HBB-NEXT (287848)

Deliverable 1.2.5

6th Quarterly Management Report

Reference Period (from 01.01.2013 to 31.03.2013)

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2	IRT
3	NEC
4	TNO
5	ST
6	STUBA
7	KU Leuven
8	THM
9	TARA

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1. Project status: Technical progress and achievements

1.1. WP1 – Project Management

Task 1.1: Project Management

First Project Review: The main focus of Project Management in this reporting period was the first Project Review which took place in Brussels on 31.1.2013. RBB coordinated the partners' presentations / preparations in an intensive iterative process. A common template that had been provided in December 2013 was discussed intensely with the work package leaders and modified several times in order to reach an efficient, streamlined and focused approach. The main focus here was to make sure that each partner covered the crucial HBB-NEXT objectives for this period in a structured and clear approach. Each presentation was checked, edited and finally formatted by RBB. Several phone conferences were held for Review preparations, covering logistic and presentation matters. RBB also prepared a project management and a Work Package 2 presentation. A full day rehearsal meeting was organised and chaired by RBB onsite in Brussels. Also, RBB stayed in touch with the Project Officer for cross-checking and communicating all information on the Review preparation. During the meeting RBB did detailed minutes, which in combination with the official Reviewers Report, will help to steer the project through the remaining project year 2. All crucial points of these minutes were communicated to the partners at the Consortium Meeting in Friedberg (see below). Once the Reviewers Report was available, RBB compiled a document summarising all the important points and their implications for the partners.

QMR: QMR 5, D1.2.4, was submitted to the Project Officer on 25.2. 2013. The delay of submission of roughly three weeks was due to the work load for all partners related to the Review and was communicated to the PO by mail as early as December 2013 and agreed by him. RBB, as usual, guided all partners through the reporting procedure and compiled and edited the final document.

Consortium Meeting: From 5 to 7 March 2013 HBB-NEXT held its fourth Consortium Meeting hosted by THM in Friedberg, Germany. The meeting started with a full day technical integration meeting to then move on to several plenary meetings (including a PCC meeting) and parallel work package as well as application team meetings. RBB, together with IRT, provided an agenda, prepared several presentations as well as detailed minutes afterwards.

Task 1.2: Financial Management

Financial Statements: After the Review there were some minor modifications on request of the Commission. Consequently, RBB's Financial Statement was changed and everything, the PPR and the

Financial Statements, were uploaded again successfully on 6.2.13. Once RBB got the final Financial Statements from the Commission on 8.3.2013, it started the signing process among the partners and sent the signed documents via courier to the Project Officer on 26.2.13.

Budget Shift: Minor budget shifts in order to adjust the HBB-NEXT budget in a sensible way without in any way changing or modifying the aims as defined in the DoW were introduced at the first Project Review. These budget shifts are in line with Article 5.2 of ECGA – Financial content of Annex I to ECGA. On 22.3.13 these requests were communicated to the Project Officer with a comprehensive text explanation per partner and request as well as with an Excel Table showing all these minor changes in the overall budget context. Before that, RBB collected all relevant information from each partner and clarified all respective questions on a bilateral basis, including the provision of detailed controlling table work for each partner.

1.2. WP2 - Usage Scenarios, System Requirements and User Validation

Task 2.3: User-Oriented Validation and Evaluation

The reporting period saw a lot of effort in the context of User Validation Phase 2 which concludes with the end of this reporting period. Both KU Leuven and RBB were busy in conducting usability tests related to selected apps (output from several HBB-NEXT App Teams).

Thus, RBB conducted user tests an 21st and 22nd February 2013: 10 hard of hearing and deaf testers from different age groups tested the improved and extended HBB-NEXT Settings Application which is related to Work Package 4. Early results of this and resulting actions for app teams from this user validation were presented at the Consortium Meeting in Friedberg as input for MS 7, the intermediate software components' development.

Likewise, KU Leuven, prepared and conducted the user evaluation of the Smart App Store also in February 2013 which is work package 3 related and presented all valid results at Friedberg to the technical partners. KU Leuven also started to prepare the user evaluation of the Group Recommender App which is work package 5 related.

KU Leuven coordinated Deliverable D2.3.2 where both partners, RBB and KU Leuven started writing their input. The background to this annex is as follows:

D2.3.2 documents the results of User Validation Phase 2 of HBB-NEXT, the second of three validation phases in the project. User Validation Phase 2 started on 1 October 2012 and lasts officially until end of March 2013 (M13 – M18). The aim of this phase according to the DoW - Description of work - is the validation of initial components and basic functionalities of the HBB-NEXT enablers. Basically, phase 2 is dedicated to testing the output of the project's Development

Cycle 2 which produced the initial versions of the HBB-NEXT core components of Work Packages 3, 4 and 5. So, in User Validation Phase 2 we now validated some of the early applications of these initial technological enablers (software components) which were developed in Task 6.3, covering both functional elements and GUIs in lab tests involving target users. This is documented in Deliverable D2.3.2. which will be submitted today. However, in two instances we would like to go beyond this:

1) The "Interactive HbbTV application" will be validated with a user group during a live television show on 31th May at 10:00 pm to have a more realistic test in a live broadcast situation and thus to get more meaningful results.

2) The test of the "group recommender interface" was originally planned with a click dummy. We would like to extend this test to also cover some implemented recommender functionalities to get results which could improve the recommender software from a user point of view. The preparation of this test requires more time and thus the evaluation needs to be postponed to mid-April, the results will be available in May.

Consequently, the planned Annex for D2.3.2 covering the above test results will be submitted 30th June 2013 at the latest.

With performing these tests and thus extending Deliverable D2.3.2 User Validation Phase 3 is thus factually extended until month 19. However, this has no delaying effect whatsoever on the technical work: According to the DoW, the results of User Validation Phase 2

are to be fed into Development Cycle 3 (started 1 October 2012, ends end of February 2014). The ultimate aim of User Validation Phase 2 is to shape the final software components and applications that will form the HBB-NEXT integrated prototype. This aim is not obstructed by the two slightly later tests.

RBB also started user acquisition for the interactive HbbTV-Application user validation which will be broadcast and tested on the 31st of May.

At the Consortium Meeting in Friedberg the approach for Validation Phase 3 was discussed in great detail and then communicated to all technical partners.

1.3. WP3 - Identity, Security and Trust

Task 3.2: User Identification, User Profile and Application Reputation Framework

During this period, all the partners participating within Work Package 3 were devoted to keep adapting and developing their respective enablers in order to successfully reach Milestone 7 by the end of May 2013. The focus was on achieving a mature intermediate version of the HBB-Next software enablers, ready to start the integration amongst them, and to show their functionality within the App Team 6 demo, i.e., the Smart AppStore developed within Task 6.3.

Thus for instance, STUBA has been actively working on the multi-model interface enabler and, more specifically on the research related to 1. the various parameterizations of speech for speaker identification and 2. in the field of 3D face recognition. NEC, in turn, worked on the one hand on finishing the last adaptations and modifications of the trust and reputation enabler architecture, design and data structures, while, on the other hand, started the actual implementation of the trust and reputation enabler software, including the user-tailored reputation scores functionality. ST continued the prototype design and implementation of the two key enablers ST is responsible for, namely: the Identity Manager and the Security Manager. In collaboration with IRT, several discussions on proposing identity management in HbbTV2.0 took place.

Each partner was represented and actively participating in the regular telcos, as well as the Plenary Meeting in Friedberg (05.04.13 to 07.04.13).

1.4. WP4 - Next Generation Multi-Synch and Application Performance

Task 4.2: Multi-Device, Multi-Domain Synchronization of A/V Content and Services

The work package 4 partners collaborated massively to merge their inter-device synchronisation solutions and to harmonise their development work. This was supported by regular telcos, which where chaired by THM, and during the plenary meeting at THM. Communication protocol definitions were finalised and implementation on multiple hardware platforms (STB, Android, iOS, HbbTV) was developed to provide the inter-device sync enabler to the demos, which will be shown at IBC. These implementations were proven in testbeds. In addition, Milestone 7 deliverable documents were created collaboratively and the writing has started.

Task 4.3: Cloud Service Offloading

NEC investigated the resource requirement of handing HD source content in the cloud and did some design and implementation work to launch media pipelines in a dynamic way so that content providers can create, monitor, and stop their media pipelines and media tasks can be dynamically triggered in the cloud by the request from user devices. To prepare for the IBC demo, NEC investigated the feasibility of setting up a local media cloud on laptops. The Milestone 7 related deliverable writing plan and the functionalities provided by the cloud offloading enabler were discussed and finalized in the integration meeting. During this quarter, several conference calls took place between IRT, NEC, TNO, and THM to discuss the interfaces between the cloud and the synchronisation modules.

