HbbTV Forum Nederland

Overview of Interactive Television services according to the HbbTV standard in Europe

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http://www.hbbtv.nu
1 HbbTV: an open standard for interactive TV services

The Hybrid Broadcast Broadband TV (HbbTV) is a new international standard that is supported by virtually every new television and that can be used by broadcasters and distributors to offer innovative services. These can be offered directly on a "Connected TV" or on an appropriate set top box, without the consumer having to buy extra equipment. HbbTV is unique because it is the only standard that can provide a direct link between the linear program and online content. Through this link, HbbTV provides a new service dimension in the provisioning of television programs and channels. As HbbTV is well standardised, broadcasters and distributors can roll out such innovations quickly - as quickly as publishing a new website. 

HbbTV standards are developed by the "HbbTV Association" (http://hbbtv.org, a Swiss not-for-profit organization), and published by ETSI (European Telecommunications Standardisation Institute, officially recognized by the European Union as a European Standards Organization). 

This overview of the HbbTV Forum Nederland focuses on the HbbTV services that are available in the different European countries, providing a categorization and a view of the types of services that are deployed. More information about HbbTV can be found on www.hbbtv.org, and through other publications of the HbbTV Forum Nederland, which can be found on the website: http://www.hbbtv.nu. In particular, the White Paper on accessibility is also relevant (http://hbbtv.nu/white-paper-bereikbaarheid/).

2 HbbTV in Europe

HbbTV (Hybrid Broadcast Broadband TV) is a technology that combines broadcasting services with services offered over the internet - on the same screen. Additional information carried in the broadcasting signal enables the TV to load a broadcaster-provided app that can retrieve related content over the internet, and display such content. HbbTV can be implemented directly in a television set but also on a set top box. Content providers only need to develop their applications according to the HbbTV standard once, instead of creating different versions for each television model and each set top box. At present, more than 90% of all producers of TV sets have adopted the HbbTV standard (source: GfK). In 2016, more than 50% of all TV sets to the people at home will be suitable for HbbTV (source: IHS Screen Digest and Idate).

The HbbTV standard is based on other open standards, including Internet and web standards, which are widely supported by the various players (broadcasters, manufacturers, service providers). The Steering Committee of the HbbTV Association consists of Abertis Telecom, Espial, Deutsche Telekom, Digital TV Labs, EBU (European Broadcasting Union), Ericsson, France Televisions, httv, Institut für Rundfunk GmbH, LG Electronics, Opera, RTL Group, Samsung, Sony Corporation, Television Francaise 1 - TF1, TNO, and TP Vision (manufacturer of Philips TVs).

As HbbTV is an international standard, viewers can access the services from all countries without any problem: television and interaction without borders.

HbbTV is used in much of Western Europe, with the most advanced services offered in France, Germany, Poland and Spain. The following table shows HbbTV’s deployment status by country. The table is sorted by phase and then alphabetically.

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<th>Country</th>
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3 HbbTV application categories

3.1 Subdivision in four categories

The wide range of services offered in Europe can be divided into the following categories:

- Social services such as Amber Alert, spoken subtitles, speech in other languages, synchronous, computer-generated sign language
- E-Government. A digital newsstand for services by the (local, national) government
- Traditional teletext-like information, but with a much more attractive user interface, also called "super text" with news, weather, traffic, sports scores, stock quotes, exchange rates, etc.
- Advanced EPGs (Electronic Program Guides)
- Enhanced TV - additional information on TV programs such as statistics in sports programs, extras with biographies, background, etc.
- Voting and Polling. Participate in TV programs, vote for candidates in talent shows, join programs like the National IQ test etc.
- Additional content, both "catch up TV" as well as new programs (previews) and restart to "rewind" a broadcast from the beginning to see it if you turn in too late ("Salto" in France)
- Simple games via television
- Home shopping
- Courses, tele-education

All these services are available using a TV channel. This may be the channel of a broadcaster, but also a mosaic channel of a cable or satellite operator, a municipal channel, or even a neighbourhood TV channel.

The above service categories are summarized in four groups of which the following section will show some examples:

- Program-related information such as EPG, extras, polling and voting, etc.
- Content such as catch-up TV, on-demand programs, streaming channels, etc.
- Information about weather, traffic, news etc.
- Social services such as access to services and government information such as sign language, Amber Alert, etc.

3.2 Practical examples

3.2.1 Program-related

Channel France 5 has a daily two-hour program called "C dans l'air" that allows viewers to communicate through an HbbTV application. A viewer that drops in at the middle of the program can instantly rewind to the start of the program through the Salto application.

