Oracle® Application Integration Architecture - Foundation Pack 2.3: Release Notes

Release 2.3

Part No. E14365-02

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Contents

Overview of Oracle AIA Foundation Pack 2.3

Oracle Application Integration Architecture (AIA) Foundation Pack is a prebuilt integration solution that provides the programming model, best practices, application-independent data model, and supporting tools to implement, test, diagnose, and govern your service oriented architecture (SOA).

This new release demonstrates Oracle's commitment to enable you to:

- Unify your application portfolio on a standardized framework
  - Join Oracle and non-Oracle applications on a robust, open-standards-based platform
  - Integrate third-party solutions through application-independent design
  - Create process-driven application integrations
- Minimize integration costs and risk
  - Speed time to value with prebuilt business objects and services
  - Develop flexible integrations using an application-independent model
- Adapt business processes to changing business needs
  - Optimize business operations using documented business processes
  - Simplify upgrades through common objects and services
  - Plug and play applications, through enterprise business services

Product Enhancements for Oracle AIA Foundation Pack 2.3

This section discusses the enhancements delivered in Oracle Application Integration Architecture (AIA) Foundation Pack 2.3. These enhancements fall into the following areas:

- Installation and upgrade
- Enterprise business objects (EBOs)
- Industry Foundation Packs
- Business process models
- Error handling and logging
- The Artifacts Generator
- The XSLT Documentation Generator
- Programming models
- Resequencing in the asynchronous message exchange pattern

Installation and Upgrade

The Oracle AIA Installer is wizard-based and completely installs and configures Oracle AIA products to your infrastructure. The Oracle AIA Installer collects information about:

- The location where the products have to be installed (AIA Home)
- The details of the Oracle SOA Suite and database installation
- Participating application details

Upon providing this information, the Oracle AIA Installer copies the complete software to the specified AIA Home and continues to deploy the various artifacts to the servers.

Some of the actions include deploying BPEL/Enterprise Service Bus (ESB) processes to the SOA server, creating tables and queues in the database, and so forth.

The *Oracle Application Integration Architecture 2.3: Installation and Upgrade Guide* provides step-by-step instructions for using the Oracle AIA Installer, along with prerequisites and post-install steps.

In addition to a new installation, the Oracle AIA Installer supports upgrades from previous installations of Oracle AIA. The *Oracle Application Integration Architecture 2.3: Installation and Upgrade Guide* includes an upgrade section that provides detailed instructions for performing the upgrade.

As part of the Oracle AIA Foundation Pack 2.3 release, the Oracle AIA Installer provides the following additional capabilities when compared to the 2.2.1 release of the Oracle AIA Installer:

- The wizard provides a better user experience by allowing users to perform multiple activities on the same screen, thereby being clear on the activity being performed. Process integration pack (PIP) selection regions have been modified to clearly distinguish existing components from new components.
- The upgrade path is automatically initiated based on the AIA Home selected. Once an existing AIA Home is selected, all existing AIA products, including their versions, are displayed before the user proceeds to upgrade.
- Upgrade of Foundation Pack is automatic and mandatory for any upgrade from a previous release of Oracle AIA. However, PIP upgrade is manual and optional so that users can choose to upgrade only desired PIPs. To accomplish this, the Oracle AIA Installer provides necessary content and scripts that users can employ based on instructions provided in the *Oracle Application Integration Architecture 2.3: Installation and Upgrade Guide*.
- Choosing more than one PIP for installation is now supported. However, users are able to proceed only when the selected PIP combination is Oracle-certified. When the combination is installed, the Oracle AIA Installer takes care of resolving conflicts between shared artifacts, such as BPEL and ESB services, and so forth.

EBOs

With each release of the Oracle AIA Foundation Pack, approximately 20 EBOs are introduced or updated. The designs of our EBOs begin with industry standards (OAGIS, for example) and are augmented with commonalities found in our best-of-breed application portfolio. Our EBOs provide you with a head start so that you can focus on your business and leave the bulk of the semantic design of application business objects to us.

