



# ISO 15022 XML Working Group



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# Background



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# Standards Development

- Leveraging New Technology
- Expanding Coverage
- Focusing on Market Practice

# XML and Standards

## *Two Variations*

- **Evolving Existing Standards**
  - FIX, SWIFT
- **Creating New Standards**
  - Industry Consortium - FpML
  - Vendor based - FinXML, NTM

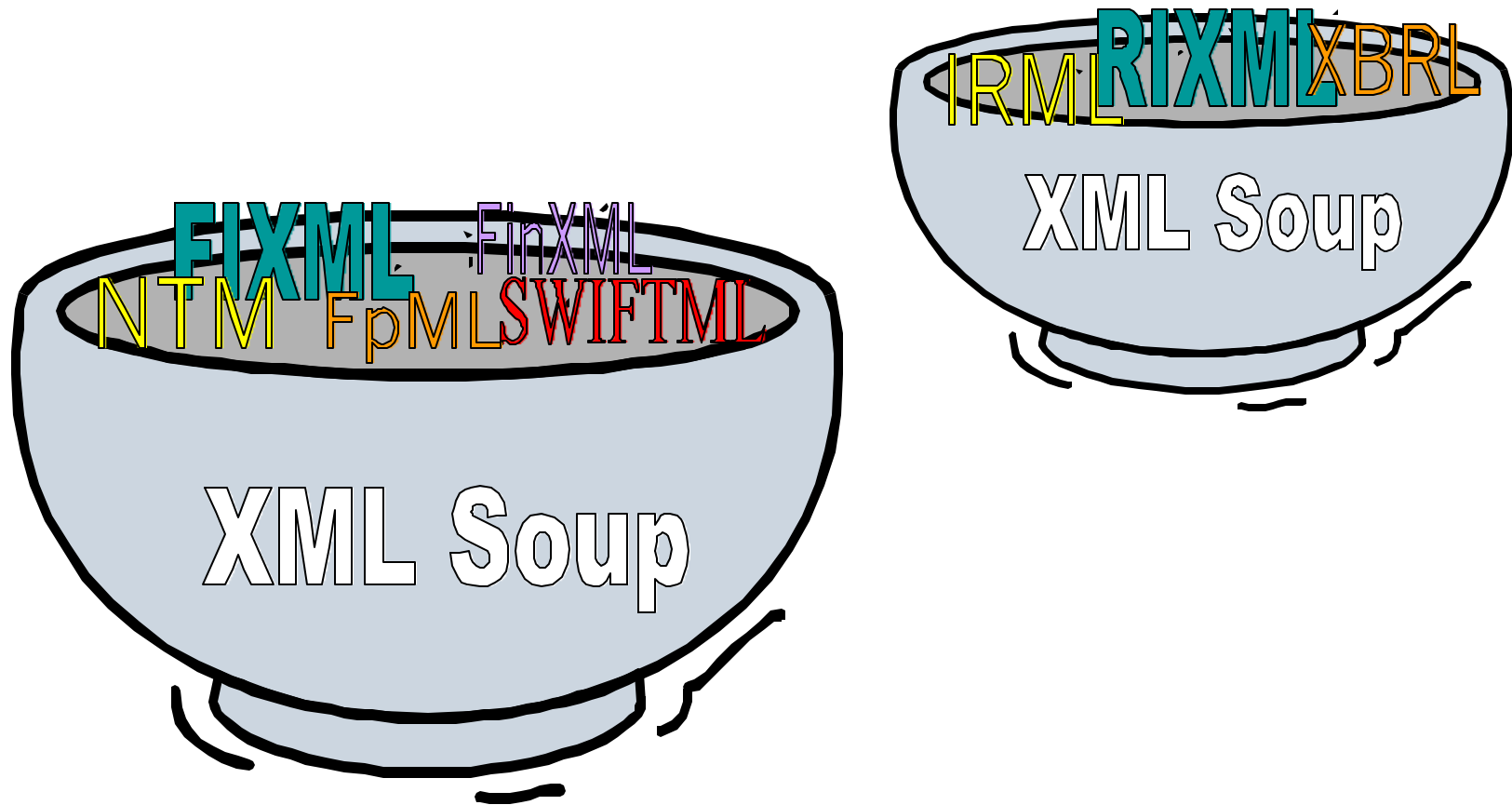
# Current Environment

## *XML Standardization Is Increasing*

### **Why?**

- **Broad Vendor Support Means More Technology Choices**
- **Platform Independence**
- **Human Nature**
- **Vendors**
  - Creating standards implies technological leadership
  - Products can be tuned to standard
- **Participants lack of knowledge of existing initiatives**

# Overlapping Initiatives



# Transactional Based XML

- **Message Networks**
  - SWIFT - XML on Next Generation Network
- **Consortia**
  - FpML - OTC Derivatives
  - FIXML - FIX Application Messages
- **Vendors**
  - Sungard - NTM
  - FinXML
- **Utilities**
  - GSTPA - XML Message Format Based On ISO 15022



# Document Based XML

- **Consortia**
  - RIXML - Parsing and classifying investment research
  - XBRL - Preparation and exchange of business reports and data
- **Vendor**
  - IRML (Multex/Consortia) - Exchange and use of financial research content
  - First Call

# Interoperability/Convergence Issues

- **Interoperability Isn't a Technology Issue**
  - Middleware, XSLT
- **Interoperability is a Business Issue**
  - Requires Coordination
- **XML doesn't replace standards competition**
- **Convergence on a single standard syntax (XML or anything else) is not realistic in the short term**

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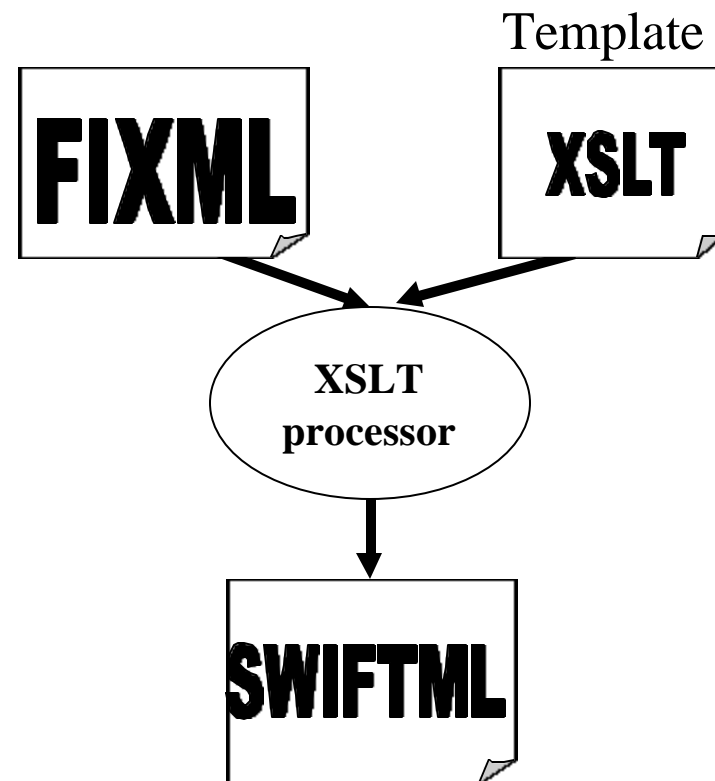
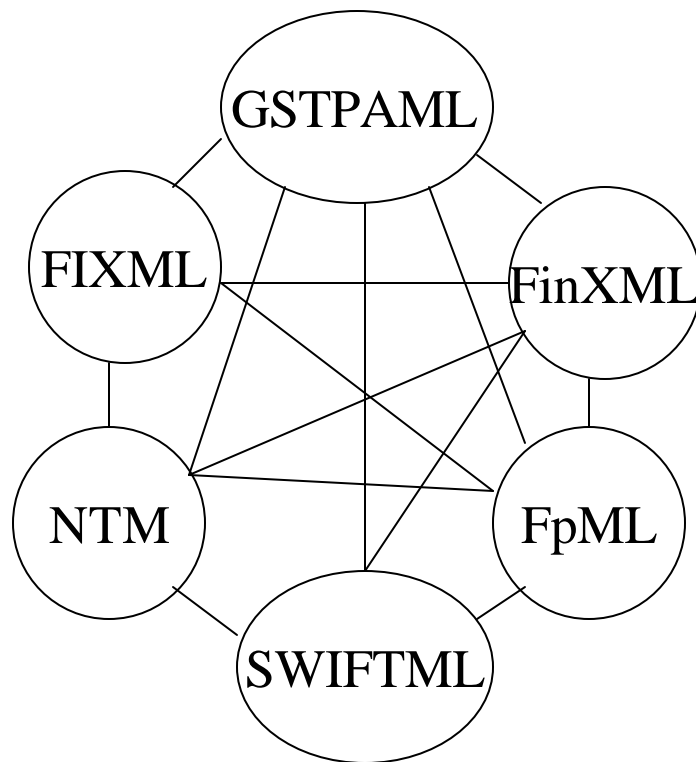
# Interoperability Options



