# From BPMN 2.0 to the Setting-Up on an ESB – Application to an Interoperability Problem


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# Outline

1. Motivation and goal
2. Related knowledge
3. ASICOM project
4. Use case from the ASICOM project
5. Conclusion & Future Works

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# Motivation and goal

- How enterprise can bring the Information System (IS) into line with business processes ?

- How to take advantage from Business Process Modeling Notation (BPMN 2.0) within the framework of a Services Oriented Architecture (SOA) development ?

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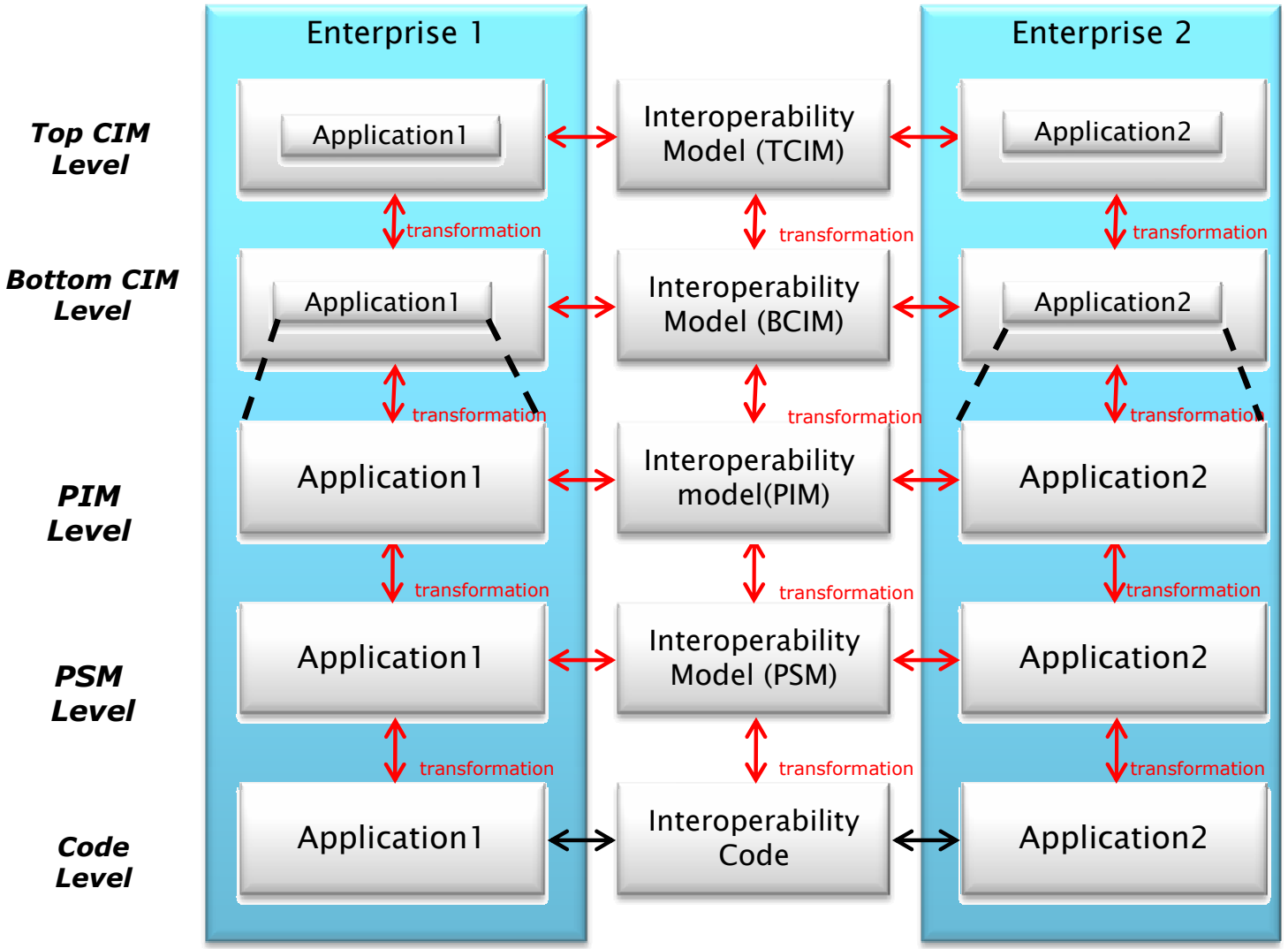
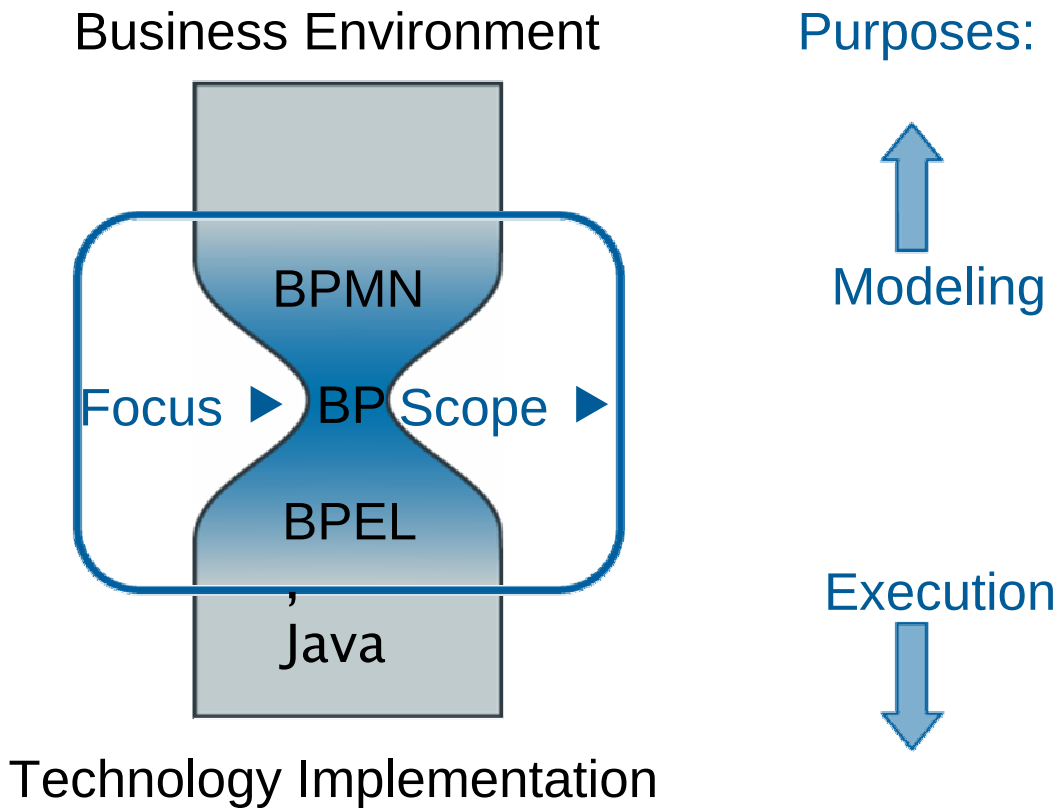
1. Motivation and goal
2. Related knowledge
   1. Model Driven Interoperability
   2. Business processing models (BPMN 2.0, BPEL)
   3. Service Oriented Architecture (SOA)
3. ASICOM project
4. Application to ASICOM project
5. Conclusion & Future Works

