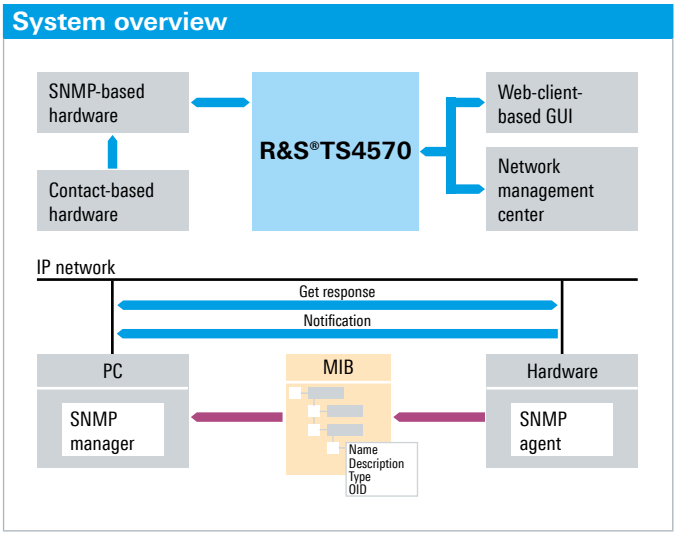
Flexible broadcast network management

SNMP based broadcast network monitoring & control Software

System overview



Your task

You are the operator of a countrywide TV network. The transition from analog to digital television increases the requirements on network management and network monitoring. Moreover, many network operators switch their transmitter sites over to unattended operation. This scenario calls for autonomous control of the systems in case of failure.

Another aspect to be considered is the reconfiguration of network monitoring. Because TV networks are constantly being adapted, the monitoring facilities also require consistent adaptation. Network operators must show their customers – the program providers – the quality of service that is output. Agile solutions are expected for this application as well.

Broadcast solution

The R&S®TS4570 system is able to fulfill all these requirements. It is highly flexible and uses standard components. The software operates on the basis of the simple network management protocol (SNMP) standard. SNMP offers the advantage of monitoring most of the network units. SNMP provides a wide variety of monitoring options for equipment such as TV transmitters, transport stream analyzers, uninterruptible power supplies, etc. The R&S®TS4570 makes it possible to poll, process and display the parameters involved. If limits are exceeded, the R&S®TS4570 can generate control commands.

The alarms of the individual units are bundled and automatically routed to other management systems. A user-definable web GUI indicates the current system status. The network operators can adapt the system themselves since this procedure requires no special programming knowledge.

Application

Multiplex control

The R&S®TS4570 software runs on a multiplex controller to gather all information from the devices connected. This setup is useful for high-power main transmitter sites where many devices are linked to one multiplex controller. Summary alarms can be created and sent off to a central monitoring application via SNMP.

Site control

In this application, the R&S®TS4570 acts as a site controller collecting data from all site-related units. Summary alarms will be created and sent to a monitoring center. This configuration is ideal for small transmitter sites, cable headends or satellite uplink centers where less equipment is involved.

Countrywide monitoring

Even countrywide monitoring can be performed using the R&S®TS4570. Depending on the broadcast network, a centralized R&S®TS4570 system can communicate with other R&S®TS4570 subsystems or directly with the equipment in the field. Rohde & Schwarz offers custom turnkey solutions and provides scalable service concepts to secure your investment in the long term.

Benefits

Easy to use

A graphical design interface enables the user to create monitoring and control profiles without requiring expert skills. Instead of having to write scripts for the creation of logical expressions, this graphical interface provides a touch and feel that is similar to Visio and the graphical programming language LabView.

The web-based frontend allows local or remote operation of the application.

High degree of flexibility

The application is fully customizable. All parameters can be set to meet specific requirements, e.g. the frequency with which object identifiers (OID) are to be polled or the definition of the device box that is to appear on the web GUI.

Wide application spectrum

The solution is vendor-independent and can be used as a centralized network management system or for monitoring equipment at a specific site, per multiplex, or per region. It is possible to create autonomous control logic to switch over transmitters, antennas or transport streams when faults are detected.

Performance

Tests have shown that 300 OIDs per second can be polled via LAN without any loss of computing performance. There are no limits for setting up monitors, controls, summary alarms, logical expressions or device elements.

Key features

SNMP manager

- Hardware- and vendor-independent
- Support for SNMP versions 1 and 2
- Support for parallel contact-based equipment

Web browser based front-end (GUI)

- Including mimic diagrams, user controls and event log viewer

SNMP agent

- Interface to network monitoring applications
- Generation of SNMP notifications
- Remote monitoring and control of R&S®TS4570 systems

Expression engine

- Interface between SNMP manager, web GUI and SNMP agent for executing logical expressions

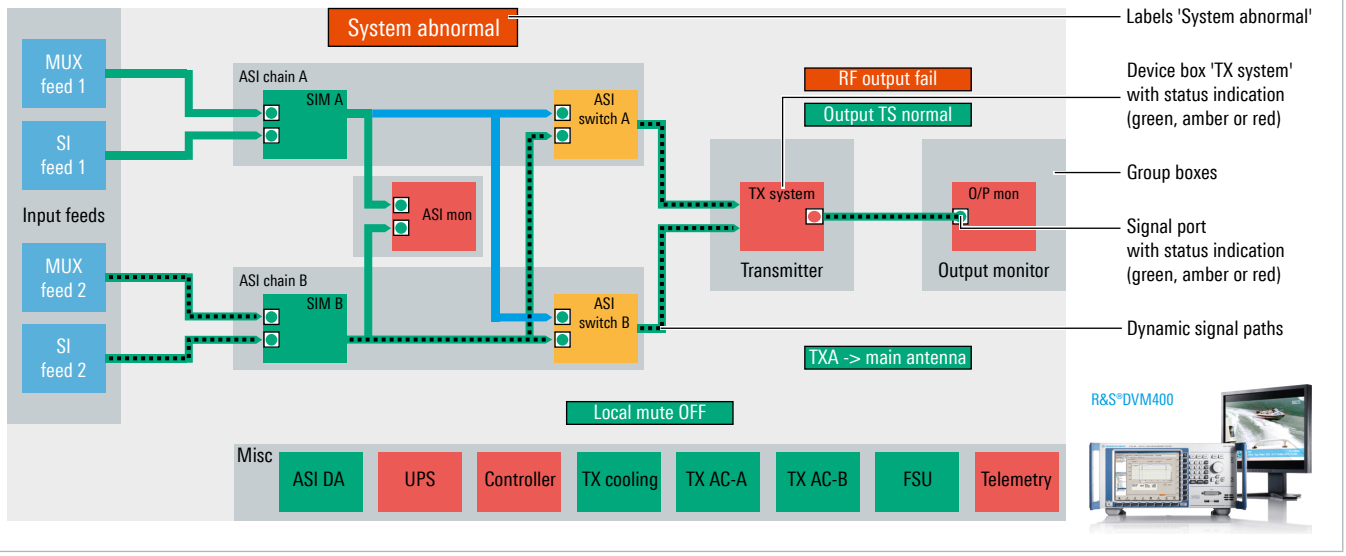
Dashboard

- Indicates connection to devices
- Provides overview and status information of the linked equipment

Required hardware

Dual-core PC with Windows XP, 2 Gbyte RAM. Special interfaces have been developed to support a customized controller. As a result, the hard disk condition can be monitored and a watchdog timer maintained. To monitor simple contacts of switches and cooling systems, for example, an industrial I/O system can be offered.

Example of a mimic diagram of the web GUI



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