The HbbTV Developer Portal

A Marketing & Education Working Group Project

10th HbbTV Symposium and Awards, November 10th, 2022, Prague

Presentation Outline

- Why a Developer Portal? The need

- The idea and its implementation

- Developer Portal Features

- Feedbacks from developers

- Next steps

Why a DevPortal? The need

- The HbbTV specification is developed by industry leaders to improve the video user experience for consumers by enabling innovative, interactive services over broadcast and broadband networks.

- **Technical information for HbbTV is spread across different places**. Whilst API documentation can be found within the specification, there is also reference sample code available on other platforms such as Github, hbbtv.org, redmine and other sources

- This project aims to create a **Developer Portal** for HbbTV application technologies, assembling existing information and creating new wherever it is not available and relevant to HbbTV application developers. The Developer Portal will provide:

    - **Quick access to technical information** in a structured, searchable and crawlable way

    - **Aim at developing and support a HbbTV developer community**, a reference point where find answers and make questions from and to the community.

The idea and its implementation

- **Based on usual Developer Portals structure**. We decided to follow common patterns.

- Aimed at offering a **clear understanding** of the programming additions with:

  – **Examples**, such as application launch and its lifecycle, its signalization on delivery means, remote control interaction, launch and control of video streams and so on.

  – **Guidelines**, an article/tutorial based section which is composed of text, code snippets, images and diagrams.

  – Specification **references** and available resources

  – Integration of a **virtual forum** to enable communication between developers, leveraging the stackoverflow.com platform. Tag #hbbtv can be used as identifier to group posts.

Developer Portal Features Overview

- Tutorials

- API References

- Resources

- Forum

- Search

Developer Portal Features Overview

Tutorials https://developer.hbbtv.org/tutorials/

- Hello World application

- Handling the broadcast a/v object

- Interaction with the remote control

- Basic screen logger

- Overview about HbbTV architecture

- Running a HbbTV application on a hybrid terminal

- Common mistakes to avoid

- HbbTV specs explained

Developer Portal Features Overview

APIs References https://developer.hbbtv.org/references/

- Index

- Method name and description

- Parameter name and description

- Expected results (including errors)

- Minimum HbbTV version

Developer Portal Features Overview

Resources https://developer.hbbtv.org/resources/

- Links to blessed HbbTV applications (e.g. the HbbTV DASH/DRM reference application)

- Links to tools (e.g. HbbTV browser extensions or VMs, FFmpeg, TSDuck, OpenCaster, MIT HbbTV Test Suite, RedOrbit HbbTV Emulator, HybridTV Dev Environment, The hbbtv-dvbstream project)

- Release notes of different HbbTV versions

Developer Portal Features Overview

Forum https://developer.hbbtv.org/forum/

- To enable communication between developers, a virtual forum was integrated using the stackoverflow.com platform, using a common tag word, i.e. #hbbtv

Search

- The portal is searchable for users and crawlable for search engines. The search can be limited to a single section (e.g. reference), including results of discussion threads in stackoverflow.com.

Developers Survey

- **What has improved over time whilst developing applications?**

  - Interoperability, stability and performance of devices
  - Adoption of HTML5 standards

- **What are the toughest challenges when developing HbbTV applications?**
  - Interoperability and testing across devices
  - Support of legacy devices
  - Video playback with DASH (+DRM)

- **Which productivity/debug/monitoring tools are you missing for your HbbTV app development?**
  - Emulator on PC/Mac
  - Debug console access on HbbTV terminal

- **What content/feature would you like to see in the HbbTV developer portal?**
  - Improvements on the API documentation (deep-linking, API changes, code snippets)
  - Best practices and more real life tutorials (e.g. catch-up portal or start-over functionality)

Next Steps

Survey results to be discussed internally at HbbTV Improve Interoperability Task Force (IITF).

Possible future initiatives:

- Virtual event in 23Q1 with developers and CEMs to find solutions to help developers work

- A new, up-to-date emulator and debugging tool

- New developer portal features, e.g. improved API documentation (deep-linking, API changes, code snippets), best practices

Thank you