

Talk

Using UML and ODP for Enterprise Architecture

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Summary

Some concepts
apparently missing from UML:

Joint action

Dependability

Configuration state machine

Signal

Flow

Summary

Some concepts
apparently missing from ODP:

Association

Signal

A relaxed attitude

At this time, the best approach to using UML to prepare an integration specification may be to have a relaxed attitude to UML restrictions.

This is the approach that has been taken by many UML modeling tool vendors, who permit drawings that violate UML restrictions.

ISO/IEC & ITU

The joint technical committee of ISO and IEC is considering a proposed new work item to prepare a standard UML profile for ODP modeling.

At the time of preparation of these slides, I do not have the alphabet soup that identifies the proposed new work item. I'm sure most of you are not interested. Those who are, please e-mail me. <mailto:joaquin@acm.org>

Quick ODP overview

For the text of RM-ODP, see

www.cuml.org/RM-ODP

Some important ODP concepts

Viewpoint

Viewpoint correspondence

Distribution transparency

ODP function

Viewpoint

2-3.2.7 Viewpoint (on a system):

a form of abstraction achieved using a selected set of architectural concepts and structuring rules, in order to focus on particular concerns within a system.

Viewpoints

Enterprise

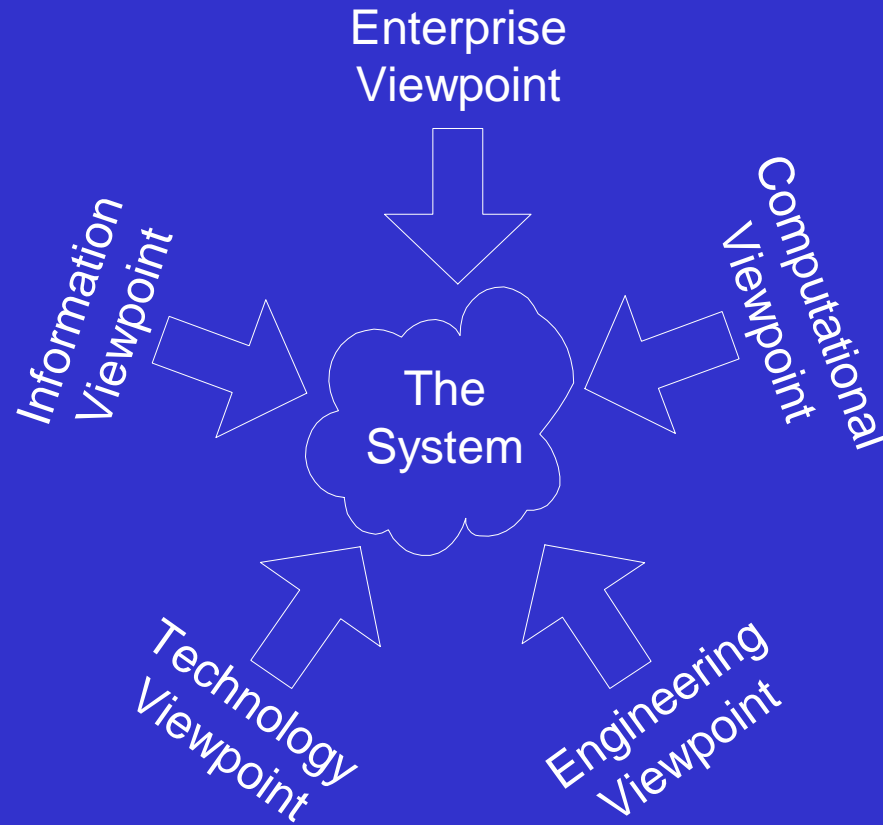
Information

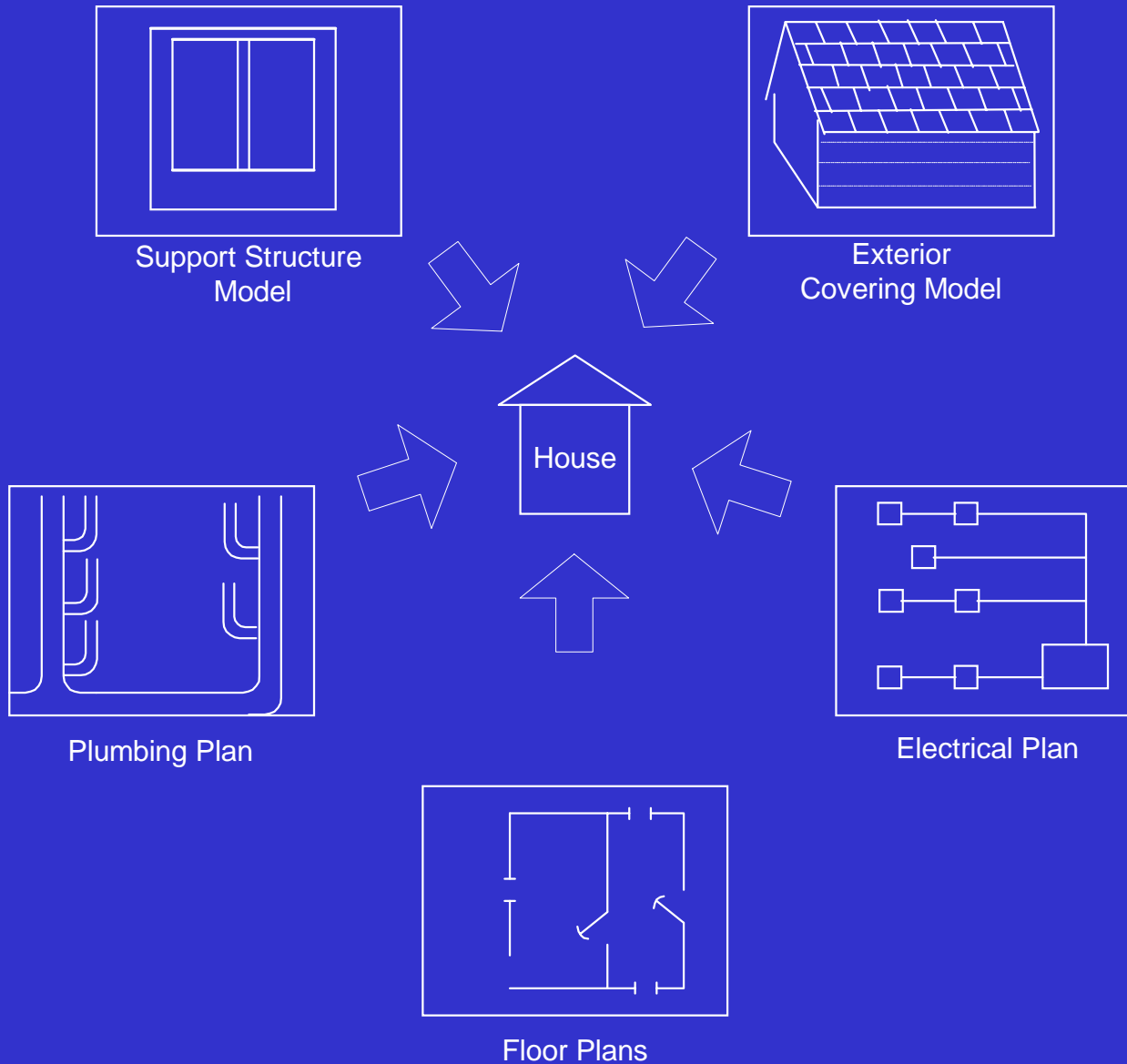
Computational

Engineering

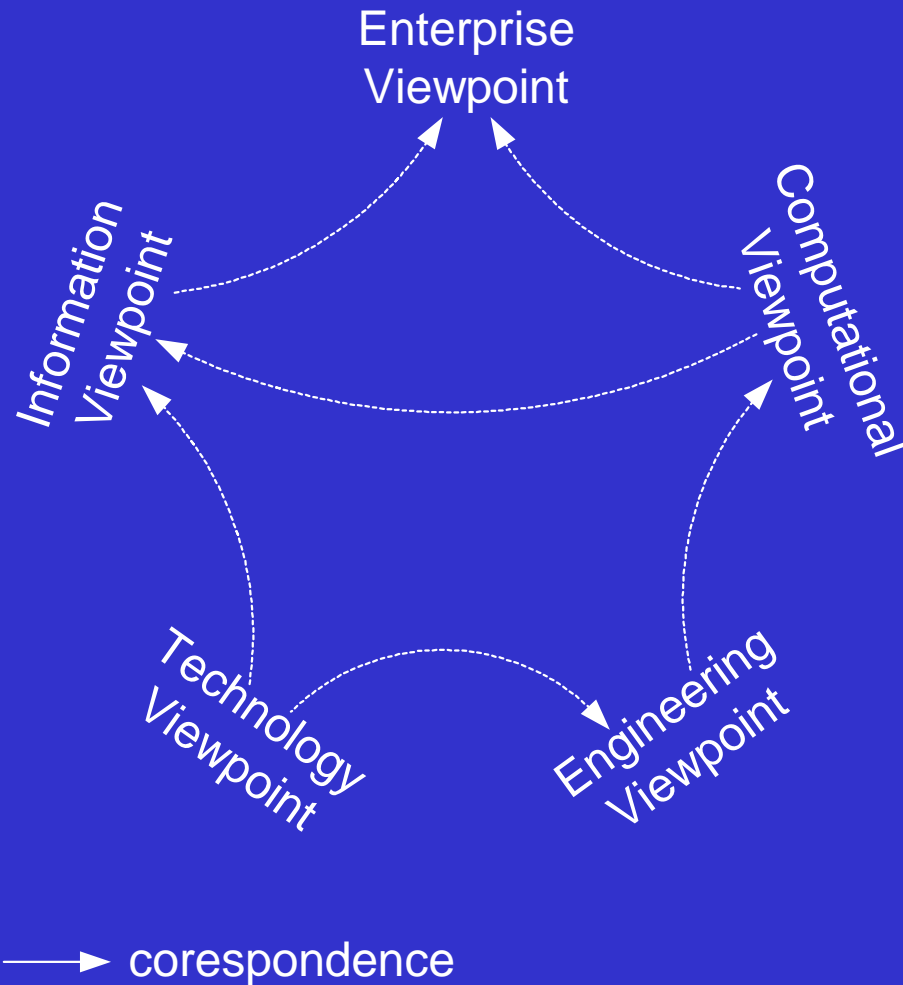
Technology

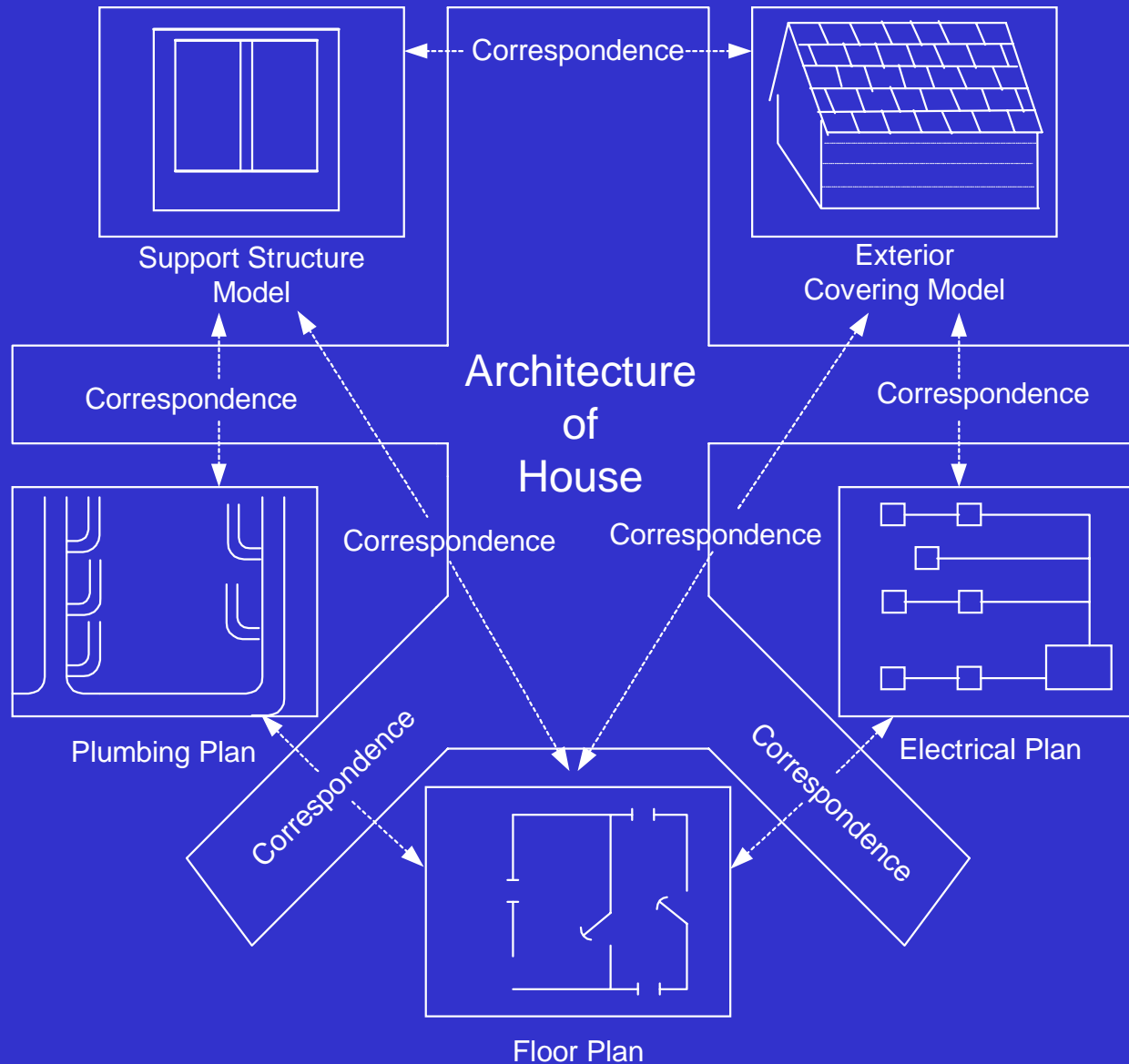
Viewpoint



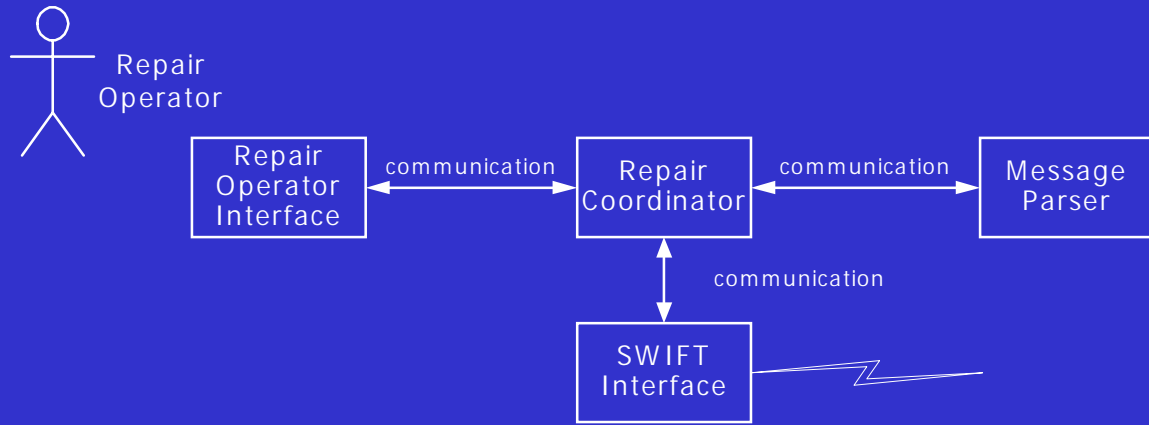


Viewpoint Correspondence

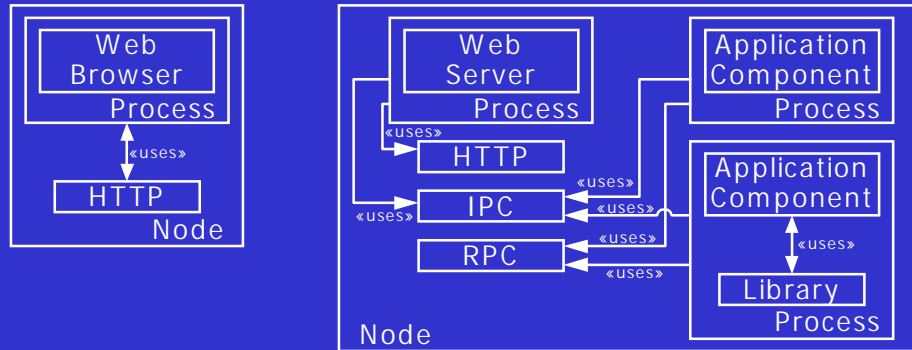




Computational
Viewpoint



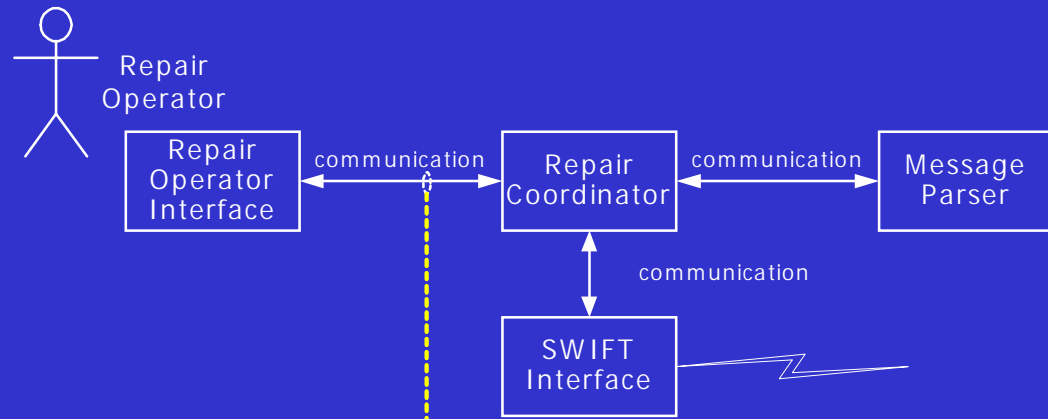
Engineering
Viewpoint



Technology
Viewpoint

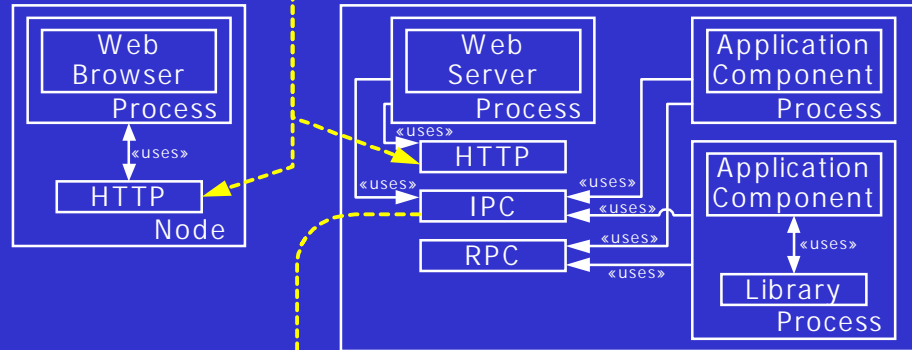


Computational
Viewpoint



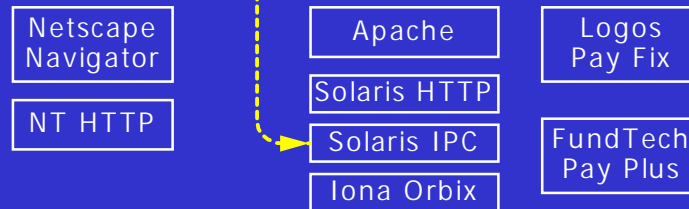
corresponds to

Engineering
Viewpoint



corresponds to

Technology
Viewpoint



Transparencies

Access transparency

Failure transparency

Location transparency

Relocation transparency

