

Service Platform for Innovative Communication Environment

The project SPICE (Service Platform for Innovative Communication Environment) is addressing the still unsolved problem of designing, developing and putting into operation efficient and innovative mobile Service creation/execution Platforms for networks beyond 3G.

At A Glance: SPICE

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Duration: 01/06 – 06/08

Total Cost: €22,1m

EC Contribution: € 12m

Main Objectives:



SPICE will research, prototype and evaluate an extendable overlay architecture and framework for rapid creation and deployment of intelligent and personalised Mobile Communication and Content & Information Services.

The key SPICE project objectives are to:

- Provide an easy and simple way to create and roll out innovative services to reduce development time, costs and risks
- Provide a unified and seamless way to deliver services over heterogeneous execution platforms, network and terminals
- Enrich the service landscape, through an overlay structure supporting the users and offering a personalized user experience anytime, anyplace;
- Create a trusted and open platform that will simplify the use of services, devices through personalization and customization
- Enrich current service platform functionality with content management features and intelligent service-controlled context-information processing
- Open-up to new business models & value chains.
- Enable Pan-European service provisioning, and seamless roaming of applications and services across commercial and national borders
- Promote the uptake of innovative IT software technologies in a telecommunications grade service platform environment.

Technical Approach

The SPICE Project is structured in eight technical workpackages (WP), corresponding to eight main research fields. Two additional WPs are dedicated to project management and dissemination, standardisation and exploitation.

- **WP1** (Requirements, Scenarios, Architecture and Business Models) is focusing on the overall SPICE architecture and framework. WP1 also integrates the R&D results from the other WPs into a consistent overall view on mobile communication and information services.
- **WP2** (Middleware & Service Enablers) aims at developing a *component-based middleware layer* to ensure the inter-working of distributed service components, across various networking and enterprise domains integrating 3rd party service providers. Component developers will use this infrastructure definition to make the components useable by the service creation and execution environments.
- **WP3** (Distributed Communication Sphere Management) aims at technically supporting the users by setting-up mechanisms and solutions that provide them with 'always on' and the 'always best-configured' communication environment. The objective is also to exploit as much as possible the diversity of devices (and respective capabilities) constituting the user's communication environment.

- **WP4** (Intelligent Service Enablers) aims at providing intelligent service platform solutions for user profile and context information management and for pro-active service adaptation (anticipatory and attentive middleware functionality).

- **WP5** (Service Creation and Life-Cycle management) will specify and prototype an advanced Service Creation and Execution environment which aims at providing the telco or service provider with the capability of quickly designing, developing, delivering and executing new mobile services to end-user and devices, based on service components and enablers available on the service platform and on user devices.

- **WP6** (Service Access Control and Trust Management) is focusing on all aspects related to controlling access to the service platform for users and third party service providers. This includes providing a security framework to support user and service authentication, authorisation, non-repudiation in single- and multi-domain-environments and also methods for management and enforcement of service level agreements.

- **WP7** (Content Management and Delivery): This WP is mainly concerned with the preparation and delivery of multimedia content, and with supporting information that facilitate the access to such content. This content can be formatted in several ways for delivery over various networks to several end devices.

- **WP8** (Experiencing SPICE) aims at assembling and validating platform components so as to demonstrate the essential results of SPICE. Demonstrations scenarios will show the ability to work across heterogeneous networks, environments and terminals.

Key Issues

SPICE aims at overcoming major hurdles faced when creating and delivering mobile services. Examples of such hurdles are:

- Time to market for new services developments is too long
- Users own many different communication devices and are surrounded by many access

technologies but they usually cannot handle the complexity of accessing their services via several of these devices.

- Service provisioning involves more and more parties - Telco, content/service providers, third party networks and service providers, and even end-users – increasing the complexity of the environment for service operation.

In this context, the main challenges in SPICE are:

- To provide end-users with communication means and tailored applications anywhere, anytime and on any device;
- To provide service providers and non-professional users with service enablers that facilitate and quicken application development.
- To allow operators to take up the role of Service Provider
- To build a user-transparent infrastructure that hides the complexity of services and applications crossing over different access domains and copes with the various access technologies and offering a diversity of services.

Expected Impact

For end-users, operators and service providers, the SPICE project will turn today's confusing heterogeneity into an easily

manageable and rich service environment by exploiting the diversity of device capabilities and fostering service adoption. The SPICE approach will broaden business opportunities in the communications and associated business sectors.

The SPICE solution will benefit the Service developer community in giving them opportunities for multiple sales or royalties from service components; it will benefit network and service operators in that the cost of generating, deploying and operating new services will be reduced; and it will benefit the society and the user community in that socially beneficial and enjoyable services will be widely available at an affordable cost level.

The SPICE Service Platform and open service architecture with innovative enablers will facilitate easy and fast creation and deployment of mobile services by non-professional users and service providers.

