

**Agile Product Lifecycle Management Integration
Pack for Oracle E-Business Suite: Design to
Release**

Implementation Guide

Release 3.1

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Agile Product Lifecycle Management Integration Pack for Oracle E-Business Suite: Design to Release Implementation Guide, Release 3.1

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Preface

Welcome to Agile Product Lifecycle Management Integration Pack for Oracle E-Business Suite: Design to Release 3.1 - Implementation Guide.

Oracle Application Integration Architecture (AIA) provides the following guides and resources for this release:

Oracle AIA Guides

- Oracle Fusion Middleware Infrastructure Components and Utilities User's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1 (11.1.1.4.0)
- Oracle Fusion Middleware Installation and Upgrade Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1 (11.1.1.4.0)
- Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1 (11.1.1.4.0)
- Oracle Fusion Middleware Reference Process Models User's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1 (11.1.1.4.0)
- Oracle Fusion Middleware Migration Guide for Oracle Application Integration Architecture 11g Release 1 (11.1.1.4.0)
- Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1 (11.1.1.4.0)

Additional Resources

The following resources are also available:

Resource	Location
Oracle Application Integration Architecture: Product-to-Guide Index	Oracle Technology Network: http://www.oracle.com/technetwork/index.html
Known Issues and Workarounds	My Oracle Support: https://support.oracle.com/
Release Notes	Oracle Technology Network: http://www.oracle.com/technetwork/index.html
Documentation updates	My Oracle Support: https://support.oracle.com/

Note: Remember to review the latest Known Issues and Workaround document (KIWA) for your PIP on My Oracle Support.

Part 1: Understanding the Delivered Process Integrations

- [Chapter 1: Agile Product Lifecycle Management Integration for Oracle E-Business Suite](#)
- [Chapter 2: Process Integration for Item Attribute Update](#)
- [Chapter 3: Process Integration for Item Balance Update](#)
- [Chapter 4: Process Integration for New Part Request](#)
- [Chapter 5: Process Integration for Item Synchronization](#)
- [Chapter 6: Process Integration for Change Order Validation](#)
- [Chapter 7: Process Integration for Change Order Release](#)
- [Chapter 8: Process Integration for Change Order Update](#)
- [Chapter 9: Process Integration for Variant Management](#)

Chapter 1: Agile Product Lifecycle Management Integration for Oracle E-Business Suite

This chapter provides an overview of the Agile Product Lifecycle Management (PLM) integration for Oracle E-Business Suite and discusses:

- Architecture of Agile PLM integration
- Solution assumptions and constraints
- Agile PLM to Oracle E-Business Suite process flows
- Oracle E-Business Suite to Agile PLM process flows
- Components of Agile PLM process integration pack (PIP)

Overview

The integration between Agile PLM and Oracle E-Business Suite is designed to enable the product development process and address the primary use cases around the synchronization of product content information between Agile Product Collaboration and Oracle Manufacturing. This allows for rapid implementation of Oracle's next-generation integrated enterprise PLM processes helping the customers reduce costs and any risks associated with typical third-party and custom integrations.

The business benefits of this integration are:

- Reduced time to market for new products
- Extendibility through Oracle Product Information Management (PIM) enablement
- Faster time to volume
- Improved product quality
- Minimum supply chain disruption from new product introductions
- Predictable and sustainable product and process innovation
- Lower total cost of ownership of enterprise PLM platform
- Reduced implementation risks
- Reduced waste and total material cost by leveraging PIM as the central part repository

Functionalities

The Agile PLM Integration Pack for Oracle E-Business Suite PIP includes the following functionalities:

- Manufacturing release of new product definition and product launch
- Change management of previously launched products
- Bidirectional synchronization of engineering change status and material attribute information from Oracle Manufacturing to Agile PLM
- Monitoring and control of the change processing and validation queues

Solution Design Assumptions and Constraints

These are the solution assumptions for this PIP:

1. Agile PLM Content Server (ACS) is used for events to trigger the payload from Agile PLM to the integration layer.
2. This design assumes that the following statements are true:
 - a. Pre-defined blank templates for the custom fields are made available.
 - b. Transformation logic for classification elements is pre-coded in the delivered Extensible Stylesheet Language Transformations (XSL); however, you may need to modify it per your Agile PLM implementation requirements.
3. It is assumed as part of the design of this integration that Agile PLM is the system of record for product design information. This means that the following information cannot be changed directly in Oracle E-Business Suite – any changes to these pieces of information must be driven through Change Orders from Agile PLM:
 - a. Item Bill of Materials (BOM): Component Sequence Number, Component Number, Quantity, Reference Designators
 - b. Item Approved Manufacturer List (AML): Manufacturer Name, Manufacturer Part Number, Preferred Status
 - c. Item Revision
4. The following changes may be made in the Oracle E-Business Suite without impacting the integration:
 - a. Changes to other BOM attributes such as operation sequence number, sub inventory, and so on
 - b. Changes to the ECO Line effectivity dates
 - c. Any other attributes not covered in this list
5. This design leverages the Application Integration Architecture (AIA) error handling framework.
6. This PIP assumes a single language setting (for example, Agile PLM and Oracle E-Business Suite in Spanish language).

These are the solution constraints:

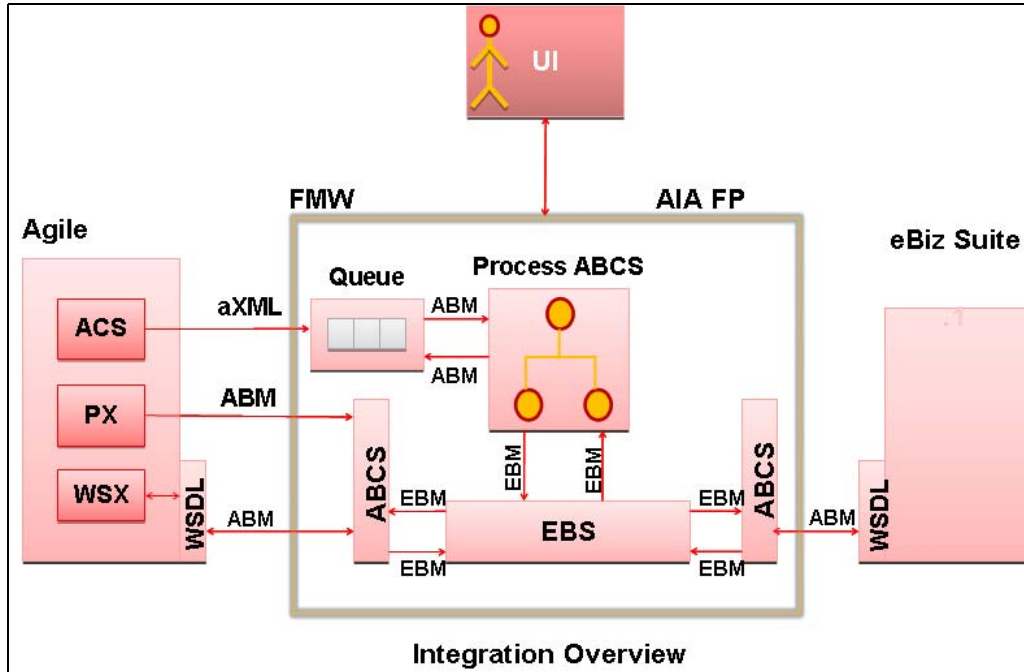
1. In some cases, configuration-driven Extensible Stylesheet Language Transformations (XSLT) may not reflect the changes immediately. Hence, a restart is required because the main XSL sheet is cached after a successful compilation.
2. ACS limits the events to be triggered from workflow only for the Change Status action, which can be used for this integration.

3. Error-handling capabilities of this integration are constrained by the capabilities of the AIA framework.

Architecture of Agile PLM Integration

This diagram illustrates the Agile PLM to Oracle E-Business Suite integration architecture:

[Agile PLM business process flow](#)



This process consists of the following flows:

1. In this architecture, for all the flows from Agile PLM into Oracle E-Business and except for new parts requests and synchronization, the messages originate in Agile PLM from the Agile Content Service (ACS) in an aXML format.

These messages go into a queue and then call the AgileReqABCServiceImpl.

2. The messages are transformed and then these go to the EbizProvABCServiceImpl, which calls an Oracle E-Business Suite service.

This Oracle E-Business Suite service creates the transactions in Oracle E-Business Suite.

3. ResponseEBS sends the replies to the AgileReqABCServiceImpl.
4. The queue is then updated and the response is sent to Agile PLM through the Agile Web Service eXtensions (WSX).
5. The new part request and item synchronization are the only process integration flows that use Process Extension (PX) to extract Agile PLM's data and send it to the Application Business Connector Service (ABCS).

6. For all the flows from Oracle E-Business to Agile PLM, the messages originate in Oracle E-Business Suite and invoked by EbizReqABCImpl.
7. The messages are transformed and then these go to AgileProvABCImpl through a Web service and create the transactions in Agile PLM.

Agile PLM to Oracle E-Business Suite Process Flows

This integration supports the following Agile PLM to Oracle E-Business Suite processed integration flows:

- Process integration for new part request
- Process integration for item synchronization
- Process integration for change order validation
- Process integration for change order release

Process Integration for New Part Request

The New Part Number Request process allows for centralization of parts repository with a Master Data Management (MDM) system such as Oracle PIM Data Hub. Engineering requests for new parts, whereby may be generated based on optional attributes of parts, providing engineer's part numbers in synchronous mode. The new part request (NPR) process is triggered from Agile PLM for obtaining a part number from Oracle Product Information Management (PIM) using an Agile PLM PX.

For more information, see [Chapter 4: Process Integration for New Part Request](#).

Process Integration for Item Synchronization

An engineer creating a new part in Agile PLM should be able to synchronize the part number to it with Oracle E-Business Suite/ PIM. This action is triggered on the action menu for the item. If the item does not exist on the Oracle E-Business Suite/PIM, it will be created or else updated. When a part already exists in both Agile PLM and Oracle E-Business Suite/PIM, and it is not released, then changes in its attributes in Agile PLM need to be updated in Oracle E-Business Suite/PIM.

For more information, see [Chapter 5: Process Integration for Item Synchronization](#).

Process Integration for Change Order Validation

During a product design phase, new products or parts are introduced and existing parts go through design changes. When the authoring of a part's attributes and design information is complete and is ready for publishing to the manufacturing system, it is released by means of change orders.

Before a change order is routed for approval in Agile PLM, you can check whether it will be implemented successfully in Oracle E-Business by validating the change order before it is released. Any potential errors will be caught early. The validation simulates the change order or Engineering Change Order (ECO) processing at any stage prior to the Release state (preferably, the Submit state).

For more information, see [Chapter 7: Process Integration for Change Order Validation](#).

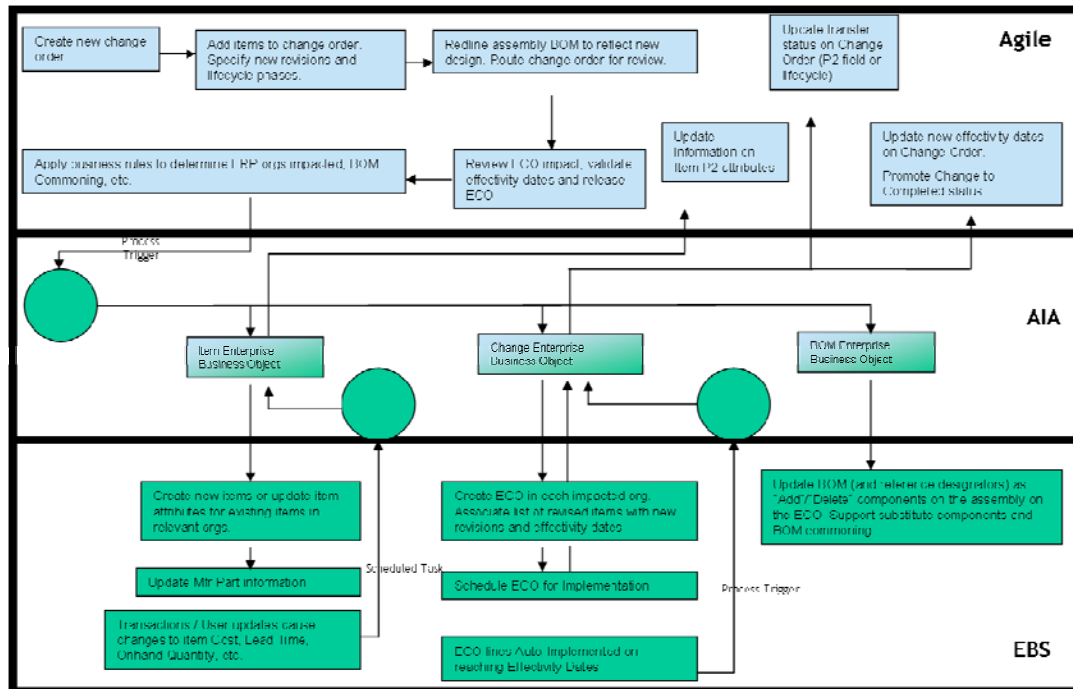
Process Integration for Change Order Release

The change order release comprises of new Part/Product Release (PREL) and Product Design Modification (PDM) flows from Agile PLM triggered by a standard ECO or a manufacturing change order (MCO) or a service change order (SCO) release event in Agile PLM. While Agile PLM is the system of record for item description, design, specs, and other information, Oracle E-Business Suite has many more attributes and placeholders for information than the Agile PLM system. Hence, the change order release needs to be updated in the Oracle E-Business Suite. A corresponding ECO is created in Oracle E-Business Manufacturing, in the appropriate Oracle E-Business Inventory Organizations, in near realtime. ECO in Oracle E-Business Suite can be implemented manually or through a low-touch, standard Oracle E-Business Suite ECO Auto-Implement process.

The release of a change order in Agile PLM acts as a trigger for the synchronization of product design information with Oracle E-Business Suite. Because Agile PLM is a system of records for product design data, the synchronization process involves transfer of the released revision of the product design from Agile PLM to the manufacturing system.

This diagram illustrates the process integration for change order release:

Change order release process integration flow



Oracle E-Business Suite to Agile PLM Process Flows

The integration also addresses these key concepts of Design for Supply Chain with an optional bi-directional synchronization (from Oracle E-Business Suite/PIM to Agile PLM) of supply chain data, such as item Lead Times, Costs and On-hand Quantities (calculated by Organization), or any other E-Business or PIM Item Master attributes.

The Oracle E-Business Suite to Agile PLM process flows supported by this integration includes:

- Process integration for item attribute update
- Process integration for item balance update
- Process integration for change order update

Process Integration for Item Attribute Update

As a necessary part of the manufacturing update process, the ability to update a change order line in Agile PLM with updates on the cost and other item attributes from the Oracle E-Business Suite/PIM system is a key component of the bidirectional synchronization capability of the integration.

This process is done through a batch operation.

For more information, see [Chapter 2: Process Integration for Item Attribute Update](#).

Process Integration for Item Balance Update

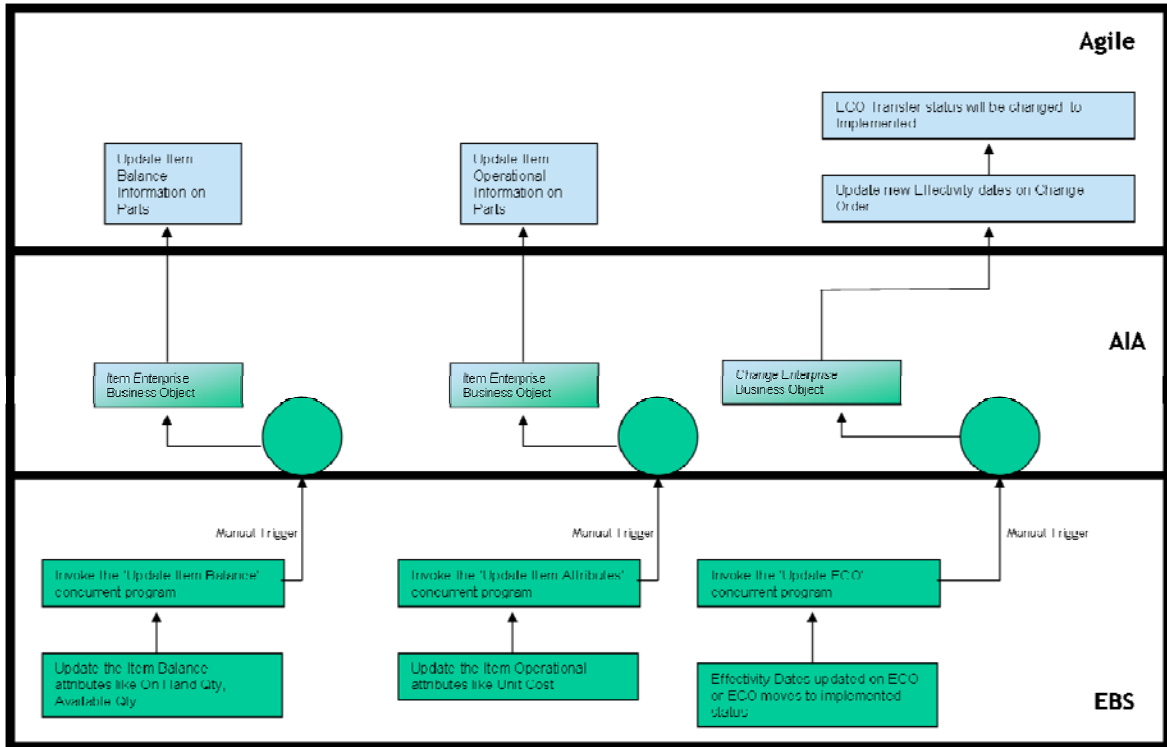
The item balance information in the Oracle E-Business Suite/PIM system is stored in three attributes: Reserved Quantity, Available Quantity, and On-hand Quantity. An item in Oracle E-Business Suite/PIM can exist in more than one organization. Any change in any of the three types of quantities can take place in just one, or in a few, or in all organizations. These changes are updated in Agile PLM.

This process is done through a batch operation.

For more information, see [Chapter 3: Process Integration for Item Balance Update](#).

This diagram illustrates the item balance and item attributes information to Agile PLM process integration flow:

Item balance and item attributes information to Agile PLM process integration flow



Process Integration for Change Order Update

The change order update from Oracle E-Business Suite to Agile PLM process flow is a means to communicate change in status of the change order in Oracle E-Business Suite/PIM (also part of the manufacturing update business flow). It constitutes a key requirement for keeping users in Agile PLM informed about the life cycle of a change order. This involves communicating the change order status in Oracle E-Business Suite/PIM to a configurable field on the change order in Agile PLM or changing the status of the change order in Agile PLM.

This process is done through a batch operation.

For more information, see [Chapter 8: Process Integration for Change Order Update](#).

Components of Agile PLM Integration Pack for Oracle E-Business Suite PIP

This PIP has the following components:

- Agile PLM Content Service (ACS)
- Software Development Kit (SDK)
- Agile Process eXtensions (PX)
- Web Service Extensions (WSX)
- Oracle Application Integration Architecture (AIA) Foundation Pack
- Oracle E-Business Suite
- Oracle Generic Configurator User Interface

ACS

ACS is an event-driven XML-based publishing service that makes the product record available to a wide variety of business applications and users, both internally and across the global manufacturing network. In addition to allowing employees and supply chain partners to publish the product record on demand, ACS can be configured to publish the item master, Bills of Material (BOM), and Approved Manufacturer List (AML) changes automatically during any phase of the product life cycle to multiple destinations, ensuring that everyone is working with current information.

The output generated by an ACS module is an aXML file or a Product Data Exchange (PDX) package.

SDK

SDK contains a collection of tools, application programming interfaces (APIs), sample applications, and documentation. You use it to build custom applications that access Agile Application Server functionality. By using the Agile SDK, you can create programs that perform tasks automatically against Agile PLM.

Agile SDK enables the following operations:

- Integrate Agile PLM with JD Edwards EnterpriseOne or other custom applications.
- Develop applications to process product data.
- Perform batch operations against the Agile Application Server.

Agile SDK has the following modules:

- Agile API: A Java API with interfaces that expose Agile PLM business objects. Use Agile API to create additional Agile PLM clients. You can also use it as part of an extension developed using web service extensions (WSX) or process extensions (PX).
- PX: A framework that allows Agile PLM customers to extend the functionality of Agile PLM clients by adding external reports, user-driven and workflow-driven customized actions, customized tools, and customized automatic number sources. PX helps in binding the data in Agile PLM with other applications.
- The new part request and the item synchronization are the only process integrations that use PX to extract Agile PLM's data and send it to ABCS.
- WSX: A framework that allows Agile PLM customers to extend the functionality of the Agile PLM server and expose customer-specific solutions using a web service.

WSX is a Web service engine enabling communication between Agile PLM and disparate systems both internal and external, including Enterprise Resource Planning (ERP) systems. WSX can be used to provide content to exchanges, reports, and custom applications and import product content data from ERP and other supply chain applications. WSX can simplify the process for aggregating raw product content and making critical product content available in realtime to other core systems.

For more information about Agile PLM components, see "*Agile Product Lifecycle Management Administrator Guide*" and "*SDK Developer Guide*."

Oracle Application Integration Architecture Foundation Pack

Oracle Application Integration Architecture (AIA) Foundation Pack enables customers to simplify cross-application business process integrations using a standards-based, pre-built integration solution. Designed to promote rapid deployment, re-usability, and configurability of business processes, AIA Foundation Pack saves significant time, effort and cost, compared to building integrations from the ground up and helps you realize the value of a Service Oriented Architecture (SOA) at an accelerated pace.

The Process Integration Packs (PIPs) provide pre-built integrations that are specific to business processes and applications. Built using AIA Foundation Pack, these specific business process integrations provides an open, standards-based approach for organizations to integrate end-to-end business processes across a broad range of custom, Oracle or third-party applications.

For more information about the AIA Foundation Pack development methodology, see [Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#).

Oracle E-Business Suite

The following application services of Oracle E-Business Suite participate in this PIP:

- Oracle Integration Repository
- Business Event System
- Concurrent Programs/Manager

Oracle Integration Repository

An integral part of Oracle E-Business Suite, Oracle Integration Repository is a compilation of information about numerous interface endpoints exposed by Oracle applications. It provides a complete catalog of Oracle E-Business Suite's business interfaces and a comprehensive view of the interface mechanisms available. It can be used to easily discover and deploy the appropriate business interface from the catalog for integration with any system, application, or business partner.

Business Event System

Business Event System is an application service that uses the Oracle Advanced Queuing (AQ) infrastructure to communicate business events between systems. It consists of the Event Manager, which enables you to register subscriptions to significant events and event activities, which enable you to model business events within workflow processes. When a local event occurs, the subscribing code is run in the same transaction as the code that raised the event. Subscription processing can include running custom code on the event information, sending event information to a workflow process, and sending event information to other queues or systems.

Concurrent Programs/Manager

Concurrent processing is an Oracle applications feature that allows non-interactive and potentially long-running functions, which may involve a large number of data-intensive computations to be run efficiently alongside interactive operations. It uses operating system facilities to facilitate background scheduling of data or resource-intensive jobs through a set of programs and forms. To ensure that resource-intensive concurrent processing operations do not interfere with interactive operations, a specialized server, the Concurrent Processing server, runs them.

Oracle Generic Configurator User Interface

Oracle Configurator (CZ) is a best-of-breed solution encompassing the design and implementation cycle for configuration models and the end-user, runtime configuration sessions.

Configuration models (model structure, rules, and UI) are created and maintained through the Oracle Configurator Developer. Oracle Configurator Developer gives product specialists (not programmers) the range and flexibility to model all products, services, and portfolios from simple to complex. Oracle Configurator Developer was designed to reinforce a rapid application implementation process and contains integrated functions for quickly deploying complete configuration solutions, which include:

- Utilizing product data from ERP or other enterprise systems.
- Modeling configurations and product, service, and system relationships.
- Applying business rules to product data.
- Specifying customized user-interface layouts.
- Creating multiple user interfaces deployed across multiple sales channels.
- Testing and debugging Oracle Configurator applications.

The Generic Configurator User Interface can be accessed by Agile PLM Variant Management to configure a model option BOM. Generic Configurator user interfaces (UIs) are not created in Oracle Configurator Developer. These UIs display only BOM Model items and enforce only implicit BOM rules. In other words, any Model structure nodes, rules, or UI elements that are defined in Configurator Developer are not available in a Generic Configurator UI. This is because Generic Configurator UIs access Model Option BOM data directly from the Oracle Bills of Material database tables, not from the CZ schema.

Note: Although Oracle Generic Configurator User Interface can be used with both Agile PLM 9.3 and 9.2.2.x versions, the Configurator User Interface is available only in 9.3.

In addition, process integrations described in this guide support the Agile PLM 9.3 Variant Management sub-items Model and Option Class, as well as their attributes Minimum, Maximum, Optional, and Mutually Exclusive with the Generic Configurator User Interface.

The following Enterprise Business Messages (EBMs) have been designed for Agile PLM 9.3 Variant Management to work with the Oracle Generic Configurator User Interface:

- GetConfiguratorURLEBM
- GetConfiguratorURLResponseEBM
- SyncBillOfMaterialsConfigurationListEBM

These EBMs are required to accomplish the UI integration to Oracle E-Business Suite Configurator with AIA. Details such as the configured BOM, connection details, or response information for Agile PLM 9.3 Variant Management have to be transferred through AIA.

Variant Management Configurator Integration uses the BillOfMaterialsConfiguration Enterprise Business Object (EBO). It carries only the configuration of the BOMs, which was configured in Oracle E-Business Suite Configurator.

For Agile PLM 9.3 Variant Management, the following flows are used:

1. GetConfiguratorURL: Uses GetConfiguratorURLEBM and GetConfiguratorURLResponseEBM
 - GetConfiguratorURLEBM: Carries the return URL, the model ID, and the organization code combination
 - GetConfiguratorURLResponseEBM: Carries the Configurator URL and the Init XML message
2. SyncBillOfMaterialsConfigurationList: Uses SyncBillOfMaterialsConfigurationListEBM
 - SyncBillOfMaterialsConfigurationListEBM: Carries the instance BOM information configuration using Oracle E-Business Suite Configurator

Chapter 2: Process Integration for Item Attribute Update

This chapter provides an overview of the process integration for item attribute update and discusses:

- Item attribute update process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- Oracle E-Business Suite interfaces
- Core Application Integration Architecture (AIA) services
- Integration services

Overview

Agile is the master for part and product information. Oracle E-Business Suite manages certain business related information related to the parts such as Cost. This business information is regularly updated in Oracle E-Business and it is important to provide visibility to this information in the product development environment (PLM). The process integration for item attribute update supports the update of item attributes. Update of other attributes can also be supported through extensions during implementation.

The item attributes information from Oracle E-Business Suite is updated in Agile PLM as part of the manufacturing update process for product information synchronization through a batch process. The term item applies to both parts and documents in Agile PLM.

Item Attribute Update Process Integration

Item attribute update is done in a batch mode by means of a scheduled process. This means that mapped attribute information is read for a group of items in Oracle E-Business Suite and sent through the interface. Because this process does not use specific event triggers, identifying from the source system which of the mapped item attributes really changed in the elapsed period is not easy. The update process, therefore, updates all the mapped attributes every time an item is updated with information from Oracle E-Business Suite. The update step can process all the items in the batch before committing or it can commit each item individually before moving on to the next one.

The item attribute update process includes:

1. Item attributes are modified in Oracle E-Business.

This modification could be done in specific organizations or in a single organization. You can designate, as a part of a configuration parameter, a single Oracle E-Business Suite organization from which all item attribute information is always retrieved. In such a case, it is not necessary to have Agile PLM multi-sites. Any Title Block or Page Two attribute may be updated with Oracle E-Business Suite data in such a case.

2. The input for this process consists of a batch of item attributes with their unique identifiers and values that need to be updated in Agile PLM.
3. The batch process for publishing the changed information starts at a specified frequency, which is configurable.

Note: While the update to information in Agile PLM is normally driven through the scheduled batch processes, it is also possible to trigger the information update event from Oracle E-Business Suite through the Integrations Administrator and running the Publish Engineering Change Order Updates function.

4. The process retrieves the last date and time where the item information update process completed successfully.
5. The process retrieves the list of items whose attributes have changed after the last successful run.

Also, it retrieves the list of mapped attribute values for these items. The data is retrieved from one or more organizations as per site-org mappings or from the configured single organization.

6. Item attribute information can exist in multiple organizations in Oracle E-Business Suite.

Therefore, the integration supports multiple organizations only when the system can accurately determine to which organizations in Oracle E-Business Suite the item attribute information belongs to.

7. In the case of a single site environment:

- Sites are mapped to the Oracle E-Business organizations through a specified P2 attribute (example, P2.ebiz Org)
- Item attributes are retrieved from the specified organization and updated in the mapped attributes in Agile PLM
- In case an item is mapped to multiple organizations, the values from the first Organization in the transformed XML file are picked up for update

8. In the case of multi-site environment:

- The attribute to be updated is defined on the Site tab of the item in Agile PLM
- Based on the update of the item attribute value in an Organization, the change is reflected in the mapped attribute in the corresponding Site.

9. The process updates the information in Agile. If the complete update is processed successfully, the process updates the date and time of last successful run.

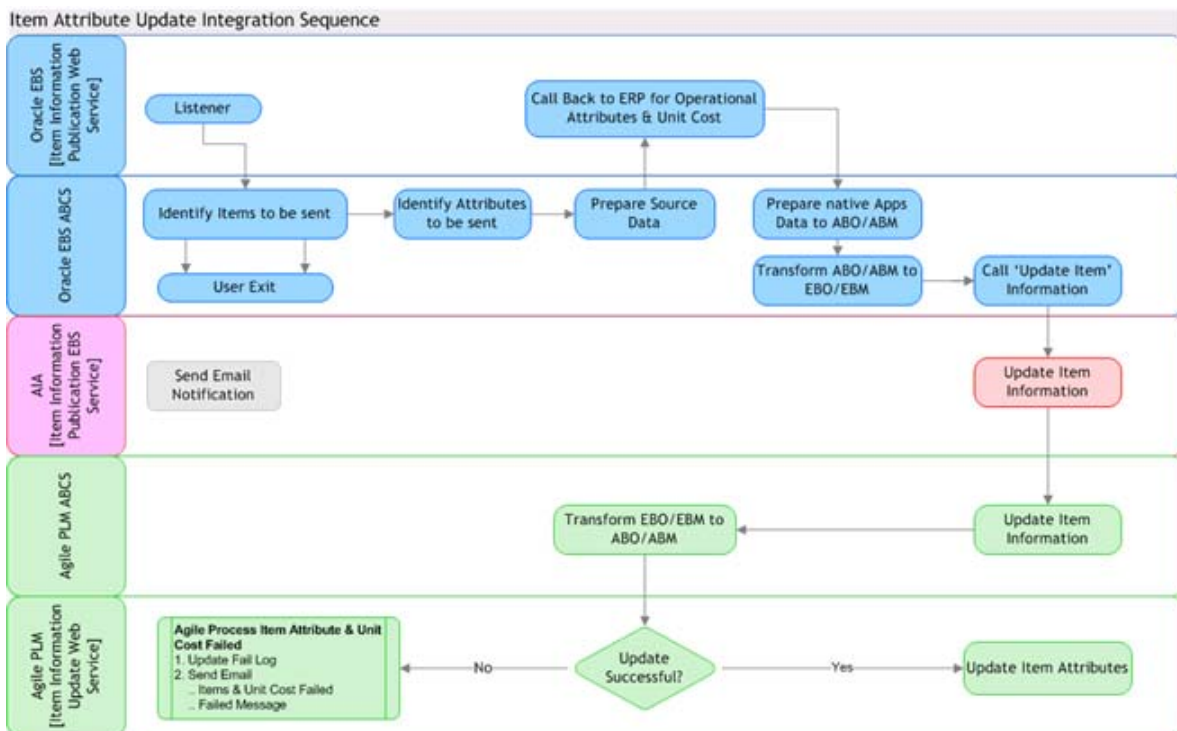
If the update process for an item errors out, the system continues to process remaining items in the batch. A list of all errors encountered when processing the batch are accumulated and logged.

10. A status code indicating whether all the items in the batch were updated successfully is returned, along with an error message, if an exception occurred.

The error message contains a cumulative log of all the exceptions that occurred during processing of the items.

This diagram illustrates the integration sequence for item attribute update from Oracle E-Business Suite to Agile PLM:

Sequence diagram for item attribute update



Exceptions

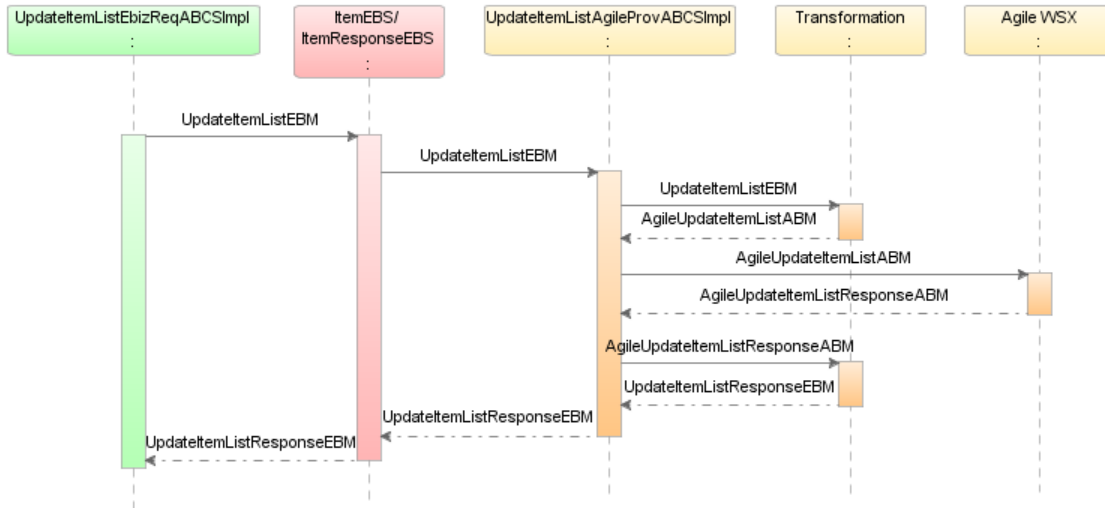
The following exception conditions create error messages for this integration process:

- Insufficient privilege to discover, read, add attachment to or update attributes on the Change object
- Invalid field value (indicate the field for which the value is incorrect, and the value that is being passed on to the field)
- Change object does not exist
- Error when adding attachment

Item Attribute Update Integration Services Orchestration

This diagram illustrates the item attribute update integration services orchestration:

Item attribute update integration services orchestration



This table list the activities involved in the item attribute update integration services orchestration:

Step	Activity	Remarks
1	Publish item attributes concurrent program is initiated.	The publish item attributes concurrent program in Oracle E-Business Suite invokes UpdateItemListEbizReqABCImpl.
2	UpdateItemListEbizReqABCImpl invokes ItemEBSV2.	An invoke activity in UpdateItemListEbizReqABCImpl invokes the UpdateItemList operation on ItemEBSV2 with UpdateItemListEBM as input.
3	ItemEBSV2 routes the UpdateItemListEBM to UpdateItemListAgileProvABCImpl.	ItemEBSV2 routes UpdateItemListEBM as input to UpdateItemListAgileProvABCImpl.
4	UpdateItemListAgileProvABCImpl invokes Agile PLM's Item Operational Attribute Update Web service.	UpdateItemListAgileProvABCImpl transforms UpdateItemListEBM to AgileUpdateItemListABM and invokes the UpdateItemList service operation on the Agile PLM Web service to update the item cost-related attribute information from Oracle to Agile PLM. AgileUpdateItemListResponseABM is returned to UpdateItemListAgileProvABCImpl.
		Note: The UpdateItemListAgileProvABCImpl composite uses the

Step	Activity	Remarks
		oracle/wss_http_token_client_policy client security policy while calling ItemABS Service hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password need to be setup correctly so that the Agile service is invoked successfully from the AIA composite in the FMW layer.
5	UpdateItemListAgileProvABCImpl sends a response to ItemResponseEBSV2.	UpdateItemListAgileProvABCImpl transforms AgileUpdateItemListResponseABM to UpdateItemListListResponseEBM and sends it to ItemResponseEBSV2.
6	ItemResponseEBSV2 sends UpdateItemListListResponseEBM to UpdateItemListEbizReqABCImpl.	ItemResponseEBSV2 sends UpdateItemListListResponseEBM to UpdateItemListEbizReqABCImpl.

Solution Assumptions and Constraints

If item information needs to be retrieved from multiple organizations in Oracle E-Business Suite, the following constraints must be met to support this process:

1. Agile PLM multisites must be configured.
2. A one-to-one mapping between Agile PLM sites and Oracle E-Business Suite organizations exists.

This is derived from the AGILE_TARGET_SITE_MAPPING DVM.

3. The attributes to be updated with Oracle E-Business Suite data are on the Sites tab of the item.

Alternatively, customers can designate, as a part of configuration parameters, a single Oracle E-Business Suite organization from which all item attributes and on-hand quantity information is always retrieved. In such a case, you do not need to have the Agile PLM multisites. Any Title Block or Page Two attribute can be updated with Oracle E-Business Suite data in such a case.

4. All changes are interfaced to only one destination system.
5. With the current release of Agile PLM, attributes are applied at the master data level. This means that an attribute cannot have different values across different part revisions.
6. Only the item number is used to query the item to be updated and all updates are made to the latest released revision of the item.

Note: New item creation is not part of the scope for this activity. The assumption is that the item exists in both Agile PLM and Oracle E-Business Suite, by means of a prior New Part Introduction or independent offline load processes.

Agile PLM Interfaces

This table lists the Agile PLM Web Services Definition Language (WSDL) files:

Interface	Description
UpdateItemListAgileProvABCImpl	
ItemABS.wsdl	Used to update an item attribute information in Oracle E-Business Suite

This table lists the Agile PLM XML Schema Definition (XSD) files:

Interface	Description
UpdateItemListAgileProvABCImpl	
ItemABM.xsd	Contains the update item list request and response ABO/ABM
ItemABO.xsd	

Oracle E-Business Suite Interfaces

This table lists the Oracle E-Business Suite WSDL files:

Interface	Description
UpdateItemListEbizReqABCImpl	
QueryItemListEbizAdapter.wsdl	Used for the OA adapter "INV_EBI_ITEM_PUB.GET_ITEM_ATTRIBUTES" pl/sql function call

This table lists the Oracle E-Business Suite XSD files:

Interface	Description
UpdateItemListEbizReqABCImpl	
ItemAttributeABM.xsd	ABM for ItemAttributeABO
ItemAttributeABO.xsd	Created based on the input from the Concurrent Program to the BPEL process and output to the Concurrent Program from the BPEL process
APPS_INV_EBI_ITEM_PUB_GET_ITEM_ATTRIBUTES.xsd	The input and output ABM for the PL/SQL API call are defined in this XSD. The package used is INV_EBI_ITEM_PUB.GET_ITEM_ATTRIBUTES

Interface	Description
CommonEbizComponents.xsd	Defines common ResponseType element

Core AIA Components

The process integration for item attribute update uses the following industry components:

Component	Name
Enterprise Business Object (EBO)	ItemEBO
Enterprise Business Message (EBM)	UpdateItemListEBM UpdateItemListResponseEBM
Enterprise Business Service (EBS)	ItemEBSV2 ItemResponseEBSV2

This table lists the core components locations:

Component	Location
EBO and EBM XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ EnterpriseBusinessServiceLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

For more information, see [Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "How to Access Oracle AIA Content in Oracle Enterprise Repository."

EBOs can be extended, for instance, to add new data elements. These extensions are protected and will remain intact after a patch or an upgrade.

For more information, see [Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "Understanding Extensibility."

Oracle E-Business Suite and Agile PLM Components

This table lists the Oracle E-Business Suite and Agile PLM components

Services	Oracle E-Business Suite (Requester)	Agile PLM (Provider)
ABMs	UpdateItemListABM	AgileUpdateListABM AgileUpdateListResponseABM
Application Business Connector Service (ABCS)	UpdateItemListEbizReqABCImpl	UpdateItemListAgileProvABCImpl
EBS	ItemEBSV2	ItemResponseEBSV2
Adapter service	QueryItemListEbizAdapter	---

This table lists the core components locations:

Component	Location
Application Business Objects, ABM, and Common XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Agile PLM/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core files
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Agile PLM/V1/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

Integration Services

The integration services for the item attribute update are:

- ItemEBSV2
- UpdateItemListEbizReqABCImpl
- UpdateItemListAgileProvABCImpl

ItemEBSV2

ItemEBSV2 is the Enterprise Business Services (EBS) that exposes the following operations related to the item attribute update integration flow in relation to the ItemEBO.

The following list itemizes the routing rules:

- ItemEBSV2 service
- UpdateItemList: Routes UpdateItemListEBM to UpdateItemListAgileProvABCSEImpl
- ItemResponseEBSV2 service
- UpdateItemListResponse: Routes UpdateItemListResponseEBM to UpdateItemListEbizReqABCSEImpl

UpdateItemListEbizReqABCSEImpl

This service is called when multiple items in Agile PLM with all the operational attributes as well as the attributes from Oracle E-Business Suite, such as unit cost, need to be updated. This is a push from Oracle E-Business Suite to Agile PLM through a batch process.

The process includes:

- The requester ABCS, defined as a synchronous process, receives a list of item IDs from the Oracle E-Business Suite concurrent program.
- The list contains only those IDs that have last_update_date greater than the last run date of the concurrent program.
- The requester BPEL process filters the list of IDs to a list of IDs that are present in the cross-reference tables in the Fusion Middleware (FMW) layer.
- This provides a list of items that are in Agile PLM. The original list of item IDs can contain items that are from the non-Agile PLM sources as well.
- The BPEL process then makes an OA Adapter call to the PL/SQL API, which provides the details of the sent item. This is the item ABM.
- A transformation converts the ABM to an EBM.
- An asynchronous request-delayed response call is made to ItemEBSV2 with UpdateItemListEBM. This service is routed to the appropriate provider.
- The BPEL instance is reactivated from dehydration store when the asynchronous call returns from the provider and provides the status of the transaction back to the caller concurrent program (because it is a synchronous call).
- The concurrent program logs the status of this call.

UpdateItemListAgileProvABCSEImpl

The UpdateItemListAgileProvABCSEImpl is used to facilitate the communication between the ItemEBSV2 and the Agile PLM Web service used for updating the item attribute information in a batch mode in Agile PLM.

The process includes:

- The UpdateItemListAgileProvABCSEImpl receives the UpdateItemListReqMsg that contains the UpdateItemListEBM.
- The transform operation is called to convert the UpdateItemListEBM into the AgileUpdateItemListABM.
- The AgileUpdateItemListABM is sent as input to the Web service operation UpdateItemList

(coarse-grained APIs in Agile PLM) to update the items in Agile PLM.

- The AgileUpdateItemListResponseABM is received upon successful implementation of the coarse-grained API.
- The transform operation is called to convert AgileUpdateItemListResponseABM to UpdateItemListResponseEBM, which is returned as an output of this BEPL process.
- If the UpdateItemList service operation fails on the Agile PLM side, a new fault is generated and is sent across with an appropriate error message.

Chapter 3: Process Integration for Item Balance Update

This chapter provides an overview of the process integration for item balance update and discusses:

- Item balance update process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- Oracle E-Business Suite interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

Overview

Agile PLM is the master for part and product information. Oracle E-Business Suite manages certain business related information related to the parts such as quantity on hand. This business information is regularly updated in Oracle E-Business and it is important to provide visibility to this information in the product development environment (PLM). The process integration for item balance update supports the update of quantity on hand and item availability

The item balance and availability information from Oracle E-Business Suite is updated in Agile PLM as part of the manufacturing update process for product information synchronization through a batch process. The term item applies to both parts and documents in Agile PLM.

The item balance information is stored in Oracle E-Business Suite in three attributes:

- Reserved Quantity
- Available Quantity
- On-hand Quantity

These three attributes are not available in the delivered application of Agile PLM. To update the item balance information from these three attributes, flex-fields in Agile PLM are configured and mapped. This configuration information is entered in the AIAConfigProperties.xml file (Multisite_Enabled property).

Item Balance Update Process Integration

The update of item balance information from Oracle E-Business Suite to Agile PLM is performed as a batch process.

The item balance update process includes:

1. Item balance information (that is on hand quantity) is modified in Oracle E-Business Suite.

This modification could be done in specific organizations or in a single Oracle E-Business Suite organization. You can designate, as a part of a configuration parameter, a single Oracle E-Business Suite organization from which all item attribute information is always retrieved. In such a case, it is not necessary to have Agile PLM multi-sites.

2. The input for this process consists of a batch of item on hand quantity or balance information with their unique identifiers and values that need to be updated in Agile PLM.
3. The batch process for publishing the changed information initiates at a specified frequency, which is configurable.

Note: While the update to information in Agile is normally driven through the scheduled batch processes, it is also possible to trigger the information update event from Oracle E-Business Suite through the Integrations Administrator and running the Publish Engineering Change Order Updates function.

4. The process retrieves the last date and time where the item information update process completed successfully.
5. The process retrieves the list of items whose on hand quantity has changed after the last successful run.

In addition, it retrieves the list of mapped attribute values for these items. The data is retrieved from one or more organizations as per site-org mappings or from the configured single organization.

