



## SITQ-aqms

# TETRA

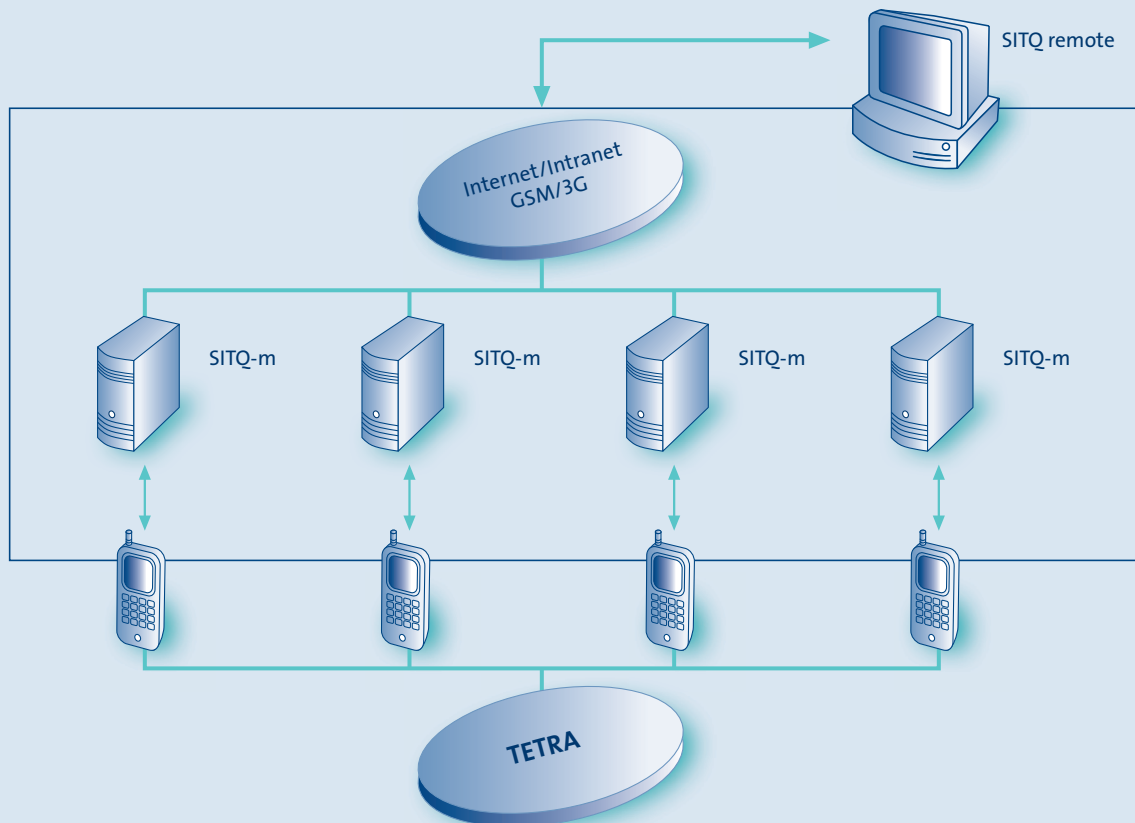
## Active Quality Monitoring System

### Overview

A communications network based on the TETRA standard EN 300 392 consists of user terminals linked via the TETRA Air Interface to the TETRA infrastructure network. The operator may check the performance of the network by monitoring the relevant Key Performance Indicators (KPI) with the SITQ Active Quality Monitoring System.

Basically it is called an active system because it stimulates events in the TETRA network by means of some dedicated TETRA test terminals. Those stimulated test events like various kinds of calls and Short Data Services (SDS) will be monitored, measured and processed according to operator defined requirements.

The Active Quality Monitoring System uses standard SITQ products in order to implement a cheap network wide performance measurement system. The following figure explains the general test system set-up.



