



Perytons

Network Visibility



Diagnostics, Monitoring and Troubleshooting of IoT Communications

IoT (Internet of Things) is a generic name for connecting large number of devices, sensors and networks to the Internet cloud. It allows processing of large amounts of data, automatic event driven decisions and better control over our surrounding. IoT includes existing systems and applications such as Automatic Meter Intelligence, Home and Building Automation, Healthcare, as well as new evolving fields such as wearable computing.

The IoT participating devices are typically low power; low footprint in nature, hence each utilizes a different, optimized communications protocol with the local gateway connecting it to the cloud. Among these protocols are ZigBee, Bluetooth Low Energy, Narrow-band PLC (Power Line) and other standard and/or proprietary protocols.

Using these communication protocols, data from the IoT connected devices is just 'expected' to be available and up-to-date. However for the information to get to the cloud it should be transferred from different networks, using multiple/still-evolving protocols which might be implemented by a variety of vendors. Interoperability in the lab cannot address all issues and combinations.

In order to facilitate service providers and system integrators to overcome these obstacles, make sure the IoT system components work properly with each other, guarantee customer satisfaction and meet their SLA; Perytons created the Perytons Network Visibility.

This unique solution provides OOB (Out-Of-Band) monitoring, diagnostics, logging and troubleshooting of each of the IoT remote networks. This is accomplished by having agents that capture data of the remote networks at a lower layer and a professional centralized diagnostics center.

Perytons Network Visibility main benefits

- Transparent to protocol stack implementation – capture done in the protocol low-level
- Embedded into existing IoT gateways – no need for additional hardware
- Routine system technical information collection and logging
- Automatic preemptive problem detection (before it starts affecting the network or end-users complains arrive)
- Important/Selected events logging and tracking (addressing auditing requirements, etc.)
- In-depth analysis and trouble-shooting for each of the remote sites driven by the help-desk operators (used to easily identify and resolve specific potential problems)
- Eliminating non-necessary field support dispatches
- Fits both first-level call center support as well as professional back-office staff escalated issues handling, including inherent data sharing between the various elements in the support force





Internet / 3G



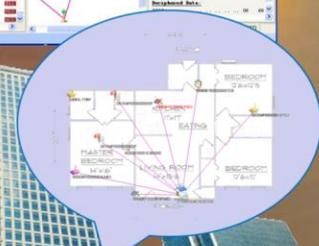
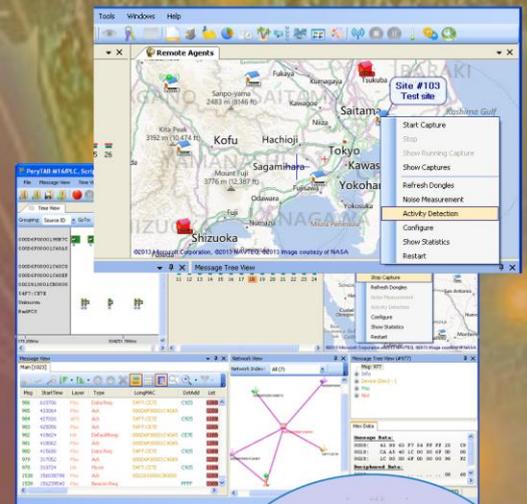
Solution Architecture

Perytons Remote Diagnostics Agents (PRDAs) are set in each of the remote networks (1), either as a dedicated device or as an API on the remote network communication gateway. The agents communicate with the Perytons Analysis and Diagnostics Center (2) over Internet or 3G. All data and information is logged into a centralized database. Periodic, event driven or user initiated diagnostics is applied on the captured data. The call-center (3) gets the network picture along with its current status, statistics and diagnostics events for each site. It can also trigger manual detailed analysis and run pre-defined scripts (4). In addition, data can be shared with field engineers (5) or R&D personnel for further investigation.

Perytons Analysis and Diagnostics Center (PADC)

Allows centralized supervision of all remote sites, data logging, triggering of pre-defined scripts for automatic preemptive diagnostics and more. It also enables help-desk personnel to perform manual analysis of any remote network selected.

- In the PADC, each Remote Agent (PRDA) is shown on top of an interactive geographical map (locations are defined using GPS coordinates) and its current status is color coded and displayed
- Call center representatives can see RF interferences (if a wireless network), capture wireless or PLC network traffic and analyze it in detail using the sophisticated tools included in the platform such as Network, Time and different Message views as well as traffic Statistic Charts and Logs.
- The PADC includes the Perytons communication server module that communicates with PRDAs and collects the relevant information to a centralized Database
- Manual and routine Automatic batch operations (scripts) can be executed in the PADC to analyze each of the remote networks, issue events, alarms and reports
- As a centralized analysis entity, the PADC allows to easily investigate potential issues that may be introduced due to protocol version changes, updates and evolution
- Specific problems can trigger a technician visit or get escalated to R&D for detailed investigation



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