

## Making Sochi Winter Olympics a Success for Social Media

### Background Brief

The Winter Olympics is one of the biggest sporting events in the world, attracting the attention across the globe. For a period of about five weeks in 2014 (Feb 7 – Mar 16) Sochi was the focal point of attention giving every participant in this great event tremendous exposure to the World, the same is true for the suppliers of telecommunication services.



Great care has been taken by MegaFon - the official supplier of telecommunication services- to build a dedicated Olympic network setup to ensure optimal user experience for the huge numbers of spectators, press and VIPs who attended. As the ecosystem changes to one where users share pictures, videos, social networking updates, instant messages – in fact any of the apps they use at home, the challenge only increases.

### The Challenge

The challenge for MegaFon during the games was the same as any operator deploying a network to support the broad selection of services consumers expect, but also contending with intense media attention, very short implementation timescales and the need for exceptionally rapid problem resolution.

In essence this wasn't about ARPU or churn but enabling customers from all over the world to utilize the mobile network in a seamless high quality manner and cementing the reputation of MegaFon and Russia as leading players on the world stage. Two of the main challenges were:

- Build a complete network in a very short time with no slippage possible before go-live
- Ensure superb user experience throughout the Olympic event

With 89 countries represented at the games, from USA to East Timor, there was the potential for many things to go wrong in a short space of time. With large numbers of subscribers including high profile users such as press and VIPs using the network, MegaFon had to be highly pro-active in identifying and resolving issues and couldn't afford to be reactive by waiting on issues being raised by subscribers' home roaming departments. Taking a reactive approach to issue identification and resolution wasn't an option and could have resulted in poor perceptions and bad publicity for MegaFon. Some of the key problems that impact quality perception are listed in Table 1.

Network Accessibility	Service Performance	Reputation
No access to network or subscriber services	MMS/SMS failure	VIPs experiencing poor performance
Dropped calls	Handset problems with low bandwidth for social media updates	
No coverage		

**Table 1: Key issues affecting quality perception**

### Key Capabilities Required for a Service Assurance

To successfully overcome the challenges of this massive event, MegaFon was in need of a service assurance solution that helped the operation teams to effectively navigate through the multitude of problems occurring in the network during such a stressful situation in a very short time to get to the root cause.

The main departments that benefited from the solution are the Network operations and Roaming departments. However, upper management and adjacent departments also benefited from the enhanced insight and troubleshooting capabilities of such a solution. Table 2 lists the main departments' key challenges.

Key Challenges for Network Operations & Roaming Management
New network not tuned to a homogenous usage pattern due to the limited time
Unknown usage patterns for services
Non proven coverage across the Olympic area
Very short time window for problem resolution
Prioritization of problems for key subscribers
Huge mobility of subscribers as they move between different venues
Coverage of all network technologies end to end
Very high focus on quality from both MegaFon's management and external parties
Proactive action on problems before they are escalated to management from external parties
Complete view of partner performance

**Table 2: Key challenges for Operator's departments**

To help network operations overcome the task of providing a superior service with the inevitable network problems, a solution that can rapidly pinpoint such problems and aid the resolution in minimum amount of time must be in place.

Segmentation and customer focus is key to ensuring that resources are deployed efficiently to resolve the problems that have the greatest impact on overall QoE.

In order to prioritize and focus on the most important issues for greatest impact, the Operations department must be able to rapidly identify issues in the services shown in Table 3 using the segmentation groups shown in Table 4, taking into consideration the limited timeframe.

Service	2G	3G	LTE
Voice	X	X	(X) CS Fallback
SMS	X	X	X
Data	X	X	X
Mobility	X	X	X

**Table 3: Services & networks monitored**

Segmentation Groups
<b>Olympic Objects</b> —Olympic Venue and Clusters
<b>VIP Subscribers</b> — from individuals to Olympic Teams
<b>Roaming Partners</b> —International and National

**Table 4: Defined segmentation groups**

### Alerting, troubleshooting and reporting



The solution must be able to provide information on the service quality perceived by an individual or group of customers whilst providing intelligence on how these experiences relate to network performance and devices used.

For massive events such as the Olympics, geographic and time dimensions become critical as individual subscribers participate in mass behaviour patterns related to physical location and application usage.

