

Roamer | GSM, GPRS and UMTS

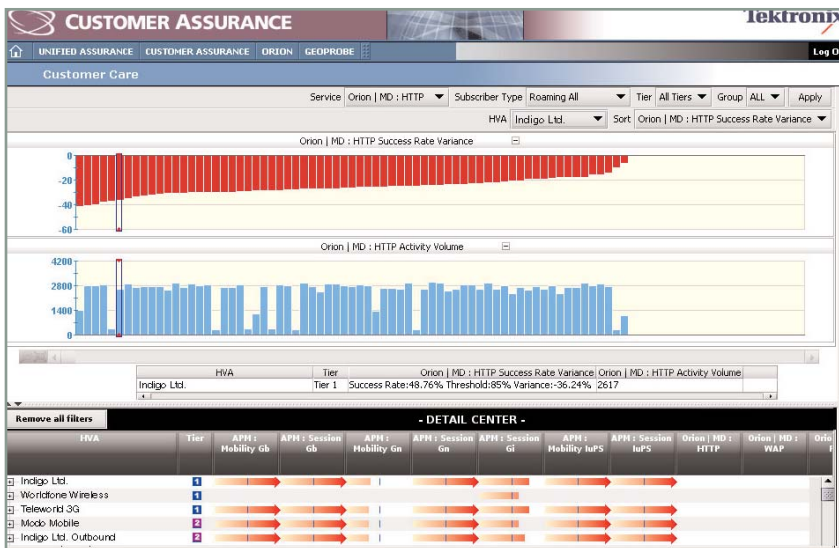
Customer Assurance for Mobile Networks



Protect High Value "Visitor" Revenue Streams

As premium rates apply when subscribers roam, it is in an operator's best interest to ensure the network and supported services are performing well for higher value "visitors." Roamer allows network operators to quickly recognize and remedy problems when these visitors are negatively impacted.

Today's handsets offer subscribers more capabilities than ever before. From e-mail and instant messaging to Internet surfing and photo sharing, mobile subscribers are staying connected—no matter where work and family commitments may take them. Tektronix' Roamer offering provides mobile operators with a tool set to proactively manage the "roaming" experience. Focused on tracking voice and data activity and performance for all subscribers by inbound and outbound roaming partners, Roamer aids operators in reducing churn, maximizing high value "visitor" revenue streams and improving roaming partner relationships.



The Customer Care view enables real-time tracking of score variance, activity volumes and KPI performance for inbound and outbound roaming partners.

Commercial Service KPIs

- QoS for HTTP, WAP, Web Browsing and E-mail
- Protocol for HTTP, WAP, Web Browsing and E-mail

Network Service KPIs

- Mobility Management and Security
- Session Connectivity
- Accessibility/Retainability
- Handover

Web Presentation

While the Customer Care view displays current status, both the KAM and Management views support the following resolutions:

- Entry-level Data: Past 24 Hours
- Hourly Data: 7, 14 and 31 Days
- Daily Data: 7, 14, 31 and 90 Days
- Weekly Data: 12 and 26 Weeks
- Monthly Data: 3 and 6 Months

Ensuring a positive roaming experience is especially critical in markets where multiple operators compete for "visitors" who are able to select a preferred carrier when traveling outside their home network.

Based on tracked IMSIs, Roamer uses Mobile Country Code (MCC) and Mobile Network Code (MNC) combinations to categorize visitors by roaming partner.

- Define multiple MCC + MNC combinations for a single roaming partner.
- Classify roaming partners as National or International.
- Automated discovery capabilities enable the detection of additional visitors in the network that may not be associated with a formal roaming partnership.

Ensure Customer Satisfaction Beyond Network Boundaries

From an outbound perspective, it is also important for an operator to monitor the quality provided to subscribers by select roaming partners. As a poor "roaming" experience is often addressed with the home network operator, problematic partners can generate costly trouble tickets, jeopardize customer satisfaction levels and ultimately increase churn rates.

