



Internationellt Standardiseringsarbete för Elektroniska Affärer

NEA, Stockholm

20 september 2005

Anders Grangård, GS1 France

- ✓ ebXML - vad är det?
- ✓ Standardiseringsarbetet i UN/CEFACT
- ✓ Internationella grupperingar som verkar inom ramen för ebXML
 - bl a GS1, OAG, OASIS/UBL
 - kopplingar till UN/CEFACT
- ✓ Arbetet i CEN workshop eInvoicing
- ✓ Något om hur man arbetar med e-frågor i Frankrike
- ✓ GS1
- ✓ Varför Internationella Standarder?

- ✓ Organisation created in 1972 by leading retailers and suppliers
- ✓ Non-profit
- ✓ 50 employees
- ✓ 28 000 member enterprises:
 - 26 500 suppliers
 - 1500 retailers & wholesalers
- ✓ 200 service providers subscribe to GS1 France (GEN&SI)





ebXML - vad är det?

Agenda- ebXML

- ✓ ebXML Overview
 - Mission
 - Vision
- ✓ ebXML Technical Architecture
- ✓ each of its components
- ✓ and how they are being applied

“To provide an open XML-based infrastructure enabling the global use of electronic business information in an interoperable, secure and consistent manner by all parties.”

Special considerations

- ✓ The needs of SMEs must be addressed.
- ✓ Make use of the 20+ years experience gained from EDI
- ✓ Build an extensible architecture to meet future needs, not a rigid “standard”.
- ✓ Make it easy and affordable to participate in the next generation of e-business.

Challenges of e-business today

- ✓ Limited to large organisations
- ✓ Expensive technology that a majority of companies cannot afford
- ✓ High cost-of-entry
- ✓ No business communicates solely in its domain
 - need to exchange messages outside industry boundaries

Challenges of e-business today

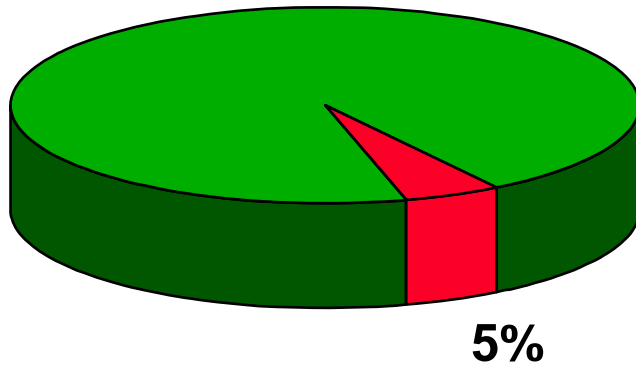
- ✓ Multiple XML initiatives
- ✓ Consensus required on common requirements
- ✓ No core infrastructure means incompatibility, reinvention and segregated pockets of communication

Lessons Learned

- ✓ UN/EDIFACT & X.12 a success!
- ✓ Integrated and necessary for many
- ✓ BUT...
- ✓ Implementation is cumbersome
- ✓ Standards maintenance is cumbersome
- ✓ So the SMEs are not invited!

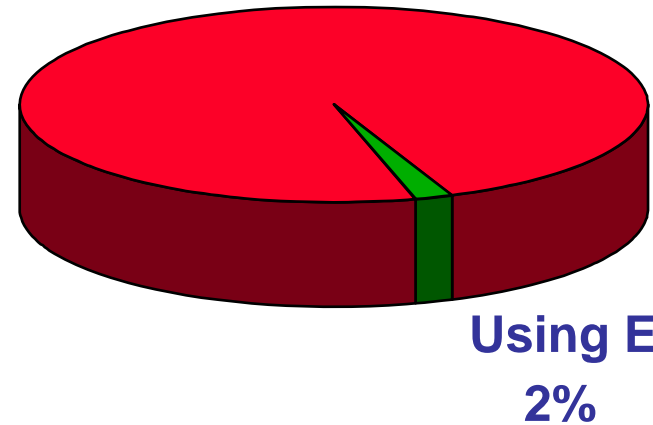
EDI – Failure to Scale

Using EDI
95%



FORTUNE 1000

98%



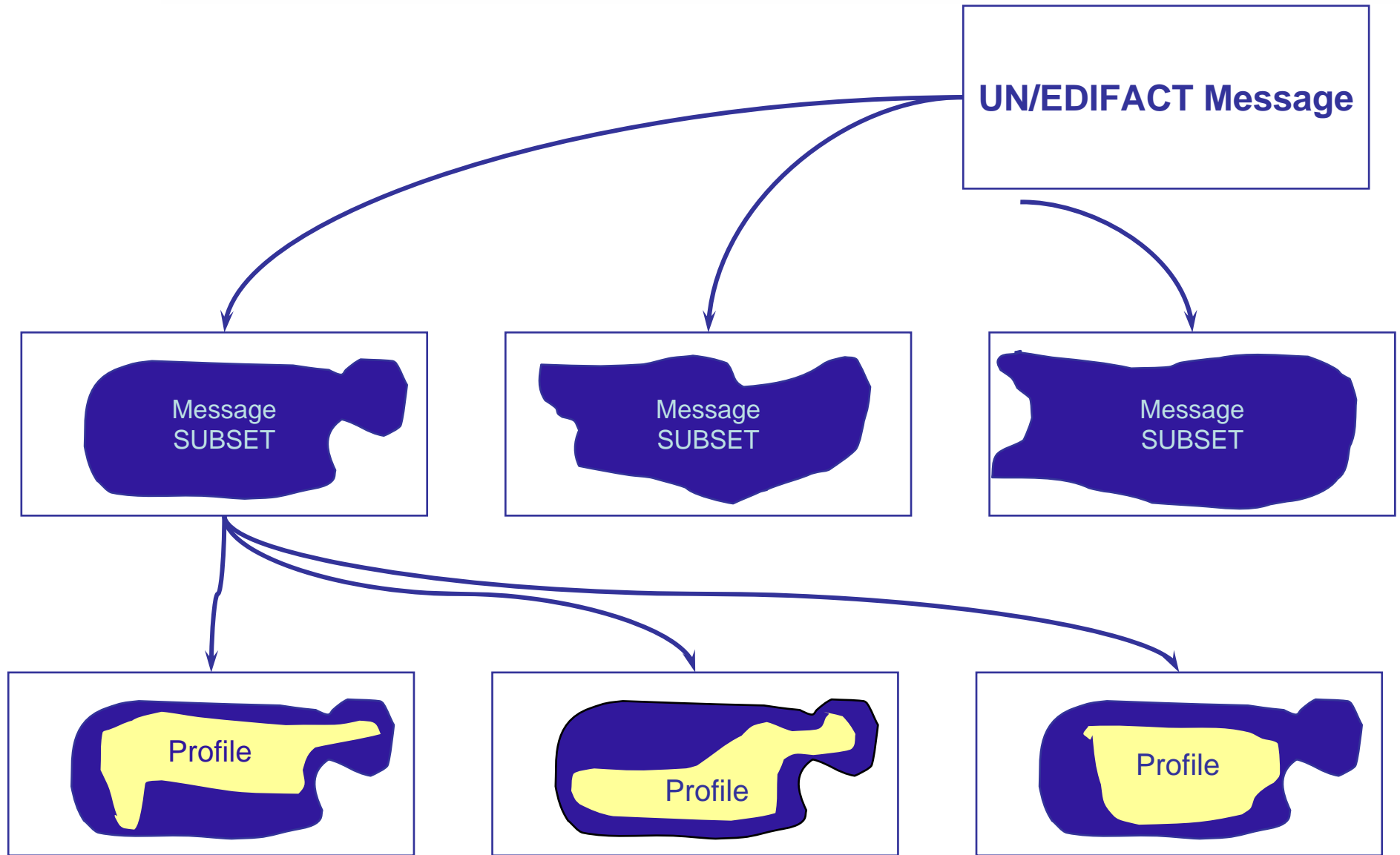
Using EDI
2%

SME's

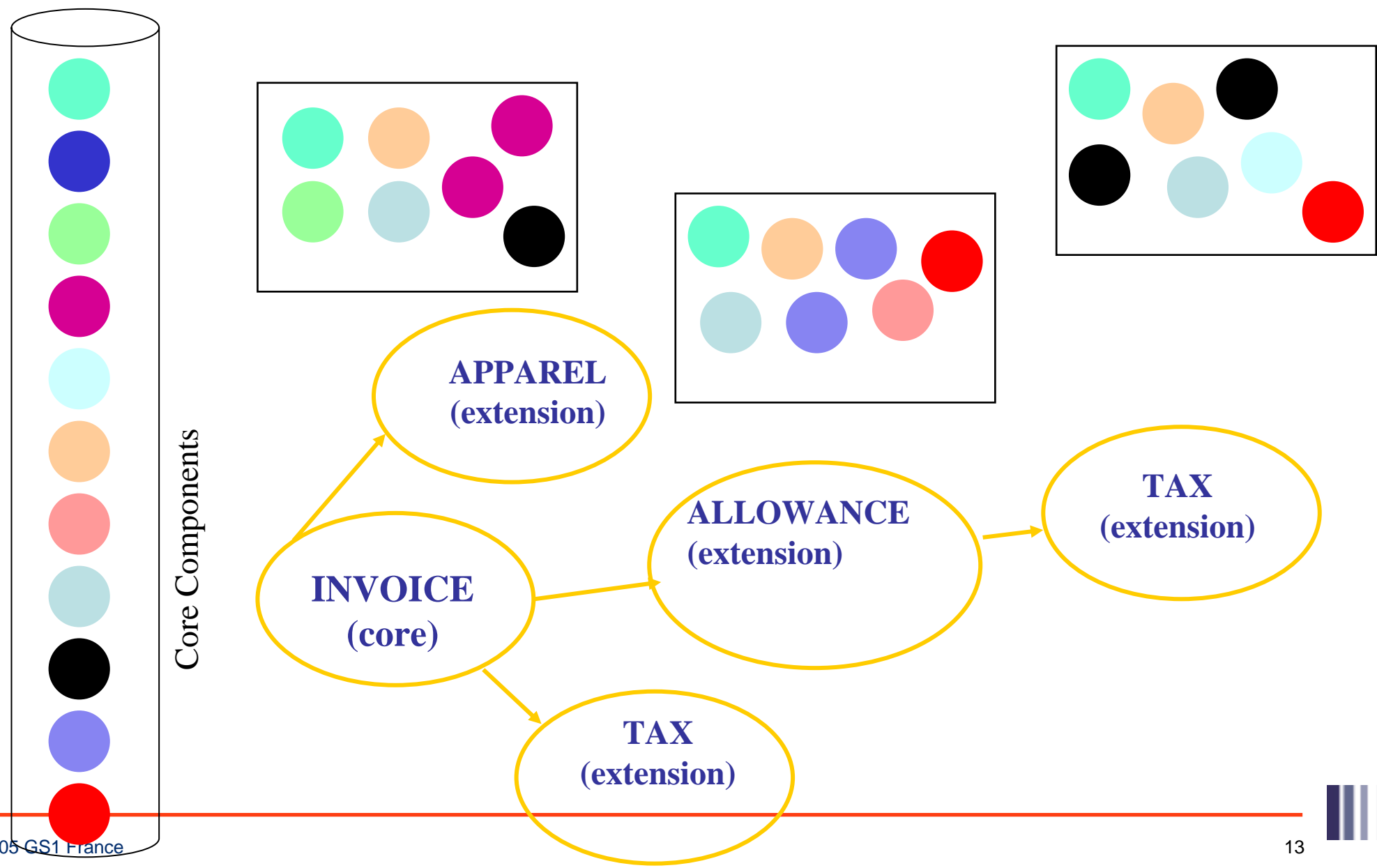
■ Using EDI
■ EDI Capable



Implementing UN/EDIFACT



Implementing ebXML



✓ The Pros:

- ✓ The rules and definitions are contained in the same file or by reference
- ✓ Extensible
- ✓ Simple
- ✓ Sub-set of SGML
- ✓ Tool-box
- ✓ Created for the Internet

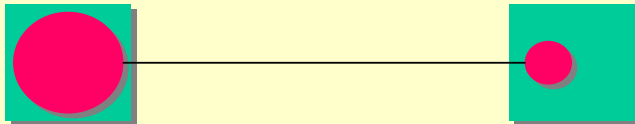
✓ The Cons:

- ✓ No global standard for business contents - yet
- ✓ Verbose
- ✓ No rules for extensions
- ✓ Multiple non-compatibles messaging protocols
- ✓ Security still under development

