

Interoperability Day 22 October 2010

 **Capgemini**
CONSULTING. TECHNOLOGY. OUTSOURCING

In collaboration with
THE *Open* GROUP

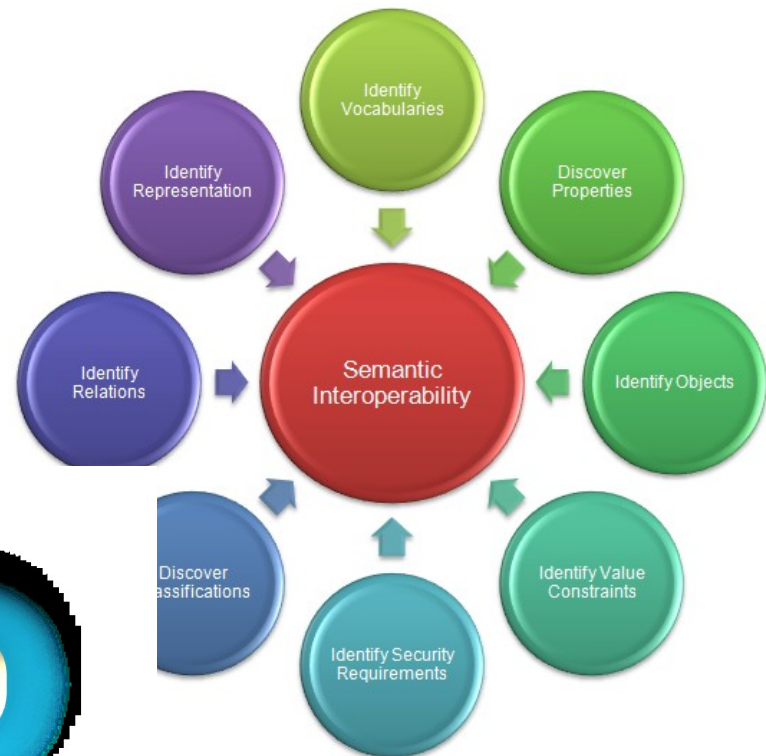


- ❑ Semantics in Enterprise Architecture
- ❑ Interoperability in TOGAF
- ❑ UDFE as a framework for Semantic

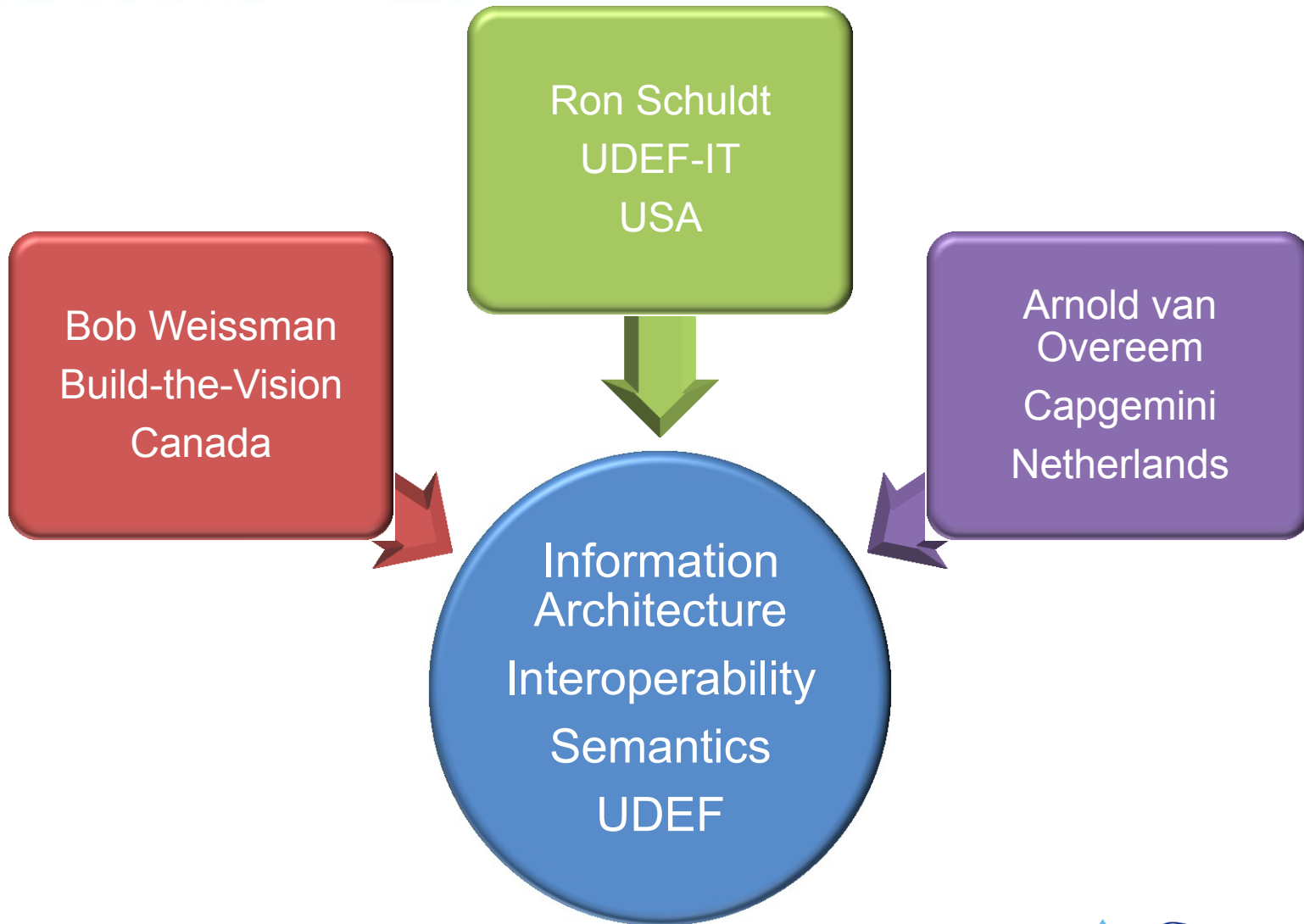
IT Architecture Practitioners Conference,
Amsterdam, Oct 18-22 2008

Interoperability Day, 22 October 2010

<http://www.opengroup.org/amsterdam2010/>



When I were you, you would understand me better



09:00-10:30 - Semantics in Enterprise Architecture - a discussion of the use of semantics in enterprise architecture to enable and improve interoperability between enterprise systems. The discussion will cover:

- ❖ How can semantics help deliver interoperability?
- ❖ How should semantics be addressed in architecture development (in particular, when using TOGAF™)?
- ❖ Who are the human actors involved?
- ❖ How information architecture affects semantic interoperability

11:00-12:30 - Semantics in Enterprise Architecture (continued)

- ❖ What supporting technology (semantic wikis, vocabulary management systems, registries, etc) should be used?
- ❖ How should the semantic technology be integrated with the tools currently used by enterprise architects?
- ❖ What standards are available, and what additional standards are needed?
- ❖ Decisions on technical basis for distributed UDEF

14:00-15:30 - UDEF as a global interoperability enabler - discussion of:

- ❖ The role of UDEF in enterprise architecture
- ❖ Enterprise UDEF registries and interoperability between them
- ❖ The supporting technology needed to enable architects to use the UDEF and incorporate it in enterprise architectures

16:00-17:30 - Forward planning for:

- ❖ The Interoperability project of the Architecture Forum
- ❖ The UDEF Project
- ❖ Other projects of the Semantic Interoperability Work Group.
- ❖ Activities towards San Diego and London

• Governance Domain A

Architecture Governance Framework of A

Manages

Enterprise Architecture of Domain A

Consists of

Architecture building blocks defined in Architecture Continuum A



Implemented by

Solution building blocks in Solution Continuum of A



Wall of independence

• Governance Domain B

Architecture Governance Framework of B

Manages

Enterprise Architecture of Domain B

Consists of

Architecture building blocks defined in Architecture Continuum B



Implemented by

Solution building blocks in Solution Continuum of B



Interoperability Requirement

• Human Individual A

Code of ethics / religion / cultural background of A

Manages

Personality / character / behavioural capabilities of A

Consists of

Inherited, acquired and educated (communication) skills and abilities of A

Implemented by

Behaviour and communication patterns exhibited by A

• Human Individual B

Code of ethics / religion / cultural background of B

Manages

Personality / character / behavioural capabilities of B

Consists of

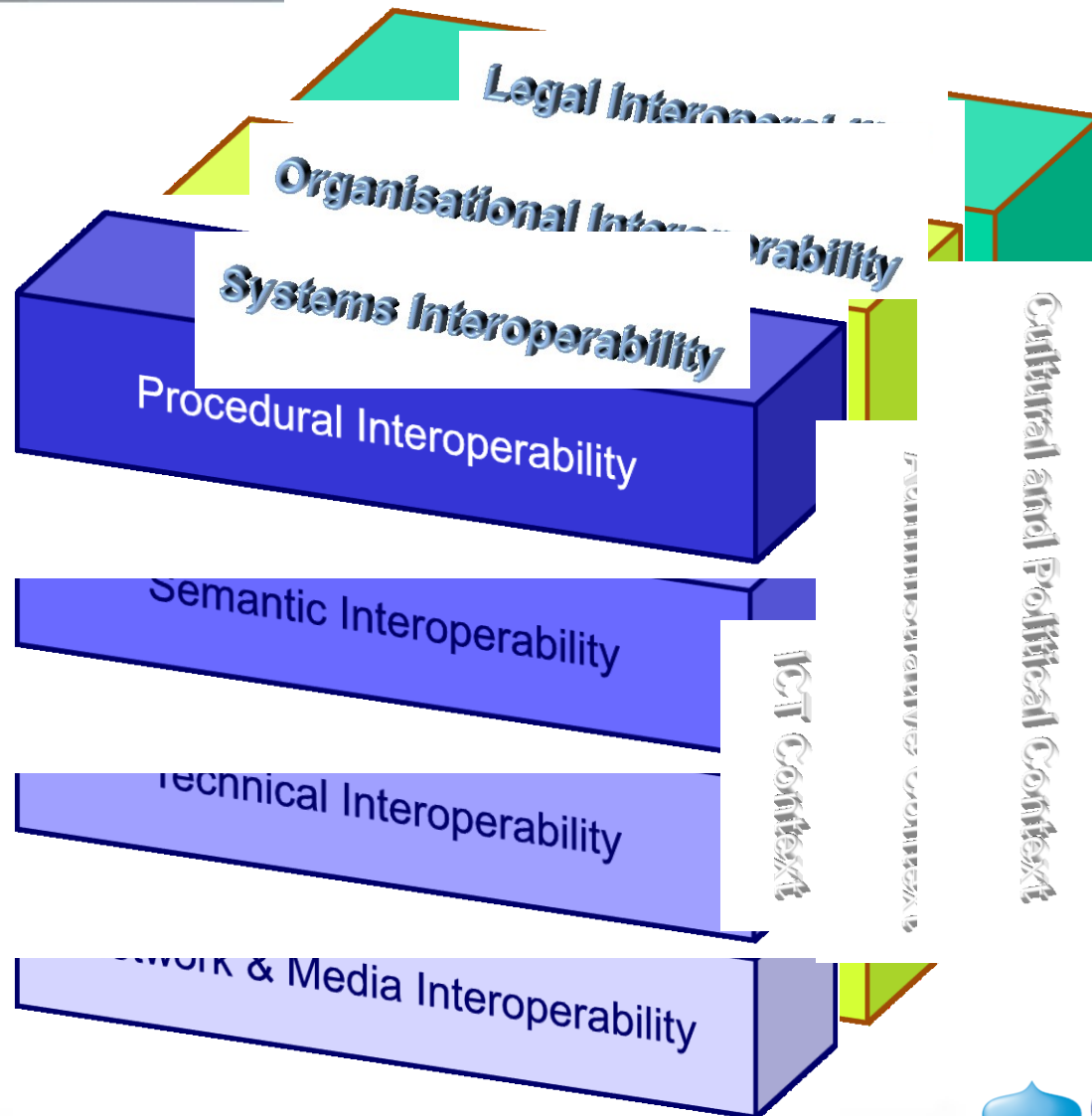
Inherited, acquired and educated (communication) skills and abilities of B

