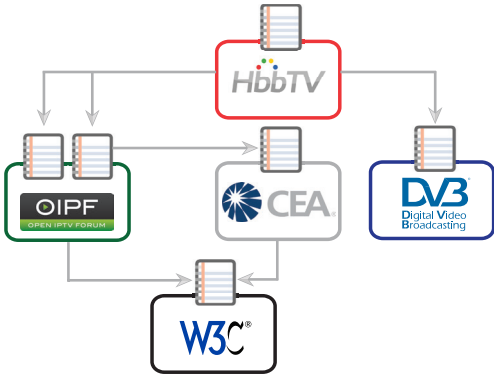
HbbTV – A GLOBAL STANDARD DRIVING BROADCAST & BROADBAND DELIVERY

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 by enabling innovative, interactive services over broadcast and broadband networks.

The HbbTV specification was developed by the HbbTV Association to effectively manage the rapidly increasing amount of available content targeted at today's end consumer. It is based on elements of existing standards and web technologies including OIPF (Open IPTV Forum), CEA-2014 (CE-HTML), W3C (HTML etc.), DVB Application Signalling Specification (ETSI TS 102 809) and DASH. The diagram (right) shows the relationship between HbbTV and other existing standards.

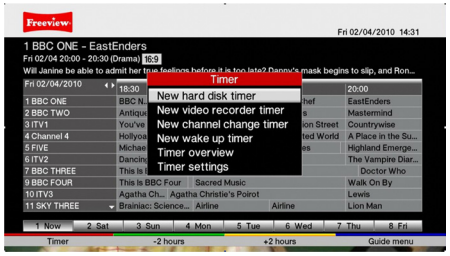
HbbTV applications can be delivered completely within a broadcast or more commonly signalled in the broadcast and delivered via an IP connection.



Why HbbTV?

HbbTV enables operators and broadcasters to deliver comprehensive and seamless services by combining the strengths of broadcast and broadband delivered TV. Where internet uptake rates are low in emerging markets, HbbTV can provide a rich, interactive experience of games, EPG, super-teletext 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 iDTVS and set-top-boxes supporting HbbTV, service providers can deliver their content to a wide audience and avoid restrictive proprietary middleware solutions. Interoperability is ensured through an active plugfest program and comprehensive test suites.

HbbTV support is becoming a standard feature on European iDTVs and beyond; for example 90% of connected TVs sold in Germany are HbbTV-enabled.



HbbTV Standards

HbbTV 1.1 was published as an ETSI standard in June 2010 as ETSI TS 102 796 v1.1.1. In November 2012, HbbTV 1.5 was published by HbbTV as v1.2.1 of the ETSI standard. The key additions in the HbbTV 1.5 standard include DRM compatibility, DASH adaptive streaming and HbbTV access to the DVB schedule information for EPG applications. 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.

HbbTV Applications

HbbTV allows broadcasters and operators to deliver innovative and rich services both in retail horizontal markets, and now as low cost deployments for vertical pay-TV platforms. Services include:

- HTML-5 Applications
- VOD, NVOD and TVOD
- Second Screen
- CI+ User Authentication
- DRM Secure Content
- EPG
- E-Government
- Super-teletext
- Catch-up
- Games
- Linear channels

