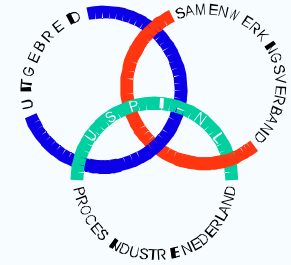


# INFORMATION MANAGEMENT FOR PROJECTS

- INTRODUCTION OF THE “CAPITAL FACILITIES HANDOVER SPECIFICATION” PROJECT (CFIHOS)
- WHAT IS IM FOR CAPITAL PROJECTS?
- WHY BOTHER WITH INFORMATION MANAGEMENT?
- COMPLEXITY OF HANDOVER
- SPECIFY INFORMATION REQUIREMENTS FOR PROJECT AND OPERATIONS
- SPECIFY IM IN CONTRACTUAL SCOPE OF WORK
- ENSURING CONSISTENCY BETWEEN PROJECTS

Jason Roberts, Shell  
Leo van Ruijven, Croon TBI Techniek



## Purpose and deliverables

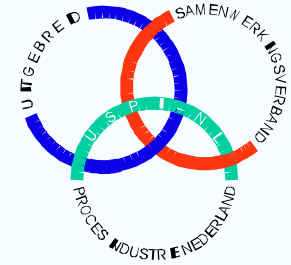
### Purpose:

Create a Hand Over (HO) Specification for operators, contractors and equipment manufacturers and suppliers to standardize the specification of information handover requirements for a project,

### Deliverables:

- 1) CFIHOS for “process industry”, Specification document
- 2) CFIHOS Tool for the plant owner to create a hand over specification working with the company RDL referring to international standards

In 2012 de-facto industry standard, in 2013 ISO standard



## *Initial Project Team*

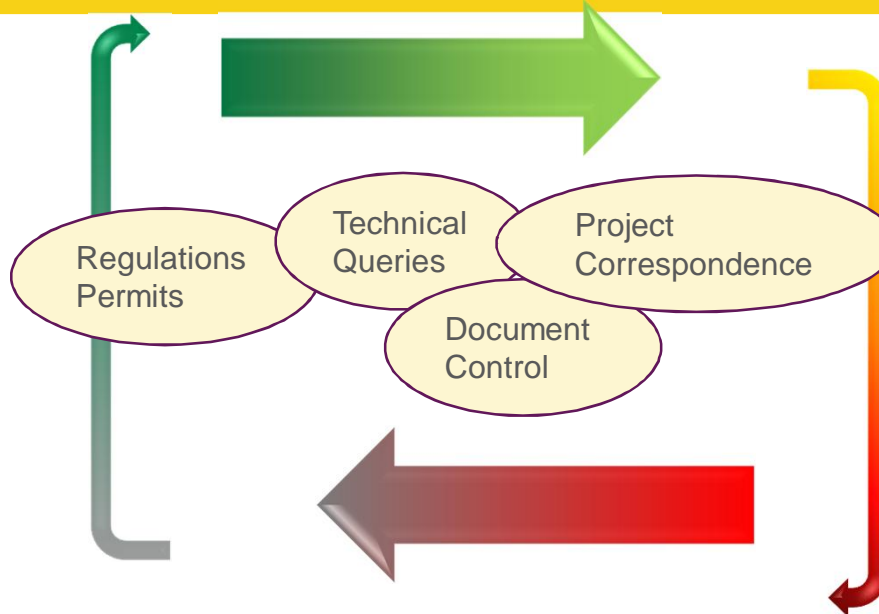
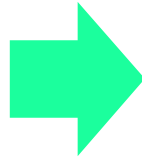
- Paul van Exel, USPI-NL (project leader)
- Hiroshi Okada, JGC
- Jason Roberts, Shell Projects and Technology
- Hindrik Koning, DSM
- Piet van Merendonk, MatchIT
- Masaaki Kamei, Toshiba
- Yoshiaki Sonoda, Mitsubishi Heavy Industries