Implemented by

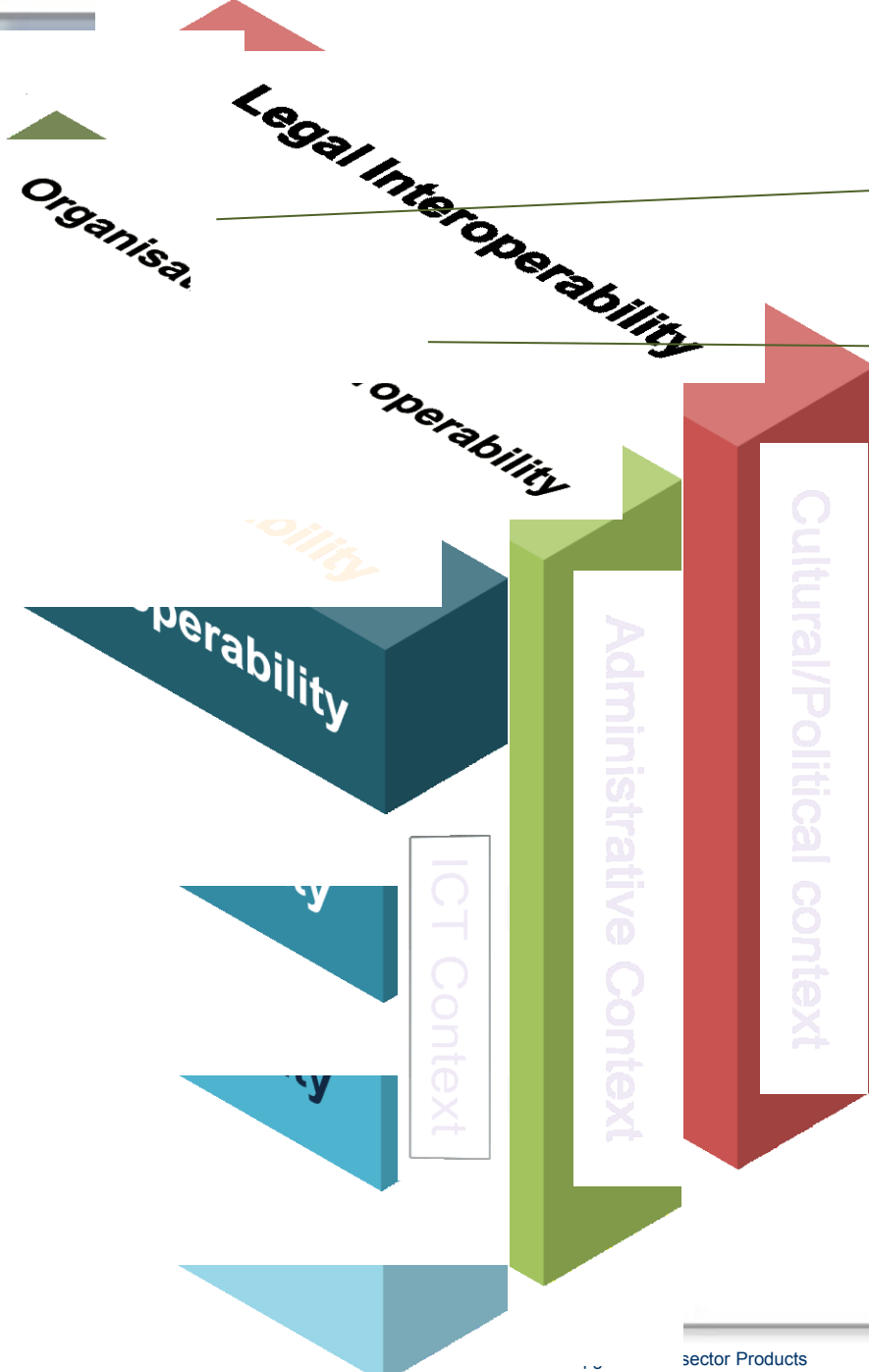
Behaviour and communication patterns exhibited by B

Wall of independence

Interoperability Requirement



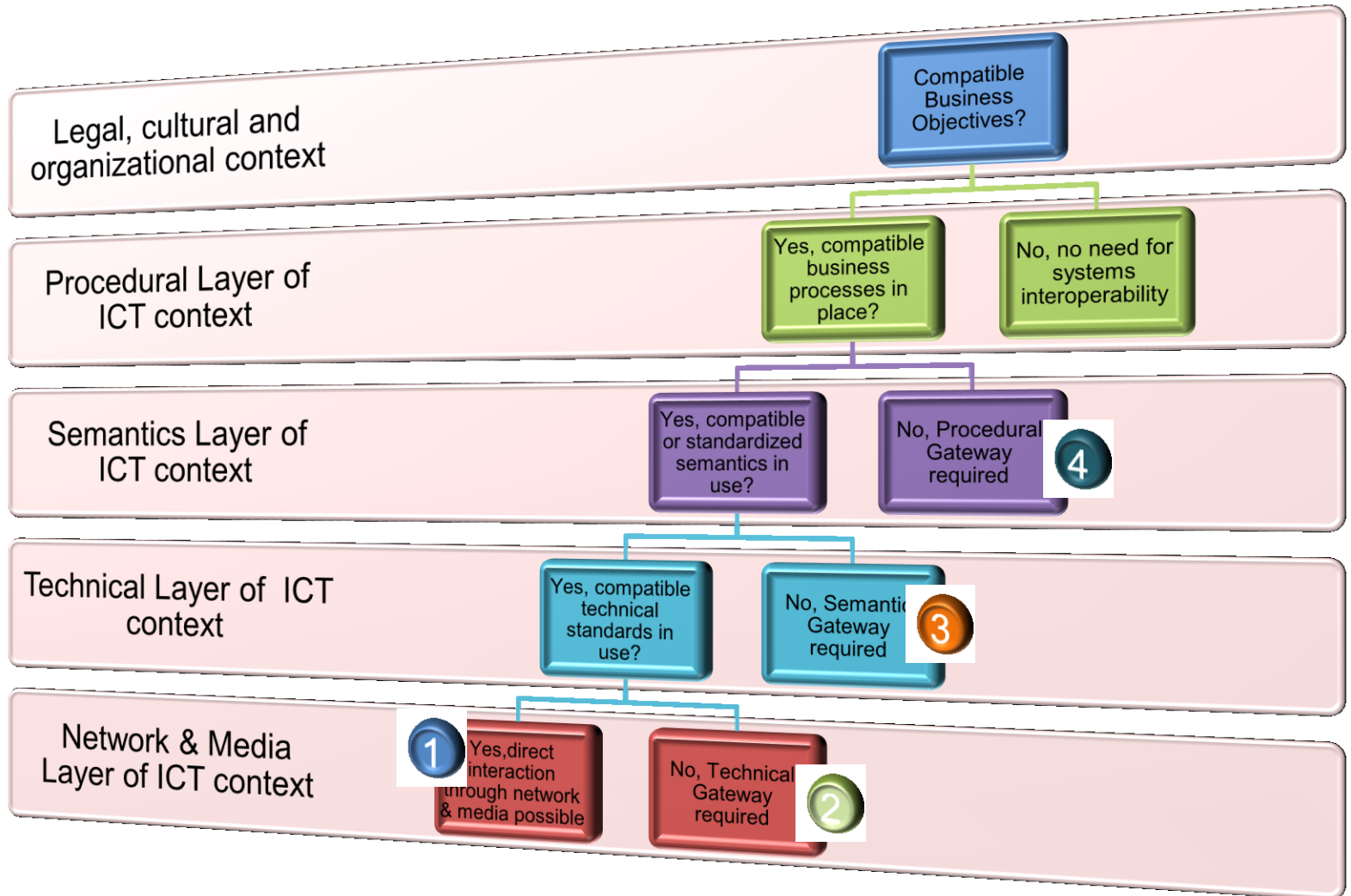
System
F



Interoperability Framework V2

Discovery Context

Commercial Context



Generic Definitions:

- A gateway is an Architecture Building Block with no other purpose than to cross-enable interoperable business processes by eliminating impediments due to incompatibility
- A gateway implementation is a Solution Building Block that is designed to enable interoperability between otherwise non-interoperable systems

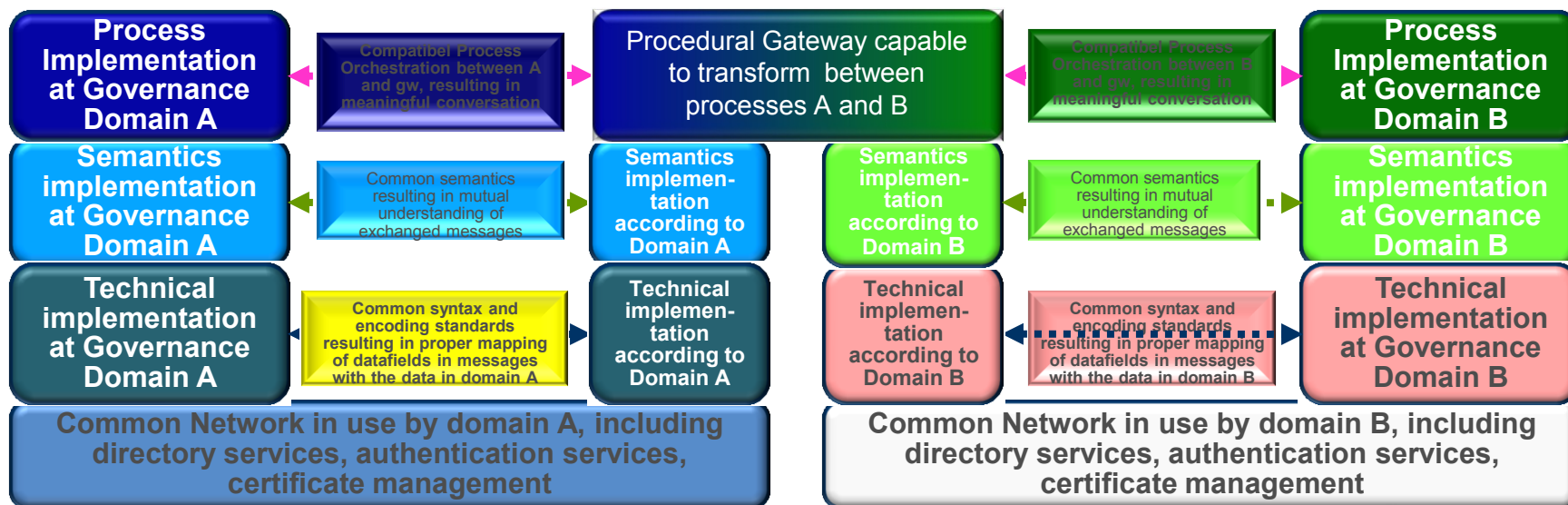
Specific Definitions

- A Procedural Gateway is a gateway that enables interworking between systems that do not have compatible business processes by which they could collaborate on a common objective
- A Semantic Gateway is gateway that enables interworking between systems with compatible business processes that cannot understand messages from each other due to incompatible semantics
- A Technical Gateway is a gateway that enables interworking between systems with compatible business processes and compatible semantics that cannot interwork due to conflicting syntax, encoding, symbolsets, timezones



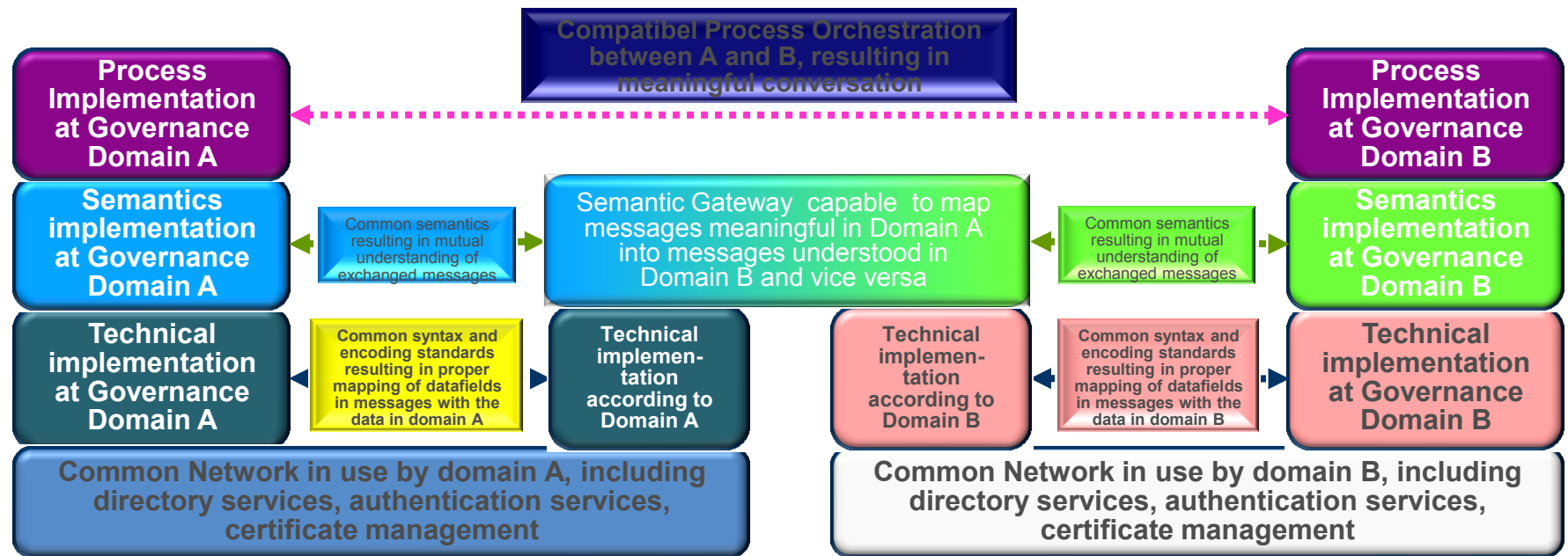
Interoperability diagram for a solution with a Procedural Gateway

