FORM

Script Based Technology Gateway

Face The Challenge

Q3ADE 3G represents the latest generation of integrated telecommunication management platforms, focusing on solving the major challenges of systems and telecommunications management:

- Increasing technology diversity
- Growing system complexity
- Mounting security threads
- Tougher competition

To meet these challenges Q3ADE offers:

- ☑ Model Driven Integration of all Leading Management Technologies
- ☑ Highly Scalable and Distributable System Architecture
- ☑ Single-Sign On and Inter-Realm Security Architecture
- ☑ Numerous Business Application Integration Paths

Model Driven Architecture Drives Integration

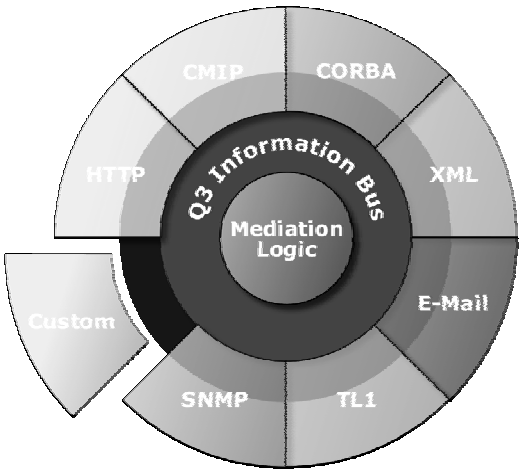
Q3ADE 3G is a fully integrated communications platform bridging all the leading management technologies and the leading business applications technologies into a homogeneous information base.

The key to handle the growing technology diversity is the Model Driven Architecture of Q3ADE.Although your management data may be captured via a wide range of communication technologies or data storage technologies, they are all presented to your business applications in a homogeneous technology-independent form. Your business logic will be able to perceive information from a wide range of sources, all the way from a flat data file on the network or a real-time temperature sensor, to a highly complex Mobile Telephone Switch, as one big virtual information store.

Q3ADE 3G enables your application developer resources to concentrate their know-how on the actual information handling rather than low-level data transformation, protocol translation, security issues etc.

Single Sign-On And Inter-Realm Security

The increased integration, and enabling of management information, inevitably leads to increased security risks. This requires an increased focus on your system's security mechanisms.
Q3ADE 3G provides you with an integration of the different security technologies that enables centralized security profiling and auditing across security realms.
The users of the various Q3ADE 3G services only have to go through a single authentication protocol to get access to all resources according to their individual access profiles.
Q3ADE 3G combines the administrative savings of an integrated security scheme with the benefit of an S.O.A. security framework.



Scalability Through Distribution

The Q3ADE 3G system architecture is based on the concepts of TMN (Telecommunication Management Network), a highly advanced distributed client/server based architecture that enables you to cope with practically any capacity requirement by scaling your management system from a retail Windows/PC workstation to a highly distributed multi-host and multi-processor Solaris Server network, or even a Linux-based mainframe.
The deployment costs of Q3ADE 3G will scale with the size of the application, not with the complexity of the technology.

Customers Require Business Applications Integration

Systems and Telecom Management can no longer be considered a single, stand-alone application. Customers demand services that require business applications to exchange information in real time. Q3ADE 3G provides you with a growing range of alternative Business integration paths including CORBA, ODBC, XML, Java and SOAP.

Business applications are also frequently changing, and are notoriously short-lived. Solutions are often expected overnight to meet the demand. The traditional methods, and the related cost, of developing Systems/Telecom Management applications are simply unacceptable in this context.

Q3ADE 3G includes facilities like a high-level scripting engine that enables you to produce running business integration solutions at a fraction of the time and cost of traditional systems/management applications.

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With Q3ADE 3G, the benefits of easy integration with existing business applications is merged with a fast deployment-grade development path for future extensibility.