Item balance information can exist in multiple organizations in Oracle E-Business Suite. Any change in any of the three types of attributes (reserve quantity, available quantity or on hand quantity) may take place in just one, or in a few, or in all organizations. Oracle E-Business Suite determines which organization corresponds (maps) to which flex-field in Agile PLM using the Domain Value Map (DVM) AGILE_TARGET_SITE_MAPPING.

In the case of a single site environment:

- Sites are mapped to the Oracle E-Business organizations through a specified P2 attribute (example, P2.ebiz Org)
- Item balance information is retrieved from the specified organization and updated in the mapped attributes in Agile
- In case an item is mapped to multiple organizations, the values from the first Organization in the transformed XML file are picked up for update

In the case of multi-site environment:

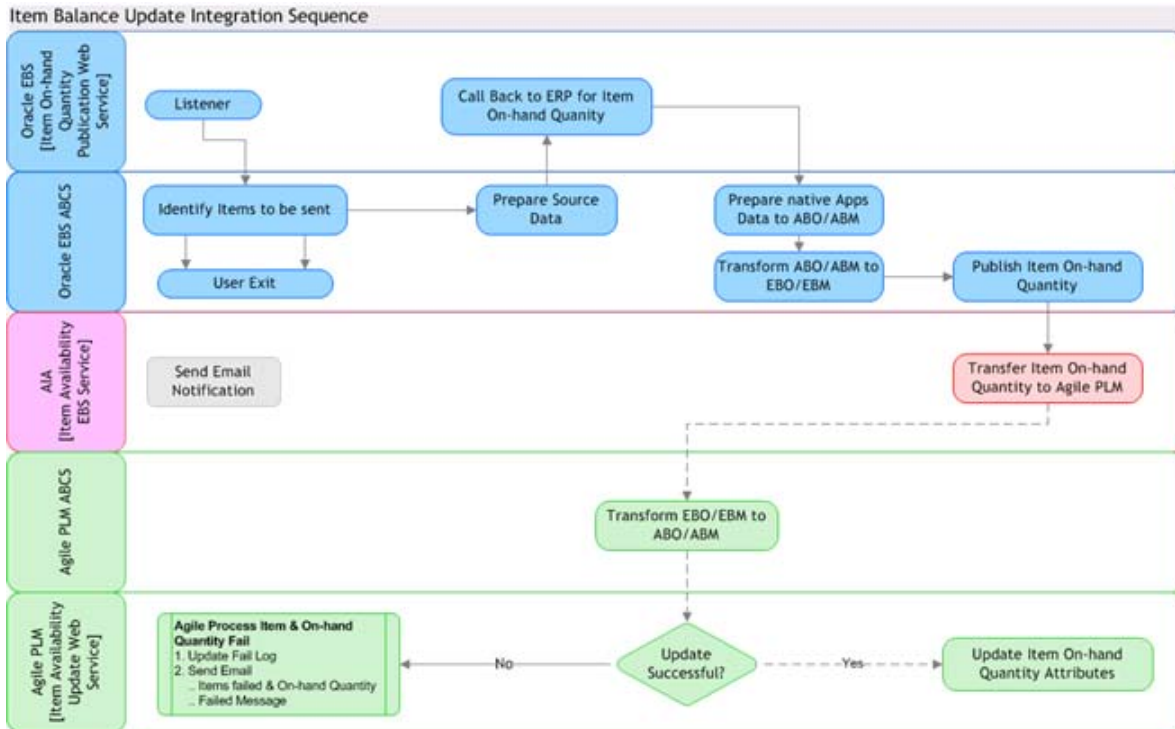
- The attribute to be updated is defined on the Site tab of the item in Agile PLM.
- Based on the update of the item attribute value in an Organization, the change is reflected in the mapped attribute in the corresponding Site.

The process updates the information in Agile PLM.

If the complete update is processed successfully, the process updates the date and time of last successful run. If the update for an item fails, the system continues to process other items in the batch. A list of all errors encountered when processing the batch are accumulated and logged.

This diagram illustrates the integration sequence for item balance update from Oracle E-Business Suite to Agile PLM:

Integration sequence for item balance update



Exceptions

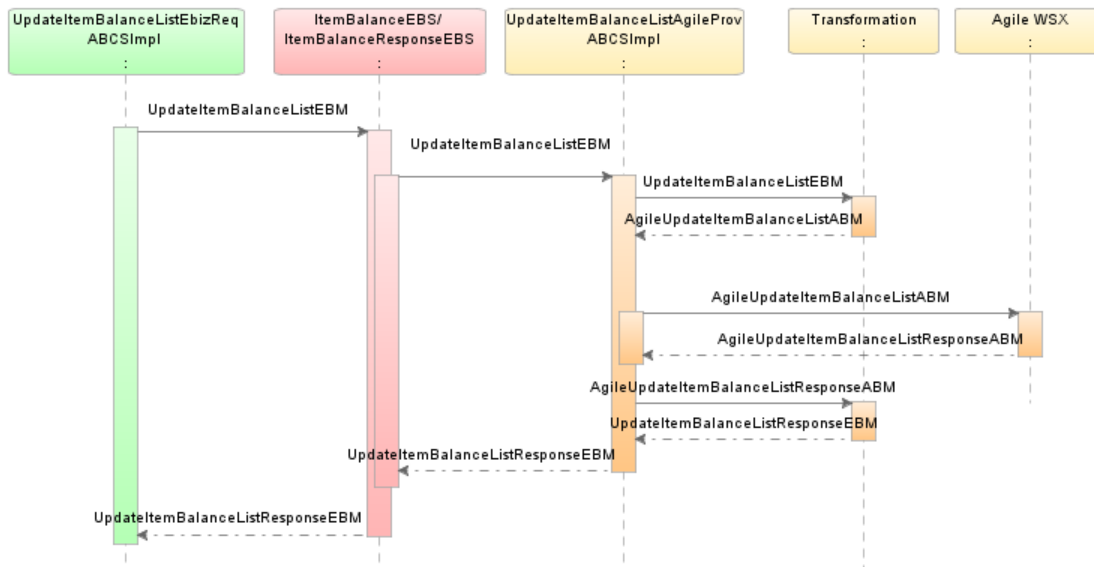
The following exception conditions create error messages for this integration process:

- Insufficient privilege to discover, read, add attachment to or update attributes on the Change object
- Invalid field value (indicate the field for which the value is incorrect, and the value that is being passed on to the field)
- Change object does not exist
- Error when adding attachment

Item Balance Update Integration Services Orchestration

This diagram illustrates the item balance update integration services orchestration:

Item balance update integration services orchestration



This table lists the activities involved in the item balance update integration services orchestration:

#	Activity	Remarks
1	Publish Item Balance concurrent program is initiated.	The Publish Item Balance concurrent program in Oracle E-Business Suite invokes UpdateItemBalanceListEbizReqABCSImpl.
2	UpdateItemBalanceListEbizReqABCSImpl invokes ItemBalanceEBS.	An invoke activity in UpdateItemBalanceListEbizReqABCSImpl invokes UpdateItemBalanceList operation on ItemBalanceEBS with UpdateItemBalanceList EBM as input.
3	ItemBalanceEBS invokes UpdateItemBalanceListAgileProvABCSImpl.	ItemBalanceEBS sends UpdateItemBalanceListEBM message as input to the UpdateItemBalanceListAgileProvABCSImpl service.
4	UpdateItemBalanceListAgileProvABCSImpl invokes Agile PLM's Item Balance Web service.	UpdateItemBalanceListAgileProvABCSImpl transforms UpdateItemBalanceListEBM to the AgileUpdateItemBalanceListABM message and invokes the UpdateItemBalanceList service operation on Agile PLM Web Service to update Item On-Hand Quantity information from Oracle to Agile PLM. AgileUpdateItemBalanceListResponseABM is returned to the UpdateItemBalanceListAgileProvABCSImpl service.
		Note: The UpdateItemBalanceAgileProvABCSImpl

#	Activity	Remarks
		composite uses the oracle/wss_http_token_client_policy client security policy while calling the ItemABS service hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password need to be setup correctly so that the Agile service is invoked successfully from the AIA composite in the FMW layer.
5	UpdateItemBalanceListAgileProvABCImpl sends the response to ItemBalanceResponseEBS.	UpdateItemBalanceListAgileProvABCImpl transforms AgileUpdateItemBalanceListResponseABM to UpdateItemBalanceListResponseEBM and returns it to ItemBalanceResponseEBS.
6	ItemBalanceResponseEBS sends UpdateItemBalanceListResponseEBM to UpdateItemBalanceListEbizReqABCImpl.	UpdateItemBalanceListEbizReqABCImpl sends the response to the concurrent program in Oracle E-Business Suite.

Solution Assumptions and Constraints

If item balance information needs to be retrieved from multiple organizations in Oracle E-Business Suite, the following constraints apply for an end-to-end process integration:

1. Agile PLM multisites must be configured.
2. A one-to-one mapping between the Agile PLM sites and Oracle E-Business Suite organizations exists.

This is derived from the AGILE_TARGET_SITE_MAPPING DVM.

3. The attributes to be updated with Oracle E-Business Suite data are on the Sites tab of the item if the Agile PLM multisites are configured.

Alternatively, customers can designate, as a part of configuration parameters, a single Oracle E-Business Suite organization from which available quantity information is always retrieved. In such a case, you do not need to have Agile PLM multisites. Any Title Block or Page Two attribute can be updated with Oracle E-Business Suite data in such a case.

4. All changes are interfaced to only one destination system.
5. With the current release of Agile PLM, attributes are applied at the master data level.

This means that an attribute cannot have different values across different part revisions.

6. Only the item number is used to query the item to be updated and all updates are made to the latest released revision of the item.

Note: New item creation is not part of the scope for this activity. The assumption is that the item exists in both Agile PLM and Oracle E-Business Suite, by means of a prior New Part Introduction or independent offline load processes.

Agile PLM Interfaces

This table lists the Agile PLM Web Services Definition Language (WSDL) files:

Interface	Description
UpdateItemBalanceListAgileProvABCImpl	
ItemABS.wsdl	Used to update an item balance information in Agile PLM

This table lists the Agile PLM XML Schema Definition (XSD) files:

Interface	Description
UpdateItemBalanceListAgileProvABCImpl	
ItemABM.xsd ItemABO.xsd	Contains the update item balance information request and response ABO and ABM

Oracle E-Business Suite Interfaces

This table lists the Oracle E-Business Suite WSDL files:

Interface	Description
UpdateItemBalanceListEbizReqABCImpl	
QueryItemBalanceListEbizAdapter.wsdl	Used for the OA adapter "INV_EBI_ITEM_PUB.GET_ITEM_BALANCE" pl/sql function call

This table lists the Oracle E-Business Suite XSD files:

Interface	Description
UpdateItemBalanceListEbizReqABCImpl	
ItemBalanceABM.xsd	ABM for ItemBalanceABO
ItemBalanceABO.xsd	Created based on the input from the Concurrent Program to the BPEL process and output to the Concurrent Program from the BPEL process
APPS_INV_EBI_ITEM_PUB_GET_ITEM_BALANCE.xsd	The input and output ABM for the PL/SQL API call are defined in this XDS. The package used is INV_EBI_ITEM_PUB.GET_ITEM_BALANCE

Interface	Description
CommonEbizComponents.xsd	Defines common ResponseType element

Core AIA Components

The process integration for item balance update uses the following industry components:

Component	Name
Enterprise Business Object (EBO)	ItemBalanceEBO
Enterprise Business Message (EBM)	UpdateItemBalanceListEBM UpdateItemBalanceListResponseEBM
Enterprise Business Service (EBS)	ItemBalanceEBS ItemBalanceResponseEBS

This table lists the core components locations:

Component	Name
EBO and EBM XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/apps/AIAMetaData/AIAComponents/ EnterpriseBusinessServiceLibrary /Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

For more information, see [Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "How to Access Oracle AIA Content in Oracle Enterprise Repository."

EBOs can be extended, for instance, to add new data elements. These extensions are protected and will remain intact after a patch or an upgrade.

For more information, see [Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "Understanding Extensibility."

Oracle E-Business Suite and Agile PLM Components for Item Balance Update

This table lists the Oracle E-Business Suite and Agile PLM components:

Services	Oracle E-Business Suite (Requester)	Agile PLM (Provider)
ABMs	ItemBalanceABM.xsd	AgileUpdateItemBalanceListABM AgileUpdateItemBalanceListResponseABM
Application Business Connector Service (ABCS)	UpdateItemBalanceListEbizReqABCImpl	UpdateItemBalanceListAgileProvABCImpl
EBS	ItemBalanceEBS	ItemBalanceResponseEBS
Adapter service	QueryItemBalanceListEbizAdapter	---

This table lists the core components locations:

Component	Location
Application Business Objects, ABM, and Common XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Agile PLM/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Agile PLM/V1/wsdls \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/wsdls \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

Integration Services

The integration services for the item balance update are:

- ItemBalanceEBS
- UpdateItemBalanceListEbizReqABCImpl
- UpdateItemBalanceListAgileProvABCImpl

ItemBalanceEBS

ItemBalanceEBS is the Enterprise Business Services (EBS) that exposes the following operations related to the item availability attributes update integration on the ItemBalanceEBO.

The following list itemizes the routing rules:

- **ItemBalanceEBS service**
UpdateItemBalanceList: Routes the UpdateItemBalanceListEBM to the UpdateItemBalanceListAgileProvABCImpl
- **ItemBalanceResponseEBS service**
UpdateItemBalanceListResponse: Routes the UpdateItemBalanceListResponseEBM to the UpdateItemBalanceListEbizReqABCImpl

UpdateItemBalanceListEbizReqABCImpl

This service is called when a participating application needs to update multiple item balance attributes on their system such as on-hand quantity from Oracle E-Business Suite. This is a push from Oracle E-Business Suite to the other participating application through a batch process.

The process includes:

- The requester ABCS, defined as a synchronous process, receives a list of item IDs from the Oracle E-Business Suite concurrent program.
The list contains the IDs that have last_update_date greater than the last run date of the concurrent program.
- The requester Business Process Execution Language (BPEL) process filters the list of IDs to a list of IDs that are present in the cross-reference tables in the Fusion Middleware (FMW) layer.
This provides a list of Items that are in the Agile PLM application. The original list of Item IDs can contain items that are from non-Agile PLM sources as well.
- The BPEL process then makes an OA Adapter call out that calls the PL/SQL API, which provides the details of the sent item.
This is an ItemBalance Application Business Message (ABM).
- A transformation converts the ABM to an EBM.
- An asynchronous request-delayed response call is made to the ItemBalanceEBS with the ItemBalanceListEBM.
This service is routed to the appropriate provider.
- The BPEL instance is reactivated from dehydration store when the asynchronous call returns from the provider and provides the status of the transaction back to the caller concurrent program (because that is a synchronous call).
It is a scheduled call and is invoked from the back end, not from the user interface (UI); hence, it does not affect performance.

- The concurrent program logs the status of this call.

UpdateItemBalanceListAgileProvABCImpl

UpdateItemBalanceListAgileProvABCImpl is used to facilitate the communication between ItemBalanceEBS and Agile PLM Web service used for updating the item quantity information in a batch mode in Agile PLM.

The process includes:

- The UpdateItemBalanceListAgileProvABCImpl receives UpdateItemBalanceListReqMsg, which contains UpdateItemBalanceListEBM.
- The transform operation is called to convert UpdateItemBalanceListEBM into AgileUpdateItemBalanceListABM.
- AgileUpdateItemBalanceListABM is sent as input to the Web service operation UpdateItemList (Coarse Grained APIs in Agile PLM) to update items in Agile PLM.
- AgileUpdateItemBalanceListResponseABM is received on the successful run of the Coarse Grained API.
- The transform operation is called to convert AgileUpdateItemBalanceListResponseABM to UpdateItemBalanceListResponseEBM, which is returned as output of this BEPL process.
- If the UpdateItems service operation fails on the Agile PLM side, a new fault is generated and is sent across with an appropriate error message.

Chapter 4: Process Integration for New Part Request

This chapter provides an overview of the process integration for new part request (NPR) and discusses:

- NPR process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- Oracle E-Business Suite interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

Overview

Even though Agile PLM is the system of record for product design and part information, new part numbers may originate in a system outside of Agile PLM. The NPR process sends the new part numbers from Oracle E-Business Suite to Agile PLM. This process can be triggered within Agile PLM in one of the following ways:

1. Releasing or approving an NPR object in Agile PLM:

Engineers designing an electronic assembly may need a part that they cannot find in the system. They will then raise a new part request to doc control that will then route it to materials managers for review.

Buyer will look into catalogs offered by the approved manufacturers and find a couple of parts that meet the criteria. They will contact the manufacturers, confirm availability, procure specifications, and then approve the new part request with the new manufacturer part numbers attached to it. Doc control will compile all the information, and assign an internal part number corresponding to the manufacturer parts and inform the engineers.

2. On-demand by user

An engineer creating a new part in Agile PLM should be able to get a part number generated from other ERP systems on request without creating an NPR and routing it for approval. This process integration addresses this scenario by invoking a new part request using a Custom Auto Number Process Extension (PX) or an Action menu based Process Extension.

When using the Custom Auto Number process extension, the NPR process is triggered after the AutoNumber option is selected and the item type is passed as the only parameter from Agile PLM to Oracle E-Business Suite to create the part in the Product Information Management (PIM) application.

3. Through the Action menu based process extension, a dummy part is created in Agile PLM and the NPR is triggered from the Action's menu of that part.

The set of mapped item attributes of the dummy part are sent as input to the NPR process and the dummy part number created in Agile is replaced by the actual part number created in Oracle E-Business Suite for the parameters that were sent.

NPR Process Integration

The synchronous new part request process from Agile PLM to E-Business includes:

1. A user in Agile PLM needs a new part number to be used on a design.

In Agile PLM, a user clicks the New Object button to create a new item for a given subclass. The New Part Request process integration compliments or replaces the new item creation process in Agile PLM by providing the users a process extension that they can use to trigger the creation of a new item.

2. The user has two options:
 - Use the Agile PLM AutoNumber process extension, which triggers the Automatic Part Number generation process. This will be used whenever the part number generation process is generic (mainly using a sequence), and does not require any item attributes to be used when generating the part number. The item type can be passed as the only parameter from Agile PLM to Oracle E-Business Suite to create the part in the PIM application. The AutoNumber PX sends a request to Oracle E-Business Suite, which generates a part number and sends it to Agile PLM.
 - Enter a dummy part number in Agile PLM that triggers the NPR process through a process extension from the Action's menu of the part. This part should not exist in Oracle E-Business Suite and therefore, the new part request will have all the required attributes for a part number to be generated in PIM. This is used whenever the user needs to specify the values for one or more item attributes (including item type). The user cannot use the dummy part number in a change order until the part is created in Oracle E-Business Suite and the actual part number is sent to Agile PLM.
3. In the case of the Action menu based process extension, the PX carries out some pre-validations and a set of mapped item attributes.

Certain validations are specific to each customer's environment (and therefore done at the time of implementation by the customer or consultant, and are not pre-packaged with the integration). Examples of such validations are:

- Ensure that the PX is being called for the right type of part. Not all part types may need their part numbers generated in PIM. One of the ways to do so is to ensure that the PX is being called from an item of the right subclass or the right type of dummy item number.
 - Ensure that the user calling the PX has the right privilege to generate a new part number in PIM for the item.
4. In the case of the autonumber process extension, the PX carries no input parameters, except for the item type.
 5. The PX calls the new part number generation process in PIM, which itself could be a custom function.

In the case of the Action menu based process extension, any attributes values passed from Agile are copied over to the corresponding mapped attributes in PIM.

6. PIM generates the part number and item number.

The item number and description is generated only if the context is Master Organization. If the item description cannot be generated or obtained, PIM sends the item number. If the organization is not passed, the item is created in the Master Organization. If more than one item master organizations exist in an Oracle E-Business Suite installation, then the organization value is obtained from the configuration property value for DEFAULT_MASTER_ORG.

7. The new part number is communicated to Agile PLM and is displayed to the user in the item or auto number window.

Optionally, a description may also be auto generated in PIM and sent back to Agile along with the part number.

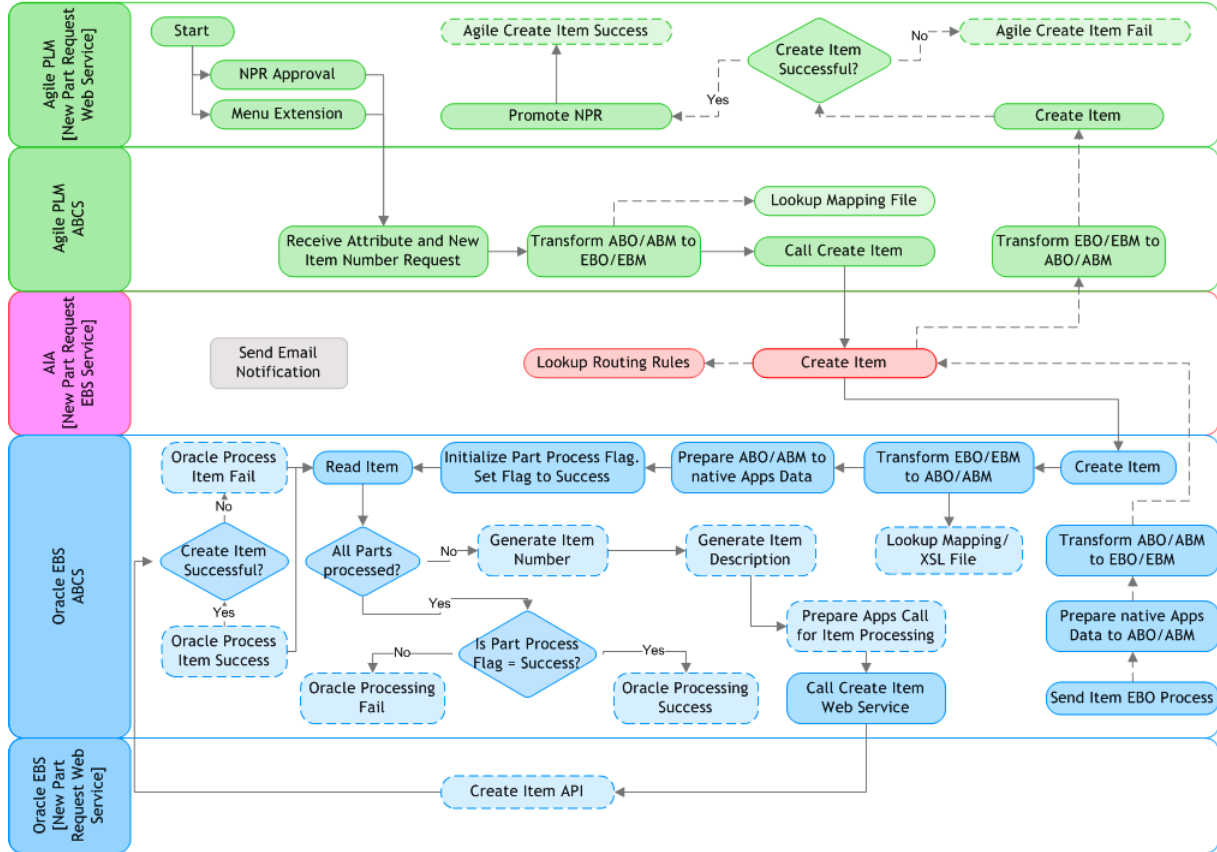
8. Depending on the type of PX, one of the following events occur:

- If the PX is AutoNumber, the part number from the response ABM is returned to the web client and displayed in the number field in the create item screen.
- If the PX is Action, the response ABM is updated on the part.

This diagram illustrates the integration sequence for NPR from Agile PLM to Oracle E-Business Suite:

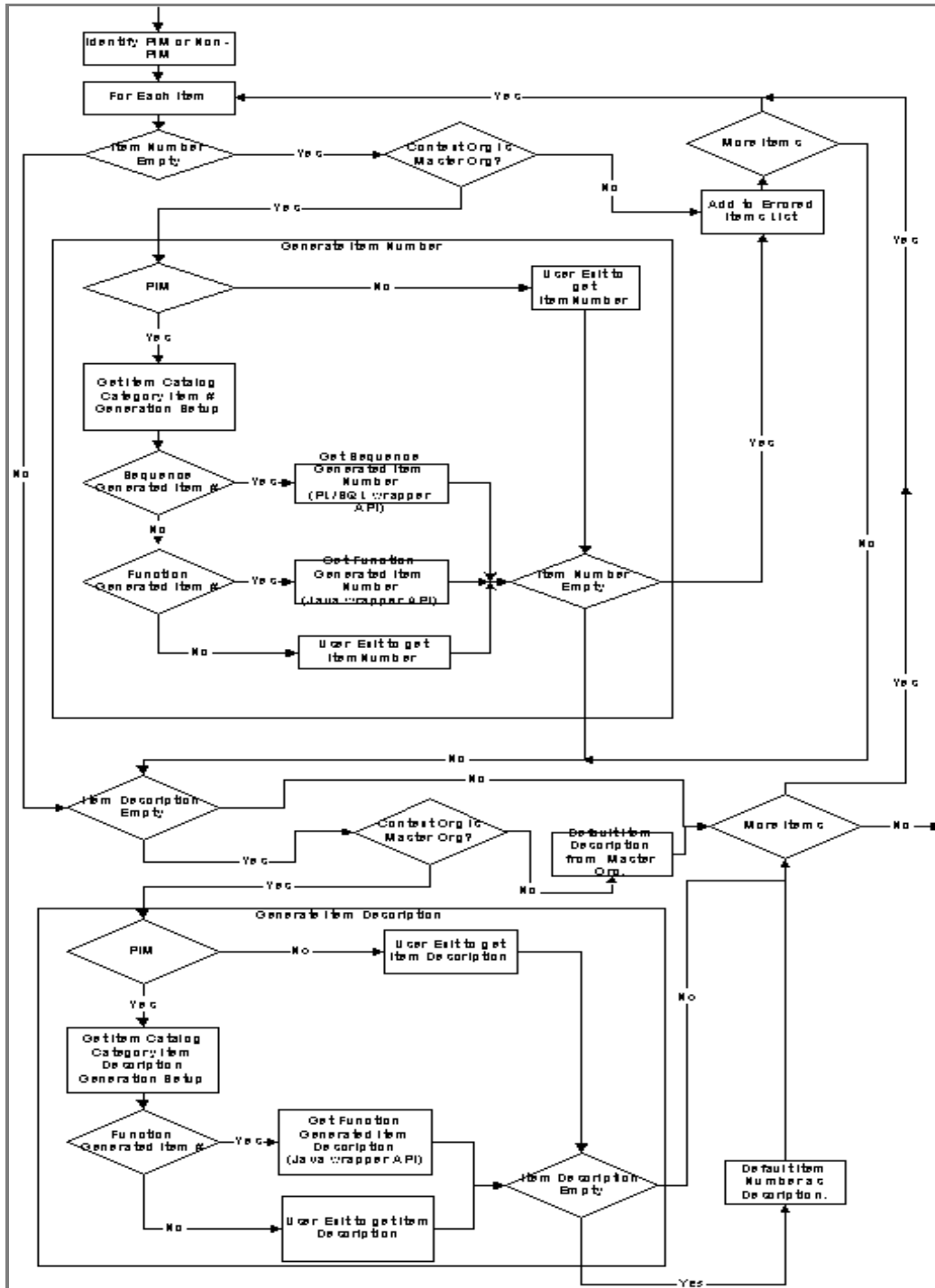
NPR sequence diagram

New Part Request Integration Flow



This diagram illustrates the logic for generating an item number and description in Oracle E-Business Suite:

Logic for generating an item number and description



Exceptions

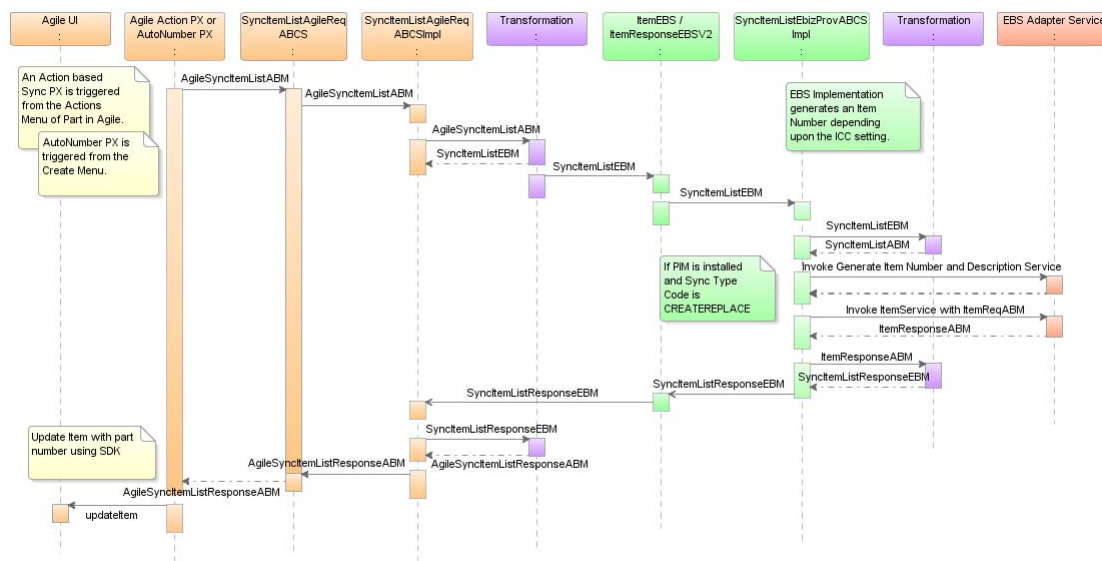
The following exception conditions create error messages for this integration process:

- The number/description generation attributes for the item catalog category setup are not passed.
- The item catalog category is not passed or is in invalid.
- The context organization is not passed.
- More than one item master organizations exist and the default master organization configuration property is not setup or is invalid.
- The new part request process time out with no result.

NPR Integration Services Orchestration

This diagram illustrates the NPR integration services orchestration:

NPR integration services orchestration



This table lists the NPR integration services orchestration activities:

Step	Activity	Remarks
1	Agile PLM NPRAutoNumber PX or NPRActionPX is triggered.	One of these is triggered by an Agile PLM user from the Agile PLM Web client as part of new part creation.
2	Invoke SyncItemAgileReqABCS with AgileSyncItemListABM as input.	The NPRAutoNumberPX or NPRActionPX process invokes SyncItemAgileReqABCS with AgileSyncItemListABM as input.
3	Invoke SyncItemAgileReqABCImpl with AgileSyncItemListABM as input.	SyncItemAgileReqABCS invokes SyncItemAgileReqABCImpl with AgileSyncItemListABM as input.

Step	Activity	Remarks
4	SyncItemListAgileReqABCImpl invokes ItemEBSV2 with the SyncItemListEBM operation.	<p>SyncItemListAgileReqABCImpl transforms AgileSyncItemListABM into SyncItemList EBM and invokes SyncItemList operation on ItemEBSV2 with SyncItemListEBM as the input.</p> <p>SyncItemListEBM is routed to Oracle E-Business Suite SyncItemListEbizProvABCImpl.</p>
5	SyncItemListEbizProvABCImpl transforms and then calls the Oracle E-Business Suite service.	<p>SyncItemListEbizProvABCImpl transforms SyncItemListEBM into SyncItemListABM and invokes the GenerateItemNumberService BPEL process to generate the new part number and description based on the Number Generation Method and Description Generation Method setup in PIM for that item type (Item Catalog Category) and invokes SyncItemListEbizAdapter to create the new part in PIM. Finally, transforms ItemResponseABM into SyncItemListResponseEBM and routes the response to Agile PLM through ItemResponseEBSV2.</p> <p>Note: The GenerateItemNumberService composite service uses the oracle/wss_username_token_client_policy client security policy while calling GenerateItemNumberAndDescriptionService hosted through IRep on the Oracle E-Business Suite server. The security credentials for this are stored in the csf-key GINServiceKey on Fusion Middleware (FMW). The Oracle E-Business Suite username and password need to be setup correctly so that the Oracle E-Business Suite service is invoked successfully from the AIA composite in FMW layer.</p>
6	SyncItemListAgileReqABCImpl transforms and then returns the response to SyncItemListAgileReqABCS.	SyncItemListAgileReqABCImpl transforms SyncItemListResponseEBM into AgileSyncItemListResponseABM and returns the same to SyncItemListAgileReqABCS.
7	SyncItemListAgileReqABCS returns AgileSyncItemListResponseABM to NPRAutnumberPX/ NPRActionPX	SyncItemListAgileReqABCS returns AgileSyncItemListResponseABM to NPRAutnumberPX or NPRActionPX.
8	NPRAutnumberPX/ NPRActionPX returns the part number to New Part Creation UI in Agile PLM.	The NPRActionPX/NPR Auto number PX using AgileSyncItemListResponseABM updates the part using Agile SDK. The PX updates all the information passed from Oracle E-Business Suite in case of the Action menu based PX and only the part number in

Step	Activity	Remarks
		case of Auto Number PX.

Solution Assumptions and Constraints

1. Item catalog category (ICC) is set up with the necessary item number and generation setup in Oracle E-Business Suite.

If the item catalog category is set up with New Item Request (NIR), then the item created will be an engineering item and will need to go through the NIR process in Oracle E-Business Suite

2. Oracle E-Business Suite INV: Default primary unit of measure and INV: Default Item Status profile options must be set up to create the item successfully.
3. The Action menu based PX is designed in such a way that any attribute for the item could be passed in the payload.

In addition, any extra information from Oracle E-Business Suite could be updated on the item apart from Part Number.

4. While Autonumber PX is being created, a unique autonumber is created for every subclass.
5. Dynamic invocation interface (DII) is used in the Autonumber PX for triggering the integration so that no stubs are generated for the Application Business Messages (ABMs) and are packaged in the PX jar; any changes to the payload have minimum impact.

Agile PLM Interfaces

This table lists the Agile PLM Web Services Definition Language (WSDL) files:

Interface	Description
SyncItemListAgileReqABCS SyncItemListAgileReqABCImpl	
ItemABS.wsdl	Used to create an item in Oracle E-Business Suite

This table lists the Agile PLM XML Schema Definition (XSD) files:

Interface	Description
SyncItemListAgileReqABCS SyncItemListAgileReqABCImpl	
ItemABM.xsd ItemABO.xsd	Contains the Item Request and Response ABM/Application Business Objects (ABOs)

Oracle E-Business Suite Interfaces

This table lists the Oracle E-Business Suite WSDL files:

Interface	Description
SyncItemListEbizProvABCImpl	
SyncItemListEbizAdapter.wsdl	Used for the OA Adapter "INV_EBI_ITEM_PUB.process_item" pl/sql function call

This table lists the Oracle E-Business Suite XSD files:

Interface	Description
SyncItemEbizProvABCImpl	
APPS_INV_EBI_ITEM_PUB_PROCESS_ITEM.xsd	Contains the CreateItem Request and Response ABM
GenerateItemNumberABM.xsd	Contains the GenerateItemNumber User Exit Output Type

Core AIA Components

The process integration for NPR uses the following industry components:

Component	Name
Enterprise Business Object (EBO)	ItemEBO
Enterprise Business Message (EBM)	SyncItemListEBM SyncItemListResponseEBM
Enterprise Business Service (EBS)	ItemEBSV2 ItemResponseEBSV2

This table lists the core components locations:

Component	Location
EBO and EBM XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/apps/AIAMetaData/AIAComponents/ EnterpriseBusinessServiceLibrary /Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

For more information, see [Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "How to Access Oracle AIA Content in Oracle Enterprise Repository."

EBOs can be extended, for instance, to add new data elements. These extensions are protected and will remain intact after a patch or an upgrade.

For more information, see [Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "Understanding Extensibility."

Agile PLM and Oracle E-Business Suite Components

This table lists the Agile PLM and Oracle E-Business Suite components:

Services	Agile PLM (Requester)	Oracle E-Business Suite (Provider)
ABMs	AgileSyncItemABM AgileSyncItemResponseABM	GenerateItemNumberABM APPS_INV_EBI_ITEM_PUB_PROCESS_ITEM
Application Business Connector Service (ABCS)	SyncItemAgileReqABCS SyncItemAgileReqABCSImpl	SyncItemEbizProvABCSImpl

This table lists the core components locations:

Component	Location
Application Business Objects, ABM, and Common XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/apps/AIAMetaData/AIAComponents/ EnterpriseBusinessServiceLibrary /Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

Integration Services

The integration services for the NPR process are:

- ItemEBSV2
- SyncItemAgileReqABCSImpl
- SyncItemEbizProvABCSImpl

ItemEBSV2

ItemEBSV2 exposes the operations related to the item integration on the Item EBO.

The following list itemizes the routing rules:

- ItemEBSV2 service
SyncItemList: Routes SyncItemListEBM to SyncItemListEbizProvABCImpl
- ItemResponseEBSV2 service
SyncItemListResponse: Routes SyncItemListResponseEBM to SyncItemListAgileReqABCImpl

SyncItemListAgileReqABCImpl

SyncItemListAgileReqABCImpl transforms the Agile PLM message (AgileSyncItemListABM) into SyncItemListEBM, calls the routing service to synchronize the item, and receives the SyncItemListResponseEBM response from Oracle E-Business Suite. It then transforms the SyncItemListResponseEBM response from the routing EBS back to the Agile PLM message (AgileSyncItemListResponseABM) and sends it to SyncItemListAgileReqABC, which returns it to the calling Agile PLM PX.

The process includes:

1. Receives AgileSyncItemListABM from SyncItemListAgileReqABC invoke by the Agile PLM Action PX or Autonumber PX.
2. Transforms this message into SyncItemListEBM:
 - a. Populates the EBM header
 - b. Determines the target system IDs and adds them in the EBM header for controlling the routing
 - c. Validates the required fields
 - d. Maps to the SyncItemListEBM
3. Calls the target ItemEBSV2 service with the operation SyncItemList
4. Transforms the SyncItemList Response Message (from SyncItemListResponseEBM) to an AgileSyncItemListResponseABM Agile PLM message
5. Sends AgileSyncItemListResponseABM back to SyncItemListAgileReqABC, which in turn sends it back to the respective PX

SyncItemListEbizProvABCImpl

SyncItemListEbizProvABCImpl receives the SyncItemListEBM message from ItemEBSV2, transforms it into Oracle E-Business Suite specific SyncItemListABM, and calls the Generate Item Number and Description services. Depending on the item catalog category, the item number and its description are generated and returned.

Note: Generate Item Number and Description service is called only if the syncActionCode value in the EBM is CREATEREPLACE. In the NPR flow, the value of syncActionCode is CREATEREPLACE; however, in the item synchronization flow, where the value of syncActionCode is CREATEUPDATE, the Generate Item Number and Description service is not called.

Subsequently, this Sync Item PL/SQL Application Programming Interface (API) is called to synchronize an item in Oracle E-Business Suite. It then transforms Oracle E-Business Suite-specific response message SyncItemResponseABM to SyncItemResponseEBM and calls the routing service ItemResponseEBSV2 from which the response is sent back to Agile PLM.

The process includes:

1. Receives SyncItemEBM from ItemEBSV2
2. Transforms SyncItemEBM into Oracle E-Business Suite specific message SyncItemABM
3. Applies the dynamically generated eXtensible Stylesheet Language (XSL) onto this transformation

This dynamic XSL is generated based on the eXtensible Stylesheet Language Transformation (XSLT) defined at the customer site, which allows mapping of the EBM attributes to the ABM attributes that can be configured at the customer site. To allow this mapping, a template call is made at the end of the Transformation XSL file (the one that transforms the EBM to ABM) and this dynamic XSL is called from the original EBM-To-ABM transformation XSL.

4. Calls the GenerateItemNumberService helper BPEL process if PIM is installed
5. Creates the item in Oracle E-Business Suite with Oracle E-Business Suite Generated Item Number instead of the Agile PLM Generated Item Number
 - a. Populates the EBM header
 - b. Determines the Target System IDs and adds them into the EBM header for controlling the routing
 - c. Validates the required fields
6. If the condition IS_PIM_INSTALLED is set to true, it calls the GIN service
7. Invokes the Sync Item API
8. Transforms Oracle E-Business Suite specific message SyncItemResponseABM into SyncItemResponseEBM
9. Calls ItemResponseEBSV2 to send response message SyncItemResponseEBM to SyncItemAgileReqABCImpl

Chapter 5: Process Integration for Item Synchronization

This chapter provides an overview of the process integration for item synchronization and discusses:

- Item synchronization process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- Oracle E-Business Suite interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

Overview

Agile PLM is the system of record for product design and part information. The Item Synchronization process sends the new part numbers together with the part attributes from Agile PLM to Oracle E-Business Suite. Synchronization of an item from Agile PLM to Oracle E-Business Suite is performed in the following two scenarios:

- A part number is created in Agile PLM and the same part number needs to be created in Oracle E-Business Suite/PIM.
- A part already exists in Agile PLM and Oracle E-Business Suite/PIM; however, a change is created on the item in Agile PLM.

The information of this item from Agile PLM needs to be synchronized with the existing item information in Oracle E-Business Suite/PIM.

The process of synchronization of an item can be triggered on-demand by the user. An engineer creating a new part in Agile PLM synchronizes the same with Oracle E-Business Suite/PIM through an action menu based process extension (PX). If the item does not exist in Oracle E-Business Suite/PIM, it will be created, or else updated.

The item synchronization process is almost the same as the New Part Request (NPR) process. However, for item synchronization, a new PX (Syncltem PX) in Agile PLM is used to trigger the publication of a new part into Oracle E-Business Suite/PIM or synchronization of an updated part from Agile PLM into Oracle E-Business Suite/PIM. The part information is replicated in Oracle E-Business Suite/PIM and a transfer status is returned. On the contrary to the item synchronization, if a part was created outside of Agile and Agile does not have the part number, the NPR process involves sending the part number from Oracle E-Business Suite into Agile.

All this is performed in realtime. No approval or any other role is involved in the process.

Item Synchronization Process Integration

The item synchronization process includes:

- For item synchronization, the part number is created first in Agile PLM and then in Oracle E-Business Suite.
If the part already exists in Oracle E-Business Suite, the part data will be synchronized with Agile PLM's part information.
- An action menu based process extension (syncitemPX) is used to trigger the publication of the part number into Oracle E-Business Suite/PIM or synchronization of an updated part from Agile PLM into Oracle E-Business Suite/PIM.
- The part information is replicated in Oracle E-Business Suite/PIM and a transfer status is returned whether it was successful or not.

Exceptions

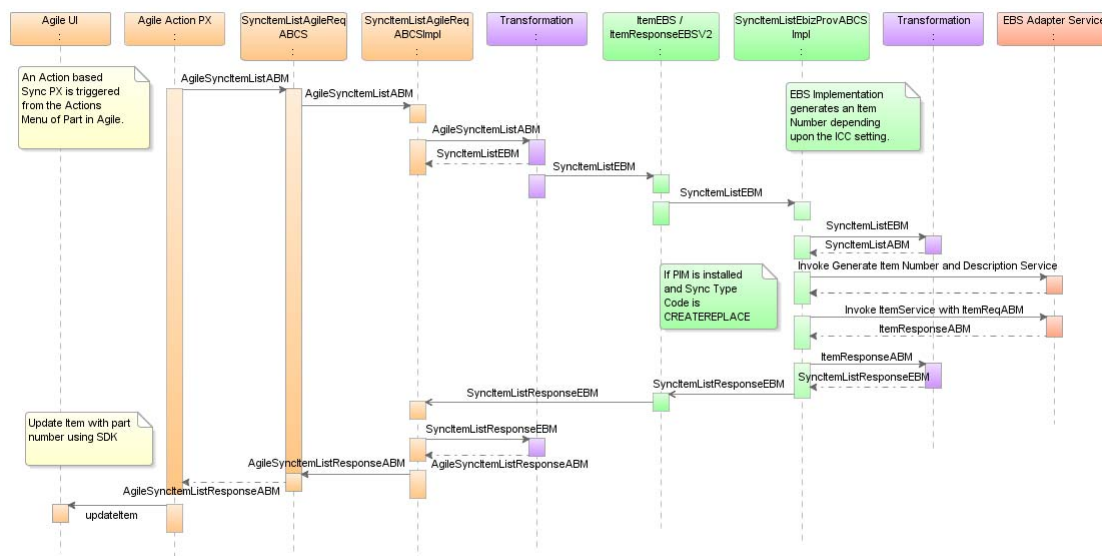
The following exception conditions create error messages for this integration process:

- The context organization is not passed.
- More than one item master organizations exist and the default master organization configuration property is not setup or is invalid.

