

Solution Overview

ALCATEL

As a world leader in the high-speed access and optical transport market, Alcatel is a major player in the area of telecommunications and the Internet. With its expertise in communications systems, its line of products and services as well as its strong global presence, the Company can anticipate its customers' needs, from operators and Internet services providers to businesses and consumers.

Challenge

Alcatel required a CORBA interface for Fault, Provisioning and Configuration management to one of their ADSL Service Provider customers. In-house development capacity could not meet the customer requirements for the delivery of the interface, leading Alcatel to look for solutions using external architects and developers. They decided on a team of experts from Vertel to develop the interface. Vertel was chosen because of its vast knowledge and experience developing network management using CORBA.

Solution

Vertel developed the interface using the Vertel Interface Framework. The solution provides a configurable user interface that can accommodate flexible mapping and model definition changes, vital for fast turnaround during product and configuration upgrades. Implementing the solution using a component model allows for localized changes and updates, again vital for field operations by Alcatel's customer.

Benefits

Alcatel eliminated approximately six months of development time that would have been required for their in-house developers to become experts on the CORBA standards and the associated implementation tools such as CORBA Telecom Logging service, Naming service and Event service. Vertel was able to develop the interface within both the Alcatel budget and delivery timeframes which led to further development work for Vertel in this area.



Connecting systems, software and carriers



ALCATEL

CORBA Interface to ADSL Element Management System

Figure 1 depicts a logical architecture of broadband networks including a Digital Subscriber Line Access Multiplexer (DSLAM). ATM Subscribers Access Multiplexer (ASAM) from Alcatel is a widely deployed and commercially successful DSLAM.

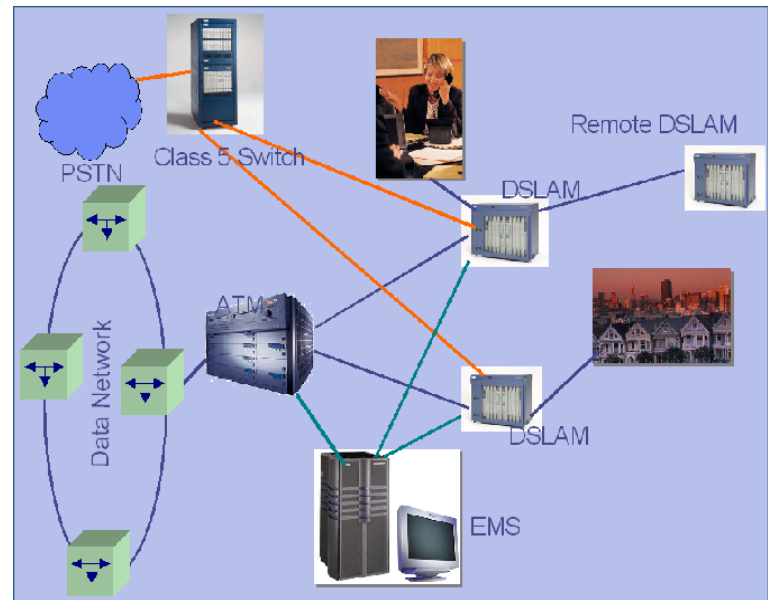


Figure 1: DSLAM and Broadband Networks

Vertel was chosen for this project because of its substantial experience in CORBA and management interfaces for telecom equipment.

Service providers use the CORBA interface to manage the DSLAM for subscriber provisioning, fault management and equipment configuration.

The solution was developed on a Solaris platform using Vertel's CORBA Interface Development framework, C++ development tools and other 3rd party CORBA Services. It is completely compliant with CORBA standards and does not depend on vendor-specific features. It provides a flexible command-mapping feature that, in most cases, allows changes to EMS commands without affecting the CORBA interface.

The CORBA interface components include *topology*, *connectivity*, *equipment*, *ATM profiles*, *ADSL profiles* and *performance* objects. The solution uses a layered architecture to provide flexibility and to enable loose coupling of mediation interfaces. Horizontal partitioning of the solution in various orthogonal components and

layered architecture guarantees incremental extension of the interface without substantial effort.

The solution uses Telecom Log Service, CORBA Naming Service and CORBA Notification, as defined in the T1M1 framework (Figure 2).

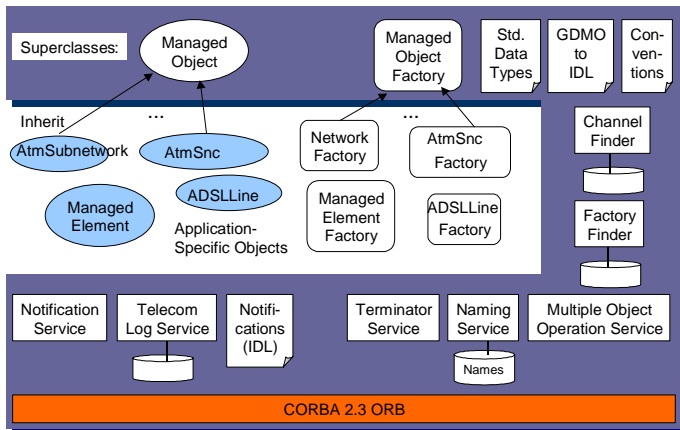


Figure 2: T1M1 CORBA Framework

Overall structural architectural robustness is further enhanced by efficient and appropriate use of the queues and concurrency thread in the physical architecture of the solution. (Figure 3)

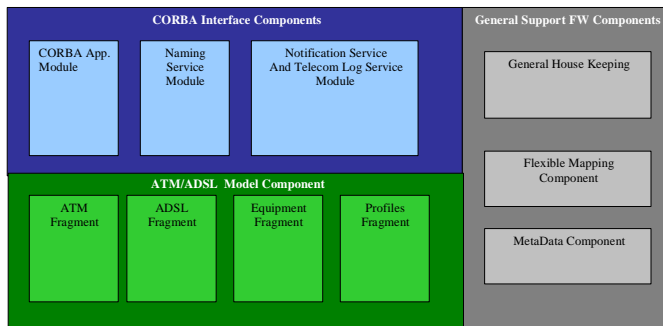


Figure 3: CORBA Interface Structural Components

The IDL for this solution is derived from ITU, ATM and ADSL standards. Both CORBA-based and GDMO/CMIP-based network management standards were used in developing this solution. Vertel's vast expertise in both technologies enabled blending features from both technologies to develop an optimum solution.

Solution Highlights

- Flexible mapping – a data-driven mapping
- Component based solution
- Provides subscriber provisioning, fault management and equipment configuration.
- Based on the T1M1 CORBA framework.
- Designed using IDL components from ATM, ADSL and ITU standards.



21300 Victory Boulevard, Suite 700
Woodland Hills, CA 91367
(818) 227-1400 • (818) 598-0047
www.vertel.com

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