New EBOs in Oracle AIA Foundation Pack 2.3

In Oracle AIA Foundation Pack 2.3, the following EBOs were added:

EBO	Description
CreditAlert	A Credit Alert is an alert raised as part of collections processing in billing to indicate intent or action taken
FulfillmentOrder	A FulfillmentOrder is an order generated by the product or service provider for the goods or services purchased by a customer. This exists in Horizontal and Communications.
Person	A person refers to an individual who has a past, present or future relationship (e.g. employment, pensioner, dependent, beneficiary etc - any role other than a customer) with the enterprise that creates and manages the person information
ProvisioningOrder	A ProvisioningOrder is an order generated by the product or service provider for the goods or services purchased by a customer. This exists in Horizontal and Communications.
ResourceCalendarEntry	ResourceCalendarEntry is a calendar entry of certain

EBO	Description
	resource. A resource can be an employee, organization, supplier, carrier, and so forth.
TransportationSalesOrder	A TransportationSalesOrder is an order generated by the product or service provider for the goods or services purchased by a customer. Transportation Industry will use this and this requirement has come from Fleet. This exists in Horizontal.
TransportationStop	A TransportationStop identifies information about a location that is required by a transportation service provider to manage logistics and define costs for transportation services to/ from that location.
TroubleTicket	A Trouble Ticket contains details about a request for a service that a customer or a customer agent makes to the service provider typically based on a pre-existing service contract or a service level agreement (SLA). Trouble Ticket may also be auto-generated by systems. An example is, Order Fallout Management System capturing orders that were failed and creating a trouble ticket to resolve them.
Worker	A worker is a person working for an enterprise and may be either an employee or a contingent worker.

Updated EBOs in Oracle AIA Foundation Pack 2.3

In Oracle AIA Foundation Pack 2.3, the following EBOs were updated:

EBO	Updates
AccountingEntry	Added ReversalIndicator to AccountingEntry
Classification	Added the following: • ParentClassificationReference component • Name and Description attributes under ClassificationSpecification component • ClassificationSpecificationExclusion child business component under ClassificationSpecification component
CustomerParty	Added PreferredIndicator under CustomerPartyAccountContact
InstalledProduct	Added the following: • InstalledProductPrice (business component) for Communications • InstalledProductSpecificationGroup (business component) for Communications

EBO	Updates
Invoice	Added the following: • BusinessUnitReference to Invoice • TaxCategoryCode to Invoice Line • AccountingDate to AccountingDistribution • AccountClassCode to AccountingDistribution
Item	Added the following attributes under ItemOrderManagementCharacteristics component (Communications only): • NetworkIndicator • FulfillmentCompositionTypeCode • FulfillmentSuccessCode • NetworkItemTypeCode • BillingStartCode
PayableInvoice	Added the following: • TaxCategoryCode (Attribute) to PayableInvoiceLine • BusinessUnitReference to PayableInvoice header • PayableInvoiceAccountingDistribution to PayableInvoice • New business component called PayableInvoiceRemitToPartyReference to PayableInvoice header • Operation to support calculation of driver incentive compensation
SalesOrder	Added the following: • RelatedItemIdentification (Common component) to SalesOrderLine • PurchaseDate (Attribute) to SalesOrderLine • DependingSalesOrderLineReference (Reference component) to SalesOrderLine • DependingSalesOrderReference (Reference component) to SalesOrderLine • PartialFulfillmentAllowedIndicator to SalesOrderLine for Communications only • FulfillmentModeCode to SalesOrderLine for Communications only • ProcessingNumber to SalesOrder header for Communications only

EBO	Updates
	• ProcessingSequenceNumber to SalesOrder header for Communications only • ProcessingTypeCode to SalesOrder header for Communications only • ProcessingQuantity to SalesOrder header for Communications only • OrderChangedIndicator to SalesOrder header for Communications only • SalespersonPartyReference to SalesOrder header • OriginalSalesOrderLineReference to SalesOrderLine • OriginalSalesOrderReference to SalesOrder header • RelatedSalesOrderLineIdentification to SalesOrderLine • EarliestDeliveryDateTime (Attribute) to SalesOrderSchedule for Communications only • MilestoneCode (Attribute) to SalesOrderLine for Communications only • ServiceTimePeriod (Common Component) to SalesOrderSchedule for Communications only • ExpectedDeliveryDate (Attribute) to SalesOrderSchedule • RevisionPermissibleCode (Attribute) to SalesOrderLine • SupplierPartyReference to SalesOrderLine • ServicePointCode (Attribute) to SalesOrderLine for Communications only • ServiceUsageStartDate (Attribute) to SalesOrderSchedule for Communications only • CycleStartDate (Attribute) to SalesOrderSchedule for Communications only • StartBillingOnFirstServiceUsageIndicator (Attribute) to SalesOrderLine for Communications only • ServiceAddress (Common Component) to SalesOrderLine for Communications only • PromotionReference (Reference Component) to SalesOrderLine • FulfillmentPriorityCode (Attribute) to SalesOrder header • ParentSalesOrderReference (Reference