- ☑ Procedural gateway transforms business process of A as seen by system B such that B believes that A behaves as B expects and vice versa
- ☐ Semantics in use in Domain A are independent of Semantics in use of Domain B, but Procedural Gateway must be capable to handle both
- ☐ Syntax, encoding, unit & currency standards in Domain A are independent of those in use in Domain B but Procedural Gateway must be capable to handle both
- ☐ Common Network in use by Domain A and Domain B may or may not be the same (assumed to be any of Internet, Intranet, Extranet or Private network, independently)



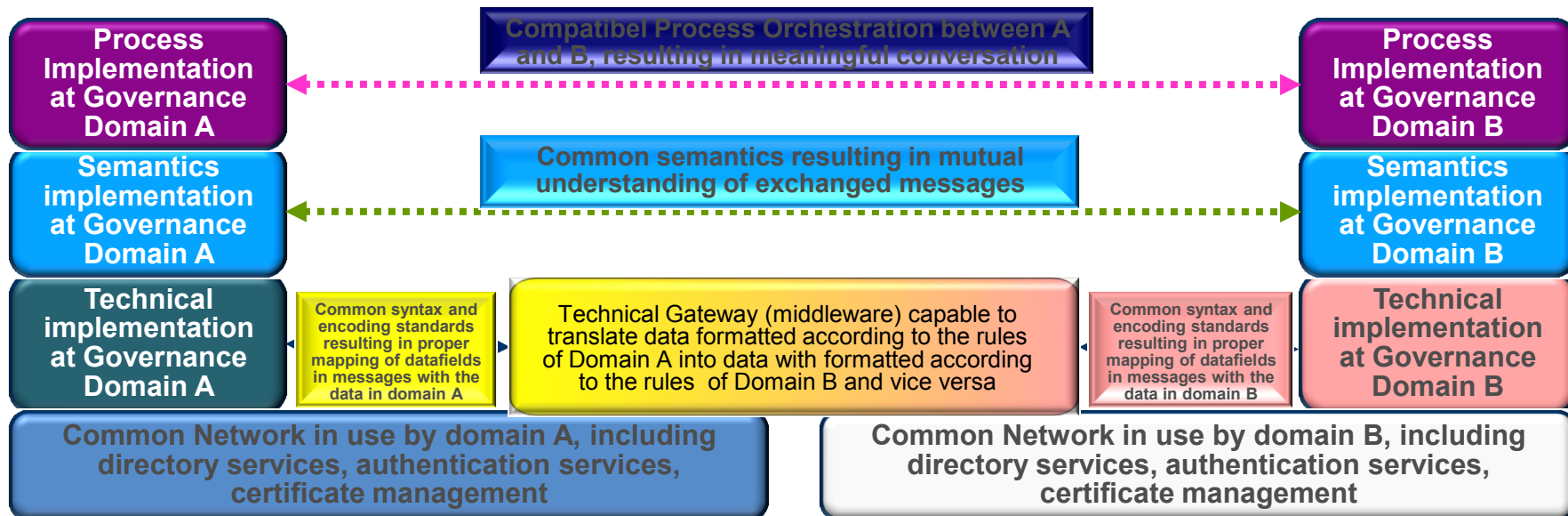
Interoperability diagram for a solution with a Semantic Gateway

- ☑ Systems Interoperability results from Organisations having a common objective for which mutually compatible business processes have been implemented. These business processes result in the orchestration of messages that can be handled by the other System.
- ☑ The Semantic Gateway is capable to learn context from both A and B, and to apply business rules relevant in Domain A and B, resulting in the ability to transpose message with Information meaningful in either Domain A or B into equivalent messages, understood the same in the other Domain
- ☐ Syntax, encoding, unit & currency standards in Domain A are independant of those in use in Domain B but the Semantic Gateway must be capable to handle both
- ☐ Common Network in use by Domain A and Domain B may or may not be the same (assumed to be any of Internet, Intranet, Extranet or Private network, independantly)

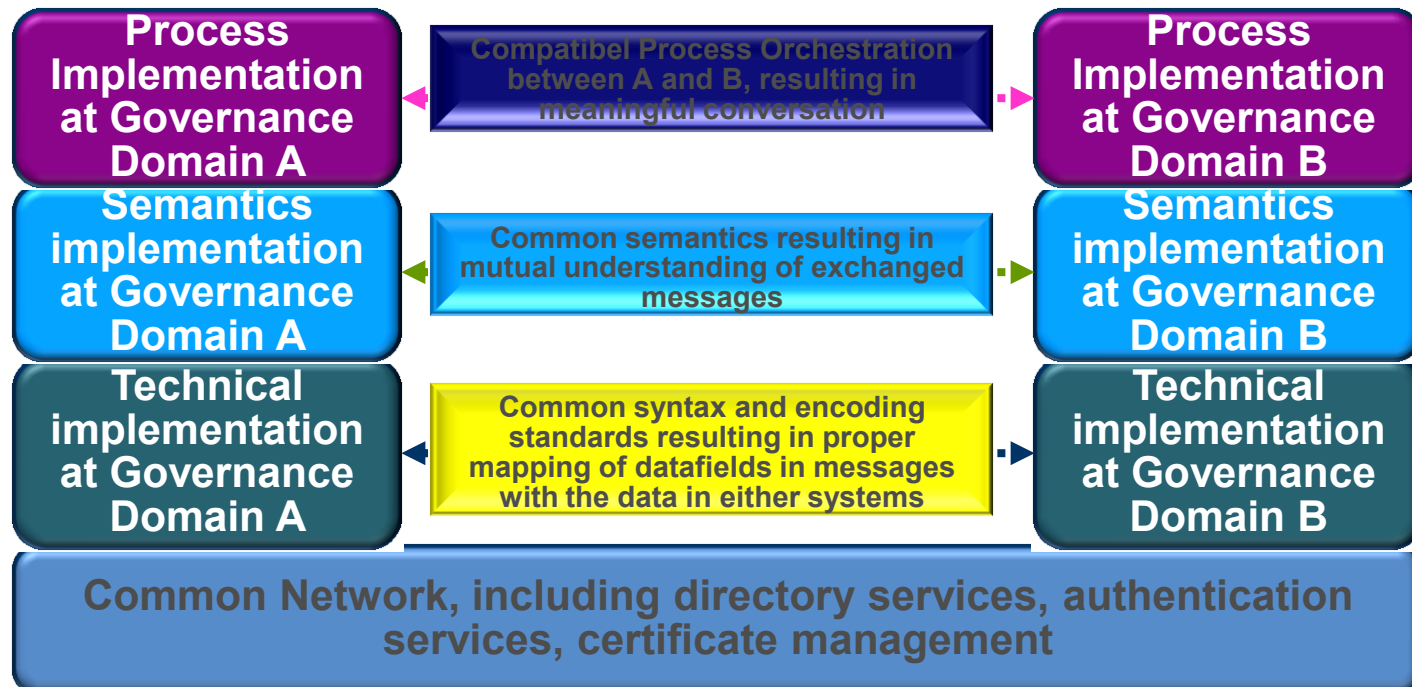


Interoperability diagram for a solution with a Technical Gateway

- ☑ Systems Interoperability results from Organisations having a common objective for which mutually compatible business processes have been implemented. These business processes result in the orchestration of messages that can be handled by the other System.
- ☑ By virtue of common semantics the Information in these messages can be properly understood by the other System
- ☑ The Technical Gateway translates Data formatted correctly following the rules of either domain into equivalent Data formatted correctly according to the rules in the other domain, including conversion of units of measure, currency conversion, timezone mapping, code table conversion and dictionary substitution between languages
- ☐ Common Network in use by Domain A and Domain B may or may not be the same (assumed to be any of Internet, Intranet, Extranet or Private network, independantly)



- ☑ Systems Interoperability results from Organisations having a common objective for which mutually compatible business processes have been implemented. These business processes result in the orchestration of messages that can be handled by the other System.
- ☑ By virtue of common semantics these messages can be properly understood by the other System
- ☑ By virtue of common syntax and encoding rules, the data fields in these messages can be properly decoded and mapped by the other System
- ☑ By virtue of a common or interconnected network infrastructure exchange of data is enabled



The Vision:

The UDEF-semantic infrastructure will be a distributed set of registries (like the DNS) each managed by its own registrar, using common standards and common and collaborative, partly shared, governance processes.

The global (root) UDEF-registry is managed and maintained by the Open Group, who as well has the authority to assign registrars of descendant registries and the authority to define the governance processes.

Every system owner can freely use the UDEF on a royalty free basis and can submit extension proposals.

Future extensions of the UDEF trees, including descendant registries will enable all systems around the world the exchange data in a semantically consistent manner, without requirements for system managers to make any prior arrangements beyond being UDEF-compliant.

National language versions of UDEF extend this vision across language barriers

Item	Munich	San Diego	London	Toronto	HongKong	Seattle	Rome	Boston	Amsterdam	San Diego	London	Austin
	4Q2008	1Q2009	2Q2009	3Q2009	4Q2009	1Q2010	2Q2010	3Q2010	4Q2010	1Q2011	2Q2011	3Q2011
Work In-Process												
German Version of UDEF									Review	Review		
French Version of UDEF	Review	Review	Review	Finalize								
Chinese Version of UDEF									Review	Review		
South-African version of UDEF									Review	Review		
Spanish version of UDEF		Initial									Review	Review
UDEF Extensions Approved - Ongoing Effort		v 1.11		v 1.12 v 1.20			V 1.21		v 1.22	V 1.23	V 1.24	V 1.30
UDEF - NL maintenance and Dissemination - ongoing effort		v 1.11		v 1.12 v 1.20			V 1.21		v 1.22	V 1.23	V 1.24	V 1.30
UDEF - FR maintenance and Dissemination - ongoing effort				Initial			V 1.21		v 1.22	V 1.23	V 1.24	V 1.30
Registry Switching Specification	Initial	Review				Revised	Review	Review	Finalize			
UDEF version 1.5 specification	Initial								Review	Finalize		
Develop template SDEF for Aerospace and Medical and PDEF	Initial									Review	Review	
Develop template SDEF for Oil&Mining, Telecom & Media, Energy, ICT					Initial					Review	Review	
UDEF version 2									Review	Revised	Review	Review

UDEF
Version 1.0

- Published originally in 2006
- Vocabulary extensions 1.01 , 1.02, 1.03, 1.04

Multilingual
UDEF

- Dutch version of UDEF (1.1) published in 2008
- French version of UDEF (1.2, multisyntax, unicode) published 2009

Next
Generation
UDEF

- Extension with Satellite Data Element Trees (1.3, 1.4) planned 2011
- Extension with Private Data Element Trees (1.5, 1.6)

Future UDEF

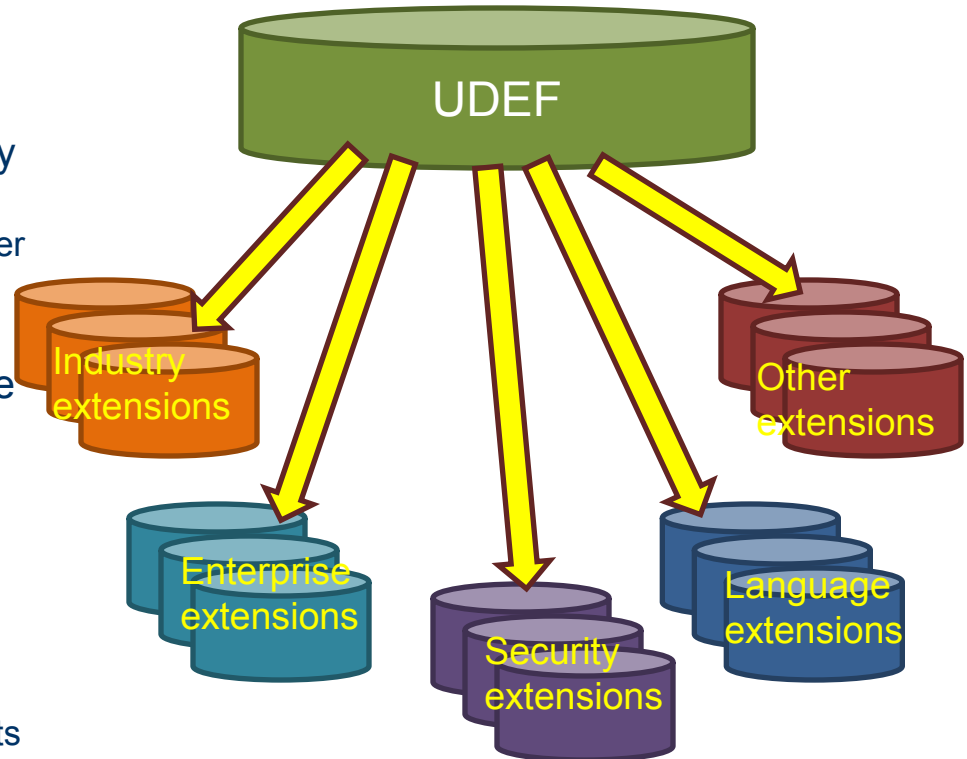
- Extension with Value Trees, Security Attribute Trees (SABSA)
- Extension with Relation Trees, Classification Trees, Context Trees

