



# Development guideline

March 30th 2015

Supported

by:



- Message Development Guide for Agriculture and Horticulture
- February 2012
- By: EL&I, AgroConnect, Frugicom, Floricode
- English version:  
[http://www.agroconnect.nl/LinkClick.aspx?fileticket=JYW\\_bkDS-Cw%3d&tabid=1764](http://www.agroconnect.nl/LinkClick.aspx?fileticket=JYW_bkDS-Cw%3d&tabid=1764)

- The guideline is intended for anyone involved in the development and implementation of standard messages for electronic data interchange in the agricultural and horticultural sectors.

- A **uniform approach**, working method and documentation of messaging standards
- **Harmonisation** of message development and improved interoperability within agriculture and horticulture.
- The creation of a **'family' of standard messages** for exchanging information in agriculture and horticulture.
- Better interchangeability of standard messages between the various sectors and domains, and the **reuse of messages** and standard components already defined.

- A standard message is a message that is widely used for exchanging information between, and within companies, for which the specifications are freely available.

- Positive **network effects** (more valuable as the number of users increases).
- **Prevents vendor lock-ins** (decoupling points).
- Encouragement of **innovation**, increased variety of products and services (as soon as the interface is known, third parties can link up with it).
- **Diminishing of transaction costs** (no need to maintain lots of bilateral connections).
- Encouragement of and support for **virtual (global) trade**.
- **Increased efficiency** in commercial chains in agriculture and horticulture.

# SEMANTIC INTEROPERABILITY



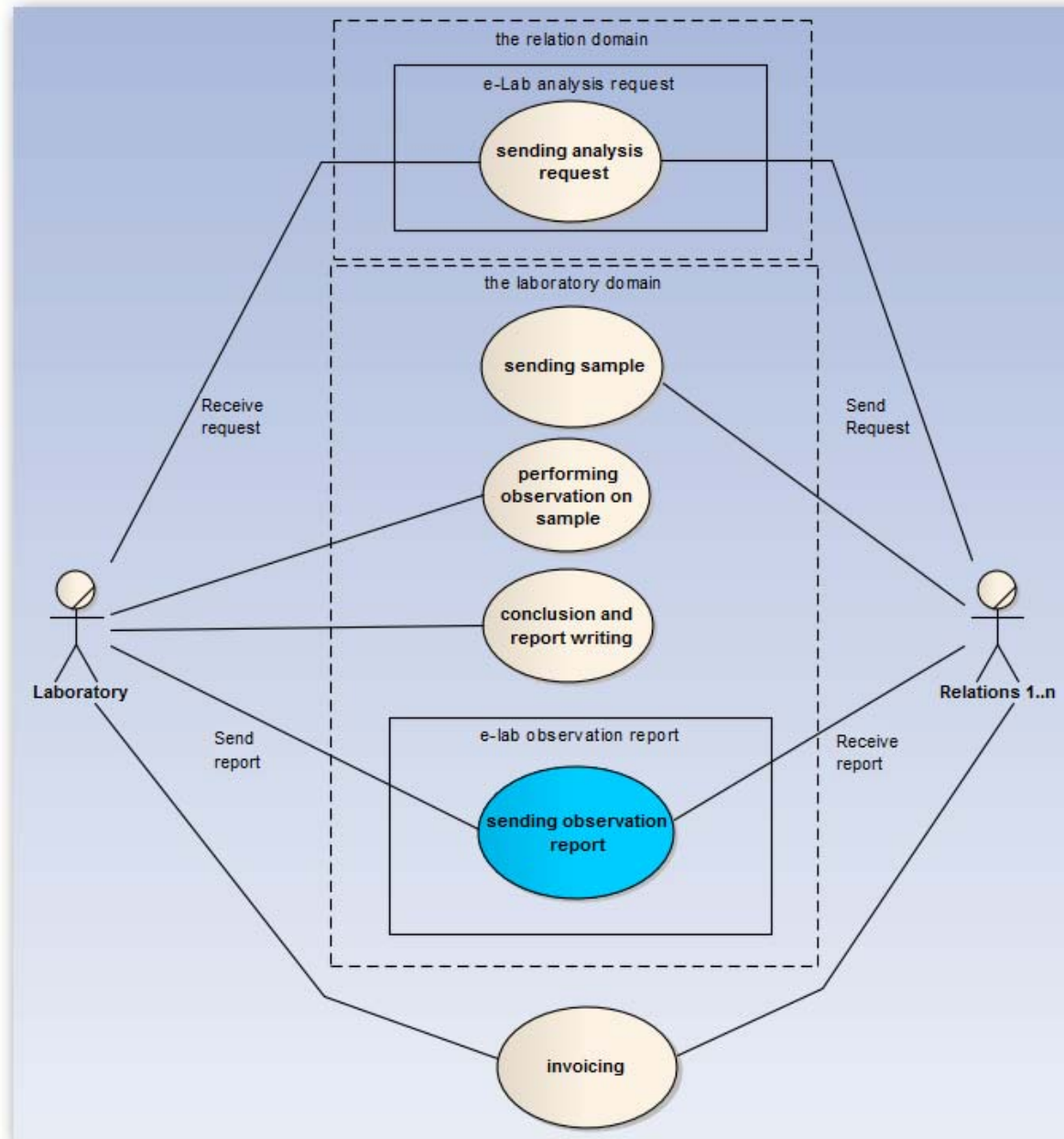
Common Semantics	Vertical Industry Language: Human Resource (HR-XML)	Vertical Industry Language: (more than 100)	Vertical Industry Language: Healthcare (HL7)	Semantic Interoperability
	Horizontal Language (OASIS, UBL)			
Common Syntax (XML)				Syntactic Interoperability (often part of technical interoperability)
Common Message Mechanism (Web Services)	Service Composition (WS-BPEL)			Technical Interoperability
	Service Discovery (UDDI)			
	Service Description (WSDL)			
	XML Messaging (SOAP)			
Common Communication Mechanism (Internet)	Transport (HTTP, SMTP, FTP, BEEP)			
	Common Networking (TCP/IP)			