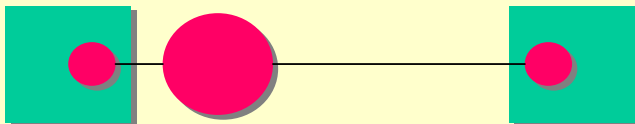
CPFR's Deployment Scenarios

Shared

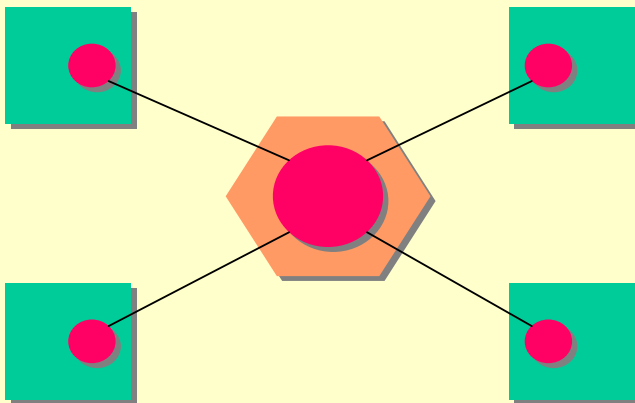
Extranet



Application Service Provider

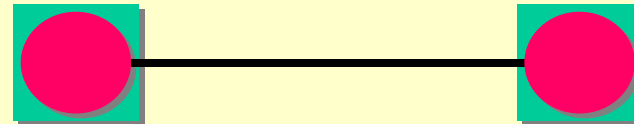


Marketplace

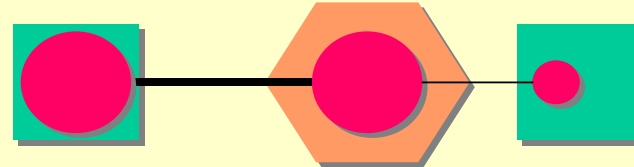


Peer-to-Peer

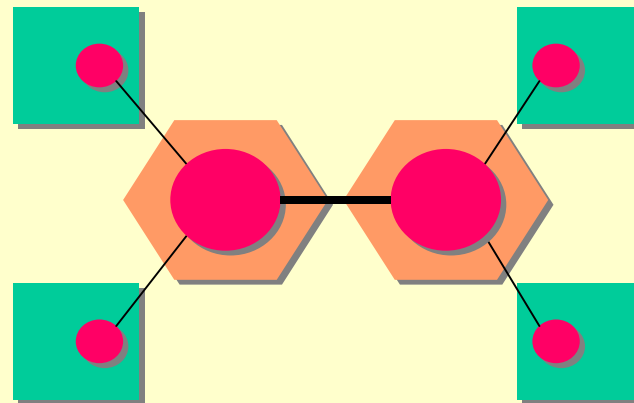
Company-to-Company



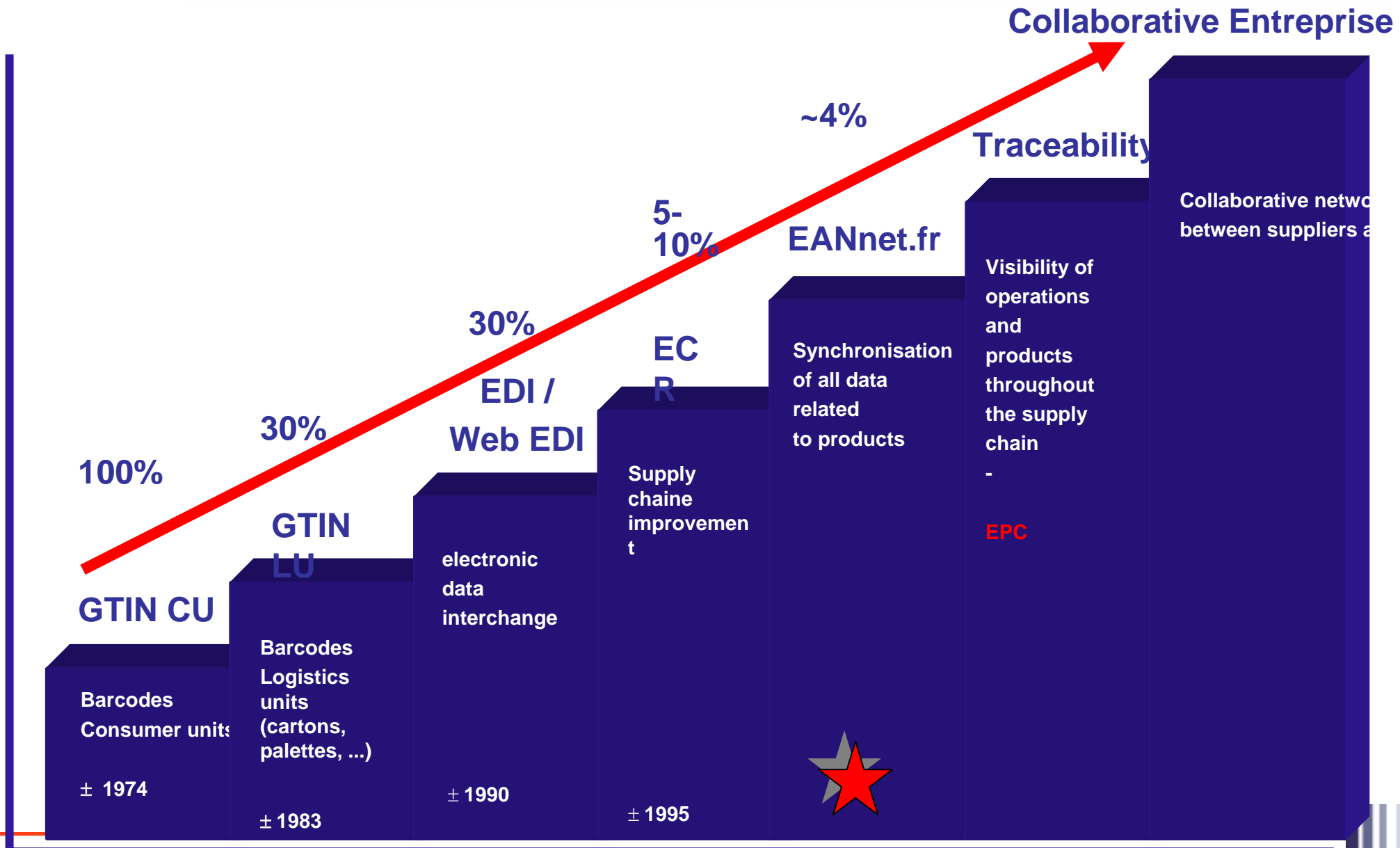
Company-to-Marketplace



Marketplace-to-Marketplace



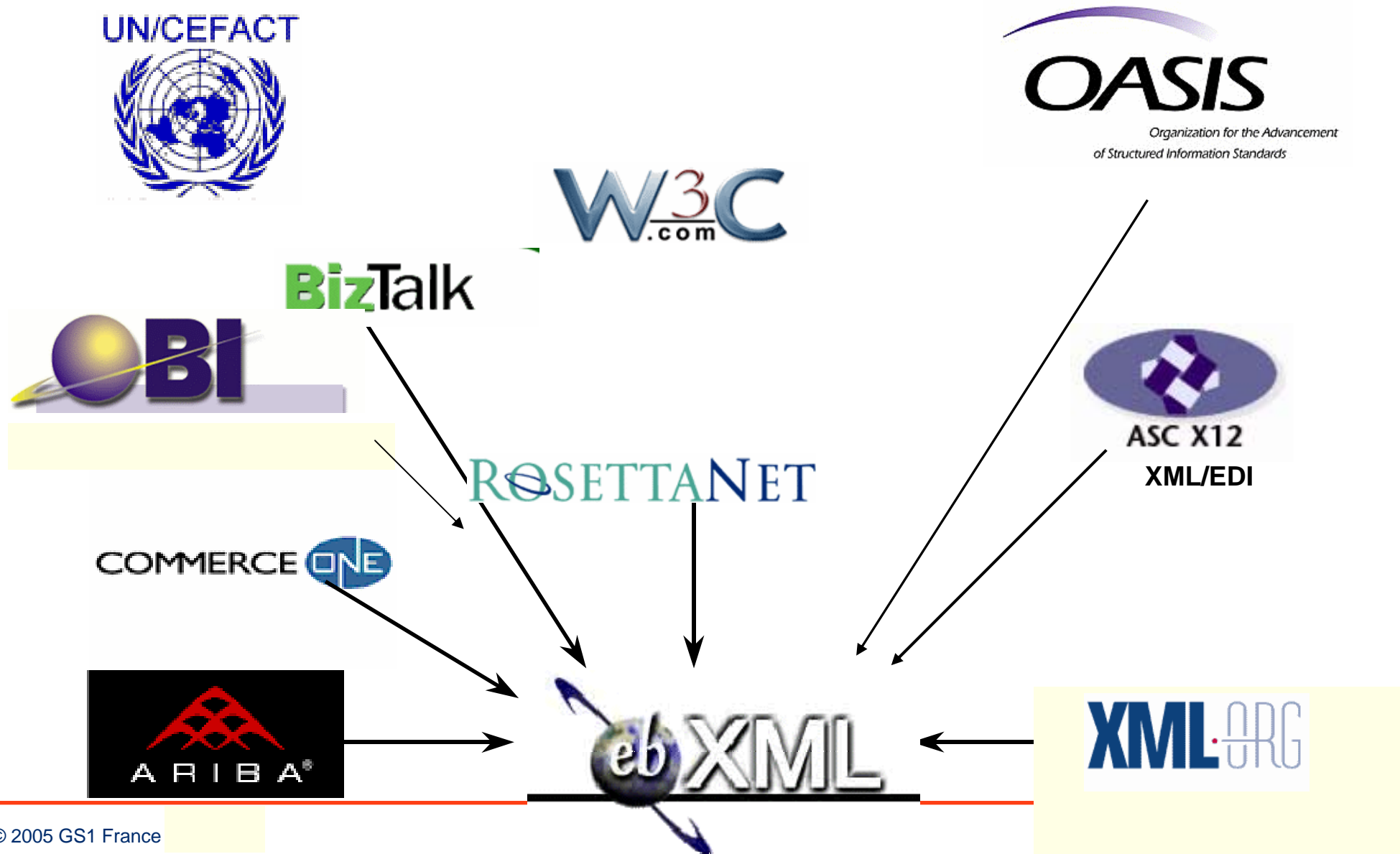
B2B Development Steps

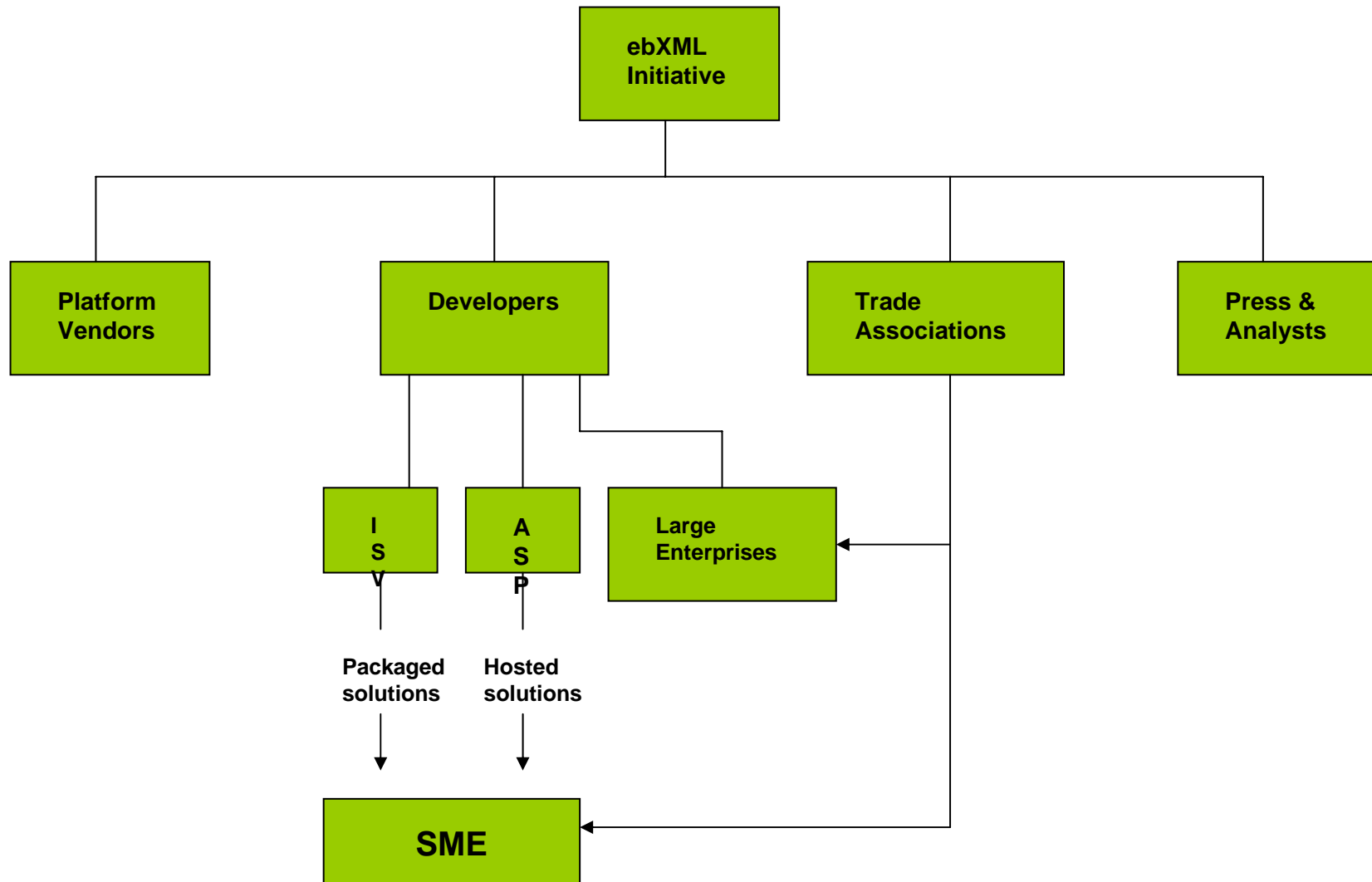


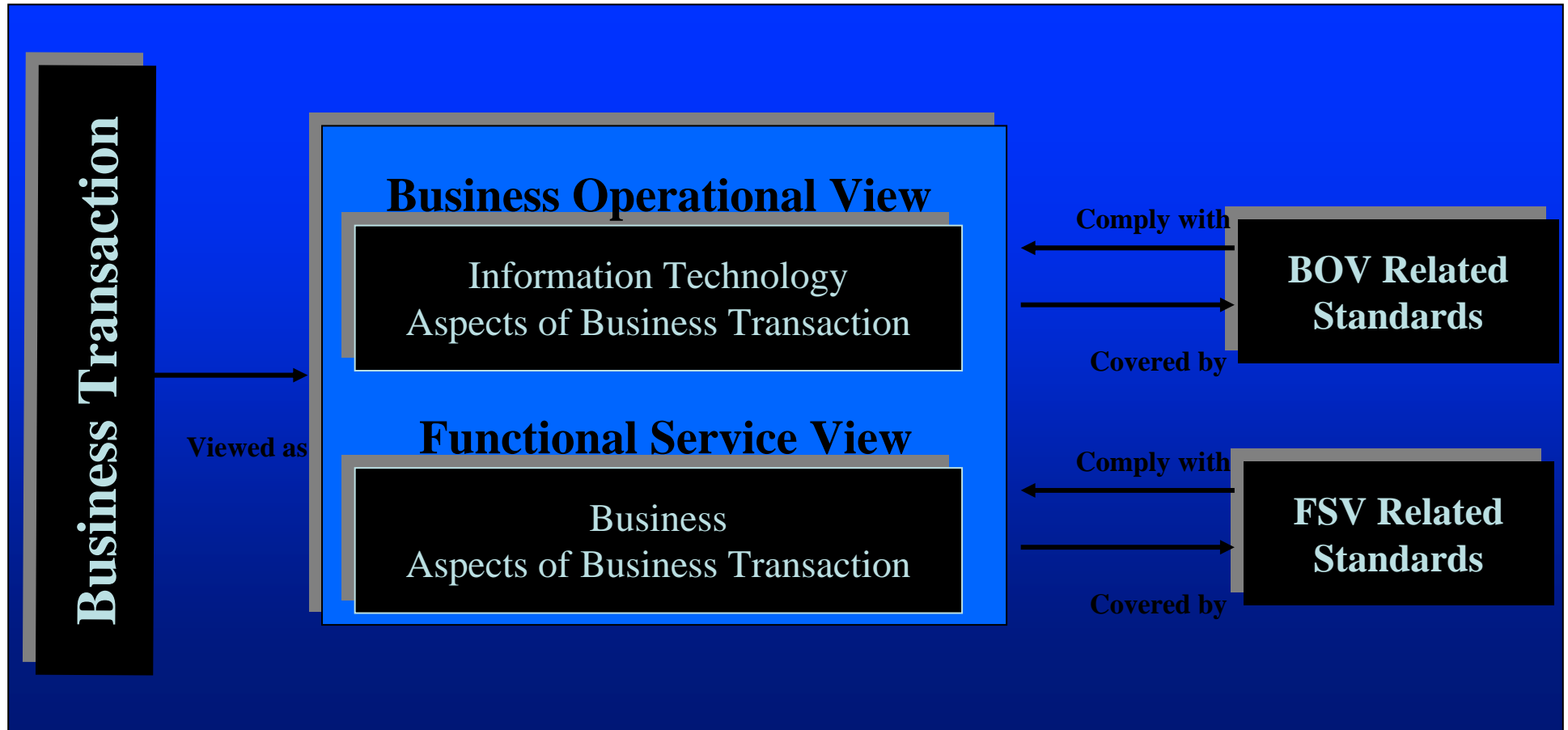
- ✓ You may use TRP section without the rest
 - To exchange your own message structures via TRP
- ✓ You may use Information section without the rest
 - To define message structures to be used in some other TRP
- ✓ You may use Process section without the rest
 - You may optionally define contract semantics of a process
- ✓ You may use Market section without the rest
 - To create an independent set of yellow or white pages
- ✓ Or: - Use all of them to reach the full vision of ebXML



ebXML history







Business Process and Information Models

BOV

BOV

FSV

FSV

Business Service
Interface

Internal
Business App

Business Service
Interface

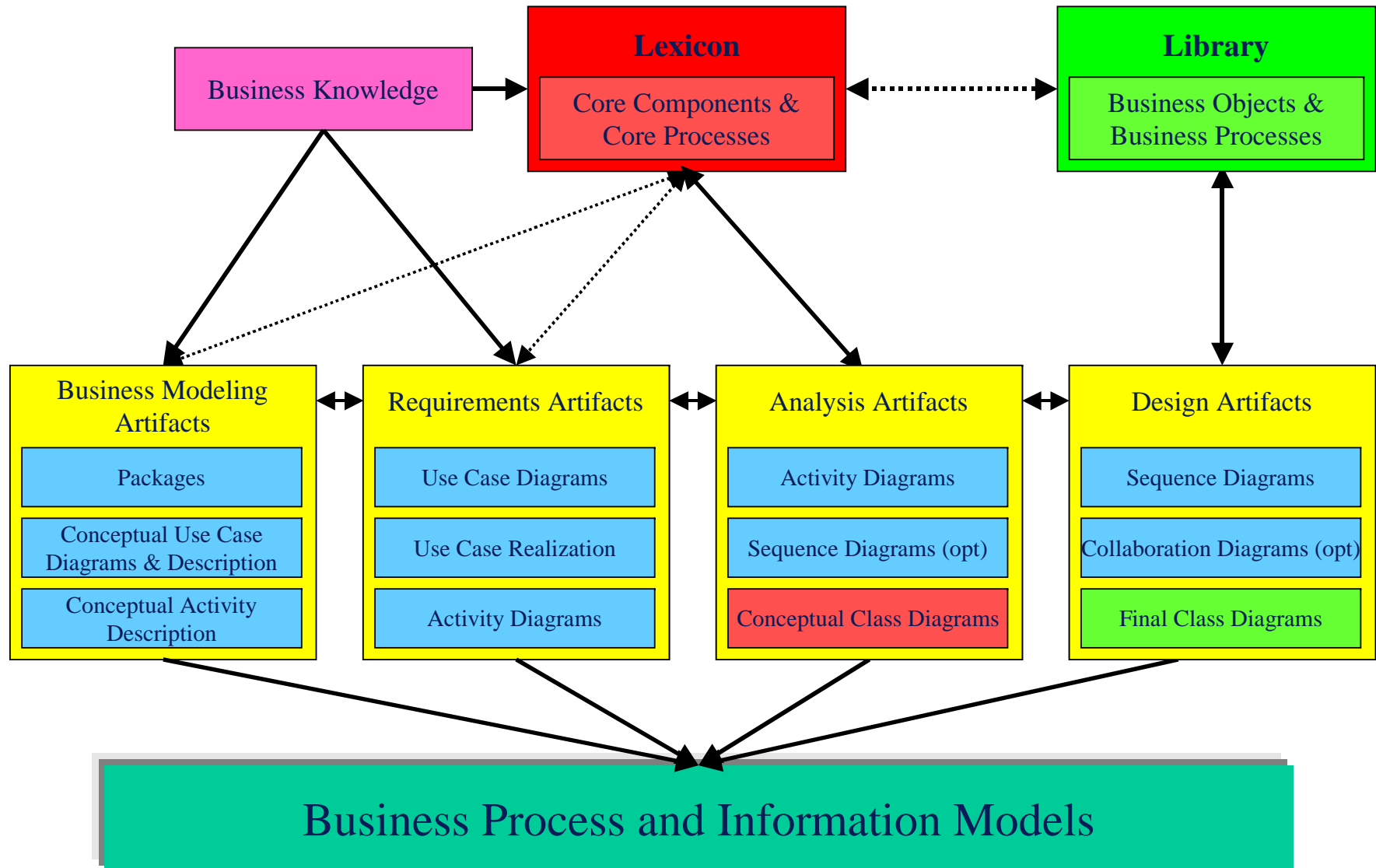
Shrink-wrapped
Application

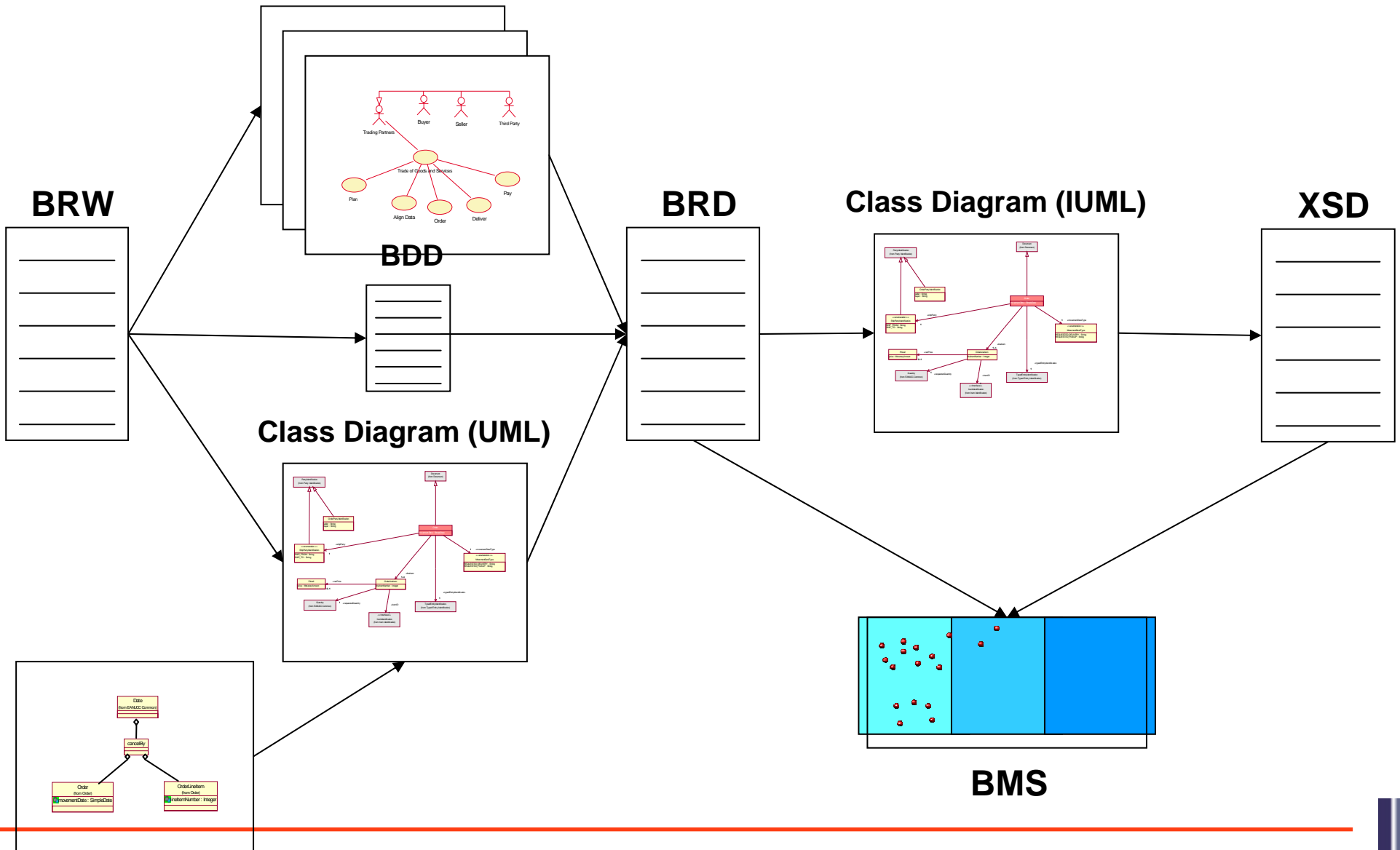


- ✓ Why do we use BPIM (UML)?
 - To understand a complex system
 - Reusability
 - Compatibility
 - Independent of syntax/techniques
 - Common language