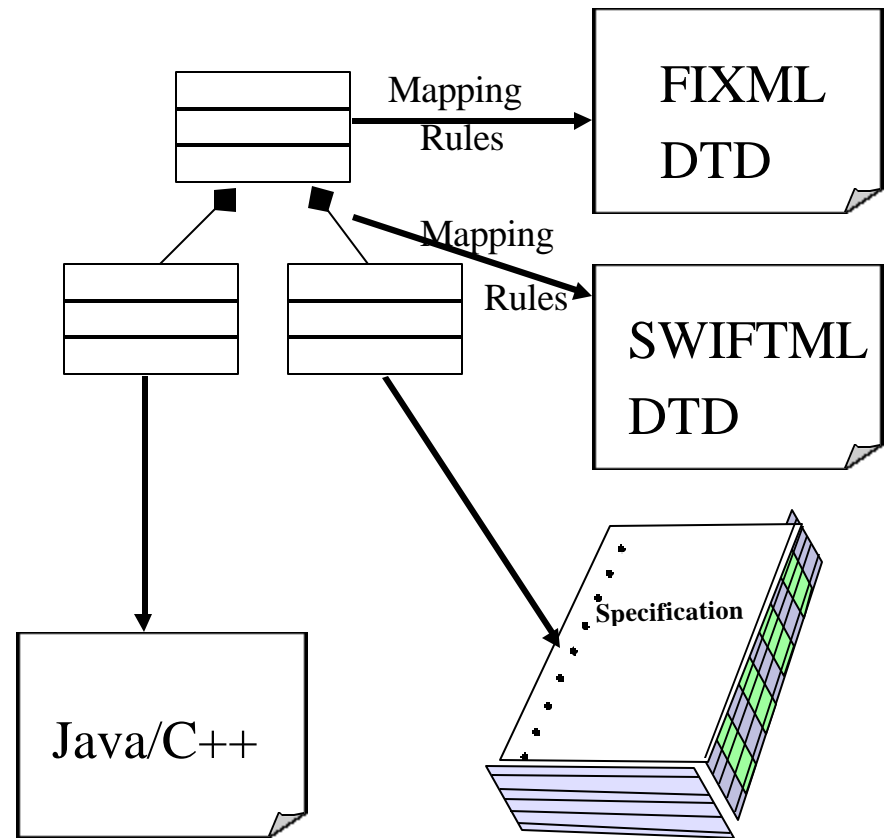
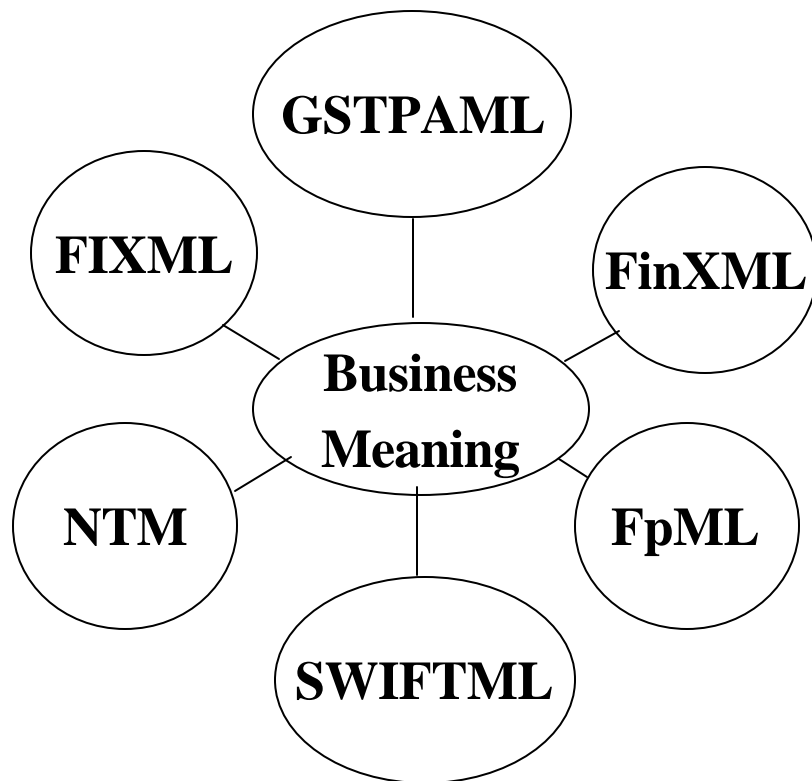
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# W3C's Solution - XSLT

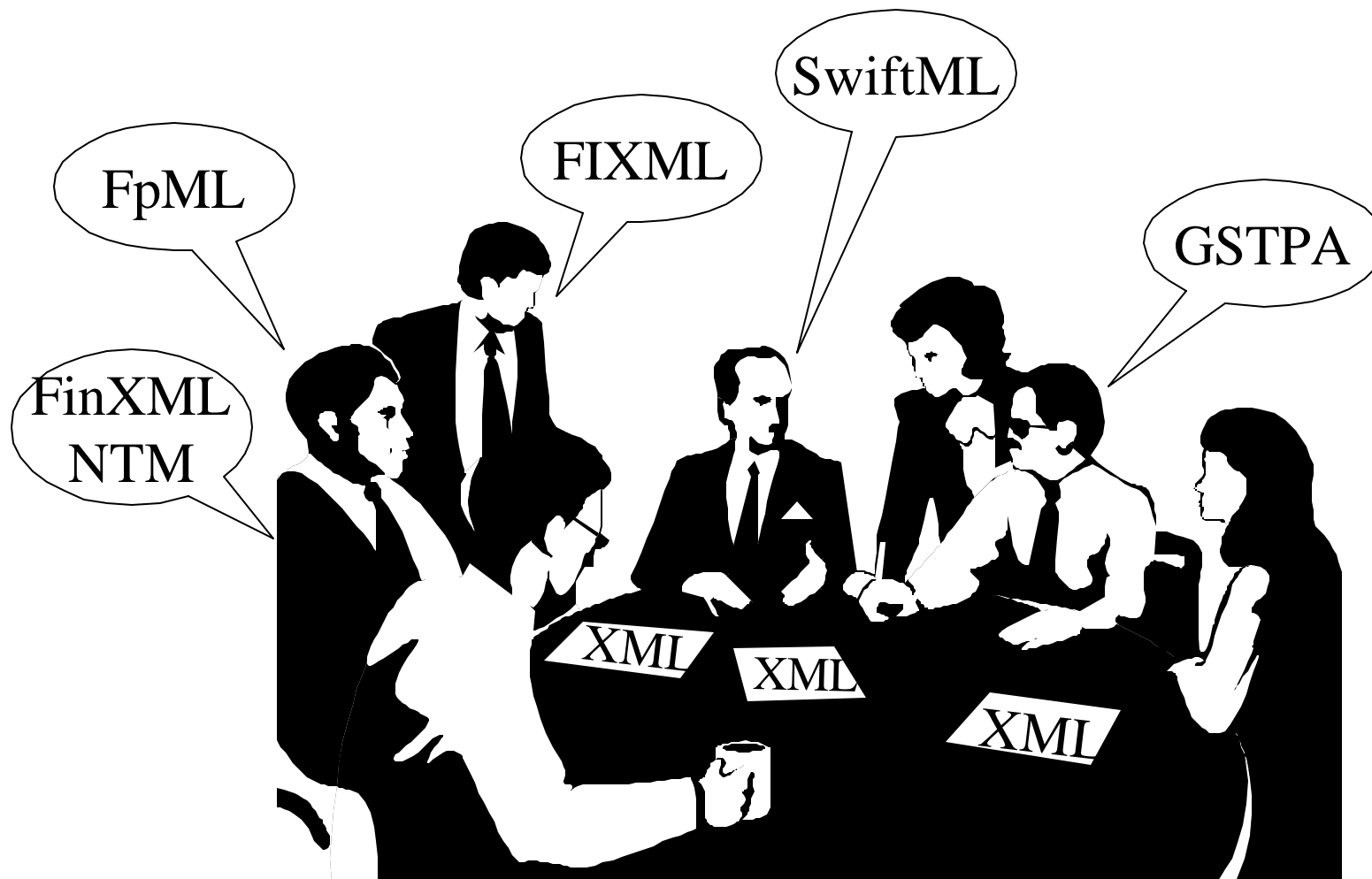


# Modeling - UML\*



\*Unified Modeling Language

# Interoperability Requires Coordination



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# ISO 15022 XML Working Group -WG10



March 6th, 2001



# ISO 15022 XML Working Group - Working Group 10

## Mission Statement

**Evolve ISO 15022 to permit migration of the securities industry to a standardized use of XML, guaranteeing interoperability across the industry and with other industry sectors, particularly but not restricted to the financial industry**

## Participants

- GSTPA, FIX, ISITC-IOA, SMPG, SWIFT, Thomson, FinXML, FpML, ECSDA, EMX, Telekurs, Instinet, etc.
- DTCC, Euroclear, CREST, Clearstream, etc.
- SSMB, Merrill, BoNY, ING, State Street, Chase, Morgan Stanley, Deutsche Bk, Goldman, Citigroup, Northern Trust, Barclays, etc.



