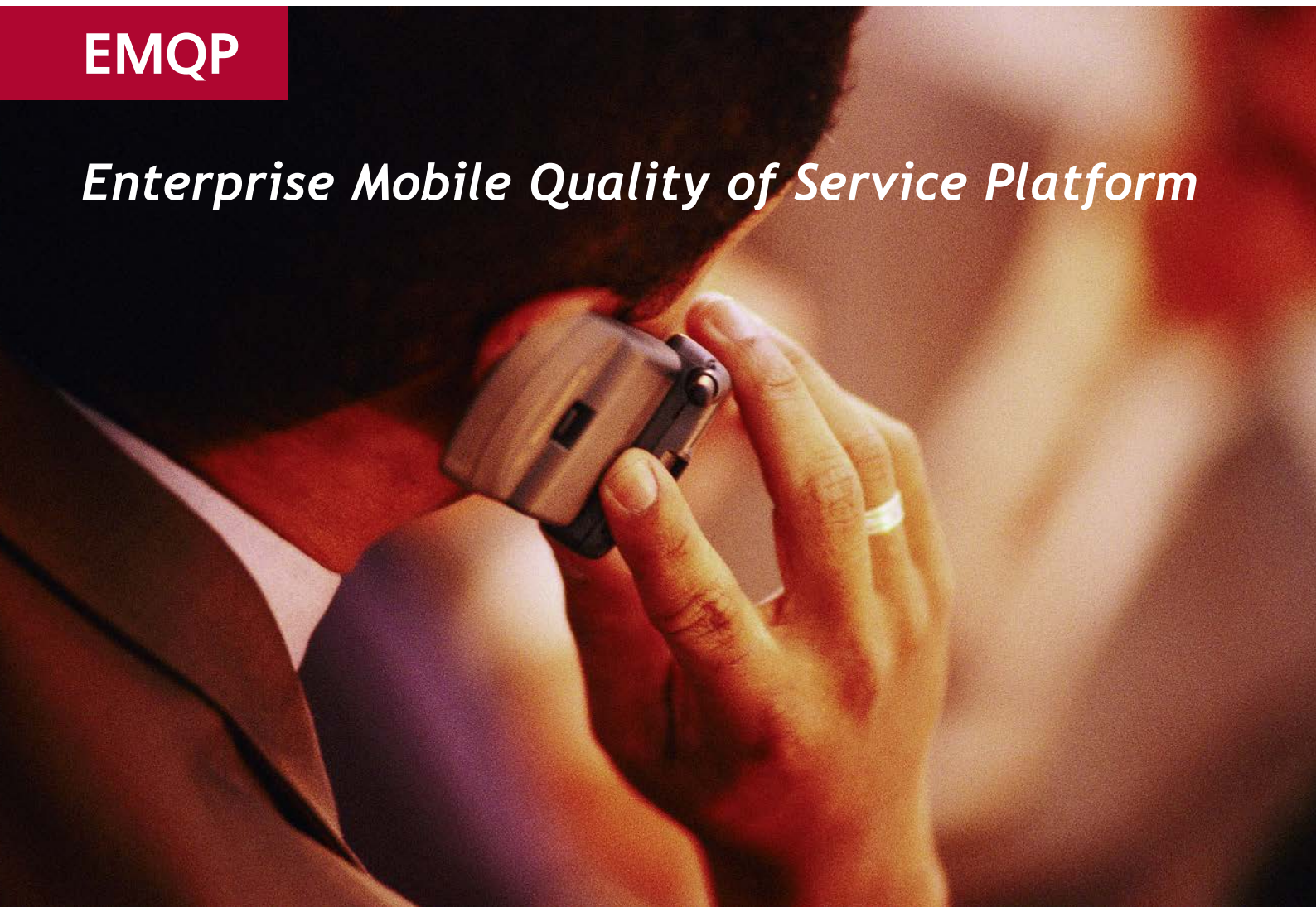


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EMQP

Enterprise Mobile Quality of Service Platform

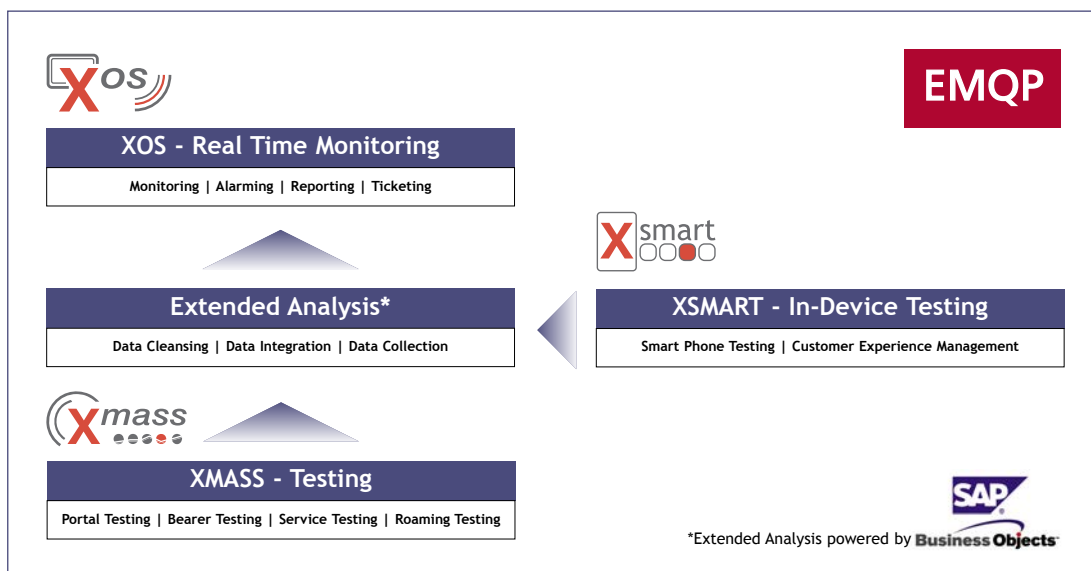


Most complete testing platform to assess the quality of your services

The liberalization of the telecommunications branch has led to the fast growth of services. Both the quality and the variety of services have profited as a result. From day to day the offering will be bigger and more complex.

Testing Area

- Bearer Testing
- Fixed Network
- LAN/DSL Testing
- Data Services
- Messaging Services
- Portal Testing
- Voice Services
- Voice Quality
- Video Services
- Video Quality
- Roaming Services
- VOIP Services
- Drive Testing
- Mobile Testing
- In-Device Testing



EMQP architecture overview

An operator's network, which is made up of manufacturers of mobile devices, network providers, service providers, content providers, portal providers, is built up in order to deliver a service as fast as possible to the end customer.

In doing so, new heterogeneous infrastructures are emerging to support the data creation and transfer to the end customer. The new task to be solved is coordinating these systems and achieving trouble free communication. Otherwise the services, irrelevant of how good they are, will never reach the end customer. Result - customer satisfaction sinks, time to market will be increased, profits decline.

