



OPERATOR APPS

SOFIA HBBTV OPERATOR APPS

OPERATOR APPS IN A NUTSHELL

Operator Application specification is a standard that enables development of special applications (“OpApps”) that create a set-top-box like experience without a physical STB device.

OpApp features are embedded in the Smart TV where they can be used to unify the user interface for the customer giving all the benefits of a STB, without the hassle of cables and multiple remote controls.

OpApp is based on the HbbTV standard creating interoperability across TV brands using HTML5 technology. Solution also benefits from using existing HbbTV testing regime and is suitable for any distribution form including OTT/IPTV, satellite, cable, and terrestrial.

When compared to regular HbbTV applications, the Operator Application defines deeper control of the device and enables the service discovery without any broadcast signalling.

Benefits of Operator Apps compared to Smart TV applications include possibility to publish same application to many different TV brands and enable control of the live TV thru the tuner and co-existence with regular HbbTV services.

One option for Pay-TV operators is to activate the Operator Application from the CA/CI-module. In this case Operator’s own services are bundled with the existence of the CA-module allowing subscribers to access not only the traditional linear services but also operator-controlled OTT services using the same subscription ID accessed thru the CA-module.

The HbbTV OpApp standard addresses 6 deployment scenarios as shown in the diagram below.



SOFIA DIGITAL OPAPP SOLUTION

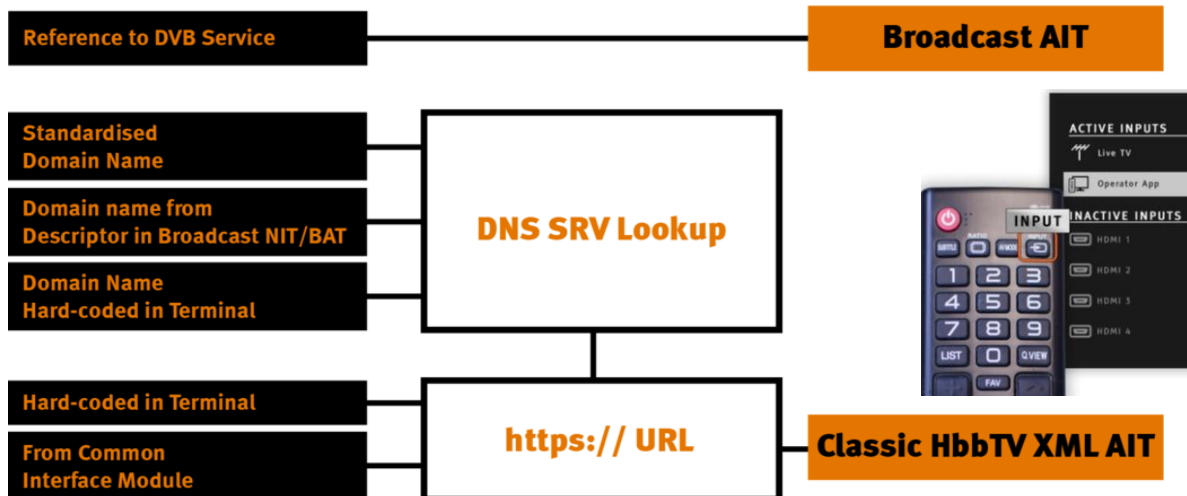
Sofia Digital has been working with broadcasters and operators in Europe and Asia. Operators already deployed standard HbbTV applications with Sofia Digital. The operator application is a natural way extending the possibilities of HbbTV including also Pay-TV integration.

Operators can make agreement with selected device manufacturers that allow them to play more strategic position compared to open field of broadcasted HbbTV apps, for example to bundle marketing and sales of the CA-modules within the Smart TV. Operators should have an active role in initiating these discussions. Sofia Digital is able to help in this by defining the operator applications and architecture of the end-to-end service.

Typically, the operator applications can brand the look & feel with functionalities like personalized TV guide, operator’s own channel list, video on-demand and streaming services - all integrated into one unified user interface.

