

ISO/IEC 19763-6 (MFI-6) : Registration procedure

SC32WG2 Meeting, Kunming, China

2010.05

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2. Objects to be registered
3. MDR/MFI Common Matamodel Package and MFI Metamodels
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5. Use-Cases and of Registration Process
6. Registry Life Cycle Statuses
7. Identification of register objects
8. Identification Scheme
9. Registry Profile
10. Registry Quality Issues

1. REQUIREMENTS & SCOPE OF THIS STANDARD

Background &

- At the Sydney Meeting(May 2008), the MFI-6 (ISO/IEC 19763-6) project was initiated after the study on the Registration.
- At the London Meeting(Nov. 2009), It was agreed to investigate the possibility of sharing the core package of MDR-3 (ISO/IEC 11179-3 Ed3). Then, another study group was initiated for extracting the core package that could be shared by both MFI-6 and MDR-6.
- Following is an proposal for MFI-6 (Registration Procedure) standard based upon the core package.

Requirements(Cont'd)

Requirement-1: thing to be registered

- MFI 6 should make it clear that things to be registered and how MFI metamodels to be used

Requirement-2: Registry Interoperability

- MFI 6 should be considered as a core part of an infrastructure which enables the interoperability by the conceivable higher lever registries (ROR)
Then, all models and ontology to be registered are required to be identified by the IRDI, URI or UUID.

Requirements; (Cont'd)

- Requirement-3: Procedure enforcement at implementations

Normative contents of the Part 6 should be enforced in both human processes and machine executable processes

- Requirement-4: Self registration

The Part 6 should provide facilities for the encouragement of registrar to complete their model registrations through the interactive processes. These facilities could enables the promoting of the accumulation of registry contents.

Requirements;

- Requirement-5: Related other MFI standards

Part-6 should be used for the registration of any kind of models including ontology those could be acceptable for MFI-2 (core) & MFI-3, MFI-5, MFI-7, MFI-8 in order to promote sharing and reusing of those for the sake of interoperability among domains.

- Requirement-6: Relation to MDR standards

The part-6 should take the MDR(ISO/IEC 11179) part-3 Ed3 in to the core of the standard

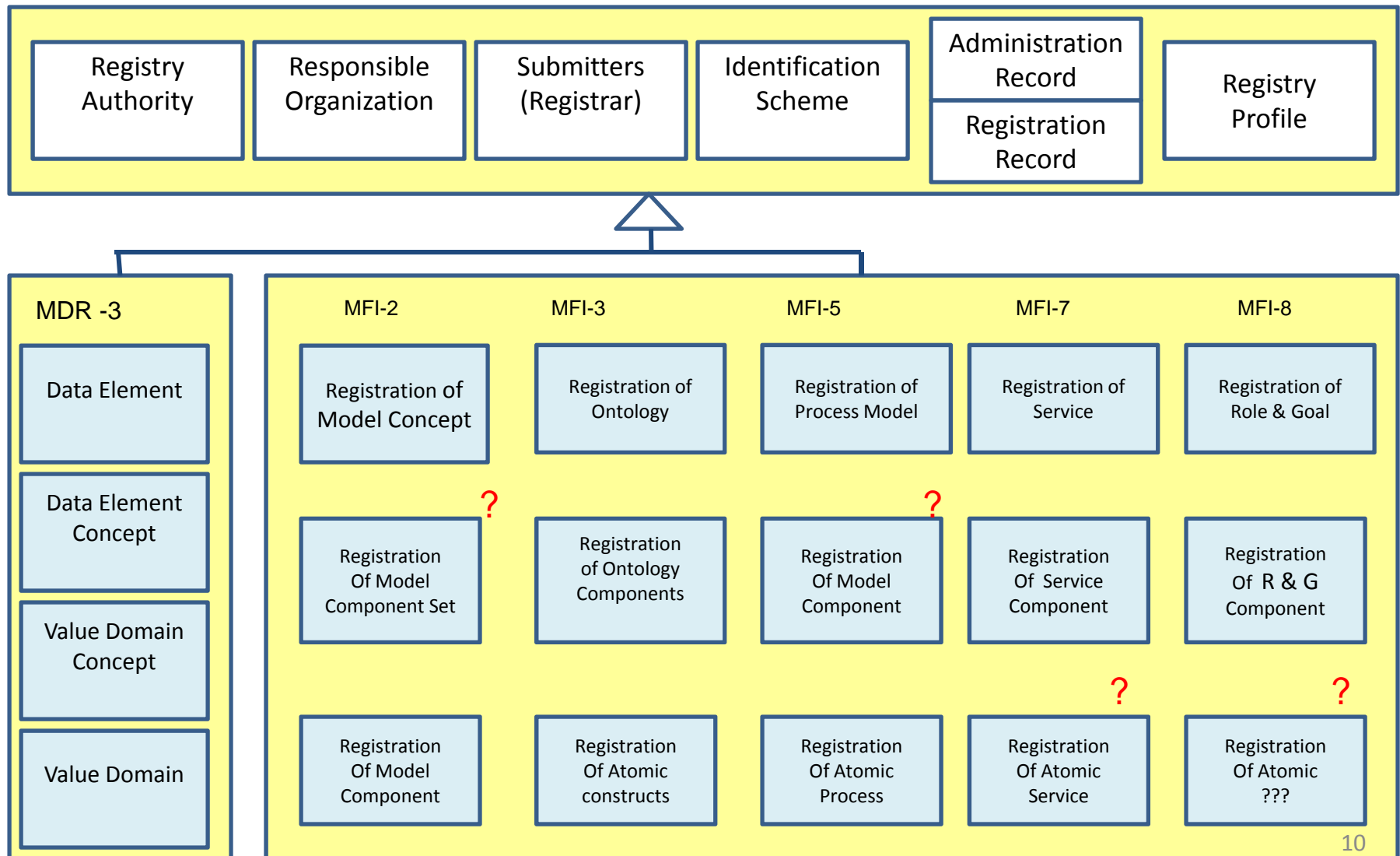
What is MFI-6

MFI-6 will show;

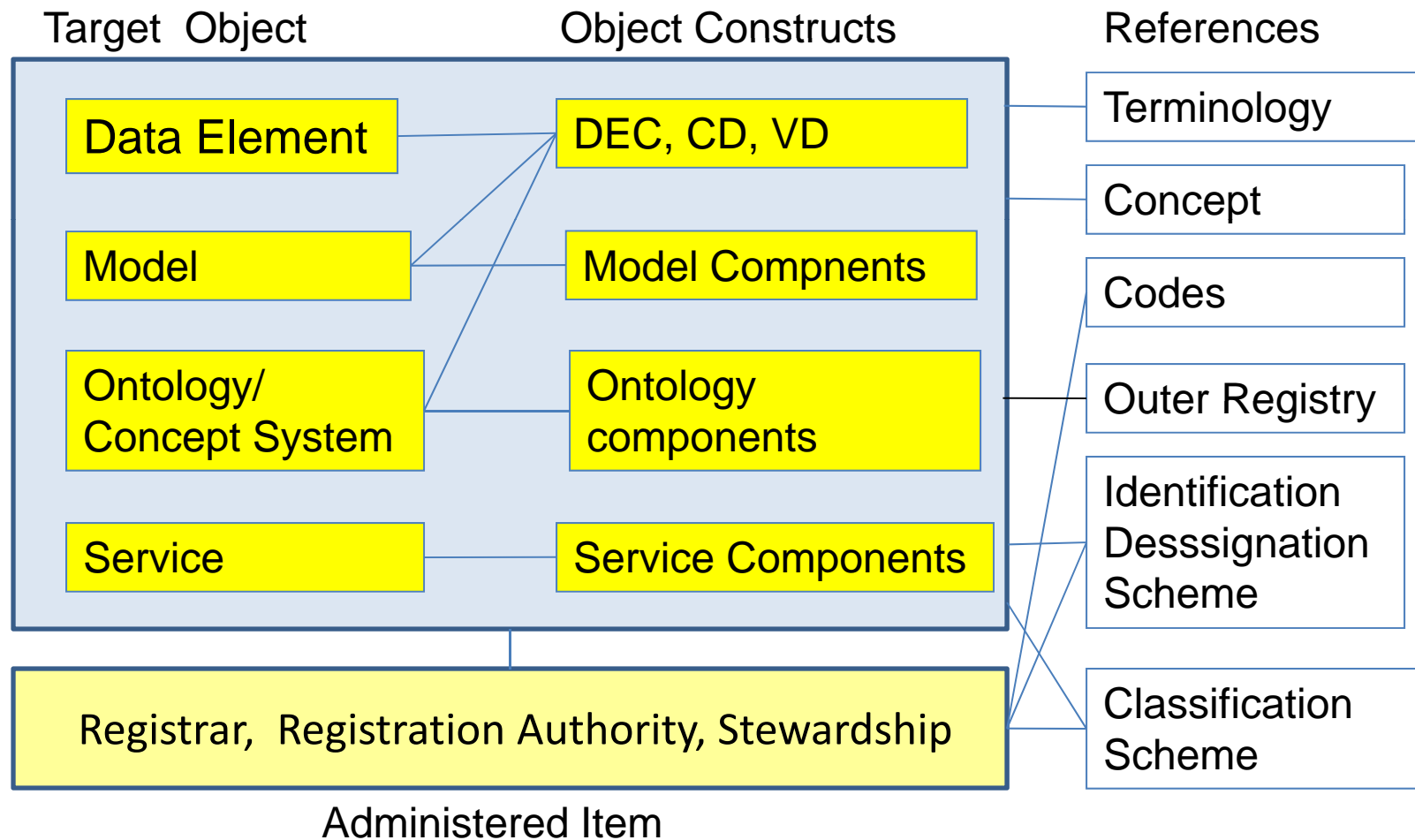
- What is Metamodel Framework for Interoperability?
- How do they work ?
- Not only the Registration, Registry Life Cycle Service specification will be covered