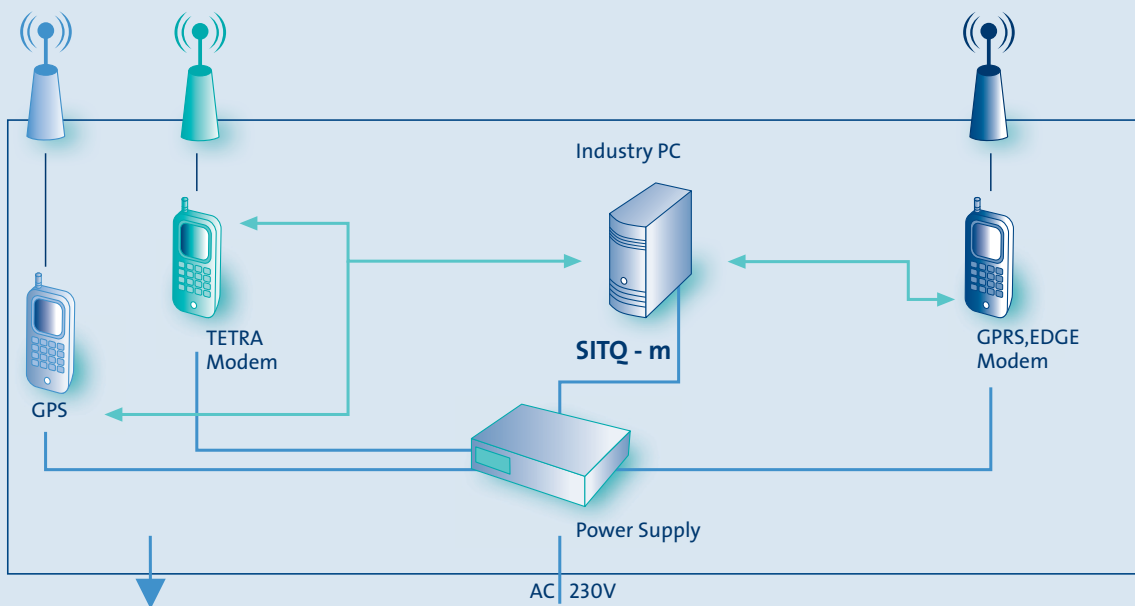


## SITQ Products Used

“SITQ-remote” is a PC application which acts as the central control station and operates several sparsely distributed “SITQ-m” installations.

“SITQ-m” is also a PC application but this one is designed to automate testing. It’s a test script based system. Standard test sets are available and additional tests can be added by customer or SITQ. The following picture explains the details of “SITQ-m”.

### Autonome aqms Test Probe



## Active Test Application

The test idea is to spread out a number of active test probes in the network. Those locations do not need engineers on-site but only a GPRS/EGPRS or LAN link to the central test lab for remote control. Test scenarios are implemented in a simple test language (JAVA style). Normally the implementation consists of test cases which can be concatenated in test suites. Additional test cases and suites can be easily designed and added.

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# TETRA

Active Quality Monitoring System

TETRA supports various kinds of half and full duplex calls, short data services, etc. All these services can be configured and executed by means of those test cases and detailed logs will be recorded.

If desired also speech quality measurements according to ITU-T P.862 (PESQ) can be performed.

The test system is designed to run 24hours/day and 7days/week without any human interaction. The test engineer has full control on what, how often and when testing is performed in an automatic mode. Additionally there is a manual mode to remotely control each test probe in the field.

At the central control station traffic lights indicates the status of each probe, e. g. showing that the probe is executing a test, transferring protocol data or being idle.

The test log files are automatically uploaded to the central test lab where a data base is filled. A parser application can aggregate the test reports according to the operator's needs.

3rd party standard network analysis and performance report tools, e. g. RANOPT/Aircom, can be used to generate graphical and numerical performance reports. Input data file formats like \*.csv are supported or can be customized to fit into the given report tool.

All probes are designed to be free of maintenance. Their operation is supervised by a watch dog so that in case of a malfunction of any part of the probe a dedicated individual or master reset can be performed. The probe automatically registers with the central control station after power-on or reset.