Item Synchronization Integration Services Orchestration

This diagram illustrates the item synchronization integration services orchestration:

Item synchronization integration services orchestration



This table lists the activities in item synchronization integration services orchestration:

Step	Name	Step Description
1.	Agile PLM SyncItemPX is triggered.	The Agile PLM Sync Item PX is triggered by the Agile PLM user from the Agile PLM Web client as part of New Part creation in Agile PLM.
2.	Invoke SyncItemListAgileReqABCS with AgileSyncItemListABM as input.	The SyncItemPX process invokes SyncItemListAgileReqABCS with AgileSyncItemListABM as input.
3.	Invoke SyncItemListAgileReqABCSEmpl with AgileSyncItemListABM as input.	SyncItemListAgileReqABCS invokes SyncItemListAgileReqABCSEmpl with AgileSyncItemListABM as input.
4.	SyncItemListAgileReqABCSEmpl invokes ItemEBSV2 with the SyncItemList operation.	SyncItemListAgileReqABCSEmpl transforms AgileSyncItemListABM into SyncItemListEBM and invokes SyncItemList operation on ItemEBSV2 with SyncItemListEBM as the input. SyncItemListEBM is routed to Oracle E-Business Suite SyncItemListEbizProvABCSEmpl.
5.	SyncItemListEbizProvABCSEmpl transforms and then calls the Oracle E-Business Suite service.	SyncItemListEbizProvABCSEmpl first transforms SyncItemListEBM into the input of the Oracle E-Business Suite service to create or update the item in Oracle E-Business Suite and then calls that service. SyncItemListEbizProvABCSEmpl invokes ItemResponseEBSV2 with SyncItemListResponseEBM as input, which is routed to SyncItemListAgileReqABCSEmpl.
6.	SyncItemListAgileReqABCSEmpl transforms and then returns the response to SyncItemListAgileReqABCS.	SyncItemListAgileReqABCSEmpl transforms SyncItemListResponseEBM into AgileSyncItemListResponseABM and returns the same to SyncItemListAgileReqABCS.
7.	SyncItemListAgileReqABCS returns AgileSyncItemListResponseABM to the SyncItemPX.	SyncItemListAgileReqABCS returns AgileSyncItemListResponseABM to SyncItemPX.
8.	SyncItemPX returns the part number to New Part Creation UI in Agile PLM	SyncItemPX gets a message from AgileSyncItemListResponseABM and displays an appropriate message in UI.

Solution Assumptions and Constraints

1. Part number generation occurs first in Agile PLM and adheres to policies established in Oracle E-Business Suite/PIM.
2. An Action based PX (SyncItem PX) is designed in such a way that any attribute for an item could be passed into the payload along with the site-specific attributes if multisite is enabled in Agile PLM.

3. Dynamic invocation interface (DII) is used in PX for triggering the integration so that no stubs are generated for the Application Business Messages (ABMs) and packaged in the PX jar; any changes to the payload will have minimum impact.
4. Oracle E-Business Suite INV: Default primary unit of measure and INV: Default Item Status profile options must be set up to create the item successfully.
5. The Action menu based PX is designed in such a way that any attribute for the item could be passed in the payload.

Agile PLM Interfaces

This table lists the Agile PLM Web Services Definition Language (WSDL) files:

Interface	Description
SyncItemListAgileReqABCS SyncItemListAgileReqABCImpl	
ItemABS.wsdl	Used to create an item in Oracle E-Business Suite

This table lists the Agile PLM XML Schema Definition (XSD) files:

Interface	Description
SyncItemListAgileReqABCS SyncItemListAgileReqABCImpl	
ItemABM.xsd ItemABO.xsd	Contains the Item Request and Response ABM/Application Business Objects (ABOs)

Oracle E-Business Suite Interfaces

This table lists the Oracle E-Business Suite WSDL files:

Interface	Description
SyncItemListEbizProvABCImpl	
SyncItemListEbizAdapter.wsdl	Used for the OA Adapter "INV_EBI_ITEM_PUB.process_item" pl/sql function call

This table lists the Oracle E-Business Suite XSD files:

Interface	Description
SyncItemEbizProvABCImpl	
APPS_INV_EBI_ITEM_PUB_PROCESS_ITEM.xsd	Contains the CreateItem Request and Response ABM

Core AIA Components

The process integration for item synchronization uses the following industry components:

Component	Name
Enterprise Business Object (EBO)	ItemEBO
Enterprise Business Message (EBM)	SyncItemListEBM SyncItemListResponseEBM
Enterprise Business Service (EBS)	ItemEBSV2 ItemResponseEBSV2

This table lists the core components locations:

Component	Location
EBO and EBM XML Schema Definition (XSD) files	\$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/apps/AIAMetaData/AIAComponents/ EnterpriseBusinessServiceLibrary /Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V 1

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

For more information, see [Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "How to Access Oracle AIA Content in Oracle Enterprise Repository."

EBOs can be extended, for instance, to add new data elements. These extensions are protected, and they will remain intact after a patch or an upgrade.

For more information, see [Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "Understanding Extensibility."

Agile PLM and Oracle E-Business Suite Components for Item Synchronization

This table lists the Agile PLM and Oracle E-Business Suite components:

Services	Agile PLM (Requester)	Oracle E-Business Suite (Provider)
ABMs	AgileSyncItemListItemABM AgileSyncItemListItemResponseABM	APPS_INV_EBI_ITEM_PUB_PROCESS_ITEM
Application Business Connector Service (ABCS)	SyncItemListItemAgileReqABCS SyncItemListItemAgileReqABCSImpl	SyncItemListItemEbizProvABCSImpl

This table lists the core components locations:

Component	Location
Application Business Objects, ABM, and Common XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Agile PLM/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Agile PLM/V1/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

Integration Services

The integration services for the item synchronization process are:

- ItemEBSV2
- SyncItemListItemAgileReqABCSImpl
- SyncItemListItemEbizProvABCSImpl

ItemEBSV2

ItemEBSV2 exposes the operations related to the item integration on the item EBO. The following list itemizes the routing rules:

- ItemEBSV2
SyncItemListItem: Routes SyncItemListItemEBM to SyncItemListItemEbizProvABCSImpl
- ItemResponseEBSV2

SyncItemResponse: Routes SyncItemResponseEBM to SyncItemAgileReqABCSImpl

SyncItemAgileReqABCSImpl

SyncItemAgileReqABCSImpl transforms the Agile PLM message (AgileSyncItemABM) into SyncItemEBM, calls the routing service to synchronize the item, and receives the SyncItemResponseEBM response from Oracle E-Business Suite. It then transforms the SyncItemResponseEBM response from the routing EBS back to the Agile PLM message (AgileSyncItemResponseABM) and sends it to SyncItemAgileReqABCS, which returns it to the calling Agile PLM PX.

The process includes:

1. Receives the AgileSyncItemABM from the SyncItemAgileReqABCS invoked by the Agile PLM Action PX
2. Transforms this message into SyncItemEBM:
 - a. Populates the EBM header
 - b. Determines the target system IDs and adds them in the EBM header for controlling the routing
 - c. Validates the required fields
 - d. Maps to SyncItemEBM
3. Calls the target ItemEBSV2 service with the operation SyncItemList
4. Transforms the SyncItem Response message (from SyncItemResponseEBM) to an AgileSyncItemResponseABM Agile PLM message
5. Sends AgileSyncItemResponseABM back to SyncItemAgileReqABCS, which in turn sends it to the respective PX

SyncItemEbizProvABCSImpl

SyncItemEbizProvABCSImpl receives the SyncItemEBM message from ItemEBSV2, transforms it into an Oracle E-Business Suite-specific SyncItemABM.

Note: Generate Item Number and Description service is called only if the syncActionCode value in the EBM is CREATEREPLACE. In the NPR flow, the value of syncActionCode is CREATEREPLACE; however, in the item synchronization flow, where the value of syncActionCode is CREATEUPDATE, the Generate Item Number and Description service is not called.

Subsequently, the Sync Item PL/SQL Application Programming Interface (API) is called to synchronize an item in Oracle E-Business Suite. It transforms the Oracle E-Business Suite-specific response message SyncItemResponseABM to SyncItemResponseEBM and calls the routing service ItemResponseEBSV2 from which the response is sent to Agile PLM.

The process includes:

1. Receives SyncItemLEBMB from ItemEBSV2
2. Transforms SyncItemLEBMB into Oracle E-Business Suite specific message SyncItemLEBMA
3. Applies the dynamically generated eXtensible Stylesheet Language (XSL) onto this transformation

This dynamic XSL is generated based on the eXtensible Stylesheet Language Transform (XSLT) defined at the customer site, which allows mapping of the EBM attributes to the ABM attributes that can be configured at the customer site. To allow this mapping, a template call is made at the end of the Transformation XSL file (the one that transforms the EBM to ABM) and this dynamic XSL is called from the original EBM-To-ABM transformation XSL.

4. Creates an item in Oracle E-Business Suite with Oracle E-Business Suite Generated Item Number instead of Agile PLM Generated Item Number
 - a. Populates the EBM header
 - b. Determines the target system IDs and adds them in the EBM header for controlling the routing
 - c. Validates the required fields
5. Invokes the Sync Item API
6. Transforms Oracle E-Business Suite-specific message SyncItemLEBMA into SyncItemLEBMA
7. Calls ItemResponseEBSV2 to send response message SyncItemLEBMA to SyncItemLEBMAImpl

Chapter 6: Process Integration for Change Order Validation

This chapter provides an overview of the process integration for change order validation and discusses:

- Change order validation process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- Oracle E-Business Suite interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

Overview

The process integration for change order validation facilitates validating a change order whether it will be implemented successfully in Oracle E-Business Suite, before the change order is routed for approval in Agile PLM. This process integration is similar to the process integration for change order release. However, the difference is that the change order release process applies only to the changes in the released state of workflow, but the change order validation is applicable to all other workflow status prior to the released state.

This process can be implemented as many times as possible and in any workflow state other than the released state before the change order is released in Agile PLM. The preferred workflow state for change order validation is submitted. After validation, the change order can be re-submitted for validation or can be released to be synchronized with Oracle E-Business Suite.

Change Order Validation Process Integration

This process includes the following steps:

1. In Agile PLM, a change order is created and an aXML file of the change order is generated through an Automated Transfer Order (ATO).

An ATO is a routable object that triggers and tracks automated transfer of product content information from Agile to XML through Agile PLM Content Service (ACS).

2. If the workflow status of this change order is other than *released*, the integration determines that the change order is being submitted for validation.
3. The change order's aXML file is not queued, and is not subject to dependency checks.

However, it appears in the integration Queue Monitor user interface in a separate section called Validate ECO. In this section, only the following information is displayed as read only:

- ECO Number
 - aXML file number
 - Release Audit Status (Pending Processing, In Process, Failed, Passed, Warning). The Warning status indicates that the audit status process could not be completed because of some error (such as unable to connect to Oracle DB)
 - Log file
4. The change orders queued for validations are processed concurrently unlike the change orders queued for synchronization, which are processed sequentially.

If validation of a change order fails, the next change order in the queue is picked up for processing automatically.

5. The integration carries out the process of posting data to Oracle E-Business Suite.

However, after processing the whole change order, it does not commit the data. In an event of a failure, the error messages are sent back to Agile PLM. This is followed by a rollback of the transaction. If the process is successful, the status is updated as Validated in Agile PLM's Transfer Status attribute (change order Agile PLM P2 or P3 defined attribute for the Change.TransferStatusAttribute property)

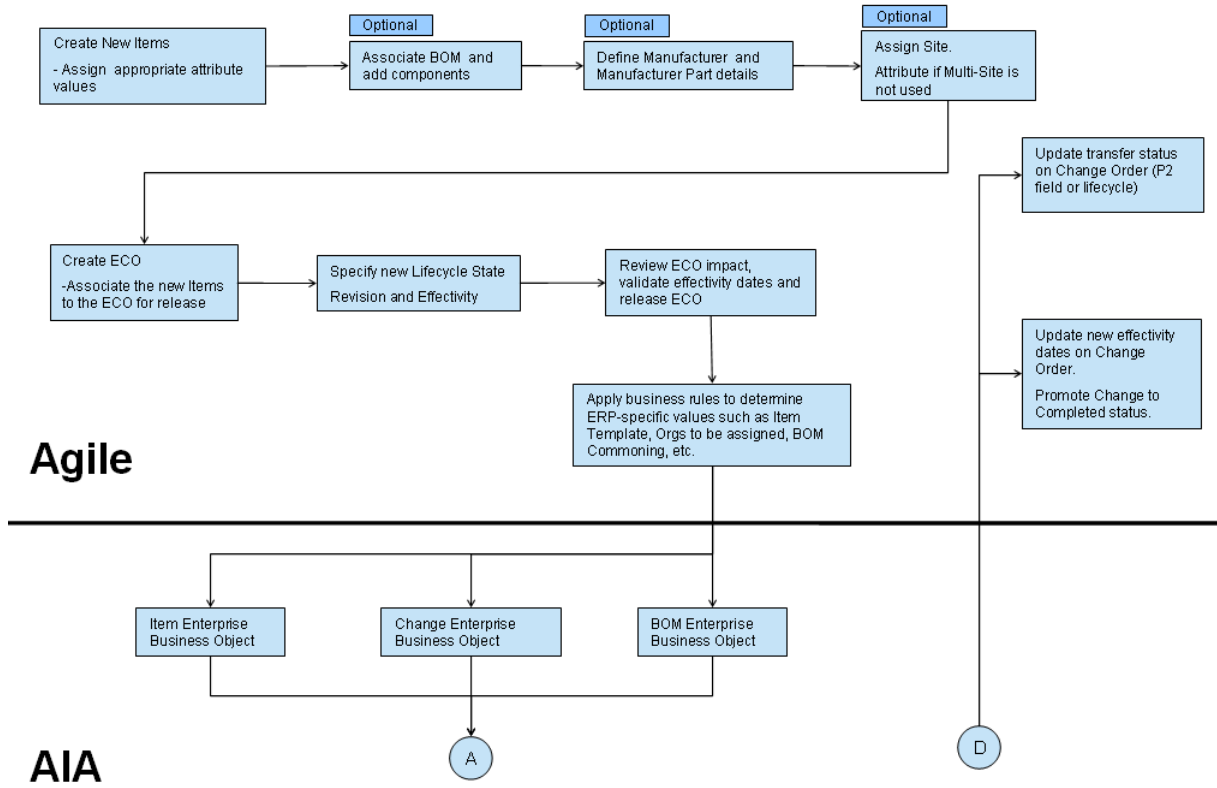
If the process fails, the status is updated as Validation Failed in Agile PLM's Transfer Status attribute (change order Agile PLM P2 or P3 defined attribute for the Change.TransferStatusAttribute property). In addition, an email notification is sent to the AIAIntegrationAdmin user, which is configured in the weblogic console under Security Realms.

For more information, see [Chapter 10](#) > Modify Flex Fields > step 6.

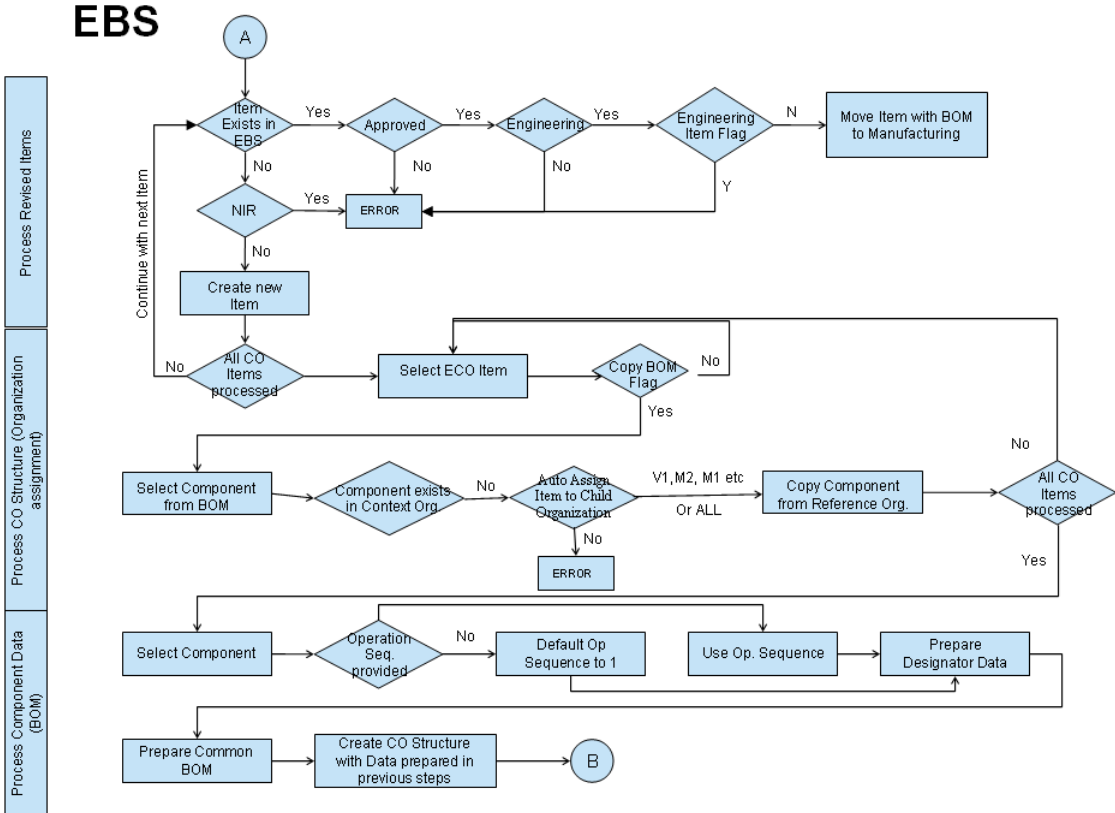
6. Errors are logged or displayed in the Queue Monitoring UI and also stored in the database on the middle tier for future reference if needed (Similar to current ECO release processing)

These diagrams illustrate change order validation integration sequence:

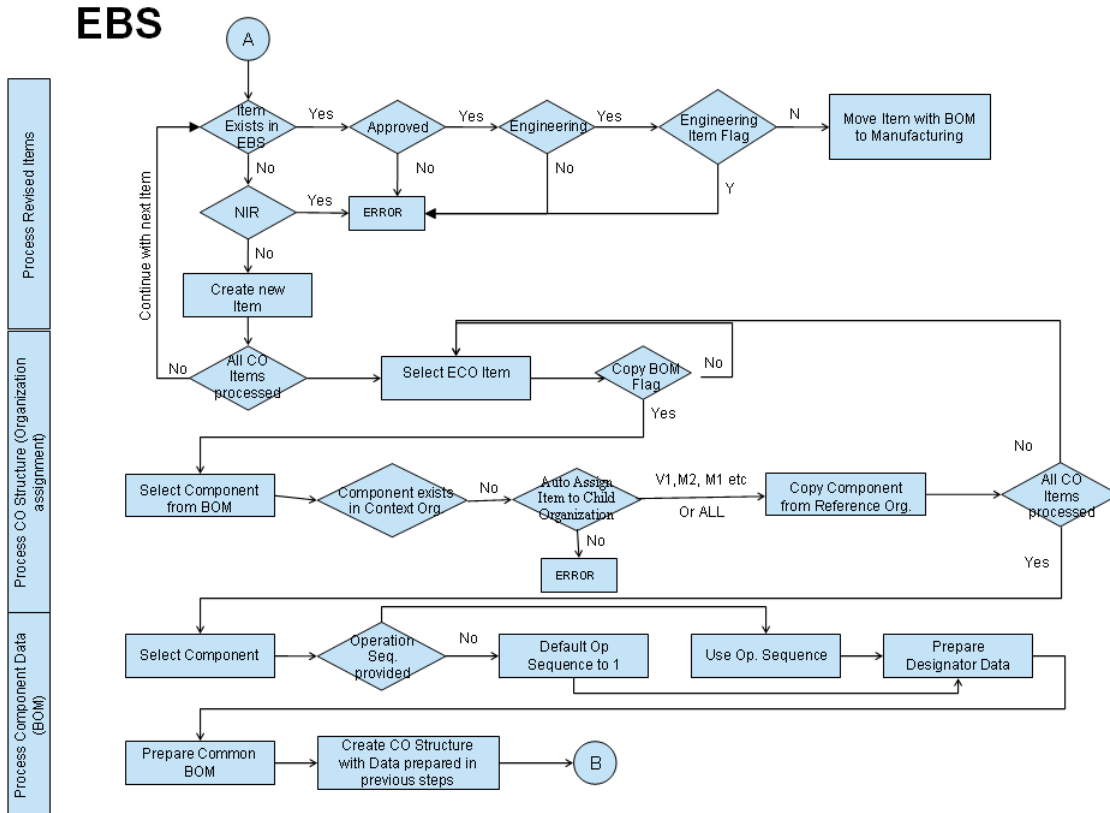
Change order validation integration diagram (1 of 4)



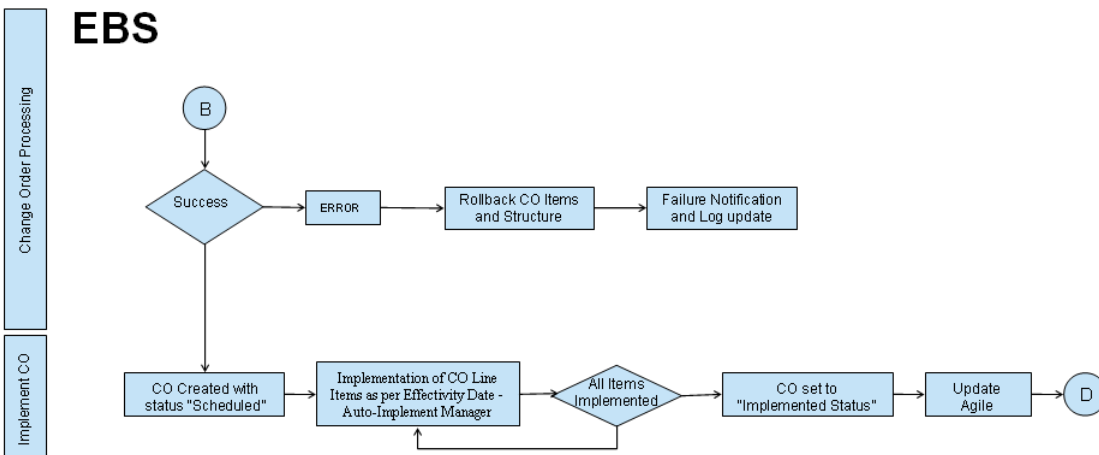
Change order validation integration diagram (2 of 4)



Change order validation integration diagram (3 of 4)



Change order validation integration diagram (4 of 4)



Exceptions

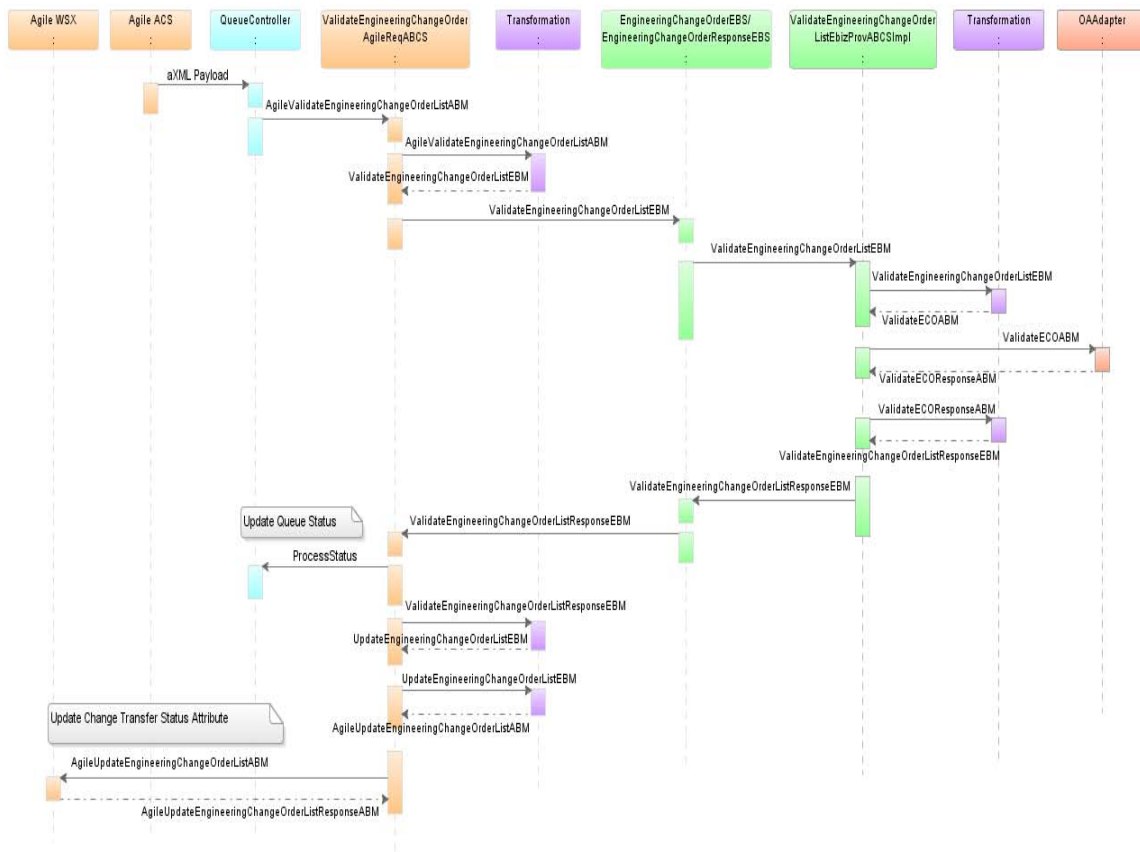
The following exception conditions create error messages for this integration process:

- Failure to update the queue status
- Errors raised during the transformations
- Failure to connect to an Oracle DB

Change Order Validation Integration Services Orchestration

This diagram illustrates the change order validation integration services orchestration:

Change order validation integration services orchestration



This table lists the activities involved in the orchestration:

Step	Activity	Remarks
1	Agile PLM ACS transmits Agile PLM ECO data in a predefined XML format known as aXML. This file will be queued up for further processing	Agile PLM ACS acts as a trigger for ECO use case.

Step	Activity	Remarks
2	The QueueController Framework reads the highest-priority Queue Message and transforms the payload (aXML) to AgileValidateEngineeringChangeOrderListABM.	QueueController processes the payload.
3	QueueController invokes ValidateEngineeringChangeOrderListAgileReqA BCSImpl with AgileValidateEngineeringChangeOrderListABM as input.	
4	AgileValidateEngineeringChangeOrderListABM is transformed into ValidateEngineeringChangeOrderListEBM.	Enterprise Business Message (EBM) is generated.
5	ValidateEngineeringChangeOrderListAgileReqA BCSImpl invokes ValidateEngineeringChangeOrderList operation on EngineeringChangeOrderEBS with ValidateEngineeringChangeOrderListEBM as input.	
6	EngineeringChangeOrderEBS routes ValidateEngineeringChangeOrderListEBM to ValidateEngineeringChangeOrderListEbizProvAB CImpl.	
7	ValidateEngineeringChangeOrderListEbizProvAB CImpl transforms ValidateEngineeringChangeOrderListEBM into the input of Oracle E-Business Suite Service and calls that service.	The Application Business Connector Service (ABCS) validates the ECO creation by creating the ECO, related items, and Bill of Material (BOM) in Oracle E-Business Suite to check for any errors. In the event of failure, the error messages are sent to Agile PLM. In the event of either Success or Failure, the transaction is rolled back.
8	ValidateEngineeringChangeOrderListEbizProvAB CImpl invokes ValidateEngineeringChangeOrderListResponse operation on EngineeringChangeOrderResponseEBS with ValidateEngineeringChangeOrderListResponseEBM as input.	
9	EngineeringChangeOrderResponseEBS routes ValidateEngineeringChangeOrderListResponseEBM to ValidateEngineeringChangeOrderListAgileReqA BCSImpl.	Response message routing.

Step	Activity	Remarks
10	ValidateEngineeringChangeOrderListAgileReqABCSImpl sends the status to the Queue Controller to update the queue.	This status is updated against the Queue message in the database by the QueueController
11	<p>ValidateEngineeringChangeOrderListAgileReqABCSImpl transforms ValidateEngineeringChangeOrderListResponseE BM into AgileValidateEngineeringChangeOrderListResponseABM.</p> <p>AgileValidateEngineeringChangeOrderListResponseABM is sent as an input to the Agile PLM Web service.</p> <p>AgileValidateEngineeringChangeOrderListResponseABM is sent to ValidateEngineeringChangeOrderListAgileReqABCSImpl.</p>	<p>The Web services update the transfer status on the change order in Agile PLM, which will be predefined P2 or P3 attributes on ECO object in Agile PLM.</p> <p>In case of failure, the notification email will be sent to the email ID of the user mentioned for the NotifyPerson property in AIAConfigurationProperties.xml file.</p> <p>Note: The ValidateEngineeringChangeOrderListAgileReqABCSImpl composite uses the oracle/wss_http_token_client_policy client security policy while calling the ChangeABS service hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password need to be setup correctly so that the Agile service is invoked successfully from the AIA composite in the FMW layer.</p>

Solution Assumptions and Constraints

1. If the customer uses Agile PLM multisites, the administrator can assign organization names to sites to indicate the destination Oracle E-Business organization that is set for an item.
2. ATOs will be used to carry the data across.
3. The change order validation process can be initiated as many times as per need.
4. The change order validation processes will not be managed through queuing currently in use for the ECO release processing.
It will be displayed in the Queue Monitoring UI in a different tab named validate ECO.
5. The change order validate processes are processed concurrently unlike the ECO Release processes, which are processed sequentially.

Agile PLM Interfaces

This table lists the Agile PLM Web Services Definition Language (WSDL) files:

Interface	Description
ValidateEngineeringChangeOrderListAgileReqABCImpl	
ChangeABS.wsdl	Used to validate an EngineeringChangeOrder in Oracle E-Business Suite

This table lists the Agile PLM XML Schema Definition (XSD) files:

Interface	Description
ValidateEngineeringChangeOrderAgileListReqABCImpl	
EngineeringChangeOrderABM.xsd EngineeringChangeOrderABO.xsd	Contains AgileValidateEngineeringChangeOrderListABM and AgileValidateEngineeringChangeOrderListResponseABM

Oracle E-Business Suite Interfaces

This table lists the Oracle E-Business Suite WSDL files:

Interface	Description
ValidateEngineeringChangeOrderListEbizProvABCImpl	
ValidateEngineeringChangeOrderListEbizAdapter.wsdl	Used for the OA adapter INV_EBI_CHANGE_ORDER_PUB/VALIDATE_CHANGE_ORDER_LIST PL/SQL function call

This table lists the Oracle E-Business Suite XSD files:

Interface	Description
ValidateEngineeringChangeOrderListEbizProvABCImpl	
APPS_INV_EBI_CHANGE_ORDER_PUB_VALIDATE_CHANGE_ORDER_LIST.xsd	Defines the input and output ABM of the PL/SQL API call The package used is INV_EBI_CHANGE_ORDER_PUB/ VALIDATE_CHANGE_ORDER_LIST API call.

Core AIA Components

The validate integration ECO and Part/Product Release (PREL) uses the following industry components:

Component	Name
Enterprise Business Objects (EBOs)	EngineeringChangeOrderEBO

Component	Name
EBMs	ValidateEngineeringChangeOrderListEBM
	ValidateEngineeringChangeOrderListResponseEBM
Enterprise Business Service (EBS)	EngineeringChangeOrderEBS
	EngineeringChangeOrderResponseEBS

This table lists the core components locations:

Component	Location
EBO and EBM XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ EnterpriseBusinessServiceLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

For more information about using the Oracle Enterprise Repository and configuring it to provide the AIA Reference Doc link, see [Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "Configuring and Using Oracle Enterprise Repository as the Oracle AIA SOA Repository."

EBOs can be extended, for instance, to add new data elements. These extensions are protected and will remain intact after a patch or an upgrade.

For more information, see [Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "Understanding Extensibility."

Agile PLM and Oracle E-Business Suite Components for Change Order Validation

This table lists Agile PLM and Oracle E-Business Suite components for change order validation:

Services	Agile PLM (Requester)	Oracle E-Business Suite (Provider)
Application Business Message (ABM)	AgileValidateEngineeringChangeOrderListABM	ValidateECOABM
	AgileValidateEngineeringChangeOrderListResponseABM	ValidateECOResponseABM
Application	ValidateEngineeringChangeOrderListAgileReqAB	ValidateEngineeringChangeOrderListEbizPro

Services	Agile PLM (Requester)	Oracle E-Business Suite (Provider)
Business Connector Service (ABCS)	CSImpl	vABCImpl
Business Process Execution Language (BPEL)	CreateQueueService QueueProcessorServiceImpl	---
Adapter service	ACSAXMLJMSConsumer CreateQueueControlService QueueProcessorService EngineeringChangeOrderService	ValidateEngineeringChangeOrderListEbizAdapter

This table lists the core components locations:

Component	Location
Application Business Objects, ABM, and Common XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Agile PLM/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Ebiz/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Agile PLM/V1/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Ebiz/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

Integration Services

The process integration for change order validation consists of the following services:

- EngineeringChangeOrderEBS
- ValidateEngineeringChangeOrderListAgileReqABCImpl
- ValidateEngineeringChangeOrderListEbizProvABCImpl

EngineeringChangeOrderEBS

EngineeringChangeOrderEBS exposes the operations related to the validate ECO and ECO integration on the EngineeringChangeOrder EBO.

The following list itemizes the routing rules:

- EngineeringChangeOrderEBS

ValidateEngineeringChangeOrderList: Routes ValidateEngineeringChangeOrderListEBM to ValidateEngineeringChangeOrderListEbizProvABCImpl

- EngineeringChangeOrderResponseEBS

ValidateEngineeringChangeOrderListResponse: Routes ValidateEngineeringChangeOrderListResponseEBM to ValidateEngineeringChangeOrderListAgileReqABCImpl

ValidateEngineeringChangeOrderListAgileReqABCImpl

This service is implemented as an asynchronous BPEL process. ValidateEngineeringChangeOrderListAgileReqABCImpl is used for transforming the AgileValidateEngineeringChangeOrderListABM into the ValidateEngineeringChangeOrderListEBM. This service invokes the ValidateEngineeringChangeOrderList operation on the EngineeringChangeOrderEBS with the ValidateEngineeringChangeOrderListEBM as input for the validation of an ECO in Oracle E-Business Suite.

The ValidateEngineeringChangeOrderListResponseEBM is received from the EngineeringChangeOrderEBS and, based on the status of the ECO validation in Oracle E-Business Suite; the QueueController is invoked to update the status of the queue message. In addition, the transfer status attribute in the change order is updated by this service.

1. The QueueController creates the AgileValidateEngineeringChangeOrderListABM and invokes the ValidateEngineeringChangeOrderListAgileReqABCImpl.
2. The ValidateEngineeringChangeOrderListAgileReqABCImpl transforms the ValidateEngineeringChangeOrderListResponseEBM into the AgileValidateEngineeringChangeOrderListResponseABM, which is sent as an input to the Agile PLM Web service.
3. The ECO validation status is updated and sent back to Agile PLM. AgileValidateEngineeringChangeOrderListResponseABM is sent back to the ValidateEngineeringChangeOrderListAgileReqABCImpl.

ValidateEngineeringChangeOrderListEbizProvABCImpl

This service is implemented as an asynchronous BPEL process.

This is a single operation service. This accepts an ECO containing item and a BOM information message as a request and returns a response.

In the Agile PLM to Oracle E-Business Suite flow, ValidateEngineeringChangeOrderListEbizProvABCImpl is used for transforming ValidateEngineeringChangeOrderListEBM into ValidateECOABM, which invokes the ValidateEngineeringChangeOrderList operation in Oracle E-Business Suite.

In the return flow, the EBS adapter service sends ValidateECOResponseABM, which is transformed by ValidateEngineeringChangeOrderListEbizProvABCImpl into ValidateEngineeringChangeOrderListResponseEBM.

Chapter 7: Process Integration for Change Order Release

This chapter provides an overview of the process integration for change order release and discusses:

- Change order release process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- Oracle E-Business Suite interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

Overview

When the engineers are done authoring a part's attributes and design information and are ready to publish it to the manufacturing system, they release the part on an Engineering Change Order (ECO) or Manufacturing Change Order (MCO). In addition, during the design phase, an assembly can go through multiple design changes, which are revision-controlled by means of ECOs. A design change may be accompanied by a change in specifications, which can be attached as files to the item object.

Within Agile PLM, the change release process used for releasing new parts and part updates (Revision, Manufacturer, and Site changes) uses three types of change orders:

- **ECO:** used for releasing changes to design, attributes, and Bill of Materials (BOM).
The ECO release results in the creation of a new revision for the item.
- **MCO:** used for releasing changes to manufacturer, manufacturer parts and related attributes (Approved Manufacturer List information).
The MCO does not result in a change of Revision.
- **Service change order (SCO):** used for releasing changes to site and site-specific AML information.
SCO does not result in a change of revision and life cycle phase. SCO is applicable only to a customer environment that has implemented Multi-Site.

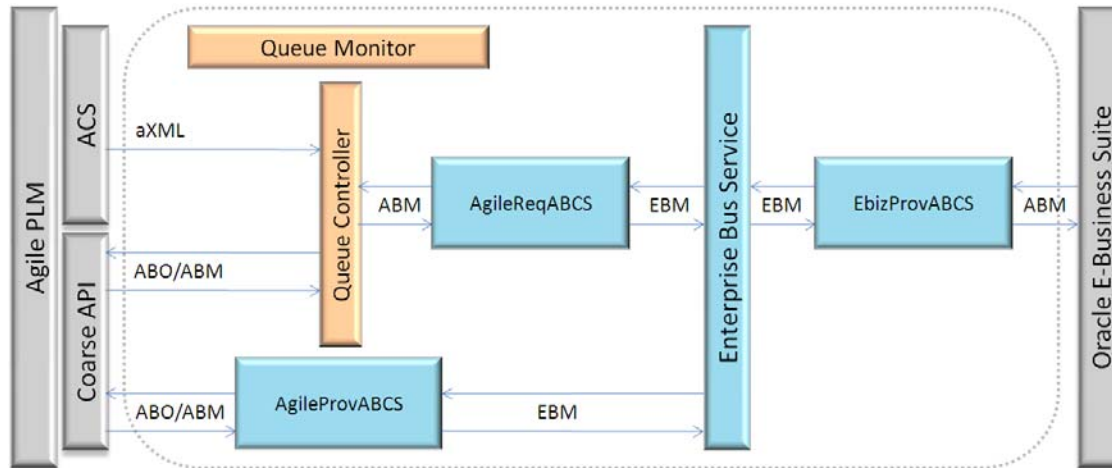
These change order information should be synchronized with Oracle E-Business Suite so that the processes controlled by Oracle E-Business Suite such as manufacturing planning, costing, procurement, and so on can reflect the latest design of the assembly.

The release of a change order in Agile PLM generally acts as a trigger for the synchronization of product design information with the ERP system; in this case, it is Oracle E-Business. Because Agile PLM is the system of record for product design data, the synchronization process involves the transfer of the released revision of the product design from Agile PLM to the manufacturing system. This information is moved forward from Agile PLM, triggered by an event tied to the change in status of a change order object. The information is then parsed in an integration object format and sent to Oracle E-Business Suite for implementation. A confirmation of its implementation status is sent to Agile PLM.

In general, the ECO process:

- Creates new items in PIM
- Creates an ECO in Oracle E-Business Suite
- Associates a list of revised items with new revisions and effectivity dates, and schedules the ECO for implementation
- Creates a new BOM
- Updates the transfer status in Agile PLM

Change order release process flow diagram



Change Order Release Process Integration

The change order release process from Agile PLM to Oracle E-Business includes:

1. Releasing a change order in Agile PLM
2. Generating of an aXML by Agile PLM Content Server (ACS)
3. Parsing and transformation of aXML Data
4. Posting change order data to Oracle E-Business Suite
5. Communicating order processing status to Agile PLM

Releasing a Change Order in Agile PLM

When a change analyst approves the change order in Agile PLM, it is marked as released. This status makes all the changes specified in the change order take effect in Agile PLM. In addition, an optional additional status of complete or implemented exists that indicates the completion of all partner communications, material dispositions, and other actions related to the change order.

Before the release of a change order, it is subjected to prevalidation before its approval stage. This involves validation of certain business rules to ascertain that the flow of change order from Agile PLM to Oracle E-Business Suite would meet all the conditions set in the destination system.

For more information, see [Chapter 6 Process Integration for Change Order Validation](#).

Generating an aXML by ACS

ACS generates an aXML (Agile PLM XML) file based on the change order data. Per the filters configured in the ACS, this file contains the information of items, BOM, manufacturers, and the change order itself.

For the purpose of the Agile PLM to Oracle E-Business Suite integration process, ACS is configured to ensure that:

1. The aXML file is configured to carry the following elements from a change order:
 - Change Order Data: Cover Page, Page Two, Page Three, and Affected Items tab attributes
 - Revised Item Data: Title Block, Page Two, Page Three, and Sites tab
 - BOM Data: BOM tab of Items (including reference designators) with delta BOMs only for the revision on Change Order
 - AML Data: AML tab of Items with delta Approved Manufacturer Lists only

Note: The assumption is that the manufacturer already exists in Oracle E-Business Suite.

2. Upon release of a change order, the aXML file goes to a Java Message Service (JMS) queue or a file folder.

Parsing and Transformation of aXML Data

The data contained in an aXML file generated by Agile PLM is not in the format that is understood by Enterprise Business Objects (EBO). Hence, this data has to be parsed and transformed.

The parsing and transformation of aXML data entails:

1. Segregation of business objects
2. Sequencing and queuing of change orders
3. Translating Agile PLM site-specific objects into Oracle E-Business Suite's organization-specific objects

4. Translating Agile PLM change order types into Oracle E-Business Suite's change order type
5. Mapping Agile PLM change order attributes to corresponding attributes in Oracle E-Business Suite
6. Ascertaining item existence in Oracle E-Business Suite
7. Defining user exit points for custom transformations

Segregation of Business Objects

The aXML file contains collective information about the business objects—change order, item attributes, revised item lines, BOM redlines, reference designators, and so on. This information is broken down into individual components and mapped, one to one, with corresponding EBOs, that is, item, change order, and structure.

Agile ACS output is configured so that only BOM delta changes (redline information) are captured in the output aXML file. The supported types of BOM redline are:

- Addition of a new component to the BOM
- Removal of an existing component from the BOM
- Replacement of an existing component by another on the BOM
- Modification of one or more attributes pertaining to a component on BOM. This includes, but is not limited to the component Find Number (or sequence number on the BOM), component quantity and reference designators

The Oracle E-Business ABCS layer captures these changes and replicates them on the corresponding BOM structures in the system. To maintain referential integrity, the change number is associated with each business individual object. In order to identify the component row being modified, the Agile PLM should not allow the same component item being present multiple times with either same or with different item sequence numbers in a given BOM.

This condition is driven by the following constraints in Oracle E-Business Suite and Agile PLM:

- Oracle E-Business BOM does not allow duplicate components with same operation sequence irrespective of whether same or different item sequence number for the same component item in a given context organization.
- Agile does not provide ability to capture operation sequence for each BOM component row and validating the component item and operation sequence combination uniqueness and then send it to Oracle E-Business Suite through the integration.

Note: In Agile PLM, ensure that the same item is not contained multiple times in a given BOM. Also, ensure that the same find number is not assigned to more than one item in a given BOM.

Sequencing and Queuing of Change Orders

The change order release process begins with queuing of the change order number in the process queue controller, which sequences the change orders for transfer of parsed data to Oracle E-Business Suite. After the data is processed by Oracle E-Business Suite and its implementation status received, the change order is removed from the process queue.

For more information, see [Appendix B](#).

Translating Agile PLM Site-specific objects into Oracle E-Business Suite's Organization-specific Objects

The data coming from Agile PLM is split into individual Oracle E-Business Suite organization-specific business objects. This is because the data in Agile PLM can be:

- **Centralized:** all design locations share the same product design information.
In the case of an Agile PLM environment with no multi sites, the list of organizations assigning an item mapping is derived from a P2/P3 attribute using a simple or complex transformation based on the customers' environment. The attribute values are typically common for all sites. In addition, the same template is typically used for creating an item in each organization,
- **Decentralized:** the site-specific item attributes, change control, and so on are implemented to multiple sites.

The data in Oracle E-Business Suite, however, is segregated by organizations.

In the case of multi-sites, the list of organizations to which an item needs to be assigned is derived from the item's site assignment. An item's site assignment in Agile is mapped to one or more E-Business organizations. In addition, some of the mapped attributes (including item templates) can have different values for the different sites and the change order lines can have site-specific effectivity dates although the revisions numbers across the sites remain same.

It is possible to configure the integration to control the transfer of BOM only to specific organizations. In such a case, other mapped organizations would only receive item information. This capability can be used based on customer requirements.

Site -specific AML is not supported for the Agile PLM to Oracle E-Business Suite integration. This is because though Agile PLM allows AML data to be different for different sites, Oracle E-Business Suite associates the AML data at item's master organization level only.

Translating Agile PLM Change Order Types into Oracle E-Business Suite's Change Order Type

In Agile PLM, a change order is categorized into one of the following change types:

- ECO
- MCO
- SCO

These categories are called as classes in Agile PLM. A class may have one or more sub-classes.

