

# Open SOA Telco Playground Update



Fraunhofer Institute for Open Communication Systems

## FOKUS innovation

09-2008

++ NGN Service Broker ++ OSS for NGNs ++ Modular IMS/Web 2.0 Client ++ New Partners ++

### SOA-based SDPs over IMS

MAMSpplus develops flexible NGN Service Creation for SMEs

In the MAMSpplus project FOKUS is developing innovative mechanisms for network abstraction, service exposition and NGN Operations, Administration, Maintenance and Provisioning (OAMP).

NGN service exposition, together with an open, flexible and intuitively understandable Service Creation Environment enables innovative business models not just for the telecommunication industry, but also for the e-Health and SME sector, enriching and facilitating communication capabilities. In June 2008 the German Federal Ministry of Education and Research (BMBF) started the MAMSpplus (Multi-Access Modular Services Framework) project. Managed by the Deutsche Telekom Laboratories, the project will prototype flexible NGN service exposure, creation and composition solutions for application in e-Health scenarios and utilization by SMEs.

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[www.fokus.fraunhofer.de/go/ims-event](http://www.fokus.fraunhofer.de/go/ims-event)

### 4th FOKUS IMS Workshop

November 6 to 7, 2008

Challenges and Opportunities in a Converged Services World – an Update on IMS, IPTV, SDPs, SOA and Web X.0

### Evolution of the Open SOA Telco Playground

SOA principles require transformation of the telco application layer

The latest developments from the unique SOA-based NGN testbed show how SOA principles are revolutionizing the telecommunications domain. FOKUS develops SOA-based service exposure, service discovery and service composition mechanisms that allow for flexible and dynamic service delivery. Securely opening up to 3rd party service providers, these modern NGN infrastructures significantly reduce telecommunication services' time to market where service modules are reused for rapid composition of new services.



In the same way SOA principles are transforming Operation Support Systems (OSS) for NGNs and IMS-based NGN clients, allowing for enhanced flexibility and reusability.

This FOKUSinnovation shows that SOA principles are not only revolutionizing the way telecommunications infrastructures like the eXtended Policy based Semantically enabled sERvice bRoker for NGNs (XPOSER) are being built, they also strongly influence the design of modern OSS for NGNs such as the FOKUS OSIMS MAnagement COnsole (OMACO) right through to the flexible design of telecommunication client software such as FOKUS' Multimedia Open interNet Services and Telco EnviRonment (MONSTER).

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### Open 3rd Party Interfaces

FOKUS supports Deutsche Telekom

Developer Portal BETA  
POWERED BY 

The Open Developer Portal, an innovation project by Deutsche Telekom AG, is now supported by Fraunhofer FOKUS – the Competence Center for Next Generation Network Infrastructure (NGNI) – in its work on a 3rd party service access platform. Deutsche Telekom currently implements web services which offer interfaces to 3rd party service developers. This eases the integration of telecommunications services in web sites and other Internet-based applications.

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<http://developer.telekom.de>

# Open SOA Telco Playground Update

## IMS Client for the iPhone

Showcase – browser-based IMS client

FOKUS has developed a web application that demonstrates web browser based IMS service utilization via 3rd party interfaces of the Open SOA Telco Playground for the iPhone. The Apple iPhone is a revolutionary mobile phone that combines consumer needs and usability.



Screenshot of browser-based IMS client for iPhone

The FOKUS OCS-X (Parlay X Gateway) provides access to IMS-based telecommunication services like messaging, call control, conferencing, presence information exchange, as well as IMS and legacy contact and address list management. Authorized users are able to administer their own profiles and can access the contact information of their buddies.

Furthermore, the application enables sending of messages, initiation of voice conferences depending on presence states and the accessing of user location data. Apart from the functional richness, the application demonstrates how non-SIP enabled clients can even now benefit from value-added IMS services utilizing SOA-based NGN service exposure mechanisms.

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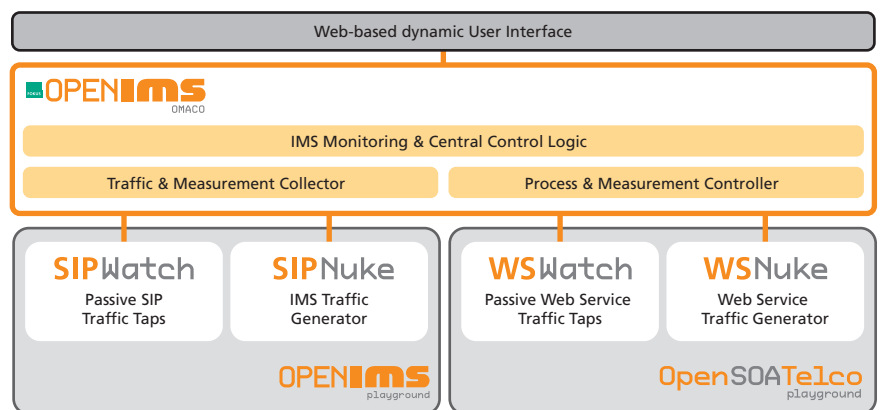
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[www.opensoaplatform.org/iphone\\_client](http://www.opensoaplatform.org/iphone_client)

## OMACO – The OSIMS Management Console

FOKUS extends OMACO towards SOA management

OMACO provides fault management and configuration management, as well as traffic and performance monitoring mechanisms for OSIMS (Open Source IMS Core) based NGNs. While the current OMACO distribution is capable of managing multiple OSIMS domains by utilizing versatile active and passive monitoring mechanisms, FOKUS is now engaged in extending OMACO towards monitoring and self-healing mechanisms for the SOA-based NGN service layer.



