



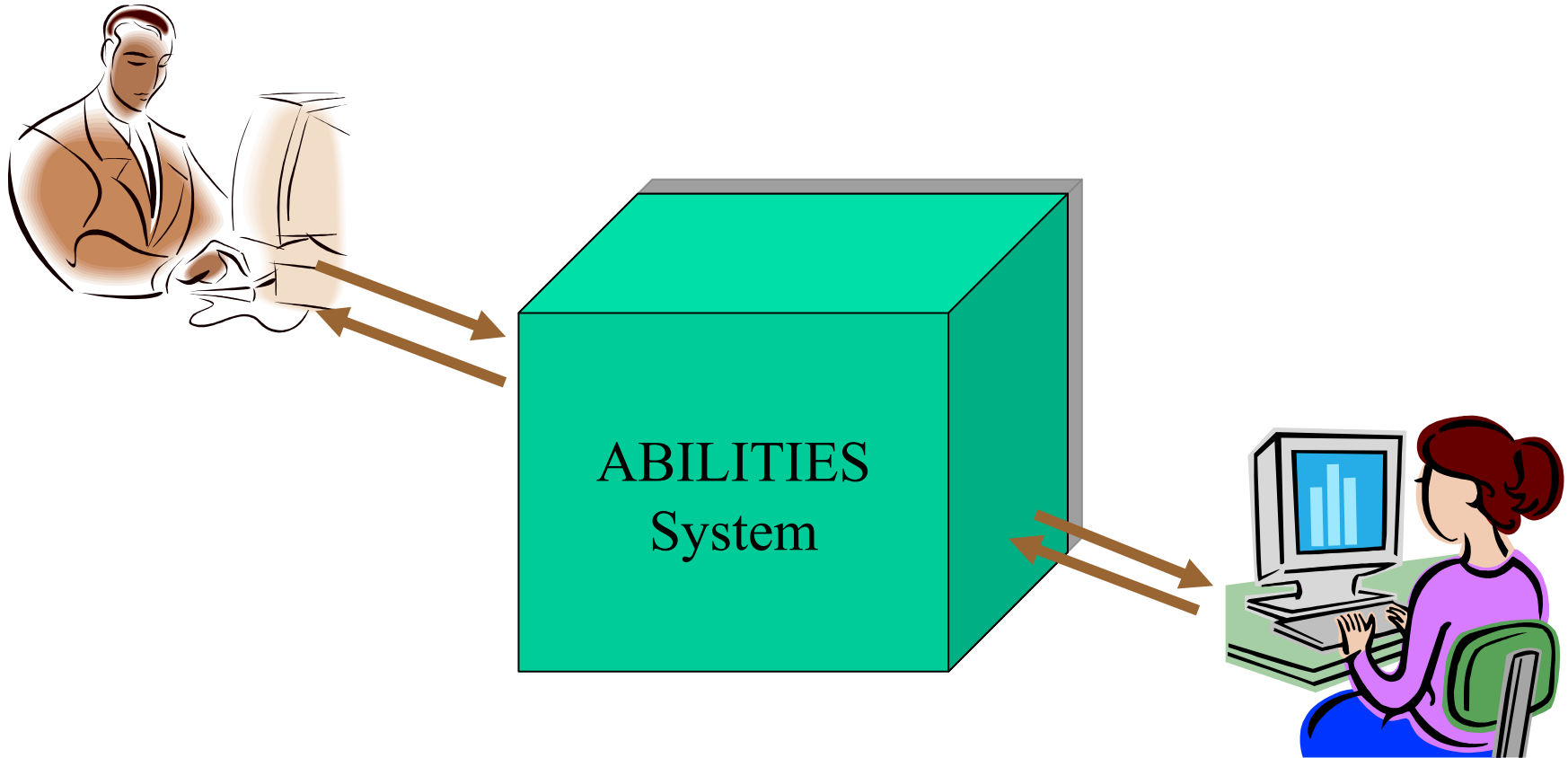
# **EU-Project ABILITIES**

—

**Application BUS for Interoperability  
among SMEs in New EU Member States**

Karsten Tolle – University of Frankfurt





## Application Bus for Interoperability In enlarged Europe SMEs

# Project details

Project Acronym

**ABILITIES**

Project Name

Application Bus for Interoperability In  
enlarged Europe SMEs

Project Code

IST-4-027306-STP

Contract Start Date

01 January 2006

Project Duration

24 months

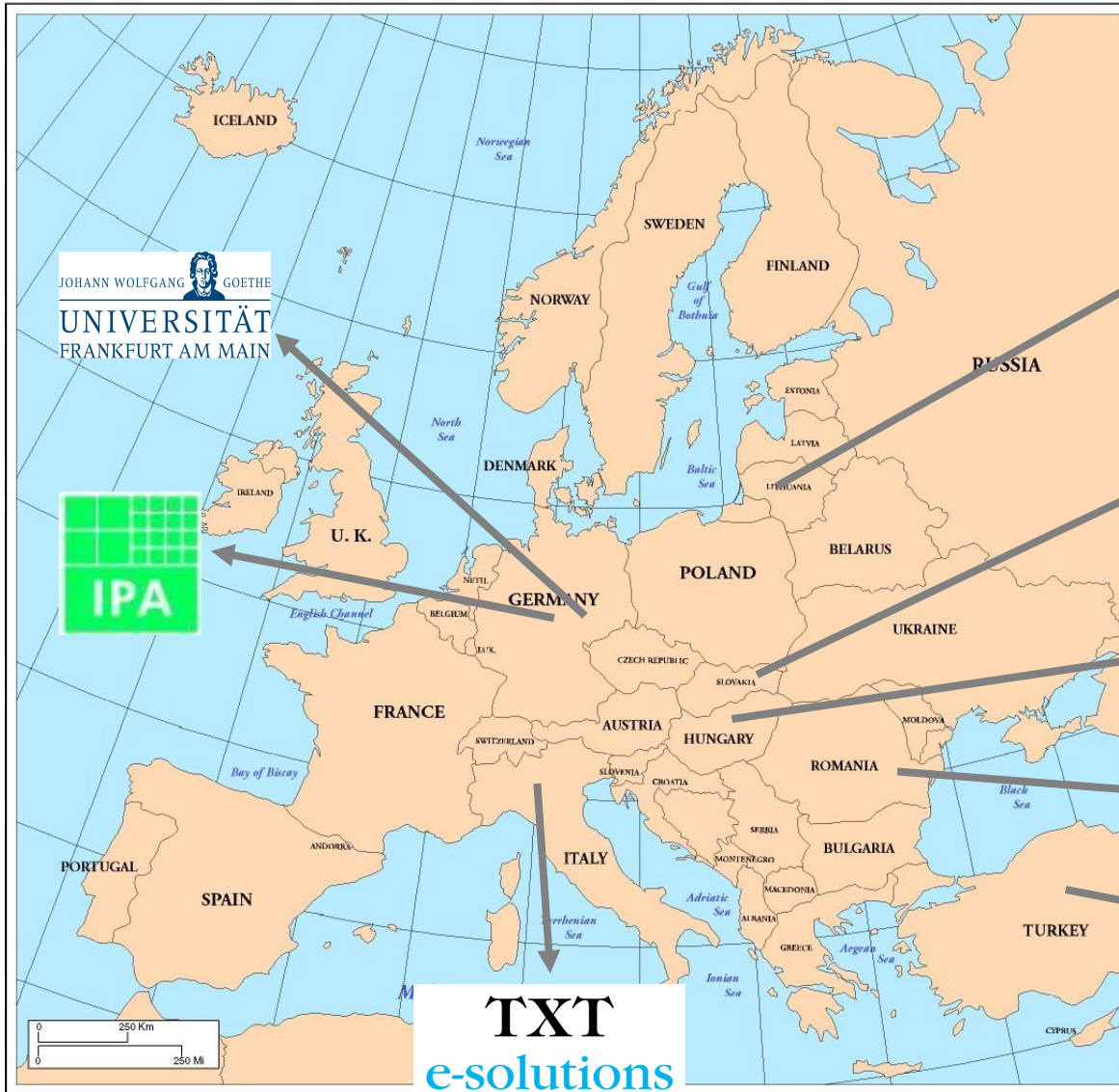
Costs

about 3 Mio. €

