

ISSEUS for ROR (2nd Edition)

Sept.04, 2008

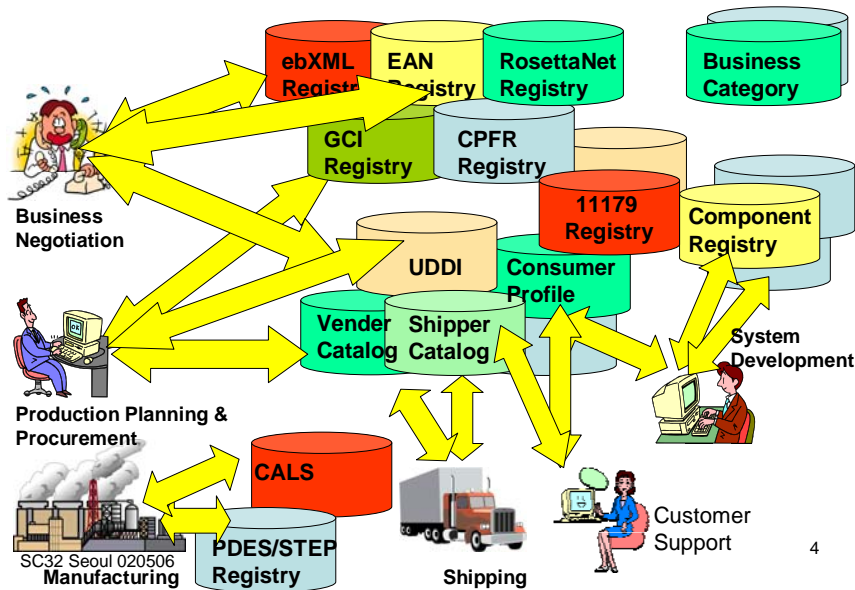
Hajime Horiuchi

What is ROR

- **ROR (Registry of Registries)** is the key objectives of the MFI standards to materialize the interoperability among industries business processes
 - MFI: ISO/IEC 19763 (Metamodel Framework for Interoperability)
- Goal:
 - Reification of the interoperability among heterogeneous domain registries
- A formal committee under IPSCJ(JTC1 Japan)
 - **SC32WG2 + TC184/SC4 + ECOM + LCDM members**
 - **Just started at officially on this April**

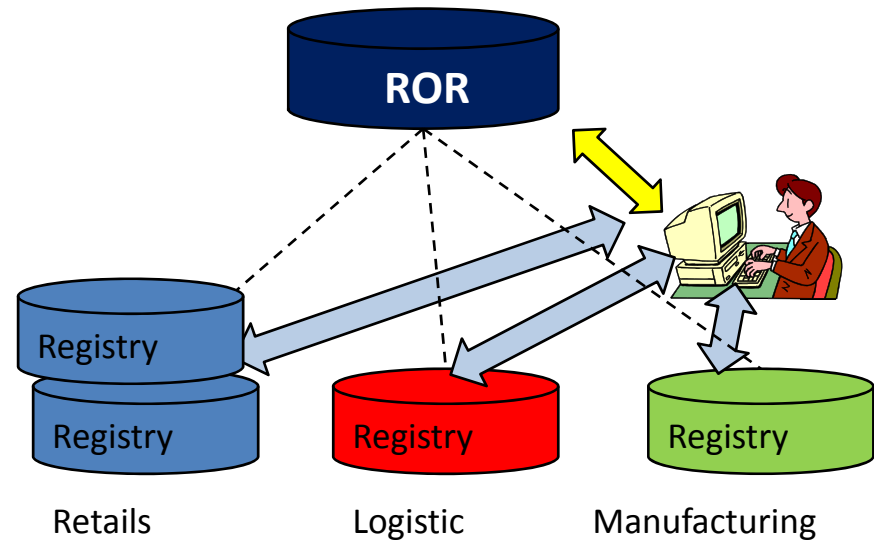
Background of ROR : Industrial Requirements

Original goals of ISO/IEC19763 standards



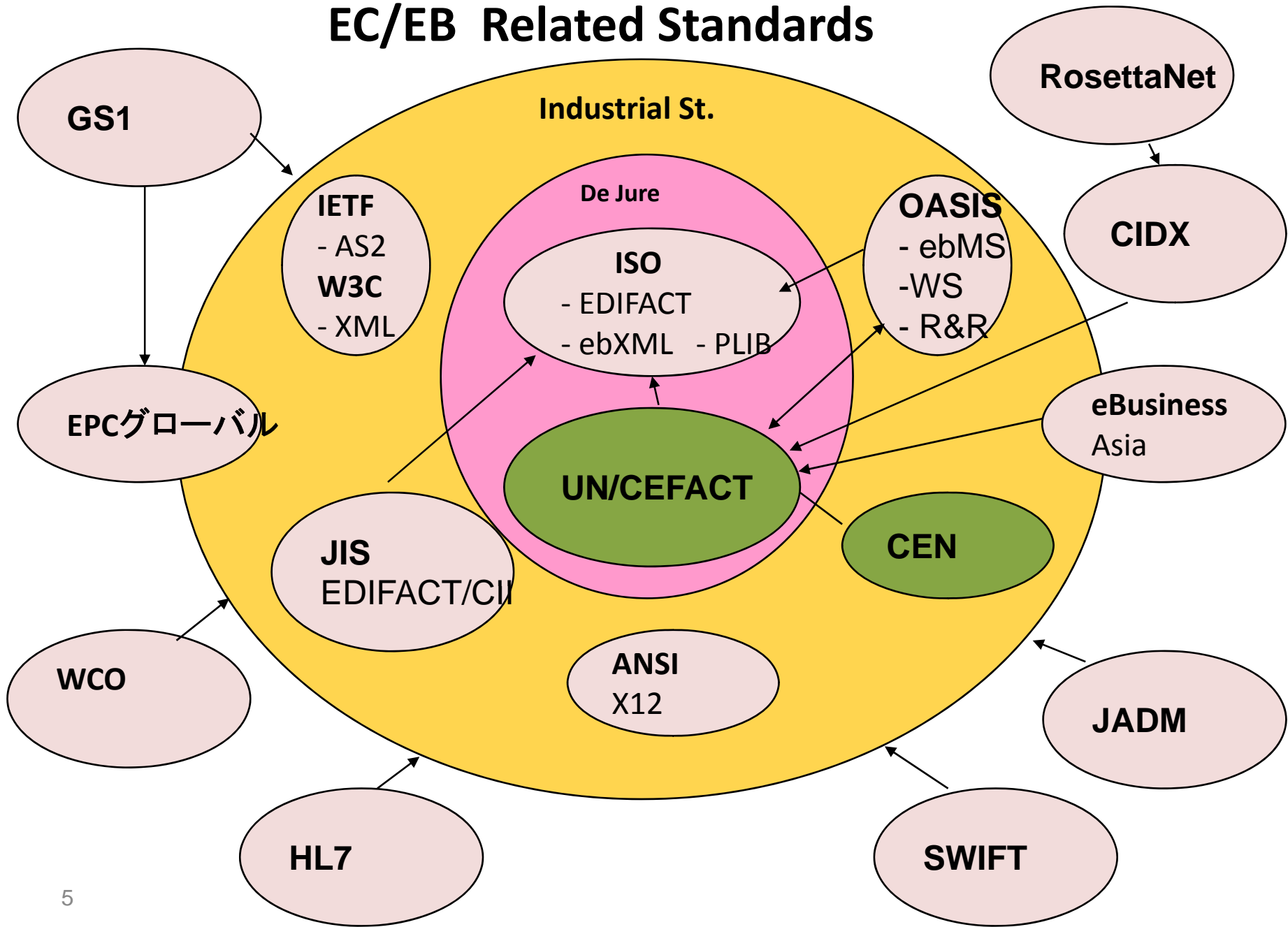
Heterogeneous Registries

ROR: Registry of Registry



Registry Interoperation

EC/EB Related Standards

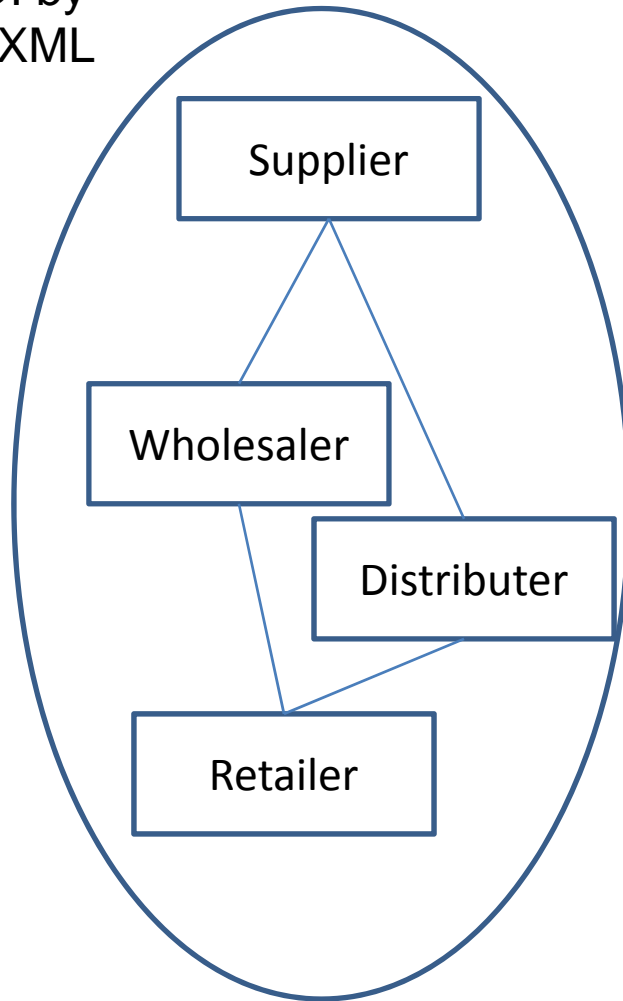


Some of actual registries in Japan

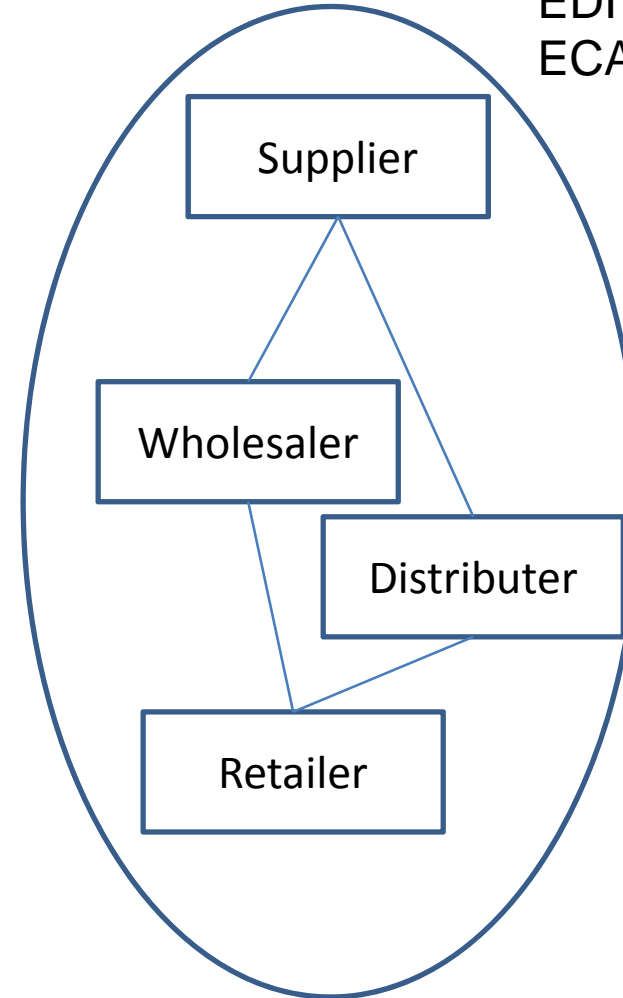
- JEITA (ECALGA, PLIB)
 - JEMA (Heavy electric parts)
 - JEMIMA (Electric Measurement Instruments)
 - CEDI (Petro Chemical)
 - JAPIA/JAMA (Automobile)
 - JASTPRO (Shippers codes)
 - JEDIC (EDI standards)
 - JICFS/DRS (Company code, Item code in retailing)
 - JACIC LCDM (Construction Engineering)
 - www.registry.go.jp
- etc.