OMACO Architecture for IMS and SDP Service Assurance

The current distribution of OMACO includes

- a central, policy-based management component for monitoring and controlling multiple OSIMS domains and OSIMS processes with a flexible, Web-based, dynamic graphical user interface
- an active IMS traffic generator based on SIPNuke [[www.sipnuke.org](http://www.sipnuke.org)]
- a passive IMS traffic monitoring component based on SIPWatch [[www.sipwatch.org](http://www.sipwatch.org)]
- local agents ready to be deployed on distributed OSIMS devices

Two supplementary tools for monitoring the SOA based SDP are close to completion

- WSWatch for passively monitoring Web Service traffic at the Enterprise Service Bus level
- WSNuke for actively probing Services and Service Enablers

Soon OMACO will provide fault management mechanisms for both NGN layers providing enhanced fault localization and self-healing capabilities including to the Open SOA Telco Playground. By utilizing OSS/J interfaces for configuration and test management the upcoming OMACO implementation will closely align with Telemangement's SOA-based NGOSS standards.

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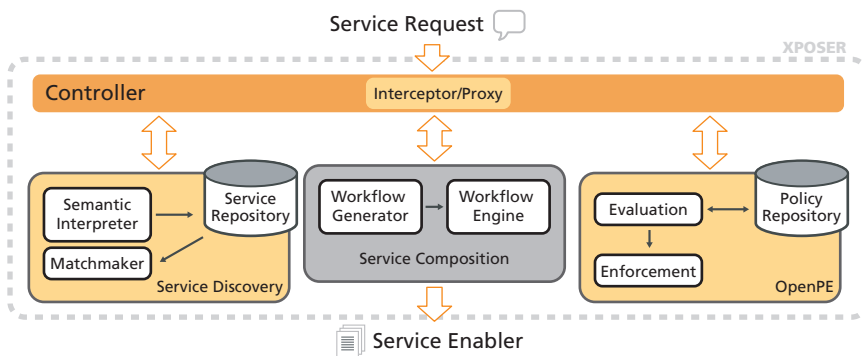
TridentCom 2009 – Papers to be received by October 1, 2008

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## XPOSER – eXtended POLicy based Semantically enabled sERvice bRoker for NGNs

Enhanced NGN service discovery and automation of service composition

Taking into account the many mechanisms of the semantic web, FOKUS is currently enhancing its SOA-based service delivery platform with semantically enriched service discovery and service composition mechanisms. NGNs already provide mechanisms that allow for a substantial expansion of the telecommunications service landscape by utilizing SOA principles and standardized service enablers.



XPOSER Architecture

XPOSER will provide novel application programming interfaces to 3rd party service providers and developers. An intent-based, semantically powered solution will provide enhanced service discovery mechanisms allowing for increased NGN service spectrum dynamics. In addition, service time to market will be minimized by automation of the service composition process. Utilizing FOKUS OpenPE, an enhanced OMA standard compliant implementation of the Policy Evaluation, Enforcement and Management (PEEM) component, allows for adding service and user specific policies to control access to NGN services and service enablers.

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## Ericsson – New Partner

FOKUS supports Ericsson IMS Center



The Next Generation Network Infrastructure group at FOKUS provides its facebook application for the Ericsson IMS Competence Center in Berne. The Competence Center provides support to application developers in the development of IMS based applications. It owns an IMS test lab which also serves the technicians and support personnel as a platform to train integration of Ericsson and 3rd party equipment and applications. The Competence Center is part of

a global Developer Program which coordinates several centers with similar set-ups around the world.

The application is provided through IMS interconnection between the Open SOA Telco Playground at Fraunhofer FOKUS in Berlin and Ericsson's IMS Competence Centre in Berne.

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## SEVEN PRINCIPLES

### One-Touch Provisioning for IMS Networks based on TMF Standards

7P and FOKUS demonstrate a dynamic IMS Provisioning Solution

Together with its partner SEVEN PRINCIPLES, an internationally operating IT-consulting company in Cologne, Germany, FOKUS has demonstrated a flexible solution for IMS client provisioning as part of its Open SOA Telco Playground activities. Based on the TeleManagement Forum's OSS/J APIs, FOKUS provides a standard-based NGOSS interface implementation backed with a dynamic provisioning framework for the IMS application and client layer. The 7P Provisioning solution shows the efficient use of these interfaces in an integrated customer self-provisioning portal which allows for the dynamic set-up of new IMS accounts, to dynamically enable IMS services on demand and update the IMS user endpoint's service related software modules.

