AGILE PRODUCT LIFECYCLE MANAGEMENT INTEGRATION PACK FOR E-BUSINESS SUITE: DESIGN TO RELEASE

Leveraging Oracle’s Application Integration Architecture, the Agile Product Lifecycle Management (PLM) "Design to Release" Process Integration Pack delivers seamless synchronization of product content between distributed engineering and manufacturing organizations, enabling your enterprise to accelerate time to market for new products and reduce costs, while improving product quality and minimizing supply chain disruptions.

End-to-End Design-to-Release Business Process

The Agile Product Lifecycle Management Design-to-Release Process Integration Pack (PIP) is a pre-built best practice integration process that is also configurable and extensible to meet your unique process needs. Based upon open, standards-based Service Oriented Architecture (SOA), it is designed to enable seamless synchronization of your enterprise product record across your supply chain and extended product network. Out-of-the-box, this integration supports enterprise processes that connect the Enterprise PLM product record in Oracle Agile Product Lifecycle Management with Oracle E-Business Suite and PIM.

BUSINESS BENEFITS:

- Reduced Time to Market for New
Products

- Extendibility through 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
- Reducing Waste and Total Material Cost by Leveraging PIM as the Central Part Repository
- Identify errors much faster and prior to final commitment

Figure 2 - New Product Request Process Flows

The core enterprise processes supported by the PIP comprise of the overarching Design to Release processes for New Products, Product Design Updates, and New Product Request, corner-stone processes that enable transparency between the engineering and manufacturing functions. The solution aims at improving overall design for manufacturability and accelerating profitable innovation in a global ‘Design Anywhere, Build Anywhere’ business environment.

The PIP delivers an out-of-the-box best practice process, supported by standard configurations and data mappings, as well as support for advanced features such as Multi-Org Change Propagation, ‘Copying’ and/or ‘Common’-ing of Bill of Materials across organizations, and bi-directional synchronization of ECO Statuses and Supply Chain data.

This PIP also enables synchronizing items and its attributes upon demand. This is most helpful when an ECO is not invoked or needed. Additionally, Pre-Release Audit enables users to simulate synchronization of items and their attributes prior to final commitment. Errors are identified upon the conclusion of the audit. Errors can then be addresses resulting in a clean final commitment.

Finally, this PIP enables the Variant Management capabilities which leverage Agile PLM, E-Business Suite, PIM, and Oracle Configurator. Variant Management functionality provides the means to define Super BOMs (Model-Option BOMs) and the rules needed to build variants (configurations, instance BOMs). Rules can be applied using Agile PLM and/or Oracle Configurator. Variants can then be processed based on business’s product design processes. An acceptable Super BOM (Model-Option BOM) is resulted upon validation of its variants. That Super BOM (Model-Option BOM) and all of its components and attributes can then be synched up with E-Business Suite or PIM. Users may also elect to synch up the variants as well.

Seamless Manufacturing Release
The Oracle Agile PLM Design-to-Release Integration Pack supports seamless exchange of product content between Oracle Agile PLM and EBS/PIM for new product introductions as well as product design updates and new part number request. These best practice processes orchestrate a near real-time and highly responsive manufacturing release process for new products and design update, from Agile PLM to EBS/PIM.

The New Part Number Request process allows for centralization of parts repository with an MDM system such as Oracle PIM Data Hub. Engineering requests for new parts, whereby may be generated based on optional attributes of parts. Providing engineers part numbers in synchronous mode then completes the request.

The New Product Release and Product Design Update processes supported by the PIP are essentially triggered by a standard ECO (or MCO or SCO) Release event in Agile PLM.

Upon release, the ECO is logged into a PIP processing queue where its status can be tracked and necessary actions, including sequencing, fast-tracking or error handling, can be taken.
A corresponding Engineering Change Order is created in EBS Manufacturing, in the appropriate EBS Inventory Organizations, in near real-time.

The ECO in EBS can be implemented manually, or via a ‘low-touch’, standard EBS ECO Auto-Implement process. ECO transfer and implementation statuses, as well as any changes to effectivities of the affected/revised items are communicated back to Agile in a combination of configurable real-time and batch processes.

