POSC Caesar Association

SIG Meetings

Stavanger, Norway - May 27, 2013

IIP Project - *Abstraction*

Robin Benjamins

BECHTEL

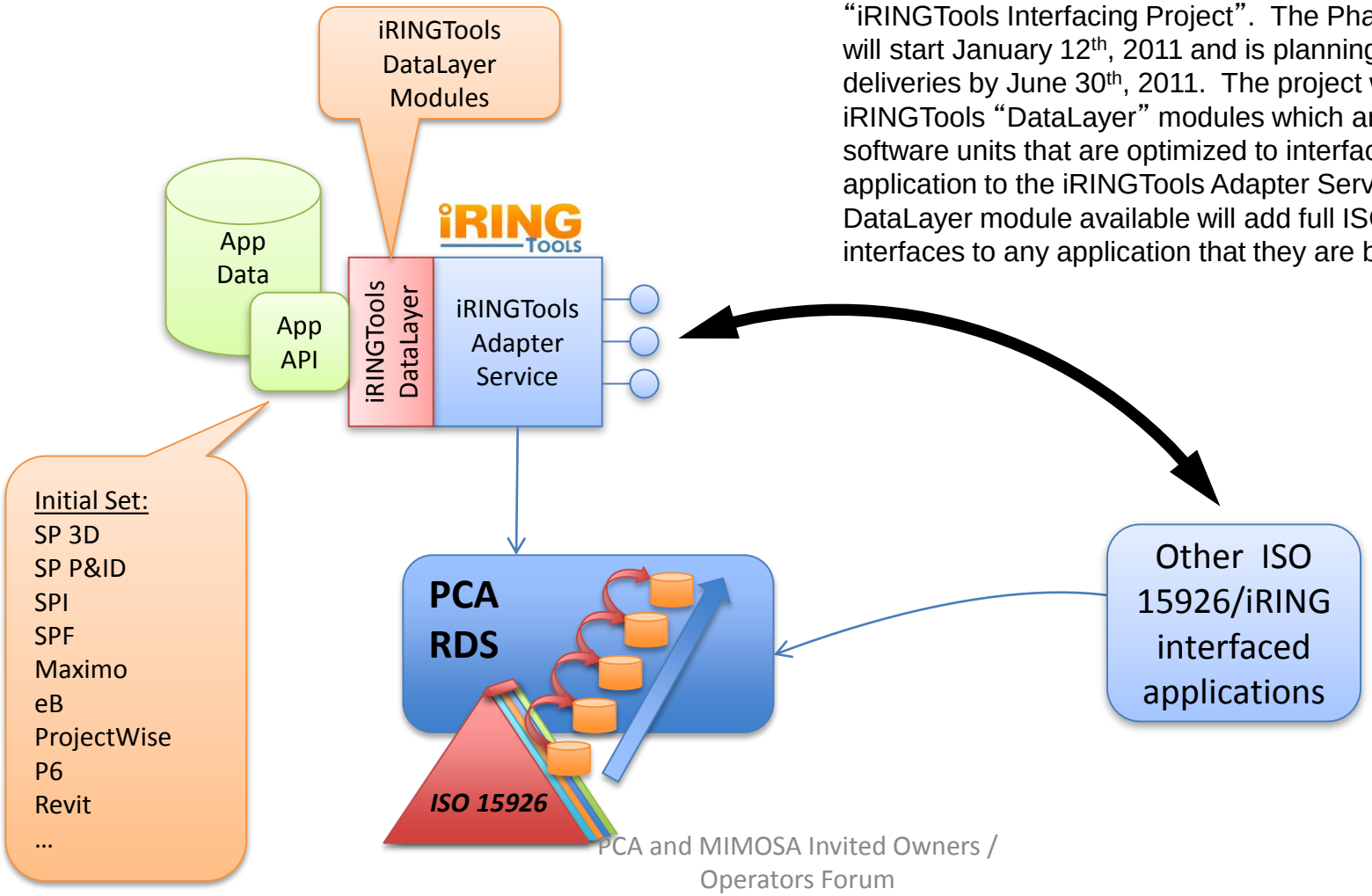
Corporate Engineering

POSC Caesar Association

MIMOSA™

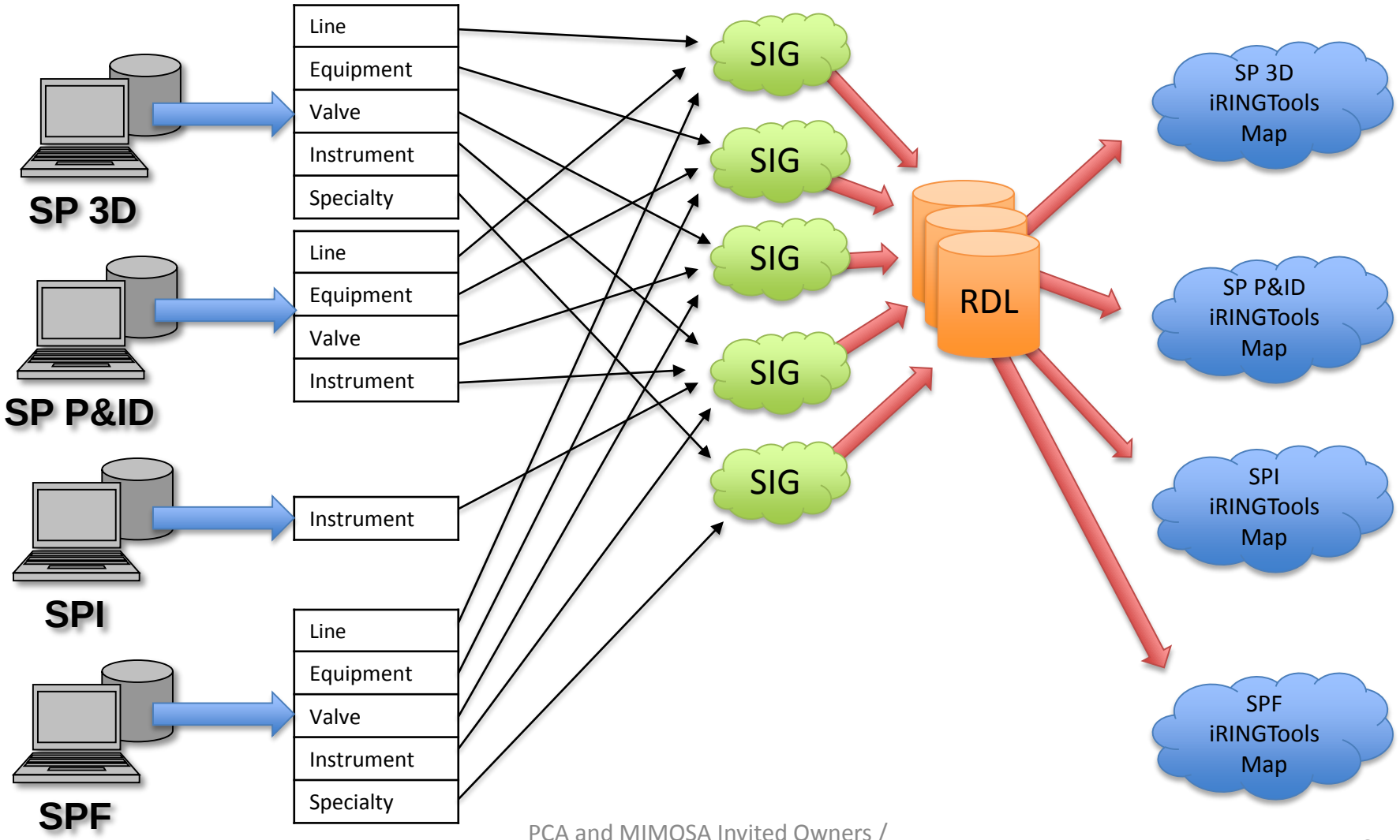
Fiatech™

iRINGTools Interfacing Project (IIP)



The iRINGUserGroup will launch a new project called the "iRINGTools Interfacing Project". The Phase I of the project will start January 12th, 2011 and is planning to make its first deliveries by June 30th, 2011. The project will build a set of iRINGTools "DataLayer" modules which are small custom software units that are optimized to interface a specific application to the iRINGTools Adapter Service. Making these DataLayer module available will add full ISO 15926/iRING interfaces to any application that they are built for.

ISO 15926 Information Patterns (IIP)



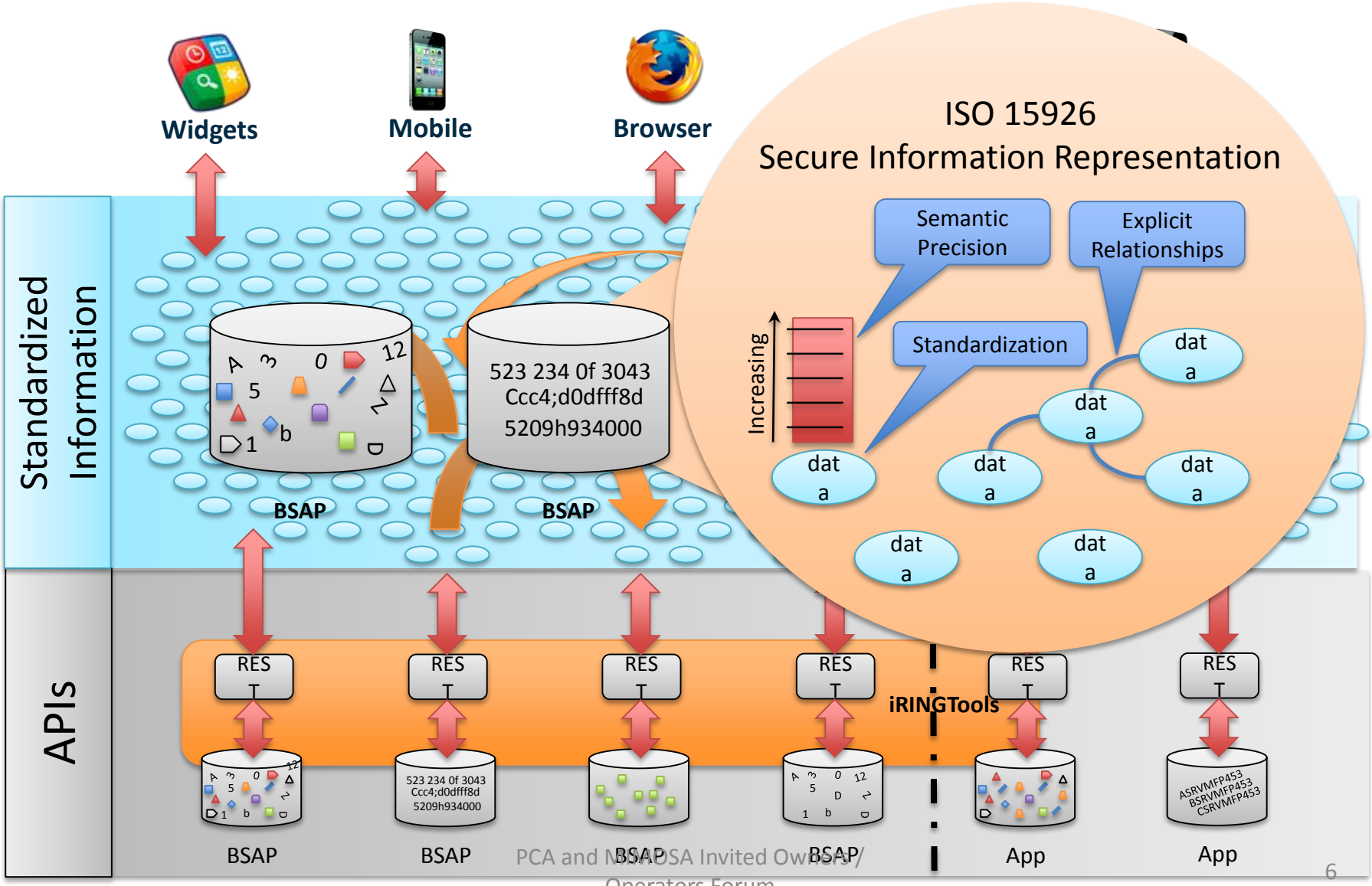
From IIP to IIP

- The project has transformed
  - Was iRINGTools DataLayer focused
  - Now Template Information Pattern (TIP) focused
- IIP project is now a “consensus engine”
- IIP is an active group that meets every Wed, 8:30 AM GMT-5
- IIP is a part of the iRING landscape
  - PCA RDS (JORD), MMT, SIGs, P8WG, OGI, EDRC, Proteus, 15926.org, etc

Abstraction

“*The System*”

The Abstraction Strategy



Why Abstraction for Mobile?

