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| SEVENTH FRAMEWORK PROGRAMME<br><br>SEVENTH FRAMEWORK PROGRAMME: PRIORITY 7.1B LARGE SCALE INTEGRATING PROJECT (IP) | IP project number 247950 Project duration: February 2010 – February 2014<br>Project coordinator: Joe Gorman Project Coordinator Organisation: SINTEF, Norway<br>Strategic Objective: 7.1.b website: www.universaal.org<br><br>UNIVERSAAL<br><br>Universal Open Architecture and Platform for Ambient Assisted Living |

| **Document Type:**<br>"Deliverable:"<br>Item Appearing in "List of Deliverables in DoW with delivery date shown in bold<br>"Supplementary Report"<br>As "Deliverable", but delivery date *not* shown in bold. These documents are formally internal to the consortium, but can be delivered on request. | | |
|---|---|---|
| | **X** | Project Deliverable, with independent sub-parts.<br>*Each sub-part forms a coherent whole in its own right, and has been edited and reviewed independently. The sub-parts are integrated in this document, to form the deliverable as a whole.* |
| | | Project Deliverable (single document, no sub-parts). |
| | | Sub-part of a Project Deliverable. |

| ***Document Identification*** | | | |
|---|---|---|---|
| Deliverable ID: | **D2.2-A** | Deliverable title: | universAAL Generic Platform Services, AAL platform services and ontology artefacts |
| Release number/date: | | 1 / 05.04.2011 | |
| Checked and released by: | | Sergio Guillén/ITACA | |

| ***Key Information from "Description of Work" (from the Contract)*** | |
|---|---|
| Deliverable Description | *Software that is installed on top of the universAAL execution environment, adding generic AAL service functionality. AAL platform services are software that is installed on top of the universAAL execution environment and Generic Platform services, providing business level AAL service functionality. Ontology artefacts are software and documents that enable developers to use a shared view on the AAL concepts and information models* |
| Dissemination Level | PU=Public |
| Deliverable Type | P = Prototype |
| Original due date (month number/date) | Month 11 / 31.Oct.2010 (changed in the first project review) |

| ***Authorship& Reviewer Information*** | |
|---|---|
| Editor (person/ partner): | Oliver Höftberger / TUW & Zaher Owda /USIEG & Saied Tazari / Fh-IGD |
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| Reviewed by (person/ partner) | Salvatore Flavio Pileggi/ ITACA |

# Release History

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| Release number | Date issued | Milestone * | eRoom version | Release description /changes made |
|---|---|---|---|---|
| 1 | 13.01.2011 | PCOS proposed | 1 | Initial version containing the structure an outline of content |
| 1 | 21.03.2011 | Intermediate approved | | Only based on software repository and the wiki pages |
| 1 | 28.03.2011 | External proposed | 2 | All input from subfolders integrated |
| 1 | 31.03.2011 | External revised | 3 | (external reviewed in subfolder) All feedback incorporated |
| 1 | 04.04.2011 | External approved | 4 | |
| 1 | 05.04.2011 | Released | 5 | Technical Manager release |

* The project uses a multi-stage internal review and release process, with defined milestones. Milestone names include abbreviations/terms as follows:

- PCOS = ”Planned Content and Structure” (describes planned contents of different sections)
- Intermediate: Document is approximately 50% complete – review checkpoint
- External For release to commission and reviewers;
- proposed: Document authors submit for internal review
- revised: Document authors produce new version in response to internal reviewer comments
- approved: Internal project reviewers accept the document
- released: Project Technical Manager/Coordinator release to Commission Services

# universAAL Consortium

universAAL (Contract No. 247950) is an Large Scale Integrating Project *(IP)* within the 7th Framework Programme, Priority 7.1.b (ICT & Ageing). The consortium members are:

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# 1 About this deliverable

Deliverable 2.2 is part of work package 2 – "Open source AAL Platform and Implementation" – whose main objective is to design, configure and implement an operational universAAL platform. This platform will be available in the Developer Depot and can be deployed to execution platforms like mobile phones, laptops, high-performance servers, etc. Special attention is given to operational issues such as reliability, security, interoperability and maintainability as perceived by service and application developers.

The deliverable D2.2 particularly reports on the progress of work done in task 2.2 – "Implement universAAL Generic Platform Services, AAL platform services and ontology support". The platform services to be implemented within this task comprise support for context awareness and personalization, service-based interoperability, and adaptive user interaction, to name a few, and should facilitate the implementation of AAL specific features.

In order to be able to concentrate on the challenges of subtasks individually, the work has been structured into the following expert groups:

- Context Management
- Service Management
- User Interaction (UI) Management
- Remote Interoperability

The most important outcome of this task will be software packages that can be used by other service and application developers, and which will be deployed with the execution environment of task 2.1. Hence, a major part of the deliverable presents the software packages that already have been developed, and it describes software artefacts that are currently under development.