3.2.2 Content

The Polish public broadcaster TVP provides live streams for 14 regional channels. As a result, these channels can be viewed throughout the country. Because TVP broadcasts via the Astra satellite, all regional channels can also be viewed across Europe.

3.2.3 Information

The so-called "super-text" application is a modern version of the ever popular Teletext. Thanks to HTML and the connection to the Internet, pictures, graphs, maps and the like can also be displayed.
A good example is the weather map of the Austrian public broadcaster ORF in cooperation with wetter.at.

### 3.2.4 Society and government

HbbTV provides opportunities for government to communicate directly with citizens. Interactive services can also be offered, like this jobs directory of the French project Mes Services TV.

Another special feature is the addition of extra services in a running program, such as a sign language interpreter, which can be shown on demand.

### 4 HbbTV local, regional, national, and international operators

#### 4.1 Of local and regional importance

Much of the discussion of HbbTV in the Netherlands focuses on the national level. Outside the national channels as NPO, RTL and SBS, there are many other channels; HbbTV might provide even more value for such channels in reaching and informing their audience.

Viewers in Poland and France have the possibility to view all regional stations through the HbbTV application associated with their own regional channel. There are 13 regional broadcasters in the Netherlands, all with their own radio and TV offerings. An HbbTV service of any regional broadcaster can make available all regional broadcasters nationwide, provided the required HbbTV signal is carried.

Stichting ROOS represents the interests of the regional broadcasters and is a member of the HbbTV Forum Netherlands.

The same possibility applies to local broadcasters. The OLON has virtually all local public media institutions as a member: 282 broadcasters, with more than 500 paid staff and 20,000 volunteers. Together they make 45,000 hours of radio and 5,000 hours of television per week. The content can be made available for HbbTV through the OLON Mediahub. This Mediahub can be made to work for even more local initiatives such as neighbourhood TV that is offered in a number of places. Again, this is only possible if the HbbTV signal is transmitted by the local operator.

#### 4.2 Thematic services

A service that can be offered through local, regional or operator HbbTV portals is the spreading of societal content. Examples are a media culture hub, or a sports hub on which regional soccer games can be viewed. Streaming a match can nowadays be done through 4G which makes live content accessible enough to be deployed at local level. The live content can be viewed via the HbbTV stream of the regional sports hub. Similarly, this applies to other societal events such as cultural events. Something like this does not yet exist, but can easily be envisaged; the OLON Mediahub already provides the required hosting and streaming functions for all local broadcasters.

#### 4.3 International

There are an infinite number of channels; too many for operators to carry all. HbbTV services can also stream channels that are not normally distributed in the package offered by the operator. The station that is in the operator package can choose to make the other channels from its portfolio available.

Furthermore international channels also offer HbbTV services, which are again only accessible if the operator transmits the HbbTV signal. An example is the Eurosport channel for the German market, but there are also new channels such as France24 with an HbbTV offering that may be of interest to Dutch households.
4.4 Examples of package provider HbbTV services

In addition to HbbTV services offered by stations, HbbTV can be used by package providers in order to offer services. Here are two examples, one national and one international.

4.4.1 Delta

The first example is the service of Delta from Zeeland that uses HbbTV for its interactive platform.

Delta customers can use services such as Uitzendingg gemist (catch-up TV), Video on Demand offered by Videoland, but also regionally oriented services like photos that have been uploaded by users, and the service "Trugkieke" for historic regional imagery by using the Humax HbbTV set-top box provided by Delta or an HbbTV capable TV.

4.4.2 Fransat

The second example of a package provider that uses HbbTV is Fransat, offering an HbbTV platform via Eutelsat with its own services, but in a way that leaves all broadcast-related apps accessible. The Dotscreen company has built a "shell around a shell" kind of service based on a special set-top-box that allows transparent switching between all services. So there is zapping between channels through the Fransat Connect HbbTV service, but users can also switch to the HbbTV services of the specific channels. This is a fine example of the openness and the potential of HbbTV. The entire channel offering is transparent and accessible.
5 HbbTV by country

Countries are listed in alphabetical order to simplify browsing. Unlike the information in the table above, the order has no relationship with the degree of maturity of HbbTV services.

5.1 AUSTRIA

5.1.1 Distribution
All HbbTV services in all TV channels are distributed through satellite television, through cable or through the digital DVB-T network.