One Document App for all document sources

Identity + context = access

Point of Encapsulation

Consumer API

Abstraction

API

InfoWorks

ProjectWise

Box

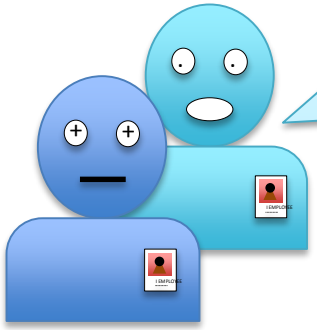
eRoom

SmartPlant Foundation

eB

Why Abstraction for Authorization?

Defined by “system information type” or defined by “standardized information type”?



Person tokens

- Identity
- Company
- Org
- Function
- Discipline (hierarchal)
- Location
- Project
- Scope (filter=?)
- Information type

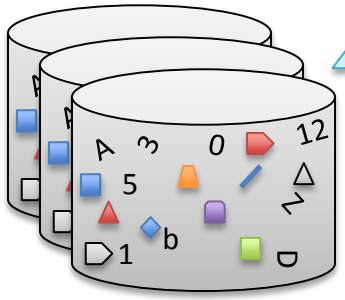
ACL

?

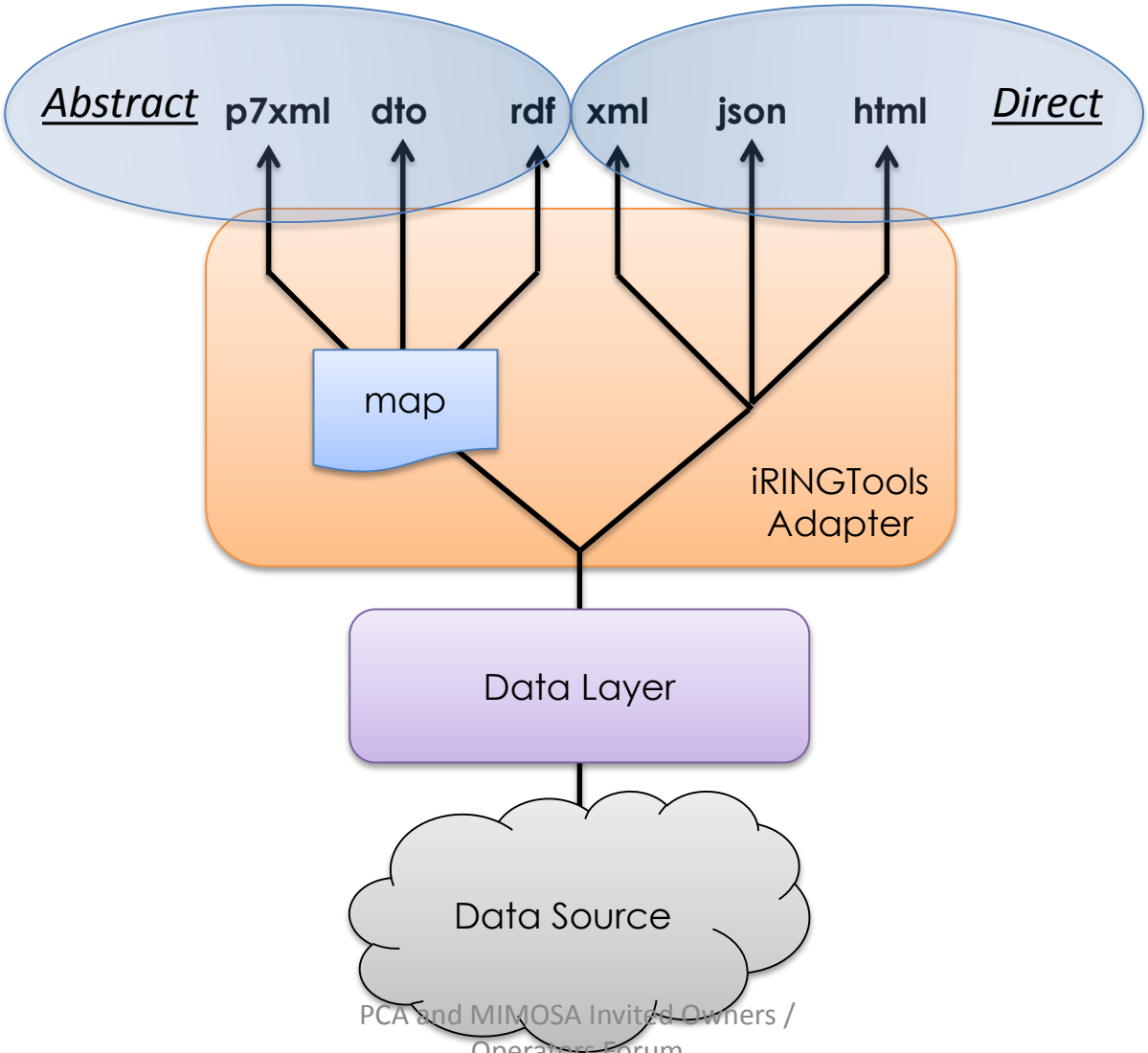
What will be the complexity and size of the ACL if standardized information is not used?

Resource tokens

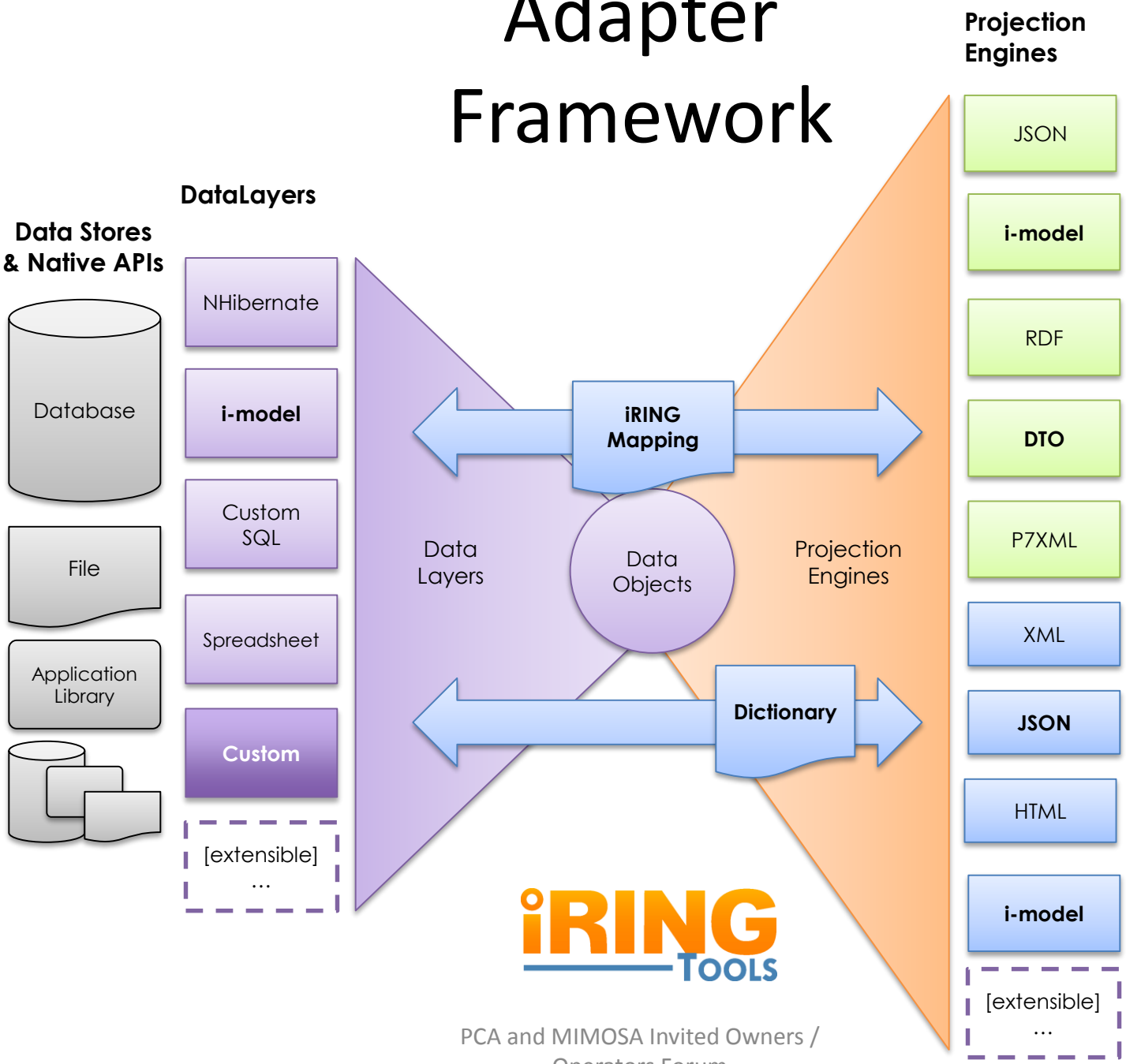
- Information type
- Scope (filter=?)
- Project
- Location
- Discipline (hierarchal)
- Function
- Org
- Company
- Named user