## *Options to join the project*

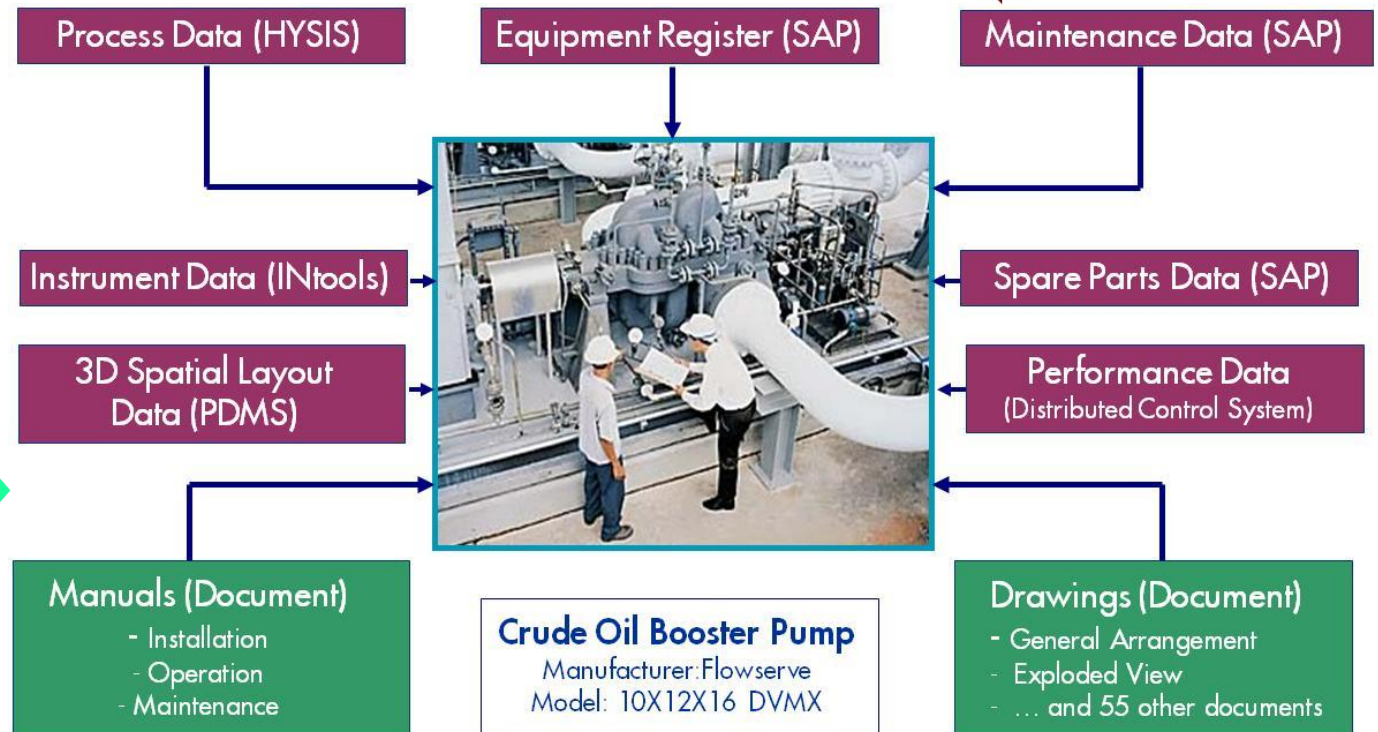
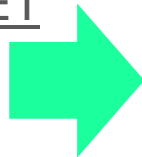
- Sponsor Company (€5000 )
- Reviewer Company (€1000)
  