# WG10 Timeline

## *Initial Meeting*

*Reviewed existing XML initiatives*

*Discussed Interoperability Opportunities*

*Established Organization Structure  
Developed Mission Framework  
Formed Project Teams*

*Full Working Group Meeting  
Formalized TC68/SC4/WG10*

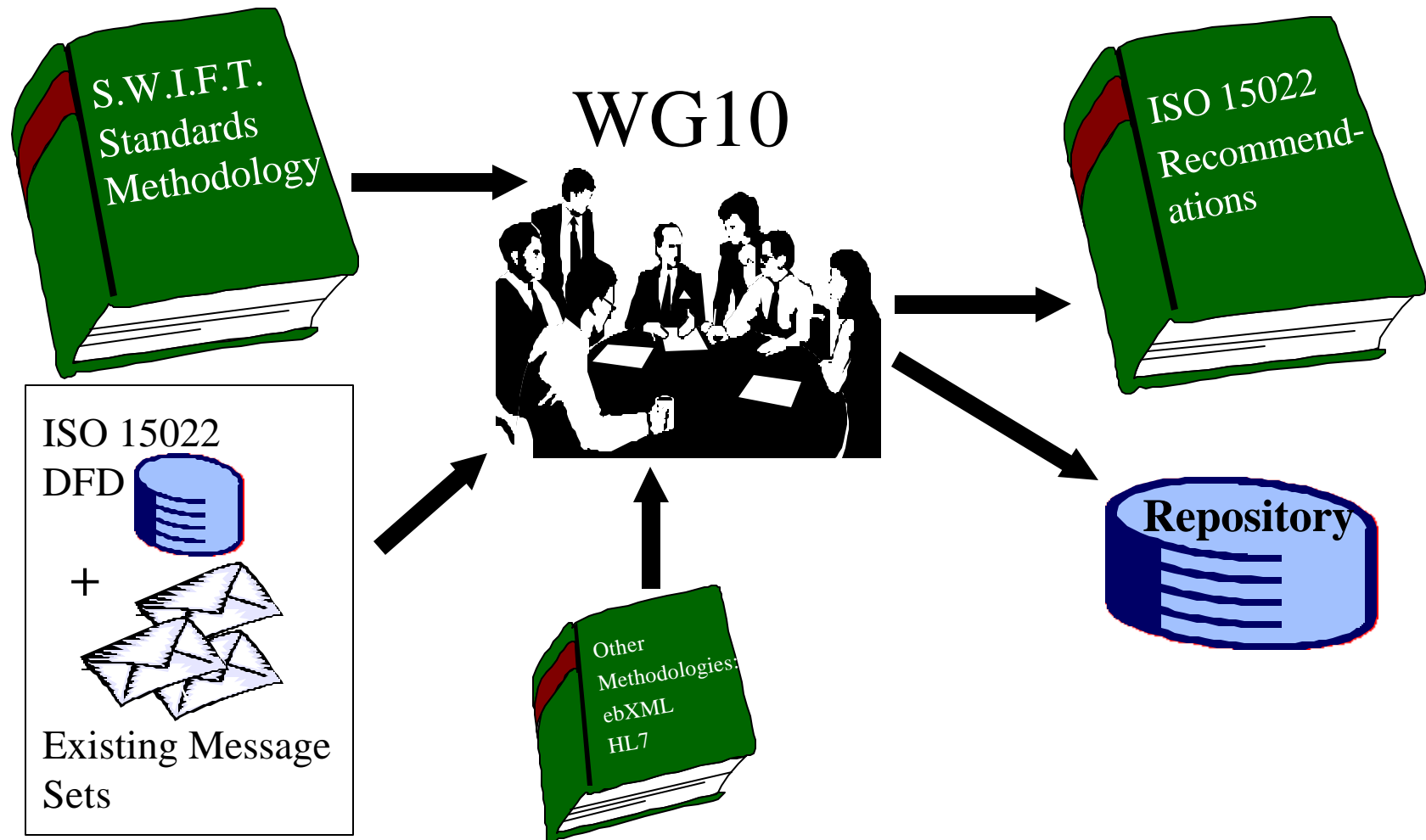
*Project Team Meetings*

*Full WG10 Meeting*



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# WG10 Process Overview



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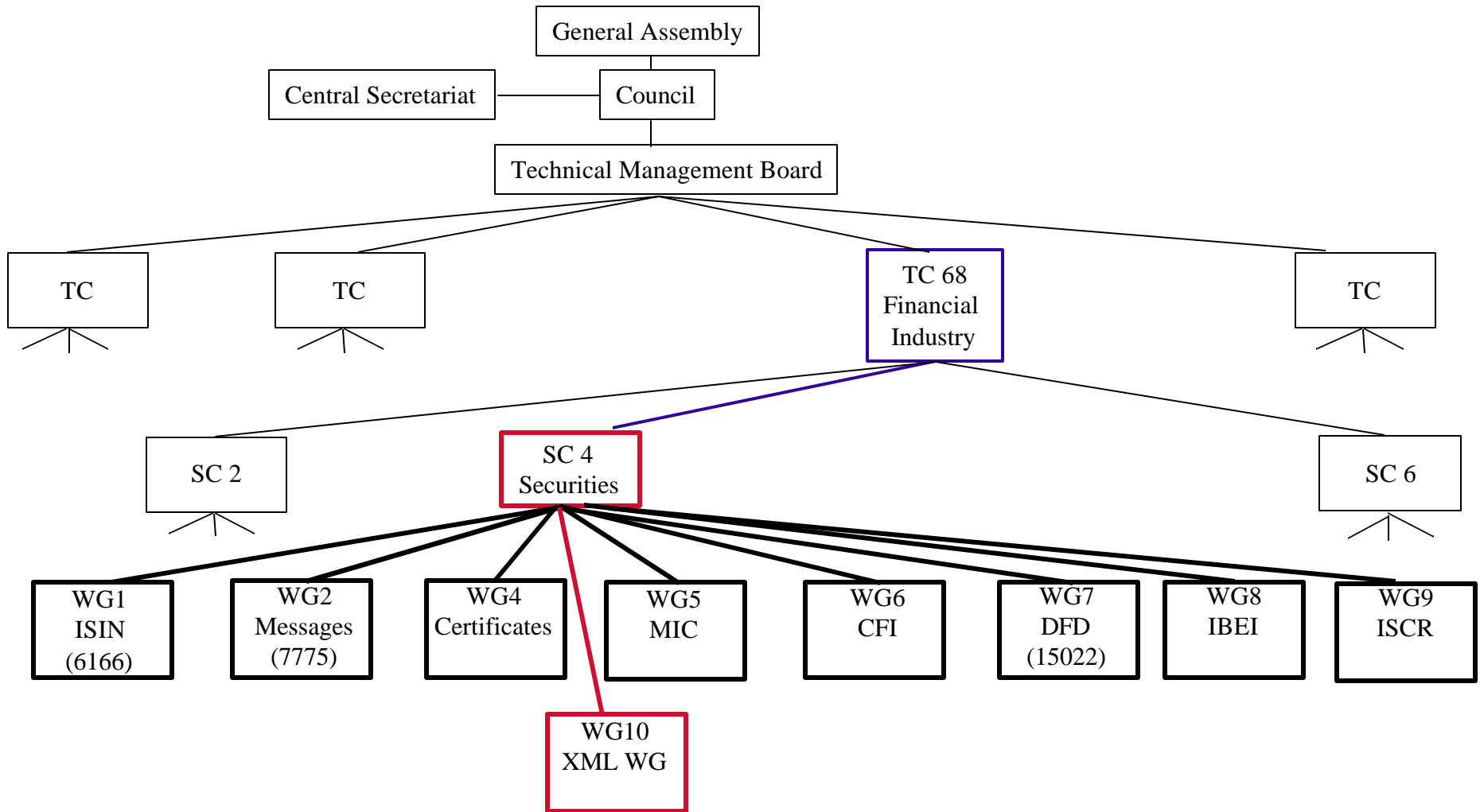
# ISO Overview



