

# OSS/J-facilitated Trouble Ticketing at Vodafone



## Summary

### Initial Situation

- Increasing complexity of OSS architecture
- Necessity to integrate several different TT Systems around Europe

### Solution

- OSS/J as the integration layer

### Conclusion

- OSS/J TT API is efficient and works in real-world applications
- OSS/J reduces integration costs

## Initial Situation

Mobile operators are constantly faced with the challenge of increasingly complex products and rapidly decreasing prices on the one hand and the need for new high-quality services which have to be delivered in ever shorter deployment periods on the other.

More and more systems which are already complex in their own right have to communicate with each other and be integrated so that each system can offer the best possible service at the best possible price.

This has led to increasingly loud calls for easier integrability of the various systems, notably from the Operations Support Systems (OSS) sections of service providers. While the usual practice to date has been to link very different systems such as Fault Management, Change Management and Trouble Ticketing point to point, it has now become

imperative to find solutions where all the systems communicate, e.g. through middleware, in order to optimize the cost and maintainability of the complete system.

In 2003, the Network Management Department of *Vodafone D2* had to take a decision on the future integration of extremely different systems. The question was whether to choose a classic EAI approach or to rely on *OSS/J through Java Initiative (OSS/J)* standards.

The *OSS/J Initiative* set itself the aim of developing APIs based on *the Java 2 Enterprise Edition Platform (J2EE)*. These APIs facilitate and reduce the cost of interaction between very different services. It should be pointed out that it is thus not merely a question of "paper standards" here, but that Reference Implementations (RI) and Technology Compatibility Kits (TCK) are also actually delivered alongside API specifications.

## Solution

First, the *Vodafone D2* Network Management Department commissioned a small German vendor to undertake a feasibility study on *OSS/J*. As the results were very promising, it was decided to carry out a Proof of Concept

The Service Management System SMOs, which is based on *Agilent's NETeXPERT*, and the Trouble Ticketing System TTWOS, which is based on *BMC Remedy ARS* and was delivered by *Ascom Systems & Solutions*, were to be linked through an *OSS/J* server on *SUN* Servers and corresponding *OSS/J* clients as part of *Vodafone's* "Service Management Integration Architecture" (SeMIA).

The basis for the link was *OSS/J* Trouble Ticketing API (JSR91). Various other companies apart from *Ascom* also took part in this PoC.

After the successful conclusion of the PoC, a decision was taken to put this initial and as yet very simple interfacing of systems into productive operation.

Andreas Buschmann (*Vodafone D2*) notes: "The PoC finally convinced us that OSS/J was ripe for real-life applications and that OSS/J was the correct approach for moving away from traditional point-to-point links".

In the ensuing period, the first simple system based on OSS/J was replaced by a system offering considerably more possibilities and interfaces. The Systems & Solutions business unit of Ascom Deutschland GmbH was responsible for much of the implementation process here.

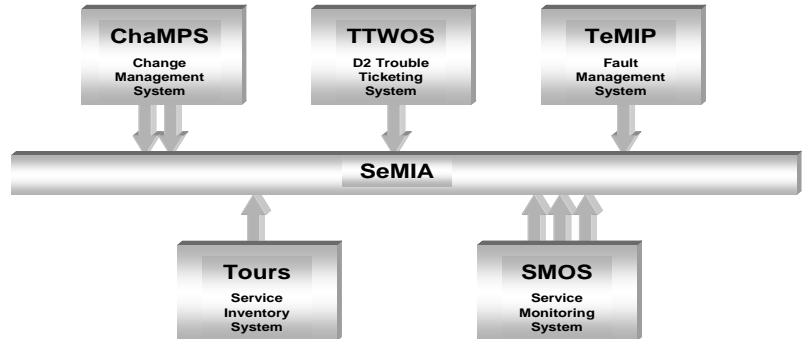
*Vodafone* chose *Ascom's* product *ARS over OSS/J* as the integration component. *ARS over OSS/J* consists of a complete OSS/J TT server based on OSS/J TT API and corresponding clients for *Remedy*-based Trouble Ticketing Systems.

*Ascom's* *Remedy*-based Trouble Ticketing System TTWOS and *Ascom's* likewise *Remedy*-based Change Management System ChaMPS were integrated by means of *ARS over OSS/J*.

In addition, *HP's* *TeMIP* Fault Management System, the Service Inventory System Tours based on *HP* *ServiceDesk* and the Service Monitoring System SMoS based on *Agilent's* *NETeXPERT* were integrated.