- Invitation letter and TOR are under distribution

# 1. WHAT IS IM FOR CAPITAL PROJECTS?

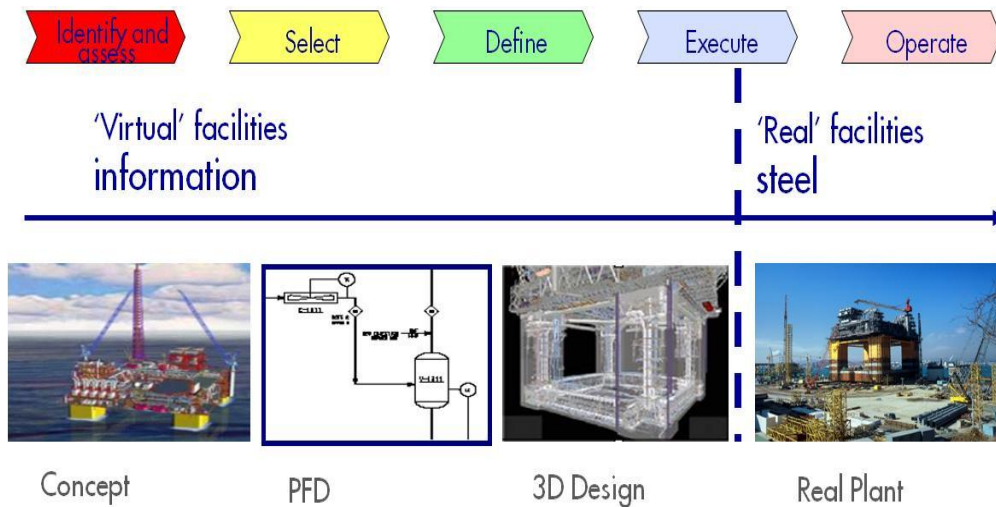
CONTROL PROJECT INFORMATION WORKFLOWS



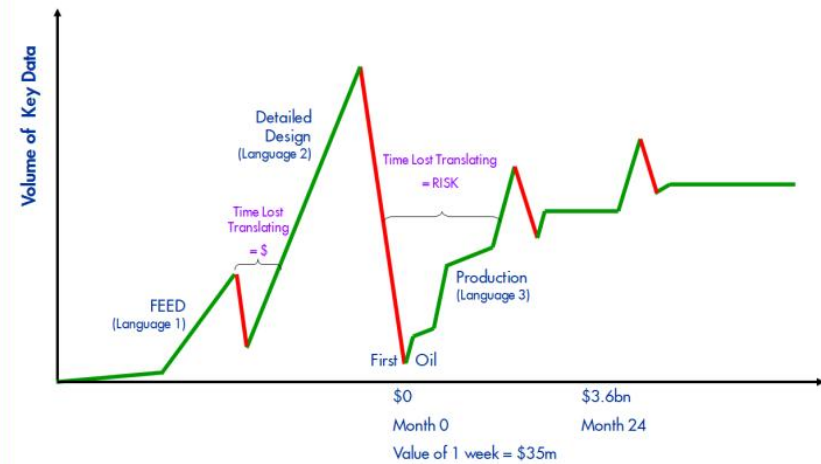
SPECIFY, CONTROL & DELIVER ASSET INFORMATION



# WHY BOTHER WITH INFORMATION MANAGEMENT?



- The greatest impact is the cost of **Time**



## ASSET INTEGRITY

SIEP definition:

**“An asset has technical integrity when it conforms to design intent and, under specified operating conditions, the risk of failure endangering safety of personnel, environment or asset value, is as low as reasonably practical during its full lifecycle.”**

