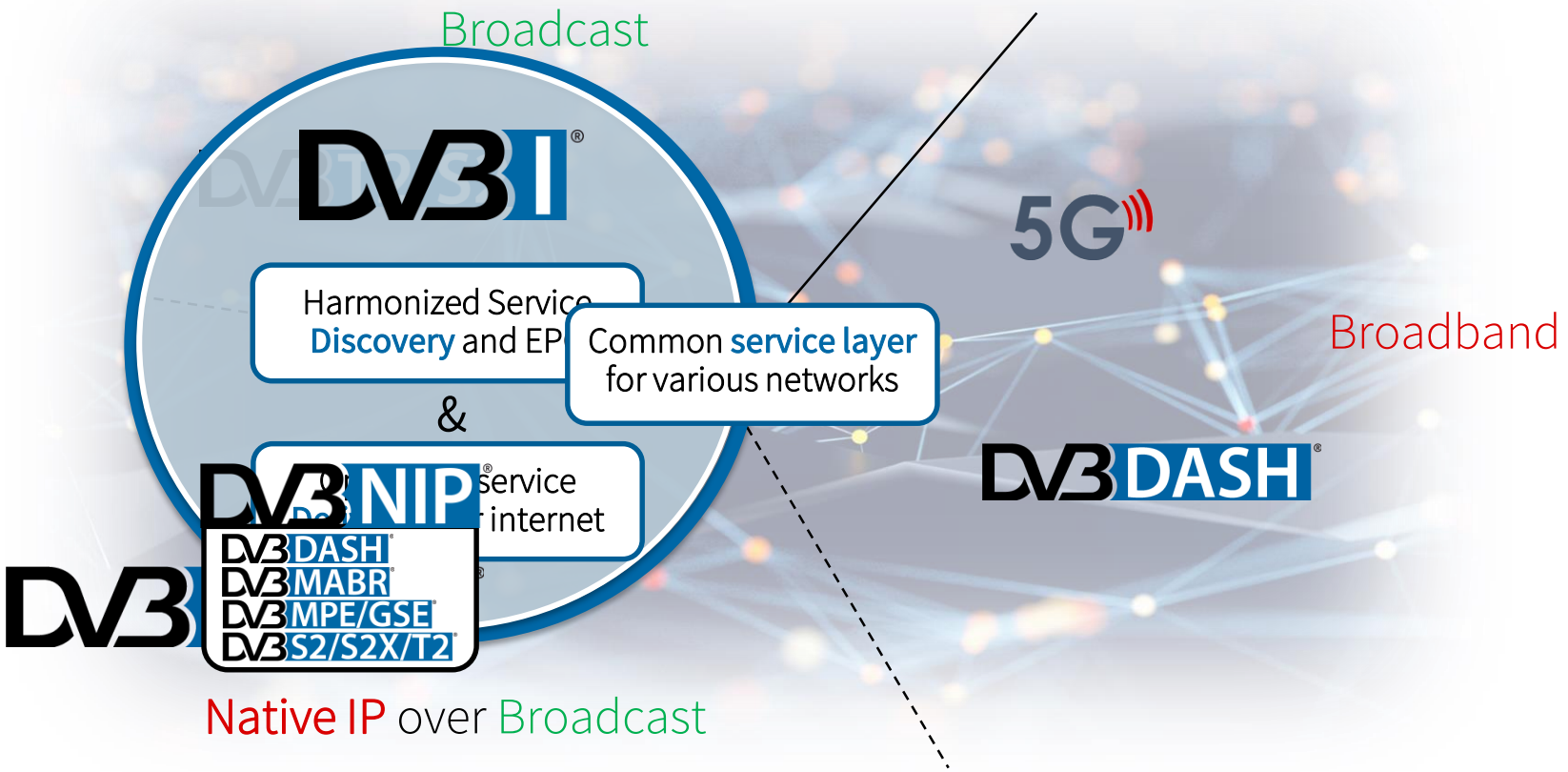
DVB-I Service Discovery in a nutshell

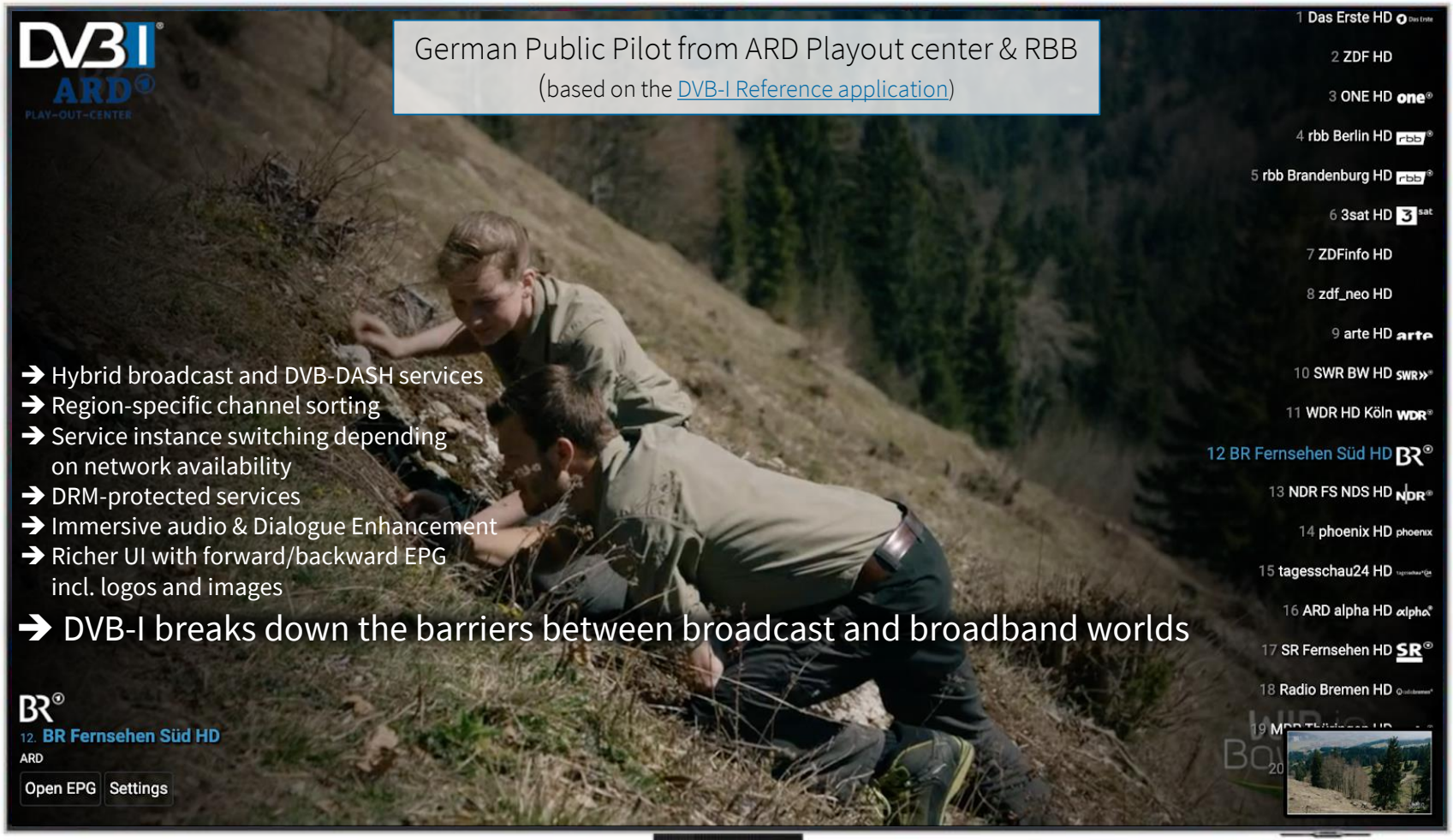


DVB-I (TS 103 770) defines the mechanisms for the **discovery of service lists** and to retrieve EPG over the internet

