

Enterprise **CO**llaboration & **IN**teroperability



COIN Winter School

COIN Services and Innovation

Ljubjana, Nov 29th 2011

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TXT e-solutions S.p.A.



COIN IP Lessons Learned

1. COIN EI Services

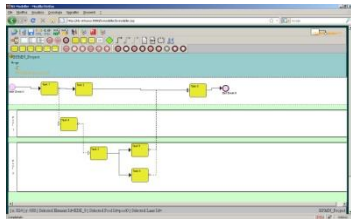
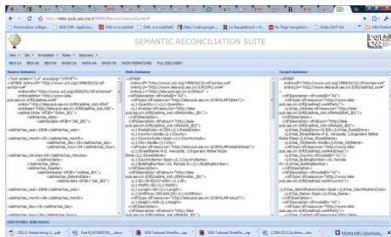
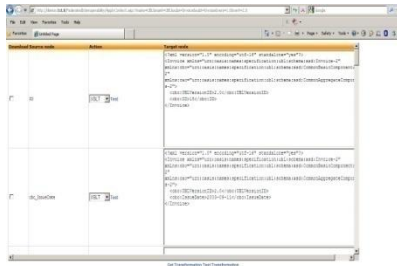
- Richer, “unified-federated” EI services**
- Easy-to use development environments (EI store)**
- EI does not matter, pervasive but invisible**

2. COIN EC Services

Enterprise Interoperability Services

SP5 Innovative services in the SP5 Demo

- Interoperability Spaces Alignment (WP 5.2)
- UBL2GS1/exceptionCriteria (iSurf)
- GS12UBL/exceptionCriteria (iSurf)
- Interoperability Spaces (Federated) (WP 5.2)
- Semantic Mapping Discovery service (WP 5.2)
- Semantic Reconciliation Rules Generation service (WP 5.2)
- Semantic Interoperability Reconciliation Engine (WP 5.2)
- Social Ontology Building and Evolution (SOBE) service(WP 5.3)
- Enterprise Semantic Profiling service (WP 5.3)
- Enterprise Semantic Matchmaking service (WP 5.3)
- Business Interoperability Gap Finding Service (WP 5.4)



COIN Information Interoperability

- Interoperability Space**

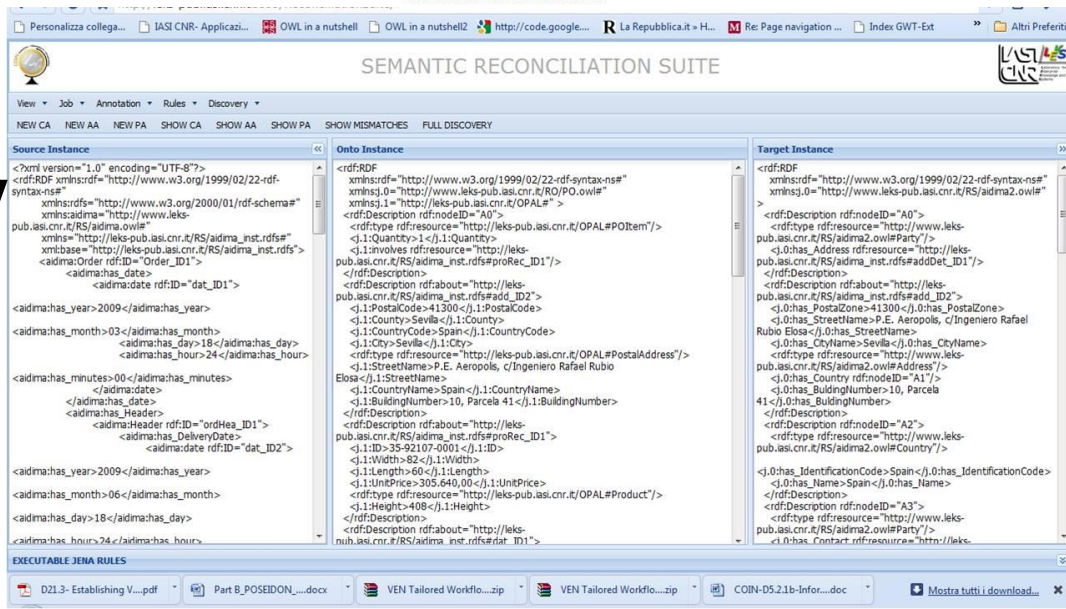
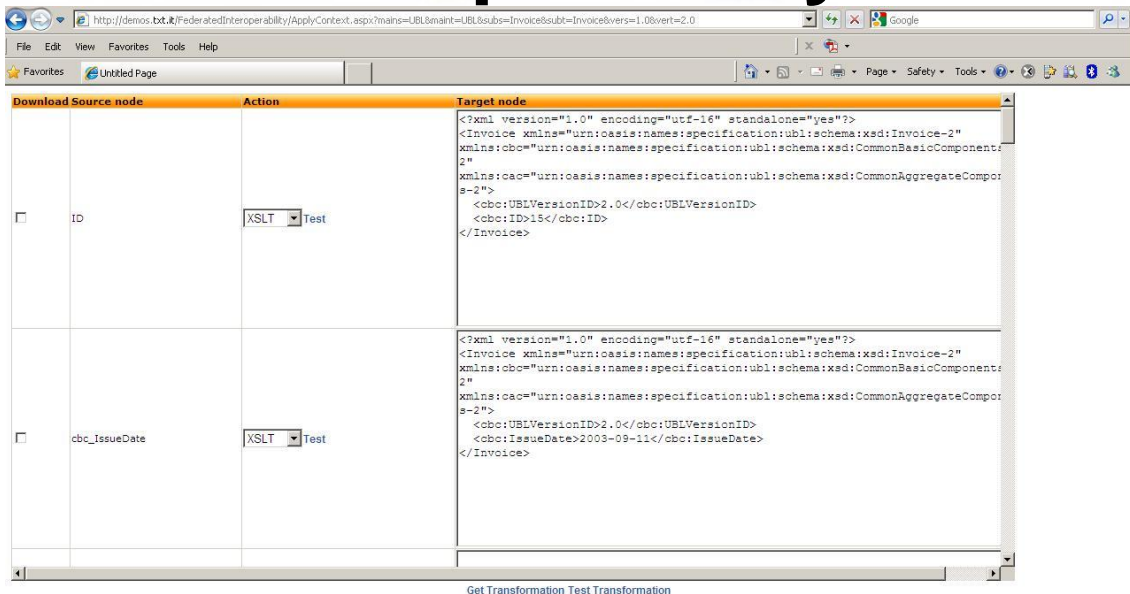
- Publish/Subscribe
- Federated Approach
- Micro-services
- UBL 1.0 – UBL 2.0 DK-TK invoices

- Payload Negotiation**

- 1:1, 1:n, n:m
- ACS negotiation contract (buyer\supplier)

- Semantic Interoperability**

- A generic complete suite
- Unified Approach
- 21 Rules
- AIDIMA order exchange (Furniture)



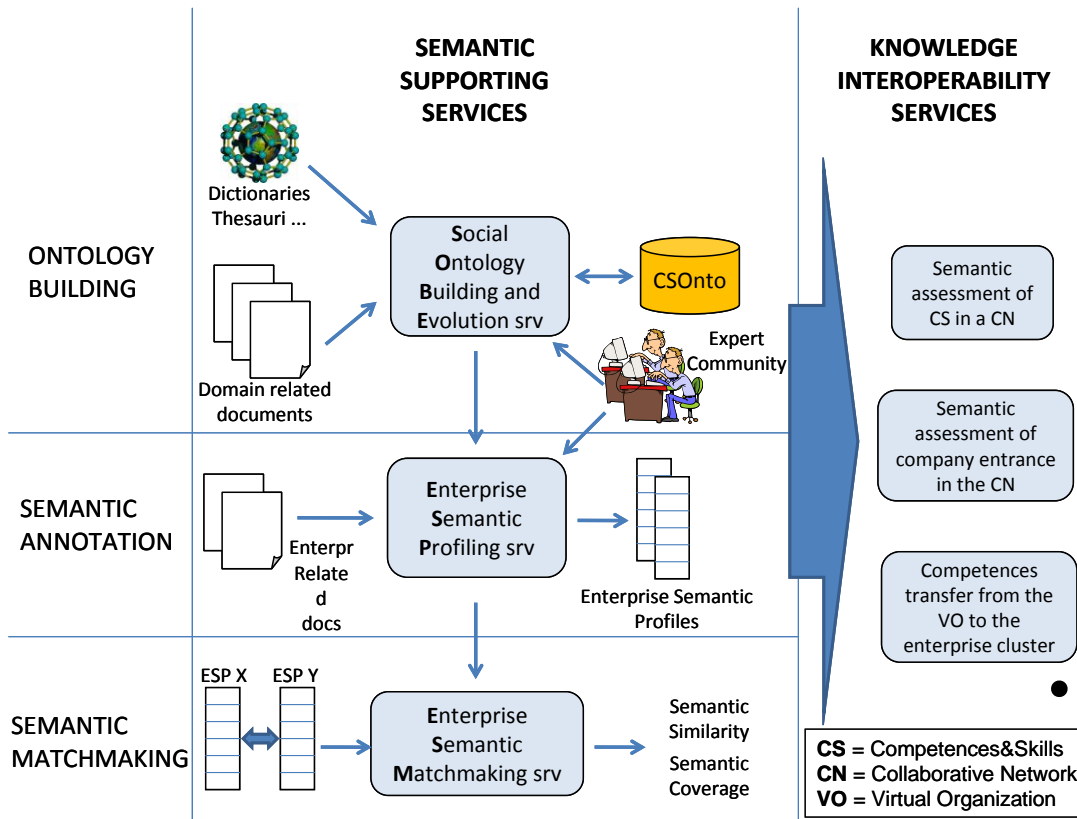
COIN Knowledge Interoperability

- **Modeling CN competences asset**

- Social Ontology Building of CS
- **Automatic knowledge extraction** from txt docs
- **Social participation of experts** community (voting, discussing)
- Example: IND ICT CS core ontology
- Enterprise Semantic Profiling
- **Ontology-based filtering** of enterprises related docs
- Semantic profiles as ontology-based feature vectors (**OFV**)

- **Assessing the current and evolving CS asset**

- Based on **Information content-driven** computation of semantic measures (**coverage and similarity**) between semantic profiles



CN = Collaborative Network
CS = Competences & Skills

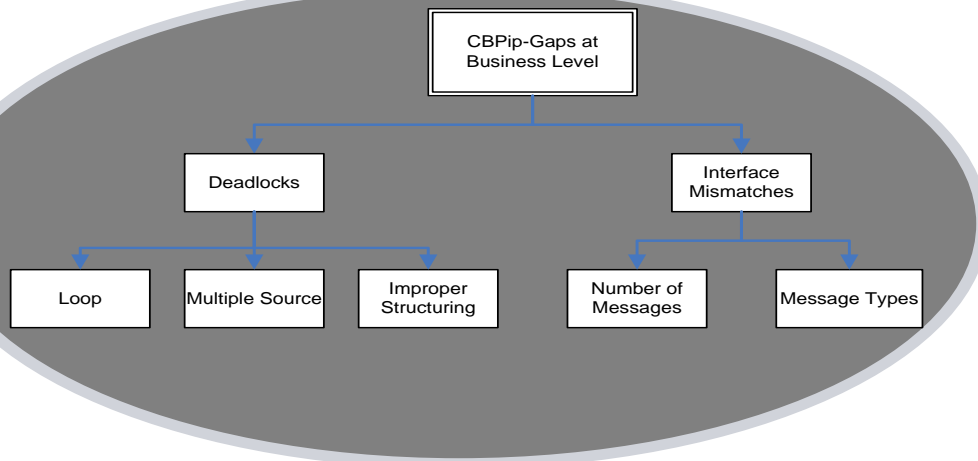
COIN Process Interoperability

Challenges

- Define the scope of business process interoperability
- Categorize and classify interoperability gaps
- Develop innovative services to ensure business process interoperability
- Provide service primitives to purge the gaps during collaborative process model design-time

Results

- Solid concept of business process interoperability
 - Overall scenario
 - Gap categorization and classification
- Prototypical implementation of Business Interoperability Services:
 - Transformation Service (to transform private business processes into view processes applying SBVR rules)
 - CBPip Gap Detection Service (to identify CBPip gaps)
 - **EXAMPLE**
 - Transformation of private processes to public views
 - Detection of interoperability gaps



The background of the slide features the European Union flag, which consists of a blue field with twelve five-pointed gold stars arranged in a circle. The flag is slightly blurred and occupies the top portion of the slide.

COIN IP Lessons Learned

1. COIN VISION

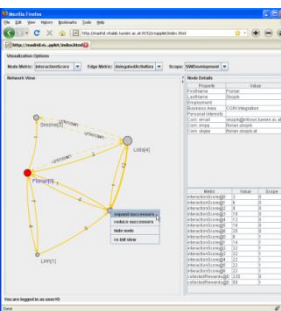
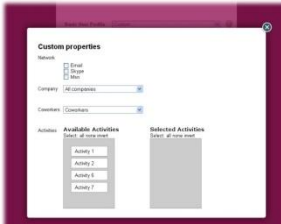
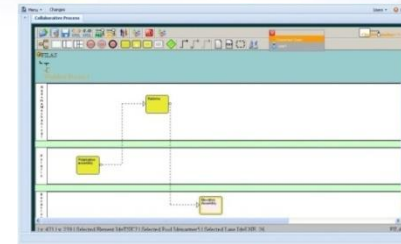
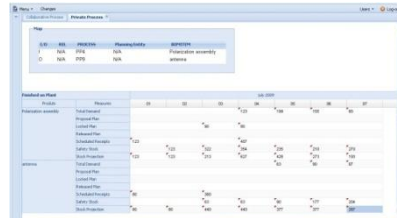
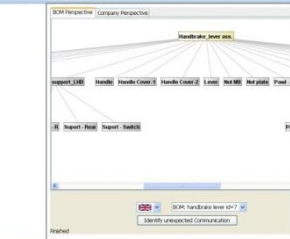
2. COIN Generic Service Platform

3. COIN EI Services

4. COIN EC Services

- Link between permanent & opportunistic alliances**
- Business opportunities internally generated**
- Collaborate to innovate, the innovation ecosystem**
- Service innovation in manufacturing ecosystems**

Enterprise Collaboration Services



EC Innovative Services		Acronym	Owner
WP	Service		
4.2 c-PD	Semantic Cluster Management Services	SCMS	ISOIN
4.2 c-PD	Document Management and Collaborative 3D Designer Service	DM&C3D	ISOIN
4.2 c-PD	Advanced Semantic Cluster Management Service	ASCM	JSI
4.3 c-PP	Collaborative Production Planning Platform	C3P	TXT
4.3 c-PP	SaaS Production Planning Service	PPS	TXT
4.3 c-PP	Collaborative Quality Management Service	cQMS	BIBA
4.3 c-PP	Supply Chain Information Services	SCIS	JSI
4.4 c-PM	Project alignment booster - Configure alignment model service	PAB - CACMS	VTT
4.4 c-PM	Project alignment booster - Project alignment profile service	PAB - PAPS	VTT
4.4 c-PM	Project alignment booster - Partner alignment indicator service	PAB - PAIS	VTT
4.4 c-PM	Project alignment booster - Competency deviations service	PAB - CDS	VTT
4.4 c-PM	Collaboration for Project Management	Coll4Pm	TXT
4.5 c-HI	Collaboration Visualization Tool	CVT	TUV
4.5 c-HI	Trusted Information Sharing	TIS	TUV
4.5 c-HI	Trusted Online Help and Support	TOHS	TUV
ECOSPACE	Team Builder	TB	TXT

COIN c-Product Development

- Collaborative Knowledge-based Product model.
 - *Semantic Cluster Management System (SCMS)*
- 3D data and collaboration through visualization
 - *Collaborative 3D Designer Service (C3DDS)*



ISOIN
Semantic Search Engine for Collaborative Product Development

Home Resources Search About us Contact

Semantic Search Engine for Collaborative Product Development



This is a tool to improve the final user interaction with PLM systems where customers can easily search for a determined product or service,

» Search

--Select a type--

GO!

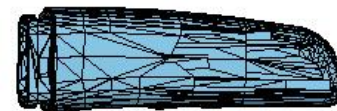
» Highlights



C3DDS
Collaborative 3D Designer Service

C3DDS How To Use ISOIN COIN

Collaborative 3D Designer Service



Annotations

Insert Comment

Select Comment

X:

Y:

Z:

user:

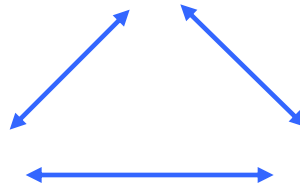
Collaborative - Product Development Services

- Semantic Cluster Management Services (SCMS)

Problems addressed:

– A new product is going to be developed. We need to find **which companies** (or **group** of companies, working in collaboration) have produced in the past a specific **part of the product**, or can provide the **needed service**.

– Usually, clusters are of **considerable size**, (supply chains, collaborative networks and business ecosystems should be taken into account), and the right information for product development (companies, products, services, materials, timing, etc) is **hard to find**.

