

The background image shows a control room environment. In the foreground, a woman with blonde hair in a ponytail, wearing a grey turtleneck, is seated at a desk with multiple computer monitors. She is looking intently at the screens. Behind her, another person is partially visible, also working at a desk. The walls are covered with large monitors displaying various technical data, including flowcharts, graphs, and 3D models of industrial structures. The overall color scheme is dominated by blues and greys, giving it a professional and technological feel.

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

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*Industrial Interoperability Summit 2019*

*15th of May 2019*

**READI** 

# 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?

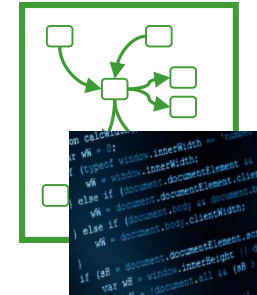
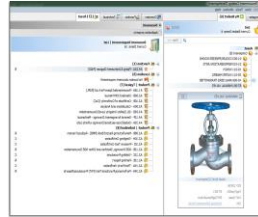
READI transforms the way we  
work with documentation

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

Estimated impact for Norwegian Continental Shelf:

## *Business case elements*

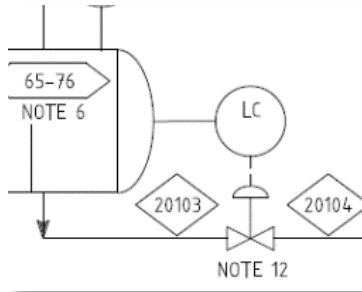


- Annual spending: NOK 72 billion
- Annual savings from: 5 – 10 %
- Annual savings from : NOK 3.6 – 7.2 billion