Long Term
UDEF Vision

- Universal Semantic Interoperability
- Global vocabulary coverage, global language coverage

- ❌ Many industry specific concepts not modeled
 - ☞ Open Group lacks in depth expertise in many industry domains
 - ☞ Open Group only models “vendor neutral” data element concepts
- ❌ Many enterprise specific concepts not modeled
 - ☞ Individual enterprises would want to model certain areas differently
- ❌ Governance process not agile due to quality procedures
 - ❖ Some required extensions do not exist in other languages
 - ❖ Enterprises want to try some extensions now
- ❌ UDEF assumes the context of an Enterprise for all data to be modeled
 - ❖ For some required concepts the enterprise concept is not known, not applicable or not relevant
 - ❖ Enterprises want flexibility to describe data in multiple contexts
- ❌ UDEF is public domain in its entirety
 - ❖ Sometimes the understanding of data conflicts with security requirements

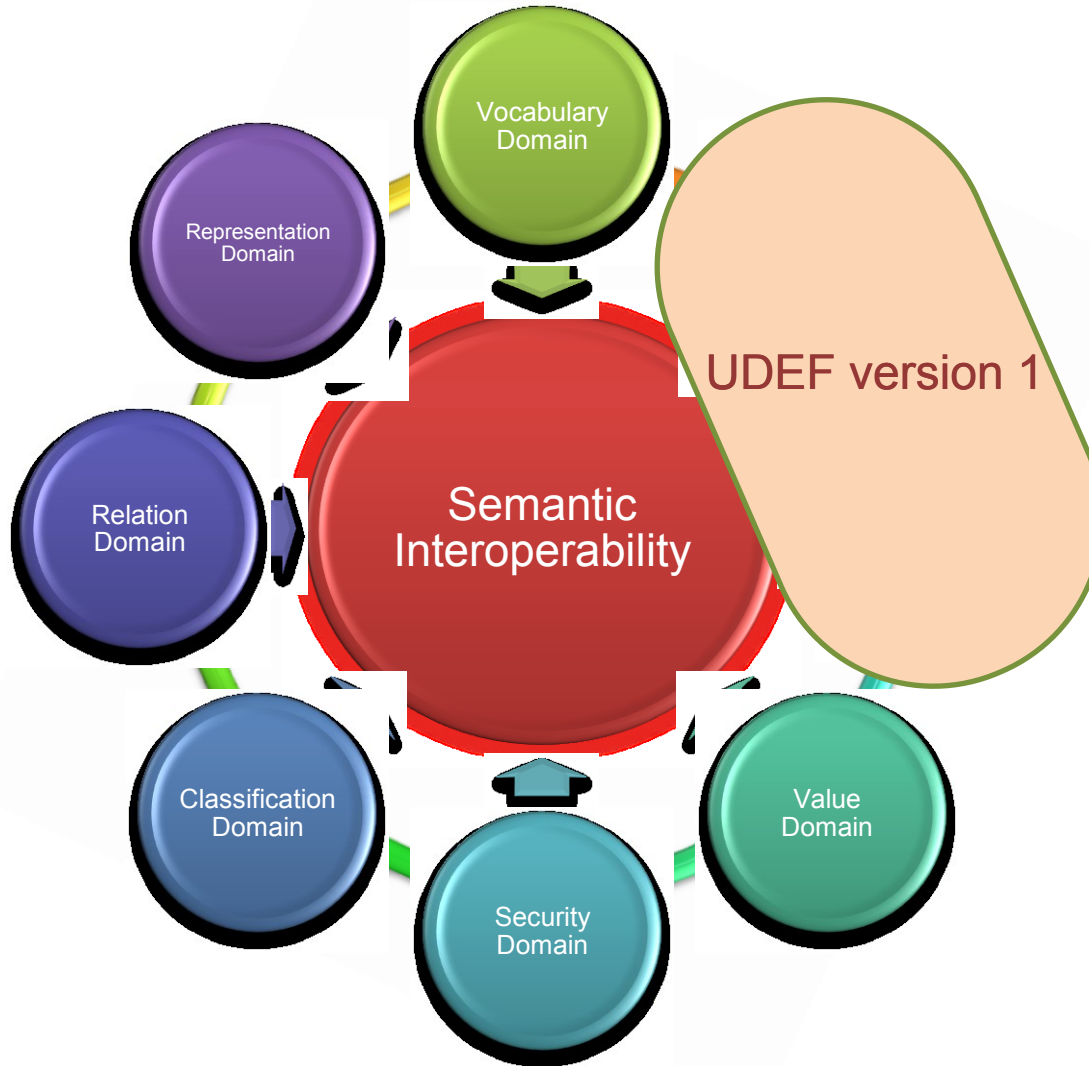
Our solution:
Distributed UDEF



- to define one or more aerospace industry specific object trees that are descendant from the UDEF objects
- probably some aerospace industry specific property trees that are descendant from UDEF properties
- define principles for the formation of a descendant tree
- define connection points in UDEF for these descendant trees
- define the governance structure and processes for a decendent SDEF
- setup an aerospace descendant registrar (as part of an existing aerospace industry acknowledged organisation)
- define and implement the interfaces between that organisation and the Open Group as owner of the global UDEF
- define and implement principles to assign extension proposals to either the global UDEF or to the aerospace descendant SDEF
- to provide proof of concept for registry switching during semantic conflict resolution
- to make this all sufficiently generic to be also applicable for other industry specific descendant SDEFs, eg for the medical domain
- to do all of the above for a private descendant PDEF
- to establish principles for defining UDEF extensions as either global, industry specific or private.



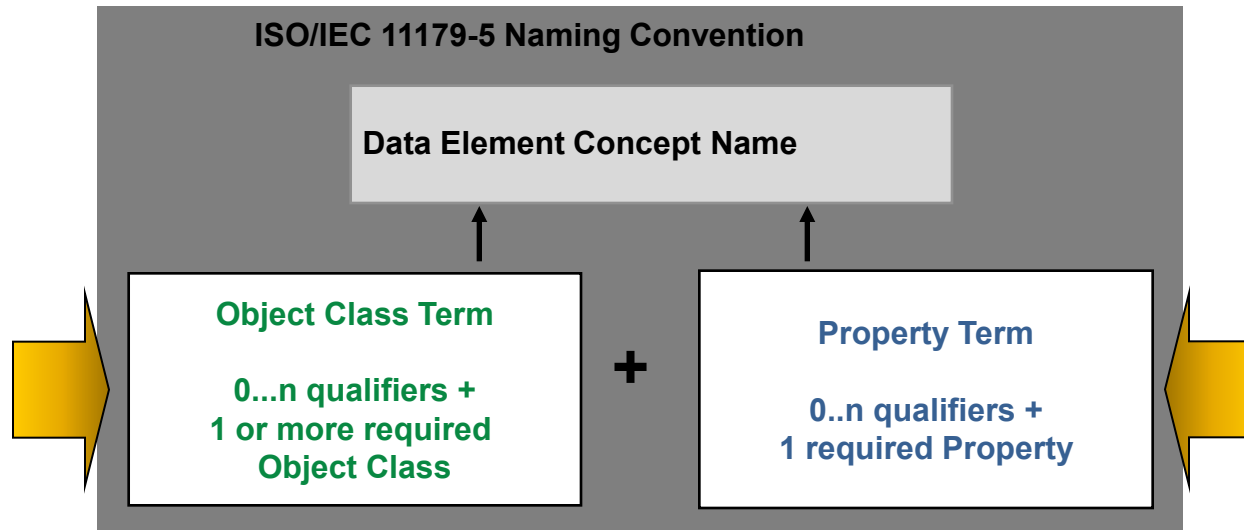
- You can still join the workgroup about registry switching at <https://www.opengroup.org/projects/udf/protected/maillinglists.tpl?CALLER=index.tpl>
- This week we will jointly:
 - Review the work of the past 2 years
 - Define the way forward
- Join the Semantic Interoperability Members Meeting on Thursday !



- ✓ UDEF version 1 is established as a standard in 2006 (originally 1030 Objects, 983 Properties)
- ✓ Multilingual support added as of 2008 (version 1.1); now available in English, Dutch and French, more languages planned
- ✓ Several vocabulary extensions (current version 1.22 has 1254 Objects, 1277 Properties), more extensions planned
- ✓ First tools are coming to market
- ✓ Industry and Enterprise vocabularies as next upgrade

UDEF Object Class List

- Entity
- Document
- Enterprise
- Place
- Program
- Product
- Process
- Person
- Asset
- Law-Rule
- Environment
- Condition
- Liability
- Animal
- Plant
- Substance
- Event



Property List

- Amount
- Code
- Date
- Date Time
- Graphic
- Identifier
- Indicator
- Measure
- Name
- Percent
- Picture
- Quantity
- Rate
- Text
- Time
- Value
- Sound
- Video

Example UDEF-Based Data Element Concept Names

Document Abstract Text

Enterprise Name

Product Price Amount

Product Scheduled Delivery Date

Engineering Design Process Cost Amount

Patient Person Family Name

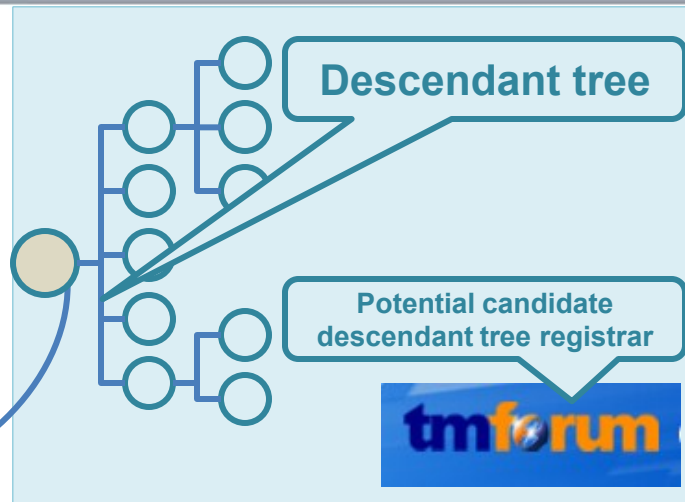
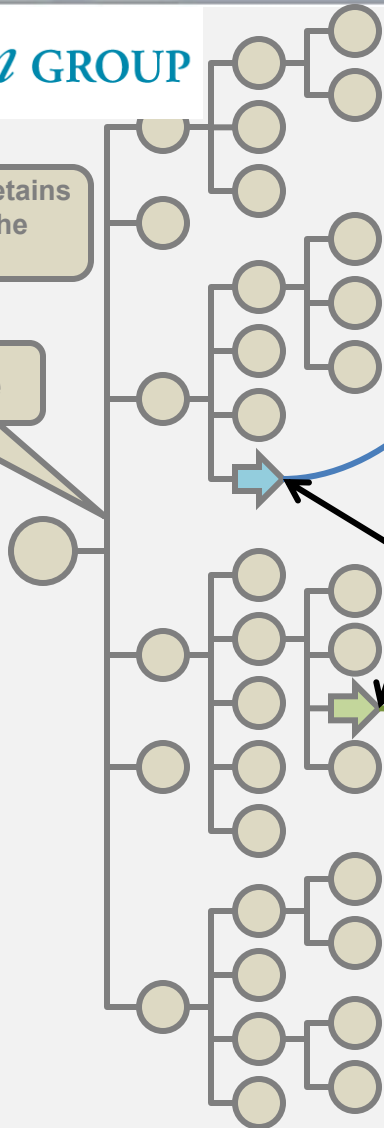
Patient Blood Body Substance Glucose Concentration Measure

UDEF names follow the rules of the natural language -- each language has its own syntax rules

