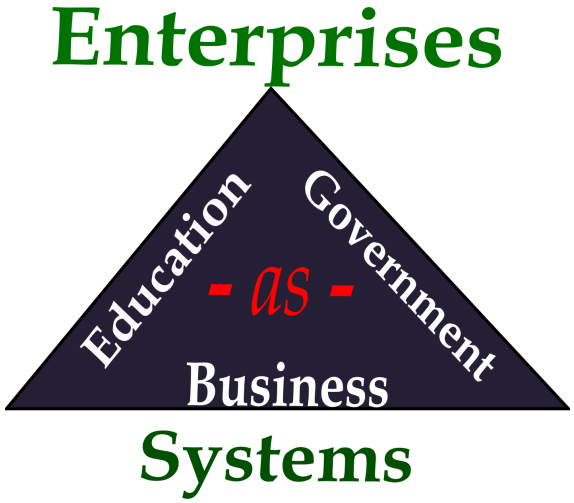
Use Cases and Requirements for the OOR (and SIO)
in the
Enterprises *as* Systems Open Collaborative Work Environment



The Open Ontology Respository Panel Discussion – Use Cases
April 1st, 2010

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(Hopeful) Contributions to the OOR (SIO) Effort

Contributions of ESA – CWE to OOR (SIO):

- Development of OOR (SIO) architecture / infrastructure
- Development of Content

Contributions to use cases and requirements:

- the extension of previously identified use cases and requirements
- Informal validation of current use cases and requirements

General Strategy:

- Present a holistic scenario that includes currently identified use cases and requirements

High Level Requirements

- Mechanisms for evaluating the effectiveness of an ontolgy for meeting enterprise goals (performance goals, quality goals, (semantic) interoperablity goals, etc.)

→ evaluations attributed to an ontology or ontologies

  - OOR / SIO must have both build-time and run-time engines
  - OOR / SIO must have feed-back mechanisms between the run-time and build-time engines

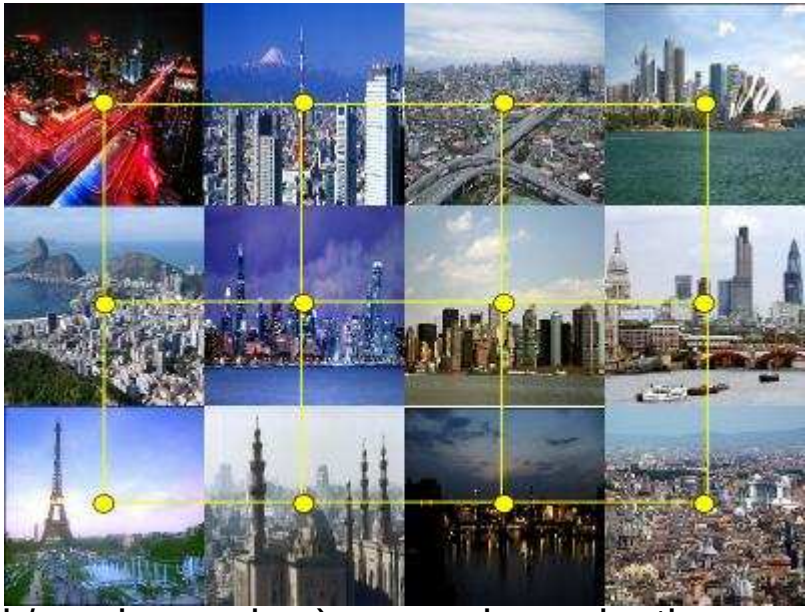
  - OOR / SIO run-time engine must have agents capable of meeting all the identified reasoning requirements about ontologies and lattices, including axioms in addition to capabilities for evaluating usage in processes and services

- For use by e.g. enterprise architect all currently identified requirements must be met

→ it is required that mechanisms be in place to track that these requirements have been satisfied

Enterprises *as* Systems Open Collaborative Work Environment (EAS - CWE)

