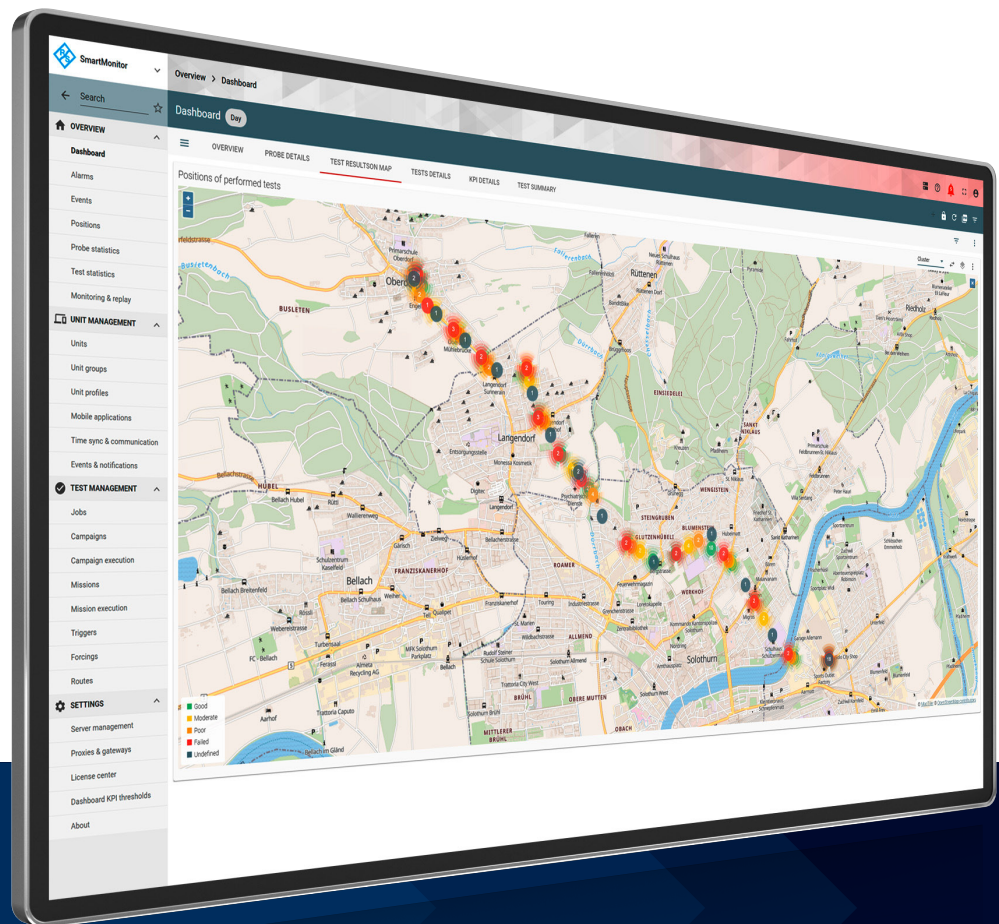


SmartMonitor

Real-time service quality monitoring



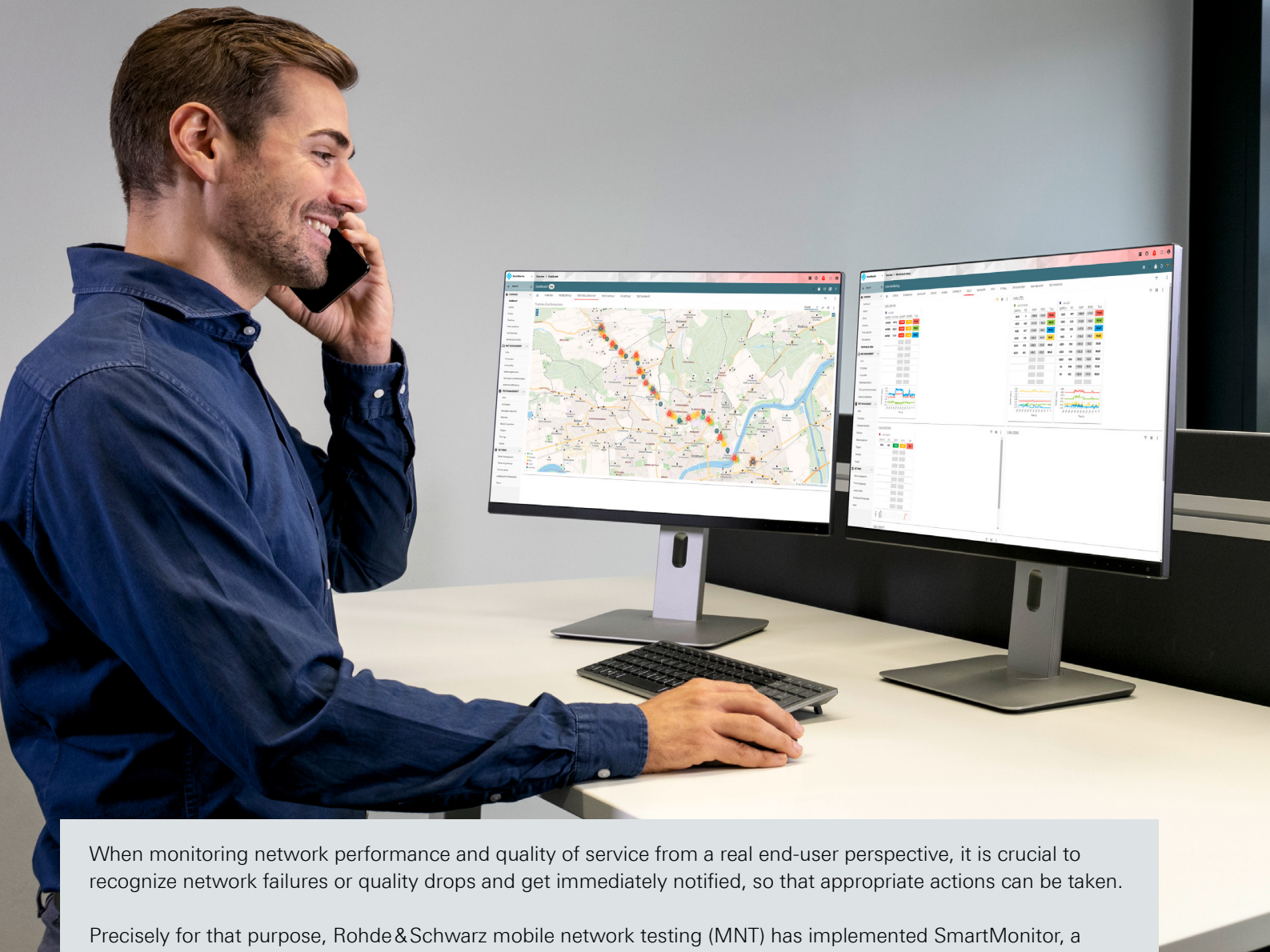
Product Brochure
Version 03.00

ROHDE & SCHWARZ

Make ideas real



REAL-TIME SERVICE QUALITY MONITORING



When monitoring network performance and quality of service from a real end-user perspective, it is crucial to recognize network failures or quality drops and get immediately notified, so that appropriate actions can be taken.

Precisely for that purpose, Rohde&Schwarz mobile network testing (MNT) has implemented SmartMonitor, a web-based application that provides a real-time overview of the current network situation based on QualiPoc Android Probes.

SmartMonitor offers an easy and straightforward fleet management, drag&drop job configuration, and real-time map-based information as well as test results, statistics and analysis, all in one tool.

The reported data by the fleet of QualiPoc Android Probes is immediately displayed on SmartMonitor dashboards and provides an instant overview of the service quality and network performance from a real end-user perspective.

