A CORBA-based Architecture for Network Control, Management, and Services Integration

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Presentation Outline

- Motivation
- Application example
- Architecture
- Summary

Motivation

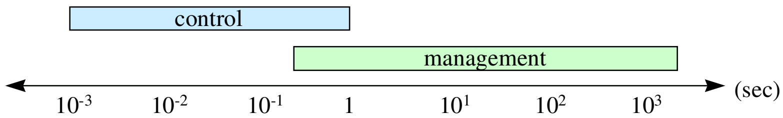
- Needs
  Sophisticated, conceptually simple architecture
  to support networked multimedia applications.

  - ***Easy service creation and deployment***
  - ***Open interface*** to network elements, ***integrating control and management*** functionality

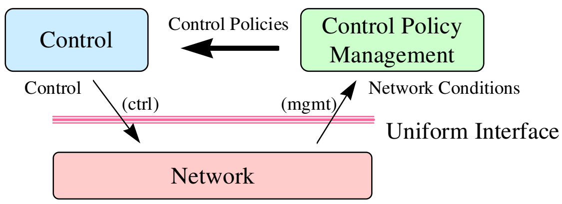
- Seeds
  CORBA as a foundation.

Integration of network control and management

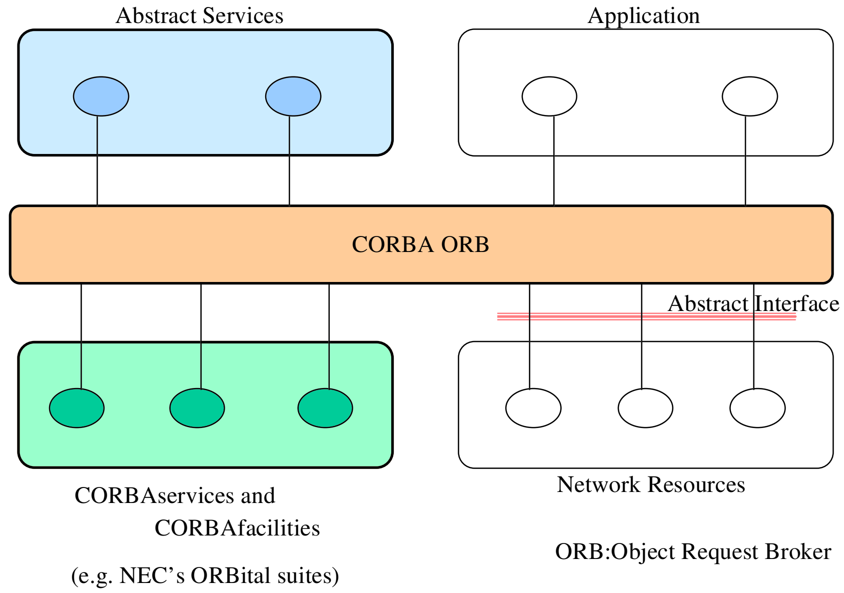
- Functions are beginning to overlap.



Example: Dynamic adaptation of control policies
(e.g. CAC algorithm) based on network conditions.