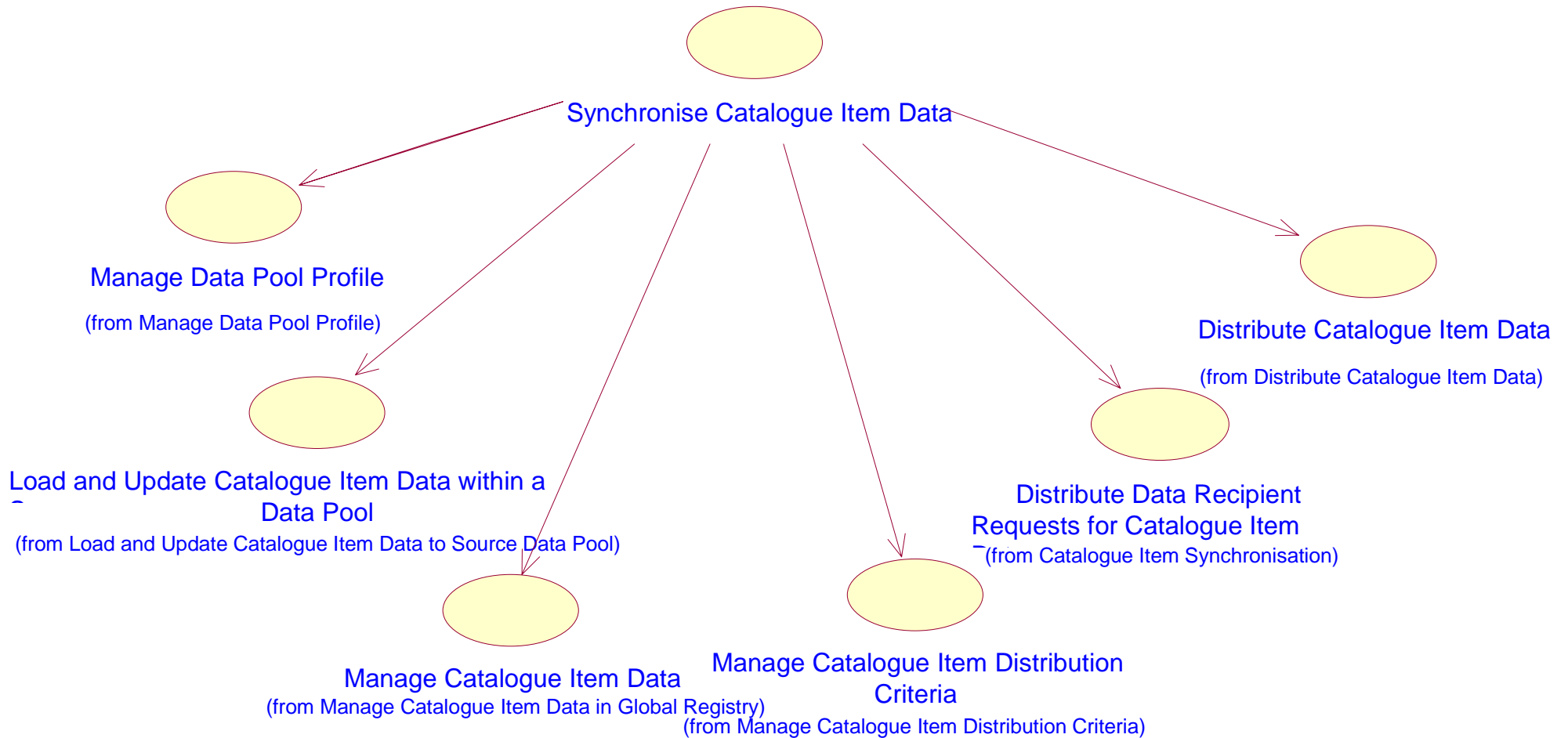


UMM - Work Flow

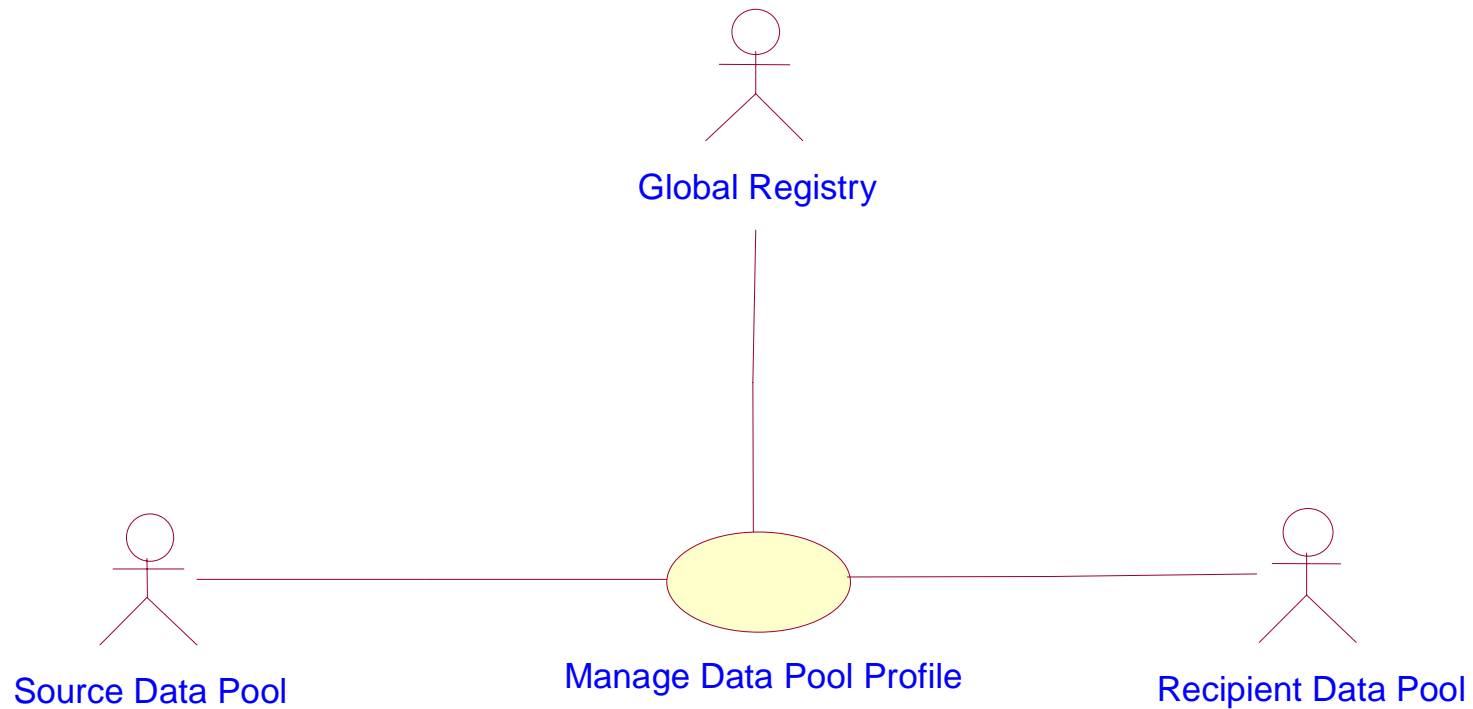




Use Case Diagram



Detailed Use Case Diagram

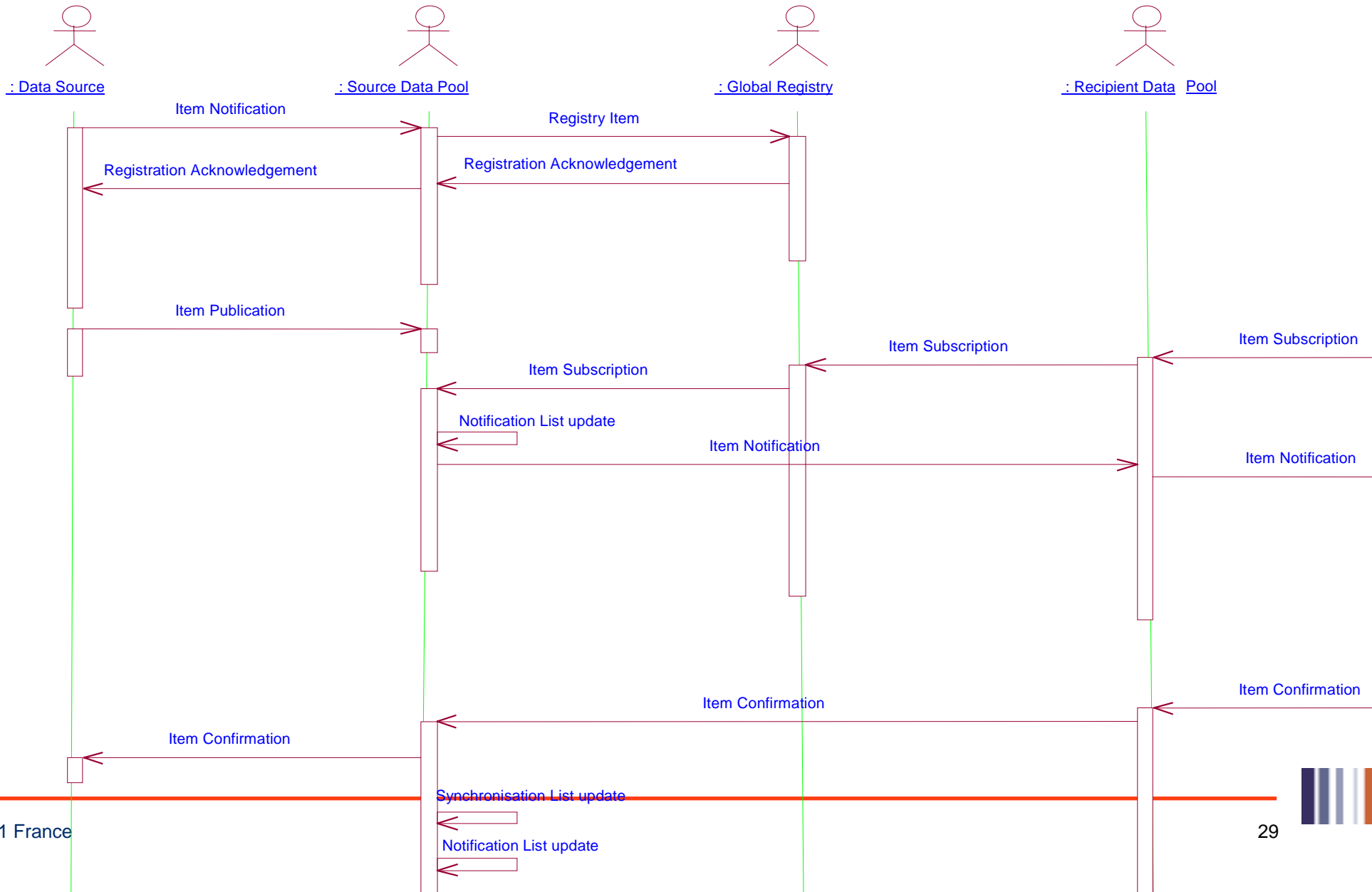


Use Case Description

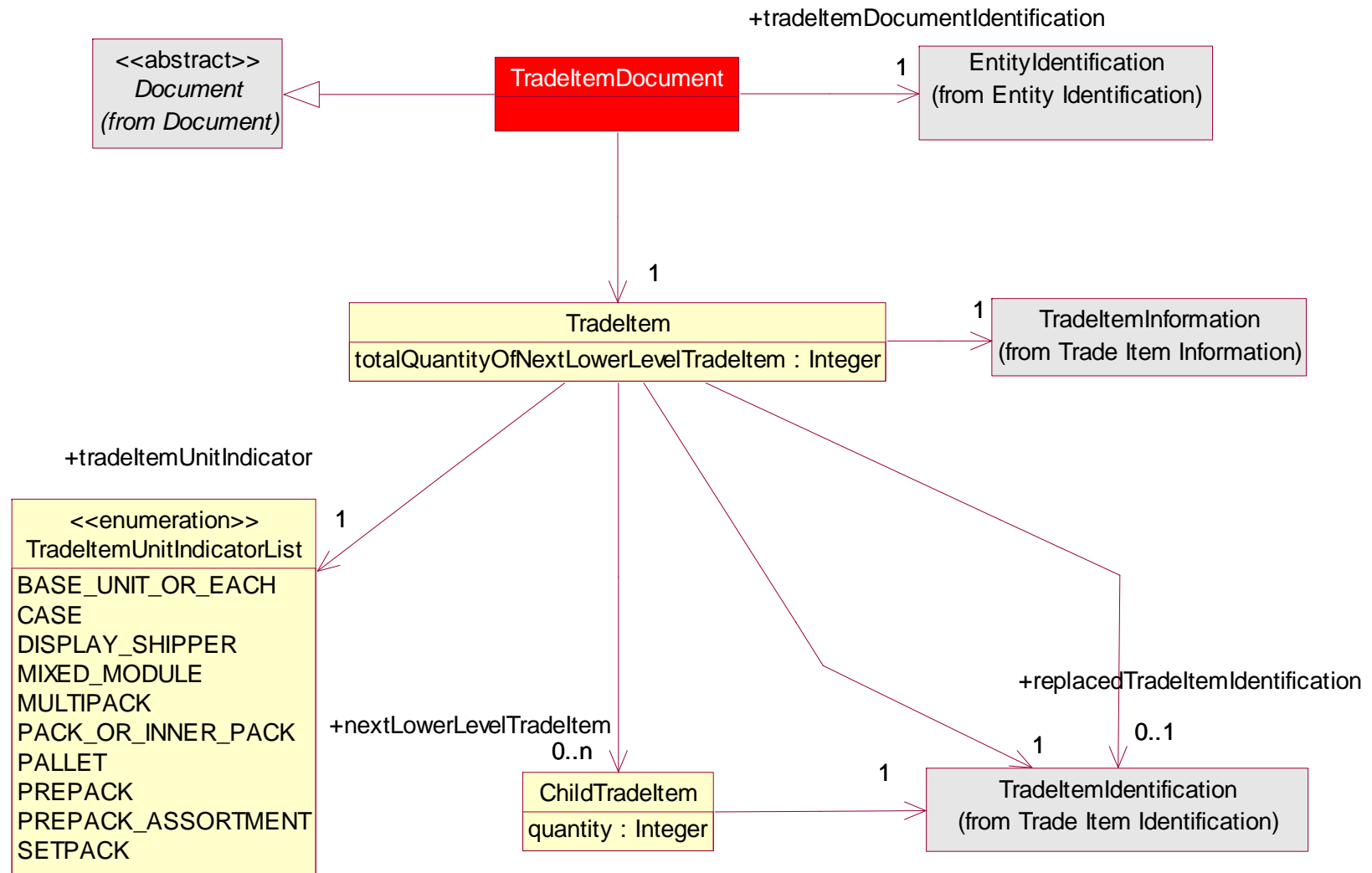
Use Case Name	Manage Data Pool Profile
Traceability Identifier	UC-30
Use Case Description	<p>The maintenance and storage of certified data pool information in the Global Registry, defining all the actors in the interoperable network and allowing any actor to retrieve information about the others. Additional requirements are needed for the Data Pool Profile Use Case.</p> <p>As a summary Use Case, specific processes will be further defined in the Detail Use Case section of this document.</p>
Use Cases Above	UC-1: Synchronise Catalogue Item Data
Use Cases Below	
Actors	<p>Source Data Pool (SDP)</p> <p>Global Registry</p> <p>Recipient Data Pool (RDP)</p>
Performance Goals	<p>SDP: To be able to obtain the address or URL of the RDP.</p> <p>RDP: To make available their address (URL) to SDPs.</p> <p>Global Registry: To be able to identify the Data Pools in the Synchronisation process.</p>
Preconditions	
Postconditions	
Scenario	
Alternative Scenario	
Special Requirements	
Extension Points	N/A
Requirements Covered	



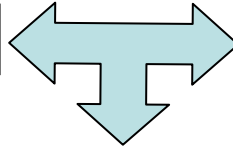
Sequence Diagram



Business Process: ALIGN: Trade Item



Business Process and Information Models



Core Components & Context

BOV

BOV

FSV

FSV

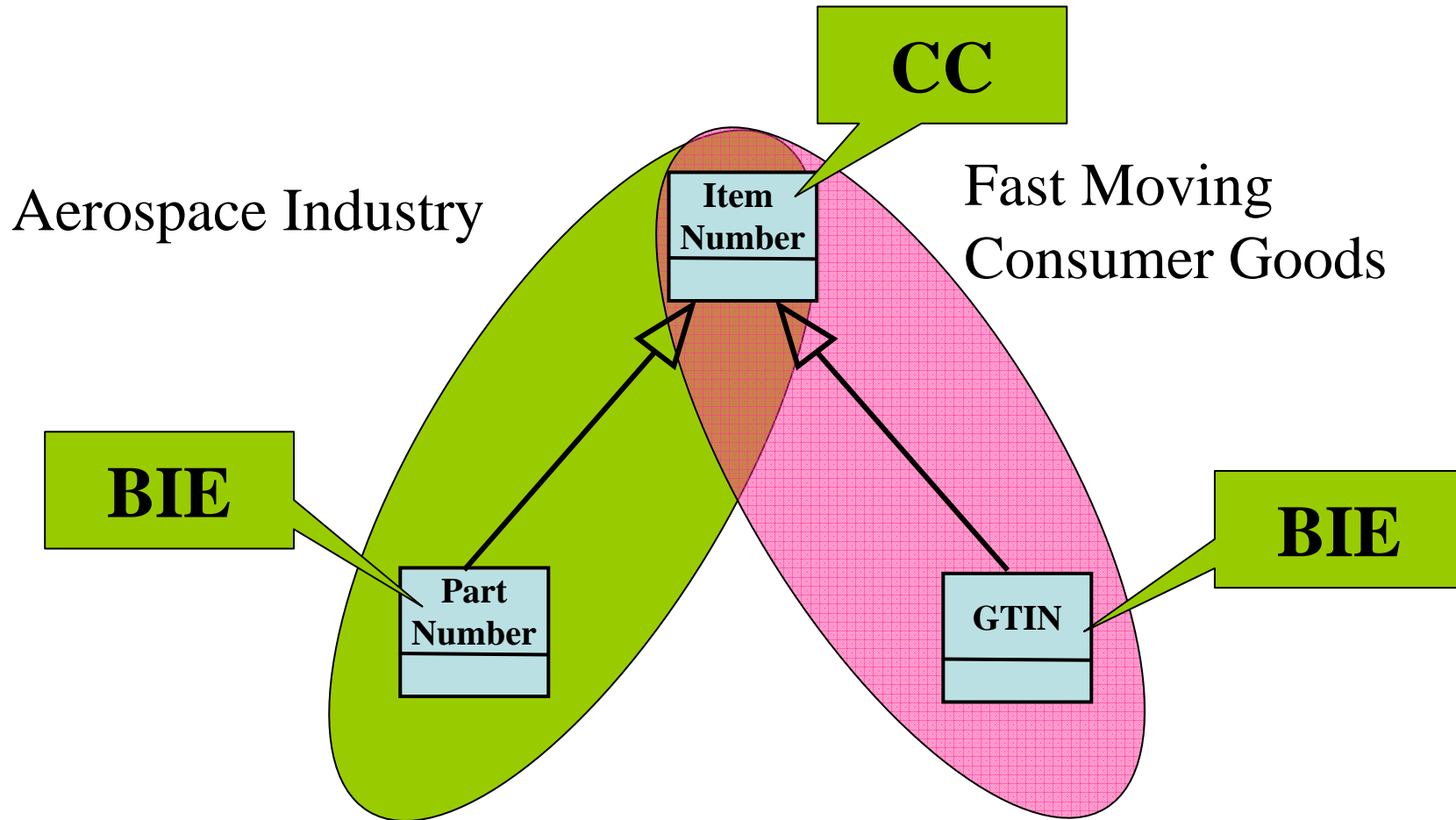
**Business Service
Interface**

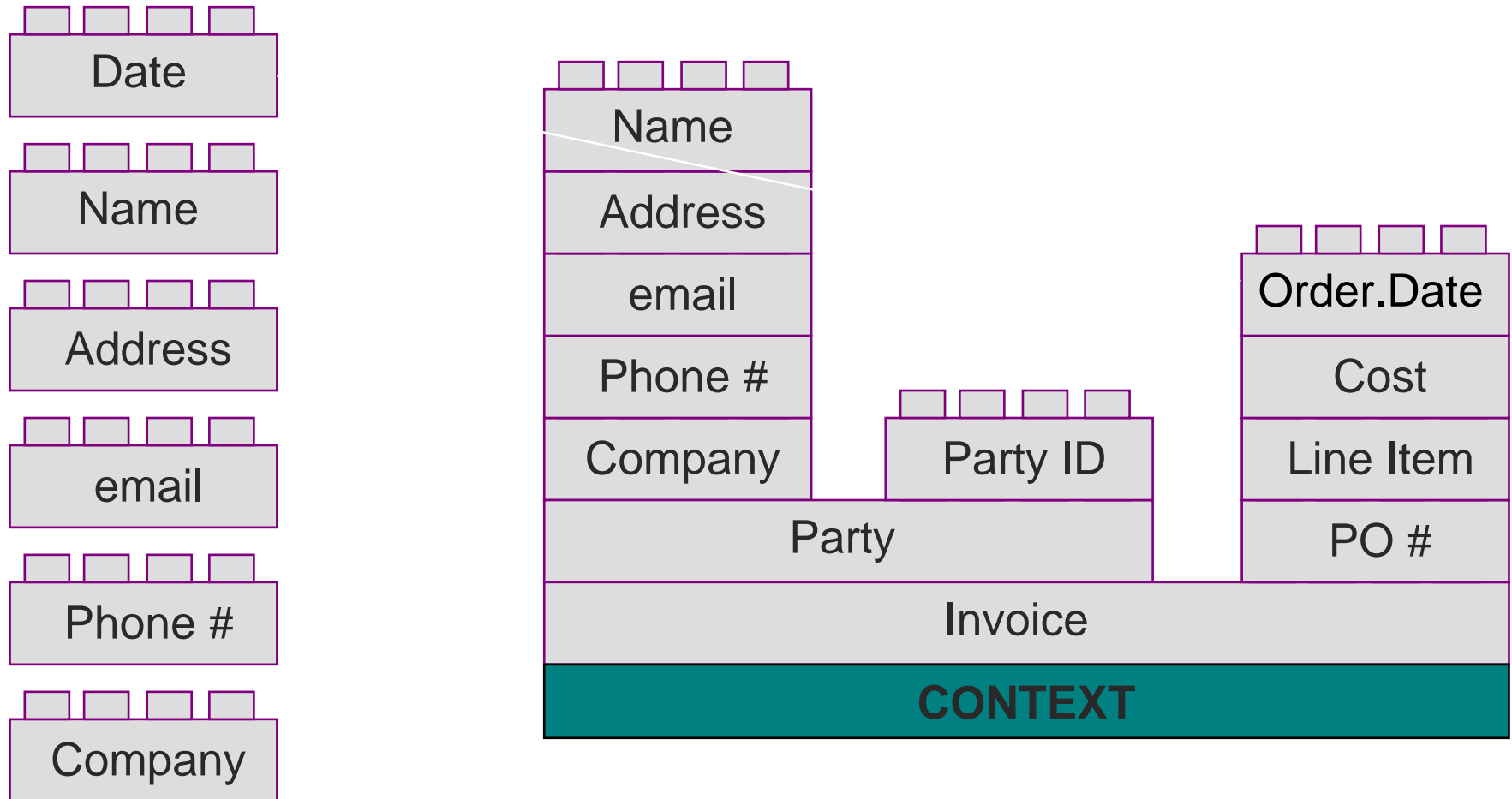
**Internal
Business App**

**Business Service
Interface**

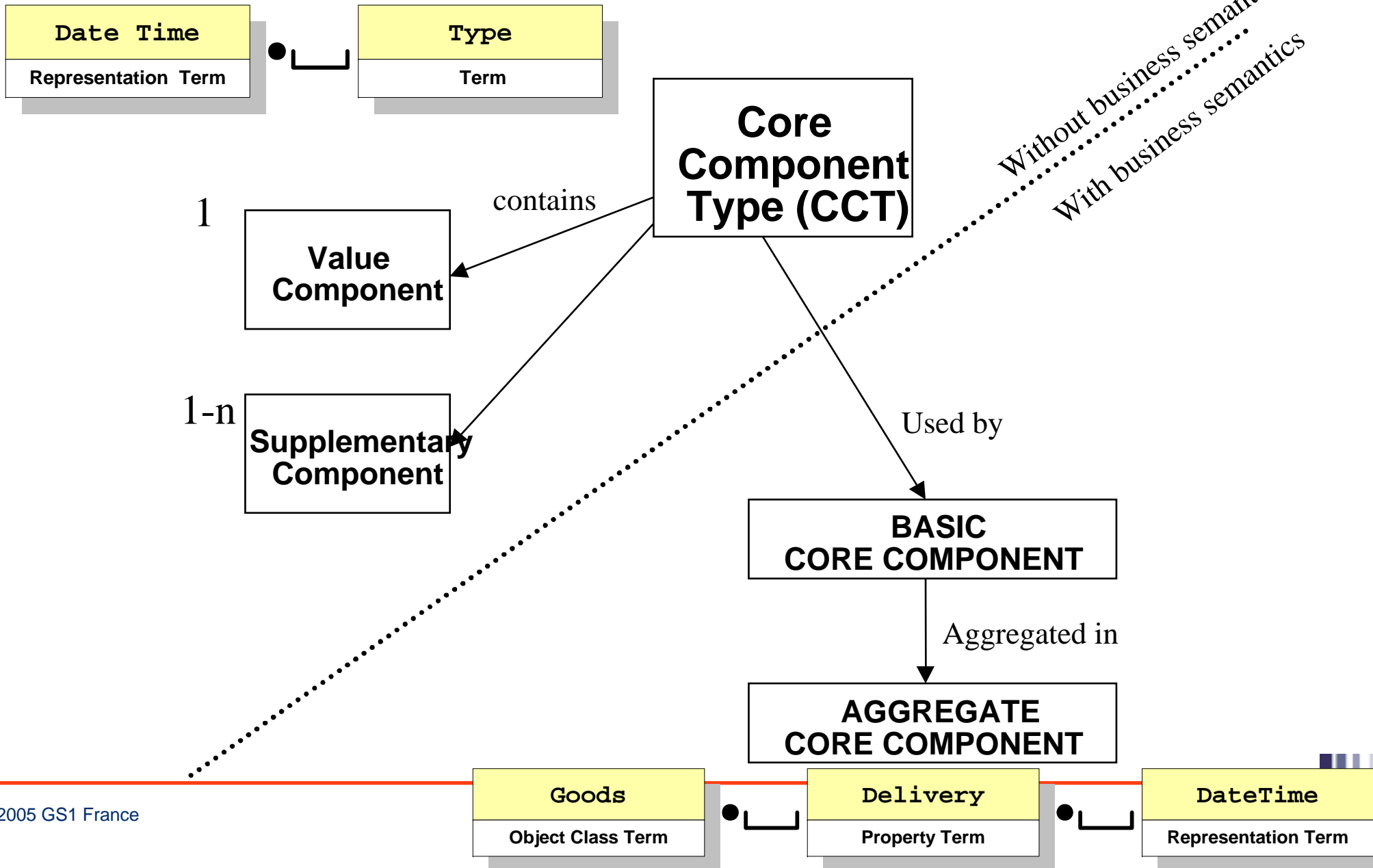
**Shrink-wrapped
Application**



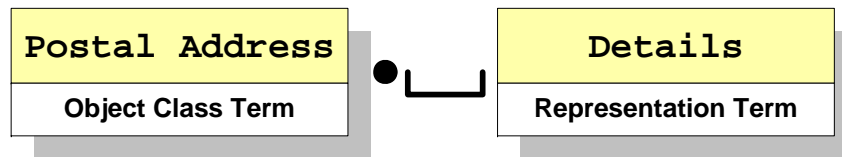




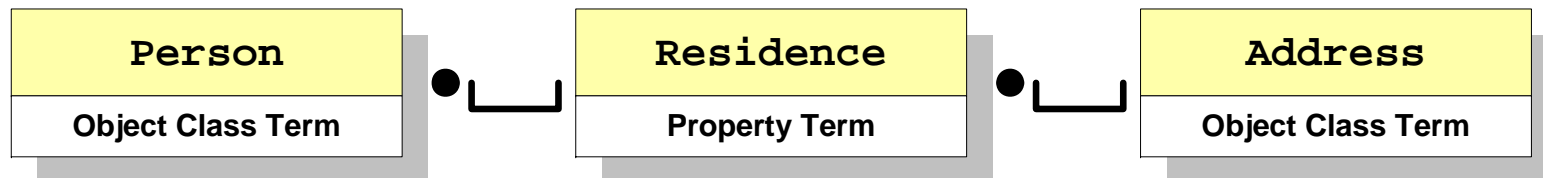
Core Components



Aggregate Core Component (ACC)



Association Core Component (ASCC)



