



HbbTV – A Global Standard Driving Broadcast & Broadband Delivery

What is HbbTV

Hybrid broadcast broadband TV (or “HbbTV”) is a global initiative aimed at harmonising the broadcast and broadband delivery of entertainment services to consumers through connected TVs, set-top boxes and multiscreen devices. The HbbTV specification is developed by industry leaders to improve the user experience for consumers. HbbTV is being widely deployed around the world and is quickly becoming a standard feature in Europe and beyond; for example more than 90% of connected TVs sold last year in Germany were HbbTV enabled.



The specification was developed by the HbbTV Association to effectively manage the rapidly increasing amount of available content targeted at today’s end consumer. It was developed using existing standards and Web technologies including OIPF (Open IPTV Forum), CEA-2014 (CE-HTML), W3C (HTML etc.), DVB Application Signalling Specification (ETSITS 102 809) and MPEG DASH.

HbbTV applications can be delivered as a pure broadcast service or as an online only service, or more commonly, signaled in the broadcast and delivered via an IP connection.

Why HbbTV?

HbbTV helps operators and broadcasters to deliver user friendly enhanced TV services by combining the strengths of broadcast and broadband networks. In emerging markets, where internet uptake rates are low, it can provide a rich interactive experience with features including: Push VOD, games, EPG, Education and e-government information for non-connected devices. Equipped with a rigorous security framework, operators can monetise content through CI+ and DRM support. With a large number of connected TVs and set-top-boxes supporting HbbTV, content providers can deliver their content to a wide audience and avoid restrictive proprietary middleware solutions.

HbbTV Applications

HbbTV allows broadcasters and operators to deliver innovative and rich TV services both for retail horizontal markets, and vertical pay-TV platforms. Services are HTML5 based and they include:

- TV program catch-up and restart
- VOD, and push VOD
- OTT linear channels
- Companion device (smartphone, tablets...) interaction
- EPG
- E-Government
- Education
- Information (super-teletext)
- Games



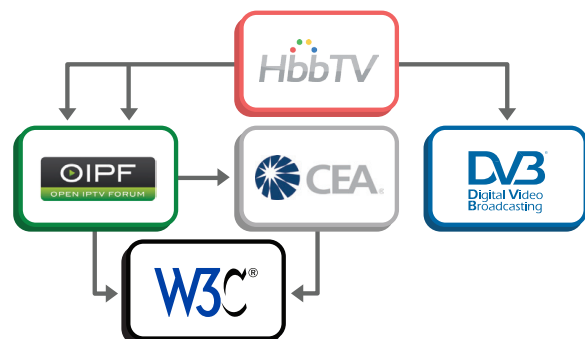
HbbTV Standard

HbbTV 2.0 was released in February 2015 and opens the door for a new wave of advanced consumer TV services, including companion device support, HTML5 user experiences and advanced video delivery features like Ultra HD and HEVC. In July 2016 HbbTV 2.0.1 was released as an update to HbbTV 2.0 to add features needed for deployment UK and Italian markets. More detailed information about the HbbTV specifications can be found on hbbtv.org.

Interoperability & Testing

HbbTV has a number of initiatives to ensure a flawless end-user experience, whilst minimising cost to manufacturers and content providers.

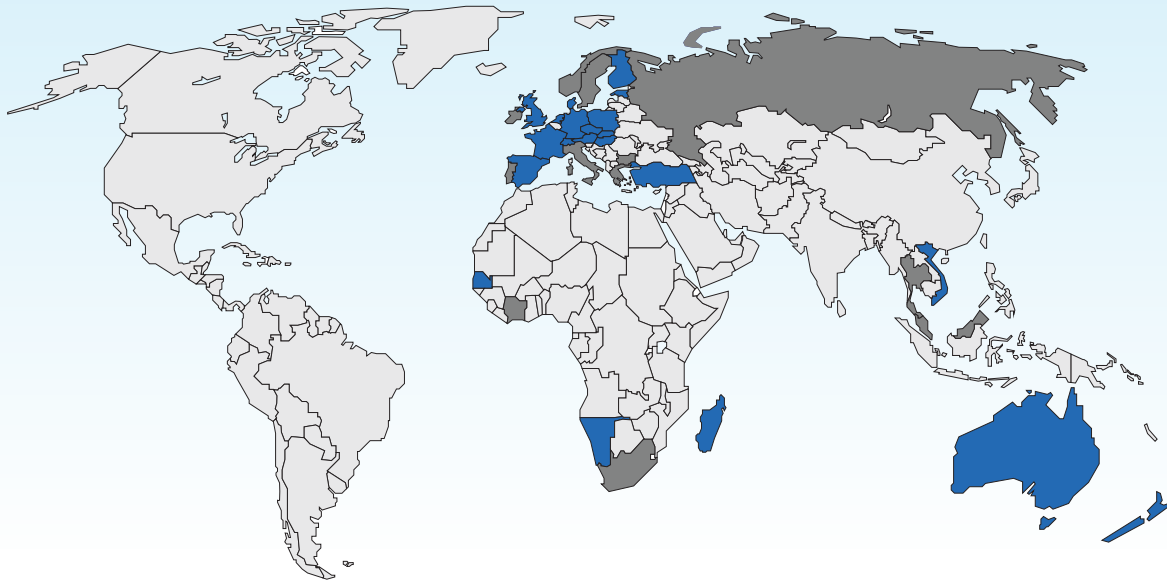
The HbbTV Association holds regular plug-fests where application developers, HbbTV device manufacturers and device software suppliers test their implementations with other vendor’s products and ensure interoperability. The organisation has a very active test suite development program available to HbbTV members free of charge.



The above diagram shows the relationship between HbbTV and other existing standards.

HbbTV Deployment

HbbTV is being widely deployed around the world both in retail, horizontal markets and now within pay-TV operator deployments. See map (Bellow).

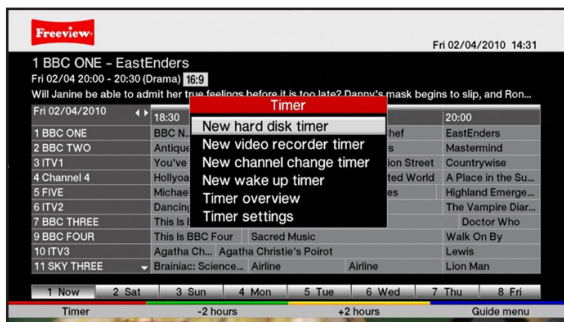


PLANNED

- | | |
|-------------|--------------|
| Bulgaria | Portugal |
| Croatia | Russia |
| Gambia | South Africa |
| Ireland | Sweden |
| Italy | Thailand |
| Ivory Coast | Vietnam |
| Norway | |

DEPLOYED

- | | |
|----------------|-------------|
| Australia | New Zealand |
| Austria | Madagascar |
| Czech Republic | Mauritius |
| Denmark | Malaysia |
| Estonia | Poland |
| Finland | Senegal |
| France | Singapore |
| Germany | Slovakia |
| Hungary | Spain |
| Luxemburg | Switzerland |
| Namibia | Turkey |
| Netherlands | UK |



The HbbTV Association

The HbbTV Association includes more than 90 members representing manufacturers, broadcasters, service suppliers and technology providers. The HbbTV Association includes the following groups: Steering group Certification, Marketing, Technical Specifications, Requirements and Testing. Membership information could be found on our website.