Oracle E-Business Suite does not have a separate category for each change type, and hence, these cannot be differentiated. Hence, when these change types are parsed and processed in Agile PLM, they are translated in Oracle E-Business Suite with the following functionalities:

Feature	ECO	MCO	SCO
Customer adoption	All installations	All installations	Only when multi-site is enabled
New revisions for revised items	Mandatory	Not supported	Not supported

Feature	ECO	MCO	SCO
Tables redlined	BOMs and Approved Manufacturer List (AML); Global as well as site-specific	AML only; Global as well as site-specific	Site-specific BOMs and AML only
Effectivity Date	At line level; Global when multisite is not enabled; Separate for each site when multisite is enabled	Not specified on change order	At line levels; site-specific only
Other line-level attributes	Global when multisite is not enabled; Separate for each site when multisite is enabled	Global when multisite is not enabled; Separate for each site when multisite is enabled	Site-specific only
New Item Release	Supported	Supported	Only item updates are supported

Ascertaining Item Existence in Oracle E-Business Suite

When an introductory revision of an item is released for the first time in Agile PLM (which can be done on an ECO or MCO but not on an SCO), the assumption is that the item has been authored in Agile PLM and does not exist in Oracle E-Business Suite. In such cases, the item needs to be created using template(s) in Oracle E-Business Suite.

An item is created in the Master Org of Oracle E-Business Suite in two ways:

1. Agile PLM releases new part introduction information to Oracle E-Business Suite through a change order, as a first time release.
2. The item information is loaded in Oracle E-Business Suite by an external system other than Oracle E-Business Suite and Agile PLM.

If the Item already exists in the Master Org, and Agile PLM releases a change order to create the same item, the system ends due to error. Because Agile PLM does not explicitly send information about first time, or subsequent releases of an item, a lookup table is employed to ascertain the existence of the item in Oracle E-Business Suite.

This lookup table maintains unique identifiers for the items received from Agile PLM and corresponding items created in Oracle E-Business Suite. It also maintains the unique identifiers for the items created in Oracle E-Business Suite by an external application. These unique identifiers help in ascertaining the existence of an item in Oracle E-Business Suite, thus eliminating any duplication errors.

Any subsequent release of the item from Agile PLM should be sent as an update transaction, and should be expected that the item already exists in the master organization. In this case, however, if the item does not exist, the process will create the item in Oracle E-Business Suite.

Defining User Exit Points for Custom Transformations

User exits have been provided in the integration to allow custom transformations or filtration routines that a customer may want to add in the process without affecting the main integration flow.

Posting Change Order Data to Oracle E-Business Suite

The processing of change order data into the Oracle E-Business Suite system is the foundation of this integration. As part of this step, the following activities are performed:

1. Item Master Synchronization:

For all the items sent to Oracle E-Business Suite, the system verifies whether the items already exist and have the same revision number as the old item from Agile PLM. If the item does not exist in Oracle E-Business Suite and it is being released for the first time from Agile PLM, it is created in Oracle E-Business Suite. If the item already exists in Oracle E-Business Suite and the two systems are coordinated to item revision, the existing item is updated with new attribute data from Agile PLM.

If the two systems are not in sync with regards to the earlier revision of the revised item (that is, per the data from Agile PLM, the old revision of the item does not match the current revision of the item in Oracle E-Business Suite), an error occurs.

Alternately, the integration may also be configured to ignore the matching of earlier revisions. If the item does not exist in Oracle E-Business Suite, it is created only in Oracle E-Business Suite. If the item already exists in Oracle E-Business Suite, it is updated and the incoming transaction type from Agile PLM is updated.

2. Item Organization Assignment:

Items are assigned to organizations. Sites and organizations assigned on the P2 Multilist01 field in the item and Default Master Org are considered in the following order:

- a. Sites (highest priority)
- b. P2 Multilist
- c. Default master Org (lowest priority)
- d. Site or Organizations should be assigned at the beginning of the first-time release of an item
- e. If the sites or organizations need to be added to the items in subsequent releases of an Item, the redlining of BOM or AML and the organization extension cannot be done at the same time because only the delta changes are done. Hence, the item may not be created correctly in the extended organizations.
- f. If the organization extension needs to be done at the subsequent release of an item with more complicated use cases, the COPY BOM or COMMON BOM customization can be used or designed to support the use cases.

Note: Affected items need to be provided with the lifecycle status. The lifecycle status is used to determine the first time or the subsequent release of an item.

3. AML Update:

New, approved manufacturer-list information from Agile PLM replaces the existing item AML. AML information is supported at the master item level only in Oracle E-Business Suite.

Site -specific AML is not supported for the Agile to Oracle E-Business integration. This is because though Agile allows AML data to be different for different sites, Oracle E-Business associates the AML data at item's master organization level only.

4. BOM Update (including reference designator):

The XML data from Agile PLM contains only the changes made to BOMs and not the complete BOM. As a result, BOM data needs to be coordinated between Agile PLM and Oracle E-Business Suite for the older revision in order for the new revision of BOM data to be posted successfully.

5. Create Change Order

The actual change order is created as an object in Oracle E-Business Suite. At the end of the post, the change order is set to a status of "scheduled" for implementation by the Oracle's Auto-Implement Manager. The Auto-Implement Manager implements the change order's lines when their scheduled Effectivity Date arrives. The complete change order is moved to the implemented status when all the lines are successfully implemented.

6. Oracle E-Business Suite profile option ENG: Require Revised Item New Revision

It should be set to No.

When a SCO or MCO is released from Agile PLM, the revision of the affected item is not changed. In Oracle E-Business Suite, if a change order exists for the item for that particular revision, this SCO or MCO case ends due to error. To avoid this scenario, `new_revised_item_revision` field is set to NULL. As a result, in the Oracle E-Business Suite user interface for the revised items, the revision field will be blank.

7. Implement Initial Item Revision Setup

If an item is created in an Oracle E-Business Suite organization as part of the create change order processing, then the initial item revision created based on the Oracle E-Business Suite organization level setup for the item will not have the change order reference information displayed from that item revision detail.

The initial item revision will have `sysdate` as the effective date. If customers want to see the change order reference information from the item revision detail while transferring an item for the first time to the Oracle E-Business Suite organization, then as part of the create change order process, along with the revision effective date, they should provide the item revision code. The item revision code should be higher in terms of ASCII value compared to the initial item revision setup at the Oracle E-Business Suite organization. Customers need to plan and implement the initial item revision setup at the Oracle E-Business Suite organization accordingly.

A large number of business rule validations are done by the Oracle E-Business Suite APIs as part of posting the change order data in Oracle E-Business Suite, especially when item and BOM data is created.

Some of the actions involved (such as item creation, BOM update, and so on) may involve different ways of handling exceptions from implementation to customer.

For example, if a component is being added to a BOM in a given Oracle E-Business Suite organization and it does not exist as an item in Oracle E-Business Suite, two types of actions can be set:

- Stop the BOM processing if an item does not exist in Oracle E-Business Suite.
However, if the item exists in Master Org and the context Org is the Child Org, then it is configurable.
- Create the component using information fed by Agile PLM (or if it already exists in the master Org in Oracle E-Business Suite, extend it to the child Org), and resume processing of the BOM.
However, if a workflow is associated for the change order Type, then the incoming ECO is created in the initial stage itself.

Different customers may have different preferences on which action to perform. The choice of such actions is therefore exposed to the integration administrator using configurable parameters.

Communicating Change Order Implementation Status to Agile PLM

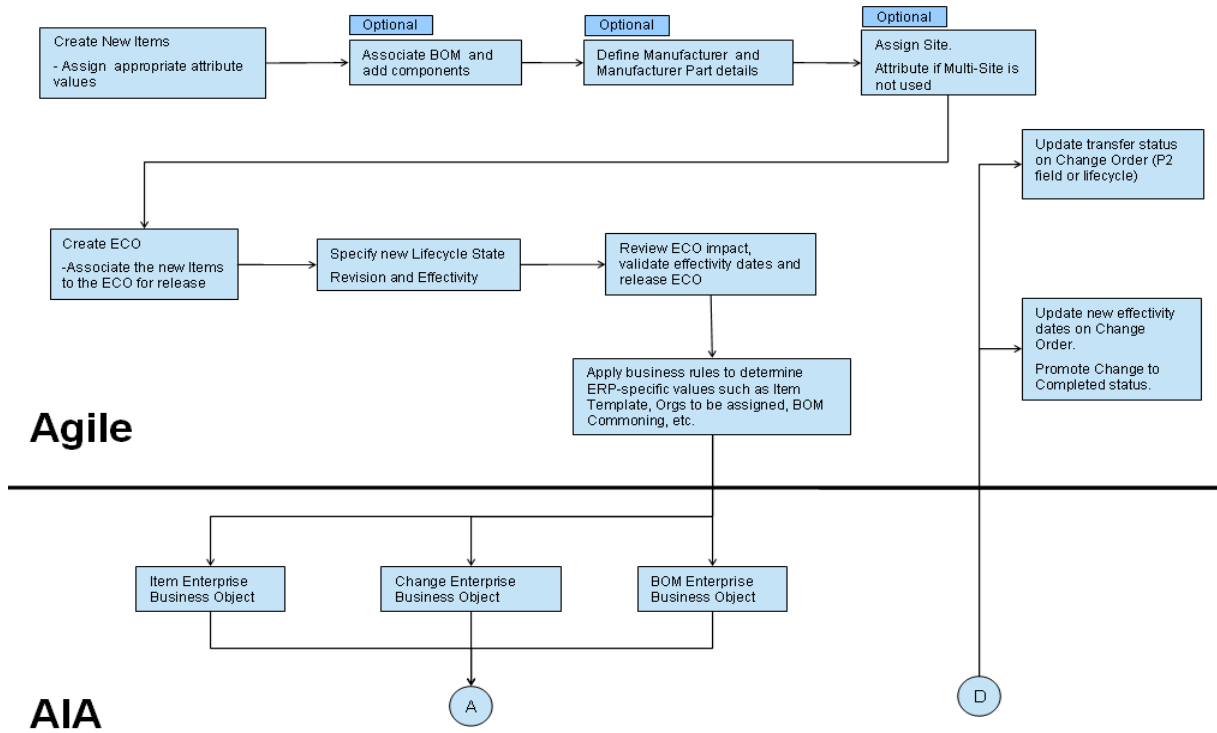
When the process of posting change order data into Oracle E-Business Suite finishes (successfully or with errors), change order processing status is sent to Agile PLM.

On receiving the status from Oracle E-Business Suite, an Agile PLM change order update process is initiated with the change order number, and a value of Errored or Transferred is passed to the Agile PLM's Transfer Status attribute (change order P2 or P3 defined attribute for the Change.TransferStatusAttribute property).

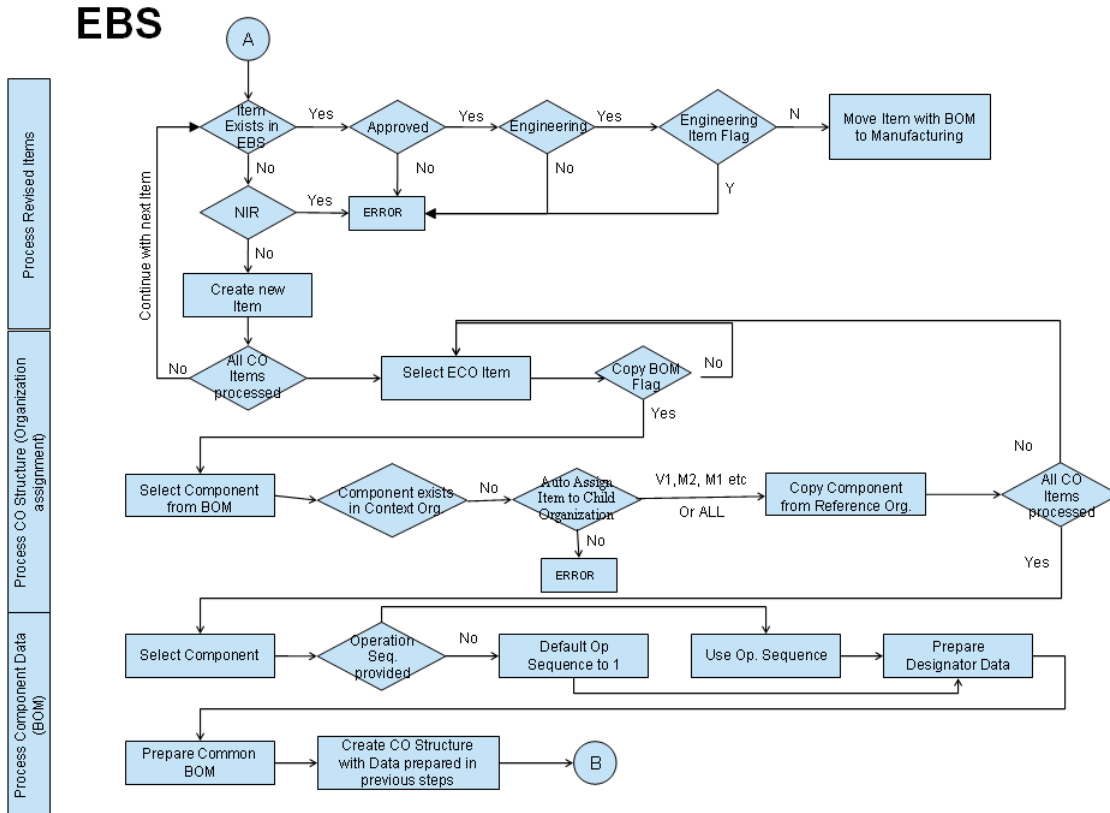
For more information, see [Chapter 10](#) > Modify Flex Fields > Step 6.

These diagrams illustrate the change order release integration sequence:

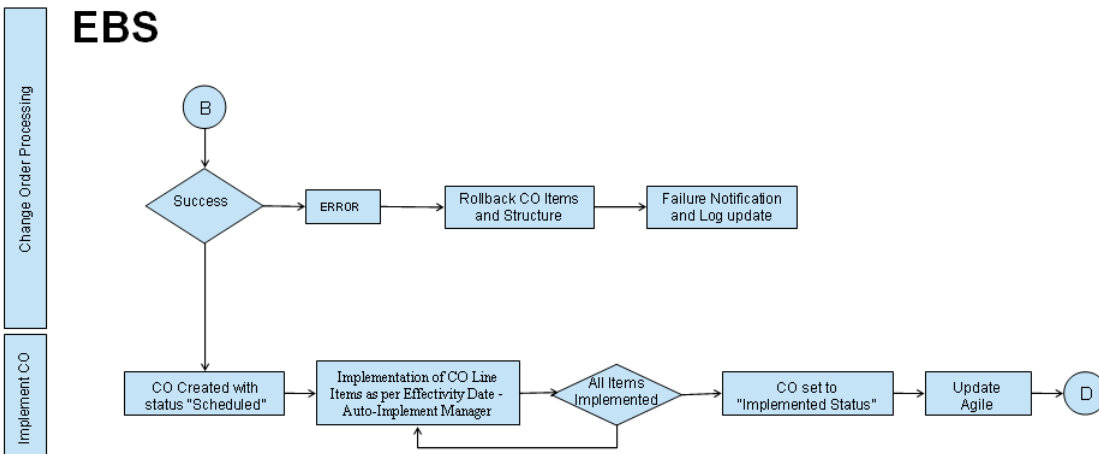
Change order release integration diagram (1 of 3)



Change order release integration diagram (2 of 3)



Change order release integration diagram (3 of 3)



Note: The integration flow is the same for both ECO and Part/Product Release (PREL) use cases.

Exceptions

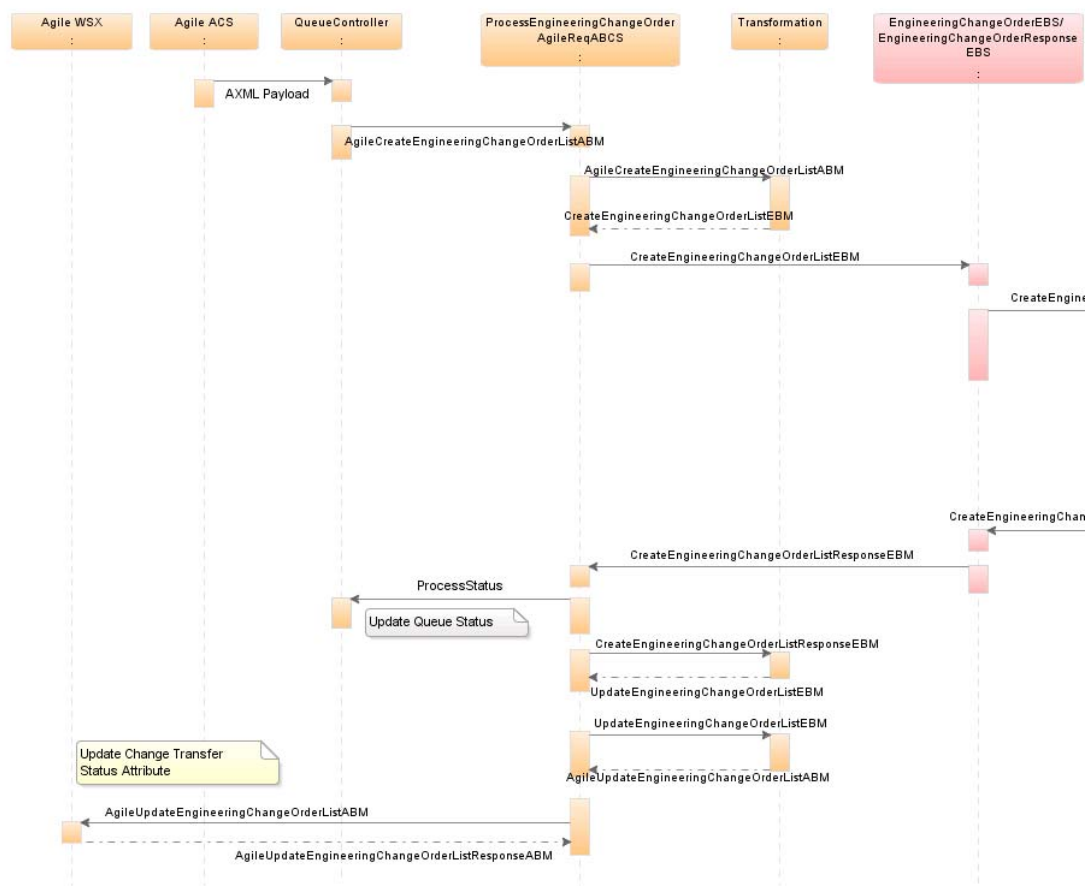
The following exception conditions create error messages for this integration process:

- If the item already exists in the Master Organization, and Agile PLM releases a change order to create the same item, the system is terminated due to error.
- If Agile PLM and Oracle E-Business Suite are not in sync with regards to the earlier revision of the revised item (that is, per the data from Agile PLM, the old revision of the item does not match the current revision of the item in Oracle E-Business Suite), an error occurs.
- Failure to update the queue status.
- Errors raised during the transformations.

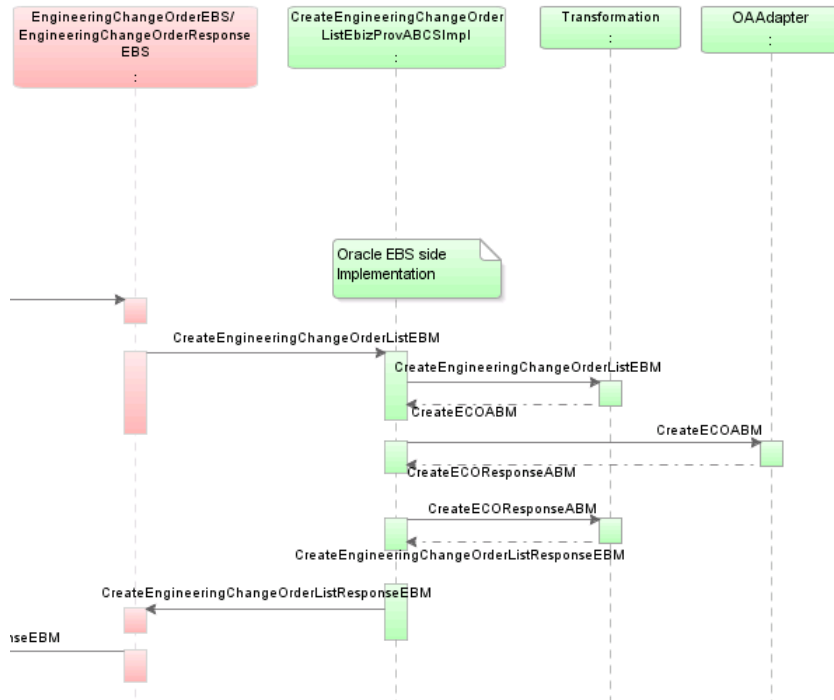
Change Order Release Integration Services Orchestration

These diagrams illustrate change order release integration flow:

Change order release integration flow (1 of 2)



Change order release integration flow (2 of 2)



This table lists the activities involved in this integration:

Step	Activity	Remarks
1	Agile PLM ACS transmits Agile PLM ECO data in payload in the form of predefined XML format known as aXML. This file will be queued up for further processing.	For the ECO process flow to be triggered, an ACS Workflow Event is generated on approval of ECO in Agile PLM.
2	The QueueController Framework reads the highest priority Queue Message and transforms the payload (aXML) to AgileCreateEngineeringChangeOrderListABM.	QueueController processes the payload.
3	QueueController invokes the ProcessEngineeringChangeOrderAgileReqABCImpl with AgileCreateEngineeringChangeOrderListABM as input.	
4	AgileCreateEngineeringChangeOrderListABM is transformed into CreateEngineeringChangeOrderListEBM.	EBM is created.
5	ProcessEngineeringChangeOrderAgileReqABCImpl invokes the CreateEngineeringChangeOrderList operation on EngineeringChangeOrderEBS with CreateEngineeringChangeOrderListEBM as input.	
6	EngineeringChangeOrderEBS routes CreateEngineeringChangeOrderListEBM to	

Step	Activity	Remarks
	CreateEngineeringChangeOrderListEbizProvABCImpl.	
7	CreateEngineeringChangeOrderListEbizProvABCImpl transforms CreateEngineeringChangeOrderListEBM into the input of Oracle E-Business Suite service and calls that service.	This activity creates items in PIM/Oracle E-Business Suite, creates an ECO, associates revised items with this ECO, and creates BOM.
8	CreateEngineeringChangeOrderListEbizProvABCImpl invokes the CreateEngineeringChangeOrderListResponse operation on EngineeringChangeOrderResponseEBS with CreateEngineeringChangeOrderListResponseEBM as input.	
9	EngineeringChangeOrderResponseEBS routes CreateEngineeringChangeOrderListResponseEBM to ProcessEngineeringChangeOrderAgileReqABCImpl.	Response message routing.
10	ProcessEngineeringChangeOrderAgileReqABCImpl sends the status back to the QueueController to update the queue.	This status is updated against the queue message in the database by the QueueController.
11	ProcessEngineeringChangeOrderAgileReqABCImpl transforms CreateEngineeringChangeOrderListResponseEBM into AgileUpdateEngineeringChangeOrderListABM. AgileUpdateEngineeringChangeOrderListABM is sent as an input to the Agile PLM Web Service. AgileUpdateEngineeringChangeOrderListResponseABM is sent to ProcessEngineeringChangeOrderAgileReqABCImpl.	<p>The Web services update the transfer status of the change order in Agile PLM, which will be a predefined P2 or P3 attribute on the change order object in Agile PLM.</p> <p>Note: The ProcessEngineeringChangeOrderAgileReqABCImpl composite uses the oracle/wss_http_token_client_policy client security policy while calling the ChangeABS service hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password need to be setup correctly so that the Agile service is invoked successfully from the AIA composite in the FMW layer.</p>

Solution Assumptions and Constraints

1. If the part already exists in Oracle E-Business Suite because it was created through the ECO process, the part is updated with information from Agile PLM.

2. When an introductory revision of an item is released for the first time in Agile PLM (which can be done on an ECO or MCO but not on an SCO), the assumption is that the item has been authored in Agile PLM and does not exist in Oracle E-Business Suite.

In such cases, the item needs to be created using the templates in Oracle E-Business Suite

3. If the Item already exists in the Master Org in Oracle E-Business Suite, and Agile PLM releases a change order to create the same item, the system is terminated due to error.

Because Agile PLM does not explicitly send information about first time, or subsequent releases of an item, a lookup table is employed to ascertain the existence of the item in Oracle E-Business Suite.

For more information, see [Chapter 10 > Identifying Cross-References > Creating Cross-Reference Data from Other Integrations](#).

4. Any subsequent release of the item from Agile PLM should be sent as an update transaction, and should be expected that the item already exists in the master organization.

In this case, however, if the item does not exist, the item will be created in Oracle E-Business Suite. Items and updates can be released through the ECO, MCO, or SCO but only ECO allows the creation of new revisions.

5. The ECO is used to associate new revision, effectivity date, BOM, and reference designator information with the new item.
6. The ECO is used to transfer the new part or part update information from Agile PLM to Oracle E-Business Suite.
7. Every ECO process is monitored for its status.
8. The user is able to prioritize the ECO processes.
9. A new process can start running only after the first process is completed.
10. It is assumed that the manufacturer already exists in Oracle E-Business Suite.
11. Manufacturer names between Agile PLM and Oracle E-Business Suite are not mapped through DVMs.

Therefore, care should be taken to ensure the Agile Manufacturer names match the Manufacturer. Name in the Manufacturer List in Oracle E-Business Suite.

12. BOM Replicate and BOM Commoning features are addressed through extensions.
13. The Substitute Components feature is addressed through extensions.

Agile PLM Interfaces

This table lists the Agile PLM Web Services Definition Language (WSDL) files:

Interface	Description
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Interface	Description
ProcessEngineeringChangeOrderAgileReqABCS	
ChangeABS.wsdl	Used to create an EngineeringChangeOrder in Oracle E-Business Suite

This table lists the Agile PLM XML Schema Definition (XSD) files:

Interface	Description
CreateEngineeringChangeOrderAgileReqABCS	
EngineeringChangeOrderABM.xsd EngineeringChangeOrderABO.xsd	Contains CreateEngineeringChangeOrderListABM and CreateEngineeringChangeOrderListResponseABM, and corresponding ABOs.

Oracle E-Business Suite Interfaces

This table lists the Oracle E-Business Suite WSDL files:

Interface	Description
CreateEngineeringChangeOrderListEbizProvABCImpl	
CreateEngineeringChangeOrderListEbizAdapter.wsdl	Used for the OA adapter INV_EBI_CHANGE_ORDER_PUB/PROCESS_CHANG E_ORDER_LIST pl/sql function call

This table lists the Oracle E-Business Suite XSD files:

Interface	Description
CreateEngineeringChangeOrderListEbizProvABCImpl	
APPS_INV_EBI_CHANGE_ORDER_PUB_PROCESS_CHANGE_ORDER_LIST.xsd	Used for input/output ABM of INV_EBI_CHANGE_ORDER_PUB/PROCESS_CHANG E_ORDER_LIST API call

Core AIA Components

This table lists the core AIA components:

Component	Name
EBOs	EngineeringChangeOrderEBO
EBMs	CreateEngineeringChangeOrderListEBM
	CreateEngineeringChangeOrderListResponseEBM
EBSs	EngineeringChangeOrderEBS
	EngineeringChangeOrderResponseEBS

This table lists the core components locations:

Component	Location
EBO and EBM XML Schema Definition (XSD) files	\$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
Web Service Definition Language (WSDL) files	\$AIA_HOME/apps/AIAMetaData/AIAComponents/ EnterpriseBusinessServiceLibrary /Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

For more information, see [Oracle Fusion Middleware Infrastructure Components and Utilities User's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#).

EBOs can be extended, for instance, to add new data elements. These extensions are protected and will remain intact after a patch or an upgrade.

For more information, see [Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "Understanding Extensibility."

Agile PLM and Oracle E-Business Suite Components for Change Order Release

This table lists Agile PLM and Oracle E-Business Suite services used in this integration:

Services	Agile PLM (Requester)	Oracle E-Business Suite (Provider)
ABMs	AgileCreateEngineeringChangeOrderListABM AgileCreateEngineeringChangeOrderListResponseABM AgileUpdateEngineeringChangeOrderListABM AgileUpdateEngineeringChangeOrderListResponseABM	CreateECOABM CreateECOResponseABM
ABCS	ProcessEngineeringChangeOrderAgileReqABCSImpl	CreateEngineeringChangeOrderListEbizProvABCSImpl
EBSs	EngineeringChangeOrderEBS (CreateEngineeringChangeOrderList	EngineeringChangeOrderResponseEBS (CreateEngineeringChangeOrderListResponse

Services	Agile PLM (Requester)	Oracle E-Business Suite (Provider)
	Operation)	Operation)
Business Process Execution Language (BPEL)	CreateQueueService QueueProcessorServiceImpl	NA
Adapter service	ACSAXMLJMSCConsumer CreateQueueControlService QueueProcessorService	CreateEngineeringChangeOrderListEbizAdapter

This table lists the core components locations:

Component	Location
Application Business Objects, ABM, and Common XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Agile PLM/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Agile PLM/V1/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

Integration Services

The integration services for the change order release process are:

- EngineeringChangeOrderEBS
- ProcessEngineeringChangeOrderAgileReqABCServiceImpl
- CreateEngineeringChangeOrderListEbizProvABCServiceImpl

EngineeringChangeOrderEBS

EngineeringChangeOrderEBS exposes the operations related to the ECO integration on the EngineeringChangeOrder EBO.

The following list itemizes the routing rules:

- EngineeringChangeOrderEBS service:
 - CreateEngineeringChangeOrderList: Routes CreateEngineeringChangeOrderListEBM to CreateEngineeringChangeOrderListEbizProvABCServiceImpl
- EngineeringChangeOrderResponseEBS service:

CreateEngineeringChangeOrderListResponse: Routes
CreateEngineeringChangeOrderListResponseEBM to
ProcessEngineeringChangeOrderAgileReqABCImpl

ProcessEngineeringChangeOrderAgileReqABCImpl

ProcessEngineeringChangeOrderAgileReqABCImpl is used for transforming AgileCreateEngineeringChangeOrderListABM into CreateEngineeringChangeOrderListEBM. This service invokes the CreateEngineeringChangeOrderList operation on EngineeringChangeOrderEBS for creation of an ECO in Oracle E-Business Suite. Based on the status of the ECO creation in Oracle E-Business Suite, this service updates the queue status. In addition, this service updates the transfer status attribute in the change order.

This service is implemented as an asynchronous BPEL process:

1. The QueueController creates AgileCreateEngineeringChangeOrderListABM and invokes ProcessEngineeringChangeOrderAgileReqABCImpl.
2. ProcessEngineeringChangeOrderAgileReqABCImpl transforms AgileCreateEngineeringChangeOrderListABM into CreateEngineeringChangeOrderListEBM and invokes the CreateEngineeringChangeOrderList operation on EngineeringChangeOrderEBS with CreateEngineeringChangeOrderListEBM as an input.
3. CreateEngineeringChangeOrderListResponseEBM is received from EngineeringChangeOrderEBS and based on the status of the ECO creation in Oracle E-Business Suite; the QueueController is invoked to update the status of the queue message.
4. ProcessEngineeringChangeOrderAgileReqABCImpl transforms CreateEngineeringChangeOrderListResponseEBM into AgileUpdateEngineeringChangeOrderListABM, which is sent as an input to the Agile PLM Web service.
5. The Web services update the transfer status of the change order in Agile PLM, which is a predefined P2 or P3 attribute on the change order object in Agile PLM.

AgileUpdateEngineeringChangeOrderListResponseABM is sent to ProcessEngineeringChangeOrderAgileReqABCImpl.

CreateEngineeringChangeOrderListEbizProvABCImpl

This is a single operation service. This accepts an ECO-containing item and BOM information message as a request and returns a response.

In Agile PLM to Oracle E-Business Suite flow, CreateEngineeringChangeOrderListEbizProvABCImpl is used for transforming CreateEngineeringChangeOrderListEBM into CreateECOABM, which invokes the CreateEngineeringChangeOrderList operation in Oracle E-Business Suite.

In the return flow, the OA Adapter sends CreateECOResponseABM, which is transformed by CreateEngineeringChangeOrderListEbizProvABCImpl into CreateEngineeringChangeOrderListResponseEBM.

This service is implemented as an asynchronous BPEL Process.

Chapter 8: Process Integration for Change Order Update

This chapter provides an overview of the process integration for change order update and discusses:

- Change order update process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- Oracle E-Business Suite interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

Overview

The change order update process flow is triggered by Oracle E-Business Suite. Change order information needs to flow from the Oracle E-Business Suite system to Agile PLM in the following cases:

- Change order is completely implemented in Oracle E-Business Suite.
This step can be configured to trigger a change order status change in Agile PLM and a change order Page Two or Page Three field update in Agile PLM. Because a change order can be created in multiple organizations in Oracle E-Business Suite and the change order can have different statuses in each organization, this operation is carried out only when the change order is completely implemented in all the organizations for which it has been created in Oracle E-Business Suite.
- Change order line status or effectivity date changes in Oracle E-Business Suite.
In either case, the effectivity date of the change order line in Oracle E-Business is reflected on the corresponding line in Agile PLM. This update can be carried out only if the change order is created in only one organization in Oracle E-Business, or if a one-to-one correspondence between the Oracle E-Business organizations and Agile PLM sites for posting change order data exists.
- Change status for a change object in Oracle E-Business Suite.
This includes a success or failure status of a new part number generation or of a change order validation.

Note: Some of these cases have restrictions in a multi-org environment because of the centralized (Agile PLM) to decentralized (Oracle E-Business Suite) nature of the interface.

Change Order Update Process Integration

Four types of events can cause a change:

1. An update to the implementation status of a change order line.

While the implementation status in Oracle E-Business Suite is tracked at a Bills of Material (BOM) line level, this is tracked at a change order line level in Agile PLM.

2. A modification of the scheduled effectivity date of a change order line.

While the effectivity dates in Oracle E-Business Suite are tracked at a BOM line level, these are tracked at a change order line level in Agile PLM.

3. An update to the status of a new part request of a change order line.
4. An update to the status of a change order validation.

Note: The cancellation or purge of a change order in Oracle E-Business Suite is not interfaced back to Agile PLM as part of this integration. These events should be handled manually in both applications.

The change order update process includes:

1. The effectivity date and item status is modified in the BOM line item in Oracle E-Business Suite.
2. The batch process for publishing the changed information initiates at a specified frequency (configurable).

While the update to information in Agile PLM is driven through the scheduled batch processes, it is also possible to trigger the information update event from Oracle E-Business Suite through the Integrations Administrator and running the Publish Engineering Change Order Updates function.

3. The change number and specified item record is queried for modification.
4. The effectivity date is modified in the mapped column in Agile PLM.
5. The change status is updated in the mapped attribute in Agile PLM.
6. If the complete update is processed successfully, the integration updates the date and time of the last successful run.

Change Order Update Process Inputs

The following parameters are used by the change order update process in Agile PLM:

- Change order number, which will uniquely identify the change object.
- In case of modification to the effective dates, the item number that will uniquely identify the change order line (affected items) and the effective date as of which the change line is scheduled to be implemented.
- Field to be updated with the transfer or implementation status of the change in Oracle E-Business Suite.

- When a change order is first transferred to Oracle E-Business Suite, the change order status in Oracle E-Business Suite is open or scheduled. All the possible statuses for a change order in Oracle E-Business Suite are:
 - Open
 - Hold
 - Released
 - Scheduled
 - Rescheduled
 - Implemented
 - Canceled
- Agile PLM's Transfer Status attribute (such as Transferred, Implemented, and Canceled).
- Status to be promoted or demoted in case of the change status for a new part generation or a change or validation.

Change Order Update Processing

The process includes the following steps:

1. The change order number and the specific affected item attributes are queried for modification.
2. Agile PLM's change order line is updated.

This can be done in a batch mode through a scheduled process. This means that the effectivity information is read for a group of change lines in Oracle E-Business Suite and sent through the interface. This process may also be triggered by the event of a change line being implemented in Oracle E-Business Suite.

The update step can process all the change order lines in the batch before committing, or it can commit each change order line individually before moving on to the next one. This decision should be taken from a technical efficiency perspective.

When processing a batch of change order lines, if the update for one record ends due to error, the process continues to process the other records in the batch. A list of all errors that occur when the batch is being processed is accumulated and logged.

Note: The effectivity date for the affected items is not updated if the multisite is enabled but the sites are not assigned to that particular affected item.

3. In case of effective date changes, the new effectivity date for the change order line is updated on the mapped column in Agile PLM.
 - a. The mapped effectivity date column in Agile PLM is updated with the incoming effectivity date only if the incoming status is implemented.
 - b. The configured column in Agile PLM is updated with a configured value based on the incoming status. The following examples illustrate a sample of these rules:

If the change order status in Oracle E-Business Suite is Scheduled, update the Affected Items.Status (an Affected Items tab list-validated flex-field) in Agile PLM with the value Not Implemented.

If the change order status in Oracle E-Business Suite is Implemented, update the Affected Items.Status field in Agile PLM with the value of Implemented, and update the Affected Items.ERP Implementation Date (an Affected Items tab date flex-field) with the effective date from Oracle E-Business Suite.

4. Agile PLM's Transfer Status attribute is updated.

After a successful transfer, the change order update process updates the Agile PLM's Transfer Status attribute (change order Agile PLM P2 or P3 defined attribute value for the Change.TransferStatusAttribute property) with a value of Transferred.

In case of multiple organizations, Agile PLM contains only a single instance of the change order and not site-specific ones but Oracle E-Business can contain multiple organizations. So in case of multiple organizations within Oracle E-business Suite:

- The Transfer Status attribute (change order Agile PLM P2 or P3 defined attribute value for the Change.TransferStatusAttribute property) in Agile PLM reflects the status of Transferred until the change order is completely implemented in all the Oracle E-Business organizations. After all the Oracle E-Business Suite organizations are implemented, Agile PLM's transfer status will be updated with a status of Implemented.

If the change order errors when implemented in one or more Oracle E-Business Suite organizations and is waiting for implementation in other organizations or has been implemented successfully in some of the organizations, Agile PLM's transfer status value will remain as Transferred.

If the change order errors when implemented in all the Oracle E-Business organizations, Agile PLM's transfer status value will be changed to Errored.

If the change order has been canceled in all the Oracle E-Business organizations, Agile PLM's transfer status will be changed to Canceled.

Because the change status name depends on the workflow being used, the CHANGE_STATUS configuration table is provided as part of the integration setup. This table allows the administrators to specify the next status for each possible combination of the change object type and the workflow being used for each event that qualifies for the Change Status operation. The administrators can add as many rows as they require, because the number of sub-classes of the change objects and the number of workflows is unlimited in Agile PLM. The following table illustrates a partially configured table:

EVENT	OUTCOME	SUBCLASS	WORKFLOW	NEXT_STATUS
New Part Request	Success	ECR	Default Change Requests	Completed
New Part Request	Failure	ECR	Default Change Requests	Pending
Pre-release Audit	Failure	ECO	Default Change Orders	Submitted
Pre-release Audit	Failure	ECO	Fast-track Change Orders	Pending
Change Implementation	Success	ECO	Default Change Orders	Implemented
Change Implementation	Success	ECO	Fast-track Change Orders	Implemented

Change Order Update Sample Use Case

1. Release an ECO, C0001, from Agile PLM to Oracle E-Business Suite.
2. In Oracle E-Business Suite, create this ECO in three organizations: Org1, Org2, and Org3.
3. Change the status of this ECO in Org1 as implemented.
4. Oracle E-Business Suite triggers an event to send the ECO list to Agile PLM.

This list has C0001 in Org1, C0001 in Org2, and C0001 in Org3. Only C0001 of Org1 carries the complete data, including the affected items data, while C0001 in the other organizations carries only the header information.

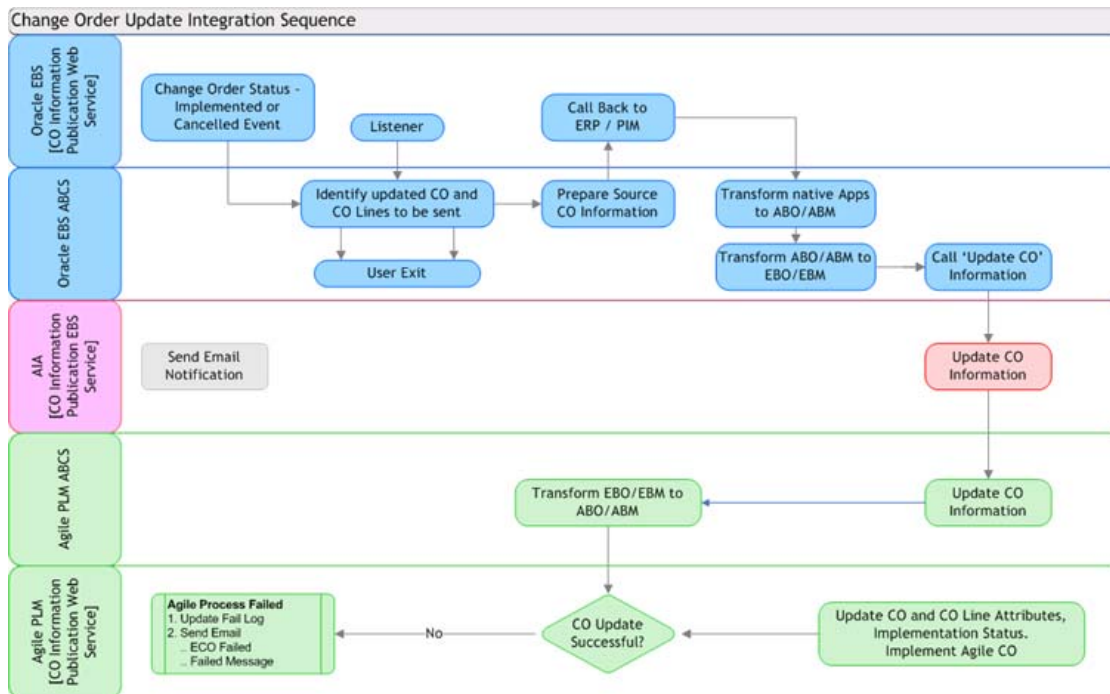
5. When Agile PLM receives the ECO list, the ECO data is updated and the workflow status of ECO is changed.

The change of workflow status is based on the following rules:

- When the status of ECO is implemented in all organizations in Oracle E-Business Suite, move the ECO in Agile PLM to the implemented status.
 - The Transfer Status field in Agile PLM is updated only when the status of ECO is the same in all the Oracle E-Business Suite organizations.
6. Hence, if the status is implemented across all the C0001 ECOs in all organizations, the transfer status field on ECO in Agile PLM is updated as implemented.
 7. If an entry in the CHANGE_STATUS table corresponding to the event Change Implemented and SubClass ECO exists, and the workflow is mentioned on ECO C0001 in Agile PLM, read the next status and send it to the next status mentioned.
 8. If no entry is in the CHANGE_STATUS table for the data, no ECO C0001 is sent to the next status.