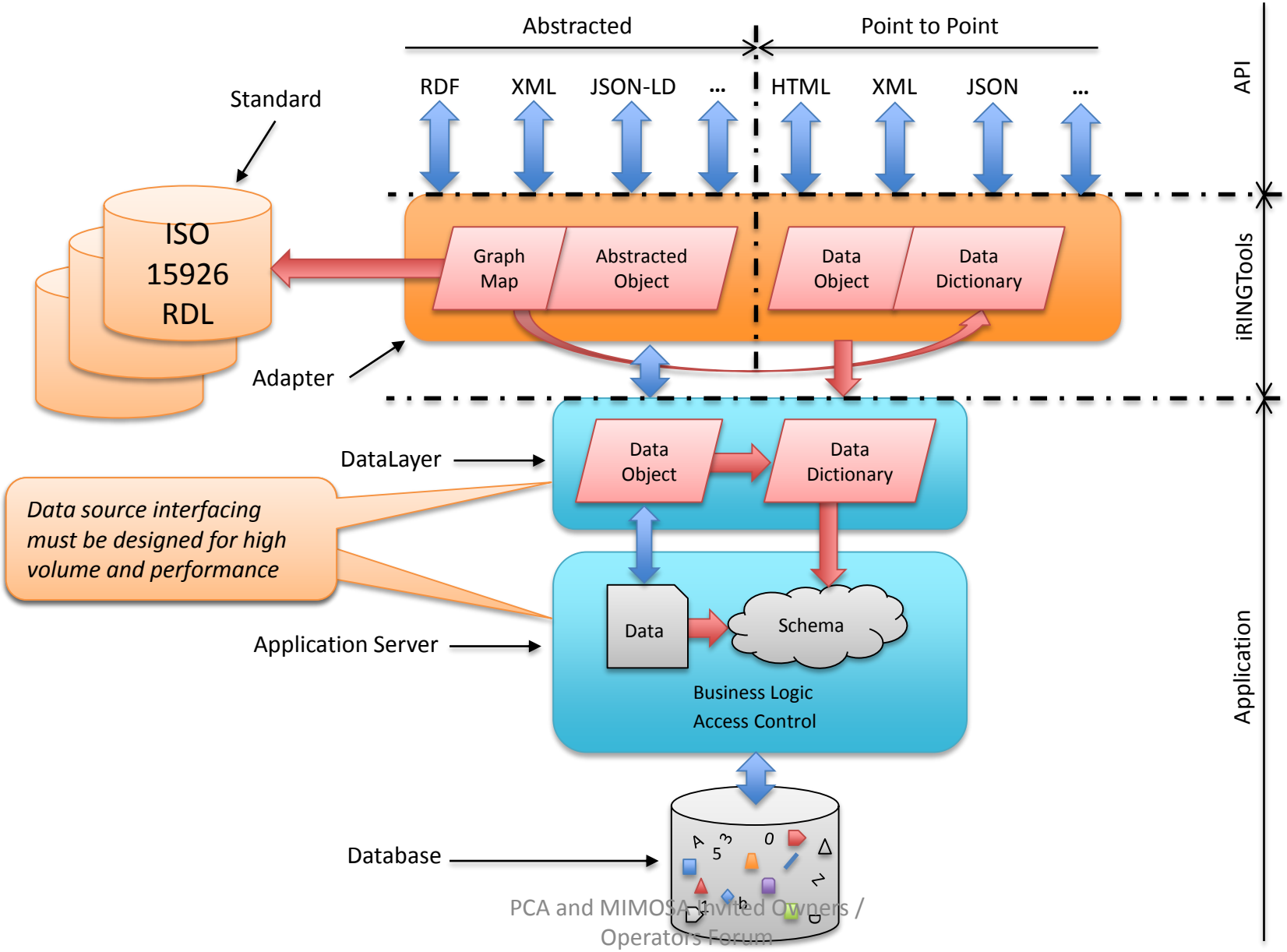
Abstraction Implementation



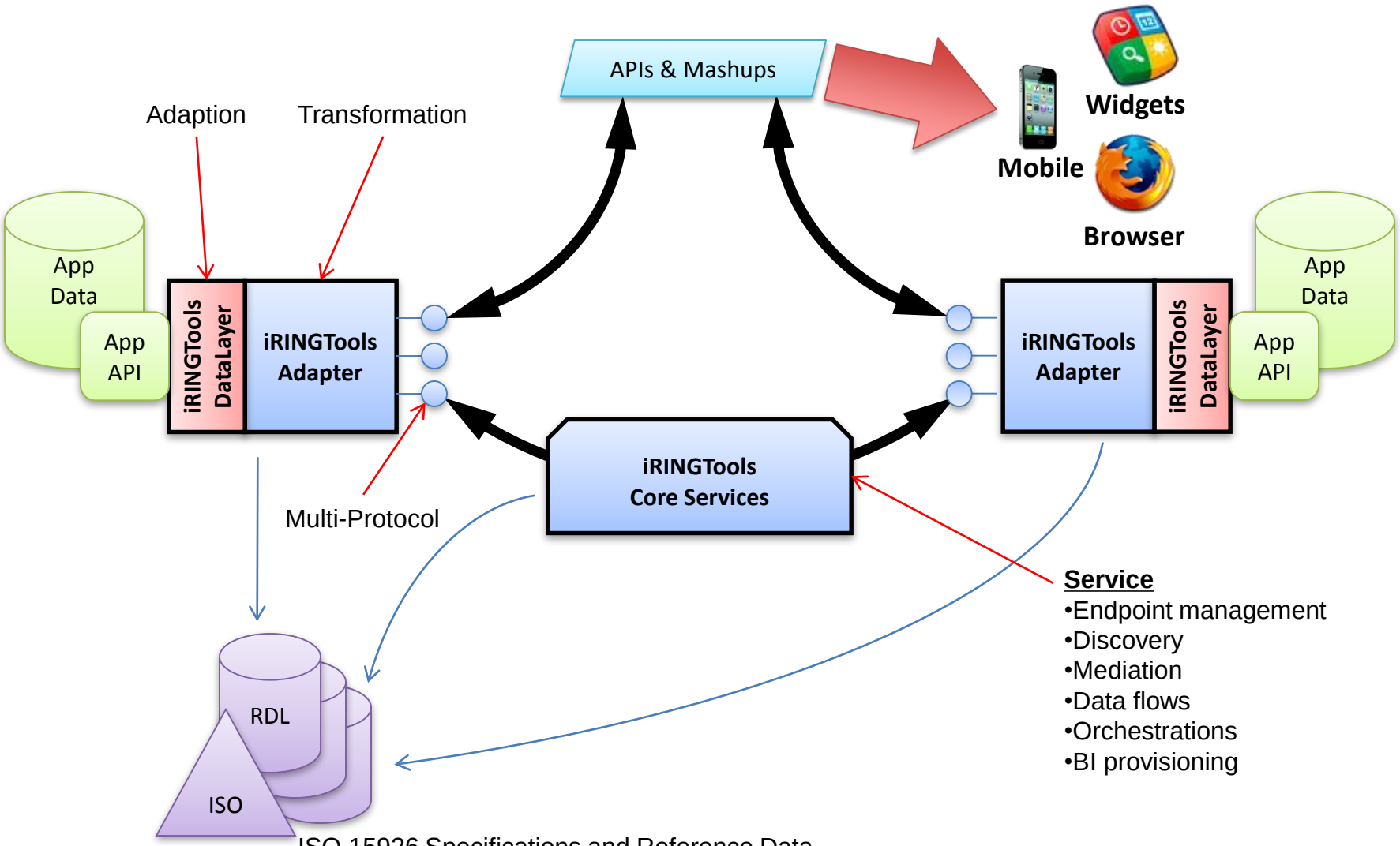
Adapter Framework



Interfacing Design



IRINGTools System



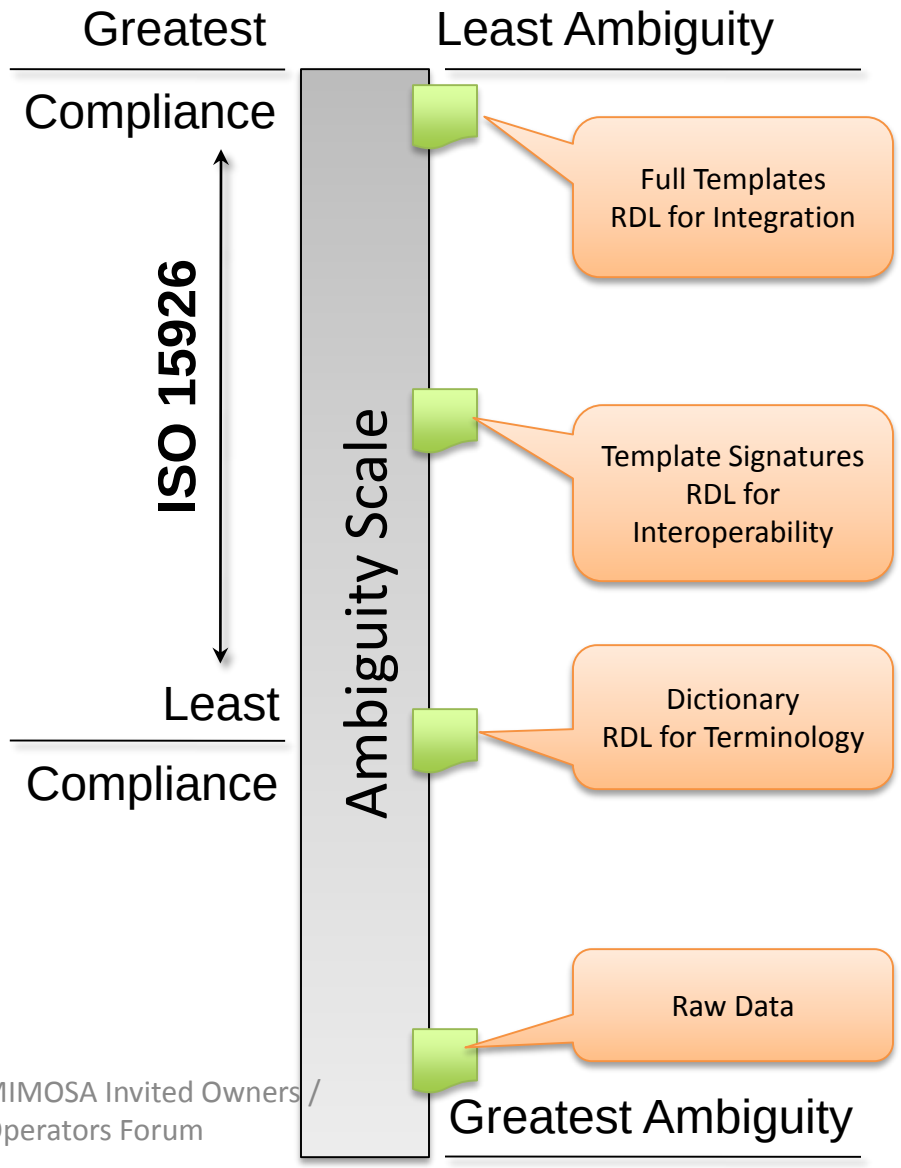
Abstraction

“*The Information Model*”

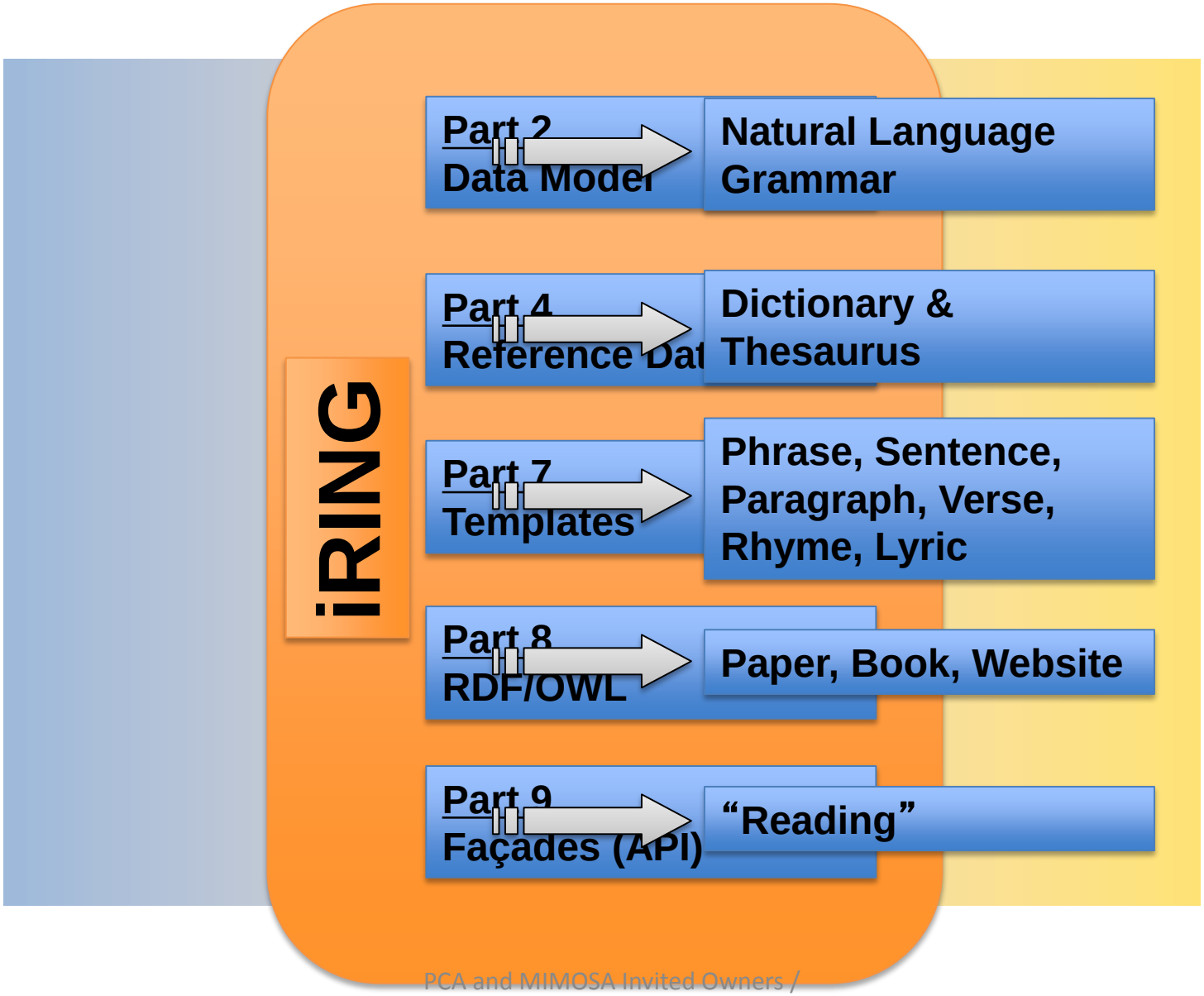
Information Ambiguity

- Ambiguity between exchanging partners can require significant effort (labor) to remove
- The higher the ambiguity, the higher the cost to use information

