

Network Management Software Solutions



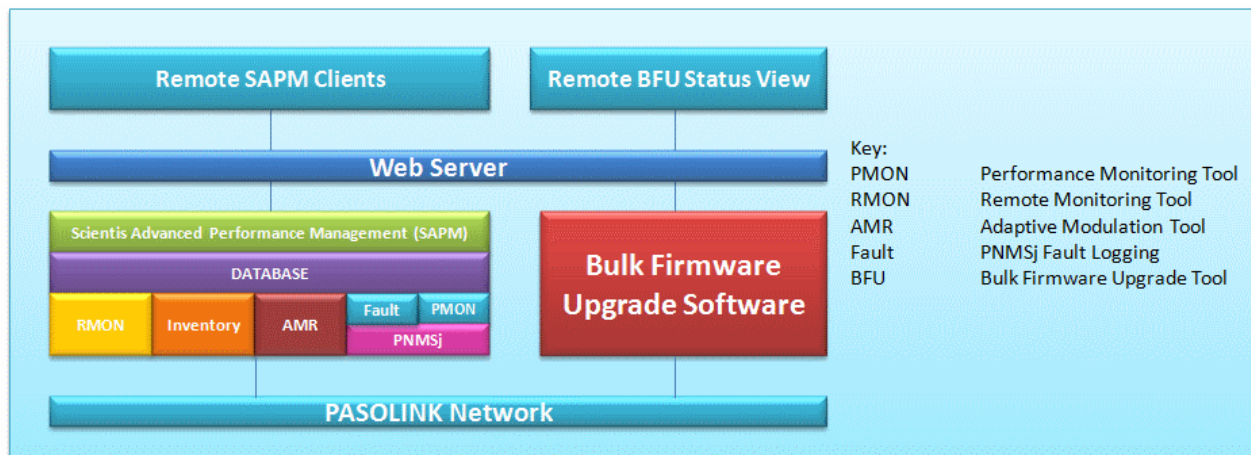
**Flexible and scalable for end
to end network application**

Software Solutions

NEC provides data connectivity monitoring platforms that are vendor agnostic and include an end-to-end network element. In addition, NEC offers a range of Network Management System (NMS) solutions in co-operation with Scientis Solutions Limited. Its cost-effective, end-to-end solutions and complementary services portfolio enables its customers to have complete visibility and control of their networks with improved detection of network failures, reduced repair times and significantly reduced operational expenditure. From various types of site monitoring and control solutions through to integration into NMS/EMS platforms, NEC and Scientis Solutions provides a comprehensive multi-vendor proposition.

Scientis Advanced Performance Management (SAPM)

Scientis Solutions provides tailored software modules, developed by NEC Engineering, for NEC's microwave radio equipment as NEC's NMS. In addition, Scientis Solutions design and develop a performance, configuration, inventory and fault reporting system, called Scientis Advanced Performance Management (SAPM), that is tailored to fit an existing NMS system. SAPM's fault reporting system can identify and detect proactively deteriorating equipment and provide early warning feedback to the operator. The NEC and Scientis Solutions portfolio available to operators include, other solutions such as synchronisation scripts, bulk-firmware upgrade tools, trap converter and more.



Performance Management Tool

NEC PASOLINK equipment provides link performance data collection, based on ITU-T G.826 and G.828 along with RSL Data, which can show up to seven days of data per PASOLINK. Scientis Solutions offers a data collection tool that collects PMON and RSL data from the PASOLINK network and exports the data to an ASCII file (CSV and XML formats available). These data files can be used to import PMON data into third party performance management systems.

In addition, Scientis Solutions' SAPM can provide a graphical web interface for viewing performance data.

Inventory Management Tool

NEC's PNMSj and PNMTj provides inventory data for a radio link. Scientis Solutions offers a inventory data collection tool that collects inventory data from the PASOLINK network. The IM tool exports the data to an ASCII file (CSV and XML formats available). These data files can be used to import inventory data into third party inventory management systems.

In addition, Scientis Solutions provides a graphical web interface for viewing network inventory data with the ability to generate PDF Inventory reports.