Cross Industries Information Sharing

EDI by ebXML

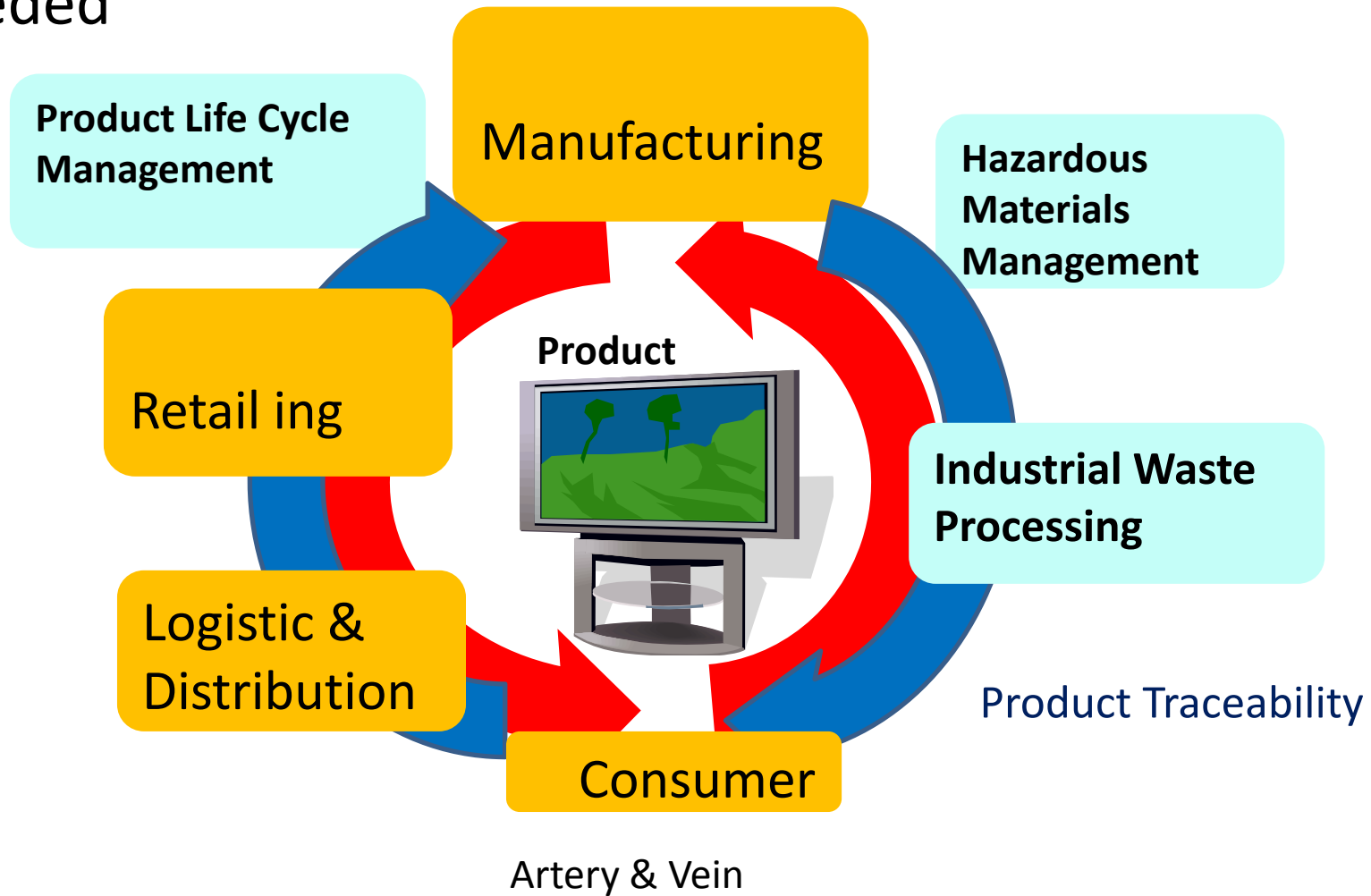


EDI by ECALS

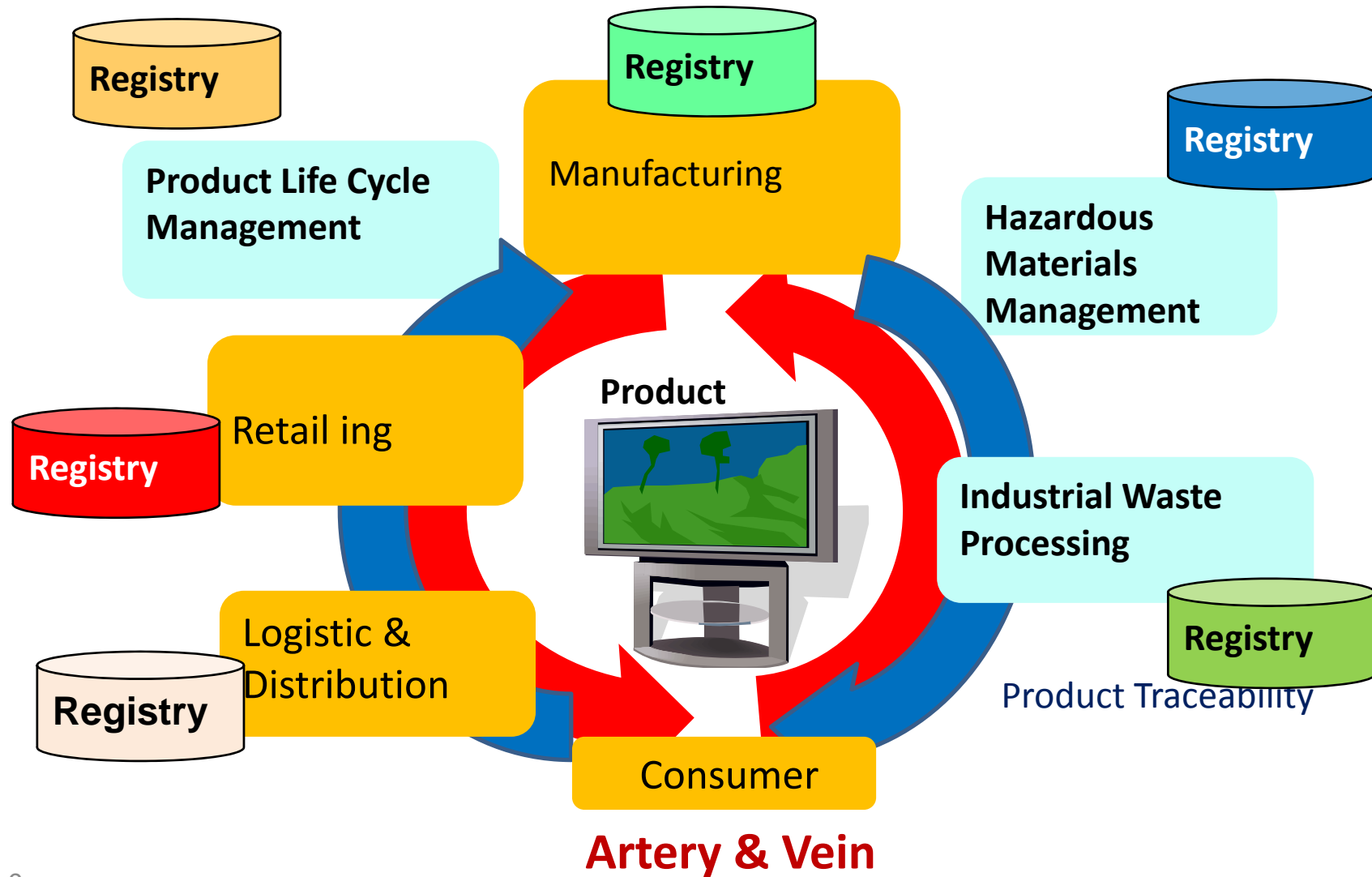


Emerging needs for the Model Sharing

Actual reification of **Cross Industries Interoperation** is needed

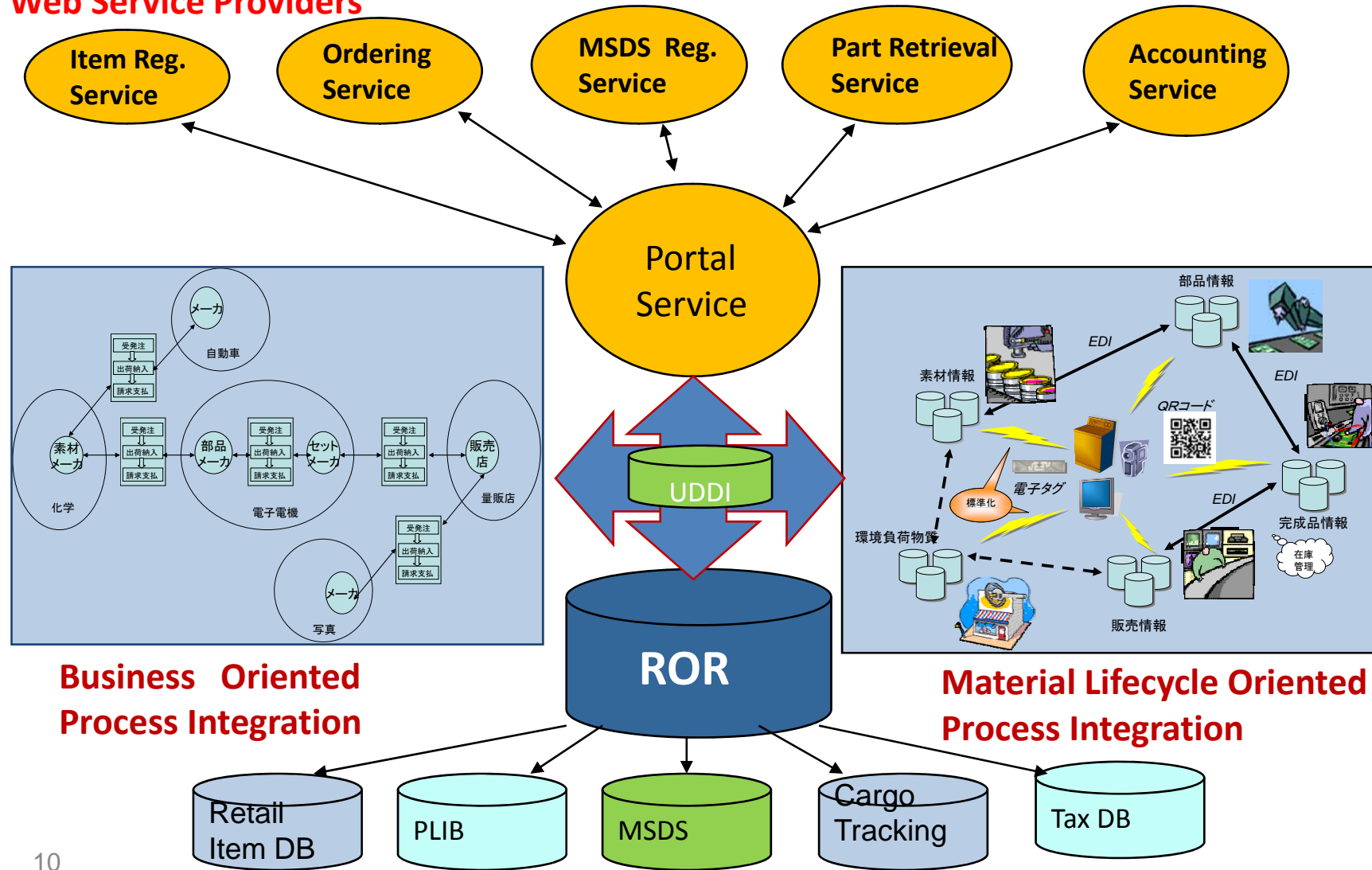


Every domain has own Registry



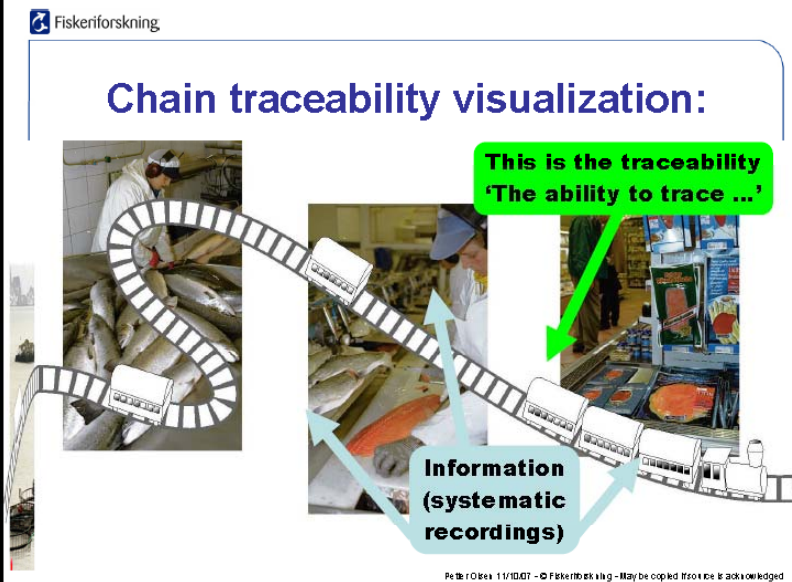
A Draft of Framework for Information Infrastructure (ECOM, 2007)

Web Service Providers



Trace-ability in EU

- General Food Law
 - Regulation EC/178/2002 (欧州食品安全庁)
- TRACEプロジェクト (<http://www.trace.eu.org/>)



Food Trace-ability by RFID tag



電子イヤータグ

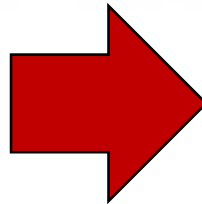


牛肉の場合...

個体識別番号



ラベルを拡大



牛の個体識別情報検索サービス

牛の個体識別番号情報検索サービス

牛の個体識別番号10桁(半角)を入力して検索ボタンを押してください。

1058947064

出生の年月日・雌雄の別・母牛の個体識別番号
種別(品種)・飼養場所の履歴

● (平成19年10月09日現在)

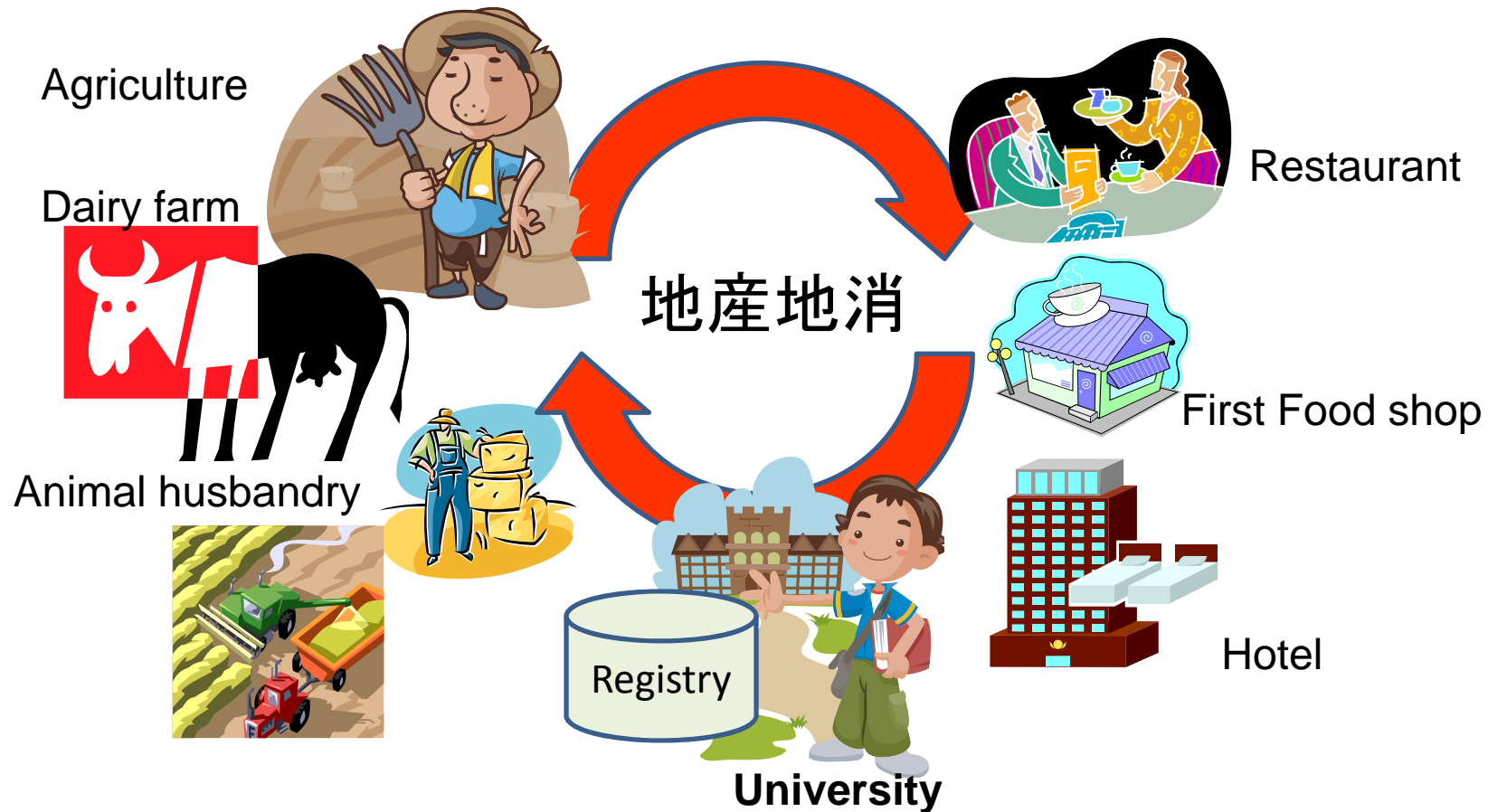
個体識別番号	出生の年月日	雌雄の別	母牛の個体識別番号	種別(品種)
1058947064	H 07.09.16	去勢(雄)		ホルスタイン種

飼養県	異動内容	異動年月日	飼養施設所在地	氏名または名称	
1 岩手県	装着	H 14.02.20	盛岡市	(社)家畜改良事業団盛岡種雑牛センター	飼養管理情報へ
2 岩手県	転出	H 16.08.30	盛岡市	(社)家畜改良事業団盛岡種雑牛センター	飼養管理情報へ
3 岩手県	転入	H 16.08.30	盛岡市	右京 政秀	
4 岩手県	転出	H 16.08.30	盛岡市	右京 政秀	
5 千葉県	搬入	H 16.08.31	旭市	(株)千葉県食肉公社	
6 千葉県	と畜	H 16.09.01	旭市	(株)千葉県食肉公社	

(注)既存牛の届出の表示は省略

Foods Recycling

- “Local Produce & Local Consumption”
- Less “Food Mileage”

