AAL-2009-2-130

Deliverable D 4.5
Title: Integration and Validation Report

Deliverable Type:	**PU***
Nature of the Deliverable:	**R****
Date:	**01/03/12**
Distribution:	**WP4**
Code:	**HOMEdotOLD/SILO/WP4/D45-v1**
Editor:	**SILO**
Contributors:	**SiLo, TLT, SEPRO, PCL, A1TA**

Deliverable Type: *PU= Public, RE= Restricted to a group specified by the Consortium, PP= Restricted to other program participants (including the Commission services), CO= Confidential, only for members of the Consortium (including the Commission services)*

*** **Nature of the Deliverable**: P= Prototype, R= Report, S= Specification, T= Tool, O= Other*

Abstract: This document represents the deliverable D4.5 – Integration and Validation Report. The scope of this deliverable is to present the plan that was followed, which is divided in two (2) main integration phases. The activities that were performed during each one of the phases are also presented. In addition, the deliverable summarises the activities that were performed for the integration of the HOMEdotOLD platform and services, as well as the main integration activities performed during the development of the HOMEdotOLD platform and services, and to highlight any difficulties found during the integration process. Last but not least the current deliverable summarises the results of the test specification for the HOMEdotOLD platform and services that is provided in deliverable D2.3 "Test and Validation plan", which prove the successful integration of the HOMEdotOLD platform and services

This page has been intentionally left blank.

Table of Contents

List of Figures

List of Tables

1. INTRODUCTION

The HOMEdotOLD project aims to provide a TV-based platform with cost-effective services that will be delivered in a highly personalised and intuitive way and will advance the social interaction of elderly people, aiming at improving the quality and joy of their home life, bridging distances and reinforcing social voluntariness and activation, thus preventing isolation and loneliness.

1.1 SCOPE

The scope of this deliverable is to present the plan that was followed, which is divided in two (2) main integration phases. The activities that were performed during each one of the phases are also presented. In addition, the deliverable summarises the activities that were performed for the integration of the HOMEdotOLD platform and services, as well as the main integration activities performed during the development of the HOMEdotOLD platform and services, and to highlight any difficulties found during the integration process. Last but not least the current deliverable summarises the results of the test specification for the HOMEdotOLD platform and services that is provided in deliverable D2.3 "Test and Validation plan", which prove the successful integration of the HOMEdotOLD platform and services.

1.2 DELIVERABLE STRUCTURE

The deliverable is structured in 4 chapters:

- Chapter 1 is the introduction of the document.
- Chapter 2 provides a high level overview of the HOMEdotOLD platform architecture
- Chapter 3 regards the platform and services integration report. It presents the plan that was followed, which is divided in two (2) main integration phases, as well as the activities that were performed during each one of the phases. This chapter summarises the activities that were performed for the integration of the HOMEdotOLD platform and services, as well as the main integration activities performed during the development of the HOMEdotOLD platform and services, and highlights any difficulties found during the integration process
- Chapter 4 presents the HOMEdotOLD platform and services validation report. It summarises the results of the test specification for the HOMEdotOLD platform and services that is provided in deliverable D2.3 "Test and Validation plan", which prove the successful integration of the HOMEdotOLD platform and services.
- Chapter 5 concludes the deliverable.

2.   HOMEdotOLD Platform Architecture Overview

The HOMEdotOLD Platform Software described in this document consists of a number of different components/modules. Specifically, it consists of the following top-level components, as shown in Figure 1:

- the Users Database
- the HOMEdotOLDUsersDatabaseHibernate Library Module
- the System Administration Module
- the Active Modality Module
- the Authentication Module
- the Policy management Module
- the YouTube Module
- the Picasa Module
- the Skype Module
- the RSS Feeds Module
- the AonTV Module
- the HOMEdotOLD Services Application Logic
- the Customer Administration HMIs
- the User network HMIs
- the User HMIs and
- the System Administration HMIs
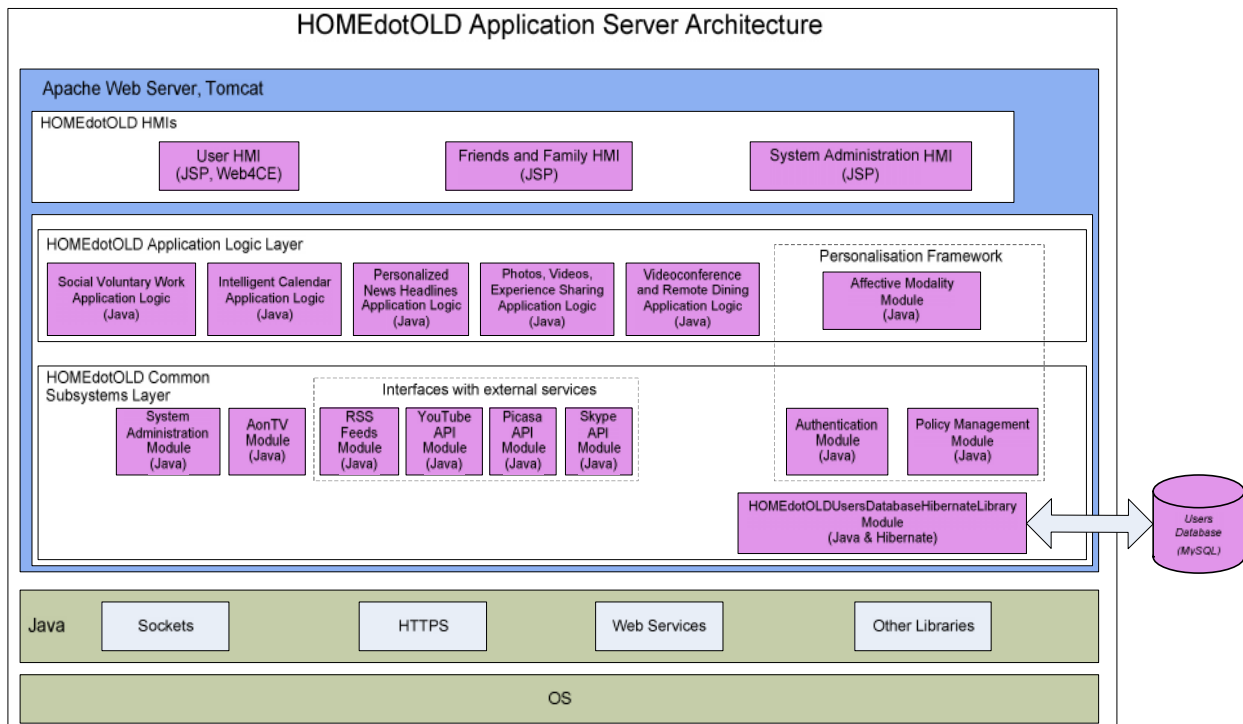
Figure 1: HOMEdotOLD Platform Software – HOMEdotOLD Application Server Architecture

The *Users Database* is used to store user specific data, such as service specific configuration parameters, personalisation information for all services, users' mood and intensity of mood and is located on the machine hosting the application logic and the user and administrator HMIs. It is also used by the service provider administrator in order to handle service specific parameters, such as the RSS sites list required by the Personalised News Headlines service and the areas of social voluntary work for supporting the Social Voluntary Work service. In order to address security and privacy issues user profile information (name, surname, address, telephone) is held in a separate database, namely *Customers Database*. Management of the database is achieved through a dedicated application, namely *Customers Administration.*

3. HOMEdotOLD PLATFORM AND SERVICES INTEGRATION REPORT

3.1 INTEGRATION PLAN

Towards the provision of the final integrated version of the HOMEdotOLD platform and services, the paragraphs below present the plan that was followed, which is divided in two (2) main integration phases. The activities that were performed during each one of the phases are also presented.

Integration Phase 1 (May '11 – July '11):

This period included the integration of the building blocks of the 1st version of the HOMEdotOLD platform and services. The following list summarises the activities that were performed:

- Integration of the Social Voluntary Work Module (SVWM) with the Social Voluntary Notification Module (SVWNM).
- Integration of the Social Voluntary Work Module (SVWM) with the Event Handling Module(EHM).
- Integration of the User Profile Module (UPM) with the Preference Matching Module (PMM).