Remote Network Monitoring Tool (RMON)

NEC PASOLINK equipment provides Ethernet performance data collection, based on RFC1757, which can show up to seven days of data per PASOLINK.

NEC offers a data collection tool that collects RMON data from the PASOLINK network and exports the data to an ASCII file (CSV and XML formats available). These data files can be used to import RMON data into third party performance management systems. In addition, Scientis Solutions' SAPM can provide a graphical web interface for viewing performance data.

Alarm Monitoring Tool (Fault)

NEC PASOLINK equipment provides alarm and status data information, which is stored for 7 days.

NEC offers a data collection tool that collects alarm and status data from the PASOLINK network and exports the data to an ASCII file (CSV and XML formats available). These data files can be used to import alarm and status data into third party performance management systems. In addition, Scientis Solutions' SAPM can provide a graphical web interface for viewing alarm/status data.

Synchronisation Tool

All traps received on PNMSj are forwarded immediately to a third party OSS or NMS system when the PNMSj northbound interface is used. However, if the northbound DCN fails, alarms during this time are not transmitted. This will mean the OSS or NMS system does not have the latest data and is not synchronised.

To resolve this situation, Scientis Solutions provides a synchronisation tool which will automatically synchronise the network when the connection is resolved. Synchronisation is automatically performed so that at all times both PNMSj and the OSS systems are showing the correct current statuses of the PASOLINK network.

The synchronisation tool works with NEC equipment directly, enabling integration with the OSS, NMS or EMS system to ensure current network status is visible on the system at all times.



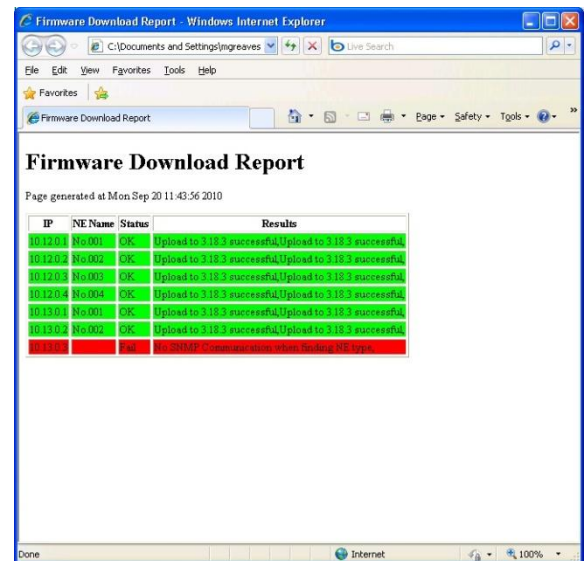
Adaptive Modulation Change Notification Tool (AMR)

NEC PASOLINK equipment shows AMR change information in its event logs that are stored for 7 days.

NEC offers a data collection tool that collects AMR change notification data from the PASOLINK network and exports the data to an ASCII file (CSV and XML formats available). These data files can be used to import AMR data into third party performance management systems. In addition, Scientis Solutions' SAPM can provide a graphical web interface for viewing AMR data.

Bulk Firmware Upgrade Tool (BFU)

The Bulk Firmware Upgrade tool is designed to be deployed alongside an existing NEC NMS system. The software can run on the same server or on a separate server. The Bulk Firmware Upgrade tool is not reliant on there being a NMS system monitoring the PASOLINK network.



Ether-PNMTj

Ether-PNMT is a Perl script that automates the launching of PNMT or PNMTj over a LAN, serial (RS232) or USB connection. The user starts Ether-PNMT, enters an IP address and then connects with PNMT to the PASOLINK element at that IP address. At the end of the session the configuration files in PNMT or PNMTj are automatically returned to their original state.