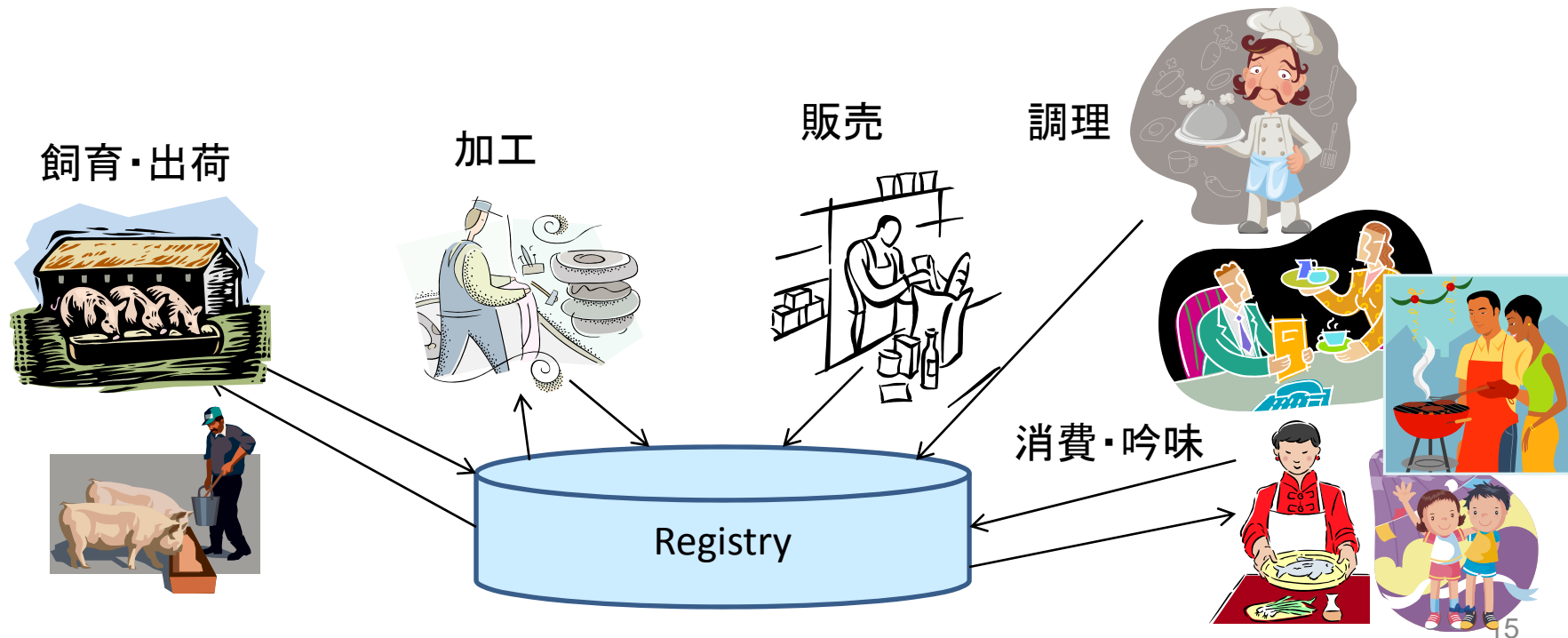


There must be registries

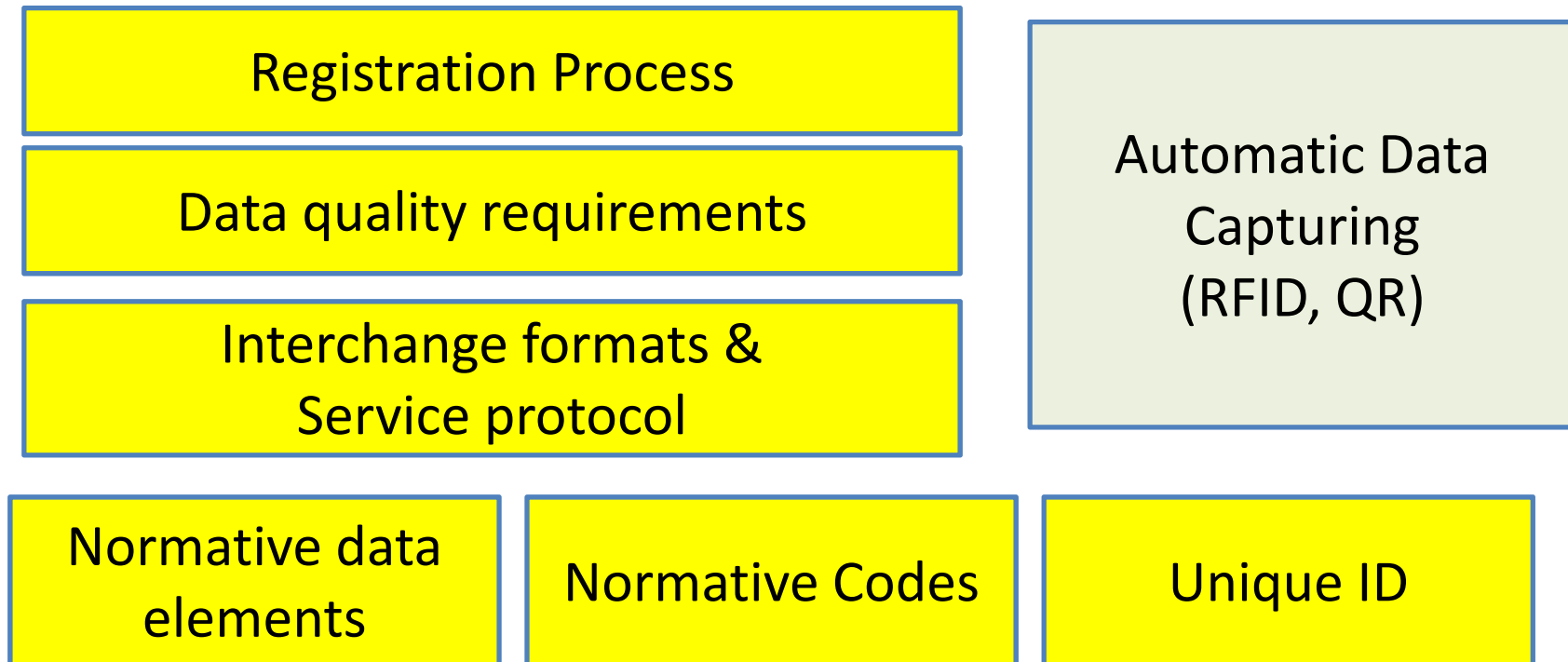


Positive TRACE-ABILITY

- Not only tracking products
- Feed back from consumers



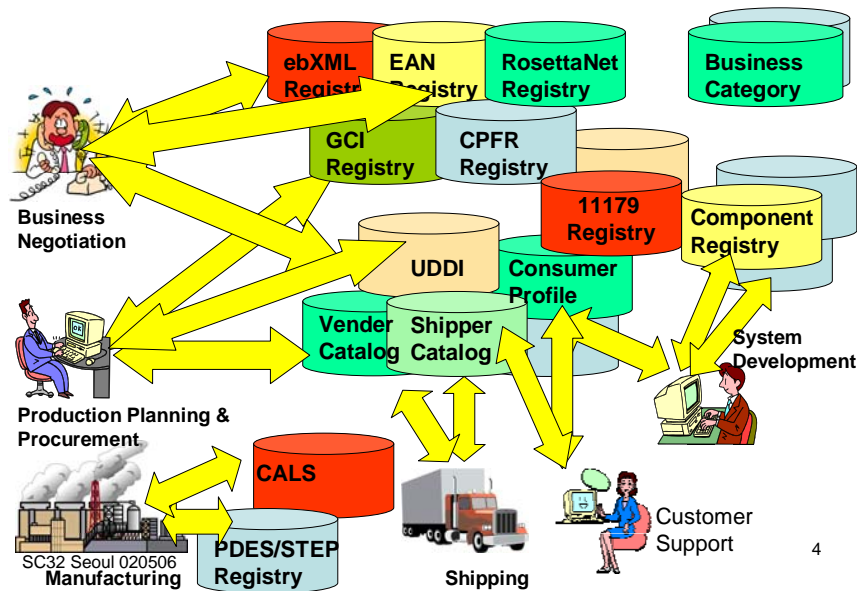
Trace-ability Framework



ROR: Registry of Registries

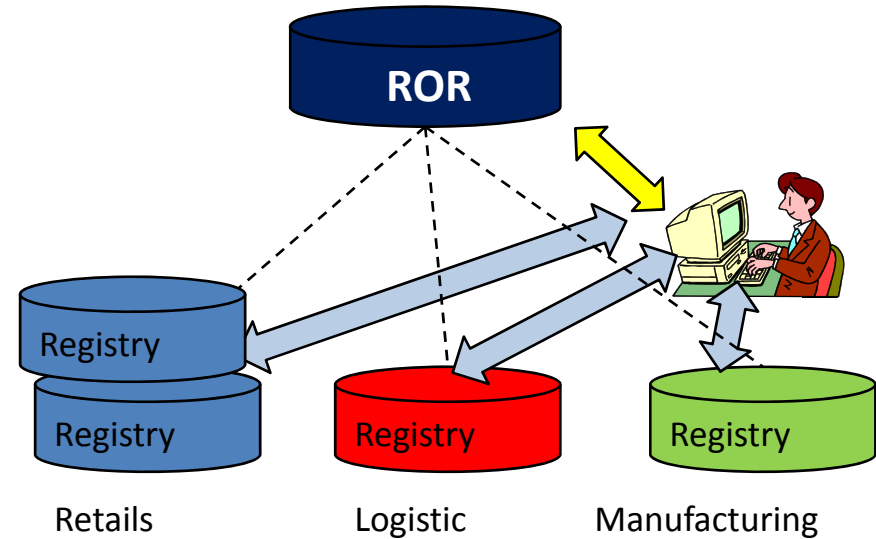
TO SUPPORT CROSS INDUSTRIES

Mission of ROR



Heterogeneous Registries

ROR: Registry of Registry



Registry Interoperation

Current status of the registry

- Today, a lot of actual registries are enforced and working in various business domains.
- They were developed mostly according to requirements in their specific domains.
- Each registry has own structure, fashion and procedure.
- Most of them did not pay attentions to other registries.
- Even if, they could follow particular standards, most of those standards themselves might be domain specific.

ISSUES FOR ROR
&
MFI Standards

ISO29002

- ISO/TC184 SC4WG3
- **ISO/CD-TS 29002-5**
**Industrial automation systems and
integration — Exchange of characteristic data**

ROR Service

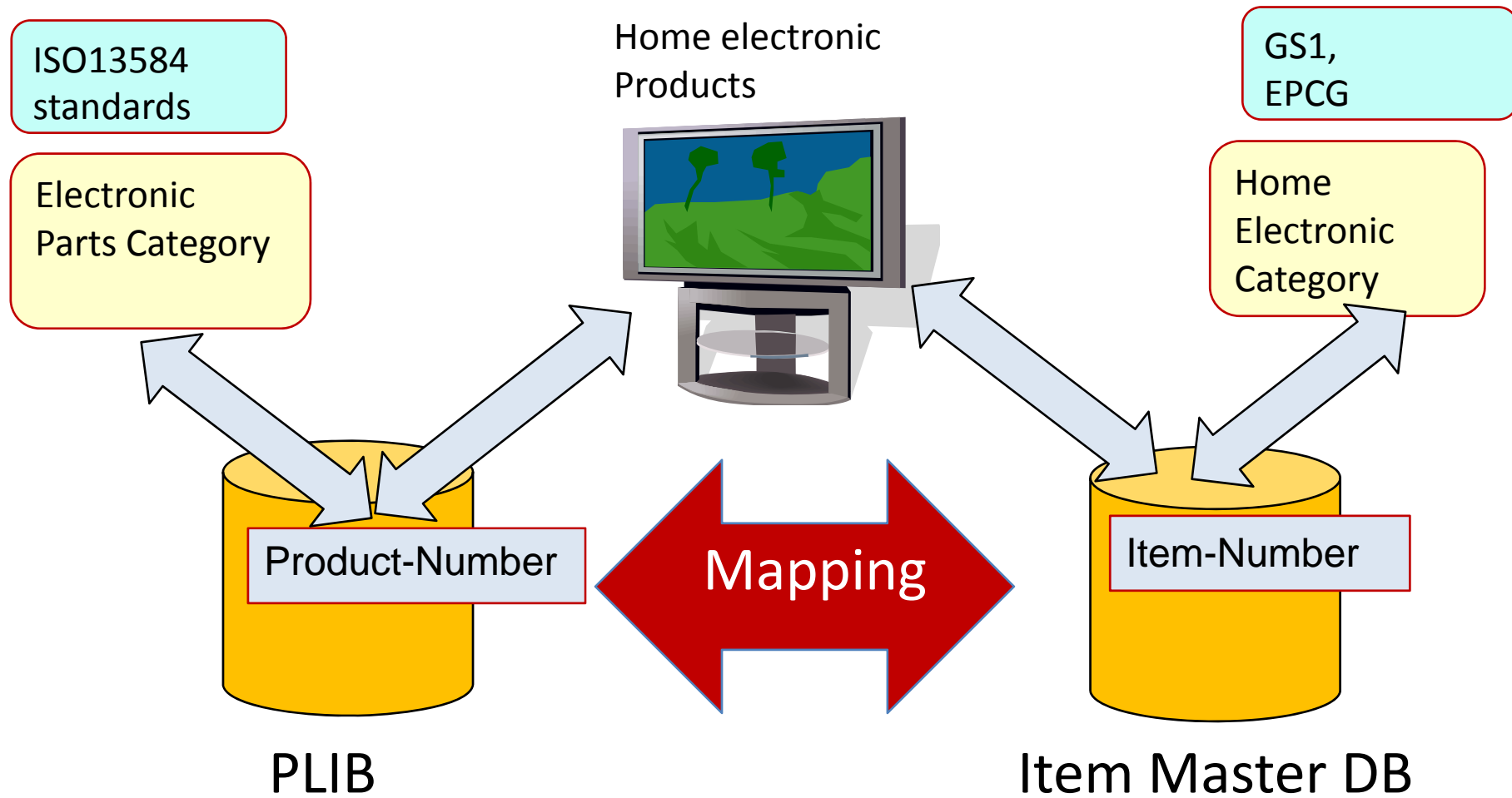
Access to
a target Registry

Select a target Registry

Analyze difference
Registries

Discovery & enumerate
Possible Registries

A Use Case in the study

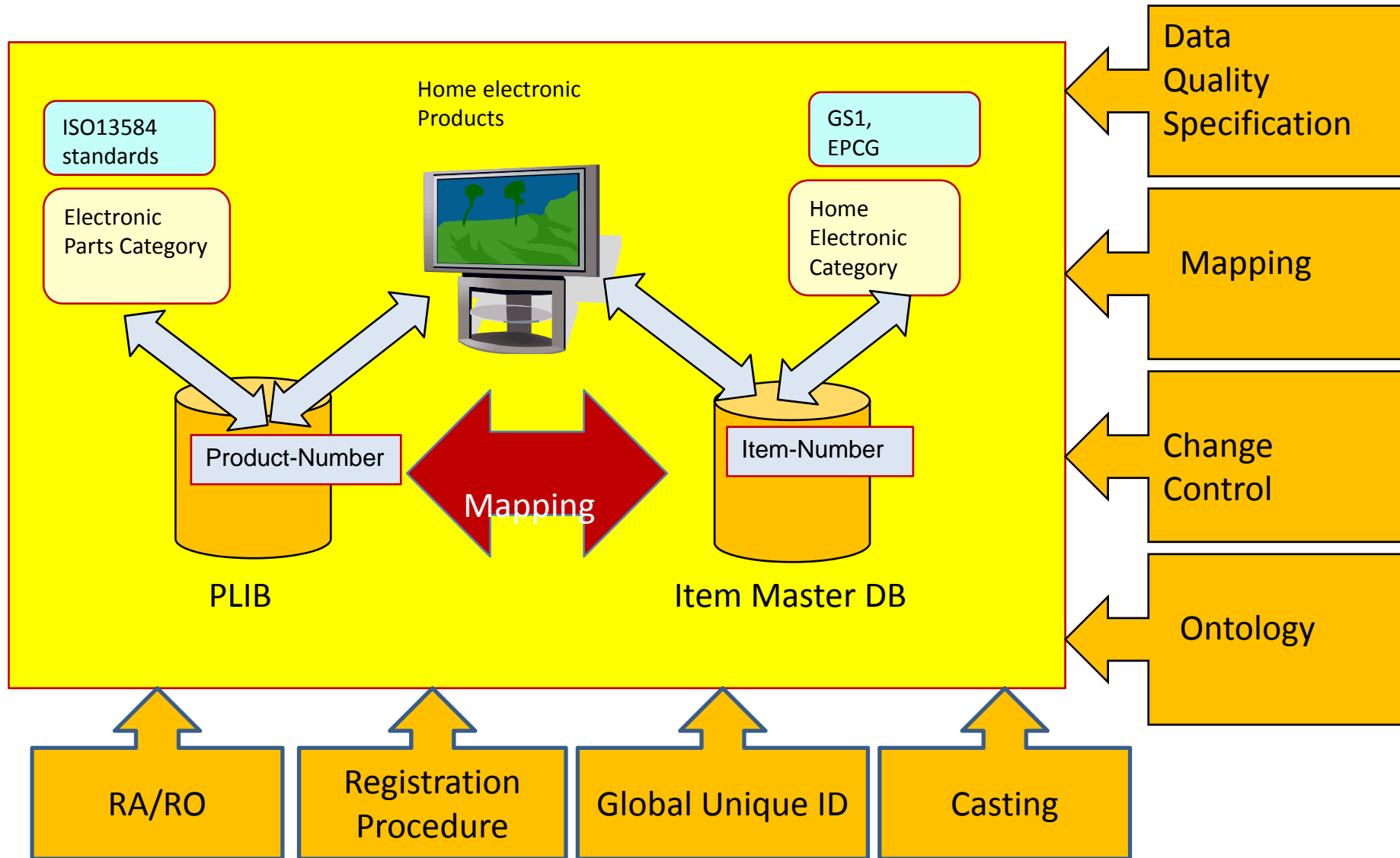


How different from Google

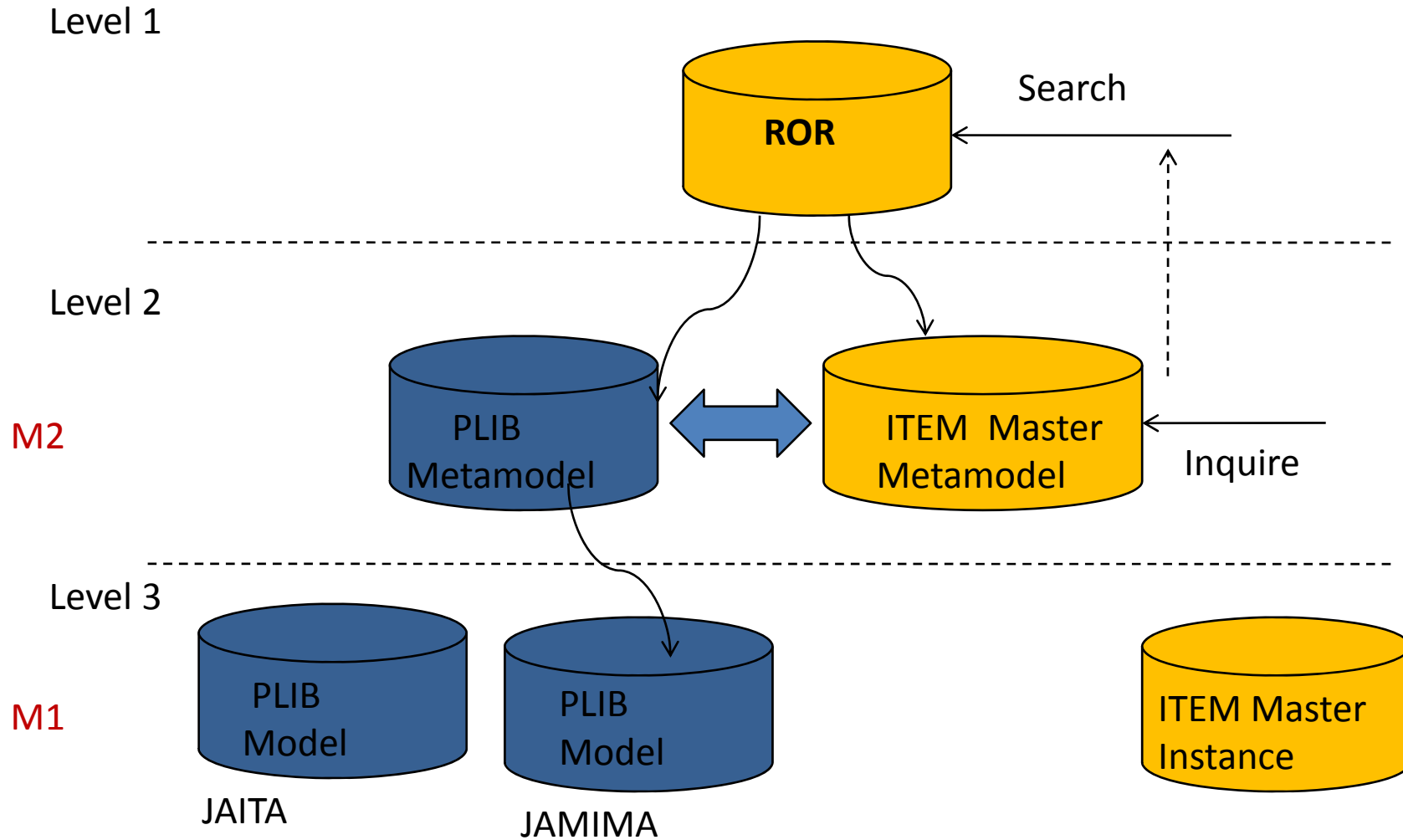
Google:

- Discovering Non-structural and textual web page by full text search
 - Too many hit results (sometime more than 10^8)
 - No semantic operations
 - Dose not provide any assurance on the result
- Is it available to use business transaction processing

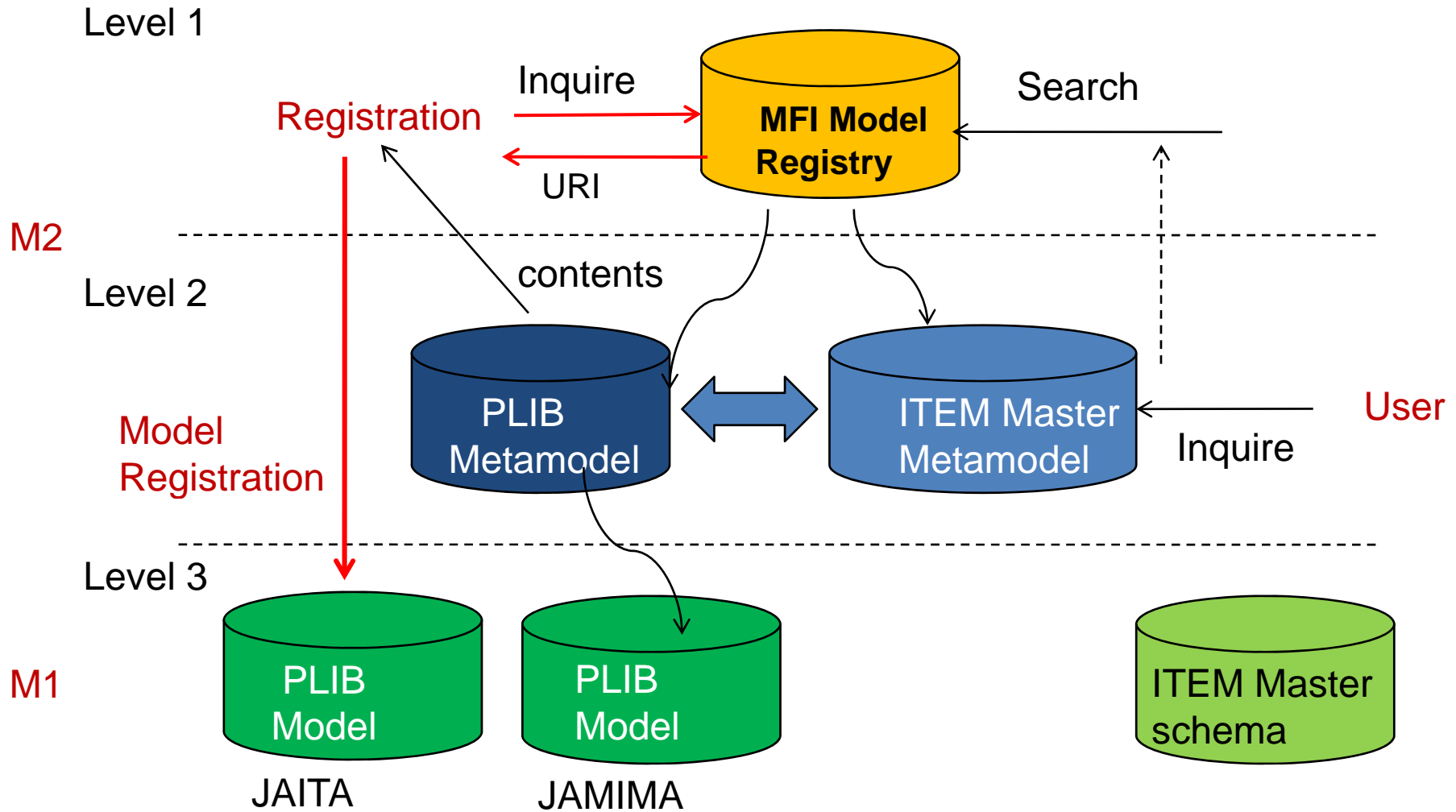
Issues



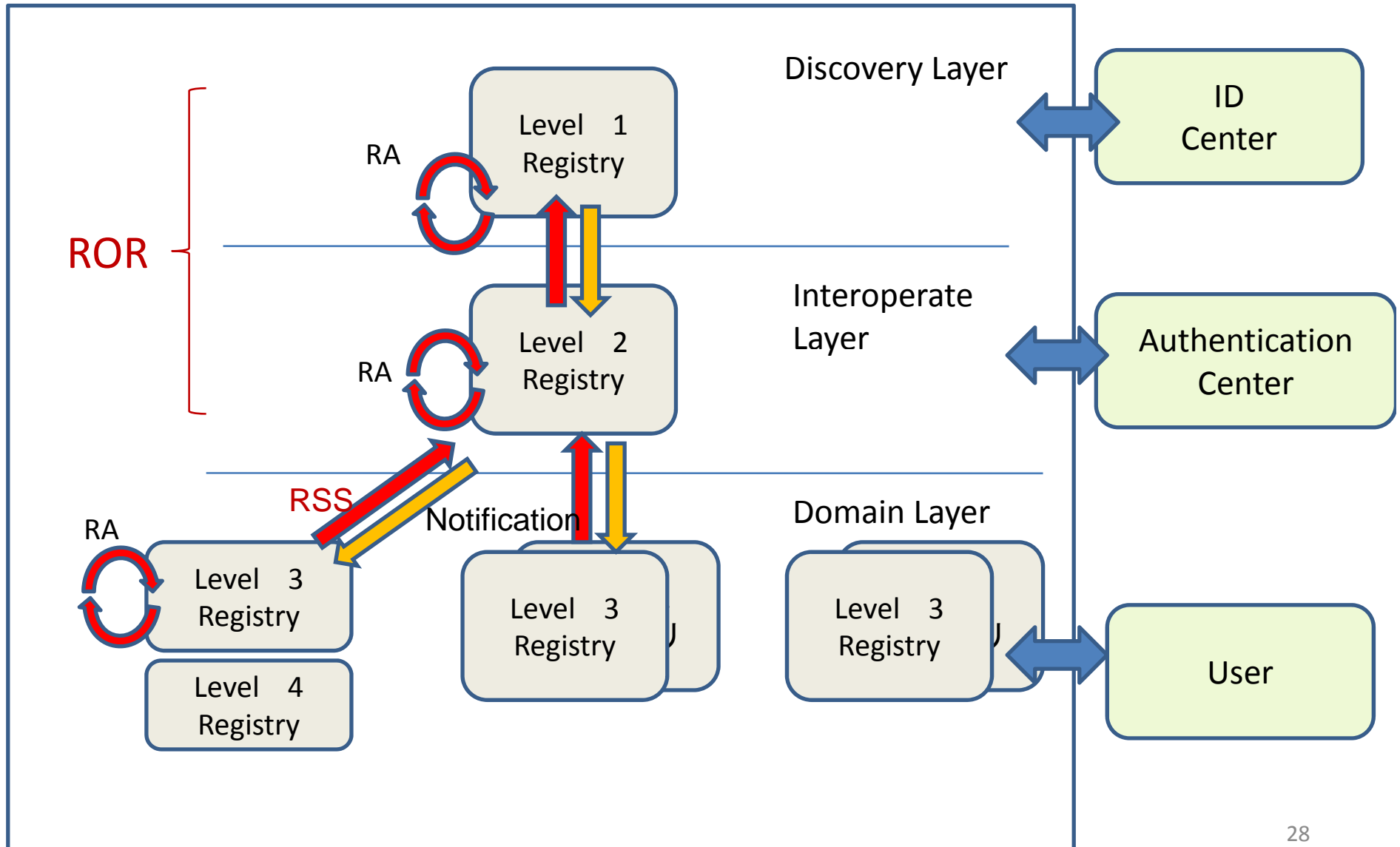
How to Cast a registry call



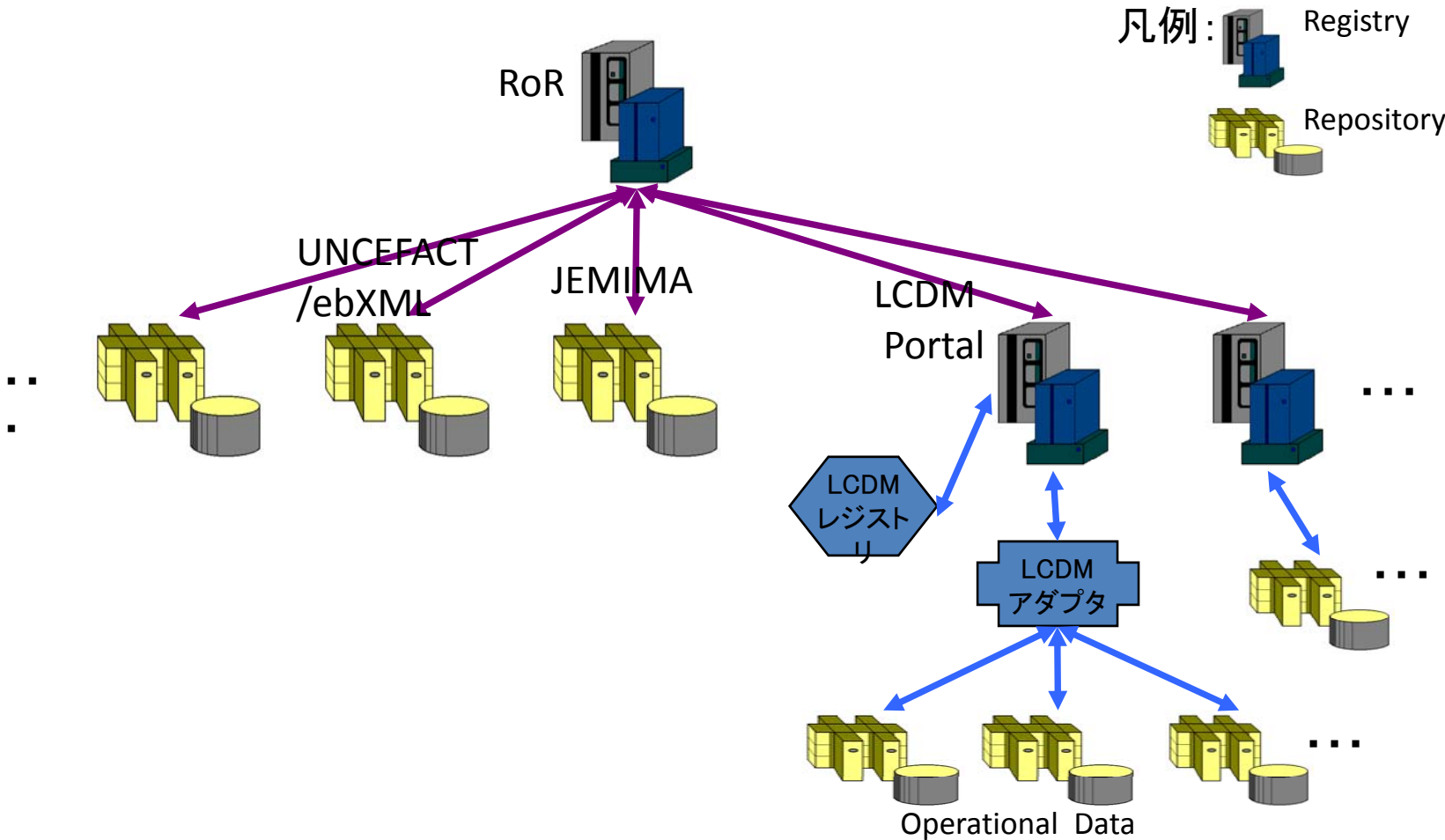
ROR : Registry Of Registries



Scope



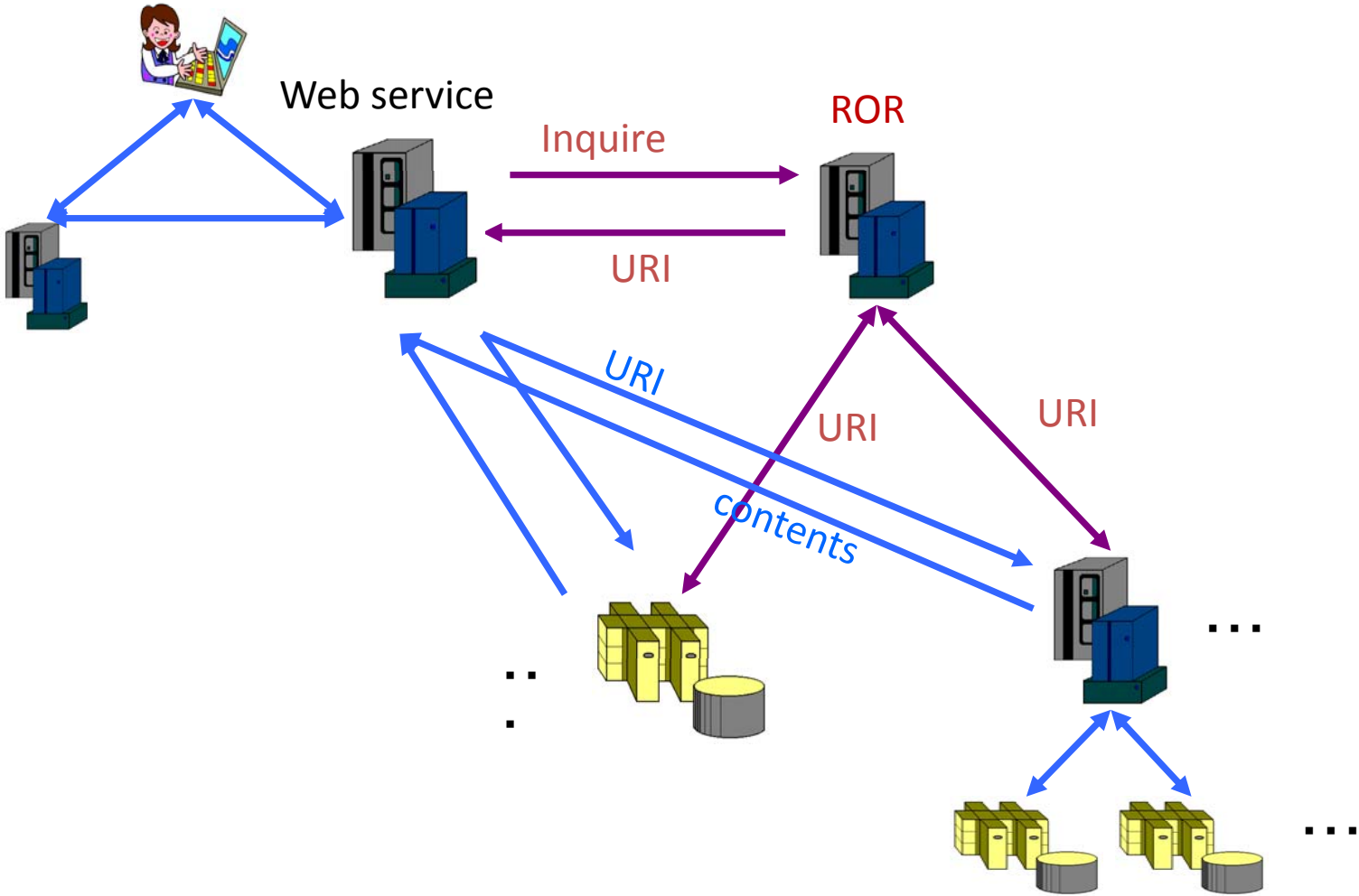
Level 1 & 2



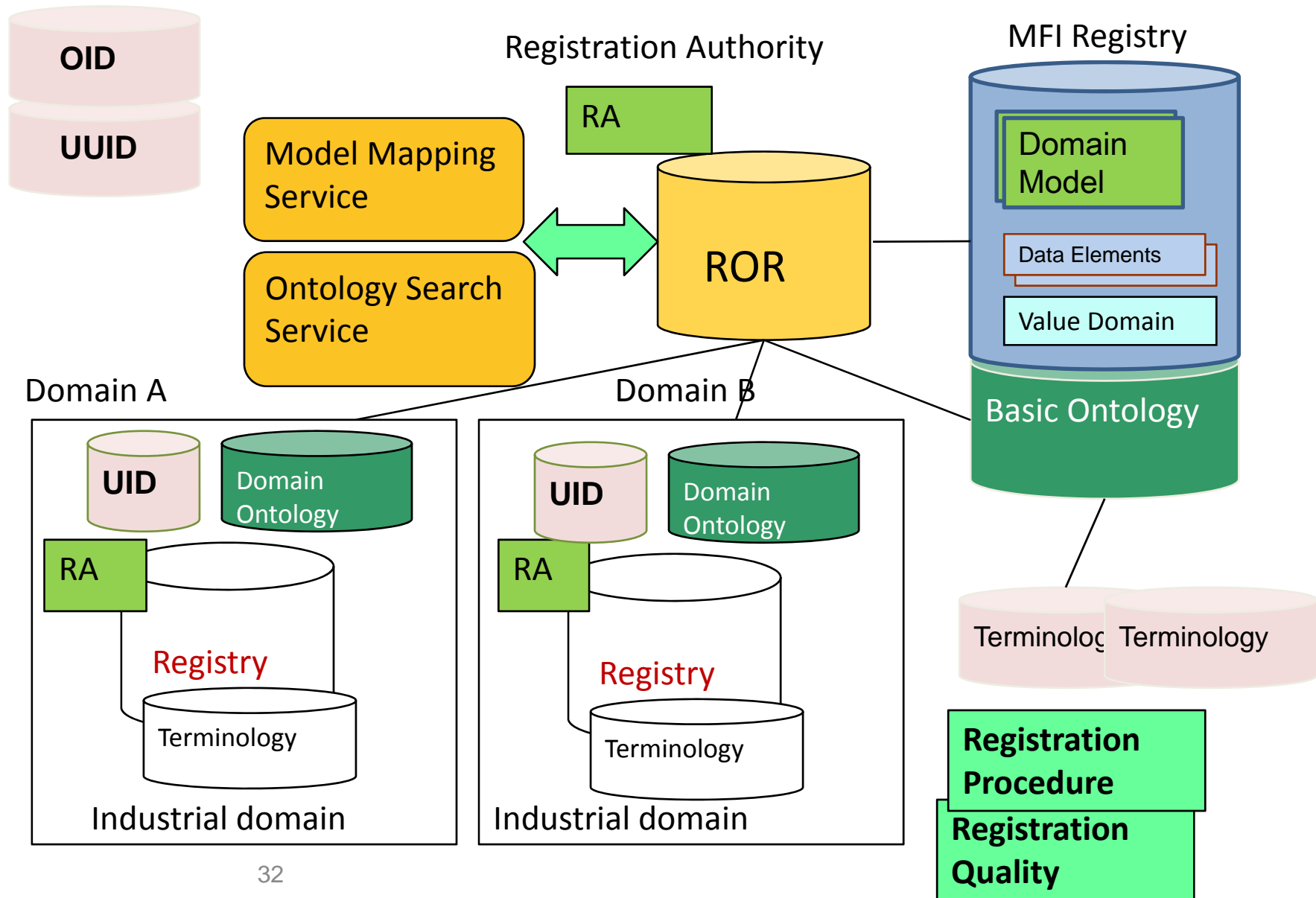
Level 1 Mapping Variation

- Exactly Same
- Similar to
- Looks like

ROR Service



Cross Domain ROR

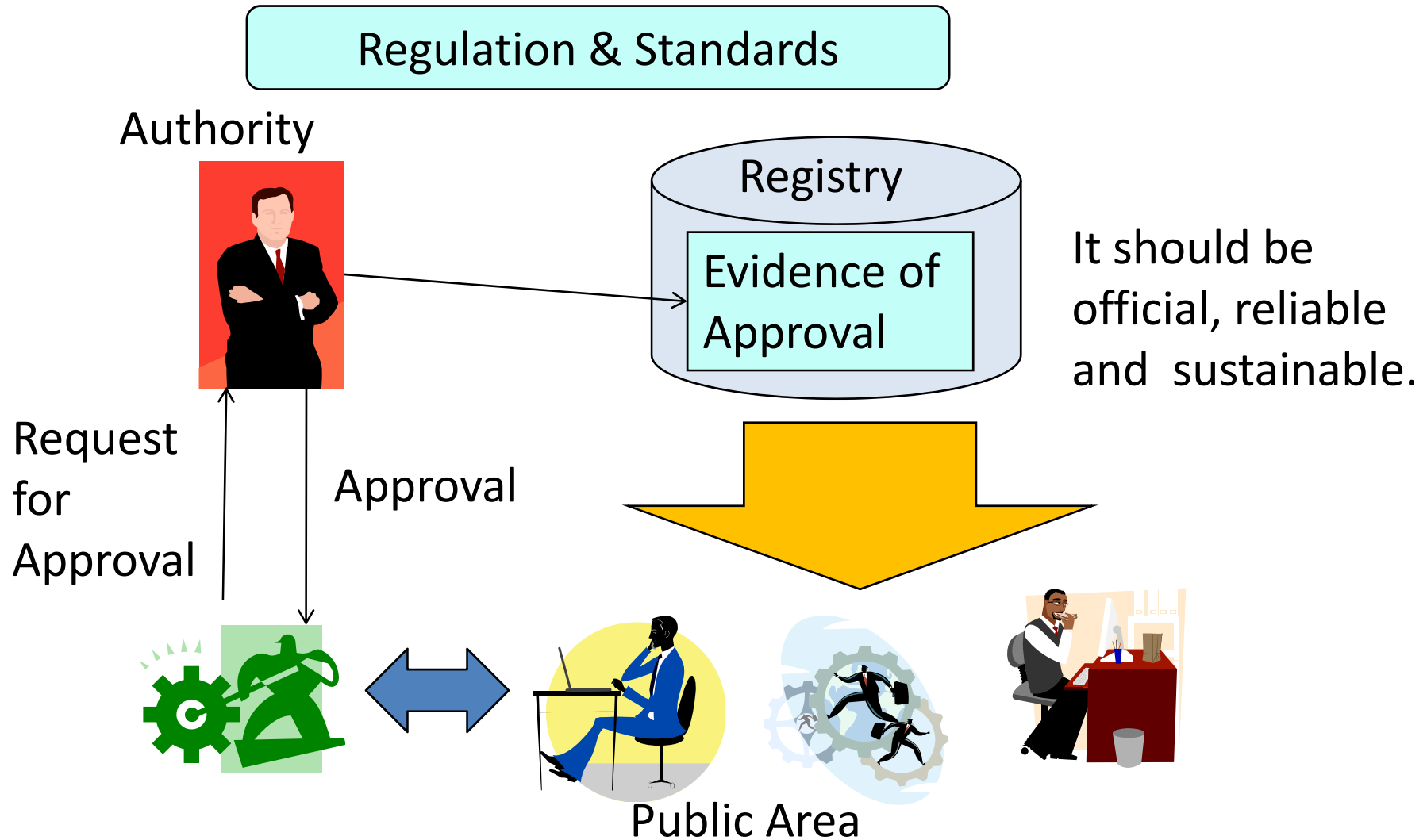


What is the Registry, again

- **Registry** has several meanings, all of which generally relate to its original or historical meaning as a **written, official or formal record of information, or the place where such records are kept.**
- Office where registrations are recorded; database for storing system configuration information.

(Wikipedia)

The Registrations



DISCUSSION

Questions/Issues

- How to support different Registry standards
 - ➔ describing their metamodels by MFI2