1.5. WP5 - Multi-User and Context-Aware Personalisation

Good progress was made on all tasks within *Work Package* 5, resulting in convincing demonstrations and presentation at the Brussels mid-term review. Gesture and face recognition technologies were demonstrated, and a working multi-user content recommendation system in an HbbTV distribution chain, integrating components from five HBB-NEXT partners. Also good progress was made on components that are to be integrated at a later stage of the project.

Task 5.2: Multimodal Interface for User/Group-Aware Personalisation in a Multi-User Environment

Task 5.2 has already achieved Milestone 7 ahead of its timing at the end of May 2013: "The intermediate version of the soft software components is in place".

Specifically, the following software components are available.

- Software component for face recognition, distinguishing two faces and identifying those simultaneously.
- Software component for speaker identification, distinguishing over five speakers.
- Software component for gesture recognition, able to count fingers on hands
- Software component for sending and receiving notifications
- Partial software component for service personalisation

The face recognition component has been successfully ported and installed by a different partner to test the function of the component and the effectiveness of its documentation.

Task 5.3: Context-Aware and Multi-User Content Recommendation

Task 5.3 has also achieved Milestone 7: "The intermediate version of the soft software components is in place".

Specifically, the following software components are available.

- Software component for recommendation framework, integrating database, metadata, algorithms , identity, and other functions.
- Software component for hybrid content metadata, automatically retrieving, aggregaring and integrating content metadata from multiple (broadcast and internet) sources.
- Software component for multi-user collaborative filtering
- Software component for HbbTV content recommender application
- Software component for QR-code-based user identification

An integrated prototype, combining the above set of components, was successfully demonstrated in a fully functional HbbTV delivery chain at the mid-term review in Brussels.

1.6. WP6 - System Architecture, Applications and Monitoring

Task 6.1: System Architecture and Monitoring

Task 6.1 continued to work on technical coordination with Work Package 3, 4 and 5 especially on the issue of identity management, its capabilities and interfaces towards applications.

During the Plenary Meeting in early March at THM the task representatives met with the experts from the technical work packages to get a new picture on the high level architecture, i.e. to focus on the relevant modules and their interfaces that need to be exposed for developing HBB-NEXT services. The outcome of that exercise is an architecture diagram that is now used in each of the technical deliverables to show the link between an enabler and the overall system architecture. This was also done taking into consideration some of the expert review comments.

The plan for deliverable D6.1.2 was defined and linked to the output of Work Package 3, 4, 5 that will deliver the intermediate software and documentation for Milestone 7.

Both the interface between the MMI and IdM enablers and the internal architecture of the MMI were defined in cooperation with Work Package 3.

Task 6.3: HBB-NEXT Applications and Integrated Proof-of-Concept Prototype

This task made good progress in developing the prototype during the reporting period. The first integration meeting was held at Friedberg ahead of the Plenary Meeting for one full day. The roadmap for the development was defined further with two more integration meetings planned for this spring and early summer.

- App Team 1: The application was enhanced to include more of the planned features. An early prototype for Android Tablets and a STB for inter device solution was developed and shown at the integration meeting. The requirement to include the cloud enabler has been finalized, including launching pipelines for a specified content source and providing combined streams to do inter-stream synchronization in the cloud.
- App team 2: In particular, arrangement was made for the further integration of the recommender system (built by TNO+IRT+THM) with other HBB-NEXT components. The integration of the MMI into the application started with looking at the two face recognizer and to get it work in a lab setup.

- App team 3: Presentation of a concept of how the current ARD-EPG could include HBB-NEXT personal and group recommendations at the ARD editorial team for a potential HBB-NEXT showcase.
- App Team 4: The user interface of the interactive TV application has been designed, there is a schedule fixed for the implementation including a live broadcast on 31.5.2013 and user tests of that application.
- App team 5 showed a working demo of 3D stereoscopic content at the integration meeting in Friedberg, where the two views have been delivered over different networks.
- App Team 6 implemented and finalized the first prototype of the Smart AppStore, in order to show the functionalities of the trust and reputation enabler.

On the STB the asynchronous streaming capabilities have been implemented which are a prerequisite of the synchronization enabler. The current software stack of the STB was updated and provided to partners. The interface between IdM and MMI was implemented in a pilot and tested together with work package 3.

The results of the user evaluation on Smart App Store were communicated to the app team. Validation Phase 3 was already planned with the app teams in cooperation with Work Package 2.

1.7. WP7 - Dissemination, Standardization and Exploitation Plan

Task 7.1: Dissemination

The results of the project research activities were continuously disseminated and exploited at different levels. They were presented at the following events and incorporated into the following papers:

- EIT ICT Labs Master School: Challenge with students for business model for HbbTV content recommendations, (16 students - competitors), 12.-14. February 2013, (TNO).
- Two conferences: 27th IEEE International Conference on Advanced Information Networking and applications (AINA 2013), 25.-28. March 2013, (TNO); 2nd social innovation conference Media4D – Talk: "HbbTV accessibility opportunities/personalization for all", 29. March 2013 (IRT),
- Three HbbTV dedicated Meetings: HbbTV v2.0 was promoted at the International Paralympic Committee: "HbbTV and Access Services", 30. January 2013 (IRT) and at UEFA: HbbTV and Access Services, 31. January 2013 (IRT)
- Five papers were submitted:
    - “Deciding What to Watch: Paper Prototyping Interactive Group Recommenders for Television”, CHI workshop on Exploring and enhancing the user experience for Television (KU Leuven);
    - “Group recommendation in an Hybrid Broadcast Broadband Television context”, Group Recommender Workshop @ UMAMP, (TNO, IRT, KU Leuven)
    - “Providing independent content recommendations in a next-generation Hybrid Broadcast Broadband TV ecosystem”, MUSST 2013 Workshop (TNO, IRT)
    - “Evaluating Group Recommender Systems from a User Perspective”, MUSST 2013 Workshop (KU Leuven)
    - “Media Platform as a Service in The Cloud”, MUSST 2013 Workshop, (NEC)

Meetings at UEFA and at the Paralympic Committee targeted the promotion of HbbTV in the context of utilising value-added services for people with disabilities at the Olympic Games 2016 in Rio de Janeiro. In this context IRT promoted HBB-NEXT (IFA Showcase / Settings Application on synchronised accessibility services).

TNO prepared two videos related to HBB-NEXT research results on Split-screen DVB-DASH media synchronisation and HbbTV app for multi-user content recommendation and uploaded them to the HBB-NEXT you tube channel . TNO also prepared a poster on the topic how to provide independent

content recommendations. The HBB-NEXT website was permanently monitored and individual website sections were updated (RBB/STUBA). A link to CORDIS with the title "HBB-NEXT on CORDIS" was added in the footer of the main page (http://cordis.europa.eu/search/index.cfm?fuseaction=proj.document&PJ_RCN=12234468). During the Call for Papers for the HBB-NEXT Workshop MUSST2013 @ EuroITV2013, a banner featuring with a link to the workshop website was added at the main page.
Tara released activities and developments of HBB-NEXT on their Webpage (http://www.tara-systems.de/newspress.html).

Furthermore, the Dissemination, Exploitation and Standardisation table was continuously updated and monitored (RBB, STUBA). All related activities, also our social media activities, are described in details in section 4.6. The activities related with organisation of three dedicated HBB-NEXT events were running during this reporting period.
MUSST 2013 Workshop on Multi-User Services for Social TV co-located with 4th International Workshop on Future Television: Focus on Multi Screen Applications hosted by LinkedTV at EuroiTV 2013, 24. June 2013, (KU Leuven, co-organised by TNO, THM, NEC), three papers were submitted by HBB-NEXT partners (see above) 7th International Workshop on Multimedia and Signal Processing, REDŽUR 2013, co-located with 29th Spring conference on Computer Graphics, SCCG 2013, 01. May 2013, (STUBA)ngnlabs workshop: 5th NGNLab.eu International NGN Workshop 2013 which is co-located at the NGMAST 2013, 25.-27. September 2013; (STUBA, ST) Furthermore, the consortium started with the preparation of the booth at IBC 2013. IRT is the main contact point for the communication with the IBC office for the Future Zone, RBB will take on the overall coordination. Two telcos were already organised by RBB. First ideas on the booth presentation of the HBB-NEXT prototype were sketched by IRT and agreed at the 4th Consortium Meeting in Friedberg. As reported in the last QMR TNO submitted the summary "TOWARDS NEXT GENERATION HYBRID BROADCAST BROADBAND, RESULTS FROM FP7 AND HBBTV 2.0" which is now accepted by IBC. TNO has started the writing and coordination of the full IBC paper with all HBB-NEXT partners.

Exploitation activities

The exploitation activities were focused mainly on the transfer of actual project results to the educational process. See chapter 4.5 for details.

Task 7.2: Standardisation and IPR Protection

The HBB-NEXT project consortium systematically continued with the standardisation activities. These activities built on previous activities. IRT participated in HbbTV v2.0 meetings and telcos in the

process of finishing the scope of the HbbTV v2.0 specification. Major elements from the HBB-NEXT framework were brought into this (IRT, TNO, ST).

