Development of ISO 15926: READI - how Norwegian offshore industry are digitalizing requirements

READI

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Industrial Interoperability Summit 2019

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Key point in this presentation

- Convert from language based requirement to digital requirements
- Automatic quality check and verification of ontologies
- More advanced queries across ontologies

What is READI?

READI transforms the way we work with documentation

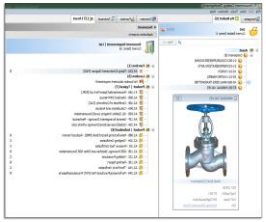
through digital requirements

and changing work processes and business model

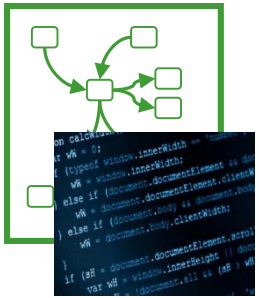
The journey from paper to digitalized

Paper based NORSOK standards

Company specific requirements



STI – updated and common requirements in a digital format



READI –Machine readable for automated verification/ validation

Cloud based industry requirement service

READI purpose, scope and main deliverables

Purpose:

More efficient LCI business processes through digitalization

Scope:

- NORSOK standards
- STI
- IEC/ISO 81346
- IEC 61355
- CFIHOS

Establish service for digital NORSOK requirements

Transform LCI requirements to machine readable format

Agree common LCI requirements

Preliminary business case

Business case elements

Estimated impact for Norwegian Continental Shelf:

- Annual spending: NOK 72 billion
- Annual savings from: 5 – 10 %
- Annual savings from : NOK 3.6 – 7.2 billion

Cost savings due to:

- Clearer and more precise requirements
- Digital control of documentation
- Re-use of concepts
- More effective engineering work processes

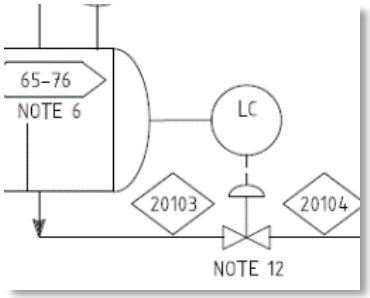
The READI JIP is executed in three phases