PIXIP.NET Enterprise Mobile Quality of Service Platform (EMQP) makes it possible to test these complex services, inside of a heterogeneous environment, with possible errors and performance problems being detected quickly.

EMQP provides:

- Centralized Enterprise Platform for End-to-End Testing
- Centralized Enterprise Platform for Real Time Monitoring
- Centralized Data Ware Housing and BI Solution
- Centralized Enterprise Reporting Platform

What does Enterprise mean?

- ⑥ Network Testing, Service Testing, Portal and VAS Testing, Roaming, Voice and Video Quality... Test all of these with one Test System.
- ⑥ Distributed unattended Testing, Drive Testing, In Device Testing... Use one system to cover all kinds of tests.
- ⑥ Test Preparation, Test Execution, Monitoring and Reporting... Cover the complete testing chain with just one platform.
- ⑥ Perform central analysis of enterprise data collected from various data sources.
- ⑥ Continuously control the level of quality with a central monitoring and alarming platform.
- ⑥ Feel your customers' real experience with your services and their quality.

Test through all Layers, from Network to Device!

Network Testing, Service Testing, Portal and VAS Testing, Roaming, Voice and Video Quality... Test all of these with one Test System

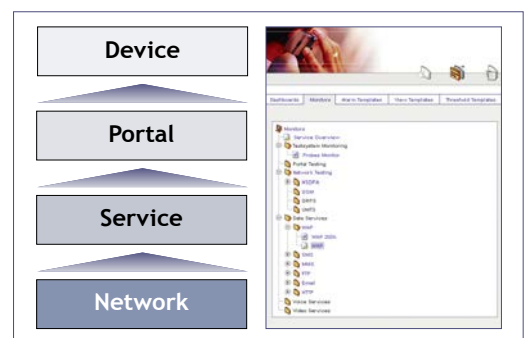
Available Test Modules:

