



软件工程

国家重点实验室(武汉大学)

STATE KEY LAB OF SOFTWARE ENGINEERING (WUHAN UNIVERSITY)

MFI-8: Metamodel for Role & Goal Registration

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Outline

- Motivation of this work
- Definition and scope of MFI-8
- How MFI-8 is constructed
- Register Role & Goal models using MFI-8
- Next step

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Motivation



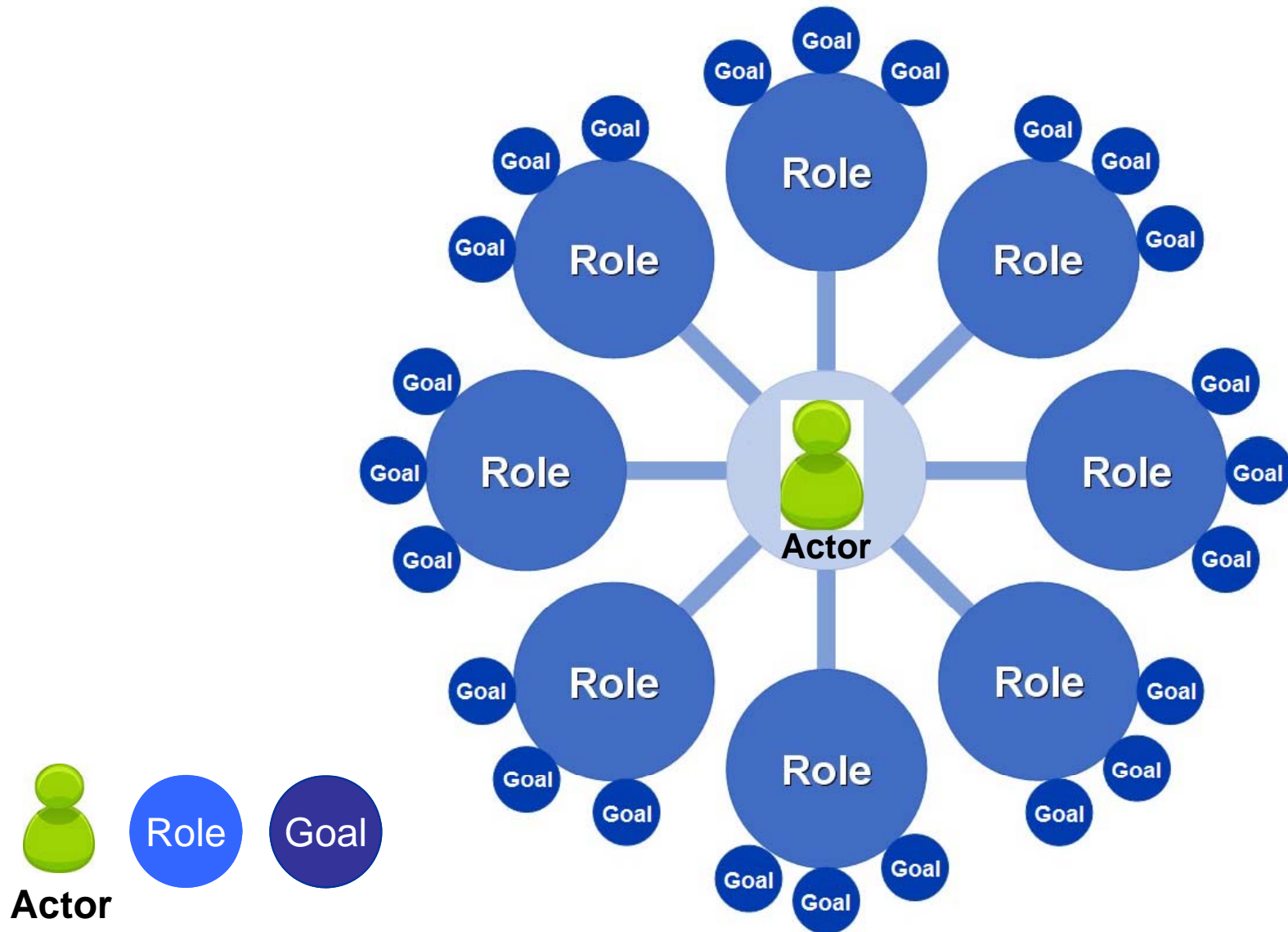
Motivation

- **Roles & Goals** are essential elements in system development



- **Roles** is used to classify and identify the actors of the system
- Each **role** has preferential intentions, including **goals**
- **Goals** provide a way to express higher level requirements
- Effective management of **roles & goals** contributes to goals reuse by roles