The definition of KPIs, real-time views and reports should not be limited to pre-aggregated data or fixed format templates. The flexible implementation of ad-hoc analysis to visualize any issue that may occur as result of an

unforeseen trend in customer behaviour should be possible without any loss of data or granularity.

## Implementation approach

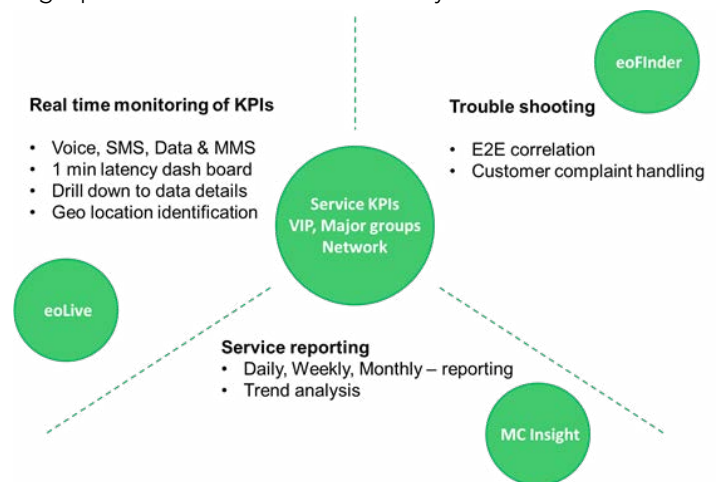
In most cases, monitoring solutions are implemented just before or during the production phase, and are extended as the network grows. In the case of MegaFon, this process was short circuited due to the very short implementation time of the Network for the Olympic Games. Despite the rigid deadlines for the completion of the Olympic network and the troubleshooting solution needed by the operator during the network's deployment and testing, Anritsu delivered the solution on time to deliver immediate value.

## The Solution - MasterClaw CEM

The MasterClaw ACEM solution was chosen tool to rapidly provide the visibility, reporting, alarming and segmentation required to ensure superb QoE at such a high profile event. One of the key differentiators is the ability to have unified access to information across multiple mobile technologies in conjunction with the many diverse troubleshooting, alerting and reporting tasks at hand.

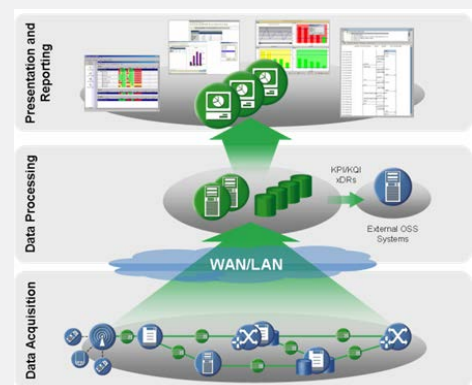
The key solution features delivered by Anritsu's MasterClaw probe system are:

- Real time KPI monitoring and alerting
- Integrated Low level E2E troubleshooting
- Service level reporting and analytics



## MasterClaw Solution Overview

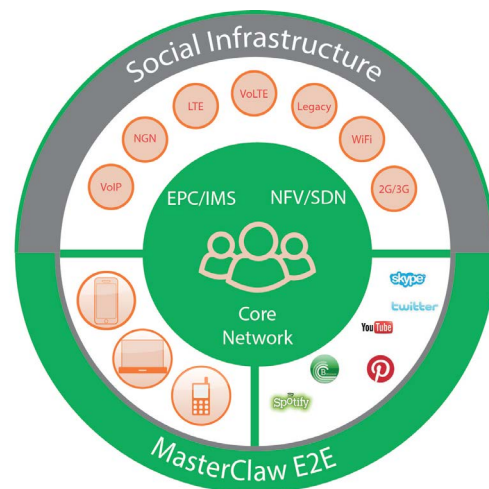
MasterClaw is designed as an extremely scalable and reliable three tiered architecture with distributed intelligence delivering unparalleled performance. MasterClaw's framework processes complex network information from a variety of data sources including our own non-intrusive multi technology probes. This information is ingested into state of the art data warehouses that deliver the business intelligence needed for network planning, investment decisions and customer experience. The suite of real-time applications enables simplification and visualization of complex network topologies for customer and partner (Inter-connect & Roamers) performance management.