- Development of UNCEFACT standard messages
  - Step 1: Formulate Business Requirement Specifications (BRS).
  - Step 2: Formulate Requirement Specification Mapping (RSM).
  - Step 3: Formulate Implementation Guideline (IG).
- The BRS describes the relevant actors, processes, information flows and data elements in a way that is understandable for the business.
  - Core Components Library:  
[http://www.unece.org/cefact/codesfortrade/unccl/ccl\\_index.html](http://www.unece.org/cefact/codesfortrade/unccl/ccl_index.html)
  - XML schemas: [http://www.unece.org/cefact/xml\\_schemas/index](http://www.unece.org/cefact/xml_schemas/index)

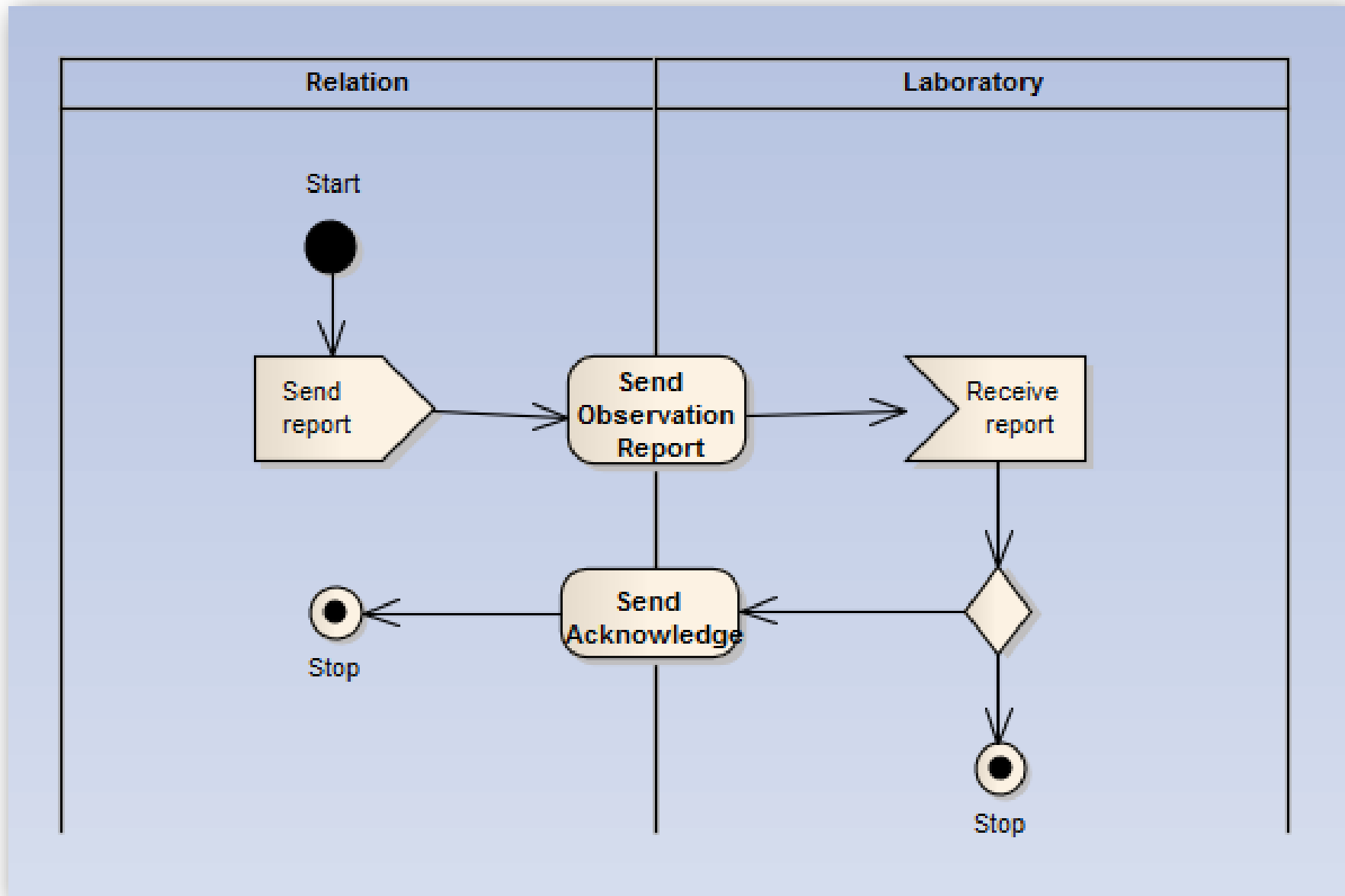


- Business Requirement Specifications
  - **1. Use case diagram**
  - **2. Class diagram**
  - 3. Object diagram
  - **4. Sequence diagram**
  - 5. Collaboration diagram
  - 6. Statechart diagram
  - **7. Activity diagram**
  - 8. Component diagram
  - 9. Deployment diagram