The TV Guide (rich EPG service) with channel browser are the first implementations of an operator applications. In this case the expected functionalities include rich program info, channel banner and channel selection addressing both streaming and broadcast delivery seamlessly and integrated with the Operator CA-module. Video on-demand services and OTT services access portal are available inside Sofia Digital Operator application suite.

6 SCENARIOS FOR THE DISCOVERY OF HBBTV OPERATOR APP



SOFIA DIGITAL HBBTV OPAPP DEMONSTRATIONS

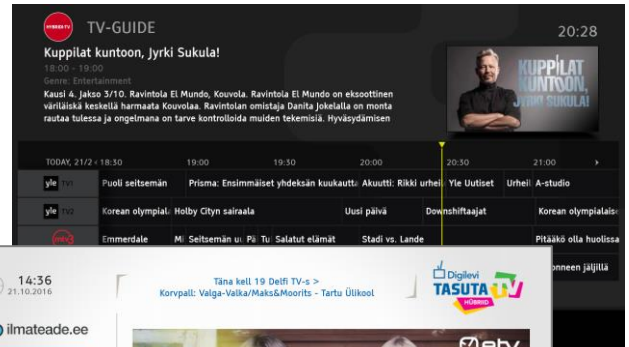
Sofia Digital with **SmarDTV and Panasonic** have the HbbTV operator application integrated in the CA module. The HbbTV operator application is activated into the Smart TV receiver by the CA-module. With the CI+ 1.4 Conditional Access modules combined with HbbTV OpApp implementation, the CAM, directly plugged into the TV, creates a virtual STB experience for end-users while maintaining the highest level of security.

Sofia Digital with **Irdeto and Panasonic** have the combined CI+ 2.0 and HbbTV based application suite enabling paytv-operators to build their own branded TV applications using the modern Smart TV receivers with CI plus support. The HbbTV-based solution offers the operators' own STB-like experience without an actual Set-top box. The CA-module is using the host device HbbTV engine that is embedded in the latest TV sets. The solution works without any additional software installation by just inserting the CA module in the TV USB-port and the application automatically sets the TV to show operator's own configuration, including for example Channel List and Operator EPG application including the access to all pay TV services.

PREVIOUS HBBTV IMPLEMENTATIONS FOR THE OPERATORS

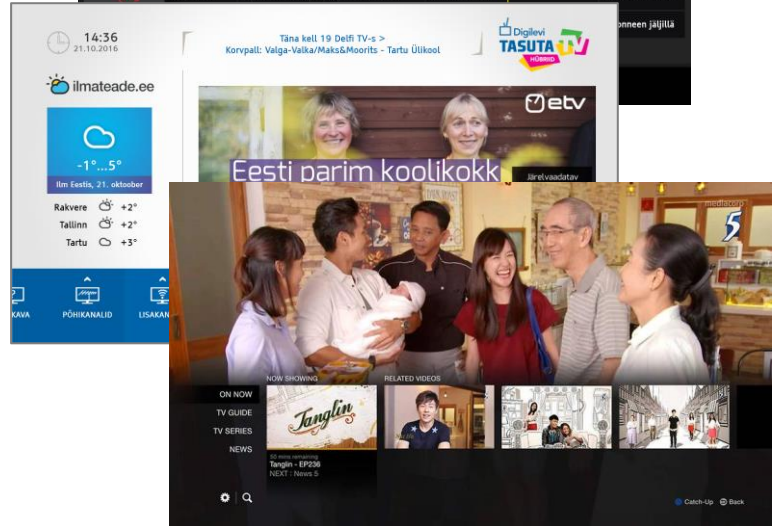
TV Guide for all FTA channels (Digita, Finland)

Finnish terrestrial operator Digita has chosen Sofia Digital's Enhanced EPG product to show all of the FTA channel program information including rich descriptions and preview images.



Tasuta portal (Levira, Estonia)

Sofia Digital implemented an operator "front page" portal for Estonian operator Levira. The portal has links to EPG, various VOD apps as well as other apps.



Mediacorp – Toggle (Singapore)

Singaporean operator Mediacorp uses Sofia Digital's HbbTV solutions to give access to various TV channels, including VOD portal and start-over streams.