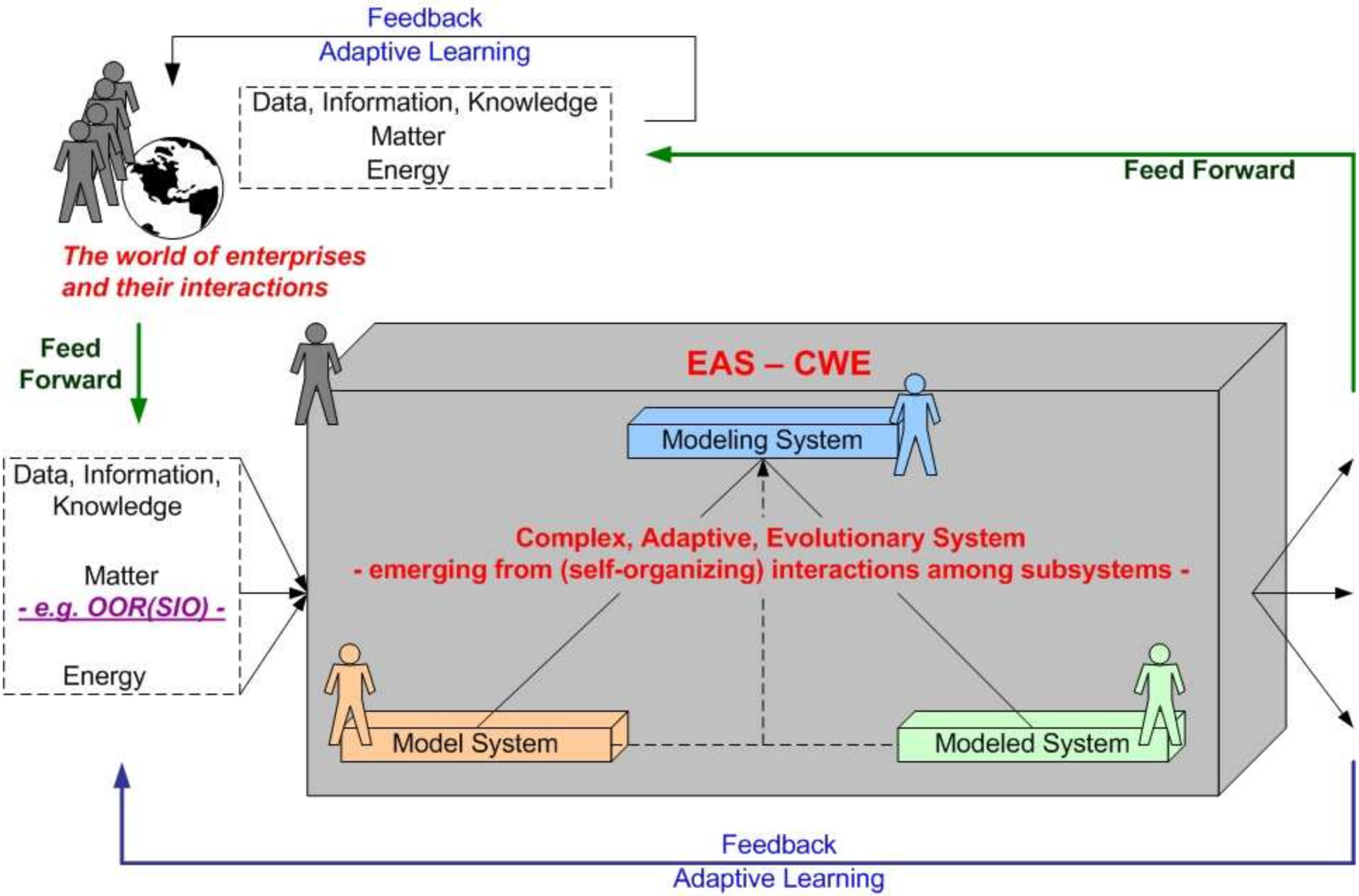
Business
Government
Eduation
Standards Bodies
Communities of Practice