- How to Discover and Cast registries
 - ➔ Web Service
- Should we register metamodels at the Level2
- Should we ask the target model to be described by MFI2 or MOF
- Should we Integrate the Administrative ITEM
- Should we provide the Model Mapping
- Should we provide a Universal ID
- Should we require Data Quality
- Registration Procedure

Establish Liaison & Collaboration

- XMDR
- OOR
- NCI
- DOD
- TC184/SC4

What is MFI

- Metamodel Framework for Interoperability
- ISO/IEC19763 series of standards
- A set of Metamodels for;

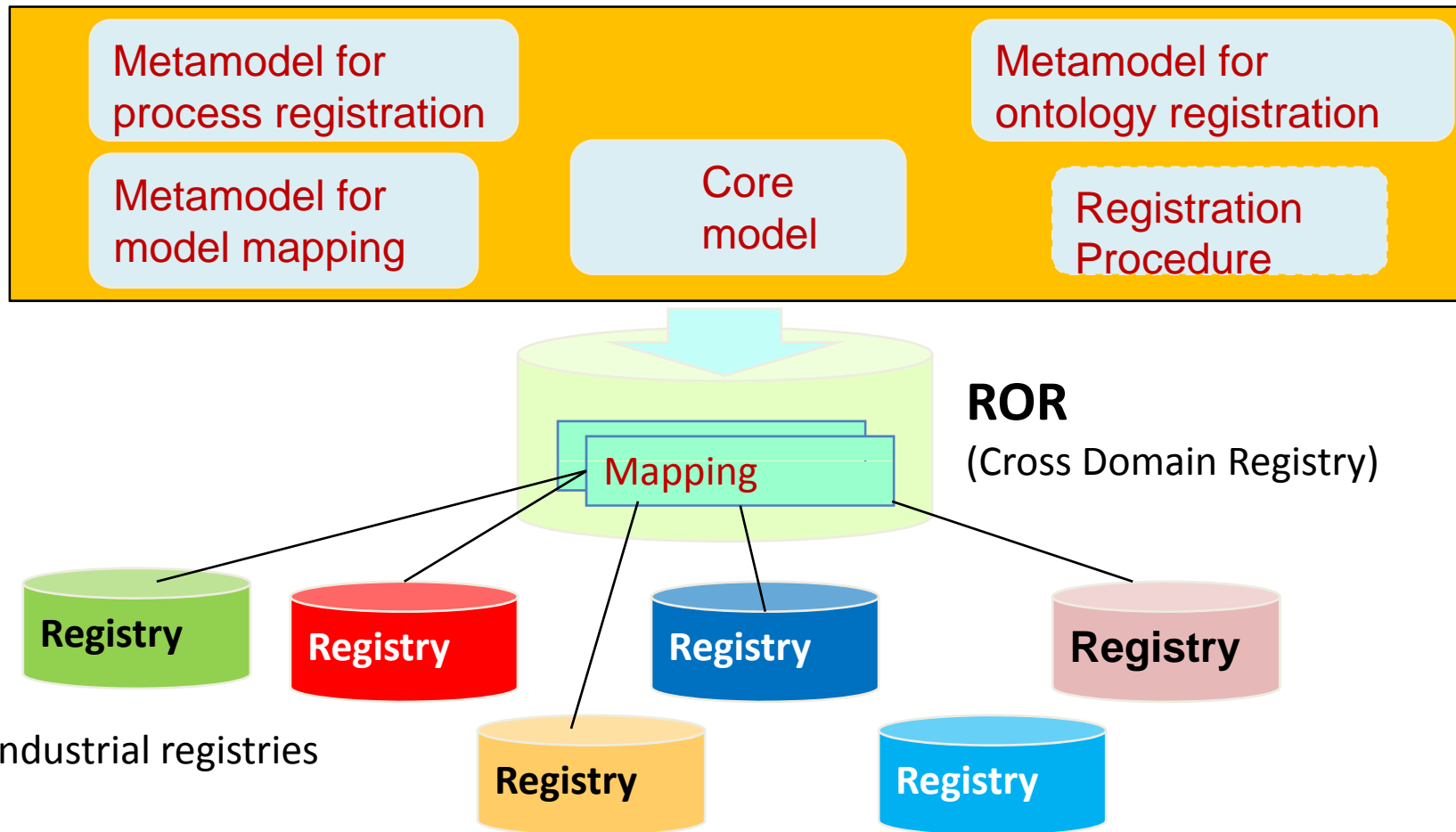
Registering Models

(Not for describing model or ontology)

- MFI is an Application of MOF (1.4)

ROR by MFI

MFI(ISO/IEC19763) series of standards



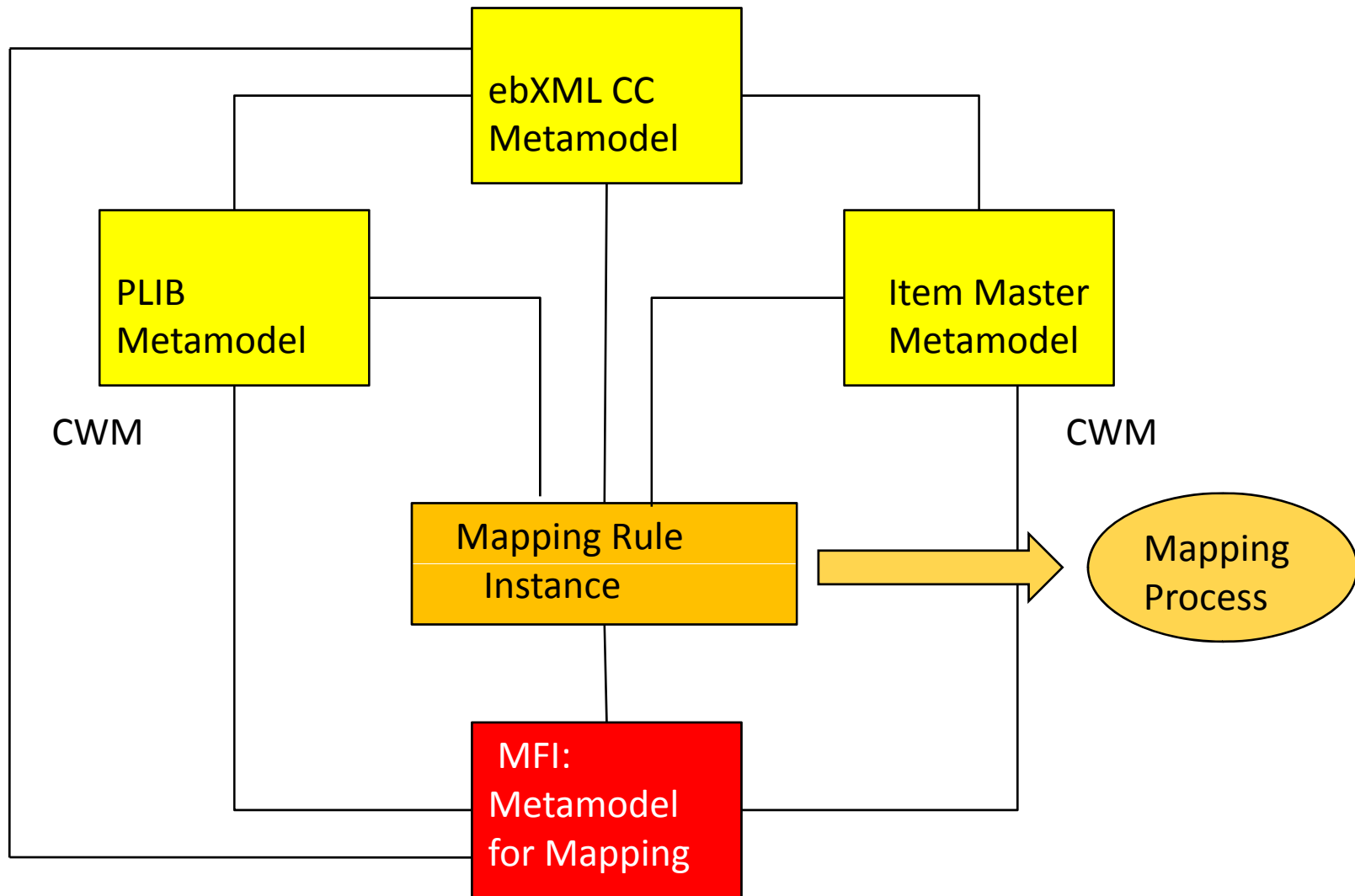
How to Map

- MFI-2 (Core Model) is used for registration of metamodel
- MFI-4 (Model Mapping) to be used for describe model mapping
- The ebXML Core Component to be used for type matching

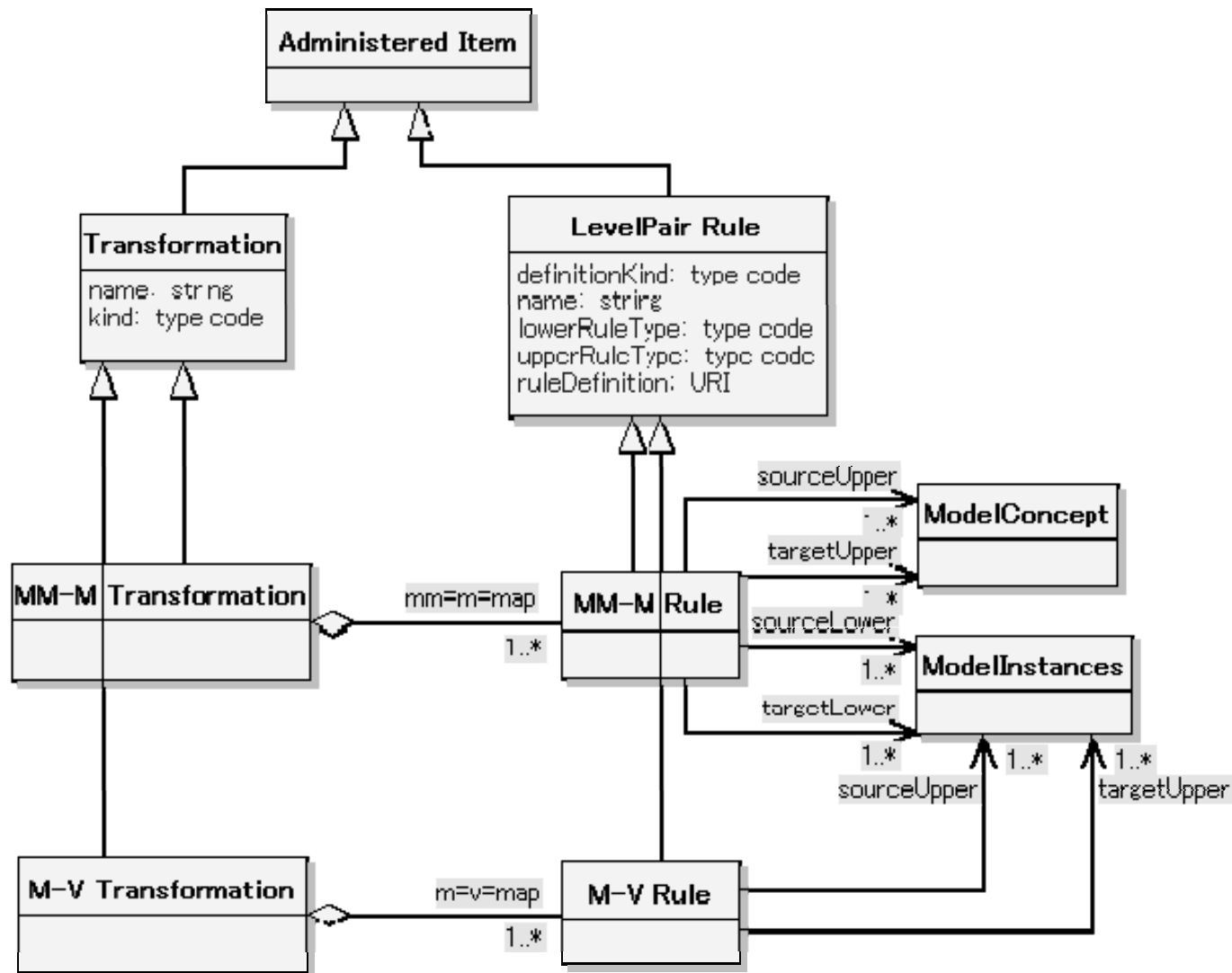
Use case 2

- Stock take Metamodel of target registries
- If they do not have any metamodel, metamodel should be developed using CWM metamodels
- Assign Core component of the ebXML to each element of the Schema