Typical example



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Definitions in MFI-8

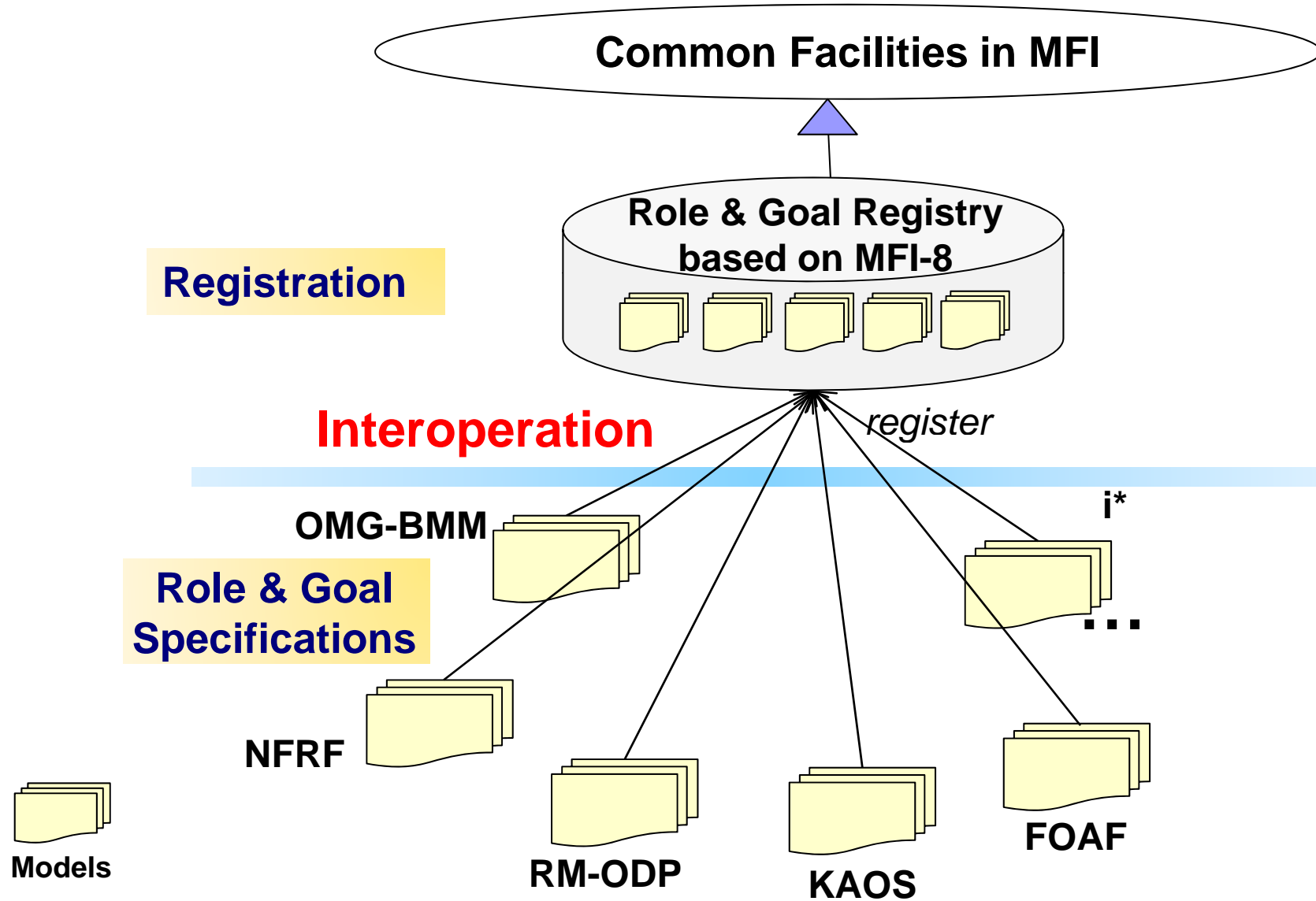
- A **role** is **abstract characterizations** of organizational **behaviours** and **responsibilities** within specified organizational context.
- A **goal** is a descriptive **statement** of **intent** of a user or an organization, and it can be viewed as an **objective** that the system under consideration should **achieve**.

Scope of MFI-8 (1/2)

- Specify a **metamodel** for registering users' **Roles & Goals** in specific domains that can be used to describe users' intention.
- Define the **decomposition** and **constraint** relationships between goals.

From: *Resolution of Wuhan Meeting, September, 2008*

Scope of MFI-8 (2/2)



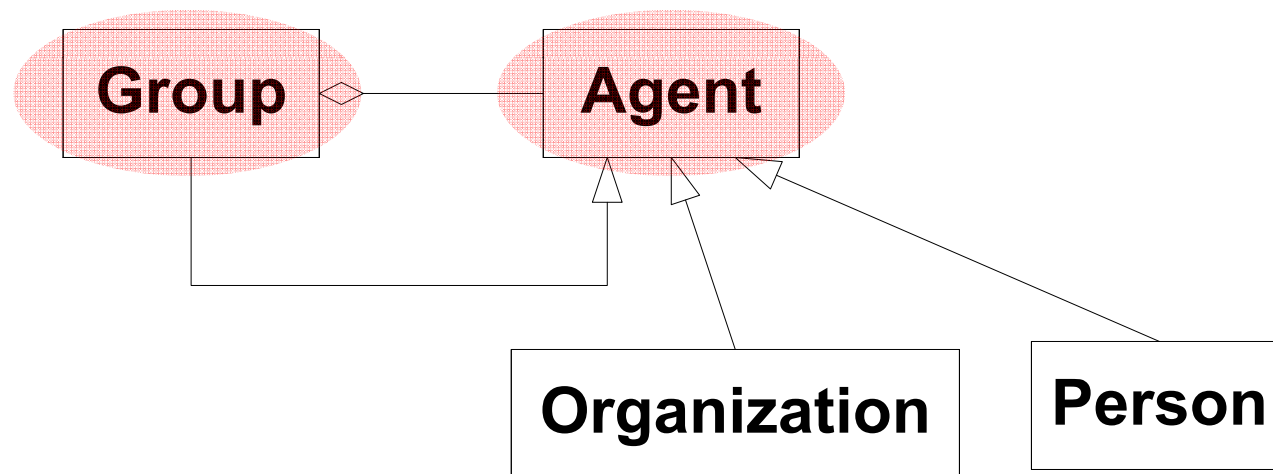
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How MFI-8 is constructed