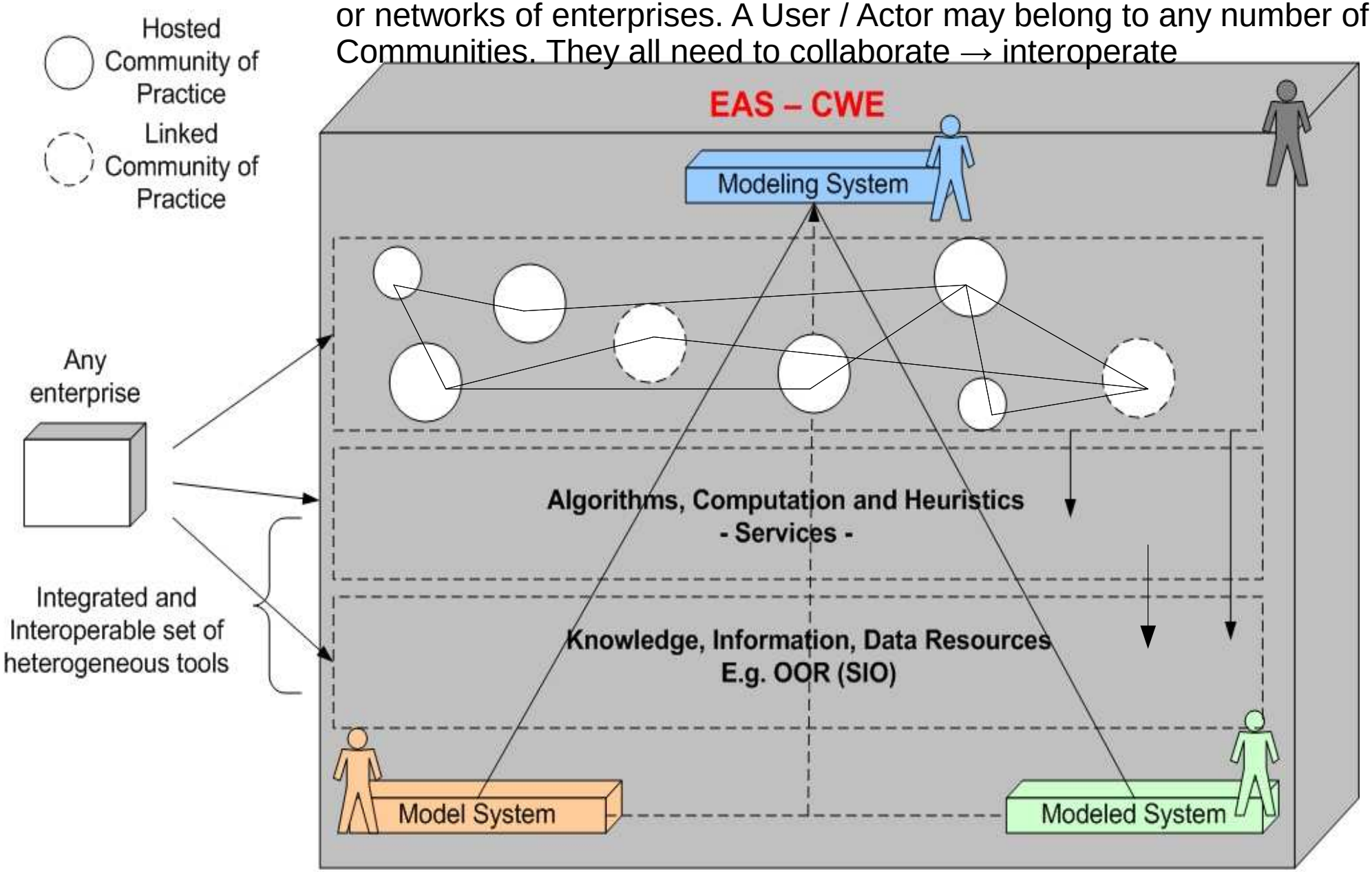
EAS-CWE

- is (explicitly being architected / engineered as) a complex, adaptive, evolutionary system
- is an enterprise
- is a collaborative work environment
- is a microcosm of intra- and inter-enterprise interactions: models, emulates and simulates, executes
- is focused on (in pratice, research and educuation)
  - The systems family of disciplines and their application to enterprises – enterprise (business and technology) analysis, architecture and engineering
  - The specification, realization and use of the “modeling discipline“