2. ITEMS TO BE REGISTERED

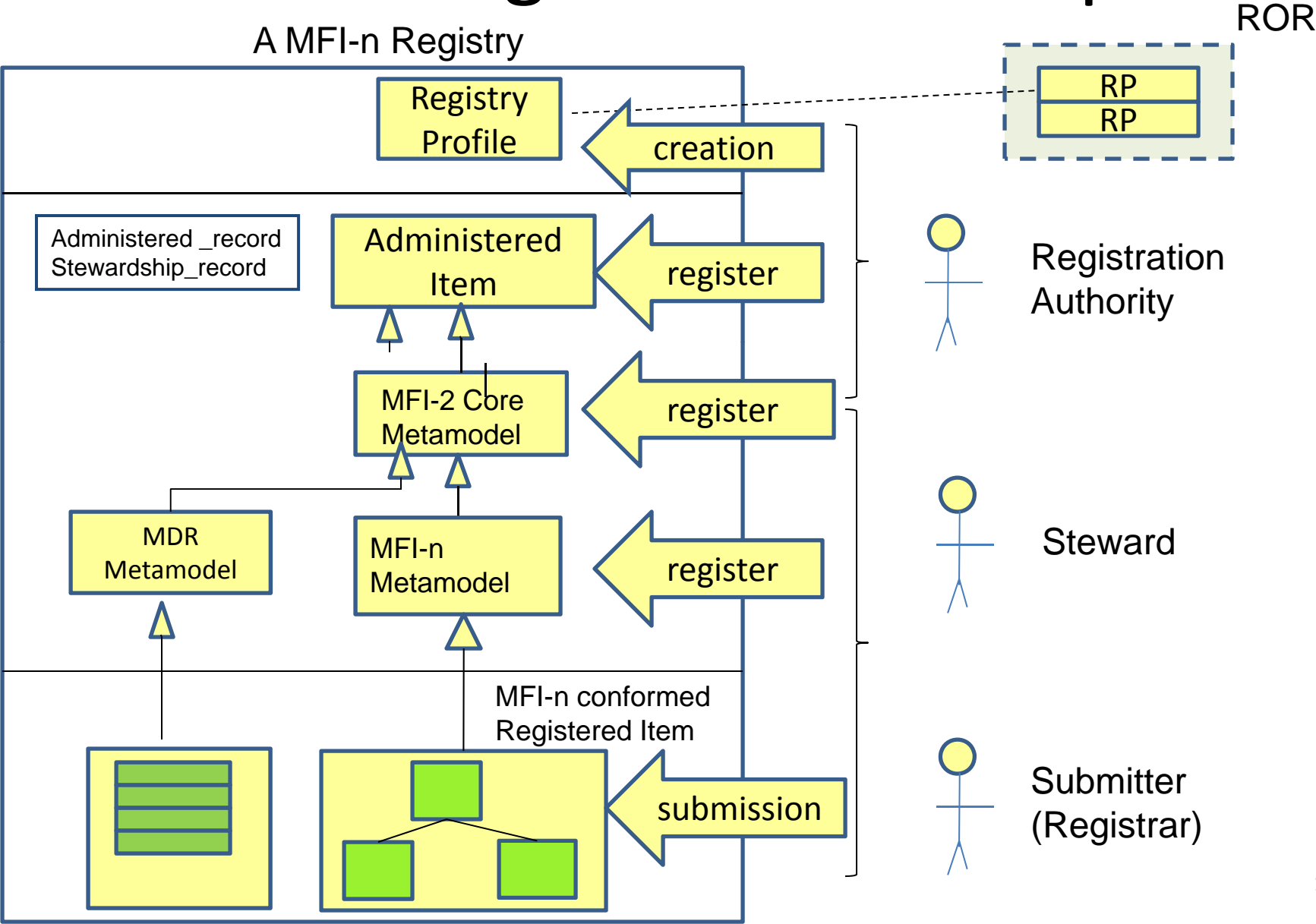
Objects to be registered



What to be Registered

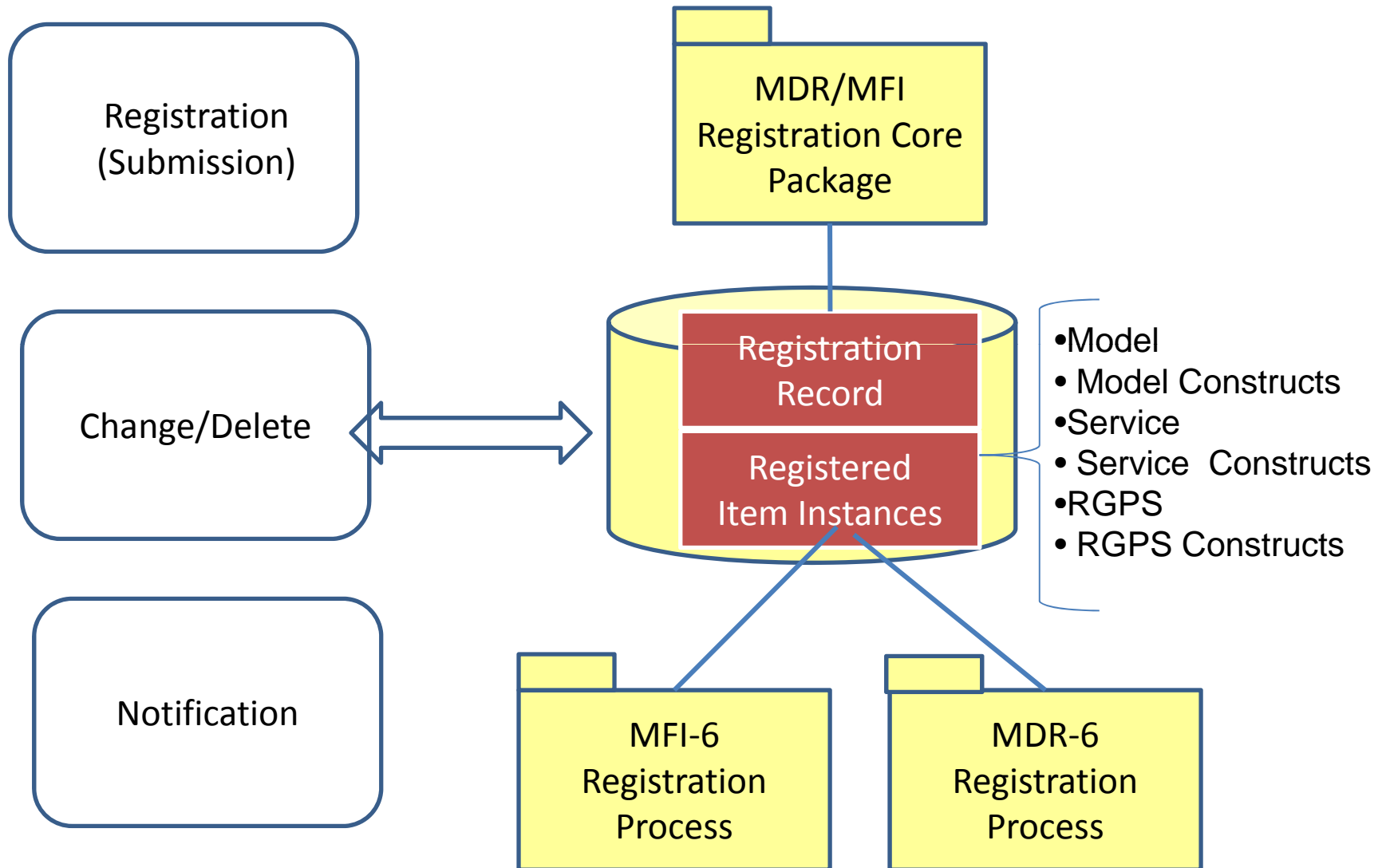


MFI Registration concept

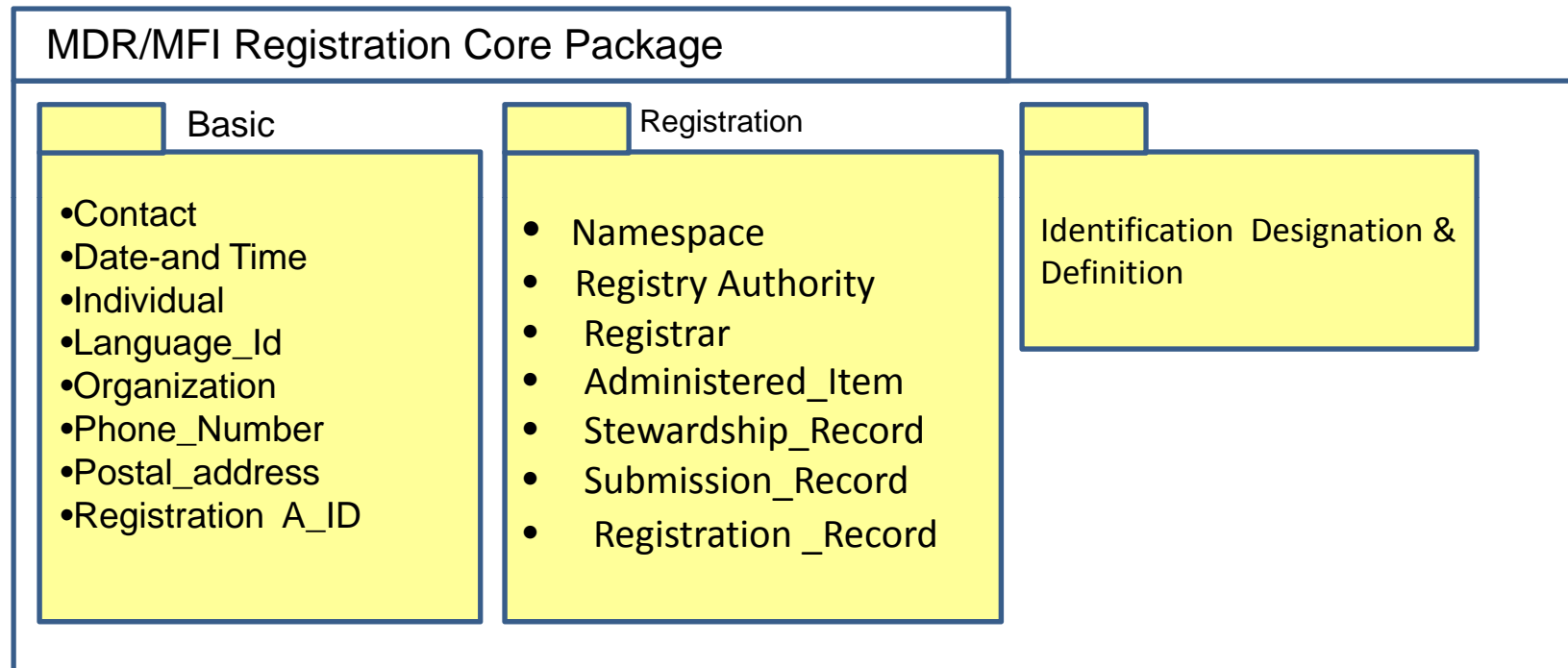


3. MDR/MFI COMMON MATAMODEL PACKAGE AND MFI METAMODELS

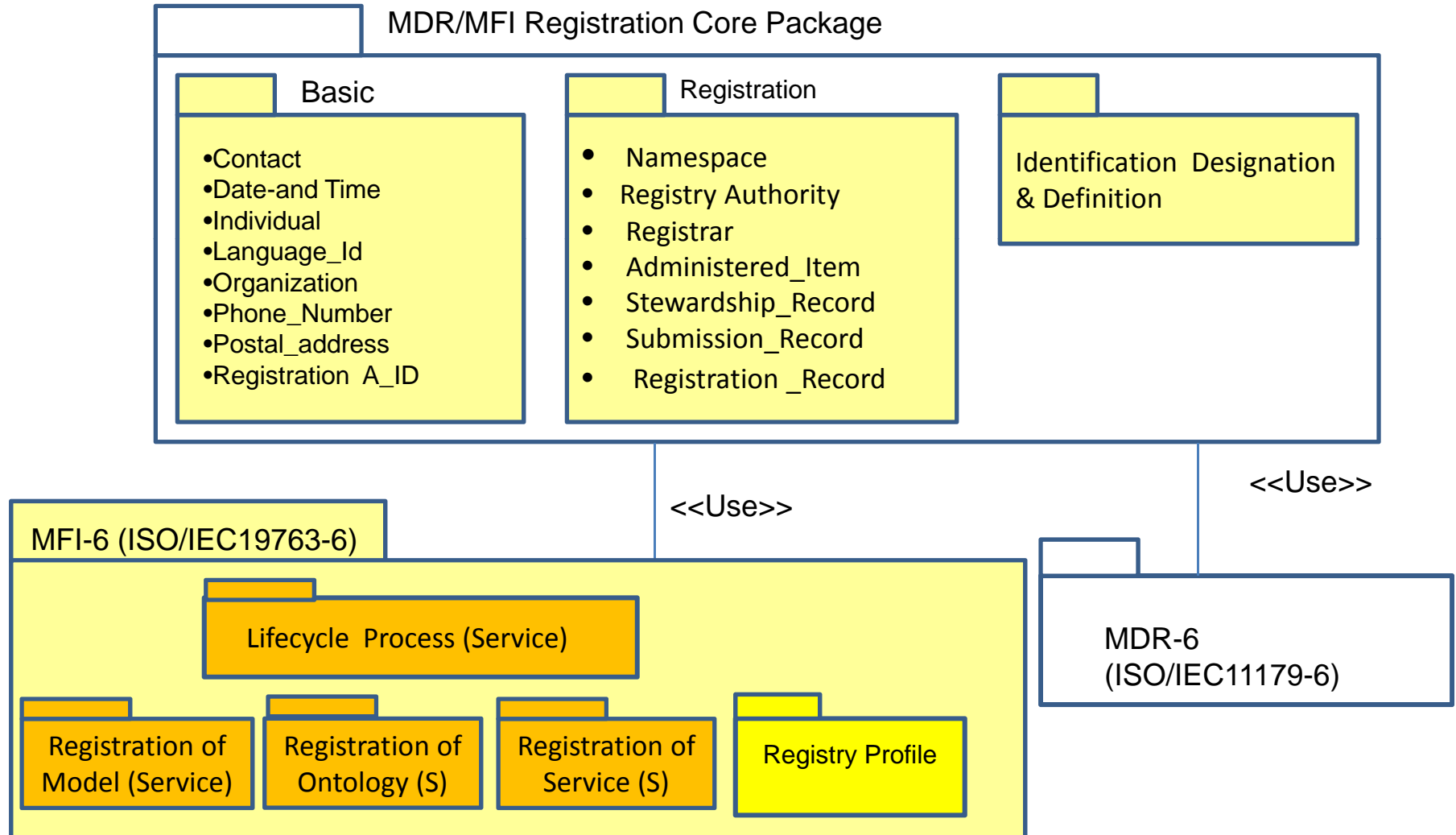
Relationship among MFI & MDR Packages



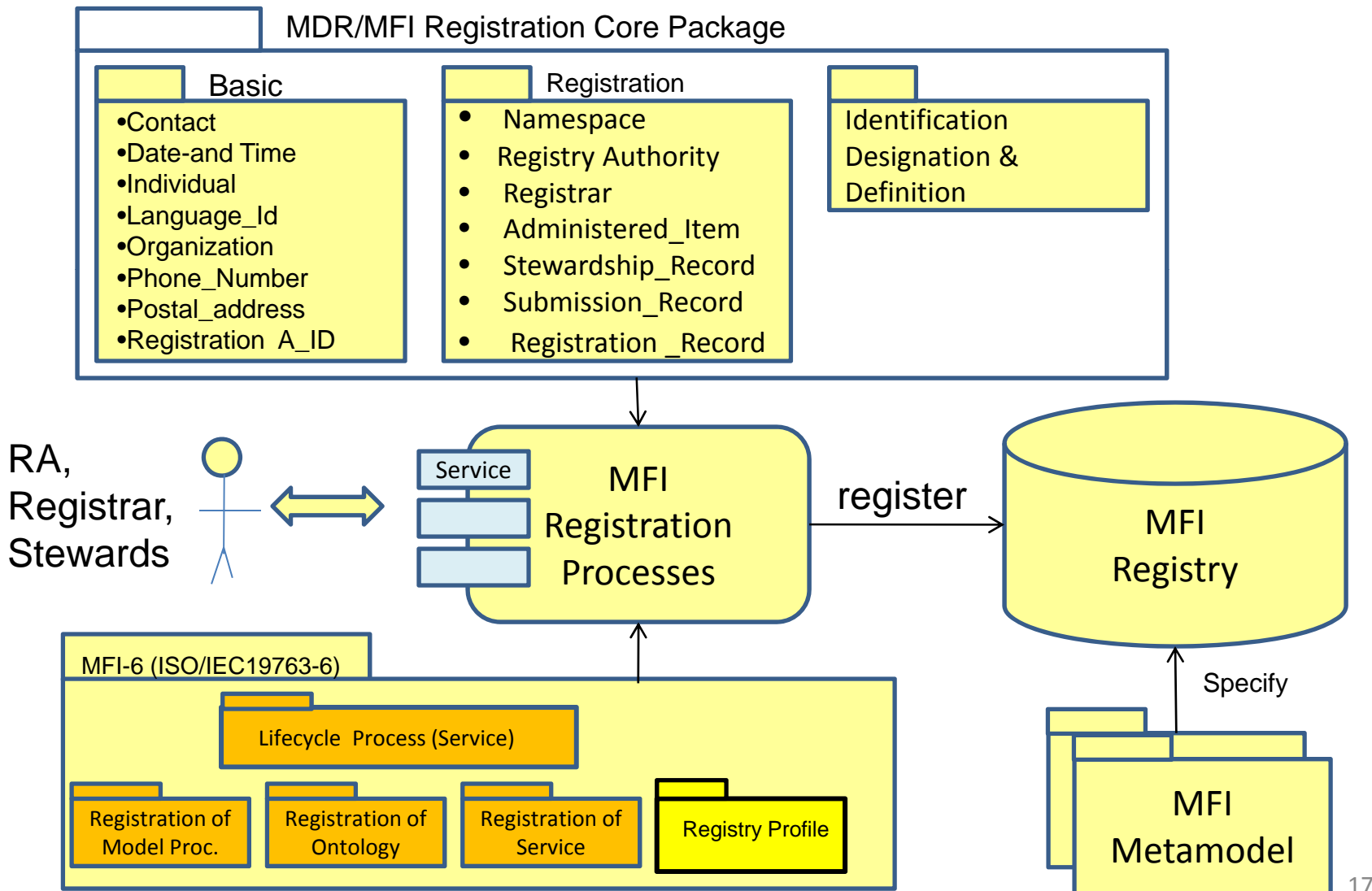
MDR/MFI Registration Common Core Package



MFI-6 package (Registration)