Horizontal Architecture with ORB



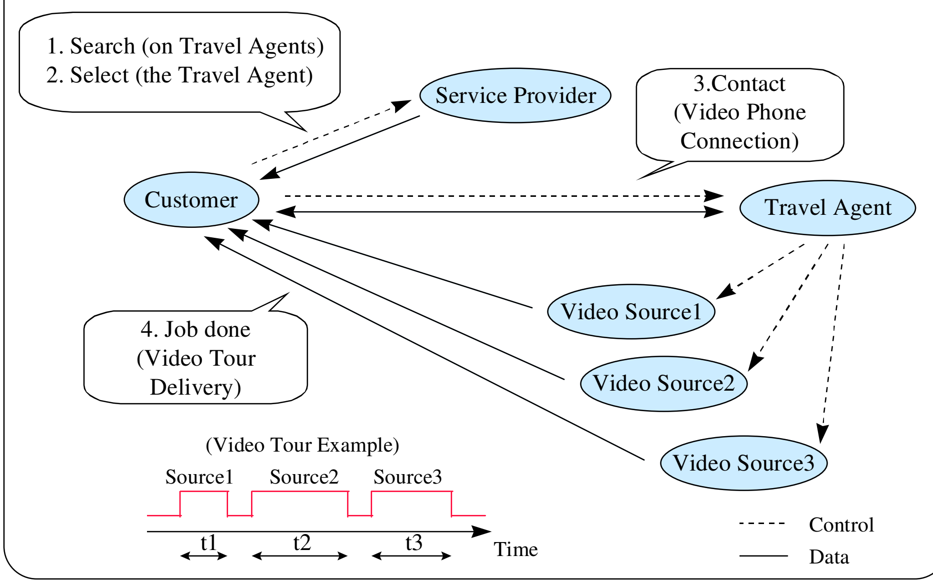
Key Components

- **<u>Distributed Object Oriented Environment (CORBA)</u>**
  as a core for the architecture to effectively support networked multimedia application.

- **<u>Abstract Service</u>**
  provides high level API to the service user, in cooperation with standardized CORBAservices and CORBAfacilities.

- **<u>Abstract Interface</u>**
  hides network details from the Interface user, and realizes uniform interface for both control and management purpose.

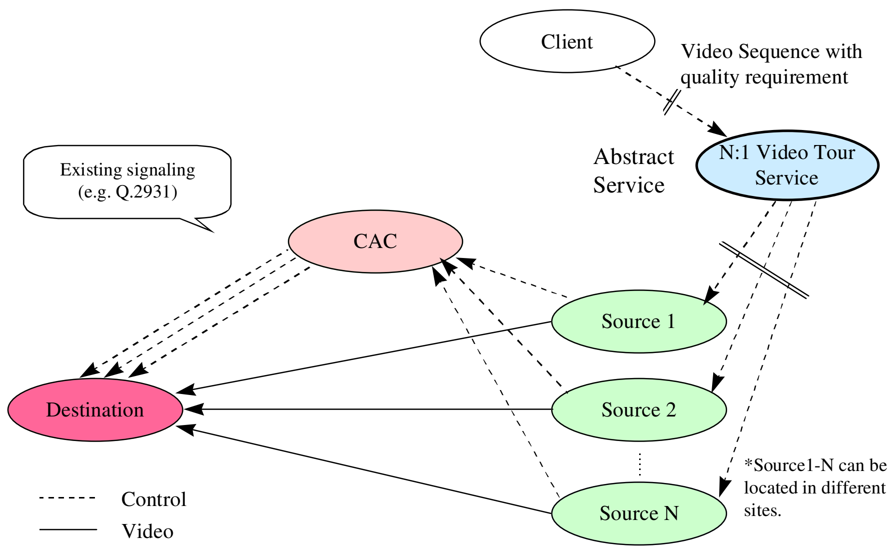
“Video Tour” within Electronic Yellow Pages Service (Application Example)



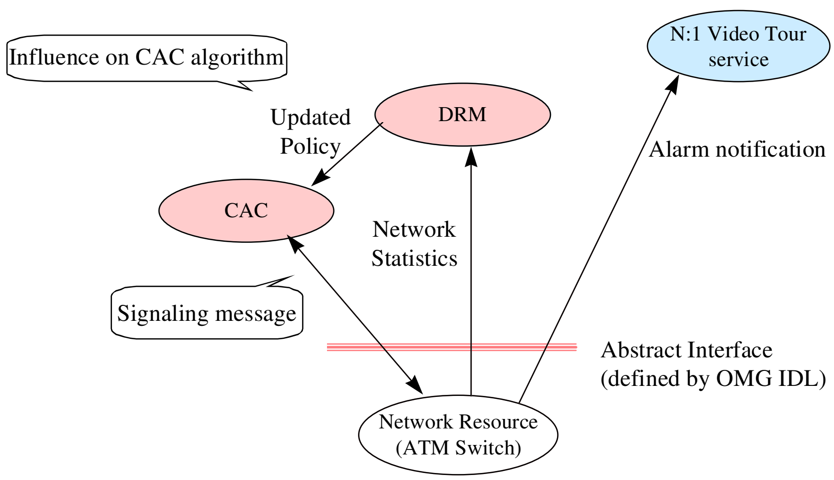
Application Scenario

- Creation of 3rd-party setup “N:1 Video Tour”.
  - ➡ *easy service creation*
- Adjustment of service characteristics based on observations of network statistics.
  - ➡ *network control and management integration*
- Recovery after an outage.
  - ➡ *preservation of sessions*