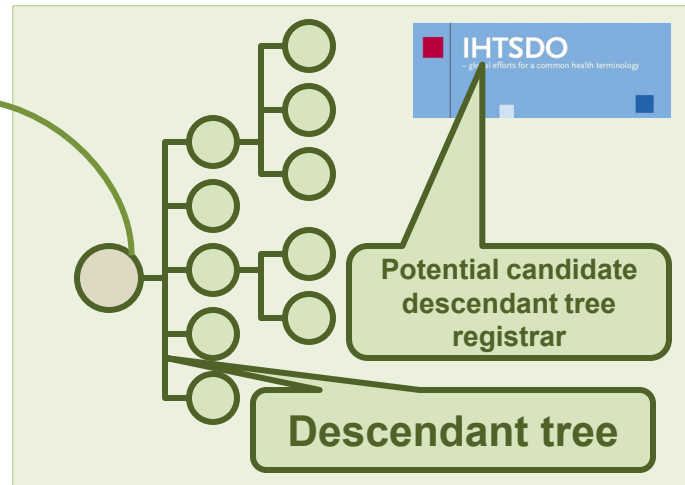
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The Open Group retains responsibility for the root UDEF trees

UDEF-tree



connectors



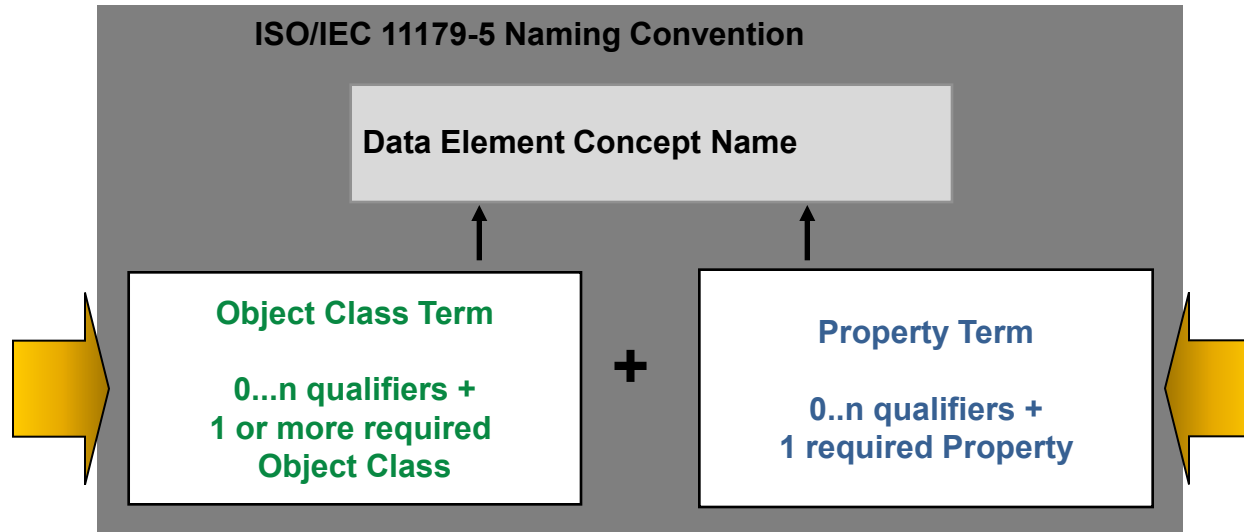
- Connectors represent root of descendant tree in parent tree
- Root concept in descendant tree matches extension position in parent tree
- Root of descendant tree and connector in parent tree are aliases whenever the context of the parent tree applies
- Descendant tree registrar has received accreditation by parent registrar
- Concept domain of descendant tree agreed with parent registrar
- Parent registrar defines roots of descendant trees; descendant registrars define branches in their trees

UDEF Object Class List

- Entity
- Document
- Enterprise
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Property List

- Amount
- Code
- Date
- Date Time
- Graphic
- Identifier
- Indicator
- Measure
- Name
- Percent
- Picture
- Quantity
- Rate
- Text
- Time
- Value
- Sound
- Video



Public Domain / Knowledge domain specific

<p>SDEF object class list Aerospace</p> <ul style="list-style-type: none"> ○ Aircraft ○ Spacecraft ○ Airport-equipment ○ Aviation supplies ○ etc tbd 	<p>SDEF object class list Medical</p> <ul style="list-style-type: none"> ○ Medical equipment ○ Medical Supplies ○ Observations ○ Medical conditions ○ Etc tbd 	<p>SDEF object class list xxx</p> <ul style="list-style-type: none"> ○ ... ○ ... ○ ...
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Enterprise specific

<p>PDEF object class list Capgemini</p> <ul style="list-style-type: none"> ○ Employee ○ Skill ○ Portfolio ○ ... ○ Etc tbd 	<p>PDEF property list Capgemini</p> <ul style="list-style-type: none"> ○ KPI ○ ... ○ ... ○ Etc tbd
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Public Domain / Knowledge domain specific

<p>SDEF property list Aerospace</p> <ul style="list-style-type: none"> ○ In flight supplies ○ ... ○ Etc tbd 	<p>SDEF property list Medical</p> <ul style="list-style-type: none"> ○ Treatment response ○ ... ○ Etc tbd 	<p>SDEF property list xxx</p> <ul style="list-style-type: none"> ○ ... ○ ... ○ ...
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Aerospace example

- B777-200.Commercial.Aircraft_Scheduled.On-Arrival.Landing.Weight.Measure
- A380-Compliant.Docking-Position_Departure-Gate.Identifier



Mining example

- Natural-Gas.Offshore.Well_Production.Performance.Measure
- Yellow-Cake.Mining-Product_Radiation-Level.Measure



Healthcare example

- Blood-Pressure-Monitor.Measuring.Medical-Equipment_Systolic.Blood-Pressure.Measure
- Limbal.Stem-Cell.Disorder_Clinical-Finding



Energy example

- Geothermal.Energy.Production.Plant_Operation.License.Expiration.Date
- High-Voltage.Powerline_Length.Measure



Telecommunications example

- Option.Bundled.Offering.Product_Activity.Indicator
- 3G.Radio-Coverage_Density.Measure

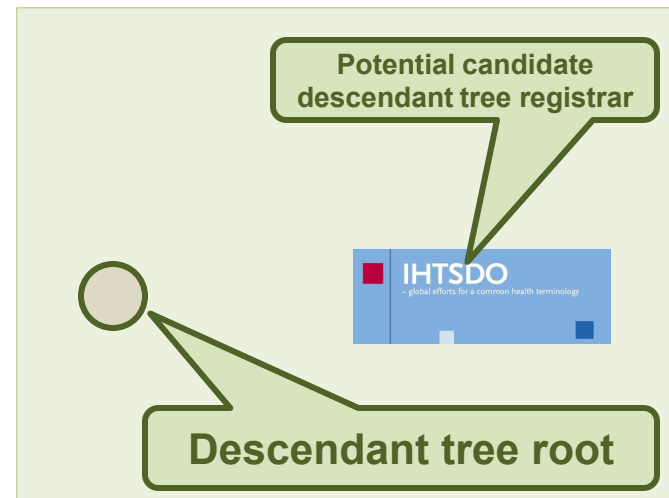
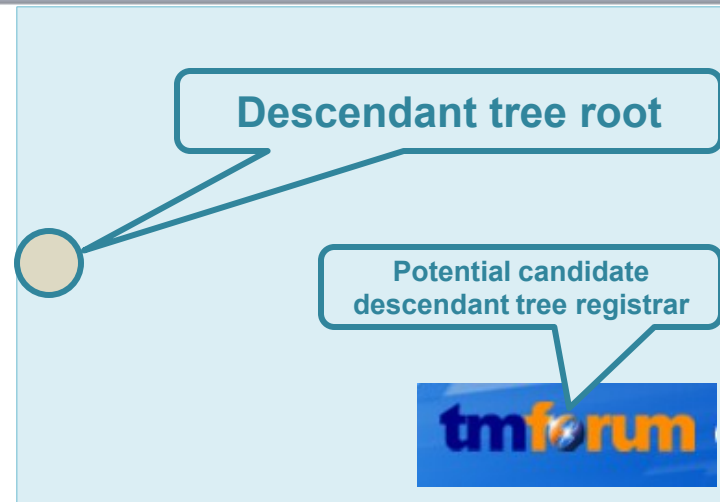
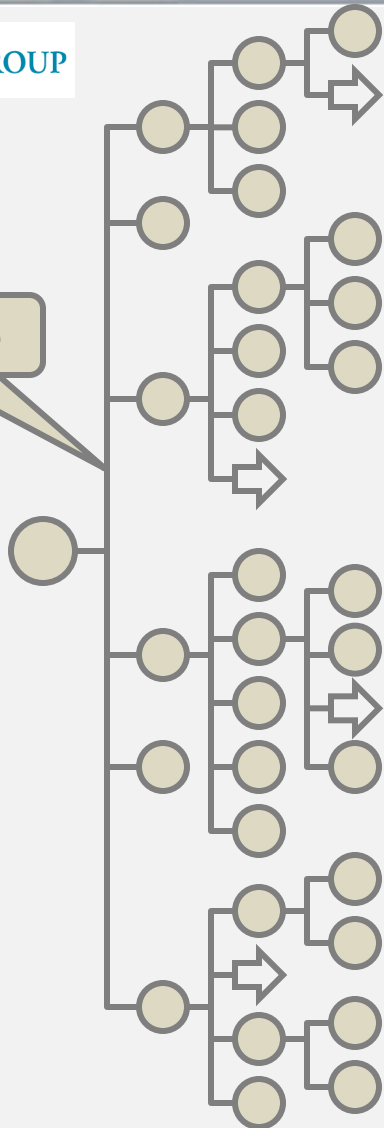


Disaster response example

- Emergency.Hospital-Service_Nearest.X-Ray.Distance.Length.Measure
- Earthquake.Event_Ground-Zero.Longitude.Measure

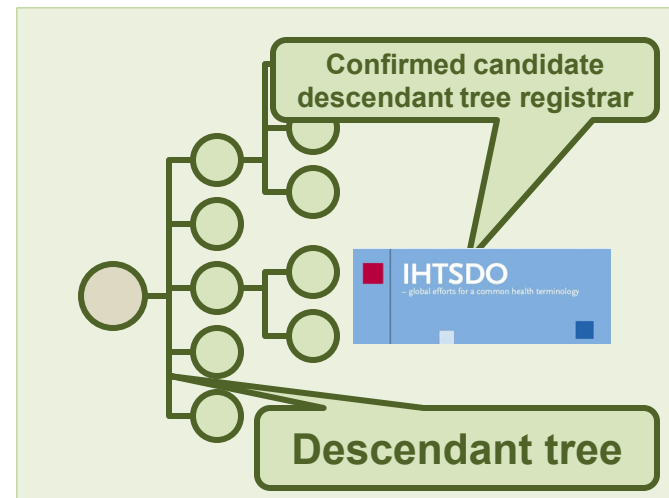
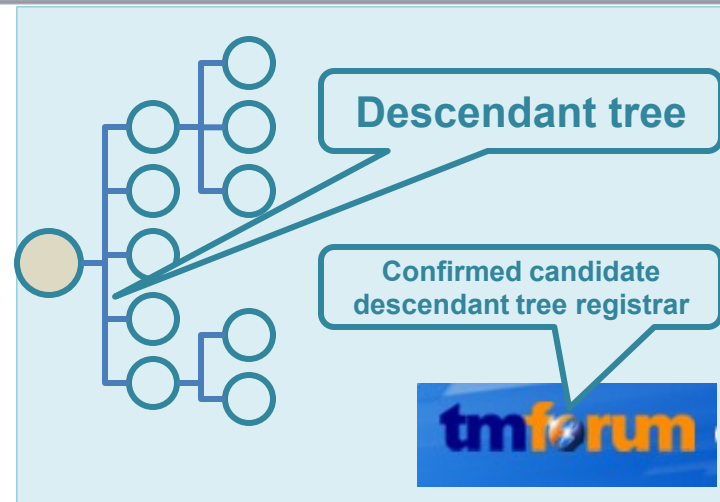
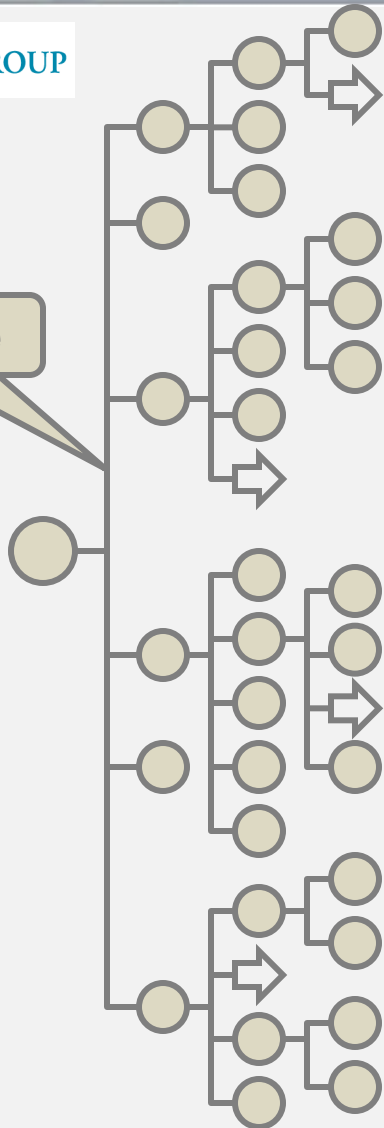
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UDEF-tree

