Independent Project Analysis

# IPA-MIMOSA OIIE Capital Projects Working Group Meeting #5 – 4/19/2021

Deborah J. McNeil (Independent Project Analysis, Inc.)
Alan Johnston (MIMOSA)
Dr. Matt Selway (University of South Australia)
Dr. Karamjit Kaur (University of South Australia)
Von Gusa (GUSA Consulting Services)

# OIIE Capital Project Working Group: 04-19-2021 Meeting Agenda

- Share the OIIE Capital Project Working Group Purpose
- Brief Overview of where we've been - Review Meeting #1 - #4 Results
- Sub-team updates:
  - Cost Estimating
  - RFI/ RFI Response
  - Asset Installation
- Discussion of Interoperability – What is it? What are the technical components?
- Better Understand the Deliverables – Q/A Session
- Define OIIE Capital Project WG Next Steps

# OIIE Capital Project Working Group Leaders

## IPA

### Deborah J. McNeil

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### Luke Wallace

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## MIMOSA

### Alan Johnston

President, MIMOSA
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### Dr. Matt Selway

Research Fellow,
University of South Australia
Matt.Selway@unisa.edu.au

# Open Industrial Interoperability Ecosystem (OIIE) Capital Project Working Group Purpose

This working group will meet monthly to help align the efforts of owner companies; engineering, procurement, and construction (EPC) firms; industry standardization organizations (e.g., IOGP/CIFHOS, ISA, MIMOSA) and international standards organizations (ISO, IEC, etc.).

All participants will work together to set the owner/EPC firm priorities for interoperability solution delivery to enable pragmatic industry digital transformation on a timely basis.

# Activities To Date

~57 Owner Companies
Across Multiple Industries

Begin Monthly Meetings

## Kick-off 11-4-20

| Participation | # |
|---|---|
| Invited | 380 |
| Registered | 218 |
| Attended | 103 |

- Charter Review
- Challenge Description
- Methodology Overview
- Initial Opportunity Identification

## Meeting #2 12-17-20

| Participation | # |
|---|---|
| Invited | 380 |
| Registered | 79 |
| Attended | 34 |

- Detailed Methodology Presentation
- Detailed Brainstorming Breakouts
- *180 Opportunities ID'd*

## Meeting #3 2-22-21

| Participation | # |
|---|---|
| Invited | 380 |
| Registered | 188 |
| Attended | 111 |

- Detailed Methodology Presentation
- *Began work on Top 3 Opportunities* (Breakouts)

## Sub-Team Meetings 3/9/21

| Participation | # |
|---|---|
| Invited | 290 |
| Registered | 111 |
| Attended | 40 |

- *Continued work on Top 3 Opportunities in Sub-teams*

## Meeting #4 3-16-21

| Participation | # |
|---|---|
| Invited | 290 |
| Registered | 152 |
| Attended | 39 |

- *Dug Deeper on Business Use Case Deliverables*

# Sub-Team Updates as of 4/20/21

## Business Use Cases

Subteams 1/2 – Cost Estimating – Working on representation of the common work process. Defining a Smaller "tiger team" to develop a strawman work process. Then align the Use Cases – Identify who is working the cost estimating / project controls area of your company - Need to align on data definitions, work process and typical Code of Accounts first… NEED A LIFE CYCLE FRAMEWORK OF THE COST ESTIMATE "DELIVERABLE" TO CONNECT USE CASES

# Sub-Team Updates as of 4/20/21

See detailed sub-team work in Appendix

## Business Use Cases

## Subteam 3 – RFI/RFI Response- Capital Supply Chain

## Active subteam – meeting recordings and work products are in MIMOSA TEAMS environment

### Major themes identified from User Story Statements

- Supplier management
  - Shortlist certified supplier
  - Shortlist suppliers that meet quality requirements
  - Unified view to see and manage all previous and current contracts
- Project Control Manager
  - Identify equipment with long lead times - should be pre-ordered as soon as design is completed
  - Monitor and control delivery schedule – no delays
- Order Change Management
  - PMS is up to date w.r.t. any design or qty changes and communicated to interested parties (such as OEMs)
  - Any change in requirements is registered and reflected in all the relevant systems

# Sub-Team Updates as of 4/20/21

## Business Use Cases

Subteam 4- Asset Installation – Capital

Meeting and Developing Business Use Cases – materials on TEAMS Site

New – Subteam 5 -- Prioritization and Value Case Definition – enablers
Goal- to stay focused on right priorities- economy of scale areas -

# Check-

Access to MIMOSA TEAMS work area –

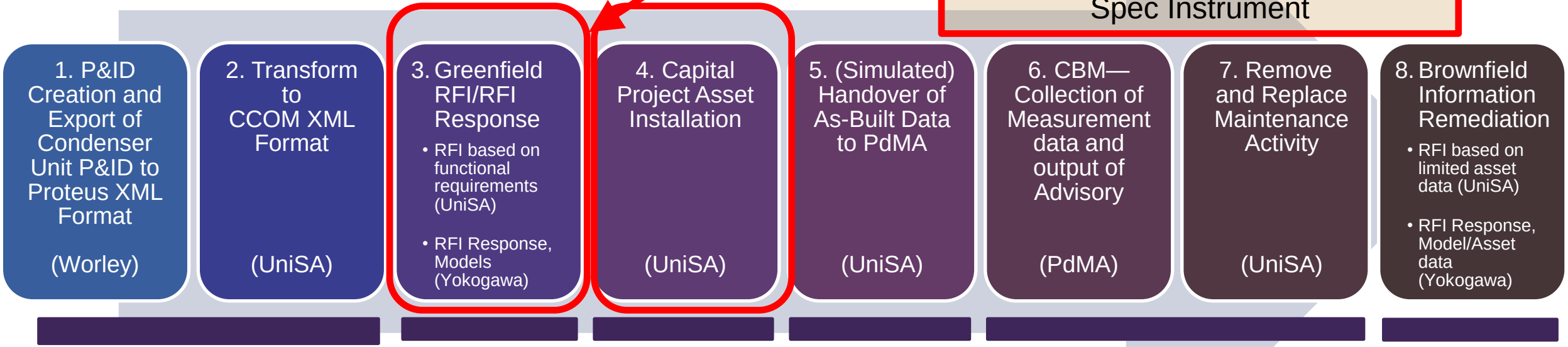
Anyone needing an invitation contact Matt Selway:

Matt.Selway@unisa.edu.au

# OIIE OGI Pilot Phase 3.3 - Starts Adding AWP (IWP) and CFIHOS

Updating 2 existing OIIE Use Cases and inserts a new OIIE Use Case focused on Purchasing, then follow the existing OIIE Use Cases shown here. **Relevant IOGP JIP33 Specifications and CFIHOS RDL are being added along with AWP requirements for IWPs.**

