

HbbTV Application Signalling for OTT Services

Two Examples with DVB-I and ADB

Michael Schäfer

Senior Software Engineer & Project Manager

TARA Systems GmbH





TARA Systems GmbH

- Founded in 1990 in Munich, Germany
- Privately owned limited company
 - Alexander Wass, Manuel Melic, Managing Directors
 - Manfred Schmidt, CTO & Senior System Architect



Our Products and Services



DVB / IPTV Middleware
Incl. HbbTV Client Solution



Inaris on Android TV
Live TV for Android Devices



**Embedded
Wizard**

Tool for Developing
Embedded GUIs



OTT



HbbTV support becomes important for OTT services

- End users are getting used to HbbTV
- Same feature set on all services for hybrid devices is desired
- Broadcasters mandate HbbTV support when providing their content
- Better related to the linear content than with native apps
- Pressing the Red Button is easier than installing native apps
- Platform for targeted advertisement

Our solution for OTT providers

- HbbTV Solution that can be added to OTT streaming apps and to hybrid platforms
- Pre-Integrated for Android devices (with TIF and without TIF)
- Uses standard components such as Chromium and ExoPlayer
- Solutions for HbbTV application discovery for OTT services



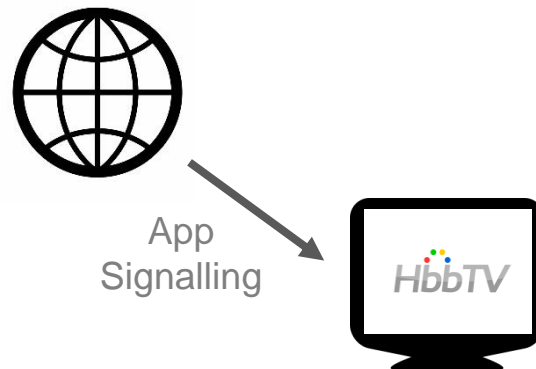


HbbTV application discovery is a challenge on OTT services

- Backend system may not provide AITs
- Transport protocol may not support AIT transmission
- Required service information e.g. DVB triplet may not be available
- DSM-CC and stream events may no longer be available

Proprietary solutions in todays products

- Direct signalling of the application URL without using (XML) AIT
- AIT transfer via proprietary protocol
- Proprietary replacement of (XML) AIT



Proprietary solutions address the challenges often not adequately



ADB allows to discover HbbTV applications via broadband

- Discovery is done via DNS and HTTP requests using an IP connection
- Used information coming from DVB-SI for the discovery e.g. triplet and service name
- Broadcasters provide and host XML AITs

Advantages of using ADB

- With ADB, broadcasters can provide XML AITs customized for OTT
- Broadcasters can exclude transport protocols that are not accessible e.g. DSM-CC
- Applications can be configured for the use in OTT environments
- One common infrastructure for all IP devices and operators



ADB is the right solution to add HbbTV functionality to existing OTT and hybrid products



DVB-I for linear TV services

- TV service signalling via IP connection
- Service delivery via classic DVB or via DVB-DASH
- HbbTV application signalling for each service by referencing an XML AIT

Advantages of using DVB-I

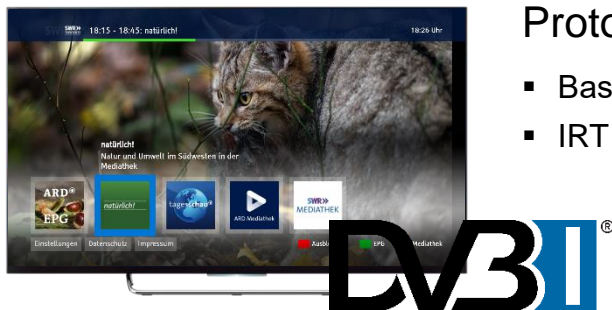
- Full HbbTV experience independent from the transport layer
- Direct link from service to XML AITs that resolve to HbbTV applications
- Standard way to deliver DVB-SI information used in HbbTV
- XML AITs for ADB can also be used with DVB-I

Products based on DVB-I will benefit from direct HbbTV application signalling



Prototype of HbbTV for OTT services using ADB

- Based on the Android TV Live Channels application
- Extended by TARA's HbbTV solution including ADB support
- Zattoo TV Input Service used for linear TV



Prototype of a DVB-I Client with HbbTV support

- Based on Android TV using TARA's DVB/IPTV Middleware and HbbTV solution
- IRT provided the DVB-I service list, streams, and XML AITs

Both demos developed in cooperation
with IRT and shown on their booth!





THANK YOU!
See you at the IRT booth!

TARA Systems GmbH
Gmunder Str. 53
81379 Munich
Germany

Tel.: +49 (89) 74 71 21-0
eMail: info@tara-systems.de
www.tara-systems.de