Initiation | Kick-Off | Phase 1 | Phase 2 | Phase 3

2017 | 2018 | 2019 | 2020

Initiation

Phase 1

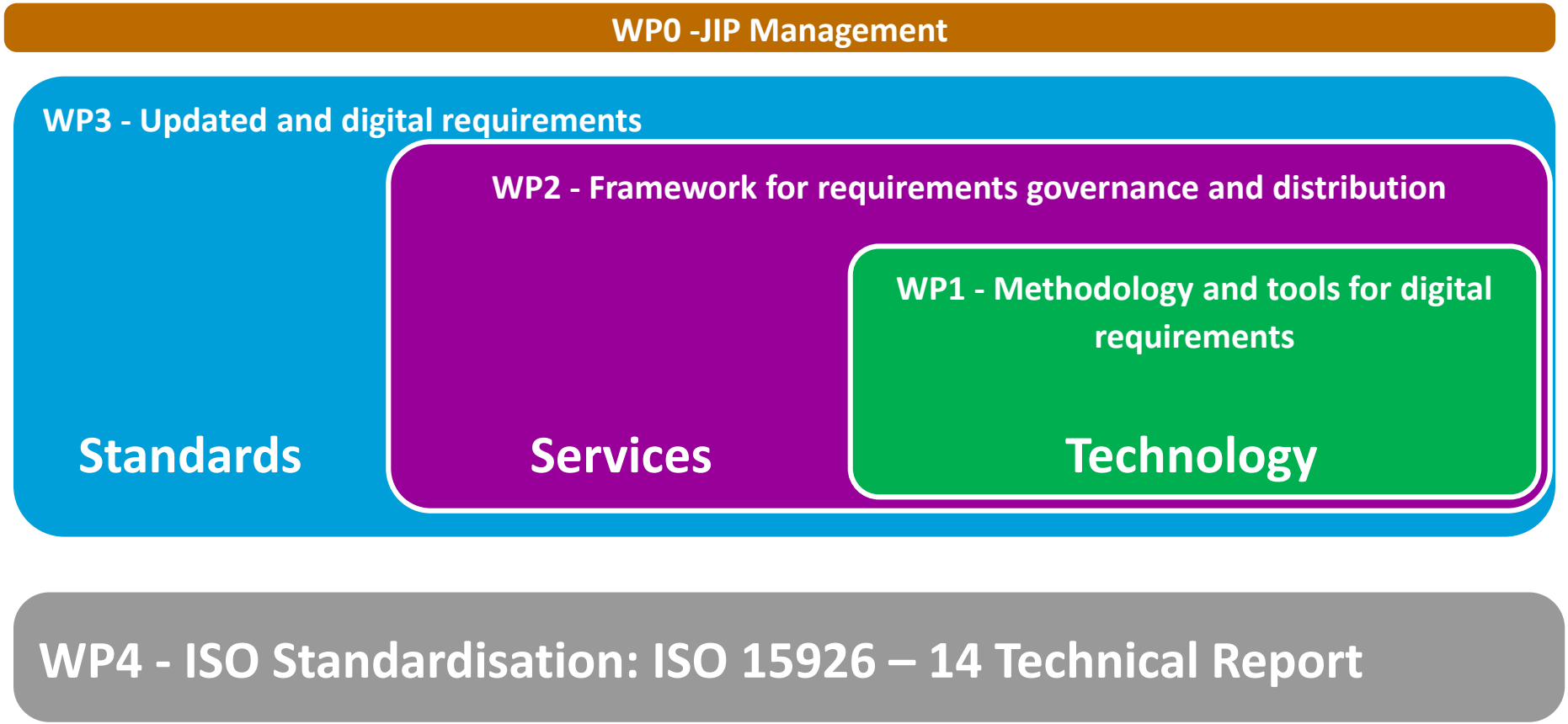


Phase 2

Phase 3

Scope for Phase 1 was information requirements to valves and subsea

Three main deliverables: Standards, Technology and Services



The problem

Authorities, public, society

Requirements

Information

Oil and gas companies

