Daidalos II

Designing Advanced network Interfaces for the Delivery and Administration of Location independent, Optimised personal Services

www.ist-daidalos.org

Information Society Technologies

What Daidalos II is about

Daidalos II is the second phase of the Integrated Project Daidalos (2003 – 2008).

Daidalos II continues research on Beyond 3G architectural concepts and components with an operator-driven perspective.

Among the new research topics and innovations are:

- Federation in diversified and fragmented markets
- Context-aware mobility management, localized mobility, multi-homing QoS
- Cross-layer context and identity management
- Tools, APIs and deployment schemes for pervasive applications.

Motivation

The project addresses the fact that mobility has become a central aspect of our lives in business, education, and leisure. It deals with rapid technological and societal changes with proliferating technologies and services that have resulted in complex and confusing communications environments for users and network operators.

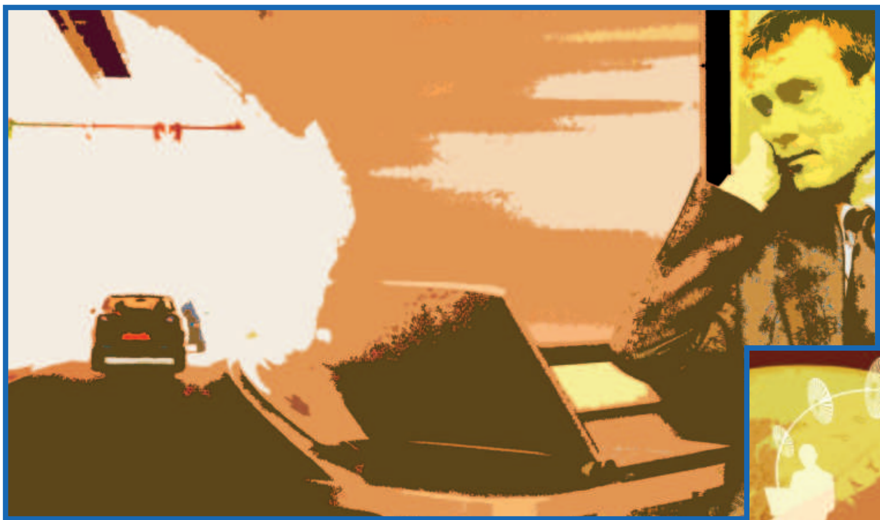
By rethinking fundamental technology and business issues, Daidalos targets usable and manageable communication infrastructures for the future. The goal is a seamless, pervasive access to content and services via heterogeneous networks that supports user preferences and context. The project will use a user-centred, scenario-based and operator-driven approach to effectively cover user and business needs. The Daidalos project aims at working towards an environment, where mobility is fully established through scalable and seamless integration of a complementary range of heterogeneous technologies and concepts, and providing the framework of integrating multiple existing technological, service and business paradigms. Daidalos is also committed to use open interfaces and technologies according to a vision of a future user-centric, fully-networked society. This environment will enable mobile users to enjoy a diverse range of personalised services – seamlessly supported by the underlying technology and transparently provided through pervasive interfaces. In Daidalos, information will reach the user through an "always best-connected" approach, taking into consideration network availability, user preferences and user/service contracts. Daidalos will develop and demonstrate an open architecture based on a common network protocol (IPv6), which in its iterations will increasingly approach the Daidalos vision.

