

USDL Variant Management

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Agenda

1. Problem

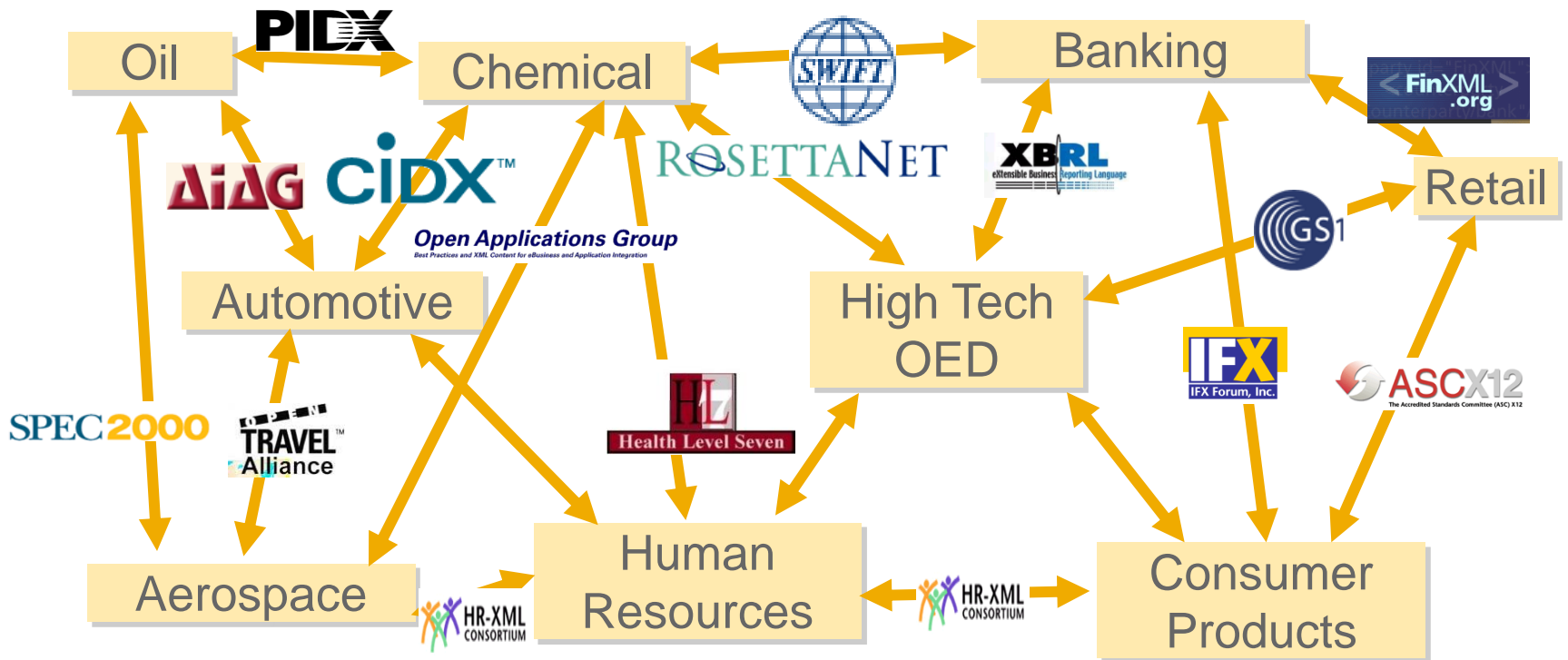
2. Solution

1. Grammar : UN/CEFACT Core Component Technical Specification (CCTS)
2. Context Logic : UN/CEFACT Unified Context Methodology Technical Specification
3. Tooling : Integration Knowledge Library
4. Processes

