

ISO/IEC 19763 -4

MFI-4 Extended Registry

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SC32/WG2

2010.05.20

The relationship between Part-4 and the other parts

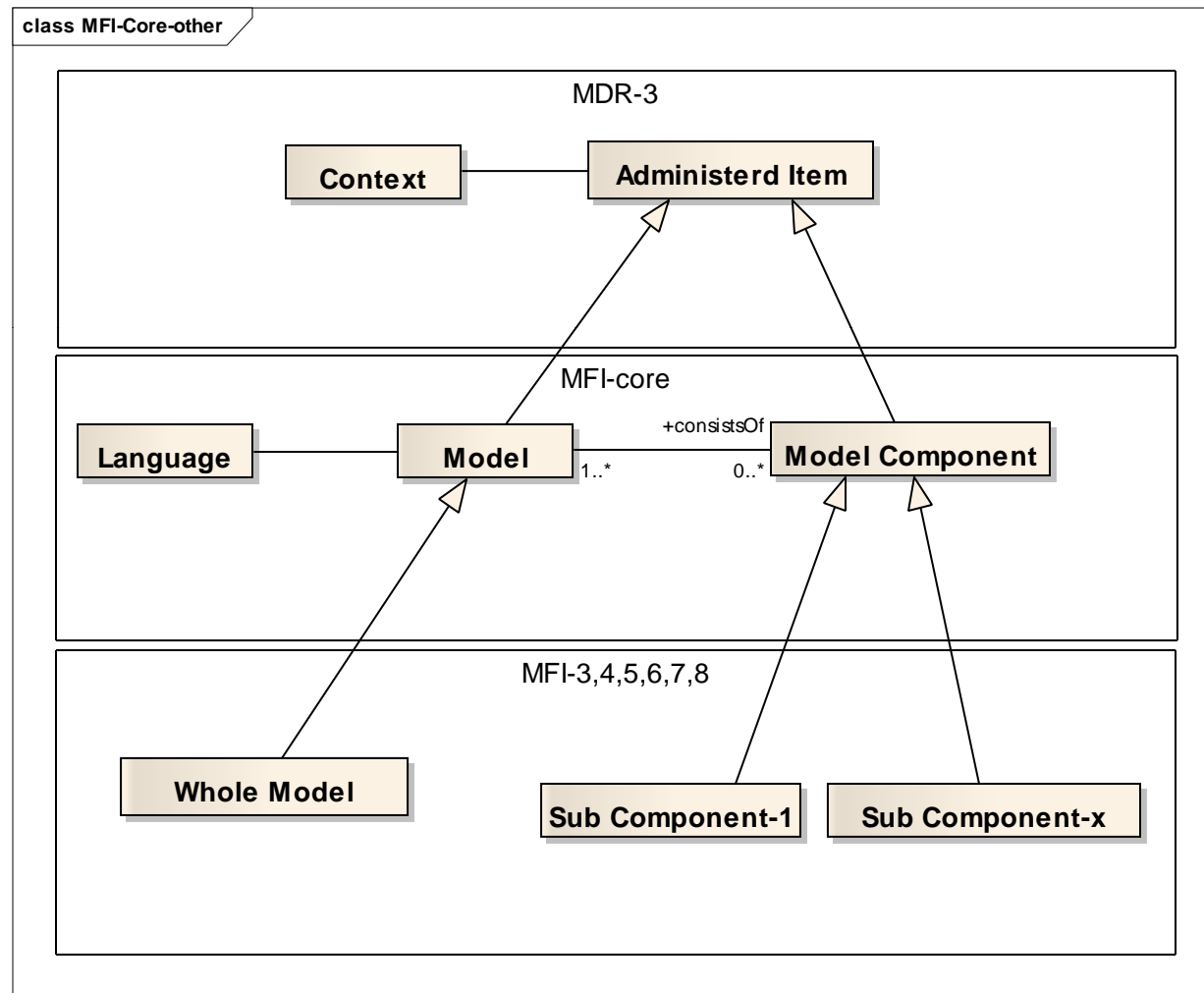
(1) Specialization approach

- The metamodels of MFI-3,5,6,7,8,9 are specialization of MFI-2
- For each part, metamodel registries are specialized and maintained independently.
- Are other metamodels from a SDO, in the same way handled in this approach?
- MFI-4 is extension of MFI-2.

