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# **Requirements for MFI Part6: Registration procedure**

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2009/11/17

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# Commonality between MFI and MDR

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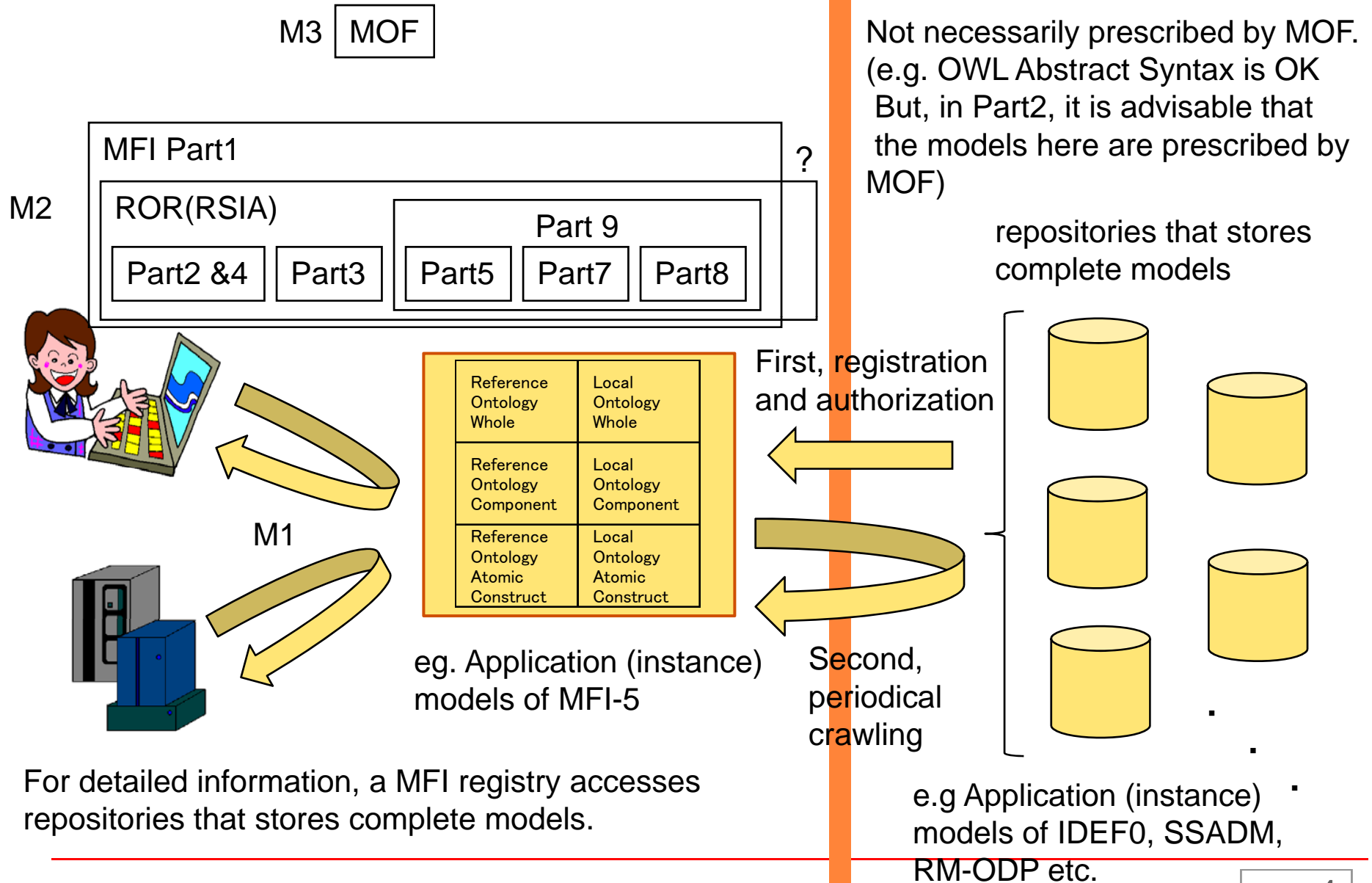
- Core portion (items that needs to be administered) inherit from Administered Item.
  - Hence, MDR Part3, which specifies the registration of Administered Item, can possibly applicable to MFI registry.

# Differences between MDR and MFI

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- Can exist independently or not?
  - MDR does not need to assume the existence of complete models outside MDR and MDR can be updated directly.
  - MFI registry assumes that complete models (ontologies, models and process models etc.) exist outside the MFI registry and needs to synchronize itself to them. MFI registry is updated not directly but only through the updates of the complete models.