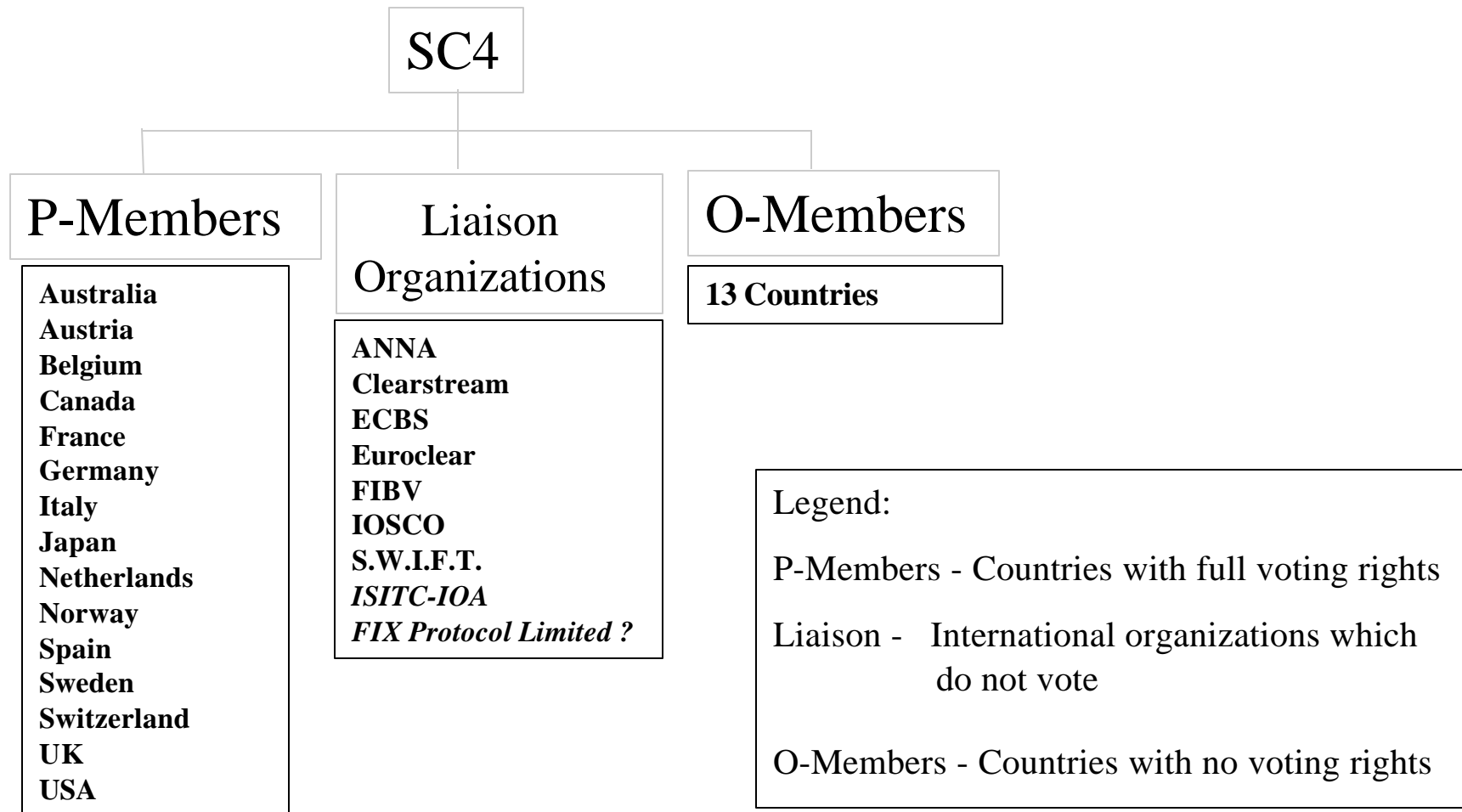
# International Organization For Standardization (ISO)

- Federation of 130 member-countries
- Prepare International Standards
- 200 Technical Committees (TC)
- 600 SubCommittees (SC)
- 2,000 Working Groups (WG)
- 15,000 International Standards prepared on a voluntary basis

# ISO 15022 XML Working Group - WG10



# SC4 Breakdown





# ISO 15022 Revealed



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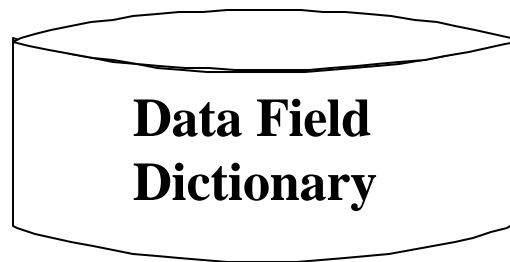
# ISO 15022

- **What exactly is the standard?**
  - Part 1: Data field and message design rules and guidelines
  - Part 2: Maintenance of the Data Field Dictionary and Catalogue of Messages
- **Registration Authority - SWIFT**
  - Maintains Data Field Dictionary/Catalogue of Messages
- **Registration Management Group**
  - Monitors Registration Authority

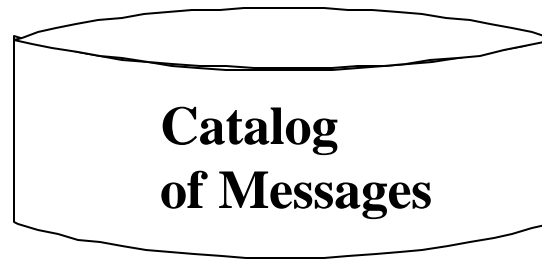


# ISO 15022

- Reference Table of Multiple Syntaxes
- Registry of Messages



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**Trading**  
**Settlement Instructions**  
**Settlement Status**  
**Settlement Confirmations**  
**Corporate Events**  
**Position/Movements**  
**Depository Receipts**

SSAB	ISITC	7775	E7775	EDIFACT
s1		:10:	:21::	
s2	a1	:11:	:22::	
	a2		:23::	
s3			:24::	

7775	E7775	EDIFACT
520	540	
521	541	
522	542	
523	543	
534	548	

# FIX - ISO 15022 Comparison

## FIX New Order Single

**8=FIX.4.1**  
**9=235**  
**35=D**  
**34=10**  
**43=N**

**49=Vendor**

115=CustomerID

**56=Broker**  
**52=19980930-09:25:58**

1=XQCCFUND

11=10

21=1  
55=EK  
48=277461109  
22=1  
54=1  
38=10000

40=2  
44=76.750000  
59=0

Begin String  
Body Length  
MsgType  
MsgSeqNum  
PossDupFlag

SenderCompID

OnBehalfOfCompID

TargetCompID  
Sending Time

Account

ClOrdID

Handling Instructions  
Symbol  
SecurityID  
IDSource  
Side  
Order Quantity

Order Type  
Price  
TimeInForce

## MT 502 - Order to Buy or Sell

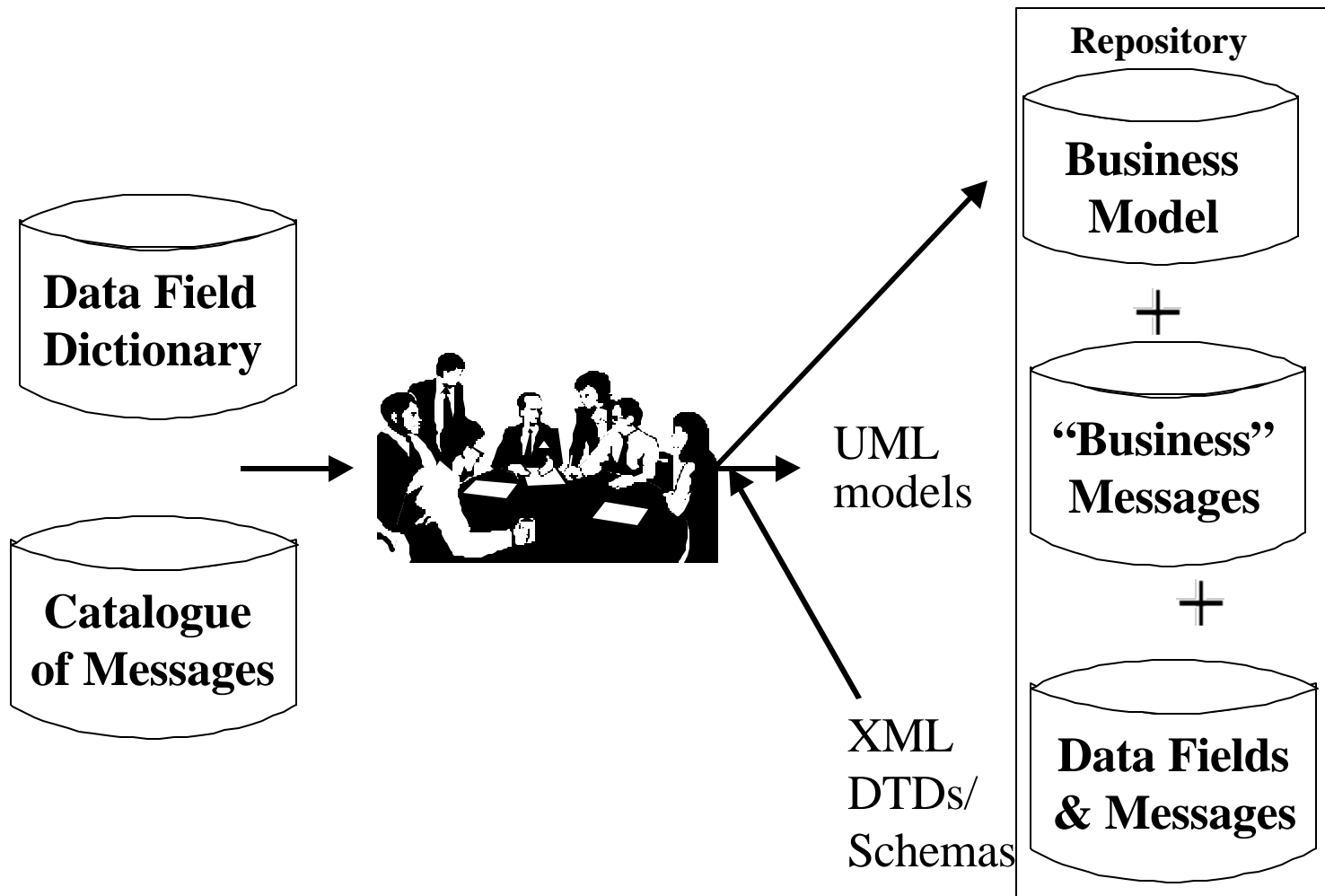
16R: TRADPRTY  
95R:: BUYR//CustomerID  
16S:: TRADPRTY