# Model Driven Interoperability Reference Model



# BPMN 2.0

- BPMN is flow-chart based notation for defining Business Processes.



# Service Oriented Architecture

SOA is an architectural approach, guideline and patterns to realize a system through a set of provided and required services

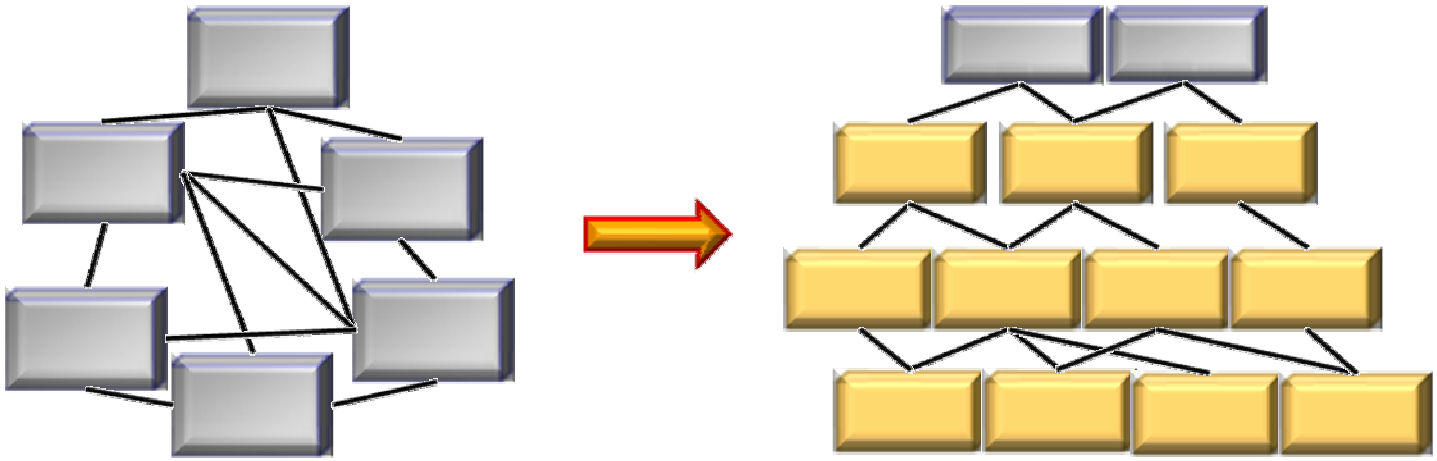


**Fig.2.** Application oriented architecture Vs Service oriented architecture

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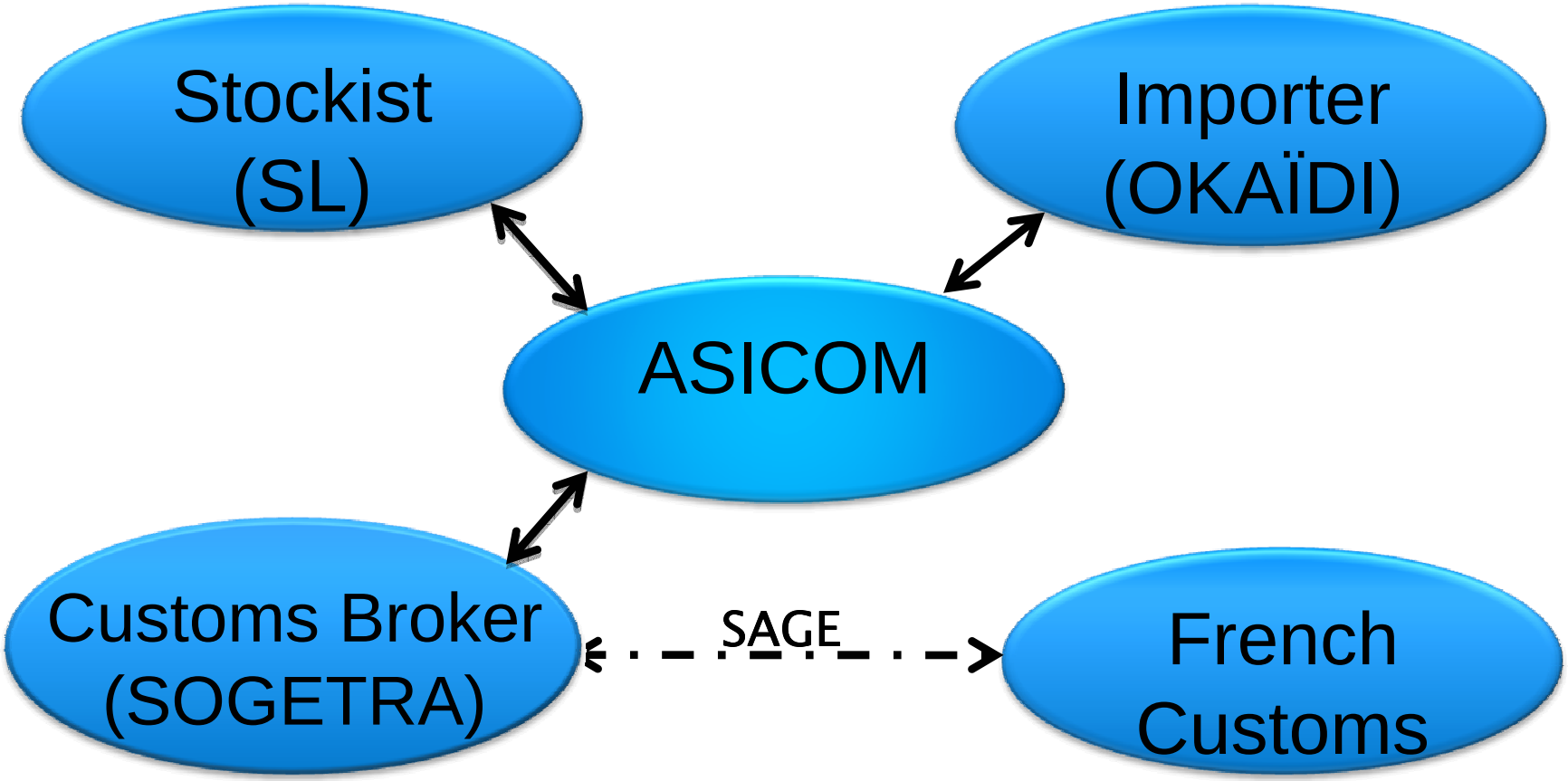
# Industry partners



# ASICOM context

- **Requirements**: Support the development and realization of system based :
  - Open source
  - Standards
  - Agility
  - The capacity of the solution to be deployed in a heterogeneous environment

- **Importance** : Ability to bring together system components at the model level in order to be able to reason about:
  - Structural compatibility (at the syntax level)
  - Behavioral compatibility (at the semantic level)

