

MFI-5: Metamodel for process model registration

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Outline

- Introduction
- Content of MFI-5
- Summary

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The status of MFI-5

- Prepared 2nd WD for review and comment at Portugal meeting for progression to CD ballot
 - SC 32 N1791
- Got permission to register as CD in Sydney meeting
 - WG 2 N1135
- Expect to go to CD in Portugal meeting

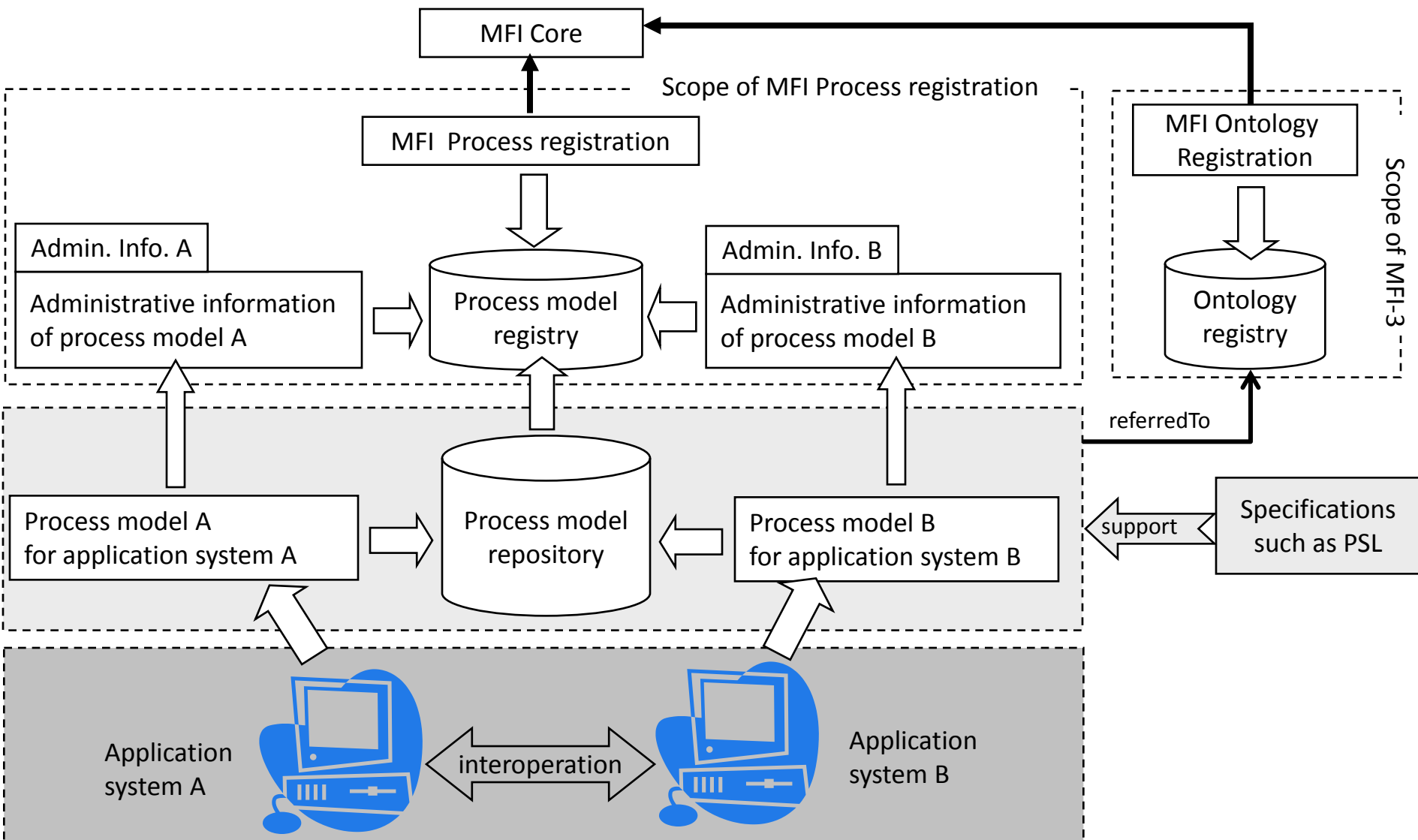
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Scope of MFI-5 (1/3)