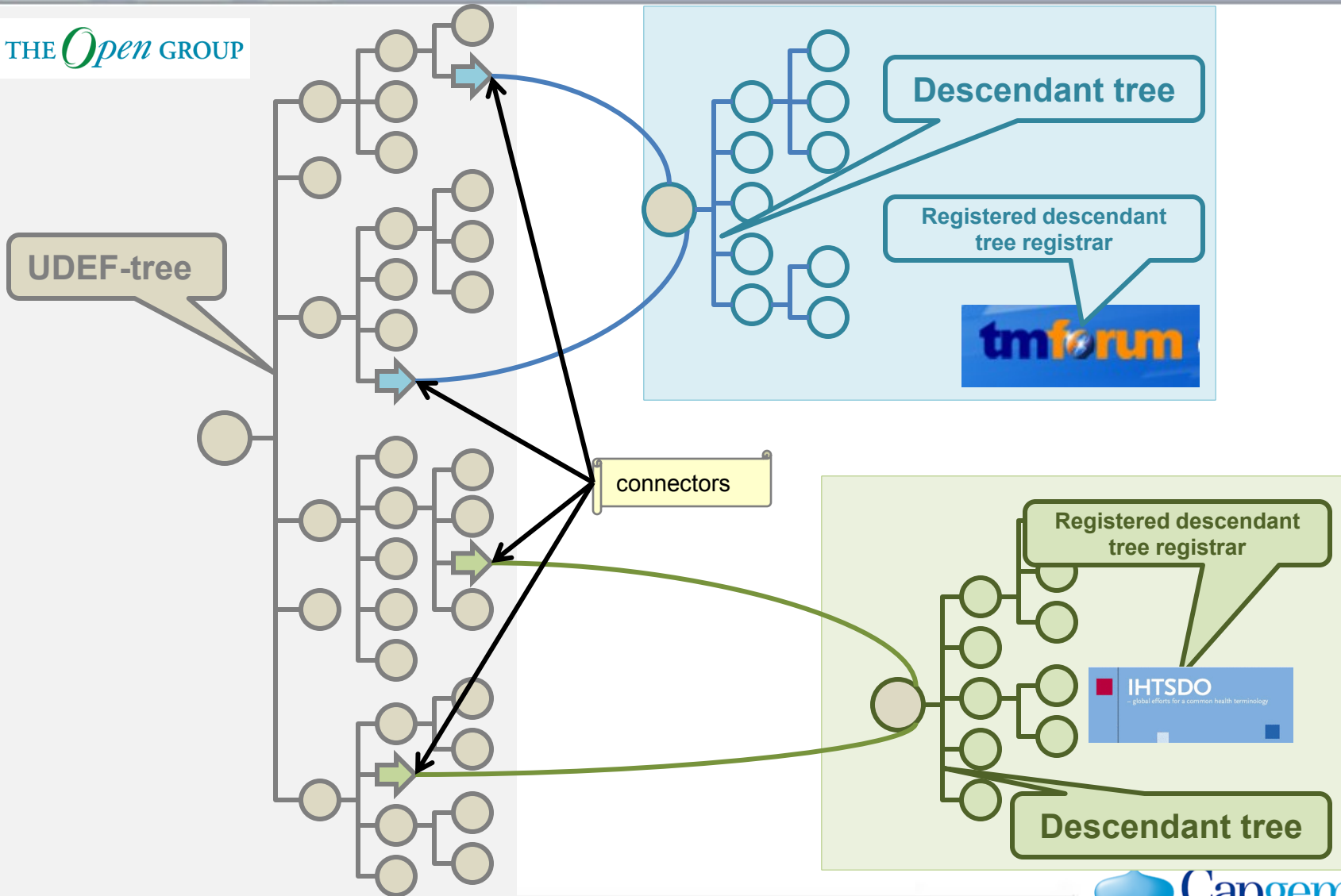


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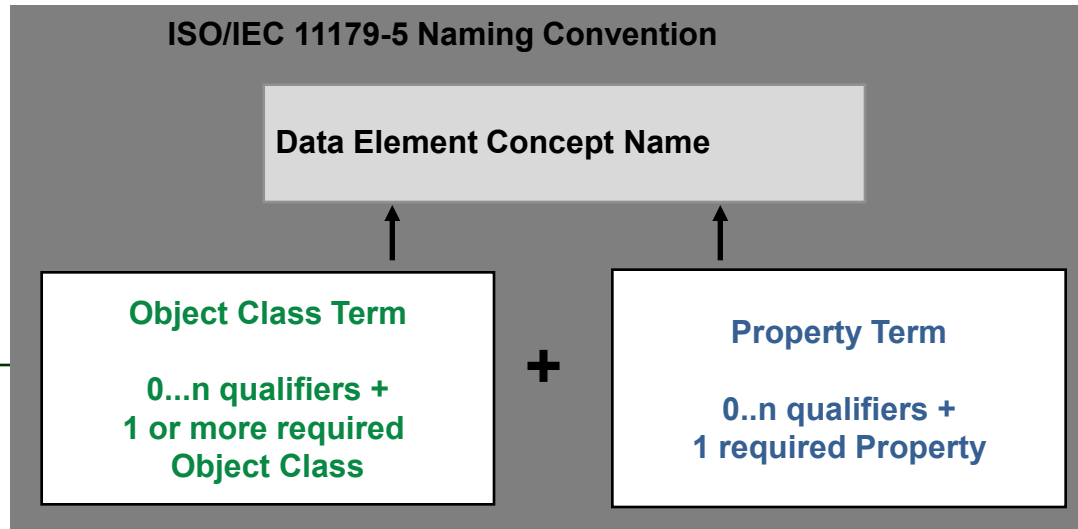
UDEF-tree



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Combine any object tree with any property tree



Multiple trees collaborate in a single governance framework

- UDEF object
- SDEF object
- PDEF object
- SDEF-extended UDEF object
- PDEF-extended UDEF object
- PDEF-extended SDEF object

- UDEF property
- SDEF property
- PDEF property
- SDEF-extended UDEF property
- PDEF-extended UDEF property
- PDEF-extended SDEF property

Registry switching allows to combine different vocabularies on the fly, even within a data element concept

- UDEF object + SDEF property
- UDEF object + PDEF property
- SDEF object + PDEF property
- SDEF object + SDEF property

- SDEF object + UDEF property
- PDEF object + UDEF property
- PDEF object + SDEF property
- PDEF object + PDEF property

Candidate SDEF domains (preliminary)

- Aerospace. This knowledge domain includes civil and military aviation, aviation industry and astrophysics.
- Medical. This knowledge domain will include both medical industry and proper healthcare, include veterinary health care
- Energy and Utilities (including nuclear industry and power conversion)
- Telecom, Internet and Media (including broadcasting, publishing and entertainment industry)
- Oil and Mining. This knowledge domain includes geology, gas, offshore drilling, chemical and heavy industry
- ICT (programming, business analysis, architecture methods, testing)
- Engineering and construction
- Travel & Transport (including lodging, tourist industry and entertainment
- Social security and taxes
- Education, science and literature (including mathematics, physics and arts)
- Finance. This knowledge domain includes banking (both private banking and investment banking), insurance, monetary services and global economics
- Automotive, travel and transport (including parts industry)
- Manufacturing (including fashion) and high tech industry
- Nautical (both commercial and naval)
- Retail, logistics and distribution (including postal services)
- Tax, social security, customs
- Legal, police, civil security
- Local government, housing, geo planning, surface waters
- Meteo (climate, geology (overlaps with oil & gaz)
- Agriculture, (marine) biology
- Entertainment, tourism, exhibitions, mass events

- ❖ Enterprises in one are of business are likely to share a knowledge domain specific set of additional Data Element Concepts, that is rarely used outside that knowledge domain
- ❖ Enterprises in a specific knowledge domain have a need to interoperate and exchange data on topics that are specific to their knowledge domain
- ❖ Enterprises in the knowledge domain already have identified the need for a common standards organization. This organization already has or is likely to consider an information reference model in scope of their activities
- ❖ Enterprises in the knowledge domain also have interoperability requirements with enterprises outside their knowledge domain
- ❖ Enterprises in the knowledge domain have noticed that other enterprises do not implement their standards, moreover, the “external” standards are relatively useless in the knowledge ICT domain of this enterprise
- ❖ Enterprises typically have their legacy systems, often in native language that has to interoperate with package software

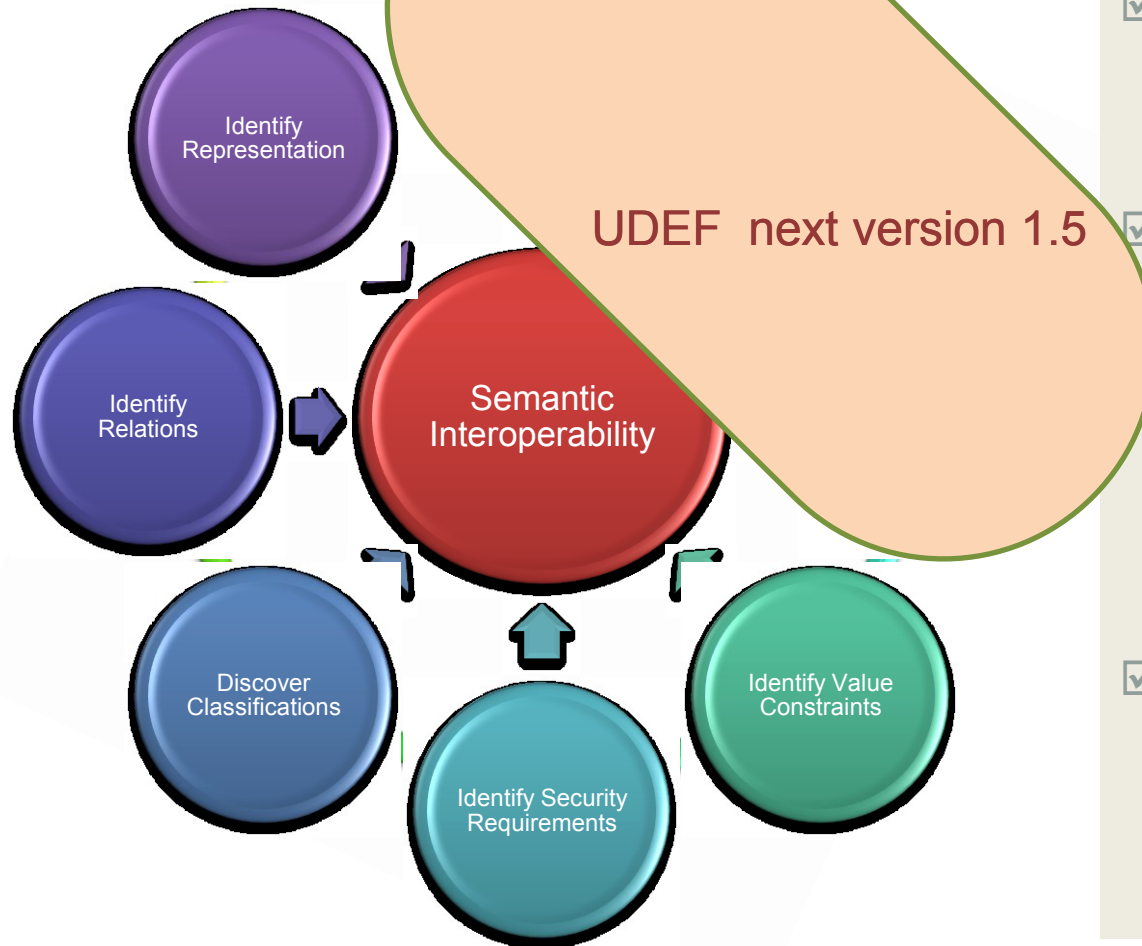


DSS-P.Employee
 CSS.Employee
 DSS-A.Employee
 Architect.Employee
 Certified.Architect.Employee
 Engagement-Manager.Employee
 Programmer.Employee
 Young-Professional.Employee

Drilling-Engineer.Employee
 Geology-Engineer.Employee
 Relocated.Employee
 Nigeria.Relocated.Employee
 Alaska.Relocated.Employee
 Refinery-Maintenance.Employee

Nurse.Employee
 Clinical-Secretary.Employee
 Surgeon.Employee
 Cardiac.Surgeon.Employee
 Orthopedic.Surgeon.Employee
 Technical-Staff.Employee