5.1.2 Reach
According to information of regulator KommAustria, satellite TV, with 50% market share, is the most important distribution method, followed by cable (44%) and ether (12%) (total is over 100% because households sometime receive broadcast TV in more than one way.).

5.1.3 Channels and services
All Austrian public and most commercial broadcasters offer a variety of services. Also all German HbbTV services are available for Austrian viewers through satellite.

ORF
Public broadcaster ORF offers a great number of services amongst which an extended catch-up TV service.

ORF-Text (Teletext) – with all services like news and sports

EPG – the Electronic Program Guide

The full offering of weather news from wetter.ORF.at (see illustration)

The ORF-TVthek. The on-demand service (catch-up TV) to watch past programs.

Commercial broadcasters

The commercial broadcaster Puls TV, part of the ProSiebenSat.1 group, has an extended HbbTV service with an emphasis on video and an extended weather service in cooperation with wetter.com.

5.2 BELGIUM

5.2.1 Distribution
The HbbTV services of the Walloon public broadcaster RTBF are distributed through digital ether broadcasting (DVB-T).

5.2.2 Channels and services
The Walloon public broadcaster RTBF is currently the only station that offers HbbTV services. It does this on an experimental basis.

During the Olympic games, viewers could choose from an extensive menu of additional information about the Olympics. It was also possible to view a large number of videos on demand.
5.3 CZECH REPUBLIC

5.3.1 Distribution
All HbbTV services of the public broadcaster CT are distributed through the ether. The programs of Ocko are available through ether and satellite.

5.3.2 Channels and services
The public broadcaster CT is the largest provider of HbbTV services in the Czech Republic. Commercial music channel Ocko TV has joined in offering an HbbTV test.

CT has started offering HbbTV in 2012, first with news, EPG and several sports applications during large events.

In 2013 the broadcaster opened its archives under the label iVysílání, making available 70,000 hours of content.

5.4 DENMARK

5.4.1 Distribution
All HbbTV services of the public broadcaster DR (Danmarks Radio) are spread through the air and through all cable networks.

5.4.2 Channels and services
The public broadcaster DR (Danmarks Radio) is the only station which is currently offering HbbTV service broadcasts. In addition, all German channels are also available with HbbTV, accessible over cable or through the ether.

5.5 FINLAND

5.5.1 Distribution
In Finland HbbTV is only available on the digital ether network from Digita.

5.5.2 Channels and services
In total 14 TV channels available through digital ether offer HbbTV services.

The Digital platform itself offers an extended EPG for all channels on the platform.

This is an example from the news portal of the commercial broadcaster MTV3.
5.6 FRANCE

5.6.1 Distribution

All HbbTV services of all the TV channels are distributed over the air (known as the TNT platform), satellite television and through all cable networks. In addition there is a test using the DVB-T network, which also provides additional services (see below).

5.6.2 Reach

In early 2013 there were 500,000 HbbTV capable TV sets in France. The distribution per platform is DVB-T/T2 69%, free satellite 11%, paid satellite 13% satellite, cable 9% and IPTV 35% (source: HD Forum France, multiple sources per household).

5.6.3 Channels and services

All French public channels (France Télévisions - on France 2, 3, 4, 5 and France O), the pan-European culture channel Arte, and commercial broadcasters TF1, M6 and NRJ have an extensive range of HbbTV services. Most stations have an offering consisting of news, weather, sports and the Electronic Program Guide.

The TV channel NRJ brings a variety of live radio stations in addition to catch-up TV.

The SALTO service of the public broadcaster is a "restart" function, which allows the viewer to go back to the beginning of a program that is already running. At this moment, this option is only offered at prime time.

Channel Arte is emphasizes its catch-up TV offering that allows the viewer to go back for seven days.

Channel France 5 has a daily program called "C dans l’air" that allows viewers to communicate with the broadcaster through its HbbTV application.

TF1 shows a Twitter feed in popular programs such as The Voice. The MyTF1 VOD works according to the HbbTV 1.5 standard and uses standardized streaming and content protection systems (the same standard was agreed in The Netherlands).

Pilot – Mes Services TV

AFDESI (Association for the Development of Enhanced TV Services and Interactivity) runs a pilot with the Mes Services TV platform, which is distributed over the digital ether network (DVB-T).