- GSM
- GPRS
- EDGE
- UMTS
- HSPA
- LTE
- CDMA2000
- WiMax
- LAN/DSL
- Basic Call
- Supplementary Call
- IVR
- VMS
- Voice Quality (MOS, PESQ, POLQA)
- HTTP(S)
- WAP 1/2
- FTP
- PING
- DNS
- TCP/UDP
- Video Streaming
- E-Mail
- Video Quality (PEVQ)
- Video Telephony
- PTTOC
- VOIP (SIP)
- LBS
- VAS
- Music download
- Logo download
- Ring tones download
- Inbound Roaming
- Outbound Roaming
- IREG, TADIG, GRQ
- Revenue Assurance
- SIM-Box Detection

It's now possible with one system to monitor the availability and quality of all services on offer, from the individual network services through to portal services.

Furthermore the quality of these services can be verified using a range of diverse test devices.

- **Network Testing** - GSM, GPRS, EDGE, UMTS, HSPA, LTE, CDMA2000, WiMax, LAN/DSL
- **Voice Service Testing** - Basic Call, IVR, VMS, Voice Quality (MOS, PESQ, POLQA)
- **Data Service Testing** - HTTP, WAP, FTP, PING, DNS, Video Streaming, VOIP, TCP, UDP
- **Messaging Service Testing** - SMS, MMS, PTTtoC, E-Mail, Instant Messaging, Black Berry®
- **Video Service Testing** - Video Streaming, Video Quality, Video Telephony
- **Portal Testing** - LBS, VAS, Music, Logos
- **Roaming Service Testing** - Inbound, Outbound, IREG, TADIG, GRQ



EMQP covers all testing layers - from Network to Device

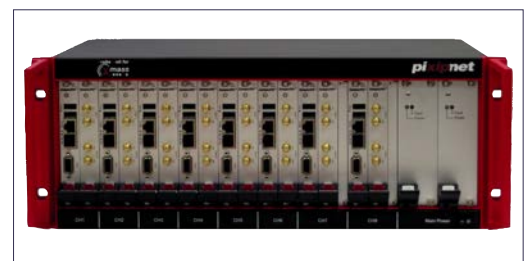
Distributed unattended Testing, Drive Testing, In-Device Testing... Use one system to cover all tests

Available Test Procedures:

- Stationary Distributed Testing
- Unattended Testing
- On Demand Testing
- Drive Testing
- Indoor Testing
- Outdoor Testing
- On Device Testing

Make use of different test devices for different test executions and combine the results with each other to achieve an accurate picture of your services.

- **Stationary Distributed Testing** for the purpose of monitoring (i.e. SLA)
- **Unattended Testing** for flexible mass-testing, anytime and anywhere
- **On Demand Testing** for verification tests
- **Drive Testing**
- **in/outdoor Testing**
- **In-Device Testing** - using Smart Phones



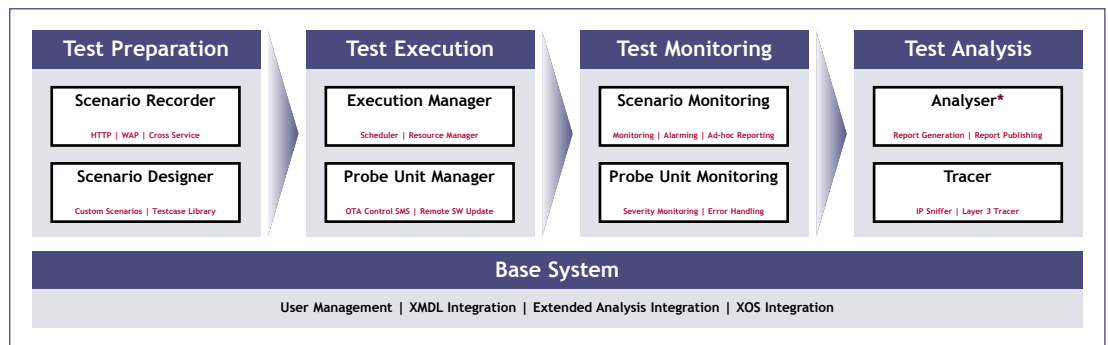
EMQP provides highly stable test probes

Test Preparation, Test Execution, Monitoring and Reporting... Cover the complete test chain with just one platform

Take advantage of the flexibility our system components offer to help you control everything from test preparation to execution through to analysis of the test data.

