DASH-DRM Reference Application Explained
What is the Reference Application („RefApp“)?

- HbbTV application and sample content to showcase the HbbTV technology together with MPEG-DASH and DRM
- Includes a complete workflow with free & open source MPEG-DASH content creation tools (with and without DRM)
- Also includes an HbbTV client application with video catalogue of sample content, including the video player made compatible with receivers having support for HbbTV 1.5 and HbbTV 2.0.1 specifications
What is the RefApp for?

• The goal was to create a recipe for successfully and rapidly deploying HbbTV services using MPEG-DASH and DRM
• Also to improve HbbTV services interoperability outside the scope of HbbTV’s official Test Suite. With the openly available deliverables the TV industry can test and validate their receivers and implementations.
• With the Reference App HbbTV product vendors have an easy way to test their DRM implementation and video playback compatibility with the MPEG-DASH content with and without DRM that is not part of the HbbTV Test Suite
How to use the RefApp?

• The reference application is freely distributed to any party interested in testing the technology by HbbTV association.

• Project deliverables includes documentation covering the creation of valid MPEG-DASH files from users own video content. Furthermore, the reference application is implemented in a way which makes the code easily reusable for anybody to implement their own DASH video streaming application.
How to use the RefApp? (cont‘d)

• The reference application presents a catalogue of content items for the TV viewer, which can then be played in clear unencrypted format or with each supported DRM system.

• Application and the content catalogue is designed in a way that it is easily extended with additional content and DRM systems.
Further the application is written in such a way it allows an application author to determine the structure and purpose of each functional area allowing them to easily understand the code and to “pick & choose” which parts of the application to copy.

As well as running on HbbTV 1.5 and 2.0.1 terminals, the reference application can be run on web browsers supporting W3C MSE and EME, and in the future HbbTV versions.
Current features available in production

- [http://refapp.hbbtv.org/production](http://refapp.hbbtv.org/production)
  - Playready and Marlin DRM streams
    - Also non-DRM streams for reference
  - Subtitle and audio stream* selection via color buttons
  - Live* and VOD DASH profiles
  - Complete tool chain for re-creating all test assets locally available at github project page
Additional features in staging instance

• [http://refapp.hbbtv.org/staging](http://refapp.hbbtv.org/staging)
  – Low latency streams with multiple moof/mdat signaling