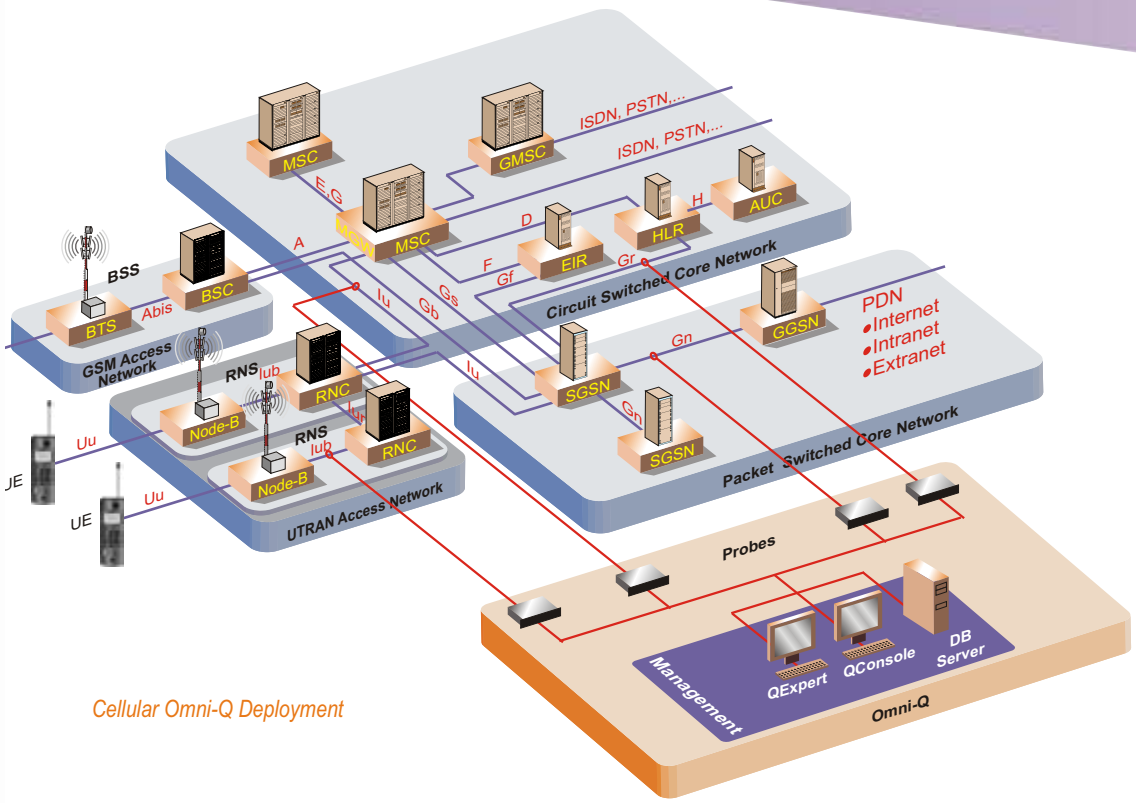
Cellular Omni-Q Probes

Network Optimization
Service Troubleshooting
Network Maintenance

RAD COM
TEST-OF-THE-ART



Cellular Omni-Q Deployment

Omni-Q Monitoring System

Omni-Q is a monitoring solution designed to continuously collect, monitor and analyze cellular, data and VoIP networks. The Omni-Q system consists of a comprehensive array of performance measurement and troubleshooting tools, all under one unified offering. A powerful user-friendly management layer offers many features that allow the user rapid problem isolation, efficient troubleshooting, and best-of-breed KPI generation. And the Omni-Q's open architecture easily integrates with other applications such as NMS/OSS and radio optimization systems.

Omni-Q Probe-based Solution

The Omni-Q probes are centrally managed by the QManager, the system's management server. They are remotely accessed by the QConsole software, installable on any PC/laptop. All collected parameters are stored in an Oracle database for use by the QExpert, Omni-Q's web-based analysis and reporting tool.