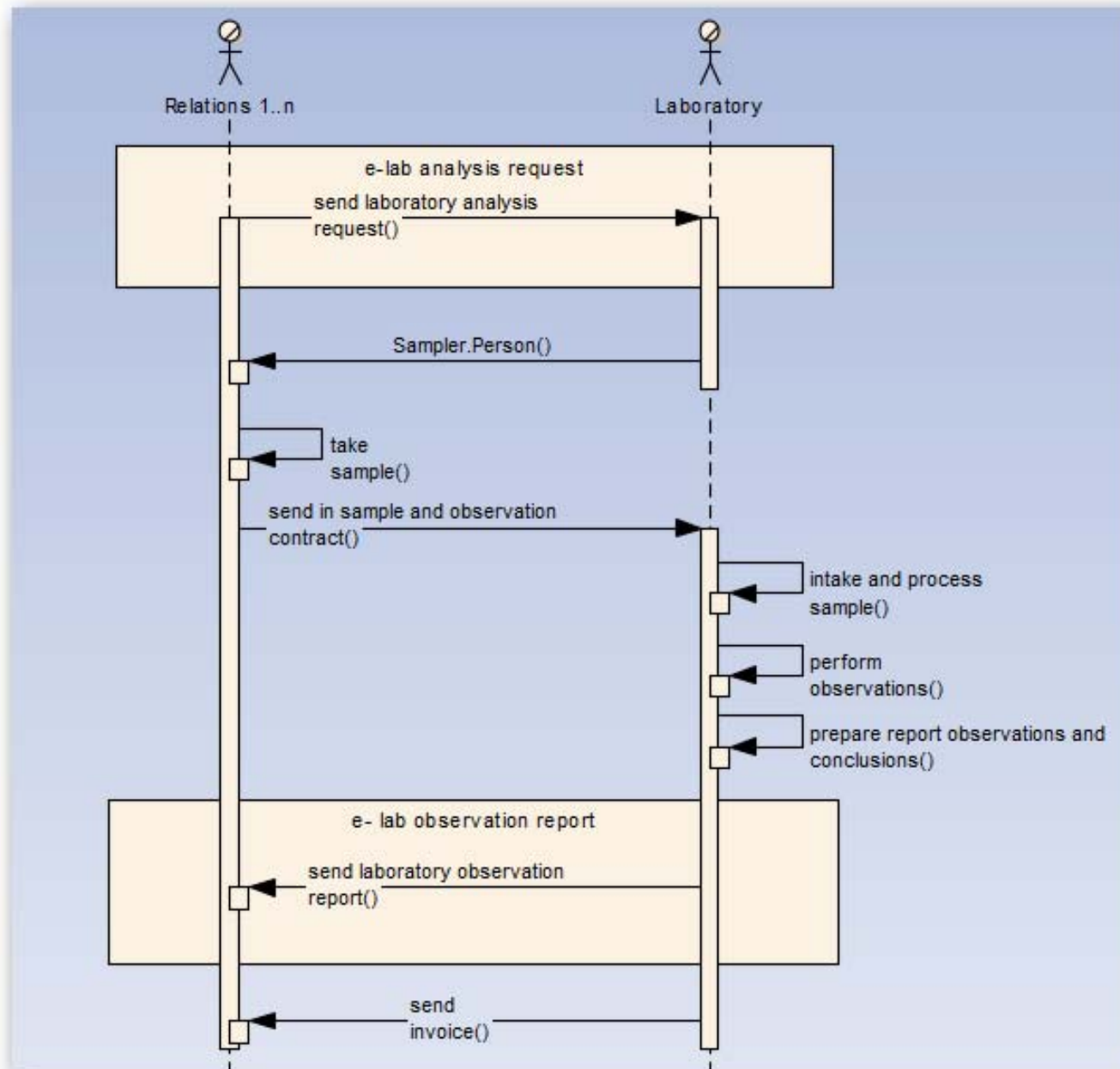
# USE CASE DIAGRAM



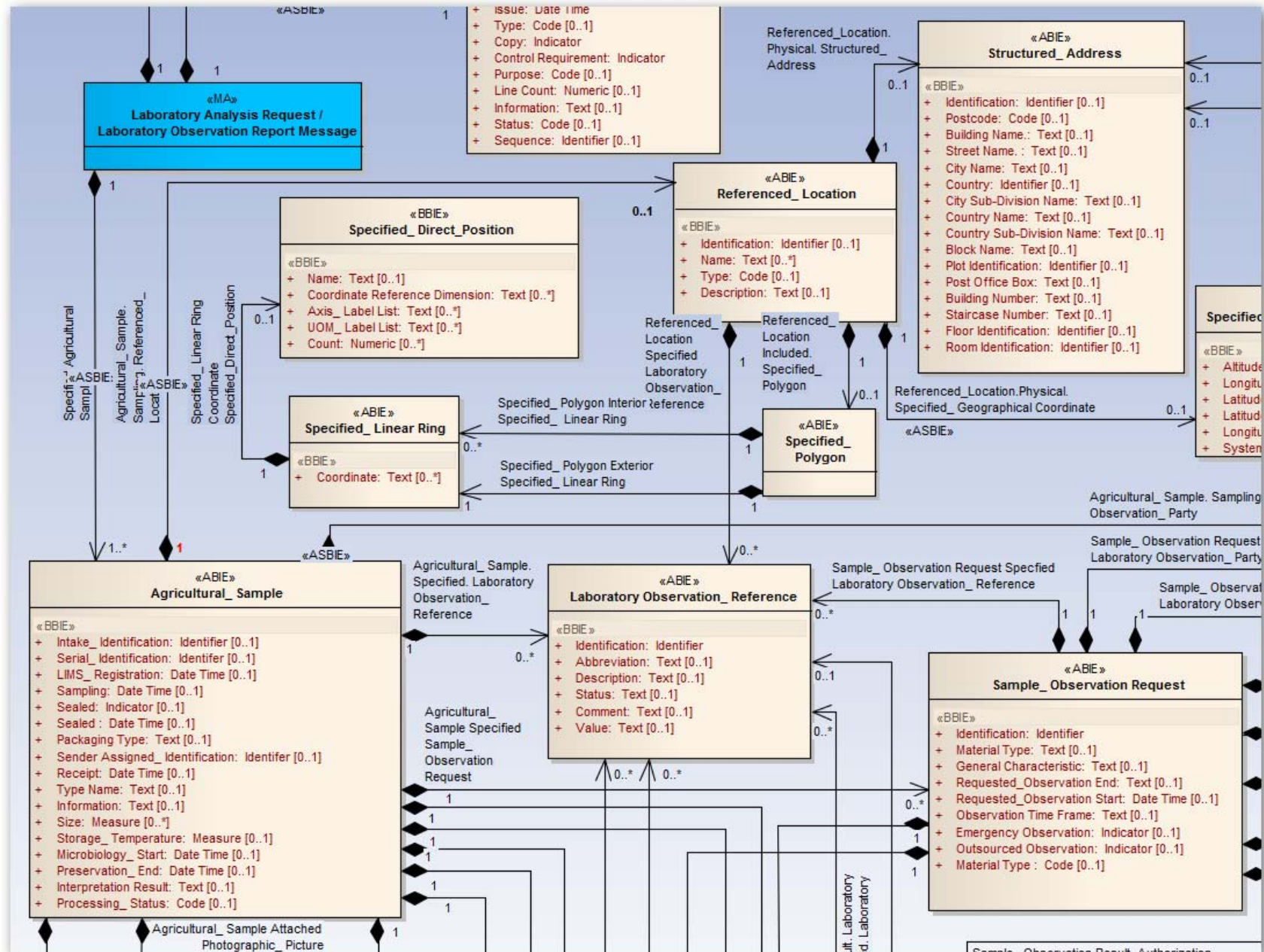
# ACTIVITY DIAGRAM



# SEQUENCE DIAGRAM

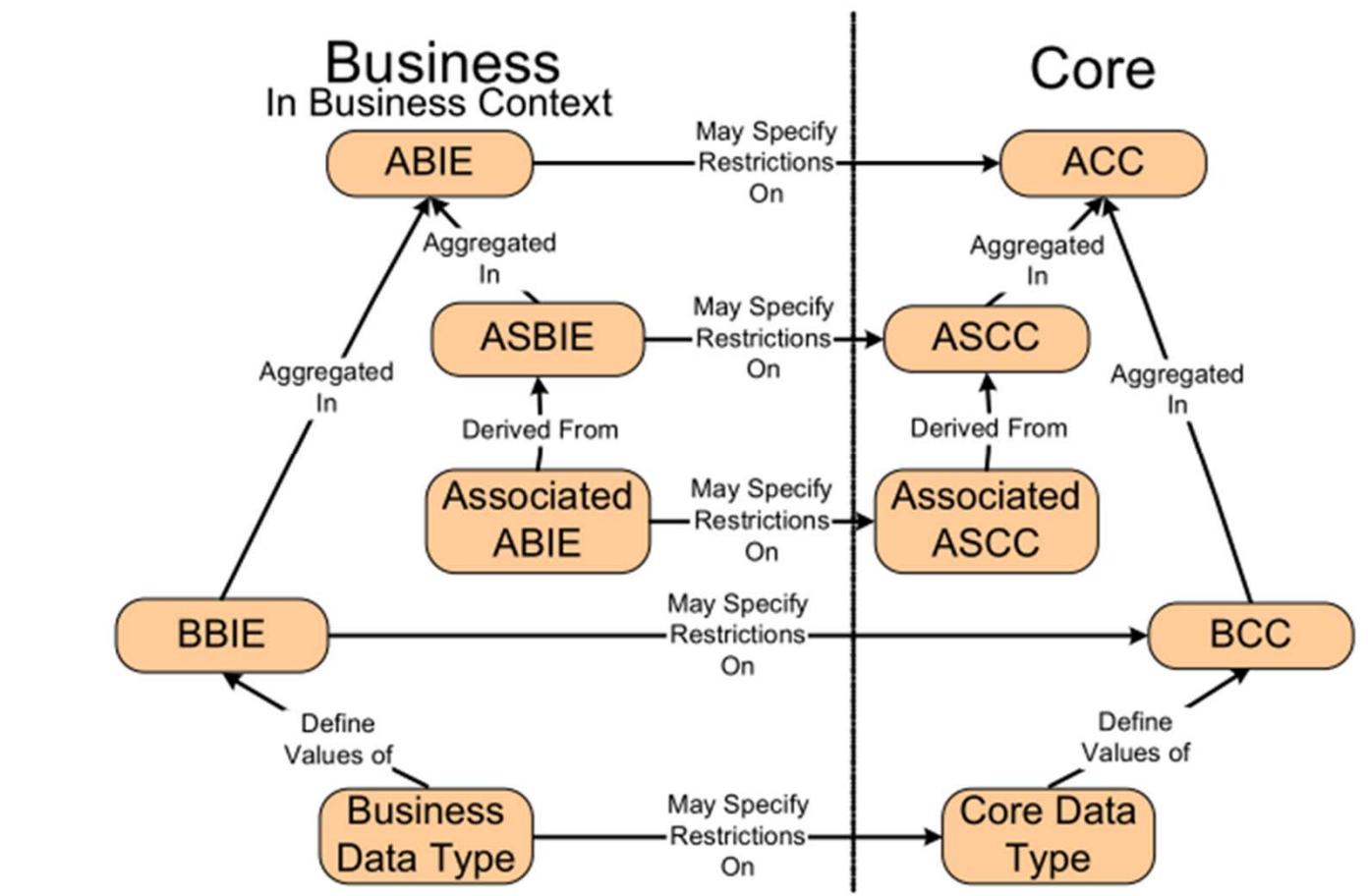


# CLASS CASE DIAGRAM



- Formulate Requirement Specification Mapping
  - With support from UNCEFACT, the Requirement Specification Mapping (RSM) is used to map the company-specific data model from the BRS (Business Requirements Specifications) to the **UNCEFACT Core Components**, using the UNCEFACT Core Components Library (UNCCL) .
  - New data elements that have not yet been incorporated in the UNCCL are added to a new version of the UNCCL. The Core Components are classified in accordance with the data types and Naming and Design Rules (NDR).





- The Implementation Guideline comprises:
  - 1. English-language or Dutch-language **instruction** for using the standard message.
  - 2. **XSDs** (XML schemas) which describe the standard message.
  - 3. In the case of a Web service, the **WSDL**.
  - 4. The **code lists** used.
  - 5. **Examples** of XML messages.
  - 6. **Instructions** for using the test environment.



## 1. Enterprise Architect

- Process supported: modelling
- Enterprise Architect is also used in the development of the Agriculture Information Model. The tool enables different views (profiles, filters) to be defined in the basic model.

## 2. GEFEG.FX

- Processes supported: management, mapping, profiling (subsetsm, views), testing, documentation, publishing

## 3. Altova MissionKit (including XMLspy)

- Processes supported: development xsd's / wsdl's, testing, implementation.

## References (1)

- Message Development Guide for Agriculture and Horticulture  
[http://www.agroconnect.nl/LinkClick.aspx?fileticket=JYW\\_bkDS-Cw%3d&tabid=1764](http://www.agroconnect.nl/LinkClick.aspx?fileticket=JYW_bkDS-Cw%3d&tabid=1764)
- Brief introduction to UML: ‘Practical UML™: A Hands-On Introduction for Developers’  
<http://edn.embarcadero.com/article/31863>
- UNCEFACT Business Requirement Specification Document Template (CEFACT/ICG/005)  
[www.unece.org/cefact/brs/TBG18-BRS-Proxy-Sep09.pdf](http://www.unece.org/cefact/brs/TBG18-BRS-Proxy-Sep09.pdf)
- Core Components Technical Specification, Version 3.0, 29 September 2009  
<http://www.unece.org/cefact/codesfortrade/CCTS/CCTS-Version3.pdf>

## References (2)

- UNCEFACT Core Components directory

[http://www.unece.org/cefact/codesfortrade/unccl/CCL\\_index.html](http://www.unece.org/cefact/codesfortrade/unccl/CCL_index.html)

- UNCEFACT XML schemas (XSDs)

[http://www.unece.org/cefact/xml\\_schemas/index.html](http://www.unece.org/cefact/xml_schemas/index.html)

- Example of a BRS: 'BRS Cattle registration and movement data exchange and animal passport'

<http://www.unece.org/fileadmin/DAM/cefact/brs/TBG18-BRSCattleRegistrationAnimalPassport.doc>

- UNCEFACT Modelling Methodology User Guide (CEFACT/TMG/N093):

[http://www.unece.org/cefact/umm/umm\\_index.html](http://www.unece.org/cefact/umm/umm_index.html)

- UNCEFACT XML Naming and Design Rules

[http://www.unece.org/cefact/xml/xml\\_index.html](http://www.unece.org/cefact/xml/xml_index.html)