Adapting For The FORM Framework

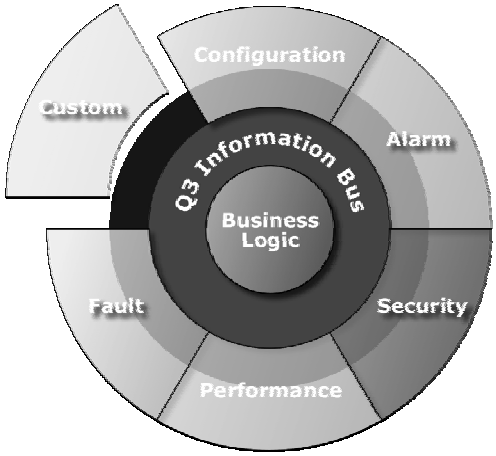
The development of a Service Level Agreement repository as a component for the FORM trial systems has been used as a case for the enhancement of the UHC Q3ADE TMN platform towards an integrated Telecommunications & Business Management Platform.

The XML interface to the SLA Repository is an example of a scribt based application based on Q3ADE scripting language LMIF.

A dynamic web-server has been developed, that enable flexible dynamic PHP-like web-pages based on LMIF.

A library of Java GUI components has been developed for common management application functionality, such as MIB-browsing, alarm management, map views etc.

Since true cross-technology domain integration demands a solution of the security issue, UHC initiated the design of a single-signon inter-realm security architecture.



Q3ADE 3G Technical Specification

SUPPORTED OPERATING SYSTEMS
Windows NT, Windows 2000, Windows XP, Solaris 2.6, RedHat Linux*) 7.1

TMN	CMIP over RFC1006[SSL/TLS*)], CMIP over Tp4, CMIP over X.25
Languages & APIs	GDMO, ASN.1, LMIF (Q3ADE's script-based automation language) , Q3ADE Agent Developer Environment, CMIS API for MFC, Internal CMIS API for C++, CMIS API for Java
Security	Q3ADE DSS*) (Directory Service based on X.500 and Kerberos), RFC1006/SSL*), Q3ADE ACS*) (Resource based access control), X.740 based Auditing
Others	Distributed Event Filtering/Forwarding/Logging (X.734, X.735), Distributed QOS monitoring (X.738, X.739, Q.822), Q3ADE Q3IM (Process Configuration), Q3ADE MM (Dynamic Meta Data, X.750) Q3ADE ALM (Distributed Alarm Management)
SNMP	SNMPv1, SNMPv2c, SNMPv3 over UDP
Languages & APIs	SMIv2, Internal SNMP API for C++, via CMIS API for Java and CMIS API for MFC, LMIF Security SNMPv3, SNMP USM, X.740 based auditing, gateway to Q3ADE DSS*)
Others	Agent Auto-discovery, Agent Availability Monitoring, Trap Filtering/Forwarding/Logging, CMIS-SNMP gateway (TMF IIMC spec)
CORBA	IIOP v1.0, GIOP 1.0
Languages & APIs	IDL, Internal IIOP API for C++, Q3ADE Agent Developer Environment
Security	GIOP over SSL/TLS, gateway to Q3ADE DSS*)
Others	CMIS-via-CORBA (OMG JIDM spec)
WEB	Q3ADE HTTPGW (Web server): HTTP v. Q3ADE SMTPGW (e-mail server): SMTP v. (e-mail service)
Languages & APIs	HTML, LHP (Q3ADE server scripting language LMIF embedded in HTML), LMIF, XML parsing
Security	SNMP USM, gateway to Q3ADE DSS*)
Others	Agent Auto-discovery, Agent Availability Monitoring, Trap Filtering/Forwarding/Logging, CMIS based Data query language
TL1	TL1 MML over TCP/IP
Languages & APIs	GR833 TL1, CMIS API for C++, CMIS API for Java, HTML, XML
Security	Q3ADE DSS, Q3USM, X.740-based auditing
Others	Script-based Object Modeling, Meta-Syntax Definition, mediation with other protocols
GUIDO	LMIF over TCP/IP, HTML over HTTP
Languages & APIs	LHP (HTML/LMIF based Server scripting) CMIS API for Java
Security	LMIF challenge protocol, SSL/TLS, RFC 2617
Others	GUIDO Alarm Management GUI, Dynamic drill-down, GUIDO Graphics components library

OTHERS

Q3ADE PODB:	Persistent Object Data Base. Object Oriented, high capacity
Q3ADE ODBCGW:	ODBC Support via LMIF and C++ Q3ADE
FSGW:	File System Gateway. Direct file system access via Q3

Information and Contact

Further information on Q3ADE 3G is available on http://www.uhcommunications.com

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