DVB-DASH (TS 103 285) is the optimized streaming format defined for the **delivery of DVB services** over the internet

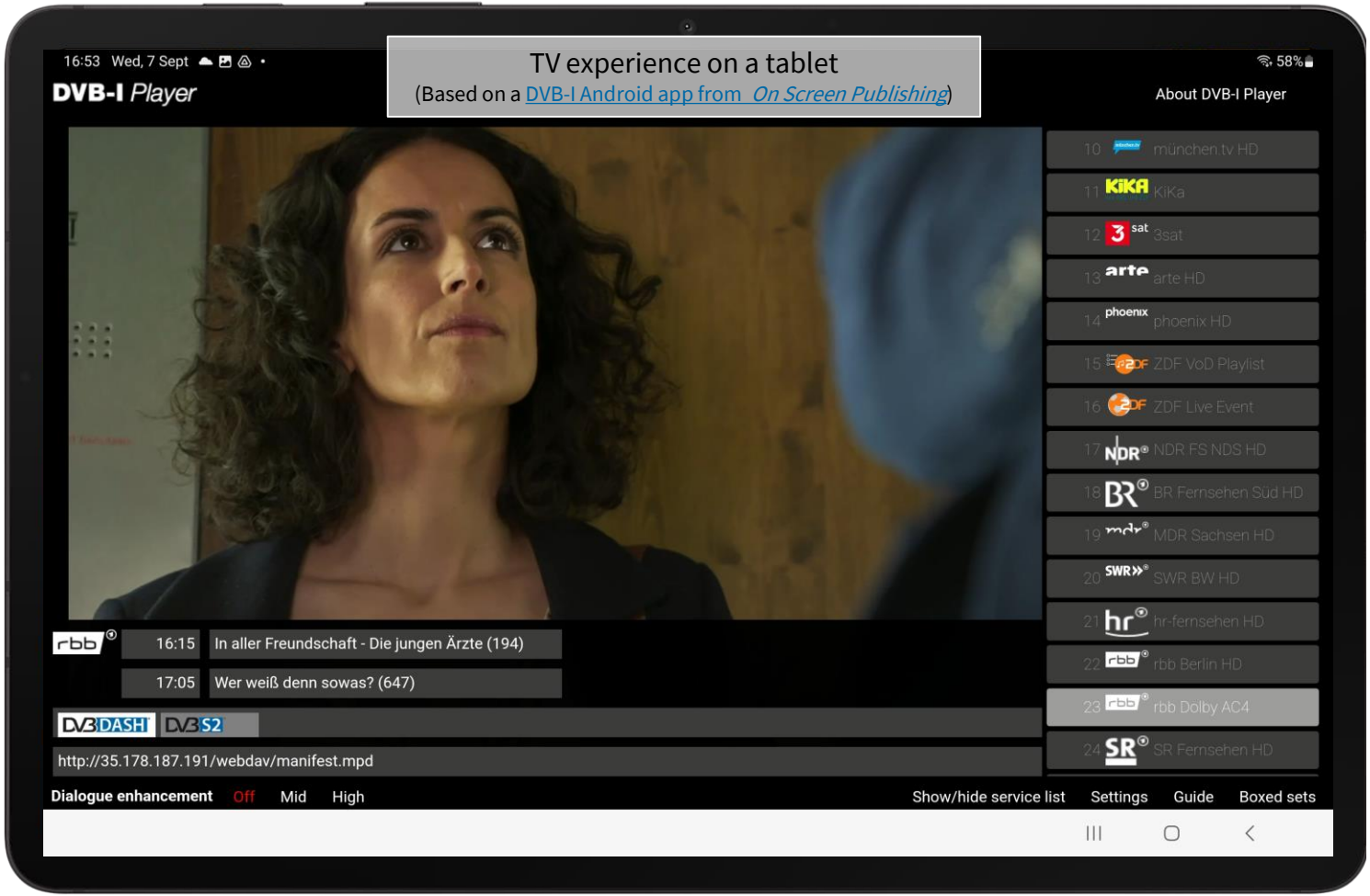
DVB-I offers a common service layer across networks