EBO	Updates
	Component) to SalesOrder header • ProjectReference to SalesOrder header • PartialFulfillmentAllowedIndicator (Attribute) to SalesOrder header for Communications only • FulfillmentModeCode (Attribute) to SalesOrder header • SalesChannelCode (Attribute) to SalesOrder header
SupplierParty	Added InactiveDateTime to Supplier party header
TroubleTicket	Added the following to Trouble Ticket: • ProcessingTypeCode (Attribute) • ProcessingSequenceNumber • ProcessingNumber • ProcessingQuantity • PriorityCode (Attribute) to OrderFailure component

Updated Common Components

In Oracle AIA Foundation Pack 2.3, the following updates were made to common components:

Common Component	Updates
AccountBalanceAdjustmentIdentification	Added new Identification Element to Common
AccountingDistribution	Added AccountClassCode (Attribute)
ChargeType	• Added Discount Amount, Discount Percent, ChangeFrequenceyCode, Discount Method Code to Core and Industry. • Added DynamicPricingIndicator to Communications only
ComponentItemSpecificationGroup	Added ActionCode (Attribute)
CustomerParty	• Added CustomerPartyAccountContactidentification, CustomerPartyAccountContactAddressCommunication to Core and Industry. • Added CustomerPartyAccountContactName, CustomerPartyAccountContactPhoneCommunication, CustomerPartyAccountContactEmailCommunication to Communications only.
CustomerPartyAccountContactEmailCommunication	Added new EmailCommunicationType to Communications only
CustomerPartyAccountContactPersonName	Added new element of PersonName type

Common Component	Updates
CustomerPartyAccountContactPhoneCommunication	Added new PhoneCommunicationType to Communications only
DependingFulfillmentOrderLineReference	Added Reference component of type FulfillmentOrderLineReference
DependingFulfillmentOrderReference	Added Reference component of type FulfillmentOrderReference
DependingProvisioningOrderLineReference	Added Reference component of type ProvisioningOrderLineReference
DependingProvisioningOrderReference	Added Reference component of type ProvisioningOrderReference
DependingSalesOrderLineReference	Added Reference of type SalesOrderLineReference to Core and Industry
DependingSalesOrderReference	Added Reference of type SalesOrderReference to Core and Industry
EmploymentAssignmentIdentification	Added new Identification type
EmploymentGradeIdentification	Added new Identification type
EventLocationReference	Reference component of LocationReference type
EventTimePeriod	New common component of time TimePeriodType
ExternalInvoiceReference	Added TotalAmount (AmountType) to External Invoice Reference to Core and Industry
FulfillmentOrderIdentification	Added new common component to Core and Industry of IdentificationType
FulfillmentOrderLineIdentification	Added new common component to Core and Industry of IdentificationType
InvoiceReference	Added DueAmount (Attribute), DueDate (Attribute), PurchaseOrderIdentification to InvoiceReference for Communications only.
ItemReference	Added NetworkIndicator (Attribute), FulfillmentCompositionTypeCode (Attribute), FulfillmentSuccessCode (Attribute), NetworkItemTypeCode (Attribute), BillingStartCode (Attribute) to ItemReference for Communications only.
ItemStructureSpecificationGroup	Added ActionCode (Attribute)
JobIdentification	Added new Identification type
LocationReference	Added the following: • TimeZoneIdentifier (Attribute) • GeographicalCoordinate (Attribute)
OriginalFulfillmentOrderLineReference	Added Reference component of type FulfillmentOrderLineReference