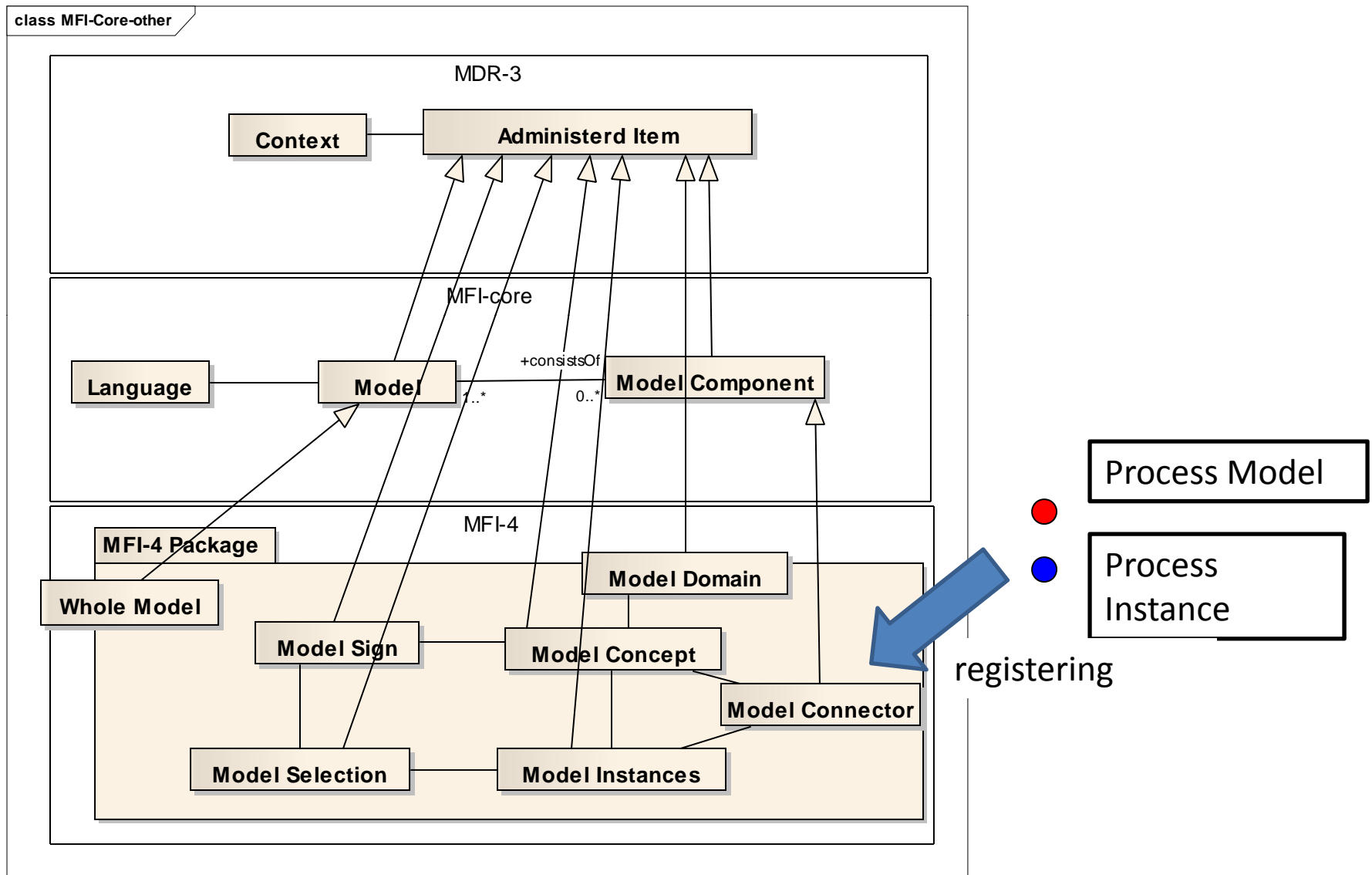
(2) Encapsulation approach

- The metamodels of MFI-3,5,6,7,8,9 are independent metamodel and registered as component in MFI-4 registry where appropriate
- For each part, metamodel registries are specialized and maintained independently or can be implemented with common MFI-4 registry
- Other metamodels from a SDO, can be managed in the same way.
- MFI-4 is extension of MFI-2.