SmartMonitor, with its new communications concept towards the probes, is an essential component to cost-effectively monitor service quality status in real-time from a real end-user perspective and helps to reduce operational costs in the field. Ultimately, SmartMonitor ensures seamless quality of service.

WEB-BASED MONITORING

As a central, web-based module for controlling and monitoring a fleet of QualiPoc Android Probes, SmartMonitor can be installed on any application server at the customer IT infrastructure or in the cloud. It is accessible from anywhere with internet access. SmartMonitor, connected to QualiPoc Android Probes that are placed in critical and strategic locations or deployed in cars, taxis or buses, delivers a constant flow of information about a mobile network's quality of service.

Targeted, 24/7, and unattended service quality monitoring and service level agreement verification in hotspots

Thanks to its smart design and self-healing functions, QualiPoc Android Probe continuously reports the perceived end-user service quality to its back-end SmartMonitor in real-time. QualiPoc Android Probes – installed in stationary and moving hotspots, including shopping malls, airports, business districts, trains, metros, etc. – in combination with SmartMonitor enable mobile network operators to ensure a stable quality of service where it matters most. Network and service instabilities, or errors that affect the end-user's quality of experience, are immediately detected; network and service operation centers are instantly alarmed so that they can take prompt action; companies with service level agreements can monitor whether the agreed service is provided.

24/7 and unattended large-scale data collection for network optimization (drive test)

QualiPoc Android Probes deployed in fleets, for example, in taxis, buses, couriers, etc., offer a cost-efficient way to collect measurements for optimization and enable mobile operators, infrastructure vendors, and testing service providers to continuously collect data from a real end-user perspective. The fleets are monitored via the web-based SmartMonitor application that displays the probes' status and results in cockpits and on maps. Tests are remotely configured and scheduled; the performance of each service is visible in a dedicated dashboard, displaying test results and alarms in real-time.

At a glance

- ▶ Web-based SmartMonitor application for Windows, Linux or OS X application server
- ▶ Informative dashboards, providing the latest results and status of the probes in real-time
- ▶ Intuitive campaign configuration and fleet operation
- ▶ Fast and easy registering of new QualiPoc Android Probes
- ▶ Tailored user roles offer an efficient and secure system and fleet management



REAL-TIME QUALITY SUPERVISION



REAL-TIME NETWORK SERVICE QUALITY MONITORING

It is essential for mobile network operators to immediately detect quality of service drops and get informed before the end-user experiences it. Using HTTP(s), SmartMonitor operates a fast and secure communications to all connected probes. This allows reporting measurement results and status updates from the QualiPoc Android Probes to SmartMonitor in real-time.

Encapsulation for deeper analysis

As a cockpit view, SmartMonitor uses powerful dashboards showing status and positions of all connected probes; it also displays an overview of all executed tests and their success rates. A smart filtering applied to all related elements in the dashboard allows an easy encapsulation of certain tests or probes for deeper analysis.

More details of detected problems

Analysis and statistics dashboards provide more detailed information about the probes' detected problems and the type of failure that occurred in each test type. KPI analysis shows the distribution of KPI values for each test type. Dashboards show statistical information about the distance each probe covered and the time it remained in a particular status (recording, idle, etc.).

Advanced, web-based GUI

The modern and intuitive user interface of the SmartMonitor facilitates operation and navigation: users find their information within a few clicks. The SmartMonitor user interface automatically adapts its layout to the screen size, regardless of whether monitored on a large screen in the office or while on the move on a mobile.

Live monitoring

In combination with SmartMonitor, QualiPoc Android Probe offers the unique live monitoring feature, displaying the monitor information of selected QualiPoc Android Probes on SmartMonitor in real-time.



COMPREHENSIVE BACK-END SOLUTION

With SmartMonitor, Rohde&Schwarz MNT offers a comprehensive and tailored back-end solution to remotely configure, control, and monitor the fleet of QualiPoc Android Probes and collect data for quality analysis and reporting.