- HbbTV-RG#3, HbbTV 2.0 features, 6.-7.02.2013, Geneva, (IRT, TNO)

The second major standardization activity is the ETSI work item on “multiscreen services” that was was moved to the ETSI E2NA group. An input draft and analysis which additional contributions are needed to conclude the work item were prepared and presented at the E2NA #5 meeting. Eugen Mikoczy from ST became rapporteur for this work item.

IRT was active in incorporating the standard HbbTV v2.0 into the ITU Focus Group on Audiovisual Media Accessibility (FG AVA) which held a meeting from 21.-23.01.2013 in Genf. A paper with the topic “HbbTV and Access Services” was submitted and Mr. Dosch gave a lecture on this topic. As result the standard HbbTV has been integrated into the ITU progress report (Doc. AVA-O-31) and is mentioned in the output document "Participation and Media" (AVA-O-35).

STUBA has prepared a strategy for bringing the combination of various modalities for user identification into the standardisation process. It has also analysed and prepared ideas of 3D face recognition and dynamic gesture recognition for patent application.

2. Issues / deviation from the plan

Issue description (explanation of the causes)	
Changes in the work planning	See below in the next line: With this, User Validation Phase 2 is extended until month 19.
Changes in the schedule of the deliverables	As announced during the Project Review and generally agreed by the Project Officer there we would like to submit an annex to D2.3.2. This is due to the fact that two applications will be tested after the official submission of D2.3.2 planned for April and thus elaborated results will be only available in June. The Annex will be submitted 30th June 2013.
Changes in planned milestones	None
Red Flags	None
Any other issues or problems that might affect achievement.	None

3. Deliverables and Milestones for the reporting period

Deliverable number	Deliverable Titel	Month	Originally planned	Current View	Actual	Status / Comments
D2.3.2	2nd Report on User Validation Results	18	31.03.13		18.04.13	-

Milestone number	Milestone Titel	Month	Originally planned	Current View	Actual	Status / Comments
-	-	-	-	-	-	-

4. Dissemination

Articles and presentations are published on our project website (http://www.hbb-next.eu/index.php/publications).

4.1. Articles published

[1] Montagud, M., Boronat, F., Stokking, H., Design and Simulation of a Distributed Control Scheme for Inter-Destination Media Synchronization, proposed for the 27th IEEE International Conference on Advanced Information Networking and applications (AINA 2013), 25.-28. March 2013, Published in conference Proceedings, TNO

4.2. Presentations at events

[1] Montagud, M., Boronat, F., Stokking, H., Design and Simulation of a Distributed Control Scheme for Inter-Destination Media Synchronization, presented at 27th IEEE International Conference on Advanced Information Networking and applications (AINA 2013), 25.-28. March 2013, TNO

[2] Presentation at International Paralympic Committee: "HbbTV and Access Services", 30. January 2013, IRT

[3] Presentation at UEFA: HbbTV and Access Services, 31. January 2013, IRT

[4] 2nd social innovation conference Media4D – Talk: "HbbTV accessibility opportunities/personalization for all", 29. March 2013, IRT

4.3. Demos, posters and showcases at events

[1] Providing independent content recommendations, poster, TNO

[2] Split-screen DVB-DASH media synchronisation, video, TNO

[3] HbbTV app for multi-user content recommendations, video, TNO

4.4. HBB-NEXT dedicated events

[1] ICT Labs Master School: Competition, (16 students -competitors), Challenge with EIT ICT Labs Master School students for business model for HbbTV content recommendations, Einthoven, Niderlands, Joost de Wit, TNO

4.5. Exploitation

[1] The MSc theses of STUBA students focused on HBB-NEXT topics:

- Automatic speech recognition (MSc student: Matúš Štrban), September 2012 - June 2013, supervisor: Juraj Kačúr
- Speaker identification (MSc student: Tomas Olexa), September 2012 - June 2013, supervisor: Juraj Kačúr
- Security architectures in hybrid multimedia networks (MSc student: Dušan Šupala), September 2012 - June 2013, supervisor: Juraj Matejka
- Authorization and Authentication Manager in Multimedia services (MSc student: Tomáš Kokolevský), September 2012 - June 2013, supervisor: Ondrej Lábaj

[2] Team projects of STUBA MSc students focused on HBB-NEXT topics:

- Multimedia interface for HBB TV (Martin Štofaňák, Ľubomír Molčan, Martin Mitro, Maroš Čavojský), September 2012 - June 2013, supervisors: Marek Vančo, Alexandra Posoldová

[3] The relevant project results are exploited within 7 new PhD theses (started on 1st September 2012) of the STUBA students (some PhD students have been involved in the HBB-NEXT project team):

- Personalisation of Services and control of access to multimedia services and applications (PhD student: Juraj Blichár), started on 1st September 2012, supervisors: Jarmila Pavlovičová and Pavol Podhradský
- Implementation of novel services over broadcasting architecture (PhD student: Roman Bronis), started on 1st September 2012, supervisor: Ivan Kotuliak
- Methodology and Algorithms of the Prediction of User Behaviour for Personalization Engine in HBBTv (PhD student: Alexandra Posoldová), started on 1st September 2012, supervisors: Miloš Oravec and Gregor Rozinaj
- Impact on the Quality of Speaker Identification for Speech Recognition (Mario Varga), started on 1st September 2012, supervisors: Gregor Rozinaj
- Speech Recognition of Slovak Language with Hidden Markov Models (PhD student: Ivan Drozd), started on 1st September 2012, supervisors: Gregor Rozinaj
- Human Face Detection and Recognition (PhD student: Marek Loderer), started on 1st September 2012, supervisor: Jarmila Pavlovičová
- New Methods of Biometric Face Recognition in Unconstrained and Uncontrolled Environment Using Machine Learning Methods (PhD student: Vojtěch Jirka), started on 1st September 2012, supervisor: Miloš Oravec
- Proposal of Methods of Analysis, Visualization and Classification of Multidimensional Data (PhD student: Dávid Hrbatý), started on 1st September 2012, supervisor: Miloš Oravec

[4] Transfer of HBB-Next knowledge to the research activities within 9 running PhD theses

(started on 1st September 2011):

- Gesture Recognition (PhD student: Ivan Minárik), continual process, October 2011 - March 2014, supervisor: Gregor Rozinaj, (STUBA)
- 3D Face Recognition (PhD student: Marek Vančo), continual process, October 2011 - March 2014, supervisor: Gregor Rozinaj (STUBA)
- Proposal of algorithms and mechanisms for security policies enforcement in networks with multimedia sessions (PhD student: Ondrej Lábaj), continual process, October 2011 - March 2014, supervisor: Pavol Podhradský, (STUBA, ST)
- Proposal of functional architecture model for support of multi-factor authentication and security policies enforcement in multimedia networks (PhD student: Juraj Londák), continual process, October 2011 - March 2014, supervisor: Pavol Podhradský (STUBA)
- Proposal of an universal identity management architecture connecting NGN and non-NGN IdM mechanisms (PhD student: Sebastian Schumann), continual process, October 2011 - March 2014, supervisor: Pavol Podhradský (STUBA, ST)
- Proposal of mechanisms for user identity, multifactor authentication and authorization management in the networks with multimedia sessions, (PhD student: Juraj Matejka), continual process, October 2011 - March 2014, supervisor: Pavol Podhradský (STUBA, ST)
- Proposal of methods of pattern recognition in biometrics (PhD student: Ľuboš Omelina), continual process, October 2011 - March 2014, supervisor: Miloš Oravec (STUBA)
- Proposal of method of feature extraction and classification in biometrics (PhD student: Matej Féder), continual process, October 2011 - March 2014, supervisor: Miloš Oravec (STUBA)
- Objects Lacalization in Images Using Machine Learning (PhD student: Jozef Ban), continual process, October 2011 - March 2014, supervisor: Jarmila pavlovičová (STUBA)

[5] "Dissertation exams" of PhD students, (STUBA):

- Multimodal Interface for Natural Communication (Ivan Minarik), passed on February 2013, supervisor: Gregor Rozinaj
- 3D Face Recognition (Marek Vanco), passed on February 2013, supervisor: Gregor Rozinaj
- Impact on the Quality of Speaker Identification for Speech Recognition (Mario Varga), passed on February 2013, supervisor: Gregor Rozinaj

[6] Transfer of HBB-Next knowledge to the LdV EU project IMProVET, within training courses: "Multimedia" and " NGN and Selected topics", continual process, October 2011 - October 2013 (STUBA).

[7] Transfer of HBB-Next knowledge to the LdV EU project IMProVET, within training course:

Information and Network Security", January - September 2013, (STUBA, TU Košice).