(1) Specialization approach

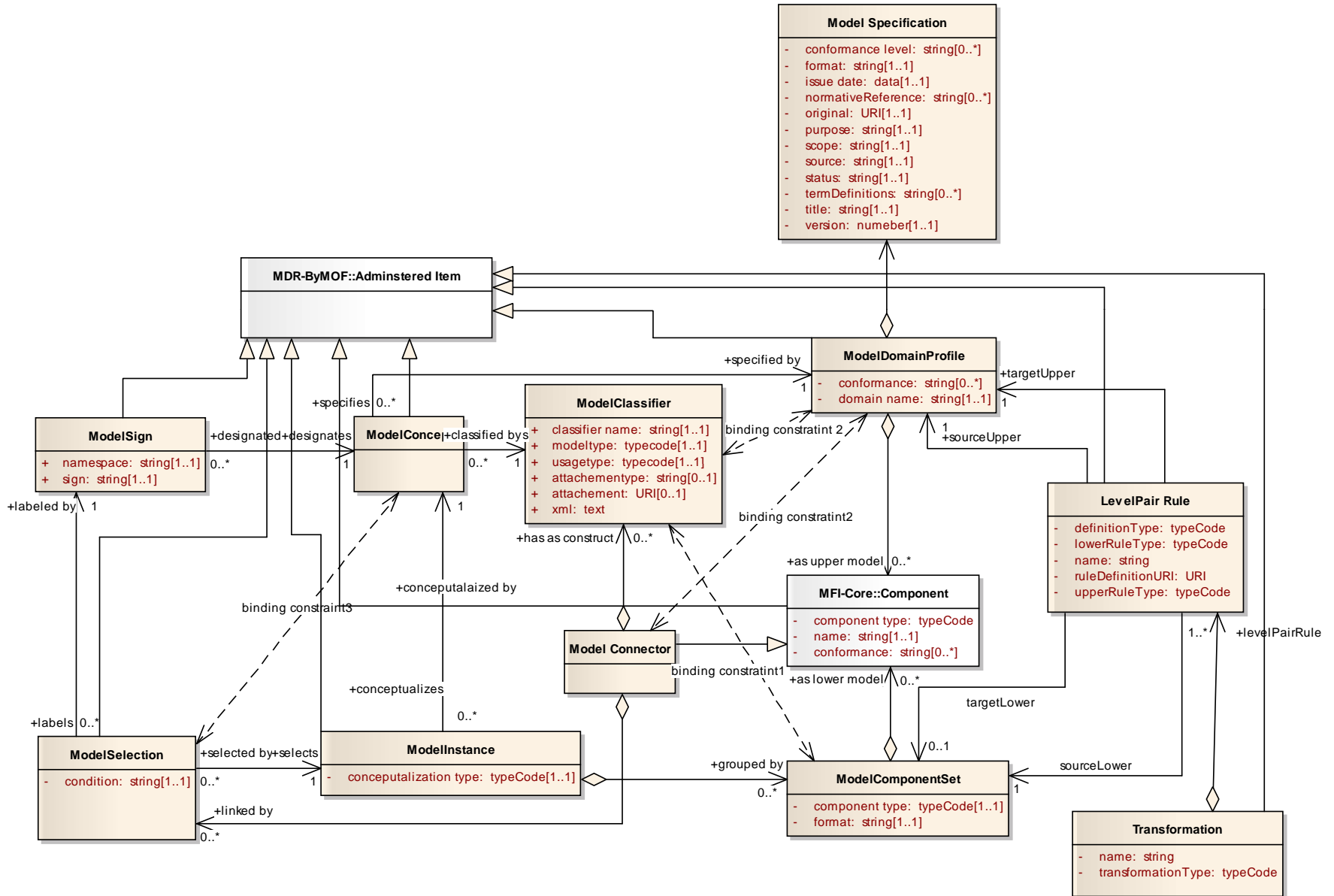


(2) Encapsulation approach



MFI Part4 : Extended Registry

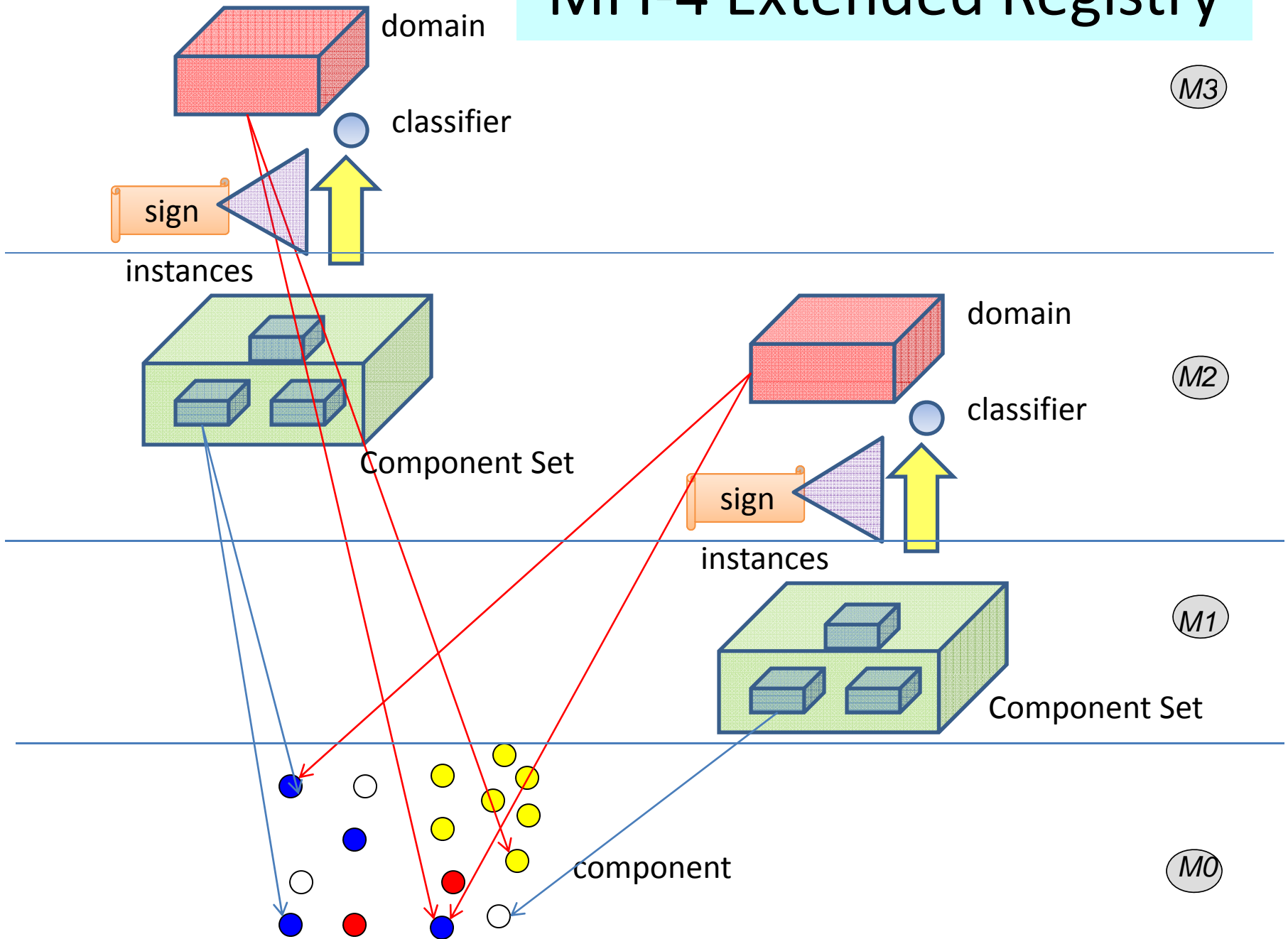
pkg Model Selection



Informal description of MFI extended registry model

- ModelComponent is unit of registered elements. Actually there are various granularities and abstraction levels .
- ModelComponentSet is aggregation of ModelComponent. The instance of ModelComponentSet is derived one from power set of ModelComponent.
- The instance of ModelComponentSet is the classified grouping elements of ModelComponent.
- ModelInstance is a role to conceptualize the grouped ModelComponentSet by upper defined ModelConcept.
- ModelInstance is aggregation again of ModelComponentSet. It seems double packaging of ModelComponent. It intends that ModelComponentSet of ModelInstance is able to be chosen for alternative ModelComponentSet elements. For example, it can be versioning of ModelComponentSet, new one will be added the ModelInstances that has old version of ModelComponent Set.
- Above all (ModelComponent, ModelComponent Set, ModelInstances) should be registered as common use as possible.
- The other hand, ModelConcept is designated with ModelSign for human communication. (ModelConcept can exist without any ModelSign).
- ModelSign is to designate ModelConcept, it is possible to put many ModelSigns to the same ModelConcept as synonym. For example, different terms are used for the same concept if the domains are different.
- Finally, ModelSelection, it is a very important notion in the MFI core model.
- ModelInstance consists of ModelComponentSet as mentioned above. The ModelInstances is specified (conceptualized) with upper ModelConcept. However, it has no sign (term) to point it for human communication.
- ModelSelection is a role of labeling the interesting ModelInstance with registered ModelSign. And, it is able to select the ModelComponentSet in ModelInstances by the selection condition.
- In sum, ModelSelection is grouping the registered ModelComponents and labeling it with the sign, It includes the intentions such as what ModelSign should be used, which ModelInstances should be adopted, which ModelComponentSet in ModelInstances should be selected.
- In fact, a ModelComponentSet has different ModelSign via different ModelInstance. From the other side, a ModelSign can be used to stand for the different ModelComponents.
- ModelSelection, for example, is a role to specify the standard ModelComponentSet such as adopted by each region, business field, group, company.
- ModelComponent is able to have sub ModelComponent via ModelSelection. It means that ModelComponent is not directly connected to another ModelComponent. Concrete actual use ModelComponent can be decided from selected ModelInstances, which has the same function (concept), according to the selection condition.
- In this way, managing and registering information such as framework is able to search the information from various viewpoints according to many purposes.
- In the example of RoR, the Registry type on display is handled in ModelSign internally in the MFI registry.
- Comparing selected ModelComponentSet for each business filed and analyzing labeled ModelSign, we can find the proper difference of Concept and understand the “ontology” in the true sense of the term.