**Insert New OIIE Use Case**
1. Purchasing
IEEE Std 841/**IOGP-JIP33 S-733D**
Low Voltage Electric Motor and ISA Spec Instrument




OIIE Use Case 1 (As-Designed)

**OIIE Use Case 12**

OIIE Use Case 15

OIIE Use Case 1

OIIE Use Cases 14, 7, **5** (CBM Acquisition, Triggering, and Resulting Maintenance)

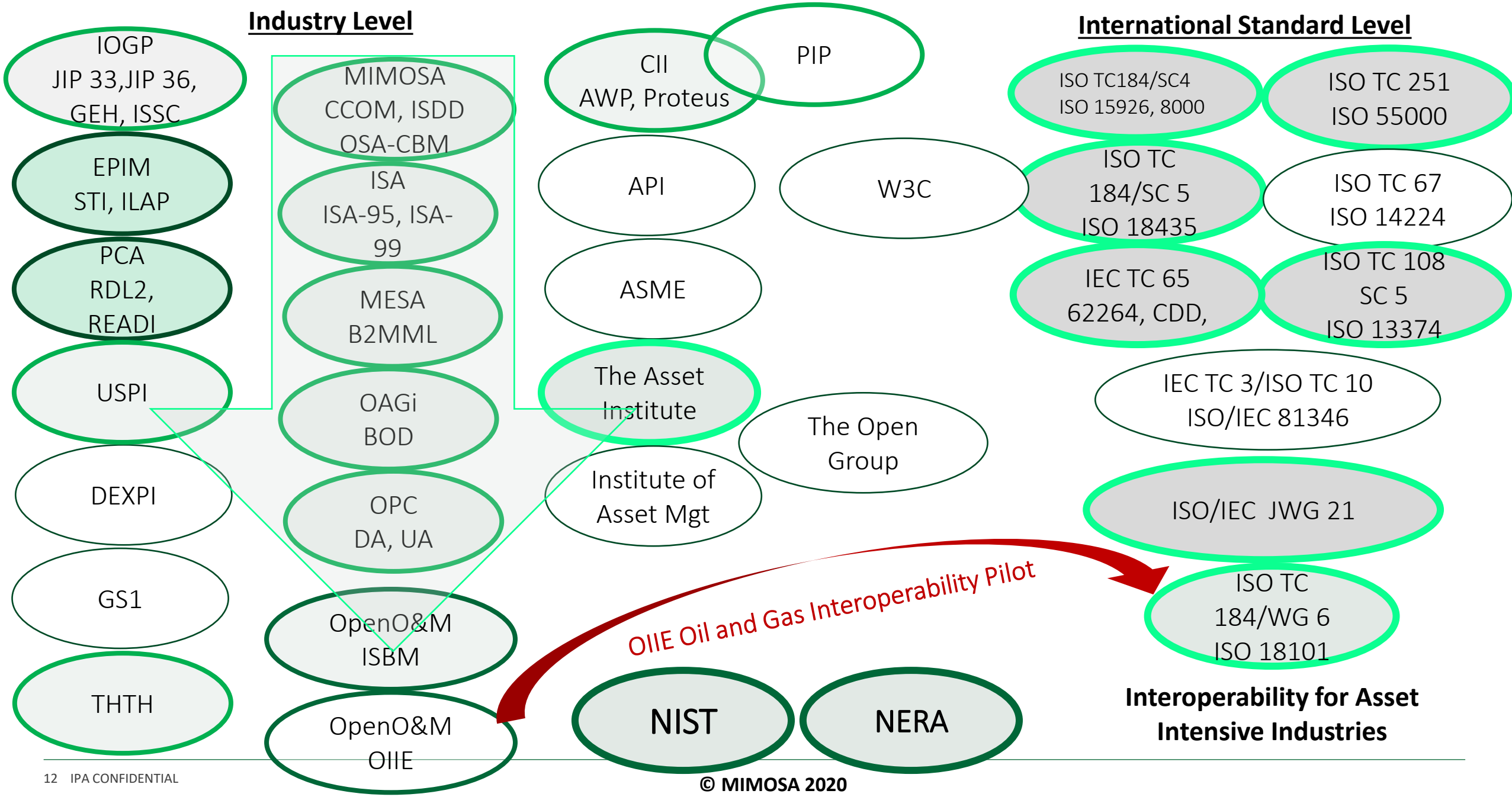
**OIIE Use Case 12**

CFIHOS Capital Facilities Information HandOver Specification

MIMOSA

The OpenO&M Initiative

# Interoperability for Physical Asset Management-Associations and Activities

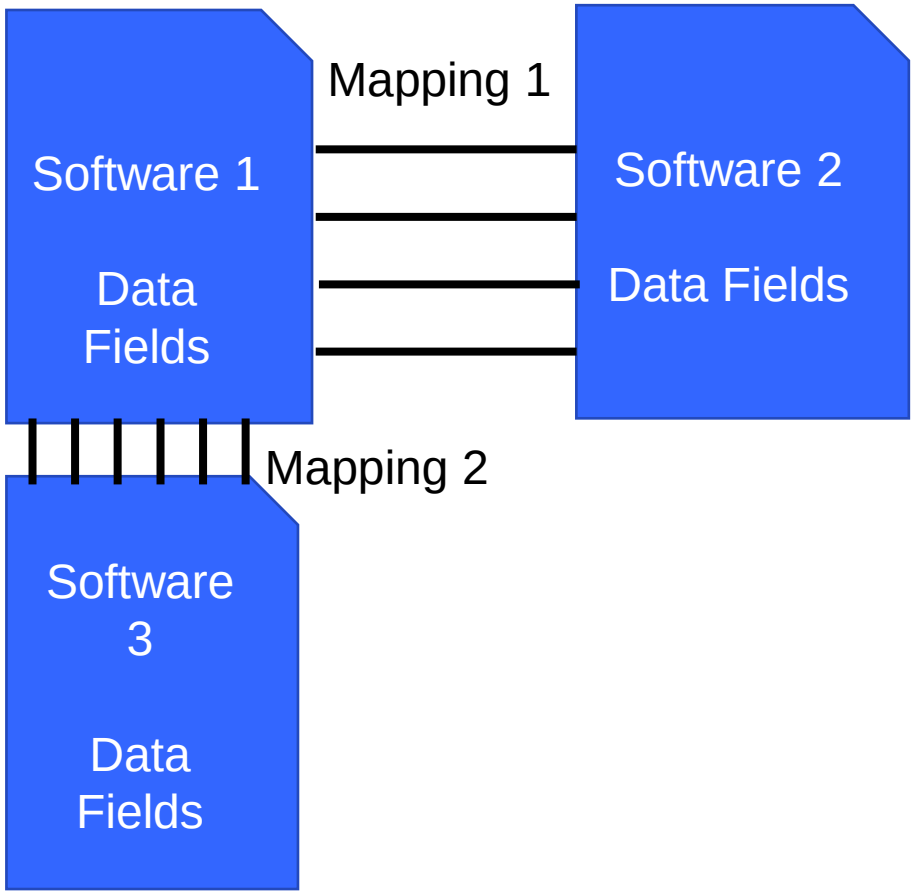


# OIIE Pilot Key Concepts

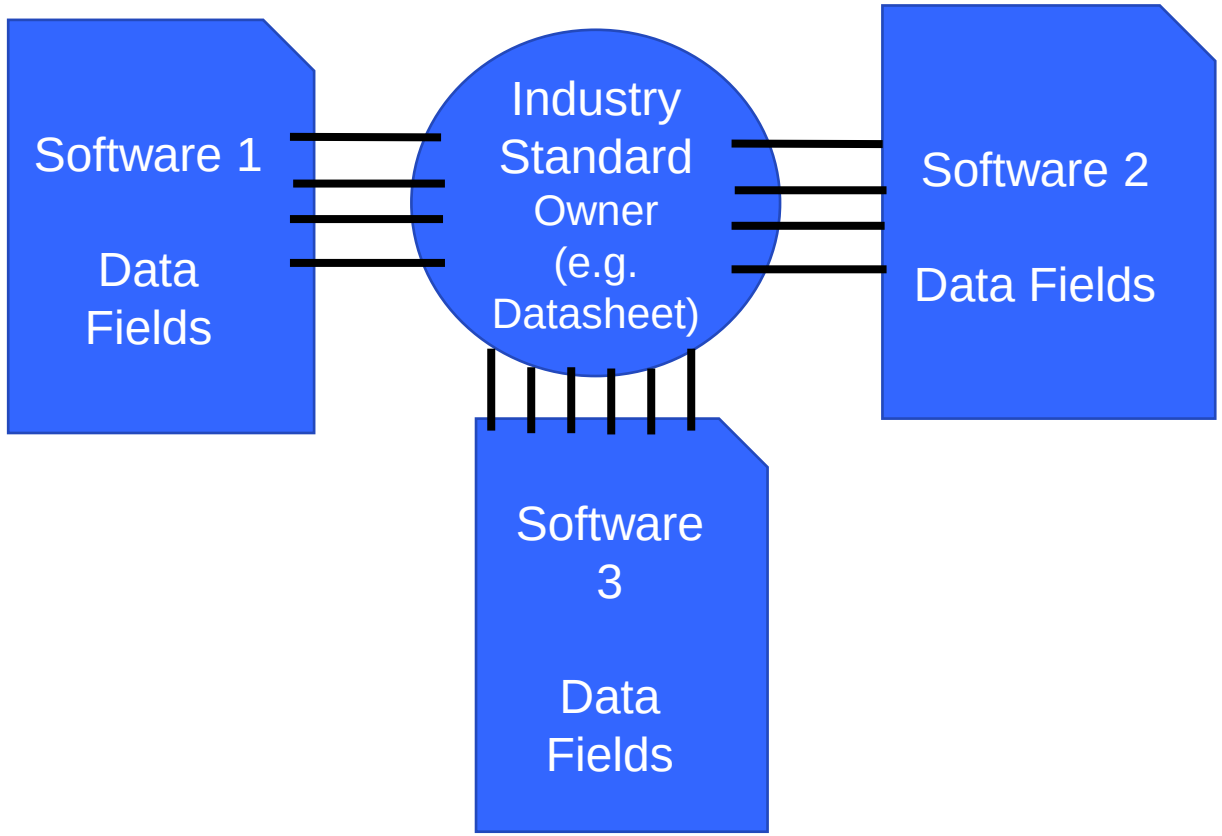