Andreas Buschmann (*Vodafone D2*) assesses the success of the SeMIA Project as follows: "The application of OSS/J technologies in our SeMIA Project has resulted in significant savings, encouraging us to use OSS/J in other areas in the future."

The current active structure of the SeMIA Project is illustrated in the following diagram.



*Ascom Systems & Solutions* played a leading role in the implementation of the VINE Project. *Ascom's* contri-

The ongoing internationalization of the *Vodafone* affiliated Group, the increasing level of collaboration between the various international *Vodafone* companies necessitated by this and the corresponding need for a standardized solution, prompted *Vodafone* to launch a new OSS/J Project, the International Trouble Ticketing System (ITTS), which in a newer version is called *Vodafone* International Exchange (VINE).

The aim here was to facilitate the exchange of Trouble Tickets between *Vodafone* companies in different countries. Consideration had to be given to the fact that differing Trouble Ticket Systems were in operation in the different countries and furthermore that it was intended that these should communicate with each other without having to make major changes to the individual TT systems.

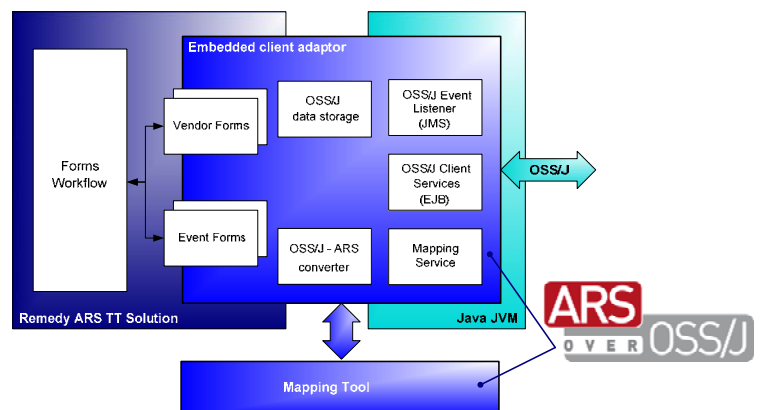
Several of the TT systems in the different countries were based on the *BMC Remedy AR System*.

butions here included *ARS over OSS/J*, a product which makes it possible to send and receive OSS/J-conform Trouble Tickets from *BMC Remedy ARS*. *ARS over OSS/J* provided both an OSS/J Server and a client here. *ARS over OSS/J* makes it easier for *Vodafone* to link various companies in different countries into the VINE Project within a relatively short time despite their very different local systems.

The application of OSS/J technologies enables global Trouble Ticketing to operate independently of local systems. The local systems provide both OSS/J TT clients and OSS/J TT servers.

In global terms, the number of point to point links can thus be dramatically reduced and a company-wide standard can be set, as it were, by OSS/J TT.

*Vodafone* now even provides a central *J2EE* hosting which is operated by *Ascom* and which enables

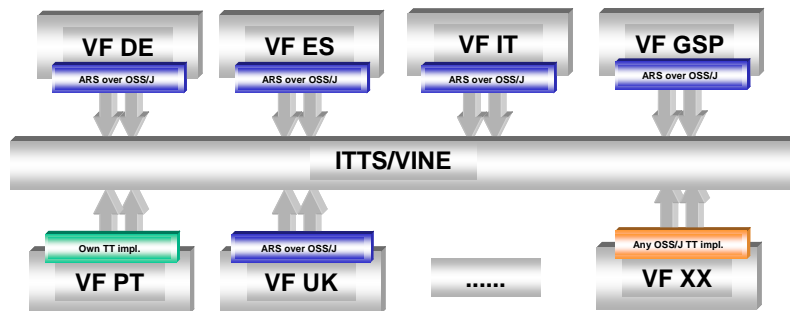


the individual companies in different countries to participate in the VINE Project without having *J2EE* servers of their own. This central hosting once again results in significant savings for the individual companies in different countries.

At present, eight *Vodafone* companies and global institutions are taking part in the VINE Project and four are already connected through VINE - *Vodafone* Germany, *Vodafone* Italy, *Vodafone* Spain and *Vodafone* Global Services Platforms.

In order to improve relationship to vendors, *Vodafone* will also integrate Trouble Ticketing of several vendors through the VINE System in the near future.

The following diagram illustrates the architecture.



**Conclusion**

With the help of its integrators and suppliers, *Vodafone* has shown that the application of *OSS/J* technologies simplifies the integration of very different systems and that this also leads to savings in the long term. Point to point links can for the most part be replaced by point to multipoint links.

