




# Semantic Material Master Data Management at Aibel (2015–)

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- Large-scale ontology (80 000 classes) in use in capital projects
  - Automating highly complex, but trivial work
  - Representing industry standards and creative designs
  - In-house developed
  - Reasoning is an integral part
    - quality assessment
    - duplicate detection
    - guiding end-user ontology development
  - Reduced cost and improved quality and accountability

# Aibel delivers the full scope of services:

**Studies**

**Engineering**

**Procurement**

**Construction**

**Installation**

**MC/Commissioning**

**Operational Support**

**Decommissioning**



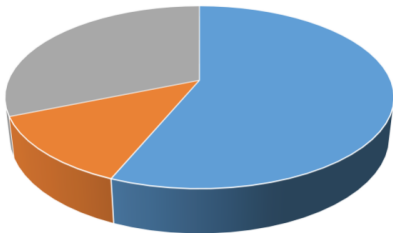
# Johan Sverdrup Drilling Platform (JSDP 2018)



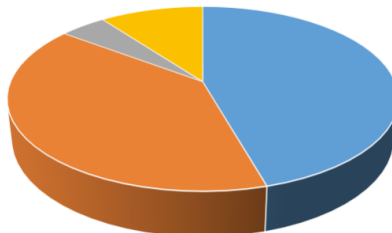


# JSDP Plant objects – piping

3 200 piping product types



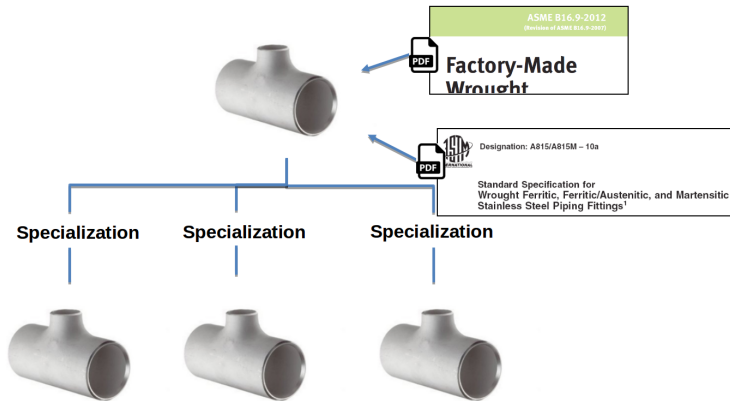
550 000 piping products



■ Piping ■ Piping bolting ■ Pipe support ■ Spool

# Engineering according to industry standards

- Material quality
- Wall thickness
- Manufacturing class
- ...