MFI-4 Extended Registry

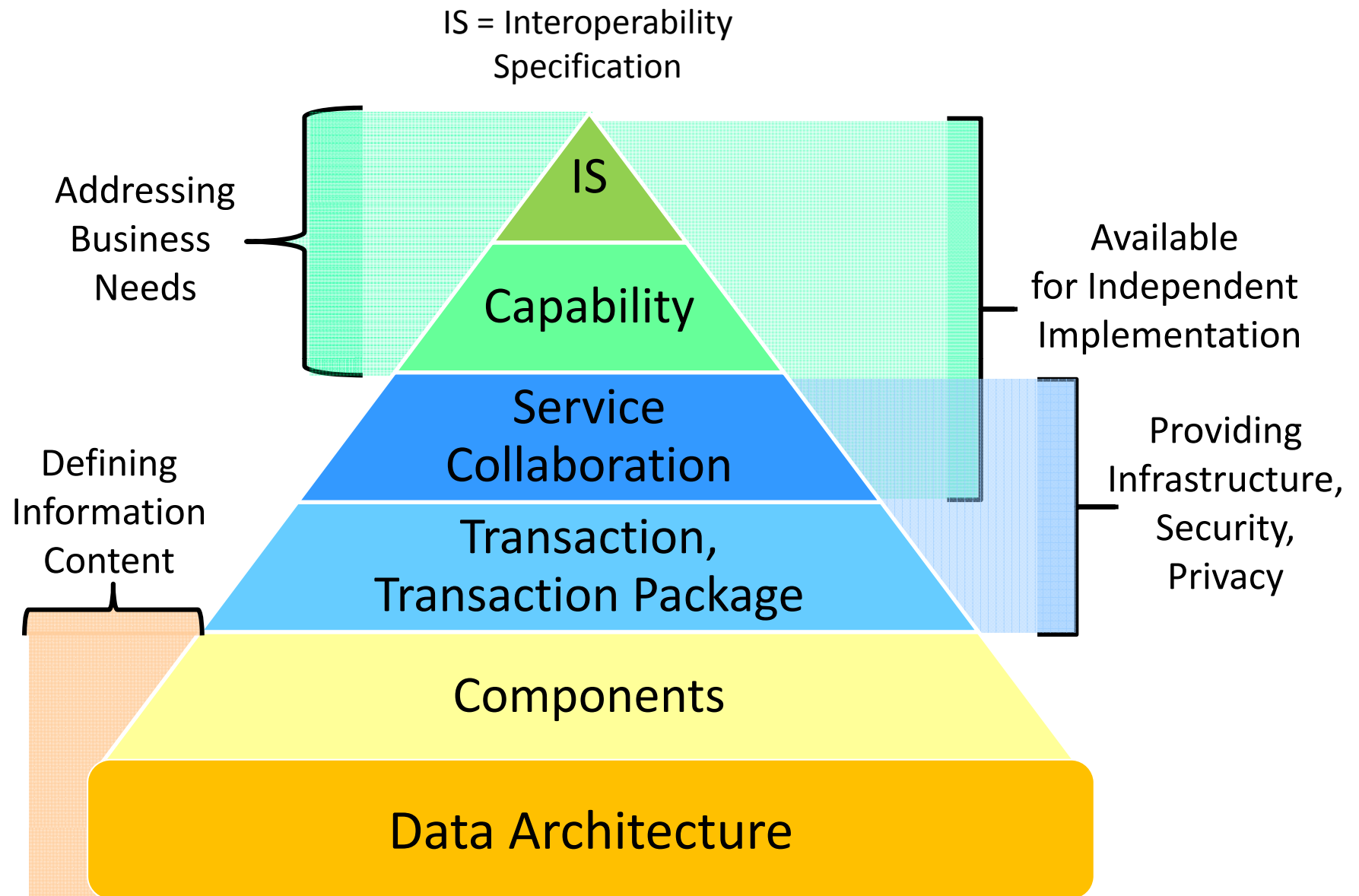


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MFI-4 Extended Registry

Example of Registry Target:
HITSP Harmonization Framework

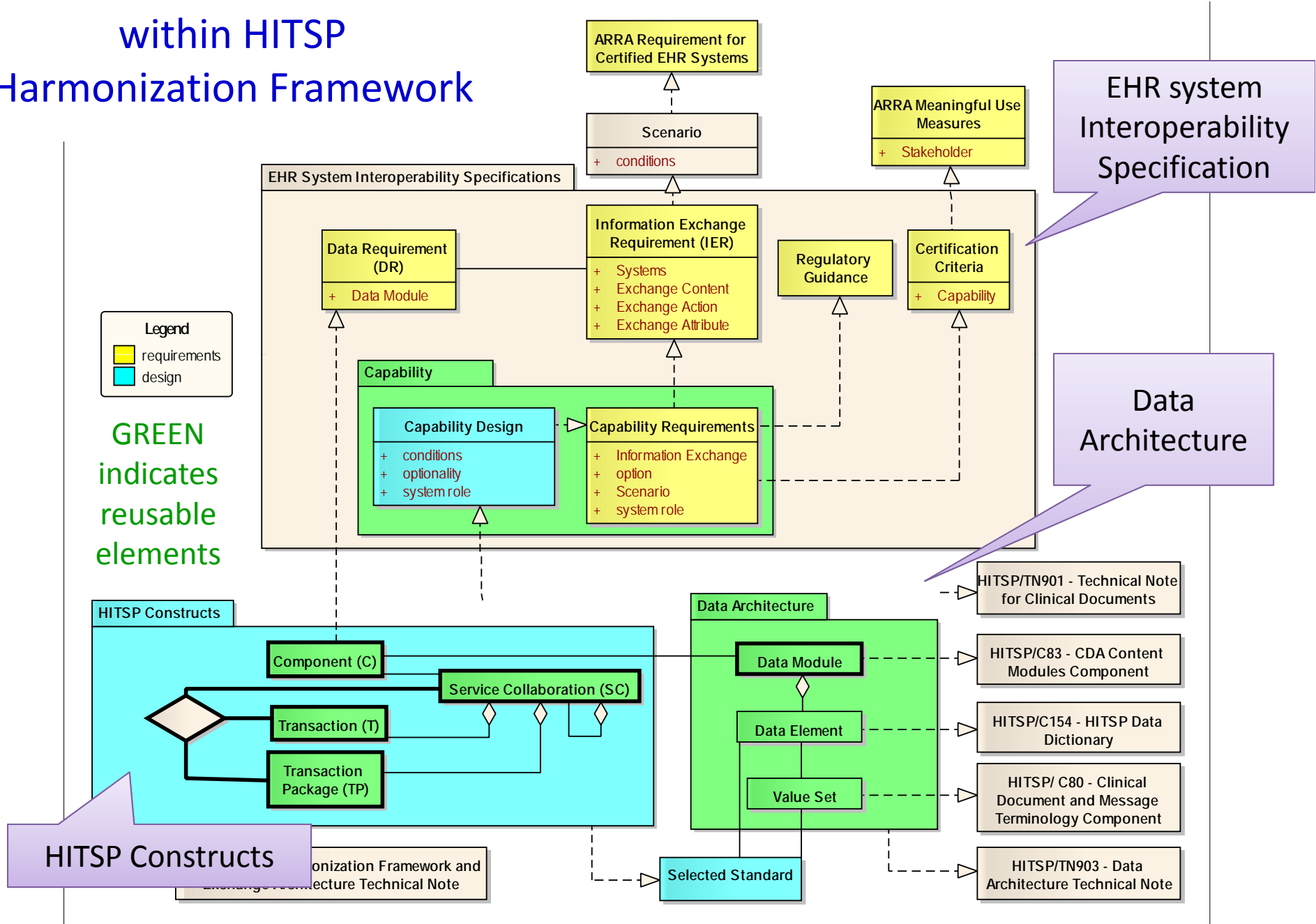
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2010.05.20

HITSP Harmonization Framework

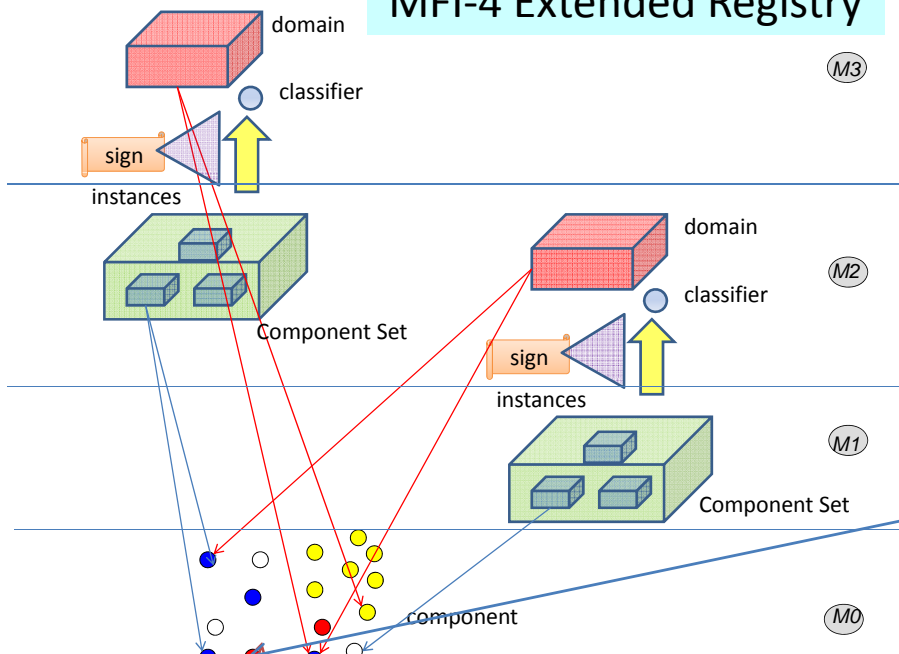


HITSP Data Architecture within HITSP Harmonization Framework

HITSP Documents are available at www.HITSP.org
Detailed HITSP Data Architecture is available online at www.USHIK.org



MFI-4 Extended Registry



Interoperability Specification, Service Collaboration, Transaction Package, Transaction, Component, Technical Note, Reference Documents

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- IG04 - Emergency Responder EHR
- IG05 - Consumer Engagement and Access to Clinical Information via Media
- IG06 - Quality
- IG07 - Medication Management
- IG08 - Personalized Healthcare
- IG09 - Escalations and Transfers of Care
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- IG107 - IHE Health Interoperability Specification
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- SC115 - HL7 Messaging
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- TP23 - Query for Existing Data
- TP29 - Patient ID Cross-Referencing
- TP30 - Manage Consent Directives
- TP43 - Medication Orders
- TP46 - Medication Forecasting and Benefits Information
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- TP89 - Sharing Imaging Results

