



PROJECT PROFILE

Service-oriented device and delivery

Developing a device-level, service-oriented ecosystem

The SODA project focuses on building a complete service-oriented ecosystem that can be used throughout an application's life cycle. It is building on the foundations laid by the groundbreaking ITEA SIRENA framework for high-level device communications that exploits service-oriented architecture (SOA). Main users of the results of SODA will be all key players – including device and software designers, applications integrators and maintenance personnel – in a wide range of industrial, domestic and communications functions.

Application of the SOA paradigm to communications and inter-working between embedded software components at the device level was pioneered by the SIRENA project. The resulting service infrastructure for real-time embedded devices used as a foundation for the SODA project is defined in a platform-, language- and network-neutral way, applicable to a wide variety of networked devices for diverse applications in domains such as industrial automation, automotive electronics, home and building automation, telecommunications and medical instrumentation.

SODA (ITEA 05022)

Partners

- Alcatel Bell
- ARC Informatique
- B-kin
- Borderlight
- Capgemini
- Consultores de Automatización y Robótica
- DataPixell
- EADS
- ESI
- Evidian
- FlexLink Automation
- FluidHouse
- Ford
- IBBT
- Information & Image Management Systems
- Krause
- Kungliga Tekniska Högskolan
- Loughborough University
- PSA
- Rihotec
- Semantic Systems
- Tampere University of Technology
- THALES Communications
- TNI-Software
- TRIMEK
- Universidad Politécnica de Madrid
- Universitat Politècnica de Catalunya
- Université Joseph Fourier
- Volvo

Countries involved

- Belgium
- Finland
- France
- Spain
- Sweden
- United Kingdom

Project start

January 2006

Project end

December 2008

Contact

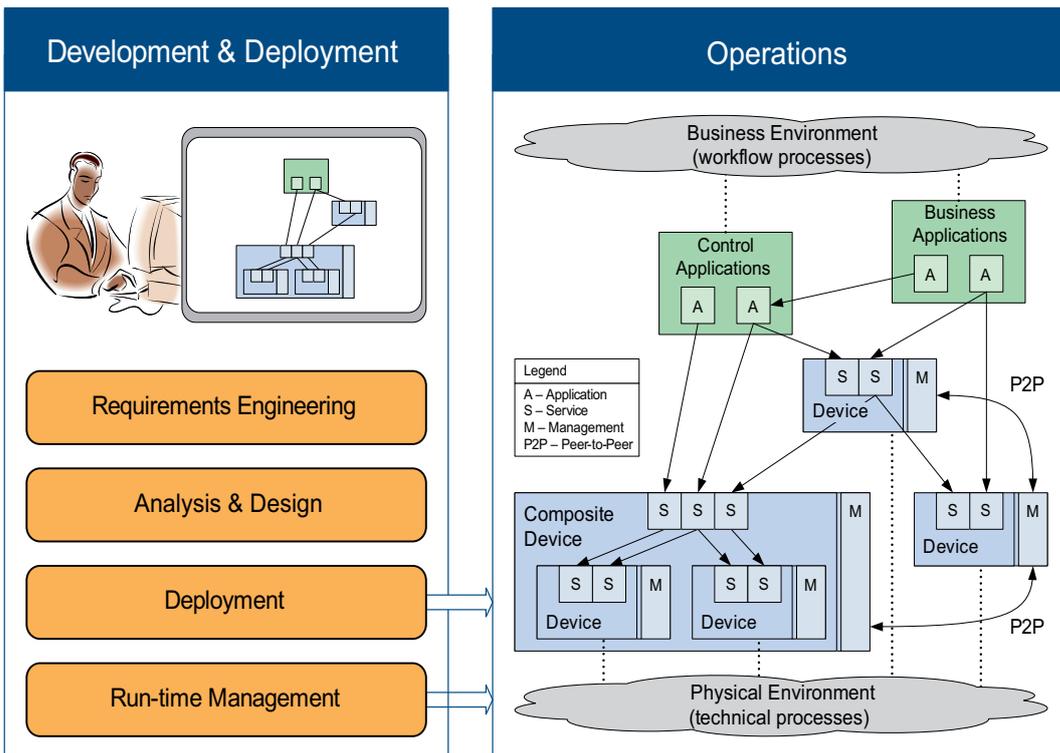
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The SODA ecosystem



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The need now is to implement a comprehensive, scalable, easy-to-deploy SOA ecosystem on industry-preferred platforms, supported by wired and wireless communications. Key points that will be addressed during the project include acceptability of the architectural breakthrough introduced by the SODA technology, and feasibility taking into account constraints for low cost devices.

Extending components

The SODA project intends to extend existing SOA components in several directions by:

- Providing a complete set of tools for design, development, deployment and run-time support, fully exploiting the service-oriented breakthrough provided by the SIRENA framework;
- Developing extensions, improving performances and serviceability, and integrating security;
- Seamlessly integrating device-provided services with high-level business processes;
- Developing elaborated experimental applications in several applications domains – including industrial automation, telecommunications, home networking and automotive electronics – to validate use of the SOA paradigm on a broad scale and promote its standardisation in several vertical applications domains; and
- Conducting feasibility studies on application of the device-level SOA approach in yet unexplored applications areas.

Complete device-level SOA ecosystem

SODA therefore intends to extend the innovation introduced by the SIRENA technology into a complete device-level SOA ecosystem. Such an ecosystem is indispensable for bringing the device-level SOA approach closer to widespread industrial use.

Moreover, the SODA ecosystem will exploit the benefits of high-level service-centred interactions. This will enable much more software to be automatically generated than before, thus greatly improving software quality and reliability. By the same token, it will be possible to achieve service validation and certification, as well as guaranteed service interworking.

Key development milestones in the SODA project roadmap will include:

- Service design, development and validation tools;
- Service deployment, security and monitoring tools;
- Infrastructure mechanisms and extensions;
- Security infrastructure and management;
- Business-process integration facilitation;
- Service-delivery environment;
- Service content and demonstrators.

Determining acceptability and feasibility

The major expected results of SODA are:

- Specifications and implementation of a suite of tools and software components addressing the design, implementation, deployment, management and maintenance of service-oriented applications for embedded devices;
- Specifications and implementation of an extended communications framework, including provisions for security;
- Development and use report of experimental applications integrating service-enabled embedded devices in higher-level service-oriented business processes;
- A feasibility study on application of an innovative, web-based, service-oriented communications architecture for intra-vehicle automotive communications; and
- Validating demonstrators for each of the applications domains addressed.

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