[8] Transfer of HBB-Next knowledge within the "University of 3rd age" (under STUBA management), lecture, (STUBA)

4.6. Web Site / Social Media

HBB-NEXT website was permanently monitored and individual website sections were updating. Some basic links were added to the footer of page: HBB-NEXT on CORDIS (http://cordis.europa.eu/search/index.cfm?fuseaction=proj.document&PJ_RCN=12234468), banner for HBB-NEXT Workshop MUSST2013 @ EuroITV2013 was created on main page and small visual enhancements have been done.

RBB continuously updated the HBB-NEXT website, mainly the news section, the “Meet us section” and the publication section. Here it collected input from the project partners and regularly edited and published news items, also in parallel with related content via Twitter and Facebook. Furthermore, HBB-related general news were published regularly on Twitter and Facebook. Continuous analysis of statistic data for the HBB-NEXT Website was done. From 01.01.13 to 31.03.2013, the HBB_NEXT website had 1.387 visitors, 62,94 % were new visitors while 37,06 % were returning visitors. Most visits are from project partner countries Germany (27%), Netherlands (10,8%) and Slovakia (10,5%). However, the website had also visitors from other European countries like France, United Kingdom and Spain as well from all over the world like United States and South Korea. Sources of our visits were for example facebook (20%) but also from the HBB-NEXT Workshop MUSST2013 @ EuroITV2013 (8,33 %) and also from CORDIS.

New:

4.7. Other important information

Contribution to Standards

In the reporting period HBB-NEXT continued its standardization work. HbbTV finalized the scope of the next major release of its specification. HBB-NEXT partners were actively involved to define the scope and to convince other HbbTV members of features proposed by HBB-NEXT. HbbTV will include a solution for inter-media and inter-device synchronization. Identity management is a controversial issue among the members, but it is still considered by HbbTV and there is a chance that a solution is included. HBB-NEXT will continue to discuss how such a solution for HbbTV can look like and propose it to HbbTV.

The second major standardization activity is the ETSI work item on “multiscreen services” that was part of the ETSI MCD group. Due to lack of participation MCD was closed down. Thanks to TNO and

ST the work item on “multiscreen services” was moved to the ETSI E2NA group. The current status of the working item was presented at the E2NA #5 meeting. An input draft and analyses what additional contributions are needed to conclude the work item has been prepared and presented. Eugen Mikoczy from ST became rapporteur for this work item.

IRT continued its work in ITU to get HbbTV specifications recognized and standardized on a worldwide level. One contribution (AVA-I-0221)1 to ITU was made in the reporting period and 4 complementing talks have been given. The focus of the contribution and the talks were on how accessibility services can be improved by using the HbbTV and the future HbbTV 2 platforms.

5. Meetings Attended

Partner		Date (Start/End)	Meeting place	N° of persons	WP/Task/expected results/details
1	RBB	29.-31.01.13	Brussels, Belgium	3	HBB-NEXT preparation Meeting for Review, Review Meeting
	RBB	05.-07.03.13 06.-07.03.13	Friedberg, Germany	2 1	4th Plenary Meeting with WP Meetings and Integration Meeting
2	IRT	21.-23.01.13	Geneva	1	Task 7.2: 7th FG AVA Meeting: ITU Focus Group on Audiovisual Media Accessibility Talk: Use of HBB to support elderly and handicapped persons. Standardization of HbbTV specifications as ITU standards, which is recognized worldwide.
2	IRT	30.-31.01.13	Brussels	1	HBB-NEXT preparation Meeting for Review, Review Meeting
2	IRT	30.01.13	Bonn	1	Task 7.1: Presentation at International Paralympic Committee: "HbbTV and Access Services" Promotion of HbbTV as a platform for access services in conjunction with the standardization at ITU. See also meeting and contributions to ITU
2	IRT	31.01.13	Geneva	1	Task 7.1: Presentation at UEFA: HbbTV and Access Services See also meeting and contributions to ITU

[1] http://www.itu.int/en/ITU-T/focusgroups/ava/Pages/default.aspx

Partner		Date (Start/End)	Meeting place	N° of persons	WP/Task/expected results/details
2	IRT	05.-07.03.13	Friedberg	3	4th Plenary Meeting with WP Meetings and Integration Meeting
2	IRT	29.03.13	Paris	1	Task 7.1: 2nd social innovation conference Media4D – Talk: "HbbTV accessibility opportunities/personalization for all" See also meeting and contributions to ITU
3	NEC	05.-07.03.13	Friedberg, Germany	3	4th Plenary Meeting with WP Meetings and Integration Meeting Integration meeting for all partners Finalized the interfaces between different components and made the plan for the upcoming deliverable plan and the IBC demonstration
4	TNO	30.-31.01.13	Brussels, Belgium	2	HBB-NEXT preparation Meeting for Review, Review Meeting
4	TNO	05.-07.03.13	Friedberg, Germany	4	4th Plenary Meeting with WP Meetings and Integration Meeting
	ST	30.-31.01.13	Brussels, Belgium	1	HBB-NEXT preparation Meeting for Review, Review Meeting
5	ST	05.-07.03.13	Friedberg, Germany	4	4th Plenary Meeting with WP Meetings and Integration Meeting
4	ST	18.-22.03.13	Online Meeting	1	Task 7.2: ETSI E2NA'5 Meeting to contribute and decided on the work item "multiscreen services"
6	STUBA	29.-31.01.13	Brussels	2	HBB-NEXT preparation Meeting for Review, Review Meeting
6	STUBA	05.-07.03.13	Friedberg Germany	4	4th Plenary and Technical HBB-NEXT Meeting in Friedberg
7	KU Leuven	30.-31.01.13	Brussel, Belgium	1	HBB-NEXT preparation Meeting for Review, Review Meeting
7	KU Leuven	05-07.03.13	Friedberg, Germany	1	4th Plenary Meeting with WP Meetings and Integration Meeting
8	THM	30.-31.01.13	Brussels, Belgium	1	HBB-NEXT preparation Meeting for Review, Review Meeting
8	THM	05.-07.03.13	Friedberg, Germany	2	4th Plenary Meeting with WP Meetings and Integration Meeting
9	TARA	30.-31.01.13	Brussels, Belgium	1	HBB-NEXT preparation Meeting for Review, Review Meeting

Partner		Date (Start/End)	Meeting place	N° of persons	WP/Task/expected results/details
9	TARA	05.-07.03.13	Friedberg, Germany	2	4th Plenary Meeting with WP Meetings and Integration Meeting

6. Resources Employed/Expenditures

6.1. Effort for the reference period per WP and per Participant (Person-Months)

I. Management		RBB		IRT		NEC		TNO		ST		STUBA		KU Leuven		THM		TARA		TOTAL per WP/Task		Total Cumulative from start of the project		Total deviation from start of the project in %
		plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	
WP1	**Project Management**	1,08	1,54	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,08	1,54	6,68	8,89	133%
T1.1	Project Management	0,69	1,26																	0,69	1,26	4,24	6,01	142%
T1.2	Financial Management	0,39	0,28																	0,39	0,28	2,44	2,88	118%
WP7	**Dissemination, Standardization and Exploitation Plan**	0,39	0,21	1,02	1,52	0,42	0,00	0,42	0,40	0,30	0,11	0,90	0,53	0,21	0,15	0,30	0,26	0,30	0,13	4,26	3,31	25,56	24,11	94%
T7.1	Dissemination	0,30	0,20	0,21	0,32	0,21	0,00	0,21	0,40	0,09	0,02	0,69	0,32	0,21	0,15	0,21	0,26	0,09	0,13	2,22	1,80	12,12	15,56	128%
T7.2	Standardisation and IPR Protection	0,09	0,01	0,81	1,20	0,21	0,00	0,21	0,00	0,21	0,09	0,21	0,21	0,00	0,00	0,09	0,00	0,21	0,00	2,04	1,51	13,44	8,55	64%
	TOTAL MGT per participant	1,47	1,75	1,02	1,52	0,42	0,00	0,42	0,40	0,30	0,11	0,90	0,53	0,21	0,15	0,30	0,26	0,30	0,13	5,34	4,85	32,24	33,00	102%