3. Demo Scenario

4. Decision

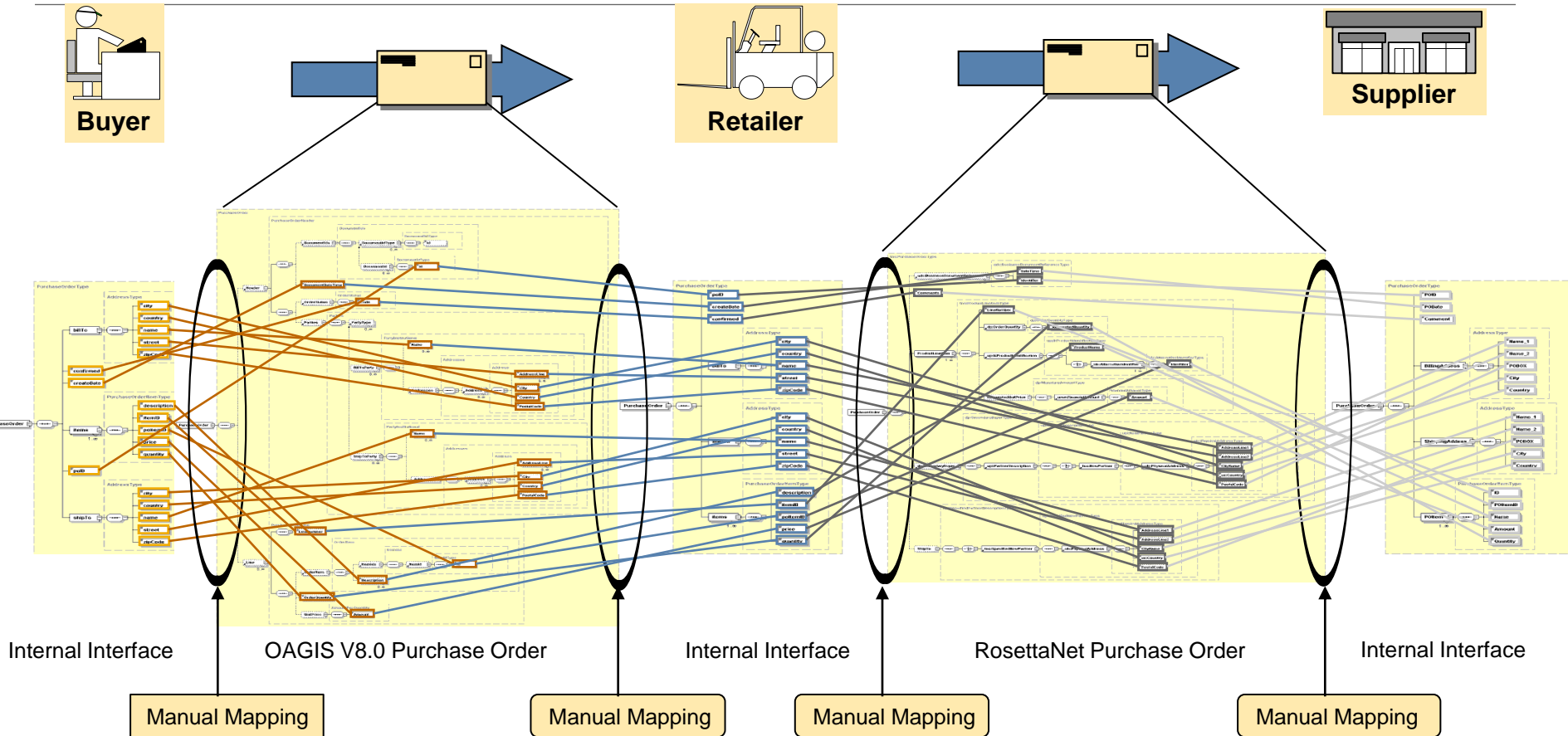
Problem – Proliferation of B2B standards



Why?

- Too many semantic interpretations, terminologies of same business information
- > 60% of the represented information in these competing standards are similar,
- but they have different names and structures
- Achieving interoperability requires cost intensive mapping

Problem – Cost & Time Intensive Mappings



We argue that a similar proliferation will happen with USDL variants for specific industries, countries, etc.