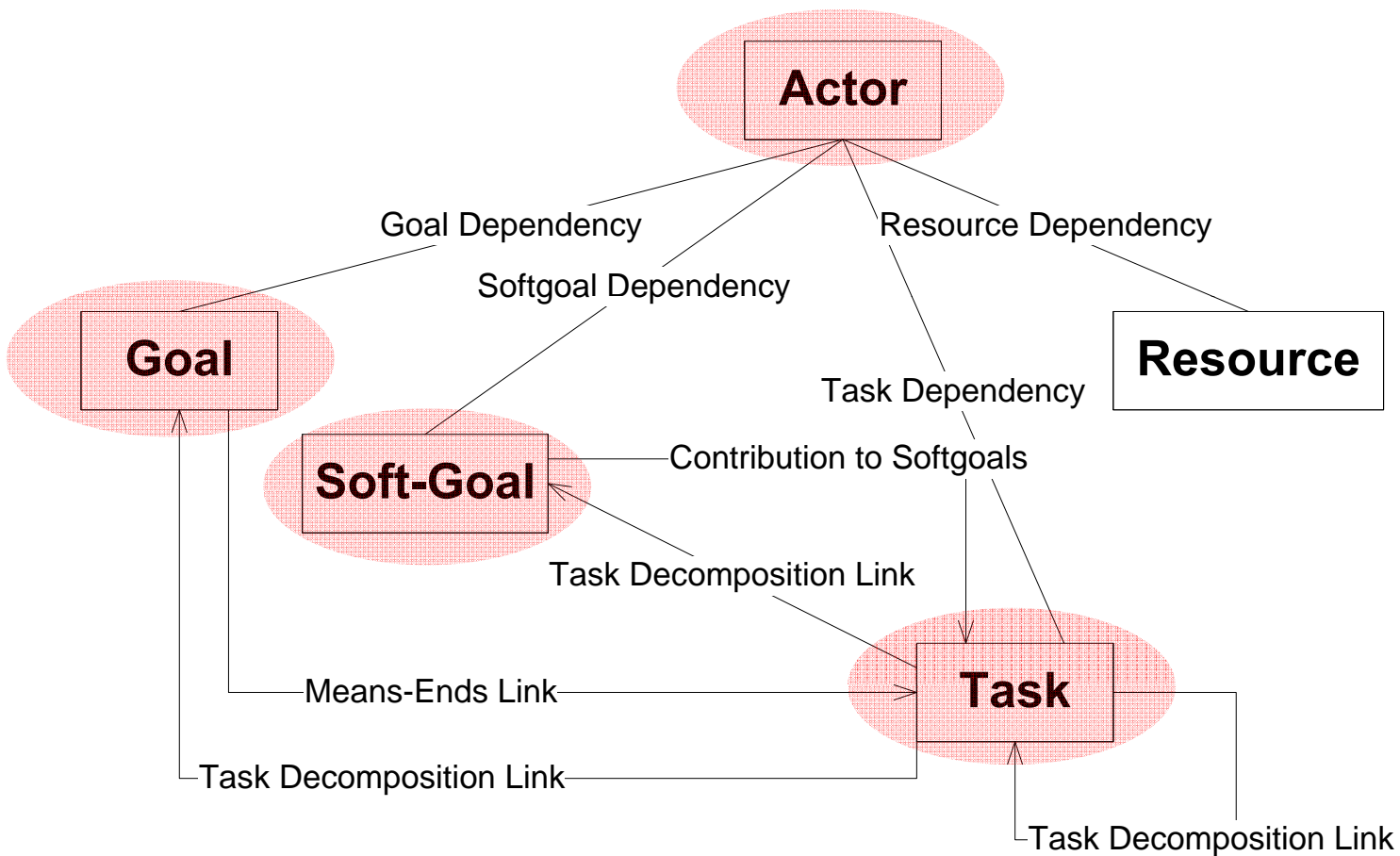
- Harmonization of various Role & Goal models for registration
 - FOAF (Friend of a Friend, *FOAF project*)
 - RM-ODP (Reference Model of Open Distributed Processing, *ISO-19793*)
 - NFRF (Non-functional Requirement Framework, *Open Group*)
 - OMG-BMM (Business Motivation Model, *OMG*)
 - KAOS (Keep All Objects Satisfied, *Université catholique de Louvain*)
 - i* (Goal-oriented requirements modeling, *University of Toronto*)
 - ...