Stefan Brock, Managing Director, says: "The co-operation with the FOKUS team has proven to be a valuable experience for us. We now have a ready-to-demonstrate, standards-based IMS network demonstration on hand that exhibits the flexibility and extensibility of our solution to our customers. We are looking forward to working together with the FOKUS team on more scenarios involving NGN provisioning."

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## Community TV

Novel Service Enablers to enhance IPTV

Current broadcast TV solutions lack interactive and personalized components. Thus, last year we asked the FOKUS Media Interoperability Lab to come up with a prototype for the integration of telecommunication and interactivity enablers in an IMS-based IPTV infrastructure.

The next step will be to accompany end users towards their community-based TV adventure involving a multimedia shared experience, covering content sharing, white boarding, pay-per-view invitations and content related chatting. As mobility plays a major role in today's communication, integration of mobile IPTV will be crucial.

Enriched communication lives and dies with applications and media-converged IPTV service mash-ups, bringing together well known elements from communication, web and IPTV. These domains are widely non-interoperable. New service enablers have to be developed, which abstract from these different domains. With our experience from the Open SOA Telco Playground, the integration of IPTV elements in this lab will be an important step forward in creating an abstraction that enables applications to make use of these three domains, e.g. sending an invitation for a dedicated user-owned holiday video to all friends online. More advanced applications enable dedicated service providers to distribute advertizing clips – like clips about sunscreen – to a set of users, communities or all online users and offer them personalized discounts where meteorological services like weather.com are forecasting a heat wave.

Christian Riede

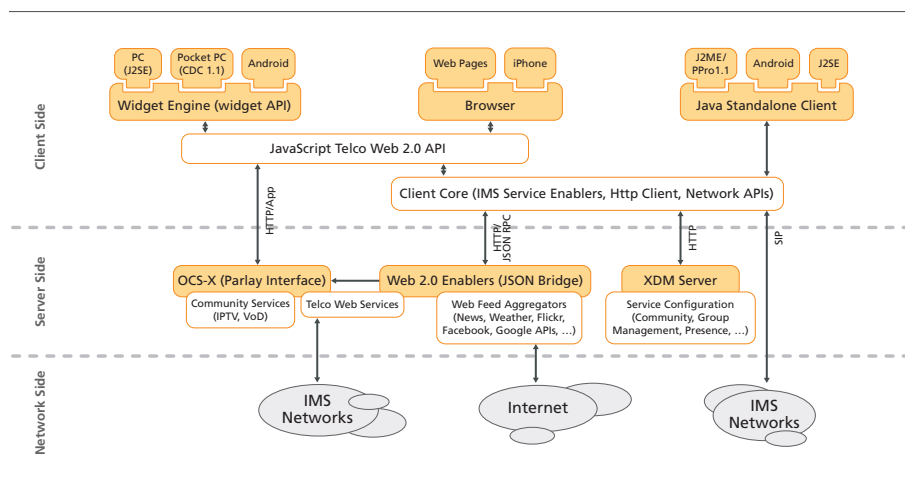
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NGNM 2008 – 5th International Workshop on NGN Middleware – part of Manweek 2008 – 4th International Week on Management of Networks and Services, 22–26 September 2008, Samos

## Develop-once-deploy-to-many – Vision

Multimedia Open interNet Services and Telco EnviRonment – MONSTER

Fraunhofer FOKUS is developing an open multimedia framework for hosting services from both the Internet and Telco domains. Ever since the emergence of IP Multimedia Subsystem (IMS) technology, we have been developing prototype solutions for multimedia services on IMS networks. Now, with the success of Web 2.0 technologies, the emergence of widget-based designs and the advances made in mobile platforms, the outstanding challenge for developers is to provide converged multimedia services for a dynamic execution environment. To fit this need, the idea of the Multimedia Open interNet Services and Telco EnviRonment (MONSTER) has been taken up for hosting different technology services and targeting multiple devices. MONSTER is an extendible plug-and-play architecture that consists of a client-core and a JavaScript API interface layer.



Plug-and-play MONSTER Architecture for IMS and Web 2.0 Services

The client-core provides intrinsic IMS signaling functionalities based on the specifications of JSR 281, thereby guaranteeing conformance to open standards. It also provides an application framework that offers component toolkits, notification, presentation views interfaces, and package managers to support rich application developments. The architecture offers services as modules, thereby ensuring a flexible and service-oriented style code base for different target devices.

To offer similar services to widget engines and browser-based applications, the JavaScript API layer grants access to IMS/Web 2.0 service enabler functionalities. There are two ways of achieving this depending on the executing platform. For widget engines on fixed platforms, the JavaScript API connects to the client-core which acts as an external library to provide these functionalities. For limited mobile platforms, the JavaScript API is offered to browser-based applications to access server-side service enablers for telephony services, community and personalized services such as news feeds, and social networking. With the MONSTER approach, we are striving to simplify and accelerate convergent service development, for fixed and mobile devices to fulfill our vision of 'develop-once-deploy-to-many'.

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