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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• Introduction
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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 interoperation between various process models.
4. Support process integration within/across organizations.
Scope of MFI-5 (2/3)

- MFI Core
- MFI Process registration
- Administrative information of process model A
- Administrative information of process model B
- Process model A for application system A
- Process model B for application system B
- Ontology registry
- MFI Ontology Registration
- Specifications such as PSL
- Application system A
- Application system B

Scope of MFI Process registration

Interoperation: Application system A and Application system B
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

**Structural Info**

```
  CP
   ↓ 1
  AP1   CP1   AP2
     ↓ 2.1 2.2
    AP3   AP4
```

**Actual execution**

1 → 2(2.1 → 2.2) → 3

- **Control_Constraint**
  - Condition: precondition/postcondition
- **Control_Construct**: Sequence 2(2.1 → 2.2) → 3

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

**Semantic Info**

```
Process model expressed in different modeling languages
abstract
```

Ontology supports

supports
Overview of MFI-5

MFI-5

Base Model

Process Control Model
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.
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!