NoTube

Networks and ontologies for the transformation and unification of broadcasting and the Internet

FP7 – 231761

D7a.3 Personalized News Platform prototype v2

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EXECUTIVE SUMMARY

This document presents the second implementation stage of the Personalized Semantic News use case and is a paper companion to the software prototype D7a.3 Personalized News Platform prototype v2.

In this deliverable all issues are faced from a technical point of view rather than from a logical point of view, leaving the last one to the deliverable D7a.1 “Personalized News Services Specifications”.

This document describes reference scenarios for the Personalized News Platform prototype that have been implemented in this second release of the prototype. The technical implementation of the prototype is presented, with an overview of the integrated architecture, focusing on the two main sides of the foreseen NoTube architecture, the Service Provider side and the Home Ambient side.

The level of integration into this second prototype with services provided by other NoTube Work Packages is underlined, also making reference to the NoTube Integrated Platform described in D6.1b NoTube System Specifications and Architectural Design and D6.3 NoTube integrated System 2nd prototype.

A step by step GUI demo describing typical operations envisaged for the WP7.a second integrated prototype, with screenshots extracted from the running demonstrator is presented as guided walkthrough of the prototype.


# DOCUMENT INFORMATION

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| Abstract (for dissemination) | This document presents the second implementation stage of the Personalized Semantic News use case and is a paper companion to the software prototype D7a.3 Personalized News Platform prototype v2. In this deliverable all issues are faced from a technical point of view rather than from a logical point of view, leaving the last one to the deliverable D7a.1 “Personalized News Services Specifications”. This document describes reference scenarios for the Personalized News Platform prototype that have been implemented in this second release of the prototype. The technical implementation of the prototype is presented, with an overview of the integrated architecture, focusing on the two main sides of the foreseen NoTube architecture, the Service Provider side and the Home Ambient side. A step by step GUI demo describing typical operations envisaged for the WP7.a second integrated prototype, with screenshots extracted from the running demonstrator is presented as guided walkthrough of the prototype. |

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</table>
# Table of Contents

**LIST OF FIGURES** .............................................................................................................. 7  
**LIST OF TABLES** ............................................................................................................... 8  
**LIST OF ACRONYMS AND ABBREVIATIONS** ................................................................. 9  

1. **INTRODUCTION** ........................................................................................................... 10  
   1.1 Scope of this document ................................................................................................. 10  
   1.2 Document outline ........................................................................................................ 10  

2. **PROTOTYPE ARCHITECTURE** .................................................................................. 11  
   2.1 Service Provider ........................................................................................................... 11  
   2.2 Home Ambient ............................................................................................................. 11  

3. **SCENARIOS/STORIES** .................................................................................................. 13  
   3.1 SP Scenarios 1: Definition/activation of a feed (User driven) .................................... 13  
   3.2 SP Scenarios 2: Filling of an activated feed (Event driven) ....................................... 16  
   3.3 HA Scenarios 1: Enhanced traditional view of a personalized newscast (User driven) 18  
   3.4 HA Scenarios 2: Socially integrated enhanced view of a personalized newscast (User driven) ................................................................................................................................. 21  

4. **GUIDED WALKTHROUGH** .......................................................................................... 25  
   4.1 Service Provider User Interface .................................................................................. 25  
   4.2 Home Ambient User Interface .................................................................................... 28  

5. **IMPLEMENTATION** ....................................................................................................... 33  
   5.1 Service Provider side .................................................................................................... 33  
   5.2 Home Ambient side ..................................................................................................... 33  

6. **EVALUATION** ............................................................................................................... 33  
   6.1 WP7a Process Evaluation ............................................................................................. 33  
      6.1.1 TEST 1: Acquisition phase test .............................................................................. 33  
      6.1.2 TEST 2: Semantic enrichment quality test......................................................... 34  
      6.1.3 TEST 3: Service Provider Feed filling test ............................................................ 34  
   6.2 WP7a GUI Evaluation .................................................................................................... 35  
      6.2.1 TEST 1: Personalized newscast GUI test ............................................................. 35  
      6.2.2 TEST 2: Social tools GUI test .............................................................................. 35  

7. **CURRENT STATUS AND FUTURE WORK** ................................................................ 36  

REFERENCES ........................................................................................................................ 36  