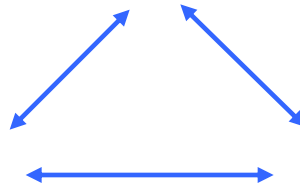


Collaborative - Product Development Services

- Semantic Cluster Management Services (SCMS)

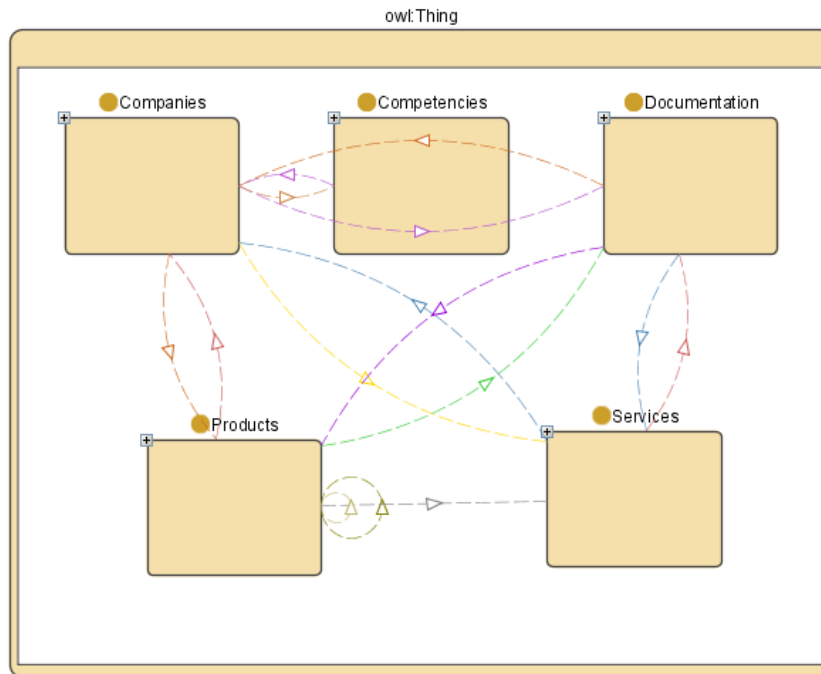
Objectives:

- **Semantic search for products or services** needed in the product development process, based on the product structure ontology.
- **Semantic search for companies** that provide the required product / service in a product development process, taking into account related **competences**.



Collaborative - Product Development Services

- Semantic Cluster Management Services (SCMS)

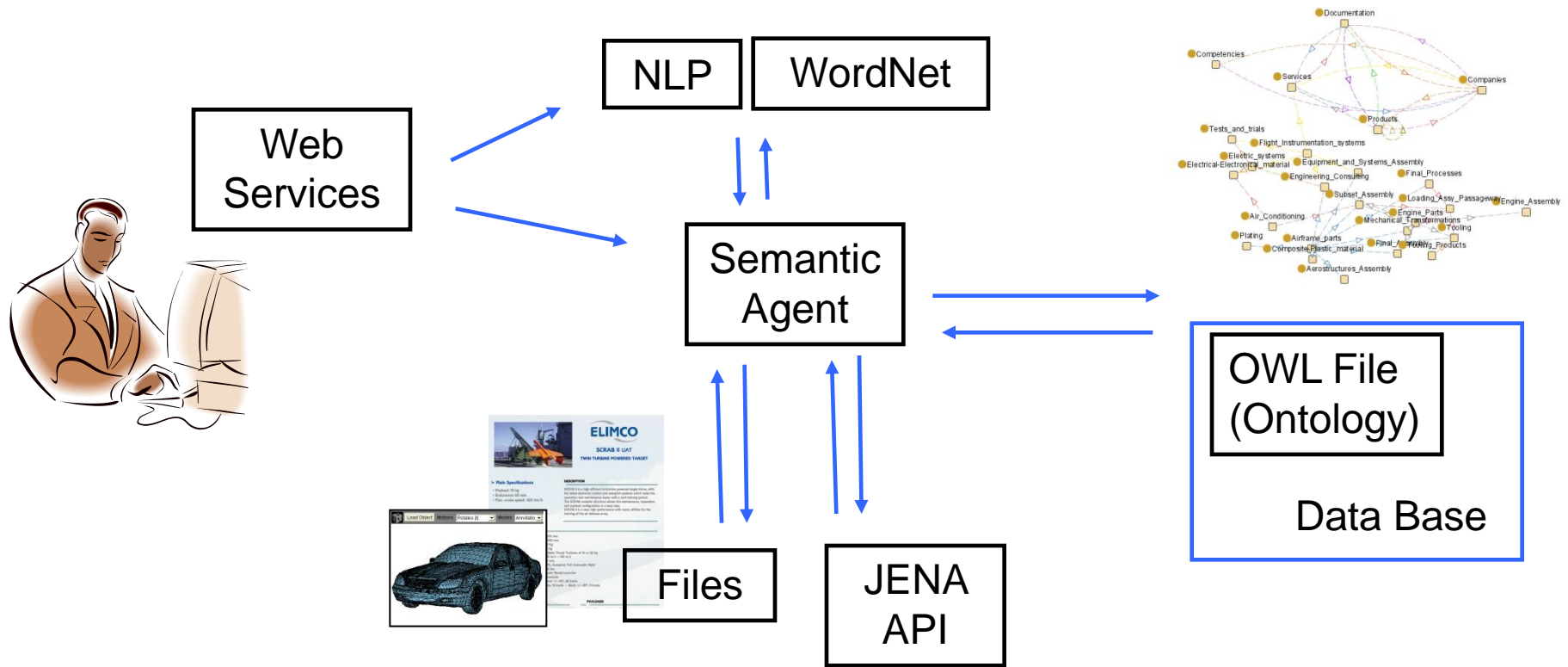


- Competencies
 - ▼ ● Collaboration_and_Interoperability (2)
 - Collaborative_systems (1)
 - Experience_in_collaborative_projects (2)
 - Interoperability_systems (1)
 - ▼ ● Innovation (6)
 - Innovative_design_processes (3)
 - Innovative_manufacturing_processes (1)
 - Innovative_materials (2)
 - ▼ ● Reliance (3)
 - Annual_turnover (1)
 - End user rating

Semantic searches are based on a product and service ontology built for the cluster

Collaborative - Product Development Services

- Semantic Cluster Management Services (SCMS)



Architecture used in Semantic Cluster Management Services (SCMS).

Collaborative - Product Development Services

- Collaborative 3D Designer Service: C3DDS

Objectives:

– Web service to support **visualization, annotation and inspection of 3D design models** in multidisciplinary and distributed teams.



C3DDS
Collaborative 3D Designer Service

C3DDS How To Use ISOIN COIN

Collaborative 3D Designer Service

Annotations

Insert Comment Select Comment

x:

y:

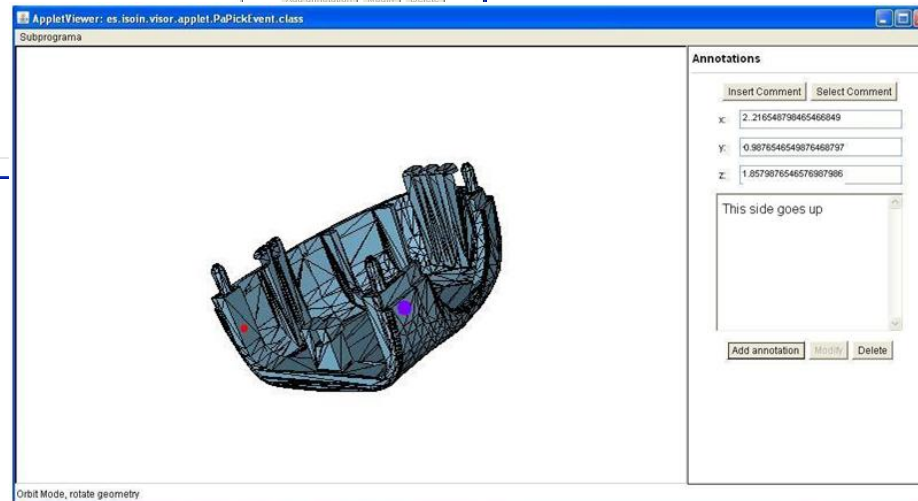
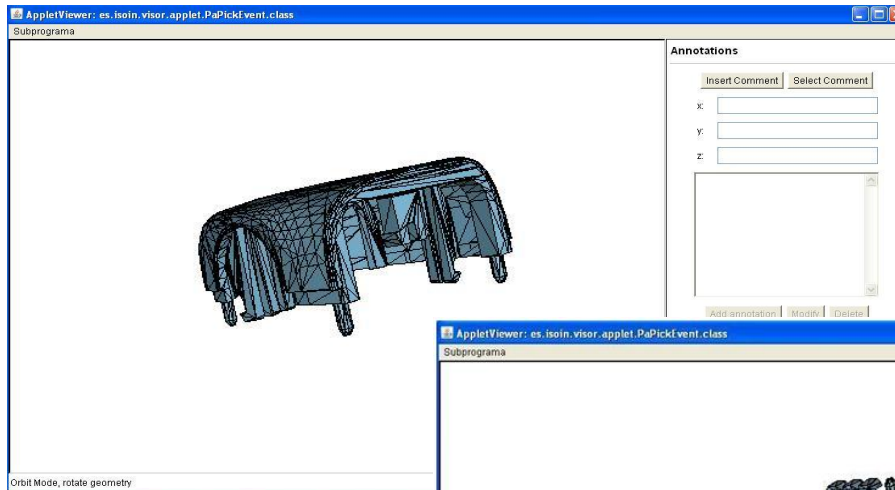
z:

user:

Collaborative - Product Development Services

- Collaborative 3D Designer Service: C3DDS

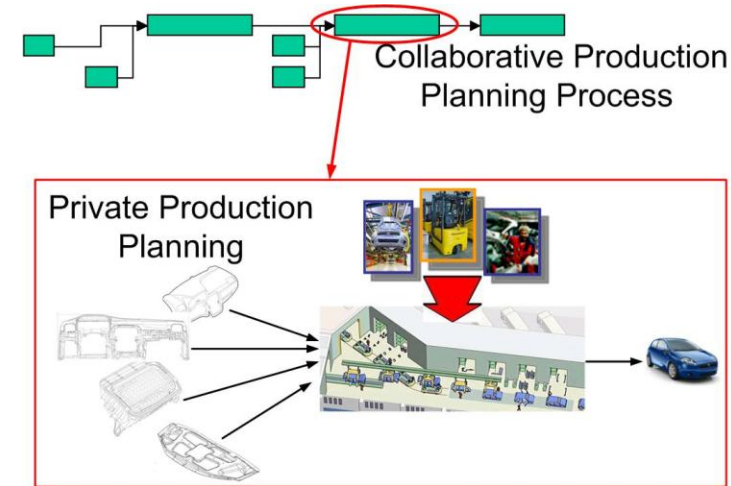
- Dissemination of 3D product designs and online annotations of the 3D file



COIN c-Production Planning

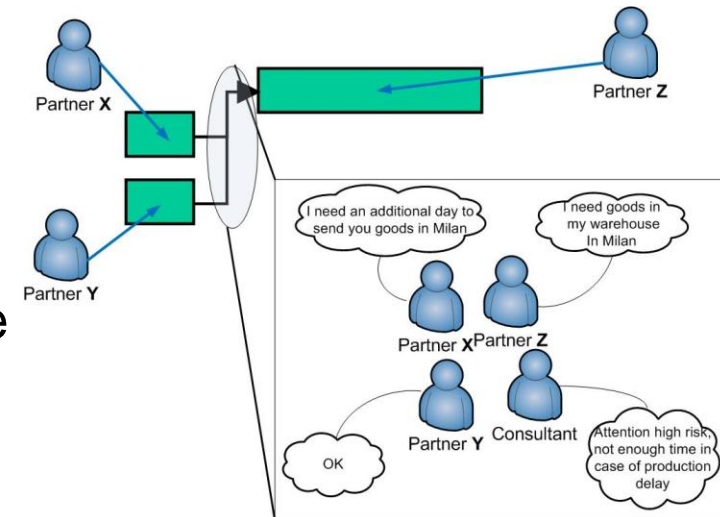
• Main challenges addressed

- Strong Support to Collaboration among value-chain actors
- Collaborative creation of Production Plans
- Collaborative prediction and management of exception
- Software design following SaaS paradigm
- Enhance Process Quality



• Main results achieved

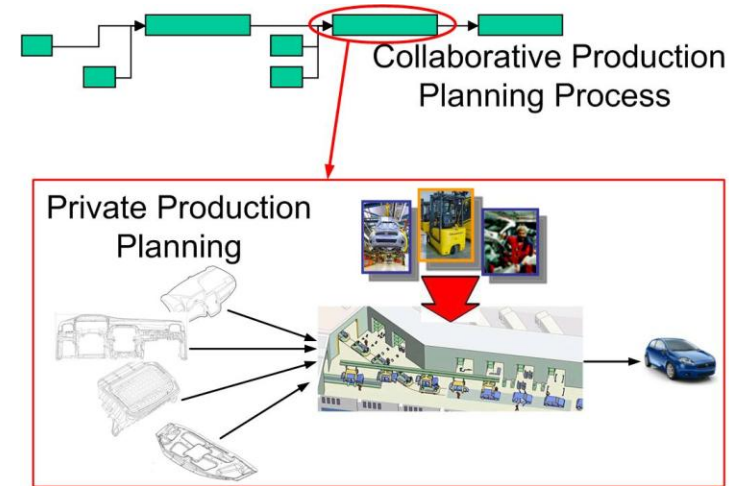
- ✓ PnP Collaborative Production Planning Portal (C3P)
- ✓ SaaS Production Planning Service (PPS)
- ✓ Collaborative Quality Management Service (cQMS)
- ✓ Supply Chain Intelligence Service (SCIS)



COIN c-Production Planning (WP4.3)

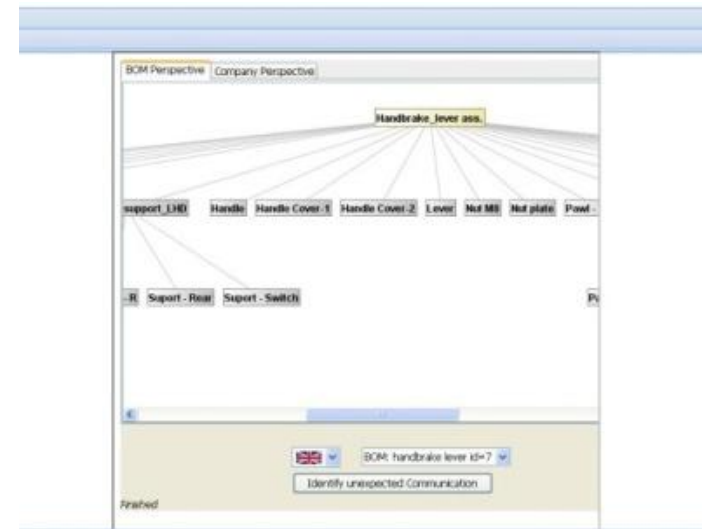
• Main challenges addressed

- Strong Support to Collaboration among value-chain actors
- Collaborative creation of Production Plans
- Collaborative prediction and management of exception
- Software design following SaaS paradigm
- Enhance Process Quality



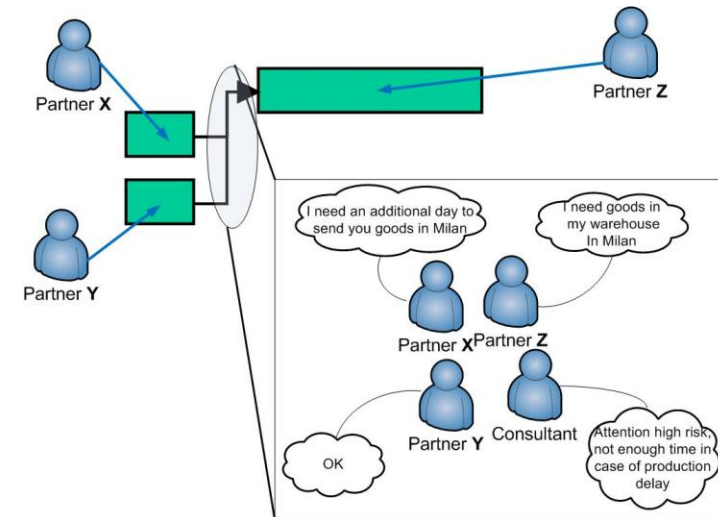
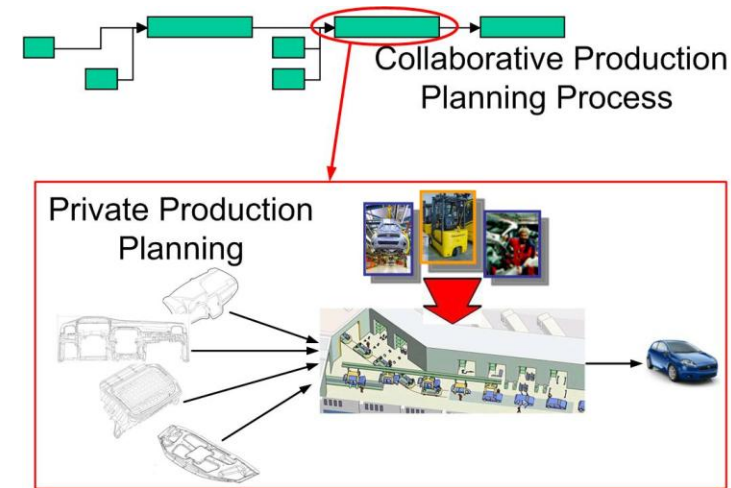
• Main results achieved

- ✓ PnP Collaborative Production Planning Portal (C3P)
- ✓ SaaS Production Planning Service (PPS)
- ✓ Collaborative Quality Management Service (cQMS)
- ✓ Supply Chain Intelligence Service (SCIS)



Collaborative Production Planning Platform (C3P)

- Creation of a Collaborative Production Plan
- Support collaboration among value-chain actors
- Give an user-centered approach to Production Planning by usage of Virtual Rooms
- Manage value-chain changes
- Point of access to other two services
- Next Steps
 - Provide privacy mechanism on information access



Supplier private process

The screenshot shows a software interface titled "Collaborative Process". At the top, there is a menu bar with "Menu" and "Users" (with a "Log-out" button). Below the menu is a toolbar with various icons for file operations (PNG, JPG), workflow management, and communication. The main workspace displays a workflow diagram labeled "Workflow Process 0". The diagram is divided into two horizontal lanes: a top lane labeled "V m N" and a bottom lane labeled "S m T". In the "V m N" lane, there is a yellow box labeled "Radome". In the "S m T" lane, there is a yellow box labeled "Antenna". A dashed vertical line connects the bottom of the "Radome" box to the top of the "Antenna" box. A blue oval encircles the "Radome" box, and another blue oval encircles the "Antenna" box. A blue arrow points from the "Collaboration in Virtual rooms" text to the dashed line connecting the two boxes. A red arrow points from the "Supplier private process" text to the "Radome" box. Another red arrow points from the "Receiver private process" text to the "Antenna" box. On the right side of the interface, there is a "Connected Users" panel showing a user named "Enrico".