- Integration of the User Profile Module (UPM) with the Calendar Module (CM).
- Integration of the Date Invitation Module (DIM) with the Event Handling Module (EHM).
- Integration of the Birthday Module (BM) with the Event Handling Module (EHM).
- Integration of the Event Handling Module (EHM) with the Notification Module (NM).

- Integration of the RSS feeds library RSSutils with the Personalized News Headlines service, providing news content from more than 40 news sources.

- Integration of the video conferencing service on a user interface level
.
- Integration of the Authentication module with the HOMEdotOLD platform, providing user authentication capabilities to the platform.

- Integration of the Multiplatform module with the HOMEdotOLD platform, providing support for the Philips NetTV platform and the PC based Opera browser.
- Integration of the Multilanguage module with the HOMEdotOLD platform, providing support for Greek, Austrian, Dutch and English user interfaces to the platform.
- Integration of the Picasa client module with the Photos, Videos & Experience Sharing service, allowing access and rating of the user's network Picasa photos.

Integration Phase 2 (Nov '11 – January '12):

This period included the integration of the building blocks of the 2nd version of the HOMEdotOLD platform and services. The following list summarises the activities that were performed:

- Integration of the User Activities Module (UAM) with the Event Handling Module (EHM).

- Integration of the TTS modules to the Personalized News Headlines service providing audio announcements of the news content.

- Integration of the Video Uploading Subsystem with the Photos, Videos & Experience Sharing service, allowing the network of a user to upload videos which the user can then view and rate, from his client device.

No further integration was planned for the second phase.

3.2 INTEGRATION REPORT

The activities for the integration of the HOMEdotOLD platform and services were performed according to the planned activities listed in the previous section. The following list summarises the main integration activities performed during the development of the HOMEdotOLD platform and services. Any difficulties found during the integration are also mentioned.

Social Voluntary Work Service

- Integration of the Social Voluntary Work Module (SVWM) with the Social Voluntary Notification Module (SVWNM). The modules cooperate by calling of the relevant interfaces, SelectSVWActivity, CreateSVWNotificationList and GetSVWNotificationList in order to extract information concerning specific SVW activities and display it to the user.

- Integration of the Social Voluntary Work Module (SVWM) with the Event Handling Module(EHM). The modules cooperate by calling of the relevant interfaces, SelectSVWActivity and CreateEvent in order to discover and record if a new SVW event is announced. The SVW event is stored in the database in order to be displayed by the relevant modules, to the user. Moreover, the modules handle the SWV activities that the user has, already, responded.

- Integration of the User Profile Module (UPM) with the Preference Matching Module (PMM). The modules cooperate by calling of the interfaces, GeneratePCriteria and ProfileUpdater, in order to compile all input criteria for personalization and produce the updated criteria list for a specific user profile.

The systems' smooth integration required compatibility concerning the data types and schema. Compatibility process included data type casting, as well as, up-cast and down-cast transformation in the schema of the exchanged data.

In order to keep SVW service up-to-date and compatible with PHILIPS NET TV platform and the internet browser, navigation is implemented both in css3 and JavaScript, since css3 is not supported, yet, by all web browsers.

Intelligent Calendar Service

- Integration of the User Profile Module (UPM) with the Calendar Module (CM). UPM and CM interact with AccountAuthenticator interface and exchange personalized user data, such as the events that the user has responded, the data invitations that he/she has sent etc. All information is displayed to the user by using the CalendarMonthViewCreator and DayMenuViewCreator interface.

- Integration of the Date Invitation Module (DIM) with the Event Handling Module (EHM). DIM and EHM use the StoreDIData, SaveDIData, CreateEvent and ViewEvent interfaces to detect whether a new date invitation is sent and replied.

- Integration of the Birthday Module (BM) with the Event Handling Module (EHM). BM and EHM use the StoreBCData, SaveBCData, CreateEvent and ViewEvent interfaces to detect whether a new date invitation is sent and replied.

- Integration of the User Activities Module (UAM) with the Event Handling Module (EHM). UAM and EHM use the StoreUAData, SaveUAData, CreateEvent and ViewEvent interfaces to detect whether selected date the user has arranged a personal event.