ANNEX A ............................................................................................................................... 37  
   HA Front End Implementation Details ............................................................................... 37  
      Authentication interface ............................................................................................... 37  
      News Item Container video player ............................................................................... 37  
      Tag cloud and DBpedia ............................................................................................... 38  
      Integration of Facebook .............................................................................................. 39  
      External links ............................................................................................................... 39
LIST OF FIGURES

Fig. 1 - NoTube WP7a Service Provider side architecture .......................................................... 11
Fig. 2 - NoTube WP7a Home Ambient side architecture ............................................................ 12
Fig. 3 - Swimlane: SP scenario 1 - Feed definition ................................................................. 14
Fig. 4 - Swimlane: SP scenario 1 - Feed activation ................................................................. 15
Fig. 5 - Swimlane: SP scenario 2 - Acquisition phase ............................................................. 16
Fig. 6 - Swimlane: SP scenario 2 (NIC Management phase) ..................................................... 17
Fig. 7 - Swimlane: SP scenario 2 (Feed filling phase) .............................................................. 18
Fig. 8 - Swimlane: HA scenario 1 (A/V fruition) ..................................................................... 19
Fig. 9 - Swimlane: HA Scenario 1 (Concept explanation) ......................................................... 19
Fig. 10 - Swimlane: HA Scenario 1 (External link access) ....................................................... 20
Fig. 11 - Swimlane: HA Scenario 1 (Direct access to a news item) .......................................... 20
Fig. 12 - Swimlane: HA Scenario 2 (Received suggestions) ..................................................... 22
Fig. 13 - Swimlane: HA Scenario 2 (Comment on profile) ...................................................... 23
Fig. 14 - Swimlane: HA Scenario 2 (Suggest news item) ....................................................... 23
Fig. 15 - Swimlane: HA Scenario 2 (Chat) ............................................................................. 24
Fig. 16 - Login form ............................................................................................................... 25
Fig. 17 - Feed info form ........................................................................................................... 25
Fig. 18 - Input rules tab ............................................................................................................ 26
Fig. 19 - Single item program selection .................................................................................... 26
Fig. 20 - Service rules tab ....................................................................................................... 27
Fig. 21 - Activate feed tab ....................................................................................................... 27
Fig. 22 - Touch screen TV ....................................................................................................... 28
Fig. 23 - User Interface Login .................................................................................................. 28
Fig. 24 - PVR oriented functionalities ..................................................................................... 29
Fig. 25 - News item titles list .................................................................................................. 29
Fig. 26 - Tag cloud ................................................................................................................. 30
Fig. 27 - The Browsing window for external links ................................................................. 30
Fig. 28 - Facebook home page integration .............................................................................. 31
Fig. 29 - Facebook chat integration ....................................................................................... 31
Fig. 30 - Sharing news items with friends .............................................................................. 32
Fig. 31 - Receiving suggested news items .............................................................................. 32
Fig. 32 - A sample of a RSS publication list (standalone mode) ............................................. 38
Fig. 33 - A sample of a Dummy NIC ...................................................................................... 38
Fig. 34 - Sample of RDF format from DBpedia ...................................................................... 39
Fig. 35 - The suggestion received by a Facebook user ............................................................ 39
LIST OF TABLES
### List of Acronyms and abbreviations

<table>
<thead>
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<td>Content Reference Identifier</td>
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<td>Electronic Program Guide</td>
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<td>GUI</td>
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<td>HTTPS</td>
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<td>leNIC</td>
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1. Introduction

1.1 Scope of this document
This document is a paper companion to the software prototype D7a.3 Personalized News Platform prototype v2. In this deliverable all issues are faced from a technical point of view rather than from a logical point of view, leaving the last one to the deliverable [1].

1.2 Document outline
In section 2. we introduce an overview of the integrated architecture, focusing on the two main sides, the Service Provider side and the Home Ambient side. For reference purposes we also highlight the integration with services developed in other NoTube Work Packages, also making reference to the NoTube Integrated Platform described in [2] and [3].

In section 3. we take into account some reference scenarios making reference to the actual use cases that have been implemented in this second release of the prototype.

Section 4. is a guided walkthrough of the prototype where some step by step GUI screenshots are used to better describe the whole prototype operations.

