Operator App at Zattoo

Example of an OpApp implementation
For HbbTV Symposium
All details can be found in our OpApp White Paper

https://thetvplatform.zattoo.com/hbbtv-opapp-contact/
Netzwerk Verbindung

Stellen Sie eine Netzwerkverbindung her, um eine Reihe von Funktionen nutzen zu können, die über das Internet oder das Heimnetzwerk verfügbar sind.

- Für eine kabellose Verbindung stellen Sie wireless Netzwerk ein.
- Für kabelgebundene Verbindungen durch ein Ethernet ein.

Bitte warten.

Wählen Sie 'Auto' nach der Einrichtung einer Netzwerkumgebung.

Auto  Manuell  Später einstellen

Wählen Sie 'Auto' für einfache automatische Festlegung der Einstellungen.
Zattoo OpApp - Facts

● The OpApp is the only version of the Zattoo all on those devices

● Available on Panasonic 2020 Models and up

● Zattoo did not receive any negative user feedback since the launch in September 2020

● Development Effort Estimate: Roughly 2 sprints for one engineer
How to build an operator app?

Implementation at Zattoo based on existing OTT app
Checklist - Preparation

- DVB Services Org ID (MHP) - for identifying the app
- Dev environment
  - Get a TV with a special dev firmware
  - Reference application
  - API docs and technical specification
  - Panasonic team is able to provide all from above

Shall match the organisation_id in the XML AIT during discovery.

Note: To register a globally unique organisation_id, operators should apply for an MHP Organisation ID at https://dvbservices.com. Here is a list of already allocated identifiers: https://www.dvbservices.com/identifiers/mhp_organisation_id.
Checklist - Package the app

- Create opapp.zip file with HTML/CSS/JS/images assets
- Add XML AIT file (Required for a production launch)
- Encrypt the package and host it (Required for a production launch)
- Share URL with Panasonic (Required for a production launch)
Checklist - App Start Experience

- Implement Loader UI
- Initialize TV APIs based on reference example
Checklist - Settings

- Add event listener in the app code
- Make Settings UI available for both authenticated and anonymous users
Checklist - Offline Mode

- Implement check for network connectivity
- Add UI to display offline status
Checklist - Uninstall

- Extend app settings with Uninstall option
- Implement method to clean up user data and delete the app via API
- Add event listener
Checklist - Additional Hardkeys on the Remote Control

- Request additional keys via provided by Panasonic API
- Register event listeners in the app code
Checklist - HbbTV

- Add event listener for Red button
- Map channel ID to HbbTV app URL
- Add method to create/close HbbTV apps based on provided API
HbbTV on Android TV

The Zattoo & Fraunhofer Fokus project to make an already smart device even smarter.

Franziska Kleemann, Zattoo
Android TV for Operator Tier
@Zattoo
01. Reliable Hardware
Currently 3 supported platforms from 2 different manufacturers

02. Powerful Operating System
Utilising all advantages of the Android system...

03. Custom Launcher
...while still providing a custom TV experience in the operator’s look & feel

Android TV for Operator Tier at Zattoo
ATV Custom Launcher

Custom Launcher operates as the intermediate layer between the OS and the TV experience.

Adding launcher specific features like: access to system settings, notifications and the apps & games section.

Additional features within the TV experience, e.g.: local recordings, login via serial number and HbbTV.
HbbTV in our ATV Custom Launcher
HbbTV on an already connected device?

- Accessible via one click
- Smooth experience: no need to install & launch a separate app
- Live content related messages & features

vs.

- Accessible via three clicks
- Installation needs to be actively triggered by the user
- Content displayed independently from currently running program

HbbTV red button prompt vs. Access to media library apps
Adding the HbbTV feature to our ATV product

A joint project by

Research
Getting an overview of available HbbTV apps & their features

Design
Defining the MVP, the architectural design and interfaces between the library and the custom launcher application

Implementation
Implementing the HbbTV library provided by Fraunhofer Fokus, handling RCU keys, navigation & lifecycle
Technical approach

- Main component of the library: **HbbTV WebView** as an extension of the Android System WebView

- **HbbTVLifecycle Manager** monitors & controls life cycle of running HbbTV applications, acting as a bridge between the WebView and the player

- Library can be used with any player - in our case: the **ExoPlayer**. Communication between the player and the HbbTV apps is managed via the PlayerInterface
User facing features

Currently supported features: e.g. VOD libraries, parental control, games, broadcast
PiP video playback

Feature toggle within settings allows user to turn the whole HbbTV feature on/off

Navigation concept uses coloured buttons, D-pad, back and OK button
Support of HbbTV 2.0
Currently supported standard = HbbTV 1.5
Future iterations might look into the 2.0 standard

Expansion to Android TV apps
Currently available in our Android TV Custom Launcher, the HbbTV feature could - in theory - also be enabled in our other ATV applications

Dynamic Signaling ✔
Switching to a dynamic approach of loading HbbTV URLs
Thank you!

Whitepaper incl. more technical details available at

thetvplatform.zattoo.com/hbbtv-contact/