Roamer makes it possible to identify under-performing roaming partners. By monitoring outbound mobile data roaming performance, operators can initiate investigation and resolution discussions with the partner or seek compensation for significant customer and revenue impacts. With the information provided, operators can even terminate a partnerships based on documented performance issues.

Roamer uses SGSN groups to track outbound roamers.

- SGSN Groups consist of remote IP addresses associated with outbound roaming partner networks.
- Track all home subscribers traveling to partner networks based on SGSN Group activity.
- Define multiple SGSN Groups for a single outbound roaming partner.



Element Detailed Service Performance Summary

Time Range: Resolution: Monthly Start Date/Time: August 2006 End Date/Time: August 2006

Interface: Gb Service: Gb Session Connectivity

Subscriber Type: Roaming All HVA: Worldfone Wireless

Element Type: SGSN SGSN Group: All

Key Quality Indicator: Gb PDP Act MS Initiated

Minimum Attempts: 0

Sort Order: Gb PDP context act dynamic address MS initiated Descending Number Of Rows Between Header: 25 Number of Records: Show All

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SGSN	Key Quality Indicator			KPI Failures	
	Successful %	Attempts	Successful	Failures	Gb PDP context act dynamic address MS Initiated
BASGS01	57.42	53,833	30,870	22,963	22,963
MMSG094	69.60	39,500	27,491	12,009	12,009
TMSG082	73.24	38,517	28,210	10,307	10,307
FMSG02	57.39	20,827	12,011	8,816	8,816
MMSG096	60.40	24,597	14,843	7,754	7,754
BASGS02	57.99	17,128	9,933	7,195	7,195

Historical reporting features allow operators to drill from roaming partner HVA-level reports to detailed element summary reports like this one. In this example the operator is investigating Gb PDP KPIs reported for an outbound roaming partner, Worldfone Wireless.

Tracked Elements

- SGSN
- BSC
- Cell
- RAI
- Handset
- MCC
- MCC-MNC
- MSC
- APN
- Server
- Entire Network

HVA Roaming Partner Classifications

- Inbound/International or Inbound/National
- Outbound (mobile data only)

Key Performance Indicators

Roamer monitors actual network and commercial service activity based on Key Performance Indicators (KPIs) for Protocol, Service QoS, Mobility Management, Security and Session Connectivity. Collected information is then made available for real-time and historical presentation through an easy-to-use, web-based environment.

Real-Time and Historical Web Presentation

A part of Tektronix' Customer Assurance solution, Roamer supports customized views for use by Network Operations, Customer Care and Roaming Partner Management personnel. Real-Time and Historical views support drill-through from roaming partner data presentation levels to relative service- and network-focused operations dashboard views.

Customer Care

With the Customer Care view, operators gain visibility to the current status of network service and commercial service KPIs for all inbound and outbound roamers. The flexible, interactive display allows operators to hone in on specific roaming partners in order to evaluate current KPI performance against other roaming partners.

Management

By taking advantage of Roamer's tier assignments (3 tiers available), operators can rank the importance of inbound and outbound roaming partners for an at-a-glance assessment of a single service or an overall picture of roaming experience health.

Key Account Manager

The Key Account Manager or KAM view allows operators to focus on the performance of all services for a single roaming partner.

Historical Reporting

Generate entry-level, hourly, daily, weekly and monthly summary reports of Network and Commercial Service KPIs per roaming partner. Reports support click-through investigation of data from roaming partner (HVA) to element, associated release causes and actual data records.

- Service Performance
- Detailed Service Performance
- Session Performance
- Protocol Transaction Performance
- QoS Service Performance
- Service Network Manager
- Release Cause Category Fault
- Release Caused Fault

Flexible sort order combinations enable swift identification of desired information. Reports may be scheduled for automatic e-mail distribution with CSV and printer-friendly output options.

About Tektronix:

Tektronix has more than 60 years of experience in providing network operators and equipment manufacturers a comprehensive and unparalleled suite of network diagnostics and management solutions for fixed, mobile, IP and converged multi-service networks.

These solutions support such architectures and applications as fixed mobile convergence, IMS, broadband wireless access, WiMAX, VoIP and triple play, including IPTV.

For Further Information:

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology.

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