- Objective
 1. Provide a metamodel to register process models, including business process model, web service and so on.
 2. Focus on the relationship between process model described with different process description languages, especially the composite process consists of sub-processes expressed in different languages.
 3. Promote semantic interoperability between various process models.
 4. Support process integration within/across organizations

Scope of MFI-5 (2/3)



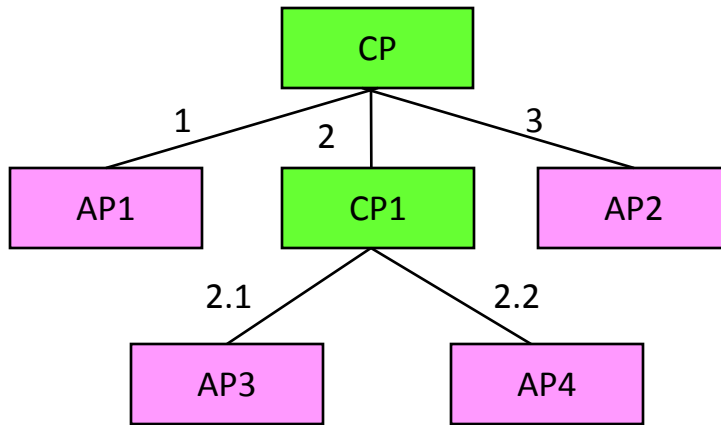
Scope of MFI-5 (3/3)

- Points in the scope of MFI-5
 - Structural information of process model
 - Which sub-processes are contained in process model
 - Which artifact participate in fulfilling the common purpose
 - Semantic constraints of process model
 - Semantic relation/contradiction between artifacts
 - Condition
 - Mandatory sequence
 - Precondition and postcondition
 -
- Outside the scope of MFI-5
 - Language specific details
 - Implementation level details

Basic idea of MFI-5

Process model expressed in different modeling languages

Structural Info



Actual execution

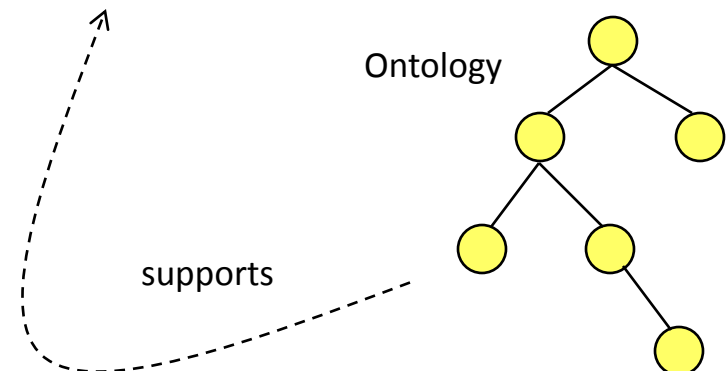
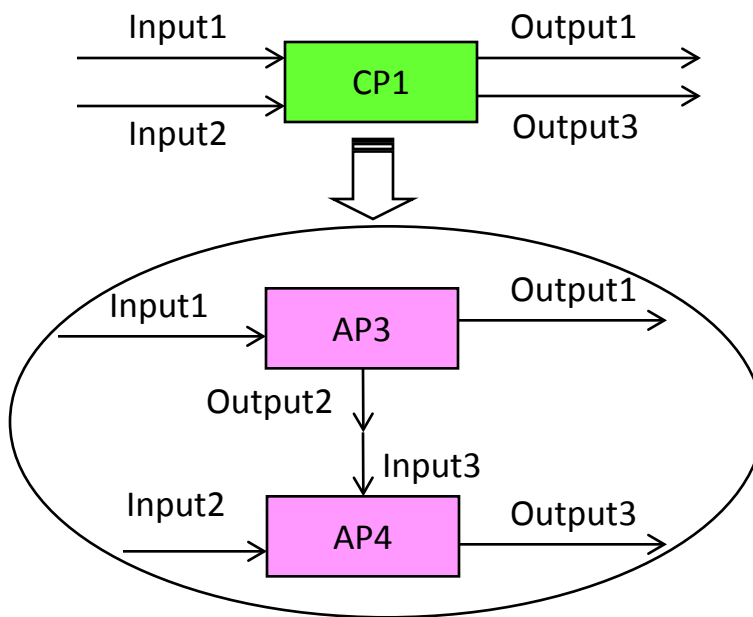
$1 \rightarrow 2(2.1 \rightarrow 2.2) \rightarrow 3$