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- T15 - Collect and Communicate Security Audit Trail
- T16 - Consistent Time
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- T24 - Pseudonymize
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- T33 - Transfer of Documents via Media
- T40 - Patient Health Plan Eligibility Verification
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- T48 - Patient Health Plan Authorization Request and Response
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- C75 - Healthcare Document Infection Report
- C76 - Case Report Pre-Patients
- C78 - Immunization Document
- C80 - Clinical Document and Message Terminology
- C83 - Emergency Domain Alerting Protocol
- C84 - CDA Content Modules
- C84 - Consent and History and Physical Note
- C87 - Anonymize Public Health Case Reporting Data
- C88 - Anonymize Immunizations and Response Management Data
- C90 - Clinical Evidence Decision Support

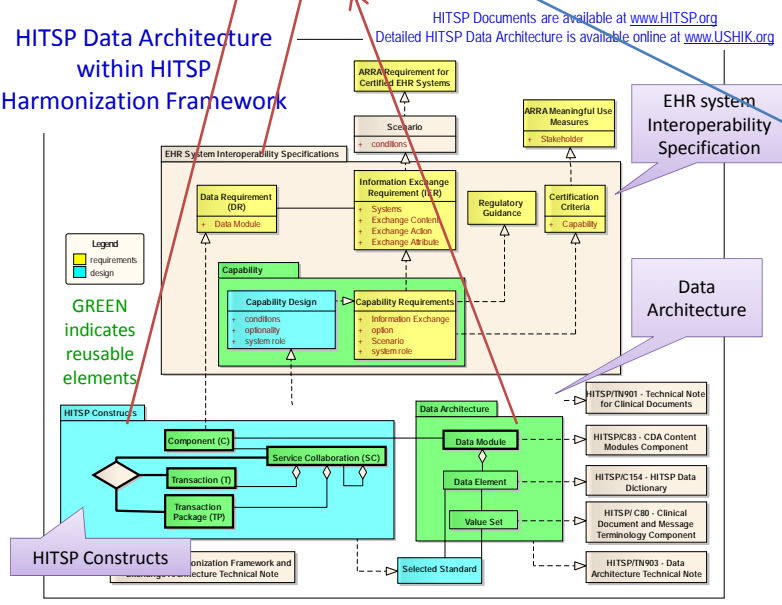
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- TN000 - Security and Privacy
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- REF12 - Quality Measure Reference Document
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- REF16 - HITSP Glossary