# Relations between MFI Registry and Repositories outside of MFI



# Differences between MFI and MDR

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## ■ Uniformity

- Each registration authority may establish his/her own MDR.
  - ◆ Hence, MDR Part6 has rich and flexible specifications and it is left to a registration authority how to apply them.
- Similarly, each organization may establish her own MFI registry also.
- But, MFI (at least Part3) also intends to establish logically only one registry just as there is only one
  - ◆ Swoogle, which is unfortunately dormant after Jim Hendler left,
  - ◆ watson, which is now getting popular, instead?
  - ◆ BioPortal, which is active in the area of biomedical ontologies.
- Hence, MFI needs a more simple but specific registration procedure.

# Differences between MFI and MDR

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- Administered Item Identifier (Small but specific point)
  - MDR uses Version Identifier. When an administered item is updated, its Data Identifier may or may not change depending on the change of its essential meaning and even Version Identifier may or may not change. A specific guide line is left to a registration authority.
  - MFI (at least Part3) does not use Version Identifier. Every time an administered item is updated, a different Data Identifier is assigned.
  - Its version transition is managed by the Evolution\_Model package.
  
- These understandings of the commonalities and differences between MFI and MDR arise the following discussion points **i** , **ii** , **iii** , **iv** of (possible) MFI Part6.

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## I. Registration procedure

## MFI Part6 Registration procedure

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- Under the assumption that complete models (ontologies, process models, service models etc.) exist outside of MFI, MFI only registers a common parts of models with its administered items.
- So, it is a key issue of MFI Part6 that the synchronization of a complete model and its common parts in a MFI registry.
- This issue is particular to MFI Part6 and may be out of the scope of MDR Part6.



# Points to be discussed (1 of 3)

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## ■ Initial submission

- Before synchronization, the initial submission (and its authorization) is necessary.
- The procedure of the initial submission might be almost the same as MDR Part6.
- But, some new issues exist. => see “Treatment of the information that cannot be gained from the complete model”

## Points to be discussed (2 of 3)

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### ■ Synchronization

- There are two ways.
  1. Periodical crawling by MFI
    - ◆ After initial submission is authorized, a MFI registry periodically crawls to the repositories that store complete models.
  2. Update submission by the owners(initial submitter)
    - ◆ Something like “When a complete model is updated, its update has to be submitted to a MFI registry by the owner within 1 week”
- For a well-authorized and frequently updated complete models such as Gene ontology, 1. is better. But, there may be the cases that 2. is better.
- Should MFI Part6 allow both?
- Some new issues also exist. => see “Treatment of the information that cannot be gained from the complete model”

## Points to be discussed (3 of 3)

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### ■ Other issue: Change notification service

- To promote the registration to a MFI registry, it should provide some services to submitters (owners).
- Change notification service is a minimal one.
- Should it be included in MFI Part6?

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## II. Statuses

# MDR Part 6 Statuses

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## ■ Registration status

### ● Lifecycle Status

- ◆ Preferred Standard
- ◆ Standard
- ◆ Qualified
- ◆ Recoded
- ◆ Candidate
- ◆ Incomplete
- ◆ Retired
- ◆ Superseded

### ● Document Status

- ◆ Historical
- ◆ Application

## ■ Administration status

- Denotes the pending changes and forewarns the community?

# MDR Part 6 Statuses

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- MDR Part6 has many statuses, whose differences are not so specific.
  - This is fine because in a MDR registry, their applications are left to its registration authority.
  
- Registration status
  - Lifecycle statuses
    - ◆ , which address improvement and progression towards levels of perfection of the quality of the metadata of the item and of the preferences of usage of the Administered Item.
  - Documentation statuses
    - ◆ , which denote positions at which there will be no more progression in quality of metadata or use of the Administered Item.
  
- Administrative statuses
  - , which denote the pending changes that are important to the community that uses this metadata register.