- ◆ Control_Constraint
 - ◆ Condition: precondition/postcondition
 - ◆ Control Construct: Sequence $2(2.1 \rightarrow 2.2) \rightarrow 3$

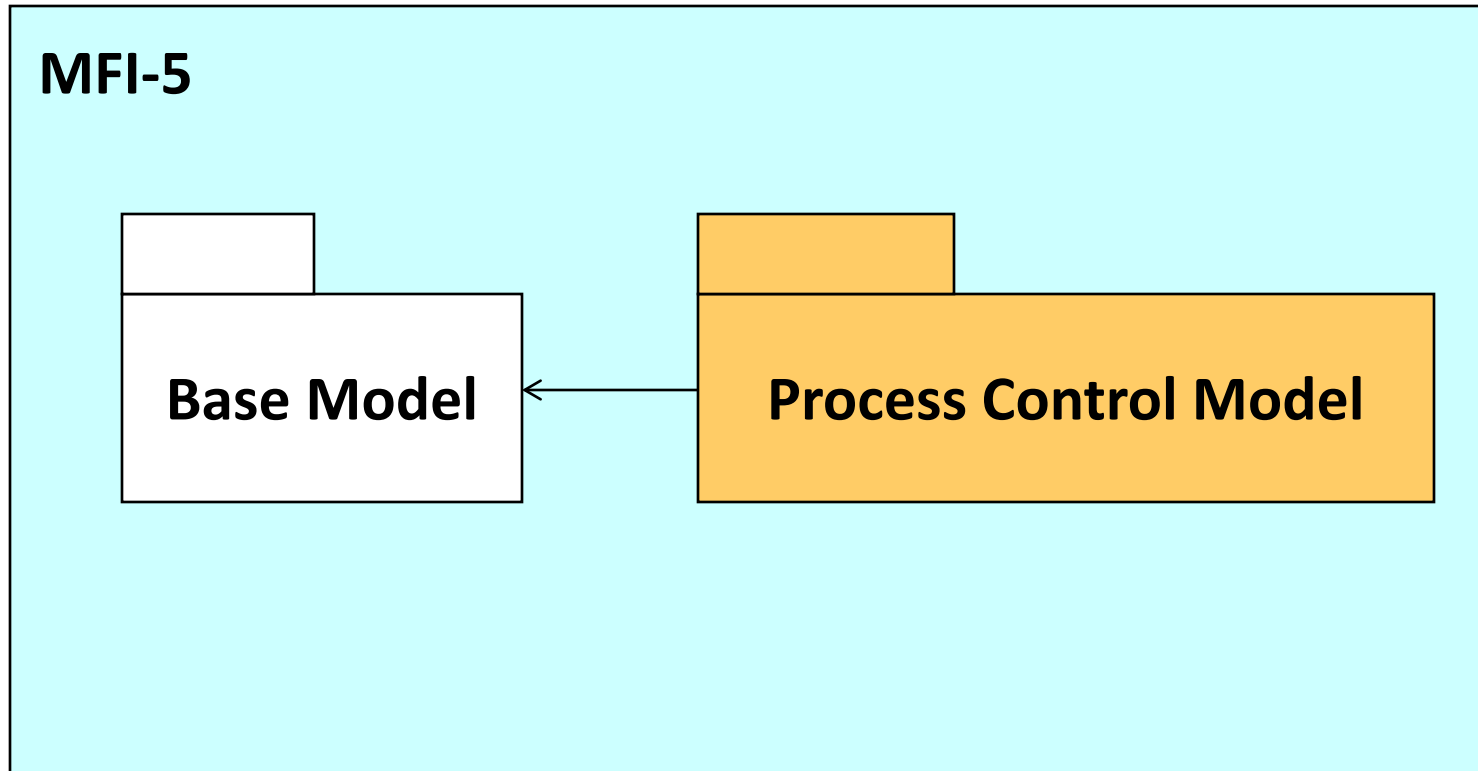
Semantic Info