German Public Pilot from ARD Playout center & RBB
(based on the DVB-I Reference application)
1 Das Erste HD
2 ZDF HD
3 ONE HD
4 rbb Berlin HD
5 rbb Brandenburg HD
6 3sat HD
7 ZDFinfo HD
8 zdf_neo HD
9 arte HD
10 SWR BW HD
11 WDR HD Köln
12 BR Fernsehen Süd HD
13 NDR FS NDS HD
14 phoenix HD
15 tagesschau24 HD
16 ARD alpha HD
17 SR Fernsehen HD
18 Radio Bremen HD
➔ Hybrid broadcast and DVB-DASH services
➔ Region-specific channel sorting
➔ Service instance switching depending on network availability
➔ DRM-protected services
➔ Immersive audio & Dialogue Enhancement
➔ Richer UI with forward/backward EPG incl. logos and images
➔ DVB-I breaks down the barriers between broadcast and broadband worlds
12. BR Fernsehen Süd HD
ARD
Open EPG
Settings

TV experience on a tablet

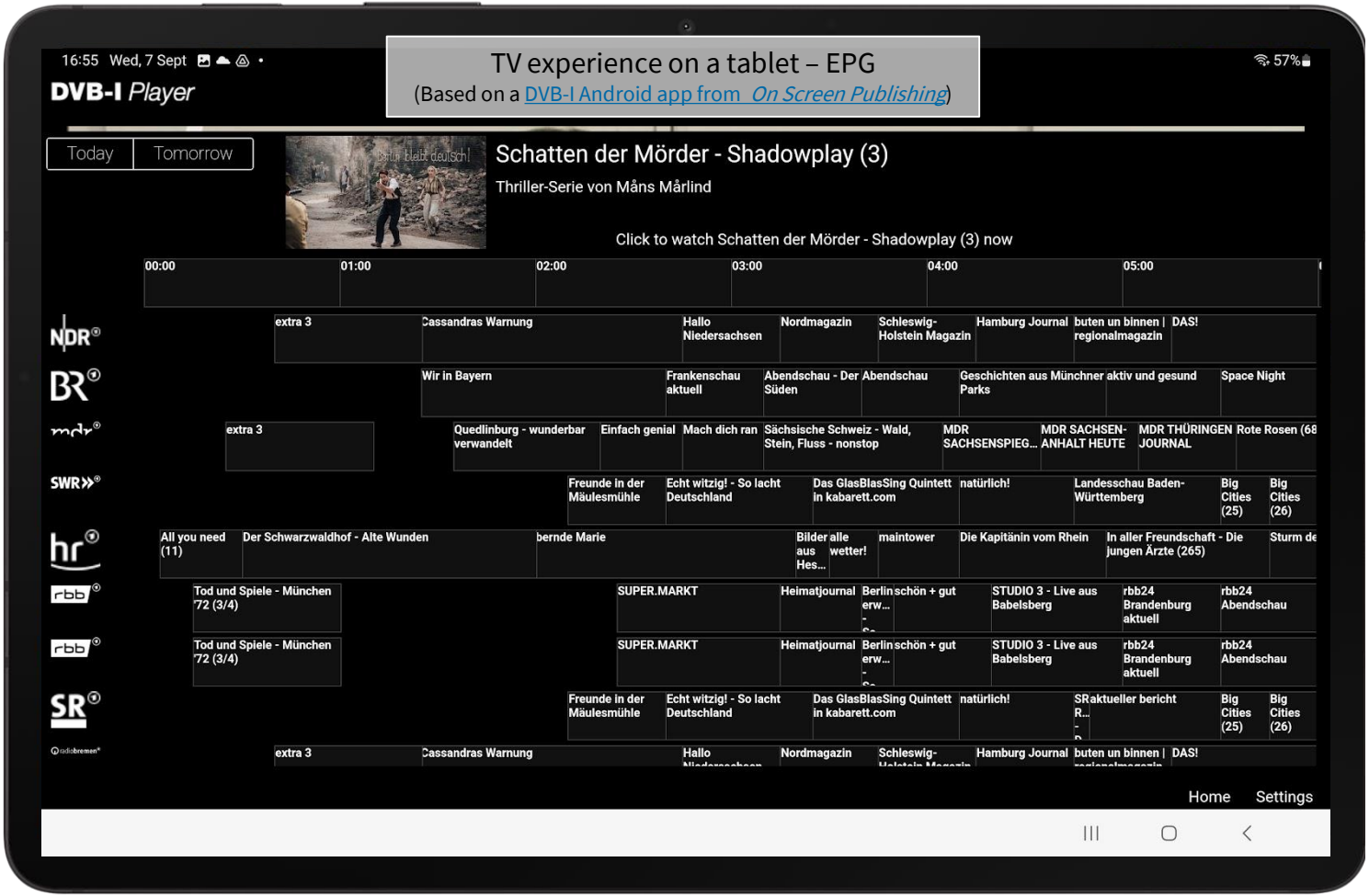
(Based on a DVB-I Android app from *On Screen Publishing*)