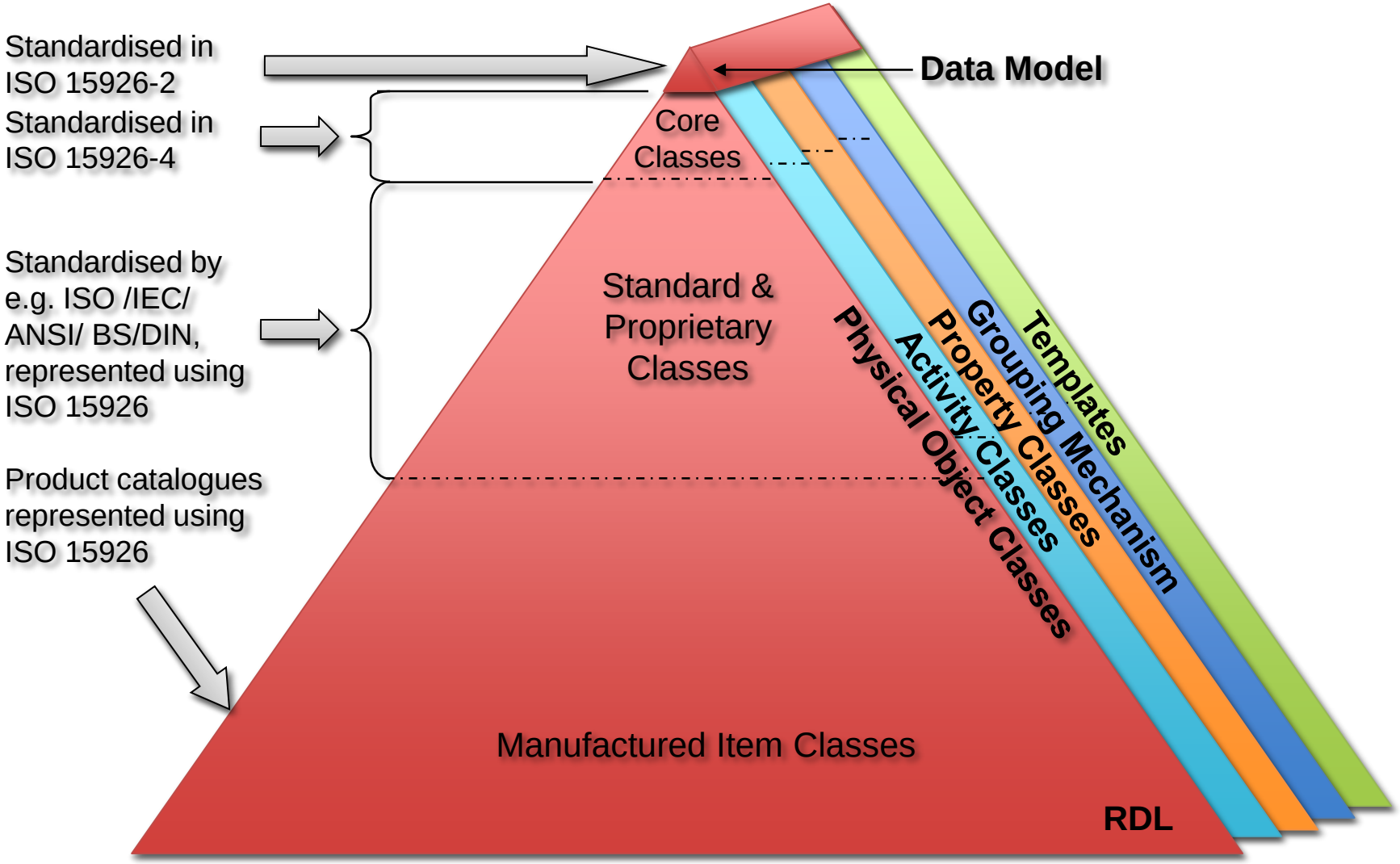
Ambiguity = Cost & Risk



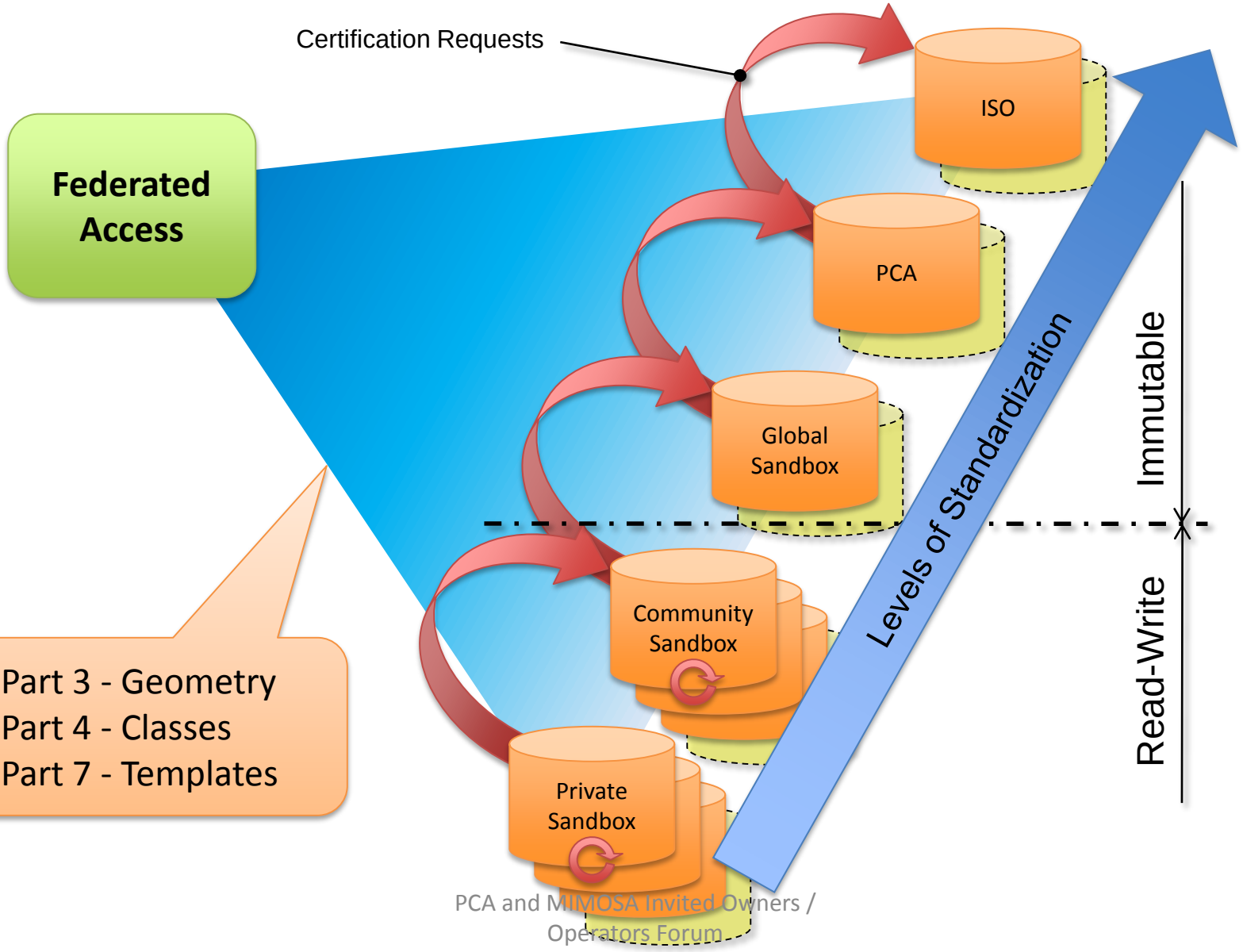
ISO 15926 “Parts” Analogy



ISO 15926 Reference Data Library (RDL)

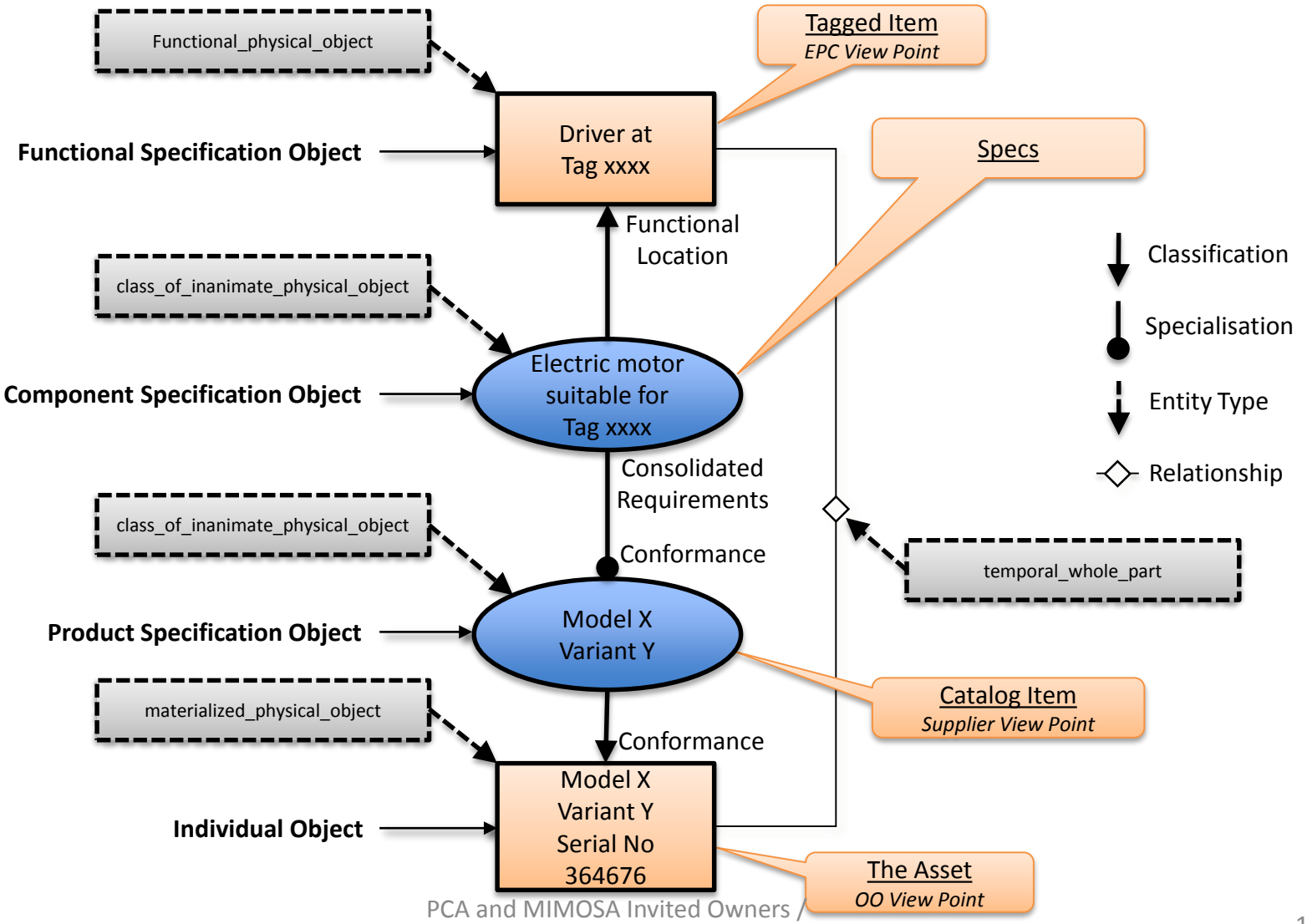


Reference Data Federation



- Part 3 - Geometry
- Part 4 - Classes
- Part 7 - Templates

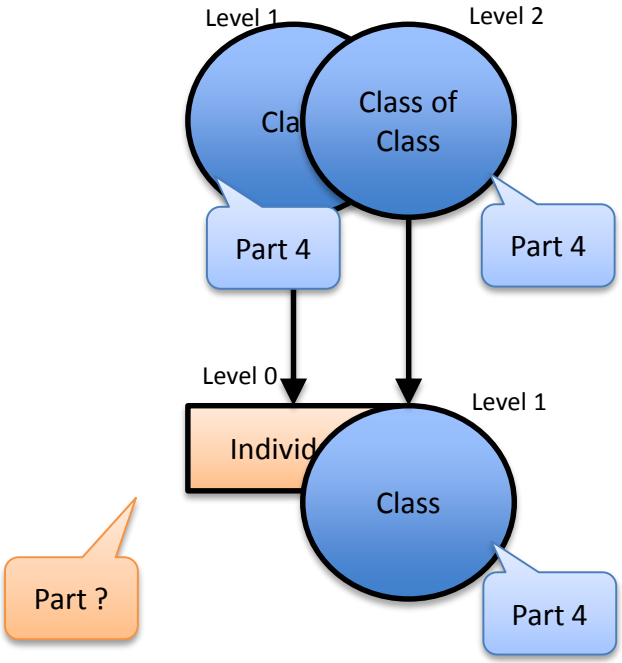
Information Model



What is Reference Data? (1)