HITSP Data Architecture within HITSP Harmonization Framework

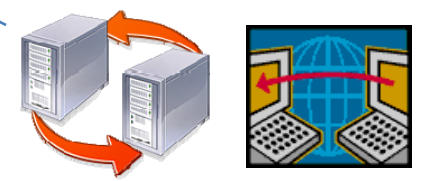


TP13 - Manage Sharing of Documents

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XDS systems

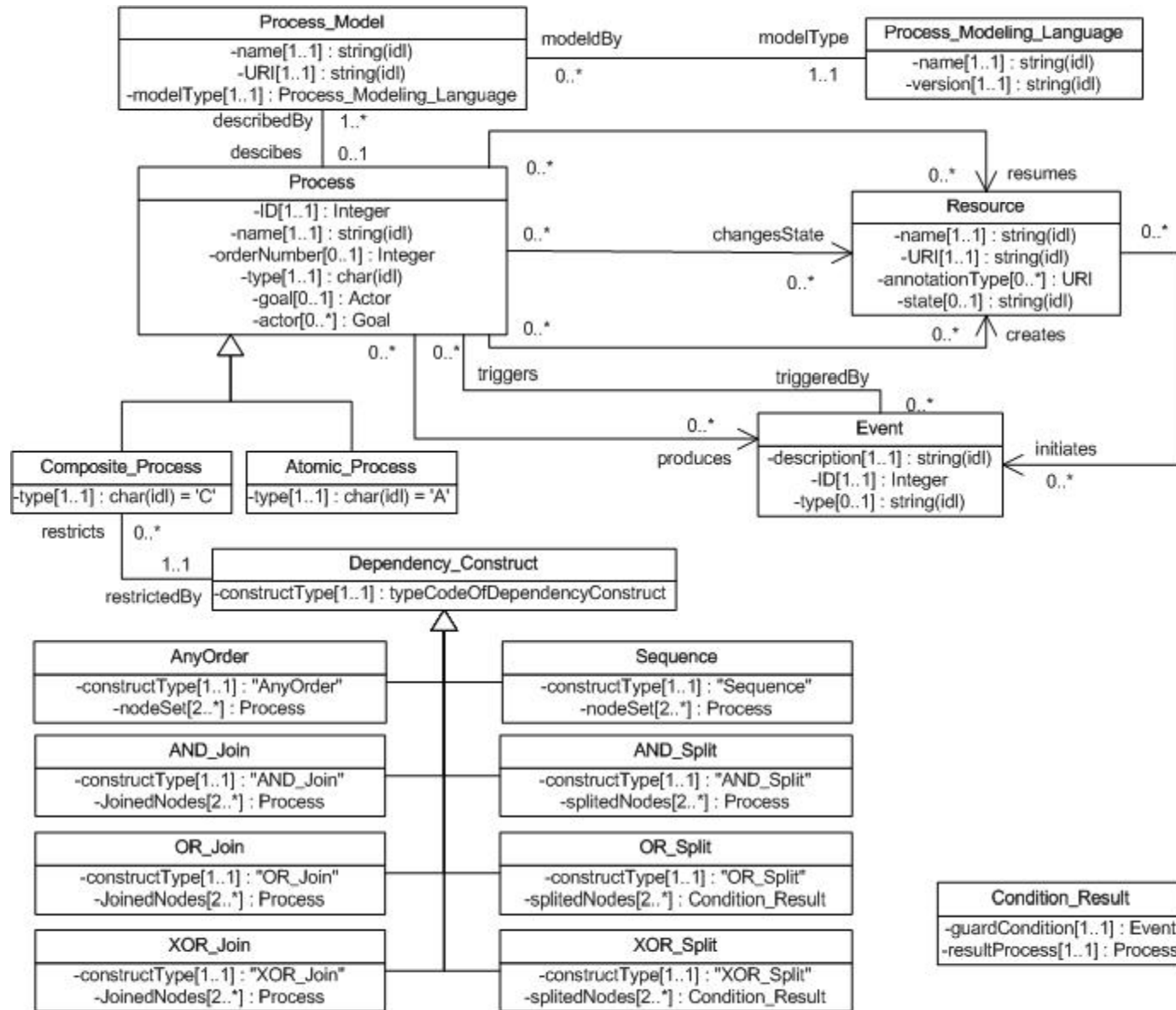


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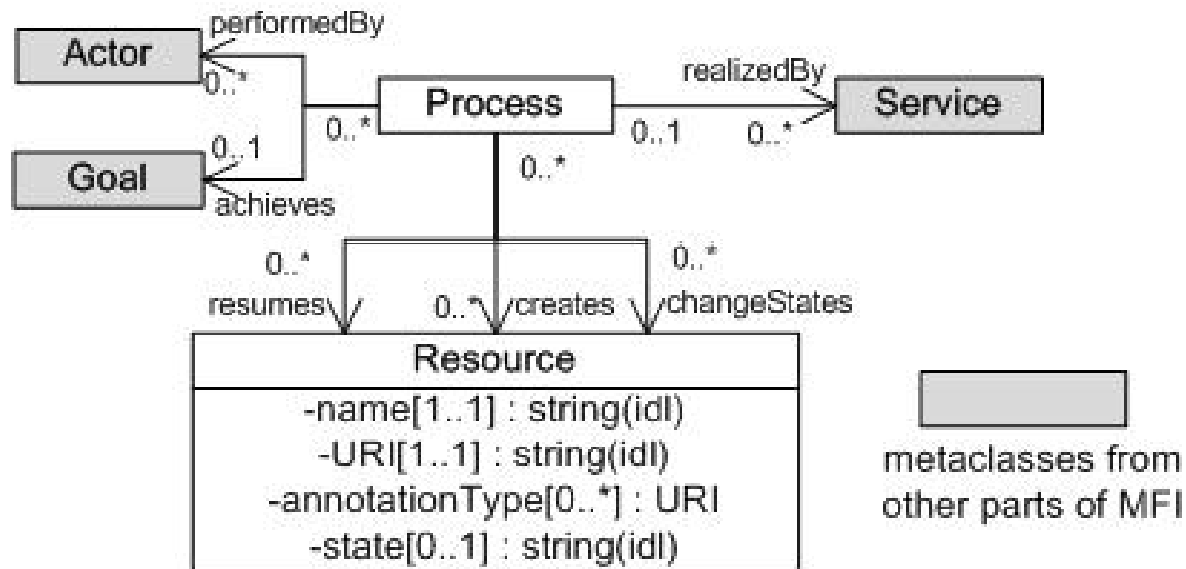
Example of Registry Target:
MFI-5 Process Model

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MFI-5: The metamodel for process model registration