  - Collaboration between individuals with differing background knowledge and roles interacting for some purpose and the integration and interoperability of tools enabling collaboration
- has an explicity semiotic, ontology, and language (SOL) layer in the architecture – a complex, adaptive, evolutionary SOL subsystem

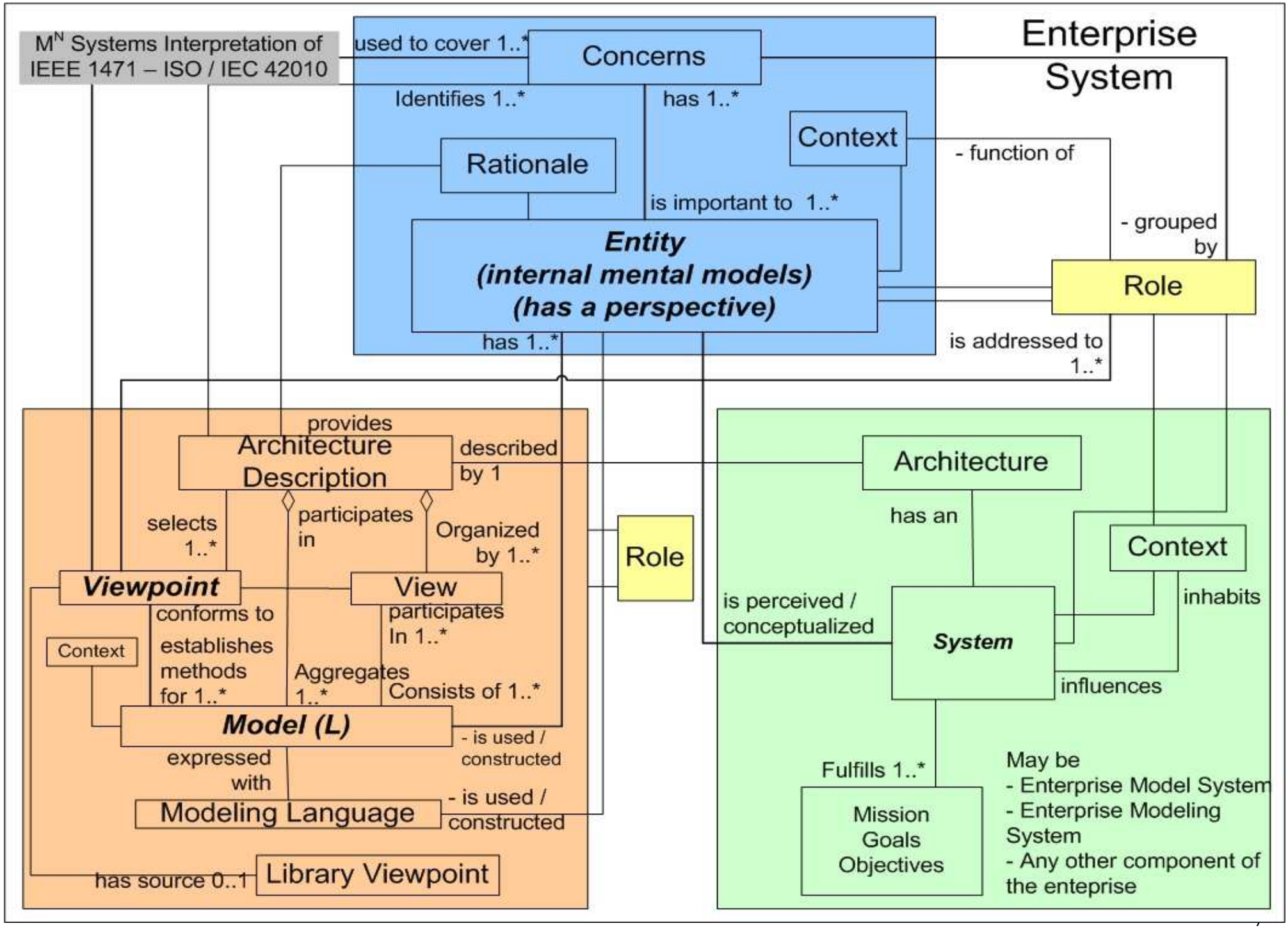
  - *Will embed the OOR (SIO) as part of SOL to meet the needs of the collaborative work environment and all other enterprises wishing to take advantages of OOR (SIO) capabilities*