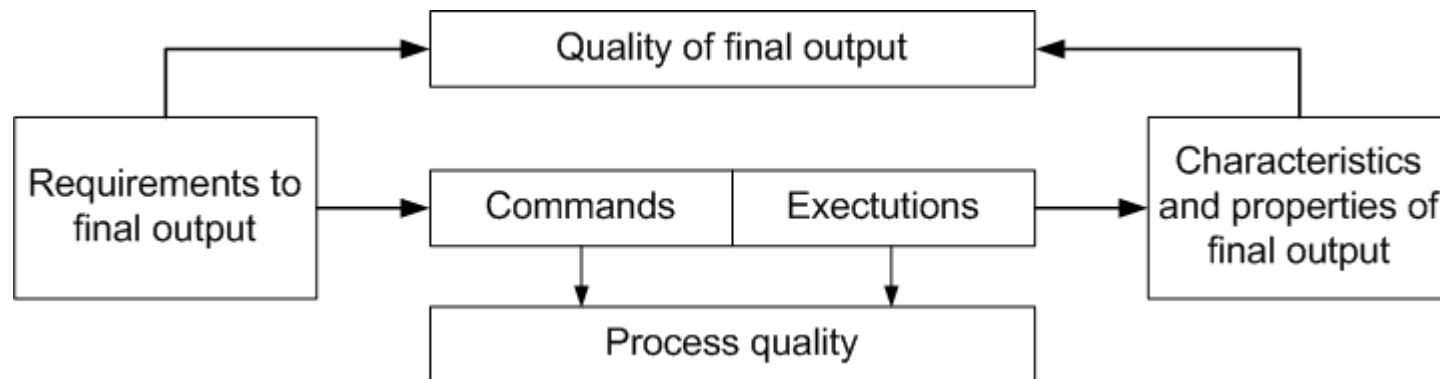
Collaboration in Virtual rooms

Receiver private process

cQMS Prototype - Overview

What is the cQMS Prototype?

- A program to identify missing inter-dependencies between partners in order to define needed communication channels to reduce quality problems in collaborative business.
- Therefore it analyses well-defined description texts of every material of a BOM (1st step)
- Future work: Analyse full Competence Profiling of collaboration partners



Research need: Towards an Inter-organisational Perspective for Managing Quality in Business Networks

(1) Level of individual network actors in an organisation (intra-organisational viewpoint; relations between single persons in different departments)

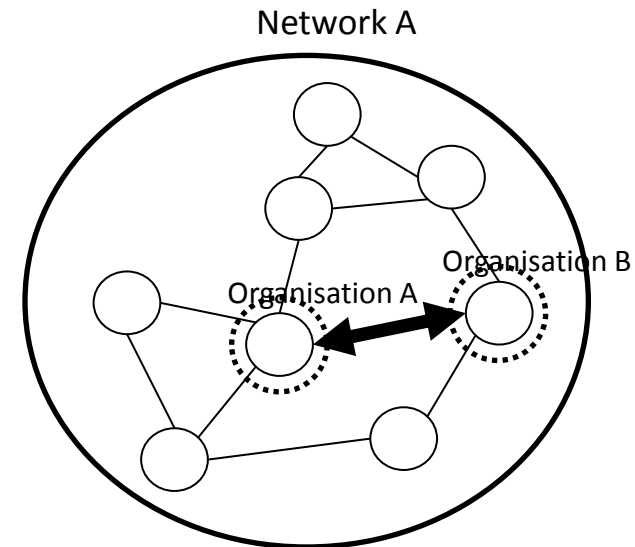
→ Covered by existing QM initiatives

(2) Level of single organisations in a network (intra-organisational viewpoint; relations between departments within an organisation)

→ Covered by existing QM initiatives

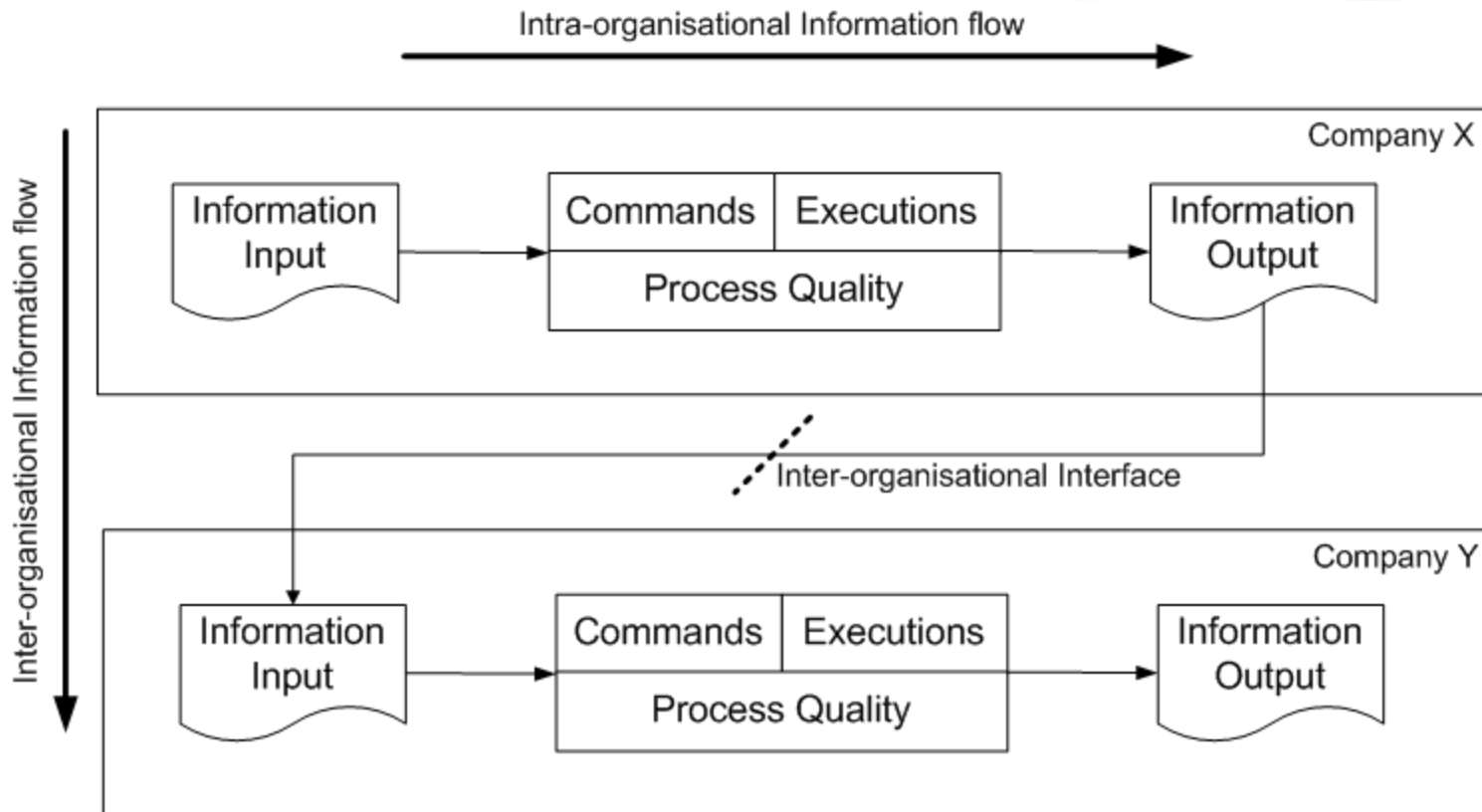
(3) Level of inter-organisational relations (inter-organisational viewpoint; relations between networks member)

(4) Level of institutional contexts (inter-organisational viewpoint; relations between networks)



Source:
Level 3 following Gilbert 2003

Process quality in a networked business context



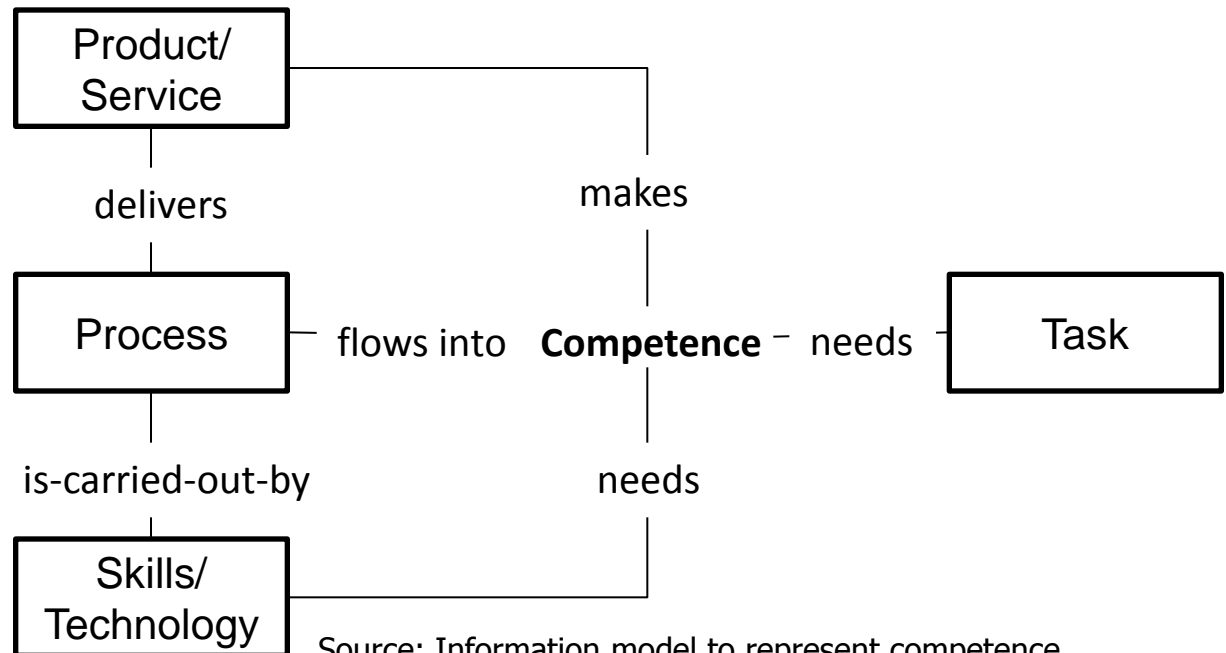
- Communication interfaces affect process quality and thus product quality
- Coordination to avoid incidents resulting from misunderstandings and lack of information

→ Identification of inter-organisational dependencies to support processes quality

Next Steps (1): Model Communication Structures by Competences

- Each actor's unique combination of products/services, resources and skills constitutes its identity as competence in the Value Network

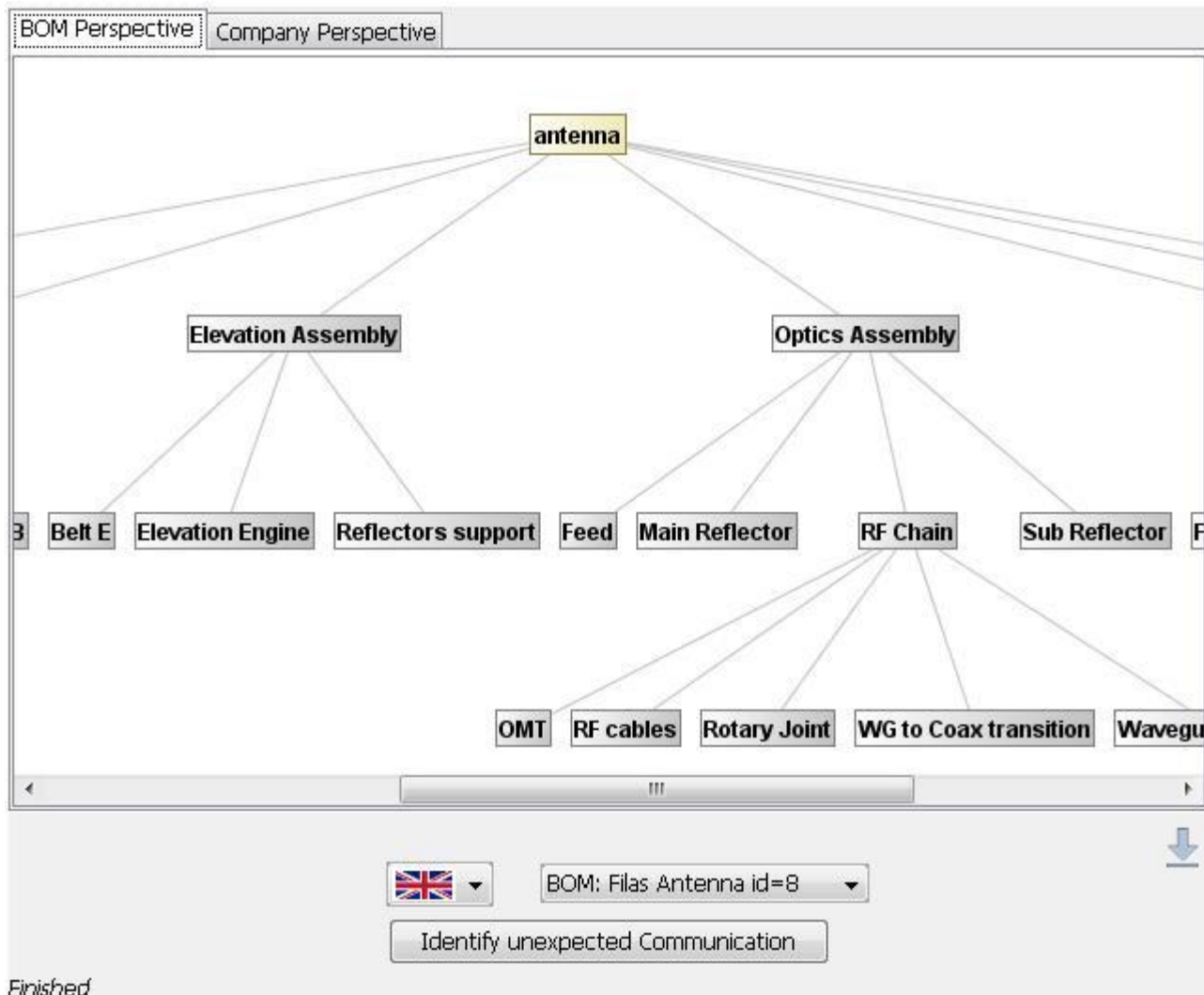
- **Product/ Service:** core product/service of a company, which are attractive from the perspective of the customer and the market, and which could make a substantial contribution to the business network
- **Processes (Business Processes):** All the core processes that are needed to offer the company's product/service to the business network
- **Skills (Technology):** Theoretical and practical knowledge, skills and abilities that are used to develop the product/service



Source: Information model to represent competence (according to Molina and Bremer, 1997)