In Section 5. Main implementation upgrades about this 2\text{nd} release of the prototype are presented.

In Section 6. an overview of possible evaluation activities is reported.

In Section 7. an overview of current status and possible future works is presented.

In Annex A more implementation details are provided.
2. Prototype Architecture

The second prototype (M23) implementation of the Personalized News Platform Use Case adheres to the high-level architecture design as sketched in [2] and [3], both for the SP (Service Provider) side and the HA (Home Ambient) side.

2.1 Service Provider

As to Service Provider side we can highlight two different environments. The Legacy one refers to systems and components which are used by the NoTube platform and which are already existing independently from the platform itself (proprietary systems). The NoTube one refers to systems and components which directly belong to the NoTube platform: in more details there is a set of components and systems which implements the particular actual service (dark and light blue blocks in the middle of Fig. 1) using a second set of general services provided by other workpackages under the broker mediation (green blocks down in Fig. 1).

![Fig. 1 - NoTube WP7a Service Provider side architecture](image)

2.2 Home Ambient

The Home Ambient component (HA), on the other hand, is connected with:

1. The Service Provider, through the internal HA/SP APIs based on an hybrid notification mechanism that leverages on RSS feeds and HTTPS-based data exchanges.

2. The Front-End, through another set of APIs internally exposed through SOAP-based Web Services concerning user profile management and News recommendation services. Media files (News) could be access directly via the HA persistence layer or the streaming server.
Referring to the diagram above, the internal workflow implements the ingestion of Newscasts (or individual News, if required) from both the IP channel and the standard broadcasting, through the component named “LiveIngestion”. Note that, for the second prototype, this same component has been re-engineered in order to be available as part of the NoTube platform services, acting as a standalone PVR, providing a set of Web Services aimed at setting up the ingestion details (channel, time, etc.) supporting also the MPEG-2 TS standard in order to easily enable the further exploitation of video processing services (WP4) within the Service Provider component.

The “NewsOrganiser Agent”, then, is aimed at managing, extracting and resorting the ingested audiovisual contents together with the acquired metadata, when made available by the Service Provider, in order to locally store a set of single News for both the audiovisual and metadata component. Moreover, at this stage, the user profile and recommendation services provided by WP3 are integrated running in background threads responsible of dynamically building up the playlists for the personalized Newscast of each active user.

The News Item Container (NIC) persistence and content resolution layer has been implemented similarly to the Service Provider, moreover a number of internal refinements have been developed to reflect Service Providers’ improvements.

The HA back-end, thanks to the mentioned integration of WP3 user profile manager (including the connection with the Beancounter) and the News recommendation services built on top of the user activities logged from social networks, is capable of delivering a personalized playlist to the front-end module.

The front-end has been redesigned completely, developed and integrated, enabling the end-user to perform standard tasks such as logging on and modifying his/her profile and interests as well as consuming the personalized Newscasts surrounded by enriched metadata enclosed in the NIC. See section 4.2 for more details.
3. Scenarios/Stories

3.1 SP scenario 1: definition/activation of a feed (User driven)

Andrea works for a well known Italian service provider, he has a lot of task to do during his working day and unfortunately many of them are quite boring.

The one he prefers, instead, is to interact with the NoTube system in order to define and activate different feeds to be sent to subscribers following his provider company guidelines.

The system allows him to define each characteristic useful to activate the desired feed, such as the choice of the broadcaster and newscast to select for the Live Ingestion of contents, or which are the genres of news that will have to be present in the final actual feed.

In order to define the feed he can create new rules or just update old ones or better the system can use already given rules and in the last case...one task less for him!

Today Andrea has to activate a new feed: it will be a free of charge feed, containing all news except for the sport news, broadcasted by RAI1 into all daily newscasts. The sport news are present into the “Premium” feed, which has already been activated.

Come on Andrea, let's do this job! He uses his login credential to come into the NoTube world. Starting from a number of different broadcasters presented by the GUI, he checks RAI to be used as initial input for the feed, then uses the “Single Item criteria” selection modality to be able to select channels and newscasts one by one. He chooses all daily newscast broadcasted by RAI1 as asked creating the corresponding input rules. After that, Andrea chooses the genres suitable for the feed, selecting all genres except the sport one.

