22nd ITS World Congress
ITS FOR SUSTAINABLE MOBILITY AND THE MITIGATION OF CLIMATE CHANGE Workshop

New Services in Mobility

Secured exchanges of data along the logistic chains

Guy Doumeingts (IMS / Univ. Bordeaux, I-VLab)
Christophe Reynaud (MGI)

Bordeaux - 7 October 2015
Contents

- Presentation of INTEROP-Vlab and MGI
- NOSCIFEL Project
- NOSCIFEL method for Enterprise Interoperability (EI)
- NOSCIFEL Transport Services Tool Box (TSTB)
- Online platform to design intelligent connectors
- NOSCIFEL Platform – Vehicle Booking System & DIGITAL SAFE Services
- Conclusion

With the contribution of

Amir Pirayesh (I-VLab), André Perpey (Geoloc Systems),
Yves Ducq (IMS/University Bordeaux)
INTEROP-VLab
International Virtual Laboratory for Enterprise Interoperability

- A non-profit organisation resulting from a Network of Excellence coordinated by IMS / University of Bordeaux in 2007

- 60 partners organised in « poles », including 200 researchers and engineers, covering Europe and China (Brazil, South Africa in the future)

- Main activities:
  - Finalized research, education, innovation, standardisation
  - Support of partners through transfer of advanced knowledge and large scale European projects accompaniment (MSEE, FITMAN, TELL ME, C2NET, PSYMBIOSYS)
MGI
Marseille Gyptis International

- **Staff:** 35 people
- **Created in:** 1985
- **Activity:** Cargo Community System Editor and Manager
- **Turnover 2013:** 5.2 M Euros
- **Shareholders:**
  - Marseilles Port professionals
  - Port of Marseilles Authority
- **Sponsors:**
  - French Ministry of transport
  - French Ministry of finances
NOSCIFEL Project

- Project sponsored by the French Government with 12 partners
- Results:
  - Normafret Services
  - Transport Services Tool Box (TSTB) for Modelling, Performance Indicators and Enterprise Interoperability
  - Innovative and modular platform for the management of the transport of goods, offering 3 main trusted services:
    - SERVE: Vehicle Booking Service
    - STEGE: Traceability & geofence Service
    - SECCO₂: CO₂ Estimation Service
NOSCIFEL Method
Enterprise Interoperability (EI) for Intermodal Supply Chain

- EI is not a technical problem: there are already many interoperable interfaces

- EI is an economic problem: the high cost to develop and to update the EI solutions due to the constant enterprise evolution

EI is “the ability of an enterprise system or enterprise software (ERP…) to interact with others at a low cost in a flexible approach (INTEROP-VLab definition, April 2007)”. Based on a high level European working group created in 2000

- EI is an important challenge for Intermodal Supply chain (Suppliers, service providers (transport) and customers)
NOSCIFEL Method
Enterprise Interoperability (EI) for Intermodal Supply Chain

- The search of EI solutions needs to use Enterprise modelling, to represent data, processes, services, decisions, businesses …, to identify all the exchanges between partners.
To solve the interoperability problem

- Use of **Enterprise Interoperability Framework (EIF)**: to identify barriers (why it is not interoperable?)

- Use of **Model Driven Interoperability (MDI)** to generate IT solution based on Model Transformation using: the Transport Service Tool Box (TSTB)
NOSCIFEL Transport Services Tool Box (TSTB)

Advantages of TSTB

- Flexible
- Rapidity to develop new solutions
- Robustness due to Model Transformation
- Well adapted for SMEs
- Implementation of Performance Indicators
An online platform to design intelligent connectors
An online platform to design intelligent connectors
An online platform to design secured connectors

- Every document is signed electronically
NOSCIFEL Platform – Vehicle Booking System

<table>
<thead>
<tr>
<th>No. O.T.</th>
<th>Donneur d’ordre</th>
<th>Transporteur</th>
</tr>
</thead>
<tbody>
<tr>
<td>331</td>
<td>TRANSCAUSSE / Terzian / 060123456</td>
<td>TRANSCAUSSE PENNE / TERZIAN / 06</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Statut</th>
<th>Ref Client</th>
<th>Ref Intégré</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSMIS</td>
<td>REFCL12703155</td>
<td>REFDO2703155</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N° d’expédition</th>
<th>Expéditeur</th>
<th>Destinataire</th>
</tr>
</thead>
<tbody>
<tr>
<td>REFXP2703155</td>
<td>SEAYARD</td>
<td>SEAYARD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adresse 1</th>
<th>Adresse 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal à container Nord 2XL</td>
<td>13516 Port-Saint-Louis-du-Rhône</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code Postal</th>
<th>Pays</th>
<th>Téléphone</th>
</tr>
</thead>
<tbody>
<tr>
<td>13516</td>
<td>France</td>
<td>0614628459</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructions Enlèvement</th>
<th>Date et heure de début</th>
<th>Document transport</th>
<th>Nbr d’opérations à réaliser</th>
<th>Nbr total d’équipement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>01/04/15 10:00</td>
<td>Non</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructions Livraison</th>
<th>Date et heure de fin</th>
<th>Nbr d’unités de conditionnement</th>
<th>Poids max.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>01/04/15 15:00</td>
<td></td>
<td>20000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class moléculaire dangereuse</th>
<th>Poids</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20000</td>
</tr>
</tbody>
</table>

---

Bordeaux, 7 October 2015

ITS Workshop
NOSCIFEL Platform – Vehicle Booking System

Tracking and Tracing systems are provided for Visibility and Alarm

Modification d’une zone de Géofence

- Intitulé: Eurofos
- Statut: Active
- Rôle: Sortant
- Type: Polygone

<table>
<thead>
<tr>
<th>N°</th>
<th>Longitude</th>
<th>Latitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.8401217</td>
<td>43.41042</td>
</tr>
<tr>
<td>2</td>
<td>4.843126</td>
<td>43.412415</td>
</tr>
<tr>
<td>3</td>
<td>4.857846</td>
<td>43.402782</td>
</tr>
<tr>
<td>4</td>
<td>4.857116</td>
<td>43.401222</td>
</tr>
<tr>
<td>5</td>
<td>4.8553567</td>
<td>43.400787</td>
</tr>
</tbody>
</table>

Bordeaux, 7 October 2015
NOSCIFEL Platform DIGITAL SAFE Services

- Every document can be stored in an online digital safe
Conclusion

- **Fruitful collaboration** between INTEROP-VLab and MGI using the Transport Service Tool Box (TSTB), will be pursued
- **Research development** supported by IMS / University of Bordeaux and UNINOVA Portugal
- **Creation of Community Group** around TSTB by INTEROP-Vlab at European level
- **MGI provides a global solution** to ensure security along supply chain (Data, process, documents and services) from French ports and airports
- **SMEs can technically and economically** participate to supply chain interoperability in compliance with security requirements
- **New SMEs capabilities** generate **business opportunities** and **effectiveness gains** for MGI and for French logistics and transport sector
Thank you for your attention

INTEROP-Vlab: info@interop-vlab.eu  http://www.interop-vlab.eu/
MGI: http://www.gyptis.fr/