# List of Participants



## EUROPE



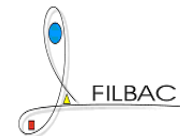
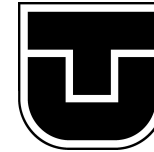
JOHANN WOLFGANG GOETHE  
UNIVERSITÄT  
FRANKFURT AM MAIN



**TXT**  
e-solutions



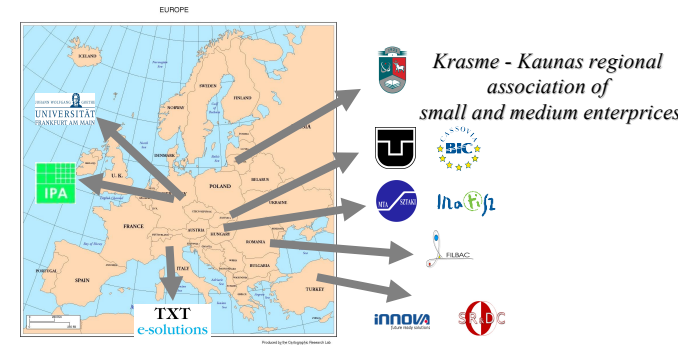
*Krasme - Kaunas regional  
association of  
small and medium enterprises*



# In the project we have five different industry test beds:



- Retail Industry in **Lithuania**;
- High-Tech Industry in **Slovakia**;
- Agro-food Industry in **Turkey**;
- Wood Industry in **Romania**;
- Tourism Industry in **Hungary**.