The new feed definition is completed and Andrea can activate it. He presses a button and wait for the confirmation: “Feed correctly activated!”.

This job is done, Andrea can logout from the NoTube platform, but many other tasks are waiting for him!

This scenario is described by the following swimlane activity diagram (Fig. 3).
**User (UI)**

- Starts application
- Logs in the application
- Sees “feed info” input form
- Fills “feed info” input form
- Sees broadcasters and choice’s criteria
- Chooses broadcasters
- Chooses “single items” criterion
- Sees list of programs channel by channel
- Chooses programs
- Sees operation status
- Selects “service rules” tab
- Sees genres
- Selects feed suitable genres
- Sees operation status
- Selects activation tab

**Rules Manager**

- Display login form
- Verify user credentials
- Display “feed info” input form
- Display broadcasters and choice’s criteria
- Request list of channels and programs
- Display list of programs channel by channel
- Create and save input rules
- Display operation status
- Display list of new item genres
- Create and save service rules
- Display operation status and enable “feed activation” button

**Broker**

- Display operation status and enable “feed activation” button

**EPG service**

- Request EPG items
- Supply EPG items
- Send EPG items
- Display list of programs channel by channel
- Create and save service rules
- Display operation status

**Rules Repository**

- Store feed info
- Store input rules file
- Store service rules file

---

**Fig. 3 - Swimlane: SP scenario 1 - Feed definition**
Fig. 4 - Swimlane: SP scenario 1 - Feed activation
### 3.2 SP scenario 2: filling of an activated feed (Event driven)

This scenario deals with operations the SP system does in order to fill an actual feed to expose to HA systems.

The SP system, once a feed is activated, monitors the broadcast channel waiting for the time to start recording each newscast belonging to the feed itself (Acquisition phase). At every expected time the different ingestion processes start and at the end of the ingestion the SP system is able to automatically create NICs to store into the NoTube platform. Afterwards each NIC is automatically enriched by the system with metadata and contents related to the news described into the NIC itself (NIC Management phase).

Following rules relevant to the examined feed, which specify the genres of interest for it, the SP system selects among all NICs only those which are suitable for the feed itself\(^1\). In this way, each time the SP system can fill the actual feed with the list of selected NICs identifiers, update and expose it to HA systems (Feed filling phase). On the other side a HA feed reader monitors the feed and is able to access it every time it is updated with new NICs identifiers.

The three phases of the scenario are described by the following three swimlanes diagrams: Acquisition phase in Fig. 5, NIC Management phase in Fig. 6 and Feed filling phase in Fig. 7.

---

\(^1\) In the current prototype, the NIC suitability is evaluated on the base of the NIC genre. The genres taken into account are compliant to the EBU genres [4] and they are automatically associated to each NIC during the acquisition phase by the ANTS system.
A new program description file is present

Send program description file (ANTS file)

Create basic NICs

Request transformation for ANTS file

Send set of NICs in NoTube format

Send modified NIC

Store ingested NIC contents

Request NIC

Request NIC internal data

Send NIC internal data

Send modified NIC

Store NIC

Request NIC internal data access

Request LUPEDEA enrichment

Send enrichment

Request NIC internal data modification

Send modified NIC

Store NIC

Wait for a new program description file

Scenario 2(2.0.2)

Fig. 6 - Swimlane: SP scenario 2 (NIC Management phase)
3.3 HA scenario 1: Enhanced traditional view of a Personalized newscast (User driven)

Roberto is a family man, working honourably for his company since almost 30 years. As every evening, he's now back from work and while reading his account statement he's watching and listening absently his personalized newscast provided by the NoTube platform. Suddenly his attention is captured by a news broadcasted on the TG1 of 1 p.m. talking about new modalities for the retirement which will be applied from next year on. He decides to see this news again carefully to know how rules are going to change...while watching he realizes the speaker is talking about something he doesn't know exactly, so he can stop the news and click on that concept into the tag cloud in order to see an additional explanation about the concept itself.

Then he restarts the news, it is really interesting for his future life, so it could be useful to check from the list of external links if there is any related news item coming from the web, he chooses some and reads them greedily.

Since the following news into his personalized newscast is not about the same topic, he skips it to look for other news about retirements which could have been broadcasted by other today’s newscasts...here's one, coming from the evening edition of TG1. Roberto doesn't miss the chance to see also this service to verify if there are other news about his future!