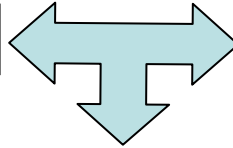
Context Category	Examples
Business Process	TradeItemAlignment, PartyAlignment
Product Classification Industry	PC50FoodBeverageAndTobacco
Product Classification Geopolitical	IC901ConsumerPackagedGoods
Official Constraints	GP002NAFTA BYBelarus GP003ASEAN BEBelgium BZBelize <i>Hazardous - Hazardous Goods</i>
Business Process Role	<i>Legislation</i> BR005Buyer, BR006BuyerLocation, BR007Carrier
Supporting Role	SR005Agent/representative
System Capabilities	EAN.UCC- EAN.UCC System



```
<!-- ROOT ELEMENT -->
<xsd:element name="despatchAdvice" type="da:DespatchAdvice.Details"/>
<!--CLASS -->
<xsd:complexType name="DespatchAdvice.Details" id="CC999949">
  <xsd:sequence>
    <xsd:element name="despatchAdviceID" type="cc:Document.Identifier"/>
    <xsd:element name="estimatedDeliveryDate" type="cc:Transportation.Date"/>
    <xsd:element name="buyer" type="cc:GLN.Identifier"/>
    <xsd:element name="seller" type="cc:GLN.Identifier"/>
    <xsd:element name="shipFrom" type="cc:GLN.Identifier" minOccurs="0"/>
    <xsd:element name="shipTo" type="cc:GLN.Identifier" minOccurs="0"/>
    <xsd:element name="carrier" type="cc:GLN.Identifier" minOccurs="0"/>
    <xsd:element name="purchaseOrder" type="da:RelatedPurchaseOrder.Details"/>
    <xsd:element name="tradeAgreement" type="da:TradeAgreement.Details" minOccurs="0"/>
    <xsd:choice>
      <xsd:element name="despatchLineItem" type="da:DespatchAdviceLine.Details"/>
      <xsd:element name="logisticUnit" type="da:LogisticsUnit.Details"/>
    </xsd:choice>
  <!-- class attributes -->
  <!-- subclasses -->
</xsd:sequence>
</xsd:complexType>
```



Business Process and Information Models



Core Components & Context

BOV

BOV

FSV

FSV

UML to XML conversion

ebXML metamodel XML content

Business Service Interface

Internal Business App

Business Service Interface

Shrink-wrapped Application



UML to XSD

```
<xsd:complexType name="PartyInformationType">
```

```
</xsd:complexType>
```

```
<xsd:complexType name="PartyDatesType">
```

```
<xsd:sequence>
```

```
<xsd:element name="effectiveChangeDate" type="xsd:dateTime" minOccurs="0"/>
```

```
<xsd:element name="partyEndDate" type="xsd:dateTime" minOccurs="0"/>
```

```
<xsd:element name="partyStartDate" type="xsd:dateTime"/>
```

```
</xsd:sequence>
```

```
</xsd:complexType>
```

```
<xsd:complexType name="FacilitySpecificationType">
```

```
<xsd:sequence>
```

```
<xsd:element name="isAppointmentRequired" type="xsd:boolean" minOccurs="0"/>
```

```
<xsd:element name="operatingDayFrom" type="DaysOfTheWeekListType" minOccurs="0"/>
```

```
<xsd:element name="operatingDayTo" type="DaysOfTheWeekListType" minOccurs="0"/>
```

```
<xsd:element name="operatingTimeFrom" type="xsd:time" minOccurs="0"/>
```

```
<xsd:element name="operatingTimeTo" type="xsd:time" minOccurs="0"/>
```

```
<xsd:element name="timeZoneOfTheLocation" minOccurs="0">
```

```
<xsd:simpleType>
```

```
<xsd:restriction base="xsd:string">
```

```
<xsd:minLength value="1"/>
```

```
<xsd:maxLength value="3"/>
```

```
</xsd:restriction>
```

```
</xsd:simpleType>
```

```
</xsd:element>
```

```
</xsd:sequence>
```

```
</xsd:complexType>
```

```
<xsd:complexType name="NameAndAddressType">
```

```
<xsd:sequence>
```

```
<xsd:element name="city">
```

```
<xsd:simpleType>
```

```
<xsd:restriction base="xsd:string">
```

```
<xsd:minLength value="1"/>
```

```
<xsd:maxLength value="35"/>
```

```
</xsd:restriction>
```

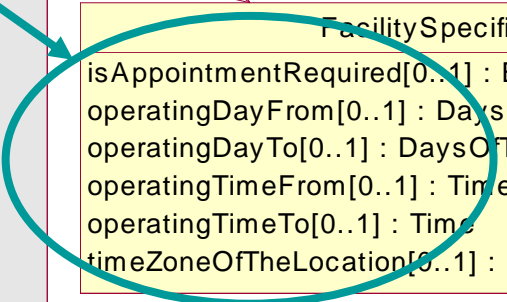
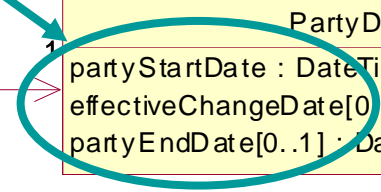
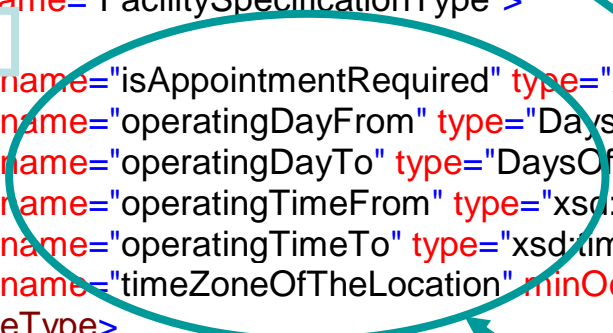
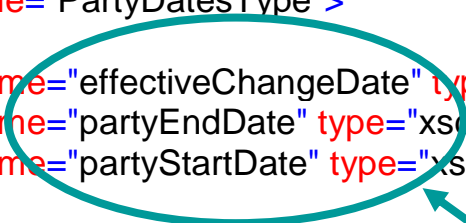
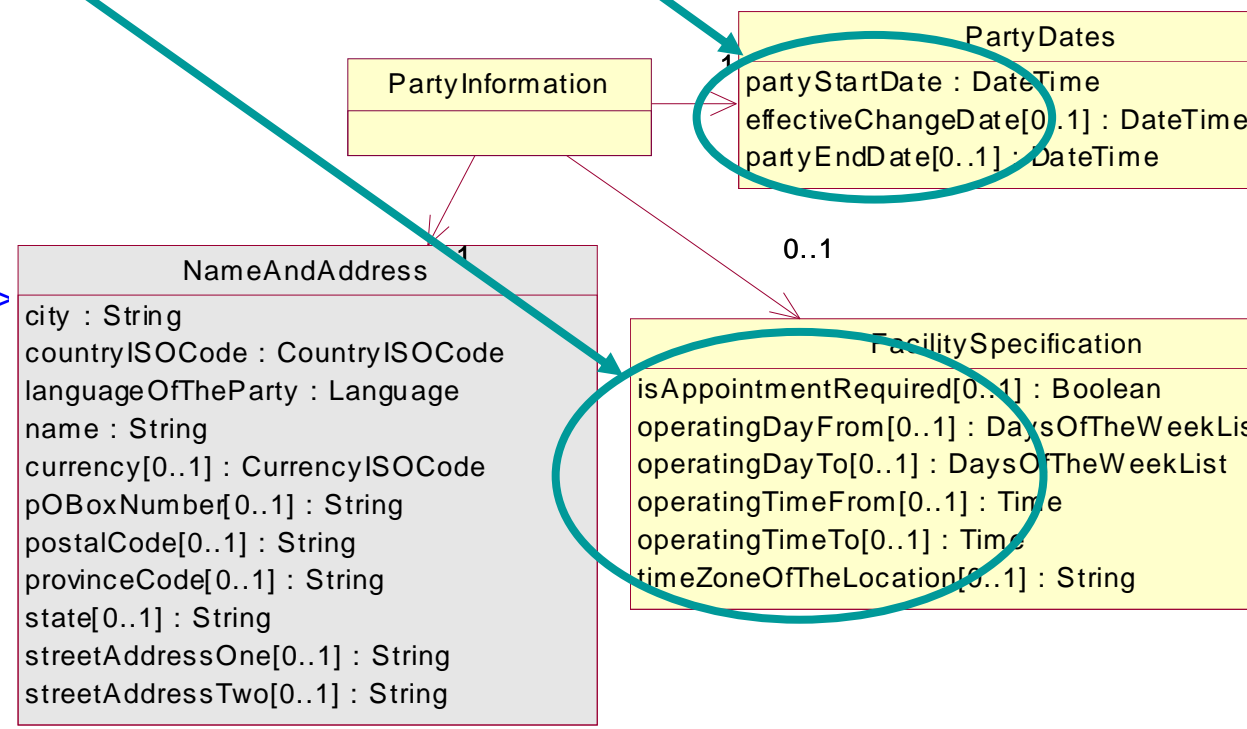
```
</xsd:simpleType>
```

```
</xsd:element>
```