N:1 Video Tour Service (*Abstract Service* example)

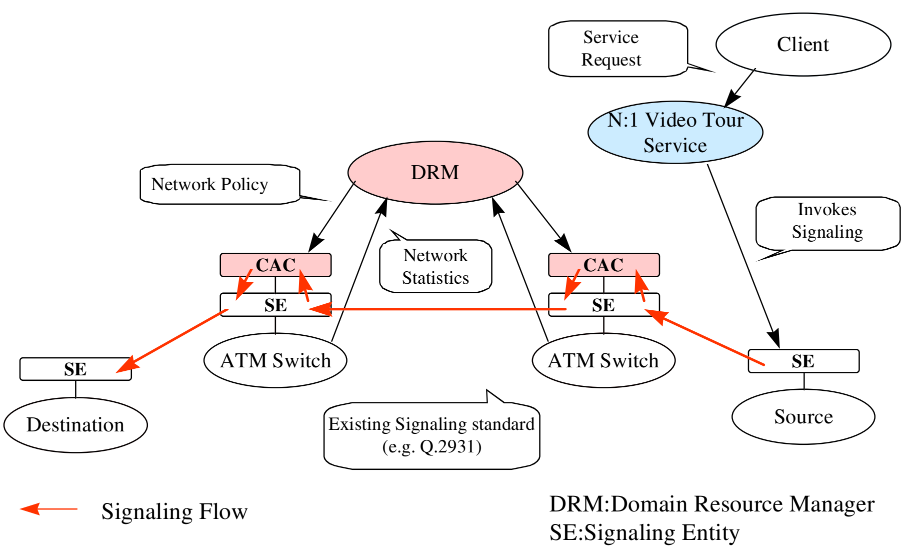


Abstract Interface example

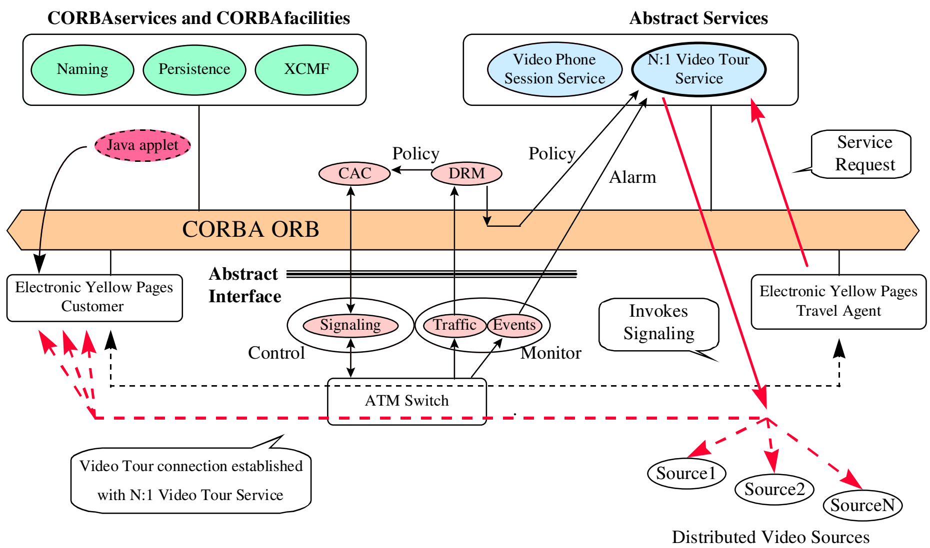


DRM:Domain Resource Manager CAC:Call Admission Control

Connection Setup with existing Signaling



Experimental Configuration Under Development



Summary

The conceptually simple distributed object-oriented network architecture, integrating control, management and services aspects, appears to be able to support networked multimedia application effectively.