Most industrial participants of ABILITIES are incubators and work together with a number of SMEs.

- For each test bed:
  - stay within the country and within the domain;
  - customize UBL 2.0 messages for domain and county specifics (UBLtc).

## Why important?

- The number of SMEs is high → improvements will have big impact
  - E.g. about **23.000** small and medium retail enterprises in Lithuania
  - Quote: “The report from KPMG shows that the sum of the smallest SME’s is responsible for the largest part of transactional business messages.” (Mikkel Hippe Brun & Christian Lanng: Reducing barriers for e-business in SME’s through an open service oriented ifrastructure)

# Situation I

- Using phone and fax for every-day business

Indicators \ End-user SMEs	INNOVA	KRASME	CASSOVIA	FILBAC	MATISZ
Average number of telephone conversation occurrences between supplier and its customers within a month	4200	1000	2000	1000	1000
Average number of misunderstandings during telephone conversations within a month	250	100	70	100	10
Average number of mistakes while filling a document	2 Mistakes	2 Mistakes	2 Mistakes	2 Mistakes	2%
The possibility of finding the previous document in 2 minutes	25%	25%	30%	40%	20%
The percentage of expense related to postal services, fax and telephone services	0,1%	0.8%	15%		5%
The percentage of documents delivered by postal service	10%	15~20%	20%	20%	5%
The percentage of business documents that are stored electronically	5%	10%	3%	10%	85%
The possibility of losing the document	10%	20%	7%	20%	5%

# Industrial Goals

Reduce:

- Time
- Mistakes
- Needed manpower



**Save money or even make more money!**

- Business of SMEs (in NMS):
  - Only few legacy systems,
  - Limited IT knowledge and manpower,
  - Limited financial background,
  - High customized products,
  - Need of flexibility.
- Solution needs to:
  - reduce barriers! → providing basic functionalities; hide complexity; reduce effort to link to legacy
  - Reduce every-day work – collaboration and negotiation

# Current Project Status

- Requirements collected ✓
- Specification completed ✓
- Development
  - Prototype planned for **Spring 2007**
- Testing and Integration
  - incremental finish by **end of 2007**

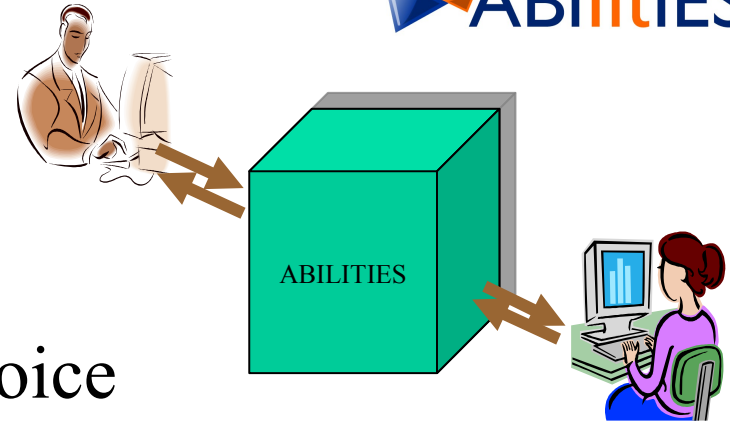
# TOC – addressed issues by ABILITIES



- **Business Process approach**
- Customization of UBL 2.0
- Working on Ontology level (Reconciliation)
- Multi-Media Enrichment
- Negotiation
- Collaboration support

# Business Process approach

- To keep it simple:
  - Concentrating on order-to-invoice
  - Companies need to register
  - Basic agreements are defined during registration
  - Collaborative Process is defined inside a template (defined for each Test Bed)