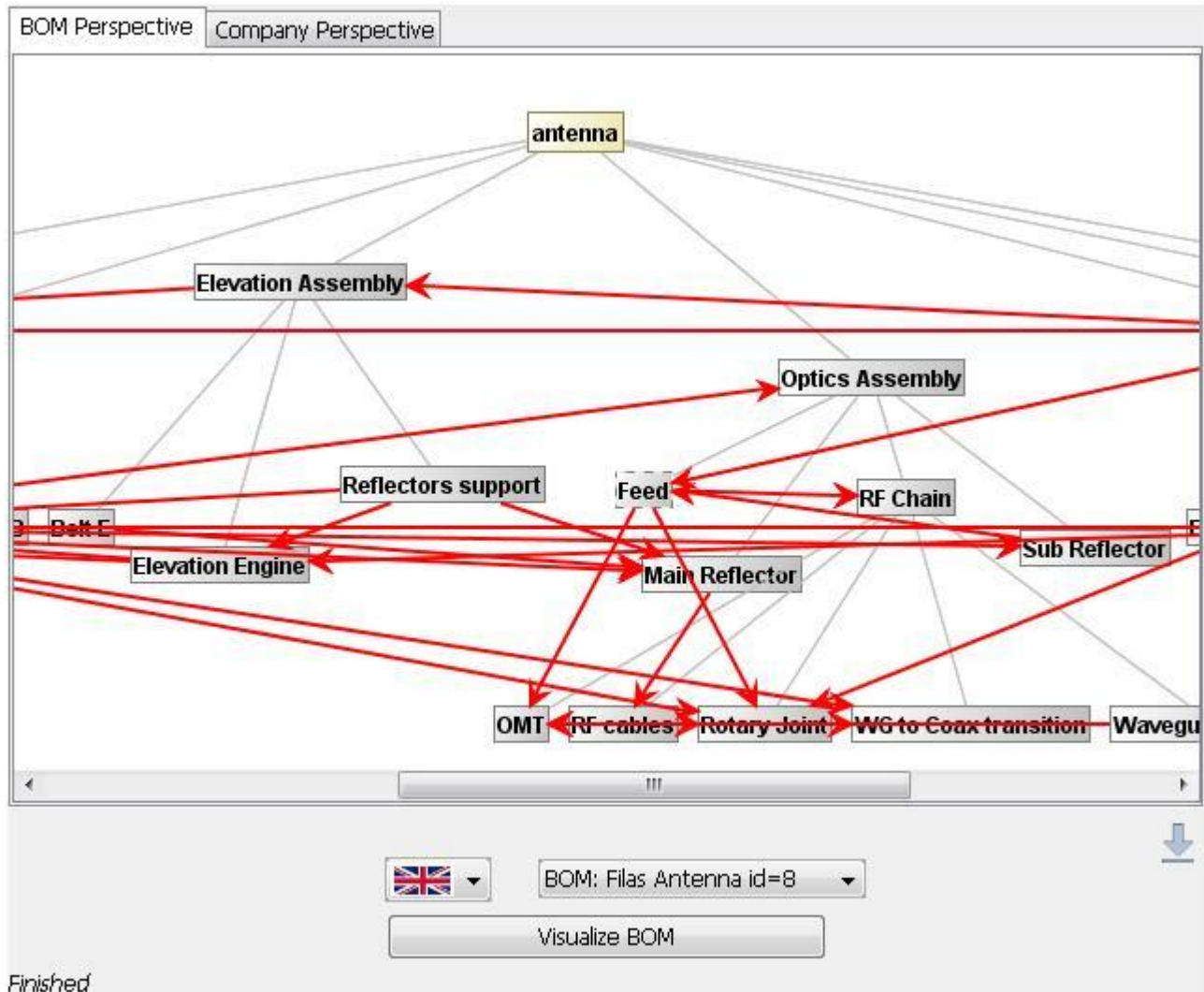
cQMS Prototype - Overview

Existing Communication / BOM Structure



cQMS Prototype - Overview

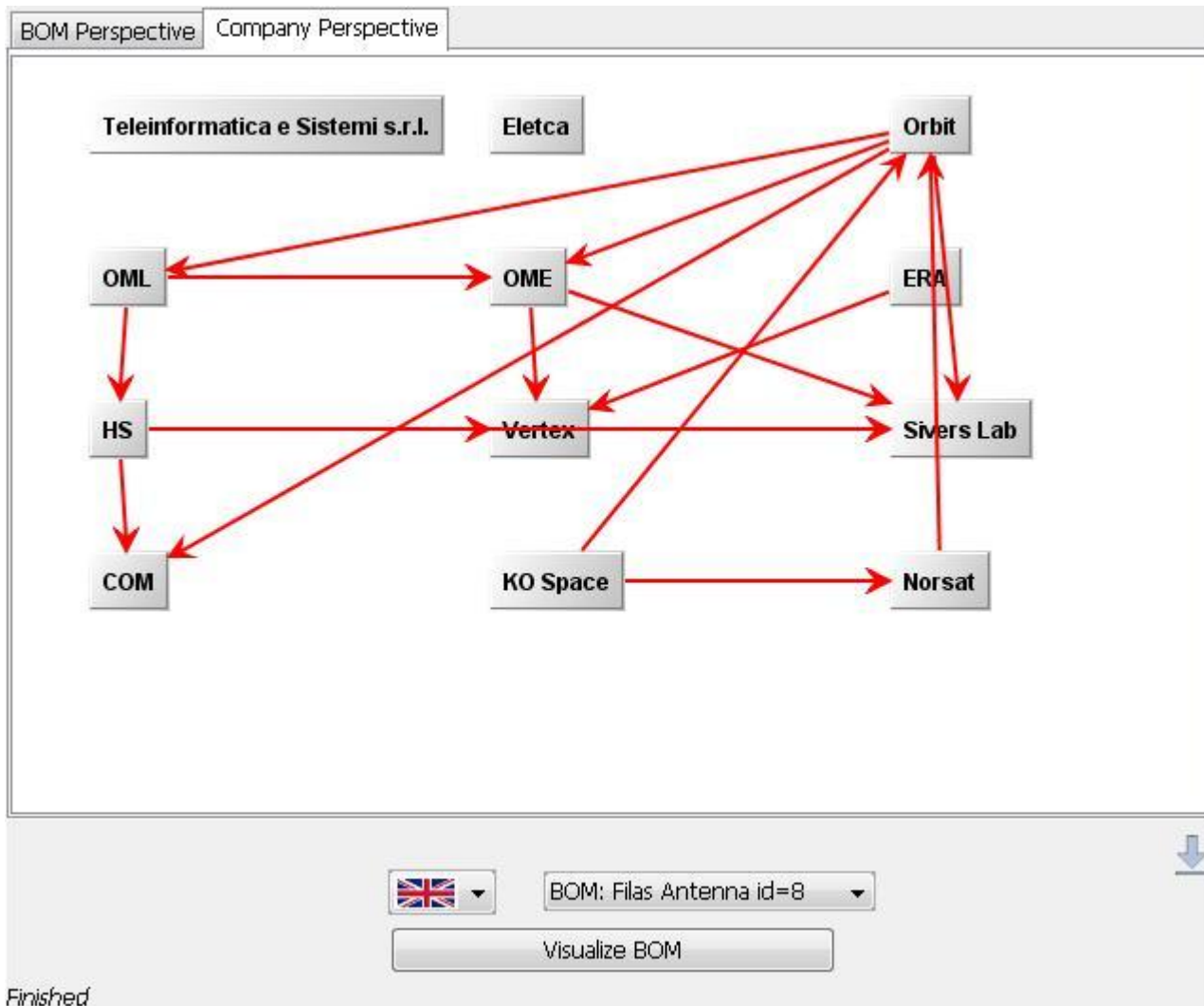
Detected Possible Inter-dependencies



Finished

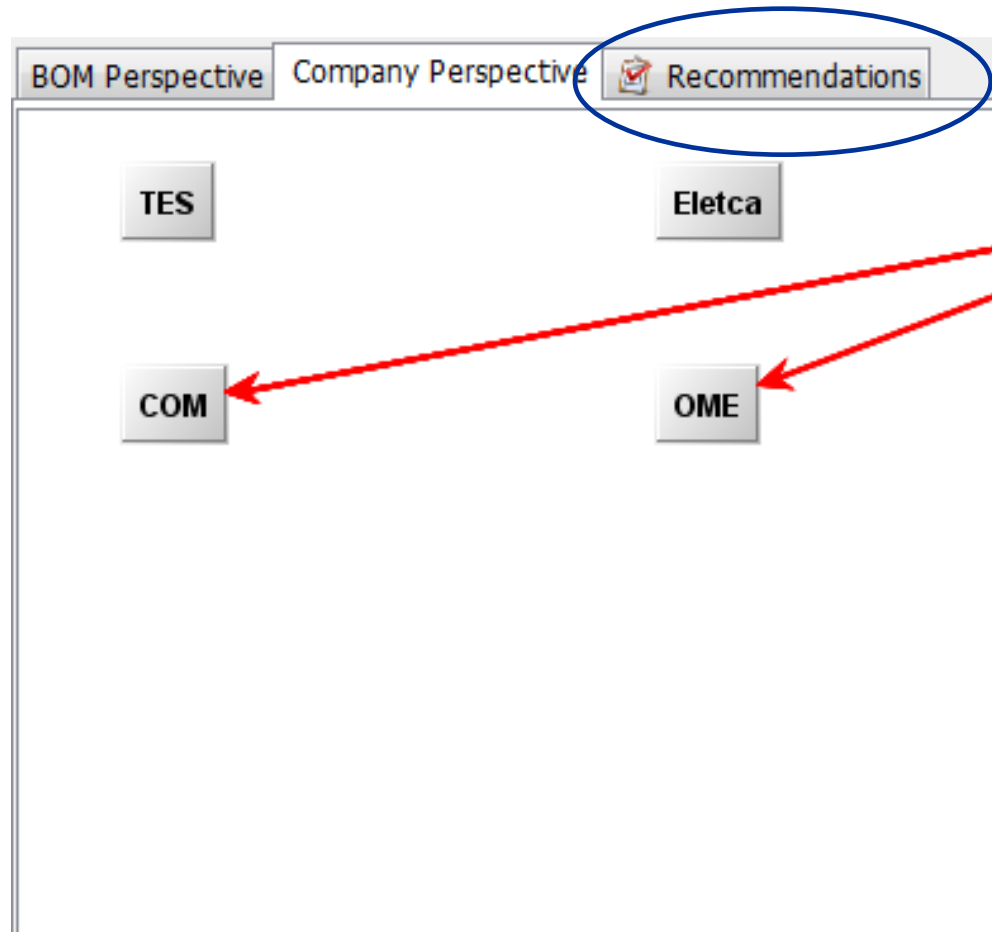
cQMS Prototype - Overview

Additional Communication Channels to be checked



cQMS Prototype - Overview

Recommendations



Integration

Integration

The cQMS has to be smoothly integrated in the Collaborative Production Planning Platform (C3P).

The screenshot displays the cQMS (Collaborative Quality Management System) interface. The main window shows a BOM Perspective for a bicycle, with a Company Perspective view. The BOM tree is structured as follows:

- bicycle
 - frame
 - fork
 - grommet
 - handlebar
 - handle
 - headset
 - rubber washer
 - ball bearing
 - bearing shell
 - steerer tube
 - nut
 - saddle
 - seat
 - seatpost
 - screw
 - wheel
 - bearing
 - valve cap
 - valve stem
 - inner tube
 - rim
 - tire

The interface includes a left sidebar with navigation options: Collaborative Process, Bill Of Materials Management, and cQMS. The bottom status bar shows a log of system events and a button to 'Identify unexpected Communication'.

COIN c-Project Management

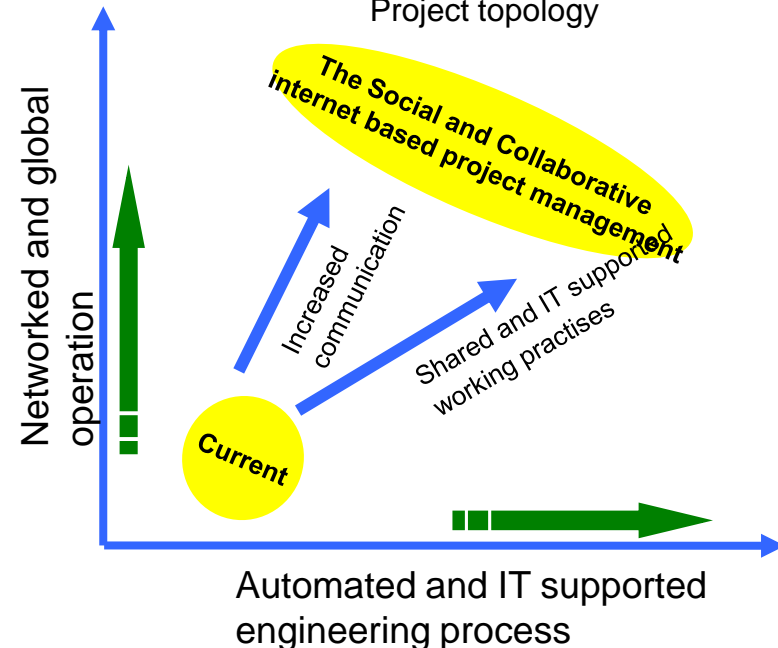
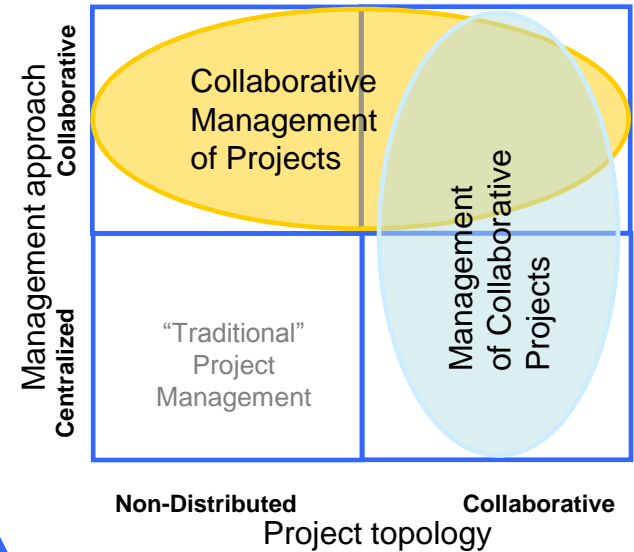
Main challenges

WP4.4 Develops services for project partners and citizens to participate in and interact with the PM process.

- Develop services for **“The Social and Collaborative internet based project management”**
- Enable project stakeholders in PM to create and interact with content rather than just consume information
- To manage co-operational processes with differences in language & ontology, working culture, work ethics, legal systems and time zones & latitudes

Results achieved

- **New type of services for industry in change**
Project Alignment Booster – Services
- Collaboration for Project Management (**Coll⁴P_M**) –
Services for Collaborative creation of a reference project WBS - Services
- Collaborative project meeting space. Management of project meeting processes over different time zones and latitudes (From agenda planning to minutes distribution) - Specification



Collaboration for Project Management Service

Coll⁴P_M

→→→ Social aspect

- Collaborative proposal
- Collaborative acceptance of proposal
- Collaborative changes management
- Activities notification (new proposal, phone call request, etc)
- Context aware environment
- Individual communication services and Individual availability
- Shared log/documentation

The screenshot displays the Coll4PM web application interface. The top navigation bar includes a menu, user information (logged in as Hans Schmidt), and project details (Project: Poyry_v1). The main content area is divided into several panels:

- Information Panel:** Contains options to visualize project information, reference GANTT, and virtual organization.
- Events Feed:** Shows recent activity for the virtual room 'poyry_vr1', including a message sent by Schmidt and a new discussion created.
- Communication Module:** Features a 'Team Communication' section with a 'Select Team and Recipients' dropdown menu and a 'Users' section currently showing 'No user selected!'. Communication options for Skype, Email, and IM are also visible.
- Action Panel:** Includes sections for 'Your Contacts', 'Your Discussion' (with an 'Open Discussion' button), and 'Create New Discussion' (with fields for Topic and Description).

A log at the bottom of the interface provides a timestamped record of user actions, such as opening the virtual room panel, project, and discussions.

COIN c-Human Interaction

- **Flexible Collaboration Support**

- Ad-hoc activities underneath pre-planned project structures.

- **Human Interaction Support in SOA**

- Guidance of interactions based on observed collaboration performance.

- **Trust-based c-HI Support**

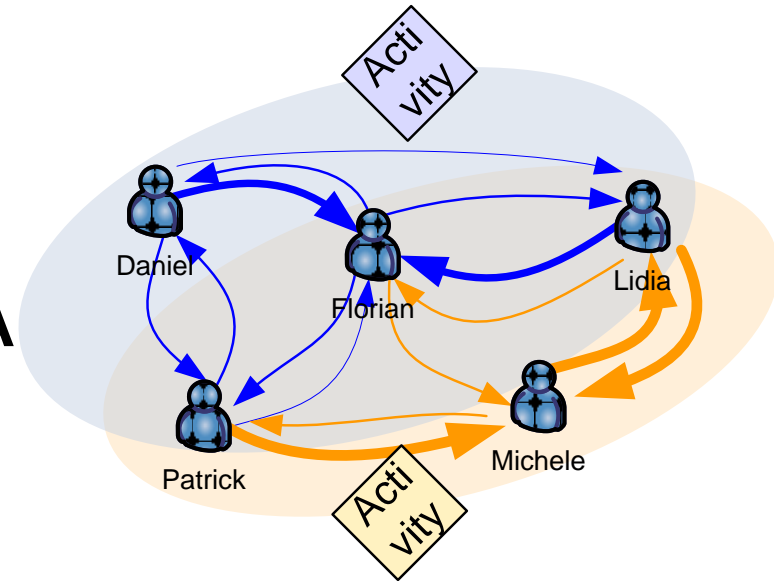
- Optimization of partner selection and group formation.