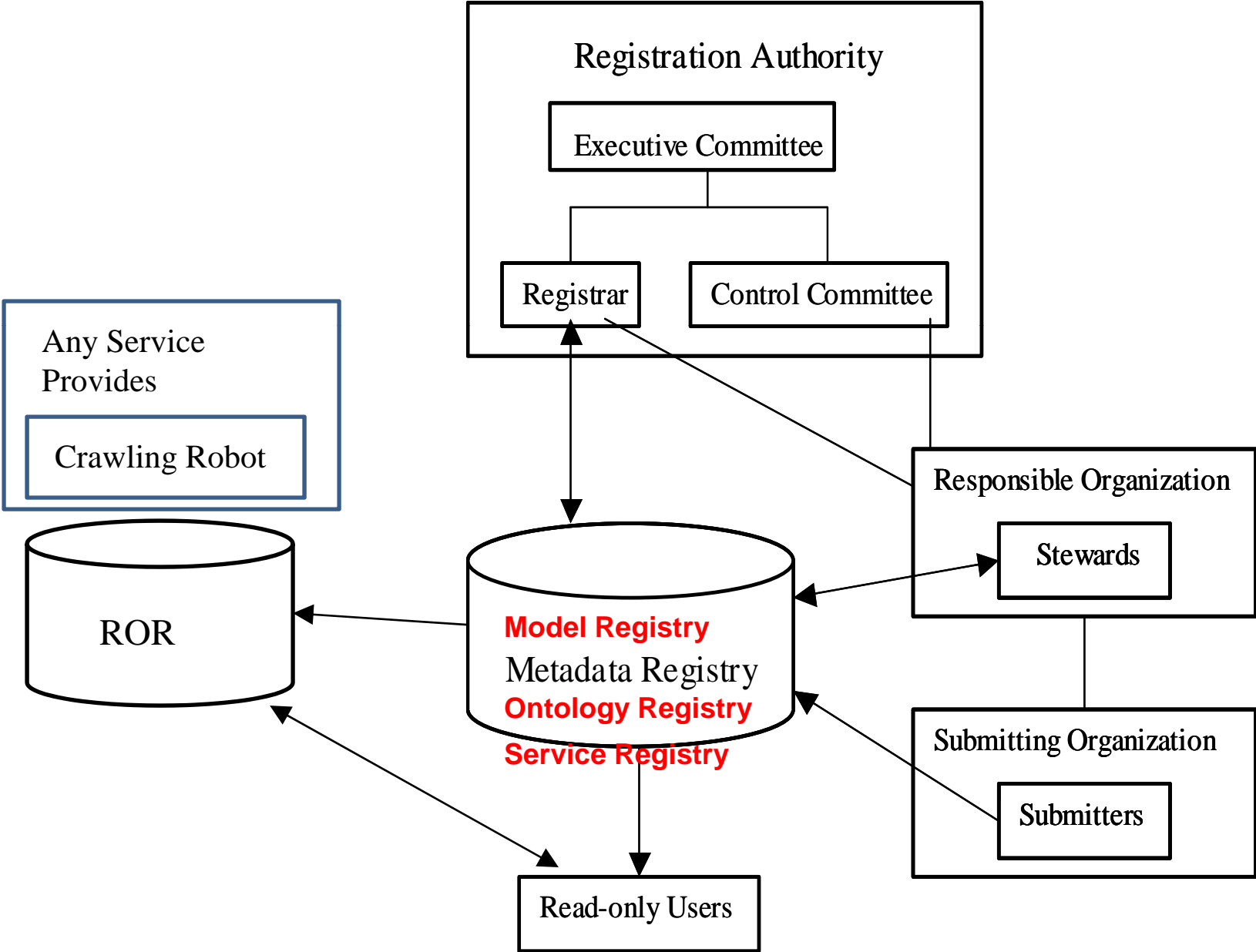


How MFI metamodels to be used in the Registration

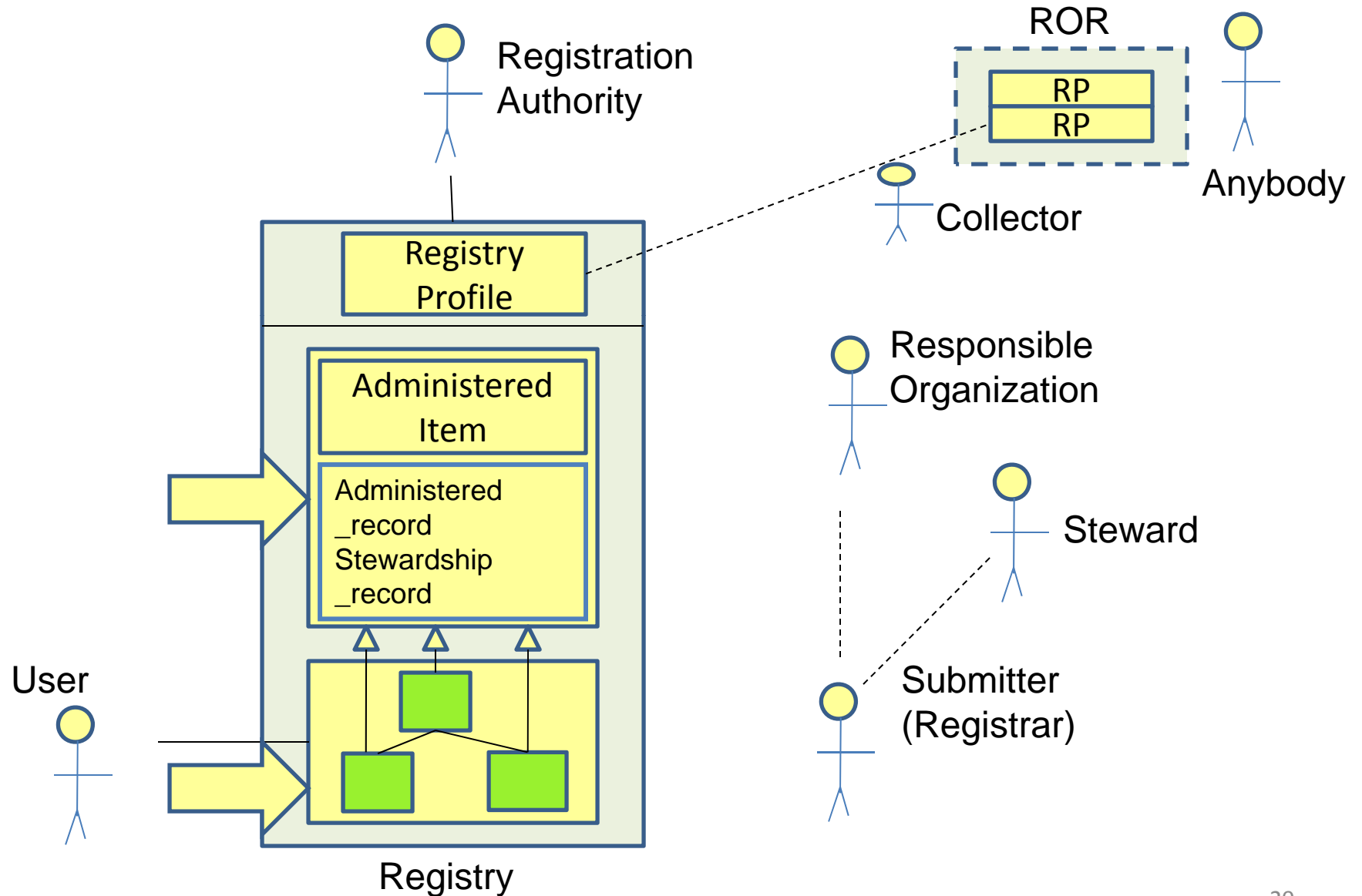


4. ORGANIZATIONAL ROLES OF ASSOCIATED WITH REGISTRY

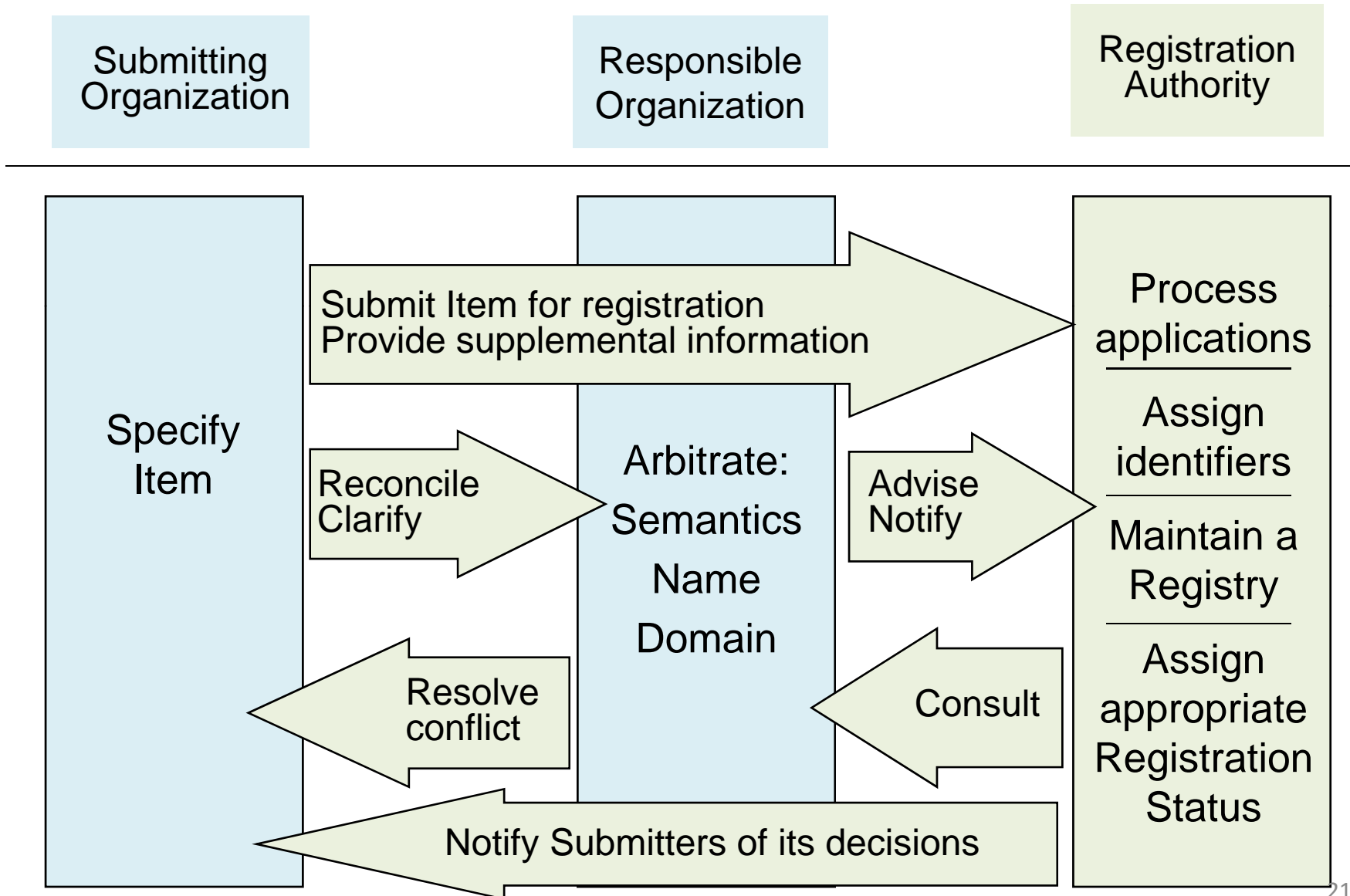
Human Roles Associated with Registry



Relationship among Actors

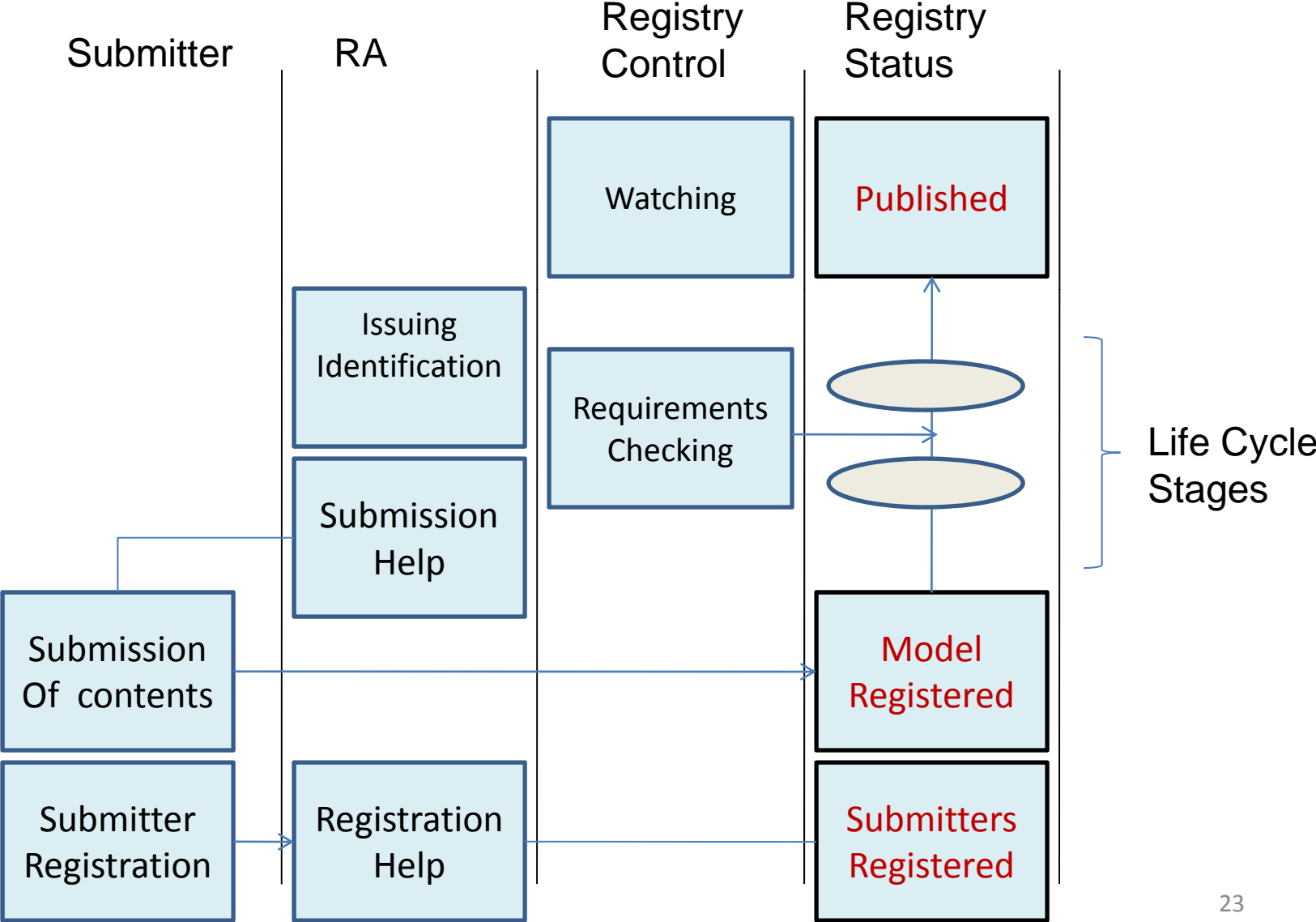


Roles and Responsibilities(MDR-6)