Two sets of software are developed, where the first set contains those software components which implement basic platform services that are a prerequisite for other components and work packages, mostly adopted from the input projects. In the second set, components are developed that extend the functionality of the platform. For each of the two sets of software components an α, β, and final release are planned where flaws in the previous version can be corrected and software components are enhanced.

Until the end of the project, four updates of this deliverable will follow with delivery dates at the end of M11[1], M18, M27 and M36 and labelled D2.2-A to D2.2-D, respectively. Table 1 presents the schedule of the deliverables and the planned release versions of the basic software components and the extension software components.

**Table 1: Schedule of deliverable D2.2**

| | M11 | M18 | M27 | M36 |
|---|---|---|---|---|
| **Basic software components** | α | β | final | |
| **Extension software components** | | α | β | final |

[1] The original delivery date of the first version in the DoW was M09; in the first project review meeting, however, it was changed to M11.

# 2 Relationship to other universAAL deliverables

Within this task – and within WP2 as a whole – central software components are developed that are based on the outcome of the reference architecture design in WP1, and are essential for other work packages and the universAAL community targeted by the project. Hence, the deliverable has a relationship to several work packages and some individual deliverables.

The deliverable D2.2 is related to the following universAAL deliverables:

- **D2.1 – universAAL Execution Environment installation packages and hardware abstraction layer:** The software packages developed in task 2.2 are deployed on top of the execution environment of D2.1. Thus, the APIs provided by the software components of task 2.1 are of utmost interest for the development in this task. There is an extensive cooperation between both tasks to obtain optimal results.
- **D2.3 – universAAL integration and testing strategy and Issue Tracker:** In this deliverable the integration strategy for existing software artefacts from input projects and software components developed by the universAAL community is described. Furthermore, development tools are presented, code conventions declared and the testing and deployment strategies defined.
- **D2.4 – Developers handbook:** In the developers handbook it will be documented how to build applications on top of the software components of this task and how those software components can be extended.

Additionally, this deliverable is strongly related to the deliverables of the following work packages:

- **WP1 – Consolidate a standard reference architecture for open AAL platforms:** There is a very tight relation between the development of software components in task 2.2, and the work done in WP1. On the one hand, the reference architecture designed in WP1 (i.e., use cases, reference architecture requirements, and the reference architecture itself) finds an implementation in the software components of WP2. On the other hand, experiences from the developments in task 2.2 are input to the next iteration of the reference architecture design.
- **WP3 – Tools and tutorials:** In WP3 tools and according tutorials are created that facilitate the design and development of AAL services and applications on top of the platform services within this task. Those tools include, for example, automatic code generation, service conformance testing tools and tools to support personalization of the universAAL platform.
- **WP4 – Innovative service concept implementations & industry cases:** The services implemented within WP4 are based on the execution platform of this work package 2. The direct usage of software components of task 2.2 will point out flaws in the implementation of platform services, and hence, provides next iterations of D2.2 with valuable feedback.
- **WP7 – Demonstration:** The work package concentrates on the demonstration of universAAL results to the universAAL community. Thereby, the reference implementation of the reference architecture that is developed in WP2 will be used for the demonstrators.

# 3 Structure of the Deliverable

This deliverable is split into several independent sub-parts. Each of these was developed as a standalone item that is useful in its own right. The deliverable production process (authorship, editing, internal review) was applied independently to the various sub-parts. Where necessary, coordination activities at WP level were carried out to ensure consistency between the different sub-parts. The structure is as follows:

- **This intro:** Within this document an overview of the complete structure of deliverable D2.2 is provided along with a short description of each subpart the deliverable is composed of.
- **Part I: "Report on the development work".** This part presents the state of the actual development of generic platform services, AAL platform services and ontology artefacts within WP2. It describes the scope of recent developments, the approach used for decision making and service selection, and finally lists all components that already have been implemented or are planned to be implemented.
- **Part II: "Development wiki pages".** During the development of software components the underlying decisions, the software architecture and development plans are documented using wiki pages. Part II consists of a collection of these wiki pages that present background knowledge for each expert group of task 2.2 and the software components developed by each group. The wiki pages for each expert group can also be found here:
  - Context Management Group: http://depot.universaal.org/wiki/context:overview
  - Service Management Group: http://depot.universaal.org/wiki/service:overview
  - UI Management Group: http://depot.universaal.org/wiki/ui:overview
  - Remote Interoperability: http://depot.universaal.org/wiki/rinterop:overview
- **Part III: "universAAL platform service software".** This is the main part of the deliverable which contains the actual software components that have been developed in the project or have been adopted from input projects.