Common Component	Updates
OriginalProvisioningOrderLineReference	Added Reference component of type ProvisioningOrderLineReference
OriginalSalesOrderLineReference	Added Reference of type SalesOrderLineReference to Core and Industry
OriginalTransportationSalesOrderLineReference	Added Reference component of type TransportationSalesOrderLineReference
OriginalTransportationSalesOrderReference	Added Reference component of type TransportationSalesOrderReference
ParentClassificationReference	Added Reference component of type ClassificationReference
ParentFulfillmentOrderLineIdentification	Added new common component to Core and Industry of FulfillmentOrderLineIdentificationType
ParentFulfillmentOrderReference	Added Reference component of type FulfillmentOrderReference
ParentInstalledProductReference	Added Reference of InstalledProductReference to Core and Industry
ParentProvisioningOrderLineIdentification	Added new common component to Core and Industry of ProvisioningOrderLineIdentification type
ParentProvisioningOrderReference	Added Reference component of type ProvisioningOrderReference
ParentTransportationSalesOrderLineIdentification	Added new common component to Core and Industry of TransportationSalesOrderLineIdentification Type
ParentTransportationSalesOrderReference	Added Reference component of type TransportationSalesOrderReference
PersonName	Added Prefix, Suffix, Military Rank to PersonName
PrimaryCustomerPartyAccountReference	Added PrimaryCustomerPartyAccountReference of type CustomerPartyAccountReference
PrimaryLocationReference	Added PrimaryLocationReference of type LocationReference (Reference Component)
PriorPayFromPartyReference	Added new Reference of type PayFromPartyReference to Communications only
ProvisioningOrderIdentification	Added new common component to Core and Industry of IdentificationType
ProvisioningOrderLineIdentification	Added new common component to Core and Industry of IdentificationType
RehireApproverWorkerReference	Added new Reference of WorkerReference Type
RelatedFulfillmentOrderLineIdentification	Added new common component to Core and Industry of IdentificationType
RelatedProvisioningOrderLineIdentification	Added new common component to Core and Industry of

Common Component	Updates
	IdentificationType
RelatedTransportationSalesOrderLineIdentification	Added new common component to Core and Industry of TransportationSalesOrderLineIdentification Type
RootParentProvisioningOrderLineIdentification	Added new common component to Core and Industry of ProvisioningOrderLineIdentification type
RootParentTransportationSalesOrderLineIdentification	Added new common component to Core and Industry of TransportationSalesOrderLineIdentification Type
SalesTerritoryReference	Added Name and Address to SalesTerritoryReference for Core and Industry
ServiceAddress	Added Service Address of AddressType to Communications only
ShipToPartyReference	Added CustomerPartyAccountIdentification to Communications only
SpecificationReference	Added Name (Attribute)
SpecificationValueSetReference	Added Name (Attribute)
SupervisorEmploymentAssignmentReference	Added new Reference of EmployeeAssignmentReference Type
SupervisorWorkerReference	Added new Reference of WorkerReference Type
TaxLocationReference	Added Reference of type LocationReference to both Core and Industry
TerminationAcceptedWorkerReference	Added new Reference of WorkerReference Type
TransportationSalesOrderIdentification	Added new common component to Core and Industry of Identification Type
TransportationSalesOrderLineIdentification	Added new common component to Core and Industry of Identification Type
WorkerIdentification	Added new Identification type

New Reference Components

In Oracle AIA Foundation Pack 2.3, the following reference components were created:

- AccountBalanceAdjustmentReference
- CalendarReference
- ClassificationReference
- DepartmentReference
- DependingSalesOrderLineReference
- EmploymentAssignmentReference
- EmploymentGradeReference

- FulfillmentOrderLineReference
- FulfillmentOrderReference
- ProvisioningOrderLineReference
- ProvisioningOrderReference
- ResourceReference
- TransportationSalesOrderLineReference
- TransportationSalesOrderReference
- VendorPartyReference
- WorkerReference

Industry Foundation Packs

This section discusses support for the communications industry.

Support for the Communications Industry

With Oracle AIA Foundation Pack 2.3, we introduce our Communications Industry Foundation Pack. This first release of the Oracle AIA Communications Foundation Pack includes new industry-specific EBOs, a complete set of activity-based industry process models, and other modified horizontal enterprise business services (EBSs) and objects.

Communications customers can easily leverage the Oracle AIA Communications Foundation Pack to facilitate integration design and enable composite business processes including:

- Agent-Assisted Billing Care
- Concept-to-Launch
- Customer Self-Service
- Delinquent-to-Collect
- Order-to-Activate
- Order-to-Bill
- Trouble-to-Resolve

These processes span a variety of applications, including CRM for sales, marketing and service; customer care and contact center, customer order management; customer eBilling, ePayment and eSupport; rating, billing, and collections; order and service management, service provisioning, service activation, logical and physical inventory; trouble ticketing; financials ERP.

New EBOs

The Oracle AIA Communications Foundation Pack includes the following new industry-specific EBOs:

EBO	Description
Communications FulfillmentOrder	The Fulfillment Order document is used to exchange order data between central fulfillment and edge applications other than provisioning.
Communications ProvisioningOrder	The Provisioning Order document is used to exchange order data between central fulfillment and provisioning applications.
Communications CreditAlert	The Credit Alert document is used for sending updates on collection actions from CRM to BRM.
Communications ServiceUsage	The Service Usage document is used for querying or sending billed usage information for a service.
Communications TroubleTicket	The Trouble Ticket document is used for sending order failure information from the central fulfillment systems to the trouble ticketing application in the context of order fallout.