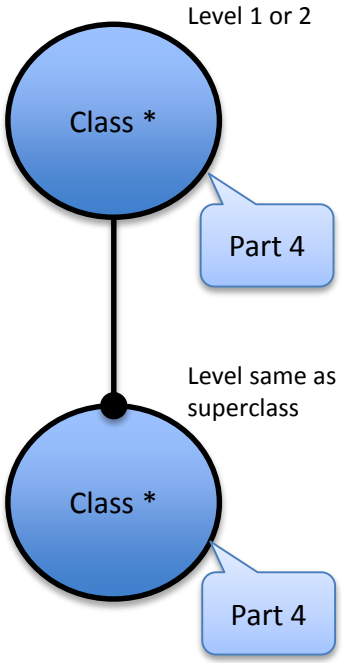
Fundamental Relationships

Classification



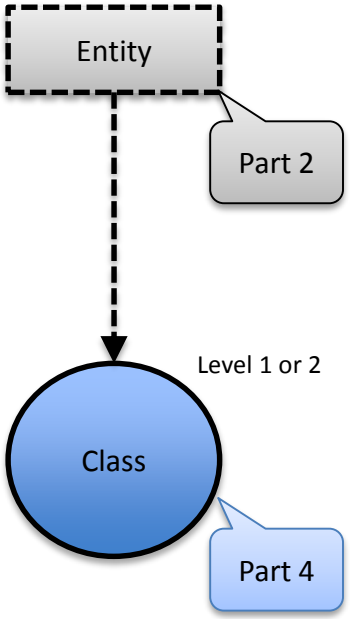
Membership

Specialization



Sub Classing

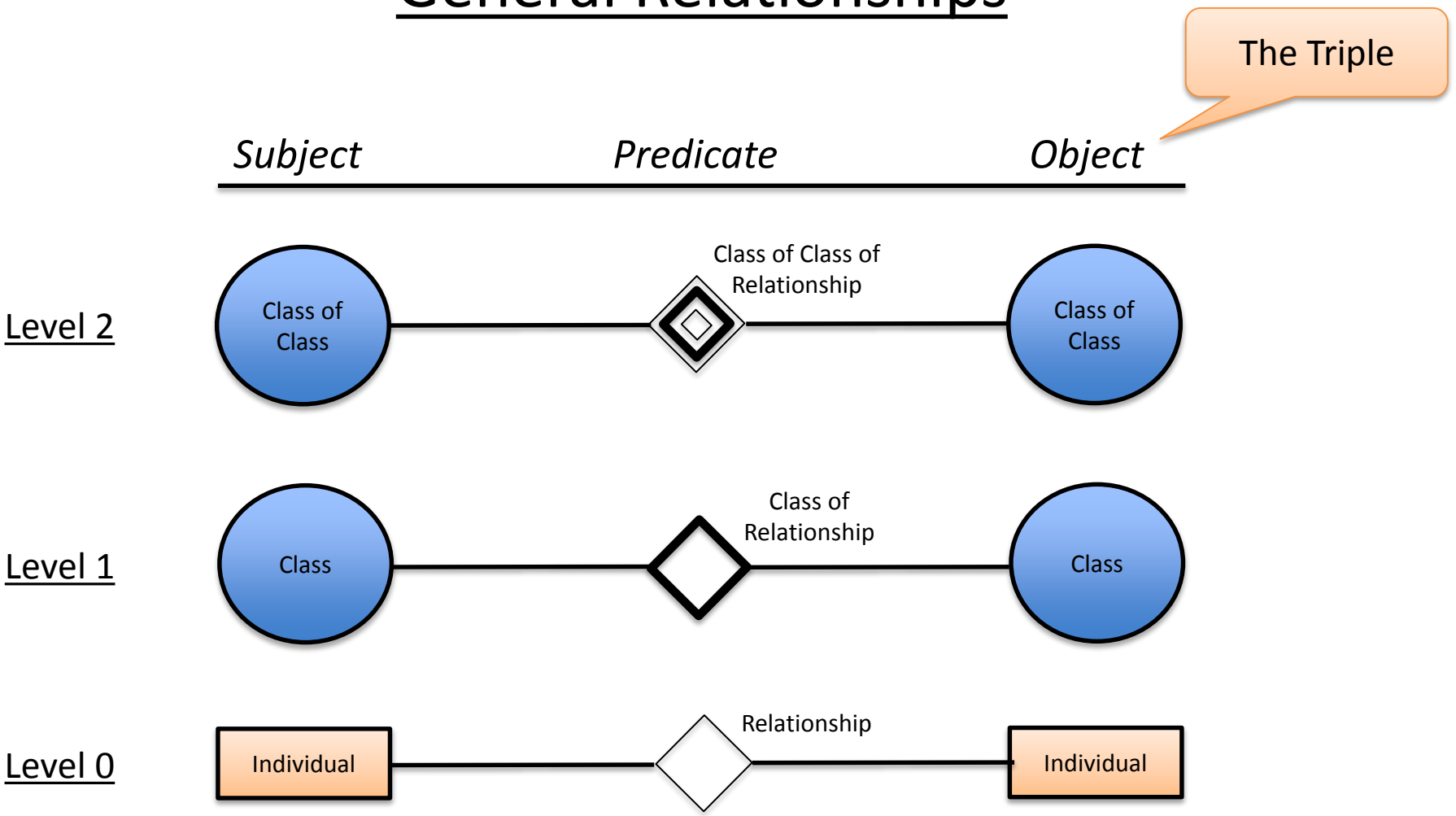
Data Model Type



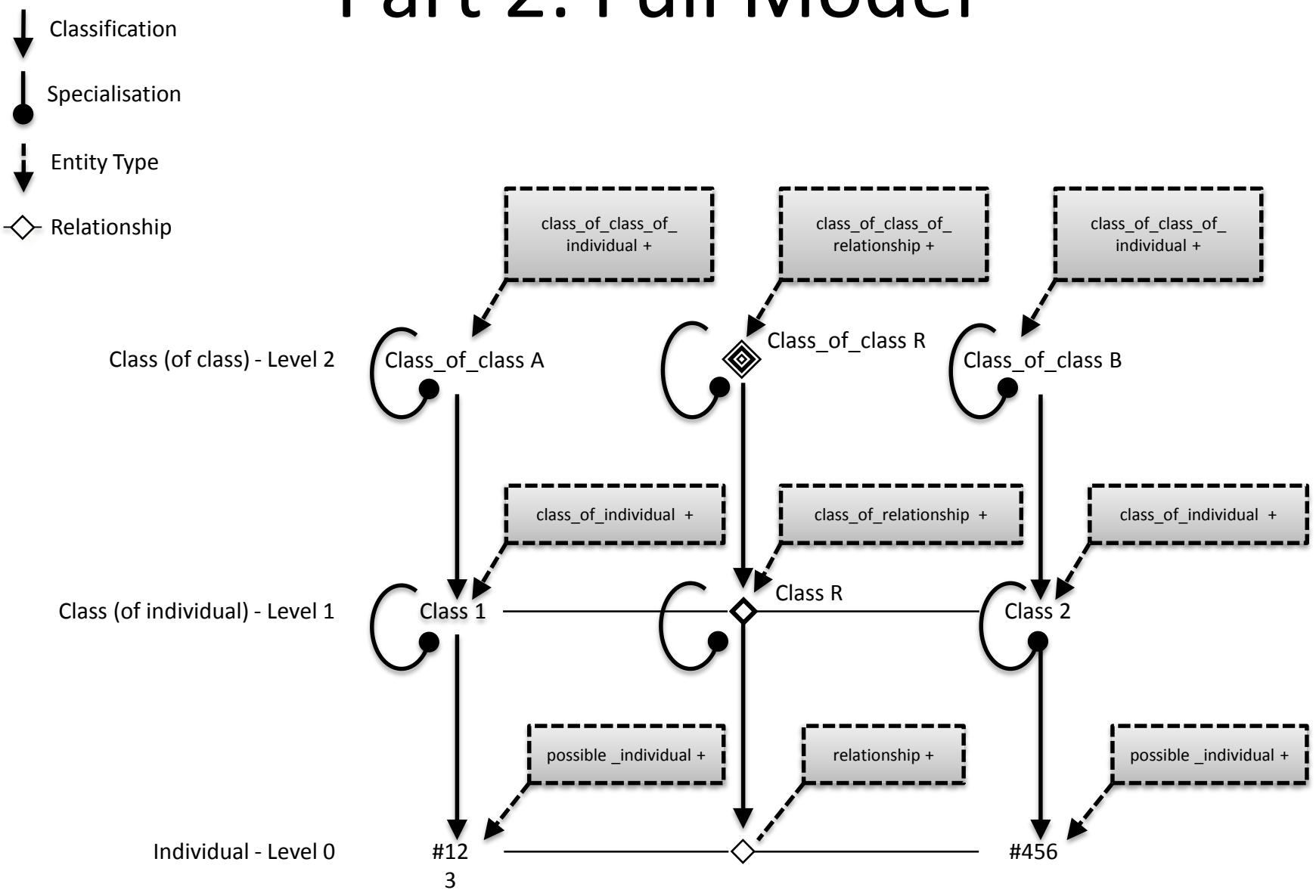
Typing

What is Reference Data (2)

