CELTIC
Telecommunication Solutions
www.celtic-initiative.org

# Development System for Mobile Services

**The main objective of DESYME was to build an open development and runtime environment allowing SMEs to develop networked, distributed mobile systems and services in an easy and flexible way. DESYME is based on an integrated development environment (IDE) and a common framework located at Application Services Providers (ASP) using service enablers provided by one or several Mobile Network Operators (MNO).**

## Main focus

The goal of DESYME was to close the existing gap between new generation services over mobile networks and user needs. It enables users to design mobile services to suit their requirements in an easy way. The concept is an open development that makes it possible for SMEs to design, develop, validate, and execute services over mobile networks.

Besides users and developers, two main players, ASPs and MNOs, launch services targeting a wide audience: This makes it difficult to customize such services for specific requirements. Specific developments have not been available for SMEs due to the high investment and specialized knowledge required. SMEs suffer from the complexity of negotiations with operators about issues such as security and billing.

Thus, the DESYME concept was based on an environment that enabled SMEs to easily design, develop, validate and execute customized services over mobile networks, and access them easily.

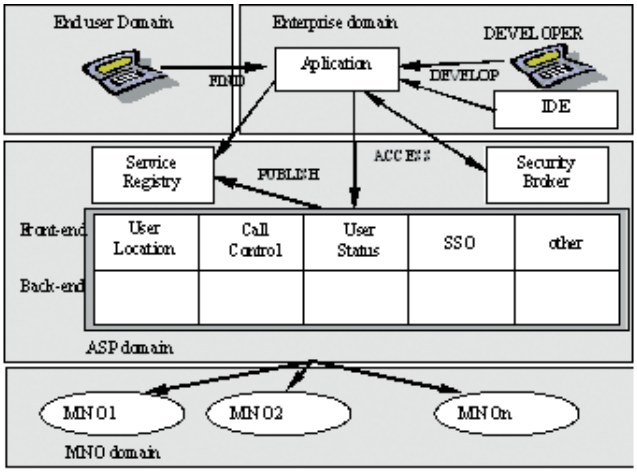


Figure 1: DESYME Environment

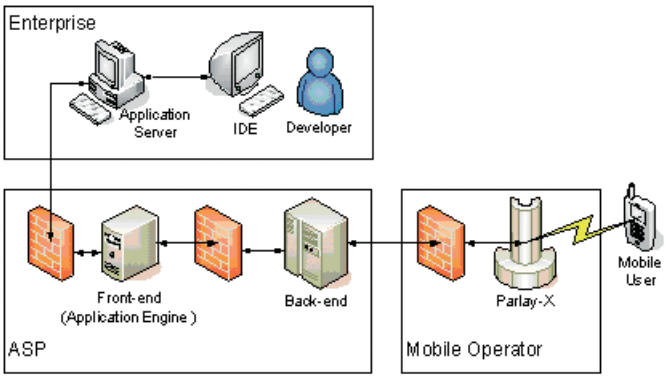


Figure 2: DESYME Architecture

## DESYME

Project ID: CP1-042
Start Date: 1 October 2004
Completion date: 31 December 2006

**Partners**

Actimage - Luxemburg

AGH - University of Science and Technology, Poland

Altec, Greece

Cellact, Israel

Ericsson Spain, Spain

Gdansk University of Technology, Poland

ICCS-NTUA - Institute for Communication and Computer Systems – National Technical University of Athens, Greece

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**Project web site**

www.celtic-initiative.org/projects/desyme

## Approach

To achieve the DESYME goals, activities within the project were split into several phases (WP): User Requirements, System Development, Field Trial, Test and Evaluation, and Dissemination & Exploitation activities.

The first step was to design the most suitable architecture of the DESYME system based on targeted user profiles and technical needs. Then, the major key objective was to translate the technical specifications into functional software modules, to face the implementation phase providing graphical and intuitive IDE at the user domain, reliable communication between the IDE and the framework front end, and between back end and MNO domain. After a deep process of development, the DESYME system was validated in a controlled and real scenario, and it has been integrated in the three different domains: user, ASP and MNO. Afterwards, a final stage of evaluation was carried out, both from a technical point of view and from the user point of view, to validate how final technical and usability results fit with user requirements defined in system design.

## Achieved results

The final result of the DESYME project can be described as an open and distributed system of several modules that together enable a user to create and use networked, distributed mobile systems and services in an easy and flexible way through web services. The project has conducted research on a common development platform composed of a Framework, IDE and a Web Service Architecture that facilitates the development of mobile applications and fosters the use of mobile services provided by MNOs. These main results could be split into the following ones, as the system needs each module to work:

- A Framework that provides access to network services located within MNOs. This Framework has been made flexible and modular allowing ASPs to add new services capabilities to it from several MNOs in an easy way.
- An IDE (developed using Java and based on Eclipse), comprised of APIs and a graphical interface to ease the development of applications.
- A Web Service Architecture that puts in communication the framework's front end and customer applications developed using the IDE provided by the project.
- Relevant contribution to the fast development and adoption of services over mobile networks (2G, 2,5G, 3G) and other networks such as WiFi, Bluetooth, etc.

In addition, knowledge obtained from the project has been reported to interested groups outside the consortium by publishing papers during the project duration. Ongoing activities, which will continue in the future, include:

- Enabling the use of the results of the project by commercial consortium members, and other European companies, and
- Identifying which contributions and achievements can be included in the investigated standards and participating in the international forums and standardization activities.

## Impact

The set of services provided to subscribers by Mobile Network Operators (MNO) grown very rapidly in the recent years. The 3G systems and upcoming 4G (or B3G) are designed with a focus on heterogeneity of services. Although the mobile network interface becomes more and more effective, there is still a lack of an efficient solution capable to fulfill very diverse subscriber's needs. Hence, a new architecture enabling the flexibility in service provisioning is required, and this is where the DESYME project results fill the gap.

Potential income benefits for European MNOs lie in the ability to expand their customer base and to offer new value-added services to their existing customers. Potential benefits for the European software industry are even larger, as the area of mobile applications is one where Europe can jump ahead of the rest of the world. DESYME helps the European software industry not only to increase revenues, but also to enhance confidence.

SMEs will be strongly favoured by the results of this project. Nowadays, only major companies, like operators or big suppliers are prepared for this complex development environment. Today, with the DESYME solution in place, this environment has become easier and simpler, so they can access a new potential market at lower costs.

## About CELTIC

Celtic is a European research and development programme, established as Eureka cluster, to strengthen Europe's competitiveness in telecommunications through short and medium term collaborative R&D projects. Celtic is currently the only European R&D programme fully dedicated to end-to-end telecommunication solutions. Launched in November 2003, Celtic (Cooperation for a sustained European Leadership in Telecommunications) was founded and has been supported by major European telecommunication players, both vendors and operators. Celtic fills the gap between public R&D programmes not specifically focused on telecoms and short-term R&D efforts by the telecoms industry

**Timeframe:** 8 years, from 2004 to 2011

**Total budget:** in the range of 1 billion euro, shared between governments and private participants

**Participants:** companies from the telecommunications industry (small, medium and large), universities, research institutes, and local authorities from all 35 Eureka countries may participate in Celtic projects.

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