***“Only complexity can reduce complexity”***

as claimed by system theorists

# Material Master Data (MMD) ontology

- 80 000 classes
- 200 ontologies
- Strict hierarchy

ISO 15926, PAV, SKOS

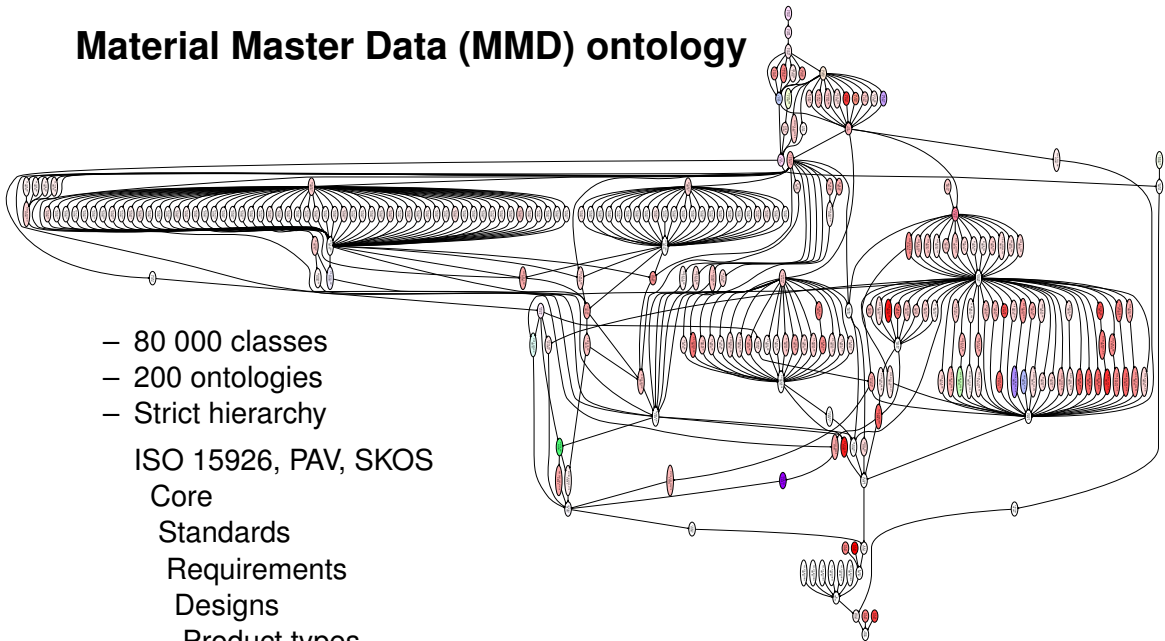
Core

Standards

Requirements

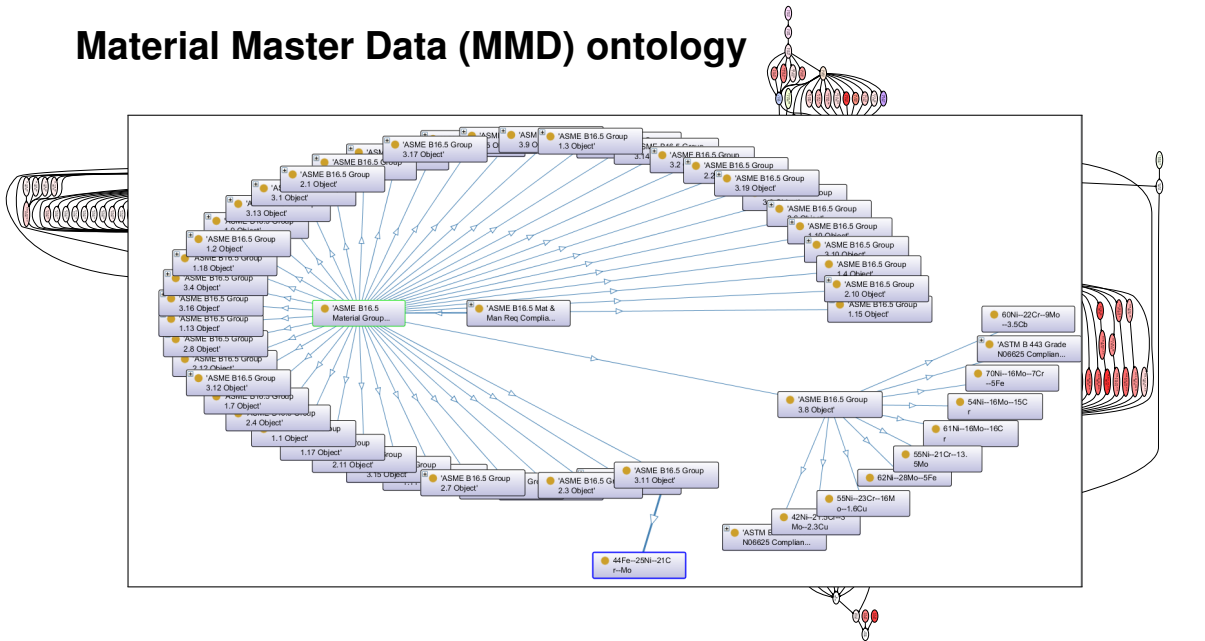
Designs

Product types






# Material Master Data (MMD) ontology

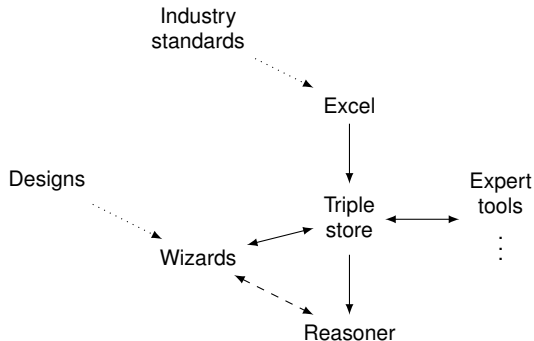


# How the MMD ontology is made

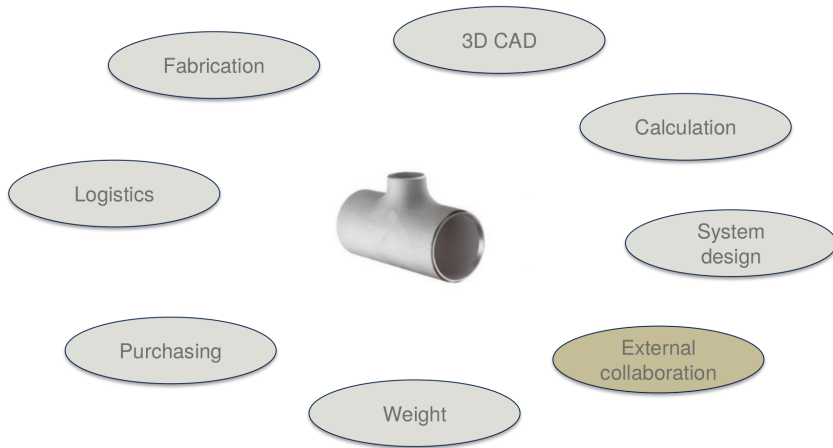


A	B	C
Individual ID	Label	Super CI MDS document TR2000
IndividualObjectRole	rdfs:label	rdf:type
X101015207	MDS DB102 -TR2000 Material Data Sheet	X101009373
X101015208	MDS DF101 -TR2000 Material Data Sheet	X101009373
X101015209	MDS DF102 -TR2000 Material Data Sheet	X101009373
X101015210	MDS DF103 -TR2000 Material Data Sheet	X101009373
X101015211	MDS DF104 -TR2000 Material Data Sheet	X101009373
X101015212	MDS DF105 -TR2000 Material Data Sheet	X101009373
X101015213	MDS DF106 -TR2000 Material Data Sheet	X101009373

- Industry standards:  
batch transformation of tables
- Designs:  
interactive wizards backed by reasoner



# Master data user – Piping bulk



## Summing up

Automating complex, but trivial work

- Tools are coming of age



# Summing up

- Automating complex, but trivial work

- Tools are coming of age

## Next steps:

- Cover more disciplines

- Use *Reasonable Ontology Templates (OTTR)* to structure and optimise input formats, transformations and queries

Check out: Demo (Thu) + Paper (Fri)