EXAMPLE

VALVE NEEDING REPAIR



+

EQUIPMENT NOT REGISTERED IN MAINTENANCE MODULE



LACK OF INTEGRITY

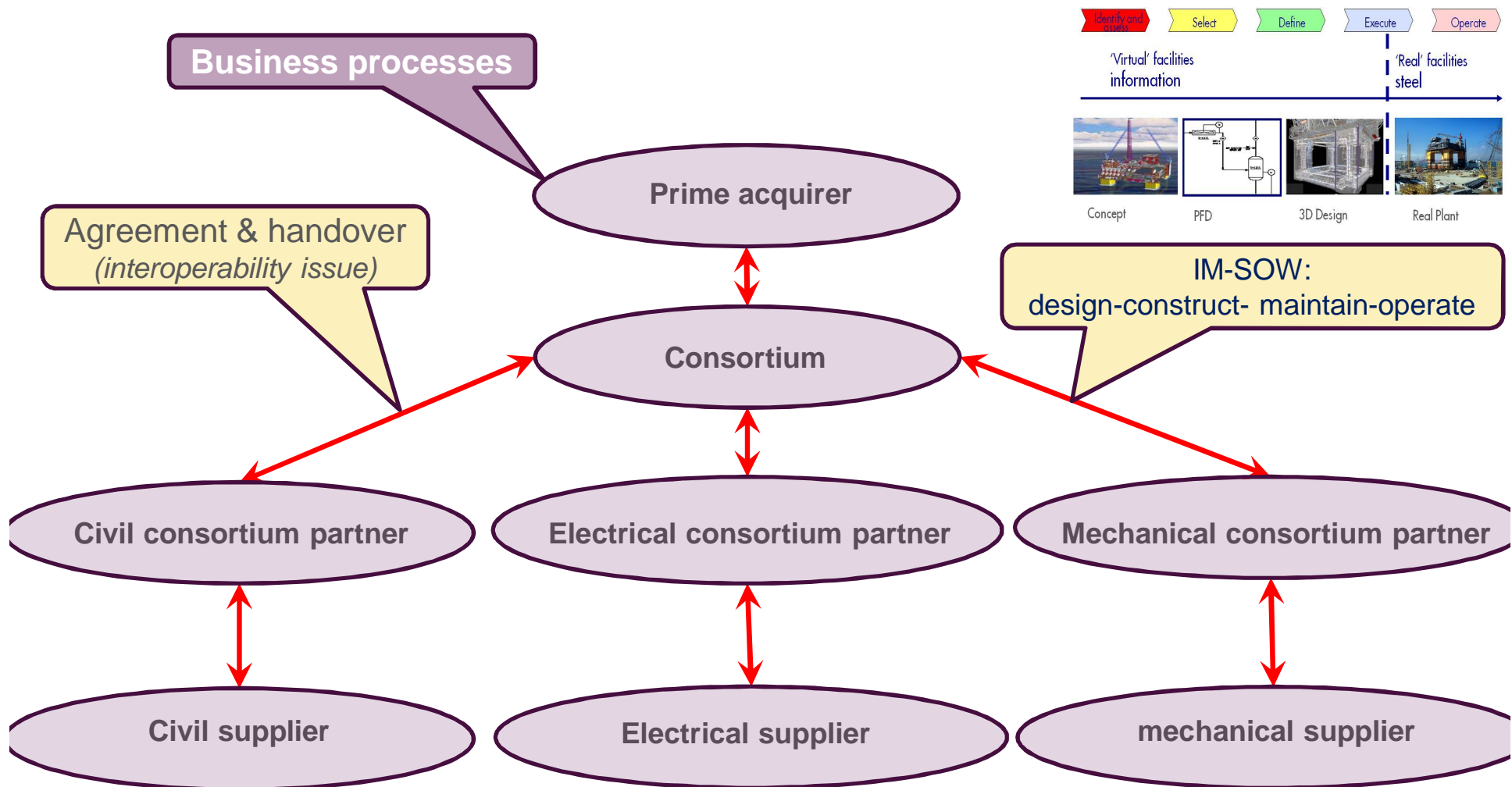


**COST RECOVERY**



# Complexity of handover

- A capital project is a “one off”, realized by a consortium formed for the occasion;
- Consortium partners are on different maturity levels (CMMI);
- Involved partners show a lack of enterprise interoperability (internal and external);
- Lack of understanding how to achieve integrated system life cycle information;





# SPECIFYING INFORMATION REQUIREMENTS FOR PROJECT AND OPERATIONS

## Information Management Specification:

What Information do we need the CONTRACTOR to provide?

How should the CONTRACTOR manage and deliver information?