This diagram illustrates the integration sequence for the change order update from Oracle E-Business Suite to Agile PLM:

[Change order update process integration sequence](#)



Exceptions

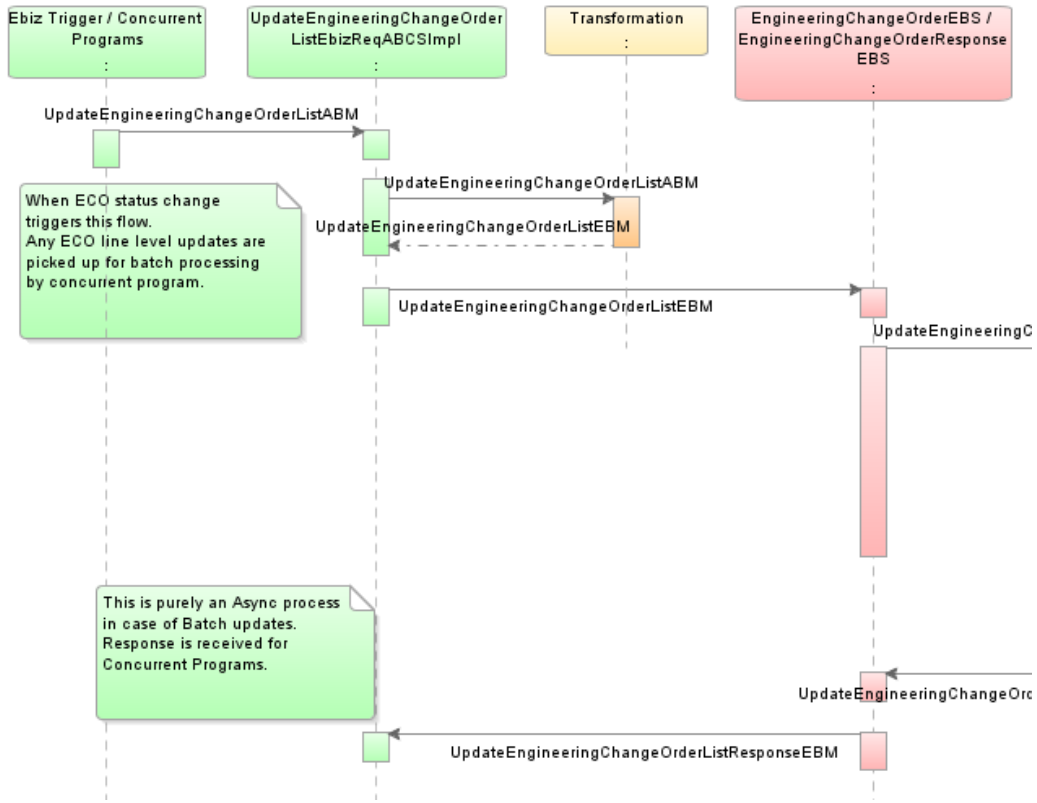
The following exception conditions create error messages for this integration process:

- Insufficient privilege to discover, read, or update attributes on the Change object
- Invalid field value (indicate the field for which the value is incorrect, and the value that is being passed on to the field)
- Change object does not exist
- Change line does not exist
- Invalid status name
- Missing exit or entry required fields

Change Order Update Integration Services Orchestration

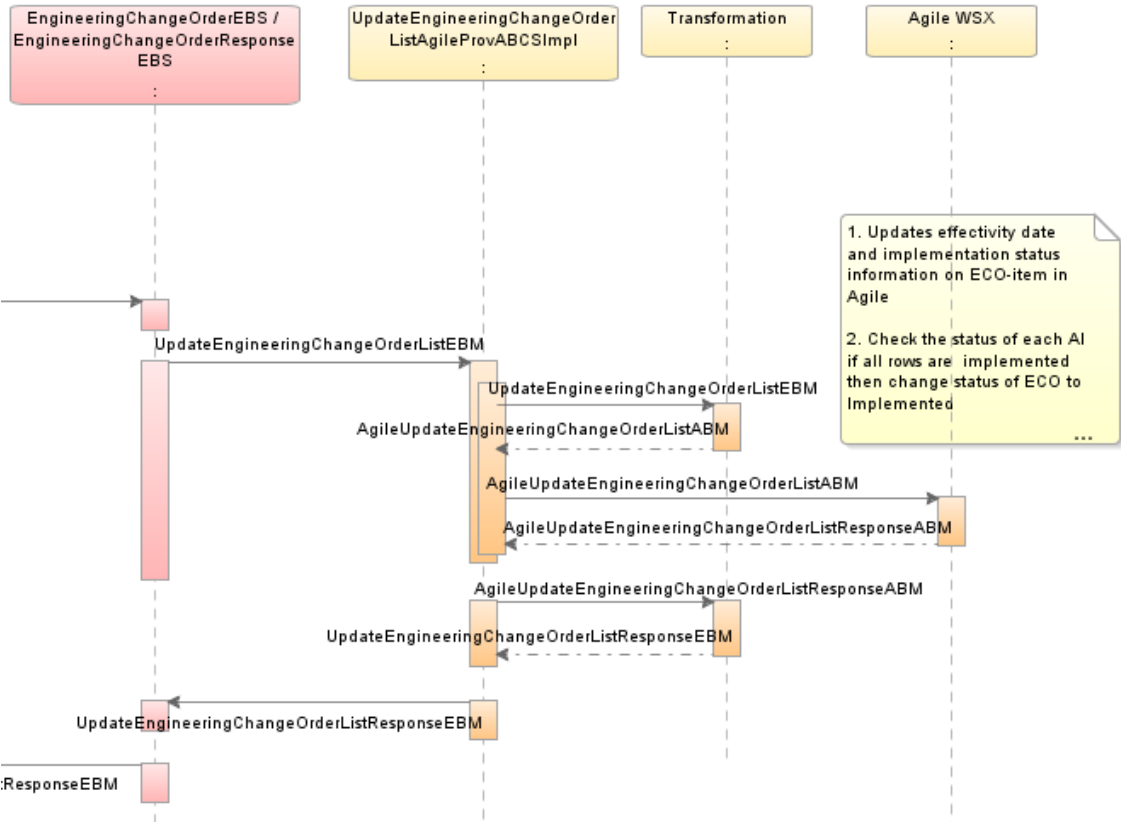
This diagram illustrates the integration services orchestration of Oracle E-Business Suite for change order update:

[Oracle E-Business Suite integration services orchestration](#)



This diagram illustrates the integration services orchestration of Agile PLM for change order update:

Agile PLM side integration services orchestration



This table lists the activities involved in the change order update integration services orchestration:

Step	Activity	Remarks
1.	Invoke UpdateEngineeringChangeOrderListEbizReqABCImpl process.	When change order lines are auto-implemented after reaching effectivity dates, UpdateEngineeringChangeOrderListEbizReqABCImpl is triggered. UpdateEngineeringChangeOrderListEbizReqABCImpl transforms UpdateEngineeringChangeOrderListABM into UpdateEngineeringChangeOrderListEBM.
2.	UpdateEngineeringChangeOrderListEbizReqABCImpl invokes the EngineeringChangeOrderEBS with the UpdateEngineeringChangeOrderList operation.	An invoke activity in UpdateEngineeringChangeOrderListEbizReqABCImpl invokes the UpdateEngineeringChangeOrderList operation on EngineeringChangeOrderEBS with UpdateEngineeringChangeOrderListEBM as the input.
3	EngineeringChangeOrderEBS routes UpdateEngineeringChangeOrderListEBM to	EngineeringChangeOrderEBS routes UpdateEngineeringChangeOrderListEBM to

Step	Activity	Remarks
	UpdateEngineeringChangeOrderListAgileProvABCImpl.	UpdateEngineeringChangeOrderListAgileProvABCImpl.
4	UpdateEngineeringChangeOrderListAgileProvABCImpl does the transformation.	UpdateEngineeringChangeOrderListAgileProvABCImpl transforms UpdateEngineeringChangeOrderListEBM into AgileUpdateEngineeringChangeOrderListABM.
5	UpdateEngineeringChangeOrderListAgileProvABCImpl invokes Agile PLM Web Services.	<p>Agile PLM Web services are invoked with AgileUpdateEngineeringChangeOrderListABM as input.</p> <p>Note: The UpdateEngineeringChangeOrderListAgileProvABCImpl composite uses the oracle/wss_http_token_client_policy client security policy while calling ChangeABS and MergeABS services hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password need to be setup correctly so that the Agile service is invoked successfully from the AIA composite in the FMW layer.</p> <p>The effectivity dates and implementation status of change order are updated in Agile PLM.</p> <p>A check determines whether all affected item rows are moved into implemented status.</p> <p>The change order status will be moved to Implemented when all affected items are implemented.</p> <p>AgileUpdateEngineeringChangeOrderListResponseABM is sent to UpdateEngineeringCUpdateEngineeringChangeOrderListAgileProvABCImpl.</p>

Solution Assumptions and Constraints

1. This release of the integration intends to solve a use case in which any given change is interfaced to only one destination system.
2. The assumption is that the log information pertaining to the complete end-to-end process of transferring a change object from Agile PLM to Oracle E-Business Suite is available as a file to this operation.
3. Verifications for the setup validations of the sub-class, workflow, and status values not part of the scope.
4. The change object should already have an assigned workflow.

Agile PLM Interfaces

This table lists the Agile PLM Web Services Definition Language (WSDL) files:

Interface	Description
UpdateEngineeringChangeOrderListAgileProvABCImpl	
ChangeABS.wsdl ChangeMerge.wsdl	Used to update change order information in Agile PLM.

This table lists the Agile PLM XML Schema Definition (XSD) files:

Interface	Description
UpdateEngineeringChangeOrderListAgileProvABCImpl	
EngineeringChangeOrderABM.xsd EngineeringChangeOrderABO.xsd	Contains UpdateEngineeringChangeOrderListABM and UpdateEngineeringChangeOrderListResponseABM

Oracle E-Business Suite Interfaces

This table lists the Oracle E-Business Suite WSDL files:

Interface	Description
UpdateEngineeringChangeOrderListEbizReqABCImpl	
QueryEngineeringChangeOrderListEbizAdapter.wsdl	Used for the OA adapter "INV_EBI_CHANGE_ORDER_PUB.GET_ECO_LIST_A TTR" pl/sql function call

This table lists the Oracle E-Business Suite XSD files:

Interface	Description
UpdateEngineeringChangeOrderListEbizReqABCImpl	
EngineeringChangeOrderABM.xsd	ABM for EngineeringChangeOrderABO
EngineeringChangeOrderABO.xsd	Created based on the input from the Concurrent Program to BPEL process and output to the Concurrent Program from BPEL process
APPS_INV_EBI_CHANGE_ORDER_PUB_GET_ECO_L IST_ATTR.xsd	Used for input/output ABM of INV_EBI_CHANGE_ORDER_PUB.GET_ECO_LIST_A TTR API call

Core AIA Components

This table lists the core AIA components for this process integration:

Component	Name
EBOs	EngineeringChangeOrderEBO
EBMs	UpdateEngineeringChangeOrderListEBM
	UpdateEngineeringChangeOrderLisResponseEBM
EBS	EngineeringChangeOrderEBS

This table lists the core components locations:

Component	Location
EBO and EBM XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/
	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ EnterpriseBusinessServiceLibrary/Core/EBO/
	\$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz
	\$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

EBOs can be extended, for instance, to add new data elements. These extensions are protected and will remain integral after a patch or an upgrade.

For more information, see [Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), “Understanding Extensibility.”

Oracle E-Business Suite and Agile PLM Components for Change Order Update

This table lists the Oracle E-Business Suite and Agile PLM components for change order update:

Services	Oracle E-Business Suite (Requester)	Agile PLM (Provider)
ABMs	UpdateEngineeringChangeOrderListABM	AgileUpdateEngineeringChangeOrderListABM
		AgileUpdateEngineeringChangeOrderListResponseABM
ABCS	UpdateEngineeringChangeOrderListEbizReqABCImpl	UpdateEngineeringChangeOrderListAgileProvABCImpl
EBS	EngineeringChangeOrderEBS	
	EngineeringChangeOrderResponseEBS	

This table lists the core components locations:

Component	Location
Application Business Objects, ABM and Common XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Agile PLM/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Ebiz/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Agile PLM/V1/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Ebiz/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

Integration Services

The integration services for the change order update are:

- EngineeringChangeOrderEBS
- UpdateEngineeringChangeOrderListEbizReqABCImpl
- UpdateEngineeringChangeOrderListAgileProvABCImpl

EngineeringChangeOrderEBS

EngineeringChangeOrderEBS is the Enterprise Business Service (EBS) that exposes the operations related to the ECO integration and change order update on the EngineeringChangeOrder EBO.

The following list itemizes the routing rules:

- EngineeringChangeOrderEBS service
UpdateEngineeringChangeOrderList: Routes UpdateEngineeringChangeOrderListEBM to UpdateEngineeringChangeOrderListAgileProvABCImpl
- EngineeringChangeOrderResponseEBS service
UpdateEngineeringChangeOrderListResponse: Routes UpdateEngineeringChangeOrderListResponseEBM to UpdateEngineeringChangeOrderListEbizReqABCImpl

UpdateEngineeringChangeOrderListEbizReqABCImpl

- The requester ABCS, defined as a synchronous process, receives a list of change IDs from the Oracle E-Business Suite concurrent program.
The list contains IDs that have last_update_date greater than the last run date of the concurrent program.

- The requester BPEL process filters the list of IDs to a list of IDs that are present in the cross-reference tables in the FMW layer.

This provides a list of change orders that were actually from the Agile PLM System alone. The original list of change IDs may be those that are from non-Agile PLM sources as well.

- The BPEL process then makes an OA Adapter call out that calls the PL/SQL API, which provides the Item details that is sent out.

This is the UpdateEngineeringChangeOrderList ABM.

- A transformation converts UpdateEngineeringChangeOrderListABM to UpdateEngineeringChangeOrderListEBM.
- An asynchronous request-delayed response call is made to EngineeringChangeOrderEBS with UpdateEngineeringChangeOrderListEBM.

This call is routed to the appropriate provider.

- The BPEL instance is reactivated from dehydration store when the asynchronous call returns from the provider and provides the status of the transaction to the caller concurrent program (because it is a synchronous call).
- The concurrent program logs the status of this call.

UpdateEngineeringChangeOrderListAgileProvABCImpl

UpdateEngineeringChangeOrderListAgileProvABCImpl updates a change order transfer status and attributes in Agile PLM.

This service is implemented as an asynchronous process.

- UpdateEngineeringChangeOrderListAgileProvABCImpl is invoked by EngineeringChangeOrderEBS with UpdateEngineeringChangeOrderListReqMsg, which contains UpdateEngineeringChangeOrderListEBM as input.
- Transform operation is called to convert UpdateEngineeringChangeOrderListEBM into AgileUpdateEngineeringChangeOrderListABM.
- AgileUpdateEngineeringChangeOrderListABM is passed as an input to the Web service operation:
 - Updates the transfer status-related attributes on the change order
 - Updates effectivity dates and implementation status.
 - If all affected items statuses are implemented, changes status of the change order to implemented (for Oracle E-Business Suite to Agile PLM flow).
- AgileUpdateEngineeringChangeOrderListResponseABM is received after the successful run of the Coarse Grained API UpdateChange.
- If the UpdateChange service operation fails in Agile PLM, a new fault is generated and sent across with an appropriate error message.

Chapter 9: Process Integration for Variant Management

This chapter provides an overview of the process integration for variant management and discusses:

- Variant management process integration
- Solution assumptions and constraints
- Agile Product Lifecycle Management (PLM) interfaces
- Oracle E-Business Suite interfaces
- Core Application Integration Architecture (AIA) components
- Integration services

Overview

Product variants are defined very early in the development process. In most cases, the decision that a product should come in multiple variants (and which ones) is already made even before designers start with their work.

That said, the development and the engineering team (possibly in collaboration with a product manager) would further specify the characteristics of the product and its variants. This includes the definition that which product components (parts, assemblies) are optional and which components can be picked from various options. The engineering team will also define technical configuration rules (constraints), reflecting their knowledge of the product components that cannot be combined (or the other way round: they always have to be used in combination).

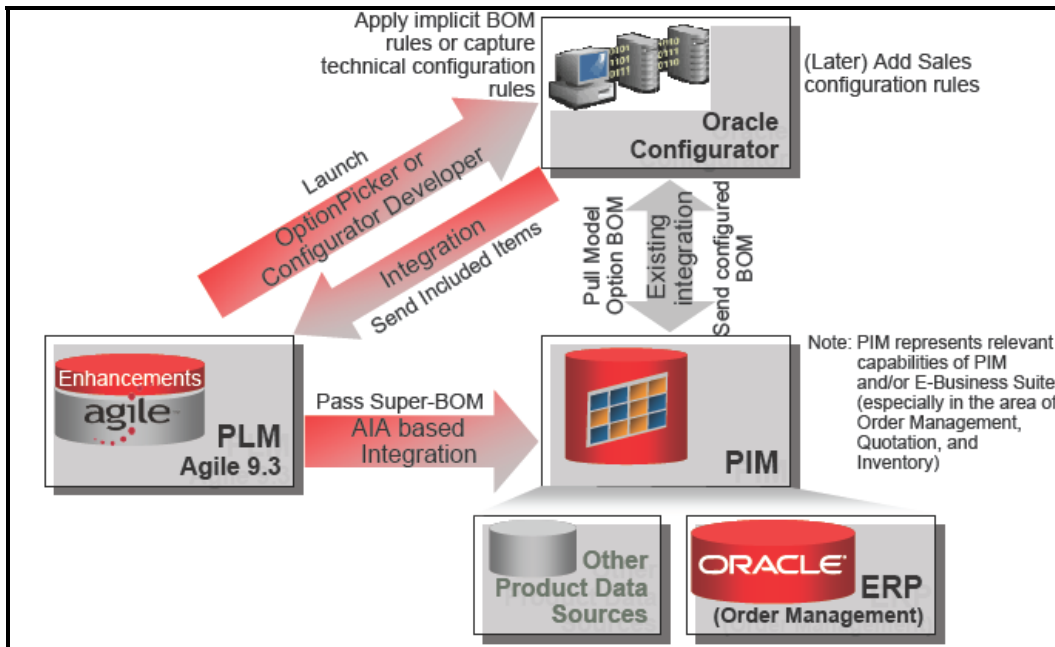
As the product development process moves forward, the quality team will be involved. Together with the engineering team, they define reference configurations (individual product variants that cover, for example, the extreme combinations and the most expected combination of product components). These reference configurations are used for validation, using simulations (virtual tests) and physical tests. Only when these tests verify that the overall design is acceptable, the product will reach the corresponding approvals.

Following the approval, the product data (represented by a Super-BOM ideally with technical constraints captured by the engineering team) is passed to Oracle E-Business Suite and downstream processes. These processes include the definition of detailed configuration rules and the production planning.

The process integration for variant management integrates Agile PLM with Oracle E-Business Suite Oracle Configurator (CZ) and enables Agile PLM users, by using Oracle Configurator, to view different User Interfaces (UIs), created for the same Bills of Material (BOM) model, based on the user login or profile. Oracle Configurator Developer (OCD) responsibility helps the user to define rules, customize the UI, and then publish the UI based on different parameters such as application, usages, and effective dates.

The following diagram illustrates the cross-application integration process for the Variant Management solution:

Integration process flow



The variant management process integration consists of the following flows:

1. Agile PLM to Oracle PIM:
 - New Part Request (Model, Option Class, and Standard)
 - Transfer pre-release prototype items (model, option class, and standard)
 - Release or transfer (Prototype) super BOM through ECO
 - Release super BOM through ECO
2. Oracle PIM to Agile PLM:
 - Oracle change order implementation information to Agile PLM (Event based and batch)
 - Oracle item operational attributes to Agile PLM (Batch)
3. Agile PLM to Oracle Configurator:
 - Generate instance BOM using Option Picker

This chapter focuses on the Agile PLM to Oracle Configurator integration flow. Other flows are discussed in the previous chapters. It also discusses the additional attributes needed for variant management in the other integration flows.

For more information about Oracle Generic Configurator User Interface, see *Oracle Configurator Implementation Guide*.

Variant Management Process Integration

The following high-level process steps illustrate how a typical variant management process spans multiple applications and how it is supported by this process integration:

1. Model, option class, and standard items are defined in Agile PLM

In order to support the variant management process integration, the new part request (NPR) and the item synchronization process integrations described previously, include model and option class item types.

2. The Super-Bills of Material (BOM) is defined in Agile PLM

3. A pre-release version of the Super-BOM is passed to Oracle E-Business PIM, through this process integration, for the initial creation of the corresponding Model/Option (M/O) BOM.

In Agile PLM, a change order is created for the Model Option BOM. The change order release process supports Agile PLM items and the Variant Management sub-items model and option class, and their attributes: Minimum, Maximum, Optional, and Mutually Exclusive.

After releasing the BOM model into Oracle E-Business Suite, the change order needs to be implemented in Oracle E-Business Suite before importing into CZ. The released change order status is set to Implemented in Oracle E-Business Suite. The Oracle Generic Configurator User Interface can display only those BOM items that are set to Implemented.

4. The Oracle Configurator Option Picker servlet from Agile PLM, providing required parameters for the Configurator to retrieve the appropriate M/O BOM from PIM, is launched.
5. User logs in to OptionPicker if called the first time during this Agile PLM session.
6. The Configurator pulls the latest version of M/O BOM (including implicit BOM rules) from PIM into its own cache

The BOM model is imported into Oracle Configurator Developer in Oracle E-Business Suite using the Populate Configuration Models concurrent program.

7. User selects the desired options and enters quantities in the Option Picker.

- a. Once the BOM Model is imported into Oracle Configurator Repository, the user can define the rules on the model and its components, create a UI using the seeded templates or custom templates, and publish the created UI to Agile PLM.
- b. While publishing the UI to Agile PLM, the user needs to select the custom application from the list of available applications and set the publication look up mode and usage as required. During a UI launch from Agile PLM, the values in profiles 'CZ: Publication Lookup Mode' and 'CZ: Publication Usage' decide which UI to launch, if multiple UIs are published to Agile PLM with different publication lookup modes and usages.
- c. The options picked by the user are populated in Agile PLM as an Instance BOM.
- d. After the user completes the configuration of the Instance BOM and clicks Finish, a termination message (containing the configuration data) is returned from Oracle E-Business Suite to a servlet in AIA.

8. The Configurator passes the picked items to Agile PLM through this process integration to create an Instance-BOM configuration in Agile PLM

- a. The servlet in the Enterprise Business Service (EBS) Application Business Connector Service (ABCS) transforms the termination message to SyncBillOfMaterialsConfigurationListABM.
- b. SyncBillOfMaterialsConfigurationListABM is then transformed into SyncBillOfMaterialsConfigurationListEBM.

- c. The enterprise service routes the configuration as SyncBillOfMaterialsConfigurationListEBM to SyncBillOfMaterialsConfigurationListAgileProvABCImpl.
- d. SyncBillOfMaterialsConfigurationListAgileProvABCImpl converts SyncBillOfMaterialsConfigurationListEBM to ABM and sends to the Agile PLM Configurator Termination Web service.
- e. A notification is sent to the user in Agile PLM when an instance BOM is derived from the Configurator or if an error occurs. To receive this notification, users need to modify the settings in the Agile PLM Java client.

For more information about the termination message, see *Oracle Configurator Developer's User Guide*.

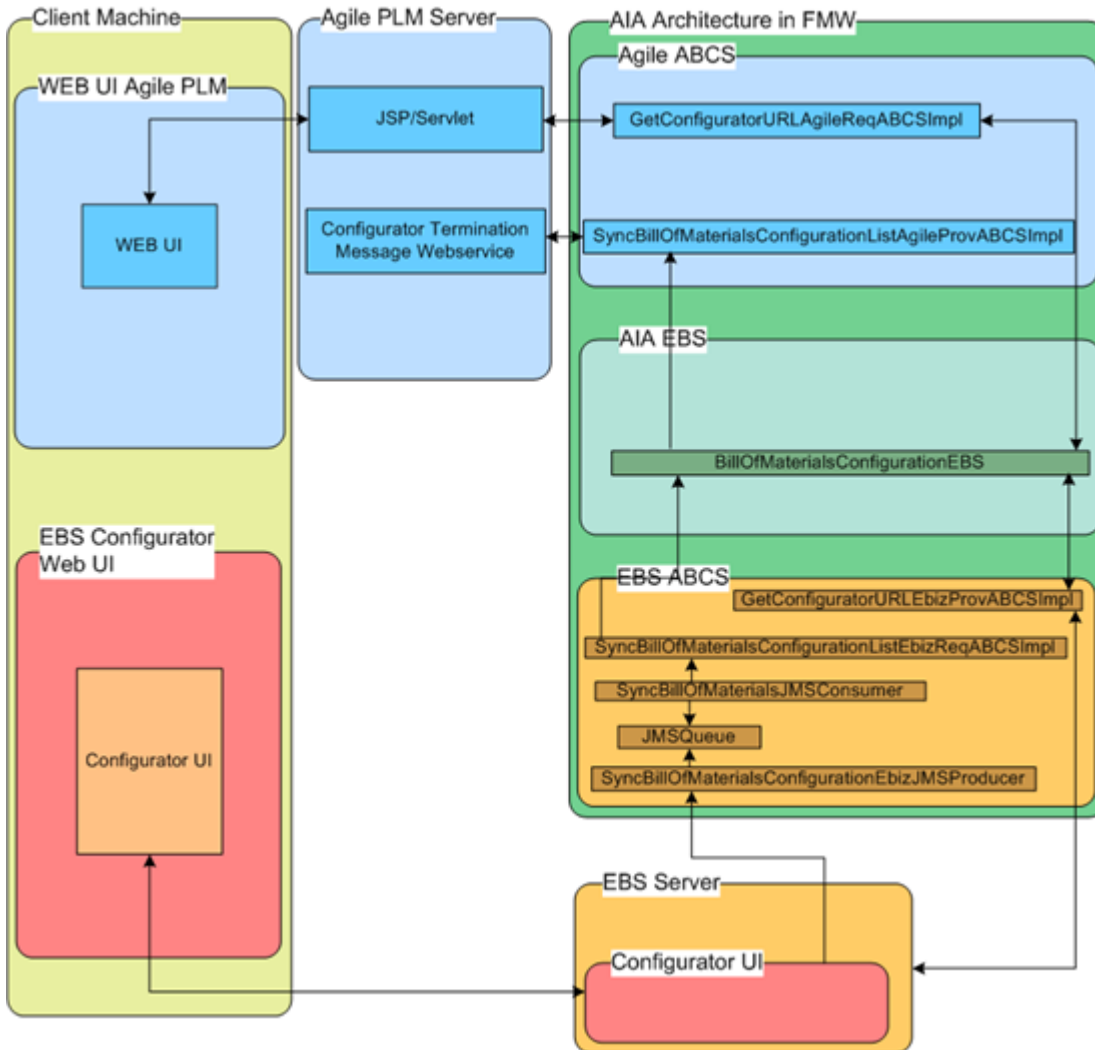
For more information, see *Oracle Configurator Developer's User Guide*.

Note: The Agile PLM termination Web service can derive an instance BOM only for BOM items, which are transferred through the Design to Release Process Integration Pack (PIP). The instance BOM cannot be derived for BOM items that have not been transferred from Agile PLM.

9. The Instance BOM is tested and processed for cost and compliance validation and further modifications
10. A new version of the Super-BOM is generated and synchronized with the corresponding M/O BOM in PIM.
11. Steps 3-9 are repeated iteratively until a production revision of the Super-BOM is created and released.

This diagram illustrates the Launch Generic Configurator User Interface and Configure Model Option BOM with Generic Configurator User Interface.

Architecture of Agile PLM Variant Management



Exceptions

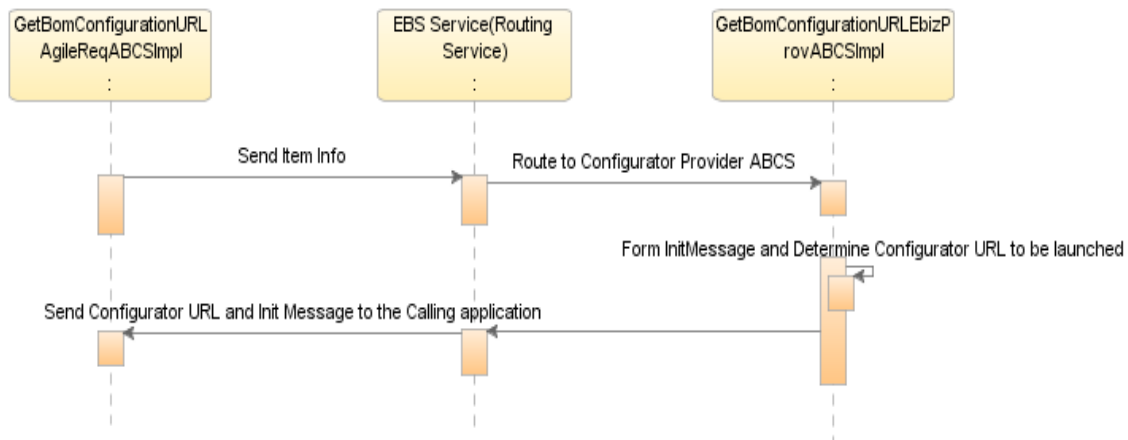
The following exception condition creates error messages for this integration process:

- An error message will be provided when the user clicks Launch Configurator button from Agile PLM (before CZ is actually launched). In this case, the error will be displayed in Agile PLM.

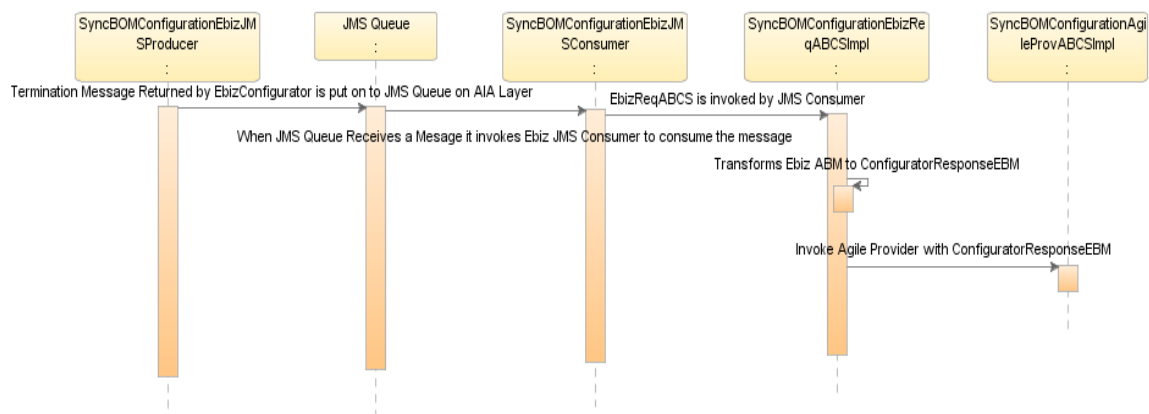
Variant Management Integration Services Orchestration

These diagrams illustrate the variant management option picker integration services orchestration:

Option picker forward flow sequence diagram



Option picker reverse flow sequence diagram



This table lists the activities involved in the variant management integration services orchestration related to the option picker and Oracle Configurator:

Step	Activity	Remarks
1.	<ul style="list-style-type: none"> Invoke GetConfiguratorURLAgileReqABCSImpl process. 	Launch the Oracle Configurator Option Picker servlet from Agile PLM. It invokes the process to obtain the Configurator URL.
2.	GetConfiguratorURLAgileReqABCSImpl invokes ConfiguratorURLEBS.	An invoke activity in GetConfiguratorURLAgileReqABCSImpl transforms AgileGetConfiguratorURLABM into GetConfiguratorURLEBM. It also invokes ConfiguratorURLEBS.
3.	GetConfiguratorURLEBS invokes GetConfiguratorURLEbizProvABCSImpl	ConfiguratorURLEBS send the GetConfiguratorURLEBM message as input into

Step	Activity	Remarks
	mpl.	GetConfiguratorURLEbizProvABCImpl.
4	GetConfiguratorURLEbizProvABCImpl process forms initial message.	GetConfiguratorURLEbizProvABCImpl transforms GetConfiguratorURLEBM and forms the initial message needed to launch the Configurator UI. It determines the Configurator URL from the Oracle E-Business Suite Profile option.
5	GetConfiguratorURLEbizProvABCImpl sends the response to ConfiguratorURLEBS.	
6	ConfiguratorURLEBS sends the response to GetConfiguratorURLAgileProvABCImpl.	GetConfiguratorURLAgileProvABCImpl transforms the message into AgileGetConfiguratorURLRespABM with the Configurator URL and the Configurator UI is displayed.
7	User selects the options in the Configurator screen until the configuration process is complete.	
8	<ul style="list-style-type: none"> Selecting Finish in the Configurator UI invokes SyncBillOfMaterialsConfigurationEbizJMSProducer. 	This will send a termination message through the integration to the JMS Queue.
9	JMS Queue invokes SyncBillOfMaterialsConfigurationEbizJMSConsumer.	When the message is received in the queue, the process invokes the JMS Consumer and sends SyncBillOfMaterialsConfigurationListABM.
10	SyncBillOfMaterialsConfigurationListEbizReqABCImpl invokes BillOfMaterialsConfigurationEBS.	SyncBillOfMaterialsConfigurationListEbizReqABCImpl receives SyncBillOfMaterialsConfigurationListABM and transforms it to SyncBillOfMaterialsConfigurationListEBM.
11	<ul style="list-style-type: none"> BillOfMaterialsConfigurationEBS invokes SyncBillOfMaterialsConfigurationListAgileProvABCImpl. 	<p>SyncBillOfMaterialsConfigurationListEBM transforms the ABM and returns the Super BOM and selected option information to Agile PLM through SyncBillOfMaterialsConfigurationListAgileProvABCImpl.</p> <p>Note: The SyncBillOfMaterialsConfigurationListAgileProvABCImpl composite uses the oracle/wss_http_token_client_policy client security policy while calling ConfiguratorTerminationService hosted on the Agile server. The security credentials for this are stored in the csf-key AgileWebServicesKey on Fusion Middleware (FMW). The Agile username and password need to be setup correctly so that the Agile service is invoked successfully from the</p>

Step	Activity	Remarks
		AIA composite in the FMW layer.

Solution Assumptions and Constraints

1. PIM and the Configurator have existing capabilities in the context, which are effectively leveraged that is the management of the Model/Option BOM in PIM and Oracle E-Business Suite and the OptionPicker in the Configurator.
2. The user will ensure successful transfer of the Super-BOM to PIM before attempting to access that version of the BOM in OptionPicker; Launch parameters will ensure the retrieval of the appropriate Model/option BOM from PIM,
3. Reconfigurations, copy, and delete will not be supported.

Agile PLM Interfaces

This table lists the Agile PLM Web Services Definition Language (WSDL) files:

Interface	Description
GetConfiguratorURLAgileReqABCImpl	
GetConfiguratorURLAgileReqABCImplExtensionConcreteWSDL.wsdl	Used to service GetConfiguratorURLAgileReqABCImpl
GetConfiguratorURLAgileReqABCImpl.wsdl	Used to service GetConfiguratorURLAgileReqABCImpl
SyncBillOfMaterialsConfigurationListAgileProvABCImpl	
ConfiguratorTerminationService.wsdl	Used as the AIA WSDL for Agile PLM VM ConfiguratorTerminationService
SyncBillOfMaterialsConfigurationListAgileProvABCImplExtensionConcreteWSDL.wsdl	Used to service SyncBillOfMaterialsConfigurationListAgileProvABCImpl

This table lists the Agile PLM XML Schema Definition (XSD) files:

Interface	Description
GetConfiguratorURLAgileReqABCImpl	
ConfiguratorABM.xsd	Contains the ABM definitions for Agile PLM VM
ConfiguratorABO.xsd	Contains the ABO definitions for Agile PLM VM
SyncBillOfMaterialsConfigurationListAgileProvABCImpl	
ConfiguratorABM.xsd	Contains the ABM definitions for Agile PLM VM
ConfiguratorABO.xsd	Contains the ABO definitions for Agile PLM VM

Interface	Description
ConfiguratorTerminationServiceTypes.xsd	Contains the local copy of the type definition for the Agile PLM VM ConfiguratorTerminationService

Oracle E-Business Suite Interfaces

This table lists the Oracle E-Business Suite WSDL files:

Interface	Description
GetConfiguratorURLEbizProvABCSEImpl	
GetConfiguratorURLEbizAdapter.wsdl	Used to service GetConfiguratorURLEbizProvABCSEImpl
SyncBillOfMaterialsConfigurationListEbizReqABCSEImpl	
SyncBillOfMaterialsConfigurationEbizJMSProducer.wsdl	Used to service SyncBillOfMaterialsConfigurationListEbizReqABCSEImpl
SyncBillOfMaterialsConfigurationEbizJMSPConsumer.wsdl	Used to service SyncBillOfMaterialsConfigurationListEbizReqABCSEImpl

Core AIA Components

This table lists the core AIA components for this process integration:

Component	Name
EBOs	BillOfMaterialsConfigurationEBO
EBMs	GetConfiguratorURLEBM SyncBillOfMaterialsConfigurationListEBM

This table lists the core components locations:

Component	Location
EBO and EBM XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ EnterpriseBusinessServiceLibrary/Core/EBO/ \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

For detailed documentation of individual EBOs and EBMs, click the AIA Reference Doc link on EBO and EBM detail pages in Oracle Enterprise Repository.

EBOs can be extended, for instance, to add new data elements. These extensions are protected and will remain integral after a patch or an upgrade.

For more information, see [Oracle Fusion Middleware Concepts and Technologies Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), “Understanding Extensibility.”

Oracle E-Business Suite and Agile PLM Components for Change Order Update

This table lists the Oracle E-Business Suite and Agile PLM components for change order update:

Services	Oracle E-Business Suite	Agile PLM
ABMs	SyncBillOfMaterialsConfigurationListABM	AgileGetConfiguratorURLABM AgileGetConfiguratorURLRespABM
ABCS	GetConfiguratorURLEbizProvABCImpl SyncBillOfMaterialsConfigurationListEbizReqABCImpl	GetConfiguratorURLAgileReqABCImpl SyncBillOfMaterialsConfigurationListAgileProvABCImpl
EBS	ConfiguratorURLEBS BillOfMaterialsConfigurationEBS	

This table lists the core components locations:

Component	Location
Application Business Objects, ABM and Common XSD files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Agile PLM/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Ebiz/V1/schemas \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary /Ebiz/Release1/Core
WSDL files	\$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Agile PLM/V1/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ApplicationObjectLibrary/Ebiz/wsdl \$AIA_HOME/AIAMetaData/AIAComponents/ ExtensionServiceLibrary/Ebiz \$AIA_HOME/AIAMetaData/AIAComponents/ApplicationConnectorServiceLibrary/Ebiz/V1

Integration Services

The integration services for the variant management process integration are:

- ConfiguratorURLEBS
- BillOfMaterialsConfigurationEBS
- GetConfiguratorURLAgileReqABCImpl
- GetConfiguratorURLEbizProvABCImpl
- SyncBillOfMaterialsConfigurationListEbizReqABCImpl
- SyncBillOfMaterialsConfigurationListAgileProvABCImpl

ConfiguratorURLEBS

The ConfiguratorURLEBS is the Enterprise Business Service (EBS) that exposes the operations related to obtaining Oracle Configurator URL.

The following list itemizes the routing rules:

- ConfiguratorURLEBS service
GetConfiguratorURL: Routes GetConfiguratorURLEBM to the GetConfiguratorURLEbizProvABCImpl

BillOfMaterialsConfigurationEBS

The BillOfMaterialsConfigurationEBS is an EBS that exposes the operations related to terminating the Oracle Configurator and returning the Super BOM and selected option information to Agile.

The following list itemizes the routing rules:

- BillOfMaterialsConfigurationEBS service
SyncBillOfMaterialsConfigurationList t: Routes SyncBillOfMaterialsConfigurationListEBM to SyncBillOfMaterialsConfigurationListAgileProvABCImpl

GetConfiguratorURLAgileReqABCImpl

- This ABC service requests the Oracle Configurator URL from Oracle E-Business Suite. It can be used in Agile PLM to select the option information.
- The requester ABCS transforms AgileGetConfiguratorURLABM into GetConfiguratorURLEBM and invokes ConfiguratorURLEBS in order to obtain the Oracle Configurator URL.
- This service receives the response from ConfiguratorURLEBS with Oracle Configurator URL.

GetConfiguratorURLEbizProvABCImpl

- This ABC service forms the initial message needed to launch Oracle Configurator UI and determines the Configurator URL from the Oracle E-Business Profile Option BOM: Configurator URL of UI Manager.
- GetConfiguratorURLEbizProvABCImpl transforms GetConfiguratorURLEBM into Oracle E-Business ABM.
- GetConfiguratorURLEbizProvABCImpl sends a response to ConfiguratorURLEBS.

SyncBillOfMaterialsConfigurationListEbizReqABCImpl

This ABC service sends the terminate Oracle Configurator message.

- SyncBillOfMaterialsConfigurationListEbizReqABCImpl receives SyncBillOfMaterialsConfigurationListABM.

- SyncBillOfMaterialsConfigurationListEbizReqABCImpl transforms SyncBillOfMaterialsConfigurationListABM into the SyncBillOfMaterialsConfigurationListEBM.

SyncBillOfMaterialsConfigurationListAgileProvABCImpl

This ABC service sends the Super BOM and option information to Agile PLM.

- SyncBillOfMaterialsConfigurationListAgileProvABCImpl transforms SyncBillOfMaterialsConfigurationListEBM into Agile PLM's ABM.

Part 2: Implementing the Delivered Process Integrations

[Chapter 10: Configuring Process Integration for Agile PLM Oracle E-Business Suite](#)

Chapter 10: Configuring Process Integration for Agile PLM Oracle E-Business Suite

This chapter discusses:

- Setting up participating applications
- Identifying cross-references
- Describing Domain Value Maps (DVMs)
- Setting configuration properties
- Setting up National Language Support (NLS)
- Handling errors
- Viewing Enterprise Business Objects (EBO) Implementation Maps (EIMs)

Setting Up the Participating Applications

Before integration, you must set up Agile Product Lifecycle Management (PLM) and Oracle E-Business Suite.

Setting Up Agile PLM

After installation of Agile PLM - Oracle E-Business Suite PIP, the system administrator must setup Agile PLM Content Services (ACS).

The following set ups are required:

1. Create new destinations.
2. Create new events for engineering change order (ECO), manufacturing change order (MCO), and site change order (SCO).
3. Define filters.
4. Create new subscribers ECO, MCO, and SCO.
5. Set privileges.
6. Set up Agile item quantity attributes
7. Create auto number PX for NPR
8. Create action menu based PX for NPR
9. Create action menu based PX for Sync Item
10. Set up CHANGE_STATUS table, if using workflow
11. Set up Agile notification

12. Variant Management: Enable Notification

These set ups are performed in the Agile PLM Java client.

Create New Destinations

If Agile PLM is deployed on Oracle Application Server (OAS)

- 1. Copy the wlthint3client.jar file (this file is located at FMW's \$WLS_HOME/Middleware/wlserver_10.3/server/lib) put under the OAS j2ee\home\applib directory in the Agile PLM environment.
- 2. Bounce the Agile Oracle Application Server (OAS).
- 3. Restart the complete SOA server using the commands from the <SOA_HOME>/opmn/bin directory.

For Linux (x86), Solaris SPARC (64-bit), IBM AIX Based Systems (64-bit), and HP-UX 11i (64 bit)

- a. ./opmnctl stopall
- b. ./opmnctl startall

For Microsoft Windows (32-bit)

- a. opmnctl stopall
- b. opmnctl startall

If Agile PLM is deployed on the Weblogic server (WLS), no need to copy the wlthint3client.jar file, it should work fine as it is.

- 1. On the Admin tab, navigate to System Settings > Agile Content Service > Destinations.
- 2. Select Protocol JMS.
- 3. Enter or set the following essential values:

Field	Value/Setting
Name	Define your own
Response Expected	No
User Name	weblogic (SOA server admin user name)
Password	weblogic#1 (SOA server admin password)
Provider Context Factory	weblogic.jndi.WLInitialContextFactory
Connection Factory	jms/aia/AIAAgilePLMECOCF
Default Provider URL	t3://<SOAServer>:<SOAServerPort>
Destination Name	jms/aia/AIAAgilePLMECOJMSQueue

Note: If you are pointing Agile to a clustered FMW environment, the Default Provider URL must contain all possible URLs in the cluster separated by a comma. For example, t3://<SOAServer1>:<SOAServerPort1>,<SOAServer2>:<SOAServerPort2>.

4. Click Test to validate.

Create New Events for ECO, MCO, and SCO

Note: Create separate Events for CO Release and CO Validation.

1. In the Admin tab, go to System Settings > Agile Content Service > Events.
2. Enter or set the following:

Field	Value/Setting		
	ECO	MCO	SCO
Name	Define your own		
Event Type	Workflow		
Workflow	Default Change Order	Default Manufacturer Orders	Default Site Change Orders
Workflow Status	For CO Release Process - Released For CO Validation Process - Any status other than Released. Preferred status is Submitted.		

Define Filters

1. In the Admin tab, go to System Settings > Agile Content Service > Filters.
2. Modify Default Item Filter to set the following:

Field	Value/Setting
View Tabs	Add Sites, Title Block, Page Two, Page Three, BOM, Manufacturers
BOM Options	Tabs and Items
BOM Levels	Select All Levels check box
AML Options	Tabs and Manufacturer Parts
Attachment Options	Tab only

3. Modify the following filters to set the given fields:

Field	Value/Setting		
	Default Change Order	Default Manufacturer	Default Site Change

	Filter	Order Filter	Order Filter
Affected Items Options	Tab & Items	Tab & Items	Tab & Items
Redline Changes only	No	No	No

Create New Subscribers for ECO, MCO, and SCO

Note: Create separate Subscribers for CO Release and CO Validation.

1. In the Admin tab, go to System Settings > Agile Content Service > Subscribers.
2. Create new Subscribers, one each for ECO, MCO and SCO, and set the following:

Field	Value/Setting		
	For ECO	For MCO	For SCO
Name	Define your own		
Subclass	ATO		
Workflow	Default ATOs		
Criteria	All Change Orders	All Manufacturer Orders	All Site Change Orders
Event	Select the Name of the Event that you created #2 for ECO	Select the Name of the Event that you created #2 for MCO	Select the Name of the Event that you created #2 for SCO

3. Enter or set the Subscriber Details for each (ECO, MCO, SCO), by adding a new row, as follows:

Field	Value/Setting		
	For ECO	For MCO	For SCO
Destinations	Select the JMS Destinations that you created for each		
Filter	Default Change Order Filter	Default Manufacturer Change Order Filter	Default Site Change Order Filter
	Default Item Filter	Default Item Filter	Default Item Filter
Roles	All		
Format	aXML		
Language	English		
Site	All		

4. Enable all the newly created Subscribers.

Set Privileges

1. In the Admin tab, go to User Settings > Privileges > Modify.
2. Create new Modify Privileges for ECO, MCO, and SCO.
3. Set privilege to Modify.
4. Select the Criteria that correspond to each ECO, MCO, and SCO.
5. Select all the Attributes, including the invisible/disabled attributes in the Applied to field and Save them.
6. In the Where Used tab, add Roles to all the created privileges. Default role is Admin user.
7. Create new Read privileges for MCO.
8. Select All Manufacturer Orders in the Criteria.
9. Choose both visible and invisible/disabled attributes in the Applied to field.
10. Modify the Read Changes and Read Items to get the Admin user in the Where Used tab.

Note: The user should have privileges to modify the 'released' items and 'released' changes.