- Use Industry Standard Data Sheets (e.g. ISA, API, ASME, PIP, etc) as a starting “standard” data set for equipment data interoperability data flows
- Convert current Industry Standard Data Definition (ISDD’s) to machine readable format (Still owned by legacy standard owner)
- Develop vendor neutral API’s to extract, move, receive and insert equipment data between software applications

# Data Movement- ISDD Approach

Data Exchange




ISDD Approach




Each Software Developer owns the cost of upgrade remapping to the Standard

# Summary

We aim to:

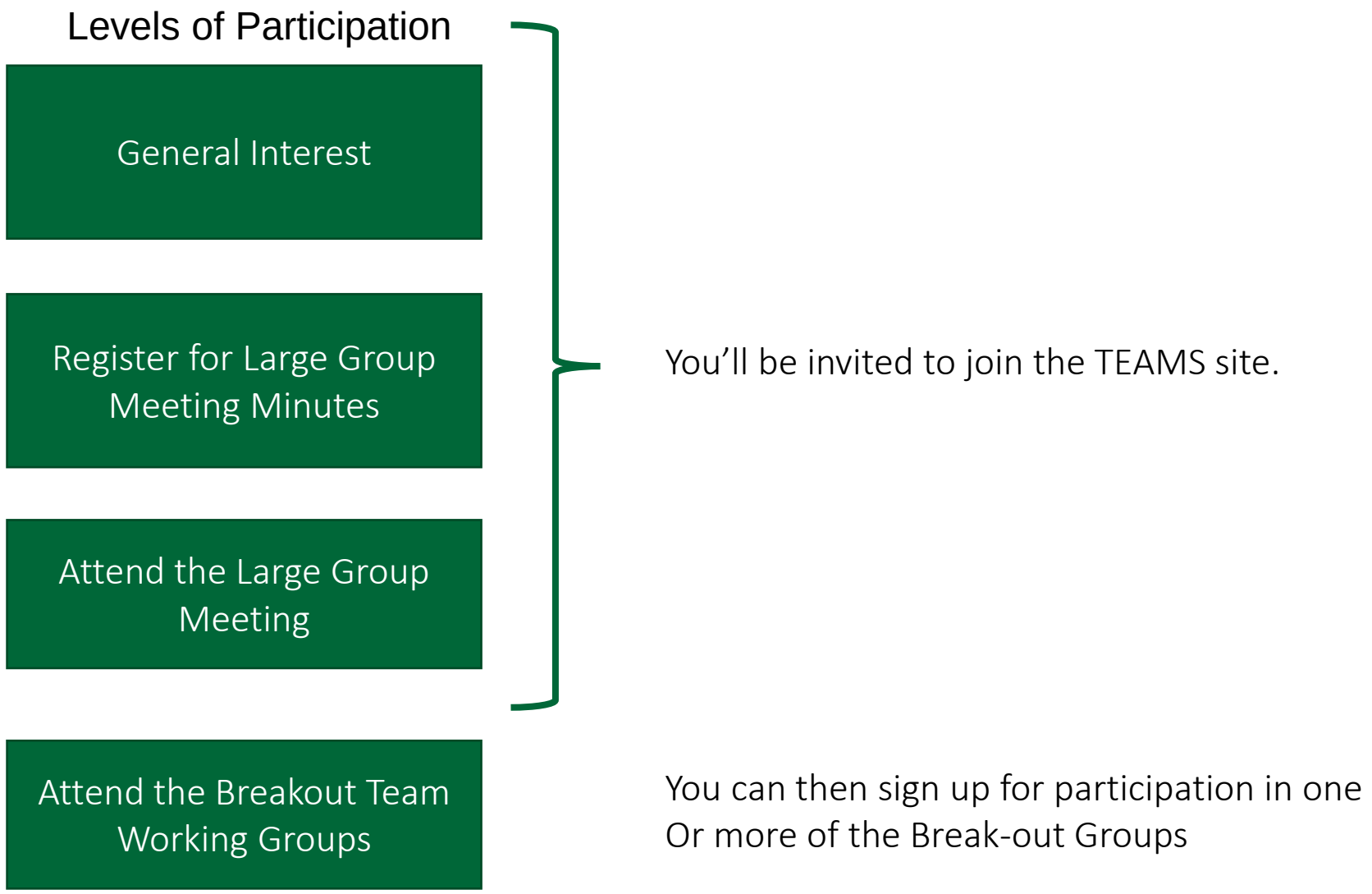
- Identify
- Prioritise
- Align
- Define
- Pilot / Validate
- Standardise / Publish

