Deliverable D7.4.1

Project Title	**Next-Generation Hybrid Broadcast Broadband**
Project Acronym	**HBB-NEXT**
Call Identifier	**FP7-ICT-2011-7**
Starting Date	**01.10.2011**
End Date	**31.03.2014**
Contract no.	**287848**
Deliverable no.	**7.4.1**
Deliverable Name	**1st Report on Standardization and IPR Protection Activities**
Work package	**7**
Nature	**Report**
Dissemination	**Public**
Author	**Michael Probst (IRT)**
Contributors	**Oskar van Deventer (TNO), Eugen Mikoczy (ST)**
Due Date	**30.09.2012**
Actual Delivery Date	**20.11.2012**

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Executive Summary

This document is the first report on HBB-NEXT's standardization and IPR protection activities. It contains a summary of the contributions made to standardization bodies and planned contributions discussed in HBB-NEXT.

Section 1 lists the contributions made to ETSI Media Content Distribution (MCD) on the topic "Multi Screen Convergence Services". In section 2 a list of features for the upcoming HbbTV 2.0 specification is presented which has been discussed in HBB-NEXT in order to allow for HBB-NEXT services on HbbTV2.0 receivers. Standardization in ITU-T for promoting HbbTV and HBB-NEXT on a world-wide level is documented in section 3.

Section 4 lists the IPR activities like patent applications which are based on HBB-NEXT work.

1. ETSI MCD and ETSI TISPAN

Work Item "Multi-screen convergence service"

End of 2011 in ETSI Media Content Distribution (MCD) [2] a new work item for multi-screen services was proposed. HBB-NEXT members, namely ST, TNO and NEC, took the opportunity to join and to extend the scope of the work item proposal with HBB-NEXT topics.

The work item's formal name is DTS/MCD-00018 with the goal of creating a specification for "Multi-screen convergence service". It was brought into ETSI MCD during the ETSI TISPAN [3] and MCD meeting in Sophia Antipolis on 30 November 2011.

Based on inputs of TNO, ST, NEC, RBB and IRT, the contribution "HBB-Next use cases" related to work item DTS/MCD-00018 was prepared. This contribution was presented by NEC at the ETSI MCD #13 meeting held in Paris on 15 March 2012.

TNO and ST in cooperation with other HBB-NEXT partners, namely RBB and IRT, elaborated three standardization contributions to the ETSI MCD meeting #14 as part of the draft technical specification DTS/MCD-00018 "Converged Multi-screen service":

- MCD(12)14_005_WI00018-requirements_re-structuring
- MCD(12)14_006_WI00018_CMS_service_requirements
- MCD(12)14_007_WI00018_CMS_system_requirements

ST represented HBB-NEXT at MCD#14 meeting in Sophia Antipolis, 14 – 16 May 2012 and during several audio calls after the meeting to present and discuss the contribution. The feedback of these discussions was provided to the HBB-NEXT partners.

Other ETSI related activities

TNO initiated a liaison letter from ETSI TISPAN/MCD to the HbbTV consortium to examine a possible cooperation of the two standardization groups, as partners of the HBB-NEXT consortium are members of both groups. The letter suggested coordination of the two bodies on media synchronization and hybrid IPTV/HbbTV systems.

At the ETSI TISPAN meeting in Sophia Antipolis, 27-29 February 2012 TNO and ST were present to discuss a liaison statement from the HbbTV Consortium to ETSI TISPAN in response to the letter above. The discussed response from the HbbTV Consortium highlighted the need for increased coordination between HbbTV, OIPF, DVB and ETSI while questioning a need for integration of IPTV on the one hand and HbbTV on the other.

2. HbbTV

In summer 2012 HbbTV released version 1.5 of its specification and version 0.9 of its test suite [1]. The HbbTV consortium continues to work on the test suite to cover more items of the current HbbTV specification and starts its work on the next major release of its specification.

2.1. Features for HbbTV2

The following paragraph shows a list of technical features which are relevant for the HBB-NEXT framework and which are proposed to HbbTV by the HbbTV members IRT and TNO. The objective is to contribute to the definition of the scope of HbbTV 2.0. The list has been discussed and agreed with the HBB-NEXT partners. IRT and TNO presented the input at the HbbTV requirements group meeting in October 2012.

HTML 5 Support

This feature aligns the HbbTV browser profile with current W3C developments which are widely supported by browsers and other platforms. The following is a non-exhaustive list of HTML5 components which should be included.

- Web Storage: The feature enables application providers to store data on the terminal locally. Unlike cookies the storage is bound to applications not web domains.
- Web sockets: The feature enables to optimize AJAX applications by reducing overhead when using XHR.

User Identity Management

The feature comprises a terminal based user management framework and a single sign-on solution for applications. For example, the user can login with a terminal dialog and user-trusted applications can receive a list of the logged in users and their profiles from the terminal. The user identity can be based on Internet identity providers like OpenID [4]. A login can be done implementation dependent and optionally based on face or voice recognition.