Set Up Agile Item Quantity Attributes

1. In the Admin tab, go to Data Settings > Classes.
2. For both Parts and Document classes, enable the flexfields on Page2, Page3 or Site tab according to the MultiSite_Enabled property value in the AIAConfigurationProperties.xml file, located at AIA_HOME>/aia_instances/\$INSTANCE_NAME/AIAMetaData/config, for the Agile PLM module.
3. These field names in Agile reflect the following fields from the Oracle E-Business Suite:
 - Manufacturer Cost
 - Available Quantity
 - On Hand Quantity
 - Reserved Quantity
4. The values of these fields should be the same as those entered for the following properties:
 - Item.UnitCostAttribute
 - Item.AvailableQuantityAttribute
 - Item.OnHandQuantityAttribute
 - Item.ReservedQuantityAttribute
5. Set the created fields to Visible

Note: Ensure that these attributes have Read and Modify privileges.

6. Similarly, enable a Page2 or Page3 flex field on the ECO, MCO, and SCO to reflect Change.TransferStatusAttribute property value in the AIAconfigProperties.xml file.

Oracle recommends that this field:

- a. Should be a Page Two field on the change orders, manufacturer orders, and site change orders classes.

The field should have the same display name on all three classes.


- b. Have a default value of Not Processed.
- c. Should be editable only by the user of the ID used by the integration to log in to Agile PLM, and be editable for all status (if the change is not released after its initial release).

If a value is not specified for this parameter, the implication is that a status update back to a change order flex-field in Agile PLM is not required


The field identified by this parameter will also be used by the integration to update the change implementation status into Agile PLM.


Create Auto Number Process Extensions for NPR

Note: Create separate Auto Number PX each sub class with appropriate names. This is used to identify the sub class for which a particular Auto number PX is triggered.



1. In the Admin tab, go to Data Settings > AutoNumbers.
2. Click  button to create auto numbers for a subclass.
3. Enter the following fields in the Define the AutoNumber screen.
 - a. Enter name for AutoNumber.
 - b. Choose Yes for Enabled.
 - c. Choose Custom for Type.
 - d. Choose the subclass name for Where Used.
 - e. Choose com.oracle.aia.npr.V2.NPRAutoNumber for Custom AutoNumber.
 - f. Click OK.
4. Navigate to Admin > Data Settings > ProcessExtensions.

Create Action Menu Based Process Extensions for NPR

1. In the Admin tab, navigate to Data Settings > Process Extensions.
2. Click  button to create the process extension.
3. Enter the following details in the Define the AutoNumber screen:
 - a. Enter name as NPR Number
 - b. Choose Internal Custom Action for Type.

- c. Choose the subclass name for Where Used.
- d. Choose com.oracle.aia.npr.V2.UpdateNPRNumber for Internal Custom Action.
- e. Choose Initiate From for Actions Menu.
- f. Choose Yes for Enabled.
- g. Click OK.
4. Navigate to Admin > Data Settings.
5. Double click Classes.
6. Double click Items in the Classes window.
7. Navigate to the Process Extensions tab.
8. Click  to open the Assign Process Extensions window.
9. Select NPR Number from the choices.
10. Click OK.

Create Action Menu Based Process Extensions for Sync Item

1. In the Admin tab, navigate to Data Settings > Process Extensions.
2. Click  button to create the process extension.
3. Enter the following details in the Add Process Extensions window:
 - a. Enter name as Sync Item.
 - b. Select Internal Custom Action for Type.
 - c. Select the subclass name for Where Used.
 - d. Select com.oracle.aia.syncitem.SyncItem for Internal Custom Action.
 - e. Select Initiate From for Actions Menu.
 - f. Select Yes for Enabled.
 - g. Click OK.
4. Navigate to Admin > Data Settings.
5. Double-click Classes.
6. Double-click Items in the Classes window.
7. Navigate to the Process Extensions tab.
8. Click  to open the Assign Process Extensions window.
9. Select Sync Item from the choices.
10. Click OK.

Set up Change_Status Table for Workflow

Because the change status name depends on the workflow being used, the CHANGE_STATUS configuration table is provided as part of the integration setup. The CHANGE_STATUS table is located in the AIA schema created on the Service-Oriented Architecture (SOA) server. The default user ID is plmpip. The password will be the same password that the customer has setup for the FP AIA database. This value is the same as the property fp.db.aia.password, which can be found in the AIAInstallProperties.xml file. The DB details, such as URL, port, server ID, and so on can be found in the AIAInstallProperties.xml file at <AIA_INSTANCE>/config/AIAInstallProperties.xml.

This table allows the administrators to specify the next status for each possible combination of change object type and the workflow being used for each event that qualifies for the change status operation. The administrators can add as many rows as required. The number of sub-classes of change objects and the number of workflows is unlimited in Agile PLM.

This table illustrates how a partially configured table looks:

EVENT	OUTCOME	SUBCLASS	WORKFLOW	NEXT_STAUS
Change Implemented	SUCCESS	ECO	Default Change Orders	Completed

In a new installation, this table will be empty. The integration administrator needs to add rows in this table if the change status process needs to be supported for any of the given processes.

- The EVENT column key is 'Change Implemented'.
- The OUTCOME column key is 'SUCCESS'.
- In the SUBCLASS column, set up the change order subclass as ECO, MCO, etc.
- In the WORKFLOW column, set up the workflows. For example, if you are using Default Change Order workflow for ECO, then enter Default Change Order in this column. These values can be picked up from Agile PLM Java client.
- In the NEXT_STATUS column, enter the status of the workflow you want it to move to when the conditions are met. For example, when a Change is implemented (identified by event - this is a key. do not change it) and the OUTCOME is SUCCESS (identified by outcome, gets checked while changing status here), and the WORKFLOW chosen is Default Change Orders, the set up requesting the Change to be moved to the Implemented status (NEXT_STATUS).

Set Up Agile Notifications

Notifications can be setup in Agile PLM to send email when any error occurs during ACS processing in the change order release process integration flow.

To set up the notifications:

1. Log in to Agile Java Client.
2. In the Admin tab, navigate to System Settings > Agile Content Service > Destinations.
3. Open the destination that was configured for the change order release flow to send the data to the JMS queue.
4. In the Notification User field, add the users and user groups who need to be notified on failure of ACS transfer.
5. Save the changes.

Variant Management: Enable Notification

1. In the Admin Tab, go to Server Settings > Database.
2. In the Notification Enabled field, select Yes.
3. Navigate to System Settings > Notifications.
4. In the Filter By field, select Name.
5. In the Value field enter Part.
6. Click Apply.
7. Open Parts - Part Send.
8. In the Notification Type field, select Inbox.
9. In the Enabled field, select Yes.

The following settings are user specific settings.

10. Go to User Settings > Privileges > Send.
11. In the Filter By field select Name.
12. In the Value field, enter Send Item.
13. Click Apply.
14. Open Send Items.
15. In the Enabled field, select Yes.

The current user has to have a role assigned that contains the privilege 'Send Item'.

16. Navigate to User Settings > Users.
17. Make sure the current user has roles assigned to him that contain the privilege 'Send Item'.

For more information, see *Agile PLM Content Service User Guide* and *Agile Product Lifecycle Management Administrator Guide*.

Setting Up Oracle E-Business Suite

This section discusses:

- Profile settings
- Oracle Configurator setup

Profile Settings

This table lists the profile option settings that need to be configured for Oracle E-Business Suite to support the integration flow from Oracle E-Business Suite to Agile PLM:

Setting	Description
BOM:Configurator URL of UI Manager	Configurator URL
CZ: Publication Lookup Mode	For Variant Management, set this profile option to define the desired publication look up mode. During a UI launch from Agile, the values in this profile decide which UI to launch, if multiple UIs are published to Agile PLM with different publication lookup modes and usages.
CZ: Publication Usage	For Variant Management, set this profile option to define the desired publication usage. During a UI launch from Agile, the values in this profile decide which UI to launch, if multiple UIs are published to Agile PLM with different publication lookup modes and usages.
EBS Integration Batch Count	Many entities (items or ECO) will be sent out in buckets based on the number that is set in this profile option. For example, if the reverse flow from Oracle E-Business Suite to Agile PLM has 22 items to be synched up based on this many items having been updated since the last run of the concurrent program and the profile has been set to 10, then 3 BPEL instances will be created to send out 10 + 10 + 2 items. If too many items have been updated after the last run, then BPEL may not be able to handle a very large payload causing memory issues. To prevent this, Oracle has introduced this profile. In such cases, the batch is split and sent.
EBS Integration Debug Directory	This profile option has VALUE as the path where the log file will be generated. This folder or directory should have read and write permission.
EBS Integration Debug Option	This profile option enables and disables logging. If the value is yes, then logging is enabled; if no, then it is disabled.
EBS Integration Language Codes	This profile option is used for returning the user language code through a concurrent program to the requestor BPEL process for identifying the integration user based on the language code received. Depending on this language code, APPS Context is set for that particular integration user and Oracle E-Business Suite will return the data in that particular language to Agile PLM.
EBS Integration: PIM Spoke Source System Name	This profile option is used for specifying multiple source systems based on which items will be filtered and updated back to Agile PLM. This source system should be a comma-separated value.
EBS Integration Proxy Server Host	Set it to the <SOA server /host name/>.
EBS Integration Proxy Server Port	Set it to the <SOA server http /port number/>.
EBS Integration: Server Endpoint URL	Endpoint of Managed SOA server on Fusion Middleware (FMW). For example, http://<host>:<port>/soa-infra/services/default
ENG: Require Revised Item New Revision	This profile indicates whether it is mandatory to assign a new revision to revised items on Oracle E-Business Suite ECOs. A blank (or "null") value is equivalent to No. This profile option should be set to No for the change order release process.

Setting	Description
EBS profile option: EGO: Enable Stats Collection	For Agile-EBS integration to work, this profile option must be disabled.

Note: If the ECO update is event based, then setup for Subscribers and Events has to be done.

To navigate to the profiles interface:

1. Log in to the application with sysadmin credentials.
2. Navigate to System Administrator > responsibility.
3. Select System > Profile.
4. Search for the profiles given in the table and set the values.

For more information about the concurrent programs, see *Oracle E-Business Suite Developer's Guide* and *Oracle E-Business Suite System Administrator's Guide - Maintenance*.

Oracle Configurator Setup

To use the Variant Management with Oracle Configurator, you will need to create a custom application in Oracle E-Business Suite (for example, Agile_PLM), which would be a onetime job during this integration. From then, for every BOM model to be launched using the Configurator UI from the Agile UI, the flow is to have the model structure released from Agile PLM to Oracle E-Business Suite and import the model into Oracle Configurator Developer. If required, create certain rules and UI for the model and publish the UI from Oracle Configurator Developer to the newly created custom application. This would make the Configurator UI available for Agile PLM users.

Creation process of a custom application in Oracle E-Business Suite includes:

1. Log in to Oracle E-Business Suite as a user with the Application Developer responsibility.
2. Navigate to Application Developer > Application > Register function.
3. Provide the values for Application, Short Name, Basepath, and Description.

For example, Agile_PLM, APLM, APLM_TOP, and Agile Integration with Configurator respectively.

4. Save.

When saved, the application details like application_id can be fetched from database using the query:

```
SELECT * From fnd_application_vl WHERE application_short_name = 'APLM';
```

5. After obtaining the application_id for the application created in this step, update the property CONFIGURATOR_APPLICATION_ID under the GetConfiguratorURLEbizProvABCServiceImpl service in the AIAConfigurationProperties.xml file to reflect this new custom application.

For subsequent launches of the Oracle Configurator UI from Agile PLM, the `application_id` set in this parameter will be passed in the initialization message to Oracle Configurator.

6. To make this application available for publishing a UI from Oracle Configurator (CZ) to Agile PLM, add it to the publication applicability list.

To do this, navigate to Oracle Configurator Administrator > Concurrent programs > Schedule and run the concurrent program Add Application to Publication Applicability List.

Secured Access to APPS Schema

For more information about how to access the Oracle E-Business Suite APPS database schema without requiring sharing of the password for the APPS schema, see *AppsDataSource, Java Authentication and Authorization Service, and Utilities for Oracle E-Business Suite*.

Performance Considerations

Depending on the volume of transactions, an index can be created on the `LAST_UPDATE_DATE` column in the base tables `CST_ITEM_COSTS`, `MTL_SYSTEM_ITEMS`, and `CST_QUANTITY_LAYERS`, which will improve performance in the publish item and publish item balance flows originating from Oracle eBusiness Suite.

Concurrent Programs Setup and Scheduling

Three flows from Oracle E-Business Suite to Agile PLM are scheduled for data to be sent at regular intervals. This is done by means of Oracle E-Business Suite concurrent programs (CP), which can be run at various intervals and scheduled with user interface options. The programs are:

- Publish Item Attributes Updates
- Publish Item Balance Updates
- Publish Engineering Change Order Updates

Concurrent programs are configured as a periodic or scheduled publication or triggered ad hoc for On-Demand publication.

1. First Scheduled Run

When the concurrent program is scheduled, it sends all those entities that have been updated. However, for the very first run, the last run date is not available. Hence, it is defaulted to the last 30 days. This may result in an enormous number of items being picked up. Hence, the customer may choose to first perform an ad hoc publish (this is after the this PIP is installed and a few items are transferred from Agile PLM to Oracle E-Business Suite based on the implementation).

In addition, specific organizations can be specified along with from date and to date in the ad hoc request parameters, from a performance perspective, to send the data in multiple requests. After this, the customer can set up a scheduled process and the first run of the scheduled process will pick up the ad hoc request run time as the last run date. Another option is that the customer can just schedule the request to be run with the Updated within the last X hours parameter set. This will pick up items, even for the first run, that have been updated in the last x hours.

2. Subsequent Scheduled Run

Oracle recommends that you set the Updated in the last X hrs parameter with a default value for the concurrent programs that you set up to run at a schedule frequency. Specify this parameter value apart from the schedule frequency that is set up in the Concurrent Program setup. Oracle suggests that you set the same x hours for the Concurrent Program Schedule setup. Alternatively, you can leave all the parameters empty and schedule the concurrent program to run at a particular schedule frequency that you want.

Concurrent Program Parameters

1. Item/ECO names:

- a. The items/ECOs that are to be published should be entered separated by double semicolons.
- b. This is a text parameter of maximum length 240.

Examples:

```
ItemName1;;ItemName2;;ItemName3
ChangeOrderName1;;ChangeOrderName2;; ChangeOrderName3
```

2. Organization codes:

- a. Organization codes must be specified separated by double semicolons.
- b. This is a text parameter of maximum length 240.

Example1:

```
Item Names      - Item1;;Item2;;Item3
Organization Codes - Org1;;Org2
If Item1 exists in Org1, Item2 in Org2 and Item3 in both Org1 & Org2 then,
Items Published: Item1:Org1, Item2:Org2, Item3:Org1, Item3:Org2
```

Example2:

```
Organization Codes - Org1;;Org2
Updated in the last X Hrs – 10
Items/ECOs Published: Items/ECOs that got updated in the last 10 hours from Org 1 &
Org2.
```

3. From Date:

This is a standard date time parameter.

4. To Date:

This is a standard date time parameter. This parameter should be entered only if the From Date parameter is given a value.

5. Updated in the last X hrs:

This is a number parameter of maximum length 15. If this parameter is provided a value, then the From Date and To Date parameter values will not be considered.

Supported Functionalities

1. Scheduled request with no value provided to all parameters

Items/ECOs that were updated from the last completed or scheduled request will be picked for publication. The items/ECOs with errors from the previous run will not be automatically picked for the publication. All the items/ECOs with errors need to be published by using ad hoc CP request functionality and providing appropriate CP request parameters for such ad hoc requests.

2. Ad hoc request with no value provided to any of the parameters

Oracle recommends that customers provide appropriate parameter values for the CP ad hoc requests. If no value is provided, then items/ECOs that were updated from the last completed or scheduled request will be published. If no scheduled requests are prior to the current request, then it will pick all the items/ECOs that were updated from the last completed request. If no completed requests are prior to the current one (first request of CP), then it will choose the data that was updated in the last 30 days.

Expected Behaviors

This table lists the expected behavior of the requests based on the input values provided. A tick mark (x) implies that the values are specified, while a dash (-) implies they are not.

Item/ECO Names	Organization Codes	From Date	To Date	Updated in last X hrs	Expected Items/ECOs to be published
x	-	-	-	-	Specified items/ECOs from all assigned Organization
-	X	-	-	-	Items/ECOs updated from the last completed request from the specified organization (If no last completed request then last 30 days). This is done in order to maintain the performance of the system. For the Publish Item Attribute Concurrent Job to work, the spoke source system value must match the value passed in from the PIP.

Item/ECO Names	Organization Codes	From Date	To Date	Updated in last X hrs	Expected Items/ECOs to be published
-	-	X	-	-	Items/ECOs updated between the specified From Date and System Date from all Organizations
-	-	-	X	-	Error (From Date cannot be empty when to Date is specified)
-	-	-	-	X	Items/ECOs updated in the last X Hours from all organizations
X	X	-	-	-	Specified Items/ECOs from specified organizations if they exist
-	X	X	-	-	Items/ECOs updated between the specified From Date and System Date from specified organizations
-	X	-	-	X	Items/ECOs updated in the last X hours from specified organizations
X	-	X	-	-	Specified items/ECOs updated between the specified From Date and System Date from all assigned organizations
X	-	-	X	-	Error (From Date cannot be missing when To Date is specified)
X	-	-	-	X	Specified items/ECOs updated in the last X hours specified from all assigned organizations
X	-	X	X	-	Specified items/ECOs updated between the specified From Date and To Date from all assigned organizations
X	-	X	X	X	Specified items/ECOs updated in the last X hours specified from all assigned organizations. The specified From Date and To Date will be ignored
X	X	-	X	X	Specified items/ECOs from specified organizations if they exist and are updated in the last X hours specified. The specified To Date will be ignored
X	X	X	X	X	Specified items/ECOs from specified organizations if they exist

Item/ECO Names	Organization Codes	From Date	To Date	Updated in last X hrs	Expected Items/ECOs to be published
					and were updated in the last X hrs specified. The specified From Date and To Date will be ignored

On Demand/Ad Hoc

After the process integration pack (PIP) setup is complete, perform the following tasks:

1. Initial publication of items and ECOs from Oracle E-Business Suite

Run an ad hoc request specifying from date and to date. (If this is not done, the CP will pick all the items and ECOs that were updated in the last 30 days.) In addition, specific organizations can be specified along with from date and to date in the CP parameters, from a performance perspective, to send the data in multiple CP requests as part of Implementation setup.

2. Periodic and scheduled publication of items and ECOs from Oracle E-Business Suite

Oracle recommends that customers set the updates in the last X hrs parameter with a reasonable value for CPs that are being set up to run at a schedule frequency. This parameter value should be specified apart from the schedule frequency setup in the Concurrent Program setup. Oracle suggests that customers set the same X number of hours for the Concurrent Program Schedule setup (OR). Customers can leave all the parameters empty and schedule the CP to run at a particular schedule frequency that they desire.

3. On Demand/Ad-hoc publication of items and ECOs from Oracle E-Business Suite

The items and ECOs that failed during the scheduled run must be sent as separate ad hoc requests by specifying appropriate value to the parameters. The items and ECOs of the organizations that failed during the scheduled publication can be obtained from the log information to provide input parameters for the ad hoc concurrent request to synchronize the data between Oracle E-Business Suite and Agile PLM after resolving the reported publication error.

Setting Up Product Information Management Spoke Source System

Product Information Management (PIM) Spoke Source System setup must be done before you run the New Part Request (NPR) flow for Oracle E-Business Suite 12.1.x release. This setup is required so that after creation of an item in Oracle E-Business Suite, it can appear in the Association Tab of the source system.

Note: The PIM Spoke Source System setup is required if the PIP is installed with the PIM option enabled.

For more information about how to set up the PIM Spoke Source System, see *Oracle Product Information Management Implementation Guide*, “Setting Up Inbound Product Data Synchronization and Data Quality Management,” Defining Source Systems.

SQL Script for Loading Cross-Reference Records

There is no utility in 11g to load cross-reference records similar to 10g. However, the same can be accomplished with a SQL script.

Here is an example script to load cross-reference records for table ORGANIZATION_ID and columns PSFT_01, RETL_01. You can modify this script to suit your specific requirements.

```

DECLARE
XrefTableName_vc2 VARCHAR2 (2000);
XrefColumnName1_vc2 VARCHAR2 (2000);
XrefColumnName2_vc2 VARCHAR2 (2000);
XrefColumnName3_vc2 VARCHAR2 (2000);
Value_vc2 VARCHAR2 (2000);
RowNumber_vc2 VARCHAR2 (48);
IsDeleted_vc2 VARCHAR2 (1);
LastModified_ts TIMESTAMP (6);
BEGIN

/* The following values need to be set just once per load*/
XrefTableName_vc2 :=
'oramds:/apps/AIAMetaData/xref/ORGANIZATION_ID.xref';

IsDeleted_vc2 := 'N';
XrefColumnName1_vc2 := 'COMMON';
XrefColumnName2_vc2 := 'PSFT_01';
XrefColumnName3_vc2 := 'RETL_01';

/* Copy this section as many times as needed for each set of three
records you need inserted */
/* You'll just need to change the Value_vc2 variable for your specific
edge app values */
/* Row Number is unique to a group of three inserts and ties them
together. Its a system generated guid in all cases */
/**/ Begin first set of 3 inserts ***/
RowNumber_vc2 := SYS_GUID;

/* Common row should have a guid for its value */
Value_vc2 := SYS_GUID;
LastModified_ts := SYSTIMESTAMP;
Insert into XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER,
VALUE, IS_DELETED, LAST_MODIFIED) values
(XrefTableName_vc2, XrefColumnName1_vc2,
RowNumber_vc2, Value_vc2, IsDeleted_vc2, LastModified_ts);
/* Value specific to each application */
Value_vc2 := 'RetailValue1';
LastModified_ts := SYSTIMESTAMP;
Insert into XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER,
VALUE, IS_DELETED, LAST_MODIFIED) values
(XrefTableName_vc2, XrefColumnName2_vc2,
RowNumber_vc2, Value_vc2, IsDeleted_vc2, LastModified_ts);

```

```

/* Value specific to each application */
Value_vc2 := 'PsftValue1';
LastModified_ts := SYSTIMESTAMP;
Insert into XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER,
VALUE, IS_DELETED, LAST_MODIFIED) values
      (XrefTableName_vc2, XrefColumnName3_vc2,
RowNumber_vc2, Value_vc2, IsDeleted_vc2, LastModified_ts);
/** End of first set of 3 inserts */
/**Begin second set of 3 inserts*/
RowNumber_vc2 := SYS_GUID;
/* Common row should have a guid for its value */
Value_vc2 := SYS_GUID;
LastModified_ts := SYSTIMESTAMP;
Insert into XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER,
VALUE, IS_DELETED, LAST_MODIFIED) values
      (XrefTableName_vc2, XrefColumnName1_vc2,
RowNumber_vc2, Value_vc2, IsDeleted_vc2, LastModified_ts);
/* Value specific to each application */
Value_vc2 := 'RetailValue2';
LastModified_ts := SYSTIMESTAMP;
Insert into XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER,
VALUE, IS_DELETED, LAST_MODIFIED) values
      (XrefTableName_vc2, XrefColumnName2_vc2,
RowNumber_vc2, Value_vc2, IsDeleted_vc2, LastModified_ts);
/* Value specific to each application */
Value_vc2 := 'PsftValue2';
LastModified_ts := SYSTIMESTAMP;
Insert into XREF_DATA (XREF_TABLE_NAME, XREF_COLUMN_NAME, ROW_NUMBER,
VALUE, IS_DELETED, LAST_MODIFIED) values
      (XrefTableName_vc2, XrefColumnName3_vc2,
RowNumber_vc2, Value_vc2, IsDeleted_vc2, LastModified_ts);
/** End second set of 3 inserts */
END;

```

Identifying Cross-Reference Data

This PIP uses the `xref_data` table present in Application Integration Architecture (AIA) schema to maintain a cross-reference between Agile PLM and Oracle E-Business Suite. This cross-reference information helps map Agile PLM Parts/ Documents/ Change Orders to Oracle E-Business Suite Items/ Change Orders.

Two virtual tables in the AIA XREF schema's `XREF_DATA` table maintain this cross-reference information.

1. `CHANGE_CHANGEID`: maintains all the change order information.
2. `ITEM_ITEMID`: maintains item information.

Example:

- A change order ECO001 contains two revised items:
 - P0001 in site V1
 - P0002 in site V2
- Both these revised items have component items:
 - P0001 has component items C0001 and C0002

- P0002 has component items C0003 and C0004
- When this change order is released from Agile PLM to Oracle E-Business Suite, the following entries are made in the CHANGE_CHANGEID virtual table:

XREF_TABLE	XREF_COLUMN	ROW_NUMBER	VALUE
CHANGE_CHANGEID	AGILE_01	E45E015046AF11DD9F2 E436FB39961A8	ECO001::V1
CHANGE_CHANGEID	COMMON	E45E015046AF11DD9F2 E436FB39961A8	2d373833303237303132383837 353631
CHANGE_CHANGEID	EBIZ_01	E45E015046AF11DD9F2 E436FB39961A8	11075
CHANGE_CHANGEID	AGILE_01	E45E015046AF11DD9F2 E436FB39961A9	ECO001::V2
CHANGE_CHANGEID	COMMON	E45E015046AF11DD9F2 E436FB39961A9	2d373833303237303132383837 353632
CHANGE_CHANGEID	EBIZ_01	E45E015046AF11DD9F2 E436FB39961A9	11076

The CHANGE_CHANGEID table is located at this location:
\$AIA_HOME/AIAMetaData/xref/CHANGE_CHANGEID.xref

- The first row entry is made by the Agile PLM BPEL flow for part P0001. This part belongs to an Agile PLM site that is mapped to site V1. The value entered is a concatenation of part number and the Oracle E-Business Suite organization code (for example, Partnumber::OrganizationCode).
- The second entry (Common) is also created by the Agile PLM BPEL flow. It indicates the common business component ID for this particular integration entity. It is used for linking change orders to Oracle E-Business Suite change orders.
- The third row entry represents the Oracle E-Business Suite inventory item ID corresponding to the item P1B and the organization ID for the item (for example, Inventory_Item_id::Organization_id::Operating_Unit_Id).
- For each revised item and component items in the change order, entries are made into the ITEM_ITEMID virtual table.

Example: For ECO001, the following entries will be made in the ITEM_ITEMID table.

XREF_TABLE	XREF_COLUMN	ROW_NUMBER	VALUE
ITEM_ITEMID	AGILE_01	0078BE703EC711DDBF9CA7A A7FE3BDFB	P0001::V1
ITEM_ITEMID	COMMON	0078BE703EC711DDBF9CA7A A7FE3BDFB	35313835373739353732383638 303435
ITEM_ITEMID	EBIZ_01	0078BE703EC711DDBF9CA7A A7FE3BDFB	66247::204::<operating unit ID>
ITEM_ITEMID	AGILE_01	0078BE703EC711DDBF9CA7A A7FE3BDFC	P0002::V2

XREF_TABLE	XREF_COLUMN	ROW_NUMBER	VALUE
ITEM_ITEMID	COMMON	0078BE703EC711DDBF9CA7A A7FE3BDFC	35313835373739353732383638 303436
ITEM_ITEMID	EBIZ_01	0078BE703EC711DDBF9CA7A A7FE3BDFC	66248::207::<operating unit ID>
ITEM_ITEMID	AGILE_01	0078BE703EC711DDBF9CA7A A7FE3BDFD	C0001::V1
ITEM_ITEMID	COMMON	0078BE703EC711DDBF9CA7A A7FE3BDFD	35313835373739353732383638 303437
ITEM_ITEMID	EBIZ_01	0078BE703EC711DDBF9CA7A A7FE3BDFD	66249::204::<operating unit ID>
ITEM_ITEMID	AGILE_01	0078BE703EC711DDBF9CA7A A7FE3BDFE	C0002::V1
ITEM_ITEMID	COMMON	0078BE703EC711DDBF9CA7A A7FE3BDFE	35313835373739353732383638 303438
ITEM_ITEMID	EBIZ_01	0078BE703EC711DDBF9CA7A A7FE3BDFE	66250::204::<operating unit ID>
ITEM_ITEMID	AGILE_01	0078BE703EC711DDBF9CA7A A7FE3BDFE	C0003::V2
ITEM_ITEMID	COMMON	0078BE703EC711DDBF9CA7A A7FE3BDFE	35313835373739353732383638 303439
ITEM_ITEMID	EBIZ_01	0078BE703EC711DDBF9CA7A A7FE3BDFE	66251::207::<operating unit ID>
ITEM_ITEMID	AGILE_01	0078BE703EC711DDBF9CA7A A7FE3BDFE	C0004::V2
ITEM_ITEMID	COMMON	0078BE703EC711DDBF9CA7A A7FE3BDFE	35313835373739353732383638 303440
ITEM_ITEMID	EBIZ_01	0078BE703EC711DDBF9CA7A A7FE3BDFE	66252::207::<operating unit ID>

The ITEM_ITEMID table is located at this location:
\$AIA_HOME/AIAMetaData/xref/ITEM_ITEMID.xref

- The first row entry is made by the Agile PLM BPEL flow for part P0001. This part belongs to an Agile PLM site that is mapped to site V1. The value entered is a concatenation of part number and E-Business OrganizationCode (for example, Partnumber::OrganizationCode).
- The second entry (Common) is also created by the Agile PLM BPEL flow. It indicates the common business component ID for this particular integration entity. It is used to link Agile PLM Parts/ Documents/ Change orders to Oracle E-Business Suite Items/Change Orders.
- The third row entry represents the Oracle E-Business Suite inventory item ID corresponding to the item P1B and the organization ID for the item (for example, Inventory_Item_id::Organization_id::Operating_Unit_Id). The rest of the entries represent the revised and component items for the ECO001.

- The ITEM_ITEMID virtual table contains the similar cross-reference entries for each item and part created through the new part request process.

Creating Cross-Reference Data from Other Integrations

If data needs to be ported from other existing integrations to the Agile PLM PIP, you should first establish the relationship between Agile PLM entities and Oracle E-Business Suite entities by inserting the relevant data in the xref_data table.

Load the required integration data manually in the xref_data table to establish the link between Agile PLM and Oracle E-Business Suite. This data will map the Agile PLM entities to the Oracle EBS entities as described in the previous section.

Even for existing Agile PLM PIP integrations, if an item or change order needs to be created in Oracle E-Business Suite and then is created in Agile PLM, the cross-reference entry is made for the PIP to process the item. All the update (reverse) flows for the PIP will update the item attributes in Agile PLM if an entry is in the xref_data table for that particular item.

The data that has to be inserted in the xref_data table can be retrieved by the following means:

- The value for the XREF_TABLE column in the xref_data table is oramds:/apps/AIAMetaData/xref/<xref-name>.xref, where xref-name is ITEM_ITEMID or CHANGE_CHANGEID.
- The change ID number that is inserted in the EBIZ_01 column for a particular change order can be obtained by means of the following query:

```
select change_id from eng_engineering_changes
where
change_notice=<AgileChangeOrder>
```

- The business component ID that is inserted in the COMMON column can be any unique number.
- The Agile PLM change order number and the Oracle E-business Suite organization corresponding to an Agile PLM site are inserted into the AGILE_01 column separated by "::".
- The Item inventory number, the organization ID, and the operating unit ID are inserted in the EBIZ_01 column separated by "::".
- The inventory item ID for a particular item can be obtained by means of the following query:

```
select inventory_item_id from mtl_system_items_b
where
segment1='<AgileItem>'
```

- The organization ID for the given item can be obtained by means of the following query:

```
select organization_id from mtl_parameters
where
organization_code=<EbizOrgMappedtotheItemAgileSite>
```

- The business component ID that is inserted in the COMMON column can be any unique number.
- The Agile PLM item number and Oracle EBS organization corresponding to the Agile PLM site are inserted into the AGILE_01 column separated by "::".

Note: Before you run the PIP integration flows, the item revisions in Agile PLM and Oracle E-Business Suite should be synchronized after the manual data load is performed.

Describing DVMs

DVMs are a standard feature of the Oracle SOA Suite. They enable you to equate lookup codes and other static values across applications, for example, FOOT and FT or US and USA.

DVMs are static in nature, though administrators can add additional maps as needed. Transactional business processes never update DVMs; they only read from them. DVMs are stored in XML files and cached in memory at run time.

DVM types are seeded for the Oracle Design to Release: Agile Product Lifecycle Management - JD Edwards EnterpriseOne flows and administrators can extend the list of mapped values by adding more maps. The DVM data should be synchronized with what the participating applications use. This synchronization should occur before any initial loads are run or any incremental transactional flows are initiated.

During installation, the DVMs used for the PIP are imported with default data mappings. The values mapped by these DVMs must be changed as needed. Many DVMs are seeded and do not need to be changed. Because most of the Agile PLM attributes being mapped are list values, the Agile PLM data is not seeded and should be changed accordingly.

Note: The ICC manufacturer must be coordinated before the DVMs are called. In addition, Orgs DVM must already be configured.

Note: You can modify the values according to your requirements. You can add rows of value mappings, but you cannot change the DVM name, column name, or number of columns.

This table lists DVMs used for this PIP and their description:

Note: The mandatory DVMs are listed in bold.

DVM	Description
AGILE_INTEGRATION_USERS	The Agile PLM Change originator users are mapped to the RequesterPartyReference in the EBM.
AGILE_SITE_TARGET_MAPPING	DEFAULT_MASTER_ORG in Oracle E-Business Suite is specified here. This is used when the Multisite_Enabled property is set to False and no org is specified for the item where it extends. When the Multisite_Enabled property is True, the sites in Agile PLM are mapped to various orgs in Oracle E-Business Suite. A site could be mapped to multiple orgs in the Oracle E-Business Suite column with " " delimiter.
AGILE_TARGET_SITE_MAPPING	The Oracle E-Business Suite orgs to Agile PLM sites are mapped. This is used for Oracle E-Business Suite to Agile PLM flows. A one-to-one mapping exists

DVM	Description
	between the Oracle E-Business Suite org to Agile PLM site.
EBIZ_AGILE_APPS_USER	Used in mapping the user name depending on the Language code DVM.
ECO_CLASSIFICATION_CODE	<p>Used for Oracle E-Business Suite attribute ECO_ATTR/ECO_CHANGE_ORDER_TYPE/CHANGE_MANAGEMENT_TYPE</p> <p>Query: SELECT change_mgmt_type_code FROM eng_change_order_types_VL where type_classification = 'CATEGORY'</p> <p>This DVM is needed for the CO Update flow.</p>
ECO_ENGINEERINGCHANGEORDERLINE_AVAILABLETOMRPINDICATOR	Used for Oracle E-Business Suite attribute ECO_ATTR/ECO_REVISSED_ITEM_TYPE/ECO_REVISSED_ITEM_TYPE_ITEM/MRP_ACTIVE
ECO_ENGINEERINGCHANGEORDERLINE_DISPOSITION_TYPE_CODE	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/DISPOSITION_TYPE
ECO_ENGINEERINGCHANGEORDERLINE_DISPOSITION_TYPE_CODE	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/DISPOSITION_TYPE
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_BILLOFMATERIALSCOMPONENTITEM_ATPCHECKREQUIREDINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_TBL/CHECK_ATP
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_BILLOFMATERIALSCOMPONENTITEM_ATPCHECKREQUIREDINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_TBL/CHECK_ATP
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_BILLOFMATERIALSCOMPONENTITEM_BILLOFMATERIALSSUBSTITUTECOMPONENTITEM_CHANGEYPECODE	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_TBL/COMPONENT_ITEM_TBL_ITEM/SUBSTITUTE_COMPONENT_TBL/SUBSTITUTE_COMPONENT_TBL_ITEM/ACD_TYPE
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_BILLOFMATERIALSCOMPONENTITEM_CHANGEYPECODE	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_TBL/SUBSTITUTE_COMPONENT_TBL/ACD_TYPE, ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_TBL/REFERENCE_DESIGNATOR_TBL/ACD_TYPE, ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_TBL/ACD_TYPE
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_BILLOFMATERIALSCOMPONENTITEM_CHANGEYPECODE	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_TBL/ ACD_TYPE
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_BILLOFMATERIALSCOMPONENTITEM	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_

DVM	Description
M_COSTROLLUPINCLUSIONINDICATOR	TBL/INCLUDE_IN_COST_ROLLUP
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_COSTROLLUPINCLUSIONINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/ INCLUDE_IN_COST_ROLLUP
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_FRACTIONALLOWEDINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/ENFORCE_INT_REQUIREMENTS
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_FRACTIONALLOWEDINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/ENFORCE_INT_REQUIREMENTS
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_MUTUALLYEXCLUSIVEOPTIONINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/MUTUALLY_EXCLUSIVE
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_MUTUALLYEXCLUSIVEOPTIONINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/MUTUALLY_EXCLUSIVE
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_OPTIONALINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/OPTIONAL
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_OPTIONALINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/OPTIONAL
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_REQUIREDFORREVENUEINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/REQUIRED_FOR_REVENUE
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_REQUIREDFORREVENUEINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/REQUIRED_FOR_REVENUE
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_REQUIREDTOSHIPINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/REQUIRED_TO_SHIP
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_REQUIREDTOSHIPINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/REQUIRED_TO_SHIP
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_SHIPPINGALLOWEDINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/SHIPPING_ALLOWED
ECO_ENGINEERINGCHANGEORDERLINE_REVISED BILLOFMATERIALS_BILLOFMATERIALSCOMPONENTIT M_SHIPPINGALLOWEDINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISD_ITEM_TYPE/COMPONENT_ITEM_ TBL/SHIPPING_ALLOWED
ECO_ENGINEERINGCHANGEORDERLINE_REVISED	Used for Oracle E-Business Suite attribute

DVM	Description
LLOFMATERIALS_BILLOFMATERIALSCOMPONENTITEM_SHIPPINGDOCUMENTVISIBILITYINDICATOR	ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_TBL/INCLUDE_ON_SHIP_DOCS
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_BILLOFMATERIALSCOMPONENTITEM_SHIPPINGDOCUMENTVISIBILITYINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/COMPONENT_ITEM_TBL/INCLUDE_ON_SHIP_DOCS
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_ENGINEERINGINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/STRUCTURE_HEADER/ASSEMBLY_TYPE
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_ENGINEERINGINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/STRUCTURE_HEADER/ASSEMBLY_TYPE
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_NAME	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/ALTERNATE_BOM_CODE
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_NAME	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/ALTERNATE_BOM_CODE
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_NAME	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE / ALTERNATE_BOM_CODE
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_TYPECODE	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/STRUCTURE_HEADER/STRUCTURE_TYPE_NAME, ECO_REVISSED_ITEM_TYPE/STRUCTURE_TYPE_NAME
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_TYPECODE	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/STRUCTURE_HEADER/STRUCTURE_TYPE_NAME, ECO_REVISSED_ITEM_TYPE/STRUCTURE_TYPE_NAME
ECO_ENGINEERINGCHANGEORDERLINE_REVISSEDBILLOFMATERIALS_TYPECODE	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE /STRUCTURE_HEADER /STRUCTURE_TYPE_NAME
ECO_ENGINEERINGCHANGEORDERLINE_UPDATEWIPINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/UP_WIP
ECO_ENGINEERINGCHANGEORDERLINE_UPDATEWIPINDICATOR	Used for Oracle E-Business Suite attribute ECO_REVISSED_ITEM_TYPE/UP_WIP
ECO_PRIORITY_CODE	Used for Oracle E-Business Suite attribute ECO_CHANGE_ORDER_TYPE/PRIORITY_CODE
ECO_PRIORITY_CODE	Used for Oracle E-Business Suite attribute

DVM	Description
	ECO_CHANGE_ORDER_TYPE/PRIORITY_CODE
ECO_REASON_CODE	Used for Oracle E-Business Suite attribute ECO_CHANGE_ORDER_TYPE/REASON_CODE. Used for Agile PLM's Reason Code attribute of a Change.
ECO_REASON_CODE	Used for Oracle E-Business Suite attribute ECO_CHANGE_ORDER_TYPE/REASON_CODE. Used for Agile PLM's Reason Code attribute of a Change.
ECO_STATUS_CODE	Used for Oracle E-Business Suite attribute ECO_CHANGE_ORDER_TYPE/STATUS_CODE, ECO_REVISSED_ITEM_TYPE/STATUS_CODE. Use for an Agile PLM Status attribute of a change. Here, the Oracle E-Business Suite values are language-independent. The query used for retrieving corresponding DVM values from Oracle E-Business Suite tables is: SELECT status_code FROM eng_change_statuses_vl WHERE status_name = <p_status_name>;
ECO_STATUS_CODE	Used for Oracle E-Business Suite attribute ECO_CHANGE_ORDER_TYPE/STATUS_CODE, ECO_REVISSED_ITEM_TYPE/STATUS_CODE. Use for the Agile PLM Status attribute of a Change. Here, the Oracle E-Business Suite values are language-independent. The query used for retrieving corresponding DVM values from Oracle E-Business Suite tables is: SELECT status_code FROM eng_change_statuses_vl WHERE status_name = p_status_name;
ECO_TYPECODE	Used for Oracle E-Business Suite attribute CHANGE_ORDER_TYPE_ID. Used for the Agile PLM Change Type attribute of a Change. Here, the Oracle E-Business Suite values are language-independent. The query used for retrieving corresponding DVM values from Oracle E-Business Suite tables is: SELECT change_order_type_id FROM eng_change_order_types_vl WHERE type_name = p_change_order_type AND change_mgmt_type_code = 'CHANGE_ORDER' AND type_classification='HEADER';
ITEM_BILLING_TYPE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/SERVICE_OBJ_TYPE/MATERIAL_BILLA

DVM	Description
	BLE_FLAG
ITEM_BILLING_TYPE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/SERVICE_OBJ_TYPE/MATERIAL_BILLABLE_FLAG
ITEM_BILLING_TYPE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/SERVICE_OBJ_TYPE/MATERIAL_BILLABLE_FLAG
ITEM_BOM_ITEM_TYPE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/BOM_OBJ_TYPE/BOM_ITEM_TYPE
ITEM_BOM_ITEMTYPE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/BOM_OBJ_TYPE/BOM_ITEM_TYPE
ITEM_BOM_ITEMTYPE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/BOM_OBJ_TYPE/BOM_ITEM_TYPE
ITEM_CONSIGNMENT_ITEM_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/GPLANNING_OBJ_TYPE/CONSIGNMENT_FLAG
ITEM_CONSIGNMENT_ITEM_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/GPLANNING_OBJ_TYPE/CONSIGNMENT_FLAG
ITEM_CONSIGNMENT_ITEM_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/GPLANNING_OBJ_TYPE/CONSIGNMENT_FLAG
ITEM_CONTRACT_TYPE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ASSET_OBJ_TYPE/CONTRACT_ITEM_TYPE_CODE
ITEM_CONTRACT_TYPE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ASSET_OBJ_TYPE/CONTRACT_ITEM_TYPE_CODE
ITEM_CONTRACT_TYPE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ASSET_OBJ_TYPE/CONTRACT_ITEM_TYPE_CODE
ITEM_CREATE_FIXED_ASSET_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/SERVICE_OBJ_TYPE/ASSET_CREATION_CODE
ITEM_CREATE_FIXED_ASSET_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/SERVICE_OBJ_TYPE/ASSET_CREATION_CODE
ITEM_CREATE_FIXED_ASSET_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/SERVICE_OBJ_TYPE/ASSET_CREATION_CODE

DVM	Description
ITEM_DUAL_UOM_TRACKING_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/MAIN_OBJ_TYPE/TRACKING_QUANTIT Y_IND
ITEM_DUAL_UOM_TRACKING_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/MAIN_OBJ_TYPE/TRACKING_QUANTIT Y_IND
ITEM_DUAL_UOM_TRACKING_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/MAIN_OBJ_TYPE/TRACKING_QUANTIT Y_IND
ITEM_EFFECTIVITY_CONTROL_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/BOM_OBJ_TYPE/EFFECTIVITY_CONT ROL
ITEM_EFFECTIVITY_CONTROL_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/BOM_OBJ_TYPE/EFFECTIVITY_CONT ROL
ITEM_EFFECTIVITY_CONTROL_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/BOM_OBJ_TYPE/EFFECTIVITY_CONT ROL
ITEM_INDICATOR	YES/NO DVM used for multiple Item attributes ITEM_OBJ/INVENTORY_OBJ_TYPE/SERIAL_STAT US_ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_STATUS _ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/CYCLE_COUN T_ENABLED_FLAG, ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_MERGE_ ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_SPLIT_E NABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/STOCK_ENAB LED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/INSPECTIO N_REQUIRED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/PURCHASIN G_ENABLED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/RECEIPT_R EQUINED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/RFO_REQUI RED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/TAXABLE_F LAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/MUST_USE_ APPROVED_VENDOR_FL, ITEM_OBJ/RECEIVING_OBJ_TYPE/ALLOW_SUBS TITUTE_RECEIPTS_F,