:97A:: COMM//XQCCFUND  
:16R:: GENL  
:20C:: SEME//10 (Senders Reference ID )  
:16S:: GENL

:16R:: ORDRDET  
:22F:: AUTO//DDOT  
:35J:: CUSI 277461109

:22H:: BUSE//BUYI  
:36B:: ORDR//UNIT/10000,  
:16R:: PRIC  
:90B:: LIM//ACTU/USD76,75  
:16S:: PRIC  
:22F:: TILI//DAYA  
:16S:: ORDRDET

# Evolving ISO 15022

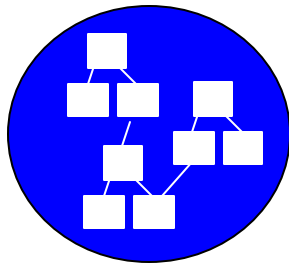


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# SWIFT Standards Methodology: A Starting Point



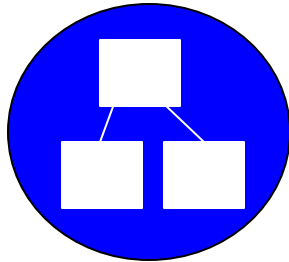
# Standards Modeling Process



**Business Layer**  
(Domain Information Model)

Contains:

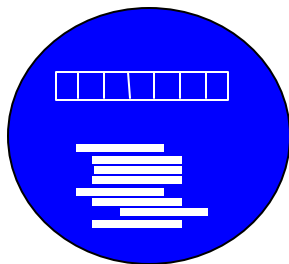
- Business Process
- Business Domain
- Actors



**Logical Layer**  
(Message Information Model)

Contains:

- Message Structure
- System Interaction



**Physical Layer**  
(Message Formats)

Contains:

- Format Transformation Rules  
(e.g. DTDs, Schemas)

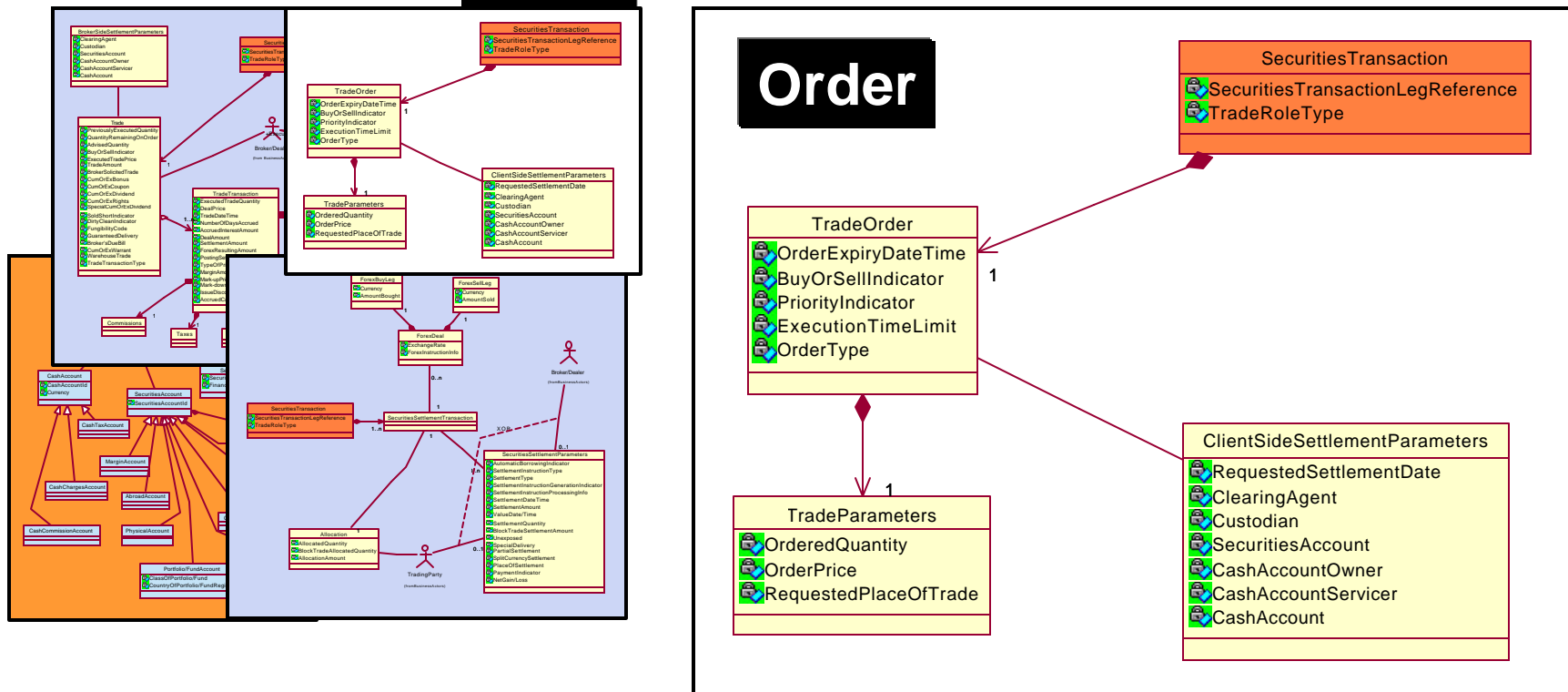
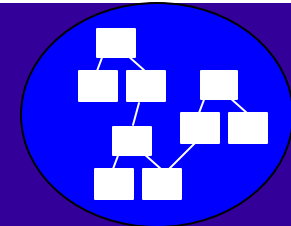
# Business Layer



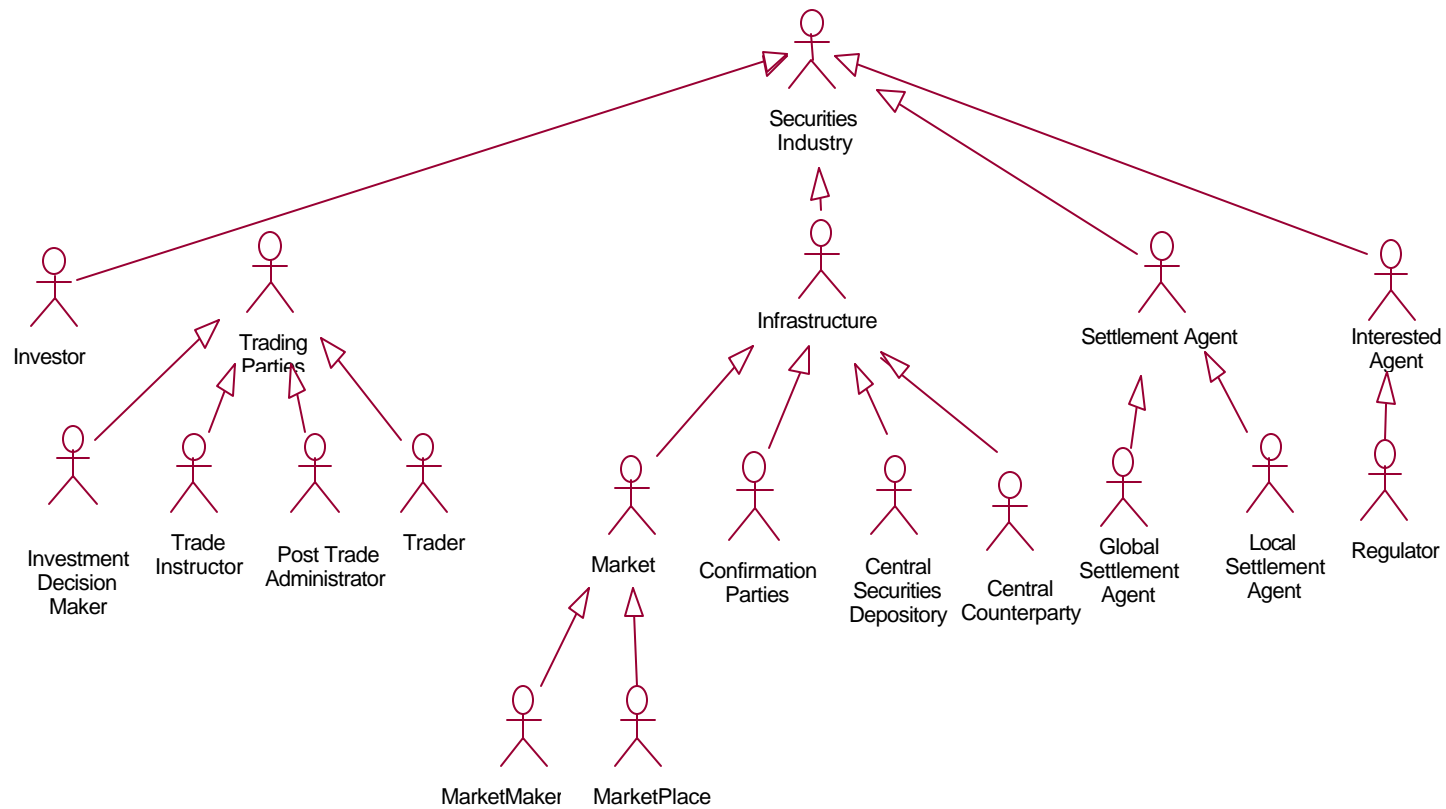
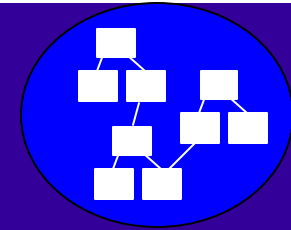
- Definition
  - Focus on Business Not Implementation
  - Describe Business Context Of Solution
- Activities
  - Identify Business Domain
  - Define Structure/Dynamics of Business Context
  - Capture Business Information within Business Context

