

› HBBTV FOR OPERATORS

BroadThinking16 | Rob Koenen

TNO innovation
for life

Speaker: Rob Koenen

- › Principal Consultant at TNO
 - › TNO: *Netherlands Institute for Applied Scientific Research*, an independent R&D organisation
 - › ~3000 employees, ~300 in ICT; ~30 in Media-related R&D
 - › Our partners include broadcasters and operators
- › Presenting HbbTV work from a personal perspective
- › Working on “**STB-less (IP)TV**” since 2012 with IPTV Operators and a range of technology partners
- › Working on HbbTV **Application Discovery** over Broadband since 2014
- › Corollary: I strongly believe that Broadcasters and Operators need to **work together** to offer attractive (linear) services



UPCOMING TV SHOWS

8:06 PM



News & Current Affairs

Sport

Drama

Entertainment

Children's

Lifestyle

Arts & Culture

Documentary &

ALL

Reality

Comedy

Variety &
Game Shows

Animation

Other



MasterChef Australia

NOW

7:30pm Season 6, Episode 51



The X Factor

NOW

7:30pm



Lizard Lick Towing



Sun, Sex and Suspicious Parents



Disorderly Conduct Caught on Tape



freeview™



BACK/RETURN



EXIT



TV GUIDE



SEARCH



SET REMINDER

On Demand



Buzz Bumble
ON DEMAND



Captain Flinn And
The Pirate Dino...
ON DEMAND



Fireman Sam
ON DEMAND



Flea Bitten
ON DEMAND



Geronimo Stilton
ON DEMAND



Coming up

Today



Thomas & Fri...

9:30AM

FOUR

Tomorrow



Wiki The Kiwi

6:10AM

2



Hi-5 House

9:35AM

FOUR



Pūkoro

6:30AM

MĀORI
TELEVISION



The Opportunity for Operator Apps

- › HbbTV provides a **well-standardised platform** for multimedia distribution and consumption
- › Platform is increasingly powerful and versatile
- › If a TV contains:
 - › a **browser**
 - › video and audio **decoders** and streaming clients
 - › a **DRM** (or an interface to e.g. a **CAM**)
- › ... then why duplicate all that technology in a separate decoding device?
- › ... and why not make a consumer's life easier and their rooms a little less cluttered?
- › This is a **technology** question and a **business** question
- › (And there is also a use case for Operator Apps on **STBs**)

Operator Perspective on Operator Apps

- › An STB-less option is great! We can ...
 - › reduce **C**omplexity, **C**ables, **C**onfusion, **C**alls, **C**ost, **C**O₂ **C**onsumption
 - › keep up with the **C**able **C**ompetition using CI+ for STB-less (IPTV Providers)
 - › enable more **C**ontent (e.g., 4K, UHD) for people that have a suitable TV
 - › still providing a branded experience with access to virtually all our services

- › And, we need this as a **standard**

Why would Operators want to do this in HbbTV?

- › HbbTV is a **mature** and well-deployed standard with a rich set of features, certainly in Version 2.0.1
- › HbbTV becoming a **standard feature** on European iDTVs
- › **Compatibility** with existing specs and broadcaster apps
- › **Lower cost** of deployment for operators using standards-based solution

Why would HbbTV want to do this?

- › Starting to happen in the market anyway; doing this in HbbTV:
 - › ensures **Compatibility** with existing specs and broadcaster apps
 - › results in higher quality solutions at less cost than when defined by individual operators
- › Expands the customer base for **HbbTV platforms** and **technology**
- › Enriches HbbTV **ecosystem**; More attractive for HbbTV technology suppliers
- › Makes life easier for **consumers** – the raison d'être for a standard organisation.

- › And, more speculative, some operators blocking HbbTV claim that non-compatibility with their services is a reason to block – let's take that reason / red herring away

What is an Operator Anyway?

- › HbbTV states¹ that:
 - › *“An Operator is understood to be an entity that aggregates a set of channels and offers them to the user.”*
- › It also says:
 - › *“The description of what constitutes an operator is not intended to constrain the use of [...] the resulting specification”*

¹OpApp Requirements Document

Operator Apps in HbbTV

- › An Operator App (“**OpApp**”) is an HbbTV Application that provides access to live channels and on-demand functionality from an Operator.
- › HbbTV will shortly start an effort to create a **specification** for OpApps
 - › **Requirements** recently approved; based on consensus among all constituencies
 - › First **technical call** 18 April
 - › Supported by wide range of Operators and technology providers in HbbTV
- › It will be published as a separate specification, relying on HbbTV 2.0.1
- › A few of the participants interested in developing and using this specification:



Three Models

- › **“Standard”**
 - › Intended for TV sets; does not replace any part of UI
- › **“Privileged”**
 - › Intended for TV sets; OpApp provides some of the Terminal UI
- › **“Operator-specific”**
 - › Intended for STBs; OpApp provides most or all of the UI on a STB that a user buys in retail



Standard OpApps

- › Assumption: **no spec work required**; can be achieved by using HbbTV specification as-is
- › For instance: **red** button starts Broadcaster App; **green** button starts Operator Environment
- › Use existing **HbbTV functionality** to switch channels or select on-demand content
- › Examples:
 - › Freeview Australia,
 - › Freeview New Zealand,
 - › Delta in Old Zeeland (NL)



Privileged OpApp

- › Runs directly on a TV
- › Replaces some of the **UI**, providing a branded Operator experience. Can, e.g., use **P+/P-** to change channels; display channel change banners
- › Assumes a **bilateral agreement** between Operator and TV maker
- › Understood to act as a “**Source**”
 - › Like any other Source that could provide TV channels (e.g., Cable, Sat or HDMI)
 - › May persist over a power cycle – turn on the TV and you’re in the App again.
- › Can easily integrate live TV with **on-demand** offerings, like an STB would
- › Supports IP multicast if the TV does



Operator-Specific OpApp

- › Intended for “**non-initialised**”, white-label STBs
- › Replaces (virtually) all of the UI on the STB to “**instantiate**” that STB for a particular Operator
- › Like “Privileged”, assumes a **bilateral agreement**
- › Close to Privileged; differences are in access to more settings and controls. And OpApp is responsible for everything that happens on the box



Principles and most relevant requirements (1)

For Privileged and Operator-Specific

- › Broadcaster Applications **keep working** as they do today
 - › Also, clear rules for overlaying broadcaster content
- › It's clear to the terminal (and hopefully also to the user) which environment handles **which keys** under which circumstances (TV, Broadcaster App, OpApp)
- › **Lifecycle** is defined, including **discovery**
 - › App can be **persistent**, including over power cycles ("Source")
 - › Until the user chooses a different Source

Principles and most relevant requirements (2)

For Privileged and Operator-Specific

- › Identification / Authentication / Authorisation of OpApps is addressed
 - › Is this OpApp is allowed to run? Can it be trusted?
 - › Is the Terminal trustworthy?
- › OpApp can **read** (some) terminal settings
 - › Operator-Specific OpApp can also **write**
- › OpApp may use **local resources** when available (e.g., Storage, PVR)
- › Interface to **DRM** and **CA** available to OpApp as it is to Broadcaster Applications

Conclusion



- › Good set of **requirements**
- › Spec work will **start** shortly
- › Success will depend on Operators and Manufacturers being able to come to agreements
- › ... and on the solution being a **straightforward delta** on HbbTV v.2.0.1



› Thanks for listening!

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