

Case study

R Cable adds the infoaming service to its Core Network



JSC INGENIUM

www.jscingenium.com

R Cable adds the inforoaming service to its Core Network in compliance with new European regulations

Challenge

R is a Cable Operator providing services in Galicia (Spain). In addition to its portfolio of **Fixed Telephony**, ADSL and Television services, it has also been providing Mobile Telephony communication services to its customers since November 2007.

In 2009, R was obliged to adapt its systems in order to comply with **REGULATION (EC) No 717/2007 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 June 2007** on roaming on public mobile telephone networks within the Community and amending Directive 2002/21/EC which

requires Operators to inform their roaming customers of the tariffs for calls to and from their mobile phone at their new geographical location.

In order to comply with the new European Directive, the solution to implement needs to know the location of the subscribers who have left the country, to inform them of the applicable tariffs from the new location. Each time a subscriber enters another country, the same query and notification must be made when appropriate.

Solution

R chose JSC Ingenium to provide the **Inforoaming service**, which is also known as "Courtesy SMS". JSC developed the Inforoaming service for the R Group by deploying a service node that filters the signal and analyses the information exchanged between the networks visited and R's local HLR, and also developing the integration with R's Core Network infrastructure for querying its business systems and sending user notifications.

The solution implemented by JSC is based on a network probe, which **monitors all the traffic from the HLR and filters out signalling related to mobility** (Location Update). If the HLR accepts a subscriber's registration, the system compares the new geographical location with the

most recent known locations for that subscriber.

Depending on the business rules established, it then determines whether or not the subscriber should be notified of the tariffs. If tariff information is required, the system will check the internal tariff cache and then send the information with the relevant tariffs as an SMS. This internal cache is regularly updated from R's business systems. There are special arrangements for visually impaired subscribers. If the subscriber has previously informed the Operator of his condition, an email is sent directly to R's customer service centre, and the centre will then contact the subscriber and inform him of the new tariffs.

It may also be necessary to cancel these notifications, as when the subscriber returns to his home country. Every time a location update for a subscriber is received, (this

update may be because he registers in a different network in the destination country, or because he has entered another country), this operation is repeated.

Solución técnica:

All the technology of the **Operator's Core Network (HLR and SMSC)** was developed by **Ericsson**.

1. The whole Inforoaming service solution is constructed on a customised version of the Application Server which was developed entirely by JSC, and it can therefore:

- Offer an uninterrupted service.
- Keep a full record of all the operations performed by the Application Server.
- Use an alarm system to instantly control any system fault or issue.
- Automatically recover after a crash.

The entire JSC Application Server was developed on Microsoft's .NET Framework.

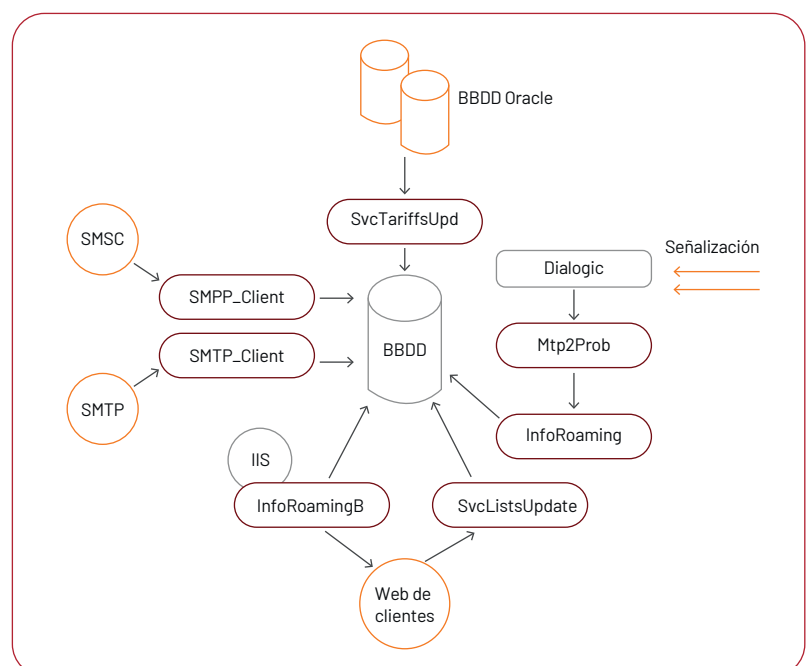
2. The Dialogic SS7 HDP signalling card supplies the frames up to the MTP 2 level.

3. The rest of the signalling stack: MTP3, SCCP, DCAP and MAP - was developed inhouse by JSC.

4. SMPP short message protocol.

5. Provisioning Gateway

6. Management console, which allows R to: query all the subscribers' records and statistics, which subscribers are roaming, send notifications to a set of users (warnings, promotions, etc.), and modify any type of information - both tariffs and lists - in the system's internal caches.



Advantages

The main advantages of the solution provided by JSC Ingenium are:

1. It is a very **low-cost solution**
2. It is **non-intrusive**, since it is not necessary to access the Network's delicate components

Technology:

Microsoft

All the Core Network technology implemented runs on the Windows 2003 R2 Operating System and is supported by a central Database which uses MS SQL Server 2005 with high availability mirroring technology. This provides:

- Optimal performance
- Simplified management
- Reduced TCO
- High Availability
- Fast time to market for new developments

Dialogic

A) Signalling Interface Unit, with SS7 HDP cards providing the physical interfaces for the interconnections to all the Operators.

B) Lower Layer Protocol Stacks which handle all the mechanisms for routing, redundancy, Network management, etc.

Dialogic

Dialogic Corporation is a leading provider of open systems platforms to both the Enterprise and Service Provider Markets. Dialogic's platforms enable converged communications, allowing service providers, content, and applications using multimedia processing and signaling technologies.

Headquartered in Montreal, Canada, Dialogic and its subsidiaries have over twenty offices worldwide, providing local presence, knowledge, and support to serve its costumers around the globe. Dialogic's research and development centers are located in Parsippany, New Jersey; Buffalo, New York; London, England; Dublin, Ireland; and Stuttgart, Germany as well as Montreal

www.dialogic.com

R

R is the brand name used by R Cable y Telecomunicaciones Galicia S.A., and R Cable y Telecomunicaciones Coruña S.A., which together constitute the only commercial cable operator in Galicia (España). With the incorporation of Mobile Telephony into its portfolio of services, R has become the Global Telecommunications Operator of reference in Galicia (Spain) with more than 250,000 customers and over 60,000 R Móvil subscribers

www.mundo-r.com

JSC Ingenium

JSC is the division of the Grupo Ingenium Tecnología which specializes in developing and implementing software components for Mobile Networks. JSC Ingenium provides all the "core" components required for MVNO, and together with their partners also supply all the billing and management software, thus offering complete solutions. Most of these components have been developed by JSC Ingenium, on a common communications platform

www.jscingenium.com



JSC INGENIUM