

Integration Challenge

The development of management systems is moving towards the use of component-oriented, off-the-shelf software. Maintaining interoperability between separately-sourced components becomes increasingly expensive as system requirements, the technology base and component capabilities evolve over time.

Architecture Stakeholders

Promoting an open market in management component software requires new architectural and modelling principles to be shared between

- Standards Bodies
- Component Vendors
- System Developers
- System Customers
i.e. the Service Providers.

Framework Structure

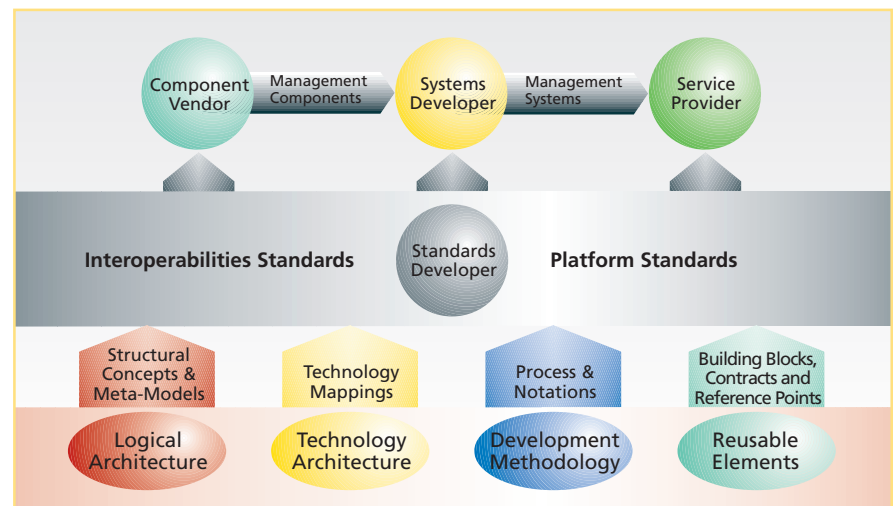
The FORM project is evaluating an Open Development Framework for component-oriented, model based management system development. The Framework is structured into four parts

- Logical Architecture
- Technology Architecture
- Development Methodology
- Set of Reusable Elements.

Application of the FORM Development Framework

FORM is applying the Development Framework to the B2B Service Management problem domain.

- It aims to provide guidance, reusable specifications and products to industry practitioners in the B2B Service Management domain.
- Portions of this application of the Framework are being implemented and evaluated in a number of trials conducted by the project.



Logical Architecture

The Logical Architecture defines the structural concepts and meta-models used across the rest of the Framework. The main principles of the architecture are

- Software components are modelled as Building Blocks
- Building Blocks interact through open interfaces called Contracts
- Management systems are modelled as collections of Building Blocks.

The Logical Architecture consists of

- A set of principles to which Building Blocks, Contracts and Systems must conform
- A meta model describing how the structural concepts – Building Blocks, Contracts etc. – relate to each other
- A description of the life-cycle of the major structural concepts from the view of abstract Framework users, e.g. business analysts, contract designers,

building block implementers, system deployers and system administrators

- XML-based language definitions for Building Block, Contract and Shared Information Model specifications. Several XML vocabularies are being used including EJB deployment descriptors, the DMTF's CIM XML binding and Microsoft's WSDL.

Building Block Principles

- Building Blocks are units of deployment and units of systems management
- A Building Block supports multiple Contract Types
- Building Blocks are typically sold in Groups
- Building Block Groups are distributed with accompanying requirements and analysis models
- Building Block behaviour is expressed in terms of policies, e.g. security, management etc.

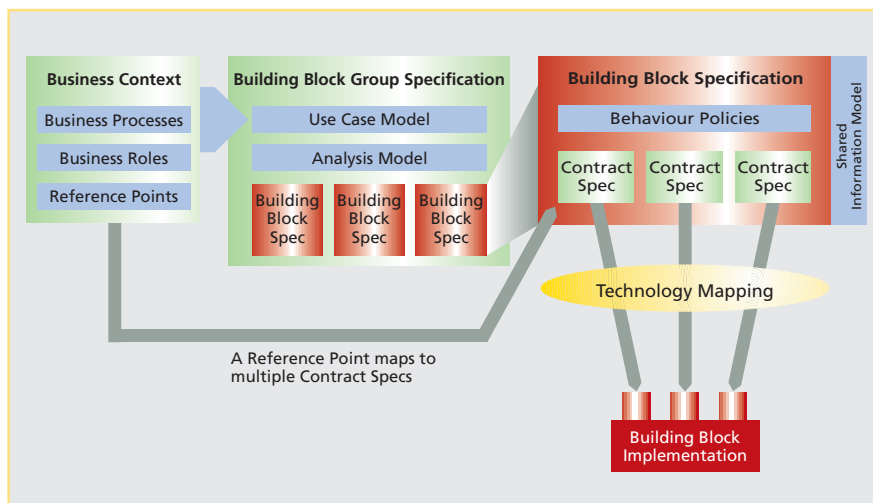
Contract Principles

- Contracts are the primary unit of standardisation
- Contracts are defined in a technology-neutral XML format
- Contract implementations require a technology-specific XML mapping, e.g. to IDL, GDMO
- The definition of information passed via a Contract is externalised in a Shared Information Model (based on the DMTF's Common Information Model Schema).

Business Context

- The business context of a Building Block Group is expressed in terms of Business Roles and the Reference Points between them
- Business Roles and Reference Points are overlaid onto business processes, e.g. those defined in the TM Forum's Telecoms Operation Map
- A Reference Point may be mapped to a set of Contract Specifications.

Overview of Logical Architecture



Technology Architecture

The Architecture addresses how the concepts expressed in the Logical Architecture can be implemented using a range of technologies.

- For each technology a single mapping between the technology neutral and a technology specific meta-model of the technology is sought
- Mediation to allow interoperability between Contracts implemented in different technologies is also addressed.

Relation to TM Forum NGOSS

The principles of the FORM Architecture are closely related to those being established in the TM Forum's NGOSS initiative – see www.tmforum.org

However as FORM is taking an incremental approach to defining and then evaluating architectural principles in implementation trials, it provides an early opportunity to provide feedback on these principles to the TM Forum.

Information and Contact

Further information on the FORM Architecture as well as an additional white paper addressing the Development Methodology is available at www.ist-form.org

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