**TEFIS Use Case:**

*Travel eCommerce experiment-
Through a single-access point to different testbed resources via web-services*

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**I. SHORT USE CASE DESCRIPTION**

This Testbed use-case is a large scale SOA application for a huge travel eCommerce platform accessible both from websites and Web Services. This experiment demonstrates the capacity to deploy large scale experiment of the application on different testbeds accessible via the TEFIS portal with the deployment of SOA components offering Services.

TEFIS portal provides a single access point to different testing and experimental facilities for communities of software and business developers to test, experiment, and collaboratively elaborate knowledge. TEFIS will establish a connector model that makes it possible to interact with testbeds and their resources in a unified manner using Web services. Initially TEFIS platform integrates 7 complementary experimental facilities which include network and software testing facilities, and user oriented living labs.

This Testbed use-case uses in particular the TEFIS connectors to PACA Grid, ETICS, and PlanetLab testbeds illustrating Internet-scale service oriented computing and Service orchestration directions of the Future Internet application. Also involvement of the frontend is part of the use-case. For this purpose a wider set of testbed services provided through the TEFIS portal, in particular the IMS testbed for end user view on mobile device and the BOTNIA Living Lab including real end users are needed.

**A. Technical environment**

The experiment takes place in SOA architecture and is the backend dedicated to support a huge travel eCommerce platform. This application integrates together a lot of independent services dealing with databases, log files and other dedicated tools. All these services are orchestrated in functions of the life of the frontend application, i.e. new features to be published, bug fixes to be built and identification of bugs. They are accessible either from websites or directly as Web Services and are distributed on dozens of servers. Some of the services create dynamically new instances using one or several machines according to the amount of computation expected, in this case we named these services parallel services. One of the aspects of this use case is to manage the distribution and the different layers of services existing in the application.

To do so, an Enterprise Service Bus (ESB) implemented using a Scheduler and a Broker is used. This part of the application is in charge of finding the right node to deploy and execute a service. It must ensure that all the requiring tools and applications are available.

A second characteristic of the use case is the processing of huge amount of technical and functional log data generated by the system. This task is a particular service of the architecture described above which require many nodes on a Grid and/or on a cloud to be executed, i.e. a parallel service.

It is necessary to extract and produce a high level representation of user sessions in order to:

- Analyze the behaviour of the system (tracking efficiency and capacity to respect SLA),
- Track customer behaviour when bugs are reported.

This task is achieved by a dedicated parallel service with massive parallel log parsing and analysis, that also needs to be achieved with specific SLA.
The challenging requirements for the travel eCommerce experiment are:

- many complex services to orchestrate;
- services requiring different environment (different OS, application, amount of memory and storage, hardware CPU/GPU and others);
- critical services with a precise SLA to respect; usage of several testbed to achieve large scale and
- mass experiments for different kind of Services and throughout several phases of the Future Internet Service development cycle.

B. Results

This use-case is foreseen to be deployed during 2011. Results will be provided later. In addition the use-case experiment serves to define requirements for the TEFIS portal, services and tools, and assess different aspects of the TEFIS platform at different levels of Internet of services and throughout the whole Service experiment lifecycle.

II. TEST BED AVAILABILITY

This use-case will run on the TEFIS portal which is under development by the TEFIS-project [1] (TEstbed for Future Internet Services). TEFIS is a large-scale integrating project addressing the FP7 work programme objective ICT-2009.1.6: Experimental Facilities. It started in June 2010 and will run for 30 month including 12 partners from 8 countries.

The project will develop an open platform to access heterogeneous and complementary experimental facilities addressing the full development lifecycle of innovative services with the appropriate tools and testing methodologies. Through the TEFIS platform users will be supported throughout the whole experiment lifecycle by access to different testing tools covering most of the software development-cycle activities such as software build and packaging, compliance tests, system integration, SLA dimensioning, large-scale deployment, and user evaluation of run-time services.

The platform will provide the necessary services that will allow the management of underlying testbeds resources. In particular, it will handle generic resource management, resource access scheduling, software deployment, matching and identification of resources that can be activated, and measurement services for a variety of testbeds.

The TEFIS platform will be based on an open platform able to integrate existing and next generation of testing and experimental facilities. The project will contribute to standardise the way network and service facilities may be accessed. TEFIS will establish a connector model that makes it possible to interact with testbeds and their resources in a unified manner using Web services. The first version of the TEFIS platform is foreseen to be available by summer 2011. Via the TEFIS Open Call new experimentations will be engaged to gradually expand the TEFIS testing facility [3].

[1] www.tefisproject.eu