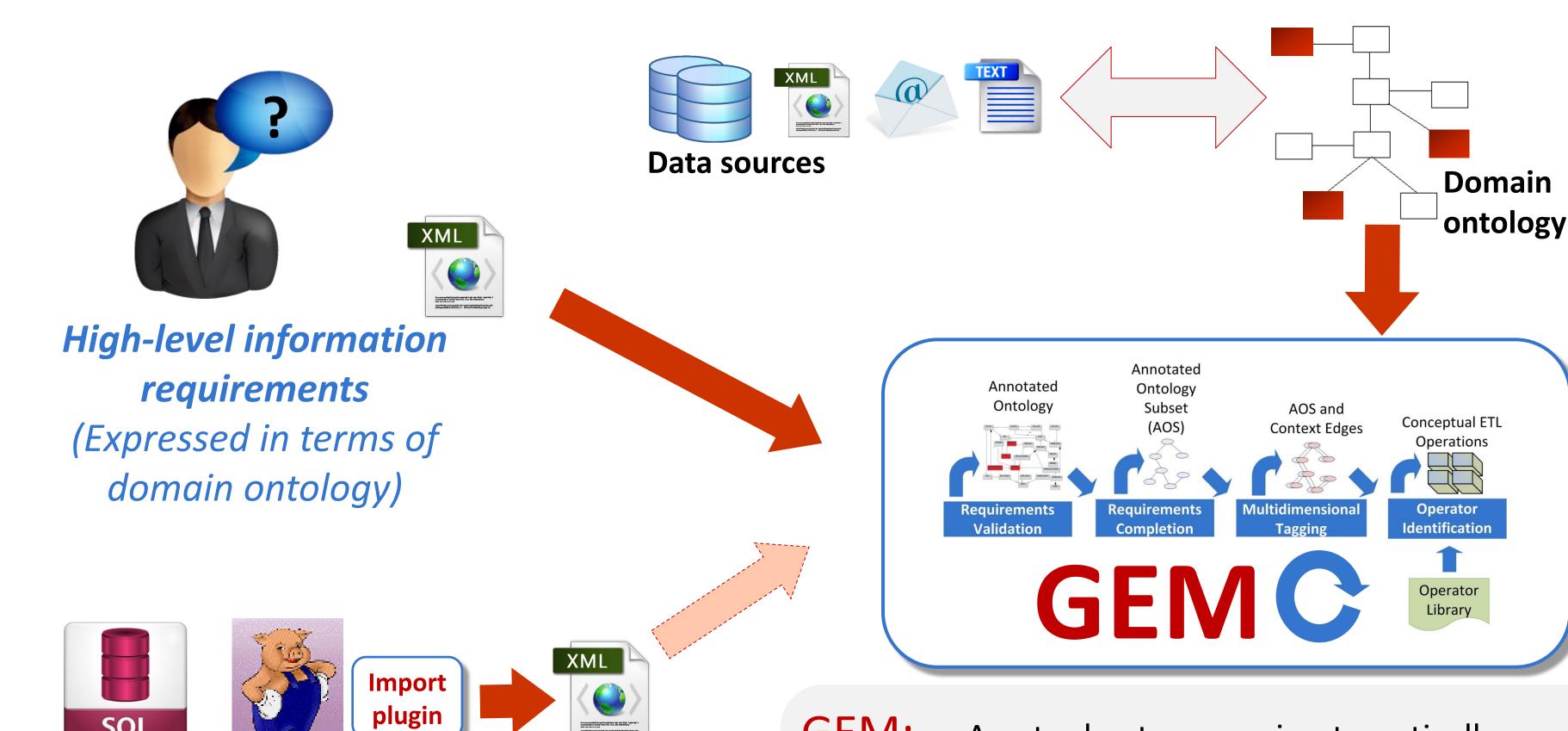
# Requirement-driven Design and Deployment of Multidimensional and ETL Designs

# Petar Jovanovic, Oscar Romero, Alberto Abelló

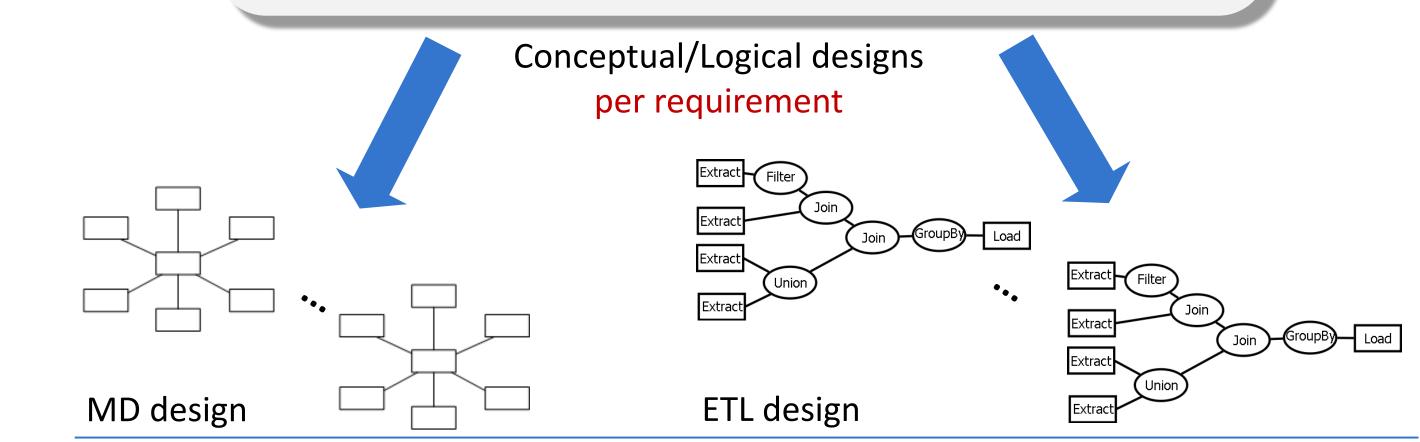
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## **Alkis Simitsis**

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GEM: tool to semi-automatically produce multidimensional (MD) and Extract-transform-load (ETL) conceptual designs from a given set of business requirements (like SLAs) and data source descriptions.



# Iterative processes to support the evolution of DW designs.

ORE: Integrates each new requirement into the existing DW constructs and produces the unified DW schema that satisfies the entire set of requirements.

CoAl: Integrates ETL flows which answer each new requirement, into the existing ETL process design and produces the unified ETL process that satisfies the entire set of requirements.



Conceptual/Logical DW design



✓MD and ETL designs are correlated ✓ materialized views vs. OLAP querying ✓ iterative tuning of both designs ✓ state space optimization ✓multi-engine support

✓ multi-objective support

✓ execution plan creation

ETL design

# MD design

### Further reading:

SQL

pentaho

Physical-level queries

(Expressed in terms

of data sources)

- Oscar Romero, Alkis Simitsis, Alberto Abelló: GEM: Requirement-Driven Generation of ETL and Multidimensional Conceptual Designs. DaWaK 2011: 80-95
- Petar Jovanovic, Oscar Romero, Alkis Simitsis, Alberto Abelló: Integrating ETL Processes from Information Requirements. DaWaK 2012: 65-80
- Petar Jovanovic, Oscar Romero, Alkis Simitsis, Alberto Abelló: ORE: an iterative approach to the design and evolution of multi-dimensional schemas. DOLAP 2012: 1-8
- Alkis Simitsis, Kevin Wilkinson, Petar Jovanovic: xPAD: a platform for analytic data flows. SIGMOD Conference 2013: 1109-1112















Cassandra







