

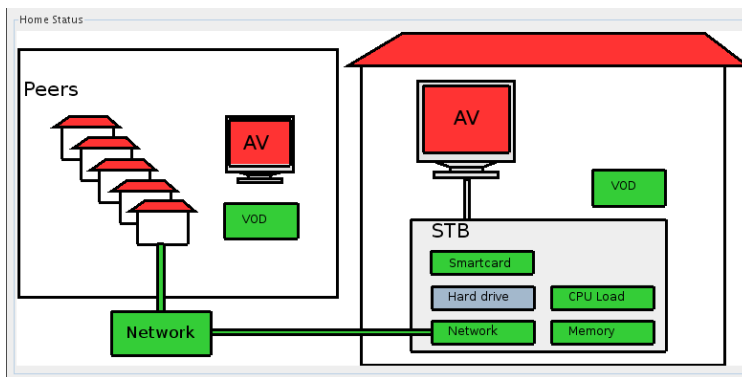


To achieve a great customer experience, you need to be able to measure it: for each and every customer and in real time. MiriMON[®] does this and provides information that helps fix the faults and performance problems encountered.

MiriMON is a proven and cost effective system for providing valuable information to a number of business functions within a Service Provider. In particular MiriMON resolves major problems for the following business functions:

Customer Care

MiriMON provides a real-time view of service delivery to an individual customer, with clear fault identification that enables the correct action to be taken to fix the problem.



MiriMON also provides a historical view of service delivery to identify intermittent faults and trends in poor service delivery.

MiriMON provides alerts for service faults before consumers call the support centre, enabling a pro-active resolution.

Networks, Infrastructure and Operations

MiriMON provides accurate impact analysis for faults and provides valuable root cause analysis of faults. This is achieved by identifying groups of devices experiencing a particular fault and identifying the common feature e.g. network segment, viewed channel, device model etc.

Marketing and Business Management

MiriMON provides accurate viewing statistics for content and advertisements and valuable statistics on service usage.

What does MiriMON Measure?

We have identified more than 600 useful events and parameters that can be measured on consumer devices. The most commonly monitored are:

- Content play-out quality (audio/video synchronization, macro-blocking, stalling, etc)
- Channel change times
- Service requests (and failures), PVR usage, channel hopping
- Network Connection (presence, bandwidth, packet loss, buffer under/overflow, signal strength)
- Device health (re-set, memory level, processor load, hard disk)
- Service usage – granular viewing figures for linear channels, VOD and advertisements.
- Application performance, including the EPG

MiriMON Reporting

Live information is provided via simple graphical web interfaces (an example of a call centre dashboard is shown left)

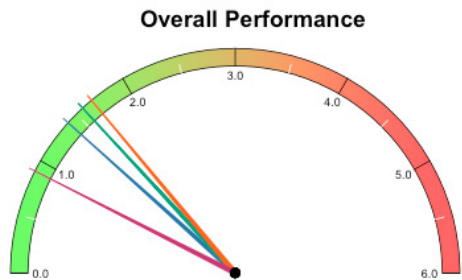
Trending and historical analysis reports are generated using standard tools such as Crystal Reports (see following page).

Information can also be exported via a SNMP feed to a standard network management system, such as HP Openview or IBM Tivoli Netcool.

Information can be accessed by 3rd party systems via an XML interface or standard relational database access methods.

MiriMON gives you
the customer
perspective...





Multicast Channel Change Timings

Period start: **01/07/2007 00:00:00** Expected overall channel change timings:
 Period end: **31/07/2007 23:59:59** Fast: 1.00 Slow: 2.00

- IGMP
- Video
- Audio
- Combined
- Fastest

Channel change timings for each multicast channel, in seconds.

Channel Name	Join IGMP Group		Start Video		Start Audio		Overall				Expectation
	Average	Std Dev	Average	Std Dev	Average	Std Dev	Average	Std Dev	Fastest	% Timed Out	
1 BBC 1	1.20	0.50	1.90	0.60	2.10	0.70	2.10	0.70	1.60	1.70	BELOW
2 BBC 2	0.80	0.20	1.10	0.50	1.30	0.60	1.60	0.60	0.90	0.90	ABOVE
3 ITV 1	1.50	0.60	1.60	0.70	0.80	0.90	0.90	0.50	1.60	0.50	BELOW
4 Channel 4	2.10	0.80	1.70	0.60	2.10	0.70	2.10	0.70	1.60	1.70	BELOW
Across all channels:	1.40	0.55	1.58	0.34	1.58	0.64	1.68	0.57	0.90	1.20	

Innovative Approach

A MiriMON agent resides on every consumer device and measures service delivery, network performance, device performance and service usage. MiriMON shows the individual consumer's QoE and identifies faults and problems before they are reported to the call centre.

Our patented technology meets the challenges of monitoring service delivery on the consumer device:

- Must not impact the performance of the consumer device
- Must not disturb the network or services being delivered
- Must not introduce security vulnerabilities
- Portable and scalable to suit a range of user equipment

MiriMON agents are intelligent: only reporting the required events, according to rules defined within a configuration file. Configurations can be applied to individual or groups of devices, allowing reporting across the network to be tailored and agent data traffic to be managed.

The MiriMON server gives a per-device historical view and supports further analysis across the entire device population.

Costs Down, Revenues Up

The information provided by MiriMON allows service providers to reduce their operational costs through:

- Fewer support calls
- Shorter calls (average handling time)
- Less truck rolls/STB swap-outs
- Proactive notification of problems
- Reduced effort to analyse faults

Better service reliability and customer service can reduce subscriber churn and improve subscriber acquisition (through reputation and reviews).

Better service quality can give consumers the confidence to use premium services, increasing ARPU.

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