Role & Goal concepts in FOAF



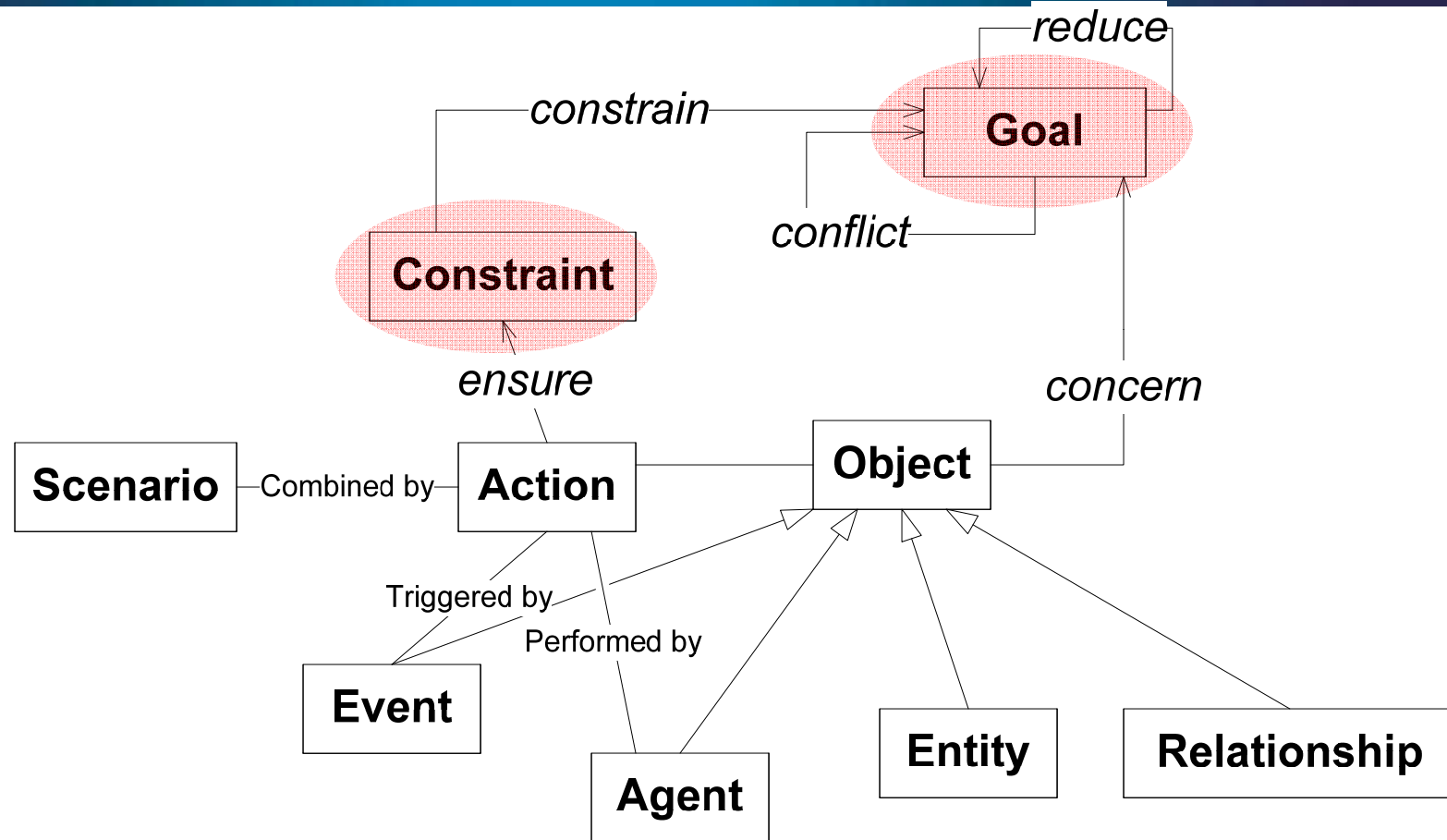
From: *FOAF Vocabulary Specification*. Available at: <http://xmlns.com/foaf/0.1/>, 2007.

Role & Goal concepts in i*



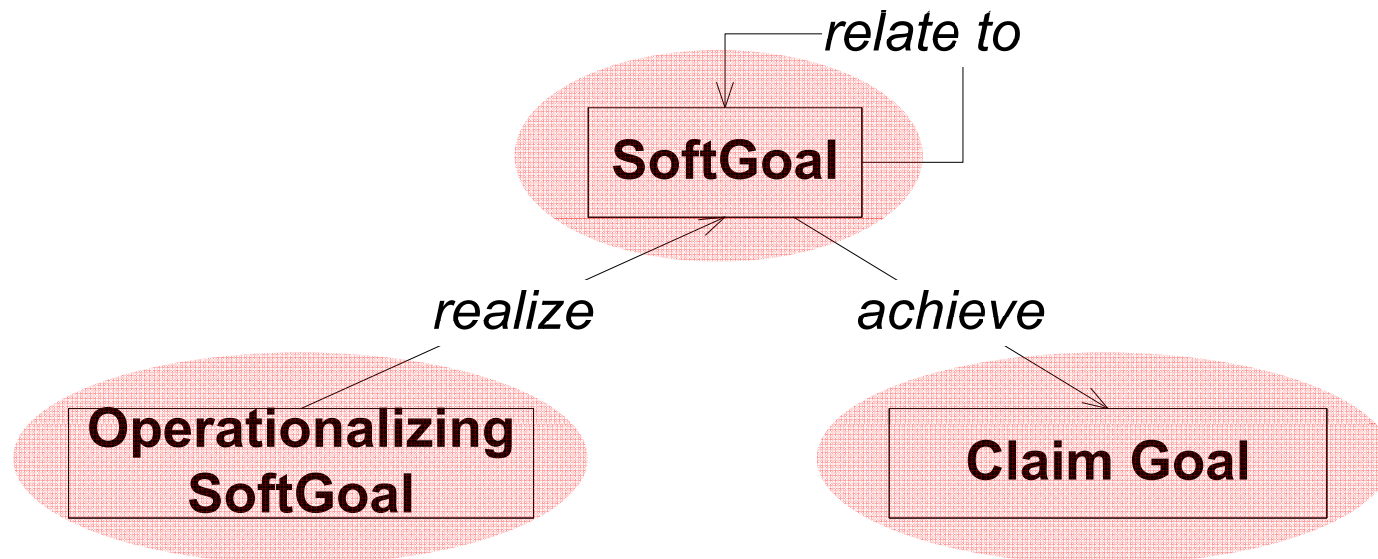
From: Eric Yu, *Towards modelling and reasoning support for early-phase requirements engineering*, Proceedings of the Third IEEE International Symposium on Requirements Engineering, 1997.