Review/Verification

Documentation

Contractors

Review/Verification

Documentation

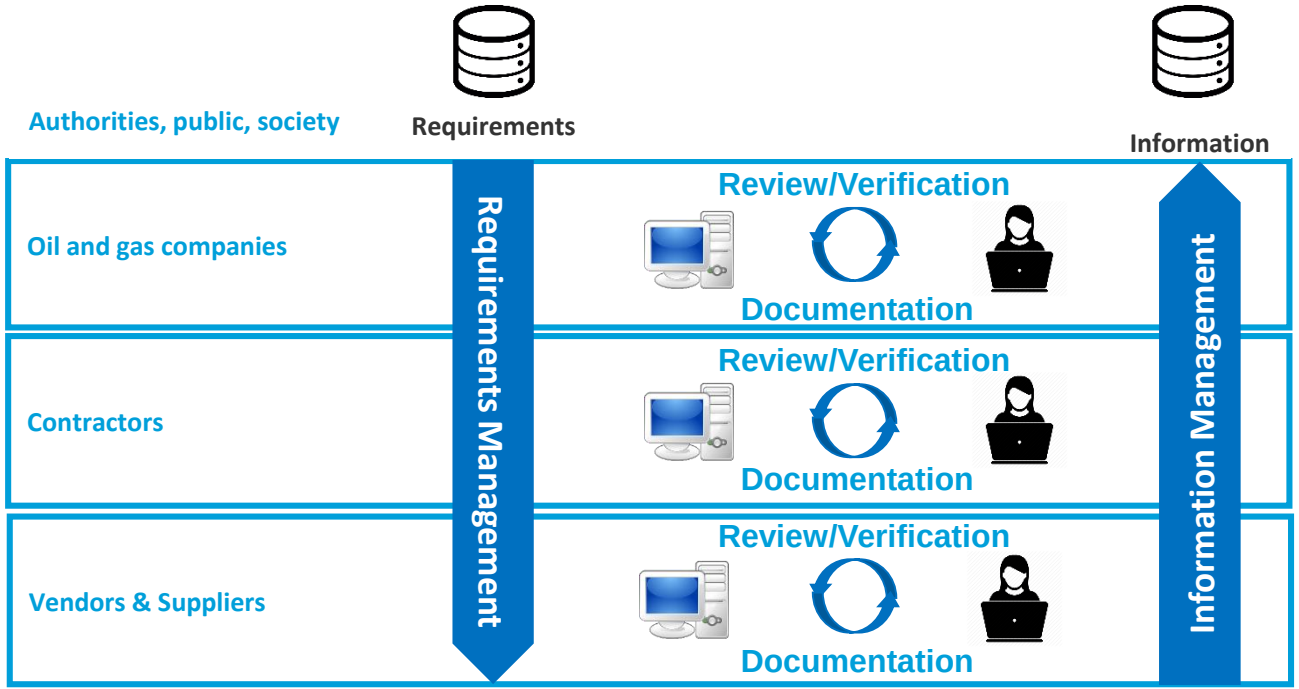
Vendors & Suppliers

Review/Verification

Documentation

- **Requirements are “analogue”**
- **Documentation is company specific**
- **Software solutions are proprietary**
- **Verification of requirements are manual**
- **Re-use of concepts and solutions are “analogue”**