Feedback
Adaptive Learning
Data, Information, Knowledge
Matter
Energy
Feed Forward
The world of enterprises
and their interactions
Feed
Forward
EAS – CWE
Modeling System
Data, Information,
Knowledge
Matter
- e.g. OOR(SIO) -
Energy
Complex, Adaptive, Evolutionary System
- emerging from (self-organizing) interactions among subsystems -
Model System
Modeled System
Feedback
Adaptive Learning

The Users / Actors come from any domain of interest from any enterprise or networks of enterprises. A User / Actor may belong to any number of Communities. They all need to collaborate → interoperate



Domains of Interest: Ontology, Process, Service, Events, Measures, Security, Cognition / Intelligence, Interoperability, Collaboration, Grids, Health Care, Economics, Law, Systems, etc. etc.


M^N Systems Interpretation of IEEE 1471 – ISO / IEC 42010
Enterprise System
used to cover 1..*
Concerns
Identifies 1..*
has 1..*
Context
Rationale
- function of
is important to 1..*
- grouped by
Entity
(internal mental models)
(has a perspective)
Role
has 1..*
is addressed to 1..*
provides
Architecture Description
described by 1
Architecture
has an
selects 1..*
participates in
Organized by 1..*
Role
Context
Viewpoint
View
conforms to
participates In 1..*
is perceived / conceptualized
inhabits
Context
establishes methods for 1..*
Aggregates 1..*
Consists of 1..*
System
influences
Model (L)
- is used / constructed
expressed with
Fulfills 1..*
May be
- Enterprise Model System
- Enterprise Modeling System
- Any other component of the enteprise
Modeling Language
- is used / constructed
Mission
Goals
Objectives
has source 0..1
Library Viewpoint

An Enterprise is a System in the general systems theoretic sense

→ to represent the system, it is required to use the concepts, principles and theories of the systems family of disciplines

→ Systems Dynamics, Social Theory, Cybernetics, etc.

- Primary User / Actor: Enterprise Architect / Enterprise Systemist
- A critical tool: a lattice of ontologies representing domains and subdomains of the systems family of disciplines
  - → the lattice is created with the collaboration between ontologists (Actors) and subject matter experts (Actors).
  - → it is shared among ontologists, subject matter experts, enterprise architects (and actors / users of any domain that is of interest to any enterprise)
  - → it housed in, e.g., OOR (an Actor in the enterprise)
- Uses include
  - → mapping the concepts, principles and theories of other domains (other ontologies) to the ontologies in the systems lattice
  - → intra- and inter-enterprise analysis, architecture and engineering
  - → creating a run-time modeling engine utilizing the ontologies for evaluation of operational products, processes and services

- Potential end result: an ontology / semantic operational layer across all domains within and between enterprises

Review

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