**Bi-directional ‘Design for Supply Chain’ Visibility**

The integration pack functionality also addresses these key concepts of ‘Design for Supply Chain’, with an optional bi-directional synchronization (from EBS/PIM to Agile) of supply chain data, such as item Lead Times, Costs and On-hand Quantities (calculated by Organization), or any other EBS or PIM Item Master attributes. Ready access to supply chain data empowers Engineering to make more supply chain friendly decisions when introducing new or improved product designs.

**Predictable and Sustainable Innovation**

Early visibility of better quality data leads to a smoother design hand-off between Engineering and Manufacturing, resulting in significantly improvements in time to market and time to volume metrics. It also has a positive impact on margin, cost and quality with reduced disruption on the supply chain, when new products are introduced or product revisions are released to other enterprise functions, including Manufacturing, Materials Management, Procurement, etc.

Similarly, providing visibility of supply chain data early in the design phases of the product, e.g. long lead time components or on hand positions, can lead to better engineering decisions and seamless absorption by the supply chain at release.

At the core of the integration is an architecture that allows for the adaptability and reusability of core business processes. The Oracle Application Integration Architecture provides the...
flexibility to easily modify existing processes to enable:
- Re-configuring business processes using reusable objects and services
- Extending the process to additional applications without recoding the integration
- Protect your changes across upgrades. When upgrades are performed on the integration or connected Oracle applications, your changes will be carried forward

**Configurable and Extensible**

The integration process and architecture supports a robust configuration, process monitoring and error handling framework, enabling business and IT users alike, to actively manage the process and reduce latencies typical to a cross-application process. This utility leverages the Oracle Fusion Middleware Business Process Execution Language (BPEL) Process Manager.

![Figure 6 - BPEL Process Manager](image)

Also included in the solution, is user friendly configuration capability for defining domain value mappings that allows business and IT users to define and manage value maps for key elements (attributes, organizations, etc.) supporting the business objects being synchronized.

Domain Value Maps (DVM) leverage Fusion Middleware Service Oriented Architecture (SOA) Suite, and is highly configurable and extensible to customer-specific mappings.

![Figure 6 - BPEL Process Manager](image)
Figure 7 - Configurable Domain Value Maps

The integration architecture is also supported by a robust process monitoring, error handling and configurable notification management framework, to ensure potential error conditions are identified early in the ECO release or transfer process and resulting impact on product quality, cost and time to market is effectively mitigated.

The Oracle Advantage

Built on the Oracle Application Integration Architecture (AIA) framework, the integration includes everything you need to rapidly enable service-oriented applications, from business processes to common objects and services, to SOA Governance, at greatly reduced cost. Oracle AIA Process Integration Packs are designed to be easily extended to evolve as your business changes, allowing you to respond to customer and market needs with greater agility and flexibility. The result is a complete end-to-end solution designed to give you faster time to benefit and lower cost of ownership.

Built on Fusion Middleware’s Service-Oriented Architecture (SOA) and BPM framework, Oracle AIA transforms rigid IT systems into flexible, integrated environments that can adapt and scale to business needs. Customers can gain comfort in knowing that all Oracle provides a complete integration solution that is fully supported, enhanced and maintained by Oracle thus minimizing any risk associated with integration projects.

For more details on AIA or the Design to Release PIP visit http://www.oracle.com/aia.

Bottom Line: Lower TCO for your Enterprise PLM Platform

Unlike traditional point-to-point integrations, typically based on proprietary third-party technologies, the Oracle Agile PLM PIP for Oracle EBS represents a SOA-based integration built on open standards. Since the PLM PIP is designed, developed, owned, sold, and maintained by Oracle, customers will not have to incur the risk or additional costs working with 3rd parties to integrate Agile to EBS/PIM.

The Design to Release Process Integration is also the first step towards building a highly configurable, extensible and sustainable platform to support Oracle’s next generation integrated Enterprise Product Lifecycle Management solutions, connecting your enterprise PLM platform to your Oracle (and 3rd party) Enterprise CRM, SCM and ERP systems, to accelerate innovation and increase profitability.

For more information on how the Agile PLM Design-to-Release Integration Pack can simplify your business, contact your Oracle Application Sales Representative.
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