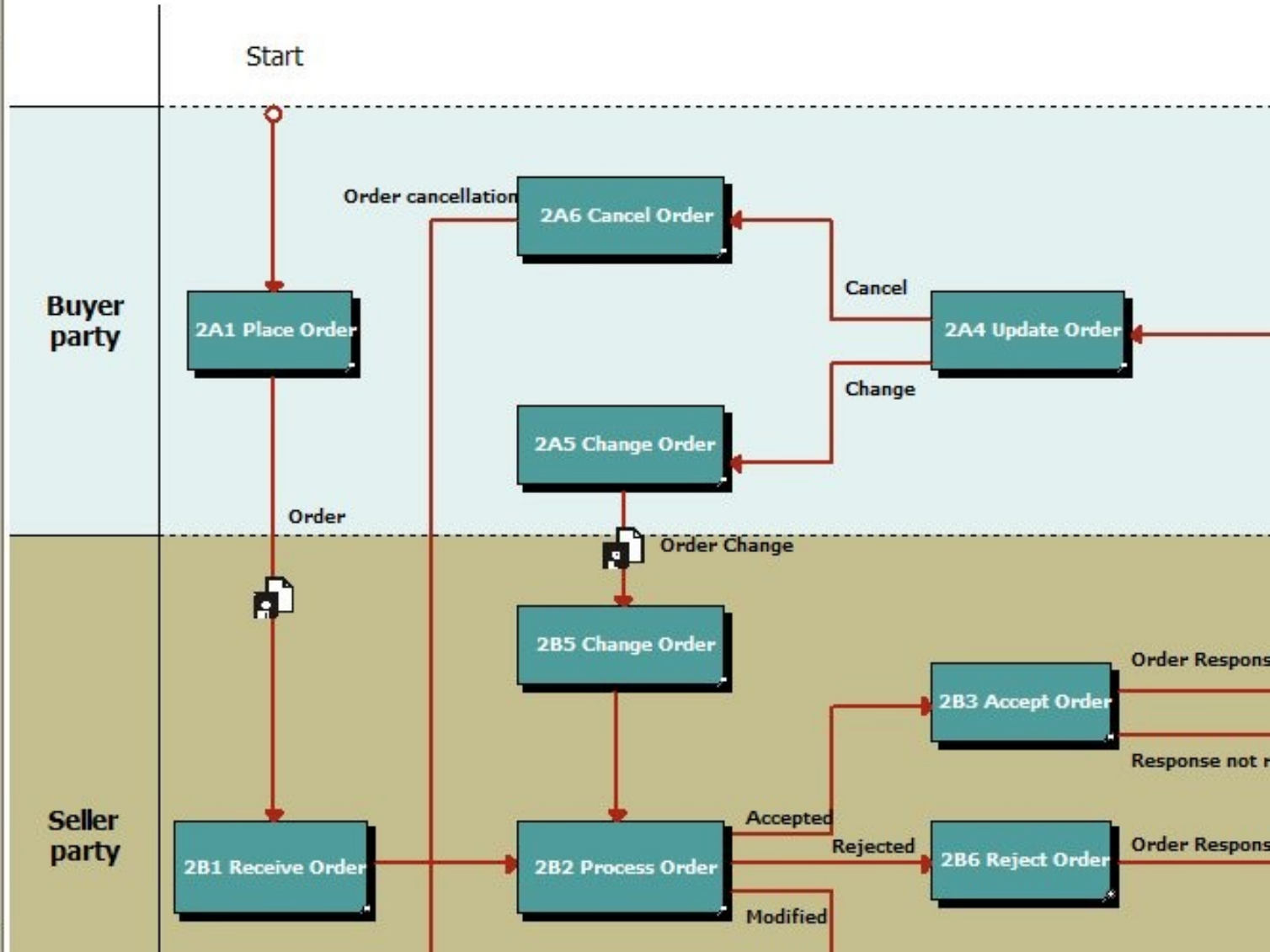


# Collaborative Business Process Global Templates



Process Hierarchy - [Abilities]