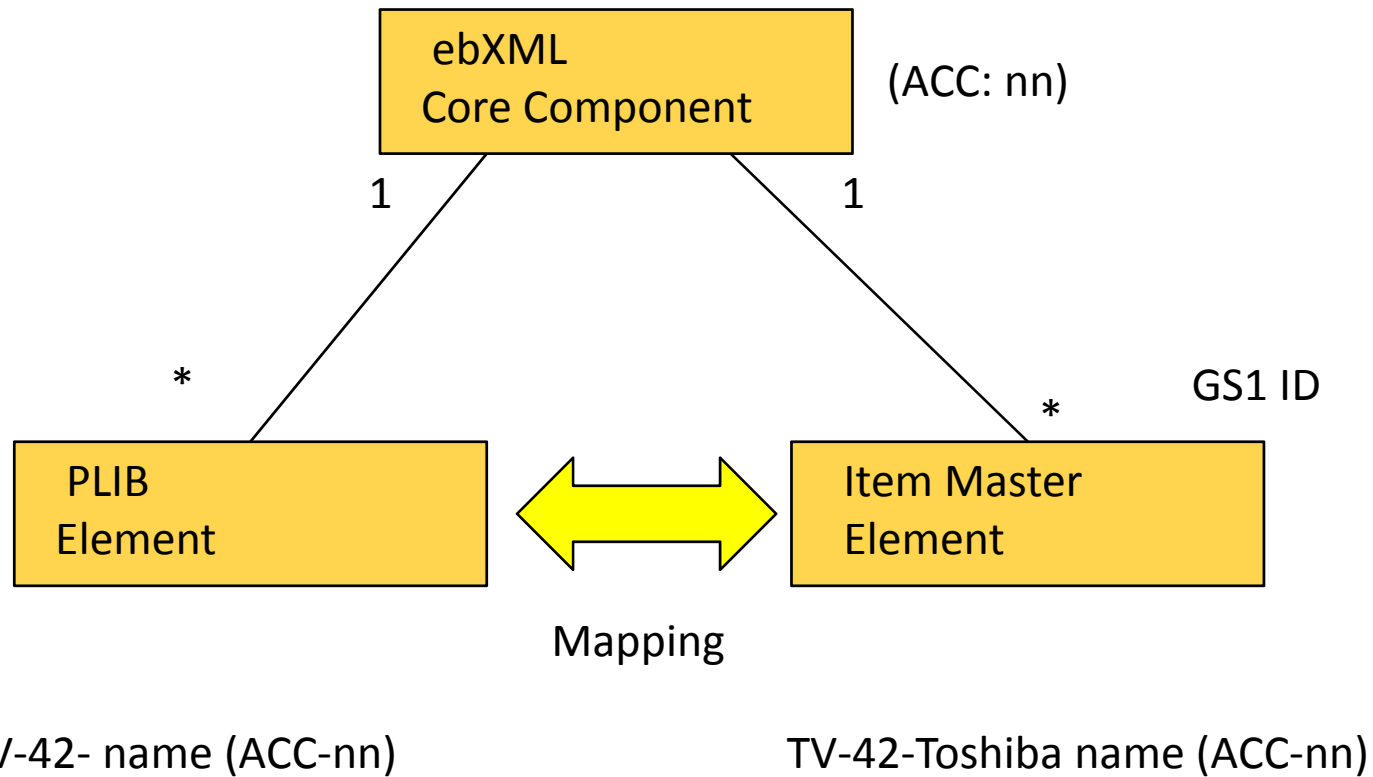
Metamodel Mapping



MFI 4: Model Mapping

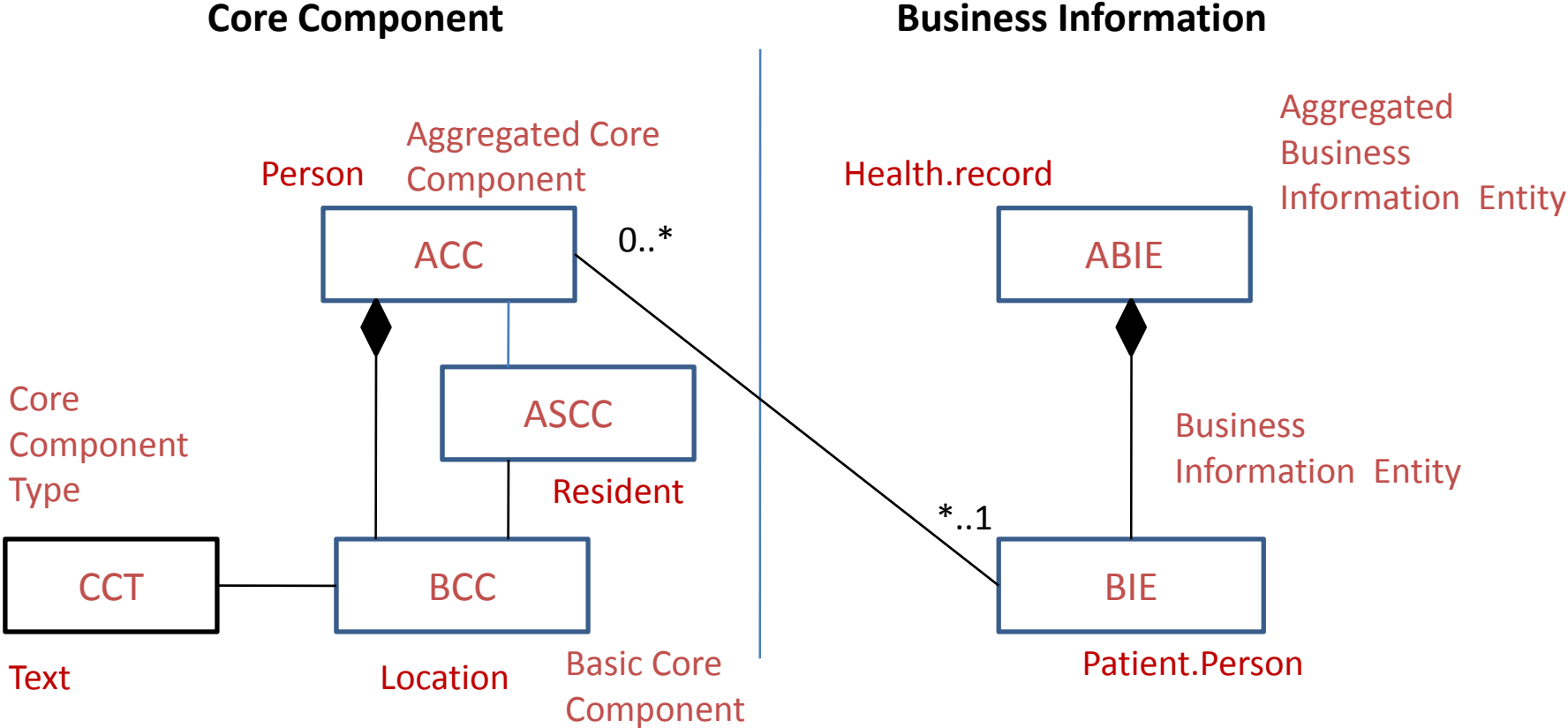


Type Matching through CC

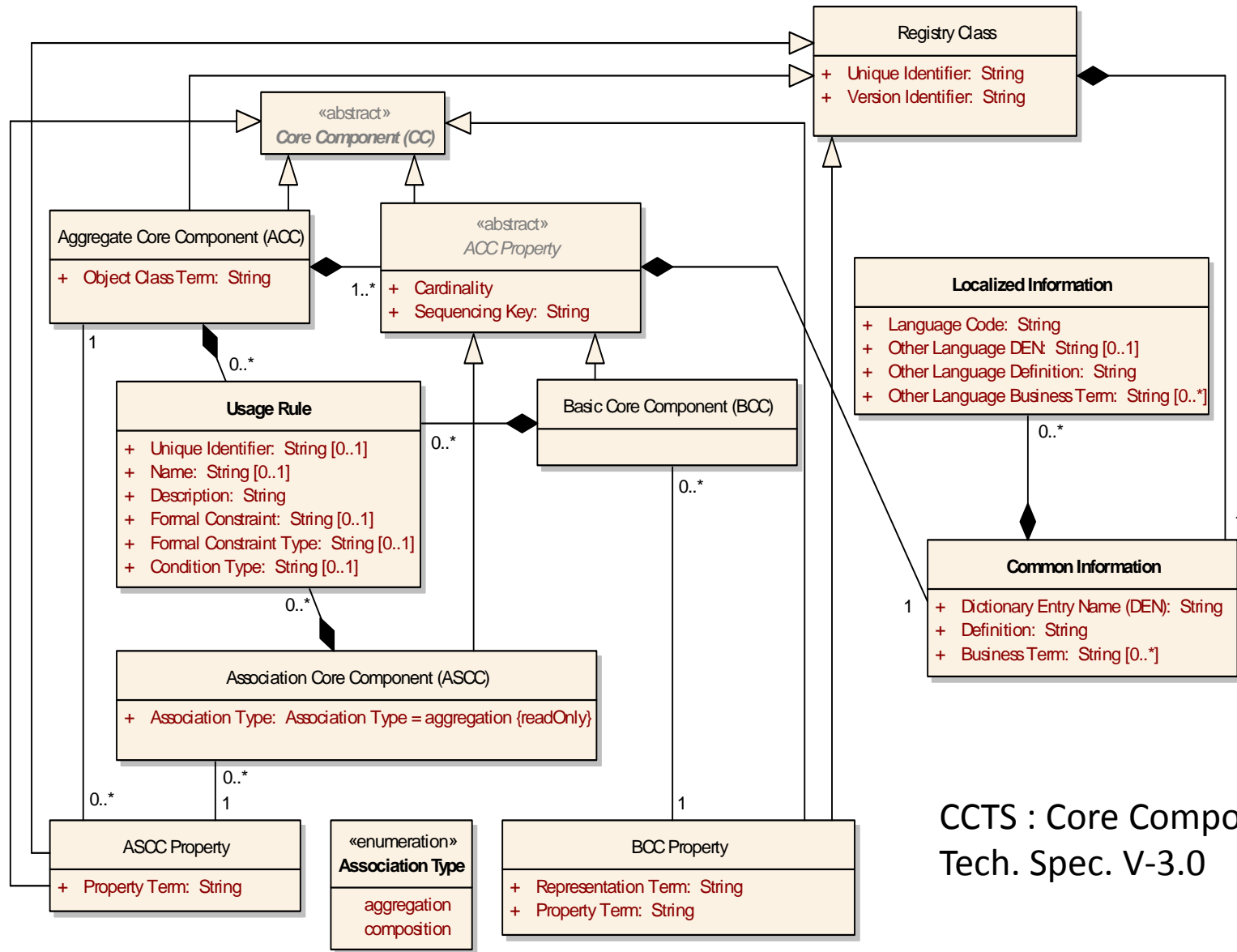


ebXML Core Component

- Standardized Information elements for Business Information to be used in the electronic business