- ◆ Artifact_Constraint: semantic consistency between artifacts carried by Input/Output

abstract



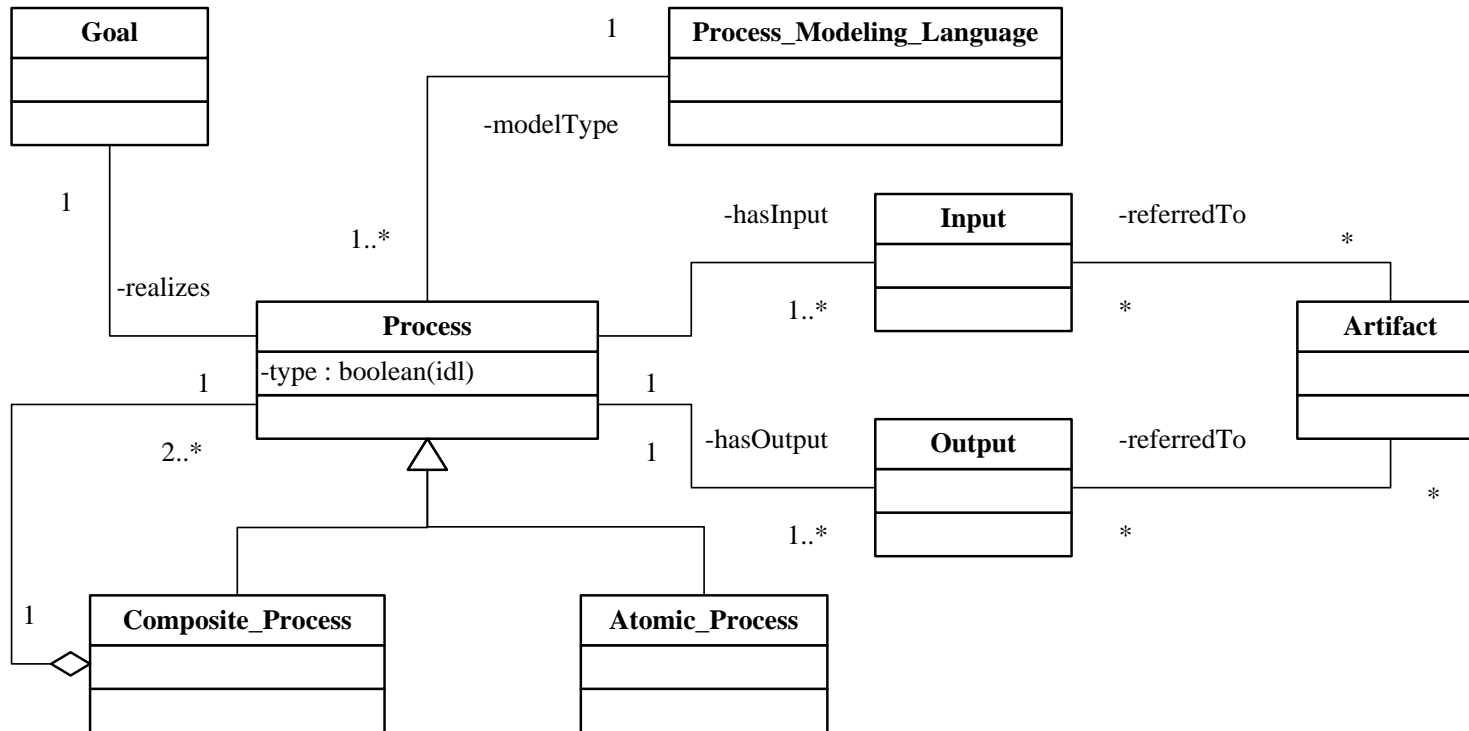
Overview of MFI-5



Base Model (1/2)