OIIE Use Cases for Capital Projects to realise industry digital transformation, improve efficiency, and deliver value.

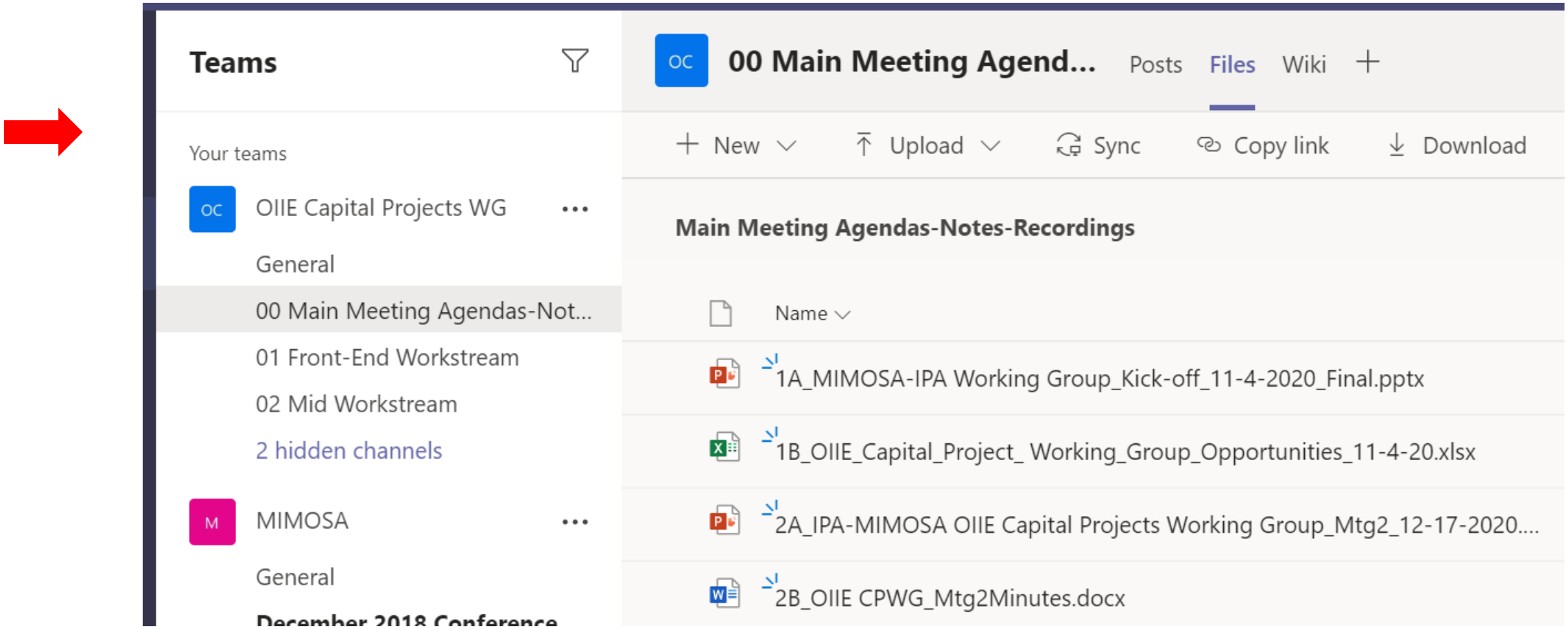
# Next Steps

Open Standards for
Physical Asset Management

# IPA – MIMOSA OIIE CPWG



# Join us on TEAMS and let's get to work…



# Meeting #4 … Using the TEAMs Chat Window…

I Wish I knew or Understood…

… more about the needs from my organization!!

… Estimate validation

I wish to understand better the final deliverables and how they tie with ISO 18101

Work shop to go over the use case methodolgy

Maybe topics or user stories or developments from each small team that apply or carry through the others. To stay aware of developments that affect each. Asset information is an example used in each phase.

appreciated seeing the user story, now have clearer picture of the end goal(s), would like to hear more on how engage an owner in a test case

# Gathering Input on 3 Use cases

## NEXT Sub-Team Meetings – May 11th 7-8 am EDST

| Break Out Group | Facilitator | Meeting Link |
|---|---|---|
| Front-End - Cost estimating group 1/ Group 2 | Von Gusa | Click here to join the meeting |
| Middle - RFI/ RFI Response (Greenfield project) | Karamjit Kaur | Click here to join the meeting |
| Back end - Capital Project Asset Installation | Matt Selway | Click here to join the meeting |

## Main Group May Meeting – May 18th 7 – 8 am EDST

# New Member Registration


SUMMARY

REQUEST INFO

Join us in helping to solve interoperability challenges and move the capital project industry's digitalization efforts forward.

The *IPA-MIMOSA Open Industrial Interoperability Ecosystem (OIIE) Capital Project Working Group* is focused on defining the high value

EVENT DETAILS

REGISTER NOW

ADD TO CALENDAR

https://www.ipaglobal.com/event/digitalization-ipa-mimosa-oiie-capital-project-working-group-meetings/

SM

# Next Steps:

1. Member willing to share your digitalization journey?

2. If not already a member, you will be invited to the MIMOSA TEAMS workspace to continue development of the Use Cases

3. Please participate in the sub-team meetings to generate the industry input to the Pilot Project and the Industry Standards work (each sub-team will set it's own meetings)

4. Contact Alan Johnston (atjohn@comcast.net) to get more info on MIMOSA membership and access to the solutions already in place for your company to use

5. The Main Team will meet once a month on the 3rd Tuesday from 7 to 8 am EDST to report on progress, share industry knowledge, set priorities and continue the knowledge sharing and dialog.
   Next Main Team Meeting: May 18th 7 to 8 am EDST – same meeting link
   If you need new meeting invitation – please email dmcneil@ipaglobal.com

6. Meeting Minutes are published in the MIMOSA TEAMS environment and will be published on the IPA Website in the next few weeks.