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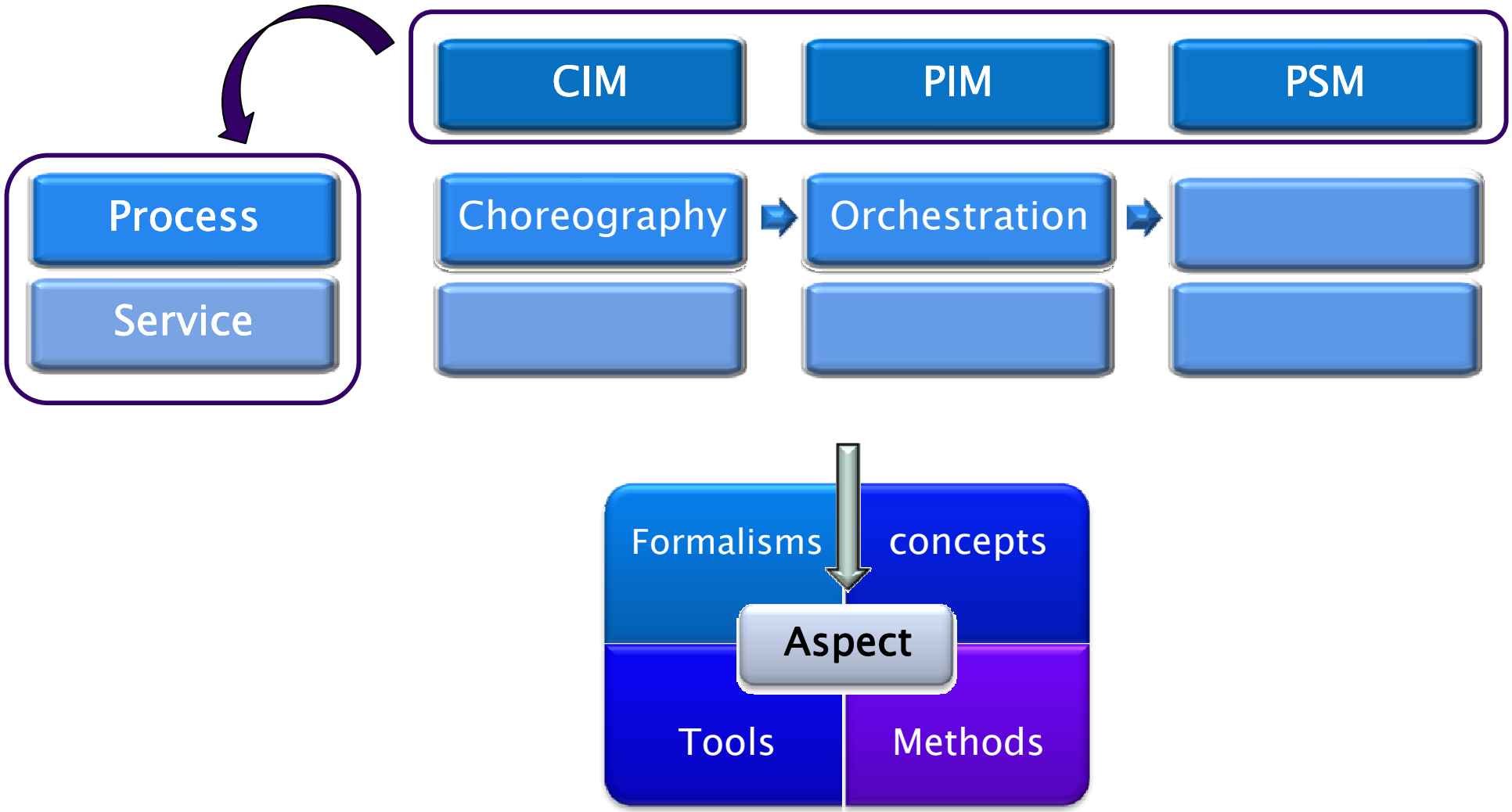
# SOA to rationalize Model driven approach



