Project Results

Enabler of the next generation of innovative software systems

Open ecosystem networking platform cuts costs for development of complex software-intensive systems

Internet has resulted in a disruptive transition for software-intensive systems. The ITEA 2 OSAmI-Commons project has developed a universal platform enabling reuse of software components across vertical application domains. This open modular ecosystem will increase innovation and allow development of complex solutions across many sectors with less effort. It has been trialled and exploited for applications in energy-sustainable homes, telematics-based city services, smart homes, ambient-assisted living, software development tools, and edutainment.

The relationship between humans, computers and electronic devices evolved rapidly from a one computer to many users in the enterprise domain in the 1960s to a one user to many devices now with phone complements, WiFi routers, gaming consoles, MP3 players, set-top boxes, digital TVs and infrastructures with impressive computing and storage capabilities. And a whole new concept of global and transversal platforms is emerging to exploit the potential of networking and affecting all business areas.

OPEN SOURCE AND SERVICE ORIENTED
OSAmI-Commons has targeted open-source common foundations for a dynamic service-oriented platform able to personalise itself in a wide range of co-operating software-intensive systems. The resulting platform facilitates:

- Service retrieval from external centralised or distributed data repositories;
- Connection and exchange of information and services between devices; and
- Linking vertical markets to enable new business solutions.

Open software business models entail significant challenges because of the various intellectual property licensing programmes and proprietary solutions. This resulted in discussions to allow partners to build their solutions in a context in which both open-source and proprietary developments could co-exist.

The project was organised in national clusters, each focusing on a specific domain, with vertical sectors contributing domain-independent assets to a common platform. In addition, a demonstrator involving services from different domains and countries was defined to improve co-operation and transversal synergies and to prove feasibility. This facilitated short-term exploitation of results and made it possible to build the foundations for a transversal platform for use across industries.

SHARING DEVELOPMENT EFFORTS
The ITEA 2 project has resulted in an ecosystem which offers an open-source-based platform for the exchange of applications. The platform has been tested and can already offer the first modules for use in building applications in various industries. Methodologies developed include an approach to how software modules have to be developed as well as policy recommendations on how to foster this ecosystem further.

This platform enables actors to share development efforts in areas where applications and software components can be used across industries as well as in various solutions. The platform also supports commercialisation of results from research and academic partners that would not normally reach the market owing to lack of networks and other barriers.

CONTRIBUTING STANDARDS & PRODUCTS
The OSAmI-Commons approach combined short-term exploitation with mid- to long-term objectives. The project contributed to standards such as OASIS WS-DD; IETF 6LowPAN- Coap and OSGi Alliance. And the solutions developed as part of the

Project Results

different subprojects are being used in new products and business solutions that will be launched commercially for telematics, sustainable buildings, telemedicine, smart homes, software development tools and edutainment.

The first products in the health domain will be launched in 2012/13. These include a sensor platform (blood pressure, oxygen saturation, and ECG sensoric) that provides the basis for a new medical handheld sensor to be used in car emergencies and other harsh environments as well as a rehabilitation programme for cardiology patients with the potential for saving many lives. The programme enables heart-attack patients to continue training on exercise machines at home after rehabilitation, connected to a doctor online.

New service solutions for intelligent city systems are being exploited in Turkey together with Turkish Telecom. A monitoring infrastructure has been incorporated in the INEED building series which provides reference architecture and a new bachelor program for the next generation of low energy, sustainable buildings. Content recommendations from the edutainment demonstrator are being used in a cable company and software development tools such as the Eclipse Libra Platform are ready for commercialisation in the business markets.

SUPPORTING EUROPEAN COMPETITIVENESS

OSAmI-Commons building blocks will support Europe's global competitiveness. The open-source platform and its software modules will also strengthen Europe's position in tackling social challenges. And project results will be used in other research projects such as the ambient assisted living universAAL project.

Major project outcomes

DISSEMINATION
Over 200 activities:
- 88 papers & 74 presentations/demos/panels
- 11 articles & 5 flyers
- 14 event booths
- 11 theses (master, diploma) & multiple ongoing PhD theses
- 1 book & 8 book chapters/contributions
- 5+ organised conference workshops (SOCNE+HSI)

EXPLOITATION
- *Green Building – INEED 3*: provides a reference architecture for green buildings
- *Smart Home*: wireless sensor networks solutions
- *Smart City /Telematics*: Ambient city service solutions (deployed with Turkish Telekom)
- *Mobile*: mobile outdoor team training and coaching application
- *E-health:*
  - Planned new medical handheld sensor with multiparamenter sensor platform (blood pressure, oxygen saturation, and ECG sensoric)
  - Remote exercise training program for cardiologic patients at home
- *Open Source Tools and Services:* Eclipse Libra Platform for the Enterprise Market & consultancy services
- *OSGi-based extensions for embedded and desktop devices*
- *Edutainment*: Content recommendation exploited through a cable company

STANDARDISATION
- OASIS-WS-DD, IETF 6LoWPAN – CoAP, and OSGi Alliance
- Collaboration with research projects UniversAAL, AALOA, SODA, and SOCRADES

PATENTS
- The main focus is on open-source components made publicly available

SPIN-OFFS
- Adevice (AICA)

OSAmI-Commons
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