Other EBOs Used

The Oracle AIA Communications Foundation Pack also uses the following EBOs:

- AccountBalanceAdjustment.
- Classification
- CustomerParty
- InstalledProduct
- Invoice
- ItemComposition
- PriceList
- ReceivedPayment
- SalesOpportunity
- SalesOrder
- ShipmentRequest
- Specification

Business Process Models

Business Process Management includes a set of activities that organizations perform to either optimize their business processes or adapt them to new organizational needs. Important elements include business process modeling and analysis, orchestration (BPEL), and business activity monitoring.

The BPA element allows a business analyst to create business process models depicting the desired optimized business processes. These models act as a communication device and design blueprint for the technical realization of the desired business process. They provide a business foundation for the addition of technical orchestration details and serve as a baseline for modifications resulting from business activity monitoring results.

The published models include hyperlinks to entries in the Business Service Repository (BSR), where technical details are described for Oracle AIA integration artifacts.

The Business Process Publisher is included for you to be able to view the published set of models and to allow business and technical analysts throughout your entire enterprise to view the models with a simple web browser. For full consumption of the delivered models, the source database is also included with Oracle AIA 2.3. A licensed copy of the Business Process Architect is required to restore the source database and use the models.

Oracle AIA 2.3 includes Reference Process Models for the following:

- Oracle AIA Foundation Pack (includes new models for the Communications and Utilities Industries)
- Process Integration Pack for Oracle Customer Hub 2.3
- Process Integration Pack for Oracle Product Hub 2.3
- Oracle Retail Merchandising Integration Pack for PeopleSoft Enterprise Financials: Financial Operations Control 2.3.
- Oracle Financials Accounting Hub Integration Pack for PeopleSoft General Ledger 2.3
- Oracle CRM On Demand Integration Pack for JD Edwards EnterpriseOne: Lead to Order 2.3

Delivered model content includes the Level 0, Level 1, Level 2 and Level 3 models for those processes supported by Oracle AIA 2.3.

Model content is cumulative and includes models delivered with prior Oracle AIA releases as well. Up to and including Oracle AIA 2.3, integration artifacts and corresponding Reference Process Models were delivered for portions of the following business processes:

Communications Industry

- Product Lifecycle Management
- Fulfillment
- Assurance
- Billing

Insurance Industry

- Claims

Utilities Industry

- Product Management
- Marketing Campaign

- Billing and Revenue Management
- Sales
- Order Fulfillment
- Customer Service

Financial Services Industry

- Financial Control and Reporting

Retail Industry

- Sales
- Procurement
- Inventory Management
- Financial Control and Reporting

Cross-Industry

- Enterprise Planning and Performance Management
- Marketing
- Sales
- Order Fulfillment
- Customer Service
- Field Service and Depot Repair
- Supply Chain Planning
- Product Management
- Production
- Procurement
- Materials Management and Logistics
- Transportation Management
- Project Management
- Financial Control and Reporting
- Cash and Treasury Management
- Asset Lifecycle Management
- Enterprise Information Management

- Recruiting
- Workforce Deployment
- Workforce Development
- Compensation Management

Cross-Industry Composite Business Flows

- Order-to-Cash (Siebel Order/Siebel Opportunity to Oracle Order Management/Oracle Transportation Management)
- Design-to-Release (Agile Product Lifecycle Management to Oracle Product Information Management)
- Lead-to-Order (JDE E1 to CRM On Demand)

Error Handing and Logging

The Oracle AIA Foundation Pack Error Handling Framework provides customers with a prebuilt solution for managing errors across the integration layer. It provides a unified approach to handling errors across heterogeneous implementation technologies (BPEL and ESB), and across different integration patterns within your integration landscape. It provides a consistent error handling approach that enables integration components, including participating applications, to contribute to an end-to-end error resolution.