German DVB-I Public Pilot – See more on https://dvb-i.tv/services/

TV experience on a tablet – EPG

(Based on a DVB-I Android app from *On Screen Publishing*)



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TV experience on a tablet – Boxed sets

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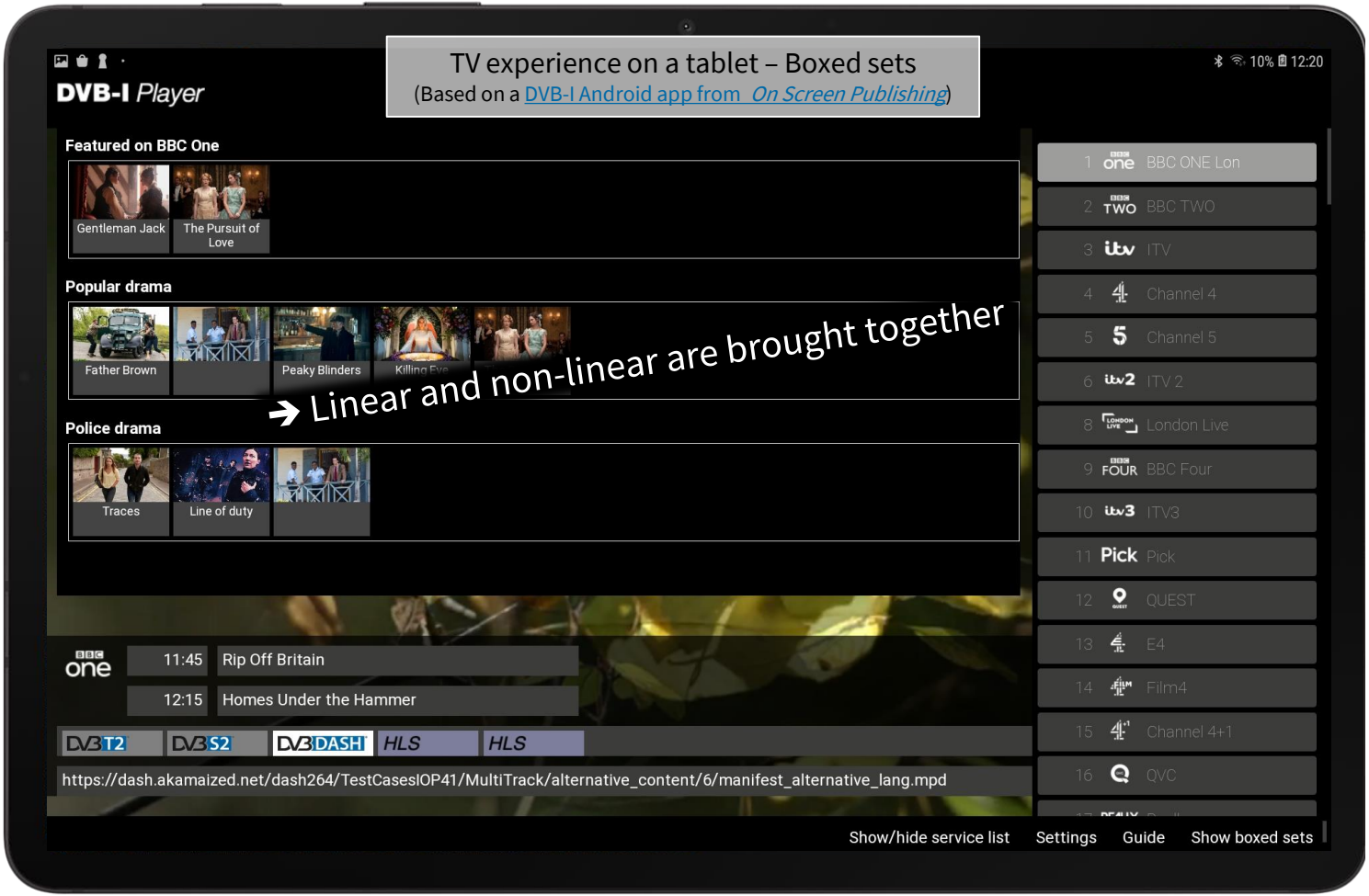