Andreas Buschmann (*Vodafone D2*) states. “*OSS/J* sets long-term standards and the provision of APIs and Reference Implementations through *OSS/J* simplifies the application of these standards by service providers. *TM Forum’s Prosspero Program* in particular should be mentioned in this regard.

Its aim is to provide service providers with solution possibilities based on *TM Forum* standards, cookbooks

and a complete eco-system for dedicated integration scenarios. It is thus unnecessary to invent the wheel yet again. We are very pleased that our *OSS/J* TT Case is part of the first *Prosspero* Solution Package.”

Gerd Höckelmann, Head of Research and Development at *Ascom Systems & Solutions* states: “Through the use of our *OSS/J*-compliant certified product *ARS over OSS/J*, we have succeeded in linking the different Trouble Ticketing Systems in the *Vodafone* Group in a standardized way, thereby minimizing the expenditure and effort required for integration.

The approach taken by the *OSS/J* Initiative – the provision of Reference Implementations and Technology Compatibility Kits alongside paper standards - has proven to be

the right path towards a standardized *OSS* future.

This will now be strengthened even further by the *TM Forum Prosspero Program*, which gives service providers in particular an outstanding tool to orient themselves on the *OSS* solutions market and to implement new solutions speedily.

We are proud to be part of the first *Prosspero* Solution Package with our solution and it is a honor for us, that we have been nominated for the first *TM Forum Excellence Award* with our product *ARS over OSS/J* and the VINE project.”



### About OSS/J

The *OSS through Java™ Initiative (OSS/J)* is a *TM Forum* Technical Program dedicated to helping telecommunications companies harness the power of their Operations/Business Support Systems (OSS/BSS) while containing costs.

The program enables participants from service providers, system integrators, independent software vendors, equipment manufacturers, consultants and academe to effectively deliver a roadmap and suite of *Java*, *XML*, and *Web Services*-based APIs aligned with the *TM Forum's Next Generation Operations Systems and Software (NGOSS)* framework.

Participation is open to any organization able to meet *OSS/J's* contribution criteria. The first real-world implementation of *NGOSS*, *OSS/J* APIs quickly links OSS applications together throughout their lifecycle. A powerful, implementable OSS integration standard, *OSS/J* is actively participating in *Prosspero*, the new one-stop-shop *TM Forum* program for deploying standards to the marketplace.



[www.tmforum.org/ossj](http://www.tmforum.org/ossj)

### About Prosspero

*Prosspero* is a new *TM Forum* program. The aim of the program is to identify solutions for scenarios and to compile these into "Solution Packages". *Prosspero* is designed to enable service providers and integrators to benefit from experience which has already been gained by other providers and integrators and thus to avoid reinventing the wheel. The *Prosspero* Program allows those who adopt it to implement solutions based on *TM Forum's* standards without starting



out on the standards level.

[www.prosspero.org](http://www.prosspero.org)

### About TeleManagement Forum

The TeleManagement Forum (TM Forum) provides leadership, strategic guidance and practical solutions to improve the management and operation of information and communications services. Our open membership of more than 500 companies comprises incumbent and new-entrant service providers, computing and network equipment suppliers, software solution suppliers and customers of communications services. TM Forum has been contributing to the Information and Communications Services (ICS) Industry for over 15 years.



### About Ascom Systems & Solutions

*Ascom's* business unit "Systems & Solutions" has had a strong background in developing turnkey solutions for the telco market for more than 15 years.

Together with our partners, we address the complete chain, from business analysis, ROI studies, project management and development up to the maintenance and operation of delivered systems.

The headquarters of this business area are located in Germany and all major carriers in Germany and Switzerland are satisfied *Ascom*-customers.

Besides the known reference projects for *Vodafone*, *Ascom* delivers a wide range of customer-specific software solutions, e.g. Workforce Management, Leased Line Management, Inter Carrier Billing, Routing Management, Fraud Management, Computer Telephony Solutions, Change Management and SLA Management.

### Contact

Ascom Deutschland GmbH  
Systems & Solutions  
Charlottenburger Allee 61  
D-52068 Aachen  
Germany  
Tel: +49 (241) 96806 0  
[info@ascom-ac.de](mailto:info@ascom-ac.de)  
<http://www.ascom.de/syssol>

Ascom (Schweiz) AG  
Systems & Solutions  
Glutz-Blotzheim-Strasse 3  
CH-4503 Solothurn  
Switzerland  
Tel: +41 (32) 624 2121  
[info@ascom-so.ch](mailto:info@ascom-so.ch)  
<http://www.ascom.ch/syssol>