Cockpit presents immediate results

The dashboards provide an immediate result overview of the service tests running on the QualiPoc Android Probes as well as information about the fleet situation. The filtering options in the dashboards allow encapsulating problem zones so that further actions can be directly initiated.

Intuitive campaign management

The intuitive campaign management on SmartMonitor offers an easy configuration of sequential and parallel jobs, also for a big number of connected probes. New tests are added via drag&drop and action items, such as “Forcing” or “Wait”, can be added at the desired position within the job. A powerful test verification service immediately checks the inputs to the test configuration, thereby preventing wrong inputs and making the user aware of any forgotten parameters.

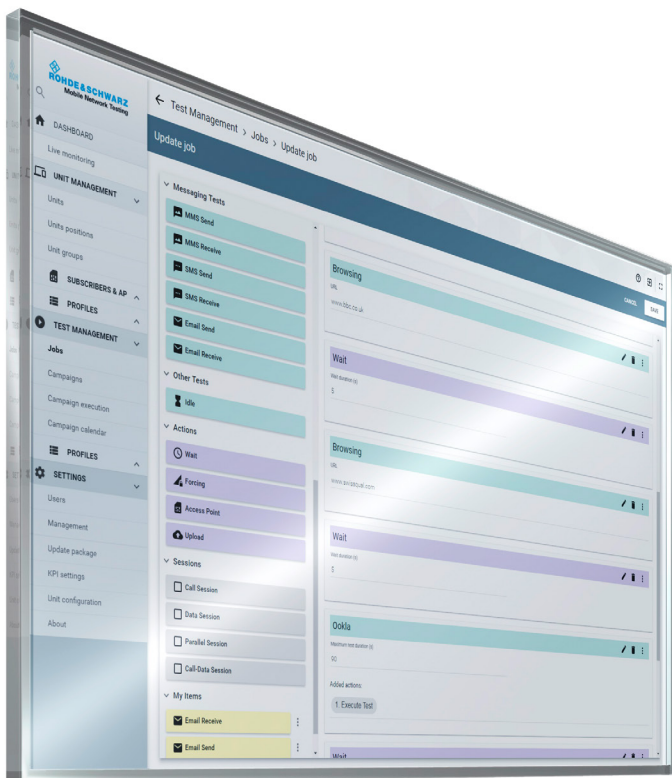
Alarming interface

SmartMonitor forwards alarms via multiple interfaces (SMS, email, SNMP, and JSON) to network supervisors or other monitoring systems.

Fast and automatic probe registering

Every QualiPoc Android Probe that registers to SmartMonitor automatically provides device information and subscriber number for an easy and fast registration. The fleet administrator can immediately assign the new registered probe to test campaigns.

Multiple dashboards and filter options on SmartMonitor help to detect problem areas. The direct link to the Rohde&Schwarz post processing NQDI database helps to get all mandatory and detailed information to drill down problems and find the root cause.



FLEXIBLE AND TAILORED FLEET AND SYSTEM ADMINISTRATION

OTA update

SmartMonitor offers an easy way to keep the fleet of QualiPoc Android Probes up to date. Simply select the QualiPoc version to which to upgrade and send the update command to the QualiPoc Android Probes for an over-the-air (OTA) update.

User and role management

The built-in user and role management of SmartMonitor allows system administrators to manage the set of users and assign tailored roles and access rights.



SOFTWARE SPECIFICATIONS

System architecture

Java Runtime that runs on Windows, Linux or OS X server, available as a deployed version at customer IT infrastructure or as a hosted cloud version by Rohde&Schwarz MNT.

Configuration data storage

SmartMonitor stores all configuration and high-level test result data into a MySQL database.

Technology

Secure communications technology is used to interact with probes, using HTTP(s) protocol. An application firewall installed on the application server secures SmartMonitor data and information against potential intruders.