- 1. SOURCING
- 2. ORDERING
- 3. FULFILMENT
- 4. BILLING INVOICING

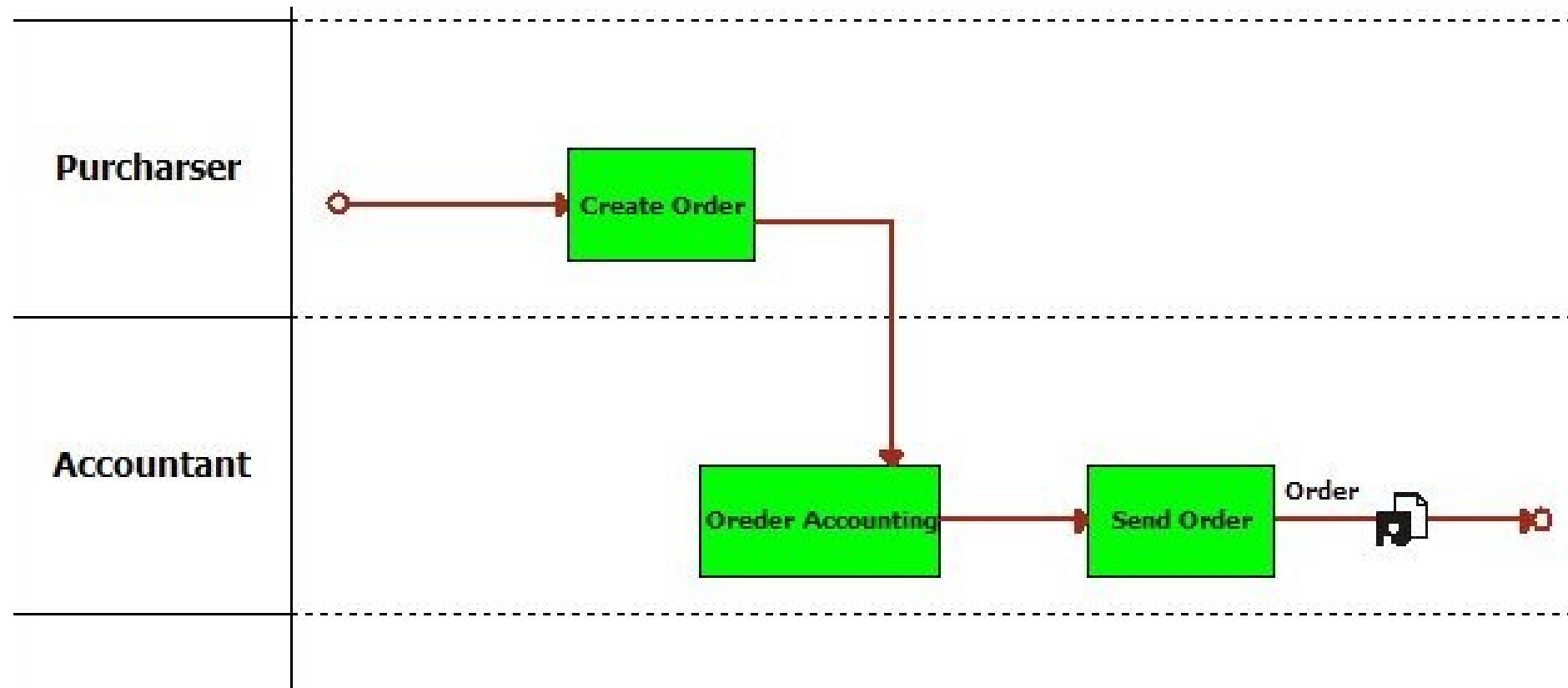


# Private Process Abstraction



- Global Templates model the intercompany collaboration
- Need to capture and model the private processes in each collaborating partner, in a context where low BP support is available
- Need to model the coordination between the two levels of abstraction
- Models of private processes need to include support for human actions to support flexibility and organisational constraints of SMEs.

# Low level Abstraction



- Needs to be modeled by a business manager of the partner.

# Where are we?

- Business Process approach
- **Customization of UBL 2.0**
- Working on Ontology level (Reconciliation)
- Collaboration and Multi-Media Enrichment
- Negotiation
- Collaboration support

# Customization

- Customizations caused by law
  - Identifier of Lithuanian invoice must consist of two fields - serial number and number. Different invoices can have same numbers if their serial numbers are different, but all numbers must be different if they have same serial number.
- Customizations caused by common practice
  - In Slovak invoice and other documents it is common to include grand total written in words to avoid mistakes entering numbers.

# Customization

Customization Name	Customization Description	Customization Reason
<b>New field:</b> Party->PartyType	Add new field. Cardinality 1. Possible values "Ltd" or "Corp." etc.	Types of corporations
Party->Address->PostBox	Add field from UBL 2 to field Address	A post office box number
<b>New field:</b> Party->Address- >MainStreetName	Add new field. Cardinality 1.	The name of the avenue or boulevard
<b>New field:</b> Party->PartyTaxScheme- >RegisteredTaxOffice	Add new field. Cardinality 1.	The tax number and tax office name which the company is registered should be presented on the invoice which is required by the invoice regulation in Turkey. Therefore tax office name will be added to "PartyTaxScheme". The CompanyID field corresponds to the tax number.

# Customization

## Part of Forward Instruction – Turkey

Terms



Yukarıda cinsi ve miktar yazılı malları Karacabey MATLI Yem Sanayi ve Ticaret A.Ş.'den sayarak ve sağlam olarak ..... götürmek üzere vasıta temin aldım.  
Malın yolda seyri sırasında doğacak her türlü zarar ve ziyan vasıta sahibi ile müteselsilen tarafıma aittir.

### TASİT RUHSATININ :

Ruhsat Tarihi : .....  
Ruhsat No. : ..... **Carrier's Vehicle Details** .....  
Varış Yeri : .....  
Plaka No. : .....

Giden Mal ..... **Sigortaya Sigorta** .....