Through a special barker channel, of large number of new services are tested by: Cadremploi.TV (jobs offering), Equidia, L’Equipe, mySkreen, T-Seniority, Geste (representing the French printed press), Eco TV, France 24, Gong (animation and video games network), Groupe Altran, Groupe Casino (supermarkets), La Chaîne Météo, LifeStyle, Météonews.TV, RFI, TV5 Monde, Guide TV, PMU (gambling), Info Traffic and more.
In the Cadremploi.TV service people can find jobs and check out company videos.

The channels France 24 and TV45 Monde, that are not transmitted in France, can be watched as a live stream through HbbTV.

T-Seniority offers viewers from an advanced age information and videos.

5.7 GERMANY

5.7.1 Distribution
All HbbTV services of all TV channels are distributed via satellite television and through all cable networks. In addition, the DVB-T network (the equivalent of the Dutch Digitenne) is made suitable for HbbTV - distribution, which will also provide additional services (see below); at this time HbbTV is available over the air in all urban areas. Deutsche Telekom is working to support HbbTV over IPTV.

5.7.2 Reach
According to data from market research firm GfK Retail and Technology, seven million TV sets were HbbTV capable at the end of 2013. According to the industry association BITKOM nearly 60% of all TVs sold in 2013 in Germany were HbbTV capable.

5.7.3 Promotion
In September 2013, the German public and commercial broadcasters launched a joint campaign to bring HbbTV to the attention of the public. With the slogan "Auf ROT geht's los!" it explains how HbbTV works and what the services are. The campaign includes TV spots and leaflets.

5.7.4 Channels and services
All public and most commercial broadcasters offer a range of services. Below is a summary per channel.

Das Erste and all broadcasters that are part of the ARD

Mediathek: the on-demand service where programs can be viewed that have already been aired.

Tagesschau. All transmissions of the ARD news, as well as separate items.

EPG - Electronic Program Guide.

ARD Text (Teletext) - with all service categories such as news, sports and weather. The viewer can personalize this service by adjusting the subjects, the colour scheme and the size of the font.

Tatort: Background information of the most popular of German TV series. Including making-of videos, interviews with the cast, and a (video) preview of the next episode.

Separate HbbTV services by digital theme channel, Phoenix, Eins Extra, Eins Festival and Eins Plus.

Separate HbbTV services by state. Each regional broadcaster that is part of the ARD has its own HbbTV service containing a Mediathek and teletext. These are the regional broadcasters: BR-alpha, Bayerische Fernsehen, Hessen Fernsehen, MDR, NDR, RBB, SWF, WDR.
ZDF
The ZDF has a similar service to Das Erste / ARD, with Mediathek, Teletext and EPG.

The ZDF also has its own HbbTV service for the digital theme channels zdfinfo, zdfKultur and zdfNe0 well as for the international German transmitter 3Sat in cooperation with ORF (Austria) and SRG (Switzerland).

Additional sports on ARD and ZDF. During the Winter Olympics in Sochi, the ARD and ZDF featured some live streams broadcasts where viewers could follow all sports live, including those not on the broadcast.

Mediengruppe RTL Deutschland
All the stations of the German RTL Group have their own HbbTV service: RTL, RTL II, Super RTL, Vox and N-TV.

Digitaltext is the name given by RTL to its teletext-alike services like news, weather, sports and traffic.

Additional support is offered through HbbTV for popular programs such as "Deutschland sucht den Superstar", "Das Supertalent" and "Bauer sucht Frau" with clips, background information, interviews, etc.

RTL also offers live streaming of channels; ClipFish Music, ClipFish Comedy, doolop (music), and ClipFish Anime. Here, the viewer can view on-demand programs and clips and create a personalized TV channel.

ProSiebenSat.1 Gruppe
All the stations of the German ProSiebenSat.1 Group have their own HbbTV service; Sat.1, Cable eins, ProSieben, and Slix.

Besides the usual teletext-like information, the stations of the ProSiebenSat.1 Group provide mostly video clips of popular programs.

In Austria the channel Puls 4, also part of the ProSiebenSat.1 Group, offers its own HbbTV service.

As a special offer all channels of ProSiebenSat.1 also offer a game Portal provided by itsmy.tv. This allows viewers both free and paid games (purchased separately for a period of 48 hours or unlimited with a subscription).

This game's portal was launched in March 2013 and reached three million plays within four months.

Small commercial broadcasters
A number of smaller private stations also have an HbbTV offering, including Das Vierte, Kinowelt TV, Bibel TV, Yavido, Sport.1 HD Anixe and Dr.Dish TV (Tech TV).