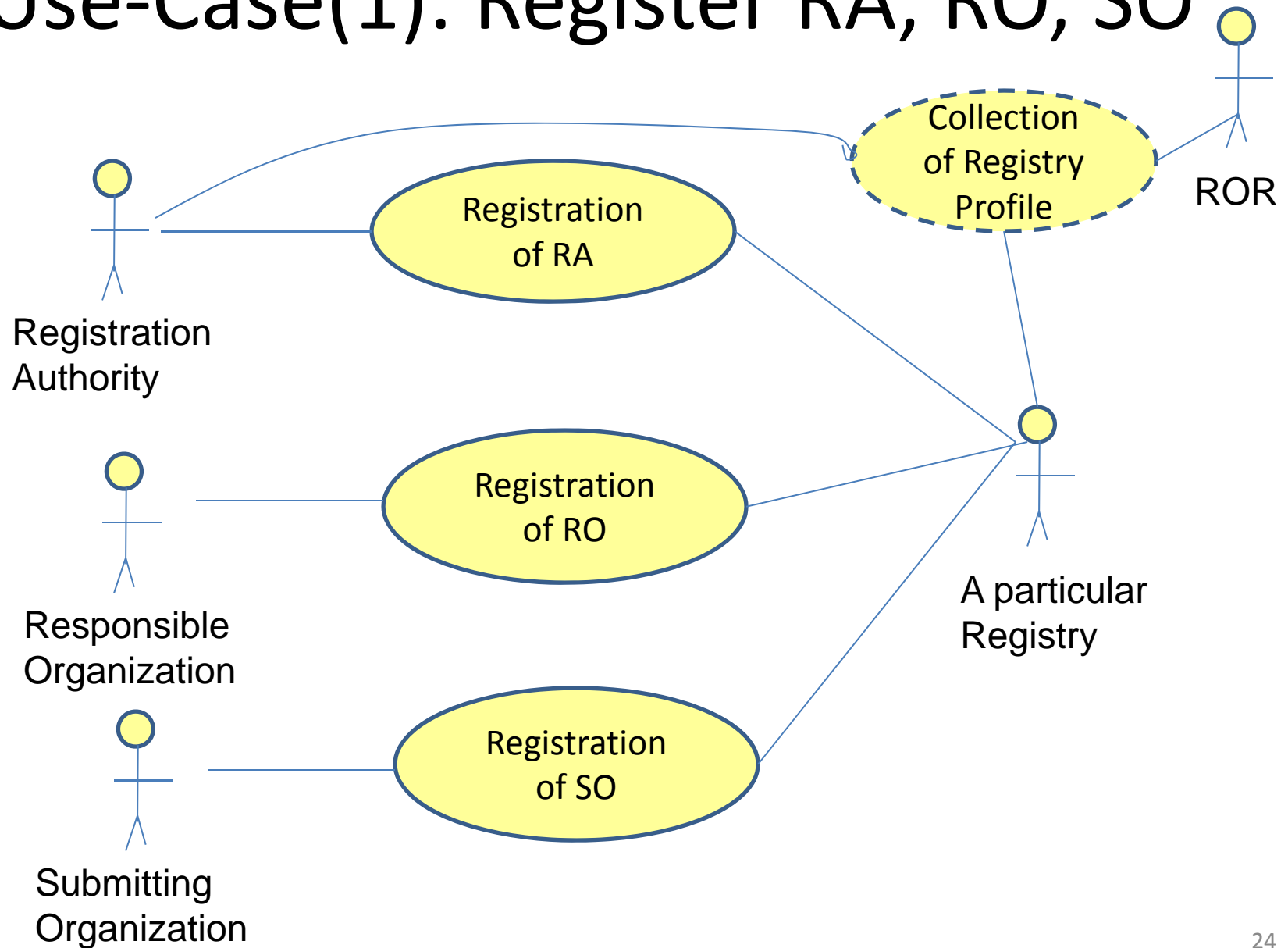


5. USE-CASES AND REGISTRATION PROCESS (HUMAN PROCESS)

MFI Registration Process

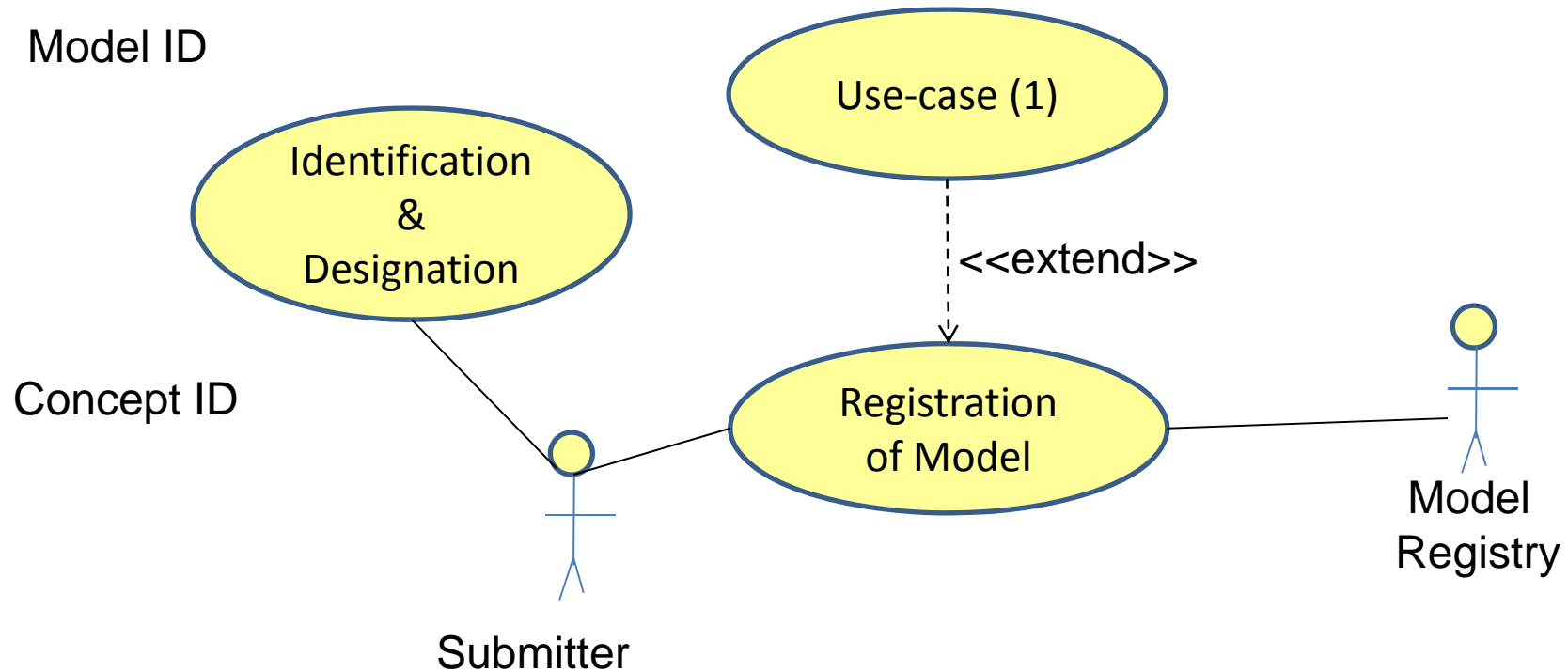


Use-Case(1): Register RA, RO, SO



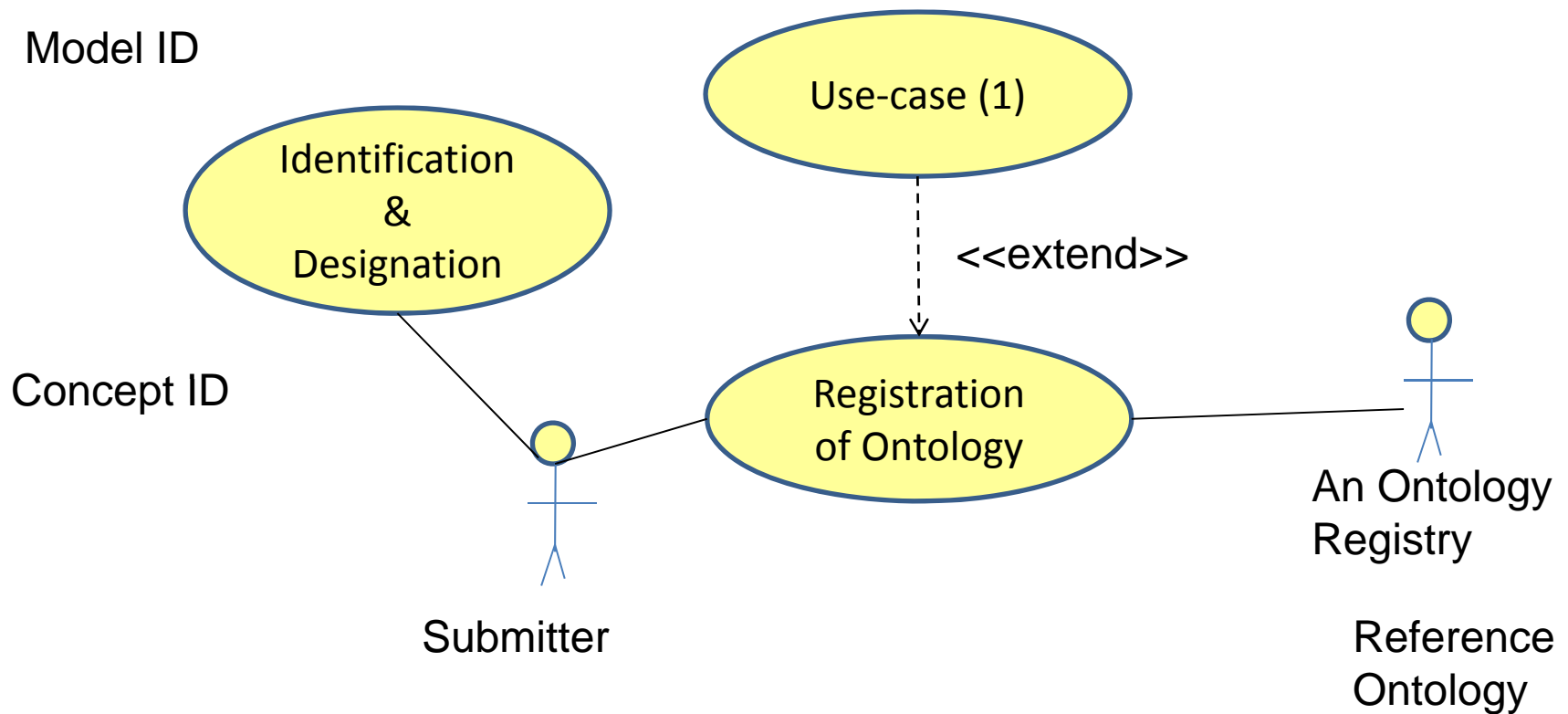
Use-case (2)

Registration of Model

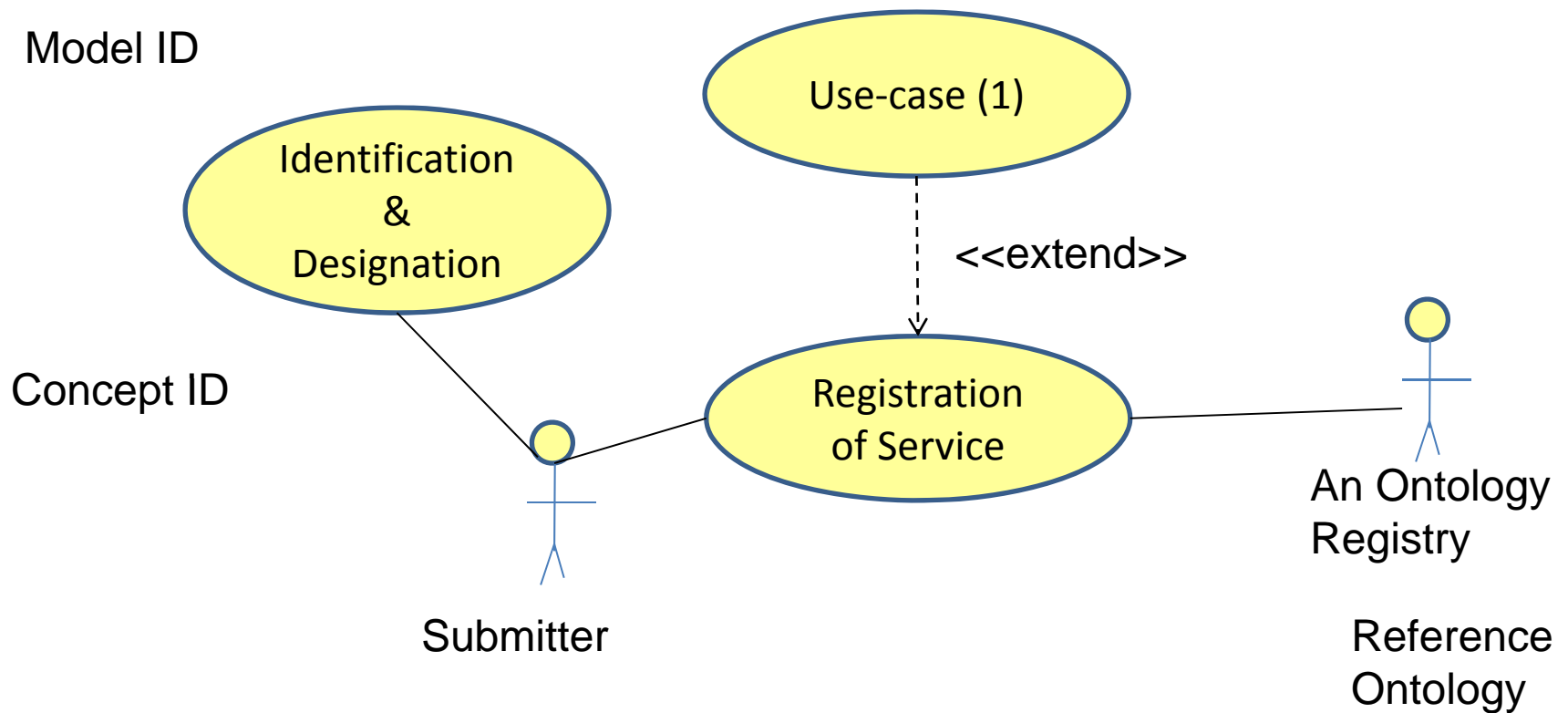


Use-case (3)