Analogy: “Architectural Designs for Building a House Based on Client Requirements”

# Business Layer - Securities Business Model

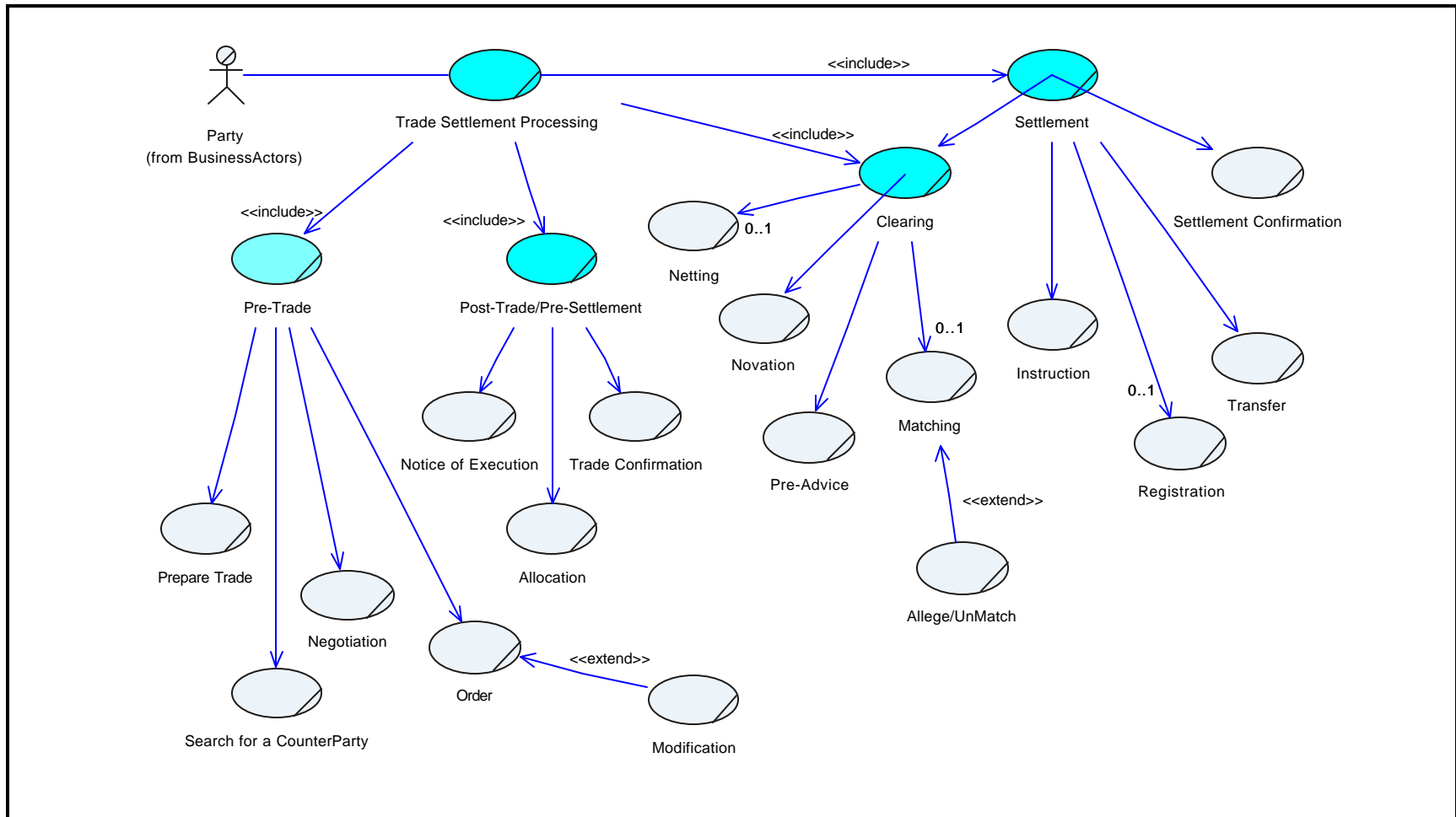
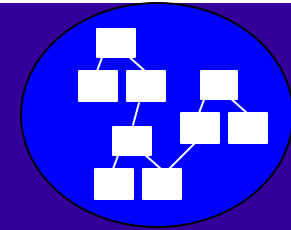


# Business Layer - Actors

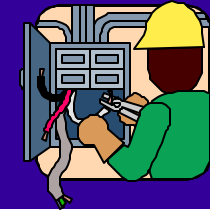




# Business Layer - Securities Business Processes



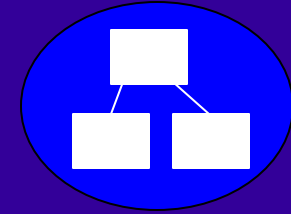
# Logical Layer



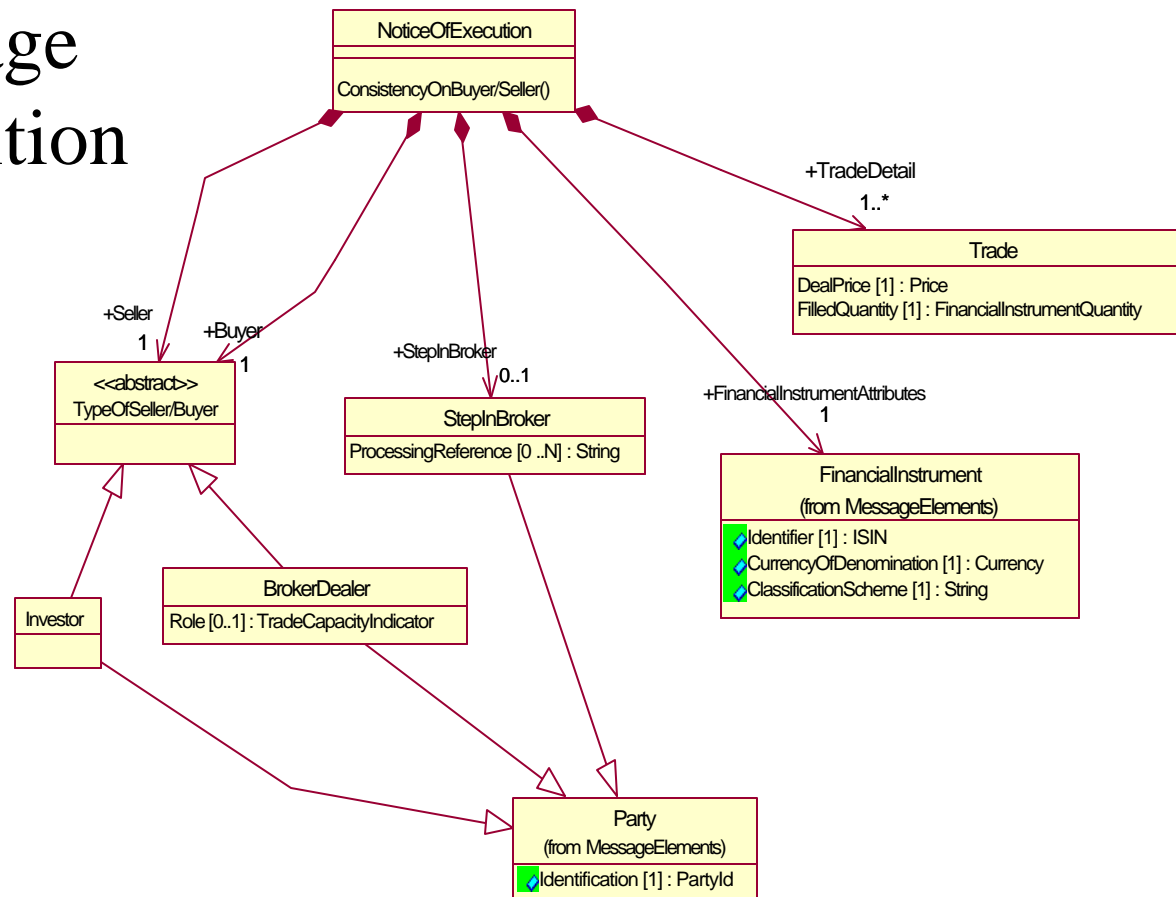
- Definition
  - Specify the Exchange of Structured Business Data (Messages)
  - Describe Abstract, Technology Neutral Solution
- Activities
  - Message Interaction - Collaboration Diagrams
  - Dynamics of Solution - Activity Diagrams
  - Business Scenarios - Sequence Diagrams
  - Message Structure/Content - Class Diagrams