Home shopping channels
Four so-called home shopping channels offer HbbTV; Channel 21, HSE24, Sonnenklar.TV, and QVC.

Via HbbTV viewers can directly purchase items at these stations, without the intervention of a (mobile) phone or computer. All interaction is done via the TV remote control.
Media Broadcast - Multithek – extra offerings through the ether

The German company Media Broadcast creates a link between TV broadcasting via digital ether (like Digitenne in the Netherlands) and additional services over the internet by using the Multithek.

At present the services are available through the stations in Berlin, Bremen, Hamburg, Saarbrücken, Nordrhein-Westfalen (Cologne, Düsseldorf, Duisburg, Osnabruck, etc), the Rhein / Main area (including Frankfurt, Wiesbaden, Mainz), Hannover, Braunschweig, Stuttgart, Nuremberg and Munich.

All HbbTV services of the channels that are broadcast through Media Broadcast are available and also their own additional service, the Multithek. This is available through a special barker channel which provides access to many services.

in addition to a wide range of on-demand offerings that includes Spiegel T amongst others, Multithek also offers access to live streaming channels including Bloomberg Television, and the home-shopping channel Das Neue TV.

Also worth mentioning is the additional distribution of Multithek via satellite, namely through Astra at 19.2 degrees East, the position at which all major German broadcasters provide their satellite broadcasts.

Local TV portal in the ether and through satellite

The Bayerischen Landeszentrale für neue Medien (BLM) has developed a portal for local TV stations, the Lokal TV Portal.

This features all the local TV stations from Bavaria and Baden-Wuertemberg nationwide both as live streams, and as on-demand. The offer is intended to be extended to local channels from other states.

HD+ Replay platform on satellite

The HD+ platform is provided by SES Play-out services in Munich and offers TV viewers in Germany access to a large number of commercial HD channels via the Astra - satellite.

HD+ also provides a portal through which many HbbTV services can be consulted from a central barker channel.

There is also a paid version, HD+ RePlay, where viewers gain access to premium websites of the Media Group RTL, ProSiebenSat.1 and Discovery (DMAX) for a quarterly fee of EUR 15.

Eutelsat Kabelkiosk

The Cable Kiosk platform of the German branch of satellite operator Eutelsat offers a white-label service for cable companies, which uses the HbbTV standard to deliver extra services. Below is Kabelkiosk Choice, VOD - service including feature films, Disney programs and on-demand offerings from various other channels, including Discovery, History and Biography Channel.

HbbTV with additional sign language

HbbTV can also be used to provide a sign language interpreter with TV programs - without having to use an additional channel. The signal with sign language can be coupled to each channel as a live stream.

5.8 HUNGARY

5.8.1 Distribution

All HbbTV services by Antenna Hungaria are exclusively distributed by digital ether.
5.8.2 Channels and services
Antenna Hungaria offers its HbbTV services as a test for now. The offering includes an extended EPG, news, weather, on-demand content and live streams of extra TV channels MTVA and Fix TV as well as a number of radio stations.

5.9 The NETHERLANDS

5.9.1 Distribution
In The Netherlands, the HbbTV services of a number of broadcasters are available in a number of different ways including digital ether (Digitenne), through satellite (Canal Digitaal), through glass fibre operators (Glashart) and through a number of smaller cable operators (SKV Veendam, CAiWay, Delta). The major operators do not carry HbbTV signals, however. The report "White Paper bereikbaarheid van Interactieve Televisiendiensten volgens de HbbTV standaard." (about the distribution of interactive TV services through HbbTV, Dutch language only) that is published on http://www.hbbtv.nu gives an overview of the aspects of HbbTV distribution in The Netherlands.

5.9.2 Reach
In The Netherlands about 70% of all 7mln households receive their TV signal through cable. The other ways of watching TV are through satellite, digital ether (Digitenne / DVB) and IPTV (KPN and Tele2). Over 450.000 unique monthly visitors use the HbbTV platform by the public broadcaster Publieke Omroep. On average 65.000 unique daily visitors generate over 850.000 page views. [source?]

5.9.3 Channels and services
The public broadcaster NPO and the commercial broadcaster SBS with its channels SBS, NET5 and Veronica provide HbbTV services.

NPO
Access to HbbTV is through the red button that gives information about current programs, enables the viewer to switch programs and offers the catch-up TV service called Uitzending Gemist.

Using Uitzending Gemist on the TV is very easy, and in this way, the Publieke Omroep supports the changing media use by its viewers.