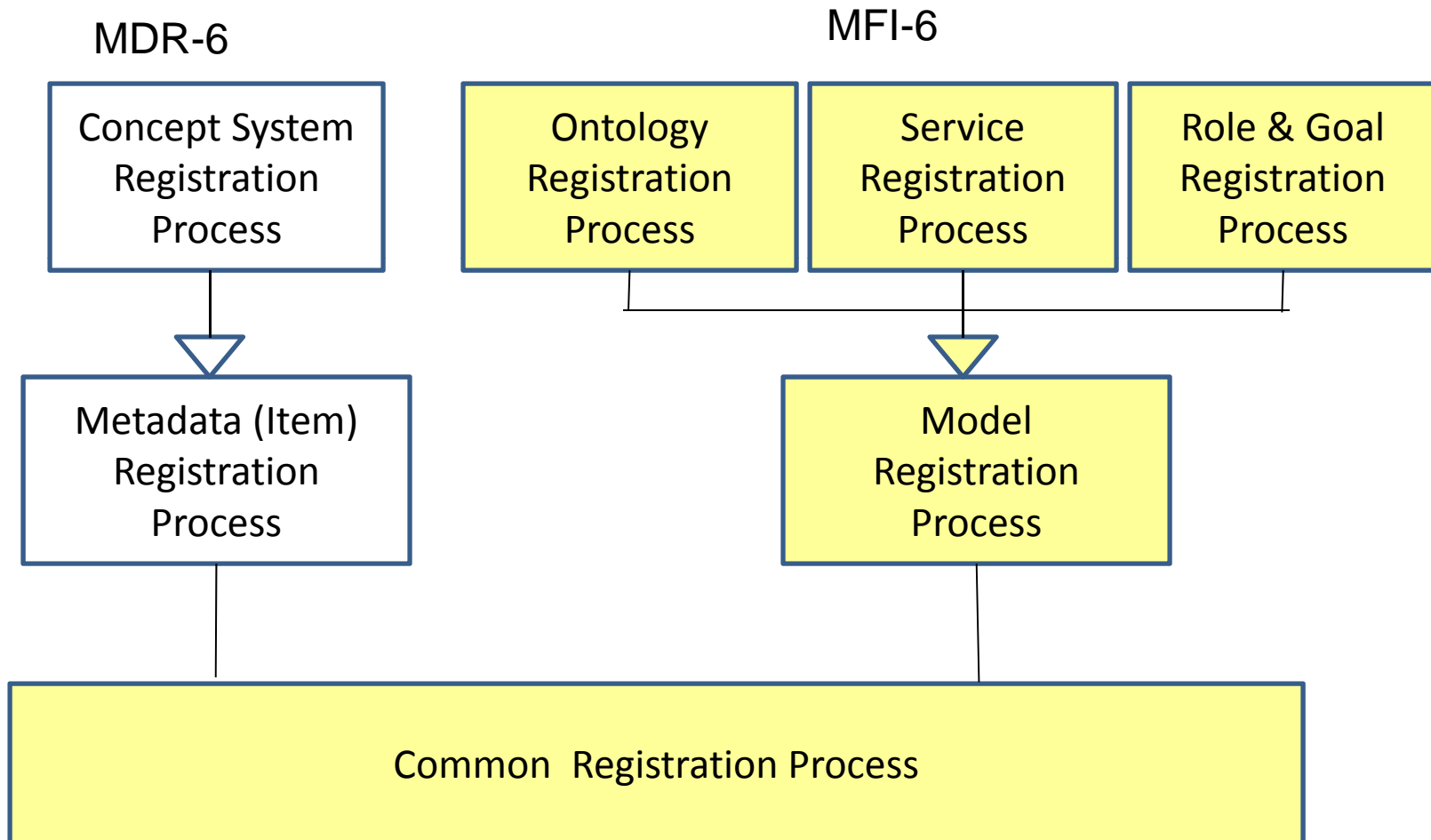
Registration of Ontology



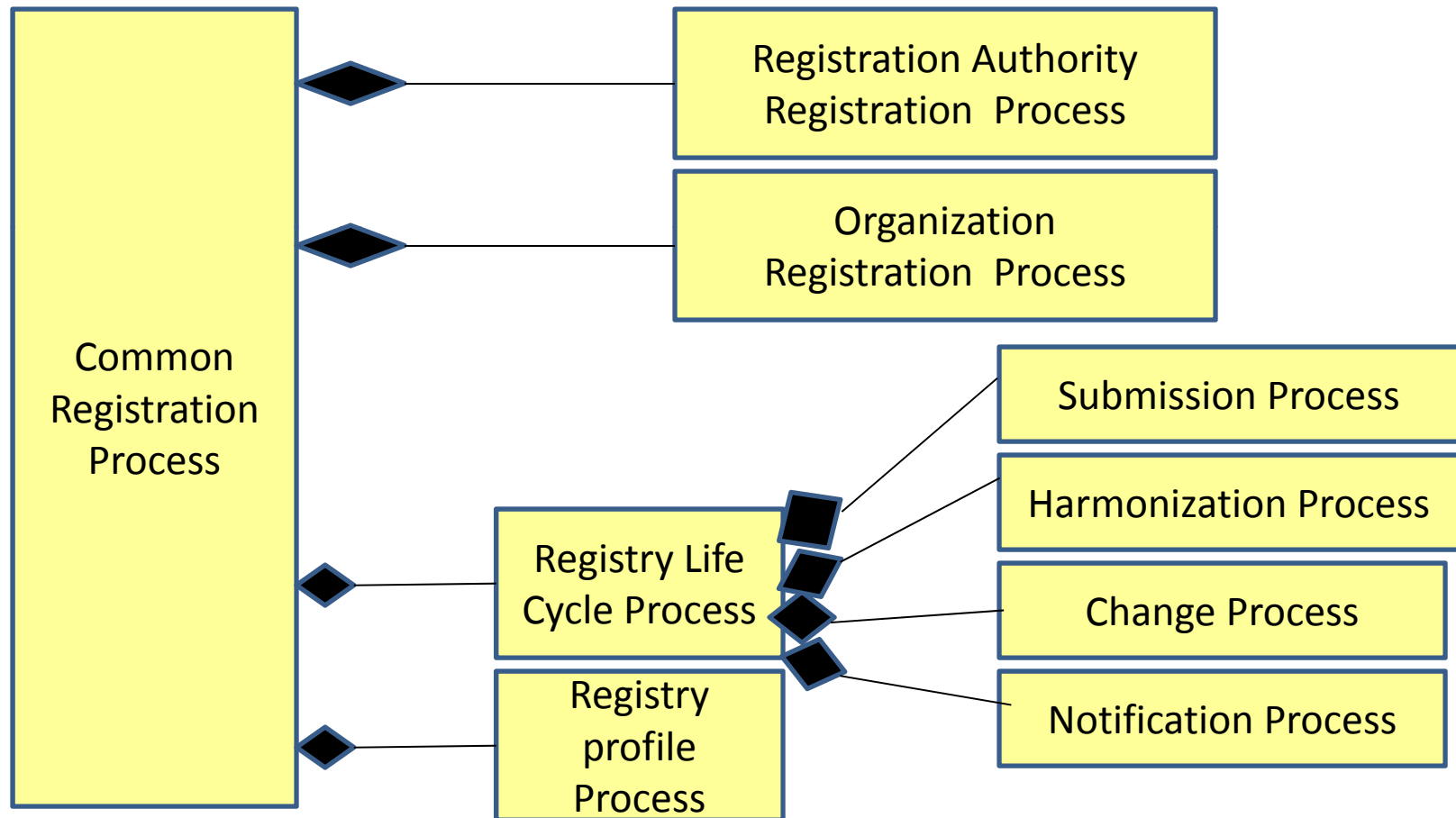
Use-case (4) Registration of Ontology



Types of Registration Process

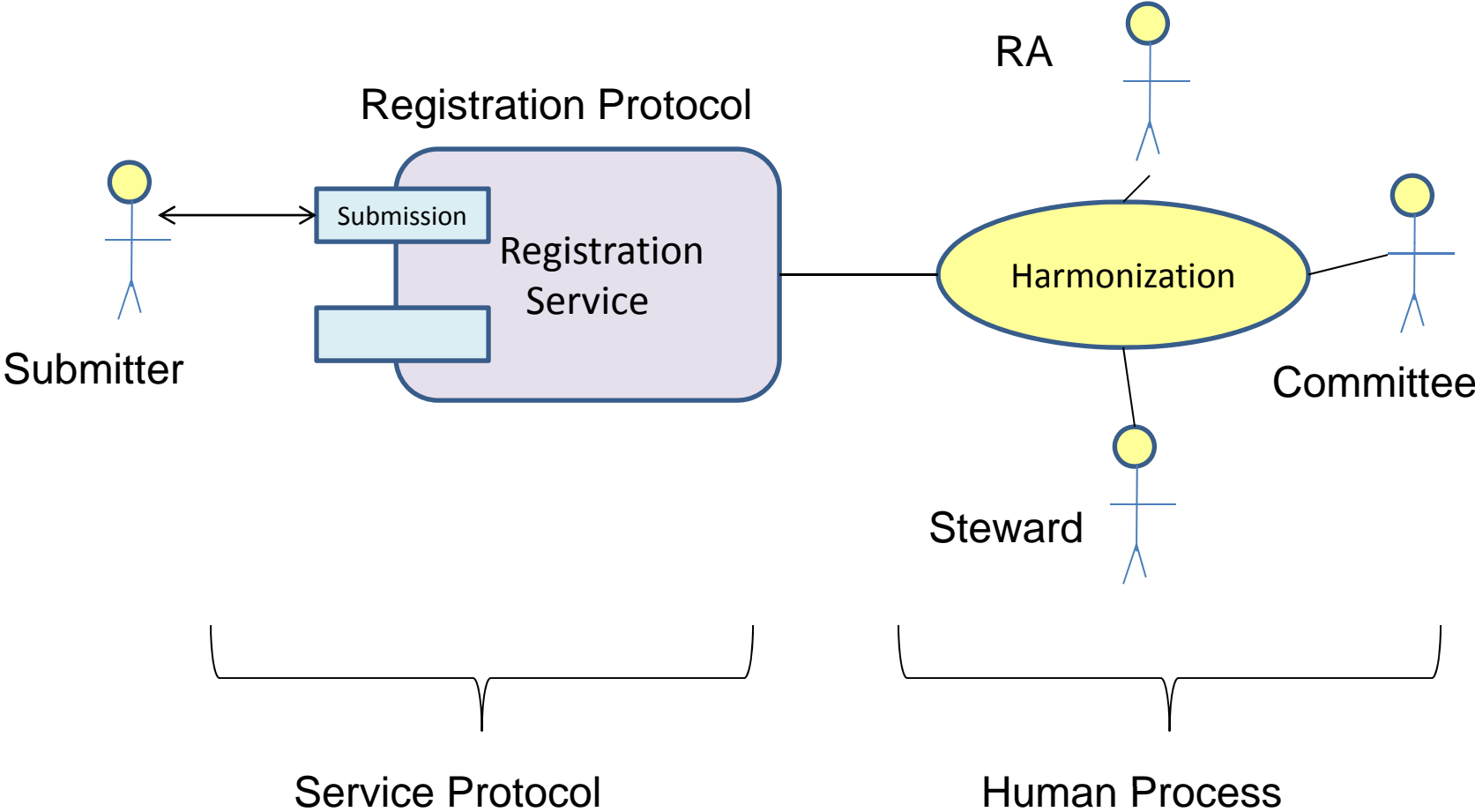


Common Registration Process

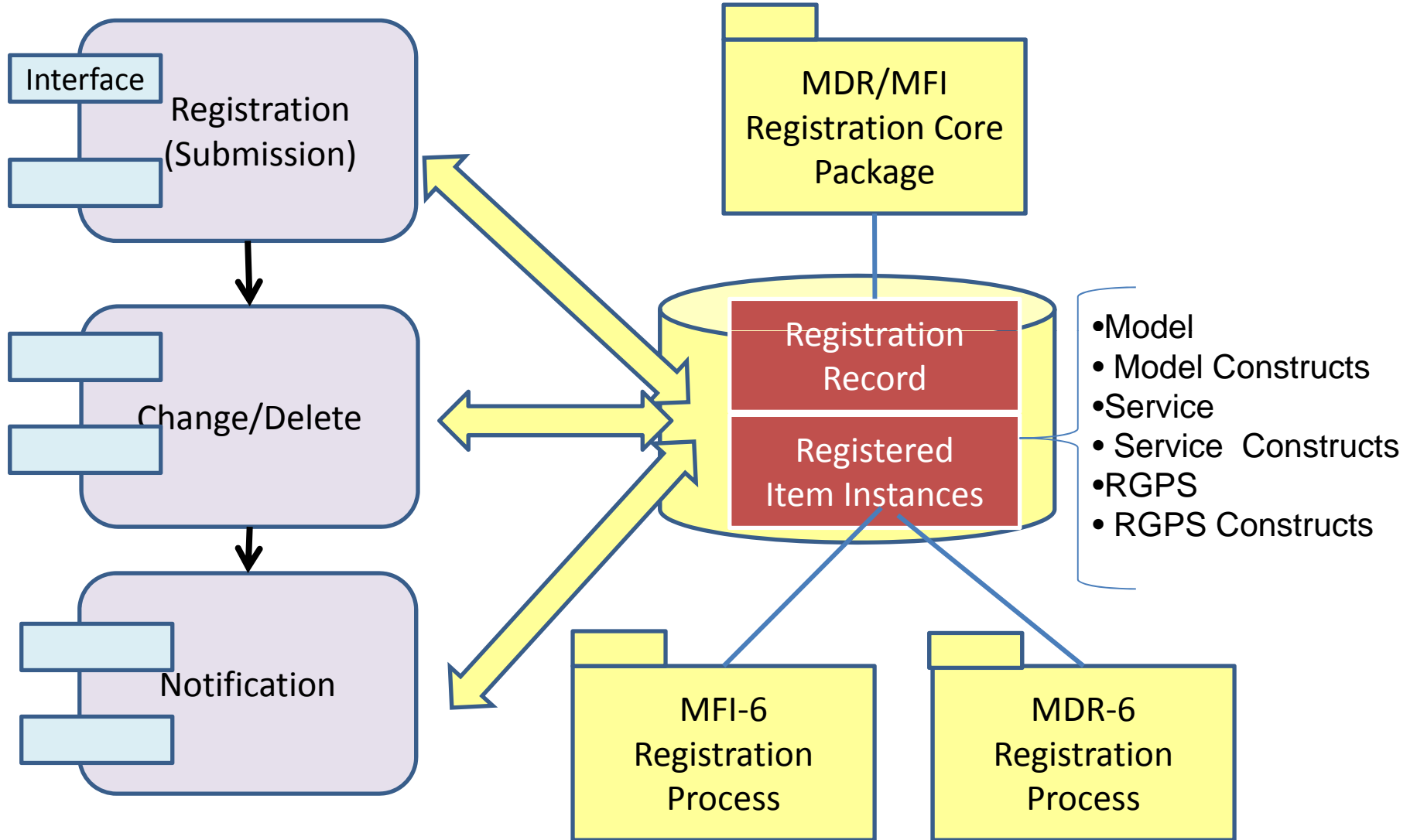


SERVICE PROTOCOL

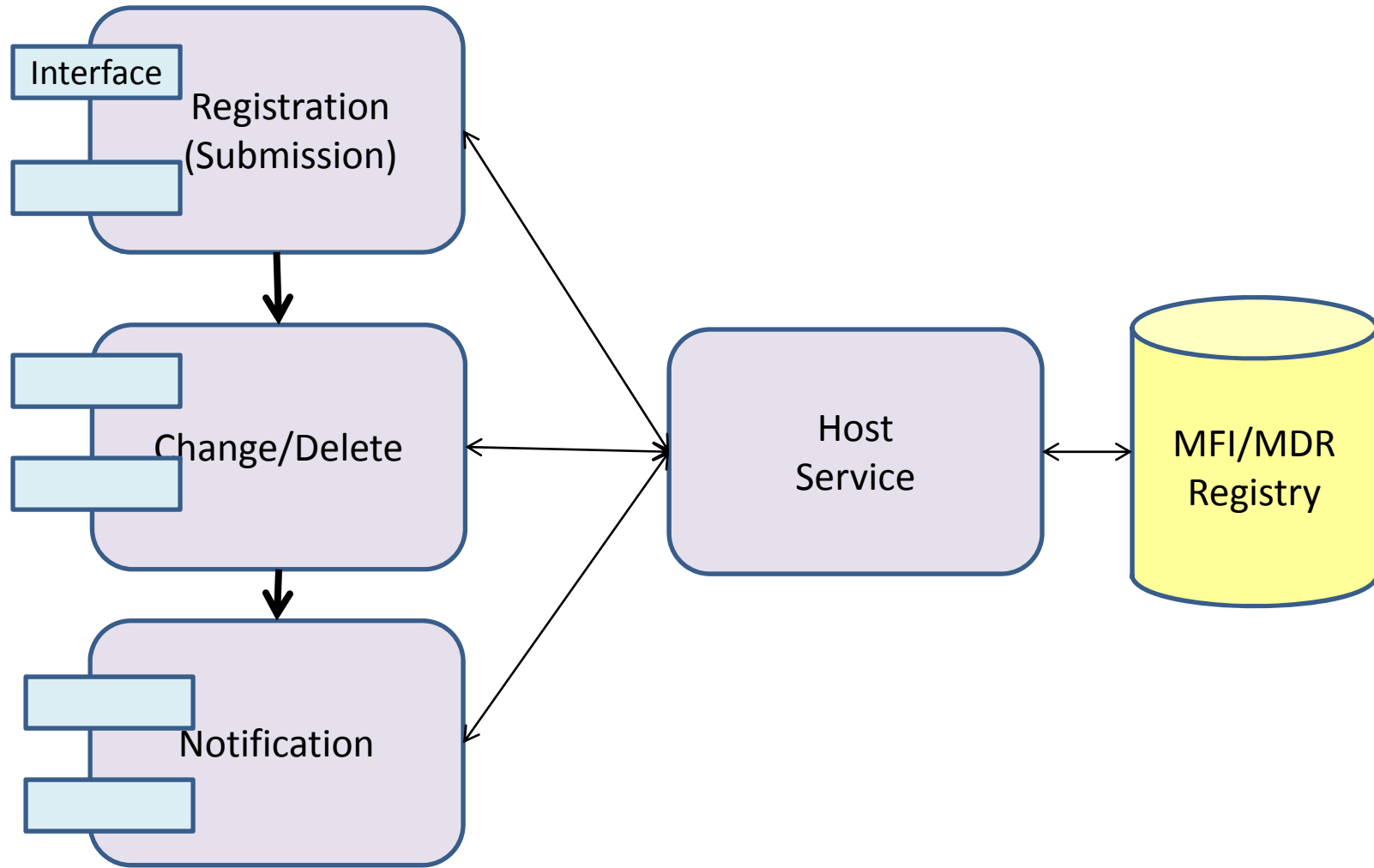
Human Process and Service Protocol



Life Cycle Services Protocol

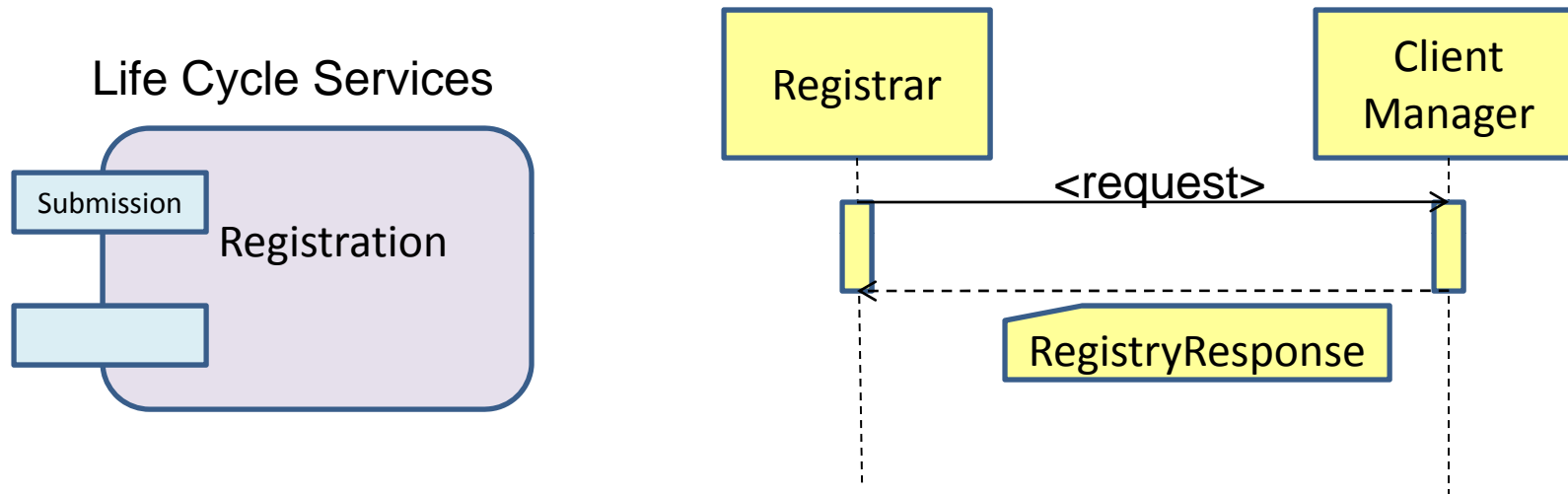


Service specification using ebXML RS 3.0



Service Protocol Definition

Submission Protocol

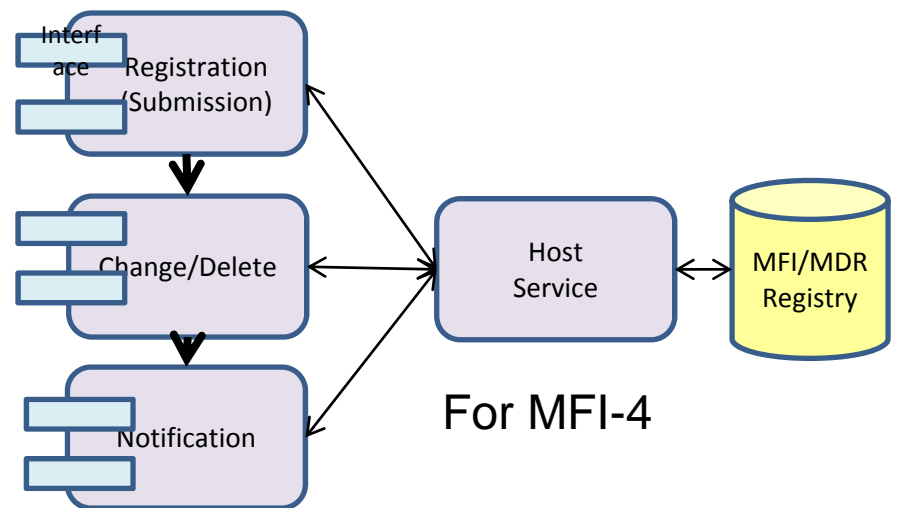
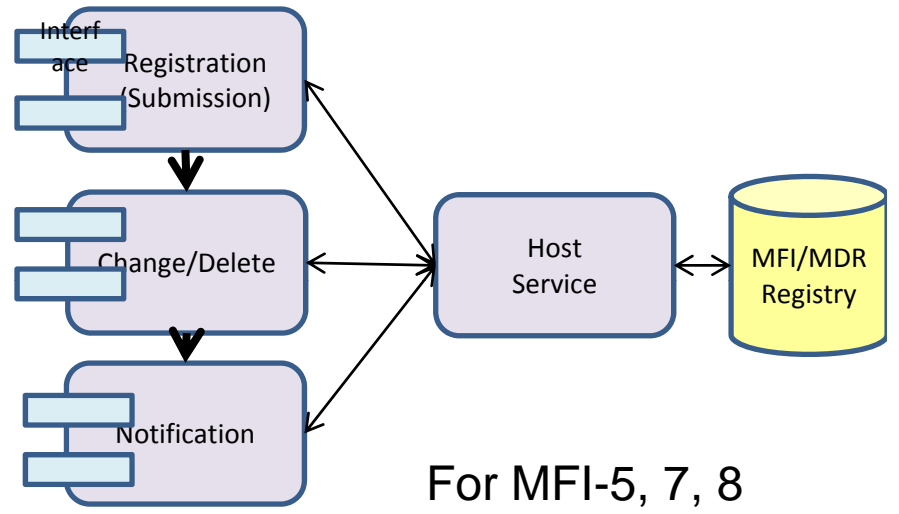
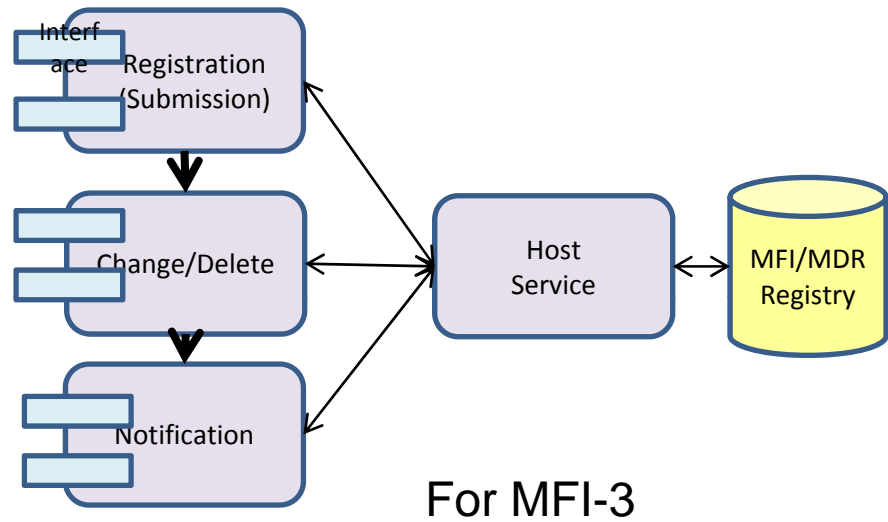


```

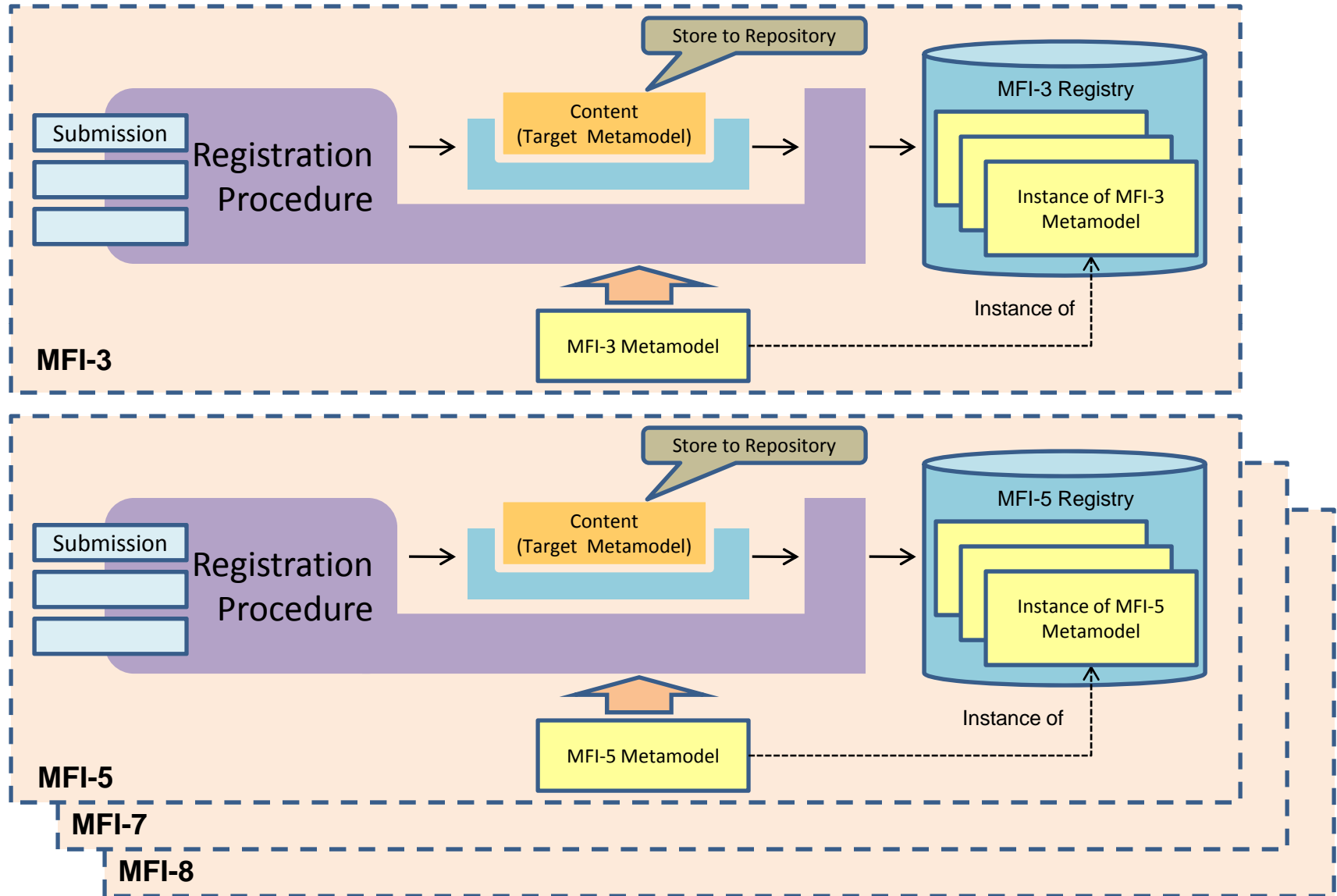
<element name="SubmitObjectsRequest">
  <complexType>
    <complexContent>