### TASİT SÖFORÜNÜN :

Adı Soyadı : ..... **Carrier's Driver Details** .....  
Ehliyet No. : .....  
Ehliyet ili : .....  
Şöforün imzası : .....

YTL'ye Sigortalı

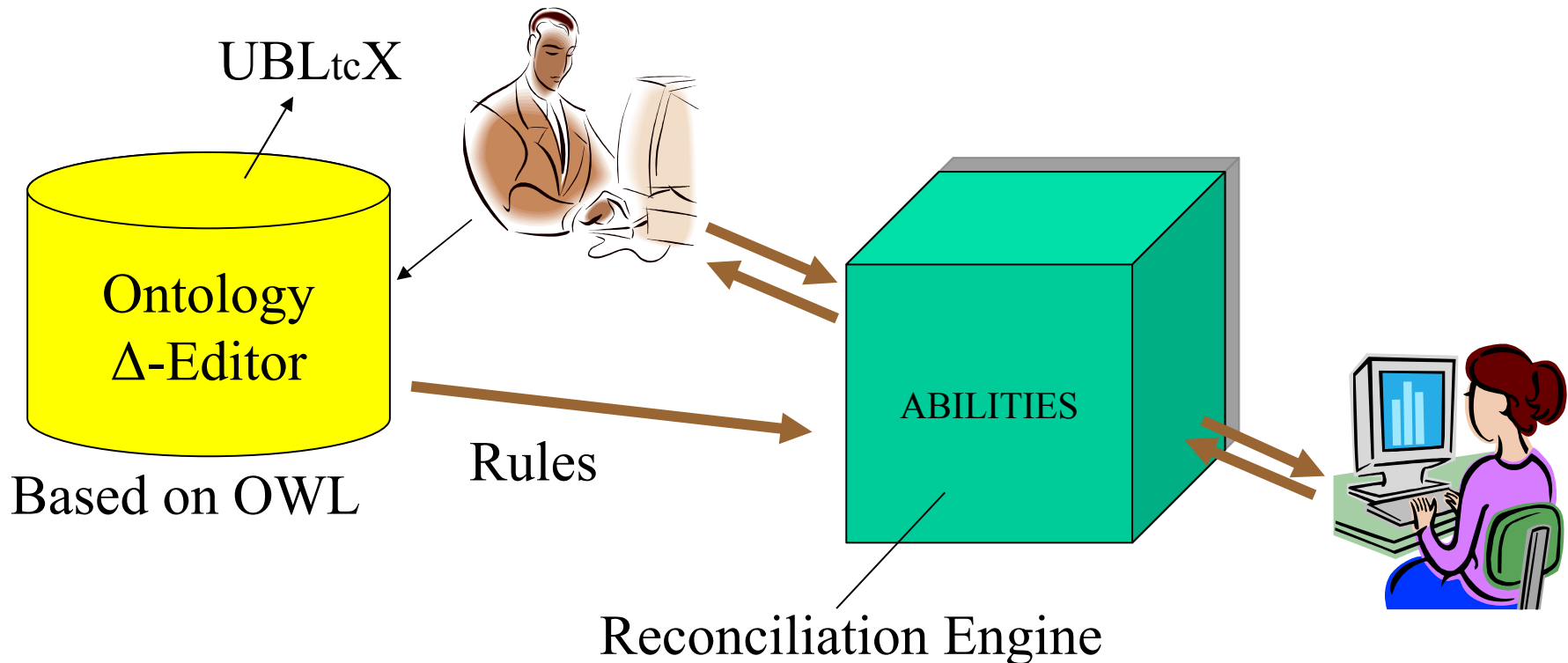
Fabrika Yetkili İmza ..... **Signature of Authorized Person (Supplier)** .....

# Where are we?

- Business Process approach
- Customization of UBL 2.0
- Working on Ontology level (Reconciliation)
- Multi-Media Enrichment
- Negotiation
- Collaboration support

# Company internal customization

- Need to map UBLtc to legacy Data/Application
- Special needs for single company possible
- Goal: Reduce effort to adopt solution!



