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ONTOLOGY-DRIVEN DATA DOCUMENTATION FOR INDUSTRY COMMONS

IRIS - IndustRIal co-design Support

Use Case No 1

Airbus / Rebeca Arista

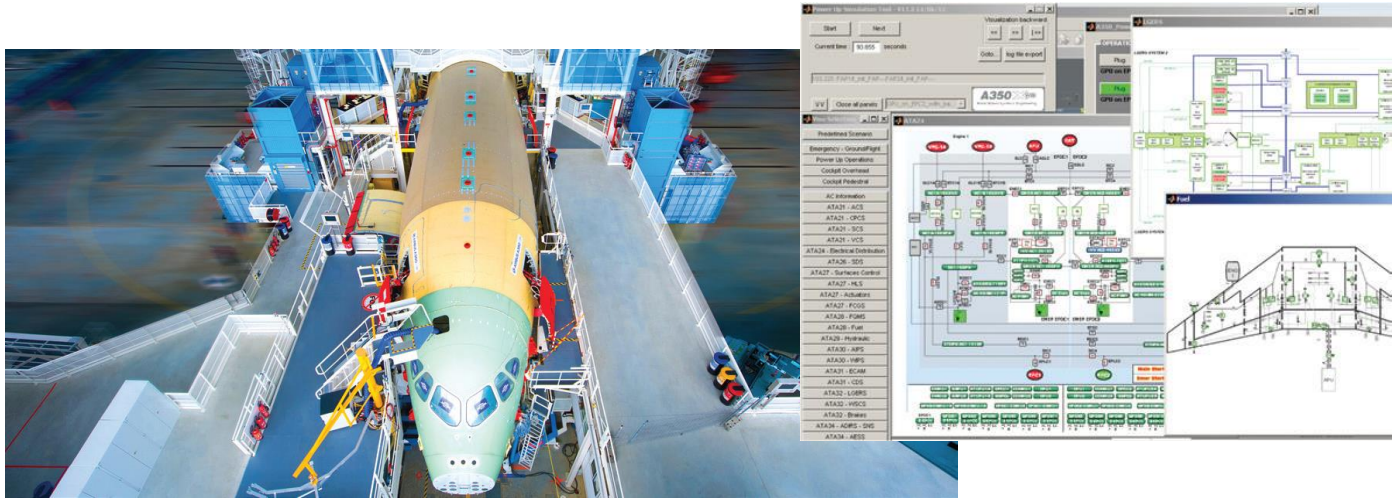
Organization

Partners involved in this use case:

- Airbus
- Universitetet I Oslo

IRIS - IndustRIal co-design Support

During the aircraft and industrial system design process, different domains engage in trade-offs and optimizations, with decisions impacting the design of other domains.

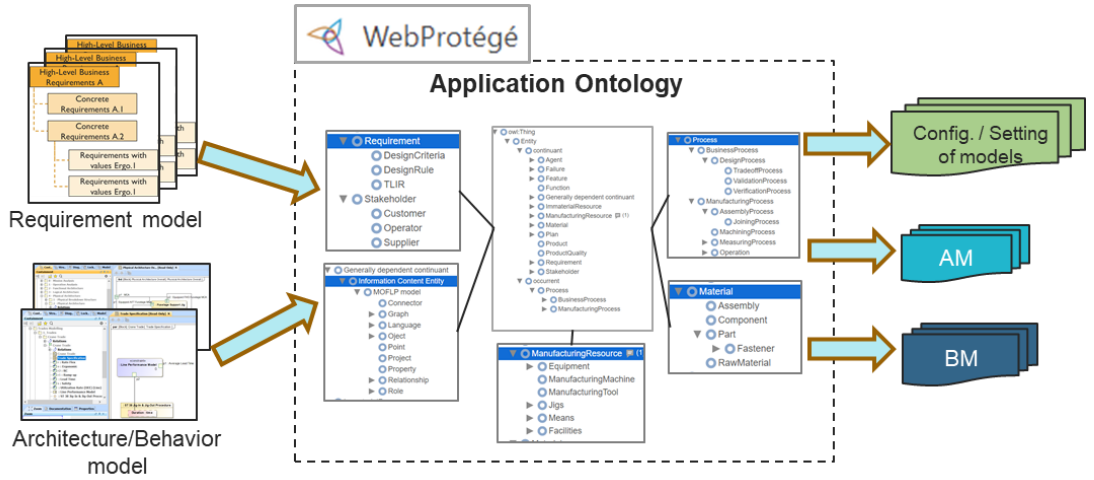


The goal of this UC is enabling an MBSE and collaborative design process between the aircraft and industrial system domains, overcoming bottlenecks concerning knowledge management, interoperability and decision making.

Ontology use in the Use case

Purpose of ontology application in the use case:

- Knowledge management and capitalization
- Decision making support
- Co-simulation and co-design process
- Data model / data structuring



Use case requirements

- Ontology-based semantic integration module, managing data flow and co-simulation from the design scenarios to the trade-off results.
- Ontology-based Engineering capturing existing formal/non-formal process knowledge in a neutral and persisting way, to reuse and automate the process design.
- Support decision making, implementing business rules at each step of the design process.
- Use of standards and open source tools, in a Digital-twin like platform.
- Demonstrate industrial application on a real case: Airbus A321 orbital joint process design, reusing resources of an existing Final Assembly line.

Main expected benefits

- The findings from this use case will have a important impact on the design process, helping to decrease the development time, and improve the industrial system reliability and efficiency.
- Technologies, methodologies and applications demonstrated, will foster a tool agnostic industrial design process.
- Semantic integration and Knowledge Management techniques will allow automation, cognitive processes and information traceability up to design choice.

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Thank you very much for your attention!

Questions?

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