      <extension base="rs:RegistryRequestType">
        <sequence>
          <element ref="rim:RegistryObjectList"/>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
  
```

Example:
 "SubmitObejctRequest"
 ebXML RS3.0

Same services are available for registration & maintenance at every part of MFI and MDR

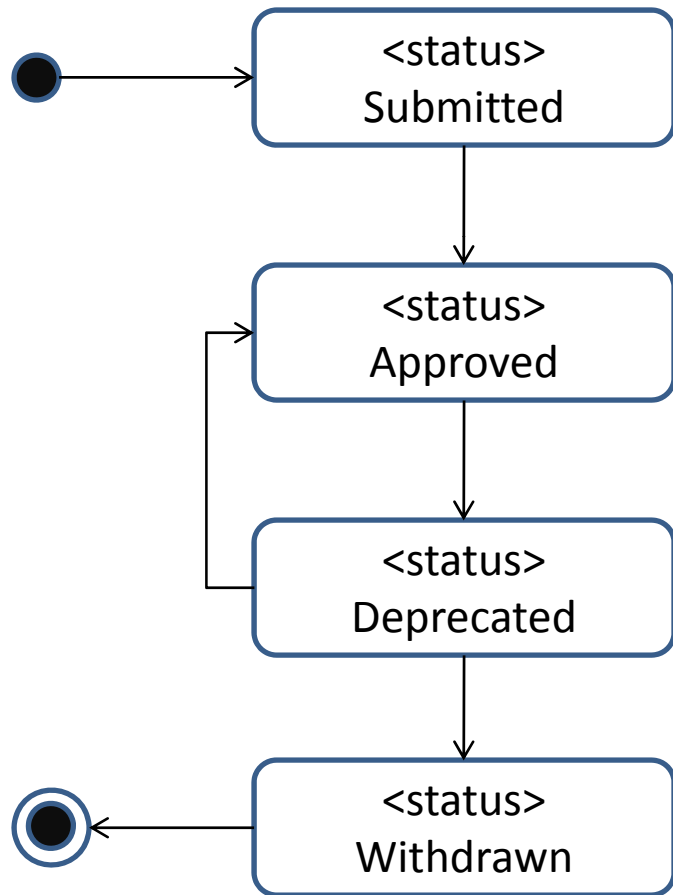


Idea for Using ebXML RS for all parts of MFI



6. REGISTRY LIFE CYCLE PROCESS

Registry Content Lifecycle Process



Status	Description
Approved	Indicates that the <i>content</i> has been approved after being submitted.
Deprecated	Indicates that the <i>content</i> has been deprecated or marked as obsolete.
Submitted	Indicates that the <i>content</i> has been submitted to the server.
Withdrawn	Indicates that the <i>content</i> has been withdrawn from the server.