## MFI Part 6 Statuses

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- MFI needs simpler but more specific status because MFI intends to establish logically one registry and the statuses of its administered items need to be specified unambiguously.
- MFI statuses simply denote “an administered item conforms to the MFI specification and is active”, or “before that (i.e. submitted but may be incomplete), or “after that (i.e. deprecated).
  - Statuses which indicate the level of completeness such as “Qualified”, “Standard” and “Preferred Standard”. It is a matter of authoritative extent.
- Hence, the followings are enough like ebXML registry.
  - Submitted
  - Approved
  - Deprecated

## MFI Part 6 Statuses

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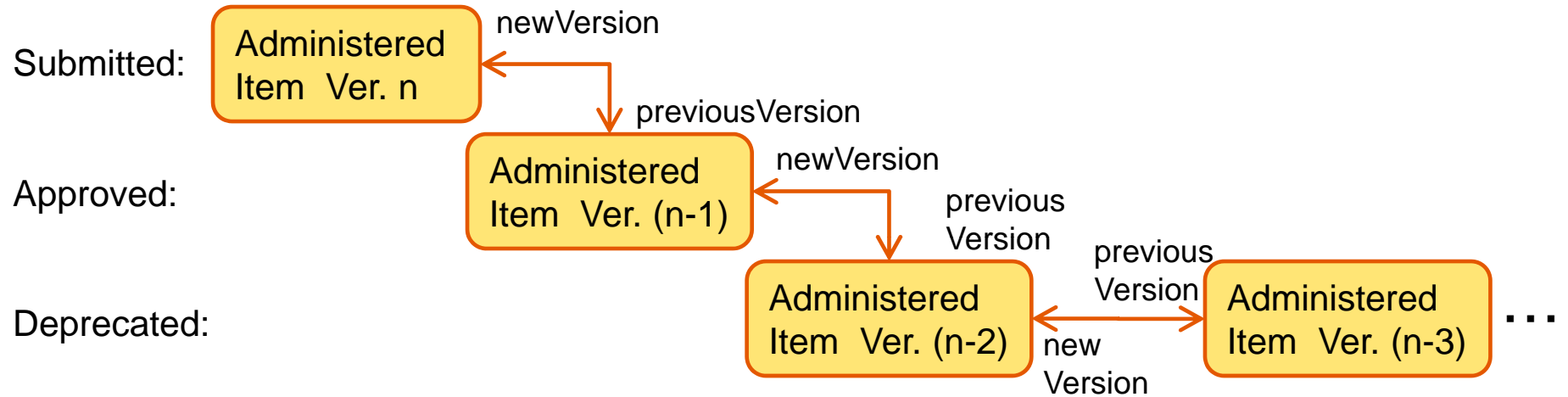
- Status “Withdrawn (or removed)” is not necessary because this status is applicable only for the administered item really removed from MFI registry.
- At most one version exists at “Submitted” status.  
At most one version exists at “Approved” status.  
All of other versions exist only at “Deprecated” status.



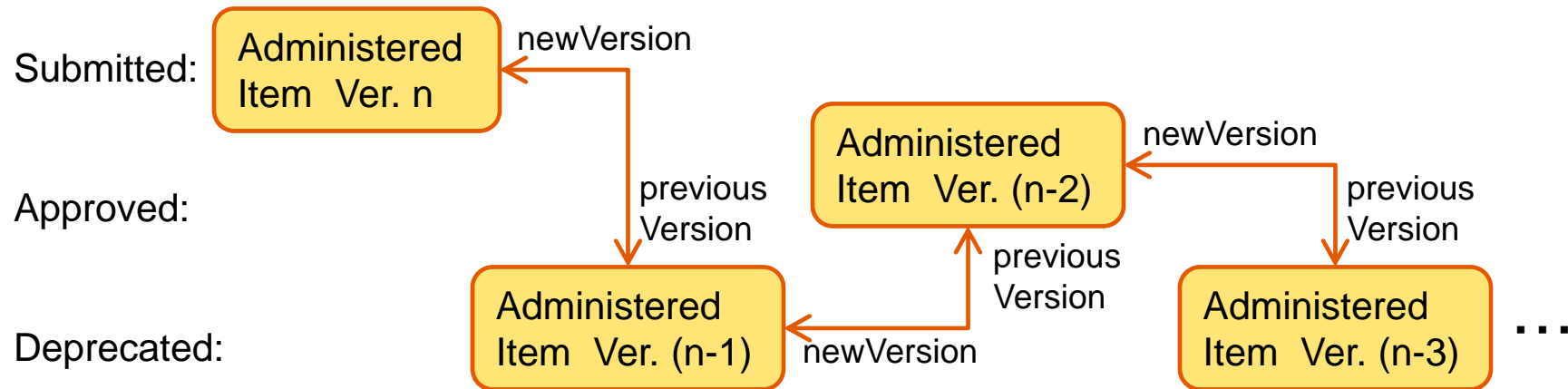
# Transition of statuses



<Usual Case>



<Case that Ver. n is submitted before Ver. (n-1) becomes approved>



# MFI Part 6 Statuses

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## ■ Submitted

- Any administered item registered (by initial submission and a periodical crawling) has this status first.
- If a new version is submitted while a current version is still “submitted”, the current version automatically becomes “deprecated”.