II. Research and Technological Development		RBB		IRT		NEC		TNO		ST		STUBA		KU Leuven		THM		TARA		TOTAL per WP/Task		Total Cumulative from start of the project		Total deviation from start of the project in %
		plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	
WP2	**Usage Scenarios, System Requirements and User Validation**	1,08	1,40	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,20	1,00	0,00	0,00	0,00	0,00	**2,28**	**2,40**	**39,88**	**36,70**	**92%**
T2.1	Usage Scenarios	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,00**	**0,00**	**12,00**	**9,93**	**83%**
T2.2	Requirements (System, Services, Users)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,00**	**0,00**	**13,00**	**11,19**	**86%**
T2.3	User-Oriented Validation and Evaluation	1,08	1,40	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,20	1,00	0,00	0,00	0,00	0,00	**2,28**	**2,40**	**9,88**	**10,71**	**108%**
T2.4	Business Models	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,00**	**0,00**	**5,00**	**4,87**	**97%**
WP3	**Identity, Security and Trust**	0,00	0,00	0,18	0,30	1,59	2,57	0,00	0,00	0,48	0,58	2,31	1,55	0,00	0,00	0,00	0,00	0,00	0,00	**4,56**	**5,00**	**29,28**	**28,32**	**97%**
T3.1	Analysis of Technologies for Identity, Security and Trust	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,00**	**0,00**	**5,00**	**5,42**	**108%**
T3.2	User Identification, User profile and Application Reputation Framework	0,00	0,00	0,18	0,30	1,59	2,57	0,00	0,00	0,48	0,58	2,31	1,55	0,00	0,00	0,00	0,00	0,00	0,00	**4,56**	**5,00**	**24,28**	**22,90**	**94%**
WP4	**Next generation multi-synch and application performance**	0,36	0,07	0,96	1,05	2,16	3,19	1,56	1,60	0,00	0,00	0,00	0,00	0,00	0,00	2,40	3,68	0,00	0,00	**7,44**	**9,59**	**44,72**	**46,67**	**104%**
T4.1	Analysis of Cloud-Based Services and Service/Content Synchronisation	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,00**	**0,00**	**5,00**	**5,83**	**117%**
T4.2	Multi-Device, Multi-Domain Synchronisation of A/V Content...	0,36	0,07	0,72	0,75	0,00	0,00	1,56	1,60	0,00	0,00	0,00	0,00	0,00	0,00	2,40	3,68	0,00	0,00	**5,04**	**6,10**	**26,92**	**28,48**	**106%**
T4.3	Cloud Service Offloading	0,00	0,00	0,24	0,30	2,16	3,19	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**2,40**	**3,49**	**12,80**	**12,36**	**97%**

		RBB		IRT		NEC		TNO		ST		STUBA		KU Leuven		THM		TARA		TOTAL per WP/Task		Total Cumulative from start of the project		Total deviation from start of the project in %
		plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	
WP5	**Multi-user and Context-Aware Personalisation**	0,00	0,00	1,20	0,90	0,00	0,00	1,68	2,70	0,36	0,46	1,65	0,98	0,36	0,25	1,20	1,32	0,00	0,00	6,45	6,61	38,45	43,23	112%
T5.1	Analysis of Multi-user, Multimodal and Context-Aware Value-Added Services	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	6,00	6,85	114%
T5.2	Multimodal Interface for User/Group-Aware Personalisation in a Multi-User Environment	0,00	0,00	0,60	0,50	0,00	0,00	0,00	0,00	0,36	0,46	1,65	0,98	0,36	0,25	0,00	0,00	0,00	0,00	2,97	2,19	14,41	14,24	99%
T5.3	Context-Aware and Multi-User Content Recommendation	0,00	0,00	0,60	0,40	0,00	0,00	1,68	2,70	0,00	0,00	0,00	0,00	0,00	0,00	1,20	1,32	0,00	0,00	3,48	4,42	18,04	22,14	123%
WP6	**System Architecture, Applications and Monitoring**	1,08	1,17	2,52	3,30	1,33	1,94	0,45	0,10	0,42	0,55	1,20	0,49	0,63	0,25	1,11	1,70	1,77	1,98	10,51	11,48	59,68	60,72	102%
T6.1	System Architecture and Monitoring	0,09	0,00	0,93	1,20	0,21	0,08	0,09	0,00	0,30	0,30	0,21	0,11	0,00	0,00	0,00	0,00	0,39	0,24	2,22	1,93	12,11	13,24	109%
T6.2	Implementation of Mock-Ups and Early Application Design	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	14,00	10,48	75%
T6.3	HBB-NEXT Applications and Integrated Proof-of-Concept Prototype	0,99	1,17	1,59	2,10	1,12	1,86	0,36	0,10	0,12	0,25	0,99	0,38	0,63	0,25	1,11	1,70	1,38	1,74	8,29	9,55	33,57	36,99	110%
	TOTAL RTD per participant	2,52	2,64	4,86	5,55	5,08	7,70	3,69	4,40	1,26	1,59	5,16	3,02	2,19	1,50	4,71	6,70	1,77	1,98	31,24	35,08	212,01	215,64	102%
	TOTAL per participant (RTD+MGT)	3,99	4,39	5,88	7,07	5,50	7,70	4,11	4,80	1,56	1,70	6,06	3,55	2,40	1,65	5,01	6,96	2,07	2,11					
	Total Cumulative from start of the project	26,26	31,06	33,12	33,32	29,44	26,11	22,80	27,70	12,26	11,33	27,00	24,05	20,64	18,24	28,96	30,12	9,92	7,68					

6.2. Comments on Person-Months Effort spent

The plan figures were calculated by using average values per three months reporting period and partner. The average calculation by month does, of course, not reflect actual peaks of efforts according to the project work phases and therefore might sometimes slightly blur the picture in respect of seemingly underspent or overspent work effort. The same applies to expenditures. The following explanations cover over – or underspending exceeding 20 per cent.

Work Package 1

Overspending:

RBB: Task 1.1

The overspending in this quarter is due to the labour-intensive preparation of the first project review in January and the preparation and conclusion of the 4th Plenary Meeting in Friedberg.

Underspending:

RBB: Task 1.2: The slight under spending in this task is due to the established routines to prepare the QMR and thus the former over spending could be partially compensated.

Work Package 2

Overspending:

RBB: Task 2.3

Increased work effort because of actually conducting the user tests of User Validation 2 (settings application) and start of recruiting users together for rbb's live programme "Science Slam" on 31st May 2013 (interactive TV application). Starting Deliverable D2.3.2.

Work Package 3

Underspending:

STUBA/Task 3.2: Within this task, the effort of STUBA was 1,55 PM (67% of planned effort for this period, after budget shifts). The unspent effort will be compensated within next (Q7 and Q8) project periods.

Overspending:

IRT/Task 3.2: IRT spent slightly more PMs than planned in the average during the reporting period due to participation in the WP face to face meeting and the discussions concerning identity management.

NEC/Task 3.2: The overspending is actually due to the proximity of MS7, the approaching IBC fair and all the entailing work with regards to: i) finalizing the implementation of the enablers and ii) integrating them into the corresponding app demo (in our case, the Smart AppStore).

ST/Task 3.2: The work on the prototype design and implementation of the IDM and security manager took much more efforts than originally planned for this quarter.

Work Package 4

Overspending:

IRT/Task 4.3: IRT spent slightly more PMs during the reporting period due to participation in the work package face to face meeting and for preparing the implementation work IRT is doing in this task.

NEC/Task 4.3: Two persons were working on the Task 4.3 in February 2013 because a job handover happened within that month.

THM/Task 4.2: The overspending was caused because of intensive work on integrating inter – device sync solution for three different platforms and on developing a new synchronisation protocol.

Underspending:

RBB: Task 4.2: RBB has a slight underspending here which is due to the fact that most of its Work Package 4 related work is now being done in Task 6.3 application work. However basic involvement in Work Package 4 is needed for finetuning the application work.Work Package 5

STUBA/Task 5.2: Research activities within this task (focused on 3D face recognition) will be extended in the next project period. During this reporting period the spent effort of STUBA was 0,98 PM (59% of planned effort, after budget shifts). The STUBA activities within Task 5.2 will be extended and the unspent effort will be compensated within next (Q7 and Q8) project periods.

KU Leuven/Task 5.2: More effort, in relation to T5.2 and T6.3, was required for the user evaluations in T2.3.2, which were planned for this period.

Overspending

TNO/Task 5.3: Early reach of Milestone 7.

ST/Task 5.2: The establishment of the interface between the multimodal interface and the IDM and Security Management took more effort than originally planned.

Work Package 6

Overspending:

IRT/Task 6.1 and Task 6.3: IRT put more effort in application development and integration work than planned in averages.

NEC/Task 6.3: The overspending is actually due to the proximity of Milestone 7, the approaching IBC fair and all the entailing work with regards to: i) finalizing the implementation of the enablers and ii) integrating them into the corresponding app demo (in our case, the Smart AppStore).

ST/Task 6.3: Establishing an interface between the prototyped IDM and Security Manager in the context of the overall architecture took more effort than planned and will compensate the underspending in last QMRs.

THM/Task 6.3: The overspending was caused by massive implementation and integration efforts on the prototypes. In addition the technical integration meeting in preparation of the plenary meeting with its topics where main focused on T6.3 Tasks.

TARA/Task 6.1/Task 6.3: Because of a higher effort within Task.6.3, the available resources were shifted from Task 6.1 to Task 6.3. This resulted in an underspending (as of T6.1) and an corresponding overspending (as ofT6.3). Implementing new features (like asynchronous streaming) caused the overspending. Moreover a time-consuming software delivery to our partners had to be made in order to enable them with the latest implemented feature-set.