Probe Operations

Monitoring probes provide single-point performance measurements, call tracing and traffic validation on all network traffic. The probe's operational concept is based on user-configurable definitions of the target traffic and of the actions to be performed on the detected target traffic. Once actions are defined, the probe continuously monitors those targets 24 hours a day, 7 days a week. The network monitoring is based on the probes' sophisticated run-time signaling and packet-by-packet analysis capabilities.

The action options include:

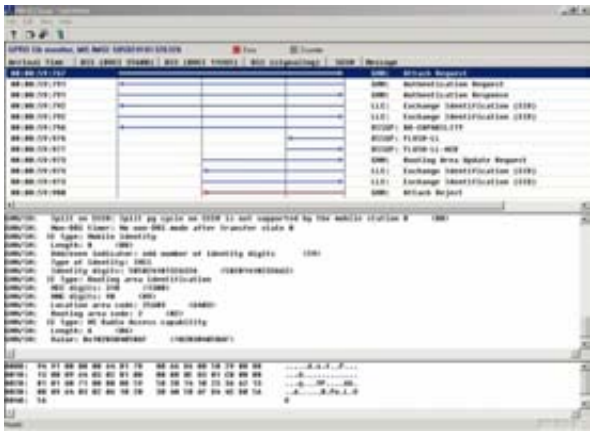
- Enhanced detail record (eDR) of the session, providing measurements on both signaling and user planes
- Saving of fully detailed, hardware time-stamped call flow signaling decode of the session (can be limited to abnormal calls only)
- Saving the user-plane data of the session

Cellular Omni-Q Probes

Cellular Performer - Live Traffic Visibility

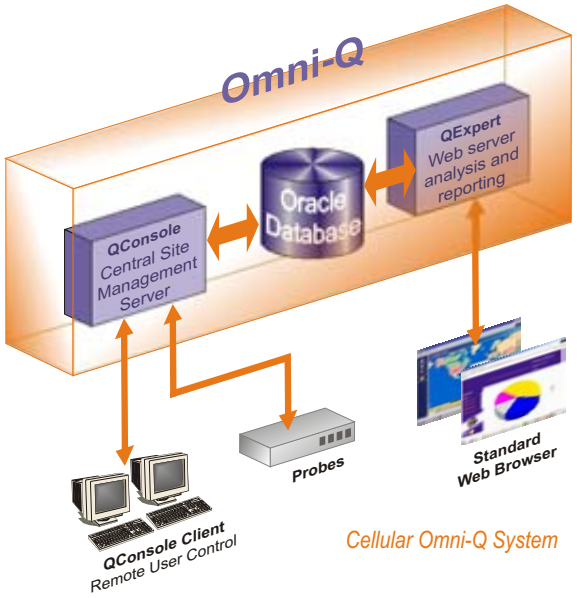
The Cellular Performer probe has been designed to monitor a multitude of GSM, GPRS, UMTS and CDMA2000 interfaces, providing full visibility to Radio Access, Packet-Switched Core and Circuit-Switched Core Network domains.

The Cellular Performer Probe provides multiple parameters and measurements on signaling and user media indicators. Supporting a three-layered operational approach, it enables operators to easily shift between monitoring, drill-down and troubleshooting, all in one system. In the first level, enhanced call detail records of performance measurements are collected for each session. In the second level signaling storage is offered. In signaling storage, calls can be specifically targeted and their detailed call-flow decodes collected and stored for online, real-time operations and customer support. The signaling flow decode is provided for each call, and is displayed together with all the other quality detail records of the call. These provide a more comprehensive view that can be further utilized for assessing and correcting degradation on the network. The graphic flow display is based on accurately time-stamped frames collected from probe hardware (accurate to within 150 nanoseconds). In the third level, run time and more in-depth real-time trouble shooting capabilities are offered. In this manner, the probe server unit can be used for remote testing capabilities, eliminating the need for a field engineer and thus saving on operations costs.



Call/Session Flow

The Omni-Q solution can correlate measurements made by different Cellular Performer probes on the same session as it traverses the network, enhancing the single-point visibility to full end-to-end session setup analysis.