Connect Tool

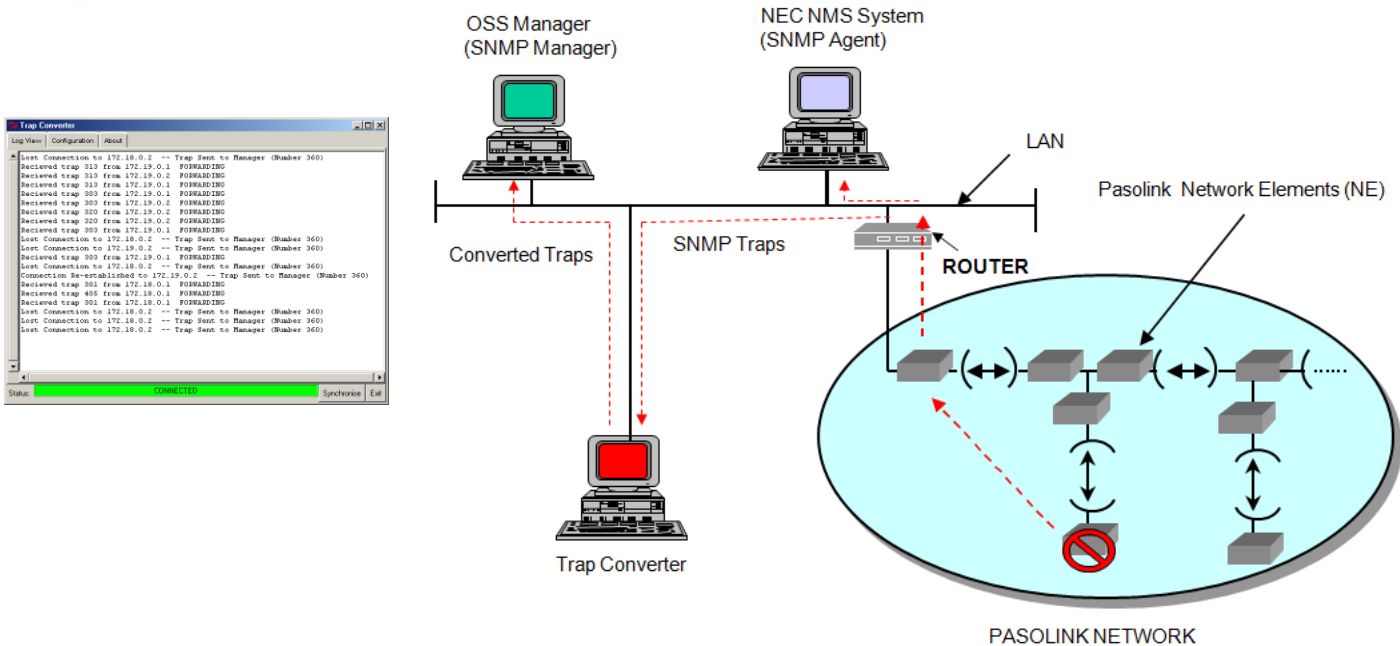
When PASOLINK is integrated into third party systems, these third party EMS systems are required to connect to the PASOLINK directly.

This requires registering their IP addresses on the PASOLINK, so that traps (status changes) are forwarded to the Entity Management System's IP address. Since the connection process is complicated, Scientis Solutions provides a connection tool to manage the connection process. The connect tool receives a list of IP addresses and equipment types. It adds the IP address of the third party system to each PASOLINK on the network, so it will receive the traps from every PASOLINK on the network.

Trap Converter

The NEC Trap Converter is a software solution designed to convert NEC PASOLINK equipment traps into another SNMPv1/V2c format that may be required by a third party NMS or OSS solution.

The Trap Converter connects to NEC PASOLINK equipment and registers its IP address. After that the Trap Converter receives all the incoming traps and converts them into the required format, before forwarding them on to the third party NMS or OSS system.



The information, configuration or specifications given in this publication are subject to change without notice

For Further Information please contact
Your local NEC representative

Scientis Solutions Limited
Innovation Centre, 49 Oxford Street,
Leicester, LE1 5XY, England.
Registered in England, no. 6851268

Tel: +44 (0) 207 692 1852
Fax: +44 (0) 207 900 2526
Email: sales@scientis.co.uk
Web: <http://www.scientis.co.uk>