

OIE Use Case 4 – Online Product Data Library Management

This Use Case describes the process for informing and updating O&M systems of product data. Product data is initially sourced from an OEM product data management system; may then be supplemented by observations by operations and maintenance; and updated by the OEM who may issue engineering change advisories. Moreover, the product data should be supplied in a standard format with which the O&M systems can be provisioned.

Background

All of the [OIE Use Cases](#) anticipate the online availability of appropriate product data libraries containing the detailed engineering reference information for makes and models of important classes of physical assets. Critical elements of Enterprise Risk Management, including both Operational Risk Management (ORM) and Environment Health & Safety (EH&S), depend on the Enterprise Asset Management, Reliability Management, Condition-Based Maintenance and ORM systems leveraging the most current product data. Manufacturers are often reluctant to publish some quality and reliability data about their products, which is extremely important, and this information needs to be gathered from trusted third parties and/or internal operating experience. As this new experience-based information becomes available, it also needs to be properly persisted and synchronized.

For all key originally installed and replaced equipment, ORM and EAM systems need online access to motor/pump/gear/bearing/valve/sensor OEM cut-sheet specification data in order for ORM systems to perform equipment diagnostics, to validate that current configurations meet the required process requirements, and for EAM systems to display to maintenance personnel. ORM and EAM systems need to know if this data is subsequently updated/modified to adjust algorithms with guaranteed delivery. ORM and EAM systems also need the ability to transfer newly-discovered product data into the PDM master database.

Scope

The scope of this Use Case is limited to the exchange of product data for known product models. The identification desired product models may occur as the result of a variety of activities, such as EPC Handover or Make/Model matchup, which are addressed by other Use Cases. Moreover, the choice of which form the product data is exchanged (such as ISDDs) and the mappings to that form are **not** within the scope of Use Case 4. This may be part of contracting arrangements handled by other use cases.

Preconditions

The business processes in all Use Cases require varying degrees of product data, and thus Use Case 4 becomes a dependency. While no Use Case is a strict dependency for Use Case 4, the scoping activities and business processes of other Use Cases will influence the data requirements of Use Case 4. For example, during O&M provisioning following EPC handover, Use Case 4 will likely be triggered for the set of product models related to the installed assets.

Successful End Condition

Operations and Maintenance systems (specifically ORM, EAM and Model Registry) are populated with up-to-date product data for all key installed and replaced equipment.

Actors

Business Actors

- Operations
- OEMs
- Maintenance

System Actors

- Product Data Management System (OEM)
- Product Model Registry (REG-PRODUCT)
- Operational Risk Management System
- Enterprise Asset Management System

Triggers

The primary information flows occur after three main conditions: 1) identification of product model or models for which complete product data is required, 2) supplements to product data (after provisioning) based on observations by O&M personnel and systems, and 3) changes to the product data for models of equipment/devices that are currently installed and have already been provisioned in O&M systems.

The first condition may occur as part of O&M provisioning following EPC Handover or as the result of a like-kind asset replacement.

The second may occur on a recurring basis through the operations and maintenance activities carried out during a product's life.