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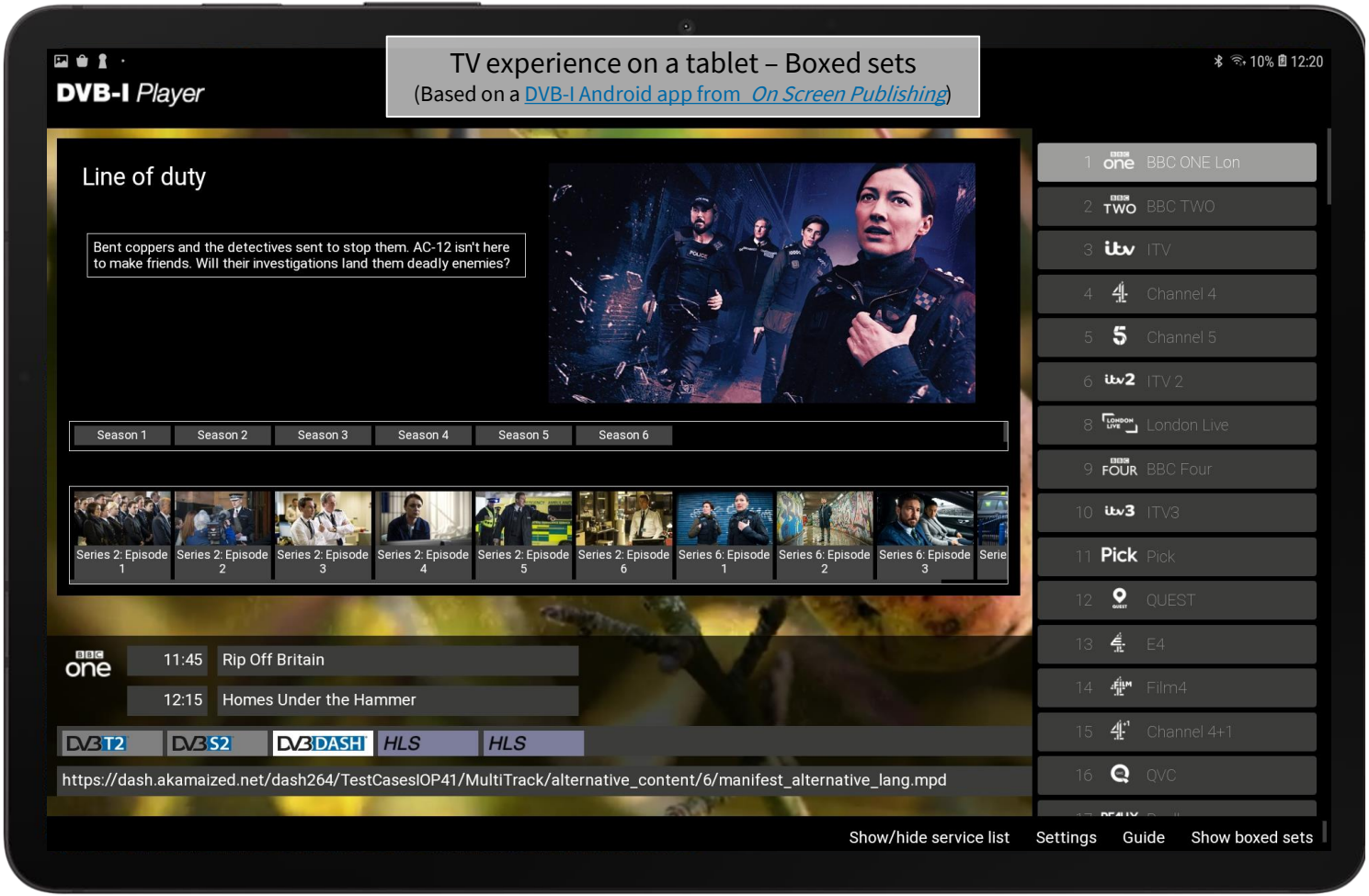