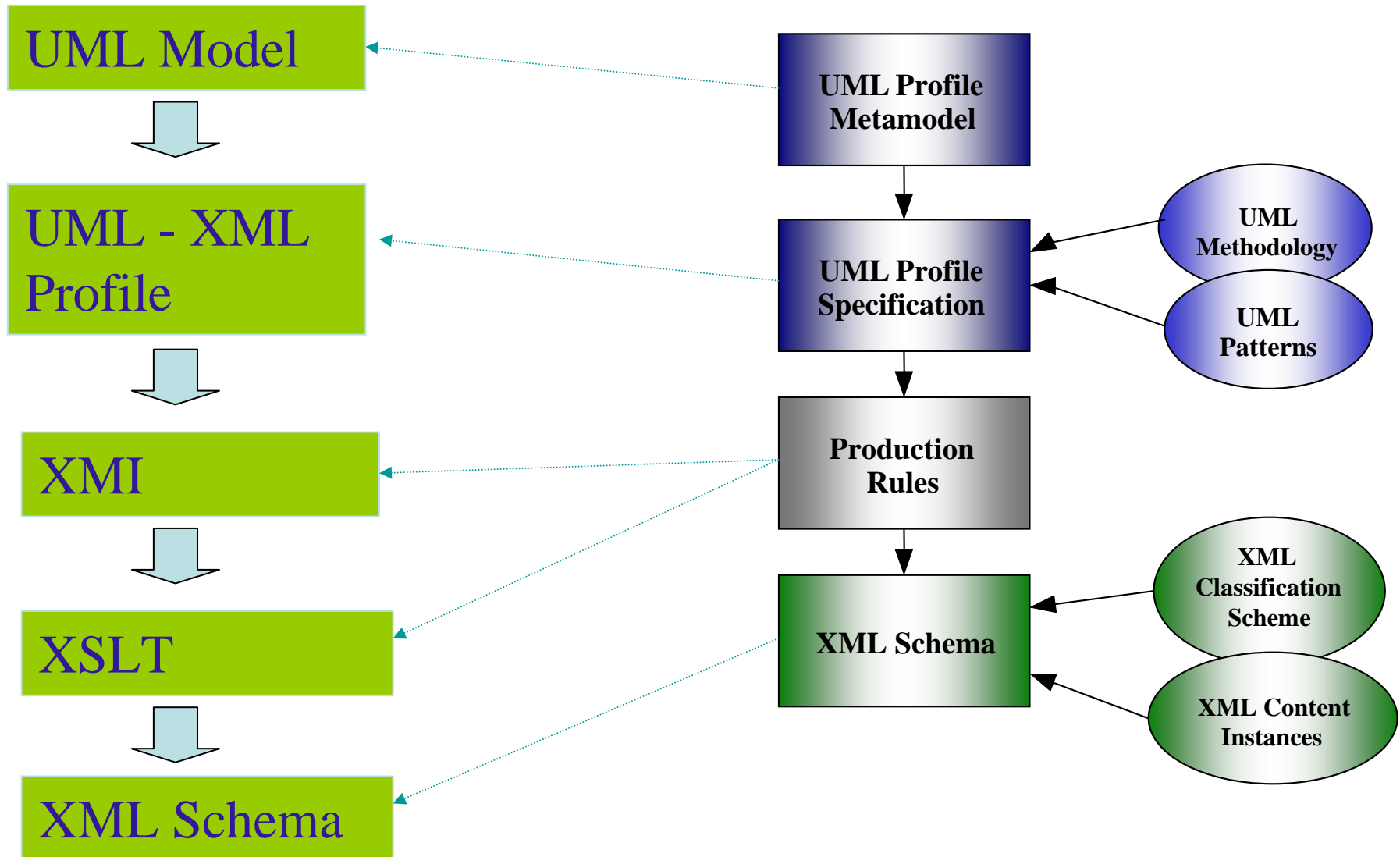
```
</xsd:element>
```

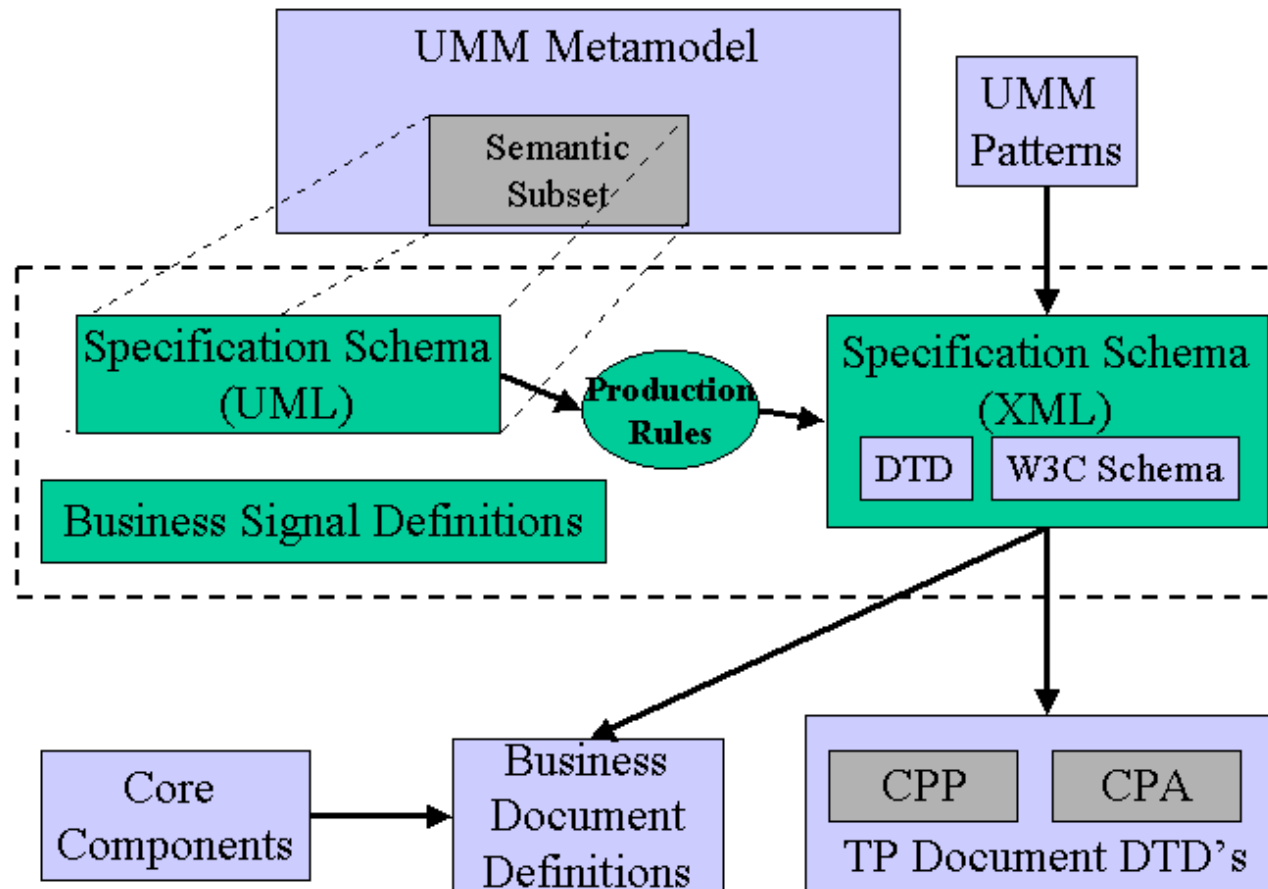
```
</xsd:sequence>
```

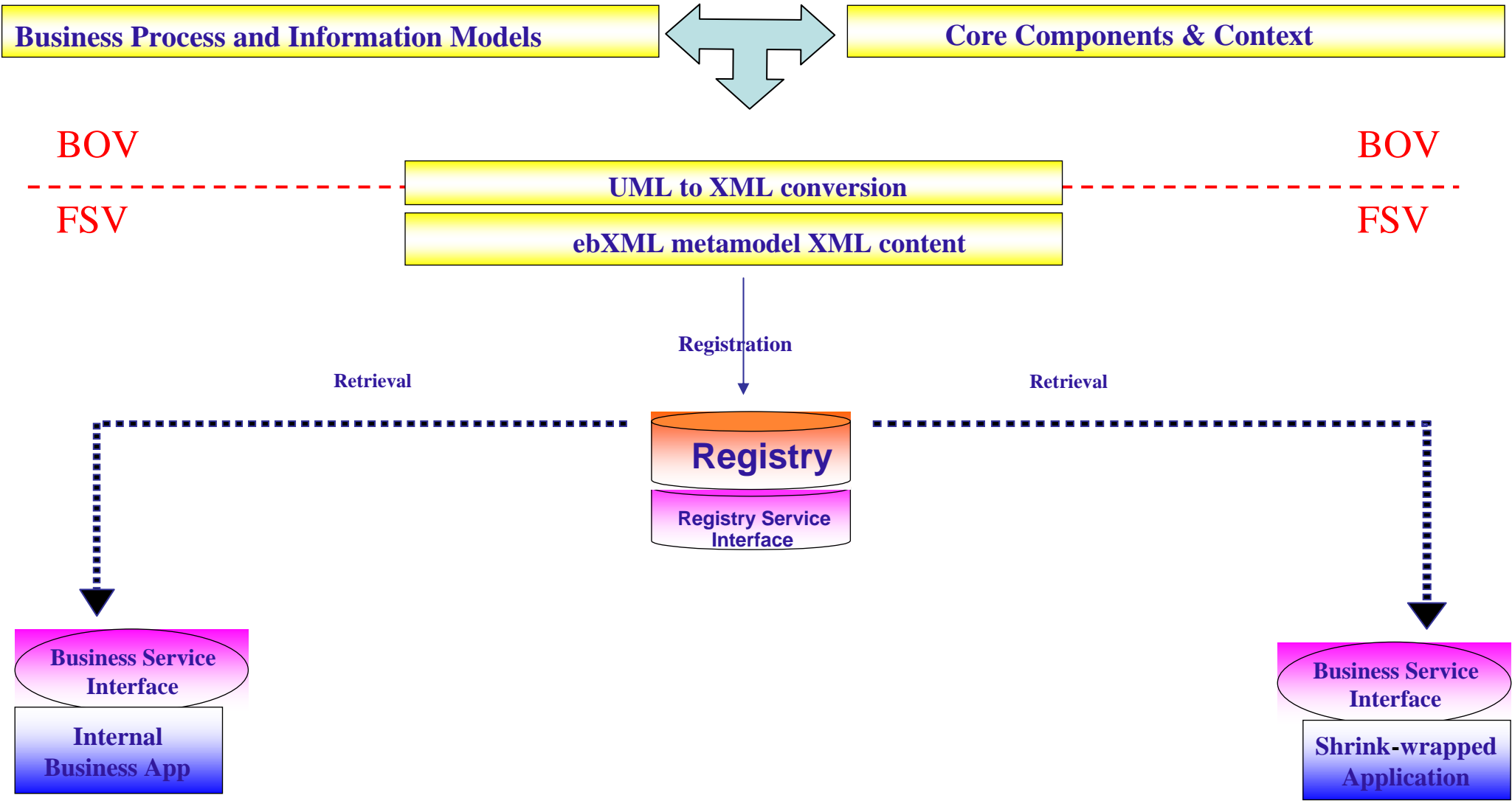
```
</xsd:complexType>
```



Transformation Rules

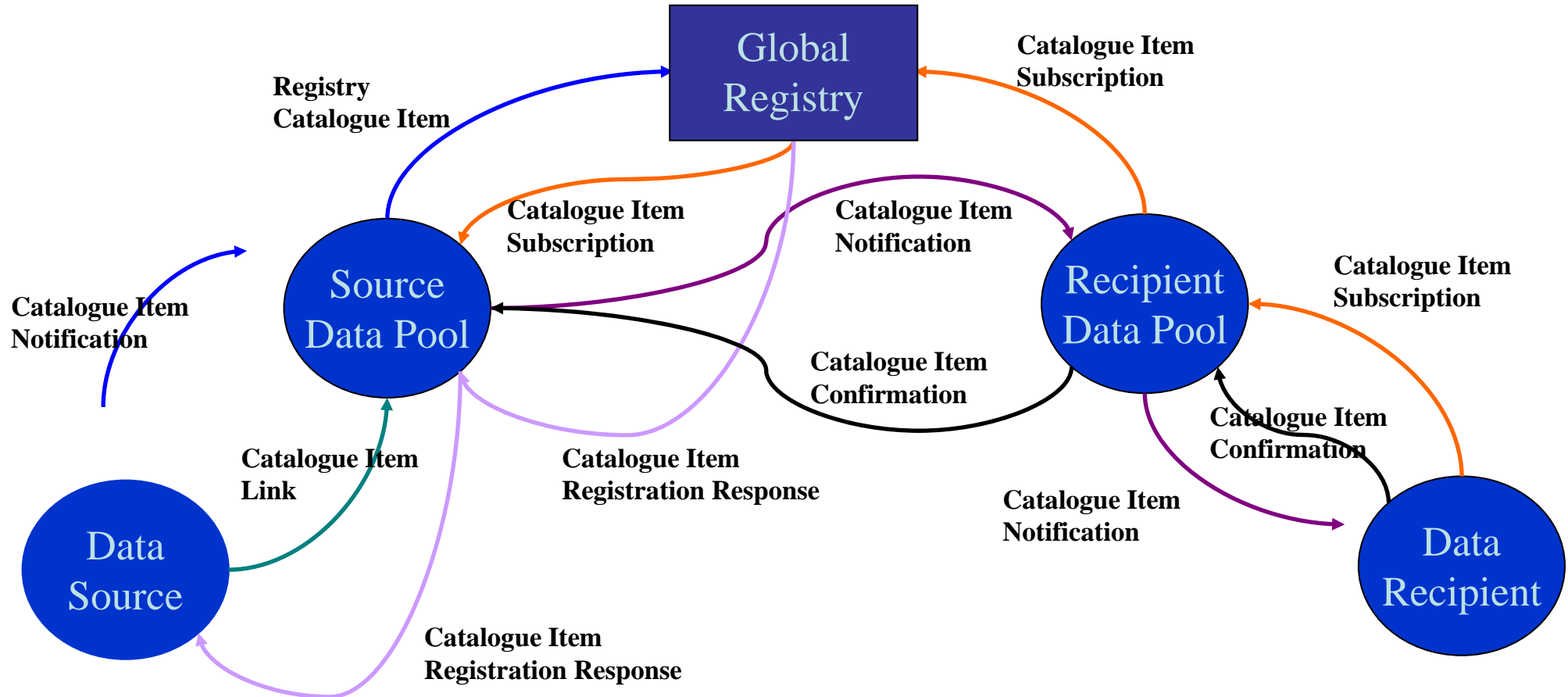


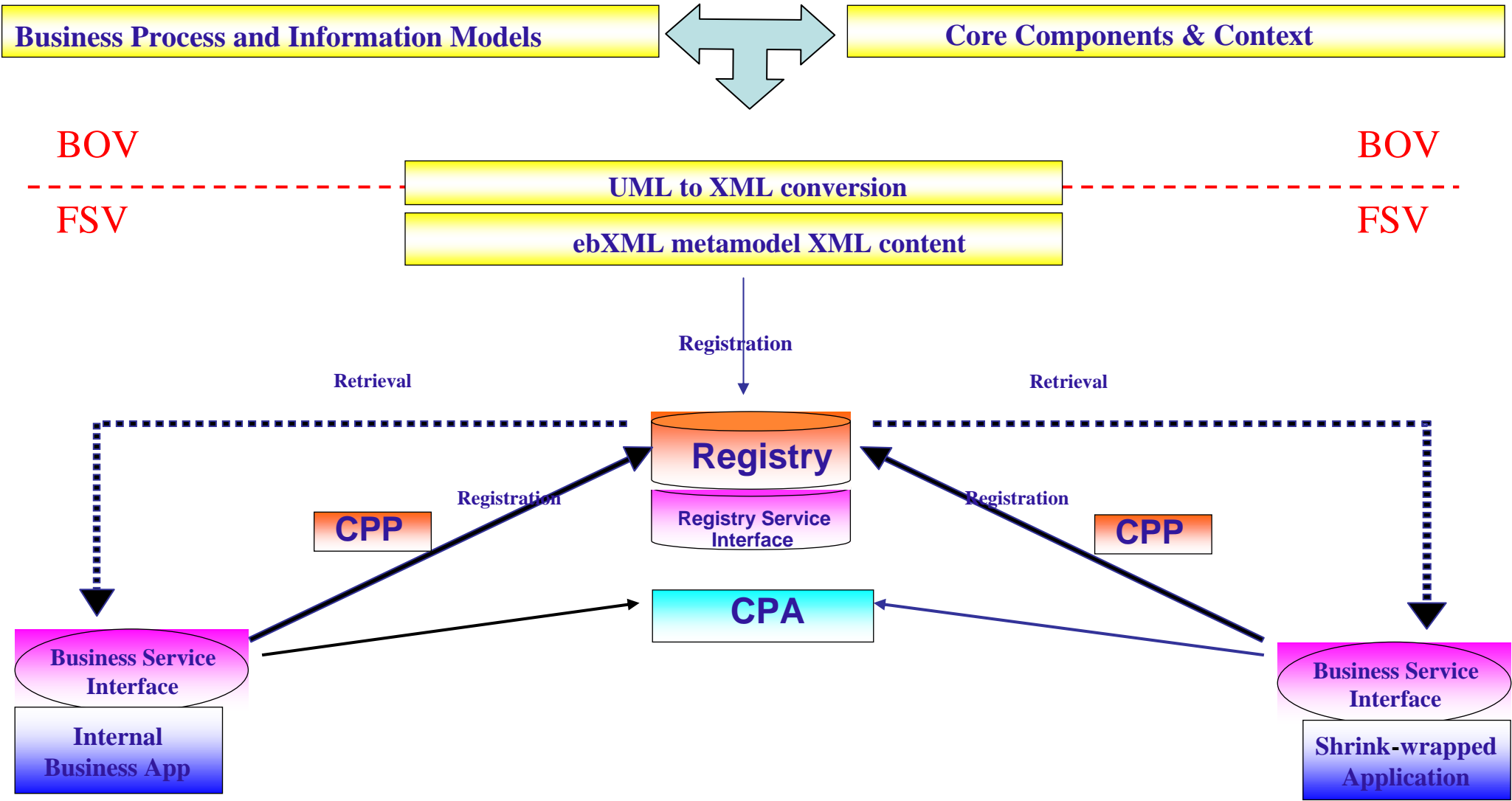


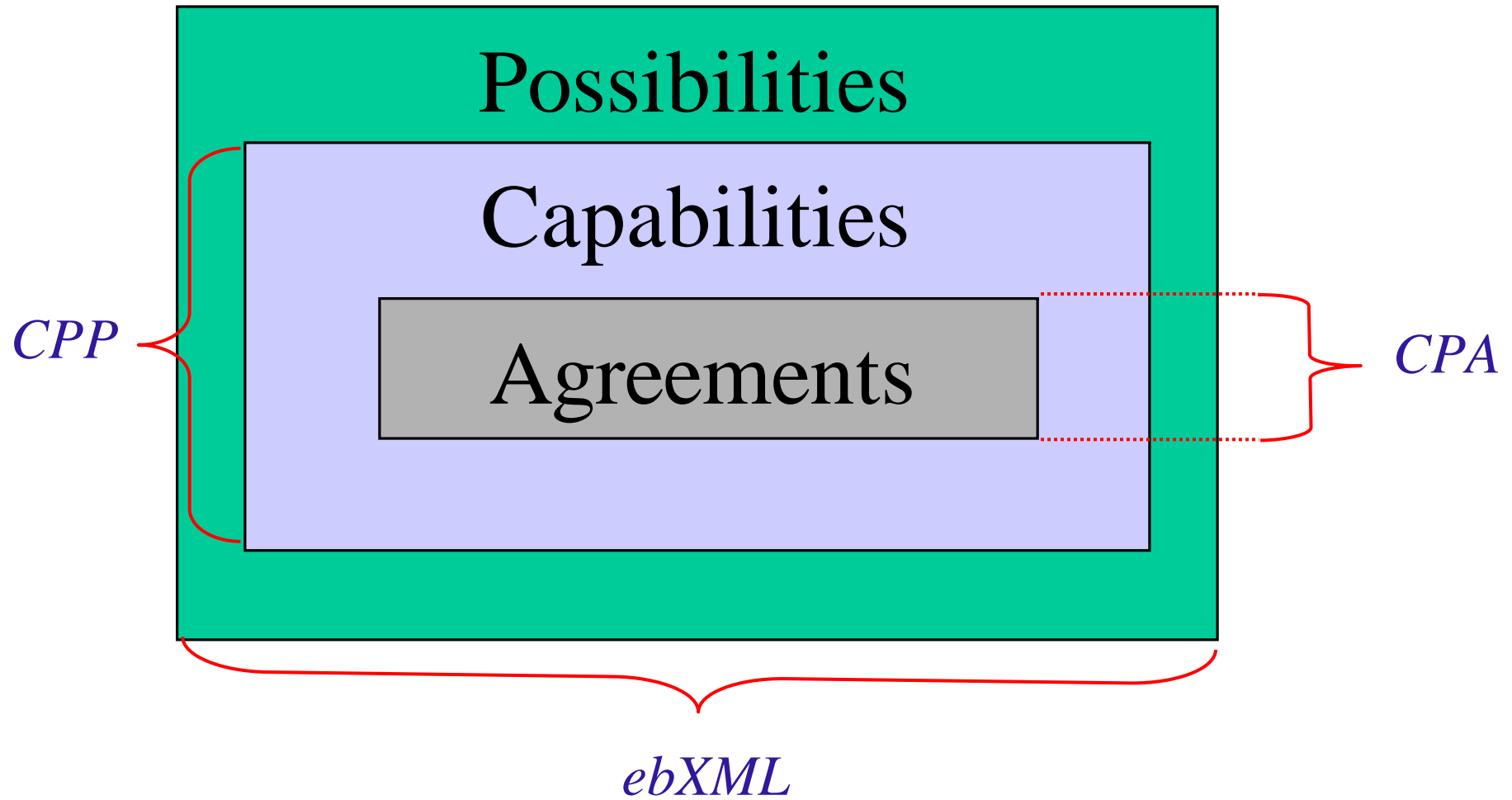




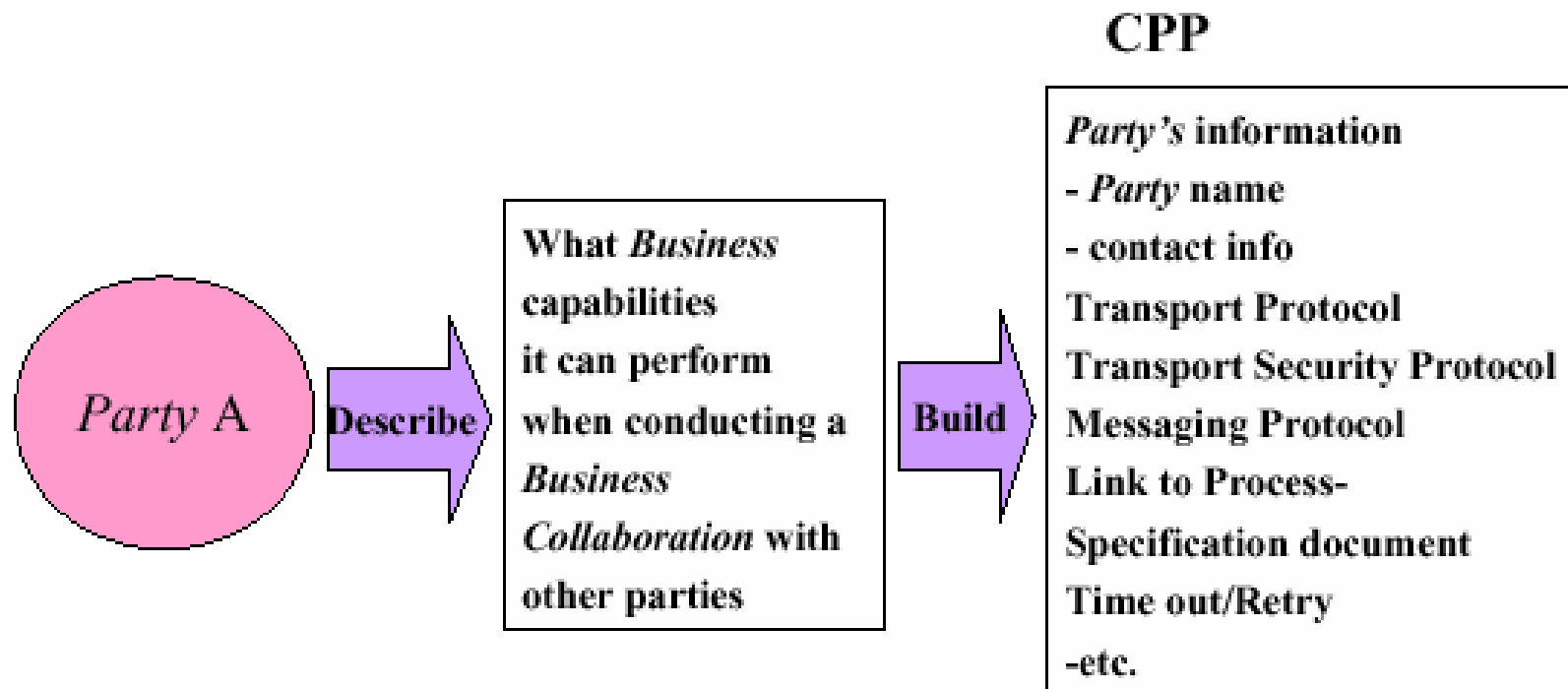
Catalogue Item Synchronisation

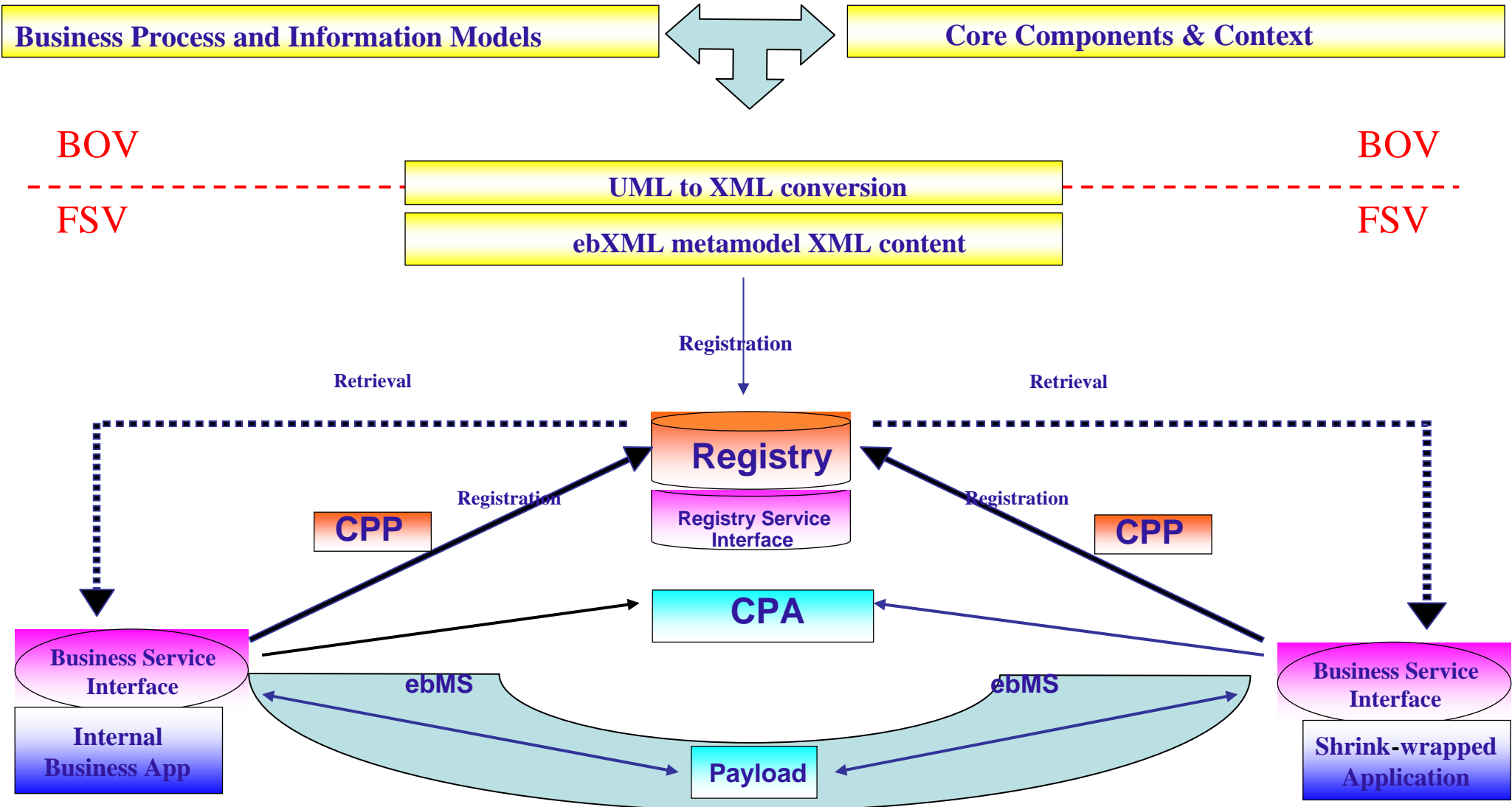


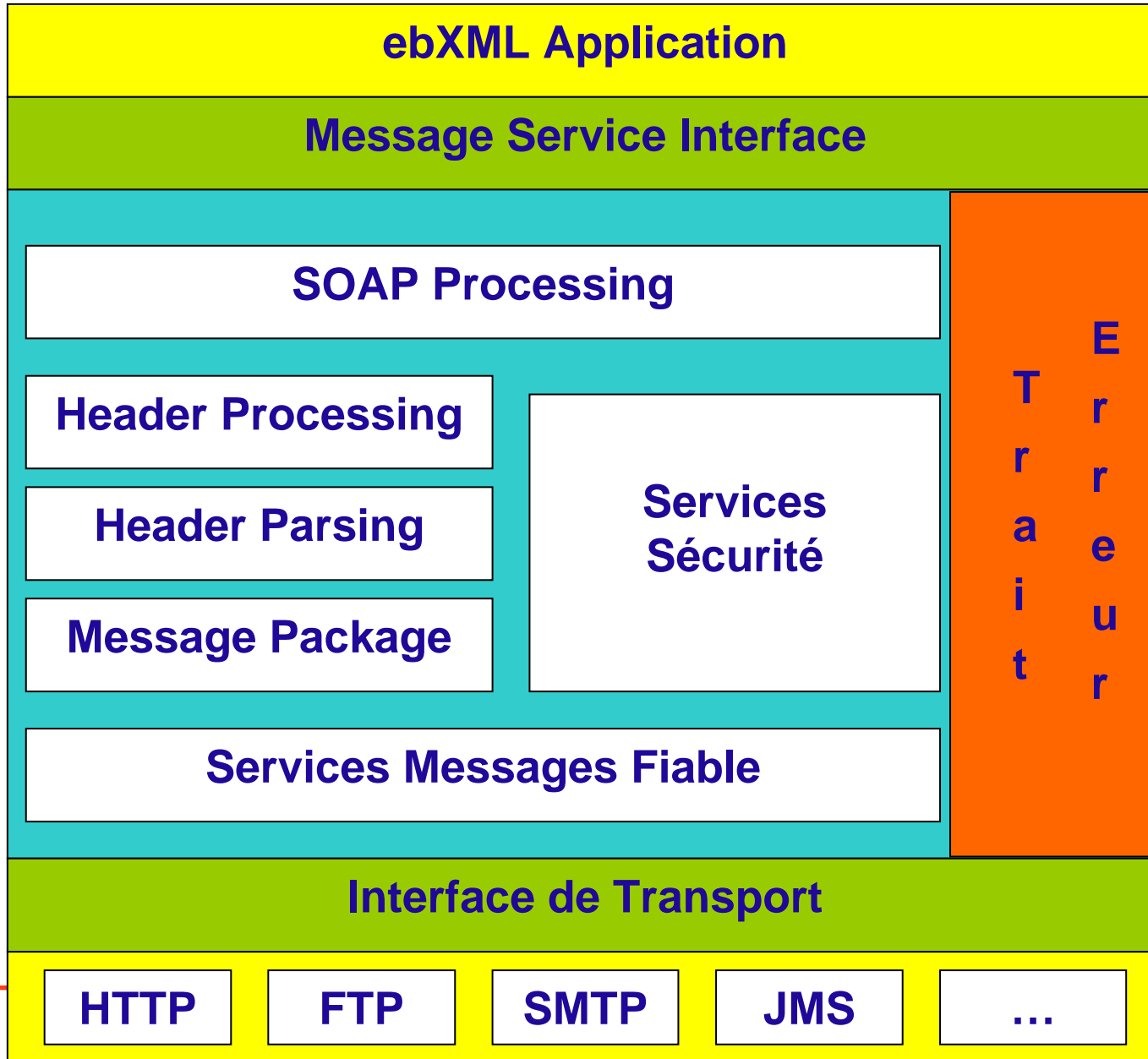


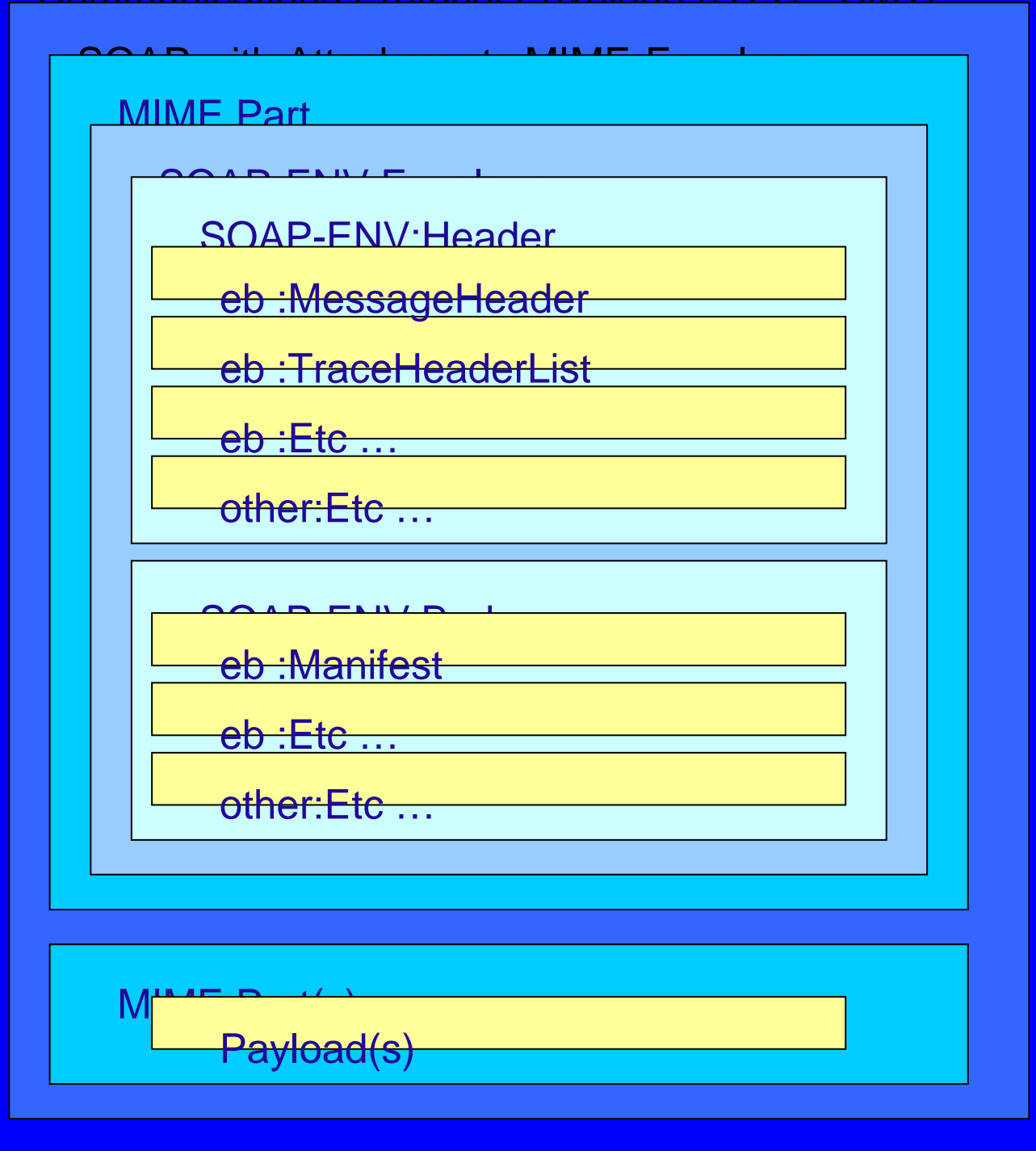


Overview of Collaboration-Protocol Profiles (CPP)







