

NGN ENABLERS

DEVELOPMENT OF GATEWAY SYSTEMS BETWEEN TRADITIONAL NETWORKS AND NEXT GENERATION NETWORKS

Introduction

Challenge

Offer network operators a solution that allows them to steadily migrate their traditional networks to the model of Next Generation Network (NGN), incorporating and developing new services, more attractive and sophisticated, but without having to abandon their traditional infrastructures.

The objectives which have led JSC Ingenium to develop this new line of products for network operators are:

- Allow migration of parts of the network operator next generation model, with low investment costs for each phase.
- Allow the development of new services based on the NGN model, but efficiently leveraging existing infrastructures.
- Eliminate the dependence of the new services from the limitations of existing infrastructure.
- Offering a total adaptability to the needs of global telecom and mobile operators.

Solution

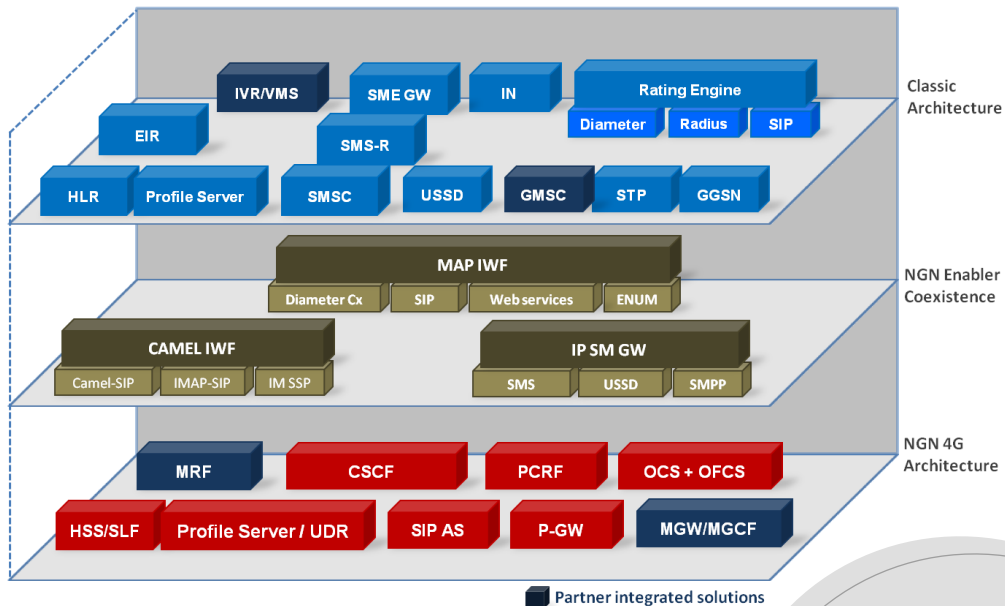
A range of products, entirely developed by JSC Ingenium, and known commercially as *NGN Enablers*, with the following features:

- Translation between traditional and next generation protocols.

- Tailoring model call states to achieve effective interoperability between traditional and next generation.
- Operates as a transparent gateway.

Achievements

- In change management:
 - Phased switching migration.
 - Use of conventional SCPs to control IP-based switches.
 - Use of SIP Application Servers to control conventional switches.
- In the construction of new services:
 - Simplified SIP development based on abstraction of conventional network structure and primitives.
 - Applications benefit from SIP “custom” headers which extend the information provided by the network.
 - Access to social networking applications and Web 2.0 over conventional networks.
- In the physical architecture:
 - Clear separation of conventional and next generation networks.
 - Capability of Monitoring and auditing communication flows.
 - Independent generation of CDRs (call detail records).



Additional advantages:

- Modularity and versatility.
- Applicability to multiple scenarios through configuration options and choice of the necessary elements.
- Adaptability to customer needs.

CASE STUDY:



MY TOOLS **CELL C**TM

Challenge

CELL C operates since 2001 as a Mobile Network Operator, and with more than eight million subscribers is the third largest mobile operator in South Africa.

