



Nexus **8620**

## Improving Customer Experience & Increasing Service Revenues

- ▶ Actively Test Network Services & Performance from the Subscriber's Point-of-View with Heartbeat Checks
- ▶ Capture & Understand the Roamer's Network Experience - Who has Zero Tolerance for Poor QoS
- ▶ Detect Service Outages Immediately & Increase Uptime
- ▶ Reduce Roaming Subscriber Churn
- ▶ Network-Wide Tests from Central Deployment Point



**NEXUSTELECOM**  
NETWORK AND SERVICE INVESTIGATION

## Securing Roaming Profits

The continuous growth of mobile users worldwide has significantly changed the culture of international roaming. Mobile users today expect high quality services experience as they do at home. GSM grew out of a vision that users should be able to make and receive calls on their mobile phones, wherever they travel. GSM, and its successor UMTS is the fastest growing communications technology of all time: the billionth GSM user was connected in Q1 2004 – just a dozen years after the commercial launches of the initial GSM networks. The availability of competing networks allows roaming customers to switch networks anytime if quality is not up to expected level. The Nexus8620 Roaming Test System pro-actively monitors the availability, stability, reliability and quality of mobile services in UMTS, GPRS and GSM networks, thus helping to secure sustainable roaming revenue.

### Key Benefits

- ▶ Pro-active service quality verification for voice and data services in UMTS, GPRS and GSM networks
- ▶ Continuous heartbeat tests of roaming capabilities
- ▶ Active roaming monitoring of 2G, 2.5G and 3G subscribers
- ▶ Early indication of service degradation and threat of revenue loss
- ▶ Alarm notification of service disruption / service degradation for quick repair
- ▶ Fully automated tests increases personnel efficiency
- ▶ Central SIMcard server using actual SIMcards (USIM / 2GSIM cards) for easy subscriber management
- ▶ Maximum efficiency of network resources as no precious airtime is utilized

### Roaming Traffic is increasing

Today, GSM accounts for 73% of the world's wireless market; GSM added more new customers in 2003 than the next most popular technology – CDMA – had in total, worldwide, at the end of 2003. However, a decline in domestic average revenue per user (ARPU) of more than 40% between 2002 to 2005 (source: Frost and Sullivan) occurred, while at the same time, the number of international travelers grew: 69% of today's international travelers are professionals, technicians, managers and executives, 80% of all business travelers carry mobile phones.

- ▶ International travel increases by 7% per year
- ▶ By 2010, more than one billion people will travel to other countries

### Securing the Roaming Revenue Slice

Travellers demand high-quality networks for reliable operation wherever they are, knowing they can switch to different networks at the push of a button. With the commercial availability of UMTS, mobile operators are forced to provide services for UMTS users at the same high-quality level as for GPRS/GSM users. At the same time, many strategic operator alliances were formed globally in order to bundle offerings to subscribers and reduce cost by economy of scale. Operators try to keep subscribers on networks within their alliance and try to avoid subscribers roaming with competing networks. So, operators who seek to secure the roaming revenue slice must make sure that roamers have access to the full functionality of all mobile services at all times. This is exactly the testing scope of the Nexus8620.



## Business Cases

### Roaming Testing with real SIM Cards

The core of the Nexus8620 Roaming Test System is the Nexus8620 Central SIMcard Server (CSS), which enables test performance based on real user profiles and parameters. All SIMcards (2G and USIM) provisioned in the CSS can be combined with any available test campaigns.

### Basic Service Testing

Test campaigns for the fundamental call-scenarios for 3G (over luCS) and 2G (over A-IF) subscribers are available and ready-to-go. These include interworking calls, location changes and handovers, as well as data/fax calls. Test campaigns are also available for a wide range of supplementary services including CallForwarding, CallBarring and MultiPartyCall.

### SMS Testing

Nexus8620 performs short message services (SMS) verification on all relevant interfaces for UMTS, GPRS and GSM.

### UMTS / GPRS Data Services Testing

Nexus8620 performs comprehensive testing of a wide range of UMTS/GPRS data services including e-mail, ftp and http.

### MMS Testing

Nexus8620 performs multimedia message services (MMS) verification on all relevant interfaces for UMTS and GPRS.

### UMTS Audio / Video Service Testing

Nexus8620 is prepared to test services such as audio streaming, video and TV streaming, and video conferencing.

### Quality Of Service Verification

Nexus8620 provides a comprehensive set of tests for service quality verification, including speech quality analysis according to PAMS, PSQM/+ and PESQ standards.

### Voice Mail System Testing

Nexus8620 actively tests the menu branches and voice patterns implemented in voice mail systems.

### Best quality to meet customer satisfaction

Strong competition forces operators to monitor their networks constantly. Mobile users are not at all interested in technology, but are very quick to complain if the services they want to make use of do not fulfill their expectations. What could be worse than a complaining client? One who switches to a different operator!

The quality of service provided to the user has direct bearing on the operator's revenue. The higher the quality of service, the higher the revenue and the lower the churn rate.