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1. UN/CEFACT CCTS as canonical grammar to describe business documents

Object Classes = ABIE
(Aggregate Business Information Entity)

Attributes = BBIE (Basic Business Information Entity)

Associations = ASBIE (Association Business Information Entity)



Context			<<ABIE>>						
Ind	RoI	Co	Purchase Order				Details		
			Type	OCQ	OCT	PQ	PT	RT	Oc.
*	*	*	<<BBIE>>	Purchase Order	Identification	Identifier			[1..1]
*	*	*	<<BBIE>>	Purchase Order	Creation	Date Time			[0..1]
*	Ret	*	<<BBIE>>	Purchase Order	Confirmation	Indicator			[0..1]
*	*	*	<<ASBIE>>	Purchase Order	Bill To	Party			[1..1]
*	*	*	<<ASBIE>>	Purchase Order	Deliver To	Party			[1..1]
Cos	*	*	<<ASBIE>>	Purchase Order	Cosmetic Supply	Item			[1..n]

Context			<<ABIE>>						
Ind	RoI	Co	Party				Details		
			Type	OCQ	OCT	PQ	PT	RT	Oc.
*	*	*	<<BBIE>>	Party	Identification	Identifier			[1..1]
*	*	*	<<BBIE>>	Party	Organization	Name			[0..1]
*	*	*	<<ASBIE>>	Party	Physical	Address			[1..1]

Context			<<ABIE>>						
Ind	RoI	Co	Cosmetic_Supplies_				Item		
			Type	OCQ	OCT	PQ	PT	RT	Oc.
*	*	*	<<BBIE>>	Cosmetic Supply	Item	Identification	Identifier		[1..1]
Cos	*	*	<<BBIE>>	Cosmetic Supply	Item	Inventory	Identifier		[0..1]
*	*	*	<<BBIE>>	Cosmetic Supply	Item	Product	Name		[1..1]
*	*	*	<<BBIE>>	Cosmetic Supply	Item	Price	Amount		[0..1]
*	*	*	<<BBIE>>	Cosmetic Supply	Item	Ordered	Quantity		[1..1]

Context			<<ABIE>>						
Ind	RoI	Co	Physical_				Address		
			Type	OCQ	OCT	PQ	PT	RT	Oc.
*	*	*	<<BBIE>>	Physical	Address		Street	Name	[1..1]
*	*	*	<<BBIE>>	Physical	Address		House	Number Text	[0..1]
*	*	*	<<BBIE>>	Physical	Address		City	Name	[1..1]
*	*	DE	<<BBIE>>	Physical	Address		Postal Code	Identifier	[1..1]
*	*	US	<<BBIE>>	Physical	Address		Zip Code	Identifier	[1..1]
*	*	*	<<BBIE>>	Physical	Address		Country	Code	[1..1]

2. UN/CEFACT Unified Context Methodology Technical Specification

Context			DEN	XSD	UML	SQL	Layout		
			<<ABIE>>  						
			Purchase Order				Details		
Ind	Rol	Co	Type	OCQ	OCT	PQ	PT	RT	Oc.
*	*	*	<<BBIE>>		<u>Purchase Order</u>		<u>Identification</u>	<u>Identifier</u>	[1..1]
*	*	*	<<BBIE>>		Purchase Order		Creation	<u>Date Time</u>	[0..1]
*	Ret	*	<<BBIE>>		Purchase Order		Confirmation	<u>Indicator</u>	[0..1]
Cos, Auto	*	*	<<ASBIE>>		Purchase Order		Bill To	<u>Party</u>	[1..1]
Cos	*	*	<<ASBIE>>		Purchase Order		Deliver To	<u>Party</u>	[1..1]
Auto	Man, Ret	*	<<ASBIE>>		Purchase Order		Manufacturer	<u>Party</u>	[1..1]
Auto	Tra, Ret	*	<<ASBIE>>		Purchase Order		Haulage	<u>Party</u>	[1..1]
Cos	*	*	<<ASBIE>>		Purchase Order	<u>Cosmetic</u>	<u>Supply</u>	<u>Item</u>	[1..n]
Auto	Ret	*	<<ASBIE>>		Purchase Order		<u>Replacement</u>	<u>Item</u>	[1..n]

Context categories

Possible context values in where unharmonized BIEs can be used.