Underspending:

STUBA/Task 6.1 and Task 6.3

Within Task 6.1, STUBA spent 0,11 PM (52% of planned effort) and within Task 6.3, STUBA spent 0,38 PM (38% of planned effort). Activities of the STUBA research team will be significantly extended within these two tasks in the next reporting period being focused on integration of applications and alsopartially on system architecture.

NEC/Task 6.1: The architecture design was finalized and more time is expected to be spent in the following quarter (integration meeting to track and evaluate the predefined architecture).

TNO/Task 6.1: No explanations given
TNO/Task 6.3: No explanations given

KU Leuven/Task 6.3: For QMR6, more effort in relation to T5.2 and T6.3, was required for the user evaluations in Task 2.3.2, which were planned for this period.

Work Package 7

The deviations in Work Package 7 depend on the peaks of dissemination and standardisation activities of each partner (participation in events or standardisation activities, mainly). As the planned figures do not cover peaks in the efforts the over- or underspending will be compensated within the lifetime of the project.

6.3. Expenditures for the reference period per Participant

I. Management	RBB		IRT		NEC		TNO		ST		STUBA		KU Leuven		THM		TARA		Grand total for the ref. period		Grand total from start		Total deviation from start of the project in %
	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	
WP1 - Project Management	0,65	2,66	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,65	2,66	3,90	6,89	177%
Travel and subsistence	0,35	2,47																	0,35	2,47	2,10	5,34	254%
Subcontracting - Certificate on the FC	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00											0,00	0,00	0,00	0,00	0%
Other Specific Project Costs	0,30	0,19																	0,30	0,19	1,80	1,55	86%
WP 7 - Dissemination, Standardization and Ex	0,30	0,30	1,00	1,98	0,40	0,00	0,57	0,00	0,50	0,00	0,64	0,00	0,35	0,00	0,31	0,00	0,20	0,00	4,28	2,28	41,94	39,70	95%
Subcontracting	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,05	0%
Travel and subsistence	0,30	0,30	0,70	1,98	0,40	0,00	0,57	0,00	0,50	0,00	0,64	0,00	0,35	0,00	0,31	0,00	0,20	0,00	3,98	2,28	24,80	22,44	90%
Consumables	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,90	0,40	44%
Other Specific Project Costs (IRT)			0,30	0,00	0,00	0,00													0,30	0,00	16,24	15,81	97%
TOTAL MGT	0,95	2,96	1,00	1,98	0,40	0,00	0,57	0,00	0,50	0,00	0,64	0,00	0,35	0,00	0,31	0,00	0,20	0,00	4,93	4,94	45,84	46,59	102%

II. Research and Technological Development	RBB		IRT		NEC		TNO		ST		STUBA		KU Leuven		THM		TARA		Grand total for the ref. period		Grand total from start		Total deviation from start of the project in %
	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	plan	spent	
WP2 - WP6																							
Travel and subsistence	1,50	0,00	1,80	3,17	1,60	1,28	2,21	4,40	0,80	2,48	1,45	3,43	0,90	0,51	0,86	0,34	0,82	0,89	11,94	16,50	69,37	60,76	88%
Equipment	0,30	0,00	0,34	0,00	0,60	0,00	0,10	0,00	0,60	0,68	0,25	0,52	0,00	0,00	0,20	0,00	0,15	0,00	2,54	1,19	30,39	7,97	26%
Consumables	0,30	0,50	0,26	0,00	0,00	0,36	0,10	1,04	0,34	0,00	0,95	0,00	0,63	0,21	0,10	0,00	0,00	0,00	2,68	2,12	11,94	12,51	105%
Other Specific Project Costs	0,00	0,08	0,00	0,00	0,17	0,00	0,10	0,00	0,10	0,00	0,25	0,00	0,10	0,00	0,25	2,31	0,15	0,00	1,12	2,39	3,97	6,89	173%
TOTAL RTD	2,10	0,58	2,40	3,17	2,37	1,65	2,51	5,45	1,84	3,16	2,90	3,94	1,63	0,72	1,41	2,65	1,12	0,89	18,28	22,19	115,66	88,12	76%

TOTAL per cost category																							
Durable equipment	0,30	0,00	0,34	0,00	0,60	0,00	0,10	0,00	0,60	0,68	0,25	0,52	0,00	0,00	0,20	0,00	0,15	0,00	2,54	1,19	11,14	0,84	8%
Subcontracting	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,05	0%
Travel and subsistence	2,15	2,77	2,50	5,15	2,00	1,28	2,78	4,40	1,30	2,48	2,09	3,43	1,25	0,51	1,17	0,34	1,02	0,89	16,26	21,25	32,00	27,98	87%
Consumables	0,30	0,50	0,26	0,00	0,00	0,36	0,10	1,04	0,34	0,00	0,95	0,00	0,63	0,21	0,10	0,00	0,00	0,00	2,68	2,12	12,84	12,91	101%
Other Specific Costs	0,30	0,26	0,30	0,00	0,17	0,00	0,10	0,00	0,10	0,00	0,25	0,00	0,10	0,00	0,25	2,31	0,15	0,00	1,72	2,57	2,34	3,49	149%

6.4. Comments on Expenditures spent

List of purchased equipment in QMR6 period

For simplification the depreciation costs from all partners in this QMR6 cover the whole project period 2. A detailed overview of equipment costs was a request by the review experts and will therefore from now on be contained not only in the PPR but also in the QMRs.

Partner	Description	Utilization
NEC	Five Raspberry Pi	For the future demonstration purpose
STUBA	STUBA ICT infrastructure	Usage of STUBA ICT infrastructure (servers, ect.) for implementation of HBB-NEXT subsystems.
ST	Two servers	The two servers used from ST lab for prototyping and testing of 2 enablers IDM and security manager. Both servers were bought before the project started SUN Fire X4140 and SUN Fire X4200 with quarterly depreciation 536€ reps. 434€ where we calculate 70% utilization by HBB-NEXT so calculated equipment cost 375.20+303.80= 679,00€ for Q1 2013.

Travel and Subsistence

RTD Travel and Subsistence:

KU Leuven: The travel costs for the 4th Plenary Meeting in Friedberg will be claimed in the next QMR as the figures are not available now.

A peak in travel costs occurs with all partners - except with THM as they were hosts - as they took part in three day Plenary Meeting including WP Meetings and the Integration Meeting.

Dissemination / Standardisation Travel and Subsistence costs:

As IRT were very active in promoting the HbbTV v2.0 in the background of possibilities for access services in four meetings at different locations there is a peak in their travel costs.

Consumables

KU Leuven: Incentive for users (User tests round 11 testers per 20 Eur) D2.3.2 Smart App Store Evaluation

TNO:

1. Postal office, sending Form c, 9 euro
2. A1 posters for demos, 133 euro
3. Ipad 4, for development and demos, 902 euro

6.4.1. Other Specific Project Costs

THM: Claiming costs to host the three days Plenary Meeting at Friedberg.

RBB: Project Management: Catering Rehearsal Meeting for Review on 30th January 2013

RTD: Catering for user tests on settings application from 21th till 22th March 2013

7. Budget Shift

Overview of requested minor budget shifts

Several partners in HBB-NEXT have expressed interest in conducting minor budget shifts at this stage of the project to balance actual spending and planned activity for the remaining project against the budget. As all the proposed shifts can be classified as minor and do not have any impact on the "Description of Work" this could be done without a contract amendment according to the ECs Guide to Financial issues:

The proposed budget shifts listed below primarily concern effort remaining from WORK PACKAGE2 tasks that are now finished and balancing other direct costs. The changes are marked in red in the attached table. This document on the envisaged minor budget shifts were communicated to the Project Officer via Email on 22.3.2013. He gave his basic ok (orally).

General remarks: The IBC booth costs of approximately 1.500€ will be allocated to all partners according to their funding share and will be claimed as a dissemination activity under other specific project costs. IRT is the only participant that has budget in this cost category. All other partners will shift a share of their travel and subsistence budget to other specific project costs to cover their share of the IBC booth costs. This will be clarified among the partners and is not yet covered in this document.

RBB

RBB proposes shifting 2PM from task T4.2 to task T6.3. Effort for task T4.2 was overestimated and could be used to enhance usability and functional aspects of the several RBB induced applications for the proof-of-concept prototype.

IRT

IRT proposes shifting the remaining 0.8 PMs from WORK PACKAGE2 to T6.3.

NEC

NEC proposes shifting the remaining 0.62 PMs from WORK PACKAGE2 and 1.38 PMs from T3.2 to T6.3. This is due to the fact that the development of the application is taking more resources than initially planned.

TNO

TNO propose shifting 0.43 PMs from WORK PACKAGE2 to T5.3 to use this effort for a problem analysis of implicit content ratings for HBB-NEXT content recommendations.

TNO overestimated their equipment costs and proposes shifting 9.000€ from equipment costs to travel and subsistence costs under RTD as they have higher travel costs than initially calculated.