# Where are we?

- Business Process approach
- Customization of UBL 2.0
- Working on Ontology level (Reconciliation)
- **Multi-Media Enrichment**
- Negotiation
- Collaboration support

## Support by Multi-Media

- I need a chair exactly the same as the one I have.  
→ use a picture to describe the chair
- Tourism industry – during the sourcing phase
- Agro-Food – to ensure quality

### Questions we address:

- How to handle files?
  - Where to store?
  - How to ensure consistency (fraud protection)

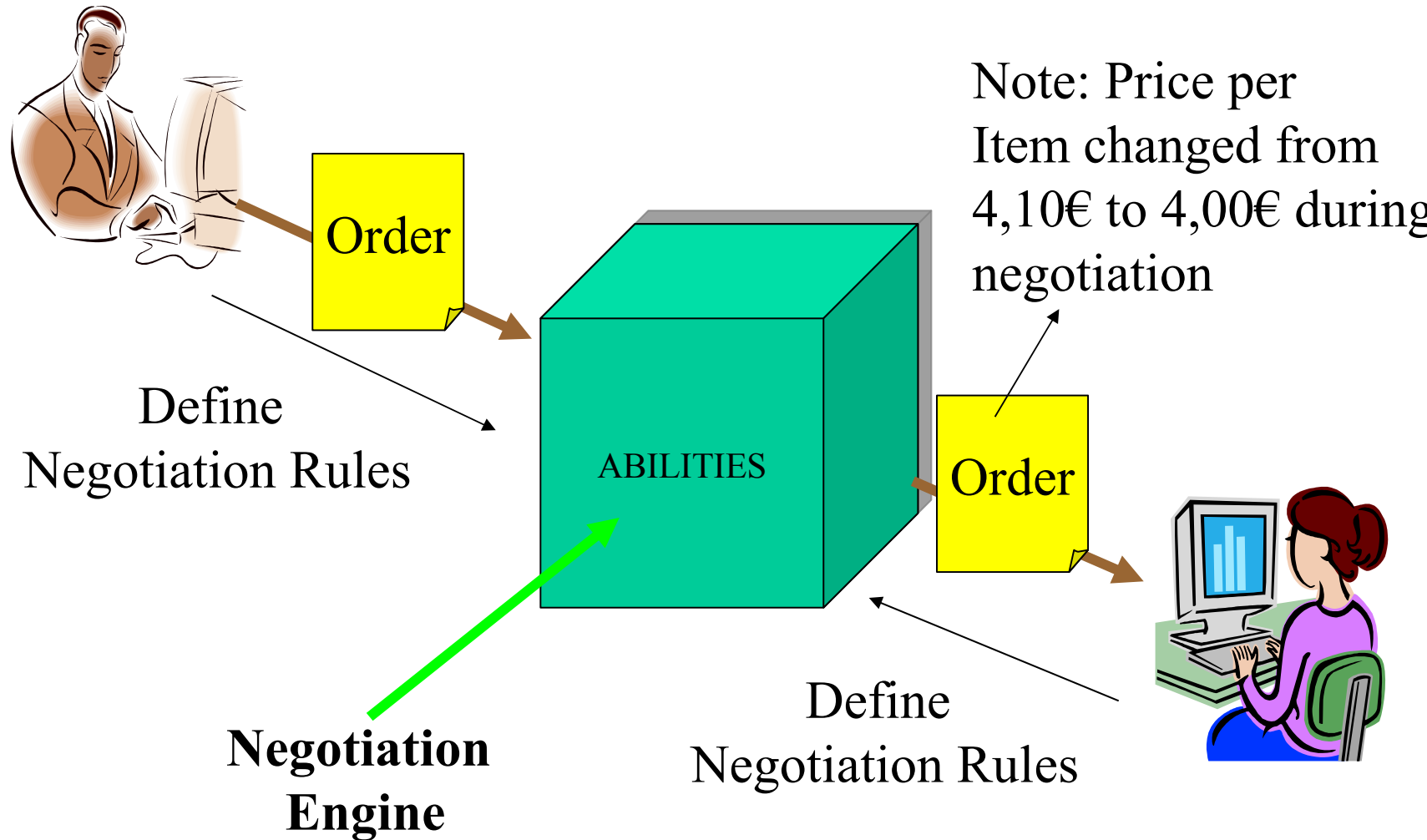
# Where are we?

- Business Process approach
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- Working on Ontology level (Reconciliation)
- Multi-Media Enrichment
- **Negotiation**
- Collaboration support

## Why negotiation?

- Bargaining conditions and prices is common praxis!
- Currently not supported by tools
  - No company-unique way of doing it
  - No visibility to customers
  - Might annoy customers (who paid more)
- Cycle using OrderResponse and OrderChange documents takes to much time!