UN/CEFACT Unified Context Methodology Technical Specification is **work in progress** and led by Oracle and SAP

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4. Decision

3. Tooling: Integration Knowledge Library

Key Features:

- *Common Repository* based on CCTS grammar for canonical representation
- *Collaborative Access and Modeling* of repository contents
- Ensures *Controlled Vocabulary* by CCTS and consideration of synonyms
- Implements *Context Logic* to deal with dimensions of variability
- *Evolutionary Optimization* of repository contents
- Offers *Semi-automatic Mapping* to facilitate integration with back-end systems

3. Tooling: Common Repository based on CCTS grammar

All entities are contextualized, stored and provided by a common repository

Common Repository

Overall structure

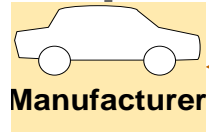
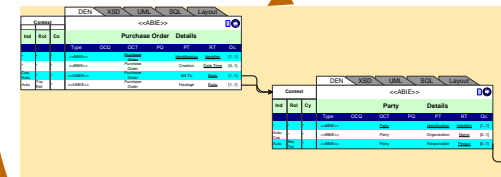
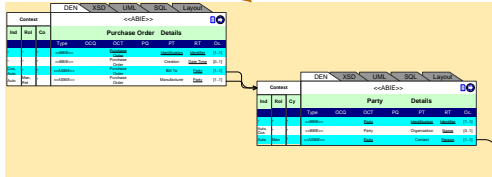
Every user can query a subset view, according his context

Context	Value
Industry	Automotive
Business Role	Manufacturer
Country	USA
Bus. Document	Purchase Order
User	Ford

Context		<<ABIE>>									
Ind	RoI	Co	Type	OCG	OCT	PO	PT	RT	Oc.		
*	*	*	<<BBIE>>	Purchase Order	Identification	Identif					(1..1)
*	*	*	<<BBIE>>	Purchase Order	Creation	Date Time					(0..1)
*	*	*	<<BBIE>>	Purchase Order	Confirmation	Indicator					(0..1)
Cos	Auto	*	<<ASBIE>>	Purchase Order	Bill To	Party					(1..1)
Auto	Man	Ret	<<ASBIE>>	Purchase Order	Manufacturer	Party					(1..1)
Auto	Man	Ret	<<ASBIE>>	Purchase Order	Manufacturer	Party					(1..1)
Cos	Auto	*	<<ASBIE>>	Purchase Order	Cosmetics	Supplier	Item				(1..n)
Auto	Ret	*	<<ASBIE>>	Purchase Order	Replacement	Item					(1..n)

Context		<<ABIE>>									
Ind	RoI	Cy	Type	OCG	OCT	PQ	PT	RT	Oc.		
Auto	Cos	*	<<BBIE>>	Party	Identification	Identif					(1..1)
Auto	Man	*	<<ASBIE>>	Party	Organization	Name					(0..1)
Auto	Man	Ret	<<ASBIE>>	Party	Contact	Respons					(1..1)
Auto	Ret	*	<<ASBIE>>	Party	Responsible	Respons					(0..1)
Cos	Man	*	<<ASBIE>>	Party	Physical	Address					(1..1)

Based on CCTS grammar



Context	Value
Industry	Automotive
Business Role	Retailer
Country	Germany
Bus. Document	Purchase Order
User	Becker



Context	Value
Industry	Cosmetics
Business Role	Supplier
Country	France
Bus. Document	Purchase Order
User	Vichi