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



Scope for Phase 1 was information requirements to valves and subsea

# Three main deliverables: Standards, Technology and Services

**WP0 -JIP Management**

**WP3 - Updated and digital requirements**

**WP2 - Framework for requirements governance and distribution**

**WP1 - Methodology and tools for digital requirements**

**Standards**

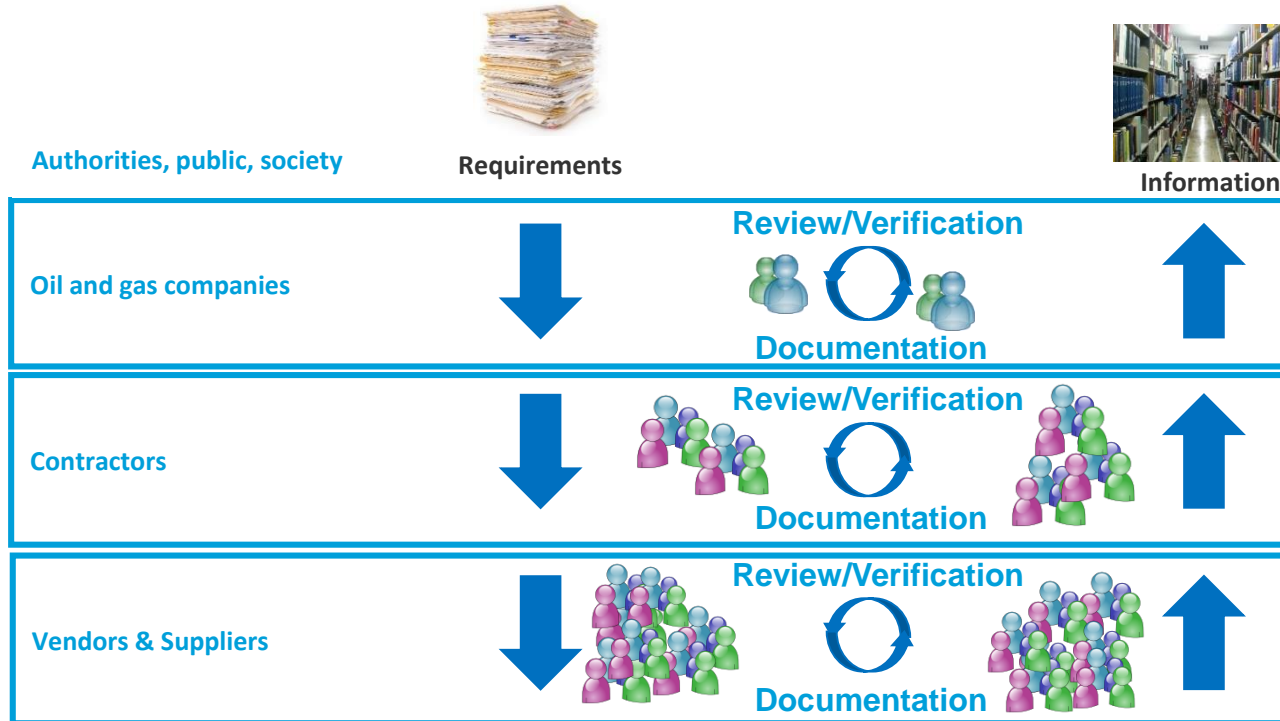
**Services**

**Technology**

**WP4 - ISO Standardisation: ISO 15926 – 14 Technical Report**

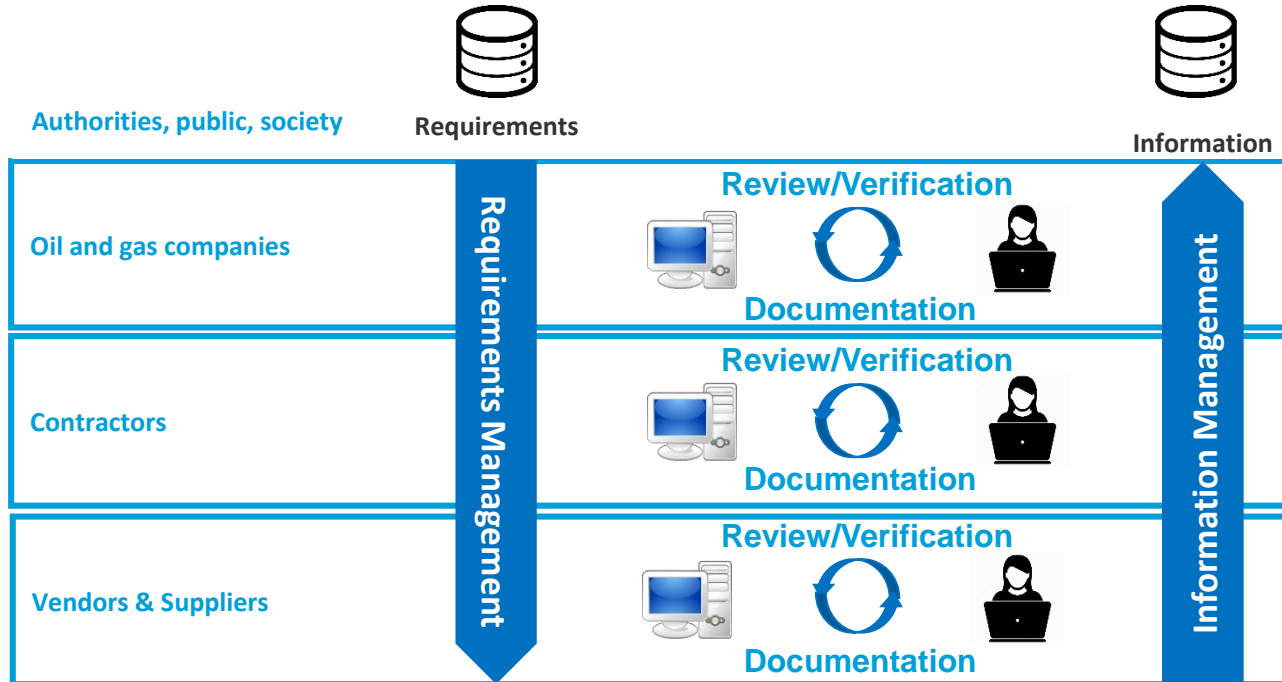


# The problem



- 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



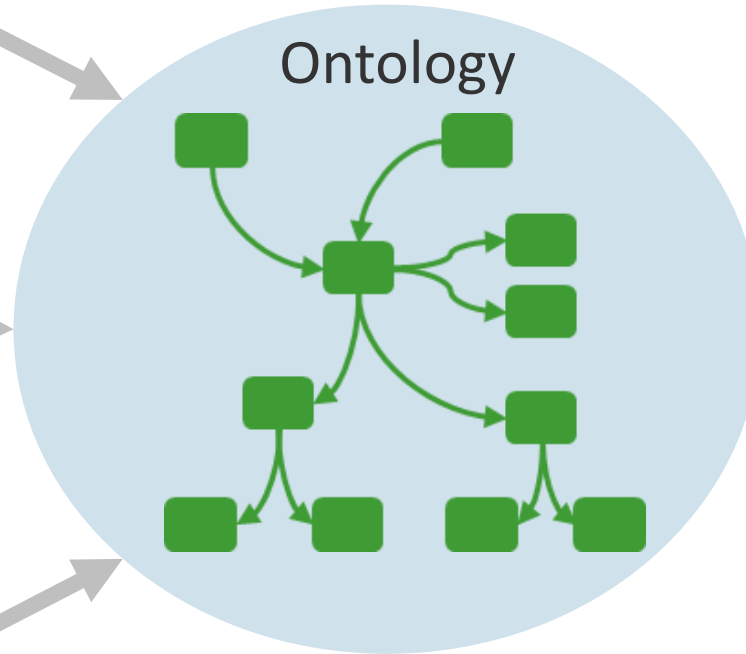
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# Ontology – the enabler to change the industry practice