### Project Requirements

**Vendor Document and Data Requirements**

**Engineering Design Tools**

**Completions and Commissioning**

**Permitting, Regulatory Compliance**

### Operational Requirements

**Example SAP Asset Hierarchy**

FuncLocation	Description	Valid from
NO.NYH	Nyhsana Plant	08.02.08
NO.NYH.003	Workshop/Laboratory (Tool & equipment), Lifting cranes, hoist etc.) xx	
NO.NYH.004	Reception facilities	
NO.NYH.005	Subsea prod, Flow, Service, Ubbil. & Contr	
NO.NYH.007	Separation and stabilisation	
NO.NYH.016	Gas dehydration and TEG regeneration	
NO.NYH.019	Gas hydrocarbon dewpointing	
NO.NYH.020	Gas export & metering, Pipeline pigging	
NO.NYH.021	Loop	
NO.NYH.023	Instruments for System 31	
NO.NYH.024	Pipes & Pipe mounted equipment	
NO.NYH.025	Structural Maintenance, System 31	
NO.NYH.027	Corrosion Monitoring Fieldbus Master	
NO.NYH.031	CONDENSATE OFF-LOADING PUMP	
NO.NYH.031-LOOPS	CONDENSATE OFF-LOADING PUMP	
NO.NYH.031-PIPING	CONDENSATE OFF-LOADING PUMP	
NO.NYH.031-STRUCTURES	CONDENSATE OFF-LOADING PUMP	
NO.NYH.IP-31-0001	CONDENSATE CAVERN WATER DRAW PUMPS	
NO.NYH.PA-31-0001A		
NO.NYH.PA-31-0001B		
NO.NYH.PA-31-0001C		
NO.NYH.PA-31-0002A		

**Future Design Changes**

# SPECIFYING IM IN CONTRACTUAL SCOPE OF WORK

## Tender Evaluation Plan

- Include IM Questions and Evaluation Criteria

## Remuneration

- Define IM Milestones and related information requirements for contract milestones identified.

## Scope of Work

- Define scope of work related to IM in terms of
  - What information to exchange
  - How to exchange information
  - Final Handover requirements

## Administration Instructions

- Specify interface management between Company and Contractor
  - Correspondence
  - Technical Queries

## Technical Information

- Provide configuration management on procedures and specs required for the Execute phase, e.g.: Numbering procedures (documents, Items) and specifications for Engineering Tools

## Tender Evaluation

- Support Contract Manager and Engineer to evaluate Tenderer IM capabilities and potential impacts on project execution.



# ENSURING CONSISTENCY BETWEEN PROJECTS 1

- Standard Processes and Tools requires projects to adopt **Standard Information Specifications**.
- A solution is a Reference Data Library (RDL) together with an application which holds the objects, relations, properties and reference data values.

Context: Shell\_RDL Menu function...

Clear Refresh Make Root

- [-] Tag
  - [-] Has Property Group
    - [-] Tag Header
      - [-] Has Properties (9)
        - [-] ACTION
        - [-] PRODUCTION\_CRITICAL\_ITEM
        - [-] REQUISITION\_CODE
        - [-] SAFETY\_CRITICAL\_ITEM
        - [-] SAFETY\_CRITICAL\_ITEM\_GROUP
        - [-] SAFETY\_CRITICAL\_ITEM\_REASON\_AWARDED
        - [-] TAG\_DESCRIPTION
        - [-] TAG\_NAME
        - [-] TAG\_STATUS
      - [-] Is for the EIS Object
      - [-] Is part of Project Contract Information Specification From Third-party to Company (6)
      - [-] Is part of Subject Area
      - [-] Is the "end1" Object of the EIS Relation (10)
        - [-] area tags
        - [-] commissioning sytem tags
        - [-] maintenance sytem tags
        - [-] plant tags
        - [-] process unit tags
        - [-] tag classification
        - [-] tag designed by company
        - [-] tag parentage
        - [-] tag physical connection
        - [-] tag purchase order
      - [-] Is the "end2" Object of the EIS Relation (8)
      - [-] Is part of IProject Contract Information Specification From Company to Third-party (4)