Now he really knows everything on this topic, maybe shortly he will get a pension too!!! More relaxed he can keep on watching his personalized newscast...

The whole scenario is described by the following four swimlanes diagrams.

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**Fig. 7 - Swimlane: SP scenario 2 (Feed filling phase)**

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**3.3 HA scenario 1: Enhanced traditional view of a Personalized newscast (User driven)**

Roberto is a family man, working honourably for his company since almost 30 years. As every evening, he's now back from work and while reading his account statement he's watching and listening absently his personalized newscast provided by the NoTube platform. Suddenly his attention is captured by a news broadcasted on the TG1 of 1 p.m. talking about new modalities for the retirement which will be applied from next year on. He decides to see this news again carefully to know how rules are going to change...while watching he realizes the speaker is talking about something he doesn't know exactly, so he can stop the news and click on that concept into the tag cloud in order to see an additional explanation about the concept itself.

Then he restarts the news, it is really interesting for his future life, so it could be useful to check from the list of external links if there is any related news item coming from the web, he chooses some and reads them greedily.

Since the following news into his personalized newscast is not about the same topic, he skips it to look for other news about retirements which could have been broadcasted by other today’s newscasts...here's one, coming from the evening edition of TG1. Roberto doesn't miss the chance to see also this service to verify if there are other news about his future!

Now he really knows everything on this topic, maybe shortly he will get a pension too!!! More relaxed he can keep on watching his personalized newscast...

The whole scenario is described by the following four swimlanes diagrams.
**Fig. 8 - Swimlane: HA scenario 1 (A/V fruition)**

**User (UI)**
- Logs in the ambient
- Watches A/V content in linear mode
- Interacts with the A/V content
- Watches A/V content in PVR mode

**Home Ambient Front_End**
- Accept user credentials
- Build Personalized NewsCast
- Select contents suitable for the device
- Deliver Personalized NewsCast
- Control A/V flow

**Home Ambient Back-End**
- Request user credentials checking
- Get already created user suitable news items list
- Send selected contents

**NoTube services**
- Validate user

**External Resources**
- NoTube services

**ScenarioHA1(a)-1.00**

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**Fig. 9 - Swimlane: HA Scenario 1 (Concept explanation)**

**User (UI)**
- Watches A/V content in PVR mode
- Sees tags cloud
- Sees selected tag information
- Selects a tag

**Home Ambient Front_End**
- Accesses tags information inside the NIC
- Display tags cloud
- Request DBpedia data
- Display concept information

**Home Ambient Back-End**
- Displays tags cloud
- Process DBpedia data

**NoTube services**
- Send data

**External Resources**
- DBpedia

**ScenarioHA1(b)-1.00**
Fig. 10 - Swimlane: HA Scenario 1 (External link access)

Fig. 11 - Swimlane: HA Scenario 1 (Direct access to a news item)
3.4 HA scenario 2: Socially integrated enhanced view of a Personalized newscast (user driven)

Once Roberto finishes to see his personalized newscast, he gives the remote control to his son, Andrea, who every evening enjoys the NoTube platform to share the most interesting news of the day with friends, without missing the chance to chat a little with them. As soon as he steps into his personal area and starts watching his personalized newscast (in the same way as described in Scenario 1 for Roberto), the alerts related to all news recommended by friends through Facebook are notified. His big friend Luca is always very active on the social network and today he has recommended to his friends all news about the football match his favourite team have won last night! Andrea, who is a fan of the same team, watches them and then opens his Facebook home page on the NoTube platform to write a joyful comment on his profile about the match...what a great day is it today!!!

Going on watching his personalized newscast, Andrea finds another news about the football match and decides to recommend it to his friends, many of them will appreciate this for sure! Meanwhile he notices that Gianni, another friend who is a big fan of the same team, is on line too, using the chat Andrea can hold with him to meet after dinner, so he writes a message on the live chat to arrange the meeting!...few clicks and the job is done, now they just have to go to celebrate the win all together!!!