- **Active Participation of Humans in SOA**

- Flexible context-aware discovery and ad-hoc involvement of experts in a service-oriented manner.

- **Adaptive Network-based Information Sharing**

- Dynamically adapting document sharing behavior relying on social relations and collaborative success.

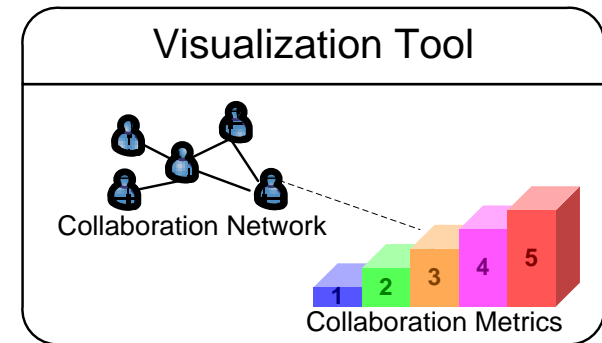


COIN c-Human Interaction (WP4.5) - Services Overview

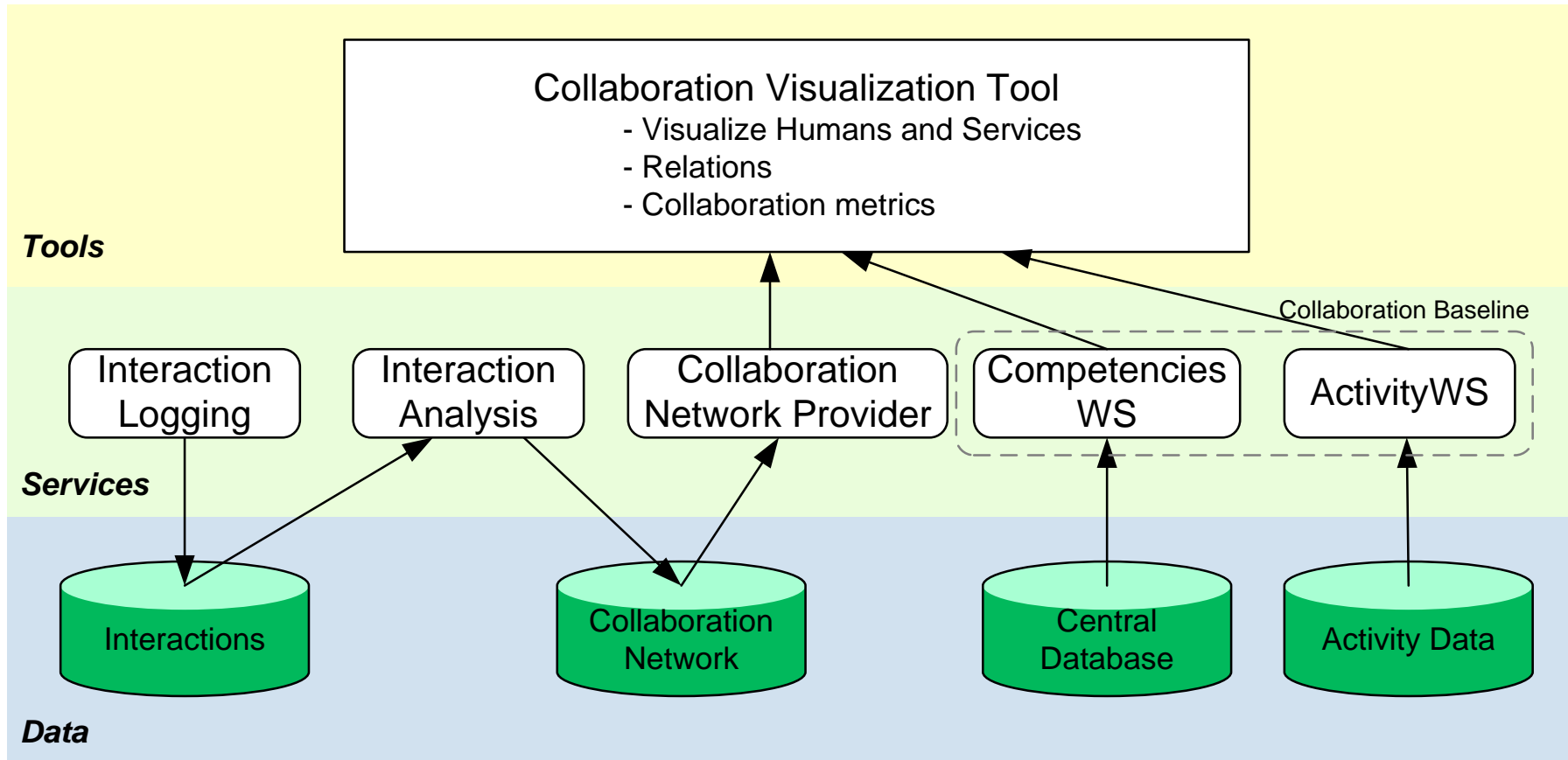
- **Collaboration Visualization Tool (CVT)**
 - Visualization of actors, relations, interaction metrics
 - Application: group formation, team evaluation
- **Trusted Online Help and Support (TOHS)**
 - Context-aware discovery and involvement of experts in ongoing collaborations
- **Trusted Information Sharing (TIS)**
 - Self-adaptive access rights management of documents based on collaboration strength
 - Suitable for highly dynamic collaboration networks

Collab. Visualization Tool (CVT)

- Visualization of Community Structures
 - Individuals
 - Registered profiles (central database)
 - Dynamic profile data
 - Relations described by metrics
- Application Scenario
 - Group Formation
 - Social Campaigns
 - Team Evaluation
- Innovative Concepts
 - Automatically managed/updated profiles and relations
 - Evidence-based structures through mining



CVT Architecture



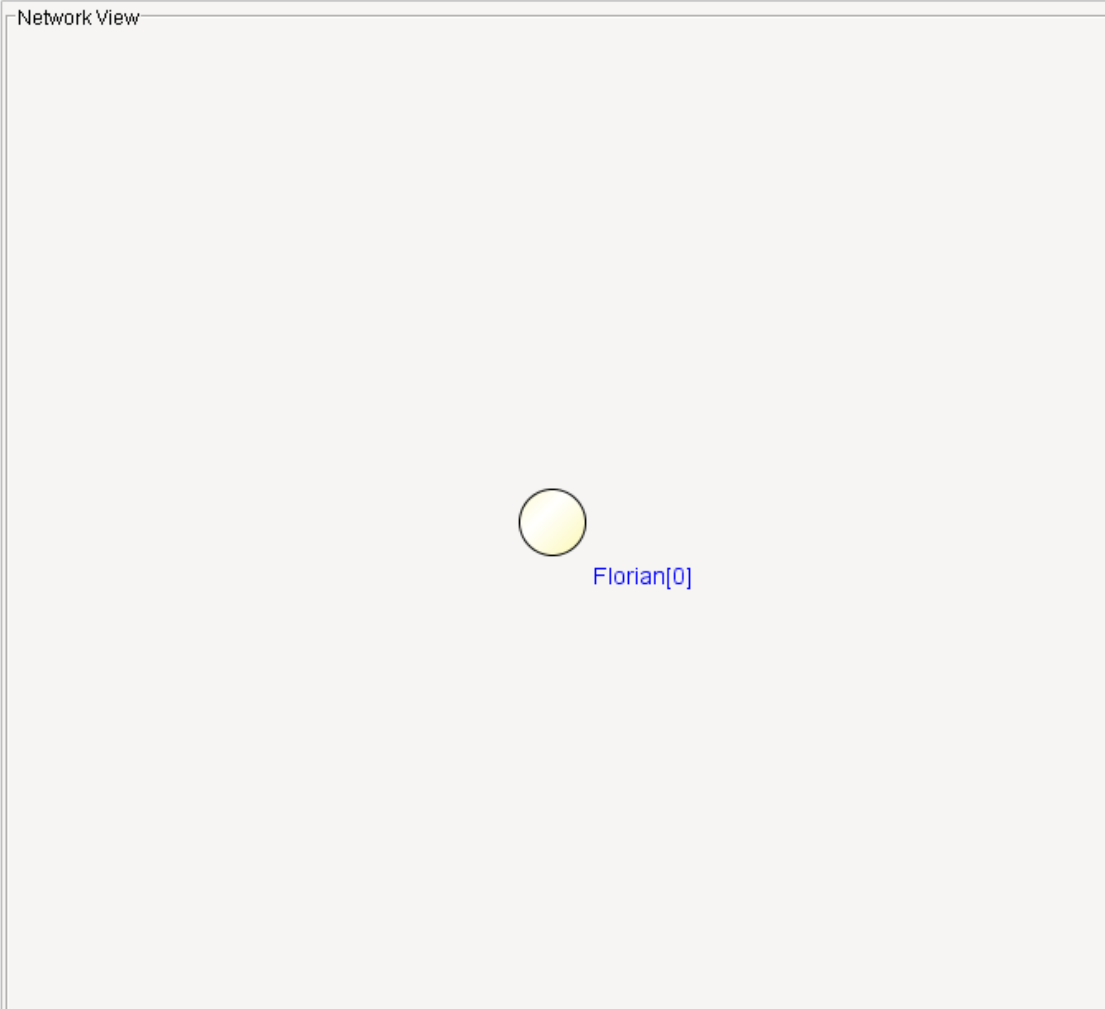
CVT Demo (1/5)

Basic User Interface

Visualization Options

Partner Property: Link Property: Scope:

Network View



Basic Profile

Property	Value
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Shared Context

Property	Value
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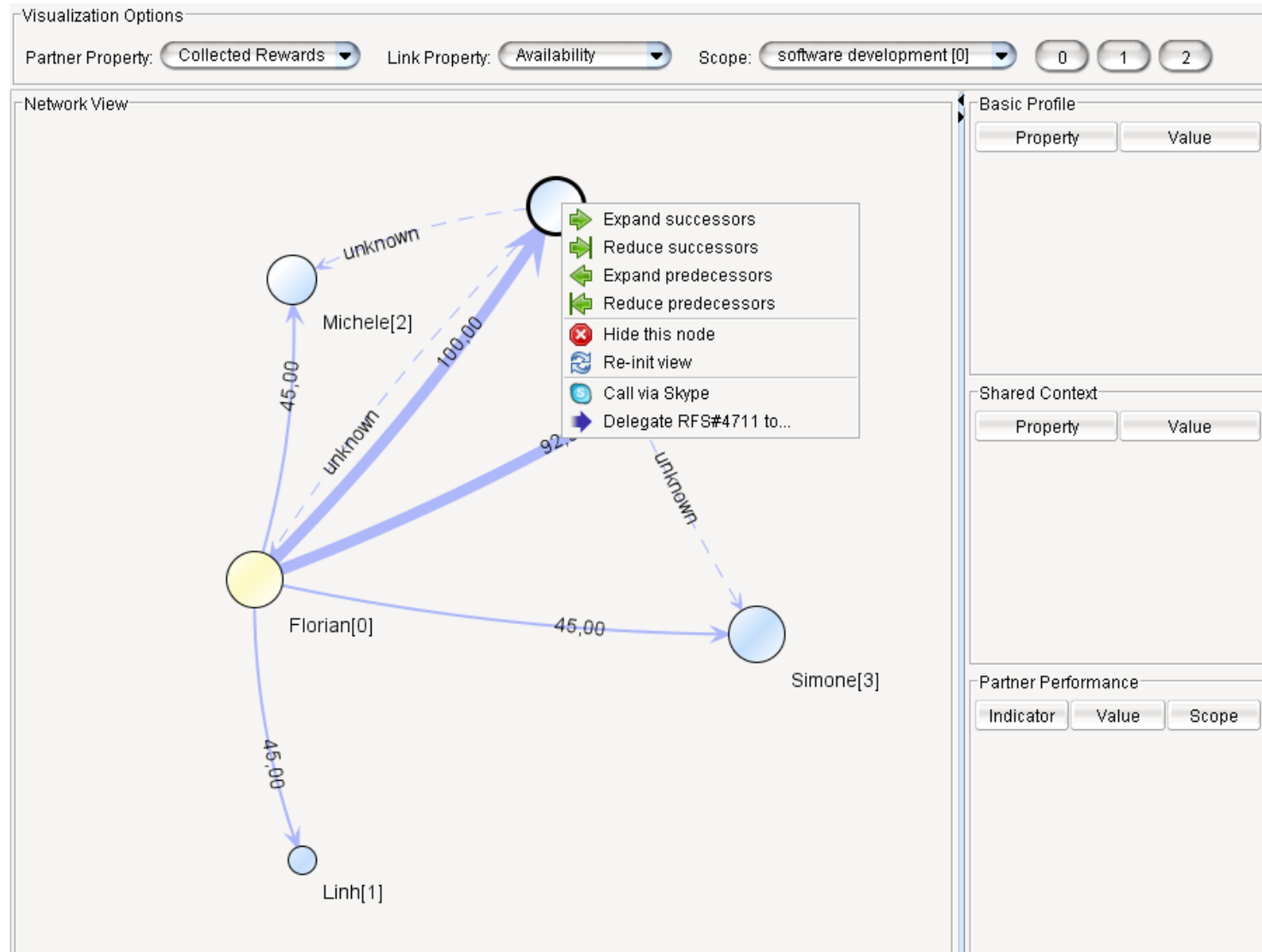
Partner Performance

Indicator	Value	Scope
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You are logged in as user#0 || Delegating RFS#4711 "Please implement"

CVT Demo (2/5)

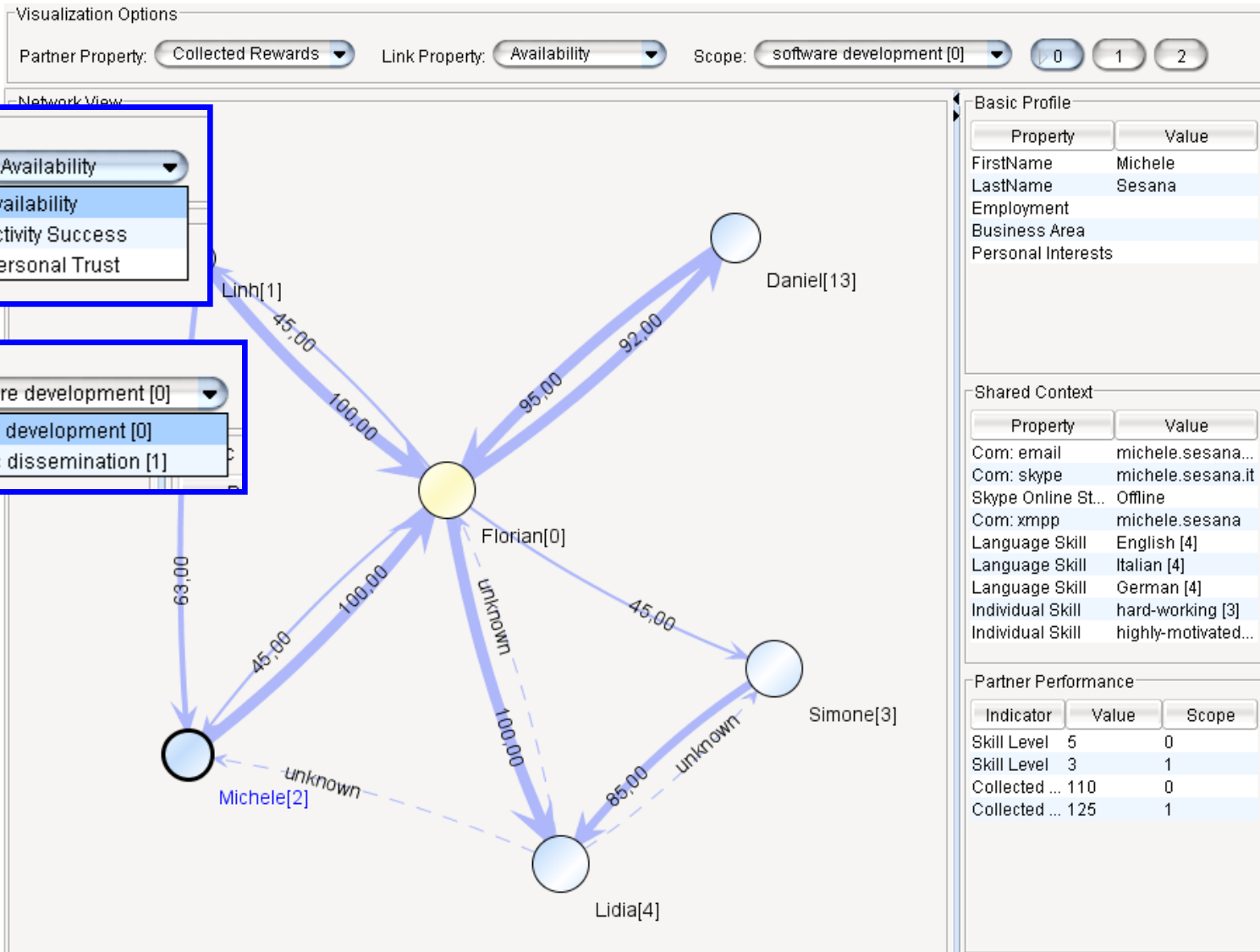
Dynamically expandable Collaboration Web