- Integration of the Event Handling Module (EHM) with the Notification Module (NM). EHM and NM exchange information by using the CreateEvent, ViewEvent, CreateNotification to detect whether a new event has taken place and produce the corresponding notifications. The notifications are displayed with the CalendarNotificationViewCreator and the ListNotificationViewCreator interface.

The integration of all the aforementioned modules required compatibility concerning the data types and schema. Compatibility process included data type casting, as well as, transformation in the schema of the exchanged data.

The navigation provided by the UI modules is implemented both in css3 and JavaScript, as css3 is not supported by all web browsers.

Videoconferencing Service

- Integration of the videoconferencing service on a user interface level

Early on in the project it became evident that integration of the videoconferencing service would only be possible on a user interface level. The Control Module (as described in deliverable D3.4) was developed to provide a unified user experience in terms of device control. The Control Module allows the user to use the same remote control for both the TV, and HOMEdotOLD services running in the TV browser, and the laptop, running the videoconferencing service. The videoconferencing service differs from the other HOMEdotOLD services in the sense that it is a native PC-based application, whereas the other HOMEdotOLD services are webbased applications. The main cause for this is the fact that a videoconferencing application needs access to local hardware, namely a microphone and camera. In the intended full integration of the videoconferencing service on a TV platform, these components will not be accessible from within a webservice. This has to do with the TV architecture which is described in layman's terms in the following paragraph.

The Philips connected TV platform is divided into dedicated sections (i.e., portals) related to the functionality of the TV. On a high level this includes:

- Device – the TV hardware itself
- Local UI/EPG portal – interfacing with devices offering channel reception
- Device portal – interfacing with external devices
- Service portal – interfacing with (web)services

The interfaces between these portals rely on predefined communication rules as to not bother users with how the communication should take place. The technology is shielded from the user as much as possible. Communication between the portals is controlled. Particular functions from each portal are accessible to other portals, while other functions are not for security reasons. Most importantly:

- The Device Portal and the Service Portal cannot control each other.
- The Device can control the Service Portal, but vice versa, the Service Portal is not allowed to control the device.

The videoconferencing service is developed for a connected device (a Windows laptop)

because it needs access to a microphone, camera and a PC based Skype client. The laptop is connected to the TV via the Device Portal. The Device Portal can "wake-up" the Device from standby upon an incoming call. However, the Service Portal cannot control the Device, nor the Device portal, to access the videoconferencing service on the laptop. This is something that a user needs to do manually.

News Headlines Service

- The integration of the RSS feeds module with the Personalized News Headlines was performed by implementing a wrapper library for the RSSutils library. A few integration issues were presented during the implementation of the wrapper library due to the lack of proper documentation for the usage of the RSSutils library.

- The integration of the TTS module with the Personalized News Headlines service was accomplished by implementing a client to Phiware's TTS web service and by integrating the content generation module with the RSS feeds module of the service in order to feed the TTS engine the proper content.

Photo & Video Sharing Service

- The integration of the Authentication module with the other subsystems of the platform was accomplished by implementing an internal interface which provides information about the user to the services, such as his ID, language and authentication state.

- Integration of the Multiplatform module with the other subsystems of the platform was performed by implementing an internal interface which provides to the services of the platform the type of web browser that the currently logged in user uses.

- The integration of the Multilanguage module was accomplished by implementing an internal interface which provides to the services of the platform the phrases that show up on the screen, based on the currently logged user's language.

- The integration of the Picasa client module with the Photos, Videos & Experience Sharing service was performed by implementing a wrapper library around Google's Data API. The integration was accomplished without any issues.

- The integration of the Video Subsystem with the Photos, Videos & Experience Sharing service was performed by implementing a web service client to Google's Account API which allows the video subsystem to recognize the users that are logged in with their Google Accounts.

4. HOMEdotOLD PLATFORM AND SERVICES VALIDATION REPORT

.

A detailed test specification for the HOMEdotOLD platform and services is provided in the deliverable D23 "Test and Validation plan", section 4. The following table presents the results of these tests, which were performed against the integrated HOMEdotOLD platform. The results of the tests prove the successful integration of the HOMEdotOLD platform and services.