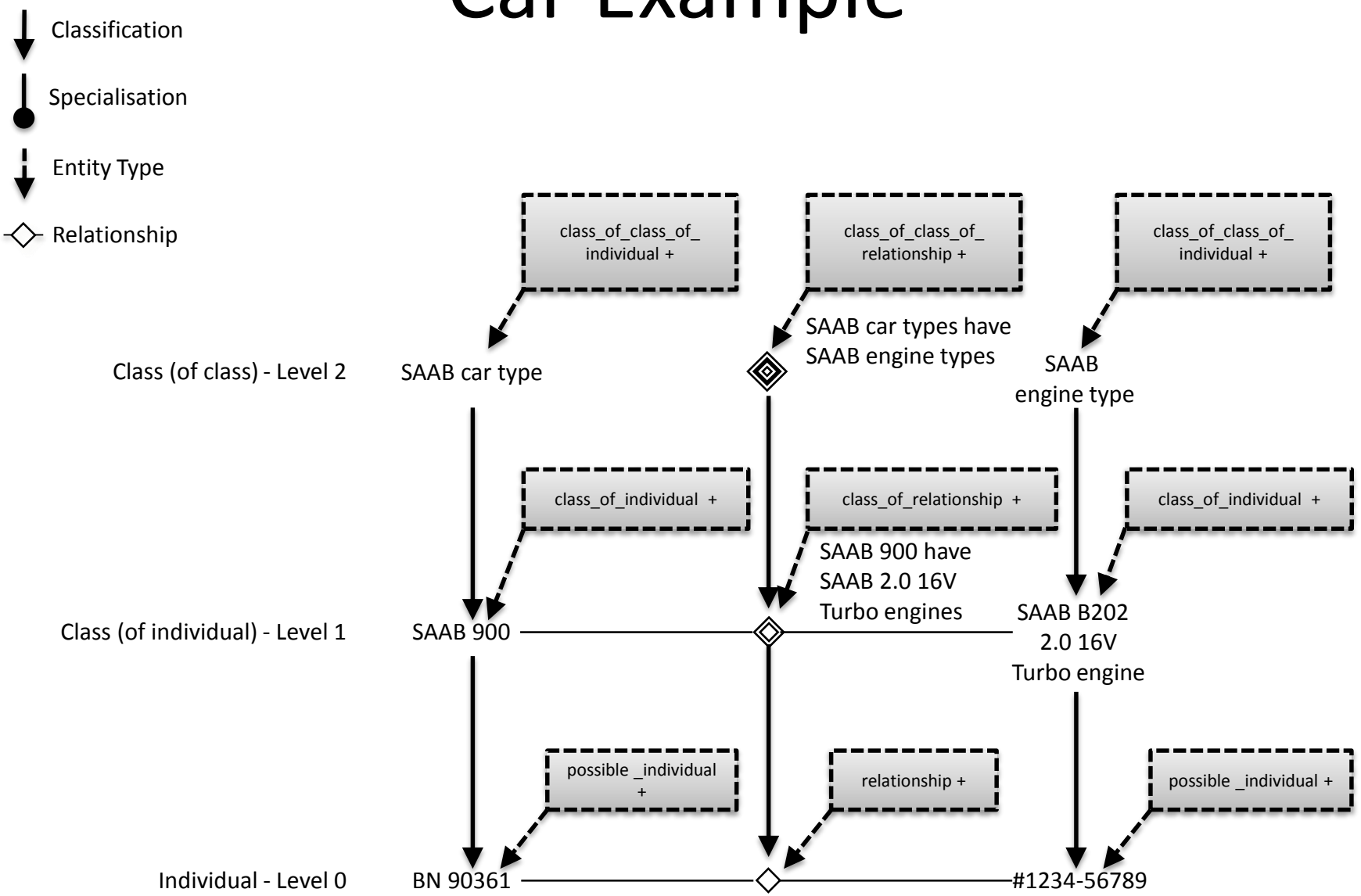
General Relationships



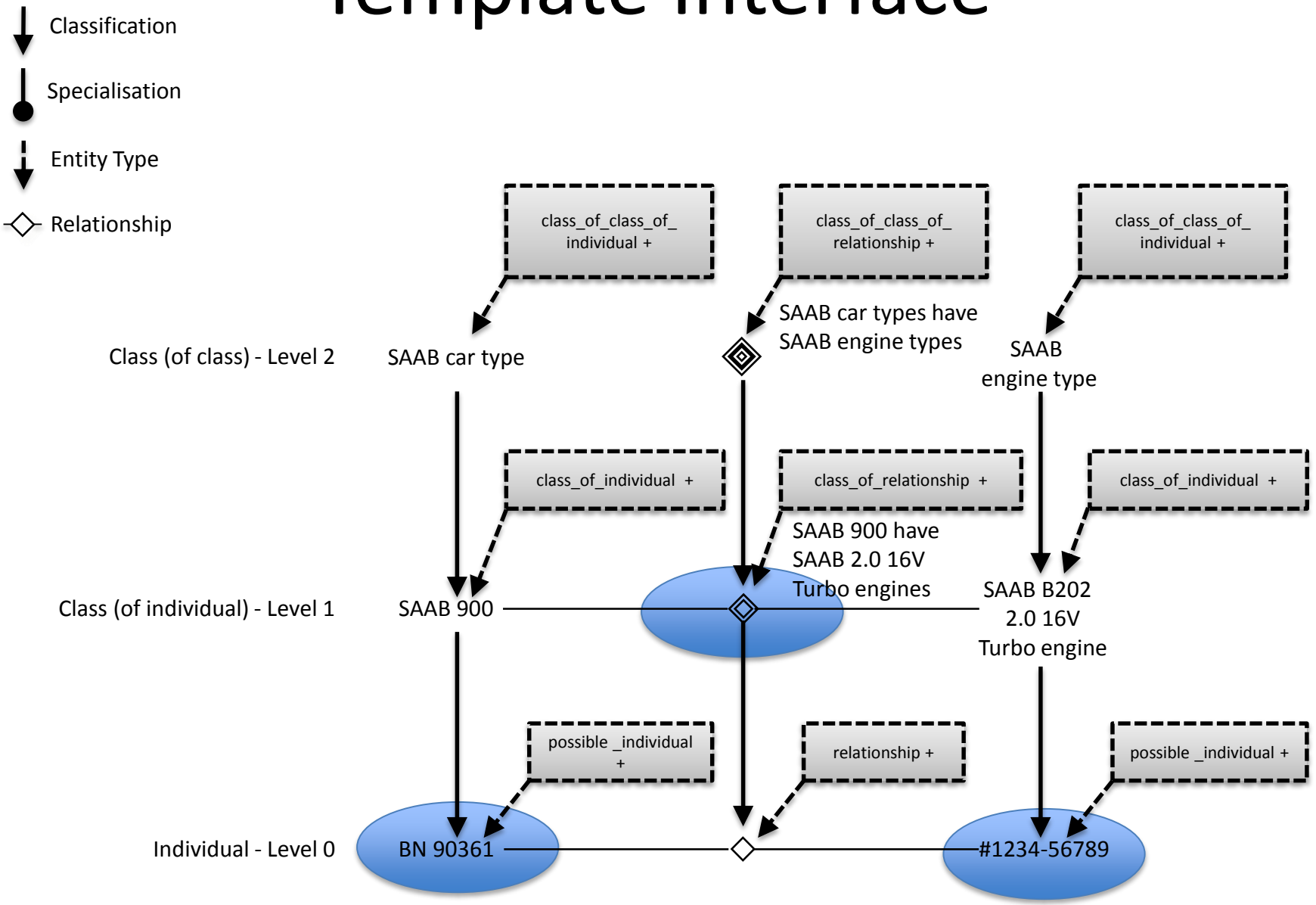
Part 2: Full Model



Car Example


Classification
Specialisation
Entity Type
Relationship
class_of_class_of_ individual +
class_of_class_of_ relationship +
class_of_class_of_ individual +
Class (of class) - Level 2
SAAB car type
SAAB car types have SAAB engine types
SAAB engine type
class_of_individual +
class_of_relationship +
class_of_individual +
SAAB 900 have SAAB 2.0 16V Turbo engines
Class (of individual) - Level 1
SAAB 900
SAAB B202 2.0 16V Turbo engine
possible _individual +
relationship +
possible _individual +
Individual - Level 0
BN 90361
#1234-56789

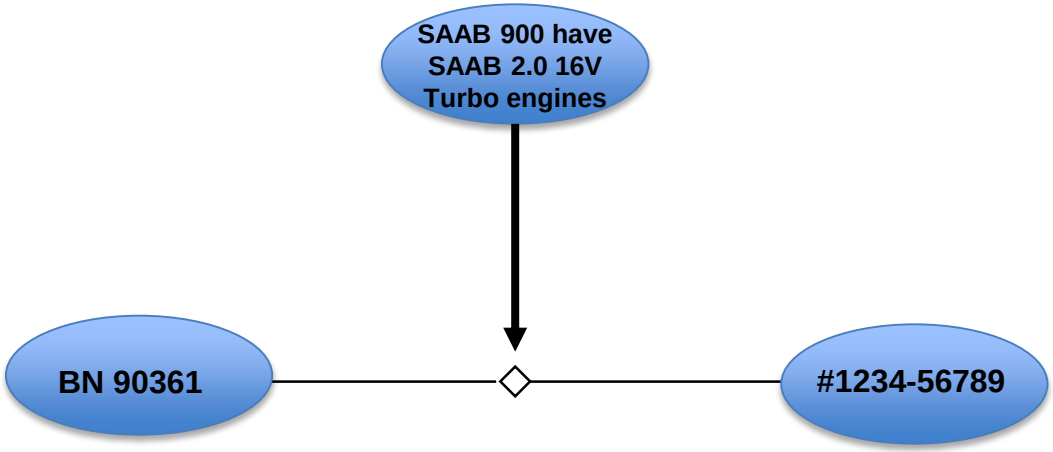
Template Interface



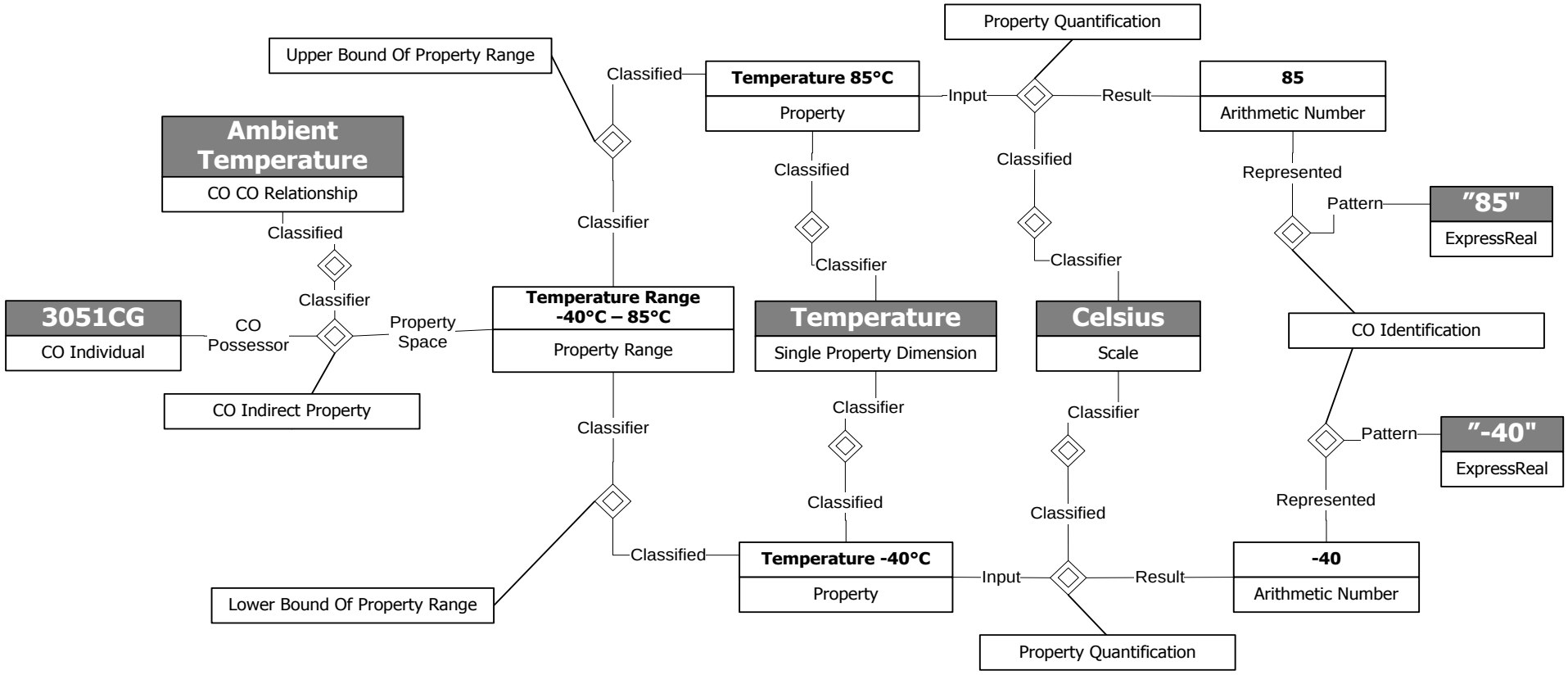
Template Signature

Template Name	Role 1	Role 2	Role 3
SAAB Engine Type	*SAAB ID*	*Engine ID*	*Has Engine Type*
	BN 90361	#1234-56789	SAAB 900 Have 2.0 16V

Part 7

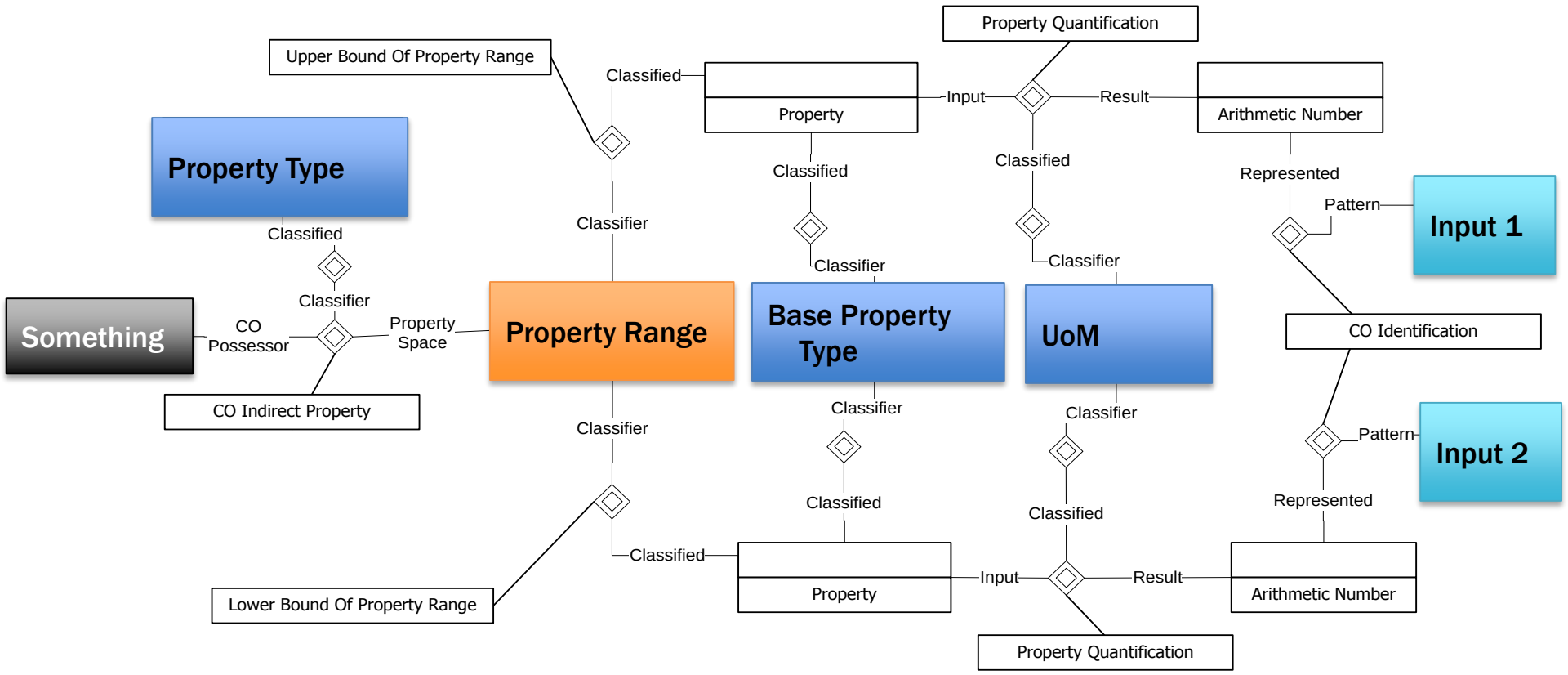


Full Model, Example 2



3051CG ambient temperature: -40°C – 85°C

Identifying the Interface



'Something' has 'Property Type' with 'Property Range' of 'Base Property Type' defined by 'Input 1' and 'Input 2' with 'UoM'