- Base Model is proposed to register structure information of various process models
 - **Goal:** the purpose that should be achieved by fulfilling the process model
 - **Artifact:** the resources that participate in the process, which can be carried by its Inputs or Outputs
 - **Atomic Process:** the process model characterized with the smallest granularity and one-step execution
 - **Composite Process:** the complicated process model which is composed of at least two sub-processes.

Base Model (1/2)



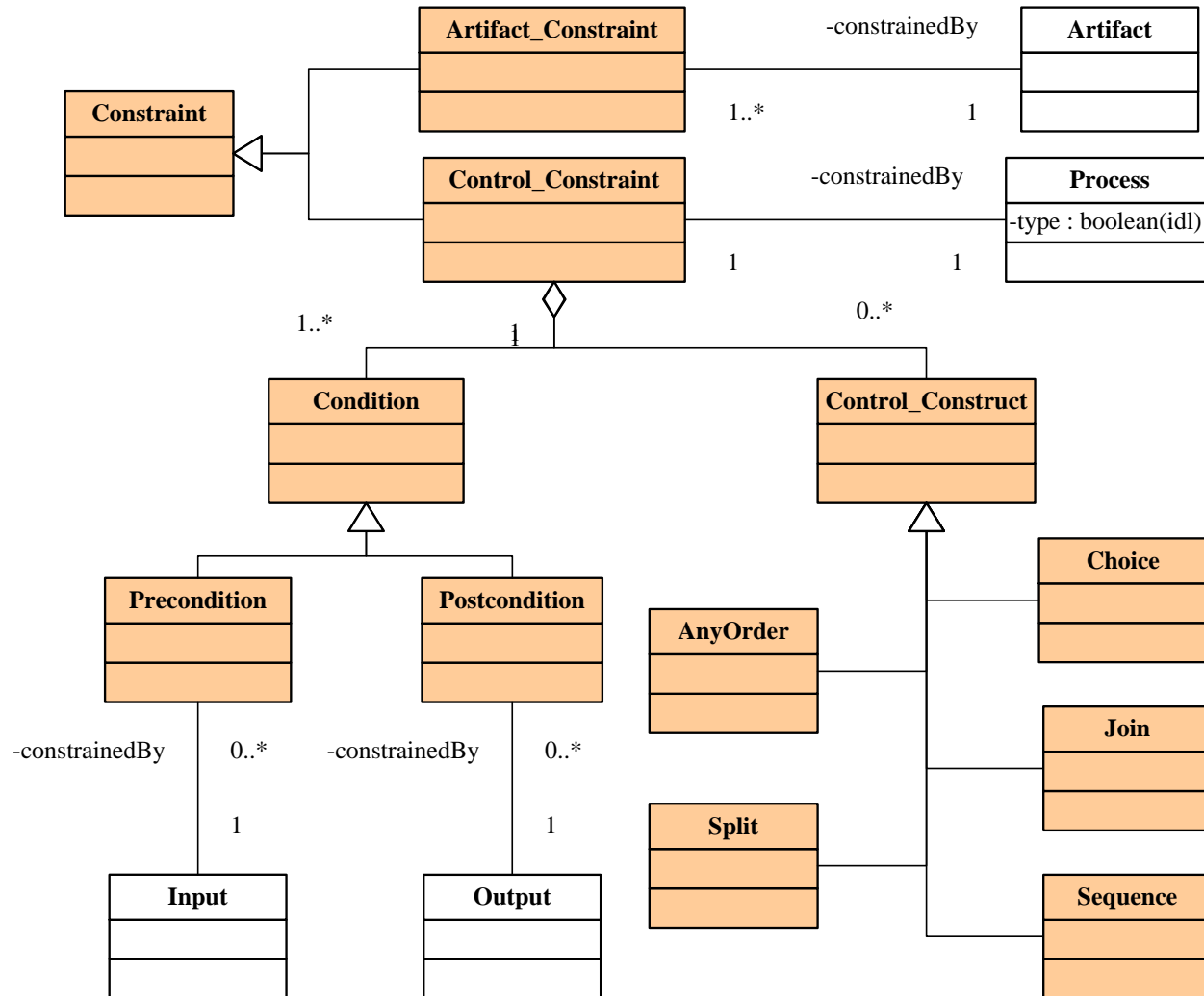
Process Control Model (1/3)