Context Specific Query

Context Specific Subset

3. Tooling: Integration Knowledge Library

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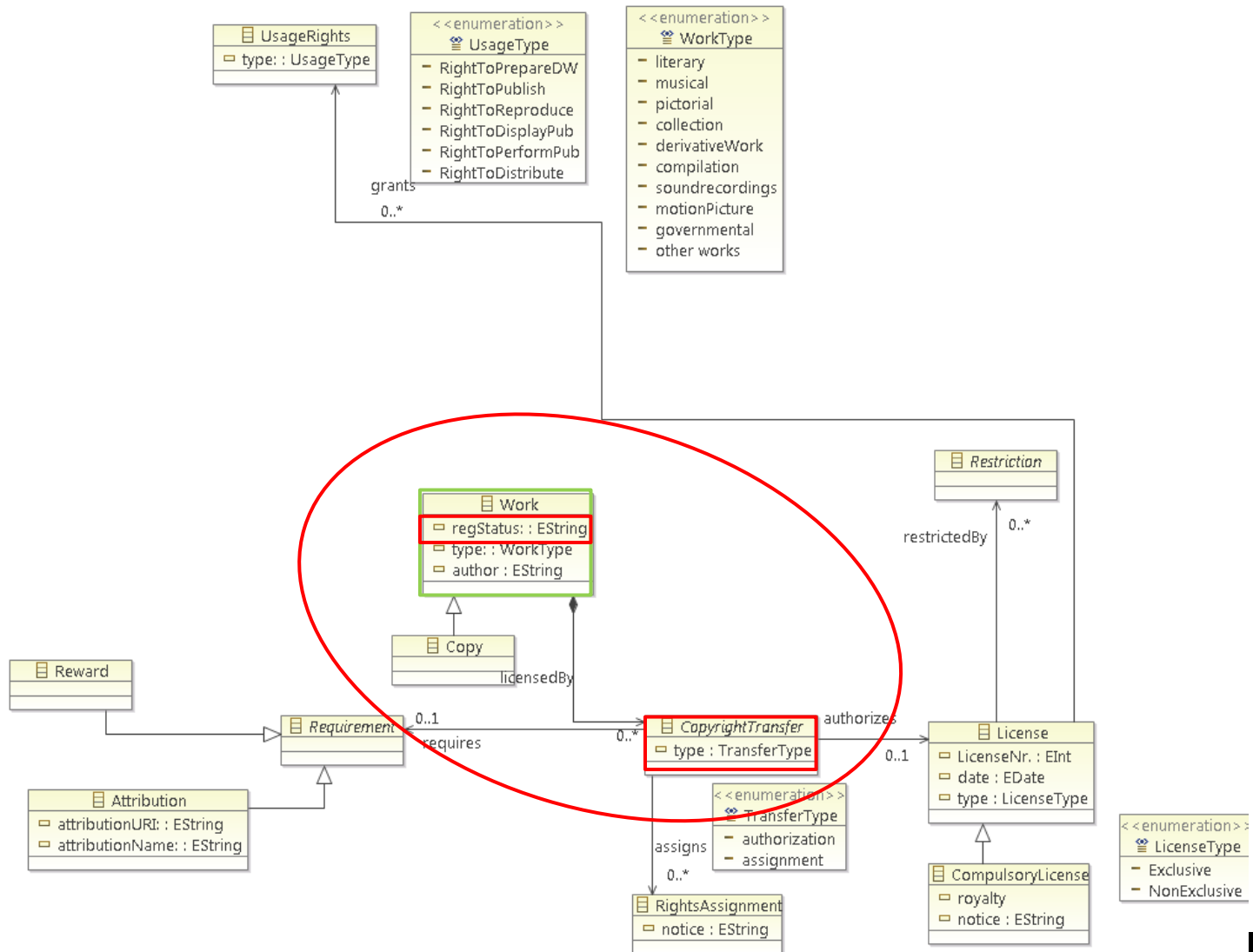
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Variants of USDL