This status and lifecycle refer to ebRS.

Registration Status

- Dynamic registration statuses
 - Address improvement and progression towards levels of perfection of the quality of the metadata of the item and of the preferences of usage.
- Static registration statuses
 - Denote positions at which there will be no more progression in quality of metadata or use of the administered item.

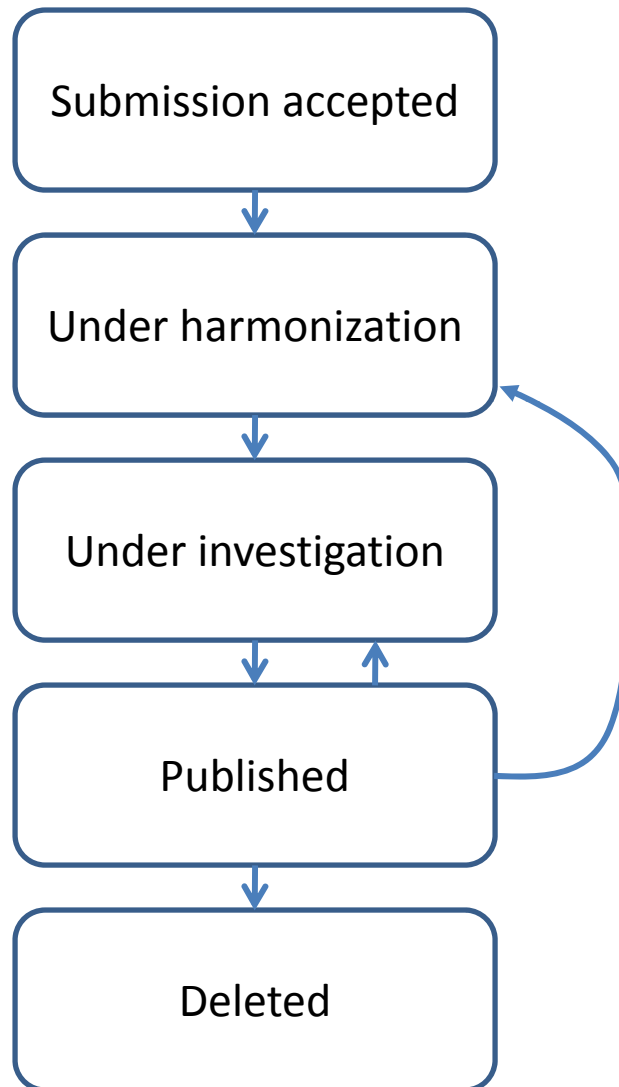
Dynamic Registration Statuses (MDR-6)

- Preferred Standard - preferred for use in the Registry community.
- Standard - of sufficient quality and of broad interest for use in the Registry community.
- Qualified - mandatory metadata attributes are complete and conform to applicable quality requirements.
- Recorded - all mandatory metadata attributes have been completed.
- Candidate - proposed for progression up the Registry registration levels.
- Incomplete - submitter wishes to make the Registry community aware of the existence of an administered item in their local domain.

Status of Static Registrations (MDR-6)

- Retired - no longer recommended for use in the Registry community and should no longer be used.
- Superseded - no longer recommended for use in the Registry community but the successor administered item is the preference for use .
- Historical - was used elsewhere in the past.
- Standardized Elsewhere - standardized in another community.
- Legacy -
- Application -

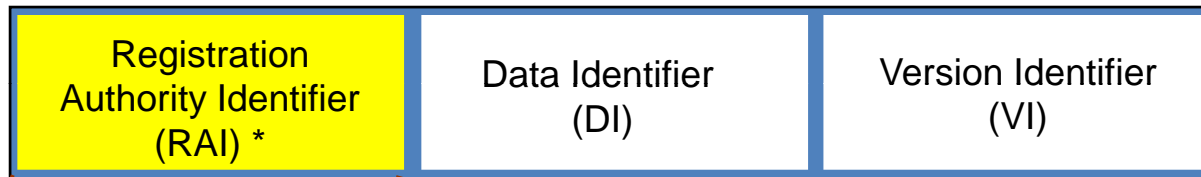
Registration status(TBG17)



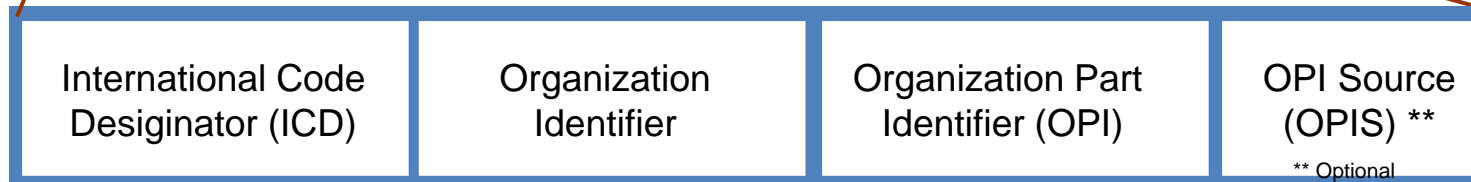
8. IDENTIFICATION

Registration Authority Identifier

IRDI(International Registration Data Identifier)

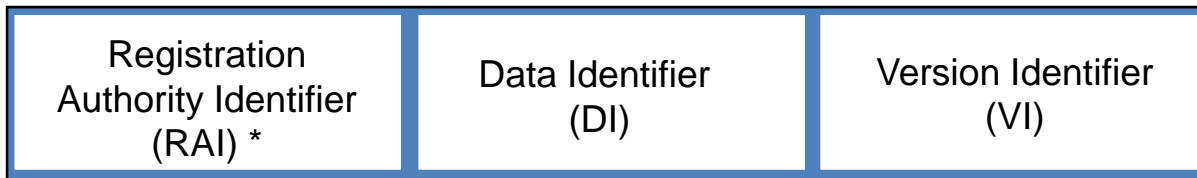


ISO/IEC 6523



IRDI(International Registration Data Identifier)

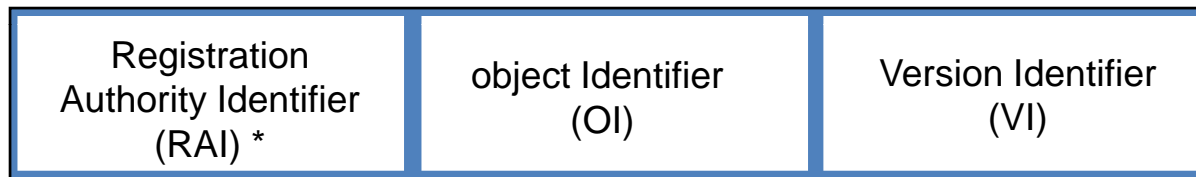
It is specified by MDR-5 for Identifying registered Item



MFI Object Identification

For MFI registered object, such as Model, Ontology, Process and Services, Other more light way for identifying objet must be needed.

URI



Needed for MFI objects?

or

Registry ID ?

↑
UUID
Ubiquitous Code
DOI
etc

Requirements on Identification

Requirements-7 Identification Schema

- Most of MFI parts use URI for identification object (Model, model constructs, Processes and Services,)
- MFI 6 should stock take major UUID providers as widely as possible including ID schema that were used in MDR standards (e.g. IRDI)
- MFI 6 should take one of those as the recommended identification scheme
- MFI 6 should provide an own ID scheme for miscellaneous object (attached model profiles), e.g.

Note:

DOI (Digital Object Identification), Ubiquitous Center (Japan),

Classification Schema

Requirements-8: Classification Schema

- MFI 6 should provide an own model classification scheme
- Those schema should consist of;
 - Purpose and mission
 - Industrial sector
 - Modeling View point
 - Domin Context

Note:

UN/CEFACT TMG is discussing the Business Context Method

The First Assignment as a Registration Authority

- Secure a Registration Authority Identifier.
- Prescribe, amend, interpret, and document the procedures.
- Determine and document any additional conditions specifically required by its domain of registration.
- Specify the format for each attribute listed in Annex A of ISO/IEC 11179-6 and for any additional attributes.
- Determine the manner in which applications shall be submitted.

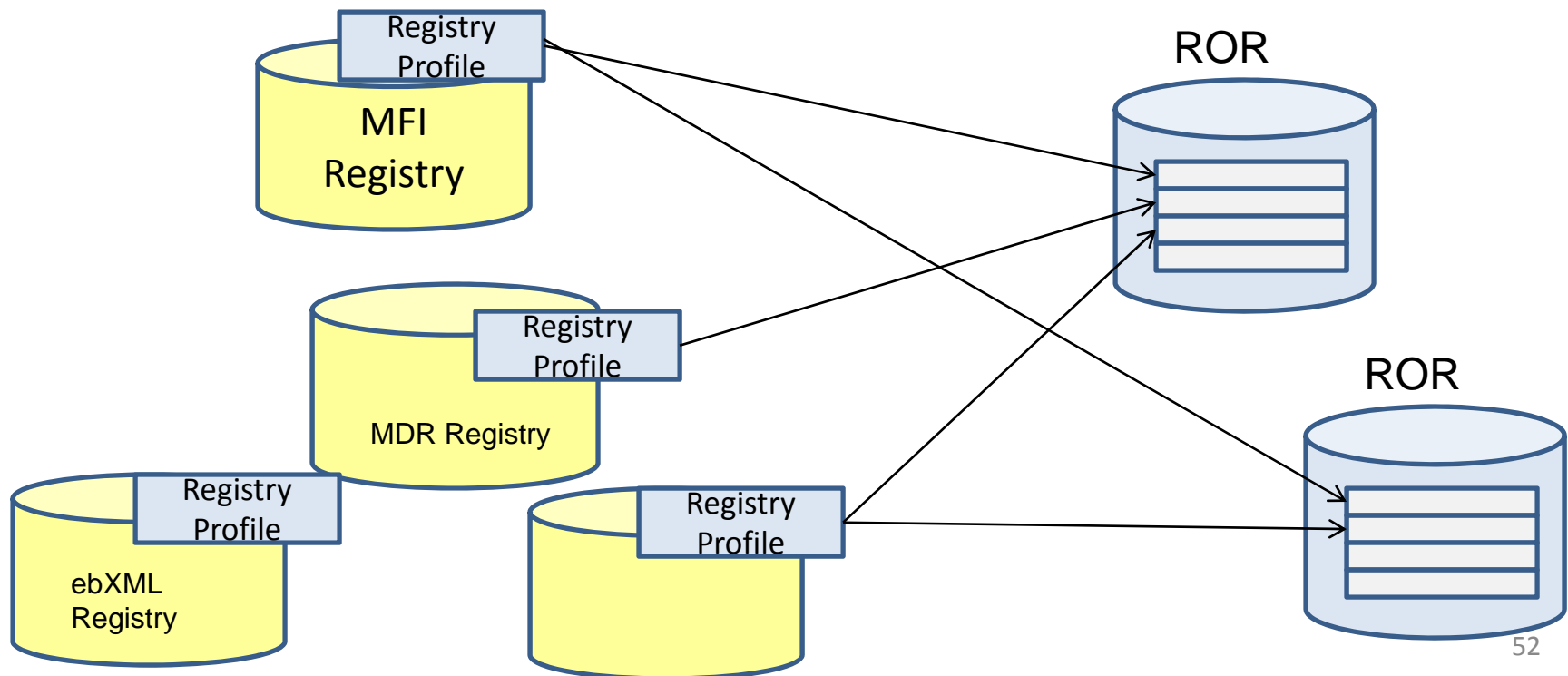
Areas of Compliance

- There are no requirements that all components of the model be present for a Registry to be compliant with the metamodel.
- The metamodel constraints are for items at “Recorded” registration status and above.
- There is a practical need for registering only those components of interest.
- Except for those situations constrained by the cardinalities of the metamodel, there is no required sequence in the registration of the components.

