



QCOM ComponentSuite for NMS / EMS Development

Motivation

The typical NMS or EMS today is built to support a large feature set across a wide range of technologies. These then have to be tailored for each particular NE type. This may be OK for companies with time and money to burn. But it is not always so. At the same time, high quality is also essential for competitiveness.

The motivation was to provide a large common feature set coupled with new software technologies such as Java to support management of different types of NE's in the shortest time interval possible and, thus, **achieve significant cost saving** in the process. Why redo similar Management Functions for each NE ?

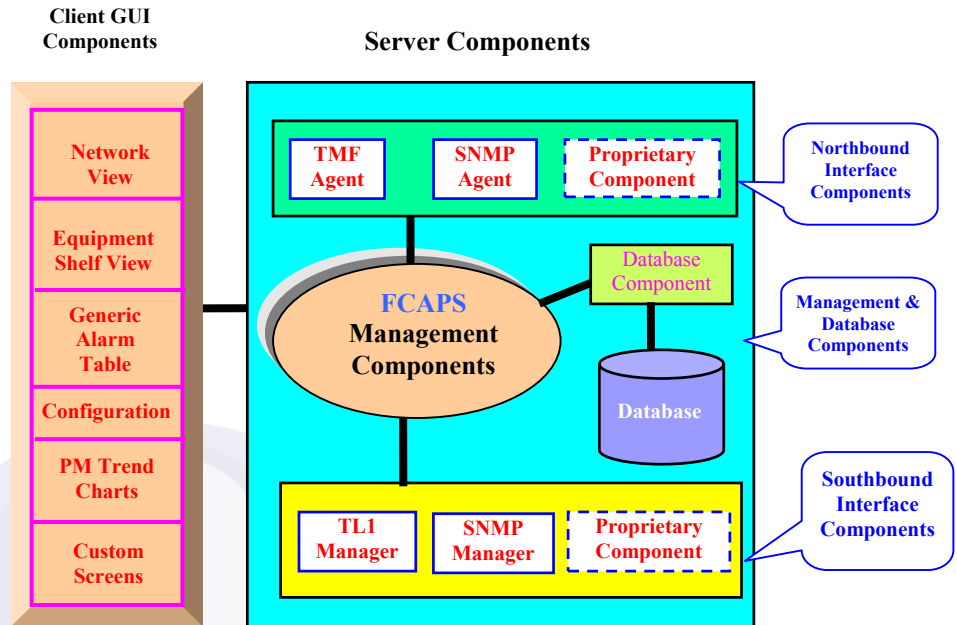
The **QCOM ComponentSuite** help you to achieve this by breaking the Management System functions into small functional components, each of which is well-tested and has well-documented APIs.

Overview

The JAVA-written components provide **Fault, Performance, Configuration** and **Security Management** for use in Management Systems that support data, SONET and DWDM technologies. Major components include a Northbound Interface component, a Management and Database component, a Southbound Interface component and a GUI can also be added. The standard Northbound Interface agent is TMF CORBA or SNMP but proprietary interfaces are also available through custom development. Likewise, the standard Southbound Interface managers include TL1 and SNMP with optional proprietary interfaces. Management components are provided to meet those specified in standards documents, e.g., Telcordia GR-3000. Most of the commonly specified FCAPS features have been developed so the required features can be incorporated into the final EMS using QCOM software tool called the **FasTrack Conductor (FTC)**. FTC allows for the construction of an NMS / EMS that has a set of features that matches a set of user and Managed Element requirements. Since all Components are fully documented with APIs, they could, as well, be incorporated as modules into your existing management systems.

Platform Options

Because the components have been developed in JAVA, they can be run on many different platforms, such as Solaris, HP-UX, Linux and Windows 2000 / NT. Moreover, both **RMI** and **EJB** versions of the QCOM components are available.



NEMS ComponentSuite Architecture



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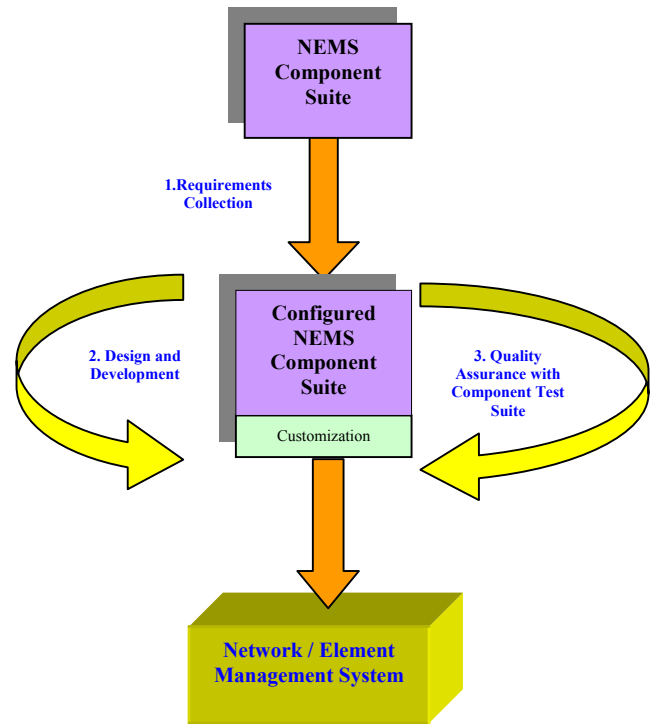
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Benefits

QCOM's component approach offers numerous advantages for the construction of a NMS or an EMS. They include :

- **Reduced Time-to-Market**
Whether QCOM builds the NMS / EMS or you build it, many of the software components are available off-the-shelf to jump-start the whole process.
- **State-of-the-art Technology**
With Java technology, the software will be more maintainable and easier to add in new features and functions.
- **Platform Independence**
Developed totally in Java, you can run the Components on practically any of the commercially available platforms such as Solaris, HP-UX and Windows NT/2000.
- **Conformance to Standards**
The data models associated with the Management Components are derived from TMN and TMF standards, which help ensure that external interfaces will inter-work with other standards-compliant management systems.
- **Cost Saving**
Availability of ready-made components **significantly brings down the overall cost of NMS / EMS Development.**



NMS / EMS Development Process using the NEMS Component Suite

GUI Components

The **GUI** components simplify the many management tasks provided by the NMS / EMS. The user-friendly interface allows users to get detailed views of the managed elements, manage alarms and performance data and perform point-and-click provisioning activities. A topological map displays the elements, subnetworks and their associated interconnectivity and provides all the menu structures.

Ensuring Service Availability through QCOM Components

Network assurance is the responsibility of the **Fault and Performance Management Components**. Alarms, once processed by the management software using standard alarm filters, are then displayed on the network map in tabular form using color-coding to indicate the severity. Alarms can be managed by acknowledgement and manual clears. Alarms are also available to other NMS / EMS's over the TMF/CORBA or SNMP interfaces. The performance module allows users, both GUI and northbound users, to set threshold levels and to enable PM parameter data collection. The PM data is stored in a database for historical data reporting purposes.

Creating Services

Network realization is the responsibility of the **Configuration Management Component**. The CM module discovers the manageable network resources and populates its local database with both physical and logical elements and their associated state information. The provisionable properties associated with physical resources can be set, modified, backed up or restored. The logical resources, such as time slots, can be assigned to protection groups or cross-connected in order to create an end-to-end services.



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