You are logged in as user#0 || Delegating RFS#4711 "Please implement"

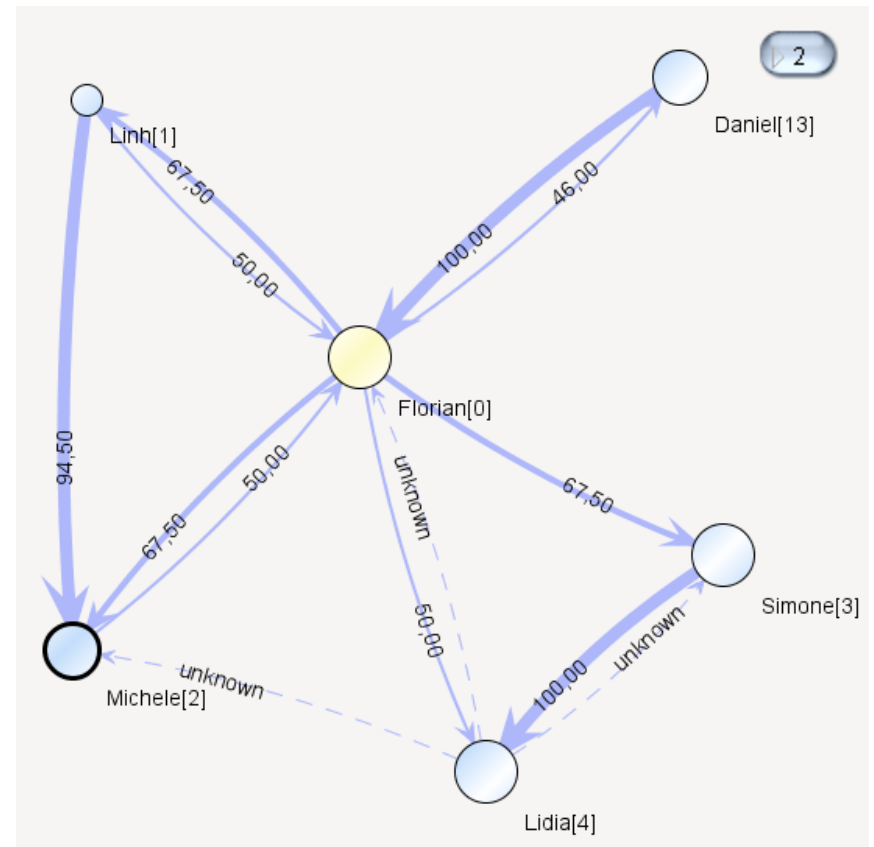
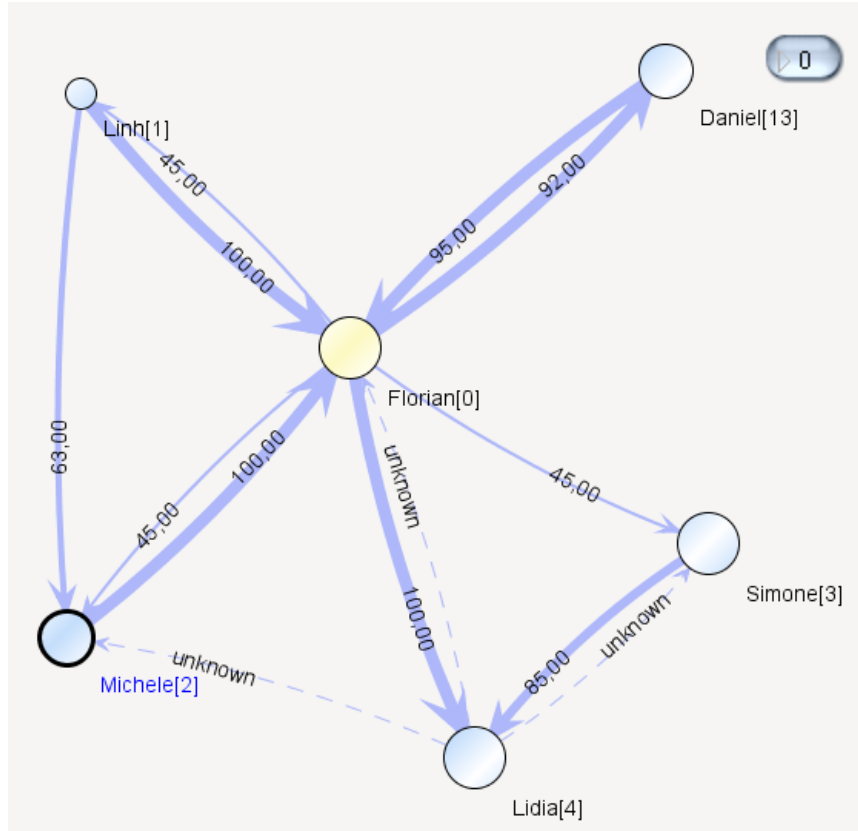
CVT Demo (3/5)

Customized Metric Visualization



CVT Demo (4/5)

Temporal Evolution



CVT Demo (5/5)

Direct Interactions with Users

The screenshot shows a CVT interface with a network diagram on the left and a user profile on the right. The network diagram features two nodes: a top node with an incoming arrow labeled '46,00' and an outgoing arrow labeled '67,50', and a bottom node labeled 'Simone[3]'. A context menu is open over the top node, listing actions such as 'Expand successors', 'Reduce successors', 'Expand predecessors', 'Reduce predecessors', 'Hide this node', 'Re-init view', 'Call via Skype', and 'Delegate RFS#4711 to...'. The 'Call via Skype' option is highlighted. The user profile on the right is titled 'Basic Profile' and contains two tables.

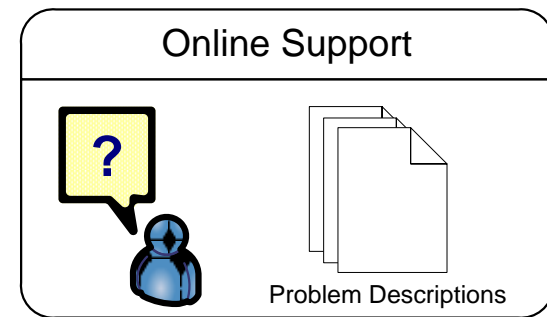
Property	Value
FirstName	Daniel
LastName	Schall
Employment	TUV
Business Area	IT Research
Personal Interests	

Property	Value
Com: email	schall@infosys.t...
Com: skype	daniel100112
Skype Online St...	Online
Language Skill	English [7]

The screenshot shows a Skype chat window for 'florian.skopik.at'. The contact is 'Daniel Schall (daniel100112)'. The chat area shows a profile picture and a timestamp of '10:46 (GMT+2)'. At the bottom, a 'Ringing...' indicator is visible, along with a green call button and a red end call button. The status bar at the very bottom indicates 'Calling Daniel Schall...' and '18.189.223 people online'.

Trusted Online Help/Sup. (TOHS)

- Flexible discovery and involvement of trustworthy experts
 - Dynamically changing skills
 - Contextual constraints to find best available expert
 - Personal preferences and social trust relations
- Application Scenarios
 - Expert Discovery
 - Team Assembly
 - Interest Group Formation
- Innovative Concepts
 - Personalized expert discovery
 - Flexible involvement of experts



TOHS Architecture

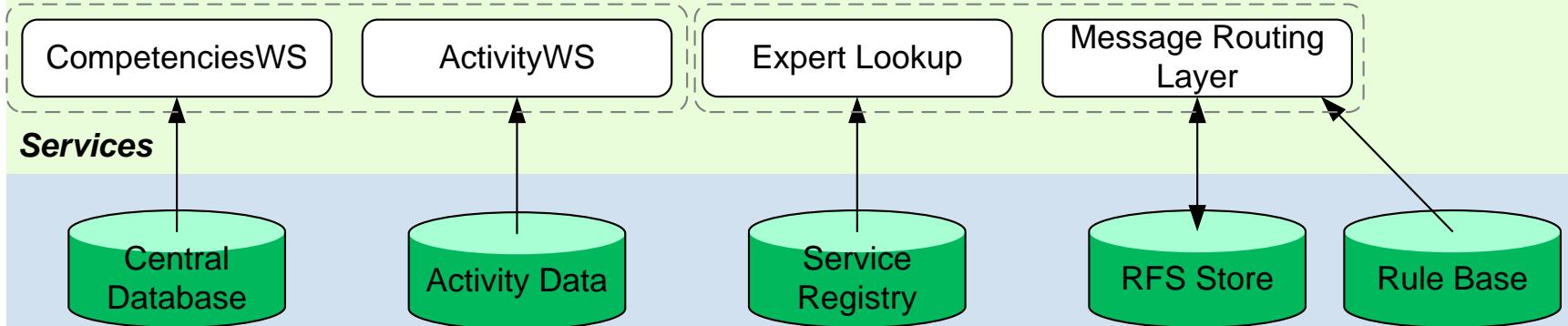
Trusted Online Help and Support

Request For Support (RFS), Delegation, and Trusted Selection

Tools

Collaboration Baseline Integration

Basic Expert Capabilities



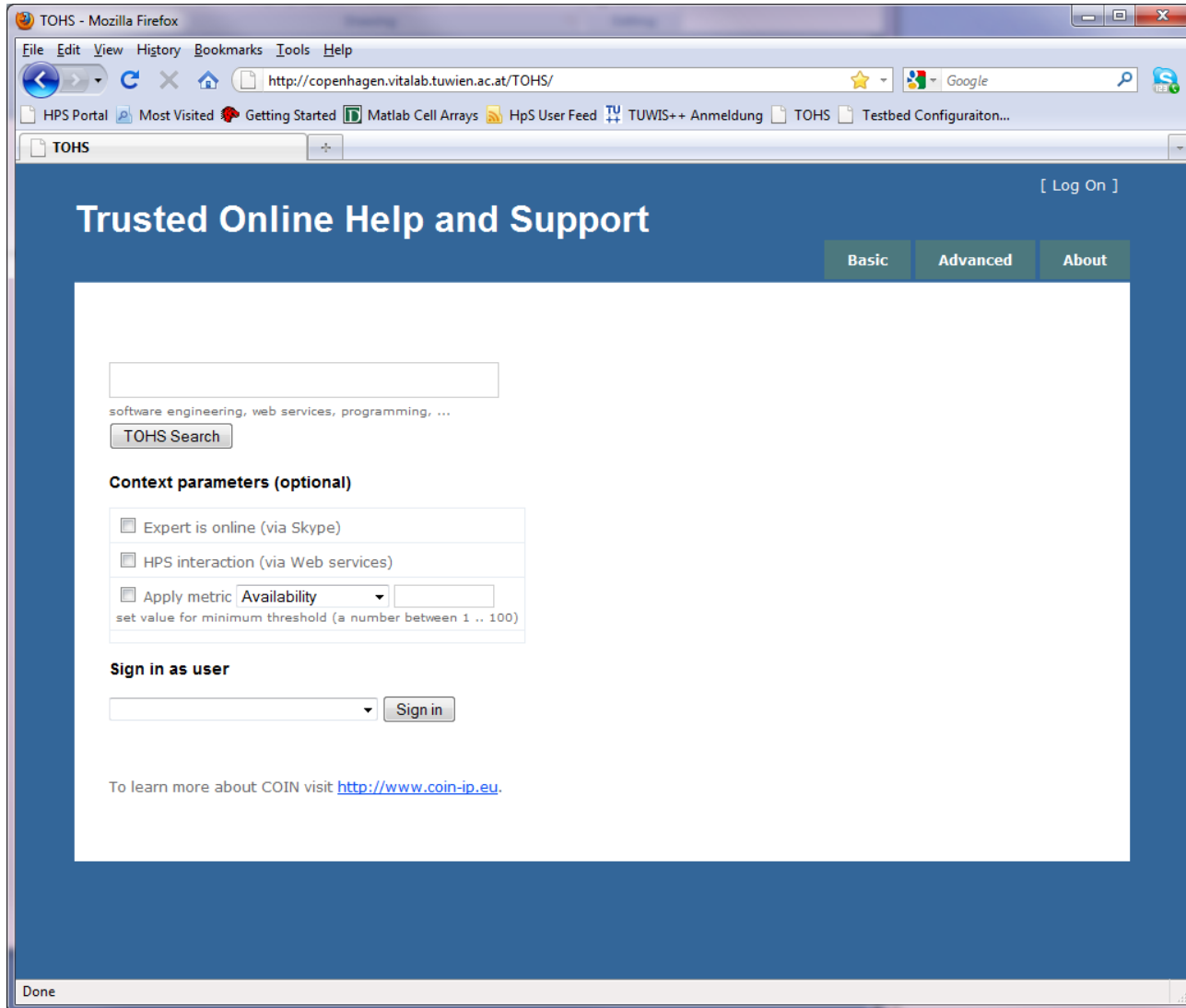
Services

Data

<http://copenhagen.vitalab.tuwien.ac.at/TOHS/>

TOHS Demo (1/5)

Basic Search



TOHS Demo (2/5)

Advanced Search

The screenshot shows a Mozilla Firefox browser window with the address bar displaying <http://copenhagen.vitalab.tuwien.ac.at/TOHS/Home/Advanced>. The page title is "Trusted Online Help and Support" and includes a "[Log On]" link. There are three tabs: "Basic", "Advanced" (selected), and "About".

All skills:

Two empty dropdown menus are separated by "AND" labels. A third empty dropdown menu is below them. A button labeled "TOHS Search All Skills" is positioned below the second dropdown.

One or more of specified skills:

The first dropdown menu contains "Software/SE/Specifications/Languages". It is followed by "OR" and another dropdown menu. A dropdown menu is also below the second dropdown. A button labeled "TOHS Search One or More" is positioned below the second dropdown.

Context parameters (optional)

Expert is online (via Skype)

HPS interaction (via Web services)

Apply metric **Availability** [dropdown] [input field]

set value for minimum threshold (a number between 1 .. 100)

Sign in as user

[dropdown menu] [Sign in button]

To learn more about COIN visit <http://www.coin-ip.eu>.

Done

TOHS Demo (3/5)

Advanced Search

TOHS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://copenhagen.vitalab.tuwien.ac.at/TOHS/Home/Advanced

HPS Portal Most Visited Getting Started Matlab Cell Arrays HpS User Feed TUWIS++ Anmeldung TOHS Testbed Configuraiton...

TOHS [Log On]

Trusted Online Help and Support

Basic Advanced About

All skills:

AND

TOHS Search All Skills

One or more of specified skills:

Software/SE/Specifications/Languages OR Software/SE/Specifications/Analysis OR

TOHS Search One or More

Context parameters (optional)

Expert is online (via Skype)

HPS interaction (via Web services)

Apply metric Availability 50
set value for minimum threshold (a number between 1 .. 100)

Signed in as:

Michele (userId 2)

Michele Sign in

To learn more about COIN visit <http://www.coin-ip.eu>.

Done

One or more of specified skills:

Software/SE/Specifications/Languages OR Software/SE/Specifications/Analysis OR

TOHS Search One or More

Context parameters (optional)

Expert is online (via Skype)

HPS interaction (via Web services)

Apply metric Availability 50
set value for minimum threshold (a number between 1 .. 100)

Personal Trust

TOHS Demo (4/5)

Search Result

Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://copenhagen.vitalab.tuwien.ac.at/TOHS/List?Skills=0&Skills=0&Skills=0&Skills=1&Skills=

HPS Portal Most Visited Getting Started Matlab Cell Arrays HpS User Feed TUVIS++ Anmeldung TOHS Te

http://copenhag...e=50&LoggedOn=2

Trusted Online Help and Support

Bas

Trusted Online Help and Support offered by:

- [Daniel Schall](#)
Skills:
 - Software/SE/Specifications/Analysis
 - Software/SE/Specifications/Languages
 - [\[FOAF \] \(knows 20\)](#) [Explore Profile](#)
- [Florian Skopik](#)
Skills:
 - Software/SE/Specifications/Languages
 - [\[FOAF \] \(knows 3\)](#) [Explore Profile](#)

Click user to contact.