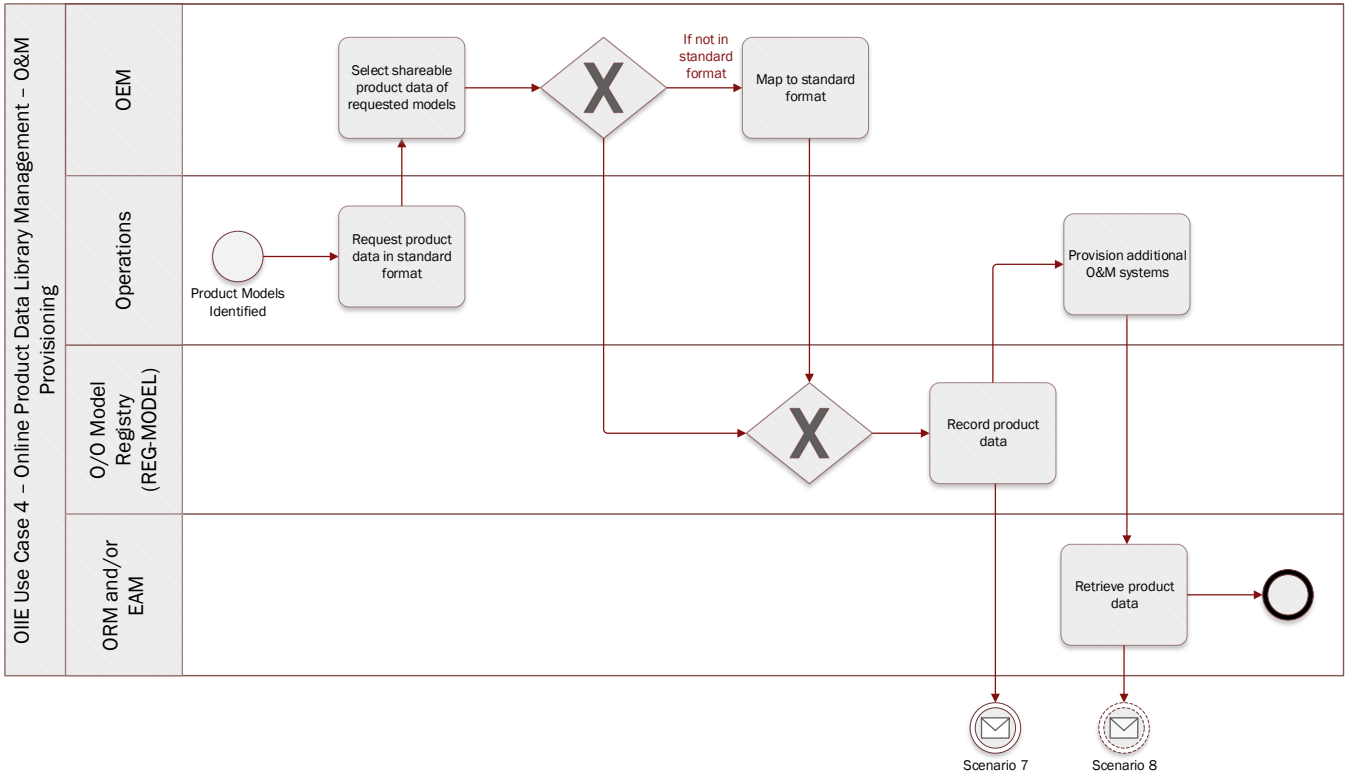
Finally, the third occurs after changes are made to product data by an OEM and a change advisory is issued to their customers.

Main Success Scenario

The following is a simplified workflow of the management of product library data that is intended to indicate the interoperability-based interactions with enterprise and automation systems within a general business process context. The workflows use REG-PRODUCT, ORM and EAM as exemplar O&M systems; however, other O&M systems may need to be provisioned with product data and, hence, may publish product data updates or may need to react to published updates.

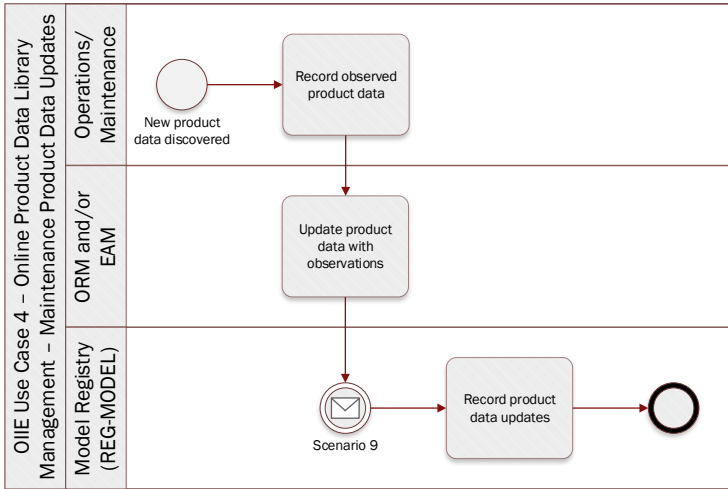
There are three primary workflows stemming from the trigger conditions. The first demonstrates the general workflow resulting from the provisioning of O&M systems; the second illustrates the supplementing of the original

product data with newly discovered or observed information; the third shows the workflow resulting from an OEM issuing a change advisory.