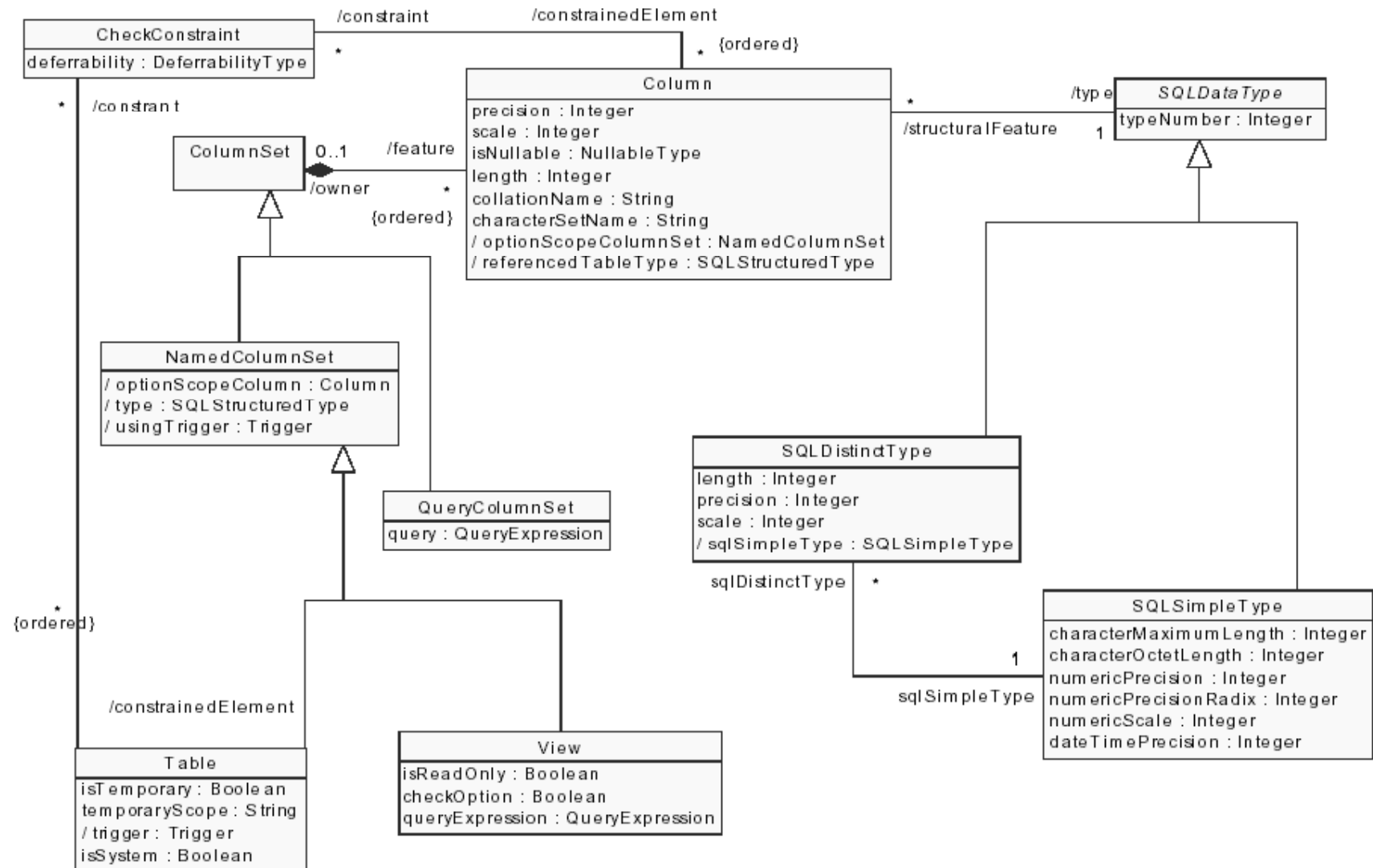


Metamodel of CC



CCTS : Core Component
Tech. Spec. V-3.0

CWM: Relational Data model



CWM: Metamodel for Record

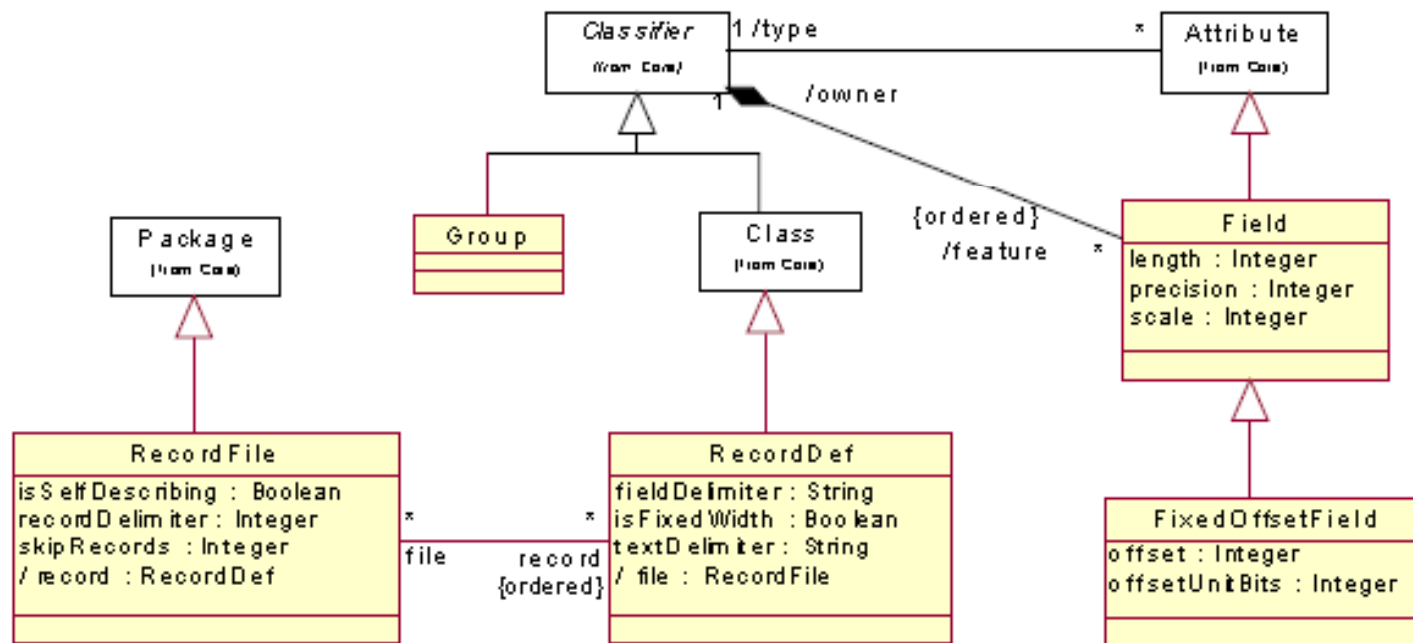
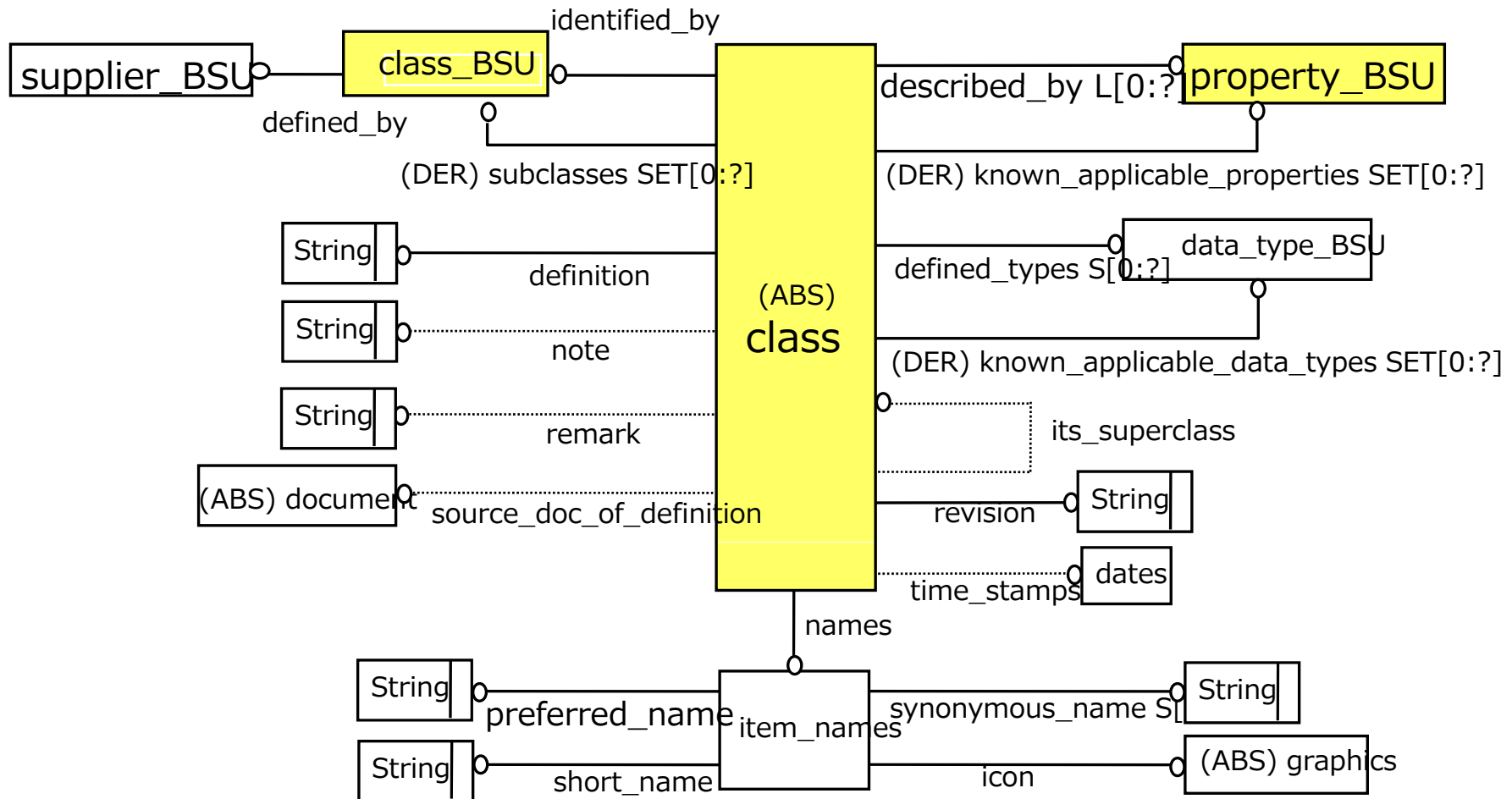


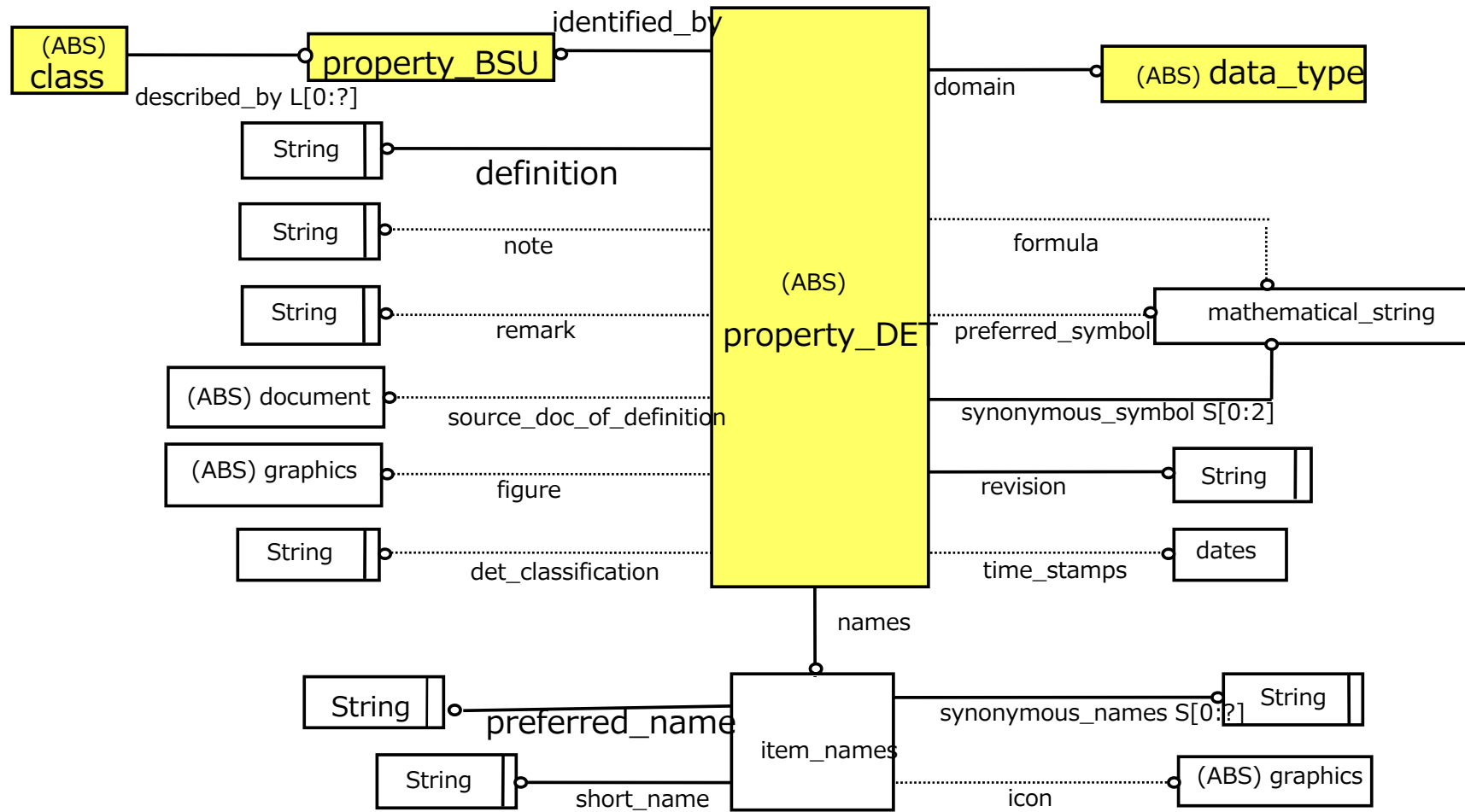
Figure 11.1 - Record Package

Traditional COBOL file, CSV file

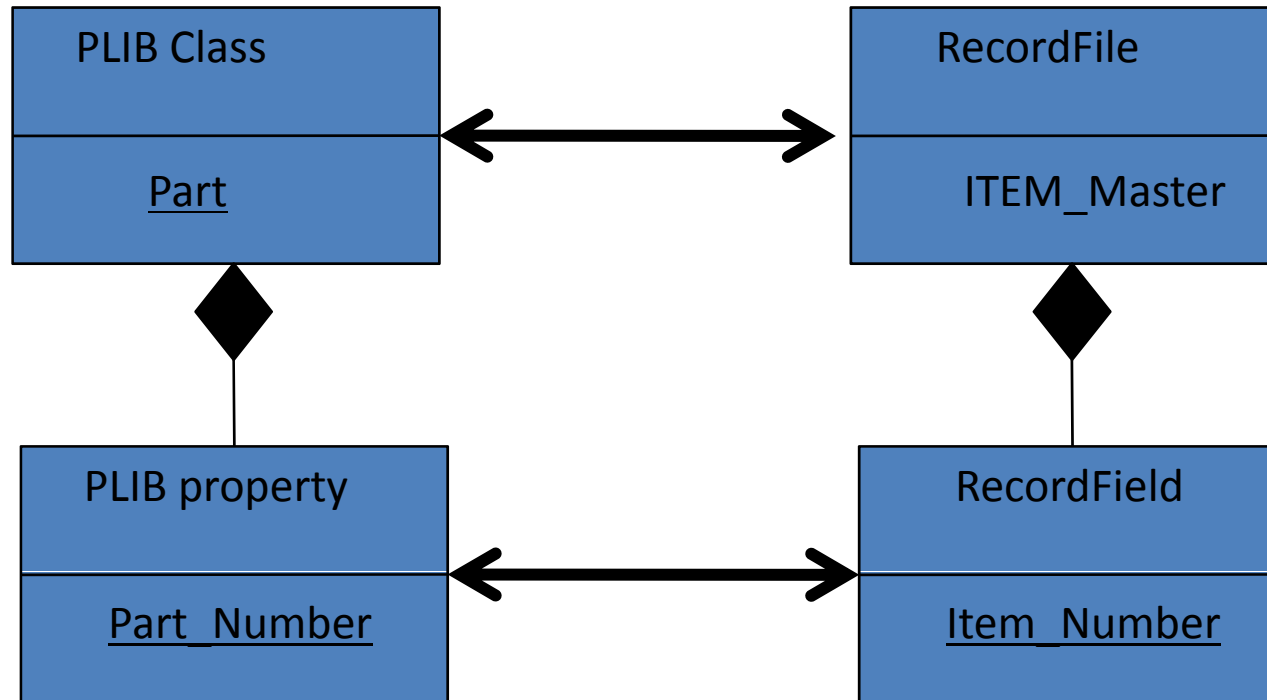
PLIB Class (Not UML)



PLIB Property (Not UML)



Mapping

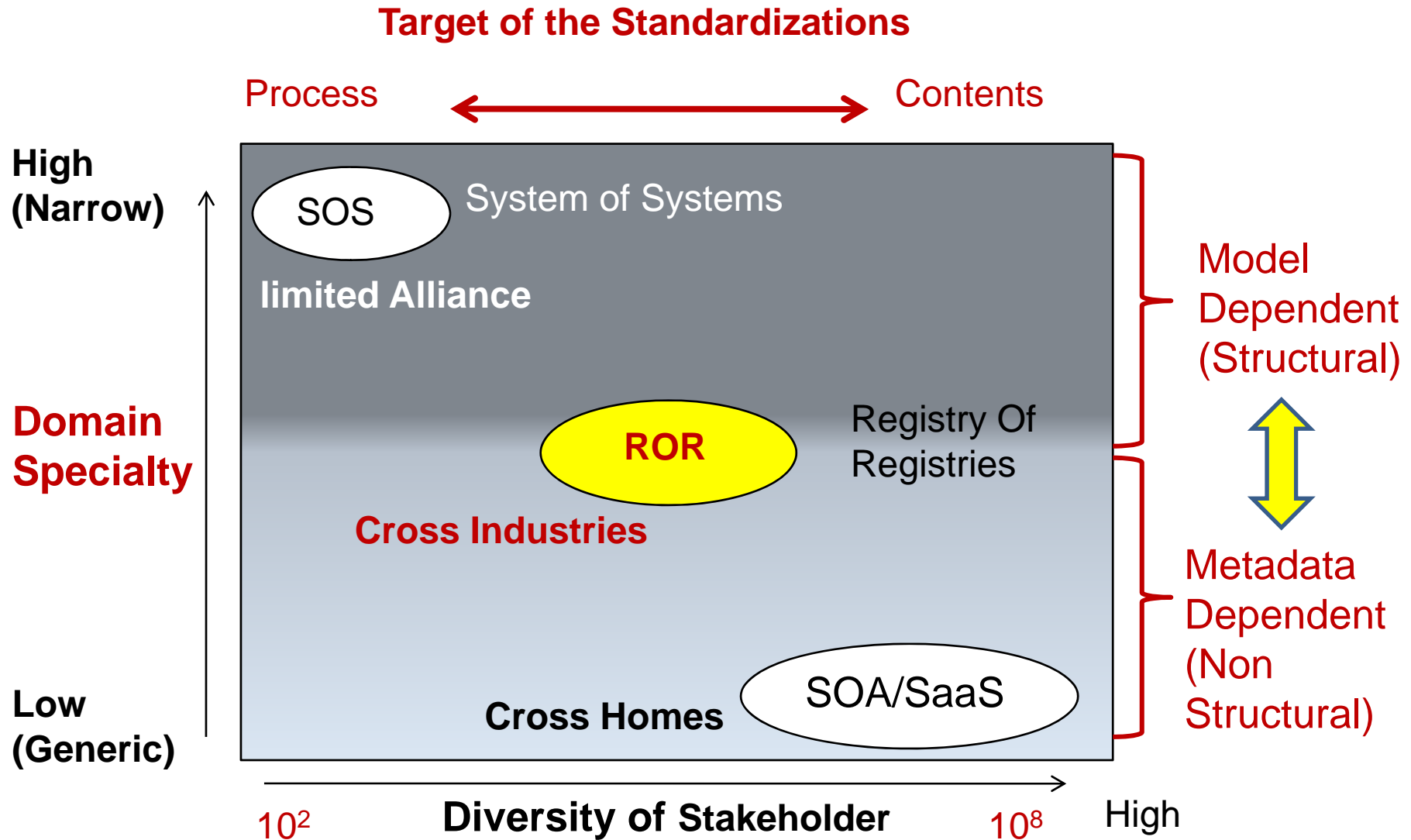


DISCUSSION

Thank you

hori@tiu.ac.jp

A Taxonomy of Architecture Types



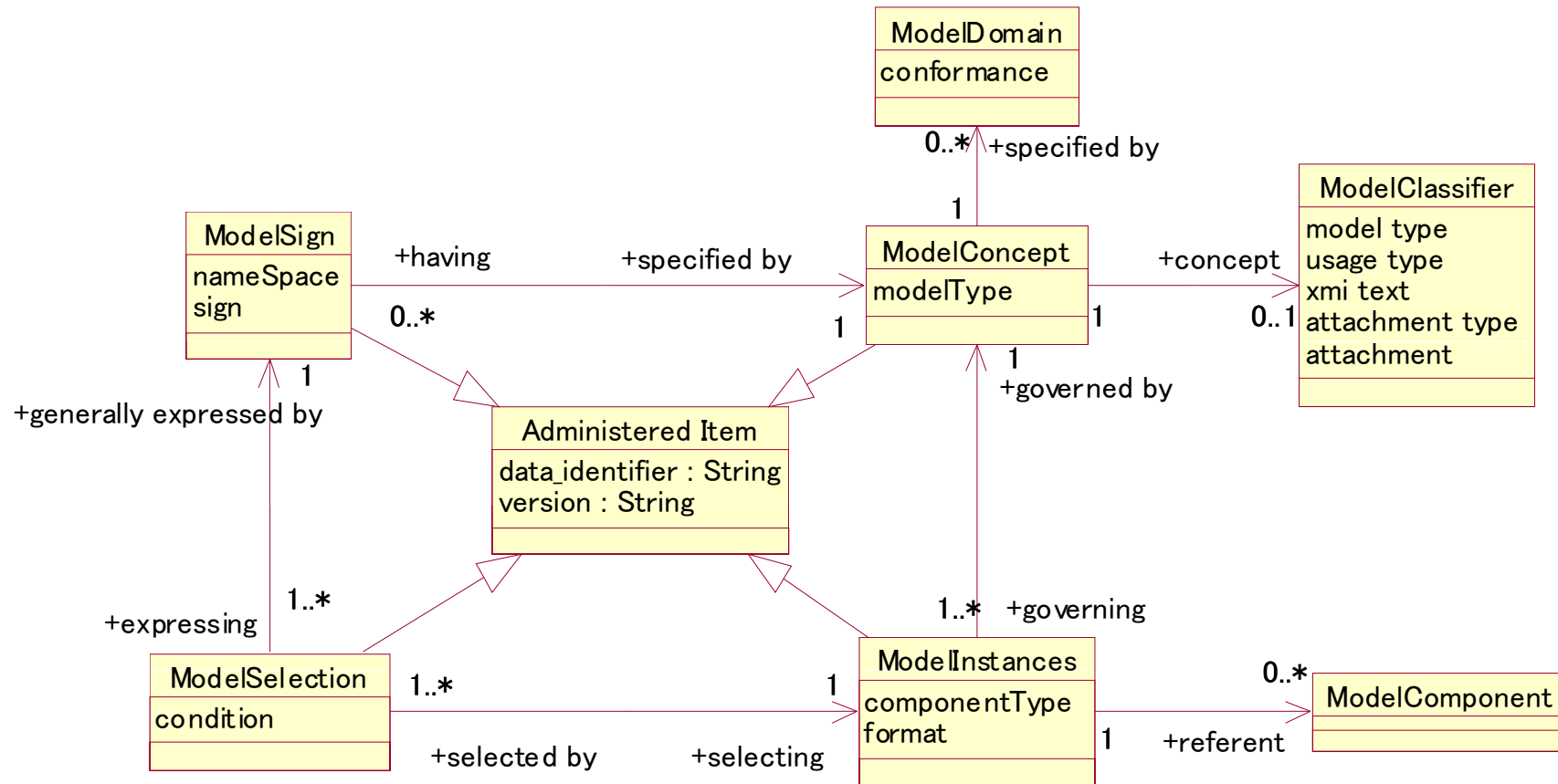
Metamodel Framework for Interoperability (MFI)