Analogy: “Detailed Plans for Wiring a Building”

# Logical Layer



## Message Definition



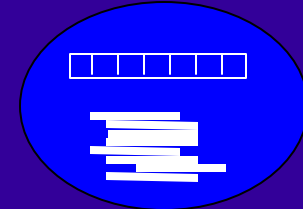
# Physical Layer



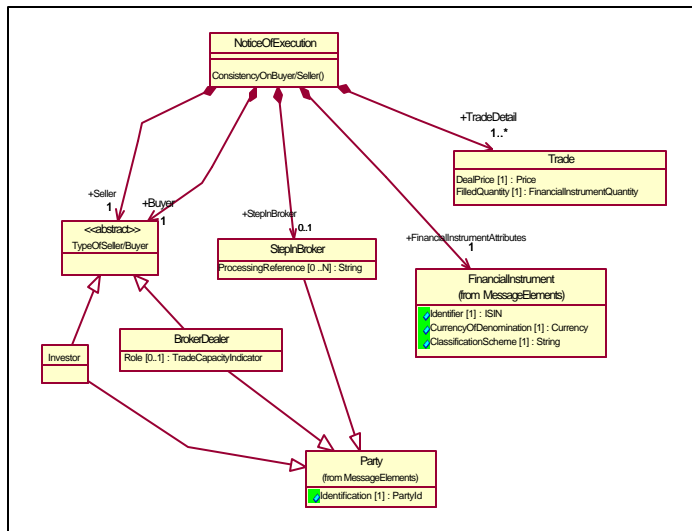
- Definition
  - Set of Mapping Specifications from the Logical Layer to Target Implementation (XML, Java, etc)
- Activities
  - Create Design Rules for Each Syntax

Analogy: “Work Plan For Actual Building Construction”

# Physical Layer



## Syntax Specific Design Rules

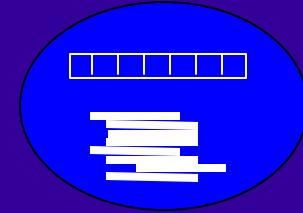


```

<!ELEMENT NoticeOfExecution
  (Seller,Buyer,InvolvedStepInBroker?,FinancialInstrumentAttributes,TradeDetail_)>

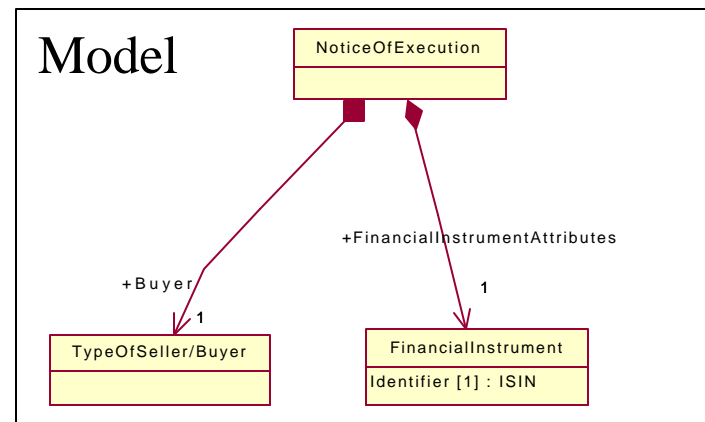
<!ELEMENT Seller (%_Investor_ ; |%_BrokerDealer_ ; )>
<!ELEMENT Buyer (%_Investor_ ; |%_BrokerDealer_ ; )>
<!ENTITY %_Investor_ " Identification " >
<!ENTITY %_BrokerDealer_ " Identification,Role?" >
<!ELEMENT InvolvedStepInBroker (Identification,ProcessingReference_ ) >
....
  
```

# Physical Layer



## Syntax Specific Design Rules

UML	XML instance
Class containing attributes	Attributes become nested XML elements.
Class having roles	Roles become nested XML elements



DTD

```
<!ELEMENT NoticeOfExecution (Buyer, FinancialInstrumentAttributes)>
<!ELEMENT FinancialInstrumentAttributes (Identifier)>
```