EMQP Test System Components

- Scenario Recorder
- Scenario Designer
- Execution Manager
- Probe Unit Manager
- Scenario Monitoring
- Probe Unit Monitoring
- Analyser
- Tracer



EMQP covers the whole testing chain providing all needed components

*BusinessObjects Enterprise powers the management and secure deployment of specialized end-user tools for reporting, query and analysis, performance management, and analytic applications on a proven, scalable, and open services-oriented architecture. BusinessObjects Enterprise gives end users information, integrated directly within a portal, extranet, desktop productivity tool, and performance management applications.

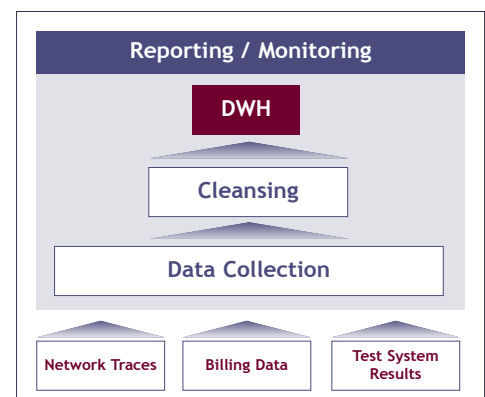
Perform central analysis of enterprise data collected from various data sources

Improve the analysis process by complementing and extending your own data with data from other data sources. Extended Analysis includes an integrated ETL tool** and a palette of adapters for various test data sources.

Available Data Source Connectors:

- SQL
- XML
- Flat Files
- CSV
- EXCEL
- SOAP
- JSON
- REST
- HTTP
- FTP
- NFS
- ASCII
- Syslog
- SNMP
- CORBA

- **Integrated ETL Tool**** - Extract, Transfer and Load various data from different data sources
- **Prepared Datamarts** - On-Demand Analysis
- **End-to-End data** - Complete set of Measurements and KPIs per Service
- **Pre-Calculated KPIs and KQIs** - Pre-Calculation of KPIs and KQIs during the ETL Process
- **Billing Data Integration** for Revenue Assurance
- **GIS and MAP Integration** - Online and Offline Maps to show coverage and Quality



EMQP improves analysis performance and quality combining data from various sources

**SAP-BusinessObjects Data Integrator™ is the most productive and scalable data integration platform for Business Intelligence. It allows organizations to easily explore, extract, transform, and deliver data anywhere, at any frequency. Data Integrator helps ensure that BI end users are always working with information that is timely, accurate, and trusted.



Detect Problems before your Customers do!

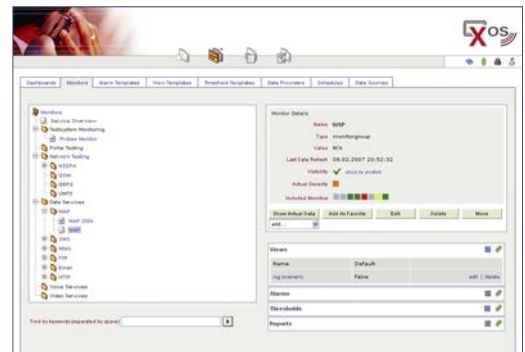
Continuously control the level of quality with a central monitoring, alarming and ticketing platform

Detect the problem early, be informed about the problem and accompany the problem through to problem resolution - all of this is possible using the central monitoring system XOS.

Available Alarming Technologies

- SMS
- Email
- JMX
- SNMP
- JMS
- SOAP
- Java Script

- **Flexible Data Visualisation** - XSL, Java-Script, Flash Technology
- **Flexible Alarming** - SMS, Email, JMX, SNMP, JMS, SOAP, Scripts etc.
- **Flexible Thresholding** - Java Script
- **Integrated Ticketing** - Trouble shooting
- **Business Objects Integration** - Reporting
- **BIRT Integration** - Reporting



EMQP provides a central Monitoring and Reporting Platform

Uncover your customers' real experience when using your Services

Let your customers report the service quality by using the XSMART Apps for Apple iOS®, Android®, Black Berry® and Windows Mobile®. Create detailed reports about Network- and Service quality correlated with GPS positioning data and Network Information like PLMN, Cell-ID, LAC-ID, etc.

Analyze the real device dependent network throughput and data transmission performance.

- **Scenario Definition** - Create either simple or complex test scenarios remotely.
- **Test Execution** - The Tests can be started by the participants at any time "on demand". Simply push the start button.
- **Data Evaluation** - The Test results contain specific, non-personalised information. The Test results can be displayed on Maps and Reports.



EMQP provides a real customer experience management platform

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