# Detailed Work of Sub-Team 3 – Purchasing of Equipment

# OIIE Use Case for Purchasing of Equipment

Karamjit Kaur
Industrial AI Research Centre
University of South Australia

# Major themes identified from User Story Statements

- Supplier management
  - Shortlist certified supplier
  - Shortlist suppliers that meet quality requirements
  - Unified view to see and manage all previous and current contracts
- Project Control Manager
  - Identify equipment with long lead times - should be pre-ordered as soon as design is completed
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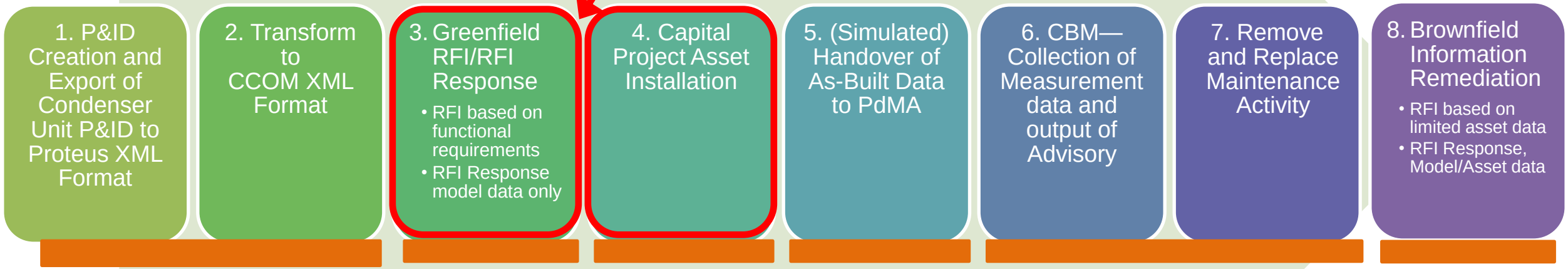
# OIIE OGI Pilot Phase 3.3

Insert New OIIE Use Cases
**1. Purchasing**
**IEEE Std 841/IOGP JIP33 S-733D Low Voltage Electric Motor Electric Motor and ISA Spec Instrument**




OIIE Use Case 1 (As-Designed)

**OIIE Use Case 12**

OIIE Use Case 15

OIIE Use Case 1

OIIE Use Cases 14, 7, **5** (CBM Acquisition, Triggering, and Resulting Maintenance)

**OIIE Use Case 12**

15 OIIE Use Cases have been identified spanning the Asset Lifecycle. Details are developed and validated in the OIIE OGI Pilot. We intend to submit the set above (likely including others) in forthcoming TRs, to be included in ISO 18101-3.

# OIIE Purchasing Use Case Scope

## In Scope(= before PO)

- ✓Process of Purchasing up to the point where Purchase Order (Digital version) is submitted and ACK is received containing estimated shipment date etc.
- ✓Identify fields(contents) to be sent as part of the RFI and RFQ and their responses
  - ✓Any documents (both machine interpretable and otherwise) to be sent as part of these RFI or RFQ and their responses
- ✓Include the data exchanged as part of RFI/RFQ process as part of Purchase Order

## Out of Scope (separate OIIE Use Cases)

- × Supplier Management
  - × Managing list of preferred suppliers etc.
- × Make/model matchup process
- × Logistics aspect of Purchasing
- × Cost estimation(Pricing) aspect of Purchasing
  - × RFP/RFP response
- × Evaluation and Selection of quote
  - × After receiving RFQ Responses
- × Payment processing
- × Change(s) in Purchase Order

# OIIE Purchasing Use Case Conditions

**Pre conditions**

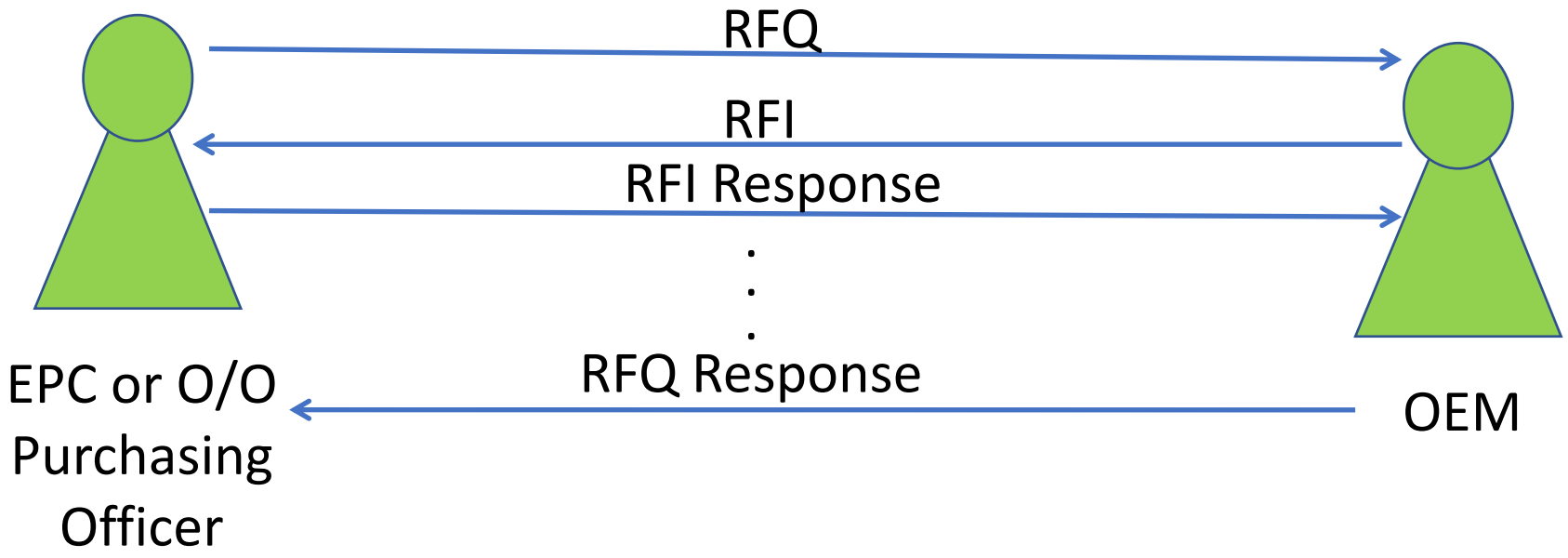
- Completion of OIIE Use Case 12 *(RFI and RFI Response for Models Meeting Functional Requirements)*