Template – Hiding the Model

Select RDL Class or Project Data

Select from Standard/customised list of RDL Instance

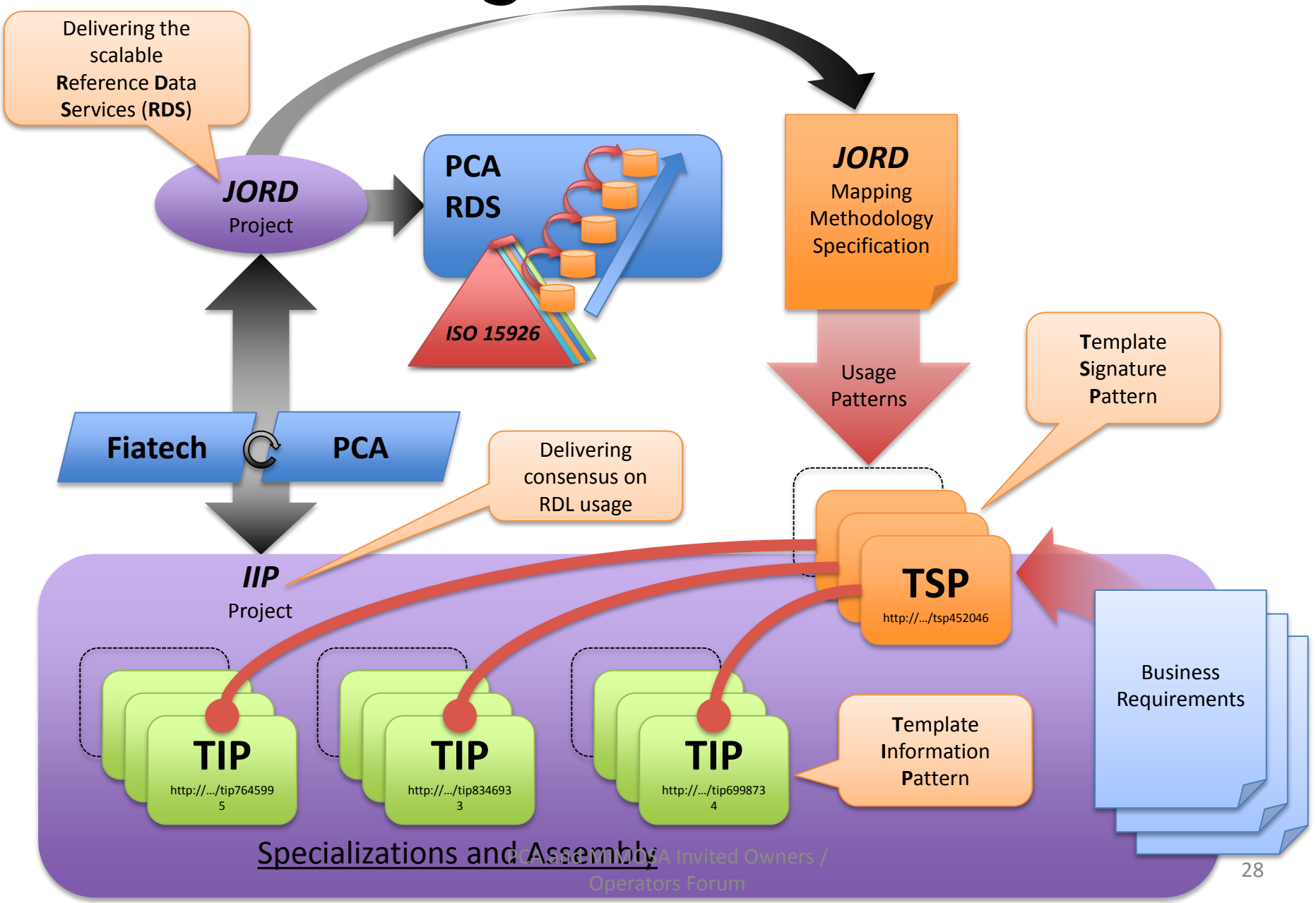
Select from Standard/customised list of RDL Instance

Select from Standard/customised list of RDL Instance

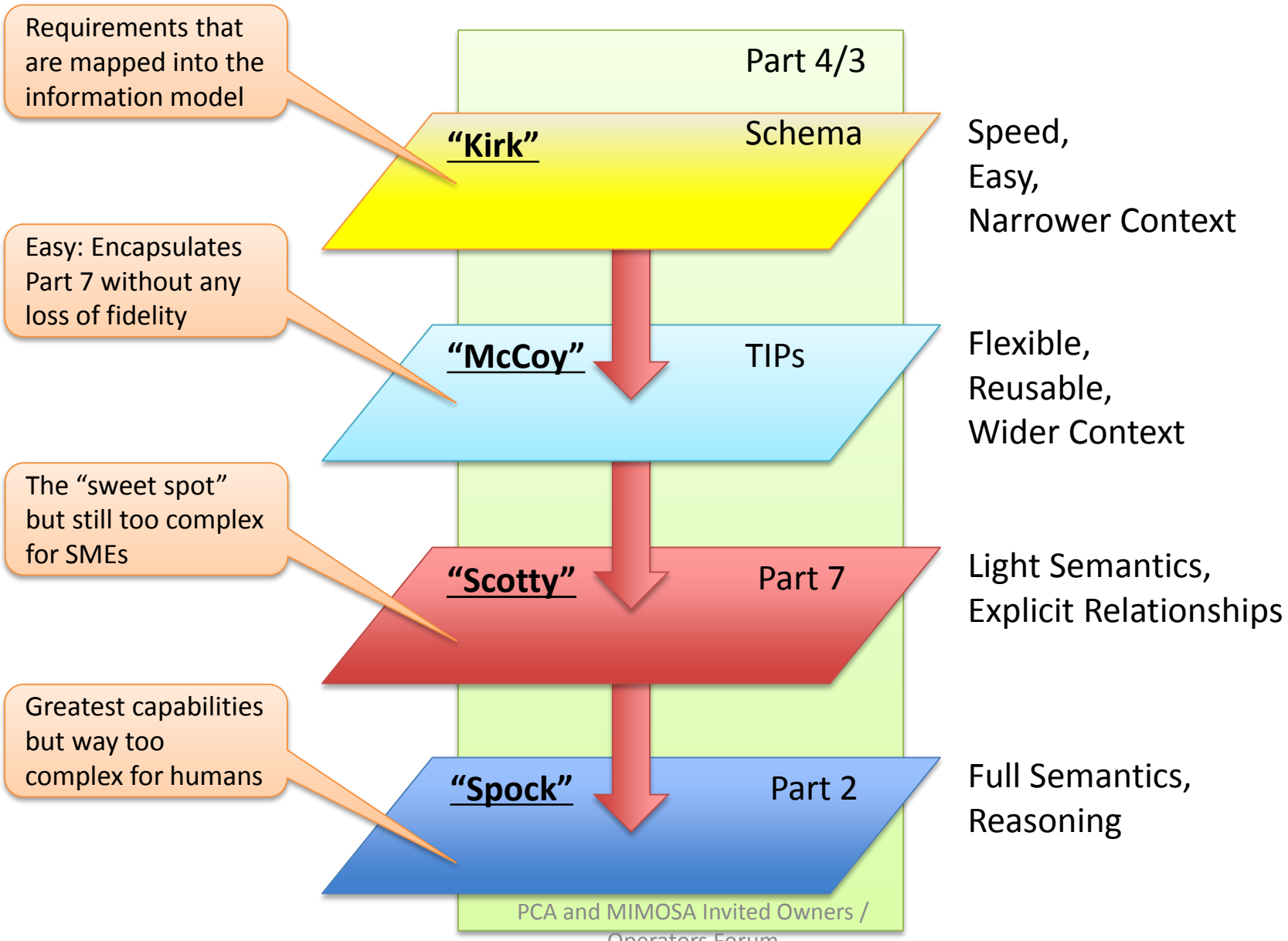
Temp. Inst. #	Something	Property Type	Property Range	Base Property Type	UoM	Input 1	Input 2
#nnn	3051CG	Ambient Temperature	(Created by the system)	Temperature	C	-40	85

Approach is applicable to any data representation.