Second Screen

The second screen or companion screen feature allows applications to launch web pages on tablet PCs and smart phones and provides a communication channel between the HbbTV application and the web page loaded on the second screen. Use cases for this feature are the presentation of additional content on a second screen with the option to loosely synchronize it with live content on the main terminal, and the control of HbbTV applications from the second screen. The feature shall allow combination with the user management.

Synchronization and Picture-in-Picture

The feature allows for receiving A/V and data components of a DVB service partly over broadcast and partly via broadband for synchronized presentation in the terminal. In addition to a second H.264 decoder the feature adds support for multiview, i.e. two videos are decoded and rendered to the screen with partial overlap. Picture-in-picture support is also possible without the synchronization part, e.g. for presenting two live services on the screen.

Social TV Synchronisation

The social TV feature allows identical and different (e.g. transcoded) content to be synchronously played on multiple devices (HbbTV, second screen, companion screen) that may or may not be close together, i.e. the users of the devices can be either in the same room or at different locations. The synchronisation solution assures that the played associated content is sufficiently synchronized over the multiple devices, i.e.

The required measurement point(s) and buffering resources each may be located on the device or in the cloud (e.g. on a virtual set-top-box). There may or may not exist a direct communication channel between the devices that are synchronised.

2.2. Next Steps

HbbTV will start to work on HbbTV2 by discussing which features shall be part of the next release. IRT and TNO will participate in this discussion and inform HBB-NEXT partners about the selected features from the list above. Depending on the selected list of features HBB-NEXT will discuss technical contributions by common members. Common members, i.e. member of HBB-NEXT and HbbTV, currently are TNO, TARA and IRT.

3. ITU-T

IRT submitted an input paper to ITU-T that explained HbbTV as a means for interactivity in cable TV (CATV) networks. The ITU-T Study Group 9 recently created a Focus Group (FG) on Smart Cable Television. The FG is open to all stakeholders. Non-ITU members may create a guest account. The first meeting was held at ITU in Geneva from 19 – 21 June 2012. The IRT text made reference to the work of HBB-NEXT and the updates that are currently under development within HBB-NEXT. IRT will continue to inform ITU about the further development of HbbTV and HBB-NEXT, both for cable and over-the-air usage. The ultimate goal is to have HbbTV standardised by ITU on a worldwide level (ETSI only covers Europe). The next step is an input to the autumn meeting of ITU-R Working Party 6B (Broadcast service assembly and access). Furthermore, there was a contribution to ITU-T Study Group 9 (Focus Group on Smart Cable Television) by IRT. Furthermore, IRT drafted a document with feature descriptions for discussion with the HBB-NEXT partners for the HbbTV Consortium. The HbbTV Consortium is currently discussing the formal approach, i.e. terms of reference, for the work on the next release. It was decided to start the work but a kick-off meeting has not been scheduled, yet.

4. IPR Protection Activities

This section lists patent applications based on work done for and in HBB-NEXT.

Inventors	Title	Application number	Date of application
Oskar van Deventer, Joost de Wit (TNO)	Group composition based recommender system and method	EP12181792.8	24-8-2012

5. Conclusion

Standardization is a major objective of HBB-NEXT. This first report shows that HBB-NEXT partners have been quite active in this area even in this early stage of the project. First standardization activities started five months into the project and concern standardization groups ETSI MCD, HbbTV and ITU-T.

A first major achievement is the HBB-NEXT contribution on scenarios, use cases and requirements for “Multi Screen Convergence Services” in ETSI-MCD. The contribution of HBB-NEXT, which was largely derived from Deliverable D2.2, has already been approved by ETSI MCD to be included in an ETSI technical specification. In the next period HBB-NEXT is planning to continue its work in this group to also standardize aspects of system architecture, APIs and protocols for “Multi Screen Convergence Services”.

The second important strand concerns the HbbTV Consortium. This has now started work on the next major release of its specification. that might cover. IRT is head of the HbbTV-Consortium and project partners TARA and TNO are also members. These partners plan to contribute a document with feature proposals for HbbTV 2.0 like support for companion screens, advanced video to video synchronization, identity management and others HBB-NEXT framework achievements.

Last but not least ITU-T is also in the project focus: In June 2012 IRT submitted an input paper there that explained HbbTV as a means for interactivity in cable TV (CATV) networks. The text made reference to the work of HBB-NEXT and the updates that are currently under development within HBB-NEXT.

And a first patent application derived from HBB-NEXT has been applied for (TNO)

6. References

[1] http://www.hbbtv.org

[2] http://www.etsi.org/WebSite/Technologies/MediaContentDistribution.aspx

[3] http://www.etsi.org/tispan/

[4] http://openid.net/

7. Abbrevations

AJAX	Asynchronous JavaScript and XML – a paradigm for realizing web applications
ETSI	The European Telecommunications Standards Institute
TISPAN	ETSI Telecommunications and Internet converged Services and Protocols for Advanced Networking
MCD	ETSI Media Content Distribution
W3C	World Wide Web Consortium
XHR	XML HTTP Request