Role & Goal concepts in KAOS



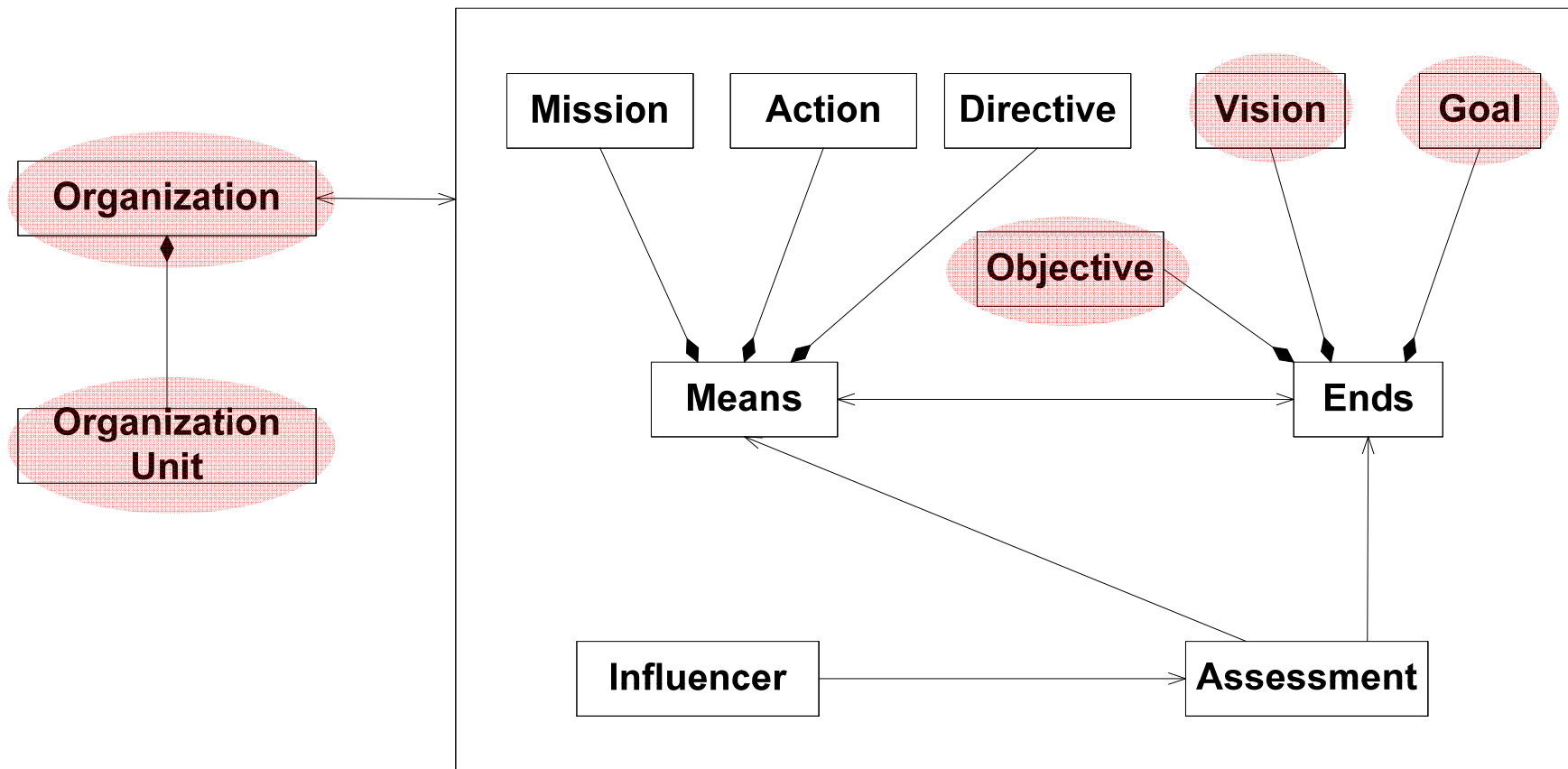
From: Axel van Lamsweerde, Robert Darimont, and Philippe Massonet, Goal-directed elaboration of requirements for a meeting scheduler: problems and lessons learnt, Proceedings of the Second IEEE International Symposium on Requirements Engineering, 1995.