4.1 PHOTOS, VIDEOS, EXPERIENCE SHARING SERVICE VALIDATION

	Test Case ID – Purpose	Qualification verdict	Comments
1.	HOMEdotOLD_SVE_001 To verify that users can add a contact to their contact list.	PASS	Contacts are managed by the platform administrator.
2.	HOMEdotOLD_SVE_002 To verify that users can remove a contact from their contact list.	PASS	Contacts are managed by the platform administrator.
3.	HOMEdotOLD_SVE_003 To verify that platform generates notifications when new shared content is available.	Not Applicable	It was decided that the users not to be notified by the platform but by the content uploader.
4.	HOMEdotOLD_SVE_004 To verify that users can access shared albums and photos.	PASS	
5.	HOMEdotOLD_SVE_005 To verify that users can assign comments to photos.	PASS	The rating of the photo is displayed to the uploader in the form of a comment.
6.	HOMEdotOLD_SVE_006 To verify that users can access shared videos.	PASS	
7.	HOMEdotOLD_SVE_007 To verify that users can assign comments to videos.	Not Applicable	It was decided not to allow the user to leave a comment to a video.
8.	HOMEdotOLD_SVF_001 To verify that friends/family users can add a	PASS	Contacts are managed by

	Test Case ID – Purpose	Qualification verdict	Comments
	contact in their contact list.		the platform administrator.
9.	HOMEdotOLD_SVF_002 To verify that friends/family users can remove a contact from their contact list.	PASS	Contacts are managed by the platform administrator.
10.	HOMEdotOLD_SVF_003 To verify that friends/family can access existing photo sharing web-application.	PASS	
11.	HOMEdotOLD_SVF_004 To verify that friends/family can access existing video sharing web-application.	PASS	
12.	HOMEdotOLD_SVF_005 To verify that friends/family can share photos with their contacts.	PASS	
13.	HOMEdotOLD_SVF_006 To verify that friends/family can assign comments to photos.	Not Applicable	It was decided not to display a photo's comments to the user.
14.	HOMEdotOLD_SVF_007 To verify that friends/family can share videos with their contacts.	PASS	
15.	HOMEdotOLD_SVF_008 To verify that friends/family can assign comments to videos.	Not Applicable	It was decided not to display a video's comments to the user.

4.2 PERSONALISED NEWS HEADLINES SERVICE VALIDATION

	Test Case ID – Purpose	Qualification verdict	Comments
1.	HOMEdotOLD_SVA_001 To verify that RSS sites list can be configured.	**PASS**	The RSS sites list can be configured by the system administrator
2.	HOMEdotOLD_SVE_008 To verify that the Personalized News Headlines Service can be customized.	**PASS**	
3.	HOMEdotOLD_SVE_009 To verify that when users access the Personalized News Headlines service the categories of interest show up.	**PASS**	
4.	HOMEdotOLD_SVE_0010	**PASS**	

	To verify easy access to the Personalized News Headlines Service.		
5.	HOMEdotOLD_SVE_0011 To verify oral announcement of news headlines.	**PASS**	

4.3 VIDEOCONFERENCING SERVICE VALIDATION

4.3.1 PHILIPS NETTV VIDEOCONFERENCING CLIENT

	Test Case ID – Purpose	**Qualification verdict**	**Comments**
1.	To verify that users can add a contact in their contact list	met	
2.	To verify that users can remove a contact from their contact list.	?	
3.	To verify that when users access the Videoconference service the system shows all contacts available for a videoconference call.	met	
4.	To verify that users can change their availability status.	unmet	Upon HMI testing proved non-desirable by users
5.	To verify that users can initiate a videoconference call.	met	
6.	To verify that users can terminate a videoconference call.	met	
7.	To verify that users can accept a videoconference call.	met	
8.	To verify that users can reject a videoconference call.	met	
9.	To verify videoconference call picture and audio quality.	met	

4.3.2 AONTV VIDEOCONFERENCING CLIENT

	Test Case ID – Purpose	Qualification verdict	Comments
1.	HOMEdotOLD_CONF_1 Check if the mGUI.exe tables are updated according Skype main program at startup.	PASS	
2.	HOMEdotOLD_CONF_2 Check if the Skype logo is shown properly on the main page.	PASS	
3.	HOMEdotOLD_CONF_3	PASS	