Thanks!

DVB is an industry-led consortium of the world's leading media & technology companies designing open technical specifications for digital media delivery.

DVB-I – Useful links, Webinars & Demos

- DVB-I specification
- DVB-I verification & validation (DVB-I ref. app & other tools)
- Webinars on DVB-I
  I. DVB-I general introduction
  II. Encoding and packaging for DVB-I services
  III. DVB-I Service lists and metadata
  IV. TV over 5G – Bridging the gap with DVB-I
  V. Road-testing DVB-I: en route for deployment
- DVB-I microsite

DVB-I demos:

DVB DEMOS 2021

- **TPV Technology**
  https://youtu.be/X1p-7uP17UY?t=338
- **NESTED (ATEME, ENENSYS,…)**
  https://youtu.be/X1p-7uP17UY?t=758
- **Kineton**
  https://youtu.be/X1p-7uP17UY?t=1287
- **Dolby**
  https://youtu.be/X1p-7uP17UY?t=2151
- **Huawei**
  https://youtu.be/X1p-7uP17UY?t=4578
- **Qualcomm**
  https://youtu.be/X1p-7uP17UY?t=5018
- **DTG Testing**
  https://youtu.be/X1p-7uP17UY?t=5966

DVB-NIP – Webinars & Demos

Video introduction:

Webinar:

DVB-NIP demos:

DVB DEMOS 2021

- **Native IP multi-vendor demo introduction**
  https://youtu.be/X1p-7uP17UY?t=2588
- **Broadpeak**
  https://youtu.be/X1p-7uP17UY?t=2781
- **ST Engineering iDirect**
  https://youtu.be/X1p-7uP17UY?t=3319
- **EKT**
  https://youtu.be/X1p-7uP17UY?t=3716
- **EasyBroadcast**
  https://youtu.be/X1p-7uP17UY?t=4041
- **ENENSYS**
  https://youtu.be/X1p-7uP17UY?t=1666