Role & Goal concepts in NFRF



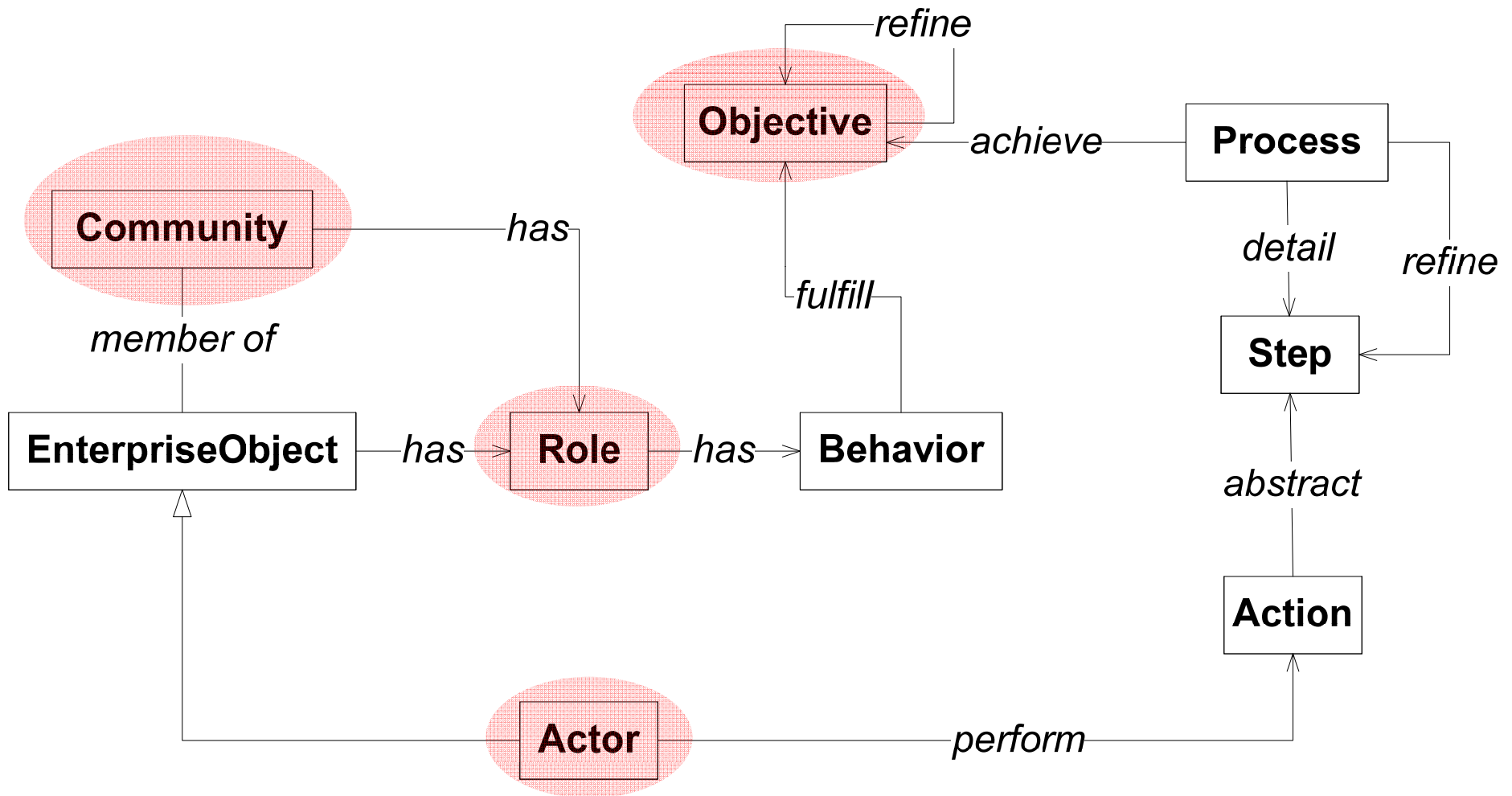
From: Lawrence Chung, Brian A. Nixon, Eric Yu, John Mylopoulos, *Non-functional requirements in software engineering*, Kluwer Publisher, 2000.

Role & Goal concepts in OMG-BMM



From: OMG, Business Motivation Model (BMM) Version 1.1 - Beta 2, <http://www.omg.org/spec/BMM/1.1/Beta2>, accessed on 2010-05-09