	Check if the three sub-items (contacts, missed calls, invitations) are available.		
4.	HOMDdotOLD_CONF_4
Check call accept/decline during TV.	PASS	
5.	HOMEdotOLD_CONF_5
Check call accept/decline during Radio.	PASS	
6.	HOMEdotOLD_CONF_6
Check call accept/decline during Skype portal.	PASS	
7.	HOMEdotOLD_CONF_7
Check call accept/decline during Services (homedotold services in Opera).	PASS	
8.	HOMEdotOLD_CONF_8
Check if Skype indicators (# missed calls, # invitations) are displayed properly.	PASS	
9.	HOMDdotOLD_CONF_9
Check if "accept with audio only" is working in every screen.	PASS	
10.	HOMEdotOLD_CONF_10
Check if availability states of users are displayed properly.	PASS	
11.	HOMEdotOLD_CONF_11
Check if video toggle functionality is working properly.	PASS	
12.	HOMEdotOLD_CONF_12
Check if call initiation is working from the Skype portal (video, audio only).	PASS	
13.	HOMEdotOLD_CONF_13
Check if "accept invitation" is working.	PASS	
14.	HOMEdotOLD_CONF_14
Check if all video conferencing screens can be accessed by their shortcuts.	PASS	
15.	HOMEdotOLD_CONF_15
Check if state information screen is working in all Skype pages.	PASS	
16.	HOMEdotOLD_CONF_16
Check if TV and Radio is muted during a call.	PASS	

4.4 INTELLIGENT CALENDAR SERVICE VALIDATION

	Test Case ID – Purpose	Qualification verdict	Comments
1.	HOMEdotOLD_IC_SC25
To verify that the TV set remote control is used for interacting with the service	PASS	
2.	HOMEdotOLD_IC_SC26	FAIL	The STT functionality was not implemented

	Test Case ID – Purpose	Qualification verdict	Comments
	To verify that vocal instructions are executed by the service		
3.	HOMEdotOLD_IC_SC27 To verify that a new event (whether a new date arrangement or a birthday reminder etc.) corresponds to a new notification	PASS	
4.	HOMEdotOLD_IC_SC28 To verify that new events trigger the Intelligent calendar (i.e. a new social voluntary work activity is displayed as a new event in the intelligent calendar	PASS	
5.	HOMEdotOLD_IC_SC29 To verify that a new match is produced upon a new event update that matches both users preferences	PASS	This was eventually implemented in the context of the "pattern matching" based on the users preferences without interconnection with external feeds.

4.5 SOCIAL VOLUNTARY WORK SERVICE VALIDATION

	Test Case ID – Purpose	Qualification verdict	Comments
1.	HOMEdotOLD_SVW_SC19 To verify that the TV set remote control is used for interacting with the service	PASS	N/A.
2.	HOMEdotOLD_SVW_SC20 To verify that a new activity update entered by the administrator is displayed on the user interface	PASS	
3.	HOMEdotOLD_SVW_SC21 To verify that a new activity update corresponds to a new notification	PASS	
4.	HOMEdotOLD_SVW_SC22 To verify that vocal instructions are executed by the service	FAIL	The STT functionality was not implemented
5.	HOMEdotOLD_SVW_SC23 To verify that new events trigger the Intelligent calendar (i.e. a new social voluntary work activity is displayed as a new event in the intelligent calendar	PASS	
6.	HOMEdotOLD_SVW_SC24 To verify that the confirmation of an invitation to a new social voluntary work activity corresponds to a new auto-generated mail message	PASS	

5. CONCLUSIONS

The scope of this deliverable was to present an overview of the implementation and integration plan that was followed, which is divided in two (2) main integration phases, as well as to also present the activities that were performed during each one of these phases. In addition, the deliverable summarised the activities that were performed for the integration of the HOMEdotOLD platform and services, as well as the main integration activities performed during the development of the HOMEdotOLD platform and services, and highlighted any difficulties that occured during the integration process. Last but not least the current deliverable summarised the results of the test specification for the HOMEdotOLD platform and services, as these are provided in deliverable D2.3 "Test and Validation plan", which prove the successful integration of the HOMEdotOLD platform and services.