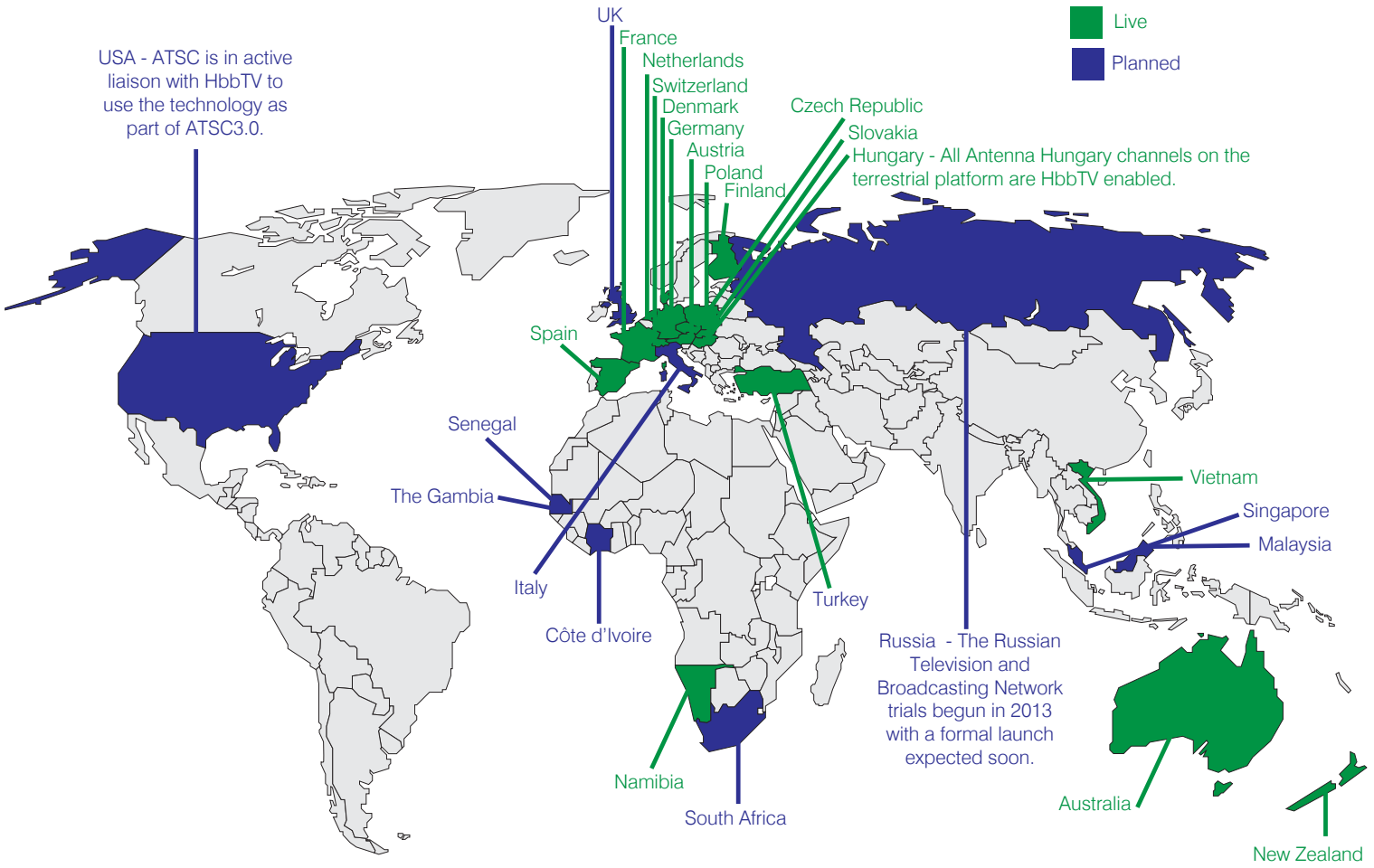
Interoperability & Testing

Interoperability is the keystone of success of any standards-based ecosystem and HbbTV has a number of initiatives and programs to ensure a flawless end-user experience, whilst minimising cost to manufacturers.

The HbbTV Association holds regular plugfests where application developers, HbbTV device manufacturers and device software suppliers can test their implementations with other vendor's products. The organisation has a very active test suite development program. The current V8.0.0 test suite is available to HbbTV members free of charge and includes 632 Approved tests and 334 supporting tests. The HbbTV Association administers a logo program backed by a global network of Registered Test Centres.

HbbTV Deployment

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



The HbbTV Association

The HbbTV Assocation has over 90 members covering manufacturers, broadcasters, service suppliers and technology providers. With an active membership, its steering group consists of representatives from Cellnex Telecom, Deutsche Telekom, EBU , Ericsson, Espial, Eurofins Digital Testing, France Télévisions, httv, Opera Software, RTL Group, SA, Samsung Electronics and TNO. Other active groups are Technical Specifications, Certification, Testing and Marketing.

HbbTV

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