Cellular Omni-Q System

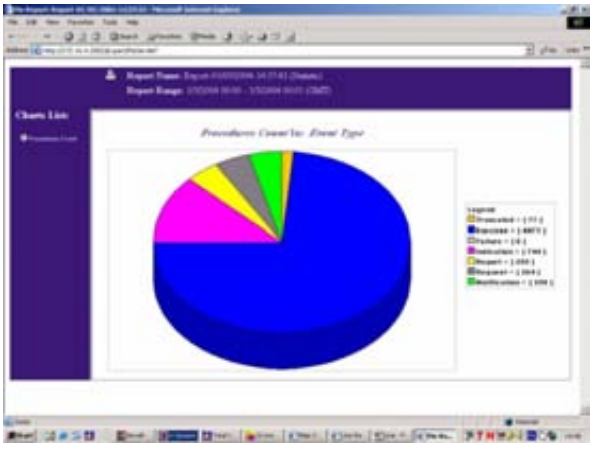
Future Ready

3G networks, with their higher voice density and very high data traffic rates, challenge any monitoring system that must provide reliable real-time information about network conditions.

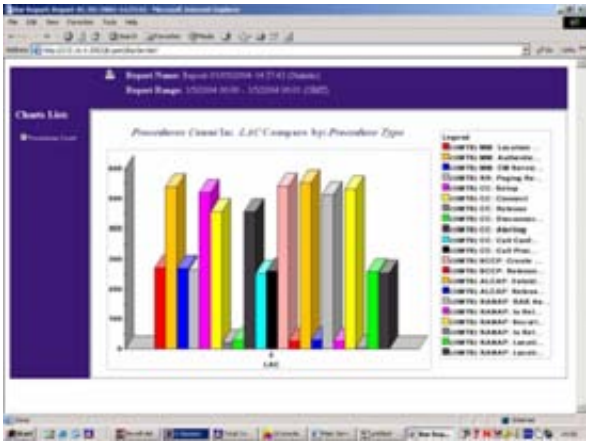
The Cellular Performer probe uses intensive hardware pre-processing of monitored data to enable top-notch performance and support very high rates on wideband interfaces such as ATM over OC-3 or Ethernet over GbE.

This performance-oriented design makes it possible to reduce the number of monitoring probes required in the network, which reduces overall system cost.

As the main processing of monitored data is done at the probe itself, scaling is practically unlimited, eliminating any obstacles to the future growth of the network.



Omni-Q Report - Pie Chart



Omni-Q Report - Bar Graph

Platforms

R1000, Rack-mount 2U, Performer/Probe Server
HW: Pentium 4; 1 GB DDR; 80 GB hard disk
Number of FEPs: up to 2, plus sync card

R4000, Rack-mount 5U, Performer/Probe Server
Consists of 4 independent segments, each including:
HW: Pentium 4; 1 GB DDR; 80 GB hard disk
Number of FEPs: up to 8, plus sync card

P1000, Portable Server
HW: Pentium 4; 1 GB DDR; 80 GB hard disk
Number of FEPs: up to 3, plus sync card

US Office:
RADCOM Equipment Inc.
6 Forest Avenue
Paramus NJ 07652 USA
Tel: (201) 518-0033
Fax: (201) 556-9030
1-800-RADCOM-4
email: info@radcomusa.com

Israel Office:
RADCOM Ltd.
24 Raoul Wallenberg Street
Tel Aviv 69719 Israel
Tel: +972-3-6455055
Fax:+972-3-6474681
email: info@radcom.com

China Office:
RADCOM Ltd.
Handerson Center, Office 506, Tower 3
18 Jianguomennei Avenue,
Beijing 1000005, P.R. China
Tel: +86-10-65187723
Fax:+86-10-65187721
email: china@radcom.com

United Kingdom Office:
RADCOM UK
2440 The Quadrant
Aztec West, Almondsbury
Bristol, BS32 4AQ England
Tel: +44-145- 487 8827
Fax: +44-145-487 8788
email: uk@radcom.com

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