The whole scenario is described by the following four swimlanes diagrams.
Fig. 12 - Swimlane: HA Scenario 2 (Received suggestions)
Fig. 13 - Swimlane: HA Scenario 2 (Comment on profile)

Fig. 14 - Swimlane: HA Scenario 2 (Suggest news item)
Fig. 15 - Swimlane: HA Scenario 2 (Chat)
4. Guided walkthrough

4.1 Service Provider User interface

The SP front end application is designed to run on a PC. The user can access the application through the Login form (Fig. 16) and if he is admitted by the system he can work into the environment to activate new feeds.

![Fig. 16 - Login form](image)

The first step to create a new feed is to fill some basic information about it as showed in Fig. 17.

![Fig. 17 - Feed info form](image)

The application allows the user to manage the creation of new service provider input rules following SP requirements for a new feed. The user can choose which are the broadcasters to take into account for the recording of the main streams, and he can also choose if selecting programs to be acquired manually one by one or by period of the day or by choosing only the main TGs of the day (Fig. 18). In this second prototype only the selection of programs one by one is considered.
In Fig. 19 the single items manual programs selection for the creation of SP input rules is showed.

Another step for the activation of a new feed is the creation of service rules done through the selection of output genres to take into account as showed in Fig. 20.
Once the input rules and the service rules have been created, the “Activate feed” button allows the user to finally activate the new feed as showed in Fig. 21.

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**Fig. 20 - Service rules tab**

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**Fig. 21 - Activate feed tab**
4.2 Home Ambient User Interface

The front end application is designed to run on a large touch screen as the one of Fig. 22. A touchscreen PC emulates a close viewing experience such as personally watching on a tablet. For the more traditional “far away” viewing experience at home the interface can equally be reproduced using pointing devices (like Wii) or gesture recognition (like Kinect).

Fig. 22 - Touch screen TV

The user can access the service selecting its personal icon (Fig. 23) or the authentication could be integrated with the ambient intelligence inside the Home Ambient.

Fig. 23 - User Interface Login

When the user enters inside the service he can start to see the personalized news program that has been automatically edited following his own preferences; these can be dynamically extracted following the behaviour of the user in the social network or can be fixed by the user himself through
the selection of its favourite genres. In this second prototype only the fixed generation of preferences is considered. Watching his personalized newscast, the user can choose to look at it in a traditional broadcast oriented way or to use the PVR oriented enhanced functionalities, such as the pause or the skip functionality for each single news as showed in Fig. 24.

![Fig. 24 - PVR oriented functionalities](image1)

Fig. 24 shows the news items title list up on the right of the screen which can be used to navigate through the personalized news program.

![Fig. 25 - News item titles list](image2)

Fig. 25 - News item titles list

The prototype allows the viewing of an animated tag cloud, showed in Fig. 26, which displays concepts that are considered significant inside the news, all concepts are mapped with DBpedia and clicking on one of them the relevant DBpedia abstract will be displayed at the bottom of the screen. The default language for the abstract is Italian but if it doesn’t exist then the English one is displayed.
In particular, each concept on the screen “pulse” in a different way so that higher relevance tags are more “clickable/touchable” than the others.

![Fig. 26 - Tag cloud](image)

In the prototype the NIC structure allows the presence of external related links, for each news item a set of URLs is available for the navigation in web sites of other media companies that expose information about the same news.

The user can navigate through the related external links and touching an item from the list the application opens an integrated browsing window showing the related news (Fig. 27).

![Fig. 27 - The Browsing window for external links](image)

When the browsing window is opened the video behind is automatically set to pause, on the contrary when the window is closed the video plays again automatically.

Inside the application the Facebook activity stream of the user is integrated. The user can interact with friends as he could do in the original Facebook home page (Fig. 28).
Another Facebook functionality which has been integrated is the chat, visible on the left of the screen in Fig. 29.

The service allows to share personalized news items with all Facebook friends and it’s also possible to receive suggestions from people who are inside the NoTube environment connected to the social network.

In particular Fig. 30 shows how a NoTube user can send a News Item suggestion with a joined personal message to friends and how this suggestion is notified to the Home Facebook GUI of a
friend, while Fig. 31 shows how the same friend could receive the suggestion on his socially connected NoTube environment.