Role & Goal concepts in RM-ODP

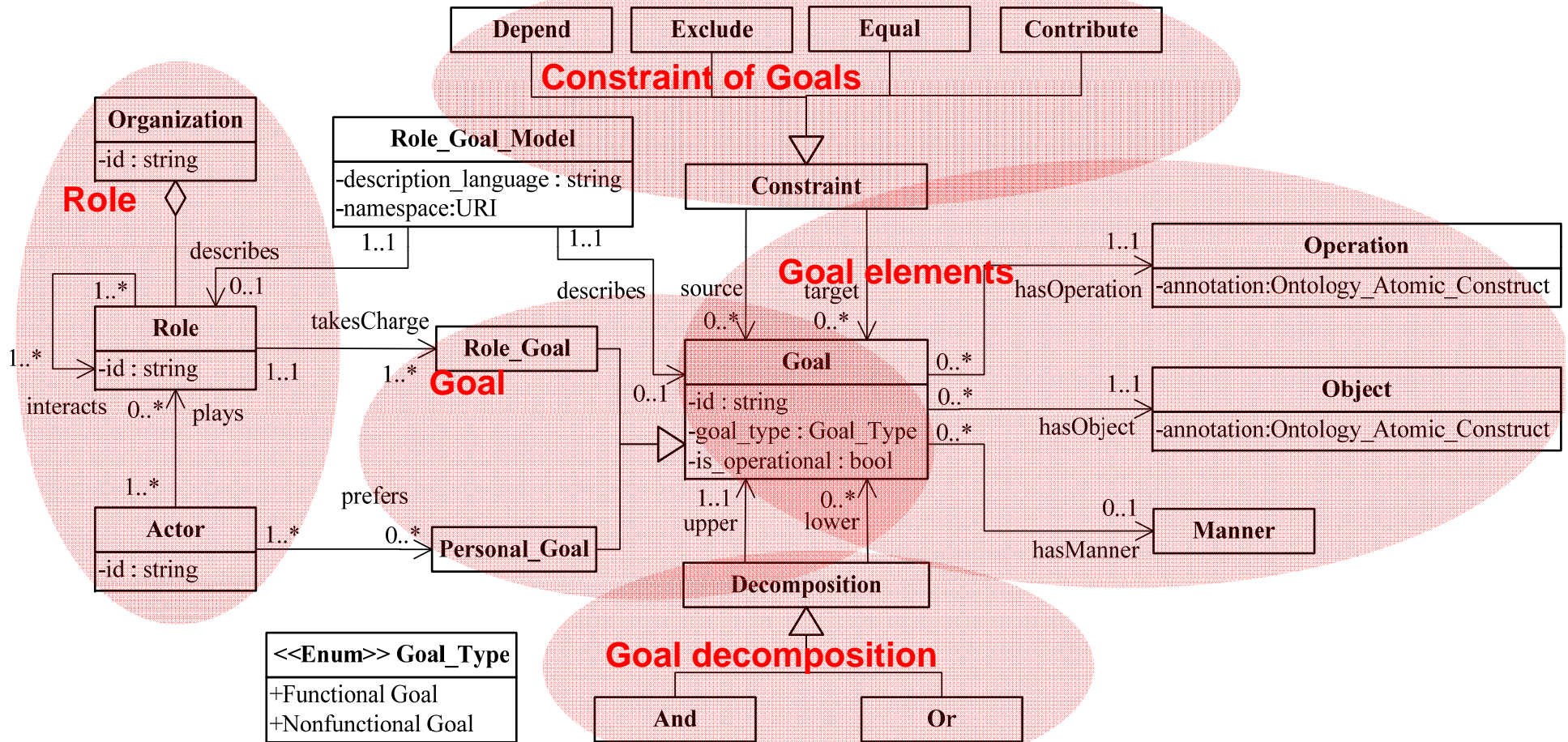


From: ISO, ISO Standards, Information technology — Open distributed processing — Use of UML for ODP system specifications, ITU-T Recommendation X.906, ISO/IEC 19793, 2009

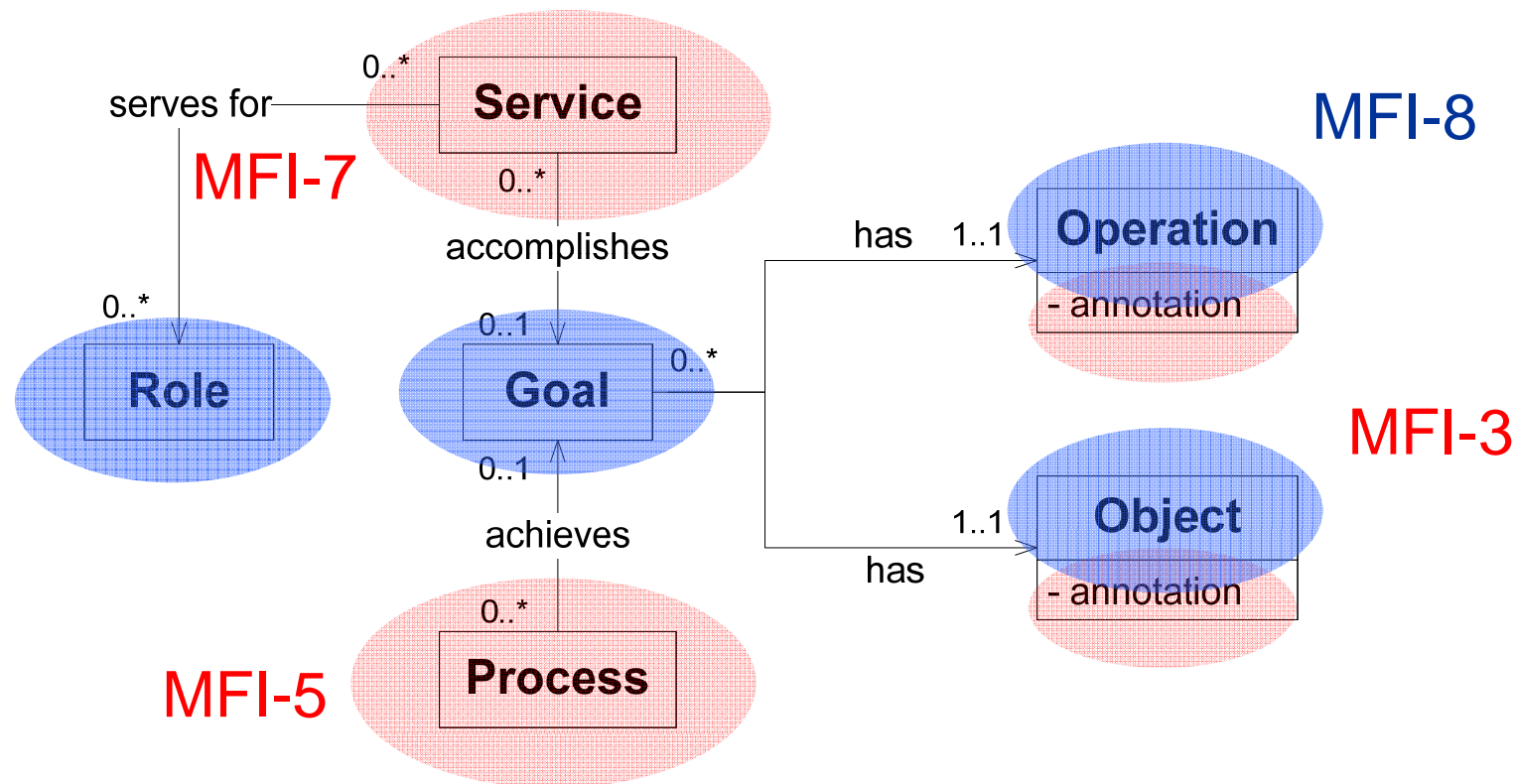
Mapping table of MFI-8 to various R&G models