## ■ Approved

- When all the administered items that constitutes a whole model (eg. `Ontology_Atomic_Constructs`, `Ontology_Component` and `Ontology_Whole` of the same ontology ) satisfies all the requirements (constraints) of MFI, all of them change their statuses from “submitted” to “approved”.
- When a new version changes its status from “Submitted” to “Approved”, a current version automatically changes its status from “Approved” to “Deprecated”.

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### III. RAI in Administered Item Identifier

# Registration Authority Identifier of MDR

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- MDR Part6 does not explicitly specify whether only one or more registration authorities are allowed per MDR(egistry).
- However, it seems that only one registration authority is allowed per MDR(egistry) if we see the following descriptions in MDR Part6.
  - It is the responsibility of the Registration Authority to refine, publish, and implement this administrative feature.(Last sentence at 4.1.3.1 General)
  - The Registration Authority shall establish procedures for necessary activities of the Metadata Registry.(First sentence at 4.2 Procedures)
- RAls in IRDI of any administered items in a MDR(egistry) seem to has be the identifier of a registration authority of the MDR(egistry).
- In actual implementations of MDR, are more than one registration authorities per MDR(egistry) ?

## Registration Authority Identifier of MFI (1 of 3)

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- Like MDR(egistry)?, there is only one registration authority per MFI registry.
- However, in a MFI registry, an RAI in IRDI of an administered item is different from a registration authority of the MFI registry. It is an identifier of a registration authority of a complete model outside MFI. So, it may be better to call it something like “authorized submitter id”.

## Registration Authority Identifier of MFI (2 of 3)

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- In some (many?) cases, a registration authority of a complete model does not have a Registration Authority Identifier specified ISO/IEC 6523, although the complete model is very authoritative such as Dublin Core, SKOS etc.
- But, it is irrational if a authoritative complete model cannot be registered in MFI registry for its lack of Registration Authority Identifier.

## Registration Authority Identifier of MFI (3 of 3)

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- To avoid this problem, the authority of MFI registry should have an International Code Designator (ICD) and, using this ICD, gives a RAI to the owner of a complete model.
  
- So, there are two cases;
  - i. If the owner of a complete model has a RAI, this RAI is also used in MFI registry as a part of Administered Item Identifiers.
  - ii. If the owner of a complete model does not has a RAI, the authority of MFI registry gives the owner a RAI, using its ICD and it is used in MFI registry as a part of Administered Item Identifiers.

## Re: Administered Item Identifiers

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- To resolve the problem of Administered Item Identifier, it needs to be investigated whether the rule of Administered Item Identifiers in MDR Part 6 should and/or can be relaxed.
- One possibility is to change the use of ISO/IEC 6523 from mandatory to preferable.
- Another extreme possibility is that anything is ok so far as it is globally unique.



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- vi. Treatment of the information that cannot be gained from the complete model

## Information that cannot be gained from the complete model

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- There is information that cannot be gained from the complete model.
  - One example is an Adminitsered Item Identifier.
  
- Unfortunately, there are several others.
  - Reference Ontology or Local Ontology of MFI Part3
  - authoritative level of MFI Part3 Ed2
  - non-functional properties of MFI Part7 ?
  
- Needs to specify the treatment of these kind of information.

# Reference Ontology and Local Ontology

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- MFI Part 3 distinguishes a reference ontology and a local ontology.
- So, when some organization wants to register some ontology in a MFI registry as a reference ontology as its initial submission, what is a condition?
- There are two possibilities.
- Explicit condition such as:
  - an ontology which is already ISO standard (e.g. ISO 18629 PSL etc.) can be automatically a reference ontology.
- Procedural condition such as:
  - to be registered as a reference ontology, it needs the authorization of XXXX.
- Also needs to specify the procedure that makes a Local Ontology forward a Reference Ontology.

# How Authoritative Level is decided and changed

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- An authoritative level of an administered item can be initially automatically decided.
  - such as the authoritative level of an administered item is newly defined one-level below the lowest authoritative level of its components which are already registered and have authoritative level.
  
- But, after that, it can be updated by its registration authority.
- Needs to specify the procedure for that.

# Non-functional properties of MFI Part 7

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■ ???

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■ Thank you!