- Process Control Model is defined to record two kinds of control constraints in process models
- Artifact_Constraint
 - Added to *Artifact*
 - From registration info of ontologies based on MFI-3
 - Can be used to
 - establish a semantic bridge between different *Artifacts*
 - support input/output matching between different process models
 - Semantically annotate specified *Artifact*
 - avoid semantic confliction during process integration

Process Control Model (2/3)

- Control_Constraint
 - Added to *Process*
 - Consists of
 - The conditions that should be satisfied **before or after execution** of the process model
 - **The sequence** followed by the sub-processes
 - Specially the conditions carried by control constructs, which are used to connect the sub-processes.

Process Control Model (3/3)

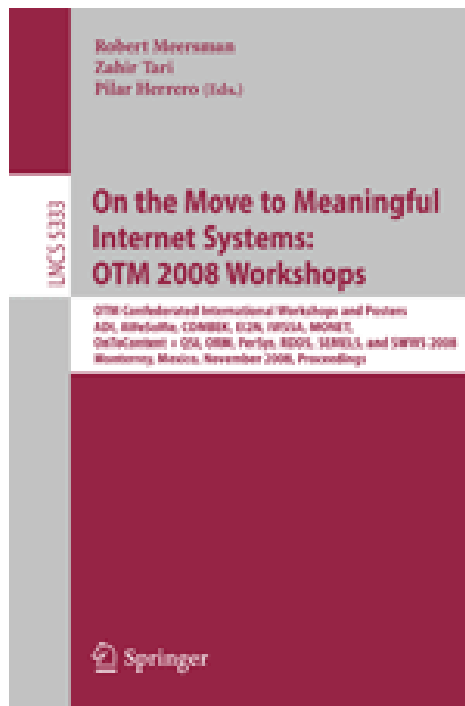


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Research Progress on 19763-5

- Publish a paper named “*A Metamodel for Enabling a Service Oriented Architecture*” with **Baba Piprani** in ORM workshop 2008.