The solution



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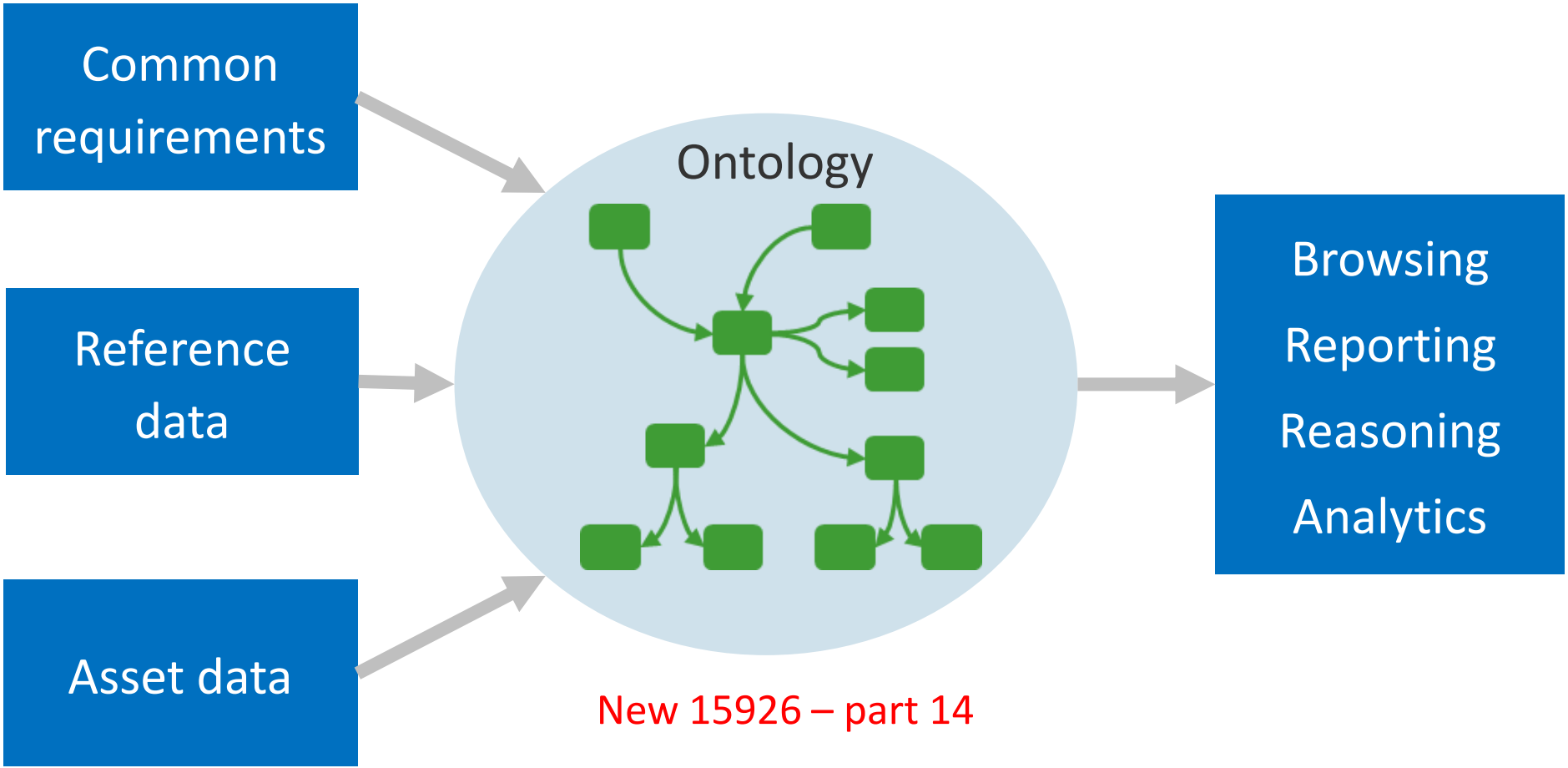