A TV guide offers information on programs coming up, and viewers can listen to Radio 1, Radio 2, 3FM, Radio 4, Radio 5 Nostalgie and Radio 6 Soul & Jazz.

SBS, NET5 en Veronica
The offering of SBS consists of a TV guide, now-and-next information, and catch-up TV. For Video on Demand films and series, viewers are currently directed to the "Kijk" service that is available through SBS’s online offering.
### 5.10 POLAND

#### 5.10.1 Distribution
All HbbTV services by all TV broadcasters are distributed through ether (DVB-T), through satellite and through all cable networks.

#### 5.10.2 Reach
Data of the Polish public broadcaster TVP (Telewizja Polska) show that there were 320,000 active users of HbbTV services in March 2014. TVP expected this to grow to 500,000 at the end of 2014.

#### 5.10.3 Channels and services
The Polish public broadcaster TVP offers the most services. Also the commercial broadcasters offer extended services. Puls TV and Eska TV have a broad service offering through the ether.

**TVP**

TVP offers live streams from all regional channels, giving access to all 16 regional TVP channels throughout the country.

Extra sport on TVP: during the Olympic Winter games in Sochi, TVP transmitted five parallel streams so viewers could watch all sports live and not only those that were broadcasted.

### 5.11 SPAIN

#### 5.11.1 Distribution
All HbbTV services of all TV channels, public and commercial and regional are distributed through the ether (the so-called TDT platform), through satellite and through all cable networks. The HbbTV services through the ether are jointly promoted as TDT Hibrida.

#### 5.11.2 Reach
Free TV through the ether (TDT) with 98% is the most popular way of viewing, with satellite (10%), cable (8%) and IPTV (5%) following (source: CMT).

#### 5.11.3 Channels and services
Many broadcasters provide HbbTV services. These are the public channels of TVE, and regional channels like Televisio de Catalunya, Tele Madrid, EITB, Canal Sur, Television de Galicia, Radio Television Canaria, IB3 (Balears), Lux Mallorca, Tele B and the commercial broadcasters like GolT (soccer) and Veo Television.

**TVE**

The public broadcaster TVE has a major offering of HbbTV services, among which an extended on-demand service, A la carta.

Especially for children, TVE has the on-demand service "Clan a la Carta".

Local and regional channels like Tele Madrid have an extended on-demand catalogue, and the soccer channel GolT offers highlights and catch-up TV of soccer games.
Veo Television, a broadcaster that is owned by a publisher, offers access to content of newspapers and magazines from the publishers' other companies.

The HbbTV services by French language broadcaster RTS are also distributed through the ether.

5.12.2 Channels and services

The public broadcaster RTS offers a number of services under the RTS+ label amongst which are “super text” and catch-up TV.

HbbTV can also be accessed on foreign channels, for instance those from France or Germany, in the case these are distributed through ether, satellite or cable.
6 About the HbbTV Forum Nederland

6.1 Goal

The HbbTV Netherlands Forum is a group of companies and institutions that cover the entire supply chain for linear and interactive broadcasting services. The Forum has the following objectives:

1. to agree on, and document, the interoperable implementation of the international HbbTV standards in the Netherlands, which includes agreeing on which version of the HbbTV standard will be used in the Netherlands, and everything else that is required on a technical and organizational level to ensure the deployment of interoperable services and consumer devices;
2. to publish and make available for free, the agreements once they are final;
3. to promote the introduction of the HbbTV standard in the Netherlands

The first two objectives have been achieved: an approved specification for the Dutch market was published in May 2013 on our website http://www.hbbtv.nu. This specification is fully in line with European standards as published by ETSI, the European Telecommunications Standards Institute, and harmonized with, in particular, the French specification.

This overview of European HbbTV services, just like our whitepaper about accessibility published at the end of 2013, is written in the context of our third objective: to promote the introduction of the HbbTV standard in the Netherlands. This overview describes what services are available in Europe, and it places the Dutch HbbTV development in that context.

6.2 Members

At the moment of publication (March 27th, 2014) the following organizations are members of the HbbTV Forum Nederland:

- 24i Media
- CAIW Diensten B.V.
- Divitel
- Dolby Laboratories
- Hoek & Sonépouse
- Infostrada
- LG
- NPO
- People’s Playground
- Stichting ROOS
- RTL Nederland
- SBS
- SeaChange
- SES
- SONY
- TNO
- TP Vision (Philips TV)
- TWC
- United
- ZeelandNet

An up-to-date member list is always available on http://www.hbbtv.nu.