# Choreography process (BPMN 2.0)

- Focuses on the exchange of information between the participants

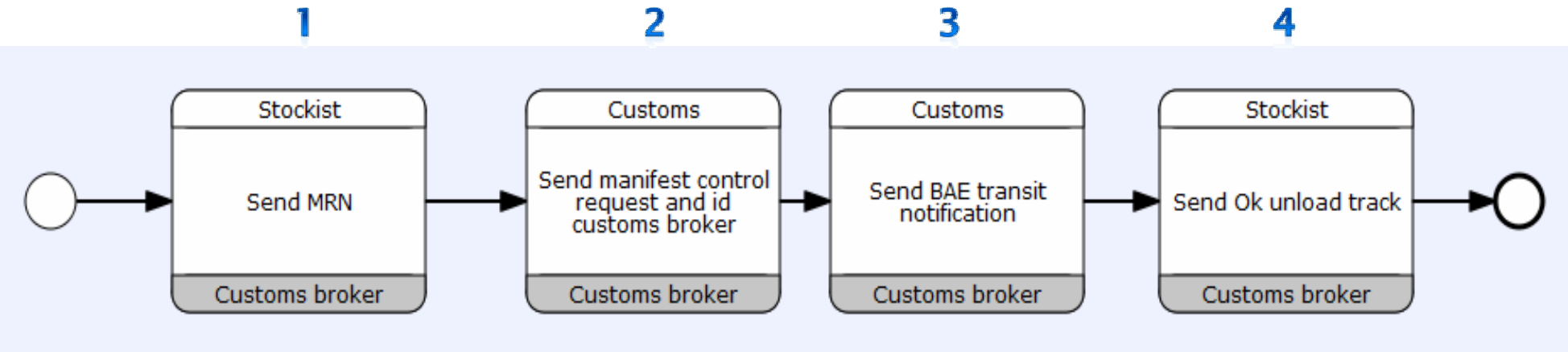



**Fig.3.** Discharge T1 when goods arrive to the stockist choreography diagram.

# Orchestration process

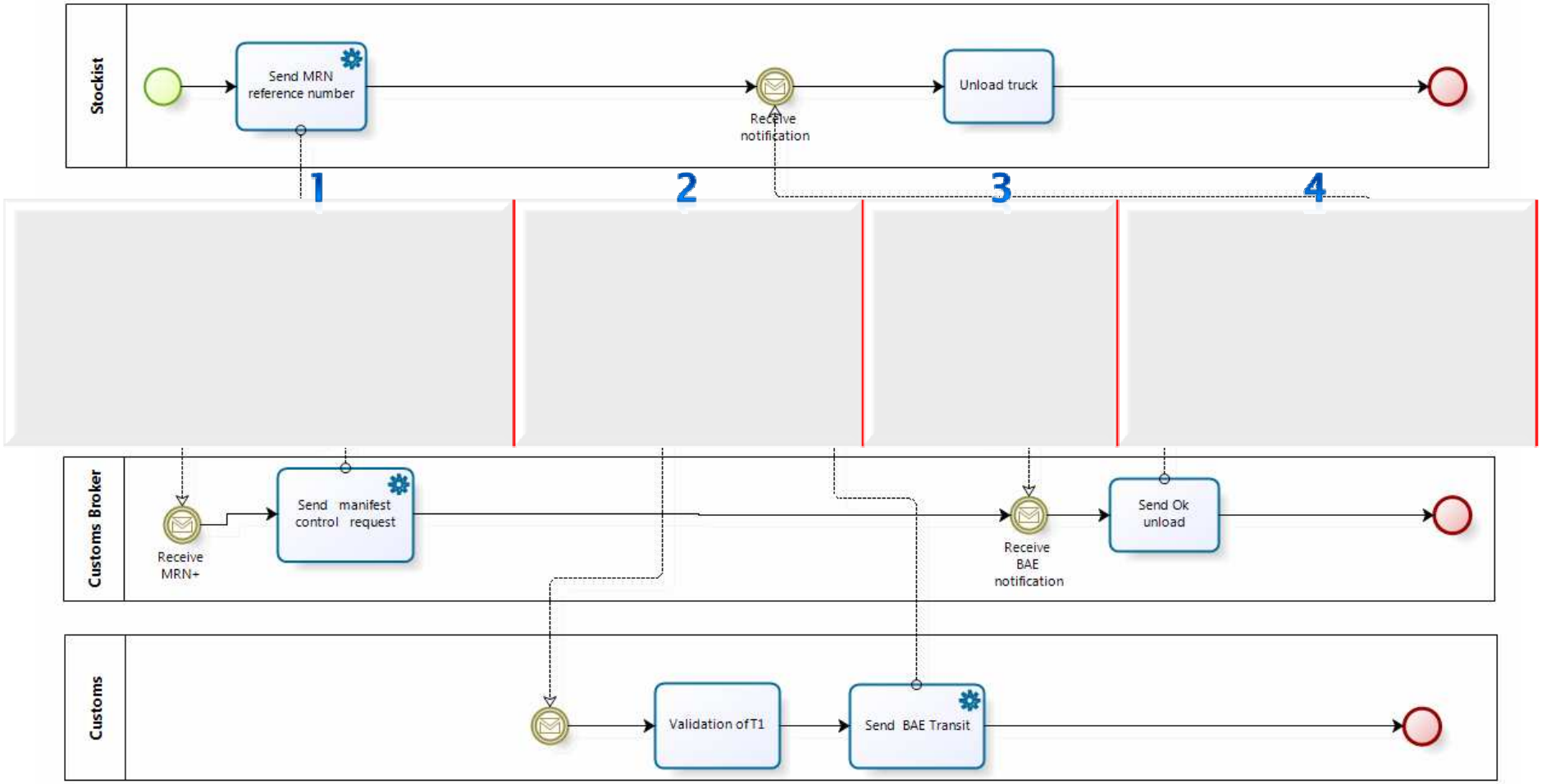



**Fig.4.** Discharge T1 when goods arrive to the stockist orchestration diagram.