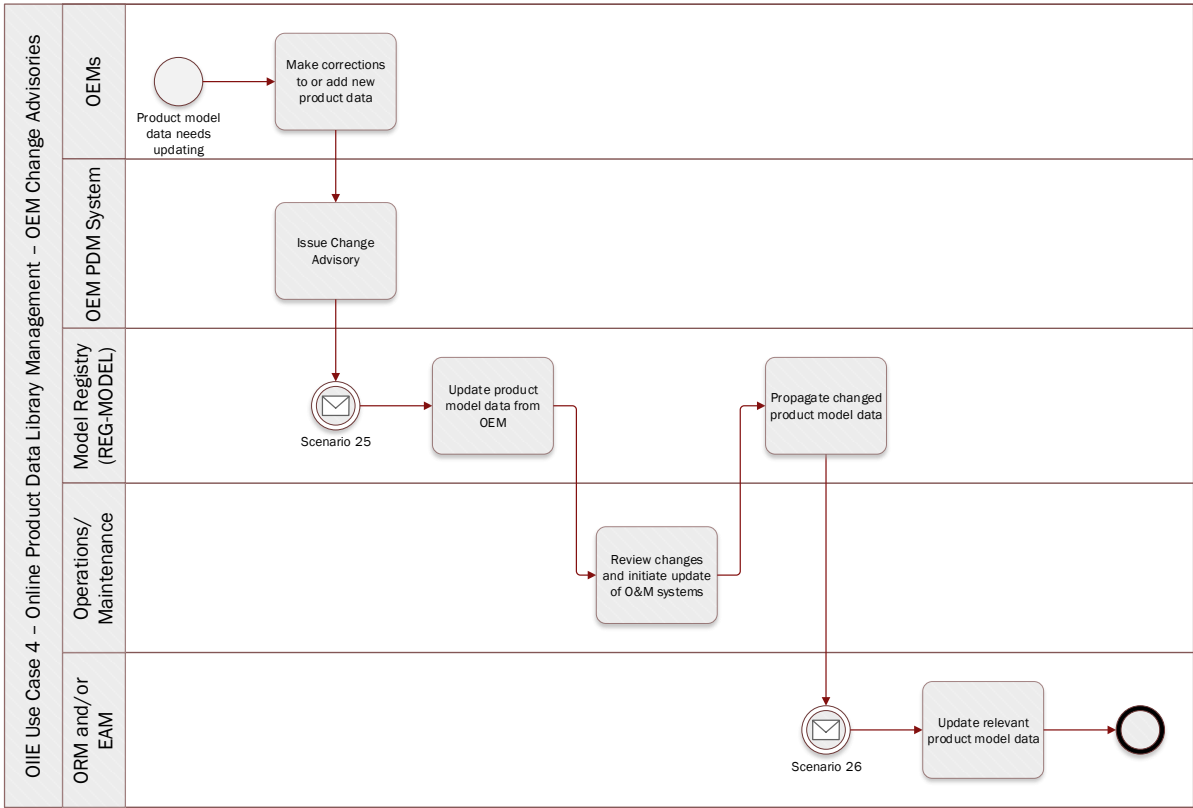
Request product data	Operations has a list of product models of installed assets for which complete make and model information is required. These data are requested from the OEM with the expectation that the data be provided in an agreed upon standard format—such as an Industry Standard Datasheet Definition (ISDD) —with which O&M systems can be provisioned.
Select product data	The OEM selects the product model data that will be shared with the customer based on organizational policies and the level of agreement between the OEM and the customer; for example, certain quality or reliability data may not be shared with all or specific customers.
Optional Map product data	If the selected product data has not previously been mapped or transformed to the agreed upon standard format, the OEM will need to map the data to that format.
Query & Record product data	The Model Registry queries for the product model data from the OEM PDM, requesting that the data be provided in the standard format. The received product data is recorded in the Model Registry.
Provision O&M systems	After populating the local registry with product data, Operations initiates the provisioning of other O&M systems with the product data as required. In particular, the ORM and EAM must be populated to support equipment diagnostics and support maintenance personnel.
Retrieve product data	The ORM and EAM systems retrieve the product data from the local registry.