Common  
requirements

Reference  
data

Asset data

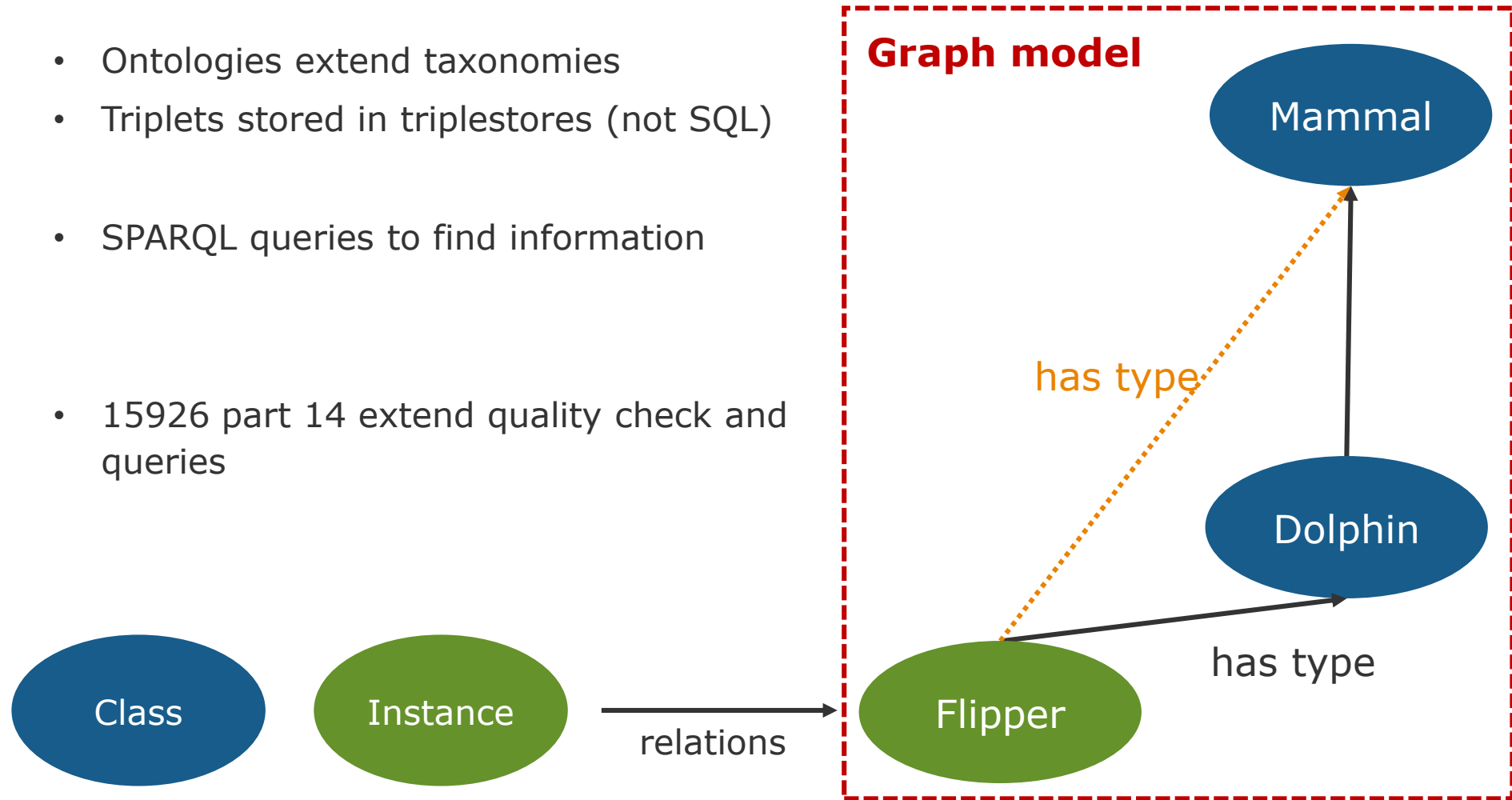


Browsing  
Reporting  
Reasoning  
Analytics

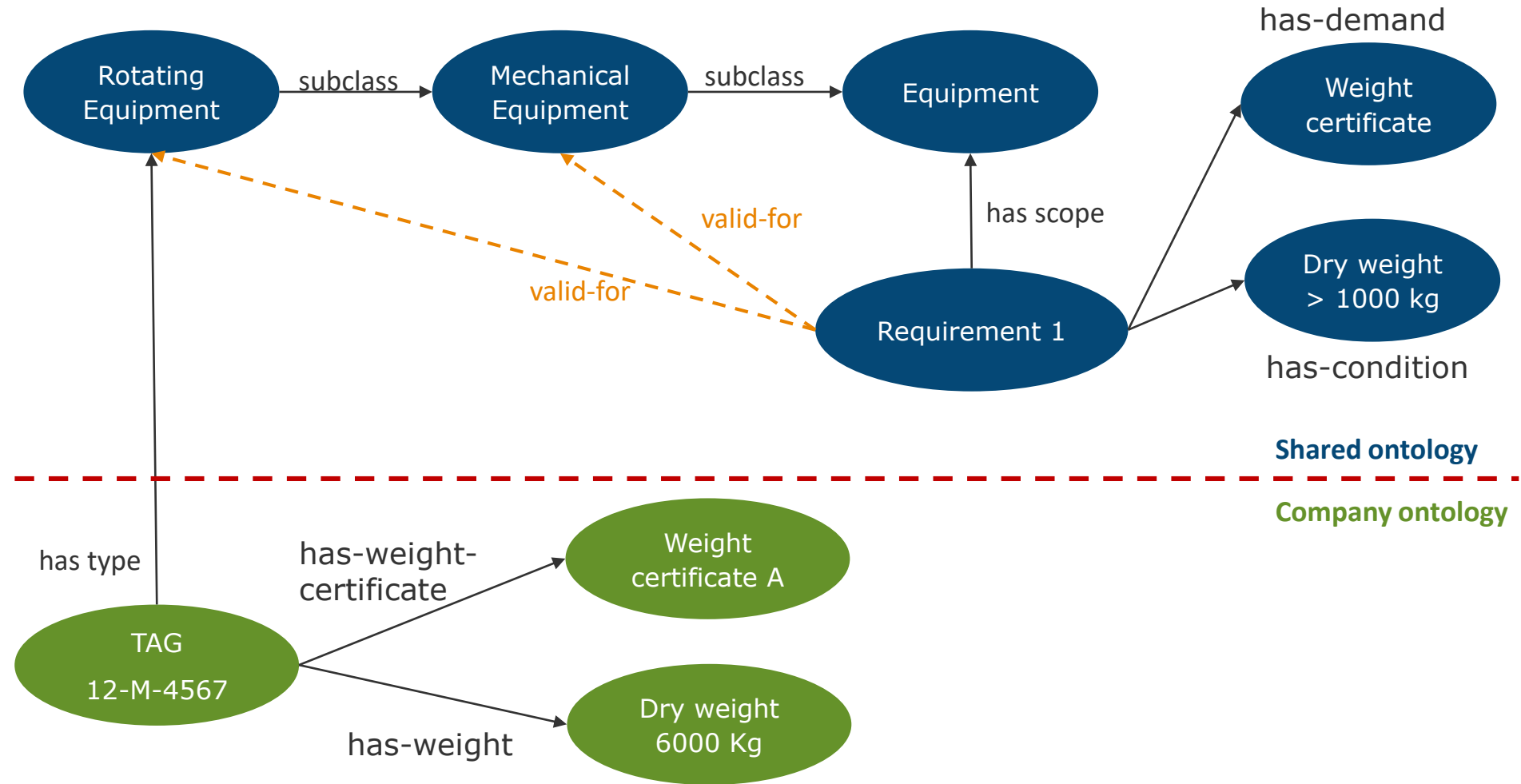
New 15926 – part 14

# 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



Bringing the  
oil and gas  
industry together



Share practises and requirements  
for improved cost efficiency  
and safety



Reducing complexity and risk  
for errors in work processes and  
information exchange



Enabling the automation  
of critical business  
processes and design

## READI contact information

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