DVM	Description
	ITEM_OBJ/RECEIVING_OBJ_TYPE/ALLOW_UNORDERED_RECEIPTS_FL, ITEM_OBJ/BOM_OBJ_TYPE/BOM_ENABLED_FLAG, ITEM_OBJ/BOM_OBJ_TYPE/ENG_ITEM_FLAG, ITEM_OBJ/COSTING_OBJ_TYPE/COSTING_ENABLED_FLAG, ITEM_OBJ/COSTING_OBJ_TYPE/INVENTORY_ASSET_FLAG, ITEM_OBJ/ORDER_OBJ_TYPE/CUSTOMER_ORDER_FLAG, ITEM_OBJ/ORDER_OBJ_TYPE/RETURNABLE_FLAG
ITEM_INDICATOR	YES/NO DVM used for multiple Item attributes ITEM_OBJ/INVENTORY_OBJ_TYPE/SERIAL_STATUS_ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_STATUS_ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/CYCLE_COUNT_ENABLED_FLAG, ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_MERGE_ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_SPLIT_ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/STOCK_ENABLED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/INSPECTION_REQUIRED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/PURCHASING_ENABLED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/RECEIPT_REQUIRED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/RFQ_REQUIRED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/TAXABLE_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/MUST_USE_APPROVED_VENDOR_FL, ITEM_OBJ/RECEIVING_OBJ_TYPE/ALLOW_SUBSTITUTE_RECEIPTS_F, ITEM_OBJ/RECEIVING_OBJ_TYPE/ALLOW_UNORDERED_RECEIPTS_FL, ITEM_OBJ/BOM_OBJ_TYPE/BOM_ENABLED_FLAG, ITEM_OBJ/BOM_OBJ_TYPE/ENG_ITEM_FLAG, ITEM_OBJ/COSTING_OBJ_TYPE/COSTING_ENABLED_FLAG, ITEM_OBJ/COSTING_OBJ_TYPE/INVENTORY_ASSET_FLAG, ITEM_OBJ/ORDER_OBJ_TYPE/CUSTOMER_ORD

DVM	Description
	ER_FLAG, ITEM_OBJ/ORDER_OBJ_TYPE/RETURNABLE_FLAG,
ITEM_INDICATOR	YES/NO DVM used for multiple Item attributes ITEM_OBJ/INVENTORY_OBJ_TYPE/SERIAL_STATUS_ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_STATUS_ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/CYCLE_COUNT_ENABLED_FLAG, ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_MERGE_ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_SPLIT_ENABLED, ITEM_OBJ/INVENTORY_OBJ_TYPE/STOCK_ENABLED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/INSPECTION_REQUIRED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/PURCHASING_ENABLED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/RECEIPT_REQUIRED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/RFQ_REQUIRED_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/TAXABLE_FLAG, ITEM_OBJ/PURCHASING_OBJ_TYPE/MUST_USE_APPROVED_VENDOR_FL, ITEM_OBJ/RECEIVING_OBJ_TYPE/ALLOW_SUBSTITUTE_RECEIPTS_F, ITEM_OBJ/RECEIVING_OBJ_TYPE/ALLOW_UNORDERED_RECEIPTS_FL, ITEM_OBJ/BOM_OBJ_TYPE/BOM_ENABLED_FLAG, ITEM_OBJ/BOM_OBJ_TYPE/ENG_ITEM_FLAG, ITEM_OBJ/COSTING_OBJ_TYPE/COSTING_ENABLED_FLAG, ITEM_OBJ/COSTING_OBJ_TYPE/INVENTORY_ASSET_FLAG, ITEM_OBJ/ORDER_OBJ_TYPE/CUSTOMER_ORDER_FLAG, ITEM_OBJ/ORDER_OBJ_TYPE/RETURNABLE_FLAG, ITEM_OBJ/ORDER_OBJ_TYPE/ REPLENISH_TO_ORDER_FLAG, ITEM_OBJ/ORDER_OBJ_TYPE/ PICK_COMPONENTS_FLAG,
ITEM_INVENTORY_PLANNING_CODE	Used for Oracle E-Business Suite Item attribute

DVM	Description
	ITEM_OBJ/GPLANNING_OBJ_TYPE/INVENTORY_PLANNING_CODE
ITEM_INVENTORY_PLANNING_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/GPLANNING_OBJ_TYPE/INVENTORY_PLANNING_CODE
ITEM_INVENTORY_PLANNING_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/GPLANNING_OBJ_TYPE/INVENTORY_PLANNING_CODE
ITEM_LOTEXPIRATION_ON_RECEIPT_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_CONTROL_CODE
ITEM_LOTEXPIRATION_ON_RECEIPT_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_CONTROL_CODE
ITEM_LOTEXPIRATION_ON_RECEIPT_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/INVENTORY_OBJ_TYPE/LOT_CONTROL_CODE
ITEM_MAKEORBUY_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/GPLANNING_OBJ_TYPE/PLANNING_MAKE_BUY_CODE
ITEM_MAKEORBUY_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/GPLANNING_OBJ_TYPE/PLANNING_MAKE_BUY_CODE
ITEM_MAKEORBUY_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ GPLANNING_OBJ_TYPE /PLANNING_MAKE_BUY_CODE
ITEM_PRIMARYCLASSIFICATIONCODE	Used for Oracle E-Business Suite Item attributes ITEM_OBJ/MAIN_OBJ_TYPE/ITEM_CATALOG_GROUP_CODE. The Agile PLM PartType of an Item is mapped to the Oracle E-Business Suite ICC.
ITEM_PRIMARYCLASSIFICATIONCODE	Used for Oracle E-Business Suite Item attributes ITEM_OBJ/MAIN_OBJ_TYPE/ITEM_CATALOG_GROUP_CODE. The Agile PLM PartType of an item is mapped to the Oracle E-Business Suite ICC.
ITEM_PRIMARYCLASSIFICATIONCODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ MAIN_OBJ_TYPE / ITEM_CATALOG_GROUP_CODE
ITEM_RECEIVING_ROUTING_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/RECEIVING_OBJ_TYPE/RECEIVING_ROUTING_ID
ITEM_RECEIVING_ROUTING_CODE	Used for Oracle E-Business Suite Item attribute

DVM	Description
	ITEM_OBJ/RECEIVING_OBJ_TYPE/RECEIVING_ROUTING_ID
ITEM_RECEIVING_ROUTING_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ RECEIVING_OBJ_TYPE / RECEIVING_ROUTING_ID
ITEM_REPLENISHMENT_SOURCE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/GPLANNING_OBJ_TYPE/SOURCE_TYPE
ITEM_REPLENISHMENT_SOURCE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/GPLANNING_OBJ_TYPE/SOURCE_TYPE
ITEM_REPLENISHMENT_SOURCE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ GPLANNING_OBJ_TYPE / SOURCE_TYPE
ITEM_RESERVATION_ALLOWED_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/INVENTORY_OBJ_TYPE/RESERVABLE_TYPE
ITEM_RESERVATION_ALLOWED_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/INVENTORY_OBJ_TYPE/RESERVABLE_TYPE
ITEM_RESERVATION_ALLOWED_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ INVENTORY_OBJ_TYPE / RESERVABLE_TYPE
ITEM_RETURN_INSPECTION_REQUIRED_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/PURCHASING_OBJ_TYPE/INSPECTION_REQUIRED_FLAG
ITEM_SERIALIZATION_EVENT_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/INVENTORY_OBJ_TYPE/SERIAL_NUMBER_CONTROL_CODE
ITEM_SERIALIZATION_EVENT_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/INVENTORY_OBJ_TYPE/SERIAL_NUMBER_CONTROL_CODE
ITEM_SERIALIZATION_EVENT_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/INVENTORY_OBJ_TYPE/ SERIAL_NUMBER_CONTROL_CODE
ITEM_SERVICE_REQUEST_ENABLED_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ASSET_OBJ_TYPE/SERV_REQ_ENABLED_CODE
ITEM_SERVICE_REQUEST_ENABLED_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ASSET_OBJ_TYPE/SERV_REQ_ENABLED_CODE

DVM	Description
ITEM_SERVICE_REQUEST_ENABLED_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ ASSET_OBJ_TYPE / SERV_REQ_ENABLED_CODE
ITEM_STATUS_CODE	Used for Oracle E-Business Suite Item attributes ITEM_OBJ/MAIN_OBJ_TYPE/INVENTORY_ITEM_STATUS_CODE. The Agile PLM Item Lifecycle phase attribute is mapped.
ITEM_STATUS_CODE	Used for Oracle E-Business Suite Item attributes ITEM_OBJ/MAIN_OBJ_TYPE/INVENTORY_ITEM_STATUS_CODE. The Agile PLM Item Lifecycle phase attribute is mapped.
ITEM_STATUS_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ MAIN_OBJ_TYPE / INVENTORY_ITEM_STATUS_CODE
ITEM_TRACK_INSTANCE_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/SERVICE_OBJ_TYPE/COMMS_NL_TRACKABLE_FLAG
ITEM_TRACK_INSTANCE_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/SERVICE_OBJ_TYPE/COMMS_NL_TRACKABLE_FLAG
ITEM_TRACK_INSTANCE_INDICATOR	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ SERVICE_OBJ_TYPE / COMMS_NL_TRACKABLE_FLAG
ITEM_UOM_CODE	Unit of Measure DVM for Item attributes ITEM_OBJ/PHYSICAL_OBJ_TYPE/VOLUME_UOM_CODE, ITEM_OBJ/PHYSICAL_OBJ_TYPE/WEIGHT_UOM_CODE
ITEM_UOM_CODE	Unit of Measure DVM for Item attributes ITEM_OBJ/PHYSICAL_OBJ_TYPE/VOLUME_UOM_CODE, ITEM_OBJ/PHYSICAL_OBJ_TYPE/WEIGHT_UOM_CODE
ITEM_UOM_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ PHYSICAL_OBJ_TYPE / WEIGHT_UOM_CODE ITEM_OBJ/ PHYSICAL_OBJ_TYPE / VOLUME_UOM_CODE ITEM_OBJ/ PHYSICAL_OBJ_TYPE / DIMENSION_UOM_CODE
ITEM_UOM_CONVERSION_USAGE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/MAIN_OBJ_TYPE/ALLOWED_UNITS_LOOKUP_CODE

DVM	Description
ITEM_UOM_CONVERSION_USAGE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/MAIN_OBJ_TYPE/ALLOWED_UNITS_LOOKUP_CODE
ITEM_UOM_CONVERSION_USAGE_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ MAIN_OBJ_TYPE / ALLOWED_UNITS_LOOKUP_CODE
ITEM_WIP_SUPPLY_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/WIP_OBJ_TYPE/WIP_SUPPLY_TYPE
ITEM_WIP_SUPPLY_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/WIP_OBJ_TYPE/WIP_SUPPLY_TYPE
ITEM_WIP_SUPPLY_CODE	Used for Oracle E-Business Suite Item attribute ITEM_OBJ/ WIP_OBJ_TYPE/ WIP_SUPPLY_TYPE
LANGUAGE_CODE	Language Code DVM for common and system-specific language code names are mapped.

Setting Configuration Properties

This PIP uses various configuration parameters that control the behavior of the flow. AIAConfigurationProperties.xml, a standard AIA XML configuration file, is used for capturing the configuration parameters. The AIAConfigurationProperties.xml file is located at \$AIA_HOME/aia_instances/\$INSTANCE_NAME/AIAMetaData/config. This AIA configuration file supports the system-level configuration parameters, service-level parameters, and module configuration parameters.

System-level parameters apply to all PIPs running on the Service-Oriented Architecture (SOA) suite. Service-level parameters can be configured at the individual service level, such as Application Business Connector Service (ABCS).

Note: The configuration properties from Agile PLM and Oracle E-Business Suite are listed separately in this section, only for the purpose of identification. The actual AIAConfigurationProperties.xml file on the AIA server is a merge of the two.

Configuration Parameters

This PIP uses the following types of configuration parameters:

- PIP-level configuration parameters: PIP configuration parameters are implemented by means of the AIA module configuration entry. The module configuration entry has a name and can contain any number of configuration parameters. A naming convention of PIP.PIPName is used for naming modules. The parameters inside the module are named with a cascaded naming convention, where individual words are separated with dots.

For example, agile.replicate.item

- Service-level configuration parameters: While most configuration requirements are satisfied by the PIP-Level configuration parameters, sometimes the behavior of a flow needs to be controlled at the service level. These parameters can be captured by means of AIA service configuration parameters. Service configuration entry is identified by the service name such as CreateItemAgileReqABCImpl. The parameter names themselves are named with a cascaded naming convention as explained previously.

For more information about requirements for working with AIAConfigurationProperties.xml, see [Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), How to Set Up AIA Workstation.

Agile PLM Configurations

This table lists the configuration parameters for Agile PLM:

Properties	Default Value/Setting	Description
moduleName	Agile	
LANG_LOCALE	English	Specifies the language locale information
MULTISITE_ENABLED	TRUE	When set to TRUE, the sites specified in Sites Tab of Items are used to determine the organizations in Oracle E-Business Suite to which they are mapped. When set to FALSE, the Page2 Multilist01 attribute is used to determine the organizations in Oracle E-Business Suite to which the item will be extended.
Item.UnitCostAttribute	Site.Numeric01	Determines the attribute to which the unit cost from Oracle E-Business Suite will be updated in Agile PLM.
Item.AvailableQuantityAttribute	Site.Numeric02	Determines the attribute to which the available quantity from Oracle E-Business Suite will be updated in Agile PLM.
Item.OnHandQuantityAttribute	Site.Numeric03	Determines the attribute to which the on-hand quantity from Oracle E-Business Suite will be updated in Agile PLM.
Item.ReservedQuantityAttribute	Site.Numeric04	Determines the attribute to which the reserved quantity from Oracle E-Business Suite will be updated in Agile PLM.
Change.TransferStatusAttribute	PageTwo.Text02	Determines the attribute of the transfer status of a change. When the change flow is from Agile PLM to Oracle E-Business Suite, the possible values are Transferred and Errored. When the change flow is from Oracle E-Business

Properties	Default Value/Setting	Description
		Suite to Agile PLM, the value will be the same as that of the status of the change in all the organizations of Oracle E-Business Suite.
REPLICATE_BOM_ENABLED	FALSE	Used for sample replicate BOM customization.
COMMON_BOM_ENABLED	FALSE	Used for sample common BOM customization.

Note: Multisite enabled property is governed by distributed processing aspects in Agile PLM. When it is set to TRUE (default), the Item.UnitCostAttribute, Item.AvailableQuantityAttribute, Item.OnHandQuantityAttribute, and Item.ReservedQuantityAttribute can be set to Site Tab Flex Attributes. You can use Numeric, Text, or Money flex-fields on the Site tab for these settings, and it is denoted by the first element, Site. For example, Site.Numeric01. When it is set to FALSE, all these attributes need to be set to Page2 or Page3 flex-fields. Hence, the settings will need to be changed to PageTwo.Numeric01 or PageThree.Numeric01 accordingly. The names of the attributes can be derived from the ItemABM Schema, which can be found in Agile PLM Interfaces.

Note: The Composite Application Validation System (CAVS) feature is not supported for the flows in this release. However, the CAVS enabling properties for the flows are deployed.

Provider ABCS

UpdateEngineeringChangeOrderListAgileProvABCImpl

Property	Default Value/Setting	Description
ABCSExtension.PreProcessABM	false	User exit for the pre-process Application Business Message (ABM) should be called or not
ABCSExtension.PreProcessEBM	false	User exit for the pre-process Enterprise Business Message (EBM) should be called or not
ABCSExtension.PostProcessEBM	false	User exit for the post-process EBM should be called or not
ABCSExtension.PostProcessABM	false	User exit for the post-process ABM should be called or not
TRACE.LOG.ENABLED	true	Use tracelog for the flow
Default.SystemID	AGILE_01	System ID of Agile PLM application instance
Routing.EngineeringChangeOrderResponseEBS.UpdateEngineeringChangeOrderListResp	false	

Property	Default Value/Setting	Description
onse.RouteToCAVS		
Routing.EngineeringChangeOrderResponseEBS.UpdateEngineeringChangeOrderListResponse.CAVS.EndpointURI	http://{http.hostname}:{http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS SOAP URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the ECO response EBS
Routing.EngineeringChangeOrderResponseEBS.UpdateEngineeringChangeOrderListResponse.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION/' 'CAVS'. Identifies the installation environment
Routing.ChangeABSService.RouteToCAVS	false	If set to True route to CAVS; otherwise, route to the Agile PLM application. This invocation relates to the change ABS service
Routing.ChangeABSService.AGILE_01.EndpointURI	http://{agile.host}:{agile.port}/AgilePLM/integration/services/ChangeABS	ChangeABS URL: When the RouteToCAVS property is set to false, use the URL mentioned to connect to the Agile PLM ChangeABS Service for the ChangeABSService partnerlink.
Routing.ChangeABSService.CAVS.EndpointURI	http://{http.hostname}:{http.port}/AIAValidationSystemServlet/syncresponsesimulator	CAVS SOAP URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the change ABS service
Routing.MergeABSService.RouteToCAVS	false	If set to True, route to CAVS; otherwise, route to the Agile PLM application. This invocation relates to the change merge ABS service
Routing.MergeABSService.CAVS.EndpointURI	http://{http.hostname}:{http.port}/AIAValidationSystemServlet/syncresponsesimulator	CAVS Simple Object Access Protocol (SOAP) URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the change merge ABS service
Routing.MergeABSService.AGILE_01.EndpointURI	http://{agile.host}:{agile.port}/AgilePLM/integration/services/MergeABSService_Port	MergeABS URL: When the RouteToCAVS property is set to false, use the URL mentioned to connect to the Agile PLM MergeABS Service for the MergeABSService partnerlink.
Routing.ChangeStatusService.RouteToCAVS	false	If set to true, it is routed to CAVS; otherwise, routed to the Agile PLM application. This invocation relates to the change status ABS service
Routing.ChangeStatusService.	http://{http.hostname}:{http.o	CAVS URL

Property	Default Value/Setting	Description
CAVS.EndpointURI	ort)/AIValidationSystemServlet/syncresponsesimulator	When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the change status ABS service
Routing.ChangeStatusService.AGILE_01.EndpointURI	http://{agile.host}:{agile.port}/AgilePLM/integration/services/ChangeABS	ChangeABS URL: When the RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile PLM ChangeABS Service for the ChangeStatusService partnerlink.
Routing.ChangeStatusDBAdapter.RouteToCAVS	false	If set to true, it is routed to CAVS; otherwise, routed to the Agile PLM application. This invocation relates to the change status EDB Adapter
Routing.ChangeStatusDBAdapter.CAVS.EndpointURI	http://{http.hostname}:{http.port)/AIValidationSystemServlet/syncresponsesimulator	CAVS URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation relates to the change status EDB Adapter
Routing.ChangeStatusDBAdapter.AGILE_01.EndpointURI	http://{agile.host}:{agile.port}/soa-infra/services/default/ChangeStatusDBAdapter/AIASystem.Agile.ABCSImpl.ChangeStatusDBAdapter_RS_ep?WSDL	ChangeABS URL: When the RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile PLM ChangeABS Service for the EDB Adapter partnerlink.

UpdateItemBalanceListAgileProvABCImpl

Property	Default Value/Setting	Description
ABCSExtension.PreProcessABM	false	User exit for the pre-process ABM should be called
ABCSExtension.PreProcessEBM	false	User exit for the pre-process EBM should be called
ABCSExtension.PostProcessEBM	false	User exit for the post-process EBM should be called
ABCSExtension.PostProcessABM	false	User exit for the post-process ABM should be called
TRACE.LOG.ENABLED	false	Use tracelog for the flow
Default.SystemID	AGILE_01	System ID of the Agile PLM instance
Routing.ItemABSService.RouteToCAVS	false	If set to True, it is routed to CAVS; otherwise, routed to Agile PLM. This invocation is regarding Item ABS.
Routing.ItemABSService.CAVS	http://{http.hostname}:{http.p	CAVS URL

Property	Default Value/Setting	Description
S.EndpointURI	ort)/AIValidationSystemService/syncresponsesimulator	When the RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This is regarding Item ABS.
Routing.ItemABSService.AGILE_01.EndpointURI	http://\${agile.host}:\${agile.port}/Agile/integration/services/ItemABS	ItemABS URL: When the RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile PLM ItemABS Service.
Routing.ItemBalanceResponseEBS.UpdateItemBalanceListResponse.RouteToCAVS	false	
Routing.ItemBalanceResponseEBS.UpdateItemBalanceListResponse.CAVS.EndpointURI	http://\${http.hostname}:\${http.port)/AIValidationSystemService/asyncresponsesimulator	CAVS URL When the RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS. This invocation is regarding Itembalance response EBS.
Routing.ItemBalanceResponseEBS.UpdateItemBalanceListResponse.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION'/ 'CAVS'. Identifies the installation environment.

UpdateItemListAgileProvABCImpl

Property	Default Value/Setting	Description
ABCSExtension.PreProcessABM	false	Decides whether the user exit for the pre-process ABM should be called
ABCSExtension.PreProcessEBM	false	Decides whether the user exit for the pre-process EBM should be called
ABCSExtension.PostProcessEBM	false	Decides whether the user exit for the post-process EBM should be called
ABCSExtension.PostProcessABM	false	Decides whether the user exit for the post-process ABM should be called
TRACE.LOG.ENABLED	false	Use tracelog for the flow
Default.SystemID	AGILE_01	System ID of the Agile PLM application instance
Routing.ItemResponseEBS.UpdateItemResponseEBS.MessageProcessingInstruction.EnvironmentCode		Environment code such as 'PRODUCTION'/ 'CAVS' and so on. Identifies the installation environment
Routing.ItemABSService.RouteToCAVS	false	If set to True, it is routed to CAVS; otherwise, routed to the Agile PLM application. This invocation is regarding the Agile PLM Item ABS service.

Property	Default Value/Setting	Description
Routing.ItemABSService.CAVS.EndpointURI	http://{http.hostname}:{http.port}/AIAValidationSystemServlet/syncresponsesimulator	Agile PLM Item ABS service SOAP URL. When the RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is regarding the Agile PLM Item ABS service
Routing.ItemABSService.AGILE_01.EndpointURI	http://{agile.host}:{agile.port}/{agiag.path}/integration/services/ItemABS	ItemABS URL. When the RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile PLM ItemABS service.
Routing.ItemResponseEBS.UpdateItemResponse.RouteToCAVS	false	If set to True, it is route to CAVS; otherwise, routed to response item EBS. This invocation is regarding the item response EBS
Routing.ItemResponseEBS.UpdateItemResponse.CAVS.EndpointURI	http://{http.hostname}:{http.port}/AIAValidationSystemServlet/asyncreponsesimulator	CAVS URL; When the RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is regarding item response EBS

SyncBillOfMaterialsConfigurationListAgileProvABCImpl

Property	Default Value/Setting	Description
Default.SystemID	AGILE_01	System ID for mapping
Routing.BillOfMaterialsConfigurationEBS.SyncBillOfMaterialsConfigurationList.RouteToCAVS	false	
Routing.BillOfMaterialsConfigurationEBS.SyncBillOfMaterialsConfigurationList.CAVS.EndpointURI	http://{http.hostname}:{http.port}/AIAValidationSystemServlet/asyncrequestrecipient	When RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS
Routing.ConfiguratorTerminationService.RouteToCAVS	false	
Routing.ConfiguratorTerminationService.AGILE_01.EndpointURI	http://{agile.host}:{agile.port}/{agiag.path}/vm/services/ConfiguratorTerminationService	Partner link end point URL
Routing.ConfiguratorTerminationService.CAVS.Endpoint.URI	http://{http.hostname}:{http.port}/AIAValidationSystemServlet/asyncrequestrecipient	When RouteToCAVS property is set to true, use the URL mentioned to connect to CAVS Partner link
ABCSExtension.PreXformEBMtoABM	false	User exit for the pre-process EBM should be called or not
ABCSExtension.PostXformEBMtoABM	false	User exit for the post-process EBM should be called or not
ABCSExtension.PreInvokeCon	false	User exit for the pre-process invoke partner

Property	Default Value/Setting	Description
figuratorTerminationMessage		link should be called or not
ABCSExtension.PostInvokeCo nfiguratorTerminationMessage	false	User exit for the post-process invoke partner link should be called or not

Requester ABCS

ProcessEngineeringChangeOrderAgileReqABCImpl

Property	Default Value/Setting	Description
ABCSExtension.PreProcessAB M	false	User exit for the pre-process ABM should be called
ABCSExtension.PreProcessEB M	false	User exit for the pre-process EBM should be called
ABCSExtension.PostProcessE BM	false	User exit for the post-process EBM should be called
ABCSExtension.PostProcessA BM	false	User exit for the post-process ABM should be called
TRACE.LOG.ENABLED	false	Use tracelog for the flow
Default.SystemID	AGILE_01	System ID of the Agile PLM application instance
Routing.ChangeABSService.Ro uteToCAVS	false	If set to True, route to CAVS else route to Agile PLM application. This invocation would be with respect to Change ABS
Routing.ChangeABSService.A GILE_01.EndpointURI	http:// \${agile.host}:\${agile.port}/Agile /integration/services/ChangeAB S	ChangeABS URL: When the RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile PLM ChangeABS Service.
Routing.ChangeABSService.CA VS.EndpointURI	http://\${http.hostname}:\${http.p ort}/AIAValidationSystemServlet /asynresponsesimulator	CAVS URL When the RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is regarding Change ABS.
Routing.EngineeringChangeOrd erEBS.CreateEngineeringChan geOrderList.RouteToCAVS	false	If set to True, route to CAVS; otherwise, route to EngineeringChangeOrder EBS (Enterprise Business Service)
Routing.EngineeringChangeOrd erEBS.CreateEngineeringChan geOrderList.CAVS.EndpointURI	http://\${http.hostname}:\${http.p ort}/AIAValidationSystemServlet /asynresponsesimulator	CAVS URL When the RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS
Routing.EngineeringChangeOrd erEBS.CreateEngineeringChan	PRODUCTION	Environment code such as 'PRODUCTION'/ 'CAVS'. Identifies the installation environment

Property	Default Value/Setting	Description
geOrderList.MessageProcessingInstruction.EnvironmentCode		

SyncItemListAgileReqABCS

Property	Default Value/Setting	Description
TRACE.LOG.ENABLED	false	
Default.SystemID	AGILE_01	System ID of the Agile PLM instance.

SyncItemListAgileReqABCImpl

Property	Default Value/Setting	Description
ABCSExtension.PreProcessABM	false	
ABCSExtension.PreProcessEBM	false	
ABCSExtension.PostProcessEBM	false	
ABCSExtension.PostProcessABM	false	
TRACE.LOG.ENABLED	false	
Default.SystemID	AGILE_01	System ID of the Agile PLM application instance
Routing.ItemEBS.SyncItemList.RouteToCAVS	false	If set to True, route to CAVS; otherwise, route to Item EBS
Routing.ItemEBS.SyncItemList.CAVS.EndpointURI	http://\${http.hostname}:\${http.port}/AIAValidationSystemServlet/a-syncresponsesimulator	CAVS URL; When the RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS
Routing.ItemEBS.SyncItemList.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION/' 'CAVS' and so on. Identifies the installation environment

ValidateEngineeringChangeOrderListAgileReqABCImpl

Property	Default Value/Setting	Description
ABCSExtension.PreProcessABM	false	
ABCSExtension.PreProcessEBM	false	
ABCSExtension.PostProcessEBM	false	
ABCSExtension.PostProcessABM	false	

Property	Default Value/Setting	Description
BM		
TRACE.LOG.ENABLED	false	
Default.SystemID	AGILE_01	
Routing.EngineeringChangeOrderEBS.ValidateEngineeringChangeOrderList.RouteToCAVS	false	If set to True, route to CAVS; otherwise, route to EngineeringChangeOrder EBS (Enterprise Business Service)
Routing.EngineeringChangeOrderEBS.ValidateEngineeringChangeOrderList.CAVS.EndpointURI	http://\${http.hostname}:\${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS URL When the RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS
Routing.EngineeringChangeOrderEBS.ValidateEngineeringChangeOrderList.MessageProcessingInstruction.EnvironmentCode	PRODUCTION	Environment code such as 'PRODUCTION'/'CAVS'. Identifies the installation environment
Routing.ChangeABSService.RouteToCAVS	false	If set to True, route to CAVS; otherwise, route to the Agile PLM application. This invocation regards Change ABS
Routing.ChangeABSService.AGILE_01.EndpointURI	http://\${agile.host}:\${agile.port}/Agile/integration/services/ChangeABS	ChangeABS URL: When RouteToCAVS property is set to False, use the URL mentioned to connect to the Agile PLM ChangeABS service.
Routing.ChangeABSService.CAVS.EndpointURI	http://\${http.hostname}:\${http.port}/AIAValidationSystemServlet/asyncresponsesimulator	CAVS URL When the RouteToCAVS property is set to True, use the URL mentioned to connect to CAVS. This invocation is regarding the Change ABS

GetConfiguratorURLAgileReqABCImpl

Property	Default Value/Setting	Description
Default.SystemID	AGILE_01	System ID for mapping
Agile _site.ColumnName	AGILE_SITE	The Agile PLM site column name in the DVM
Agile _site.TargetColumnName	TARGET_VALUE	The Agile PLM site target column name in the DVM
Agile _site.DefaultOrgPropertyName	DEFAULT_MASTER_ORG	The Agile PLM site default property name in the DVM
Routing.BillOfMaterialsConfigurationEBS.GetConfiguratorURL.RouteToCAVS	false	
Routing.BillOfMaterialsConfigurationEBS.GetConfiguratorURL.CA	http://\${http.hostname}:\${http.port}/AIAValidationSystemServlet	When the RouteToCAVS property is set to True, use the URL mentioned to connect to

Property	Default Value/Setting	Description
VS.EndpointURI	et/asyncrepsonsereipient	CAVS
ABCSExtension.PreXformABMtoEBM	false	User exit for the pre-process ABM should be called
ABCSExtension.PreInvokeEBS	false	User exit for the pre-process Invoke should be called
ABCSExtension.PostXformABMtoEBM	false	User exit for the post-process ABM should be called
ABCSExtensionPostReceiveGetURLResponse	false	User exit for the post-process EBM should be called
Return_URL	http://\${http.hostname}:\${http.port}/AGILE_PATH/default/actionDialogs/FinishExternalConfigurator.jsp	The Return URL to be used by the Oracle E-Business Suite for returning after configuration

Oracle E-Business Suite Configurations

This table lists configuration properties for Oracle E-Business Suite:

Property	Default Value/Setting	Description
ModuleName	Ebiz	
FIXED_ORG_FOR_INBOUND_DATA_TRANSFER		If set, Oracle E-Business Suite to Agile PLM flows will publish data only for this particular organization code
IS_PIM_INSTALLED	false	If set to True, PIM is installed; False indicates a non-PIM scenario. It should be left as False for this release with Oracle E-Business Suite 11i.
DEFAULT_MASTER_ORG		Default organization when the incoming one is empty for New Part Request
RESPONSIBILITY	System Administrator	Responsibility for setting FND Apps Context
USER	mfg	User for setting FND Apps Context
EBIZ_01.SERVER_TIMEZONE	GMT-08:00	Corresponds to GMT offset of Oracle E-Business Suite instance Please refer to Oracle E-Business profile SERVER_TIMEZONE_ID to configure this property, for

Property	Default Value/Setting	Description
		example, '-07:00' or 'GMT-07:00' or 'PST'
EBIZ_01.LANG	ENG	
PROJECTS_RESPONSIBILITY	Projects, Vision Services (USA)	

Provider ABCS

CreateEngineeringChangeOrderListEbizProvABCImpl

Property	Default Value/Settings	Description
Default.SystemID	EBIZ_01	Used to get the default XREF target column name when TargetId is empty in the incoming EBM
Routing.ECOSERVICE.RouteToCAVS	false	Use CAVS for ECOSERVICE
ROUTING.ECOSERVICE.CAVS.ENDPOINTURI	http://\${fp.server.soaserverhostname}:\${fp.server.soaserverport}/AIAValidationSystemServlet/syncresponsesimulator	ECOSERVICE endpoint URI when set to CAVS
ROUTING.ECOSERVICE.EBIZ_01.ENDPOINTURI	http://\${fp.server.soaserverhostname}:\${fp.server.soaserverport}/soa-infra/services/default/CreateEngineeringChangeOrderListEbizAdapter/CreateEngineeringChangeOrderListEbizAdapter_ep	ECOSERVICE run-time target endpoint URI
Routing.EngineeringChangeOrderResponseEBS.RouteToCAVS	false	Use CAVS for EngineeringChangeOrderResponseEBS
ROUTING.ENGINEERINGCHANGEORDERRESPONSEEBS.CAVS.ENDPOINTURI	http://\${fp.server.soaserverhostname}:\${fp.server.soaserverport}/AIAValidationSystemServlet/asyncreponsesimulator	EngineeringChangeOrderResponseEBS endpoint URI when set to CAVS
ABCSEXTENSION.PREPROCESSABM	false	User exit for the pre-process ABM should be called or not
ABCSEXTENSION.POSTPROCESSABM	false	User exit for the post-process ABM should be called or not
ABCSEXTENSION.PREPROCESSEBM	false	User exit for the pre-process EBM should be called or not
ABCSEXTENSION.POSTPROCESSEBM	false	User exit for the post-process EBM should be called or not

Property	Default Value/Settings	Description
CUSTOM.TRANSFORMATIONS.EBM_TO_ABM	false	Use Custom transformation for EBM to ABM
CUSTOM.TRANSFORMATIONS.ABM_TO_EBM	false	Use Custom transformation for ABM to EBM
ASSIGN_ITEM_TO_CHILD_ORG	T	Indicates that if Components and SubstituteComponent coming in do not exist in context, org should be assigned from master org
TEMPLATE_FOR_ITEM_UPDATE_ALLOWED	F	During item update, if this config value is T, then the item template can be updated; if it is F item, the template cannot be changed
VALIDATE_REVISIED_ITEM_REVISION	F	If this Config value is set to T, then in the MCO and SCO case, the incoming revision is either the Current or a Future implemented revision T to validate current item revision, F not to validate current item revision
DEFAULT_STRUCTURE_TYPE	EBOM	This parameter is only for the R12 case. If the incoming payload does not have any value for structure type, then the value specified for this config parameter will be supplied by default. The default value provided for this property in the AIAConfig file should be a valid structure_type in the Oracle E-Business Suite database. Use this script to retrieve a valid structure type from Oracle E-Business Suite: SELECT STRUCTURE_TYPE_NAME FROM BOM_STRUCTURE_TYPES_B, where disable_date is null or disable_date > sysdate
CREATE_ERP_CHANGE_ORDER	T	If the value of this property is T, an ERP change order is created.

Property	Default Value/Settings	Description
		<p>If the value of this property is F, an Agile PLM change order is created.</p> <p>If users have set up some predefined workflow set for the change order type in Oracle E-Business Suite, then that will be effective only for the Agile PLM type of change orders.</p>
REPLICATE_BOM_VIEW_SCOPE	CURRENT_AND_FUTURE	<p>Indicates the BOM view scope for the replicate BOM case</p> <p>'ALL' -- All the BOMs should be considered for replicating BOM from source org to destination org</p> <p>'CURRENT' -- BOM that is effective currently should be considered</p> <p>'CURRENT_AND_FUTURE' -- BOM that is effective currently and also those with future effective dates should be considered</p>
REPLICATE_BOM_IMPLEMENTATION_SCOPE	All	<p>Indicates the BOM implementation scope for a replicate BOM case</p> <p>All – implemented and unimplemented BOMs</p> <p>'IMPLEMENTED' -- Implemented BOMs in the source org will be considered for replicating BOM from source org to destination org</p> <p>'UNIMPLEMENTED' -- Only unimplemented BOMs will be considered</p>
TRACE.LOG.ENABLED	false	Use tracelog for the flow
STANDALONE_BOM_UPDATES_ALLOWED	true	<p>The default value for this property is set to true so that by default, legacy BOM data can be updated by the PIP.</p> <p>If only the BOMs created by this PIP need to be updated (not including legacy BOMs), this property should be set to false.</p>

Property	Default Value/Settings	Description
ASSIGN_DEFAULT_TEMPLATE_FROM_ICC	false	If this property is set to true and the user does not pass a template, then the ICC has a default template attached to it that will be applied to the item. If this property is set to false, the default template attached to the ICC will not be considered.
UNIMPLEMENTED_BOM_UPDATES_ALLOWED (This property is available after applying 3.1 RUP 12543953)	T/F	If this property is set to 'T' redlining of unimplemented BOM's can be done from Agile. If it is set to 'F' then only implemented BOM's can be redlined.
ALLOW_LIFECYCLE_PHASE_SKIP (This property is available after applying 3.1 RUP 12543953)	T/F	If this property is set to T, the life cycle phases in EBS can be skipped. if it is set to F, the life cycle phase skip is not possible.

ValidateEngineeringChangeOrderListEbizProvABCImpl

Property	Default Value/Setting	Description
Default.SystemID	EBIZ_01	Used to get the default XREF target column name when TargetId is missing in the incoming EBM
Routing.ValidateECOService.RouteToCAVS	false	Use CAVS for ValidateECOService
Routing.ValidateECOService.CAVS.EndpointURI	http://{fp.server.soaserverhostname}:{fp.server.soaserverport}/AIAValidationSystemServlet/syncreponsesimulator	ValidateECOService run-time EndpointURI
Routing.ValidateECOService.EBIZ_01.EndpointURI	http://{fp.server.soaserverhostname}:{fp.server.soaserverport}/soa-infra/services/default/ValidateEngineeringChangeOrderListEbizAdapter/ValidateEngineeringChangeOrderListEbizAdapter_ep	ValidateECOService EndpointURI when set to CAVS
Routing.EngineeringChangeOrderResponseEBS.RouteToCAVS	false	Use CAVS for EngineeringChangeOrderResponseEBS
Routing.EngineeringChangeOrderResponseEBS.CAVS.EndpointURI	http://{fp.server.soaserverhostname}:{fp.server.soaserverport}/AIAValidationSystemServlet/asyncreponsesimulator	EngineeringChangeOrderEBS EndpointURI when set to CAVS

Property	Default Value/Setting	Description
ABCSEXTENSION.PREPROCESSABM	false	User exit for the pre-process ABM should be called
ABCSEXTENSION.POSTPROCESSABM	false	User exit for the post-process ABM should be called
ABCSEXTENSION.PREPROCESSEBM	false	User exit for the pre-process EBM should be called
ABCSEXTENSION.POSTPROCESSEBM	false	User exit for the post-process EBM should be called
CUSTOM.TRANSFORMATIONS.EBM_TO_ABM	false	Use Custom transformation for EBM to ABM
CUSTOM.TRANSFORMATIONS.ABM_TO_EBM	false	Use Custom transformation for ABM to EBM
ASSIGN_ITEM_TO_CHILD_ORG	T	Indicates that if Components,SubstituteComponents coming in does not exist in context, whether org should be assigned from master org.
TEMPLATE_FOR_ITEM_UPDATE_ALLOWED	F	During Item Update, if this config value is T, then the item template can be updated; if it is F, the item template cannot be changed
VALIDATE_REVISIED_ITEM_REVISION	F	If this Config value is set to T, then in MCO/SCO case, the incoming revision is either the current or a future-implemented revision
DEFAULT_STRUCTURE_TYPE	EBOM	<p>This parameter is only for the R12 case. If the incoming payload does not have any value for structure type, then the value specified for this config parameter will be supplied by default.</p> <p>The default value provided for this property in the AIAConfig file should be a valid structure_type in the Oracle E-Business Suite database. Use this script to retrieve a valid structure type from Oracle E-Business Suite:</p> <pre>SELECT STRUCTURE_TYPE_NAME FROM BOM_STRUCTURE_TYPES_B,</pre>

Property	Default Value/Setting	Description
		where disable_date is null or disable_date > sysdate
CREATE_ERP_CHANGE_ORDER	T	If the value of this property is T, an Enterprise Resource Planning (ERP) change order is created. If the value of this property is F, an Agile PLM change order is created. If users have set up some predefined workflow set for the change order type in Oracle E-Business Suite, then that will be effective only for the Agile PLM type of change orders.
REPLICATE_BOM_VIEW_SCOPE	CURRENT_AND_FUTURE	Indicates the BOM view scope for the replicate BOM case 'ALL' -- All the BOMs should be considered for replicating BOM from source org to destination org 'CURRENT' -- BOM that is effective currently should be considered 'CURRENT_AND_FUTURE' -- BOM that is effective currently and also those with future effective dates should be considered
REPLICATE_BOM_IMPLEMENTATION_SCOPE	ALL	Indicates BOM implementation scope for the replicate BOM case All – implemented and unimplemented BOMs 'IMPLEMENTED' -- Implemented BOMs in source org will be considered for replicating BOM from source org to destination org 'UNIMPLEMENTED' -- Only unimplemented BOMs will be considered
TRACE.LOG.ENABLED	false	Use tracelog for the flow
STANDALONE_BOM_UPDATES_ALLOWED	true	The default value for this property is set to true so that by default, legacy BOM data can be updated by the PIP. If only the BOMs created by this

Property	Default Value/Setting	Description
		PIP need to be updated (not including legacy BOMs), this property should be set to false.
ASSIGN_DEFAULT_TEMPLATE_F ROM_ICC	F	If this property is set to true and the user does not pass a template, then the ICC has a default template attached to it that will be applied to the item. If this property is set to false, the default template attached to the ICC will not be considered.
UNIMPLEMENTED_BOM_UPDATE S_ALLOWED (This property is available after applying 3.1 RUP 12543953)	T/F	If this property is set to 'T' redlining of unimplemented BOM's can be done from Agile. If it is set to 'F' then only implemented BOM's can be redlined.
ALLOW_LIFECYCLE_PHASE_SKIP (This property is available after applying 3.1 RUP 12543953)	T/F	If this property is set to T, the life cycle phases in EBS can be skipped. if it is set to F, the life cycle phase skip is not possible.

SyncItemLEbizProvABCSEmpl

Property	Default Value / Settings	Description
Default.SystemID	EBIZ_01	Default target system to be invoked
Routing.SyncItemLEbizAdapter.RouteToCAVS	false	Controls whether SyncItemLEbizProvABCSEmpl should route messages to Ebiz system or to CAVS
Routing.SyncItemLEbizAdapter.CAVS.EndpointURI	http://\${fp.server.soaserverhostname}:\${fp.server.soaserverport}/AIAValidationSystemServlet/asyncreponsesimulator	URL to which messages should be routed if Routing.SyncItemLEbizAdapter.RouteToCAVS is set to True
Routing.SyncItemLEbizAdapter.EBIZ_01.EndpointURI	http://\${fp.server.soaserverhostname}:\${fp.server.soaserverport}/soa-infra/services/default/SyncItemLEbizAdapter/SyncItemLEbizAdapter_ep	URL of Adapter Service that invokes process_item_list api on Ebiz instance
Routing.ItemResponseEBSV2.SyncItemLEbizResponse.RouteToCAVS	false	Controls whether SyncItemLEbizProvABCSEmpl should route response messages to the Agile PLM system or to CAVS
Routing.ItemResponseEBSV2.SyncItemLEbizResponse.MessageProcessi	PRODUCTION	Environment Code to be supplied in the Response EBM Header

Property	Default Value / Settings	Description
ngInstruction.EnvironmentCode		
Routing.ItemResponseEBSV2.SyncItemResponse.CAVS.EndpointURL	http://{fp.server.soaserverhostname}:{fp.server.soaserverport}/AIAValidationSystemServlet/asyncresponserrecipient	URL to which response messages should be routed if Routing.ItemResponseEBSV2.SyncItemResponse.RouteToCAVS is set to True
ABCSExtension.PreXformEBMtoABMEBM	false	UserExit for PreProcess EBM
ABCSExtension.PreInvokeSyncItemListABM	false	UserExit for PreProcess AM
ABCSExtension.PostInvokeSyncItemListABM	false	UserExit for PostProcess ABM
ABCSExtension.PostXformABMtoEBMEBM	false	UserExit for PostProcess EBM
TRACE.LOG.ENABLED	false	Specifies whether logging is enabled
DEFAULT.TEMPLATE.NAME	No Default Value	
TEMPLATE_FOR_ITEM_UPDATE_ALLOWED	F	During item update, if this config value is T, then the item template can be updated; if it is F item, the template cannot be changed
DEFAULT.CATEGORYSET.NAME		
DEFAULT.MASTER.ORG.CODE		Default organization code
ASSIGN_DEFAULT_TEMPLATE_FROM_ICC	F	If this property is set to true and the user does not pass a template, then if the ICC has a default template attached to it, which will be applied to the item. If this property is set to false, the default template attached to ICC will not be considered.