**Successful End Condition**

- The EPC or Owner/Operator issues purchase order to manufacturers to procure identified assets.
- Receiving of Acknowledgement

# OIIE Purchasing Use Case Scenarios

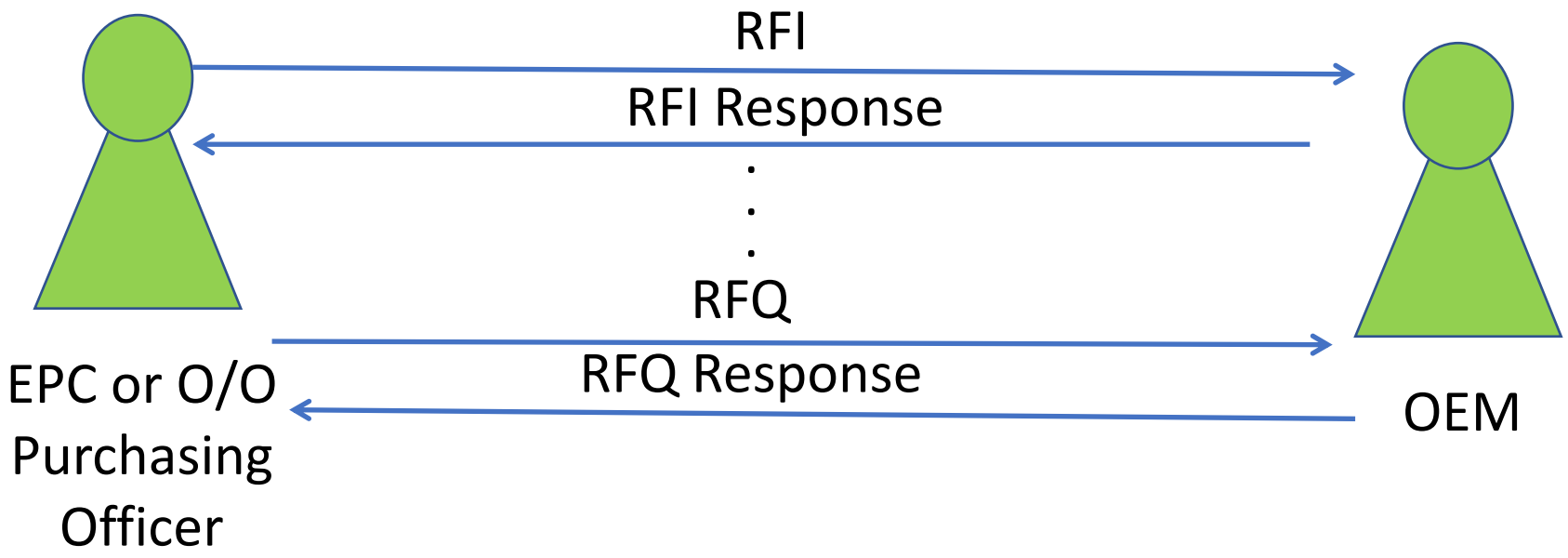
Scenario 1 - EPC or O/O know equipment models already




- NOTE: The information exchanged in RFIs and RFQs above will become part of Purchase Order

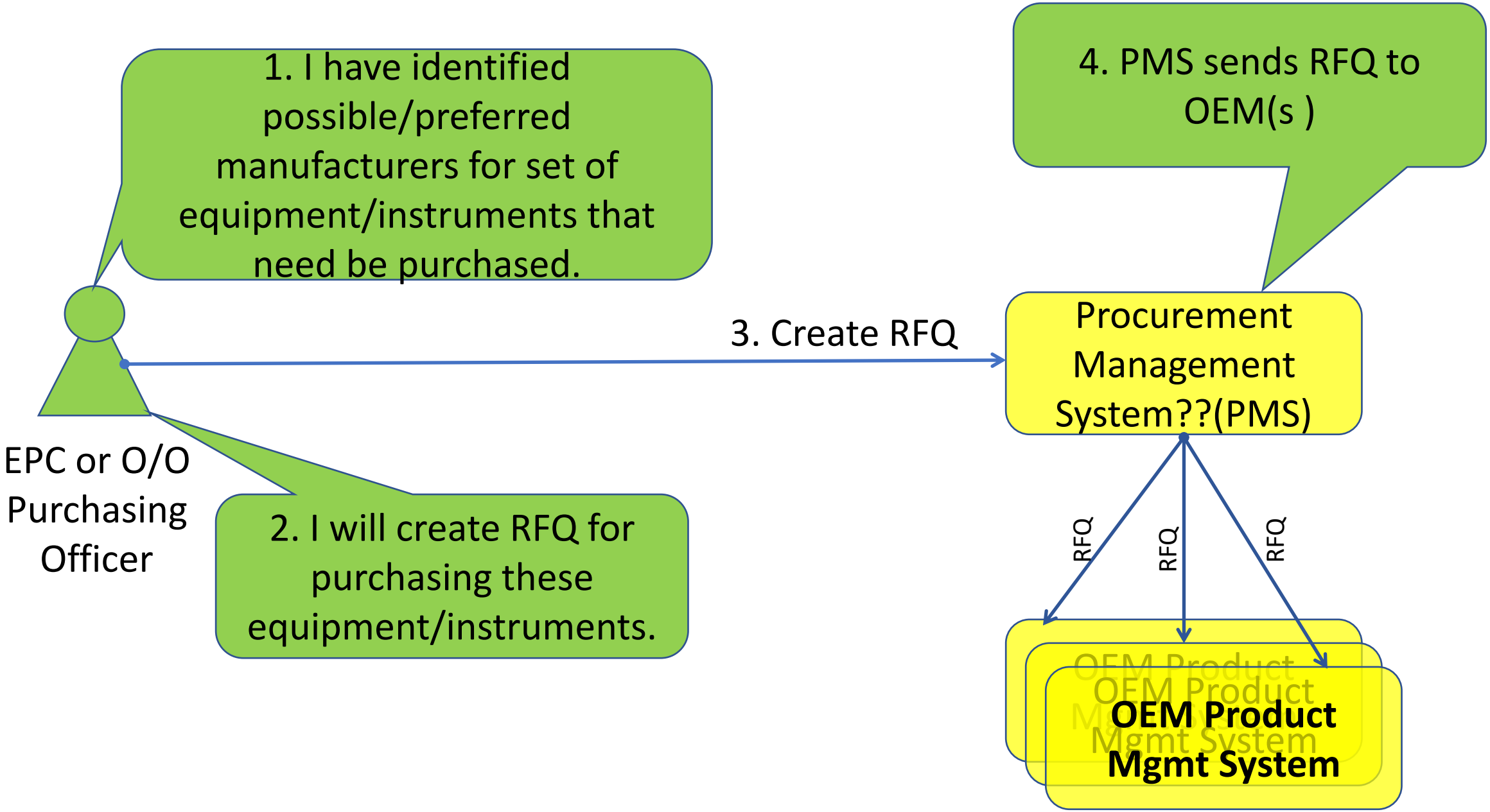
# OIIE Purchasing Use Case Scenarios

Scenario 2 - EPC or O/O are not aware of the specific model they require. They do know the engineering design and functional requirements.