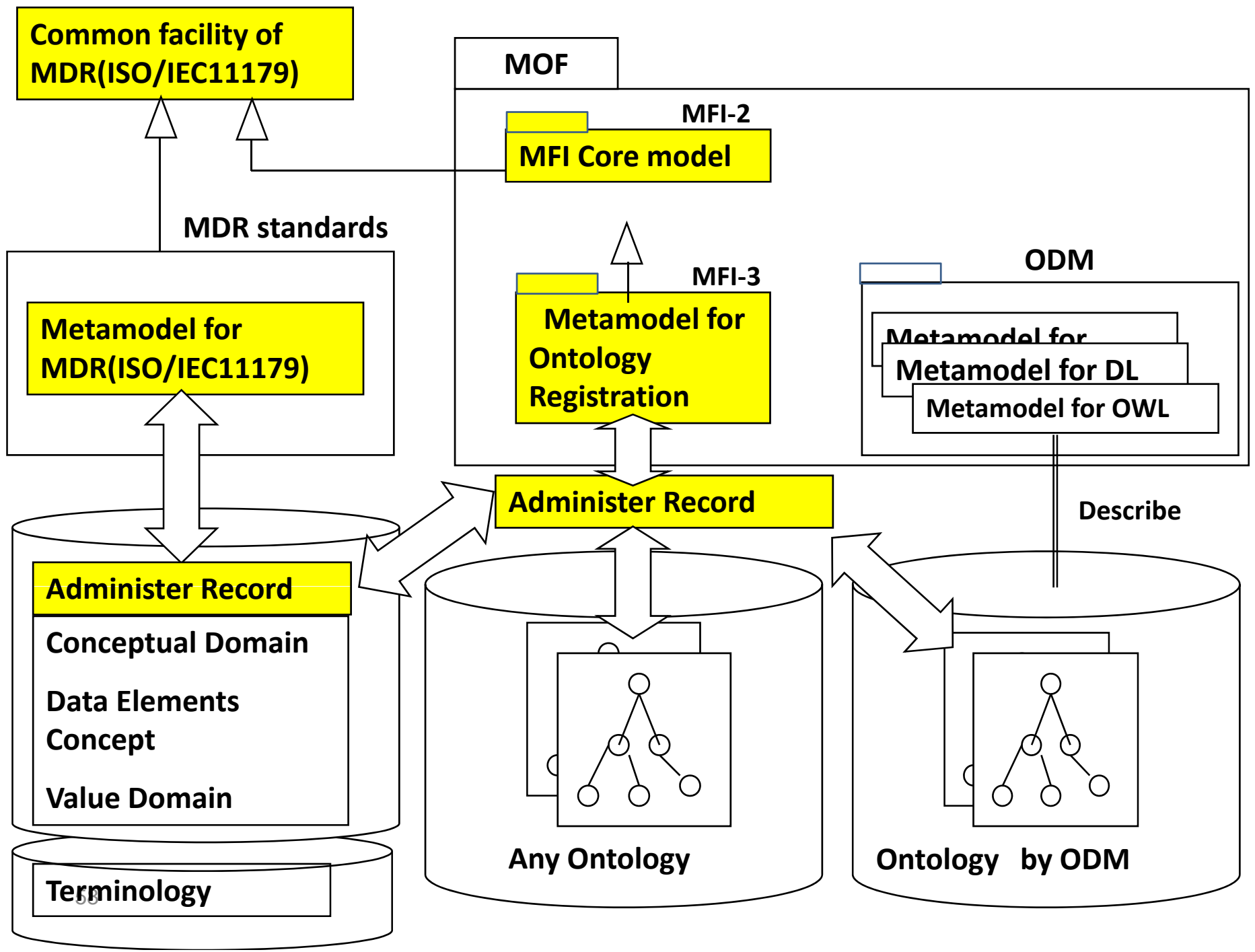
- **ISO/IEC19763-1 Reference model**
- **ISO/IEC19763-2 Core model**
- **ISO/IEC19763-3 Metamodel for ontology registration**
- **ISO/IEC19763-4 Metamodel for model mapping**
- **ISO/IEC WD19763-5 Process model registration**

Objectives for MFI Core

- **Registering sharable modeling constructs**
 - Metamodel
 - Model
 - Ontology
 - Profiles
 - Pattern
- **Classification** for components
 - From viewpoint of “**Sign-Concept-Instances**”
- **Selection of instance sets** for a particular purpose usage
 - Assembly (Composition) of registered components
 - Plug and Play with selection
- Core Framework for registering **Ontology** and **Model Mapping**

ISO/IEC 19763-2 : Core Model (Overview)

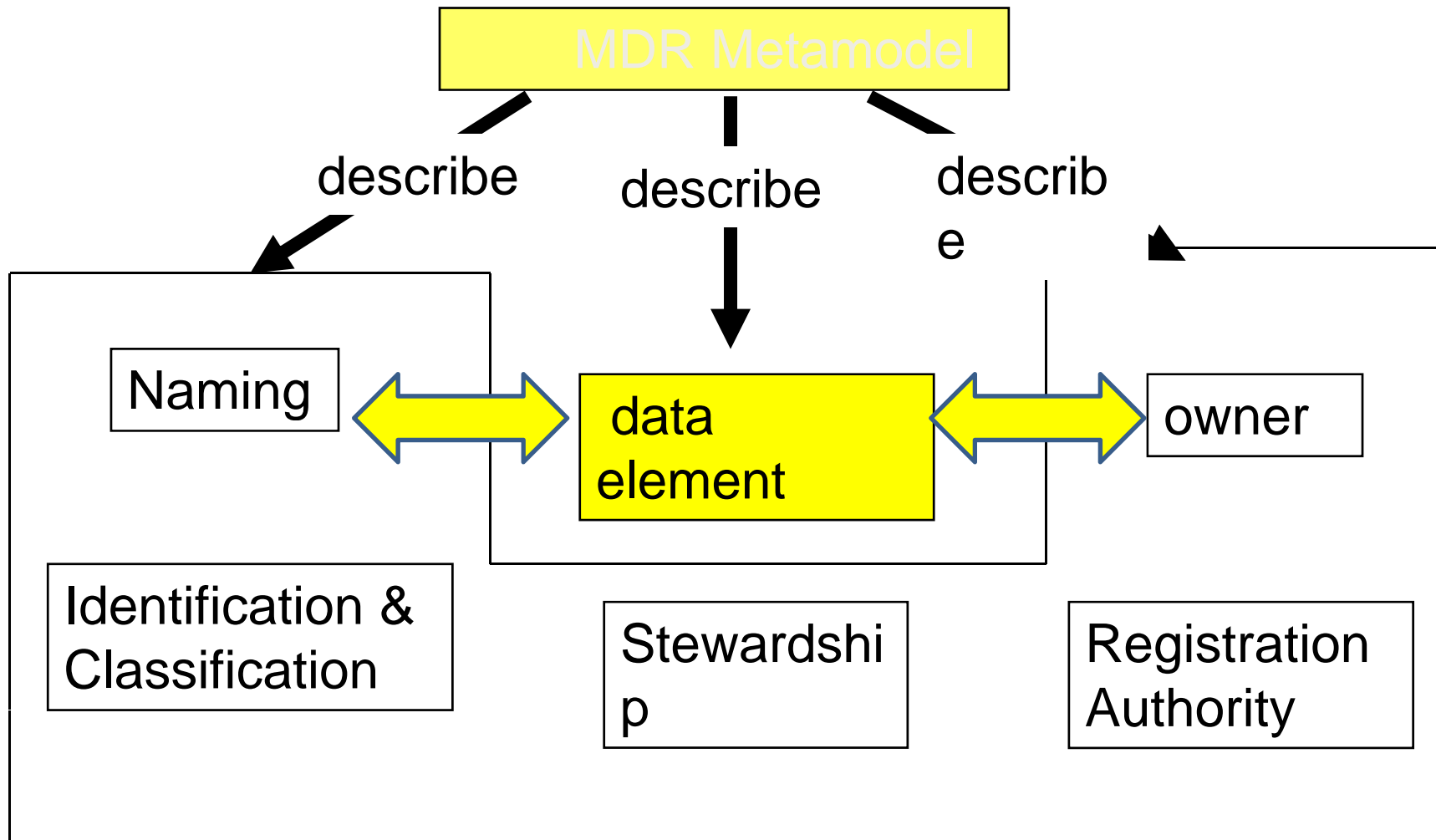




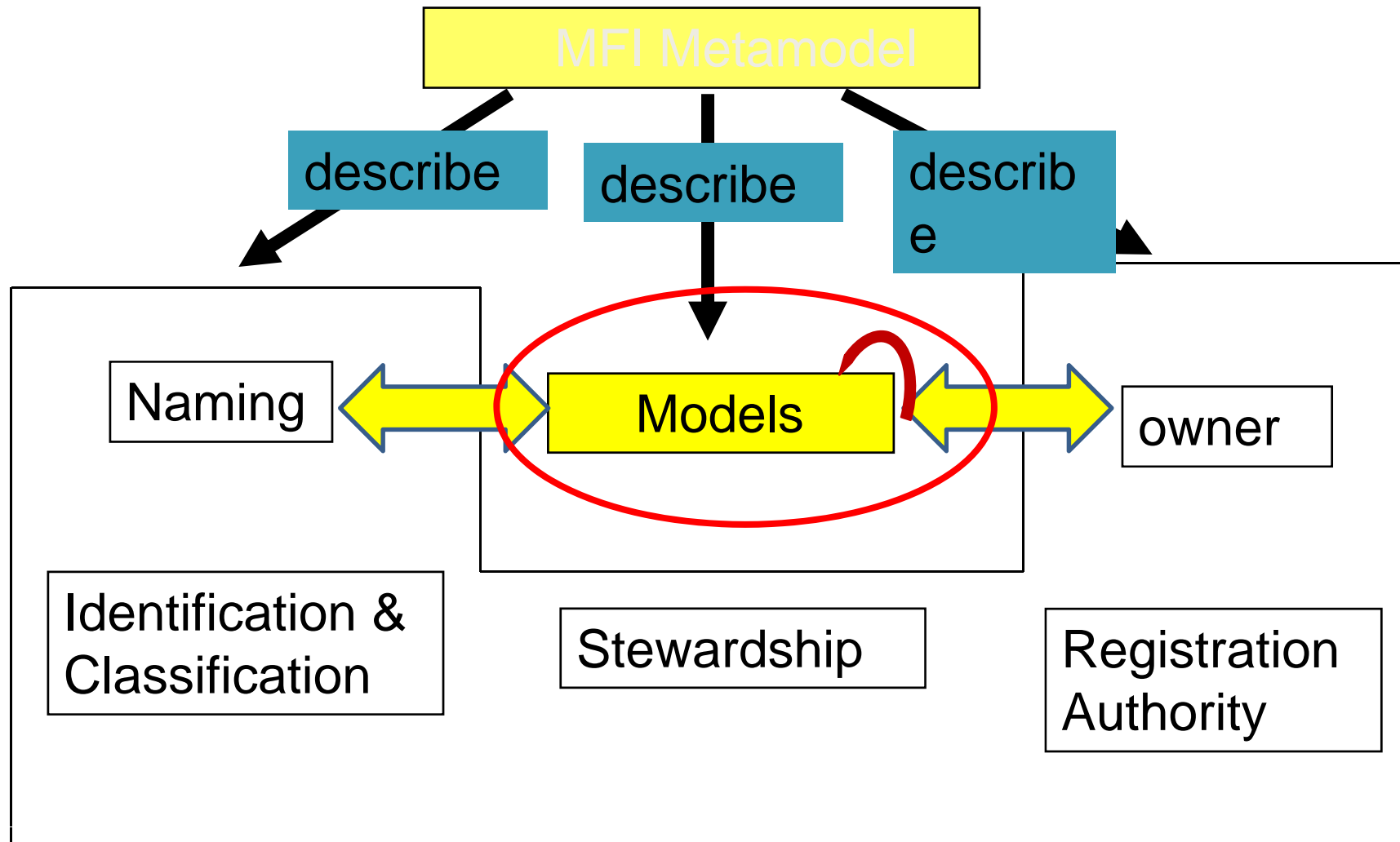
Issues for WG2

- Consolidation of MDR & MFI
- Service Interfaces

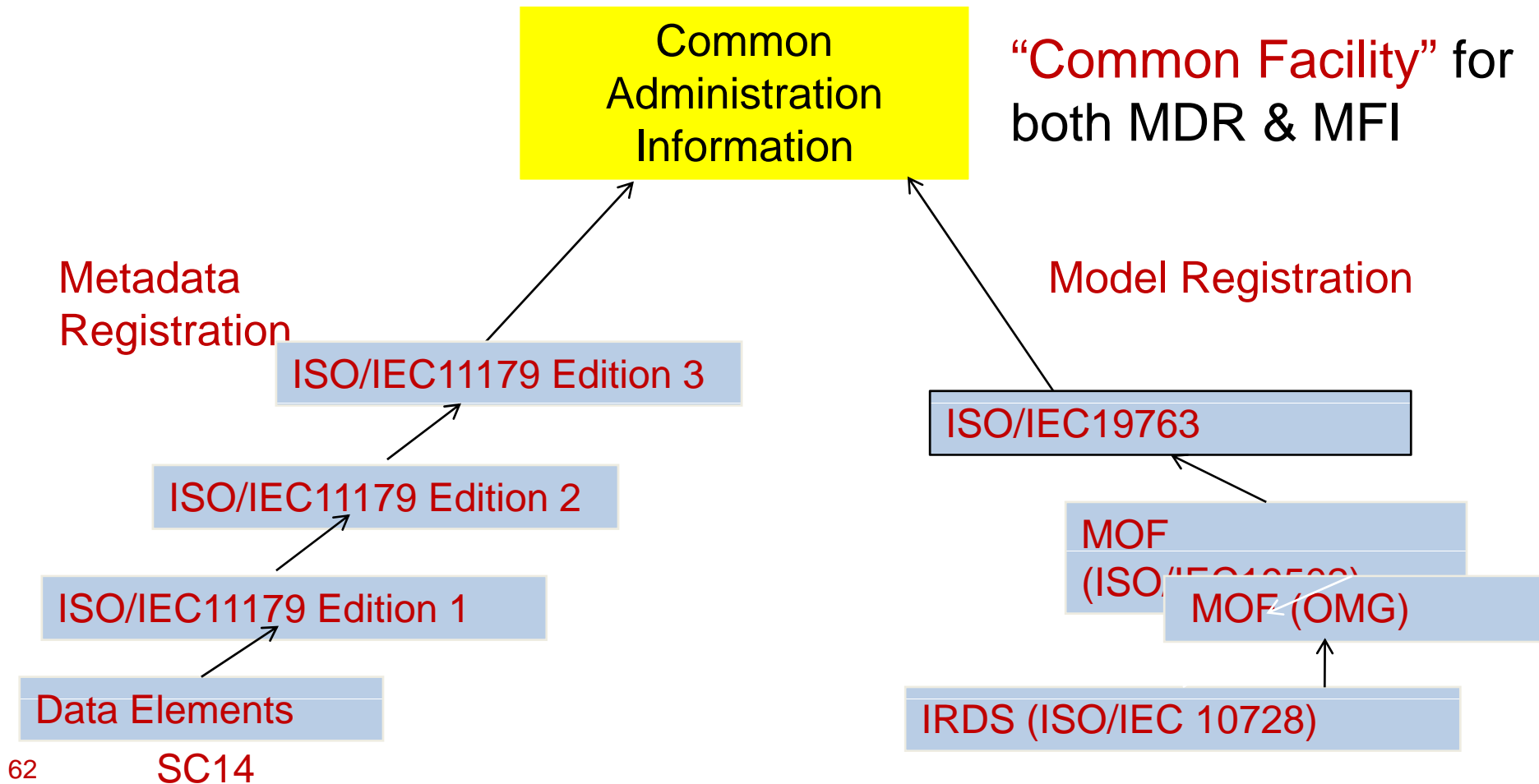
Overview of MDR Metamodel



Overview of MFI Metamodel



Expected Evolution of MDR & MFI (1)



Expected Evolution of MDR & MFI (2)