GetConfiguratorURLEbizProvABCSEImpl

Property	Default Value/Settings	Description
Default.SystemID	EBIZ_01	
ABCSEXTENSION.PREPROCESSABM	false	
ABCSEXTENSION.POSTPROCESSABM	false	
ABCSEXTENSION.PREPROCESSE	false	

Property	Default Value/Settings	Description
BM		
ABCSEXTENSION.POSTPROCESS EBM	false	
CUSTOM.TRANSFORMATIONS.EB M_TO_AB M	false	
CUSTOM.TRANSFORMATIONS.AB M_TO_EB M	false	
Routing.ProcessInitMsgService.EBIZ _01.EndpointURI	http://{fp.server.soaserverhostname };{fp.server.soaserverport}/soa- infra/services/default/GetConfiguratorURLEbizAdapter/GetConfiguratorURLEbizAdapter_ep	
Routing.ProcessInitMsgService.RouteToCAVS	false	
Routing.ProcessInitMsgService.CAV S.EndpointURI	http://{fp.server.soaserverhostname };{fp.server.soaserverport}/AIAValidationSystemServlet/asyncresponser ecipient	
Routing.BillOfMaterialsConfiguration EBS.GetConfiguratorURL.RouteToC AVS	false	
Routing.BillOfMaterialsConfiguration EBS.GetConfiguratorURL.CAVS.En dpointURI	http://{fp.server.soaserverhostname };{fp.server.soaserverport}/AIAValidationSystemServlet/asyncresponser ecipient	
CONFIGURATOR_RETURN_URL	http://{fp.server.soaserverhostname };{fp.server.soaserverport}/EBIBOM Configurator/ebibomconfigreturnserv let	
CONFIGURATOR_APPLICATION_I D	401	
CONFIGURATOR_RESPONSIBILIT Y_ID	66935	
TERMINATE_MSG_BEHAVIOUR	full	
TRACE.LOG.ENABLED	false	

Requester ABCS

UpdateItemListEbizReqABCImpl

Property	Default Value/Setting	Description
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Property	Default Value/Setting	Description
Default.SystemID	EBIZ_01	Used to get the default XREF target column name when TargetId is empty in the incoming EBM
Routing.GetItemAttrListService.GetItemService.RouteToCAVS	false	Use CAVS for getItemAttrListService
Routing.GetItemAttrListService.GetItemService.CAVS.EndpointURI	http://\${fp.server.soaserverhostname}:\${fp.server.soaserverport}/AIAValidationSystemServlet/syncresponse simulator	Use CAVS for ItemEBSV2
Routing.GetItemAttrListService.EBIZ_01.EndpointURI	http://\${fp.server.soaserverhostname}:\${fp.server.soaserverport}/soa-infra/services/default/QueryItemListEbizAdapter/QueryItemListEbizAdapter_ep	getItemAttrListService run-time target endpoint URI
Routing.ItemEBS.UpdateItemListItem.RouteToCAVS	false	ItemEBSV2 run-time target endpoint URI
Routing.ItemEBS.UpdateItemListItem.CAVS.EndpointURI	http://\${fp.server.soaserverhostname}:\${fp.server.soaserverport}/AIAValidationSystemServlet/asyncreponsesimulator	getItemAttrListService endpoint URI when set to CAVS
Routing.ItemEBS.EBIZ_01.EndpointURI	http://\${fp.server.soaserverhostname}:\${fp.server.soaserverport}/soa-infra/services/default/ItemEBSV2/ItemEBSV2_ep	ItemEBSV2 endpoint URI when set to CAVS
CUSTOM_TRANSFORMATIONS	false	Used to determine whether custom transformations should be used
ASSET_ATTRS	T	When the property is set to T, all Asset attributes will be published in output EBM
BOM_ATTRS	T	When the property is set to true, all BOM attributes will be published in output EBM
COSTING_ATTRS	T	When the property is set to true, all Costing attributes will be published in output EBM
GPLAN_ATTRS	T	When the property is set to T, all Planning attributes will be published in output EBM
INVENTORY_ATTRS	T	When the property is set to T, all Inventory attributes will be published in output EBM

Property	Default Value/Setting	Description
INVOICE_ATTRS	T	When the property is set to T, all Invoice attributes will be published in output EBM
LEAD_TIME_ATTRS	T	When the property is set to T, all Lead Times attributes will be published in output EBM
MPSMRP_ATTRS	T	When the property is set to T, all MPS/MRP Planning attributes will be published in output EBM
ORDER_ATTRS	T	When the property is set to T, all Order attributes will be published in output EBM
PHYSICAL_ATTRS	T	When the property is set to T, all Physical attributes will be published in output EBM
PROCESS_ATTRS	T	When the property is set to T, all Process attributes will be published in output EBM
PURCHASING_ATTRS	T	When the property is set to T, all Purchasing attributes will be published in output EBM
RECEIVING_ATTRS	T	When the property is set to T, all Receiving attributes will be published in output EBM
SERVICE_ATTRS	T	When the property is set to T, all Service attributes will be published in output EBM
WEB_OPTION_ATTRS	T	When the property is set to T, all Web Option attributes will be published in output EBM
WIP_ATTRS	T	When the property is set to T, all Work In progress attributes will be published in output EBM
ITEM_ATTRS	T	When the property is set to T, all Item attributes will be published in output EBM
DEFAULT_ITEM_COST_GROUP		<p>If this value is given, then the cost will be derived based on this value</p> <p>Note: Either DEFAULT_ITEM_COST_TY</p>

Property	Default Value/Setting	Description
		PE or DEFAULT_ITEM_COST_GR OUP should be set but not both
		If this value is given, the cost will be derived based on this value Note: Either DEFAULT_ITEM_COST_TY PE or DEFAULT_ITEM_COST_GR OUP should be set but not both
DEFAULT_ITEM_COST_TYPE	1	
TRACE.LOG.ENABLED	false	Use tracelog for the flow
ABCSEXTENSION.PREPROCESSA BM	false	User exit for the pre-process ABM should be called
ABCSEXTENSION.POSTPROCESS ABM	false	User exit for the post-process ABM should be called
ABCSEXTENSION.PREPROCESSE BM	false	User exit for the pre-process EBM should be called
ABCSEXTENSION.POSTPROCESS EBM	false	User exit for the post-process EBM should be called

UpdateEngineeringChangeOrderEbizReqABCImpl

Property	Default Value/Setting	Description
Default.SystemID	EBIZ_01	Used to get the default XREF target column name when TargetId is missing in incoming EBM
Routing.GetUpdateEngineeringChan geOrderListService.UpdateEngineeri ngChangeOrderListService.RouteTo CAVS	false	Use CAVS for getUpdateEngineeringChangeOrder ListService
Routing.GetUpdateEngineeringChan geOrderListService.UpdateEngineeri ngChangeOrderListService.CAVS.E ndpointURI	http://\${fp.server.soaserverhostnam e}:\${fp.server.soaserverport}/AIAVal idationSystemService/syncresponse simulator	Use CAVS for EngineeringChangeOrderEBS
Routing.GetUpdateEngineeringChan geOrderListService.EBIZ_01.Endpoi ntURI	http://\${fp.server.soaserverhostnam e}:\${fp.server.soaserverport}/soa- infra/services/default/QueryEnginee ringChangeOrderListEbizAdapter/Q	getUpdateEngineeringChangeOrder ListService run-time target endpoint URI

Property	Default Value/Setting	Description
	ueryEngineeringChangeOrderListE bizAdapter_ep	
Routing.ECOEngineeringChangeOrd erEBS.UpdateEngineeringChangeOr derList.RouteToCAVS	false	EngineeringChangeOrderEBS run- time target endpoint URI
Routing.ECOEngineeringChangeOrd erEBS.UpdateEngineeringChangeOr derList.CAVS.EndpointURI	http://\${fp.server.soaserverhostnam e}:\${fp.server.soaserverport}/AIAVal idationSystemServlet/asyncrespons esimulator	getUpdateEngineeringChangeOrder ListService endpoint URI when set to CAVS
Routing.ECOEngineeringChangeOrd erEBS.EBIZ_01.EndpointURI	http://\${fp.server.soaserverhostnam e}:\${fp.server.soaserverport}/soa- infra/services/default/EngineeringC hangeOrderEBS/EngineeringChang eOrderEBS_ep	EngineeringChangeOrderEBS endpoint URI when set to CAVS
CUSTOM_TRANSFORMATIONS	false	Used to determine whether custom transformations should be used
INCLUDE_REVISSED_ITEMS	T	Having a single Boolean Char value (T/F), this property is passed to the PI/Sql API based on the value of the property Revised Item details are supplied in the output ABM
INCLUDE_COMPONENT_ITEMS	T	Having with a Boolean Char value (T/F), this property is passed to the PI/Sql Application Programming Interface (API) based on the value of the property Component. Item details are supplied in the output ABM
INCLUDE_SUBSTITUTE_COMPON ENTS	T	Having a single Boolean Char value (T/F), this property is passed to the PI/Sql API based on the value of the property Substitute item details are supplied in the output ABM
INCLUDE_REFERENCE_DESIGNA TORS	T	Having a single Boolean Char value (T/F), this property is passed to the PI/Sql API based on the value of the property Reference Designators of the Component item details are supplied in the output ABM
ABCSEXTENSION.PREPROCESSA BM	false	User exit for the pre-process ABM should be called
ABCSEXTENSION.POSTPROCESS	false	User exit for the post-process ABM

Property	Default Value/Setting	Description
ABM		should be called
ABCSEXTENSION.PREPROCESSE BM	false	User exit for the pre-process EBM should be called
ABCSEXTENSION.POSTPROCESS EBM	false	User exit for the post-process EBM should be called
TRACE.LOG.ENABLED	false	Use tracelog for the flow

UpdateItemBalanceListEbizReqABCImpl

Property	Value/Setting	Description
Default.SystemID	EBIZ_01	Used to get the default XREF target column name when TargetId is missing in incoming EBM
Routing.ItemBalanceService.GetItem BalanceService.RouteToCAVS	false	Use CAVS for ItemBalanceService
Routing.ItemBalanceEBS.UpdateItem BalanceList.RouteToCAVS	false	Use CAVS for ItemBalanceEBS
Routing.ItemBalanceService.GetItem BalanceService.CAVS.EndpointURI	http://\${fp.server.soaserverhostnam e}:\${fp.server.soaserverport}/AIAVal idationSystemService/syncresponse simulator	ItemBalanceService endpoint URI when set to CAVS
Routing.ItemBalanceEBS.UpdateItem BalanceList.CAVS.EndpointURI	http://\${fp.server.soaserverhostnam e}:\${fp.server.soaserverport}/AIAVal idationSystemService/asyncrepons esimulator	ItemBalanceEBS endpoint URI when set to CAVS
ItemBalanceService.EBIZ_01.Default Target.EndpointURI	http://\${fp.server.soaserverhostnam e}:\${fp.server.soaserverport}/soa- infra/services/default/QueryItemBal anceListEbizAdapter/QueryItemBal anceListEbizAdapter_ep	ItemBalanceService run-time target endpoint URI
ItemBalanceEBS.EBIZ_01.Default.T arget.EndpointURI	http://\${fp.server.soaserverhostnam e}:\${fp.server.soaserverport}/soa- infra/services/default/ItemBalanceE BS/ItemBalanceEBS_ep	ItemBalanceEBS run-time target endpoint URI
CUSTOM_TRANSFORMATIONS	false	Used to determine whether custom transformations should be used
TRACE.LOG.ENABLED	false	Use tracelog for the flow
ABCSEXTENSION.PREPROCESSA BM	false	User exit for the pre-process ABM should be called
ABCSEXTENSION.POSTPROCESS ABM	false	User exit for the post-process ABM should be called

Property	Value/Setting	Description
ABCSEXTENSION.PREPROCESSE BM	false	User exit for the pre-process EBM should be called
ABCSEXTENSION.POSTPROCESS EBM	false	User exit for the post-process EBM should be called

SyncBillOfMaterialsConfigurationListEbizReqABCImpl

Property	Default Value/Setting	Description
Default.SystemID	EBIZ_01	
ABCSEXTENSION.PREPPROCES SABM	false	
ABCSEXTENSION.PREPROCESS EBM	false	
CUSTOM.TRANSFORMATIONS.A BM_TO_EBM	false	
Routing.BillOfMaterialsConfiguration EBS.SyncBillOfMaterialsConfigurati onList.RouteToCAVS	false	
Routing.BillOfMaterialsConfiguration EBS.SyncBillOfMaterialsConfigurati onList.CAVSEndpointURI	http://{fp.server.soaserverhostnam e}:{fp.server.soaserverport}/AIValida tionSystemServlet/asyncresponse recipient	

BPEL Service

GenerateItemNumberService

Property	Default Value/Setting	Description
Routing.GenerateItemNumberService. EBIZ_01.EndpointURI	http://{ebiz.host}:{ebiz.port}/webse rvices/AppsWSProvider/oracle/apps/ inv/ebi/item/GenerateItemNumberSe rvice	
Routing.GenerateItemNumberService. CAVS.EndpointURI	http://{fp.server.soaserverhostnam e}:{fp.server.soaserverport}/AIValida tionSystemServlet/asyncresponse simulator	
Routing.GenerateItemNumberService. RouteToCAVS	false	

Setting Up NLS

National language support (NLS) has been implemented in the process integration pack (PIP) for Agile PLM to Oracle E-Business Suite integration.

Requester Flows

1. In all the requester flows, the language code is managed from the concurrent program.
2. Configure the profile option called EBS Integration Language Codes with the installed languages in Oracle E-Business Suite using comma-separated values, for example, US, KO.

Note: In AIA Release 2.4 PIP, only one language is in the Oracle E-Business Suite Integration profile option for reverse flow. This is because in Agile PLM, the filtering and routing is carried out based on the language code in the EBS layer. Agile PLM does not send any response to Oracle E-Business Suite Integration Requester ABCS for the language that is not the same as the one configured on the Agile PLM side.

3. In AIA Release 2.3 PIP, the value of the Apps User is set from the Configuration file. However, from AIA Release 2.4 PIP onwards, a new DVM EBIZ_AGILE_APPS_USER, with the columns LANG_CODE and USER_NAME, is used. The value of the Apps User is set based on the language code returned by the concurrent program.

Before the EBM is sent to Agile PLM, the language code is converted to the common value, which is configured from the DVM LANGUAGE_CODE. The default integration user is picked from the AIA configuration file. In the module level Oracle E-Business Suite, the default user is picked from the USER property.

Note: Ensure that the values are configured for the DVM LANGUAGE_CODE and EBIZ_AGILE_APPS_USER before the flows are triggered.

4. For the Update Engineering change order, you can use two ways to invoke the Requester ABCS. One is through the concurrent program and the other is through the inbound adapter Events, called the Business Events.

In AIA Release 2.3 PIP, a change in ECO status returns the SID and the Change ID as an input to the Requester ABCS. However, from AIA Release 2.4 PIP onwards, another field called Language_Code has been added to enter parameters in the transformations, which has a default value as US. If you want to update this for Multi Languages, you must run the Publish Engineering Change Order concurrent program.

Provider Flows

In the AIA Release 2.3 PIP, the default language code in Agile PLM is set to en-US. This code value is sent to the provider ABCS in Oracle E-Business Suite without any conversion. However, from AIA Release 2.4 PIP onwards, this language code from Agile Product Lifecycle Management (PLM) is converted to an Oracle E-Business Suite system value by means of the LANGUAGE_CODE DVM.

This language code value is then used for setting up the APPS user in the EBIZ_AGILE_APPS_USER DVM. If the language code does not exist in this DVM, the default user is set from the AIA configuration file.

Note: The steps that are provided are specific to NLS. Carry out all the prerequisite configuration steps before testing the flows.

EBS Integration Language Codes is a prerequisite field to be configured with value with the appropriate Language Code. Besides, in AIA Release 2.4 PIP, the language code configured in Agile PLM should be configured in EBS exactly. That is, if Agile PLM is configured with Korean (KO) then the EBS Integration Language Codes should be configured with KO because Agile PLM would accept only the Korean data. Configure ECO_STATUS_CODE and ITEM_STATUS_CODE with the corresponding Language values in the Agile PLM column (the column name Common).

Setting Up NLS in Agile PLM

1. In Agile PLM Java Client, for each subscriber of MCO, SCO, and ECO, navigate to the subscriber details page and set the language.
2. Change the language preference of all users who are creating change orders and items, including integration users, to Japanese.

Note: For easy comprehension, we are using Japanese as a sample language.

Setting Up NLS in FMW for Agile PLM

Editing Transformations

1. Edit the following eXtensible Stylesheet Language (XSL) file and replace the hard-coded string Preliminary to the Japanese equivalent coming from the Agile PLM list values.

```
<SOA_HOME>/Apache/Apache/htdocs/AIAComponents/Transformations/Agile
PLM/Release1/QueueProcessorServiceImpl/AgileData_to_AgileCreateEngineeringChangeOrd
erListABM_Impl.xsl
```

2. Edit the following XSL file and replace the following values:

```
<SOA_HOME>/Apache/Apache/htdocs/AIAComponents/Transformations/Agile
PLM/Release1/ProcessEngineeringChangeOrderAgileReqABCS/AgileCreateEngineeringChan
geOrderListABM_to_CreateEngineeringChangeOrderListEBM_Impl.xsl
```

Replace the hard-coded string Preliminary to the Japanese equivalent coming from the Agile PLM list values.

Replace the hard-coded string SCO to the Japanese equivalent coming from the Agile PLM list values.

3. Edit the following XSL file and replace hard-coded strings Errored with the Japanese equivalent:

```
<SOA_HOME>/Apache/Apache/htdocs/AIAComponents/Transformations/Agile
PLM/Release1/ProcessEngineeringChangeOrderAgileReqABCS/AgileCreateEngineeringChan
geOrderListABM_to_AgileUpdateEngineeringChangeOrderListABM_Impl.xsl
```

4. Edit the following XSL file and replace the following values:

```
<SOA_HOME>/Apache/Apache/htdocs/AIAComponents/Transformations/Agile
PLM/Release1/ProcessEngineeringChangeOrderAgileReqABCS/UpdateEngineeringChangeOr
derListEBM_to_AgileUpdateEngineeringChangeOrderListABM_Impl.xsl
```

Replace the hard-coded string Transferred with its Japanese equivalent.

Replace the hard-coded string Errored with its Japanese equivalent.

Note: Use a UTF -8 based editor such as JEdit to perform these changes. Choose UTF-8 as the character set while loading the file to edit. Set FTP transfer mode to Binary while uploading these files to AIA components.

Editing AIA Configurations

Edit the property LANG_LOCALE under module Agile to Japanese. Its language value is available under the column COMMON in the LANGUAGE_CODE DVM at this path:

```
AIA_HOME>/aia_instances/$INSTANCE_NAME/AIAMetaData/config
```

For more information about requirements for working with AIAConfigurationProperties.xml, see [Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "Building AIA Integration Flows," How to Set Up AIA Workstation.

Setting Up DVMs

Set up the required DVMs using SOA Composer. Enter the Japanese language values under the Agile PLM column AGILE_01 in the following DVMs:

- ITEM_PRIMARYCLASSIFICATIONCODE
- ITEM_STATUS_CODE

- ITEM_UOM_CODE
- ECO_REASON_CODE
- ECO_TYPECODE
- ECO_CLASSIFICATION_CODE
- ECO_STATUS_CODE

Setting Up NLS in FMW for Oracle E-Business Suite

1. Log in to Oracle E-Business Suite.
2. Navigate to User Preferences.
3. Change the current session language and default language to the language that is configured in Agile PLM.
4. Navigate to System Administrator Responsibility in Oracle E-Business Suite and navigate to the following path:

System Administrator > Profile Options > System

5. Query for profile option EBS Integration Language Codes.
6. Set the language code to the corresponding Agile PLM language.

Note: You should do a substring revision in the custom transformations on the Agile PLM or Oracle E-Business Suite side to confirm an MLS setup with a multibyte language such as Korean. If no MLS exists, a binding exception occurs during invoking the Ebiz Adapter.

Setting Up DVMs for NLS

- In the LANGUAGE_CODE DVM, configure EBIZ_01 with the appropriate language code of ORACLE EBS.
- In the EBIZ_AGILE_APPS_USER DVM, configure the LANG_CODE and the corresponding integration user under USER_NAME.

Handling Errors

Based on the roles defined for the services, email notifications are sent if an error occurs. The roles can be assigned at various levels in a hierarchy (service, process, and domain) so that when a service ends due to error, the Error Handling Framework uses the role value to derive the users who have to be notified. The Error Handling Framework then notifies the users through their preferred notification method, puts the error in the user's Oracle Worklist, and records the error in the error log.


- **Role:** Actor role associated with the error notification. Actor roles receive notifications for and are assigned to error scenarios occurring in Oracle AIA integration flows. The task is editable in the Error Console and is meant to be worked on and resolved by the actor assigned to the task.

- **FYI Role:** FYI role associated with the error notification. This role receives for-your-information (FYI) notifications for error scenarios occurring in Oracle AIA integration flows. An example of an FYI role is a customer service representative. The task is displayed in read-only view in the Error Console.

For more information about the errors caused by the applications Agile PLM and Oracle E-Business Suite, see the documentation for the respective product.

For more information about AIA error handling, see [Oracle Fusion Middleware Infrastructure Components and Utilities User's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), "Setting Up Error Handling."

Error Handling in PIP Queue Manager

Any failure in the processing of a change order is captured by Queue Manager. This Errored process can be identified in Queue Monitor, symbolized by .

To see the reason for the error, click the link Errored in the Process Status column.

This Error Message comprises two parts:

- **Error Text** - This is the description of the error source, which can be from any of the participating ABCS services that faulted.
- **Details** - The error details consist of:
 - **Service Name:** The name of the service where an instance failed to run
 - **Instance ID:** The identification number of the instance that failed

Multiple faults generated by the service are captured and displayed in this UI. In addition to this, any failures in the flows are captured in the AIA Error Logs. These can be seen from the Enterprise Manager Console logs section.

In an event in which a certain service is down and the error is not related to the payload, users can resubmit the change in the Queue Manager UI.

Viewing EIMs

For more information about using XSL Mapping Analyzer (XMAN), see [Oracle Fusion Middleware Infrastructure Components and Utilities User's Guide for Oracle Application Integration Architecture Foundation Pack 11g Release 1](#), Using the XSL Mapping Analyzer.

For more information about how services are mapped, see the My Oracle Support document: [EBO Implementation Maps \(EIMs\) 881022.1](#).

Setting Up for Change Order Creation in Released Status in EBS

OOTB ECO will be released from Agile in *Released* status and it must be created in *Scheduled* status ,so in ECO_STATUS_CODE DVM *Released* status of Agile is mapped to **SCHEDULED** value of **COMMON** Column .

To create a change order in EBS in *Released* status:

1. Apply EBS patch 12895719:R12.ENG.C on EBS host.
2. In Fusion Middleware, update the "COMMON" and "AGILE_01" columns of the ECO_STATUS_CODE DVM.

This table shows the old settings.

COMMON	AGILE_01
SCHEDULED	Released
RELEASED	

This table shows the new settings.

COMMON	AGILE_01
SCHEDULED	
RELEASED	Released

3. Save the DVM changes.

After completing these steps, you can create change orders in *Released* status in EBS using the Agile Product Lifecycle Management (PLM) integration for Oracle E-Business Suite.

Appendix A: Functionalities Available

The following functionalities are available across different versions of Agile PLM and Oracle E-Business Suite application combination deployments.

Features and Agile PLM + Oracle E-Business Suite Versions	Agile PLM 9226 + EBS 11.5.10	Agile PLM 9226 + EBS 12.1.x	Agile PLM 93 + EBS 11.5.10	Agile PLM 93 without VM + EBS 12.1.x	Agile PLM 9226 + EBS 12.1.x with PIM	Agile PLM 93 without VM + EBS 12.1.x with PIM	Agile PLM 93 with VM + EBS 12.1.x with PIM	Agile PLM 93 with VM + EBS 12.1.x
NPR (Action PX)	N	N (Deployed - shared with SyncItem)	N	N (Deployed - shared with SyncItem)	Y	Y	Y	N (Deployed - shared with SyncItem)
NPR (Auto Number PX)	N	N (Deployed - shared with SyncItem)	N	N (Deployed - shared with SyncItem)	Y	Y	Y	N (Deployed - shared with SyncItem)
PREL(ECO Forward Flow From Agile PLM to EBS)	Y	Y	Y	Y	Y	Y	Y	Y
ECO Update Flow (From EBS to Agile PLM)	Y	Y	Y	Y	Y	Y	Y	Y
Item Balance Update Flow (From EBS to Agile PLM)	Y	Y	Y	Y	Y	Y	Y	Y
Item	Y	Y	Y	Y	Y	Y	Y	Y

Features and Agile PLM + Oracle E-Business Suite Versions	Agile PLM 9226 + EBS 11.5.10	Agile PLM 9226 + EBS 12.1.x	Agile PLM 93 + EBS 11.5.10	Agile PLM 93 without VM + EBS 12.1.x	Agile PLM 9226 + EBS 12.1.x with PIM	Agile PLM 93 without VM + EBS 12.1.x with PIM	Agile PLM 93 with VM + EBS 12.1.x with PIM	Agile PLM 93 with VM + EBS 12.1.x
Operational Attribute Update Flow (From EBS to Agile PLM)								
Queue Functionality AQ (Database Persistent))	Y	Y	Y	Y	Y	Y	Y	Y
Sync Item	N	Y	N	Y	Y	Y	Y	Y
VM Configurator Integration	N	N	N	N	N	N	Y	Y
Pre-Release Audit	N	Y	N	Y	Y	Y	Y	Y

Appendix B: Queue Management

The Queue Management feature in the process integration pack (PIP) helps you meet the following requirements:

- An event exists to produce filtered payload from a file destination to a JMS destination,
- The payload is defined by means of a standard XSD.
- The files or JMS messages produced by events are sequenced in the order in which the objects are released.

Note: These requirements are leveraged by means of the Agile PLM Content Service (ACS). ACS can produce payload to a file or JMS destination. The payload is based on filter configured for the ACS event defined by an Agile PLM-provided AXML schema definition. In addition, ACS transmits the messages in the order in which the ATOs are released.

- A queue manages the order of messages
- A queue monitors UI to enable reordering and resubmitting unprocessed messages
- The queue manages the payloads based on the business process for which the message is produced by the event
- The queue controlling mechanism:
 - Triggers the business flow based on the business process of message
 - Processes the messages sequentially based on the order specified in the message (the highest-order message is picked first for processing)
 - Does not pick a message for processing unless the processing of the previous message is complete
 - Can reorder the messages that have not been picked for processing

For more information about Queue Manager, see *Agile PLM Integration Pack for Oracle E-Business Suite User Guide*.

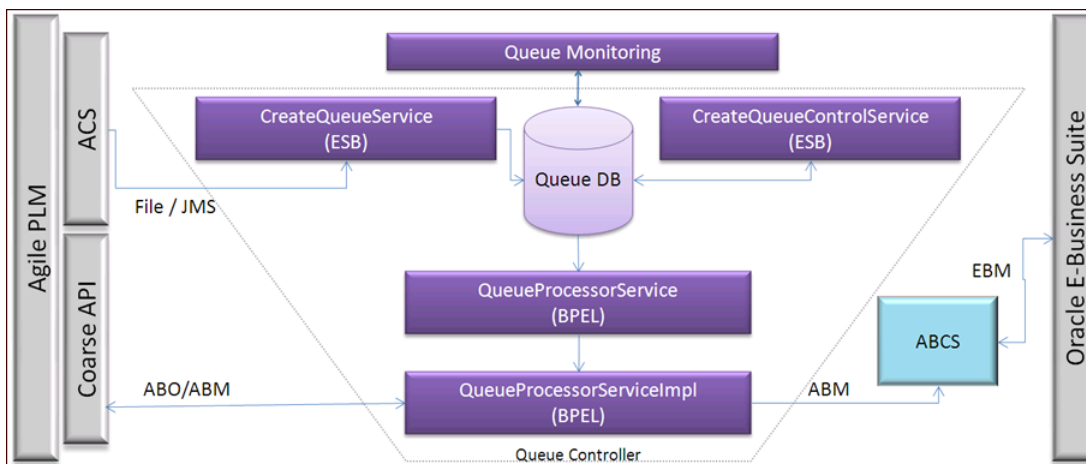
Queue Management Solution

The Queue Management Solution comprises of the following components:

- Queue DB: The database that keeps the data related to the queue messages.
- Queue Controller: Polls for new event payloads and adds them to the Queue DB. The highest priority message for each business process is picked and processed sequentially to trigger its business flow.
- Queue Monitoring: UI that monitors the queue message status supports reordering of priorities of the queue messages.

In addition, it provides the capability to resubmit the unprocessed messages.

Queue monitoring



Queue Schema

To support the Queue Management Solution, a polling strategy similar to PollingControlTableStrategy is used. The following two main tables are used to manage the sequential processing and reordering of the messages:

1. QUEUE_TABLE

It stores all the queue messages that are being provided by the Event trigger.

2. QUEUE_CONTROL_TABLE

It stores the relevant information of the messages from the QUEUE_TABLE that have not been processed yet.

The Queue Manager ensures that only one message is in the control table that is not yet processed. When the processing of a message is complete, a Pending message from the Queue table is inserted into this table. This facilitates the sequential processing of the message. In addition, because all the pending messages are stored in the Queue table, they can be reordered.

Queue DB Details

The Queue Schema has the following tables:

Table	Description
ECO_QUEUE	This table holds the data of both Process ECO and Validate ECO. The PROCESS_TYPE column is used as an identifier for Process ECO and Validate ECO.
ECO_QUEUE_CONTROL	This table stores the details about the rows that are currently in processing state.
ECO_QUEUE_STATUS	This table holds the data to control the simultaneous processing and suspending the Queue. Changing the values in the ECO_QUEUE_STATUS

Table	Description
	column can change the number of simultaneously processed ECOs.

The structure of the ECO_QUEUE_STATUS table is:

ECO_QUEUE_STATUS_ID	ECO_QUEUE_STATUS	ECO_QUEUE_STATUS_DESCRIPTION	Description
1	1 or 0	ProcessECO Suspend Resume Status	The status of the queue for ProcessECOs in suspended or resume mode. 0 means suspended.
2	1	Maximum Number of Rows for Processing ProcessECO	The count of rows that can be processed simultaneously for Process ECO A value of 1 means sequential processing.
3	5	Maximum Number of Rows for Processing ValidateECO	The count of rows that can be processed simultaneously for Validate ECO
4	1 or 0	ValidateECO Suspend Resume Status	The status of the Queue for ValidateECOs, in suspended or resume mode. 0 means suspended

Queue Controller

A polling strategy on the Queue DB is used for addressing the Queue Management business requirements. The Queue Controller provides an ECO system to ensure that this polling strategy works in tandem to ensure that:

- All event-transmitted file and JMS messages are added to the queue for both change order release and change order processing flows as well as for the change order validation flow.
- At any given time, only one pending message is in the control table for change order release and change order processing flows.
- Once the processing of a message in the control table is complete, insert the highest-priority queue message for change order release and change order processing flows from the queue table to the control table.
- In case of change order release and change order processing flows, if the Integration flow ends due to error, the queue manager will wait until the message is resubmitted or removed for Change Order Release flow.
- Change order release processes are available on the Process ECO tab.
- Validate release processes are available on the Validate ECO tab.
- Validate change order processes are processed concurrently, dissimilar to the change order release and change order processing flows, which are processed sequentially.
- If any of the validate change order processes end due to error, other processes can still proceed.

Queue Monitor

When a change order is released for release ECO or validate ECO processing by ACS, it is picked up by Queue Controller. The Queue Monitor displays a list of all the change orders that are waiting to be processed in both the tabs. It also helps you reorder their sequence of processing.

For more information about Queue Monitor, see *Agile PLM to Oracle E-Business Suite Integration User Guide*, “Managing the Process Queues.”

Queue Manager Services

These services are deployed as part of Queue Manager:

- CreateQueueService
- CreateQueueControlService
- QueueProcessorService
- QueueProcessorServiceImpl

CreateQueueService

The CreateQueueService is implemented as a routing mediator service. An adapter service (File/JMS Adapter) polls on the destinations for any event payloads. The payload is in the form of aXML files. This service receives message as a binary element (aXML file). For each payload received the service inserts a new row into the QUEUE table. An Adapter Service (DB Adapter) is used for the same. The Toplink solution generates the required schema from the table for this DB Adapter.

- The service uses transformation services to populate any NOT NULL columns in the table.
- OBJECT_REFERENCE is inserted with the file name of the aXML file using the mediator header transformation extension functions.
- PROCESS_STATUS is pending for the newly inserted row.
- PROCESS_PRIORITY is captured from the file name. (ACS can be configured to append a default order for the file name)

CreateQueueControlService

The CreateQueueControlService is implemented as a routing mediator service. A DB Adapter polls on the QUEUE_CONTROL_TABLE table. If no rows are in the Pending status, CreateQueueControlService invokes a DB Adapter service, which runs a custom SQL. This SQL identifies the highest-priority pending Queue message from QUEUE_TABLE table and inserts the same in the QUEUE_CONTROL_TABLE table.

This polling strategy ensures that at any time only one pending message is in the QUEUE_CONTROL_TABLE table. Once the Pending message is processed and status completed, a new Pending message is inserted from the QUEUE_TABLE table to the QUEUE_CONTROL_TABLE table. When the status for a message is completed in the QUEUE_CONTROL_TABLE, that row is deleted from the table.

QueueProcessorService

The QueueProcessorService is implemented as a routing mediator service that acts like an Interface and provides a façade in front of the QueueProcessorServiceImpl service. A DB Adapter polls on the QUEUE_CONTROL table for any Pending messages. A pending message in the table is routed to the QueueProcessorServiceImpl service, which processes the message. Based on the result from the implementation service, the status of the message is updated in the control table.

QueueProcessorServiceImpl

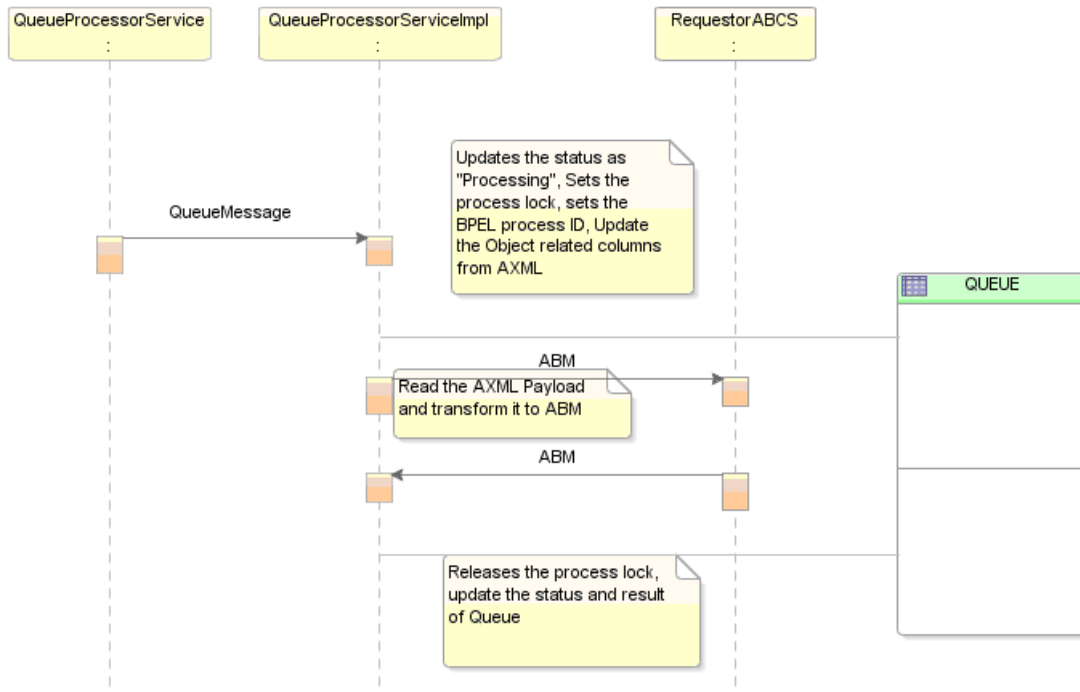
The primary task of this service is to invoke the RequestorABCS. The response from RequestorABCS is processed and the queue is updated with the processing status.

Input: The QueueMessage generated by the Toplink solution in the QueueProcessorService is used as the input for this Service.

Output: QueueStatusMessage, which contains the status and result of the processed queue message.

This diagram illustrates how QueueProcessorServiceImpl invokes the RequestorABCS:

Invoking RequestorABCS through QueueProcessorServiceImpl



This table lists the steps required to invoke the RequestorABCS:

Step	Description
QueueProcessorService invokes QueueProcessorServiceImpl process	The QueueProcessorService invokes QueueProcessorServiceImpl with QueueMessage (generated by the Toplink solution for the QUEUE

Step	Description
	table) as input.
Invoke UpdateQueueStatus DB Adapter service	The input QueueMessage in this process is assigned with the following values to update the Queue message in the Queue DB PROCESS_STATUS: Processing PROCESS_ID: BPEL Process ID PROCESS_LOCK: 1
Transform AgileData (aXML) to ABM	QueueMessage will have the AgileData payload, which is transformed to ABM.
Invoke RequestorABCS	QueueProcessorServiceImpl invokes RequestorABCS with ABM as input.
Invoke Coarse Grained Web Service	RequestorABCS optionally invokes the coarse-grained Web services to get the ABM populated with any missing information required for the integration flow.
RequestorABCS Transforms ABM to EBM	The response ABM from coarse-grained WS is transformed to EBM and an operation on EBS is invoked with EBM as the input.
RequestorABCS orchestrates the business flow	The RequestorABCS routes the EBM to EBS.
EBS routes the response to RequestorABCS	The response EBM from EBS is routed to the RequestorABCS, which is transformed to ABM and returned to QueueProcessorServiceImpl
QueueProcessorServiceImpl invokes UpdateQueueResult DB Adapter service	The result from the RequestorABCS is used to update the status of Queue in the Queue DB. Also, the Process lock is released.

Transformations

The aXML payload is transformed to the ABM, which is input for the RequestorABCS. Because the ABM schema is defined on the lines of aXML schema, this transformation will be easier to do in the Jdeveloper XSL Mapper.

Implementation Details

The QueueProcessorServiceImpl is implemented as an Asynchronous BPEL process. For updating the queue status and invoking RequestorABCS, RequestorABCS and DB Adapters are called. These involve some logic (parsing the aXML payload) that cannot be achieved by means of mediator.

Note: QueueID is used for the correlation set between QueueProcessorServiceImpl and RequestorABCS.

Error Management

All errors in the integration flow are managed in RequestorABCS. Any such errors leading to failure of the queue processing will be handled in this process. Because of such error, the queue status and result with failure status is updated in the Queue DB.

Appendix C: Troubleshooting

Issue: ECOs remain in PROCESSING status in Agile Queue and flow trace displays this error: BINDING.JCA-11811 Stored procedure invocation error. Error while trying to prepare and execute the APPS.INV_EBI_CHANGE_ORDER_PUB.PROCESS_CHANGE_ORDER_LIST API.

Cause: java.sql.SQLException: ORA-03111: break received on communication channel

Solution:

Increase the JTA timeout values from the FMW console.

To increase JTA timeout:

1. Log in to the FMW admin console.
2. Navigate to soa_domain > Services > JTA.
3. Set the timeout value.

To increase syncMaxWaitTime:

1. Log in to the FMW EM console.
2. Expand SOA and right-click soa-infra.
3. Select SOA Administration > BPEL Properties.
4. Click the More BPEL Configuration Properties link and find syncMaxWaitTime.
5. Change it to some higher value and save.

Issue: In ECO forward flow, after the ECO is processed successfully the transfer status attribute (flex) in the ECO in Agile PLM is not being updated.

Solution: Check the flexfield attribute, which has been enabled corresponding to the change. Then, ensure that the same attribute has been configured in the AIAConfigurationProperties.xml for that property.

Issue: For the Item Cost update and Item Balance update flows, the attributes in Agile PLM are not getting updated.

Solution: Check whether the Multisite_Enabled property is set to True or False. Based on this given value, ensure that the Cost and Quantity attributes in AIAConfigurationProperties.xml are correctly set.

Issue: NPR use case is failing with one of the following errors:

- Exception on JaxRpc invoke: start fault message: SystemError: Error occurred in Web Services system.:end fault message

- Exception on JaxRpc invoke: HTTP transport error: javax.xml.soap.SOAPException: java.security.PrivilegedActionException: javax.xml.soap.SOAPException: Message send failed: Premature EOF encountered
- The security token could not be authenticated or authorized

Solution: Refer preinstallation steps for PIP installation in Installation and Upgrade Guide and verify the SOA Provider setup in Oracle EBS environment using Oracle E-Business Suite Integrated SOA Gateway Troubleshooting Guide.

Issue: In Agile PLM ACS, the test for Destination fails with some error.

Solution: If the Agile PLM server and the FMW server are in different domains, then for the ACS to work, an entry should be made in the host file of the two servers.

For Example:

10.176.138.126 aia06.agile.agilesoft.com aia06 - this would go in the FMW server's host file.
64.181.168.191 sdc78623svqe.corp.siebel.com - this would go in the Agile PLM server's host file.

Issue: If Oracle E-Business Suite Provider ends due to error, with an error message such as "This Child Item has no Master Item record in MTL_SYSTEM_ITEMS," perform the step given in the following solution.

Solution: If it is the first-time release of the item from Agile PLM to Oracle E-Business Suite, then the item should be sent as an Affected or Revised item in the Master Org along with Child Org from Agile PLM.

Queue Issues

Issue: ECOs remain in the pending state and are not picked up for processing.

Solution: By default, the queue will be in the suspended mode. Click the Resume button to continue the queue processing.

Issue: Two ATOs for the same ECO appear in the process ECO tab.

When a change is submitted that triggers the Validate ECO Subscriber and then released (which triggers ECO trigger), and not much interval is given between because the ACS thread is sleeping when the Validate ECO trigger picks up the data, then the change is already in released status. ACS does not pick up the snapshot data when the process is triggered but the data when the ACS thread is running to pick up the data.

Solution: Enough delay between the submit and release processes should be maintained so that the ECO status is correct and is queued up under either Validate or Process ECO queue. Otherwise, if some changes need to be auto-implemented, do not configure prerelease audit subscription for that particular workflow.

Issue: Once an ECO/MCO/SCO has been released in Agile PLM, the Queue does not display any corresponding entry for the change order.

Solution:

1. Check Agile PLM for ATO, which was created on the release of the particular change order. Check the status on the Where Sent tab of the ATO.
2. If a Failure message is displayed, then an error occurred while ACS was processing the publishing of the data to JMS destination. The error message is specified in the Transmission Notes column.

Destination	Filters	Data Format	Language	Site	Date Sent	Transmission SL...	Transmission Notes	Response	Roles
JMS Destination - AIA04	Default Change Order Filter; Default Item Filter	axML	English	All		Failure	jms/QueueConnectionFactory not found		Execu (Rest (Rest (Rest Manag Read

3. After you make any necessary changes to the transfer order or the destination to correct the problem, reset the destination to attempt delivery again. Once a destination has failed, no other transfer orders can be sent to that destination until it has been reset.

To reset the destination:

1. In the Agile PLM Java client, navigate to Admin > System Settings > Agile PLM Content Service > Destinations.
2. Select the particular destination and click the Reset button on the top.
3. After resetting the destination, test the destination to ensure that the test is successful for the destination. If it fails, it has to be resolved, mainly by ensuring that all the ECO Queue settings are correct and the OPMN Port specified in the URL is correct.
4. If the status of the ATO transfer is Success, the implication is that the ACS publishing of data to JMS queue was successful. Then you need to troubleshoot in the BPEL console:
5. Navigate to the Enterprise Manager (EM) Console: <http://host:port/em>.
6. In the EM console, select SOA > soa-infra > Instances.
7. In the Instances tab, check for the instance of the CreateQueueService in which the error occurred.
8. Click the instance name link and navigate to the Flow link.
9. Go to the BPEL instance and see the error.

Oracle E-Business Suite Issues

Issue: The concurrent program request status for reverse flows displays 'Error' as a status.

Solution:

1. If the concurrent program request displays an Error status, in the View Requests tab, select the row with the error and click the View Log button.
2. The error message is displayed there. If further details are required on the process instance that caused the error, note the BPEL process instance that appears in the log file.
3. Navigate to the Enterprise Manager (EM) Console: <http://host:port/em>.
4. Select the Instances tab and search for the specific instance ID.
5. Click the instance name and navigate to the Flow link.
6. Go to the BPEL instance and see the error.

Issue: Create ECO flow gives the error message "following user does not have the PersonId not attached to it."

Solution:

1. Check whether the Oracle E-Business Suite integration user specified in the `AIAConfigurationProperties.xml` is the correct user.
2. If the user is correct, then check whether the integration user has a person name assigned in System Administrator Responsibility.
3. If the user is not assigned, then assign a valid user.

Issue: Cannot establish connection to Oracle EBS Apps adapter.

Solution:

If the database password is changed, then the same should be changed in the Connection Pool in the Application server console. Try establishing a connection.

1. Log in to the FMW console: <http://:/console>.
2. Navigate to Services > Data Sources.
3. Navigate to the Connection Pool tab for the data source `OracleAppsDataSourceDS`.
4. Change the password.
5. Save and test the data source.

Issue: Concurrent Program Failed

Solution:

1. Check whether the profile values for EBS Integration Proxy Server Host, EBS Integration Proxy Server Port are configured correctly in the Profiles screen.
2. If not, then enter the correct value for these.

For more information about the correct values of these options, see [Setting Up Oracle E-Business Suite, Profile Settings](#).

Issue: For existing items in PIM/Oracle E-Business Suite, the CreateEngineeringChangeOrderListEbizProvABCImpl integration service returns the following error message: “ITEM Message Text: Master - Child Conflict in one of these Attributes: STOCK_ENABLED_FLAG, BOM_ENABLED_FLAG, BUILD_IN_WIP_FLAG, REVISION_QTY_CONTROL_CODE, ITEM_CATALOG_GROUP_ID.”

Solution: To resolve this issue, you must correctly setup the Item Catalog Group. Use the Catalog Group field in the Item Catalog (MST) screen to enter the correct Catalog Group name for the items in PIM/Oracle E-Business Suite. This will allow you to create an ECO, associate revised items with this ECO, and create BOM.