Done

```
<rdf:RDF>
- <foaf:PersonalProfileDocument rdf:about="">
  <foaf:maker rdf:resource="#me"/>
  <foaf:primaryTopic rdf:resource="#me"/>
  <admin:generatorAgent rdf:resource="http://keg.cs.tsinghua.edu.cn/tj/cs/foaf_creator"/>
  <admin:errorReportsTo rdf:resource="mailto:jery.tang@gmail.com"/>
- <foaf:PersonalProfileDocument>
- <foaf:Person rdf:ID="me">
  <foaf:name>Daniel Schall</foaf:name>
  <foaf:title>null</foaf:title>
  <foaf:givenname>Daniel</foaf:givenname>
  <foaf:family_name>Schall</foaf:family_name>
  <foaf:mbox rdf:resource="mailto:null"/>
  <foaf:nick>Daniel Schall</foaf:nick>
  <foaf:nick>Daniel Schall</foaf:nick>
  <foaf:nick>Daniel Schall</foaf:nick>
  <foaf:homepage rdf:resource="null"/>
  <foaf:phone rdf:resource="tel:null"/>
  <foaf:phone rdf:resource="fax:null"/>
- <foaf:knows>
- <foaf:Person>
  <foaf:name>Stephane Corlosquet</foaf:name>
  <foaf:homepage rdf:resource="http://arnetminer.org/viewperson.do?id=-1&name=Stephane Corlosquet"/>
</foaf:Person>
```

Florian Skopik

Joint Projects:

Title: inContext EU FP6 (STREP)
Title: COIN EU FP7 (IP)

TOHS Demo (5/5)

Contact Expert

Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://copenhagen.vitalab.tuwien.ac.at/TOHS/List?Skills=0&Skills=0&Skills=0&Skills=1&Skills=

HPS Portal Most Visited Getting Started Matlab Cell Arrays HpS User Feed TUWIS++ Anmeldung TOHS Testbed Configuraiton...

http://copenhag...e=50&LoggedOn=2

Trusted Online Help and Support

Trusted Online Help and Support offered by:

- [Daniel Schall](#)
Skills:
 - Software/SE/Specifications/Analysis
 - Software/SE/Specifications/Languages[\[FOAF \] \(knows 20\) Explore Profile](#)
- [Florian Skopik](#)
Skills:
 - Software/SE/Specifications/Languages[\[FOAF \] \(knows 3\) Explore Profile](#)

Click user to contact.

Request For Support Information (User: 13, Skype: Online)

Subject:

RFS Description:

[Contact via Skype](#)

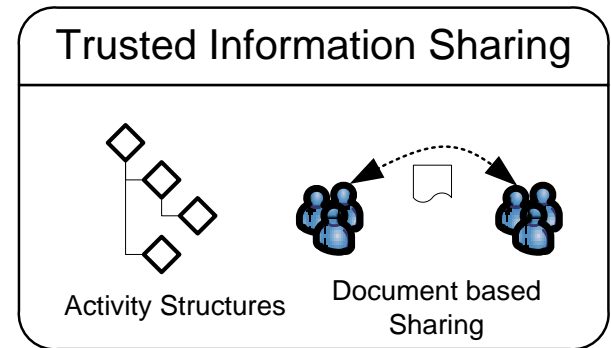
To learn more about COIN visit <http://www.coin-ip.eu>.

Skype for Real-time Communication

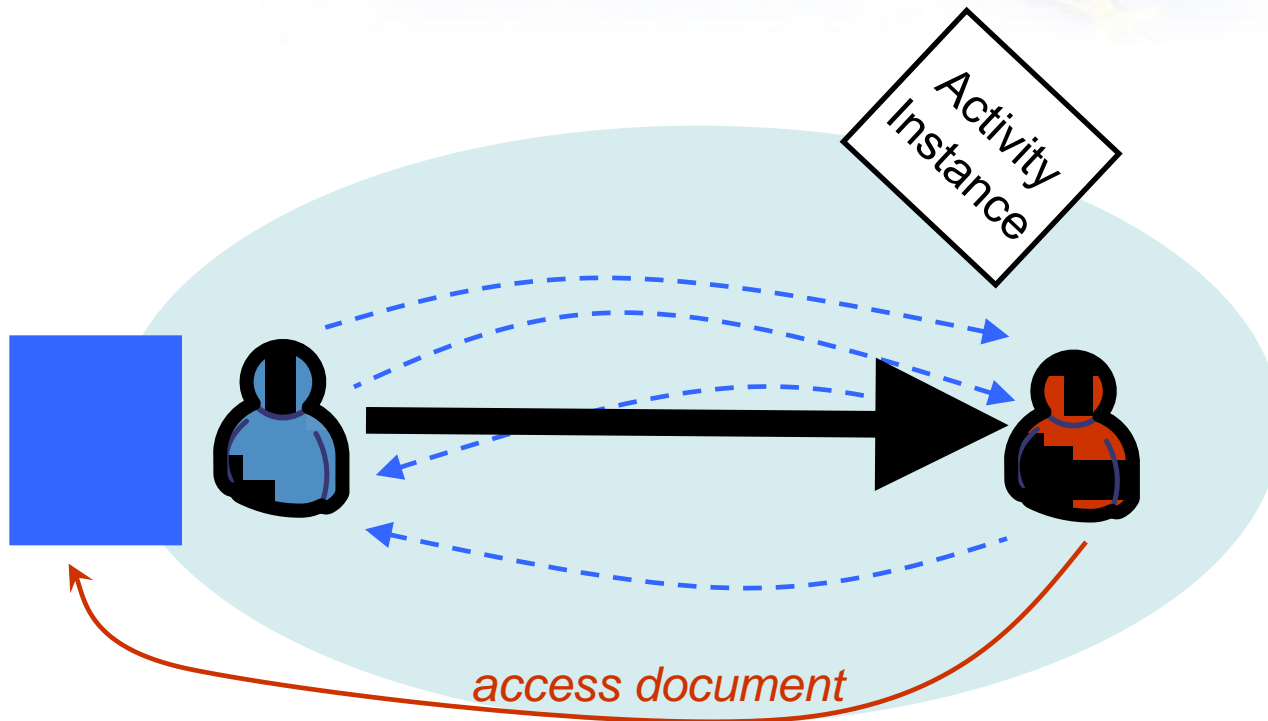
Done

Trusted Info. Sharing (TIS)

- Document-centric Information Sharing
 - Sharing based on dynamically adapting social and collaborative network structures
 - Altering Social relations
 - Flexible activity participation
- Application Scenario
 - Sharing of sensitive data in highly flexible collaboration scenarios
 - Sharing of information in social campaigns
- Innovative Concepts
 - Dynamically adapting access rights based on social relations and previous collaborations
 - Facilitate collaborations through active sharing



TIS - Fundamental Scenario

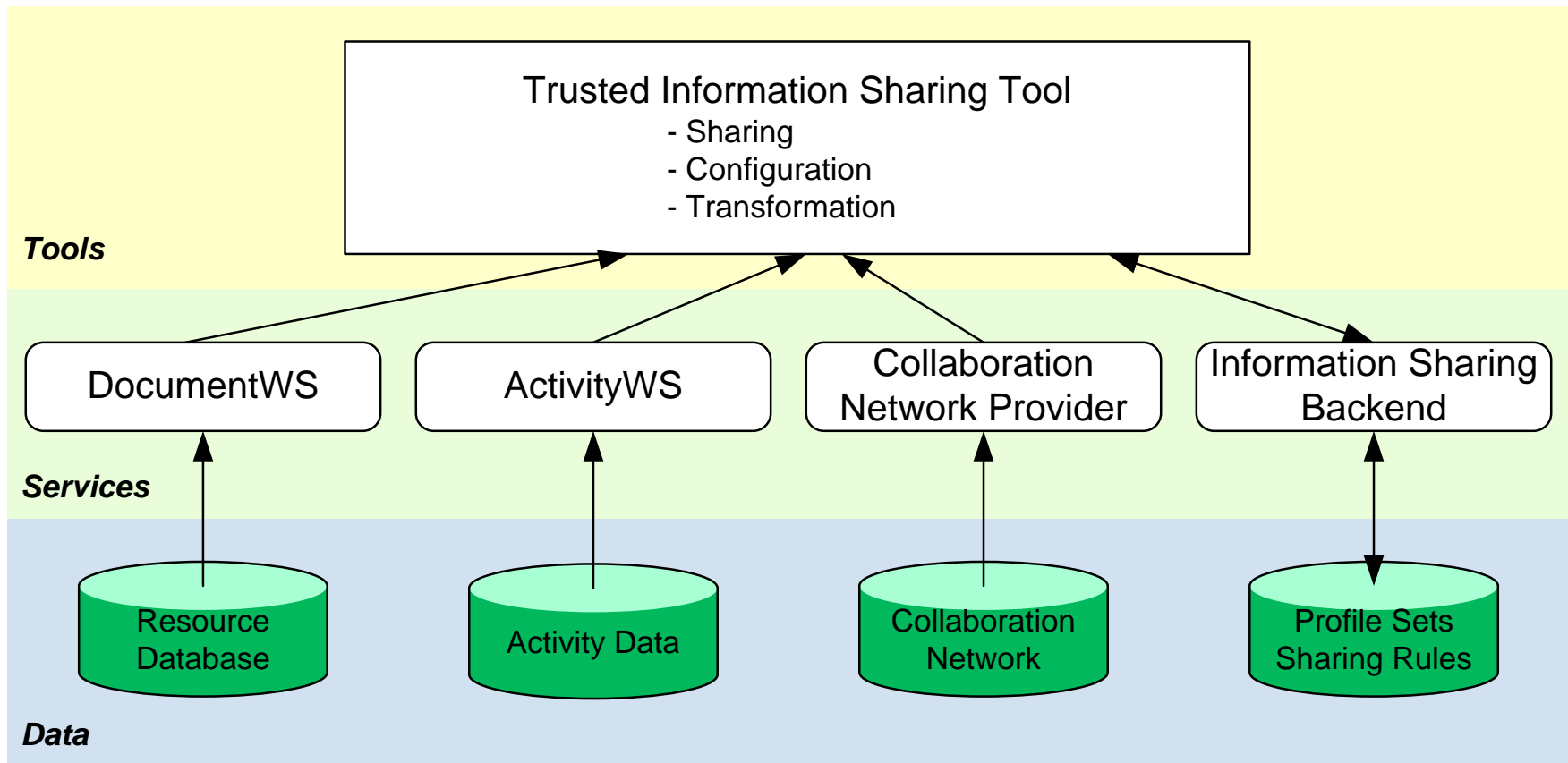


Collaboration strength determined through:

- *Availability on request*
- *Joint Activity Success*
- *Interest Similarities*

- Sharing of information depends on collaboration strength rather than static roles
- Collaboration attitude may change over time
 - Dynamically controlled access rights
 - No manual intervention required

TIS Architecture



<http://copenhagen.vitalab.tuwien.ac.at/InfoService/Default.aspx>

TIS Demo (1/4)

Selecting Sharing Scope

trust based sharing tool

RULE METRIC
COLLABORATION
ADAPTATION

home share retrieve manage

1. CHOOSE ACTIVITY

	Name	Description	Activity URI	
<input type="checkbox"/>	ActivityS_23		http://www.in-context.eu/Activity/Activity#158	
<input checked="" type="checkbox"/>	IS paper writing	actual writing task	http://www.in-context.eu/Activity/Activity#167	
<input checked="" type="checkbox"/>	IS CR	Camera Ready preparation of IS	http://www.in-context.eu/Activity/Activity#168	

Found : 7 Records

2 / 2 Pages

add activity

TIS Demo (2/4)

Shared Document (XML)

```
- <paperdraft uri="http://www.infosys.tuwien.ac.at/tis/info#03456895" xsi:noNamespaceSchemaLocation="paper-draft.xsd">
- <title>
  Trusted Information Sharing in Service-oriented Collaborative Networks
</title>
- <author>
  <p:firstname>Florian</p:firstname>
  <p:lastname>Skopik</p:lastname>
  <p:organization>TU Vienna</p:organization>
  <p:email>skopik@infosys.tuwien.ac.at</p:email>
</author>
- <author>
  <p:firstname>Daniel</p:firstname>
  <p:lastname>Schall</p:lastname>
  <p:organization>TU Vienna</p:organization>
  <p:email>schall@infosys.tuwien.ac.at</p:email>
</author>
- <author>
  <p:firstname>Schahram</p:firstname>
  <p:lastname>Dustdar</p:lastname>
  <p:organization>TU Vienna</p:organization>
  <p:email>dustdar@infosys.tuwien.ac.at</p:email>
</author>
  <contact>skopik@infosys.tuwien.ac.at</contact>
  <category>computer science</category>
  <category>service oriented architectures</category>
  <keyword>trust</keyword>
  <keyword>sharing</keyword>
  <keyword>collaboration</keyword>
  <keyword>service-supported environment</keyword>
- <body>
  This is the main text expressed in HTML blah 123...
</body>
  <lastChangeAt>2009-09-11T10:40:47.0Z</lastChangeAt>
- <linkedRes>
  http://svn.infosys.tuwien.ac.at/papers/tis/main.tex
</linkedRes>
- <linkedRes>
  http://www.infosys.tuwien.ac.at/staff/skopik/papers/viete2009.pdf
</linkedRes>
</paperdraft>
```

TIS Demo (3/4)

Defining Rules

The screenshot displays the TIS interface for defining rules and uploading documents. On the left, a tree view shows XML tags for a paper draft, with `/paperdraft` selected. The main area shows a rule configuration table with columns for Tag, Scope, Metric, and Value. A dropdown menu for the Metric column is open, showing options: Availability, Activity Success, and Personal Trust. Below the table, a message box states "File has been successfully uploaded." The interface is divided into sections: "2. UPLOAD DOCUMENT YOU WANT TO SHARE" and "3. SPECIFY TRUST SHARING RULES".

Tag	Scope	Metric	Value
<input type="checkbox"/>	<input type="text" value="/paperdraft"/>	<input type="checkbox"/> Availability	<input type="text" value=">"/>

File has been successfully uploaded.

2. UPLOAD DOCUMENT YOU WANT TO SHARE

Current file

3. SPECIFY TRUST SHARING RULES

Tag	Scope	Metric	Value
Rule 1: <input type="checkbox"/>	<input type="text" value="/paperdraft/author"/>	<input type="checkbox"/> Activity Success	<input type="text" value=">"/> 50
		<input type="checkbox"/> Personal Trust	<input type="text" value=">="/> 75
Rule 2: <input type="checkbox"/>	<input type="text" value="/paperdraft/body"/>	<input type="checkbox"/> Activity Success	<input type="text" value=">"/> 75
		<input type="checkbox"/> Personal Trust	<input type="text" value=">"/> 90

- Access to author section is slightly restricted
- Access to document body even more

COIN Collaborative Platform

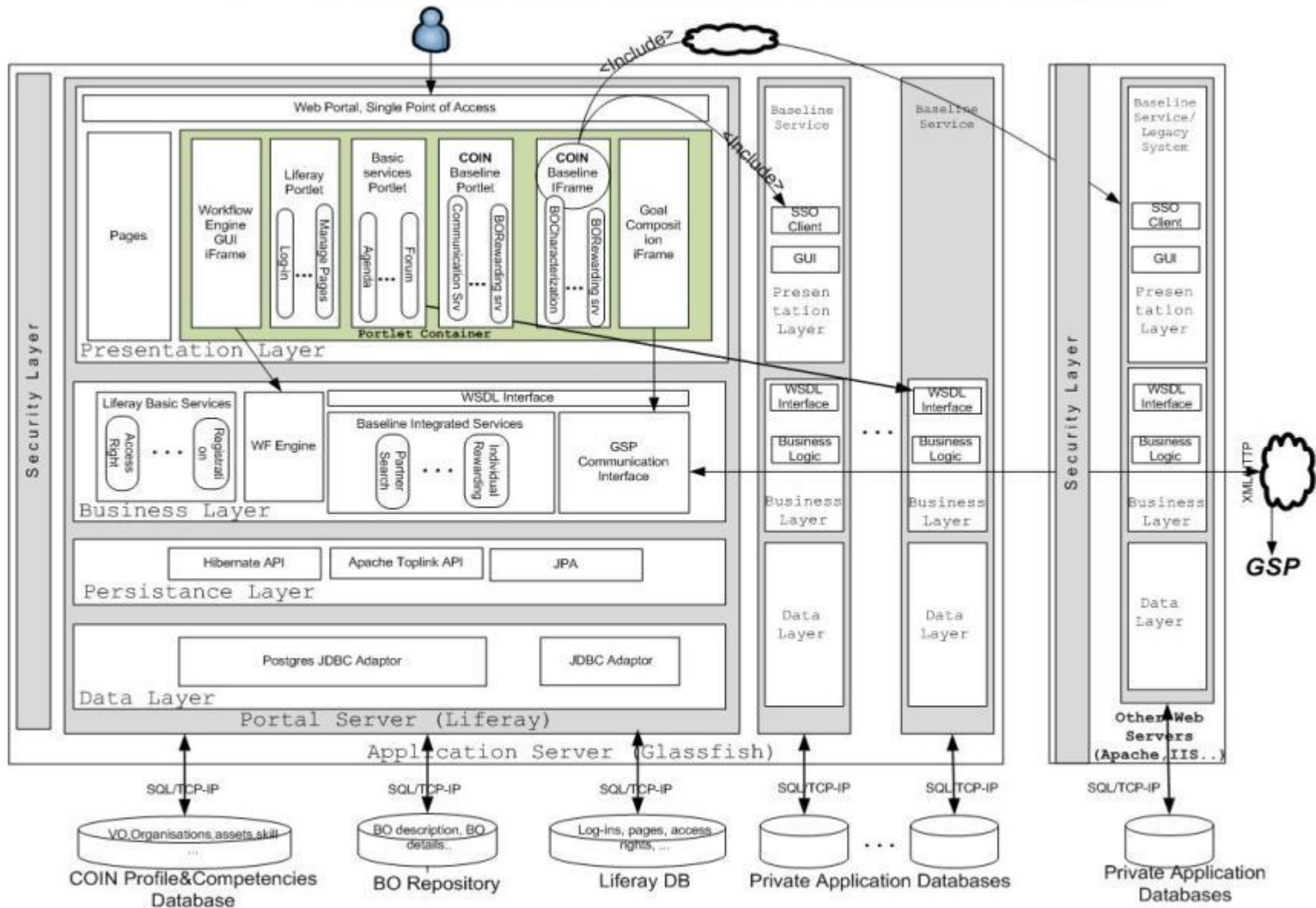
- Support the collaboration among cluster partners, providing different assets:
 - Knowledge
 - Social
 - Business
- Main door to access to get beneficial of the whole COIN functionalities (integration step 2-3)
- Direct access to COIN services (integration step 1)
- Integrate a Business Process environment for cross-organisational collaboration

CP Environment

- Based on Liferay Portal Community Edition (CE)
 - LGPL license¹
- ALL liferay Functionalities still available
- COIN service as portlet
- COIN services in iFrames
- Integrates COIN Front-End APIs to access to the COIN GSP federated CLOUD with EI/EC services

¹ <http://www.liferay.com/downloads/liferay-portal/license>

Collaborative Platform (CP) Architecture



COIN CP (http://demos.txt.it:8056/web/guest/home)

Welcome!