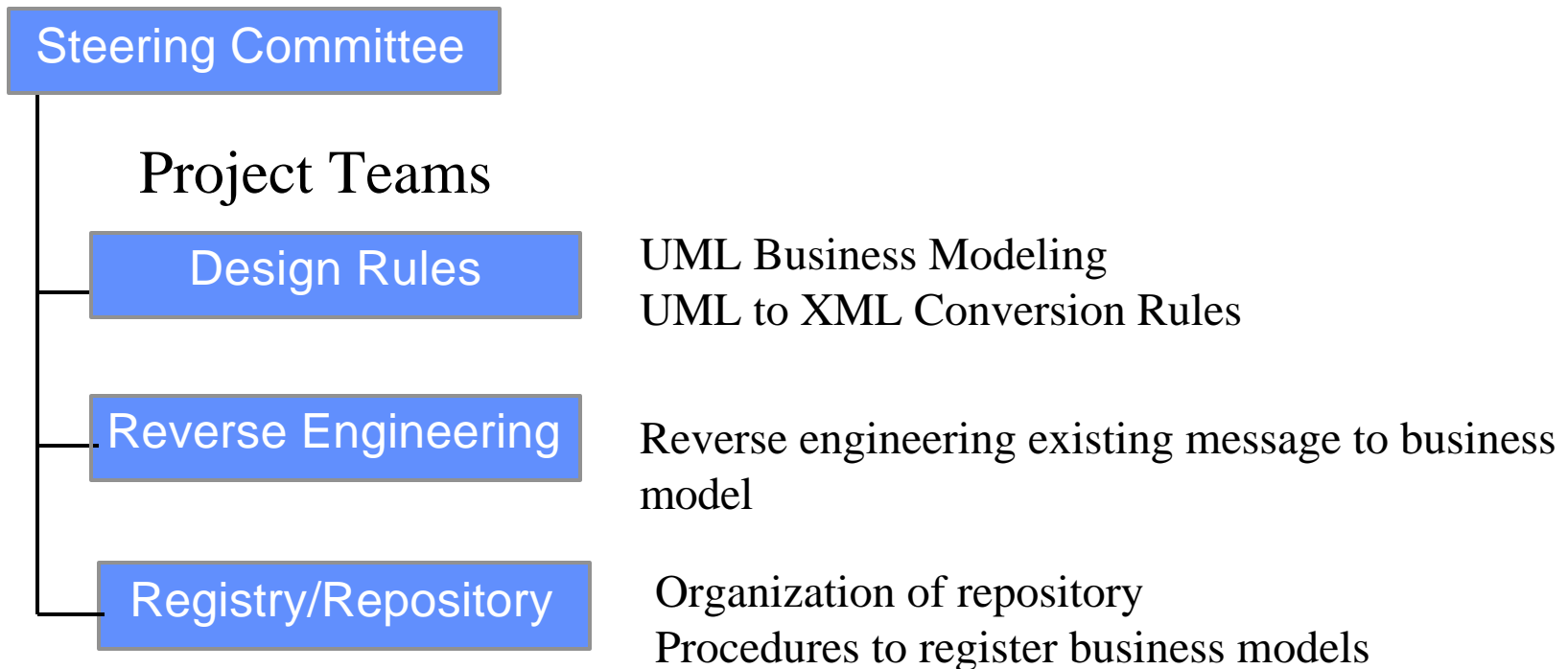


# WG10 Organization



# ISO 15022 XML Working Group - WG10

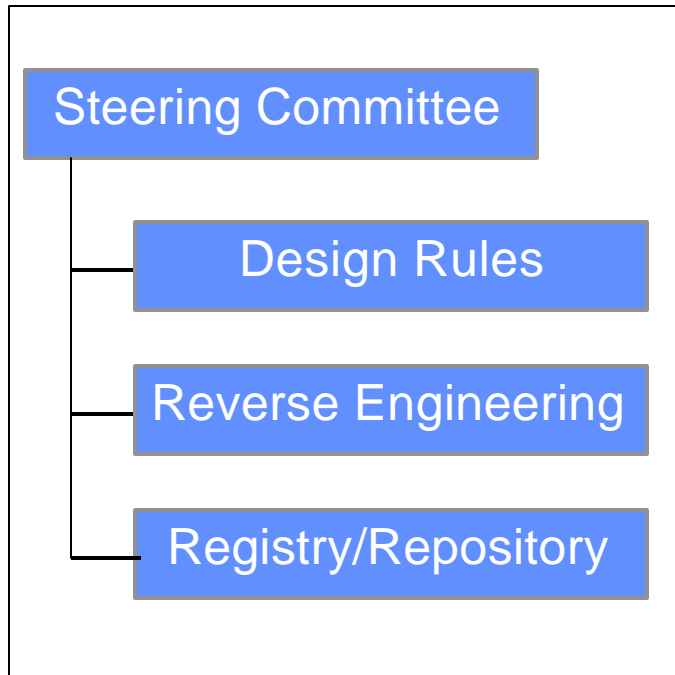
## *Structure*



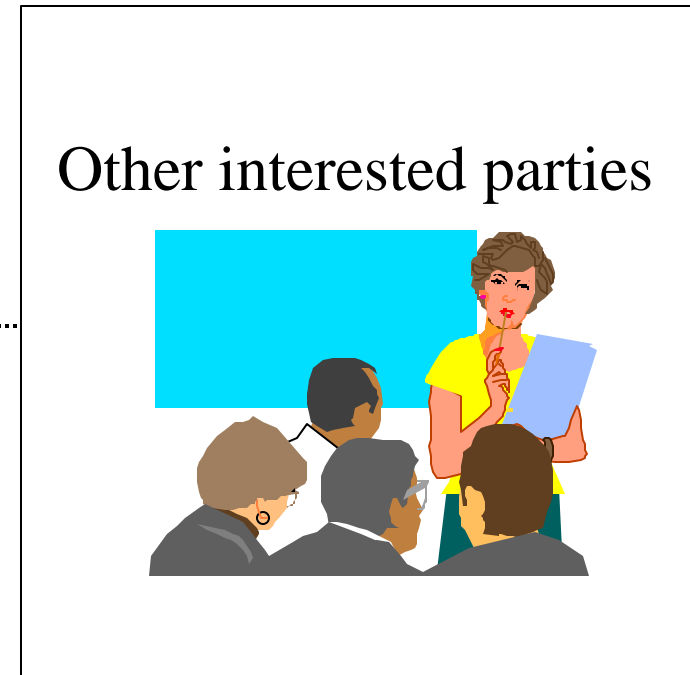


# ISO 15022 XML Working Group - WG10

## WG10



## “Observers”



Nominated by ISO

# Design Rules Project Team

- Define a Standards Development Approach
  - Common, Syntax Independent Business Model (UML) ending in a specific physical representation (XML)
- Create Standards Development Rules
  - UML for business modeling
  - XML for its physical representation
- Ensure Technical and Business Interoperability
  - ebXML
  - HL7

# Reverse Engineering Project Team

- Provide Reverse Engineering User Guidelines
- Validate Rules Defined by Design Rules Group
  - Build Portion of Securities Business Model,
  - Generate Logical Model
  - Derive XML Outputs
- Build Initial Repository

# Reverse Engineering Project Team



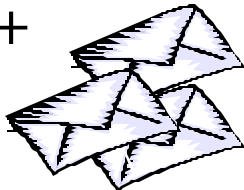
Business Analysis

ISO 15022

DFD

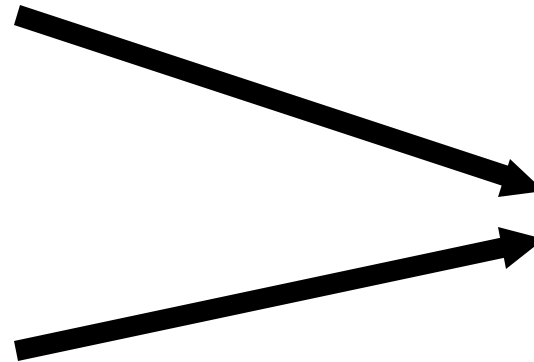


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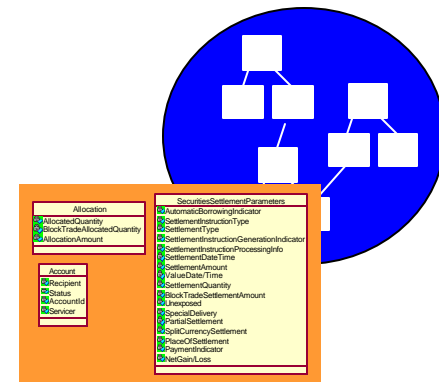
Existing Message Sets

Top-Down



Reverse-Engineering  
(Bottom-Up)

Business Model

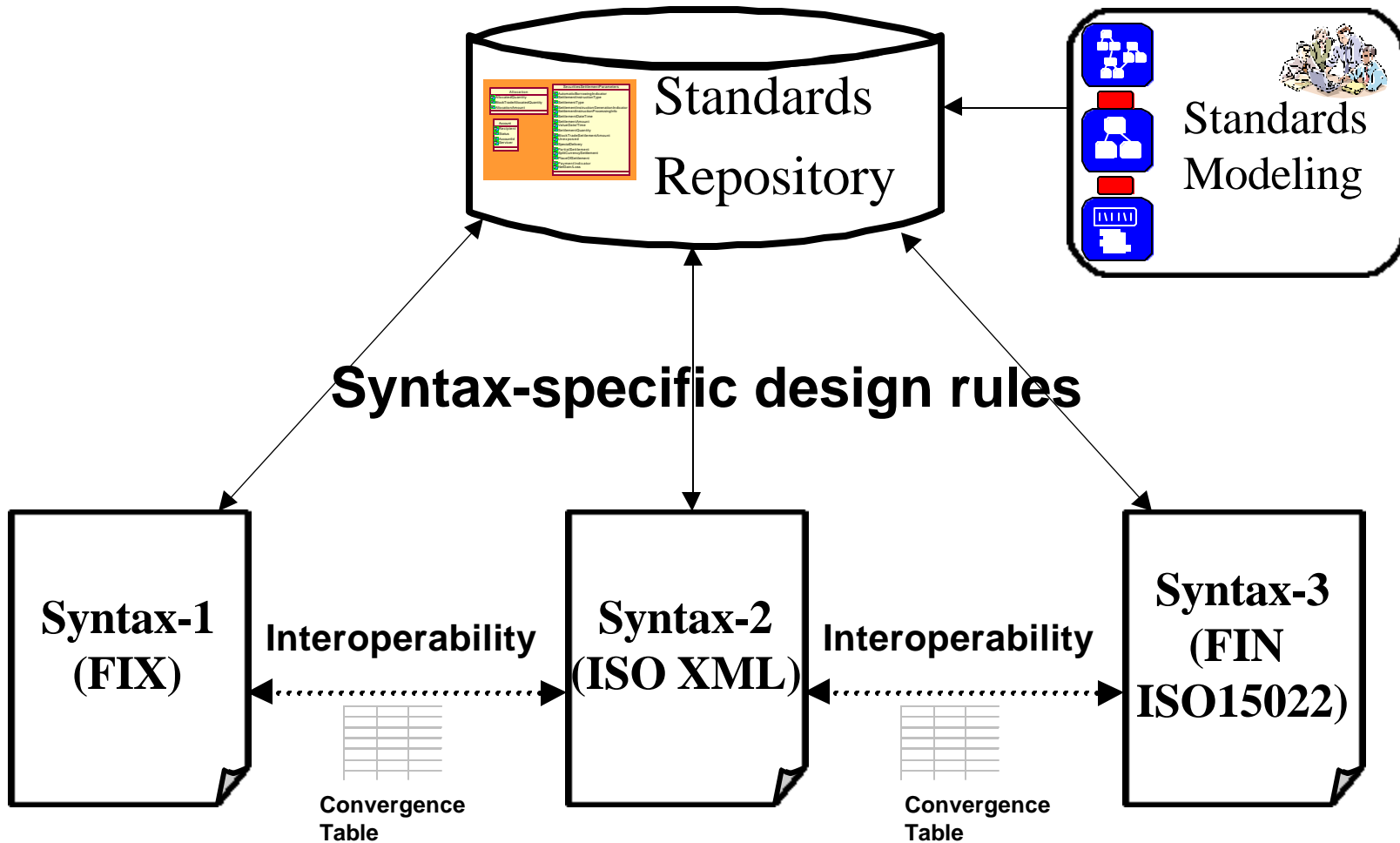


Identification of Business Processes  
Detailed Description of Business Entities  
Relationships Between Business Entities

# Registry/Repository Project Team

- Review responsibility/SLA of the ISO 15022 Registration Authority (RA) and Registration Management Group (RMG)
- Determine input/output of future ISO 15022 Repository
  - Business Models
  - DTD/Schemas
  - Data Elements

# Repository Interoperability



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## WG10 Deliverables - *Recommend Changes to ISO 15022*

- Development Methodology
  - Business Models
  - Logical/Message Models
  - Rules to Derive XML Syntax
- Registry/Repository
  - Maintenance Procedures
  - RA Service Level Agreement

# ISO Submission

## Steps

- Circulate Draft To **16** ISO P-Member Countries
- Allow Five Months for P-Member Comments/Revisions
- Create Draft International Standard
- Circulate To ISO Member Countries
- Allow Two Months for Member Comments/Revisions
- Create Final Draft International Standard
- Circulate To ISO Member Countries
- Allow Two Months for Member Comments/Revisions
- Publish International Standard



# WG10 - How to Participate

- Two Types
  - Observer - Register on eGroups
  - Project Team Member
- Project Team Member
  - Requires ISO Sponsorship
    - Local Standards Body (U.S. - ANSI-X9)
    - Liaison Organizations (ISITC-IOA, FIX Protocol?)

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# ISO 15022 XML Working Group - WG10

## *More Information*

Main Site:

[http://groups.yahoo.com/group/XML\\_Init\\_Main](http://groups.yahoo.com/group/XML_Init_Main)

Project Teams:

[www.tc68.org](http://www.tc68.org)