Relationship between MFI PMR and some parts in MFI

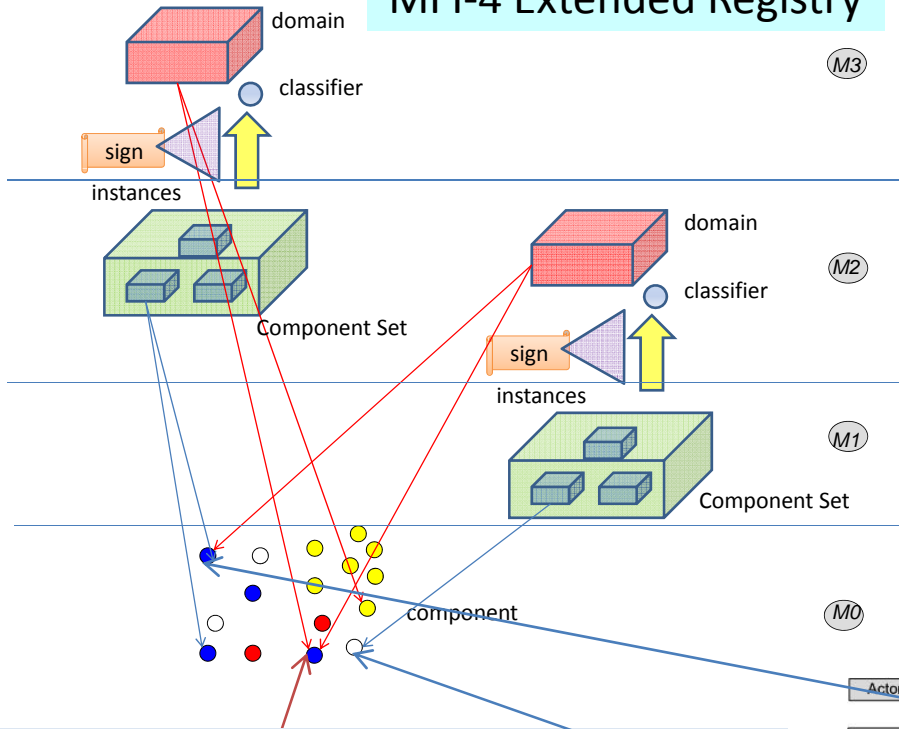


Examples of MFI PMR registration

```
- <process:CompositeProcess rdf:ID="BravoAir_Process">
  <rdfs:label>This is the top level process for BravoAir</rdfs:label>
- <process:composedOf>
  - <process:Sequence>
    - <process:components rdf:parseType="Collection">
      <process:AtomicProcess rdf:about="#GetDesiredFlightDetails" />
      <process:AtomicProcess rdf:about="#SelectAvailableFlight" />
      <process:CompositeProcess rdf:about="#BookFlight" />
    </process:components>
  </process:Sequence>
</process:composedOf>
</process:CompositeProcess>
- <process:AtomicProcess rdf:ID="GetDesiredFlightDetails">
  <process:hasInput rdf:resource="#DepartureAirport_In" />
  <process:hasInput rdf:resource="#ArrivalAirport_In" />
  <process:hasInput rdf:resource="#OutboundDate_In" />
  <process:hasInput rdf:resource="#InboundDate_In" />
  <process:hasInput rdf:resource="#RoundTrip_In" />
</process:AtomicProcess>
- <process:Input rdf:ID="DepartureAirport_In">
  <process:parameterType rdf:resource="http://www.daml.org/services/owl-s/1.0/Concepts.owl#Airport" />
</process:Input>
- <process:Input rdf:ID="ArrivalAirport_In">
  <process:parameterType rdf:resource="http://www.daml.org/services/owl-s/1.0/Concepts.owl#Airport" />
</process:Input>
- <process:Input rdf:ID="OutboundDate_In">
  <process:parameterType rdf:resource="http://www.daml.org/services/owl-s/1.0/Concepts.owl#FlightDate" />
</process:Input>
- <process:Input rdf:ID="InboundDate_In">
  <process:parameterType rdf:resource="http://www.daml.org/services/owl-s/1.0/Concepts.owl#FlightDate" />
</process:Input>
- <process:Input rdf:ID="RoundTrip_In">
  <process:parameterType rdf:resource="http://www.daml.org/services/owl-s/1.0/Concepts.owl#RoundTrip" />
</process:Input>

- <process:AtomicProcess rdf:ID="SelectAvailableFlight">
  <process:hasInput rdf:resource="#PreferredFlightItinerary_In" />
  <process:hasOutput rdf:resource="#AvailableFlightItineraryList_Out" />
</process:AtomicProcess>
- <process:Input rdf:ID="PreferredFlightItinerary_In">
  <process:parameterType rdf:resource="http://www.daml.org/services/owl-s/1.0/Concepts.owl#FlightItinerary" />
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- <process:UnConditionalOutput rdf:ID="AvailableFlightItineraryList_Out">
  <process:parameterType rdf:resource="http://www.daml.org/services/owl-s/1.0/Concepts.owl#FlightItineraryList" />
</process:UnConditionalOutput>
```

MFI-4 Extended Registry



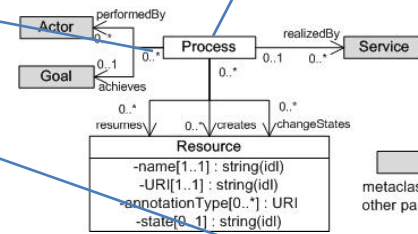
BravoAir_Process

Examples of MFI PMR registration

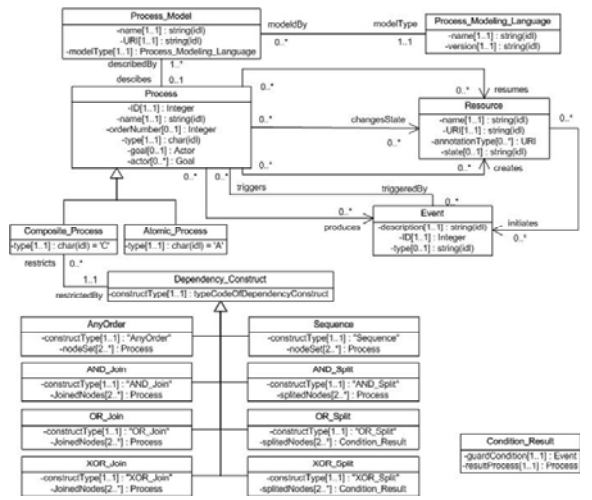
```

- <process CompositeProcess rdf:ID="BravoAir_Process">
  <dfs:label This is the top level process for BravoAir </dfs:label >
  <process CompositeOf >
    <process Sequence >
      <process Composite >
        <process CompositeType rdf:ID="Collection">
          <process AtomicProcess rdf:about="#GetDesiredFlightDetails" />
          <process AtomicProcess rdf:about="#SelectAvailableFlight" />
          <process CompositeProcess rdf:about="#BookFlight" />
        </process Composite >
      </process Sequence >
    </process CompositeOf >
  </process CompositeProcess >
- <process AtomicProcess rdf:ID="GetDesiredFlightDetails">
  <process HasInput rdf:resource="#DepartureAirport_In" />
  <process HasOutput rdf:resource="#ArrivalAirport_In" />
  <process HasOutput rdf:resource="#OutboundDate_In" />
  <process HasOutput rdf:resource="#InboundDate_In" />
  <process HasOutput rdf:resource="#RoundTrip_In" />
</process AtomicProcess >
- <process Input rdf:ID="DepartureAirport_In">
  <process parameterType rdf:resource="http://www.daml.org/services/owl-s/1.0/Concepts.owl#Airport" />
</process Input >
- <process Input rdf:ID="ArrivalAirport_In">
  <process parameterType rdf:resource="http://www.daml.org/services/owl-s/1.0/Concepts.owl#Airport" />
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- <process Input rdf:ID="InboundDate_In">
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</process Input >
- <process AtomicProcess rdf:ID="SelectAvailableFlight">
  <process HasInput rdf:resource="#PreferredFlightInventory_In" />
  <process HasOutput rdf:resource="#AvailableFlightInventory_Out" />
</process AtomicProcess >
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</process UnconditionalOutput >
  
```

Actor, Goal, Process, Goal, Service, Resource



MFI-5: The metamodel for process model registration



BravoAir systems

