

ISP-IT™ Femto

In-Life Service Quality Reporting

ISP-IT™ for Femtocell is a complete customer experience management solution for mobile operators with femtocells deployed on both their own and un-managed third-party broadband networks.

Active ISP-IT™ probes generate real customer femtocell call traffic, routed over any broadband delivery network, and report service quality and benchmarking Quality of Experience (QoE) metrics in real-time - 24 x 7 x 365. This capability provides mobile operators with insight into several key areas;

Quality of Experience (QoE)

To ensure an acceptable Quality of Service (QoS), voice and video traffic traversing the consumer broadband connection should be prioritised above less sensitive applications. In scenarios where the femtocell is deployed in an unmanaged third-party broadband network this may not be possible. Additionally the effects of any changes in third-party ISP traffic management policies need to be closely monitored and understood.

Service Optimisation

Femtocells must work for all broadband subscribers regardless of the broadband technology in place, and contention between femtocell-based voice traffic and traditional and future Internet traffic in the home needs to be fully understood and closely managed.

Last Mile Management

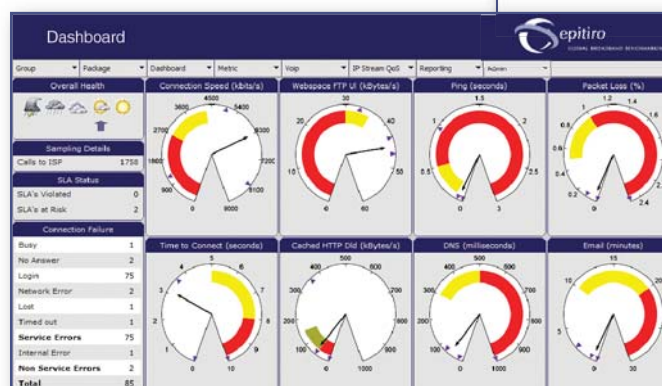
The link between the femtocell CPE and the core cellular network should be tolerant to packet loss, jitter and network delay. In scenarios where your femtocell device is relying on an un-managed third-party party broadband network this may not be possible and the effects of any ISP network issues need to be closely monitored, managed and communicated to customers.

Extensive Voice Quality Analysis

ISP-IT™ Femto provides continuous, real-time visibility of the health and status of the key elements of your femtocell infrastructure and industry-standard PESQ-MOS ratings of voice calls to and from the handset. The software as a service (SaaS) solution provides monitoring and reporting across any call-path (including IP, TDM & Cellular) and provides a single, real-time consolidated view of all QoE/QoS metrics.

Active testing agents provide on-going link quality and performance measurements for femtocell-based services by initiating femtocell-initiated calls between hardware robots and pre-defined termination points anywhere inside or outside any national or international network.

ISP-IT™ Femtocell will objectively determine voice quality from the all-important subscriber perspective. The system uses standards-based Perceptual Evaluation of Speech Quality (PESQ ITU P.862) to provide an automated, MOS-based objective voice quality score from the customer's perspective.



Reports

Epitiro's renowned report generating capability allows any user to quickly and easily see test performance data in the format of their choice. The powerful and flexible report generation, including Web browser access to all reports, enables the following views;

- Trend Testing - Profile the behaviour of your hardware with continuous long term testing at different times of the day, week, or month.
- 'At a glance' insight of your competitors strengths and weaknesses
- Multiple levels of drill-down detail right down to a single femtocell test call
- Remote-control and real-time availability reporting of all agents

Look Who's Talking

Epitiro's clients include top ISPs, regulators and telcos. Companies such as BT, Tiscali, Ofcom, Virgin, Telecom New Zealand, Telefonica O2, Orange and others use Epitiro's technology and Software as a Service (SaaS) capability to measure and manage customer experience.



Pre-qualify underlying Broadband network quality

- Throughput
- Packet Loss
- Latency

Speech Transmission - PESQ (ITU standard P.862)

- Mean-Opinion-Score (MOS) Rating & E-Model Integration
- P.862.1 is the ITU-T standard mapping for PESQ to MOS-like scale
- PESQ-LQ gives a quality score on a MOS-like scale
- PESQ-le is the impairment factor, le, which is an input to the E-model
- Speech Activity
- Speech Power
- Loss
- C-message noise
- Wideband noise

Echo Detection (ITU G.131)

- Echo Return Loss (ERL); echo attenuation in dB
- ERLs and echo delays for multiple echoes
- Perceptual estimation of echo annoyance (ITU-T G.131)

HSPA Module available to test data capabilities of femtocell and includes metrics for:

- Packet Domain Stats including Negotiation Time, Authentication and IP Address Assignment
- Raw TCP/UDP Performance - On and Off Network (International Peering Points)
- HTTP Performance
- FTP Performance
- PING testing
- DNS testing
- Packet Loss Reporting



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