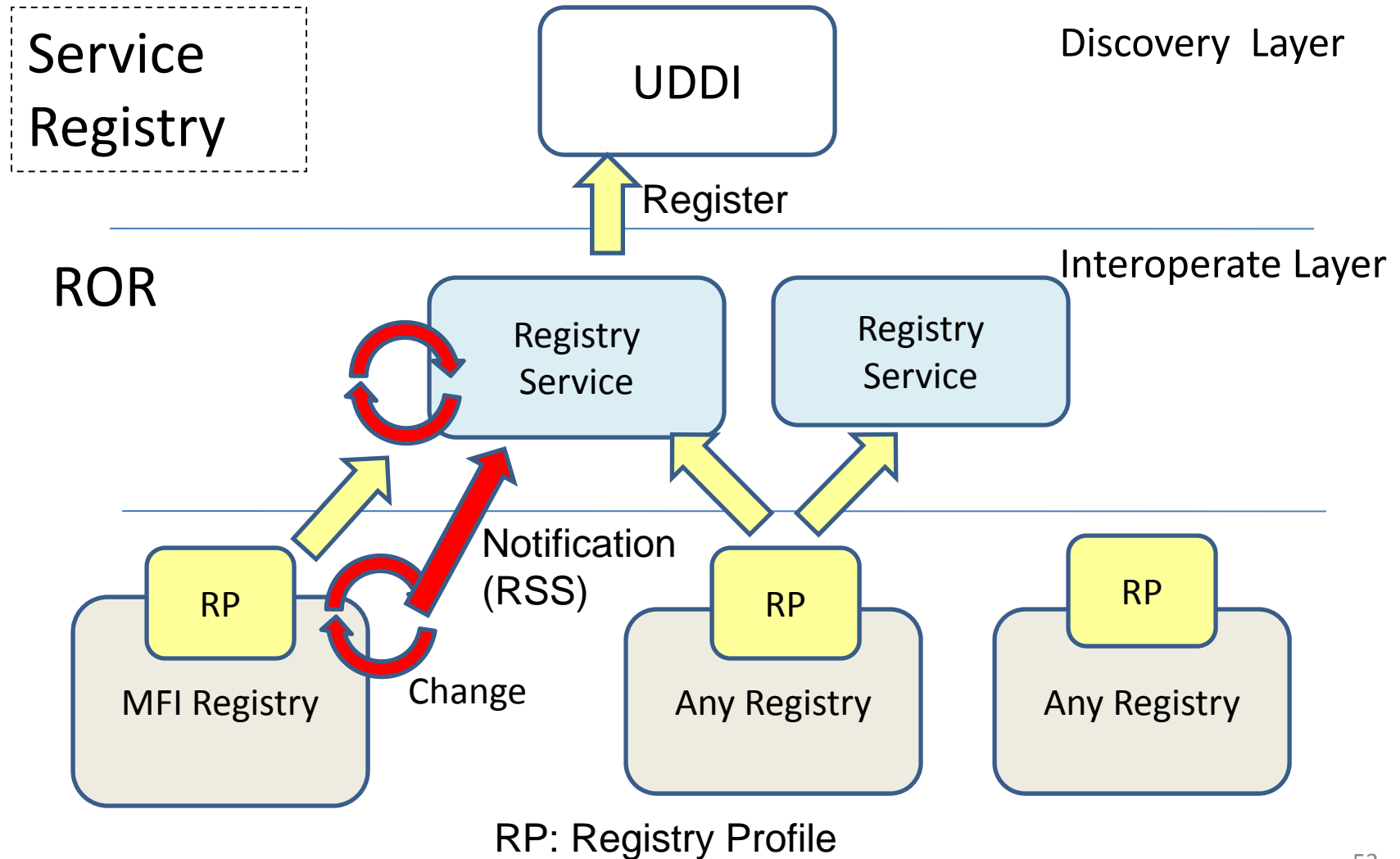
9. REGISTRY PROFILE

ROR

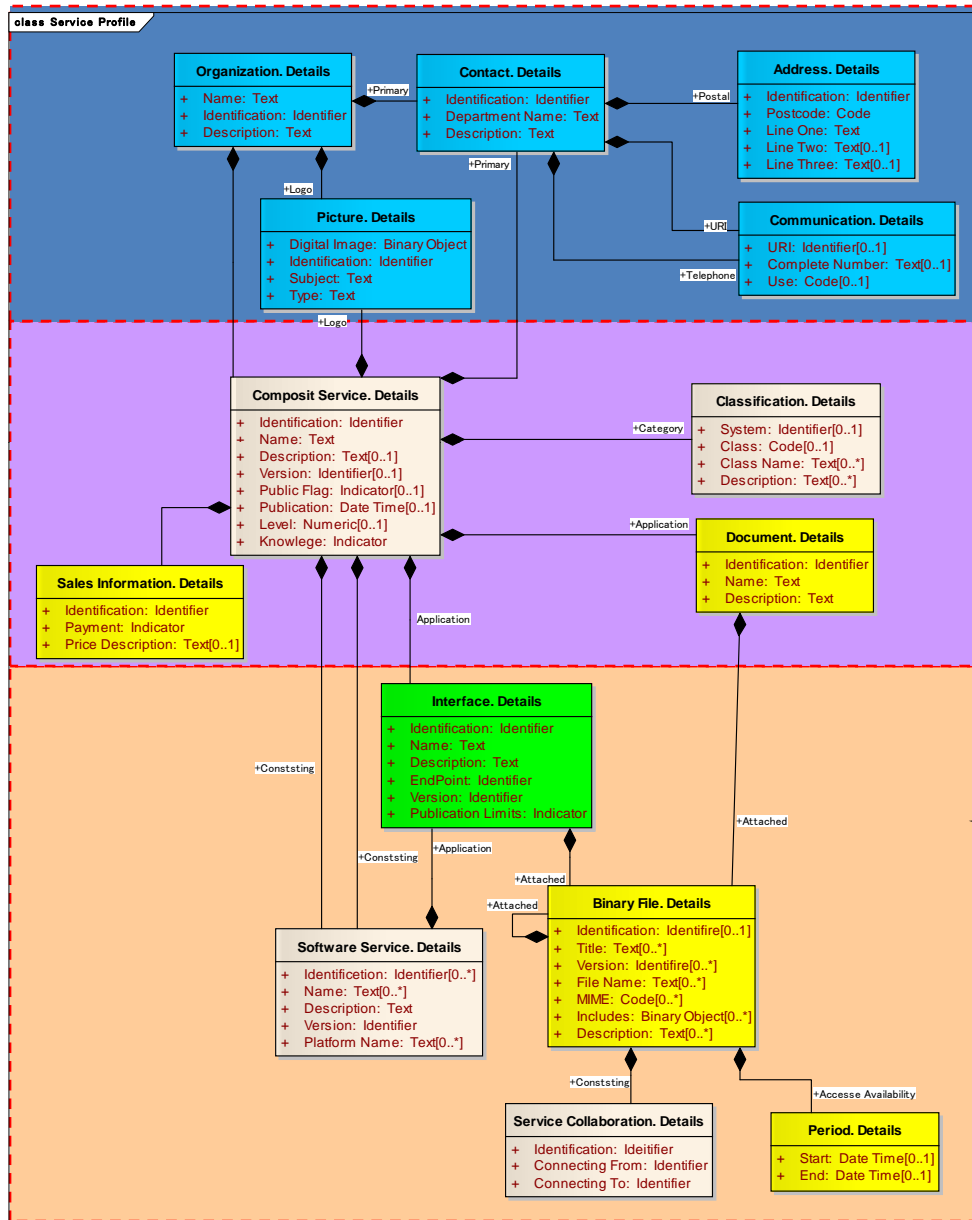
- Only collection of Registry Profiles
- Everybody can collect and store a set of profiles
- Change will be informed by Notification(RSS)



Registry Interoperability by Registry Profile



Metamodel for Registry Profile



Information of owner who is managing and operating registry system.

Information of Registry system.

Information of access interfaces to registry system.

Metamodel for Registry Profile

Organization	Attribute	Data Type	Multiplicity
	Name	Text	1..1
	Identification	Identifier	1..1
	Description	Text	1..1
	Reference	Class	Multiplicity
	Primary	Contact	0..1
	Logo	Picture	0..1
		Composite Service	1..*

Contact	Attribute	Data Type	Multiplicity
	Identification	Identifier	1..1
	Department Name	Text	1..1
	Description	Text	1..1
	Reference	Class	Multiplicity
	Postal	Address	0..1
	URI	Communication	0..1
	Telephone	Communication	0..1

Address	Attribute	Data Type	Multiplicity
	Identification	Identifier	1..1
	Postcode	Code	1..1
	Line One	Text	1..1
	Line Two	Text	0..1
	Line Three	Text	0..1

Communication	Attribute	Data Type	Multiplicity
	URI	Identifier	0..1
	Complete Number	Text	0..1
	Use	Code	0..1

Picture	Attribute	Data Type	Multiplicity
	Digital Image	Binary Object	1..1
	Identification	Identifier	1..1
	Subject	Text	1..1
	Type	Text	1..1

Composite Service	Attribute	Data Type	Multiplicity
	Identification	Identifier	1..1
	Name	Text	1..1
	Description	Text	0..1
	Version	Identifier	0..1
	Public Flag	Indicator	0..1
	Publication	Date Time	0..1
	Level	Numeric	0..1
	Knowledge	Indicator	1..1
	Reference	Class	Multiplicity
	Logo	Picture	0..1
	Primary	Contact	0..1
	Category	Classification	1..*
	Application	Document	0..1
	Consisting	Software Service	1..*
	Connecting	Software Service	0..1
		Sales Information	0..1

Period	Attribute	Data Type	Multiplicity
	Start	Date Time	0..1
	End	Date Time	0..1

Classification	Attribute	Data Type	Multiplicity
	System	Identifier	0..1
	Class	Code	0..1
	Class Name	Text	0..*
	Description	Text	0..*

Document	Attribute	Data Type	Multiplicity
	Identification	Identifier	1..1
	Name	Text	1..1
	Description	Text	1..1
	Reference	Class	Multiplicity
	Attached	Binary File	0..*

Sales Information	Attribute	Data Type	Multiplicity
	Identification	Identifier	1..1
	Payment	Indicator	1..1
	Price Description	Text	0..1

Interface	Attribute	Data Type	Multiplicity
	Identification	Identifier	1..1
	Name	Text	1..1
	Description	Text	1..1
	EndPoint	Identifier	1..1
	Version	Identifier	1..1
	Publication Limits	Indicator	1..1
	Reference	Class	Multiplicity
	Attached	Binary File	0..*

Software Service	Attribute	Data Type	Multiplicity
	Identification	Identifier	0..*
	Name	Text	0..*
	Description	Text	1..1
	Version	Identifier	1..1
	Platform Name	Text	0..*
	Composite Service Identification	Identifier	0..*
	Reference	Class	Multiplicity
	Application	Interface	0..*

Service Collaboration	Attribute	Data Type	Multiplicity
	Identification	Identifier	1..1
	Connecting From	Identifier	1..1
	Connecting To	Identifier	1..1

Binary File	Attribute	Data Type	Multiplicity
	Identification	Identifier	0..1
	Title	Text	0..*
	Version	Identifier	0..*
	File Name	Text	0..*
	MIME	Code	0..*
	Includes	Binary Object	0..*
	Description	Text	0..*
	Reference	Class	Multiplicity
	Attached	Binary File	0..*
	Access Availability	Period	0..*
	Consisting	Service Collaboration	1..1

Data Type: Core Component Data Type.

10. LEVEL OF COFORMANCE

As a Standard

Normative	Informative
<ul style="list-style-type: none">•MDR/MFI Core Registration Package•Registration Authority•Registry Life Cycle process•Registration Protocol•Registry Profile	<ul style="list-style-type: none">•Organizational Roles•Registration human process•Use-case

Levels of Compliance

- For Dynamic Registration Statuses –

A component is deemed to reach a certain Registration Status when its own attributes and those of the Required Associated Components meet the minimal criteria for that Registration Status.

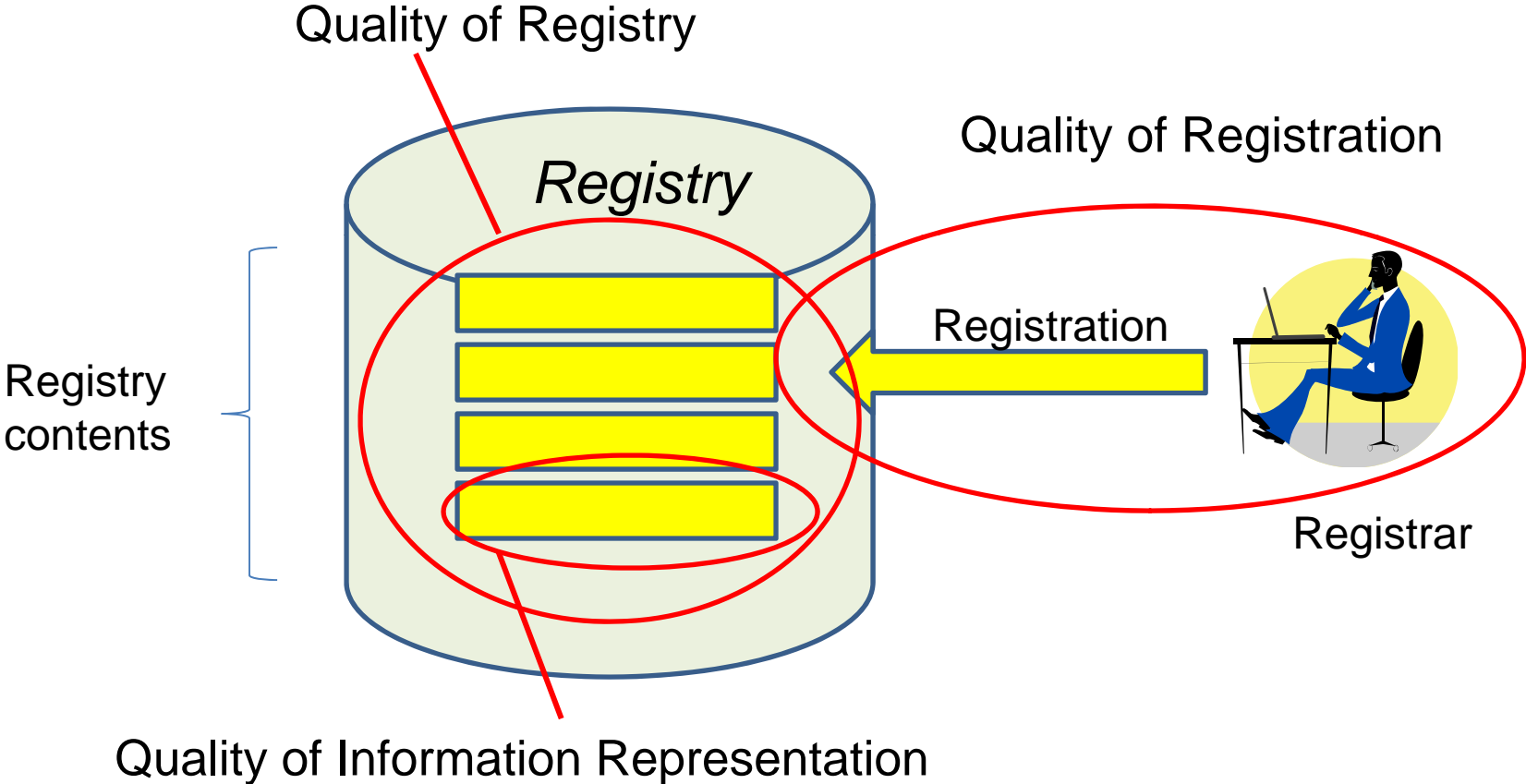
As a Standard

Normative	Informative
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10. REGISTRY QUALITY ISSUES

Quality Requirements

Requirement- 7: Requirements on Quality



Quality of Data

- The quality measurements and guideline of each data element or set of data elements should be domain dependent.(e.g. ISO8000)
- In MFI 6, It should be out of the scope
- However, the “Registry Quality ” must be considered in the common process

Quality of the Registration

- To maintain the Quality of the registry, the MFI 6 should specify the processes and guideline
- Those processes should be possible for software automated checking and enforcement

Quality of the Registry

- The Quality of Registry means that consistency and compliances to all of mandatory criteria should be kept among all of model instances in the registry
- These compliance maintenance should be responsible to the steward of the MFI registry.

Level of Conformance

- Normative
 - MDR/MFI Core Registration Package
 - Registration Protocol (Sequence & Message)
 - Registry Profile
- Informative
 - Organizational Roles and Human Processes
 - Registry Life Cycle process
 - Registration Process

Normative References

- *ISO 3166-1 Codes for the representation of names of countries and their subdivisions*
- *– Part 1: Country codes*
- *ISO 6523-1 Information technology – Structure for the identification of organizations and organization parts –Part 1: Identification of organization identification schemes*
- *ISO/IEC 646 Information technology – ISO 7-bit coded character set for information interchange*
- *ISO/IEC 15459 Information technology - Unique identifiers for item management*
- *ISO/IEC 9834-8*
- *Information technology -- Open Systems Interconnection -- Procedures for the operation of OSI Registration Authorities: Generation and registration of Universally Unique Identifiers (UUIDs) and their use as ASN.1 Object Identifier components*

Schedule:

- Draft CD text (Skelton): End of This meeting
- For CD Balloting : End of July, 2010

Editor Change

- Current Editor: Hajime Horiuchi
- New Editor : Tatsumi Adachi (NEC)

Thank you

Requirements (Con't)

Requirements-7 Identification Schema

- MFI 6 should stock take major UUID providers as widely as possible including ID schema that were used in MDR standards (e.g. IRDI)
- MFI 6 should take one of those as the recommended identification scheme
- MFI 6 should provide an own ID scheme for miscellaneous object (attached model profiles), e.g.

Note:

DOI (Digital Object Identification), Ubiquitous Center (Japan),

Classification Schema

Requirements-8: Classification Schema

- MFI 6 should provide an own model classification scheme
- Those schema should consist of;
 - Purpose and mission
 - Industrial sector
 - Modeling View point
 - Domin Context