A Metamodel for Enabling a Service Oriented Architecture

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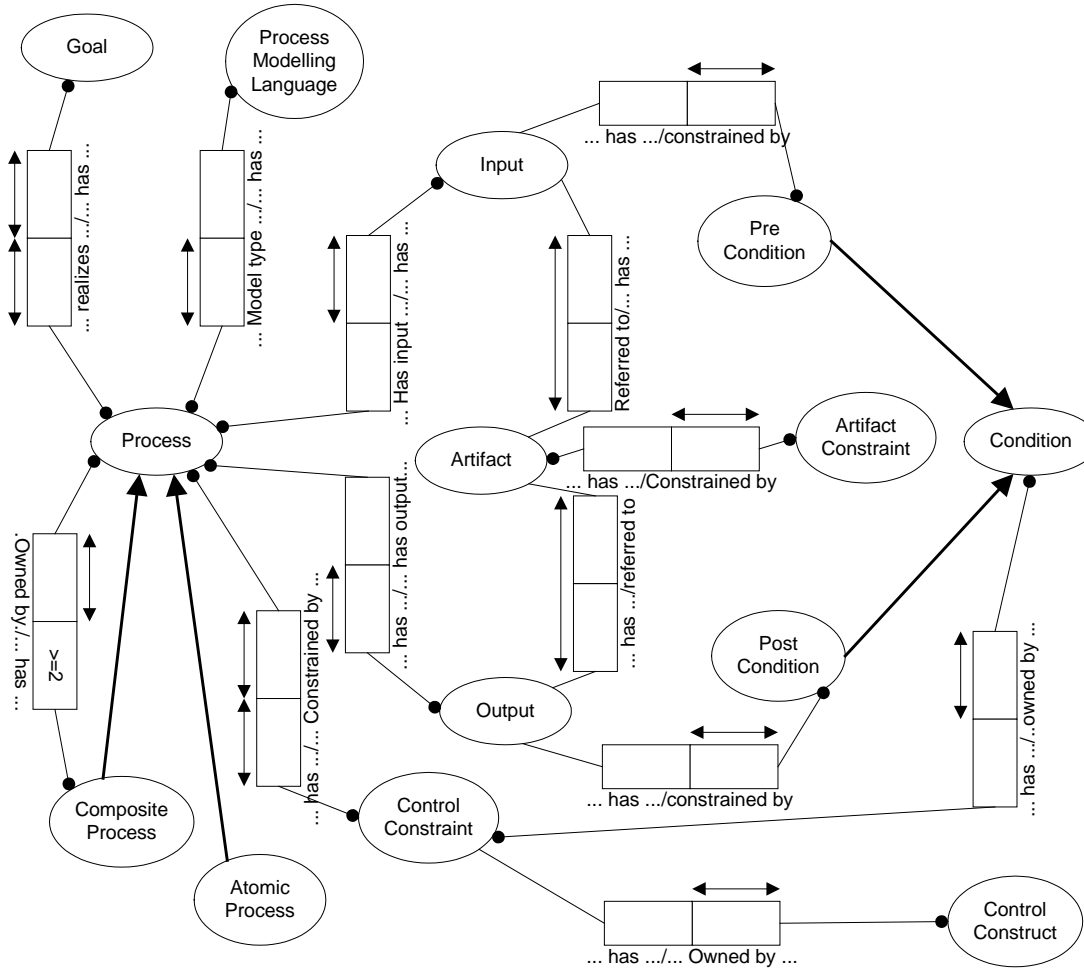
Abstract. Process modelling initiatives generally develop their process models without much emphasis on data, burying their sequence of operations as a thread within a non-elementary process. More often than not, these buried operations are elementary atomic reusable components. The resulting models are generally not flexible or sufficiently reusable, suffering from update anomalies and redundancies. Addressing “service” as a major deliverable component, an ORM metamodel was developed in line with ISO 19763-5 Metamodel Framework for Interoperability: Metamodel for Process Model Registration, to harmonize atomic component processes using a control sequence and event models to enable the delivery of a totally flexible model set facilitating metamodel interoperability and cooperation between systems via their respective models. The paper provides a limited ORM based review of ISO 19763-5, and uses underlying component processes to develop a metamodel for a deliverable Services Oriented Architecture containing control sequence models, event models, and bridges to associated data models or web services.

Keywords: Services, Event Modelling, Service Oriented Architecture, ORM, ISO19763-5

1 Introduction

Many businesses suffer from weak IT infrastructures consisting of disconnected databases, applications and services. This is even reflected in the glaring lack of documented business processes and their automatable counterparts in the form of IT

ORM schema of MFI-5



With Baba Piprani

From "A Metamodel for Enabling a Service Oriented Architecture", ORM workshop 2008

Validation of MFI-5

- Improve metamodels in MFI-5 2nd WD
- Modify ORM schema accordingly
- Validate MFI-5 in real projects
 - A RGPS-based process modeling tool has been developed
 - This tool is now being applied into urban transportation domain.
 - It is feasible to use RGPS-based process models as examples to validate MFI-5.

Any comments are welcome!