CELL C requests JSC Ingenium a solution that allows them to offer totally innovative and differentiated services based on next-generation technologies, from conventional SS7 network, without penalizing the heavy investments already made in their existing infrastructures.

Solution

JSC Ingenium deploys its **CAMEL IWF (Interworking Function) Gateway**, allowing CELL C to develop or integrate

services of new generation networks that interact with traditional systems.

The solution deployed by JSC translates the call signaling and short messages generated in the SS7 network, SIP, which is the protocol supported by the service provider. It is a totally new market and opens the possibility of interoperability between the world of conventional telephony SS7 and SIP-based applications.

In particular it allows features such as:

- Call control and routing via SIP on the conventional network.
- Translation of numbers via SIP on the conventional network.
- User information of traffic generated in real time (via web).
- Custom Call Forwarding.
- Forwarding text messages.



Advanced features:

- Bidirectional conversion between CAMEL intelligent network protocol and SIP.
- Invocation sequence of several drivers (CAMEL and SIP) to allow cooperative and transparent management of calls.
- Generation of CDRs and traces.

Standards supported:

- ITU-T Q.701 MTP - 704 + Q.707 / ANSI T1.113
- SIGTRAN (M3UA M2PA)
- ITU-T Q.711 SCCP TO Q.714 (1993) / ANSI T1 (1992) / BTNR145
- TCAP ITU-T Q.711 - Q.774 / ANSI T1.114-1996
- 29,002 MAP 3GPP stage 3
- CS1, CS2
- Adaptations IN proprietary
- SIP
- CAMEL phases 1 to 4 and INAP.

Technology:

- **JSC Ingenium Application Engine**

JSC Ingenium Application Engine is the core infrastructure of telecommunications nodes from JSC Ingenium.

Other features include:

- Oriented programming state machine.
- Homogeneous model of access to all supported protocol modules.
- High performance and scalability.

- Built-in redundancy mechanisms independent of the application layer, which is therefore redundant without specific development.
- O & M mechanisms native to the platform.
- Native mechanisms for monitoring applications.
- Architecture based on isolated application environments: A bad behavior of an application does not bind the other or the system.

Dialogic.Signaling Interfaces

Dialogic®

Dialogic® Distributed Signaling Interface (DSI) Boards and Stacks

Dialogic® Distributed Signaling Interface (DSI) supports a wide range of SS7 features that allow an application to manage SS7 signaling network, whether TDM or IP.

Among the main benefits of SDI:

- Investment protection by allowing developing the same application portability between cards to SS7 over IP (SIGTRAN).
- Monitoring capability of both TDM and SS7 signaling over IP to allow the launch of differentiating services and enhanced security.

Conclusion:

- The product line JSC Ingenium enabler has proven its effectiveness in converged mobile network environments.
- The integration of Dialogic products in the areas of signaling, switching and transcoding has allowed us to build solutions easy to deploy, interoperable and scalable.
- Position themselves as a very advantageous alternative to the phased migration of existing networks to new protocols.

About CELL C

CELL C, founded in 2011, is the third mobile network operator in South Africa, with a market share of 15% currently provides service to 8.2 million subscribers.

Three shareholders: Oger Telecom South Africa, and CellSAF Lanun Securities SA (Pty) Limited hold 60%, 15% and 25% respectively of the shares of 3C Telecommunications Limited (3C) which in turn owns 100% of Cell C (Pty) Limited.

Very concerned with consistently complying with the times and especially the Internet era CELL C connects with customers through social networks such as Facebook, Twitter and MXit providing access to its services through the Internet.

More information: www.cellc.co.za/mytools

About Dialogic

Dialogic Corporation is a leading provider of open systems to both the Enterprise Platforms 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 costumers around the globe STIs. 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.

More information: www.dialogic.com

About JSC Ingenium

JSC is the division of Ingenium Group Telecom specialized in the development and implementation of elements for Mobile Networks. JSC Ingenium provides all the "core" elements required for Mobile Virtual Network Operators, and also, along its partners, all elements of management and "billing", thus providing complete solutions. Many of these elements have been developed by JSC Ingenium on a common communications platform.

More information: www.jscingenium.com