# Negotiation

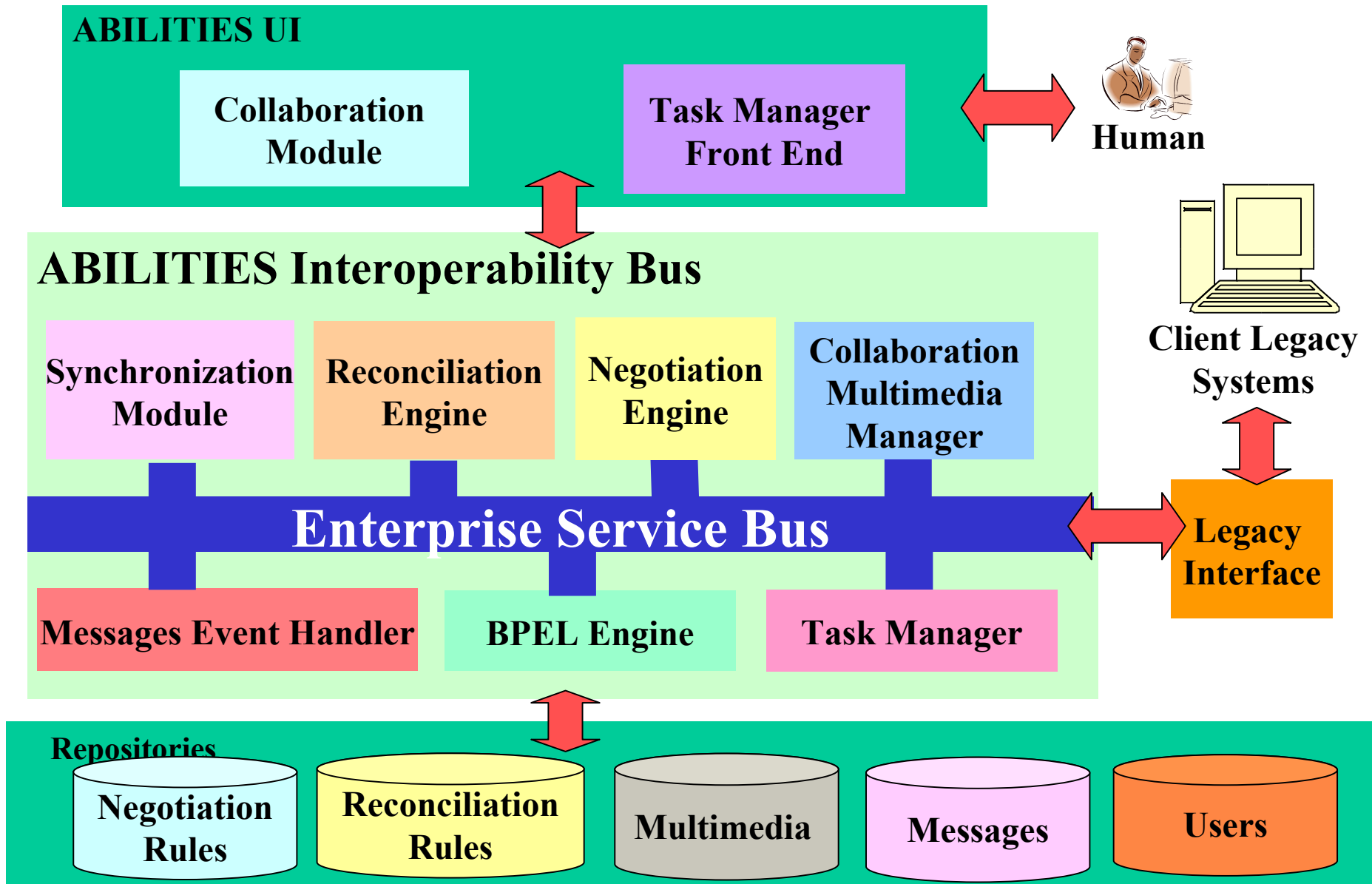


# Where are we?

- Business Process approach
- Customization of UBL 2.0
- Working on Ontology level (Reconciliation)
- Multi-Media Enrichment
- Negotiation
- **Collaboration support**

- Support of communication between parties
  - Finding dates and times to communicate
  - Providing communication channels
    - Phone, Fax, SMS, e-mail, Skype
- Can be triggered by the system in case needed
  - Failure during negotiation
  - Errors
  - Usage of Multimedia

# ABILITIES Architecture at Operation Time



# Project Description

## ABILITIES

Application Bus for InteroperabiLITy In enlarged Europe SMEs

*Study, design and develop a federated architecture implemented by a set of intelligent and adaptive UBL active messages (an Application Bus for EAI) and basic interoperability services, which aims at supporting SMEs EAI in e-commerce contexts, specifically in less developed Countries and less Research and Technology Development intensive industrial sectors.*

# Additional Information



- <http://services.txt.it/abilities/project.html> - Project Website
- <http://www.viewzone.org/abilities/> - Portal describing and tracking project relevant standards
- Contact: [tolle@dbis.cs.uni-frankfurt.de](mailto:tolle@dbis.cs.uni-frankfurt.de)

*UBL has an extreme high potential for SMEs  
to enter new markets and to provide new  
business opportunities.*

Thank you for your attention!

Questions?