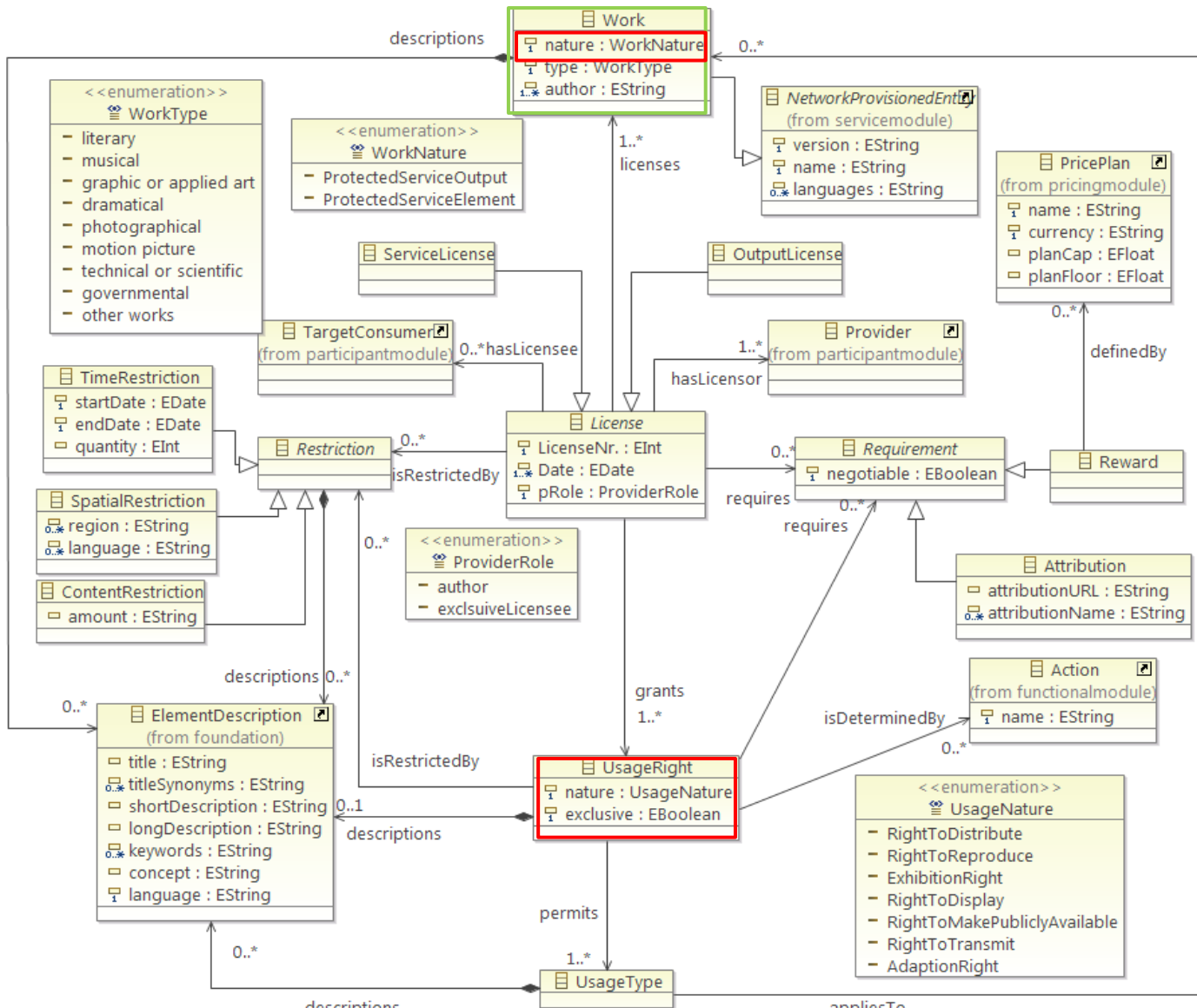
Variants along different dimensions

- Granularity
 - Attribute
 - Class/Relation
 - Whole Module
- Different representation terms
 - Terminology
 - Internationalization
- Contexts
 - Country
 - Industry
 - ...
- Origin / ownership
 - Normative
 - Proprietary, local, user-specific

Country-specific: Legal Module for the US



Country-specific: Legal Module for Germany



Demo

Disclaimer:

The following demo shows an older prototype called *Warp10*

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Notable Disadvantages

- CCTS
 - Learning curve
 - Need to transform Ecore to CCTS
 - Loss of expressiveness
 - Several man months of work
 - No support for software engineering
 - Geared at describing business documents and messages
 - No modularization
 - No tooling
- Tooling
 - Only from SAP
 - Still a long way to a full-fledged product
- Global USDL Schema Repository has to be established
- Governance body has to be found
- How to develop tools (e.g. editor) when schema is a moving target?