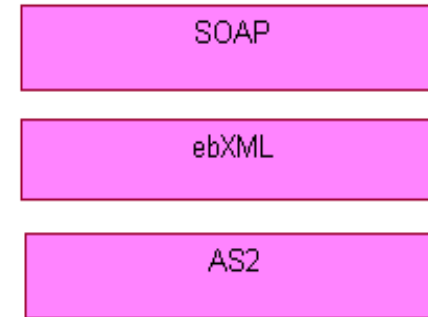
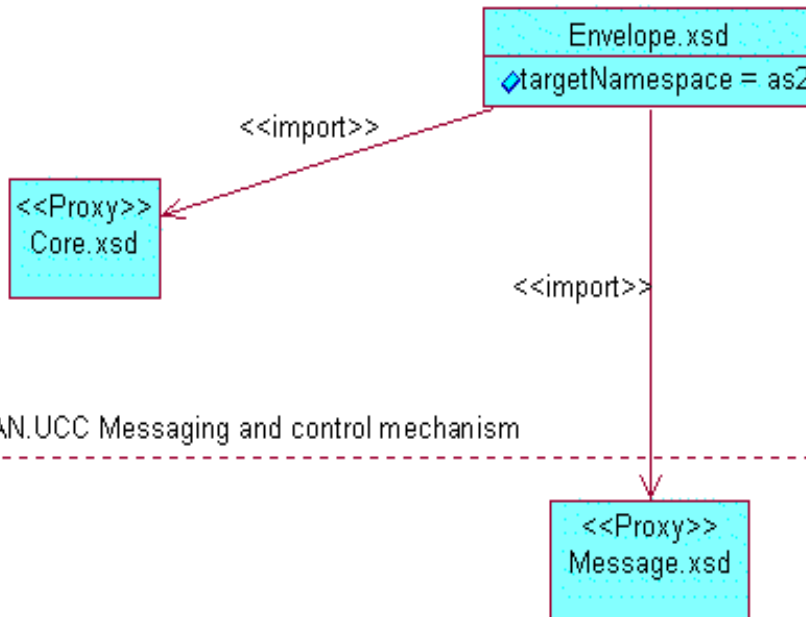


Envelope Layer

Envelope Layer

Transport and Routing protocols get substituted here

Envelope Layer



Message Layer

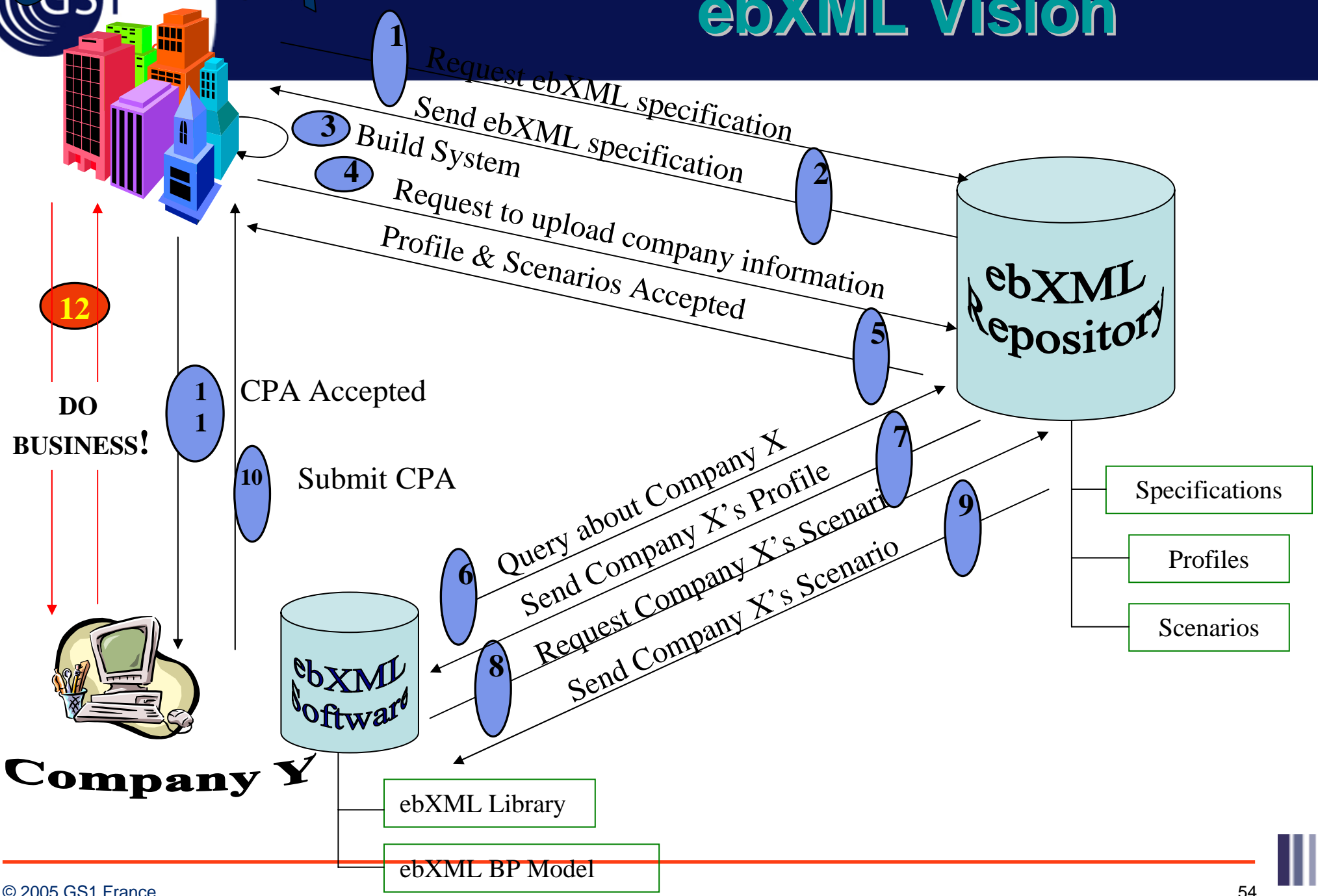
EAN.UCC Messaging and control mechanism

Message Layer



XML Payload Standard

- ✓ Naming & Design Rules being developed by UN/CEFACT ATG2
- ✓ Input from 12 major organisations (SWIFT, EAN.UCC, UBL, CIDX, OTA, ...)
- ✓ Currently 115 rules defined
- ✓ Draft specification beginning of next year





Standardiseringsarbetet i UN/CEFACT

✓ Mission:

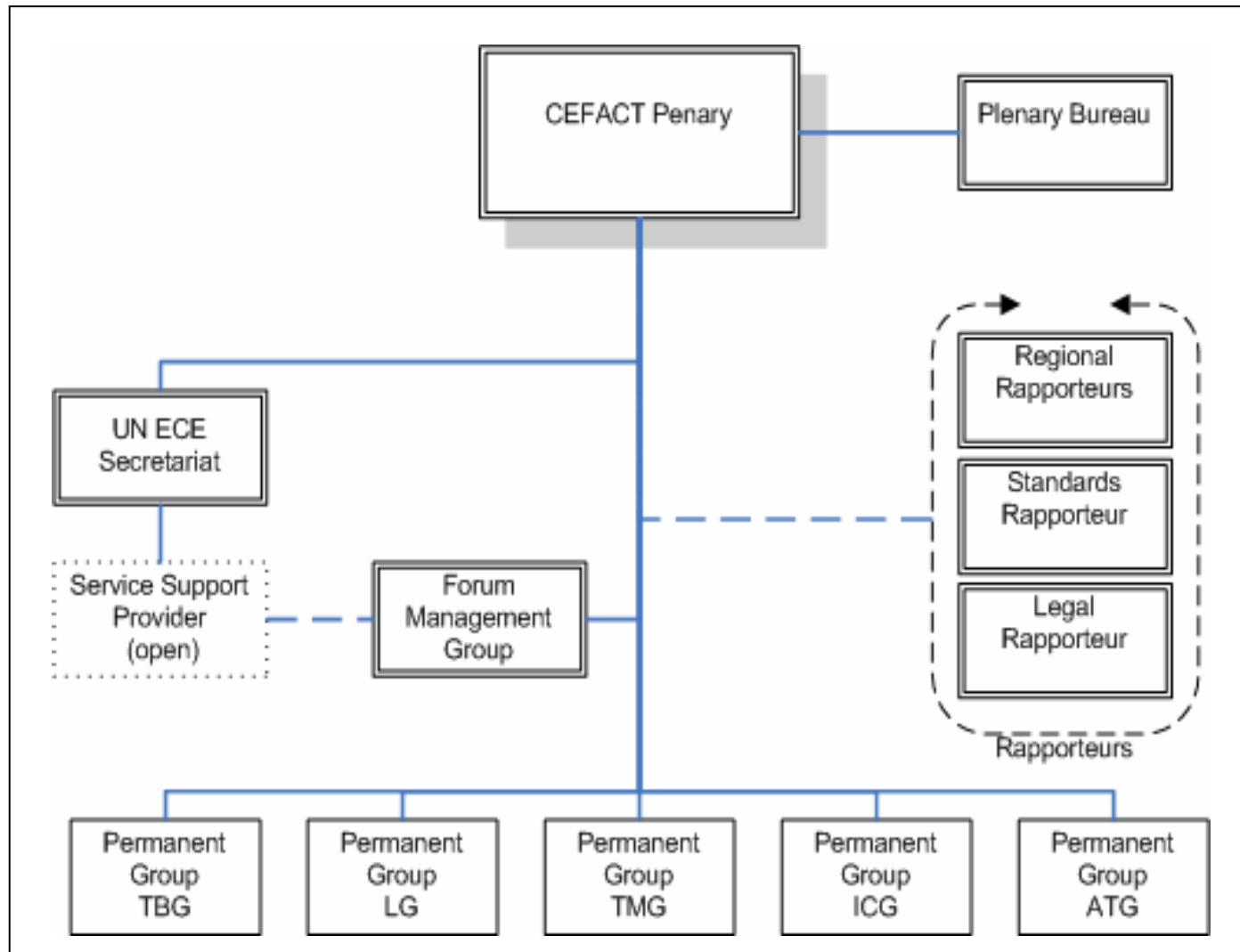
- Trade Facilitation and eBusiness.
- To improve the ability of business, trade and administrative organizations, from developed, developing and transitional economies, to exchange products and relevant services effectively.
- Contribute to the growth of global commerce

✓ Focus

- The worldwide facilitation of national AND international transactions, through the simplification and harmonization of procedures and information flows.



UN/CEFACT Structure



- ✓ The purpose of the TBG is to be responsible for the simplification of international trade procedures, business and governmental process analysis, and best practices, using the UN/CEFACT Modelling Methodology, where appropriate, to support the development of trade facilitation & e-Business solutions.
(TRADE/CEFACT/2004/11/Add.4)
- ✓ *Chair : Jean-Luc Champion*

TBG Working Groups		Chair
TBG1	Supply Chain	Fr. De Vos
TBG2	Electronic Documents	M. Dill
TBG3	Transportation & Logistics	D. Vankemmel
TBG4	Customs	G. Diepens
TBG5	Finance	Y. Gailly
TBG6	Architecture & Construction	B. Longhi
TBG7	Statistics Collection & Reporting	C. Nelson
TBG8	Insurance	B. Grossman
TBG9	Travel, Tourism and Leisure	P. Heilig
TBG10	Healthcare	Fr. van Bomme
TBG11	Social Services	
TBG12	Accounting & Audit	R. Lemense
TBG13	Environmental	D. Schwarz
TBG14	Business Process Analysis	N. Sharma
TBG15	International Trade Procedures	G. Cragge
TBG16	Entry Points	A. Dechamps
TBG17	Harmonisation	St. Korsgaard
TBG18	Agriculture	TBD

- Ensure the release of quality technical specifications for e-business.
- Management of the UN/CEFACT information repositories and libraries for electronic business;
- Technical conformance and the registration of the UN/CEFACT business requirements specifications;
- Normalization and maintenance of the base components (building blocks for the development of standards for implementation);
- Technical conformity and registration of syntax specific information objects and components.
- *Chair: Mike Conroy*



Major UN/CEFACT Registry Features

Publish UN/CEFACT Artefacts

Manage UN/CEFACT artefacts. Enforce conformity rules, Cataloguing, custom queries, WCM

Interoperability between autonomous ebXML registries

Federated Architecture

Information artefacts registry

Content Management

ebXML Registry

Secure Architecture

Standard Metadata

UN/CEFACT extensions:
 ✓ Identification
 ✓ Classification
 ✓ Association

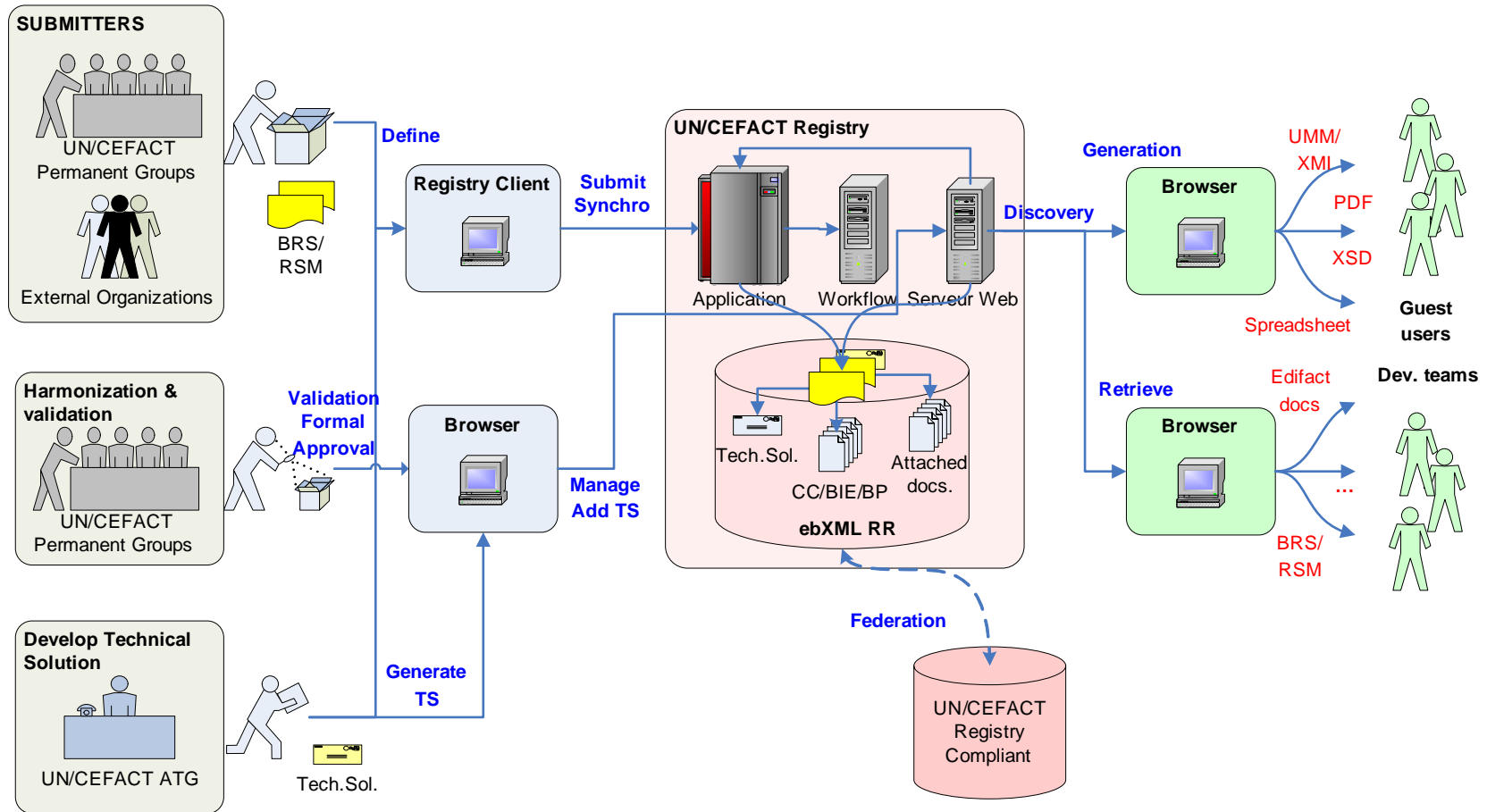
Event Notification

DSIG, Role-Based Access Control, Audit Trail

Enable UN/CEFACT workflow using Content-Based Event Notification



UN/CEFACT Registry functional view



Mandate:

The purpose of the ATG is to create and maintain the United Nations trade, business and administration document structures that are deployed by a specific technology or standard, such as UN/EDIFACT, UN Layout Key, UN e-docs or XML.

Chair: Anders Grangård

- ✓ Work on UMM, Business Process, Core Components and Architecture.
- ✓ Developing core eBusiness framework
- ✓ *Chair: Gunther Stuhec*



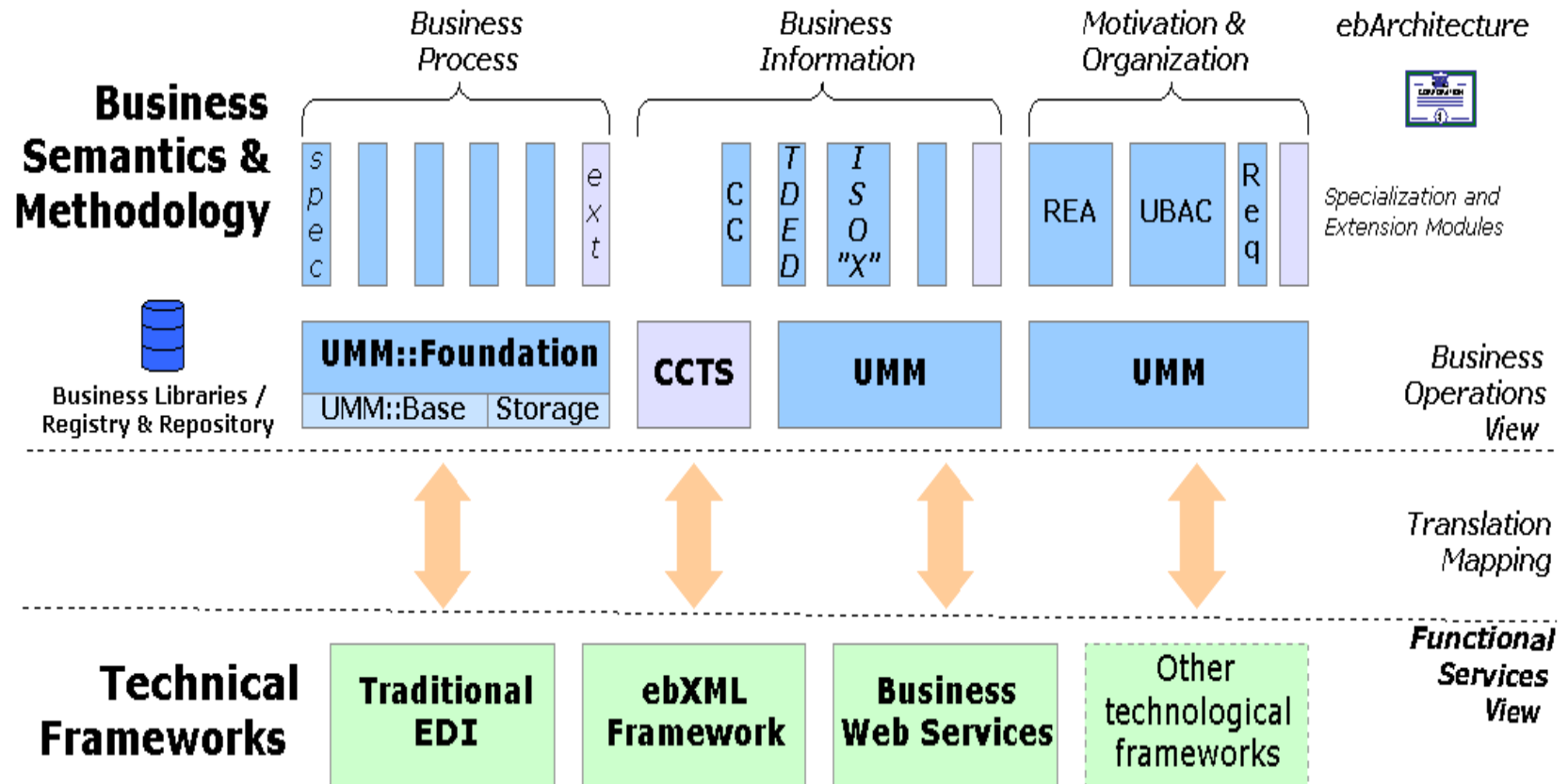
- ✓ All legal aspects.
- ✓ Working Group composed of individuals knowledgeable in law and technology.
- ✓ UN/CEFACT Intellectual property policy.



- ✓ UN/CEFACT 60 (+) projekt



UN/CEFACT Technology Agnostic Approach

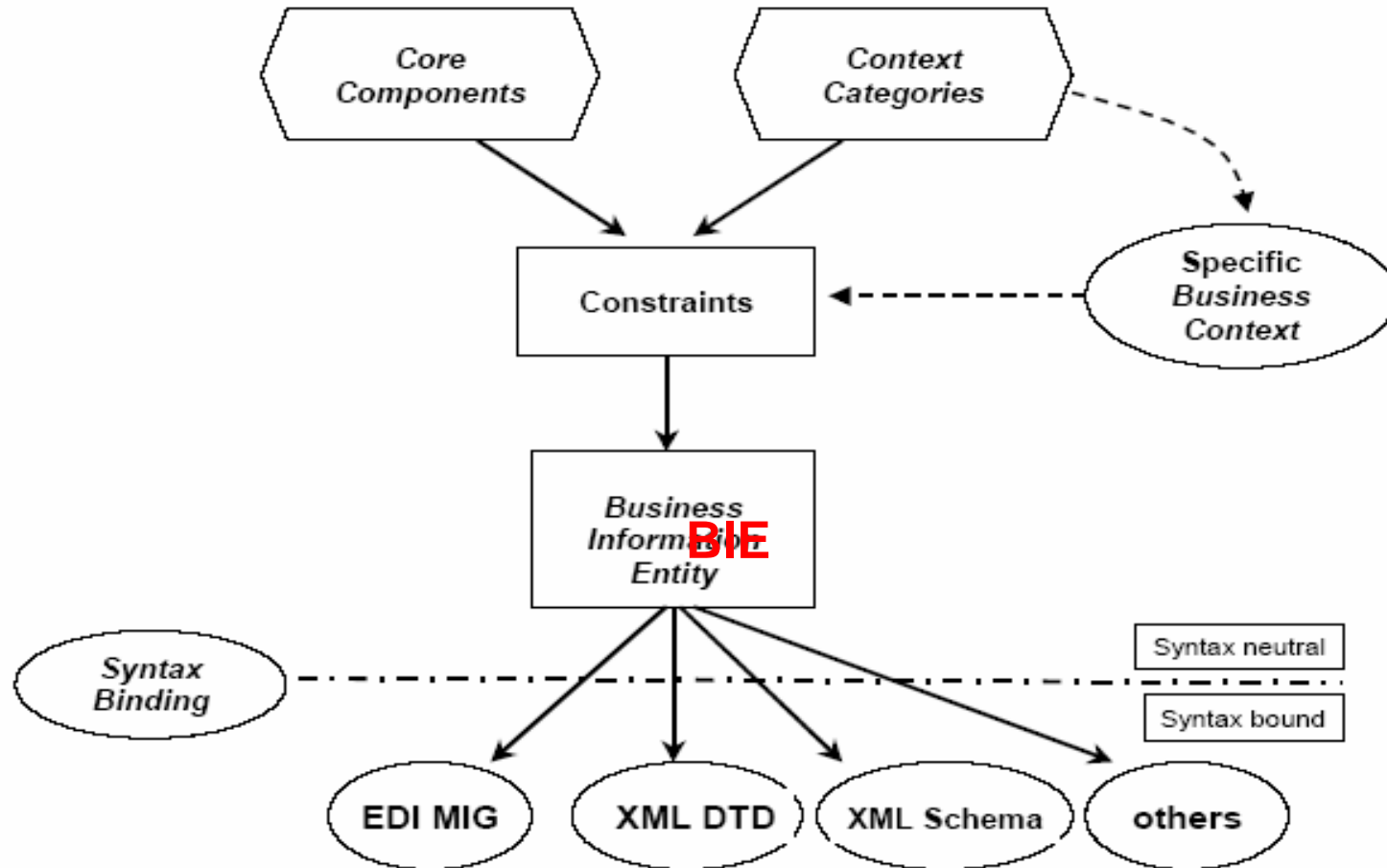


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- ✓ Design time technology.
- ✓ Captures the lexicon of an organization and all aspects of their business (policy, intent etc.).
- ✓ Technology agnostic - reusable over generations of implemented technology.
- ✓ Main artifacts:
 - Common Business Process Catalog
 - Core Component Library
(and other business libraries)
- ✓ Methodology to guide modelers to understand their goals.
- ✓ Derived set of artifacts can be mapped to and from UML, XML, EDI or other formats.