MFI-8	FOAF	i*	KAOS	NFRF	OMG-BMM	RMODP
Organization	Group				Organization	Community
Role		Actor			Organization Unit	Role
Goal			Goal	OperationalizingSoftGoal	Vision, Goal	
Actor	Agent					Actor
Goal: Functional Goal		Goal, Task				Objective
Goal: Non-functional Goal		SoftGoal		SoftGoal, ClaimGoal		
Goal: Operational Goal			Constraint		Objective	

Metamodel of Role & Goal registration



Relationship with other parts in MFI

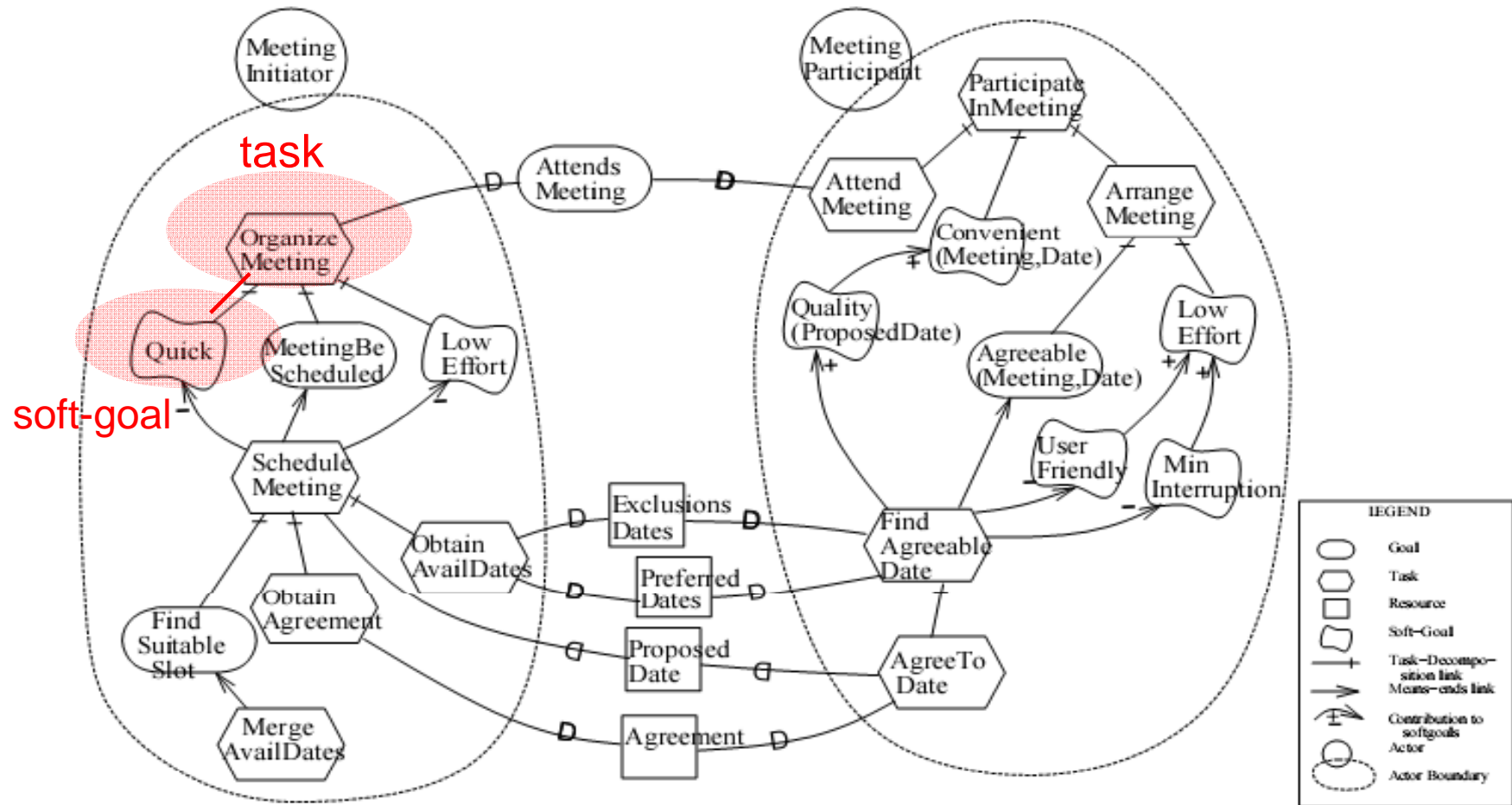


- **Service** is a concept from **MFI-7**
- **Process** is a concept from **MFI-5**
- **annotation** attributes are annotated by `Ontology_Atomic_Construct` from **MFI-3**

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Register Role & Goal models with MFI-8 (1/2)



From: Eric Yu, *Towards Modelling and Reasoning Support for Early-phase Requirements Engineering*, Proc. of the 3rd International Symposium on Requirements Engineering, 1997.

Register Role & Goal models with MFI-8 (2/2)

MFI-8		Instances of i^*
Role		Meeting Initiator (R1)
		Meeting Participant (R2)
Goal: Functional Goal		Organize Meeting (G1)
		Meeting Be Scheduled (G2)
		Schedule Meeting (G3)
Goal: Non-functional Goal		Quick (G4)
Mandatory	upper	Organize Meeting (G1)
	lower	Quick (G4)
Contribute	source	Schedule Meeting (G3)
	target	Quick (G4)

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Next steps

- Metamodel extension for Role & Goal registration with social information
- Harmonization with other Role & Goal models including social web standards
- Role & Goal registration for interoperable cloud
- Submit a **CD** version in **June 2010**