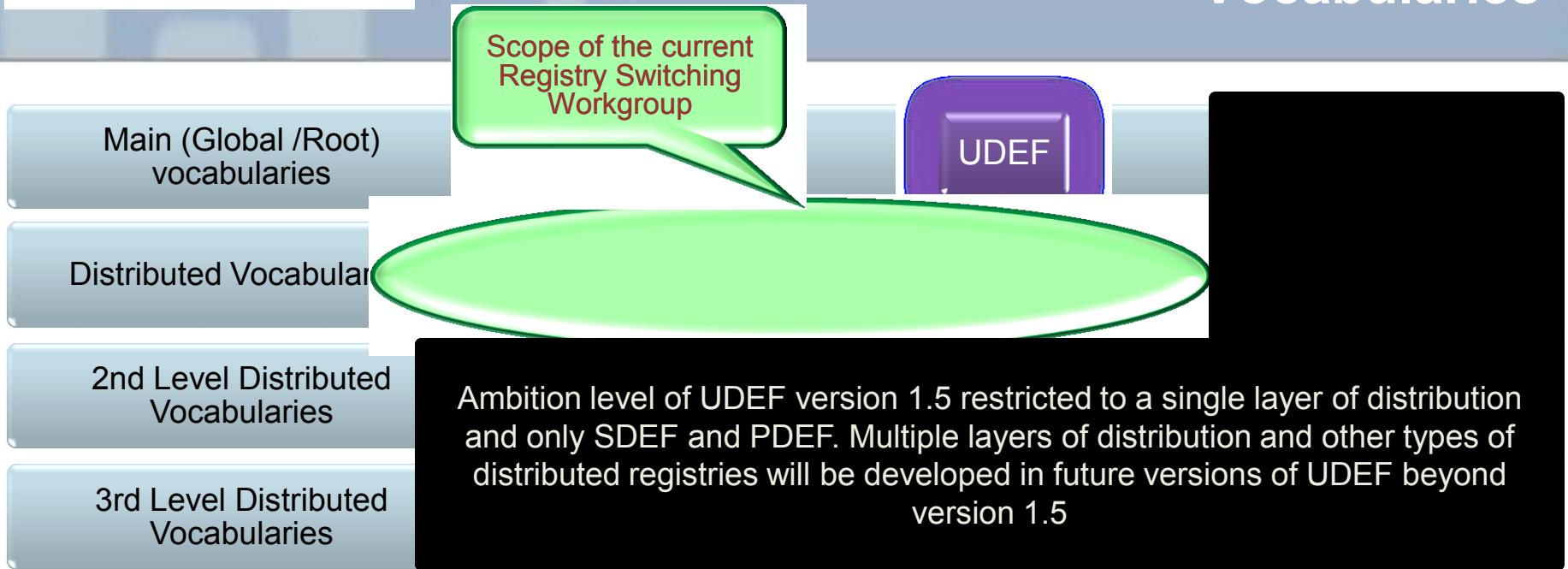
Group-Leader.Employee
 Sales.BSS.Employee
 Wholesale.Sales.BSS.Employee
 Retail.Sales.BSS.Employee
 Radio-Coverage.Monitoring.OSS.Employee



- ✓ Registry Switching workgroup addresses working with multiple vocabularies
- ✓ Distributed vocabularies are organised in a tree, with UDEF as root.
- ✓ Existing vocabularies may be imported into a DDEF; adding DDEF tags to the elements of the vocabulary doesn't restrict its capability
- ✓ Develop strategies to import existing vocabularies with maximum reuse of efforts expended by other bodies

- Not the same data element concepts in different trees
- Not a replication of what already is in UDEF
- Not an unlimited freedom to use some of the UDEF principles with a different flavour of your own choice
- Not (yet) a complete and ultimate solution for universal semantic interoperability

- Many more data element concepts not modeled in UDEF today or in future
- The possibility to define data element concepts in some other context than a generic enterprise
- Full integration of UDEF / DDEF definitions in an integrated semantic environment
- A major step forward to overcome the hurdles of universal semantic interoperability

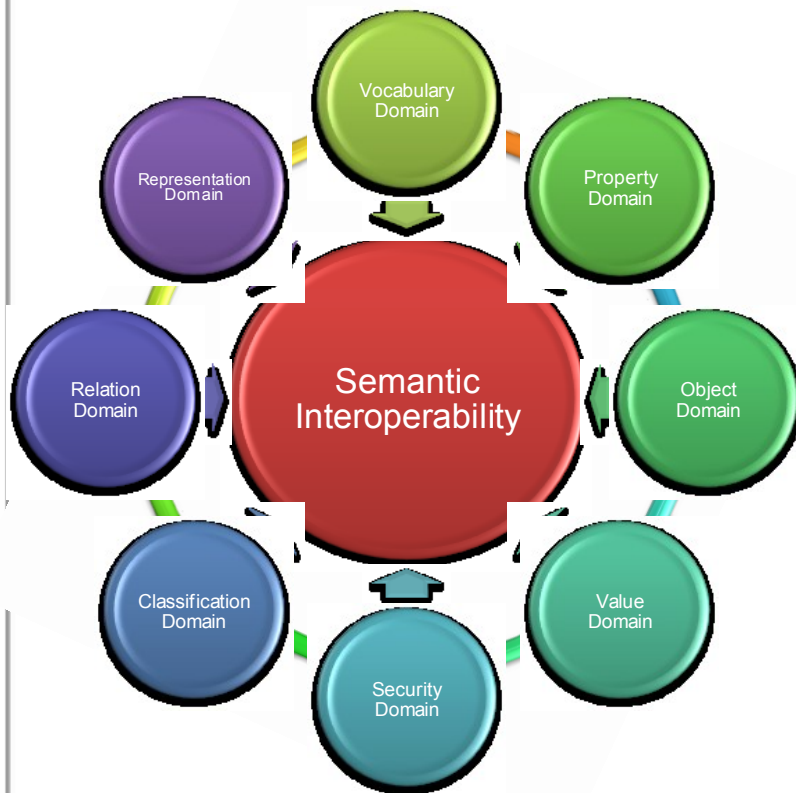


- **Types of distributed vocabularies:**

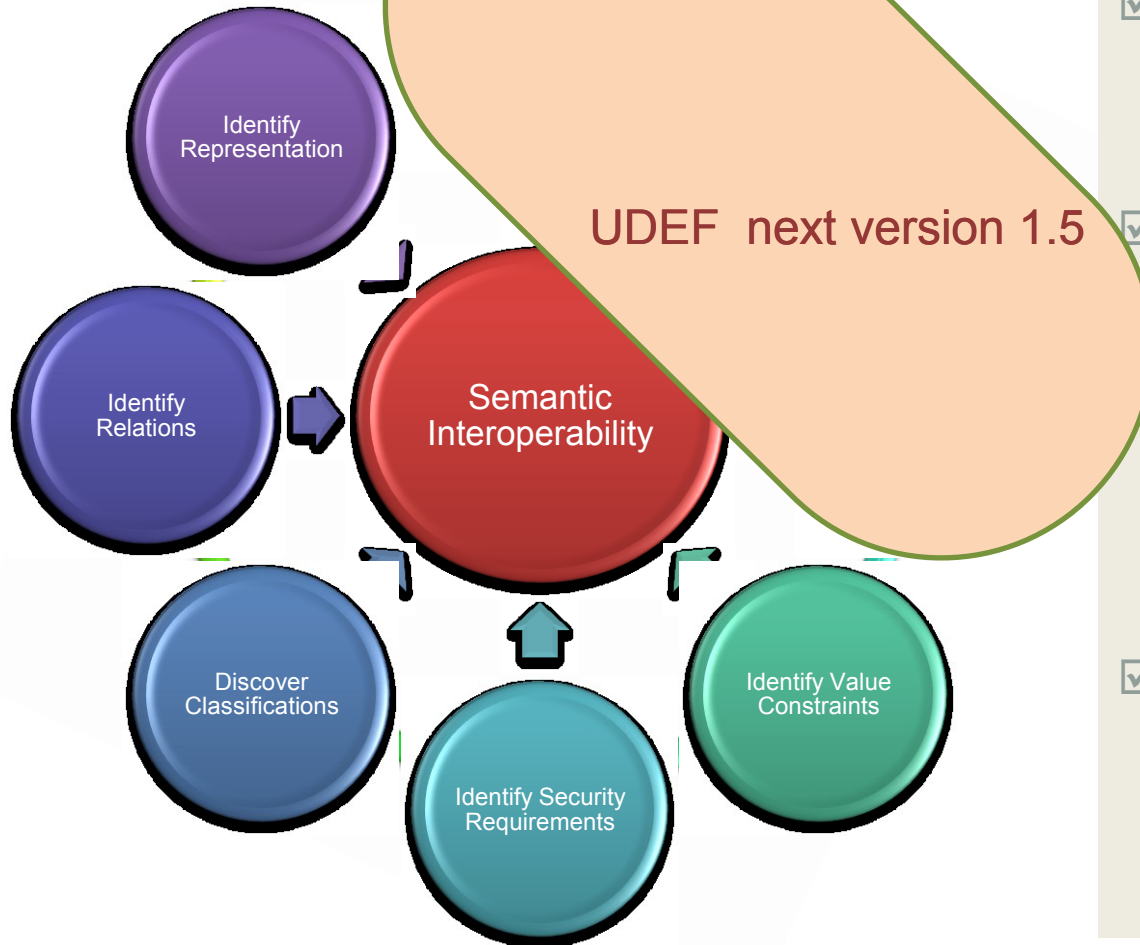
- SDEF – Satellite Data Element Framework: Public vocabularies for a specific knowledge domain, managed by an neutral authority in that branch of industry
- PDEF – Private Data Element Framework: Private vocabularies for a specific enterprise domain, managed privately by each UDEF certified enterprise
- LDEF – Language-specific Data Element Framework: Public vocabularies for a specific language, managed by a lexicographic authority for that language (group of languages)
- XDEF – Cryptographically-concealed Data Element Framework: Vocabularies for secure semantics managed by a UDEF certified trusted 3rd party
- MDEF – Merged Enterprise Private Data Element Framework: Vocabularies for post merger integration of UDEF certified enterprises

- Basic Principles for Distributed UDEF
 - [wiki: basic concepts of registry switching](#)
- Governance Principles for distributed UDEF
 - [Wiki:governance principles](#)
- Naming conventions for DDEF trees
 - SDEF: s000-s999 / UDEF-S
 - ~~PDEF: p000-p999 / UDEF-P~~
- Prioritize TDEF (temporary extension) to PDEF priority
- Extend **every** (rather than any) branch of UDEF with a PDEF connector
- Consider renaming PDEF (private) to EDEF (enterprise)
- Requirements for SDEF registries and registrars
 - Certification
 - Role and position
 -