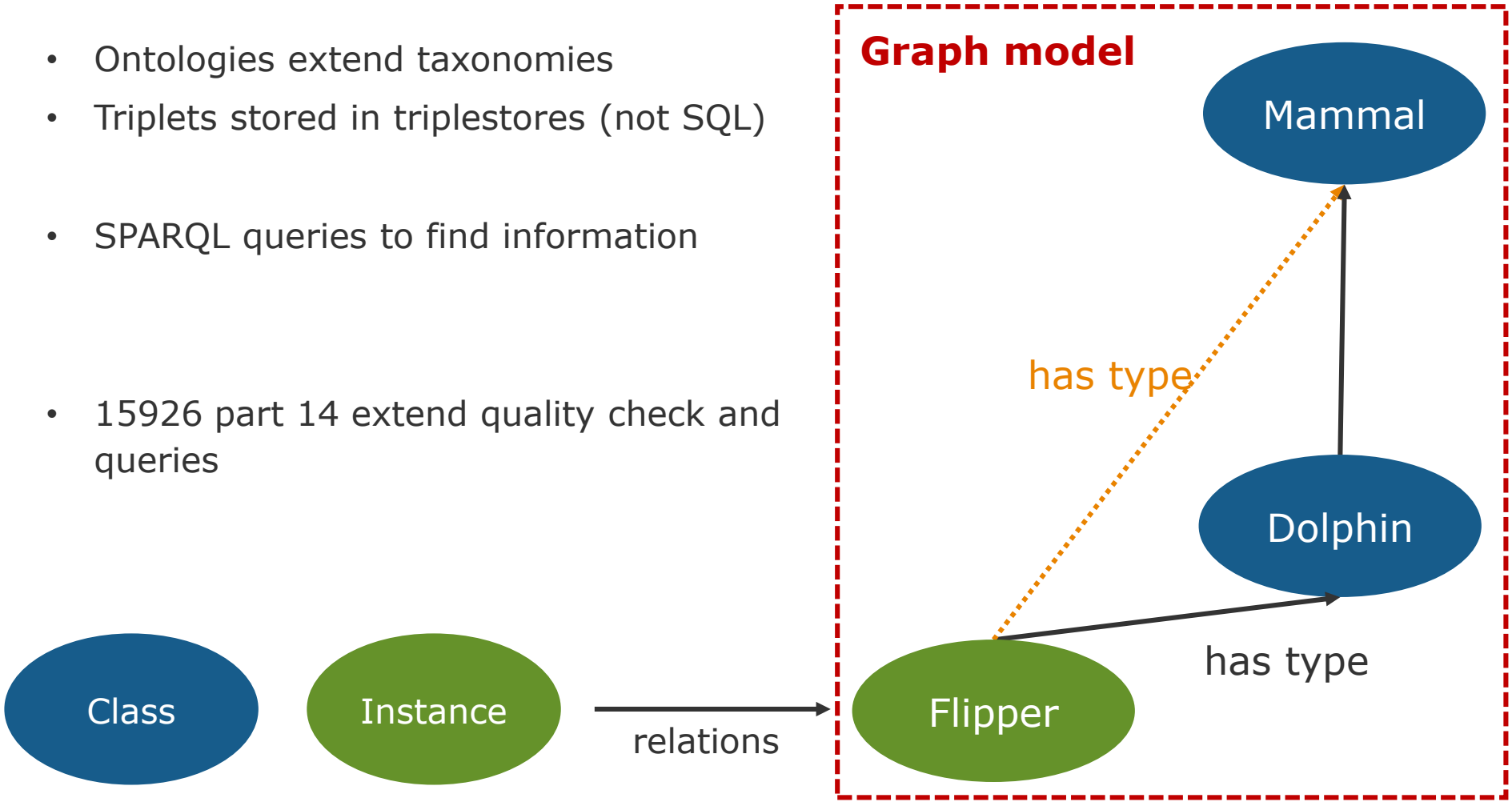
Ontology – the enabler to change the industry practice