### Objectives of Mobile Operators

- ▶ Secure roaming revenue by detecting service affecting problems before customers do, by getting early information about a possible degradation of any service parameter. This is crucial for the development and maintenance of preventive and corrective measures.
- ▶ Reduce network downtime, either when faults are detected during preventive maintenance or in response to customer complaints.
- ▶ Save labor cost by performing automated testing. The Nexus8620 Roaming Test System facilitates the achievement of these objectives by providing a single solution that ensures early indication and fast location of service degradation or service disruption for all mobile technologies.

### Reduction of Roaming Subscriber Churn

Today, revenue from roaming subscribers account for a minimum of 15%, significantly more for many operators though. Protecting this growing slice of revenue must be key to operators. The Nexus8620 system monitors the satisfaction level of roaming subscribers on your network by verifying the service availability with service heartbeat tests. It is absolutely essential to recognize service degradation within the shortest time possible to initiate corrective action. This will prevent loss of hundreds of thousands of dollars; mostly unrecognized in today's networks!

### Billing Records Verification

For every network transaction, the Nexus8620 provides the corresponding CDR derived from its signaling activity. This CDR represents an alternative source as compared to the billing chain produced CDR. It is hence perfectly suited to serve as «second-opinion» when verifying billing CDR's correctness. The Nexus8620 supports revenue assurance through billing verification processes.

## System Components

### Nexus8620 Test Control Unit (TCU)

The Nexus8620 System software and applications run on a SUN workstation. The system software uses Solaris as the operating system software and a Sybase database to store all data. The Nexus8620 Roaming Test System can either be configured as a stand-alone or as a Client – Server solution.

### Nexus8620 Test Unit 3 (TU3)

The Nexus8620 TU3 is equipped with various types of test modules that are connected to appropriate interfaces of the core network. It provides up to six interface-type cards per 19" chassis. For large systems, multiple TU3s can be incorporated in the same test setup.

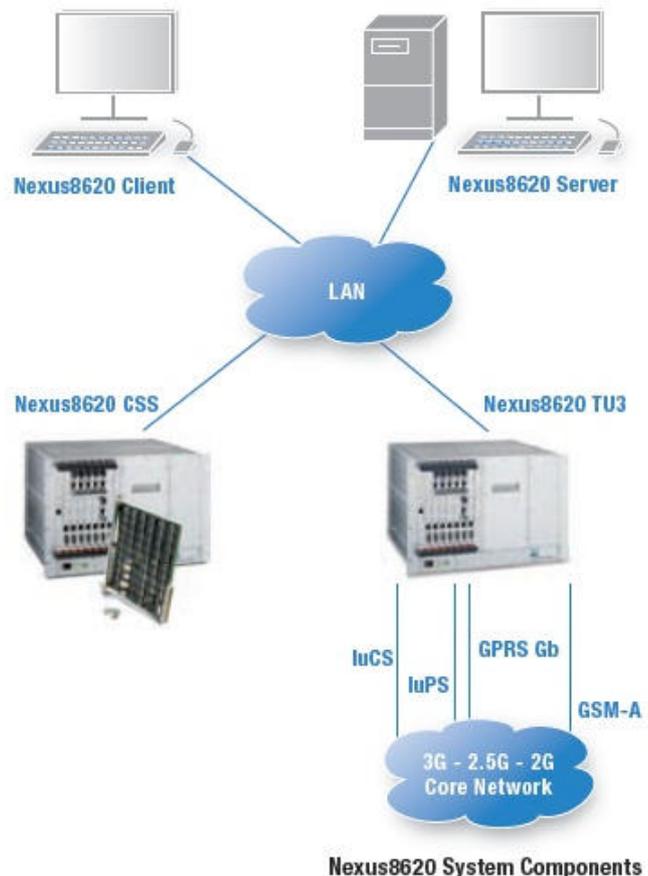
### Nexus8620 Central SIMcard Server (CSS)

The Nexus8620 Central SIMcard Server can be equipped with hundreds of SIMcards (both (U)SIM and 2G). The SIMcards are centrally stored in the Nexus8620 CSS and can simultaneously be accessed for performing different concurrent tests.

As the Nexus8620 Roaming Test System is a scalable multiuser solution, the number of Nexus8620 TCUs, Nexus8620 TU3 and Nexus8620 CSS for multiple concurrent users can be freely combined with no limitations imposed by the system architecture. Thus, customization options for test scenarios are virtually endless.

### Interested?

Contact us directly. We'll be glad to show you more!  
Or visit the Nexus8620 website at [www.Nexus8620.com](http://www.Nexus8620.com)



### Head Office

Europe  
Zurich  
Switzerland  
Tel: +41 44 355 6611

### Sales Offices

North America  
Ottawa  
Canada  
Tel: +1 613 224 2637

Central and Latin  
America  
Santiago, Chile  
Tel: +562 946 3102

Africa  
Centurion  
South Africa  
Tel: + 27 8 2773 5730

Middle East  
Islamabad  
Pakistan  
Tel: + 92 5 1285 4890

South East Asia  
Kuala Lumpur  
Malaysia  
Tel: +603 7725 2099

[www.nexustelecom.com](http://www.nexustelecom.com)