- [-] Tag\_Class
- [-] Tag\_Property\_Value
- [-] Task\_List\_Header
- [-] Task\_List\_Header\_Classification
- [-] Task\_List\_Header\_Reason
- [-] Task\_List\_Operation
- [-] Task\_List\_Operation\_Component
- [-] Task\_List\_Operation\_Control\_Key
- [-] Task\_List\_Operation\_Impact\_Code
- [-] Task\_List\_Operation\_PRTS
- [-] Task\_List\_Operation\_Package
- [-] Task\_List\_Operation\_Standard\_Text
- [-] Task\_List\_Operation\_System\_Condition
- [-] Task\_List\_Standard\_Text

## Welcome to the Shell RDL

- To learn more about the DEP EIS objects click [here](#).
- To display the examples of Contract Information Specification click [here](#).
- To display the Templates of Project Contract IM Scope of Work and Information Specification click [here](#).
- To Download the latest EP reference data, click on the picture below:

The diagram illustrates the data model. On the left, 'Tag' and 'Equipment' are linked to 'Tag\_Property\_Value' and 'Equipment\_Property\_Value' respectively. Both 'Tag\_Class' and 'Equipment\_Class' are linked to 'Property' via 'Tag\_Class Properties' and 'Equipment\_Class Properties'. On the right, a hierarchy shows 'Discipline' leading to 'Document\_Type', which leads to 'Document'. A red arrow points from the text 'Reference Data' to the 'Document' box.

**Objects** (points to Tag)

**Properties** (bracketed next to Has Properties)

**Relationships** (bracketed next to Is the "end1" Object)

**Specification Templates** (points to the list of links)

**Reference Data** (points to Document)

# ENSURING CONSISTENCY BETWEEN PROJECTS 2

Context: Test\_IM\_Scope\_Of\_Work

Clear Refresh Make Root

- ⊕ Search for Document Name='EPP-2011%' Desc=""
- ⊕ Search for Document Name='EPP-2011%' Desc=""
- ⊖ Search for EISIMScopeOfWork Name="" Desc=""
  - ⊕ Appendix-A of EIS Rev 3
  - ⊕ Appendix-H of EIS Rev 2
  - ⊕ Example-Project Contract Information Specification Package supplier
  - ⊕ Example-Project Contract Information Specification Single equipment supplier
  - ⊖ **Example-Project Contract Information Specification for EPC**
    - ⊕ Is delivered From Company to Third-Party
    - ⊖ Is delivered From Third-Party To Company
    - ⊖ To Project X
      - ⊖ Has Objects (23)
        - ⊕ 2D\_Intelligent\_Drawing\_Data
        - ⊕ 3D\_Model\_Data
        - ⊕ Area
        - ⊕ Company
        - ⊕ CTR
        - ⊕ Document
        - ⊕ Document\_Master
        - ⊕ Electrical\_Data
        - ⊕ Equipment
        - ⊕ Equipment\_Property\_Value
        - ⊕ Inspection\_Data
        - ⊕ Instrumentation\_Data
        - ⊕ Maintenance\_Data
        - ⊕ Model\_Part
        - ⊕ Model\_Part\_Property\_Value
        - ⊕ PO\_VDDR
        - ⊕ Purchase\_Order
        - ⊕ Risk\_Reliability\_Maintenance\_Data
        - ⊕ Set\_Of\_Files
        - ⊕ Spare\_Part\_Data
        - ⊕ Tag
        - ⊕ Tag\_Property\_Value
        - ⊕ Vendor\_Document\_Schedule
      - ⊕ Has Properties (75)
      - ⊕ Has Relations (38)
      - ⊕ Properties by Object
    - ⊕ Report Definition
    - ⊕ Microsoft Word template
    - ⊕ Microsoft Word template transformation sheet
  - ⊕ Example-Project Contract Information Specification for FEED