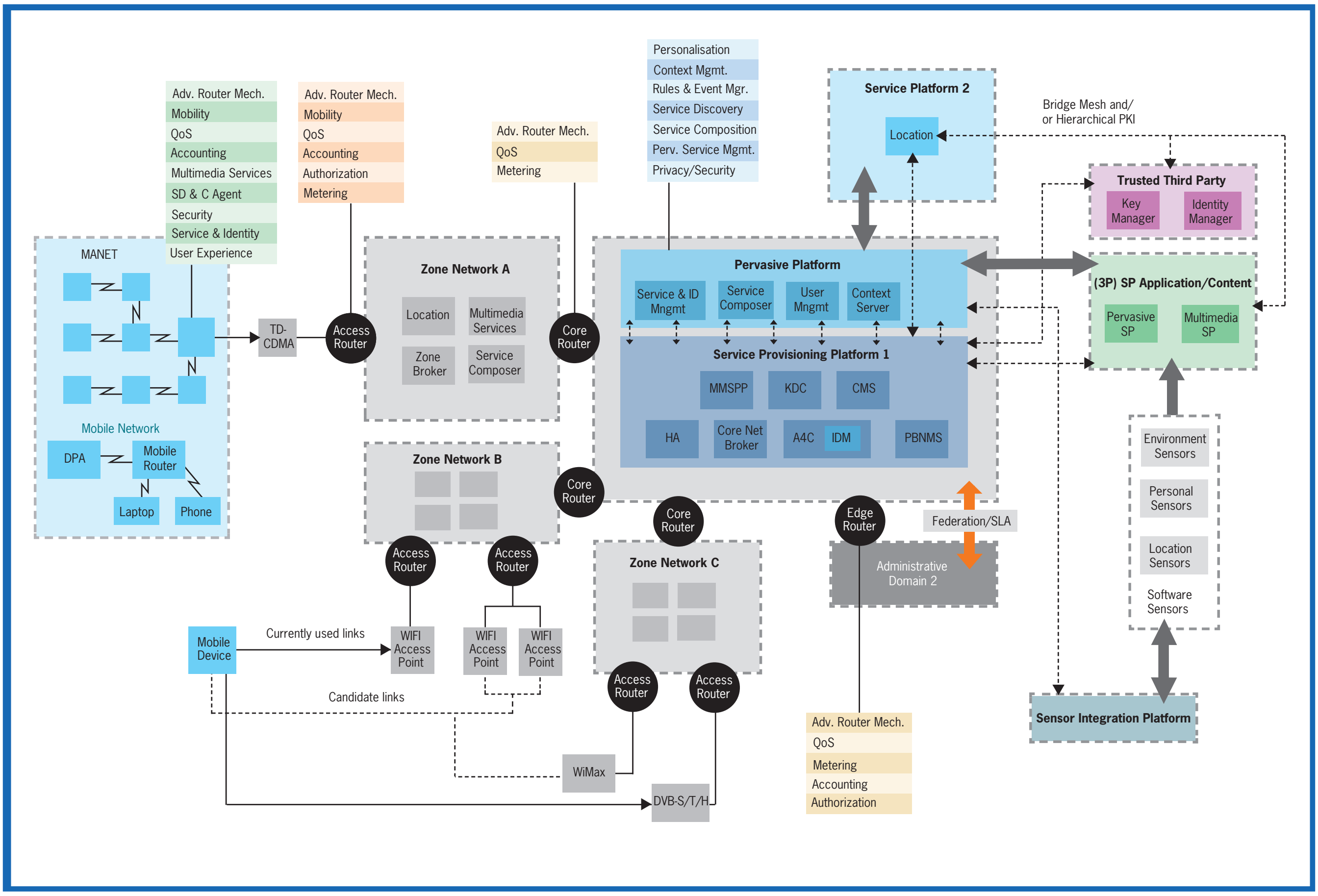
Key guiding concepts

Daidalos will be guided by five key concepts:

- MARQS (Mobility Management, AAA [Authentication, Authorisation and Accounting], Resource Management, QoS and Security), supporting functional integration for end-to-end services across heterogeneous technologies.
- VID (Virtual Identity), which separates the user from a device, thereby enables flexibility as well as privacy and personalization.
- USP (Ubiquitous and Seamless Pervasiveness), enabling pervasiveness across personal and embedded devices, and allowing adaptation to changing contexts, movement and user requests.
- SIB (Seamless Integration of Broadcast), which integrates broadcast at both the technology level, such as DVB-S/T/H, and at the services level, such as TV, carousels and data-cast.
- Federation, which will enable network operators and service providers to offer and receive services, allowing players to enter and leave the field in a dynamic business environment.

Daidalos brings together several domains and will follow a strictly methodological approach on modelling, testing, and integration cycles with feedback loops via early integration.





Daidalos – Global network architecture

Technical approach

The Daidalos II project is structured in four technical work packages, representing the different network and service layers to be researched. In addition, there is a work package dedicated to integration, and a work package dealing with project management, dissemination, standardisation, and training.

Global architecture

The main objective of this work package is to technically align the other work packages, in order to ensure consistency in architecture, consistency of technical direction in relation to the five key concepts, maximisation of impacts on standards, monitoring, and adhering to business needs.

Integration of heterogeneous networks

This work package is dedicated to the specification and implementation of an integrated pure-IP network for mobile communication. Daidalos II aims at achieving an efficient and scalable integration of heterogeneous access network technologies, including cellular, satellite, broadcast, wired networks, wireless networks and sensor networks.

Context-aware network service provisioning

This work package addresses network operation and service provisioning. The planned architecture will be context-aware, flexible, scalable, robust, and optimised. This will allow for the provisioning of creative, attractive and more stringent services, whilst supporting new business models.

Enabling pervasive services

This work package focuses on developing an enabling platform for providing services in a pervasive way. Particular emphasis is put on user-centred, flexible and adaptable service management; ontologies and models for open service value chains. In addition, Daidalos will explore user behaviour and usage of this knowledge for service provisioning, tools and methodologies for pervasive service engineering as well as privacy and security issues related to pervasive computing.

Proof of Daidalos II concepts

Work package 5 will provide the main validation and verification effort of Daidalos II. This work will be based on the work done in work packages 1 to 4. Qualitative and quantitative measurements will be provided to gather information from expert groups and end-user evaluation. This will be used to get feedback on the application of the global architecture in the selected scenarios and produce an overall evaluation of the Daidalos II system.

Consortium & Contact

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Partners

Expected impact

The Daidalos II project will have expected impacts in a number of areas:

Enhanced European competitiveness

Daidalos II will develop concepts that enable European companies to provide services that best meet the needs of the users – thus providing a significant advantage over worldwide competitors. The new standards set by the project will complement traditional 2nd and 3rd generation networks, and will pave the way to allow operators to become truly global players. This will be realised through:

- Evolution of DVB and GSM/UMTS to Beyond 3G concepts.
- Provision of pervasive computing environments.

Strengthening European R&D

The collaboration across different scientific and technological domains, as organized inside Daidalos, will broaden and deepen the knowledge and understanding of the complex and interdependent problem spaces addressed. This will improve excellence, relevance and impact of each discipline involved as well as enhance the interdisciplinary network of European R&D.

Contributions to standards

Daidalos II has a strong commitment and focus on consensus formation and collection of a critical mass of competence. High priority is given to impacting on the standardisation and specification efforts that are ongoing in the international scientific and industrial communities. Daidalos II will contribute by monitoring developments and trends regarding relevant standardisation, active participation in standardisation work via project partners, and official liaisons with relevant bodies.

About DAIDALOS

Daidalos II is an Integrated Project under EU Framework Programme 6, which is running from January 2006 to December 2008. Daidalos II will design, develop and validate a blueprint B3G Framework. It supports secure, personalized and pervasive services built on heterogeneous network and service infrastructures for the mobile user and will contribute to standards and industry fora.

37 partners from industry and academia are involved in the project, which has a duration of 3 years.