### Rapid deployment of the solution along with the network rollout

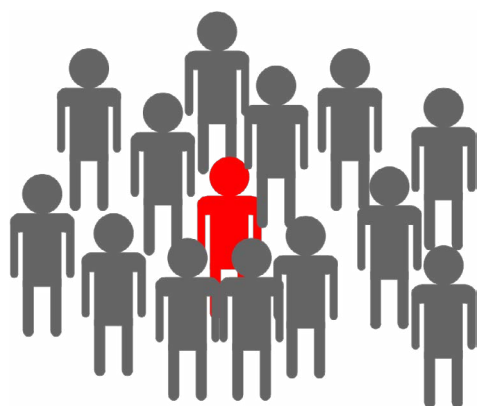
The uniform build of MasterClaw’s multi-network probe infrastructure is the key to the fast deployment of Anritsu’s E2E monitoring system. Information is made available instantly and initial low level troubleshooting is enabled.

Unified service definition and grouping allow users to quickly setup the system to match each event’s characteristics. The information is stored centrally and made available across all applications for data enrichment.



### Transformation of data into actionable intelligence

It is of paramount importance for an event like the Olympics that issues are prioritized so that the most serious problems are solved first. The right data at the right time is key for ensuring such prioritization. MasterClaw solution transforms data into actionable intelligence by providing the information included in Table 5.



Key Data for Prioritization
<b>Details on location and customer groups</b> —Most important users (VIP, Enterprises, Roaming Partners) and areas are identified
<b>Impact</b> — Top priority problems are identified
<b>Unique subscribers affected</b> — ability to filter single subscribers affecting KPIs on call drops and single cell performance, in order to focus on high impact issues affecting many users

Table 5: Key data for prioritization process

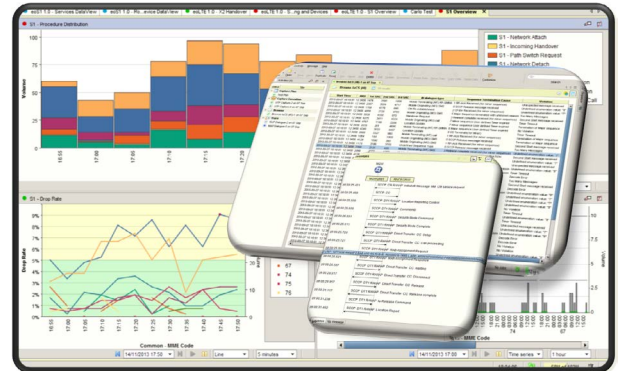
### Flexibility to respond to unpredicted events

In order to rapidly respond to changes on mobile services usage pattern, MasterClaw eoLive application enables users to create almost any KPI from the vast list of fields available from all monitored interfaces. This flexibility combined with MasterClaw’s DPI service engine makes it possible to track the performance of almost any OTT service.

### Fast time to resolution

The fast time to resolution capability delivered by MasterClaw is achieved by combining features such as prioritization of issues, dashboard representations, alarm engine and the rapid drill into low level details.

MasterClaw provides an integrated solution with direct linkage between the real time KPIs, data record details and low level PDUs stored at probe level. Problems detected on real-time on-line dashboards can be analysed within seconds, permitting the root-cause to be found immediately.



### Conclusions

MasterClaw is the chosen monitoring system for the Sochi games and MasterClaw delivered. At the time of writing, there has been no mention of poor mobile coverage or service performance. This single fact is a clear proof that the MegaFon has done an incredible job and also has chosen the right partner for service assurance in order to provide a superior quality of Experience.

“The usage of the system allows to notify the specialist about the problems in the network earlier than other 3rd party systems which are installed in MegaFon Kavkaz Branch. This is due to 5 min interval which is used for calculation of the KPIs and sending alarms that also help to speed up the work on investigation of the network or VIPs problems” says Mr. Sergey Malkovskiy, Head of Technical Control at MegaFon.

Key element in the success:

- MasterClaw is the solution to minimise key pains for operational departments maintaining the system for such events
- Strong cooperation between Anritsu and MegaFon ensured smooth deployment and operation of the solution
- Ensuring superb user experience throughout the Olympic event with very little problem resolution time

The high quality of service experienced at the Sochi Olympics shows that Anritsu is the partner of choice to ensure that network operators can deliver in high profile high pressure situations. Anritsu solutions and people can ensure that operators can deliver a superior service, not only in high profile events, but also in technology migrations and also coping with the changing ecosystem as it migrates to a consumer and app driven one.