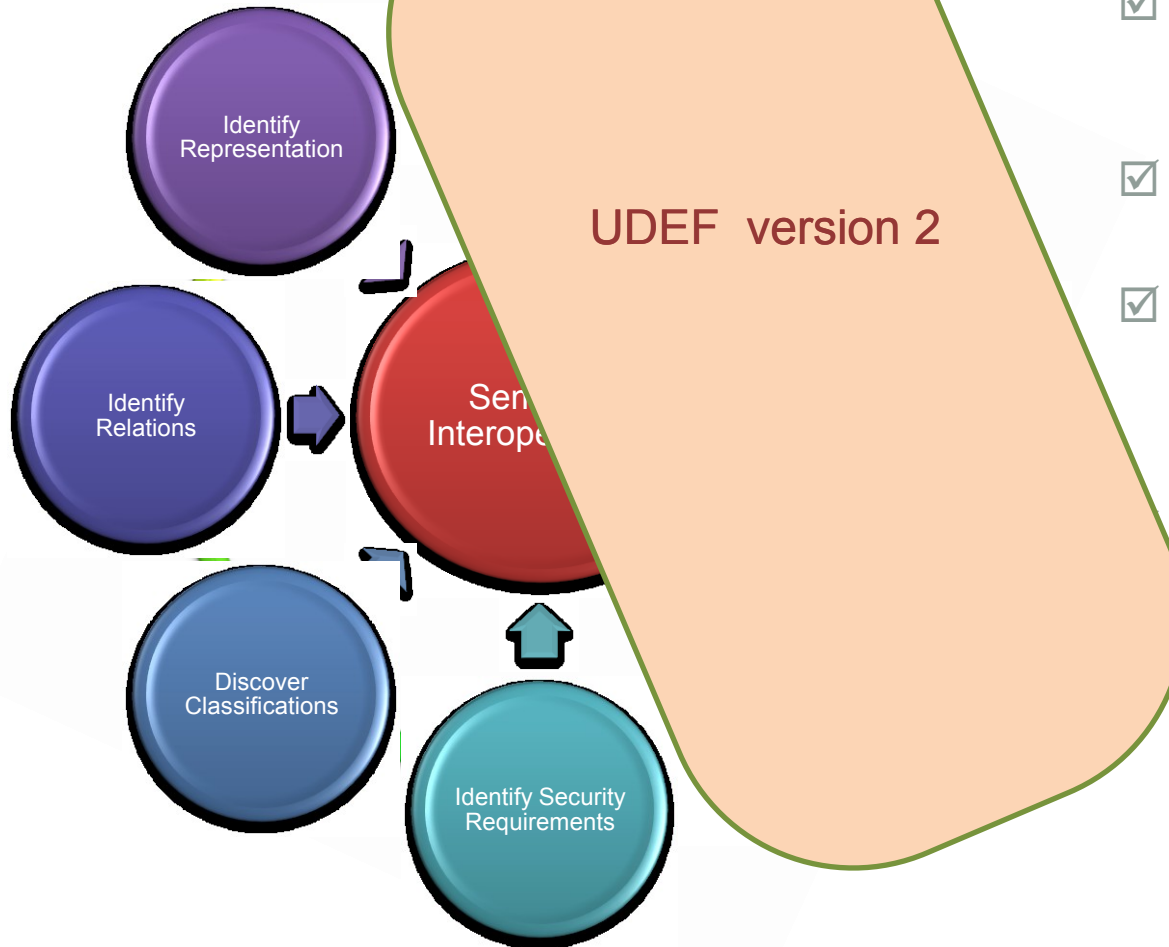
<i>Conflict type</i>	<i>Description / example</i>
Data Value conflicts	In order for values to be comparable and/or to derive summary or aggregate data from it, they must share metadata about how they were determined; e.g. blood glucose levels obtained by the same procedure; engine power measured under the same conditions; chemical process yields at the same temperature and pressure, etc
Data Precision conflicts	The mass of a vehicle in one system may be defined in multiples of 100 kg, whereas another system stores more precise weights in units of kg, or employ different rounding rules. Another example is the calculation of a supply of spare parts: does it include the parts that left the warehouse but are still in possession of service technicians that may or may not ever use these, or is this unspecified
Spatial Domain conflicts	Data defined in one system has implications which are dissimilar from and potentially incompatible with corresponding data in another system. In Afghanistan, a Dutch helicopter send out to rescue a Canadian platoon had 7 seats and found out that a Canadian platoon were 8 soldiers. In Spain, part of the identification of people is derived from referral to the identification data of his parents, whereas in Germany privacy protection prohibits links from children to parents (links from parents to children are allowed)
Labeling conflicts	Both homonyms (different concepts described by the same word depending on context), and synonyms (multiple alternative words describing the same concept) belong to this category
Confounding conflicts	Data defined in a way that makes their actual meaning dependant on the content (value) of other data: the meaning of “today’s weather” depends on some temporal and geographical data stored or assumed elsewhere. Similarly the “first appointment” of the day in a diary changes meaning when a new appointment is scheduled on an earlier hour. “My wife” changes meaning when referred to by “You”.
Schema isomorphism conflicts	Schema-isomorphism conflicts occur when the same concept (entity class) is described by a dissimilar set of attributes, that is: the same concept is represented by a number of different attributes and, therefore, the sets of entities are not setoperation-compatible
Integrity conflicts	Data, correctly and legitimately stored in one system as occurrences of a concept, violate integrity constraints enforced by other systems that hold and exchange data on the same concepts. E.g. marital status that in on system implies married or previously married people to be of opposite gender, whereas other systems are compatible with concepts of gender change and gay marriage.
Generalisation conflicts	Data defined in one system may be a subset or superset of the data defined in another system; the system defining the subset may hold mandatory attributes that are invalid for some occurrences of the superset system.
Aggregation conflicts	Data stored in one system are defined such that collective (aggregate) data in another system cannot be derived (and vice versa) . For example: a group of children is classified in one system by age groups, whereas another system, that doesn’t have access to age data classifies the same group of children by their school advance levels, which cannot be accessed by the first system



	Vocabularies	Properties	Objects	Values	Security	Classification	Relations	Representation
Labeling	X	X	X		X			
Data Value		X	X	X	X			
Data Precision		X		X				X
Spatial Domain	X	X		X	X		X	
Confounding		X	X	X			X	
Schema Isomorphism	X		X			X	X	X
Integrity		X		X	X		X	
Generalisation			X	X		X		
Aggregation	X	X	X			X		



- ✓ Registry Switching workgroup addresses working with multiple vocabularies
- ✓ Distributed vocabularies are organised in a tree, with UDEF as root.
- ✓ Existing vocabularies may be imported into a DDEF; adding DDEF tags to the elements of the vocabulary doesn't restrict its capability
- ✓ Develop strategies to import existing vocabularies with maximum reuse of efforts expended by other bodies



- ☑ Expand the scope of UDEF to include value semantics on individual Data Elements
- ☑ Address Data Base normalization issues
- ☑ Address Data Value conflicts, Data Precision conflicts and Confounding conflicts

Some cleanup of UDEF v 1.x trees may be proposed

Will be fully backwards compatible with UDEF v 1.x as a minimum requirement



UDEF version 2.5

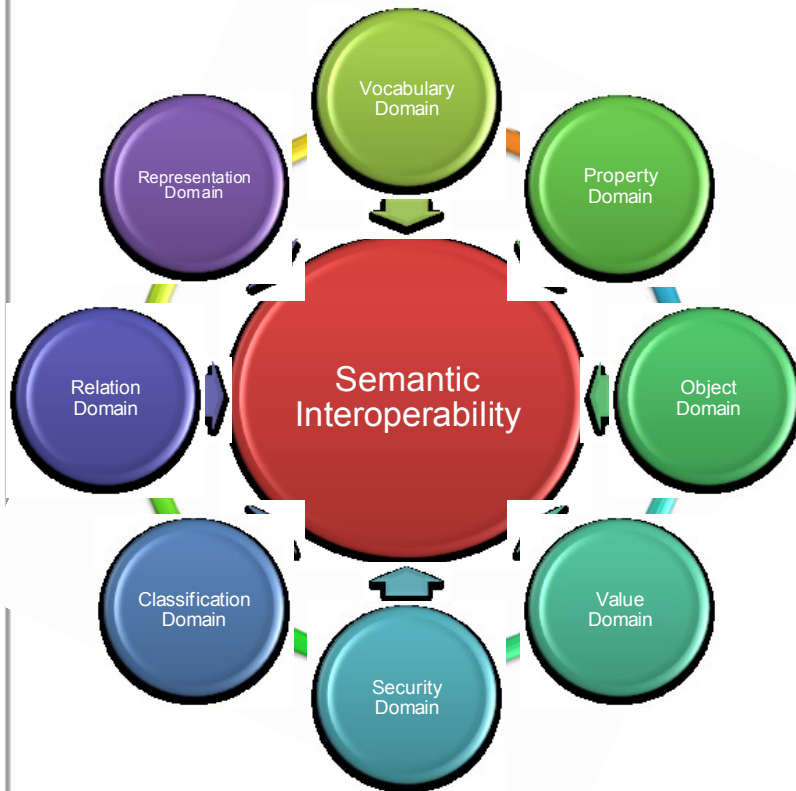
- ☑ Extend the UDEF trees and the governance processes to support secure semantics
- ☑ Extend the UDEF trees and the governance processes to apply semantic interoperability on secure data
- ☑ Develop security processes around UDEF together with Security Forum / Jericho Forum

UDEF version 3

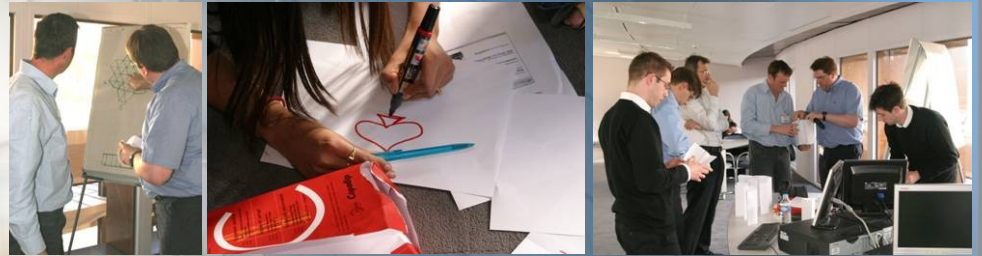
- ☑ Add support for classification and relation semantics
- ☑ Add support for controlled representation
- ☑ Add business rules to steer missing semantic data
- ☑ Provide a wholistic solution for unrestricted semantic interoperability
- ☑ Develop the Semantic Gateway together with SOA workgroup

UDEF version 3.5

- ☑ Add support for universal context
- ☑ Add support for controlled representation
- ☑ Add business rules to steer missing semantic data
- ☑ Provide a wholistic solution for unrestricted semantic interoperability
- ☑ Develop the Semantic Gateway together with SOA workgroup



	Vocabularies	Properties	Objects	Values	Security	Classification	Relations	Representation
Labeling								
Data Value								
Data Precision								
Spatial Domain								
Confounding								
Schema Isomorphism								
Integrity								
Generalisation								
Aggregation								



Back-up slides

 **Capgemini**
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In collaboration with
THE *Open* GROUP

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. <i>Is UDEF an ontology?</i> 2. <i>Is “my concept” already in UDEF?</i> 3. <i>Can UDEF handle unstructured data?</i> 4. <i>Can I use UDEF for my own data?</i> 5. <i>How can I map concepts in different language than English on UDEF?</i> 6. <i>In what languages is UDEF available?</i> 7. <i>Are UDEF versions in different languages mutually compatible?</i> 8. <i>Can I create a new language version for UDEF?</i> 9. <i>How can I choose between different branches in a tree or even between trees?</i> 10. <i>Is UDEF a licensed product?</i> | <ol style="list-style-type: none"> 1. No, but you can add UDEF-ids to all elements of any ontology; this facilitates cross-mapping between different ontologies 2. UDEF currently covers about 1.5 Million data element concepts, and is infinitely extensible. If your data is not yet covered, you can submit an extension proposal 3. Currently UDEF is restricted to structured data, but a future version of UDEF is envisioned that also can support unstructured data 4. Of course. Next version of UDEF will support knowledge domain and enterprise specific object and property trees in addition to the trees already supported, and all of them are extensible 5. You can use a UDEF version in the language of your data element concepts 6. Currently versions In English, Dutch and French have been published. Other languages are being developed, among them: German, Spanish, Chinese, Southafrican 7. Absolutely, meaning is attached to the UDEF-tag. The language trees are just representations of the meaning 8. You are welcome; the Open Group will support you with the processes to develop a new language version 9. In order to learn how to work with UDEF, it is recommended to take a half day course? 10. No! UDEF is a freely available public standard. Anyone can use it for any purpose |
|---|---|

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|---|---|
| <p>11. <i>Is UDEF dependent on other standards?</i></p> | <p>11. UDEF is an implementation of parts of ISO 11179</p> |
| <p>12. <i>What is the relation between UDEF and RDF?</i></p> | <p>12. RDF (Resource Description Framework) is a language with which semantic concepts can be expressed. UDEF is available in RDF. In RDF terminology: each node of a UDEF tree can be expressed as a RDF-statement</p> |
| <p>13. <i>What is the difference between UDEF and OWL?</i></p> | <p>13. OWL (Ontology Web Language) is a language in which data models can be expressed. UDEF enables to identify the meaning of each element of a Data Model.</p> |
| <p>14. <i>Can I use UDEF to create my Data Model?</i></p> | <p>14. No, but you can use UDEF to index the constituents of your datamodel. This facilitates the comparison of your data model, with data models created by other people</p> |
| <p>15. <i>What is the relation between UDEF and TOGAF?</i></p> | <p>15. Both UDEF and TOGAF are Open Group frameworks. TOGAF will define how you can use UDEF in an enterprise architecture. UDEF will define the meaning of all concepts in TOGAF, to make the use of TOGAF completely open to be combined with other architecture Frameworks</p> |
| <p>16. <i>How long has UDEF been in existence?</i></p> | <p>16. UDEF version 1.0 was launched in 2006. It has been in existence for a long time before 2006 but not available as a public standard</p> |
| <p>17. <i>What is the current version of UDEF?</i></p> | <p>17. UDEF version 1.22 is latest version currently . Further extensions are planned with version 1.23 which will probably be published in early 2011</p> |
| <p>18. <i>Can I use different versions of UDEF in different systems?</i></p> | <p>18. Yes! All versions of UDEF are and will be compatible; the capabilities in such case are restricted to the capabilities of the lower version number</p> |
| <p>19. <i>How can I upgrade UDEF to a newer version?</i></p> | <p>19. Download the latest version of UDEF into the same folder as the earlier version. Overwrite the older version. That is all.</p> |
| <p>20. <i>What is the Data Model of UDEF?</i></p> | <p>20. None. UDEF is just collection of words that are organized in trees. No data model is implied or excluded</p> |