ST

ST proposes shifting budget from equipment costs (9.000 €) and travel costs (7.000 €) under the activity research and development to travel costs under dissemination and standardisation (Management). The equipment budget was overestimated as ST could re-use equipment and claim only prorata depreciation of existing equipment. Moreover, due to Slovak national rules equipment belongs to consumables if the purchase price is not above 1700 €. Most devices and components which we will purchased belong to consumables.

ST plans to expand their dissemination activities to present HBB-NEXT results at relevant conferences and industry forums. Additionally, ST has a leading role in contributing the HBB-NEXT requirements to the ETSI work item “Converged Multi-screen Service: use case and requirements” and would like to participate in the next two E2NA meetings in June and October 2013. The proposed shift does not increase the requested grant from the EC.

STUBA

Person Month shifts

STUBA proposes increasing the number of PMs in T3.2 and T5.2 from 40 to 42.5 at no extra budget increase. This is possible as the average personal costs per PM changed from 3,800 € to 3,576.47 €. This drop in costs was possible as STUBA involved more young researchers, with a lower hourly rate, in their HBB-NEXT project team than originally planned. The increased effort will cover STUBA’s research activities in the field of "multimodal interface".. These research activities are part of T3.2 and T5.2.

STUBA also propose shifting 5 PMs from T7.2 to T7.1. as its dissemination activities including maintenance of the HBB-NEXT website are higher than initially planned.

Expenditures

STUBA also proposes the following shifts:

a) Transfer of 5,500 € from "Durable equipment costs" to "Travel and Subsistence costs" category.

b) Transfer of 5,500 € from "Durable equipment costs" to "Consumable and Supplies costs" category.

c) Transfer of 1,500 € from "Durable equipment costs" to "Other specific project costs" category.

d) The rest 2,500 € will be used within "Durable equipment costs" category.

Initially, STUBA calculated 15,000 € for "Durable equipment". However, under Slovak national rules equipment belongs to consumables if the purchase price is not above 1,700 Euros. Most devices and components purchased or still to be purchased do not exceed the limit so must be treated as consumables.

KU Leuven

KU Leuven proposes shifting their equipment budget to consumables budget. According to the Belgium national rules only devices with a purchase price above 5,500€ belong to equipment, their planned purchases must be treated as consumables.

THM

THM propose shifting 1.875 € from travel and subsistence costs under Dissemination (Work Package 7) to other specific project costs under RTD. THM hosted the plenary meeting at Friedberg in March 2013.

THM also propose shifting the remaining 0,94 PMs from WORK PACKAGE2 to T6.3 to use it for the integration of their application into the proof-of-concept prototype.

TARA

TARA proposes shifting surplus effort from tasks T2.1/2.2 to T6.1/6.3. The effort required for T6.1 was underestimated, which lead to a current overspending, and it is expected that supporting and implementing the integrated prototype will require higher man power in the second half of the project.

TARA proposes shifting part of the travel budget to equipment and OSPC. Tara incurred costs for purchasing software licenses specifically for use in the project and for carrying out a necessary technical workshop which was not originally planned. An additional workshop might be necessary to support the integration of the applications on the set-top-box in the final phase of the project.

	Participant no.	1		2		3		4		5		6		7		8		9		Total	
	Participant	RBB		IRT		NEC		TNO		ST		STUBA		KU Leuven		THM		TARA			
		original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget
WP 1	Project Management	11,00	11,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	11,00	11,00
T 1.1	Project Management	7,00	7,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	7,00	7,00
T 1.2	Financial Management	4,00	4,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,00	4,00
WP 2	Usage Scenarios, System Requirements & User Validation	14,00	14,00	5,00	4,20	4,00	3,38	3,00	2,57	2,00	2,00	1,00	1,00	15,00	15,00	3,00	2,06	2,00	0,66	49,00	44,87
T 2.1	Usage Scenarios	3,00	3,00	2,00	1,50	1,00	0,49	1,00	1,01	1,00	1,00	0,00	0,00	2,00	2,00	1,00	1,00	1,00	0,50	12,00	10,50
T 2.2	Requirements (System, Services, Users)	1,00	1,00	2,00	1,58	1,00	1,13	1,00	0,38	1,00	1,00	1,00	1,00	3,00	3,00	2,00	1,06	1,00	0,16	13,00	10,31
T2.3	User-oriented Validation & Evaluation	9,00	9,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,00	0,00	10,00	10,00	0,00	0,00	0,00	0,00	19,00	19,00
T2.4	Business Models	1,00	1,00	1,00	1,12	2,00	1,76	1,00	1,18	0,00		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	5,00	5,06
WP 3	Identity, Security and Trust	0,00	0,00	2,00	2,00	17,00	15,62	0,00	0,00	5,00	5,00	17,00	18,50	1,00	1,00	0,00	0,00	0,00	0,00	42,00	42,12
T 3.1	Analysis of Technologies for Identity, Security and Trust	0,00	0,00	1,00	0,78	1,00	1,00	0,00	0,00	1,00	1,00	1,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	5,00	4,78
T 3.2	User Identification, User profile and Application Reputation Framework	0,00	0,00	1,00	1,22	16,00	14,62	0,00	0,00	4,00	4,00	16,00	17,50	0,00	0,00	0,00	0,00	0,00	0,00	37,00	37,34
WP 4	Next generation multi-synch and application performance	5,00	3,00	9,00	9,00	19,00	19,00	14,00	14,00	0,00	0,00	0,00	0,00	0,00	0,00	21,00	21,00	0,00	0,00	68,00	66,00
T 4.1	Analysis of cloud-based services and service/content synchronisation	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,00	0,00	0,00	0,00	0,00	0,00	1,00	1,00	0,00	0,00	5,00	5,00
T 4.2	Multi-device, multi-domain synchronization of A/V content and services	4,00	2,00	6,00	6,00	0,00	0,00	13,00	13,00	0,00	0,00	0,00	0,00	0,00	0,00	20,00	20,00	0,00	0,00	43,00	41,00
T 4.3	Cloud Service Offloading	0,00	0,00	2,00	2,00	18,00	18,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	20,00	20,00
WP 5	Multi-user & Context-Aware Personalisation	0,00	0,00	11,00	11,00	0,00	0,00	14,00	14,43	4,00	4,00	12,00	13,00	4,00	4,00	11,00	11,00	0,00	0,00	56,00	57,43
T 5.1	Analysis of multi-user, multi-modal & context-aware value-added services	0,00	0,00	1,00	1,00	0,00	0,00	1,00	1,00	1,00	1,00	1,00	0,70	1,00	1,00	1,00	1,00	0,00	0,00	6,00	5,70
T 5.2	Multimodal interface for user/group–aware personalisation in a multi–user environment	0,00	0,00	5,00	5,00	0,00	0,00	0,00	0,00	3,00	3,00	11,00	12,30	3,00	3,00	0,00	0,00	0,00	0,00	22,00	23,30
T 5.3	Context-aware personalised multi-user content recommendation	0,00	0,00	5,00	5,00	0,00	0,00	13,00	13,43	0,00	0,00	0,00	0,00	0,00	0,00	10,00	10,00	0,00	0,00	28,00	28,43
WP 6	System architecture, applications & monitoring	9,00	11,00	20,00	20,80	7,00	9,00	4,00	4,00	5,00	5,00	10,00	10,00	7,00	7,00	10,00	10,94	12,00	13,34	84,00	91,08
T 6.1	System Architecture & Monitoring	1,00	1,00	9,00	9,00	2,00	2,00	1,00	1,00	3,00	3,00	2,00	2,00	0,00	0,00	0,00	0,00	2,00	2,84	20,00	20,84
T 6.2	Implementation of Mock-Ups & Early application	4,00	4,00	0,00	0,00	0,00	0,00		0,00	1,00	1,00	0,00	0,07	6,00	4,00	3,00	3,00	0,00	0,00	14,00	12,07
T 6.3	HBB-Next Applications & Integrated Proof-of-Concept Prototype	4,00	6,00	11,00	11,80	5,00	7,00	3,00	3,00	1,00	1,00	8,00	7,93	1,00	3,00	7,00	7,94	10,00	10,50	50,00	58,17
WP 7	Dissemination and Knowledge Management	4,00	4,00	11,00	11,00	4,00	4,00	4,00	4,00	3,00	3,00	8,00	8,50	2,00	2,00	3,00	3,00	3,00	3,00	42,00	42,50
T 7.1	Dissemination	3,00	3,00	3,00	3,00	2,00	2,00	2,00	2,00	1,00	1,00	4,00	5,50	2,00	2,00	2,00	2,00	1,00	1,00	20,00	21,50
T 7.2	Standardisation and IPR Protection	1,00	1,00	8,00	8,00	2,00	2,00	2,00	2,00	2,00	2,00	4,00	3,00	0,00		1,00	1,00	2,00	2,00	22,00	21,00
	Total PM	43,00	43,00	58,00	58,00	51,00	51,00	39,00	39,00	19,00	19,00	48,00	51,00	29,00	29,00	48,00	48,00	17,00	17,00	352,00	355,00