Core Component concepts



- ✓ United Nations Electronic Documents.
- ✓ Why - The strain that paper is putting on the international supply chain becomes greater every day:
 - **the movement of goods is accelerating**
 - **modern containerized traffic “outruns” accompanying documents**
 - **Must balance needs of secure supply chains with trade facilitation**
 - **Newer technologies will automate supply chains and challenge paper and electronic documents and procedures.**
- ✓ UN eDocs solve these problems



- ✓ Världens största EDI standard
- ✓ Implementerad globalt
 - Jo, även i USA!
- ✓ 195 meddelanden
- ✓ “Ryktena om min död är starkt överdrivna”



- ✓ Styrka&svaghet: integrerad del i ebXML
- ✓ Svaghet: konkurens med pragmatiska UBL
- ✓ Styrka: samarbete med UBL

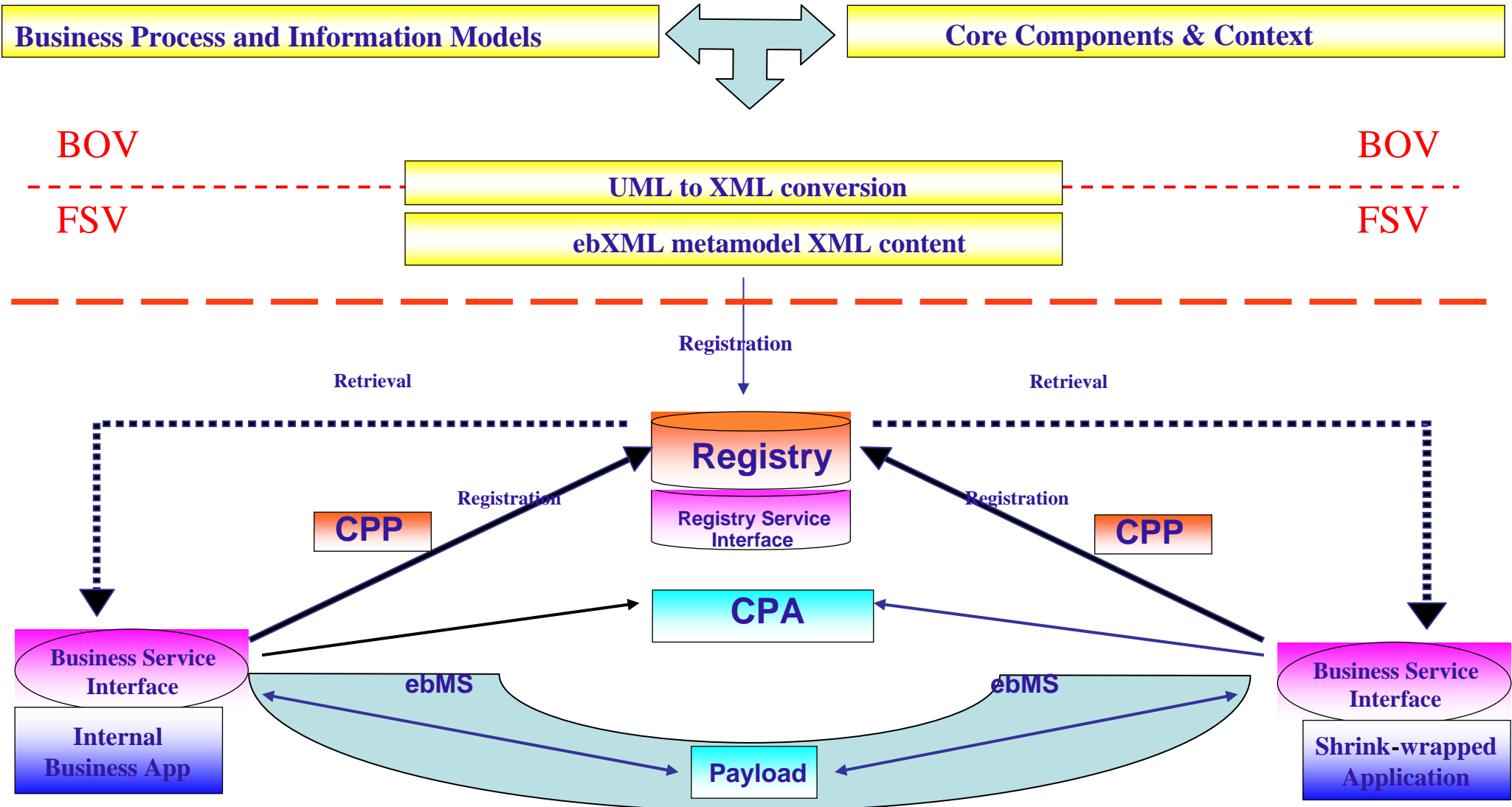


Internationella grupperingar som verkar inom ramen för ebXML

GS1, OAG, OASIS/UBL
kopplingar till UN/CEFACT

- ✓ UBL
- ✓ OAG
- ✓ GS1
- ✓ SWIFT
- ✓ RosettaNet
- ✓ OTA
- ✓ HL7







Arbetet i CEN workshop eInvoicing

- ✓ Council Directive 2011/115/EC on the simplification, modernisation and harmonisation of the conditions laid down for **invoicing in respect of VAT.**
- ✓ “Invoice”:
 - Paper based
 - Electronic format
- ✓ Right to deduct Value Added Tax
- ✓ Current legislation dated back to the '60s, where the environment was paper-based.
- ✓ Today:
 - new technologies,
 - more cross border commerce,
 - arrangement for e-invoicing was therefore needed.
- ✓ Transposition in national legislation until 1/2004



- ✓ e-invoicing permitted, Art. 2 (c)
- ✓ Minimum of data required (...no signature required, Art. 2 (b))
- ✓ Authenticity of origin and integrity of the data must be ensured
- ✓ Three options possible:
 - EDI
 - Advanced electronic signature with or without links to qualified certificates
 - Other systems (not defined but these must also ensure authenticity and integrity)
- ✓ The legislation will also be required to be followed by the new candidate countries for accession.



Mandatory requirements according to the European Directive 2001/115/CE

	289 bis	2001/115/CE	Segment / DE	Codes
Date de délivrance ou d'émission	X	X	DTM - 1001	137
Numéro séquentiel	X	X	UNH - 0062	
Numéro d'identification à la TVA de l'assujetti	X	X	SG3 – RFF	VA
Numéro d'identification à la TVA du client		X	SG3 – RFF	VA
Nom complet et adresse de l'assujetti	X	X	SG2 – NAD – C059, 3164, 3229, 3251, 3207	IV
Nom complet et adresse du client	X	X	SG2 – NAD – C059, 3164, 3229, 3251, 3207	SE
Numéro d'identification à la TVA du représentant fiscal		X	SG3 – RFF	VA
Nom complet et adresse du représentant fiscal		X	SG2 – NAD – C059, 3164, 3229, 3251, 3207	LC
Quantité du bien livré	X	X	SG25 – QTY – 6063	47
Dénomination précise du bien livré	X	X	SG25 – IMD - 7077	E
Champ d'application de la prestation de service	X	X		
Dénomination précise de la prestation de service	X	X	SG25 – IMD - 7077	E



1. EDI and business standards

- ✓ Update Commission Recommendation 1994/820/EC
- ✓ Creation of the relevant UN/CEFACT Core Components
- ✓ Permit the use of organisation identifiers and product identifiers, as alternatives to the names and descriptions
- ✓ Develop codes, standardised at community level, to replace standard clauses (text)
- ✓ To list the various ways of how data elements that are described in the Directive are being applied in each member state.

2. Electronic signatures for eInvoices

- ✓ Guidelines specifying how to apply digital signatures to companies
- ✓ Guidelines specifying how to apply digital signatures to multi-tier communications
- ✓ Define integrity, authenticity and signature authorisation and how the result can be documented

3. Overall work items

- ✓ Rules for storage of electronic invoices within the member states, including rules and guidelines for inspection
- ✓ Harmonised electronic invoicing processes for tax authorities in all EU Member States, in particular, for cross-border electronic invoicing.
- ✓ Rules and guidelines for service providers, such as ASP and VAN
- ✓ Define an e-Invoicing Framework Model.





e-Committees
CEN/WS eIN
Interoperability of Electronic Invoices in the European Community.

Public Information :

- Scope
Member List
Work Programme
Published Standards
Structure and Organisation
Public Documents
Business Plan
Calendar of events
Calendar of Plenary meetings
Documents from CEN/ISSS eBES
Glossary
To register
Open meeting 27 June 2005
News

Restricted to members :

- Participant List
Meeting Calendar
Document Register
Work Items
CWA Template
Task Teams Members
Discussion Forum
Forum Archive

User : Password : Connect

Contact : Mlle France LAFARGUE
Mme Monique BRUNORO



PDF - Need to use Acrobat Reader, free download

Last update : 2005-06-24 11:58

The e-committees site is designed for IE 5.5 + or similar



Något om hur man arbetar med e-frågor i Frankrike

National working groups

✓ EDIFRANCE

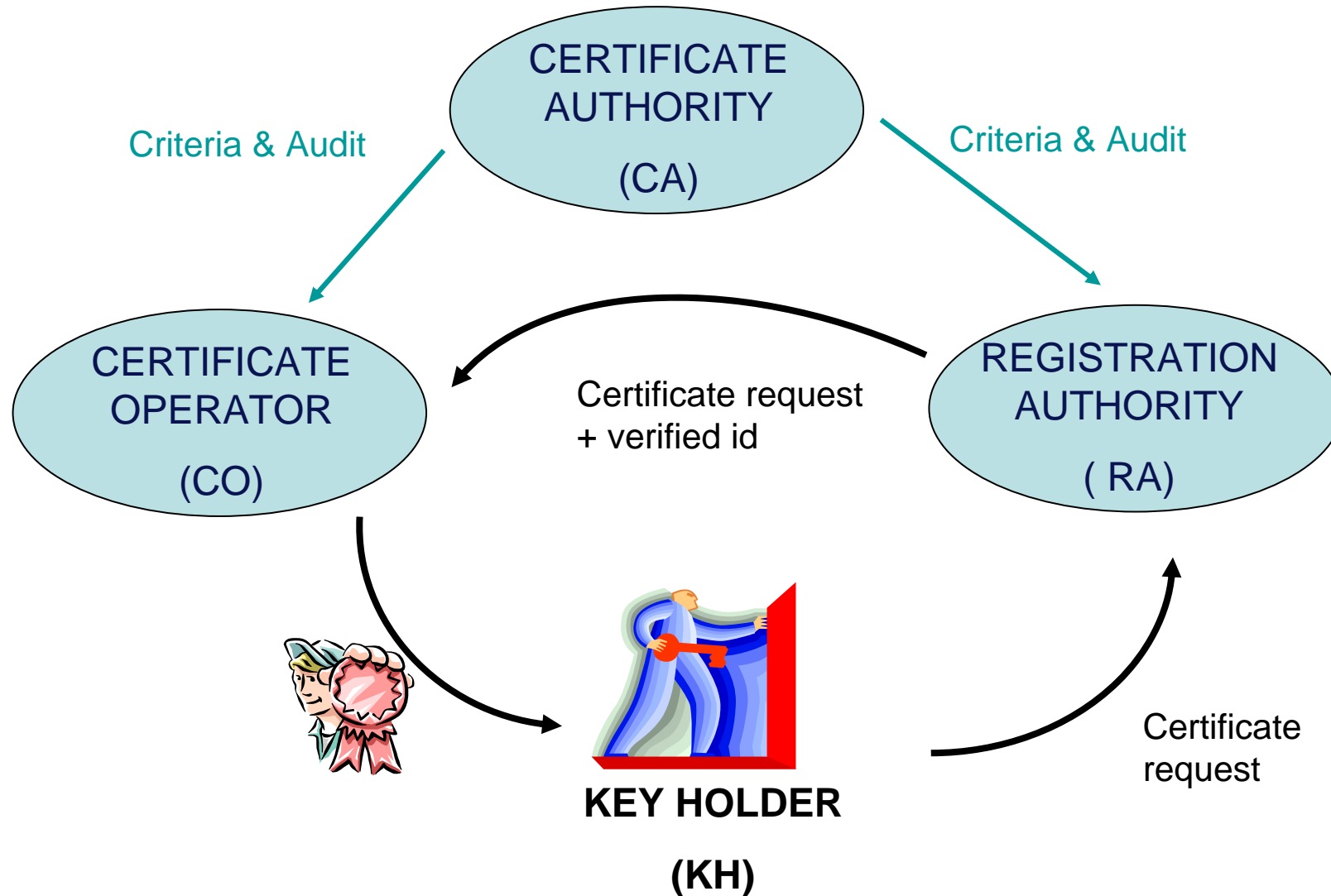
- Aimed at harmonising and provide guidance for eBusiness across all French industries and sectors.
- Deliverables
 - Best practice guidelines
 - French intersectoral profiles
 - Coordinated international views

✓ GS1 France

- Retail & distribution and ...



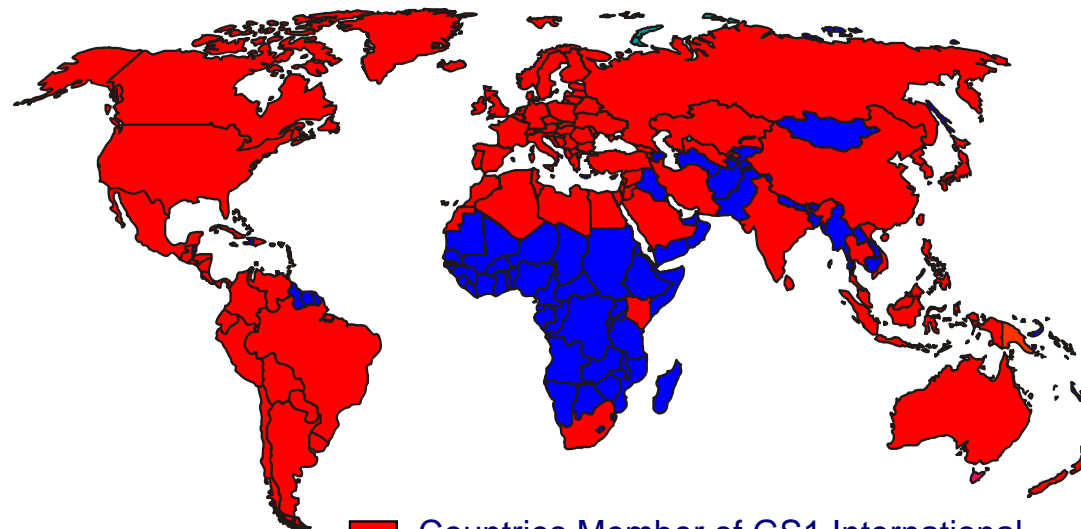
Certificat Management







GS1

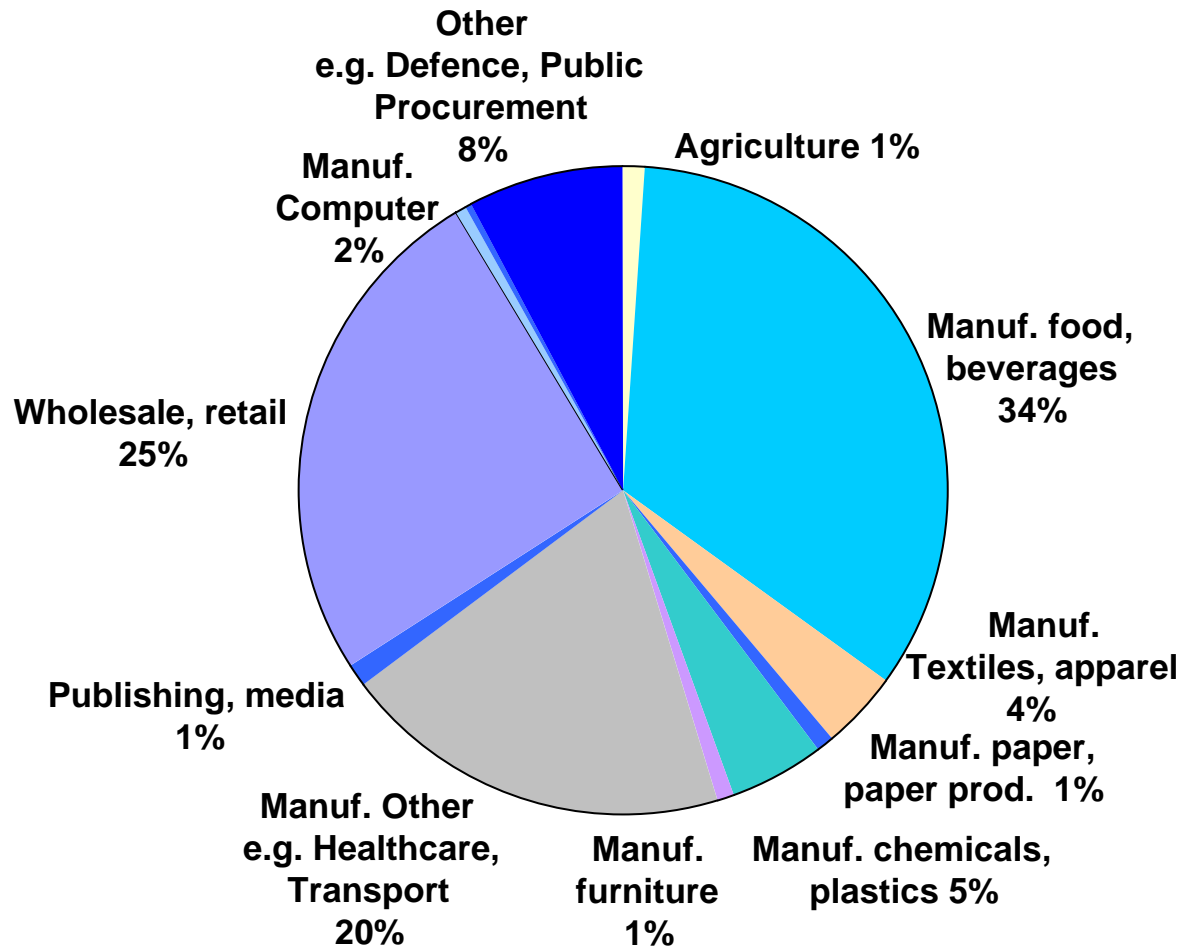
- ✓ Organisation created in 1977
- ✓ Co-ordinates GS1 organisation in 103 countries around the world
- ✓ Managing authority for countries without national GS1 structure.
- ✓ 1 million user companies



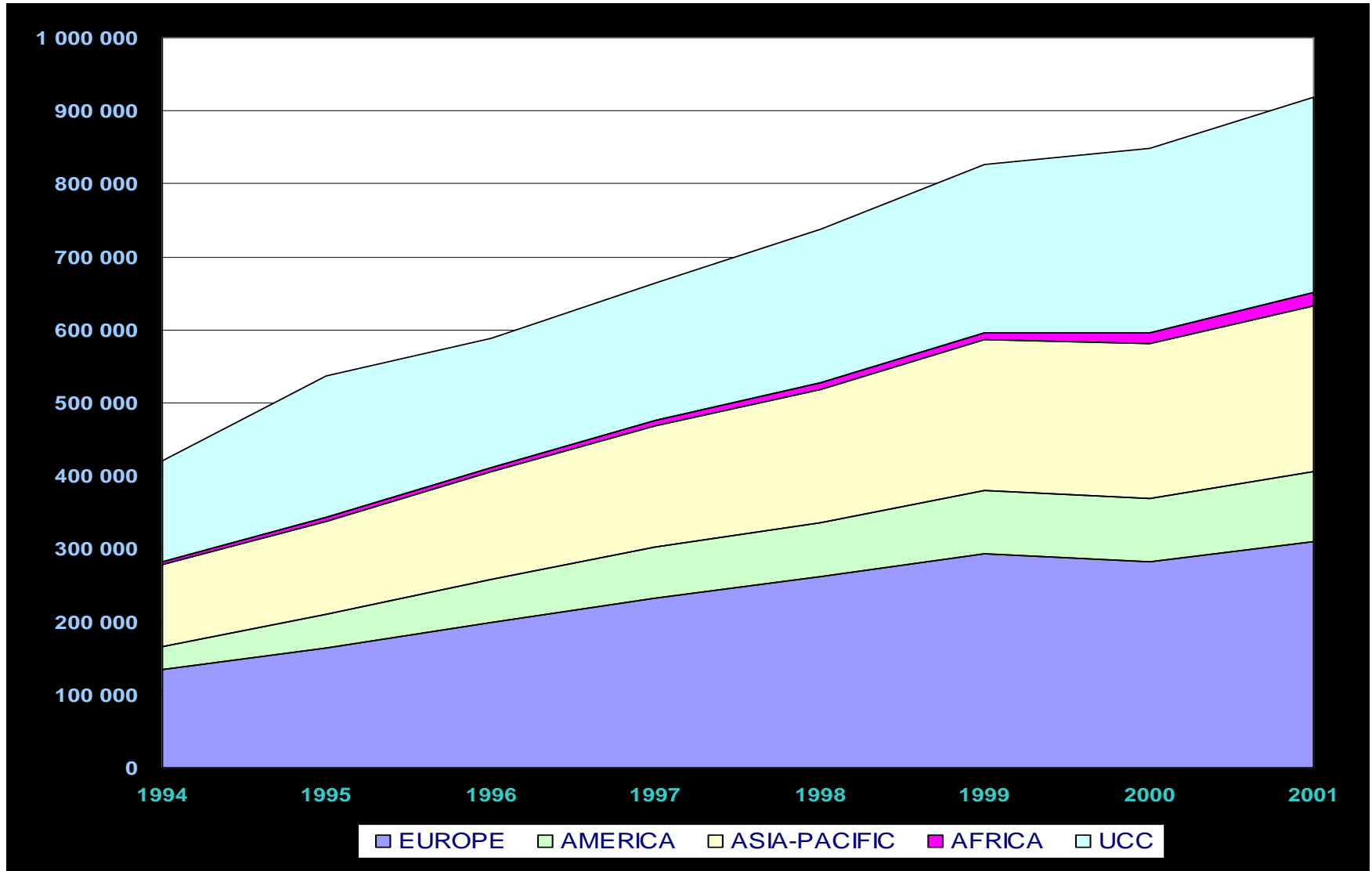
 Countries Member of GS1 International
 Manufacturer numbers are allocated on a direct basis by EAN International and UCC