COIN

Enterprise **C**ollaboration & **I**nteroperability

► Projects

Welcome on the Collaborative Platform of the COIN project!

Click on the images below to have more information on the COIN end users; use the left COIN to access the the first 6 end-users of the project, click on the right COIN to access the Enlarged Europe end-users.

If you are a registered member of this cluster please use the log in function on the top-right corner to access to private pages of your cluster.



Communities

- 13 communities
 - 6 COIN end-users
 - 6 COIN-EEU end-users
 - 1 guest access

Welcome Administrator!

- Home
- Control Panel
- My Account
- Sign Out
- Add Application
- Layout Template
- Manage Pages
- Toggle Edit Controls

project!
on on the COIN end us
on the right COIN to ac

e the log in function on th

- My Community
- Guest
- FILAS
- ACS
- UCY
- FAVIT
- IND
- ISOIN
- KTU
- LODER

My Places

responsibility

EU

COIN Collaborative Platform

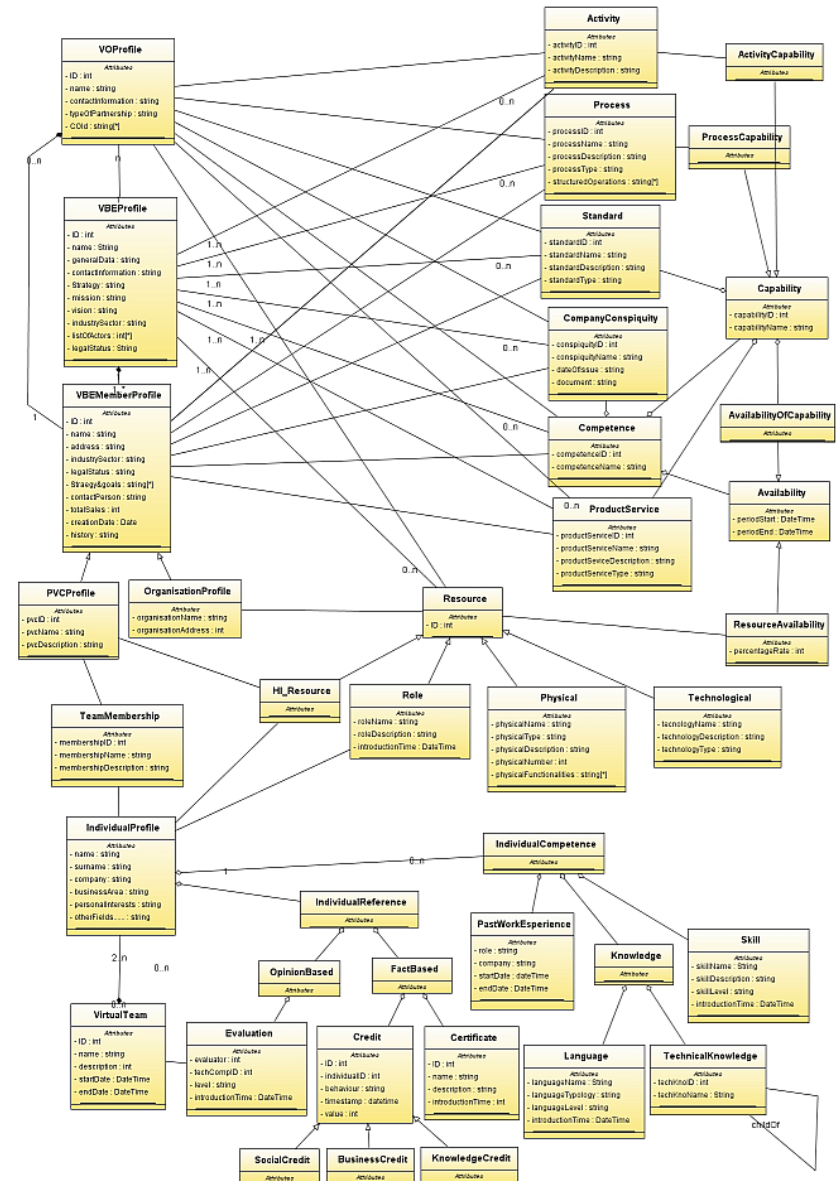
Home GSP Clients About Liferay

Welcome! Please select your test case.

Social Business Social Knowledge	Supply Chain ACS	Collaborative Network ISOIN	Business Ecosystem UNCONVENTIONAL BUSINESS VEN
	Filas finanziaria laziale di sviluppo	IND	PÖYRY

Data Layer

- Centralised Synchronized Database supporting cluster companies and individuals and their competencies



Service Layer (baseline adaptation)

The screenshot shows a web-based application with a navigation bar (S1: Home, S2: Select CO, S3: Tasks, S4: Scheduling) and a main content area. The content area is divided into sections: 'Bill of Material', 'Business Opportunity', 'Item Management', and 'Tasks List'. The 'Component: Lower sheet assembly' section displays a table with fields for Component ID (300), Component Name (Lower sheet assembly), Component Description (Lower sheet assembly), Component Quantity (1), Component Price (90), Component Characteristics, Component Unit of Measure (Pieces), and Component Classification (Lower sheet of Loading Assy-Passegeaway). Below this is the 'Item Management' section with 'Insert a new BOM Item' and 'Delete this item from the BOM' buttons. The 'Tasks List' section shows a table with columns for Task Name, Competency name, Capability name, Resource name, and Potential Production Rate (AVG/Max). Below the screenshot, a cylinder icon represents a database, with an arrow pointing to it labeled 'Business Logic'.

Portlet

Tools Layer

The screenshot shows a portlet interface with a navigation bar (S1: Home, S2: Select CO, S3: Tasks, S4: Scheduling) and a main content area. The content area is divided into sections: 'Bill of Material', 'Component: Plastic handle', and 'TASKS LIST'. The 'Component: Plastic handle' section displays a table with fields for Component ID (215), Component Name (Plastic handle), Component Description (Outer part of the product, used for gripping), Component value (empty), and Component specification (empty). The 'TASKS LIST' section shows a table with columns for Task name, Competency name, Capability name, Resource name, and Potential Production Rate (AVG/Max). Below the screenshot, a cylinder icon represents a database, with an arrow pointing to it labeled 'Business Logic'.

Service Layer

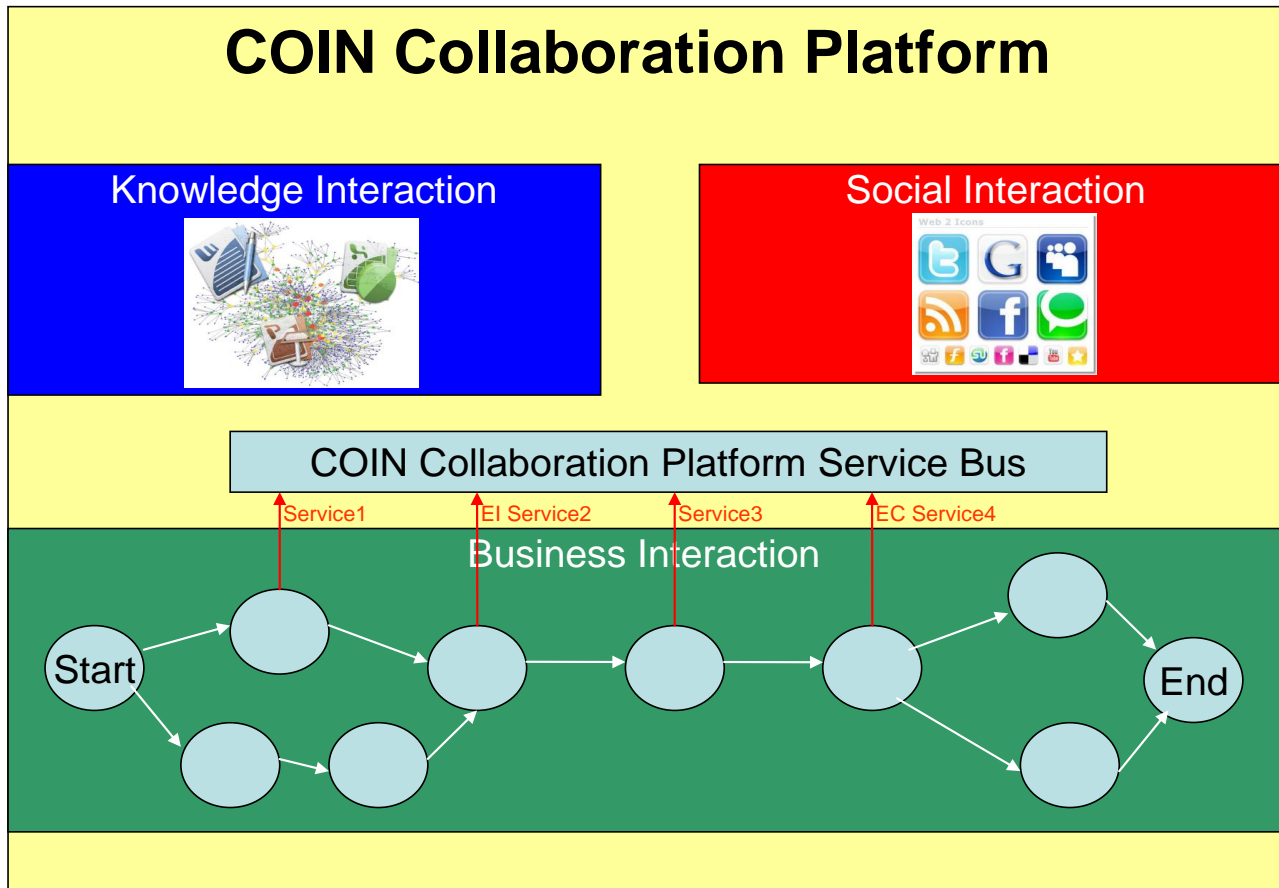
And now... Some Services

- AdminService [read\(\)](#)
 - AdminService
- Version [read\(\)](#)
 - getVersion
- FilesAccess [read\(\)](#)
 - insertNewVOModelFile
 - listVOModelFiles
 - loadVOModelFile
 - saveVOModelFile
 - deleteVOModelFile
 - executeArasAlap
 - executeEI
 - executeBOM

Data Layer

The diagram shows the Data Layer with two main components: 'Models instances' and 'Models repository'. 'Models instances' is represented by a computer monitor displaying a code editor with a large block of text. 'Models repository' is represented by a computer monitor displaying a complex network diagram with many nodes and connections. Arrows indicate bidirectional communication between the Data Layer and the Service Layer above it.

Services access from the COIN CP (Integration Step 1)



Business Process

COIN
Enterprise Collaboration & Interoperability

Welcome Administrator!

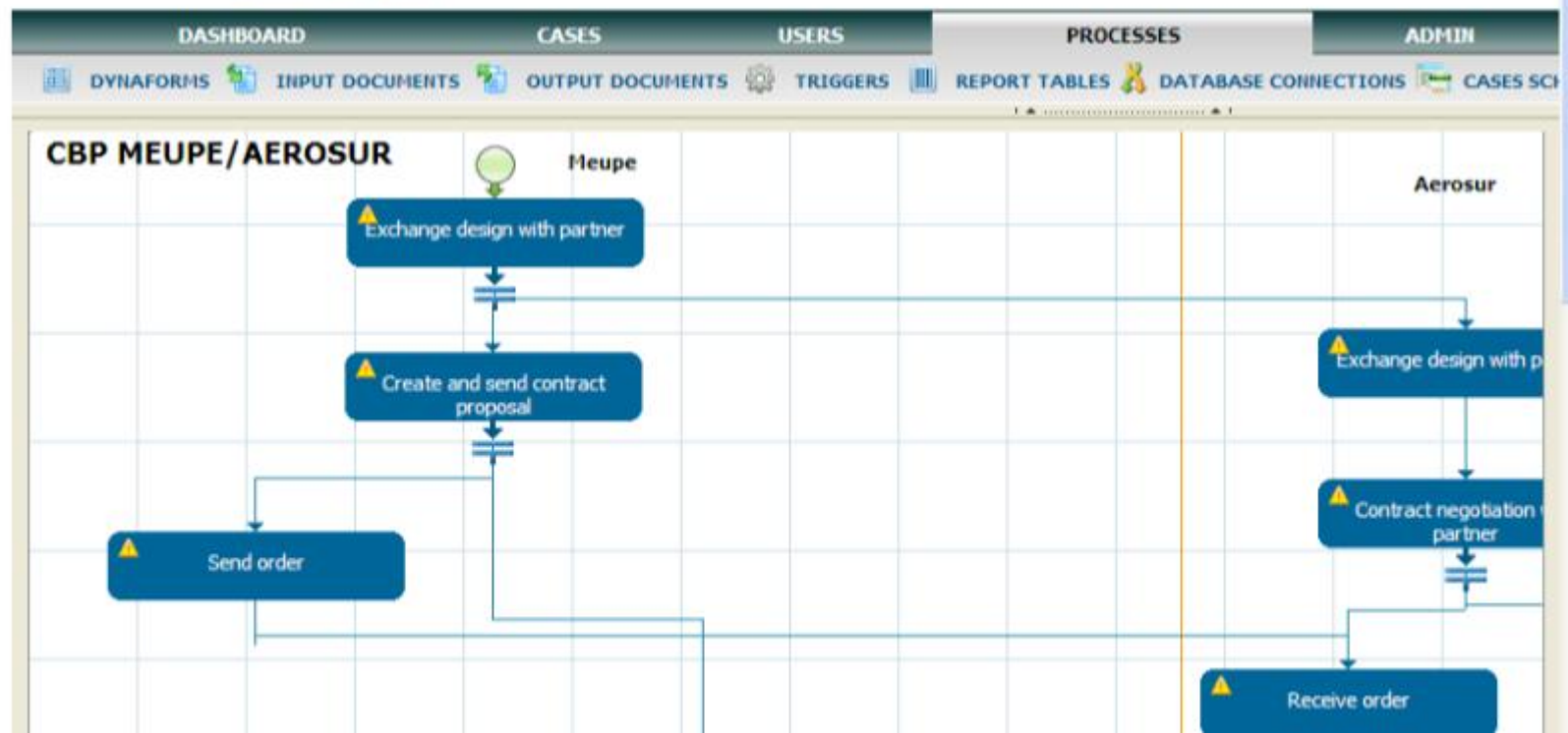
FILAS

Add Page

Business Management | Innovative Services | Semantic Reconciliation Suite | Business Opportunity | Calendar | Test

Business Process - [Look and Feel](#) - [Configuration](#) - [Close](#)

ProcessMaker[®]
Workflow Simplified



COIN Services (portlets/iframes)

COIN
Enterprise **CO**llaboration & **IN**teroperability

Welcome Administrator!

VEN

+ Add Page

Business Management | Community | Knowledge Management | **Innovative Services** | Business Opportunity | Virtual Organization

COIN Model Transformation Service | Member Registration Request

Collaboration Visualization Tool

Trusted Information Sharing

Trusted Online Help and Support

Semantic Mapping Discovery Service

Semantic Reconciliation Rules Generation Service

Semantic Interoperability Runtime Service

Interoperability Spaces Service

Social Ontology Building and Evolution service

Enterprise Semantic Profiling Services

Enterprise Semantic Matchmaking Service

COIN Cluster Management System

Cluster Assessment ▾ | New Partner ▾ | Export ▾

On Target | **Gaps** | New Partner Evaluation

Feature

Ontology

- Thing
 - Management
 - development
 - CRM-solutions
 - Stock and Index Information
 - CAD
 - Banking
 - programming paradigm
 - analysis and data cleaning
 - data communication
 - Integration
 - OLAP tools
 - Development Framework
 - enterprise Solutions
 - server-side component architecture
 - data mining
 - platform
 - application

Enterprise COllaboration & INteroperability



COIN Winter School

COIN Services and Innovation

Ljubjana, Nov 29th 2011

Michele Sesana

TXT e-solutions S.p.A.