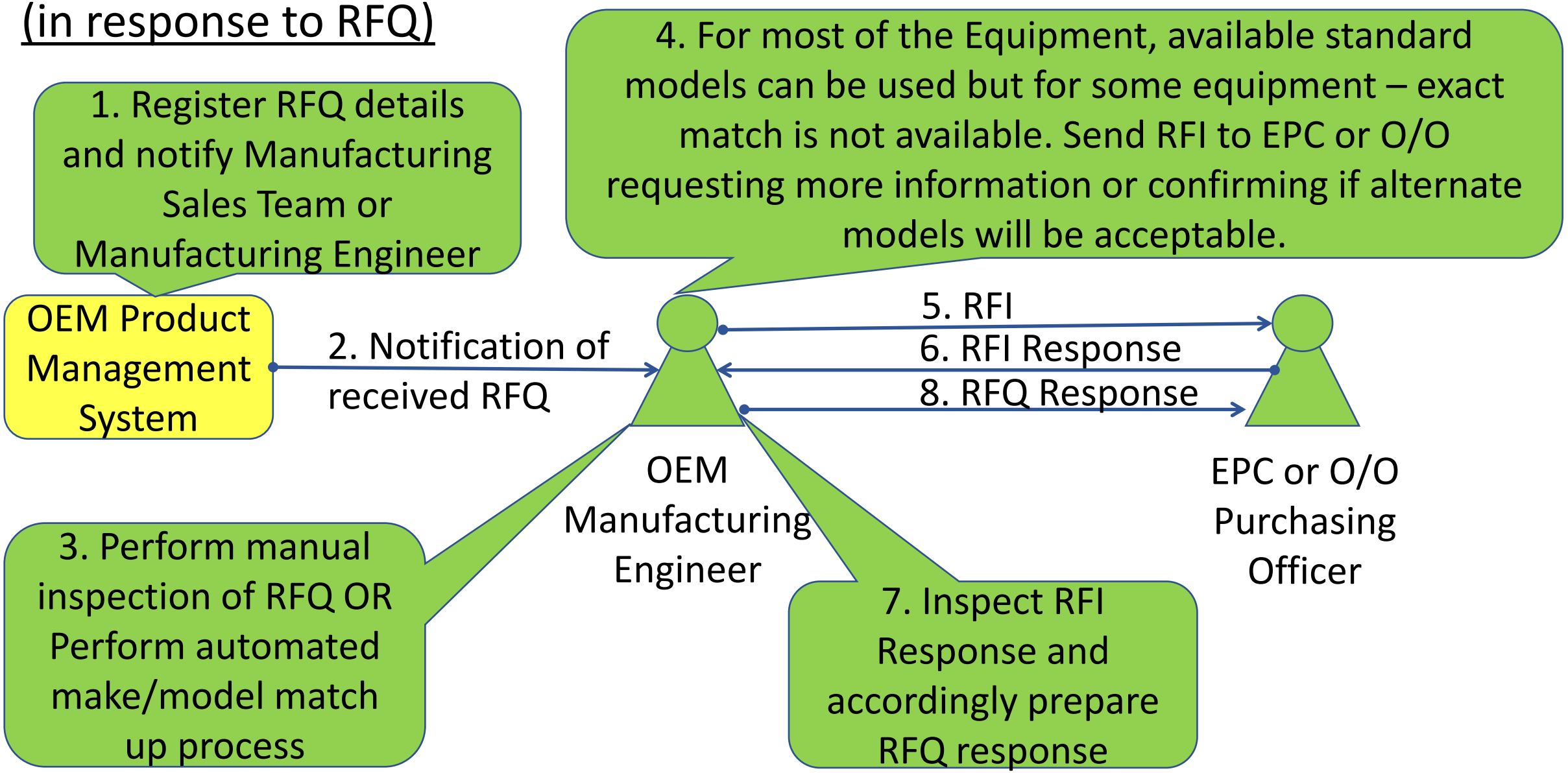



- NOTE: The information exchanged in RFIs and RFQs above will become part of Purchase Order

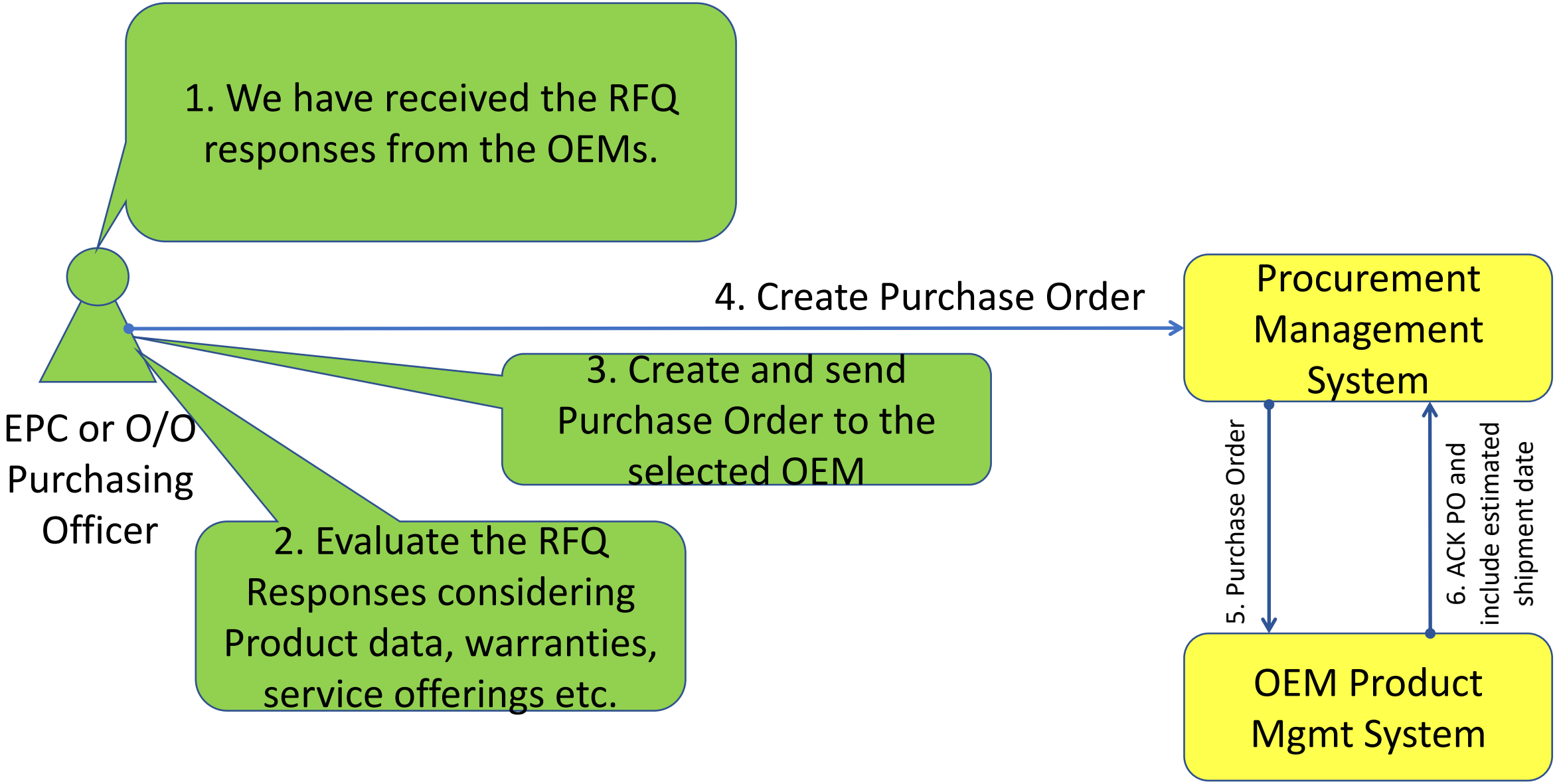
# Story M130: Send RFQ for Purchasing Equipment/Instruments