User interface

The modern user interface, using an Angular Material design, is easy to operate and fully compatible with any size of display: whether displayed on a large desktop monitor or a smaller tablet screen, SmartMonitor adapts its layout automatically.

Dashboard

All test result KPIs are presented in powerful dashboards. At all times, the manager has an accurate overview of the network's current service quality and receives detailed status information of all QualiPoc Android Probes.

Probe management

QualiPoc Android Probes also include phone configuration and subscriber number when registering to SmartMonitor. This offers an easy and fast way to add more probes to SmartMonitor. Probes can be assembled into groups so that also the handling of large numbers is an easy task.

Campaign management

An intuitive and easy to operate campaign and test management offers fast and efficient test configurations in a modular way – also for large numbers of involved probes.

User management

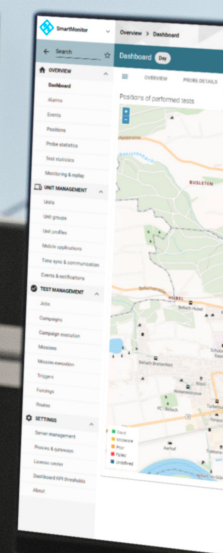
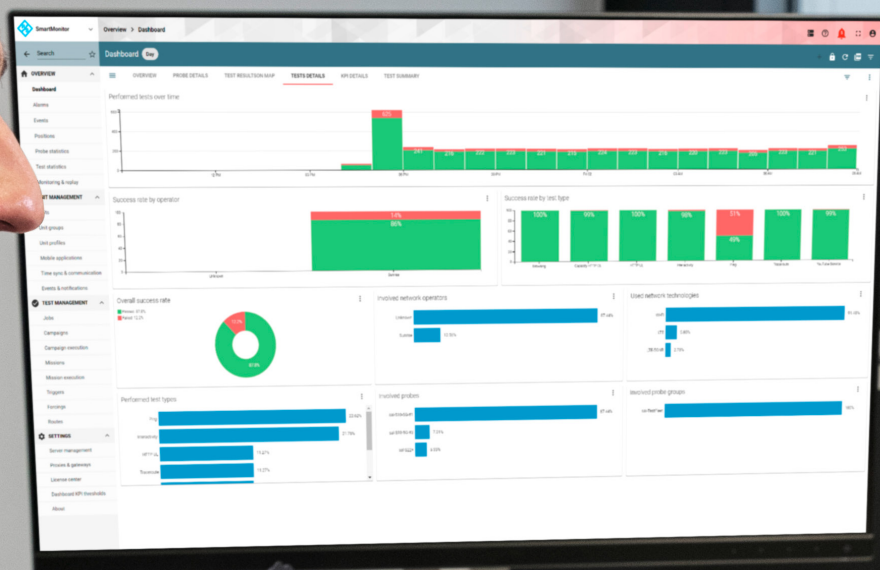
Multiple roles with different access levels (Admin, Manager, Test Manager, Viewer) are part of the built-in user management and allow system administrators to manage users and assign tailored roles.

COMPATIBILITY

Network probes

SmartMonitor supports QualiPoc Android Probes, which are available on a wide range of the latest Android smartphones, including Samsung, LG, HTC and Sony.

TARGETED AND 24/7 QUALITY CONTROL



Service at Rohde & Schwarz You're in great hands

- ▶ Worldwide
- ▶ Local and personalized
- ▶ Customized and flexible
- ▶ Uncompromising quality
- ▶ Long-term dependability

Rohde & Schwarz

The Rohde&Schwarz technology group is among the trailblazers when it comes to paving the way for a safer and connected world with its leading solutions in test & measurement, technology systems and networks&cybersecurity. Founded more than 85 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Mobile network testing

The company's broad and diverse product portfolio for mobile network testing addresses every test scenario in the network lifecycle – from base station installation to network acceptance and network benchmarking, from optimization and troubleshooting to interference hunting and spectrum analysis, from IP application awareness to QoS and QoE of voice, data, video and app based services.

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