RTD/Innovation	RBB		IRT		NEC		TNO		ST		STUBA		KULeuven		THM		TARA		TOTAL	
	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget	original budget	new budget
Indirect personnel costs %	101,24%	101,24%	117,99%	117,99%	56,60%	56,60%	140,63%	140,63%	20,00%	20,00%	60,00%	60,00%	60,00%	60,00%	60,00%	60,00%	60,00%	60,00%		
Direct personnel costs (€)	5.880	5.880	6.280	6.280	6.678	6.678	6.400	6.400	4.510	4.510	3.800	3.576	6.500	6.500	4.646	4.646	6.500	6.500		
Total research (p/months)	28,00	28,00	47,00	47,00	47,00	47,00	35,00	35,00	16,00	16,00	40,00	42,50	27,00	27,00	45,00	45,00	14,00	14,00	299	302
Personnel costs (€)	164.640,00	164.640,00	295.160,00	295.160,00	313.866,00	313.866,00	224.000,00	224.000,00	72.160,00	72.160,00	152.000,00	151.999,98	175.500,00	175.500	209.070,00	209.070	91.000,00	91.000	1.697.396	1.697.396
Subcontracting costs (€)	0,00	0,00	0,00		0,00		0,00		0,00		0,00	0,00	0,00		0,00		0,00		0	0
Other direct costs (€)	21.000,00	21.000,00	24.000,00	24.000,00	23.700,00	23.700,00	25.080,00	25.080,00	34.390,00	18.390,00	29.000,00	29.000,00	16.300,00	16.300	11.600,00	14.100	11.180,00	11.180	196.250	182.750
Travel and subsistence costs (€)	15.000,00	15.000,00	18.000,00	18.000,00	16.000,00	16.000,00	13.080,00	22.080,00	15.000,00	8.000,00	9.000,00	14.500,00	9.000,00	9.000	8.600,00	8.600	11.180,00	8.180	114.860	119.360
Durable equipment costs (€)	3.000,00	3.000,00	3.400,00	3.400,00	6.000,00	6.000,00	10.000,00	1.000,00	15.000,00	6.000,00	15.000,00	2.500,00	1.300,00	0	2.000,00	2.000	0,00	1.500	55.700	25.400
Consumable and supplies costs (€)	3.000,00	3.000,00	2.600,00	2.600,00	0,00	0,00	1.000,00	1.000,00	3.390,00	3.390,00	4.000,00	9.500,00	5.000,00	6.300	1.000,00	1.000	0,00	0,00	19.990	26.790
Other Specific Project Costs (OSPC) (€)	0,00	0,00	0,00	0,00	1.700,00	1.700,00	1.000,00	1.000,00	1.000,00	1.000,00	1.000,00	2.500,00	1.000,00	1.000	0,00	2.500	0,00	1.500	5.700	11.200
Indirect costs (€)	166.678,40	166.678,40	348.270,00	348.270,00	177.660,00	177.660,00	315.000,00	315.000,00	21.310,00	18.110,00	108.600,00	108.599,99	115.080,00	115.080	132.402,00	133.902	61.308,00	61.308	1.446.308	1.444.608
Total costs (€)	352.318,40	352.318,40	667.430,00	667.430,00	515.226,00	515.226,00	564.080,00	564.080,00	127.860,00	108.660,00	289.600,00	289.599,96	306.880,00	306.880	353.072,00	357.072	163.488,00	163.488	3.339.954	3.324.754
RTD requested grant (€)	264.238,80	264.238,80	500.572,50	500.572,50	257.613,00	257.613,00	423.060,00	423.060,00	63.930,00	54.330,00	217.200,00	217.199,97	230.160,00	230.160	264.804,00	267.804	122.616,00	122.616	2.344.194	2.337.594

Dissemination/Knowledge Management	RBB		IRT		NEC		TNO		ST		STUBA		KULeuven		THM		TARA		TOTAL	
Total dissemination (p/months)	4,00	4,00	11,00	11,00	4,00	4,00	4,00	4,00	3,00	3,00	8,00	8,50	2,00	2,00	3,00	3,00	3,00	3,00	42,00	42,50
Personnel costs (€)	23.520,00	23.520,00	69.080,00	69.080,00	26.712,00	26.712,00	25.600,00	25.600,00	13.530,00	13.530,00	30.400,00	30.400,00	13.000,00	13.000	13.938,00	13.938,00	19.500,00	19.500,00	235.280	235.280
Subcontracting	0,00	0,00	0,00																	
Other direct costs (€)	3.000,00	3.000,00	10.000,00	10.000,00	4.000,00	4.000,00	5.746,00	5.746,00	5.000,00	13.000,00	6.400,00	6.400,00	3.500,00	3.500	5.000,00	3.125,00	2.000,00	2.000,00	44.646	50.771
Travel costs (€)	3.000,00	3.000,00	7.000,00	7.000,00	4.000,00	4.000,00	5.746,00	5.746,00	5.000,00	13.000,00	6.400,00	6.400,00	3.500,00	3.500	5.000,00	3.125,00	2.000,00	2.000,00	41.646	47.771
Other Specific Project Costs (OSPC) (€)	0,00		3.000,00	3.000,00	0,00		0,00		0,00		0,00		0,00		0,00	0,00	0,00		3.000	3.000
Consumables							0,00									0,00				
Indirect costs (€)	23.811,20	23.811,20	81.510,00	81.510,00	15.120,00	15.120,00	36.000,00	36.000,00	3.706,00	5.306,00	22.080,00	22.080,00	9.900,00	9.900	11.362,80	10.237,80	12.900,00	12.900,00	216.390	216.865
Total costs (€)	50.331,20	50.331,20	160.590,00	160.590,00	45.832,00	45.832,00	67.346,00	67.346,00	22.236,00	31.836,00	58.880,00	58.879,99	26.400,00	26.400	30.300,80	27.300,80	34.400,00	34.400,00	496.316	502.916
Management requested grant (€)	50.331,20	50.331,20	160.590,00	160.590,00	45.832,00	45.832,00	67.346,00	67.346,00	22.236,00	31.836,00	58.880,00	58.879,99	26.400,00	26.400	30.300,80	27.300,80	34.400,00	34.400,00	496.316	502.916

Project Management	RBB		IRT		NEC		TNO		ST		STUBA		KULeuven		THM		TARA		TOTAL	
Total management (p/months)	11,00	11,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	11	11
Personnel costs (€)	64.680,00	64.680,00	0,00	0,00	0,00	0,00	0,00	0,00	0	0	0	0	0	0	0	0	0	0	64.680	64.680
Subcontracting (Audit certificate) costs (€)	4.000,00	4.000,00	5.000,00	5.000,00	0,00		3.500,00	3.500,00	0		0		0		0		0		12.500	12.500
Other direct costs (€)	6.500,00	6.500,00	0,00	0,00	0,00	0,00	0,00	0,00	0	0	0	0	0	0	0	0	0	0	6.500	6.500
Travel and subsistence costs (€)	3.500,00	3.500,00	0,00		0,00		0,00		0		0		0		0		0		3.500	3.500
Other Specific Project Costs (OSPC) (€)	3.000,00	3.000,00	0,00		0,00		0,00		0		0		0		0		0		3.000	3.000
Indirect costs (€)	65.480,80	65.480,80	0,00	0,00	0,00	0,00	0,00	0,00	0	0	0	0	0	0	0	0	0	0	65.481	65.481
Total costs (€)	140.660,80	140.660,80	5.000,00	5.000,00	0,00	0,00	3.500,00	3.500,00	0	0	0	0	0	0	0	0	0	0	149.161	149.161
Management requested grant (€)	140.660,80	140.660,80	5.000,00	5.000,00	0,00	0,00	3.500,00	3.500,00	0	0	0	0	0	0	0	0	0	0	149.161	149.161

Total Budget	RBB		IRT		NEC		TNO		ST		STUBA		KULeuven		THM		TARA		TOTAL	
Total costs (€)	543.310,40	543.310,40	833.020,00	833.020,00	561.058,00	561.058,00	634.926,00	634.926,00	150.096	140.496	348.480	348.480	333.280	333.280	383.373	384.373	197.888	197.888	3.985.431	3.976.831
Total requested grant (€)	455.230,80	455.230,80	666.162,50	666.162,50	303.445,00	303.445,00	493.906,00	493.906,00	86.166	86.166	276.080	276.080	256.560	256.560	295.105	295.105	157.016	157.016	2.989.671	2.989.671
Total %	15,23%	15,23%	22,28%	22,28%	10,15%	10,15%	16,52%	16,52%	2,88%	2,88%	9,23%	9,23%	8,58%	8,58%	9,87%	9,87%	5,25%	5,25%	100%	100%