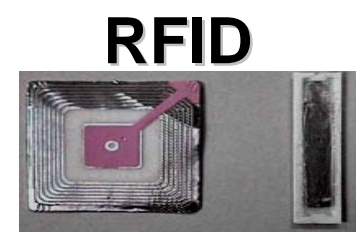
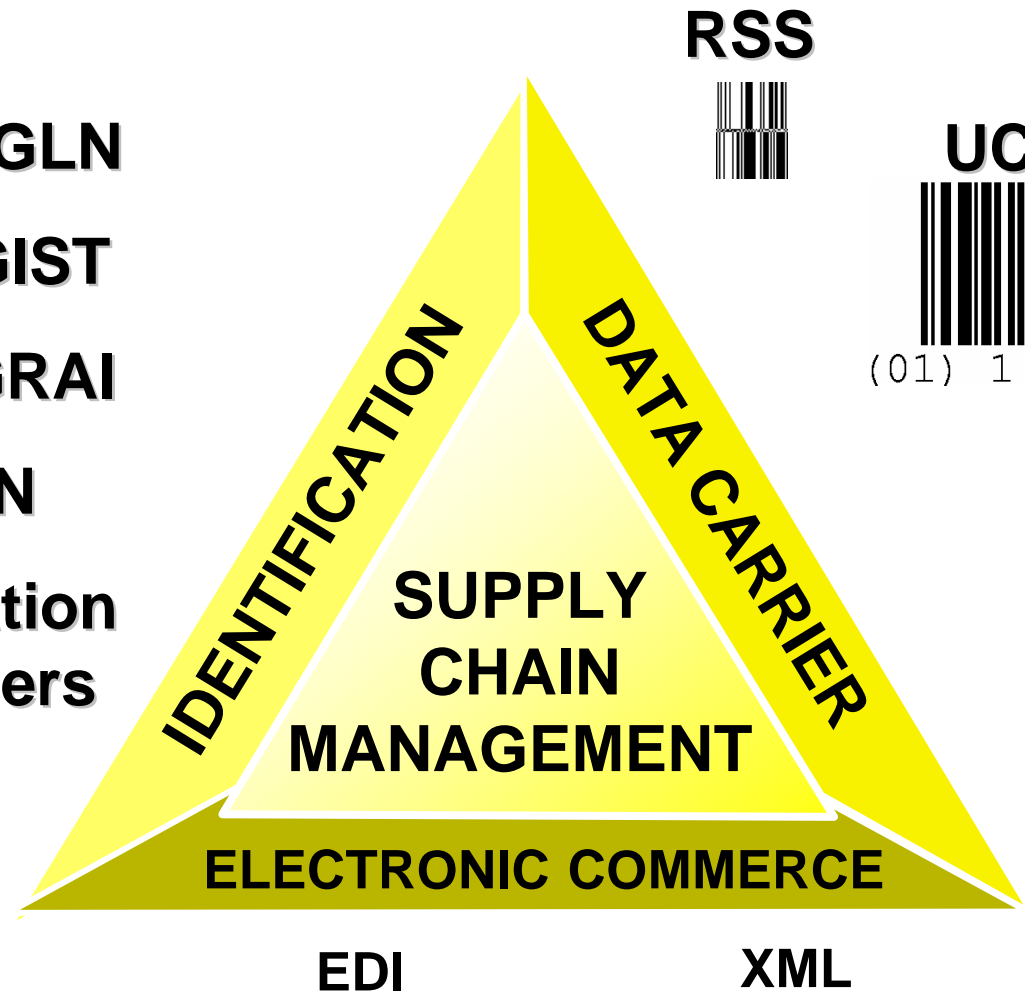
GS1 member companies come from a large variety of industries



The global EAN•UCC Membership



GTIN GLN
GIAI GIST
GIAI GRAI
GSRN
Application Identifiers





The Global Language of Business

Improving efficiency & visibility in supply and demand chains

GS1 Solutions

Point of Sale, Inventory Mgt, Asset Mgt, Collaborative Planning, Traceability

GS1 System (formerly the EAN.UCC System)

Global standards for item identification



Global standards for electronic business messaging



Global Standards for global data synchronisation



Global Standards for RFID-based identification

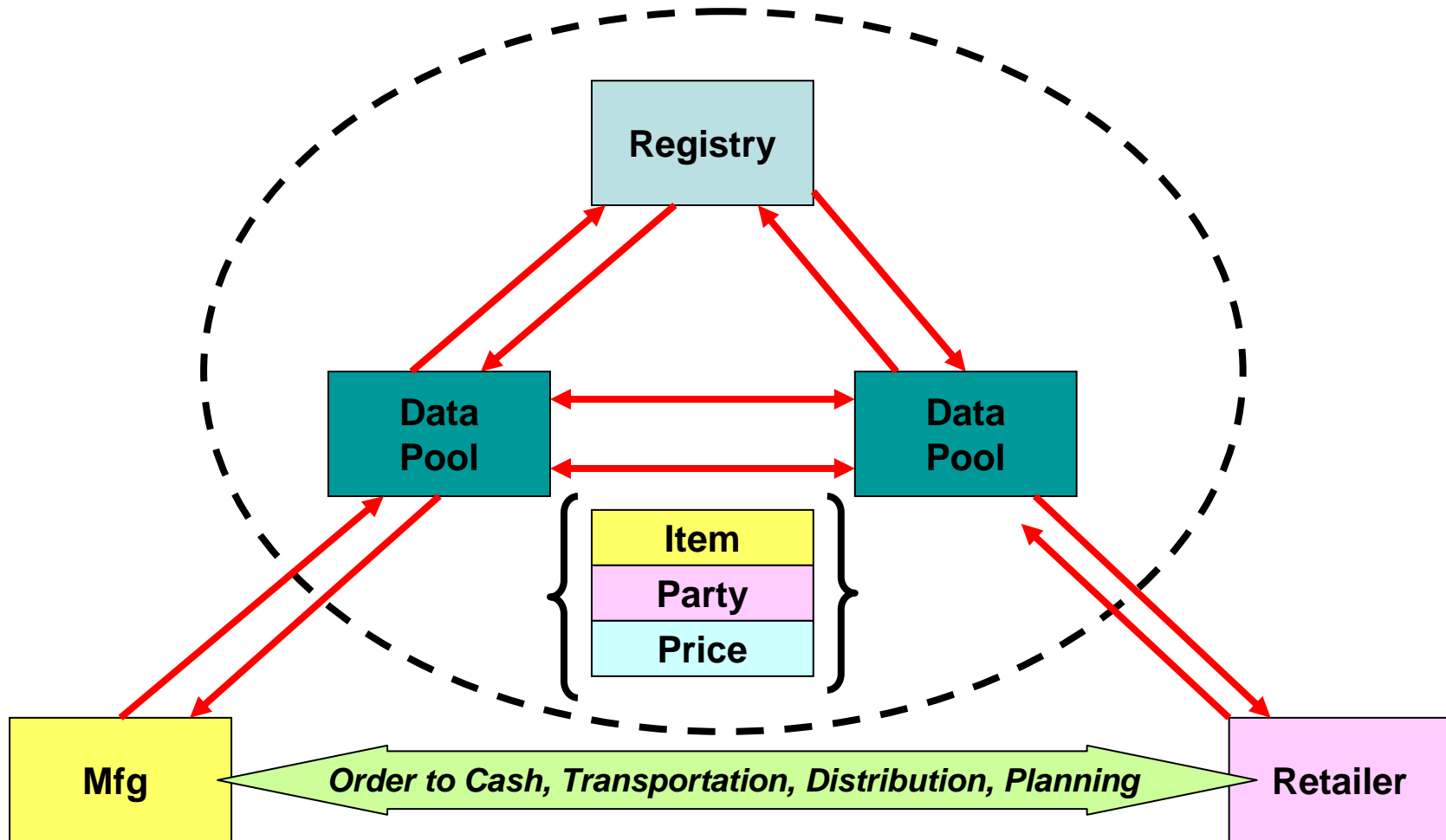


Common Identifiers: GTIN, GLN, GRAI, GSRN, SSCC, GIAI, GTDI & EPC
Attribute data: eg Best before date, Deliver to location, batch number.....

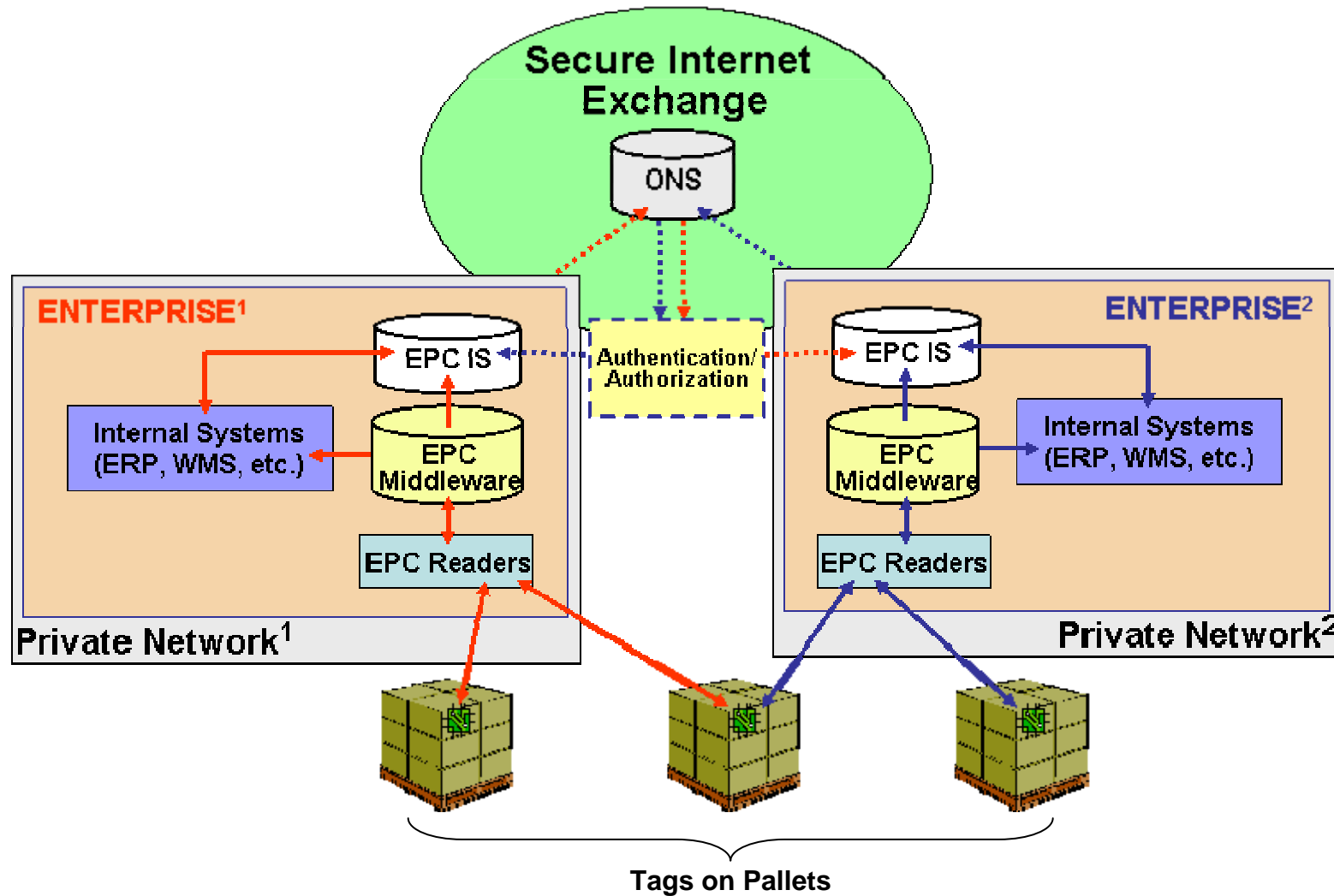
Global & Local Services

Global Standards Management Process, Global Registry, Learn....
 Help desk, events, facilitation, training guides and publications...
 Representation, community adoption....
 Data Pool, Quality Assurance Services.....

GDSN Network & Payload



The EPCglobal Network





Varför Internationella Standarder?

En Global EDI Standard?

1972 - 1982

- SEDAS, DE
- GENCOD, FR
- TRADACOM, UK
- TRANSCOM, NL
- DAKOM, SE
- and others

1983

TDI

1988

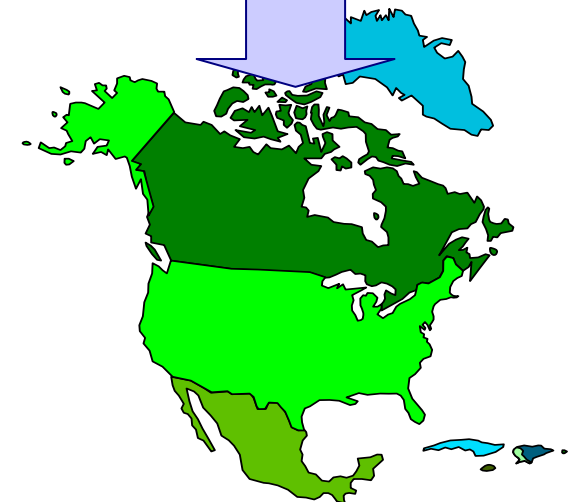
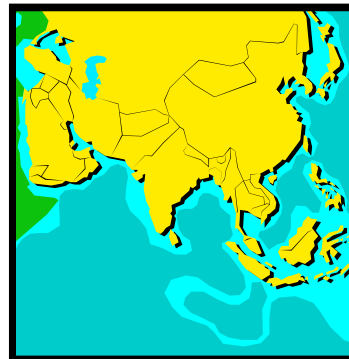
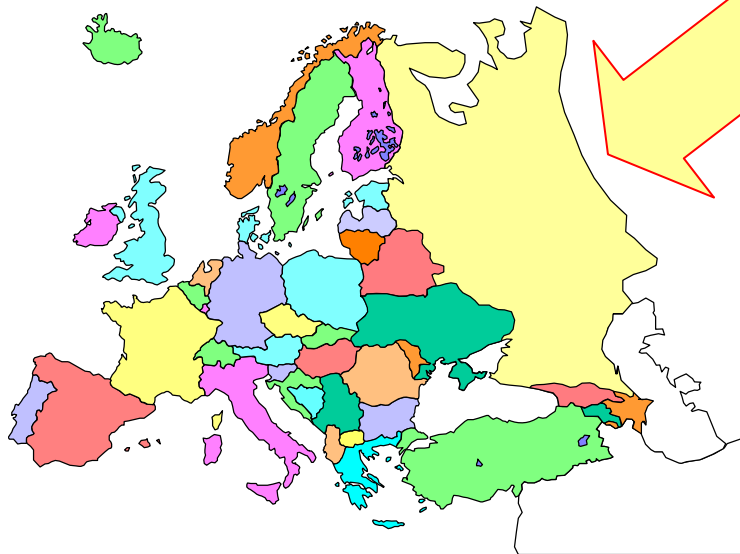
UN/CEFACT

1983

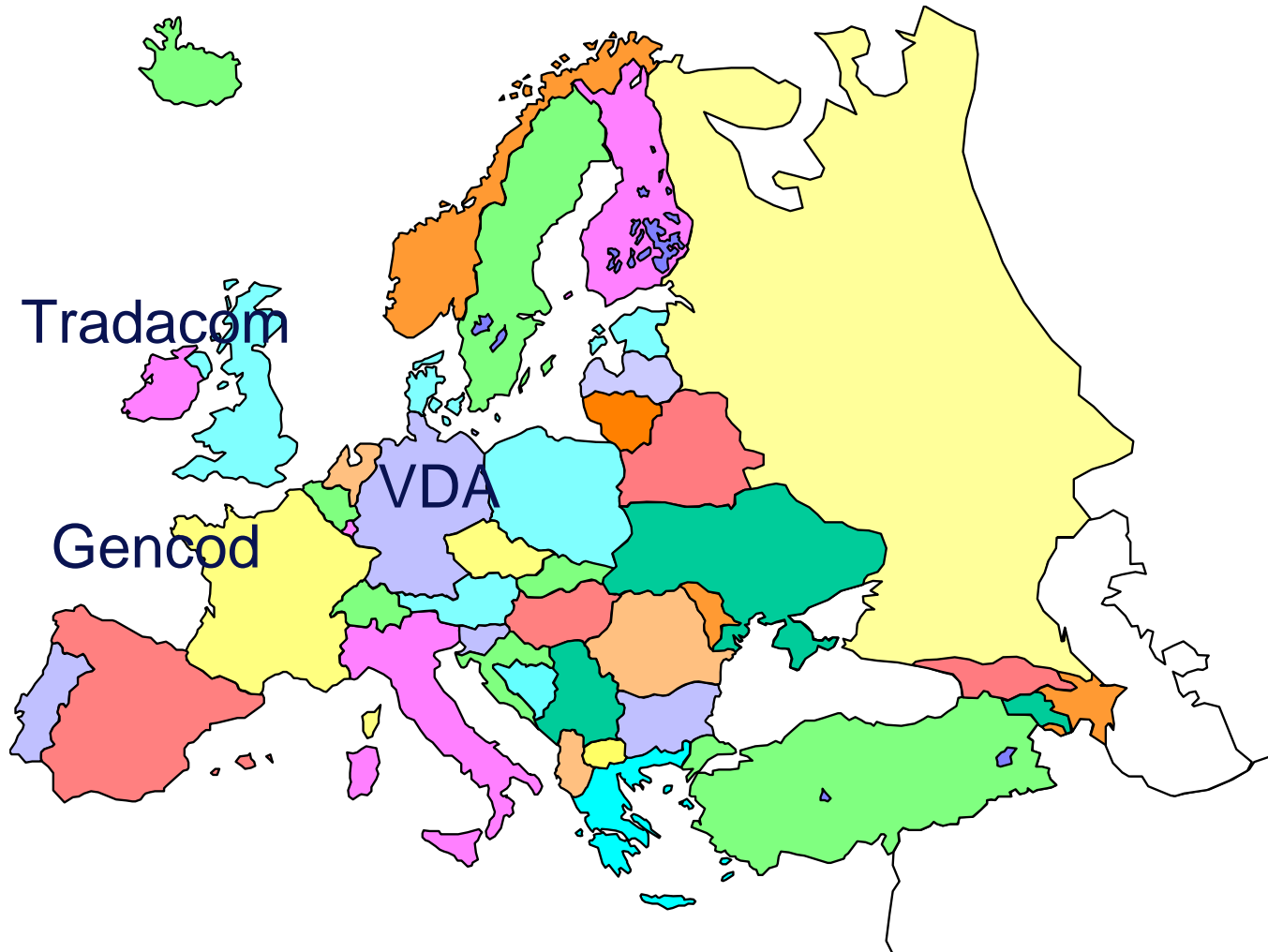
ANSI X12

EANCOM

VICS



En Global EDI Standard?

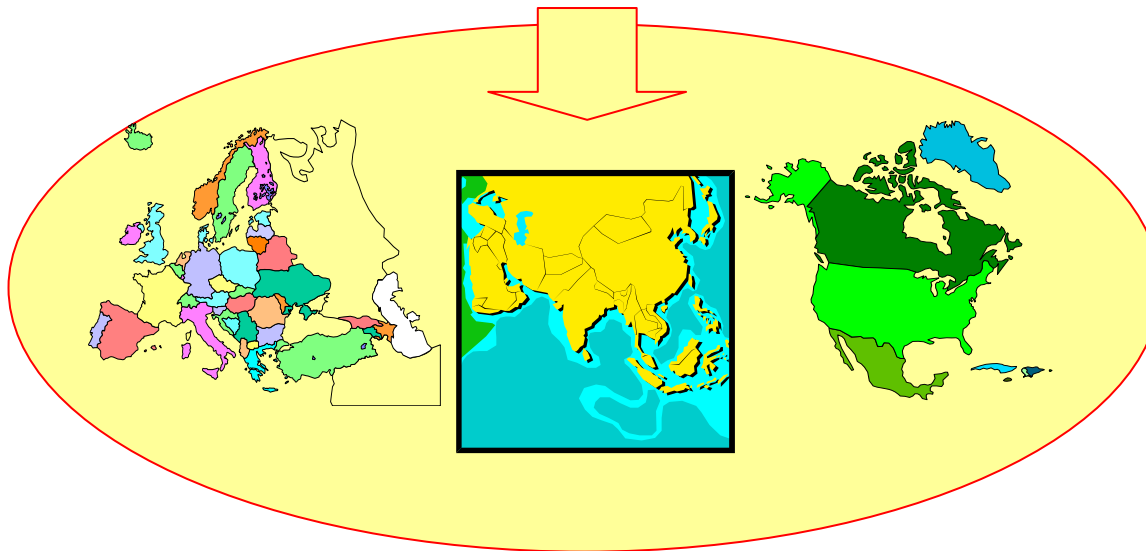


En Global EDI Standard?

XML

- *Globally implemented*
- *Local Flavor*
- *Fast*
- *Simple*

GDSN, Order to Cash, CPFR®



Why Standards

- **Cross-sectoral interoperability.**
- **User requirements.**
- **Technical standard vs. Application standards**
- **Technical standard's limitations/possibilities**
- **Technical expertise**
- **Strategic importance**



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