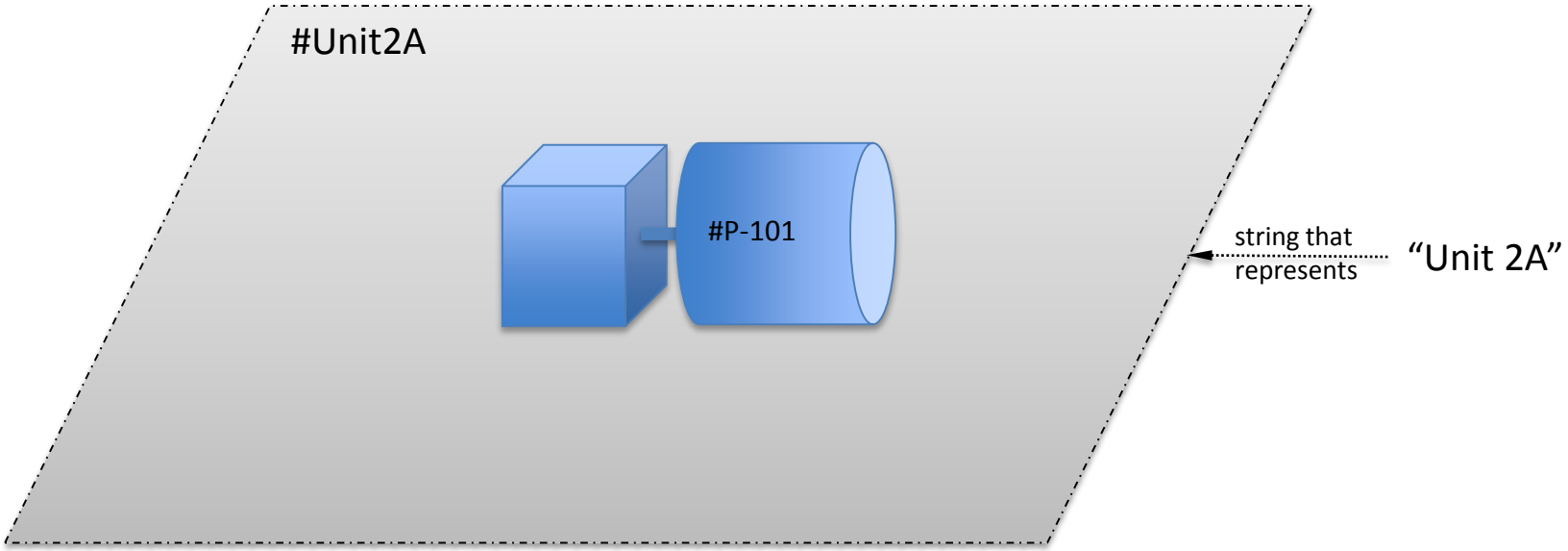
TSP Usage Patterns to TIP



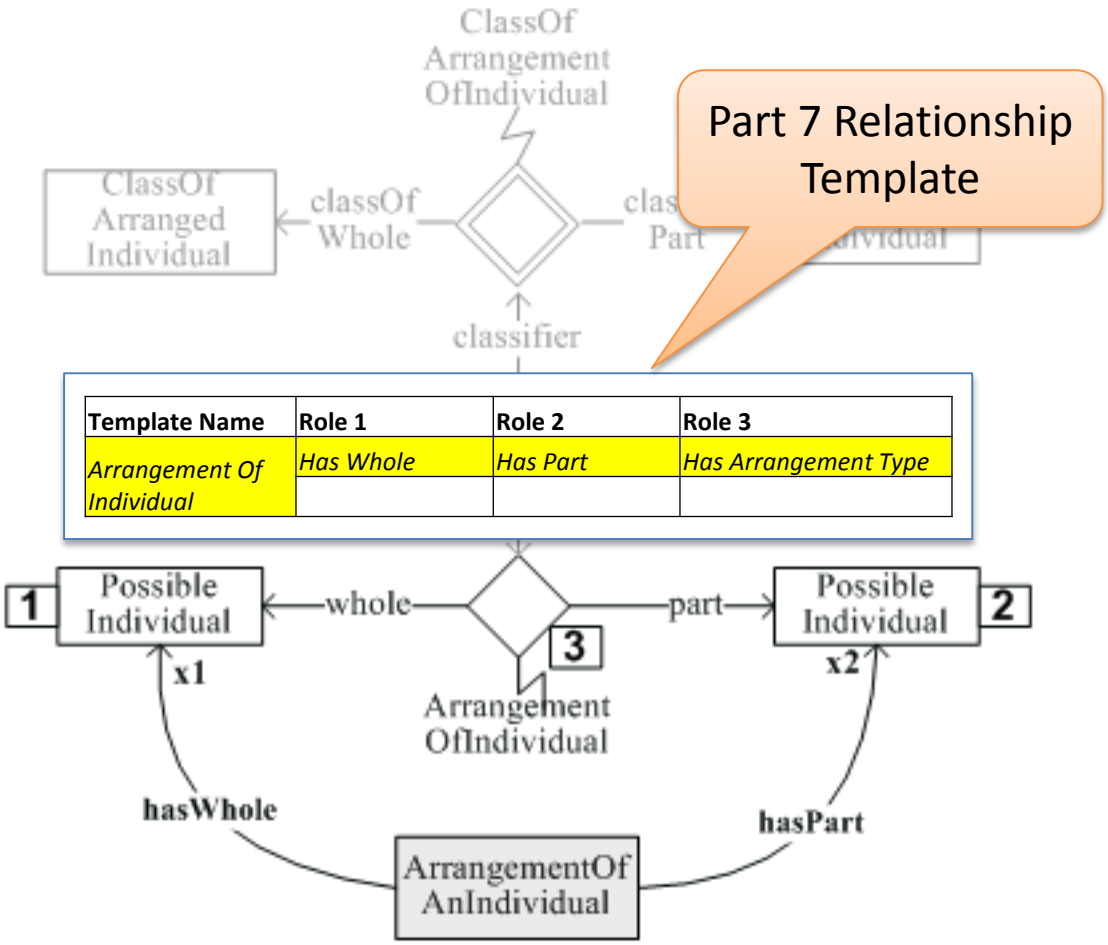
Managing Complexity



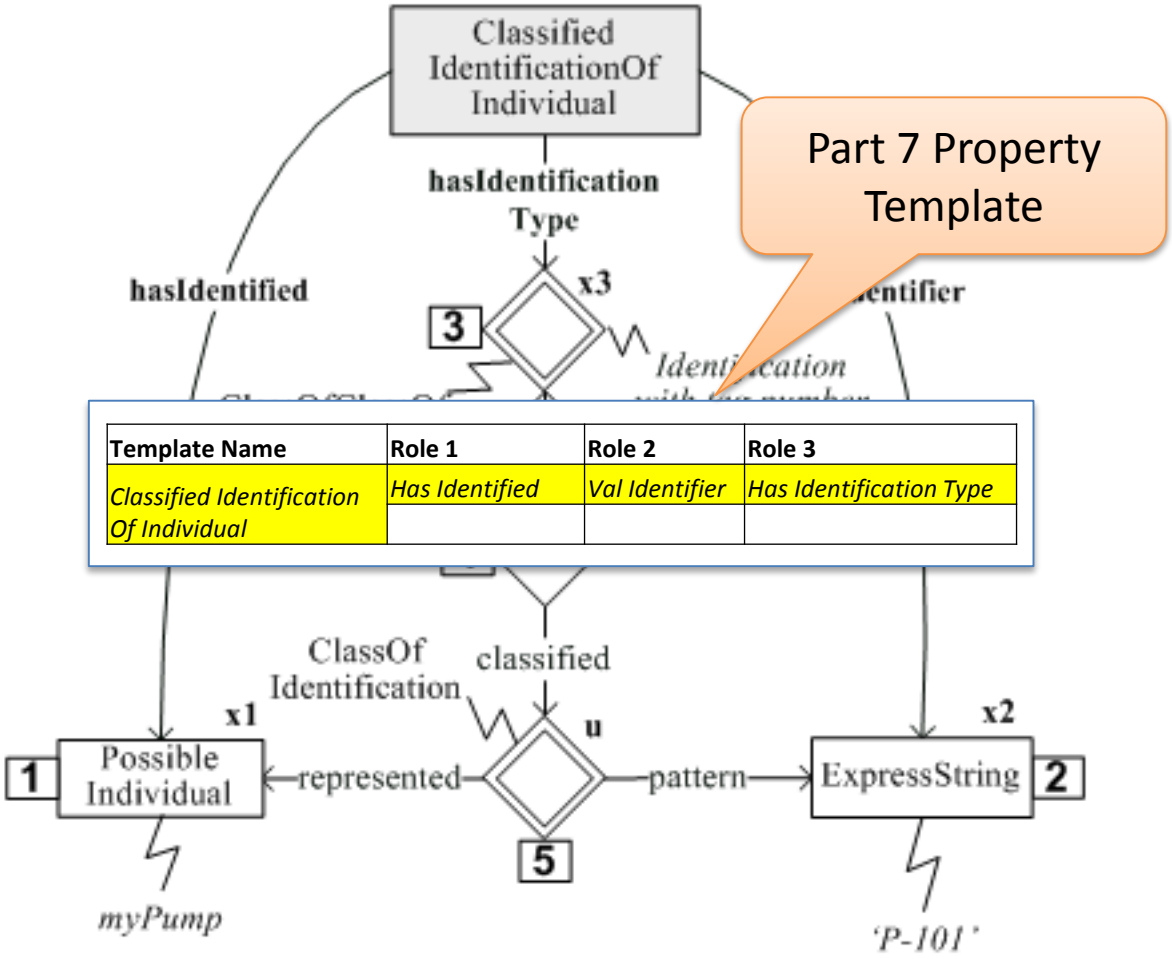
How to Model A Pump's Area



Part 2 Representation: Arrangement Of Individual

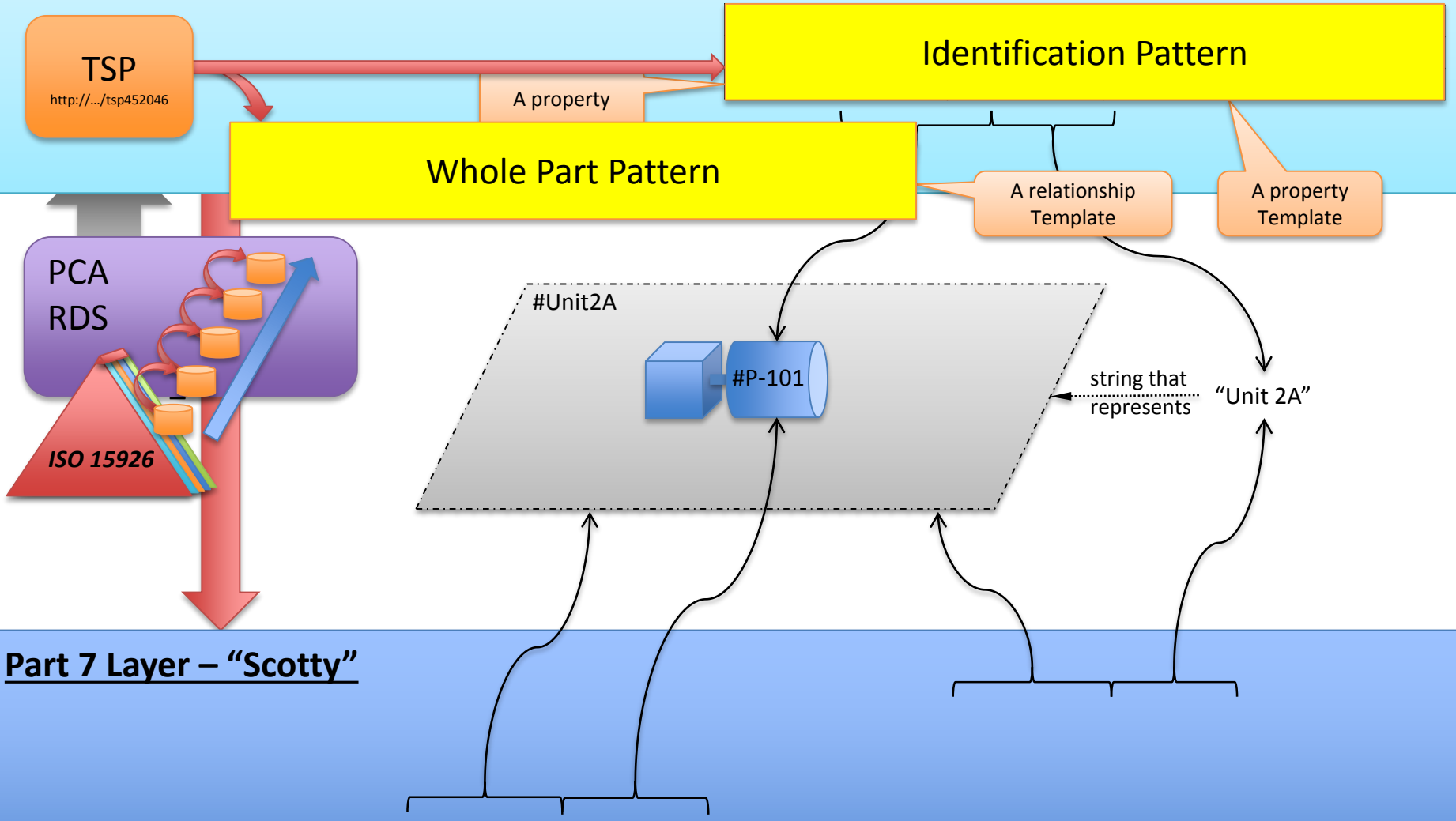


Part 2 Representation: Classified Identification Of Individual



TIP Layer – "McCoy"

TIPs!



Part 7 Layer – "Scotty"

TIPs: Simplification and Compression

Equipment								
Identity	**Tag**	**Type**	**Manufacture**	**Weight**	**Weight.UOM**	**Length**	**Length.UOM**	**Purchase Order**
1	01-AB-P101A	Centrifugal	FlowServe	2,454	Pounds	3.546	FEET	PO-4267457
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
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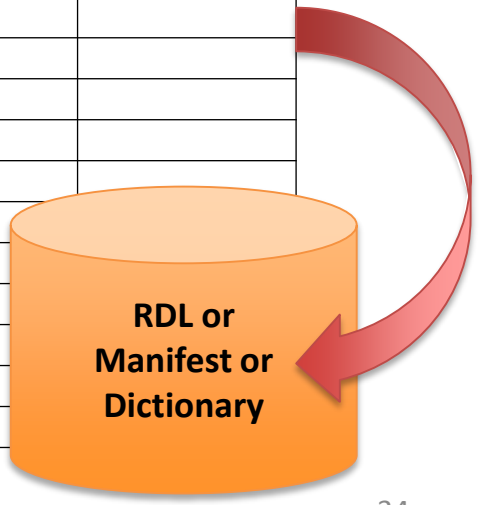

Discussion