During regular operations and maintenance activities, baseline product data may be supplemented by observations about those products. These data need to be shared with other O&M systems, in particular the Product Model Registry. Other systems may also be interested in such updates and take actions.



Record observed product data	Operations and/or maintenance make observations about installed equipment, such as quality or reliability data, and record these data against the baseline product model data obtained from the OEM.
Update product data with observations	<p>The observed data is used to supplement the product data used in O&M systems, such as the ORM and EAM. The new data is published to other O&M systems that are interested in the product model or equipment class to which data is being added.</p> <p>NOTE None of the original OEM data is modified in this scenario.</p> <p>NOTE Observations will be exchanged using a standard format, e.g. ISDD, but may refer to Enterprise Reference Data.</p>
Record product data updates	The O&M systems, particularly the Product Model Registry, record the published supplementary product model data to ensure the data is properly persisted and synchronized across O&M systems of interest.

During the life of a product, the OEM may update the information about their product. These updates are shared with their customers through Product/Part Engineering Change Advisories. The data provided with these advisories needs to be shared with relevant O&M systems, particularly the Product Model Registry, ORM and EAM, to ensure systems and personnel are operating on the most up-to-date information.



Make corrections or add product data	The OEM may update their product model data for a variety of reasons, including correcting errors, supplementing their data sheets with new data, etc. These changes are recorded in their Product Data Management System.
Issue change advisory	The OEM's PDM system issues Part/Product Engineering Change Advisories to customers. The change advisories may be in a specified format, e.g., using a specific ISDD, agreed with each customer on a contractual basis.
Update product model data	The customer's local Model Registry received and records the change advisory, updating the local copy of the product model data in accordance with the OEM's changes. The change notification may be ignored if the product is no longer an installed or replaced equipment.
Review changed data	Operations and/or Maintenance review the changed product data to determine the potential impact of the changes on operational systems. If the updated data is approved, Operations and/or Maintenance will initiate the propagation of the data to other O&M systems.
Update relevant product model data	Other O&M systems affected by the change, particularly the ORM and EAM, receive and record the product model data updates from the local Model Registry to ensure proper synchronization of model data.

System Interoperability Scenarios

- [Scenario 7 – Pull OEM Model data from OEM PDM to REG-PRODUCT](#)
- [Scenario 8 – Pull OEM Model data from REG-PRODUCT to O&M](#)
- [Scenario 9 – Publish OEM Model data from O&M to O&M](#)
- Scenario 25 – Publish Product/Part Engineering Change Advisories from OEM PDM to REG-PRODUCT (Placeholder)
- Scenario 26 – Publish Product/Part Engineering Change Advisories from REG-PRODUCT to O&M (Placeholder)

Version Applicability/Alignment

Use Cases do not specify generic or specific data requirements; however, they have a lifecycle and can be associated with versions of CCOM and other MIMOSA standards based on when they are introduced, updated, or deprecated. For example, newer Use Cases may not be able to be supported by older versions of CCOM, while older Use Cases may become obsolete as the standards and OIIE evolves over time.

This Use Case is applicable to the following versions of CCOM:

- CCOM 3.x (part of OSA-EAI 3.x)
- CCOM 4.x

NOTE Use of 'x' in the version number indicates a variable version. For example, "4.x" indicates applicability to all versions of CCOM with the MAJOR version '4', regardless of MINOR and PATCH versions.

Document Versioning

Version	Date	Major Changes
1.3	2020-12-08	Updated to use OpenO&M template
1.2	2020-02-11	Corrections resulting from review from OIIE OGI Pilot phase 3.1
1.1	2019-01-20	Update to new Use Case Architecture; complete missing sections.
1.0	2019-01-03	Initial import from web-based documentation.