Fig. 30 - Sharing news items with friends

Fig. 31 - Receiving suggested news items
5. Implementation

5.1 Service Provider side
The main enhancements brought in the 2nd prototype at service provider side are:

- Feed oriented SP rules management
- Enhanced input rules management
- Basic service rules management
- Enhanced version of the whole process for the live ingestion of MSQC

The SP feed management application is developed to run on a PC. In particular, the SP GUI is a windows application developed with MS Visual Studio 2008.

5.2 Home Ambient side
Functionalities developed in the 2nd prototype are:

- Authentication interface
- News Item Container video player
- Facebook activity stream interaction
- Facebook chat for friends interaction
- Facebook sharing of multimedia objects for sharing of News items with friends
- Management of the list suggested by friends
- Animated Tag Cloud showing DBpedia concepts
- Management of external related links

The prototype is developed to run on a large Touch screen TV/PC. It can work also on Windows Surface platform.

The developing tools used to build the prototype is MS Visual Studio 2008 for the business logic and Blend3 inside the Expression Studio package for the GUI part.

More implementation details are provided in Annex A.

6. Evaluation

This chapter describes how the work of WP7a will be evaluated. The evaluation process can be divided in two main parts: the WP7a process evaluation (related to the Service Provider environment) and the WP7a GUI evaluation (related to the Home Ambient environment).

For each of these we have identified some hypothesis and begun designing the relative tests. The tests will be carried out in the first quarter of 2011.

6.1 WP7a process evaluation

6.1.1 TEST 1: Acquisition phase test

This test means to check the SP Live Ingestion process controlled by SP rules.

What we do: Define a set of SP rules, activate acquisition processes and verify the presence of foreseen programs contents in the Acquisition buffers. The synchronization data between SP environment and HA environment are verified. Acquisition delays are also assessed.

What we test: We test the Rules Manager, the broker EPG oriented goals, the Rules Repository, the Acquisition System and the Acquisition Buffers. Rules files (SP rules), List of Entries files (feed related programs to acquire list), List of ingestion coordinates files, synchronization RSS file and acquired contents files are involved.
How we do it: Fill input rules form for a test feed, activate the feed and manually verify the outputs.

Requirements:
- EPG oriented broker goals properly working
- UI for feed creation and activation (already available)

Pending actions
- Define criteria for the delay evaluation

6.1.2 TEST 2: Semantic enrichment quality test

This test want to check the quality of Lupedia enrichments on a predefined set of NICs representing a chosen variety of news genres. These enrichments are made starting from the speech to text transcription present into every NIC.

What we do: Select a set of already ingested NICs and verify the level of accuracy of the Lupedia enrichment in terms of:
- Found correct concepts
- Found inconsistent concepts
- Not founded present concepts

What we test: We test the Lupedia service in the NIC context.

How we do it: Make access to selected NICs and manually verify the outputs using a dedicated GUI.

Requirements:
- Lupedia oriented broker goals properly working
- Dedicated GUI for access to NIC Lupedia enrichment and NIC transcription

Pending actions
- Develop the dedicated GUI

6.1.3 TEST 3: Service Provider Feed filling test

This test means to check the SP feed filling process controlled by SP rules.

What we do: Define a set of SP service rules, activate feed filling processes and verify the presence of foreseen NICs Identifiers inside the output SP feed.

What we test: We test the Rules Manager and the Service Manager. Service Rules file, List of Entries files (feed related programs to acquire list) and SP output RSS file (Meta feed) are involved.

How we do it: Fill service rules form for a test feed, activate the feed and manually verify the outputs using a dedicated GUI. This GUI allows showing the NIC inside the NIC repository selecting those which have the identifier inside the SP output RSS file and those which are suitable for the test feed.

Requirements:
- GUI for feed creation and activation (already available)
- Dedicated GUI for access to NIC inside NIC repository

Pending actions
- Develop the dedicated GUI
6.2 **WP7a GUI evaluation**

6.2.1 **TEST 1: Personalized newscast GUI test**

This test means to check the usability and the usefulness of the personalized newscast program from the user point of view using the GUI of the prototype.

**What we do:** Using a set of already suggested list of NICs and building a static newscast program to verify the reaction of a real user.

**What we test:** We test the reaction of a user that uses the service.

**How we do it:** a number of users will be invited to try the application, during the test session a set of question will be done to the user, after the session the user will be invited to complete a brief questionnaire.