Migration transparency

Persistence transparency

Replication transparency

Transaction transparency

Functions

Management functions

Node, object, cluster, and capsule management

Coordination functions

Event notification, checkpointing and recovery, deactivation and reactivation, group, replication, migration, engineering interface reference tracking, transaction

Repository functions

Storage, information organization, relocation, type, trading

Security functions

Access control, security audit, authentication, integrity, confidentiality, non-repudiation, key management

Enterprise view

What we are specifying and why



A view of an ODP system and its environment
that focuses on the
purpose, scope and policies
for that system.

Enterprise view

Community

- Configuration of objects
- Purpose
- Contract
- Roles
- Policies

Federation

Enterprise view

The systems to be integrated will form a larger system.

Specify the community in which this larger system plays a role.

Specify the role of each system in this community.

Enterprise language

A new enterprise language standard has just been adopted:

Recommendation X.911
International Standard 15414

Information view

Monolithic view



A view of an ODP system and its environment
that focuses on the
**the semantics of information
and information processing**

Information view

Specify all the information processed
by the larger system

and

Specify all the processing of that
information by that system

Without regard for the distribution
of responsibilities

Computational view

Modular view



A view of an ODP system and its environment
which enables distribution through
functional decomposition of the system
into objects
which interact at interfaces.

Computational view

Specify an initial decomposition of the larger system with each of the systems to be integrated appearing as a single computational object.

Determine what other computational objects are needed.

Engineering view

Mechanisms for distributed interaction



A view of an ODP system and its environment
that focuses on
the mechanisms and functions required
to support distributed interaction
between objects in the system.

Engineering view

Specify the transparencies that are required.

Use the functions and structuring rules to provide the transparencies.

Technology view

Standards to be followed

Products to be used



A view of an ODP system and its environment
that focuses on
the choice of technology
in that system.

Technology view

Of course: wherever practical and adequate, use already available and proven software to provide the needed functions.

Better yet, use proven software that reliably provides the required transparencies

See the tutorial slides

On the same CD with these slides, you will find a somewhat larger set of slides on the same topic, prepared for the tutorial presented earlier in the workshop.

Sadly...

An apology

Due to the need to prepare for an ISO editing meeting and to work on UML 2 and MOF 2 submissions, I was unable to complete the drawings and notes for these slides before the deadline.

A complete set of slides and notes is at:

www.cuml.org/UML-ODP

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