Project Results

- Complete Open Source CCM platform
  - IDL/CIDL compilers
  - Code generators for Java and C++
  - Flexible container framework
  - Packaging and assembling tools
  - Deployment infrastructure
  - Telecom specific CCM adaptations including QoS and Security support
  - Support for multiple ORB products
- Modelling support
  - UML modelling profile for CCM
  - Modelling profile for QoS and stream interactions
  - Modelling profile for deployment and configuration specifications
  - CCM metamodel based repository
- Component test environment
  - Component test framework for test specification, test implementation, and test execution
  - Runtime visualization of component interactions
  - Interactive or scripted component testing
- Model Driven Security architecture
  - Platform independent definition of security policies
  - Policy definition language
  - Platform specific enforcement for CCM
- Telecom Applications
  - Network Management Framework
  - Parlay Platform
- New OMG specifications
- Improvement of the CCM specification

Project Information

- Contract: IST-2001-34445
- Starting date: 1 April 2002
- Duration: 2 years
- Consortium: industry, research labs, universities
- Manpower: 514 MM
- Prime: T-Systems

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IST Programme

Information Society Technologies (IST) is a single, integrated research programme building on the convergence of information processing, communications and media technologies. IST has an indicative budget of 3.6 billion euro and is managed by the Information Society DG of the European Commission.

IST-Project COACH

Component Based Open Source Architecture for Distributed Telecom Applications

COACH Consortium


http://www.ist-coach.org/

COACH realises a flexible and complete Open Source component framework based on the CORBA Component Model (CCM) standard of the Object Management Group (OMG).

The CCM is a specification for creating distributed, server-side scalable, component-based, language-neutral, transactional, multi-user, and secure applications.

COACH allows the rapid transformation of architecture and design level components to execution level ones according to the OMG's Model-Driven Architecture (MDA) approach.

CORBA Components
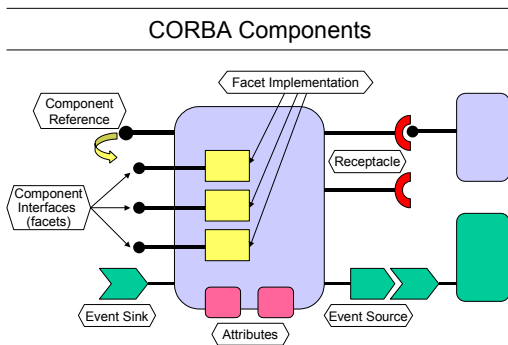
With COACH, designers can clearly capture configurable attributes, provided and required interfaces (facets and receptacles), as well as event sources and sinks of their business components. This allows the developer to concentrate on the business logic instead of reinventing technical infrastructure and on the reuse of existing components, which greatly reduces development costs and time to market.

In order to automate and improve CORBA component software developments, COACH

The COACH Tool Chain
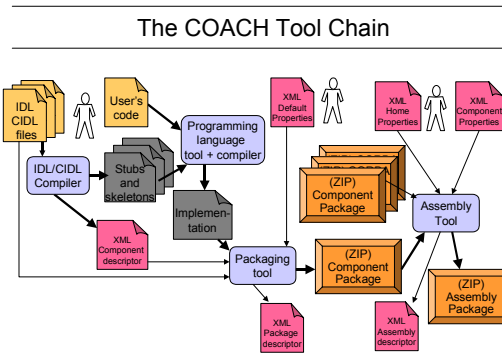
will provide a complete CCM tool chain supporting the OMG Interface Definition Language (IDL), the Component Implementation Definition Language (CIDL), packaging and assembling, and XML descriptors.

COACH will also provide a framework for component testing, which allows developers to rigorously test CCM components using a variety of test tools.

Flexible COACH Containers
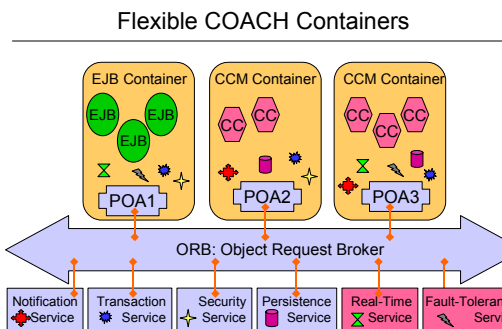
COACH develops a new flexible runtime container technology allowing the design, development, and deployment of standard CCM containers, transparently managing

system services like activation, communication, notification, security, transaction, and persistency, but also of new application specific containers, e.g. managing logging, real-time, and fault-tolerance services. This allows us to build dependable and adaptable distributed applications suitable for the telecom domain.

As part of COACH, a new security architecture for CORBA and CCM will be developed that allows the flexible enforcement of consistent enterprise-wide security policies, where technology-unspecific security policies are transformed into technology specific code modules that enforce the defined policy.

The COACH Deployment Infrastructure
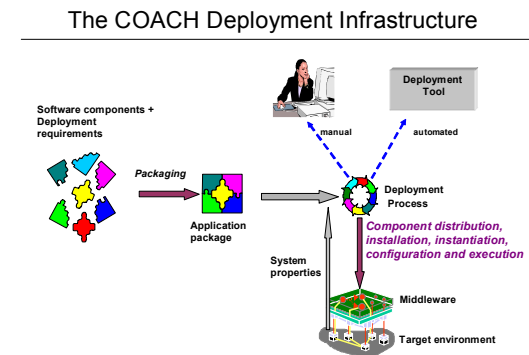
Moreover, COACH will provide a distributed deployment infrastructure to support manual and automatic efficient application deployment on heterogeneous distributed hardware platforms.

Finally, two relevant telecommunication applications are to be implemented to evaluate the suitability of the COACH framework and the CCM for the development of complex distributed applications.