# Business Process Execution Language(BPEL 1.2)

- Refine BPMN with implementation details using BPEL

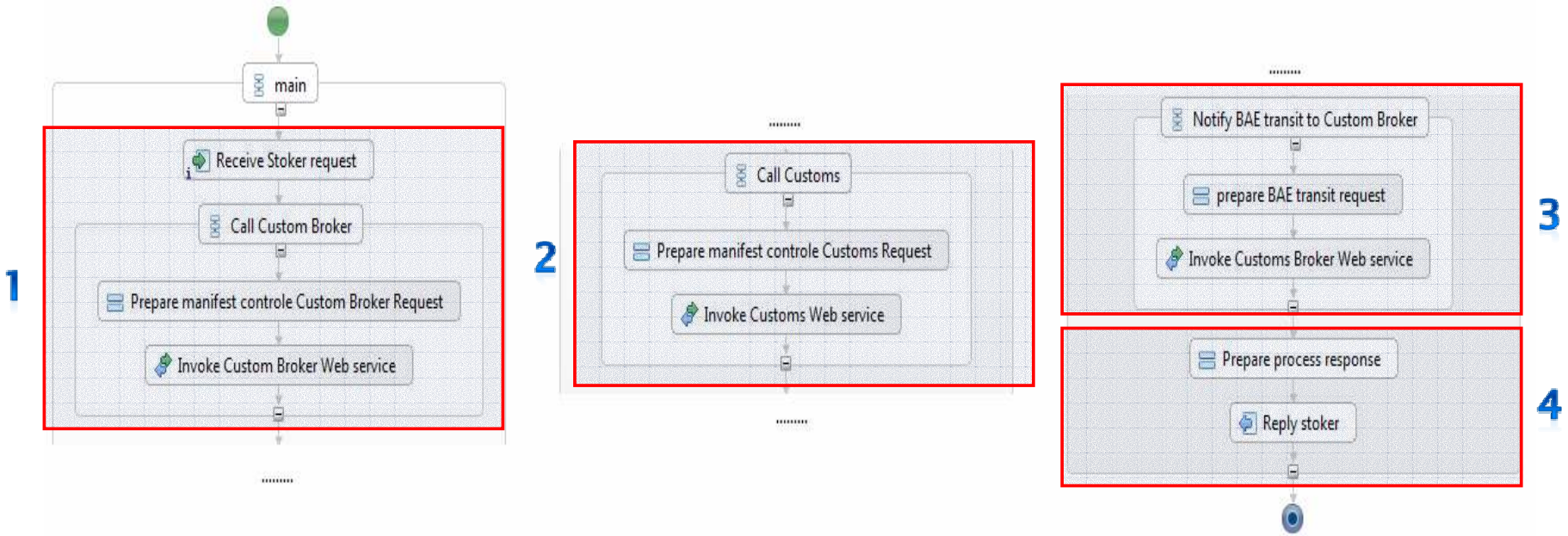



**Fig.5.** Discharge T1 when goods arrive to the stockist BPEL diagram.

# The ASICOM SOA infrastructure

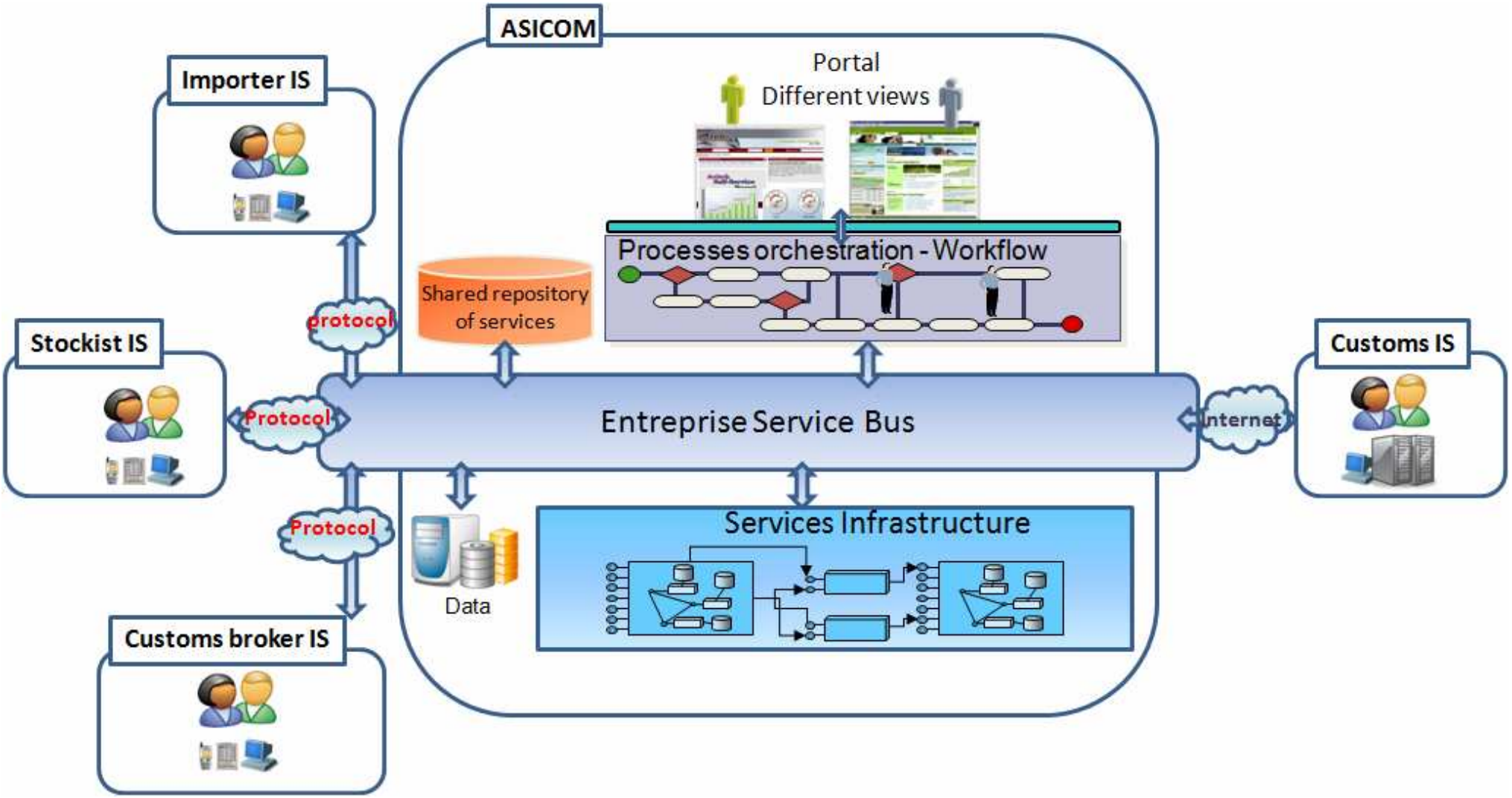



**Fig.5.** ASICOM platform Architecture.

# Conclusion

- What we have done:
  - Testing industrial use case in the ASICOM project with the objective of aligning business and IT models.
  - Propose a top-down realization of SOA based on a model driven approach (formalisms, tools).

- Future work:
  - Aligning Business and IT Models in Service-Oriented Architectures using BPMN and SoaML.
  - To use the Software and Systems Process Engineering Meta-Model (SPEM) to defining the development process in an interoperable project using a service-oriented architecture.