1. Create an area for a specific Project

2. Checking existing templates most relevant for your project scope.

3. Review the objects, relationships and properties in the templates

Actions available for the Project Contract Information Specification "Example-Project"

- Display Information Specification
- Update Information Specification
- Create Project Contract Information Specification from Company to Third-party
- Create Project Contract Information Specification from Third-party to Company
- Generate Project Contract Information Specification appendix
- Clone this Project Contract Information Specification
- Create Relation 'Has Project Contract Information Specification'
- Create Relation 'Is part of Work Package.'

4. After selecting the best fitting template for your needs, clone it.

# ENSURING CONSISTENCY BETWEEN PROJECTS 3

Context: Test\_IM\_Scope\_Of\_Work

Clear Refresh Make Root

- ⊞ Search for Document Name='EPP-2011%' Desc=""
- ⊞ Search for Document Name='EPP-2011%' Desc=""
- ⊞ Search for EISIMScopeOfWork Name="" Desc=""
  - ⊞ Appendix-A of EIS Rev 3
  - ⊞ Appendix-H of EIS Rev 2
  - ⊞ Example-Project Contract Information Specification Package supplier
  - ⊞ Example-Project Contract Information Specification Single equipment supplier
  - ⊞ Example-Project Contract Information Specification for EPC
    - ⊞ *Is delivered From Company to Third-Party*
    - ⊞ *Is delivered From Third-Party To Company*
      - ⊞ To Project X
        - ⊞ *Has Objects (23)*
          - ⊞ 2D\_Intelligent\_Drawing\_Data
          - ⊞ 3D\_Model\_Data
          - ⊞ Area
          - ⊞ Company
          - ⊞ CTR
          - ⊞ Document
          - ⊞ Document\_Master
          - ⊞ Electrical\_Data
          - ⊞ Equipment
          - ⊞ Equipment\_Property\_Value
          - ⊞ Inspection\_Data
          - ⊞ Instrumentation\_Data
          - ⊞ Maintenance\_Data
          - ⊞ Model\_Part
          - ⊞ Model\_Part\_Property\_Value
          - ⊞ PO\_VDDR
          - ⊞ Purchase\_Order
          - ⊞ Risk\_Reliability\_Maintenance\_Data
          - ⊞ Set\_Of\_Files
          - ⊞ Spare\_Part\_Data
          - ⊞ Tag
          - ⊞ Tag\_Property\_Value
          - ⊞ Vendor\_Document\_Schedule
        - ⊞ *Has Properties (75)*
        - ⊞ *Has Relations (38)*
        - ⊞ *Properties by Object*
      - ⊞ *Report Definition*
      - ⊞ *Microsoft Word template*
      - ⊞ *Microsoft Word template transformation sheet*
- ⊞ Example-Project Contract Information Specification for FEED

From the Project Contract Information Specification from Third-party to Company "To Project