**Requirements:**
- A number of test users
- The prototype ready with static lists of recommended NICs
- The questionnaire ready

6.2.2 **TEST 2: Social tools GUI test**

This test means to check the usability and the usefulness of social tools from the user point of view using the GUI of the prototype.

**What we do:** while the user joins the newscast program he will be also invited to try some social interaction to verify the reaction.

**What we test:** We test the reaction of a user that uses social tools inside the prototype.

**How we do it:** a number of users will be invited to try the application, during the test session a set of question will be done to the user, after the session the user will be invited to complete a brief questionnaire.

**Requirements:**
- A number of test users
- The prototype ready with static lists of recommended NICs
- The questionnaire ready
- Dummy social users ready for the test
7. Current status and future work

For the Service provider side actually a number of basic building blocks are ready to be finally integrated. During the activity of the third (and final) prototype we foresee to finish the integration in order to obtain the whole NoTube platform ready for a pre-service phase.

About the Application for the final user, the prototype described in this document covers all requirements for a television application in the environment of the Personalized News Service. The future works foresees to add mobile devices as phones and pads used as second screen device to control and enrich the service.

As to evaluation work, we foresee to complete all the highlighted pending actions by the end of January 2011 so as starting with the evaluation processes at the beginning of February 2011 and get results by the end of February 2011.

References

Annex A

**HA front end implementation details**

**Authentication interface**

The authentication interface is designed to be integrated with the NoTube Authentication and profiling functionality and it could be integrated also with ambient intelligence. The prototype allows three types of user:

- Administrator
- Guest
- NoTube User

The administrator login is hided, to enter inside the administration console the user can use the “CTRL + A” keyboard sequence. The Administrator can perform the setup of the property of the system at runtime, and manage users according to the NoTube user profiling system (creation, editing, deleting).

The Guest is a demo user that cannot access to the social network features. The NoTube User can access all functionalities of the service.

**News Item Container video player**

This software component allows the user to play in full screen mode a particular News Item, it allows to play, stop, pause and skip news items inside the list of recommended news. The prototype uses The WMP (windows media player) component to allow audio/video rendering. Each payable item is an element of the NIC recommended list.

The prototype allows operating in a demo standalone modality, in this case the recommendation NIC list is based on the RSS feed used also for the publication of NICs inside the NoTube platform, for each user a static RSS file (Fig. 32) is embedded in the demo device. Each NIC list item refers to a NIC in a dummy format (an example is given in Fig. 33).
Tag cloud and DBpedia

The prototype allows the viewing of an animated Tag Cloud showing main concepts expressed in the News, all concepts are linked to a DBpedia URI.
The Tag cloud is designed in order to be showed on a touch screen display, each displayed concept has a related relevance value which is used to modify the associated label aspect on the screen. The result is that high relevance tags are more “clickable/touchable” than the other ones.

The information is taken querying the DBpedia resource using the URI of the concept, DBpedia is able to back the result in a RDF format containing the abstract to be displayed in the application screen.

Fig. 34 - Sample of RDF format from DBpedia

Integration of Facebook

The prototype allows the user to use:
- Facebook activity stream interaction
- Facebook chat for friends interaction
- Facebook sharing of multimedia objects for sharing of News items with friends

Facebook APIs are now in continuous evolution, in the prototype the following APIs are used to integrate Facebook features:
- agsXMPP for the chat
- Facebook.Net SDK for the access to the user streams

The interaction with the activity stream allows the user to view and manage the Facebook stream of the user himself.

The Facebook chat functionality is also integrated in the prototype, the agsXMPP software library allows the application to communicate with the Facebook server through XMPP massages.

The prototype is able to give information about personal contacts status, for example if friends are online and their personal pictures (the same features given by the Facebook web site).

The sharing functionality is developed using a status update inside the Facebook stream of the user.

If the target of the suggestion is not a NoTube user then the suggestion is seen as a simple tag with the identifier of the NIC of the news.

Fig. 35 - The suggestion received by a Facebook user

External links

In the prototype the NIC structure allows the presence of external related links, when detected a set of URLs is available for the navigation in web sites of other media companies that expose information about the same news.
In order to display and navigate inside the external link a “Windows explorer” browsing object is integrated in the prototype. When the browsing window is opened the video behind is automatically set to pause, when the window is closed the video plays again automatically.