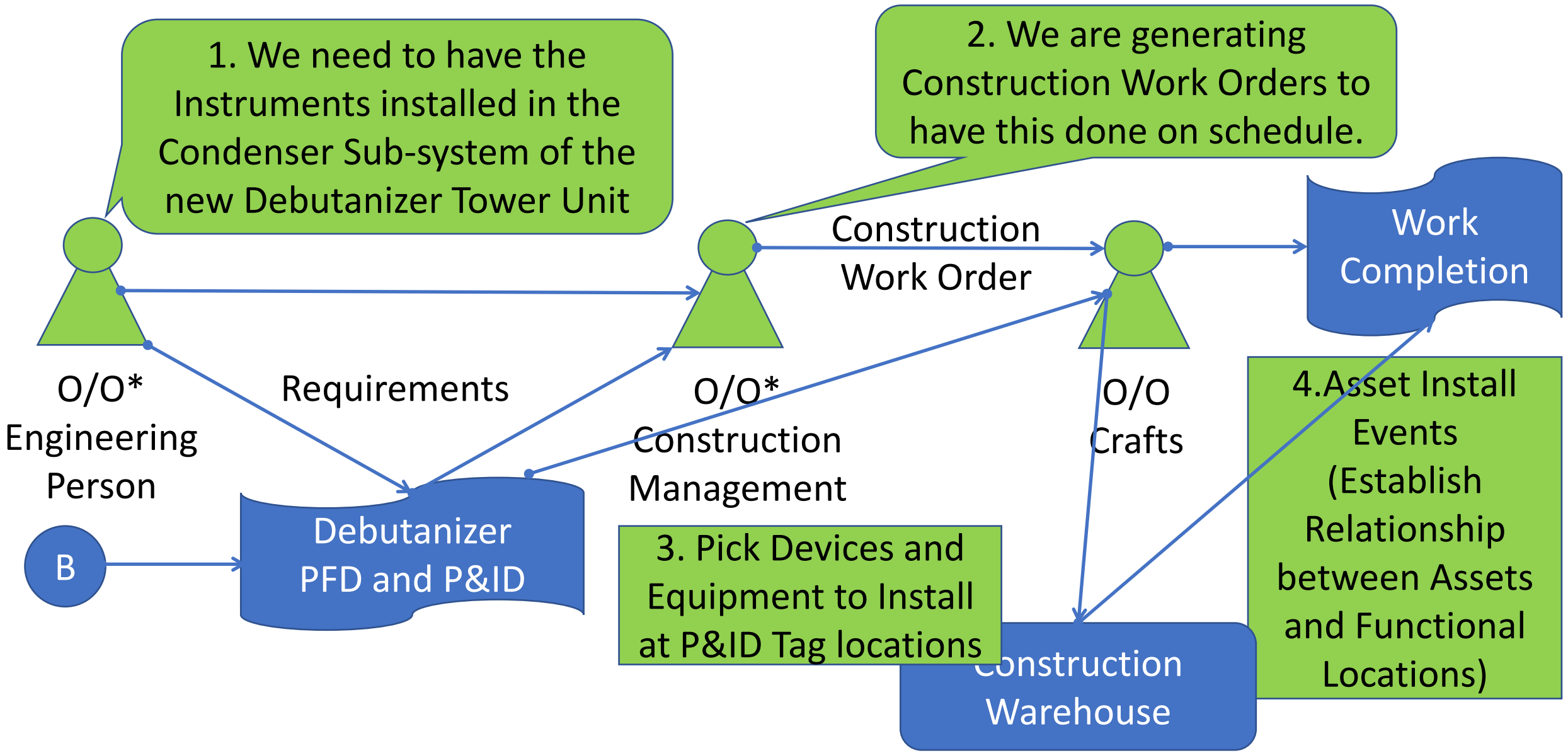
# Story M131: Make and Model Match-up and RFI/RFI Response (in response to RFQ)



# Story M132: Evaluate RFQ Responses and Send Purchase Order



# Story M140: Capital Project - Install Equipment and Devices
# Basis for Condenser Sub-system Digital Twin with As-Designed and As-Built Info



# OIIE Purchasing Use Case Actors

**Business Actors**

- Purchasing Team/Officer
- Project Control Manager

- Manufacturer sales team
- Manufacturer Engineer

**System Actors**

- Material/Procurement Management System
- Supplier Management System
- Order Change Management System

- OEM Product Management System

# RFI Contents

- ??

# RFI Response Contents

- ??

# RFQ Contents

- List of Model(s) meeting functional requirements
  - One RFQ consisting of multiple Models or one RFQ for each Model?
- Engineering data sheets containing functional requirements for each location
- Model data sheets containing model specific properties
- Allowable deviations or customizations from specified functional requirements
- Respond by – Date
- Requested  by – Person/Team/System

# RFQ Response Contents

# Purchase Order Contents

# Purchase Order ACK Contents

# OIIE Purchasing Use Case Triggers

- ?

# THANK YOU