Add	Del	EIS Object
<input type="checkbox"/>	<input type="checkbox"/>	2D_Intelligent_Drawing_Data
<input type="checkbox"/>	<input type="checkbox"/>	3D_Model_Data
<input type="checkbox"/>	<input type="checkbox"/>	Area
<input type="checkbox"/>	<input type="checkbox"/>	CTR
<input type="checkbox"/>	<input type="checkbox"/>	Commissioning_System
<input type="checkbox"/>	<input type="checkbox"/>	Commissioning_Unit
<input type="checkbox"/>	<input type="checkbox"/>	Company
<input type="checkbox"/>	<input type="checkbox"/>	Corrosion_Key_Point
<input type="checkbox"/>	<input type="checkbox"/>	Corrosion_Key_Point_Type
<input type="checkbox"/>	<input type="checkbox"/>	Corrosion_Loop
<input type="checkbox"/>	<input type="checkbox"/>	Corrosion_Loop_Type
<input type="checkbox"/>	<input type="checkbox"/>	Corrosion_Position
<input type="checkbox"/>	<input type="checkbox"/>	Corrosion_Position_Type
<input type="checkbox"/>	<input type="checkbox"/>	Discipline
<input type="checkbox"/>	<input type="checkbox"/>	Document
<input type="checkbox"/>	<input type="checkbox"/>	Document_In_Transmittal
<input type="checkbox"/>	<input type="checkbox"/>	Document_Master
<input type="checkbox"/>	<input type="checkbox"/>	Document_Templates
<input type="checkbox"/>	<input type="checkbox"/>	Document_Type
<input type="checkbox"/>	<input type="checkbox"/>	Document_Type_Group
<input type="checkbox"/>	<input type="checkbox"/>	Electrical_Data
<input type="checkbox"/>	<input type="checkbox"/>	Equipment
<input type="checkbox"/>	<input type="checkbox"/>	Equipment_Class
<input type="checkbox"/>	<input type="checkbox"/>	Equipment_Property_Value
<input type="checkbox"/>	<input type="checkbox"/>	GRM_Record_Serie
<input type="checkbox"/>	<input type="checkbox"/>	Inspection_Data
<input type="checkbox"/>	<input type="checkbox"/>	Instrumentation_Data
<input type="checkbox"/>	<input type="checkbox"/>	Maintenance_Activity_Type
<input type="checkbox"/>	<input type="checkbox"/>	Maintenance_Data
<input type="checkbox"/>	<input type="checkbox"/>	Maintenance_Item

5. For Cloned Specification make modifications by choosing from valid existing objects/relationships/properties.

Delete redundant objects/relationships/properties as required.



# ENSURING CONSISTENCY BETWEEN PROJECTS 4

Context: Test\_IM\_Scope\_Of\_Work

Clear Refresh Make Root

- ⊕ Search for Document Name='EPP-2011%' Desc=""
- ⊕ Search for Document Name='EPP-2011%' Desc=""
- ⊖ Search for EISIMScopeOfWork Name="" Desc=""
  - ⊕ Appendix-A of EIS Rev 3
  - ⊕ Appendix-H of EIS Rev 2
  - ⊕ Example-Project Contract Information Specification Package supplier
  - ⊕ Example-Project Contract Information Specification Single equipment supplier
  - ⊖ Example-Project Contract Information Specification for EPC
    - ⊕ *Is delivered From Company to Third-Party*
    - ⊕ *Is delivered From Third-Party To Company*
    - ⊖ *Report Definition*
      - ⊖ IMSPEC-EPC-123-YYYY, Report Definition of Example-Project Contract Information Specificati
        - ⊕ *Has for Columns (1)*
        - ⊖ *Reports (7)*
          - ⊕ 014, 16 apr 2008 17:19:58 Report of IM SOW example - Low data requirement.
          - ⊕ 015, 19 may 2008 13:57:04 Report of IM SOW example - Low data requirement.
          - ⊕ 023, 10 jun 2008 14:33:56 Report of IM SOW example - Low data requirement.
          - ⊕ 034, 24 sep 2008 08:49:54 Report of Example-EPC type projects-Low data requirement (unk
          - ⊕ 035, 12 feb 2009 16:44:05 Report of Example-EPC type projects-Low data requirement (und
          - ⊕ 036, 07 oct 2011 10:28:04 Report of Example-EPC type projects-Low data requirement (und
          - ⊕ 037, 14 oct 2011 14:29:22 Report of Example-EPC type projects-Low data requirement (und
        - ⊕ *Parameters*
          - ⊕ *Microsoft Word template*
          - ⊕ *Microsoft Word template transformation sheet*
- ⊕ Example-Project Contract Information Specification for FEED

## Actions available for the Report "037":

- *Display Report*
- *Update Report*
- *Download Report (In CSV)*
- *Download Report (Custom)*
- *Compare with another report*

7. Generate output as a CSV file.

8. Generate output using a template file to create a Word document.

6. After customising your Specification, store results.

Questions ?