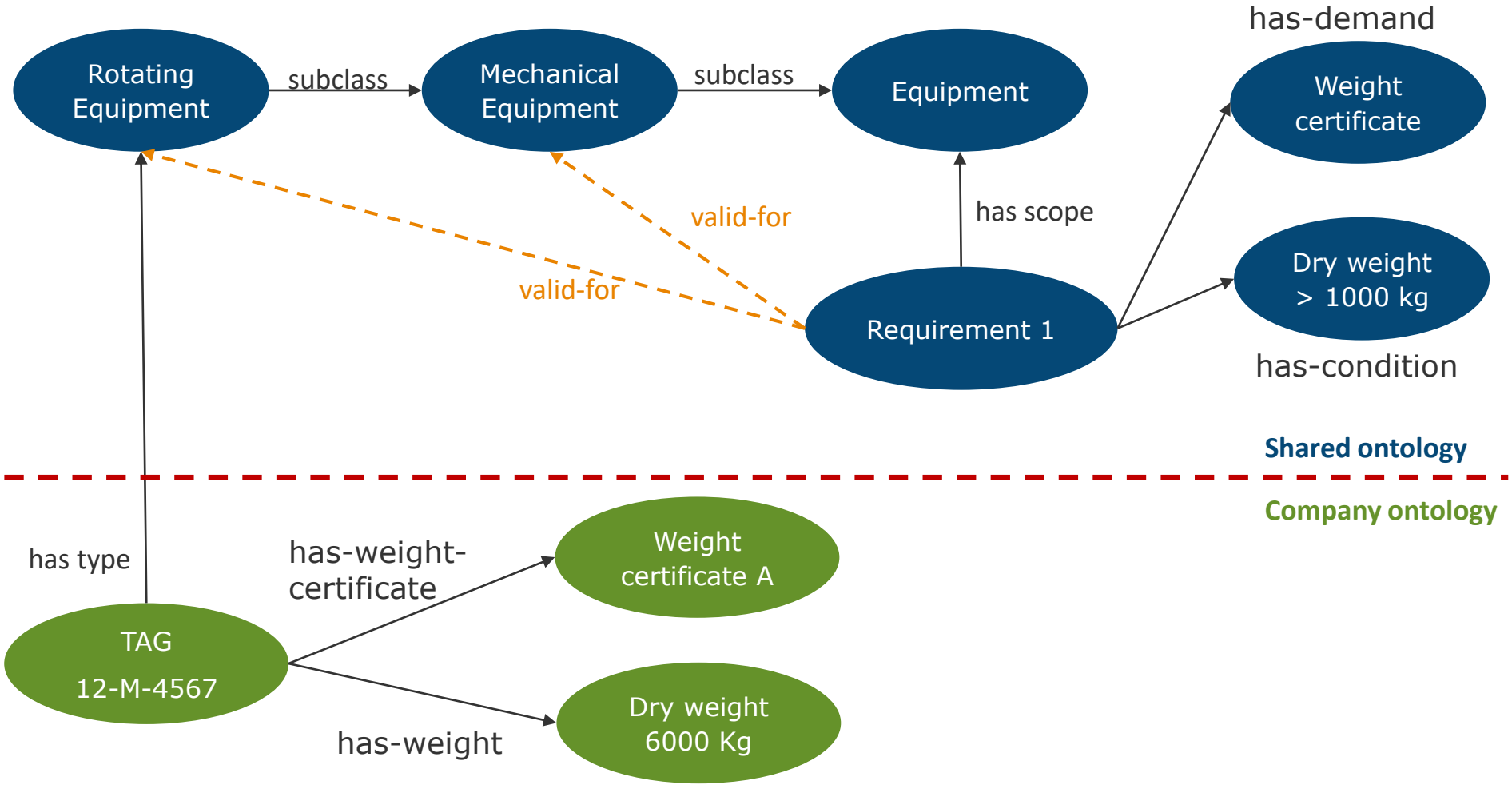


Semantic technologies: Ontology and OWL

- Ontologies extend taxonomies
- Triplets stored in triplestores (not SQL)
- SPARQL queries to find information
- 15926 part 14 extend quality check and queries



Total input overview including asset data



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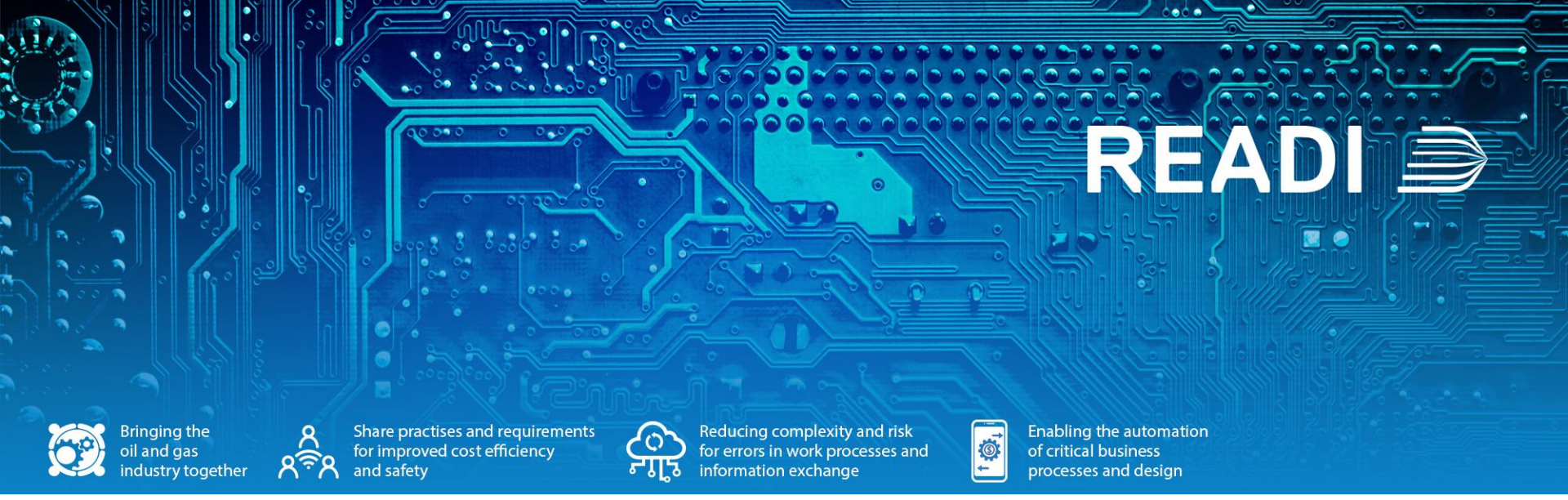
Thank you
for your time and attention



READI contact information

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