The primary features of the Oracle AIA Error Handling framework include:

- A consistent approach to handling errors across integration patterns and implementation technologies
- Preference-based notifications that serve to be auto-alerts each time an error occurs
- A user interface to define error scenario classifications (business or technical, for example) or categorization based on error type or business process, and a mechanism for mapping roles to these error situations so that appropriate roles are notified based on these defined classifications
- Error and trace logging defined by different levels
- A pluggable and extensible framework that allows you to hook in custom behavior at various points within the framework

As a part of the Oracle AIA Foundation Pack 2.3, the Oracle AIA Error Handling framework delivers the following features and enhancements:

- Enhanced fault content
- Extension of default error handling behavior
- Message resubmission

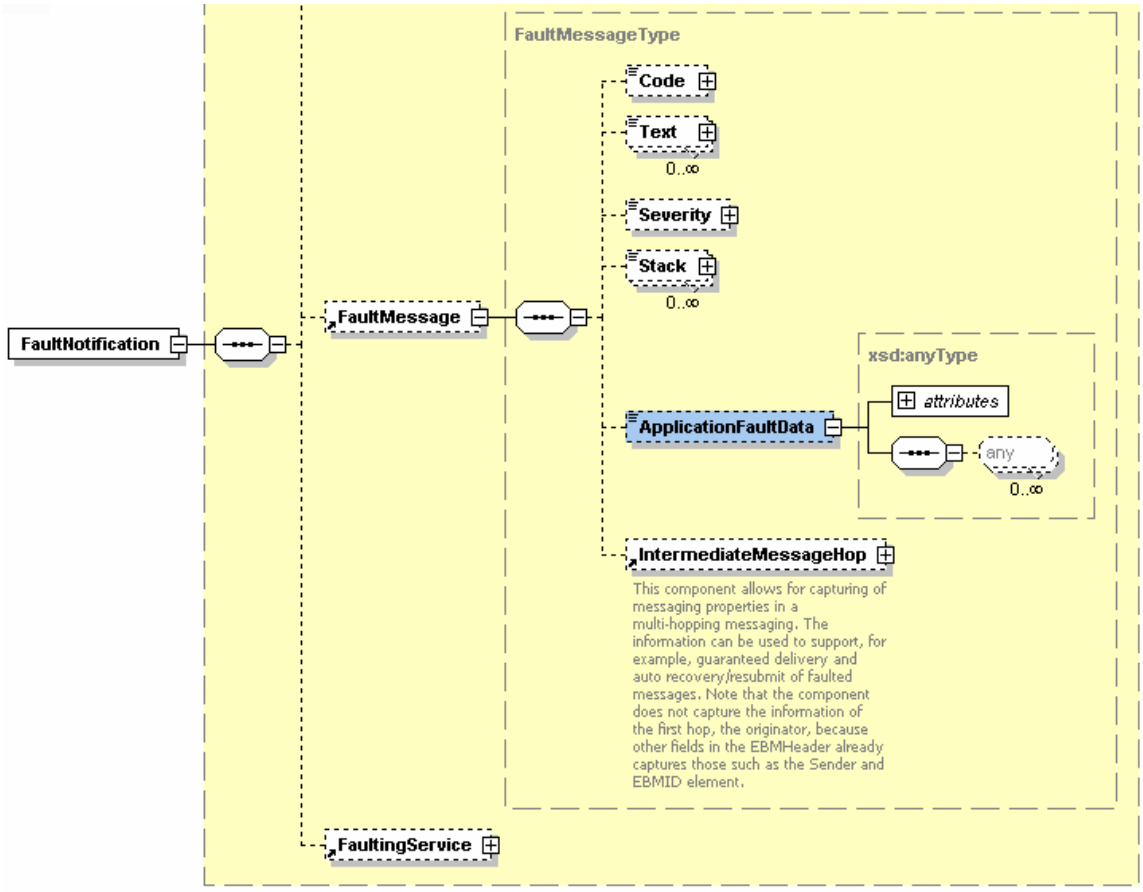
Enhanced Fault Content

The Error Handling Framework provides the ability to enrich the base fault message, as defined by Oracle AIA, with custom content. This custom content can be functionally rich information that is very specific to an integration use case and can be any XML input. The Error Handling Framework provides a mechanism by which extension handlers can be registered with the framework to perform these appendages.

This feature allows for the expansion of the scope of error details that are captured for troubleshooting purposes, thus paving the way for quicker error resolution.

Additionally, the Error Handling Framework provides a mechanism to consume these additional fields in the desired manner using another Oracle AIA Foundation Pack 2.3 enhancement, Extension of Default Error Handling Behavior.

Extending a fault message utilizes the ApplicationFaultData element of type ***xsd:anyType*** in the FaultType message schema definition in Meta.xsd.

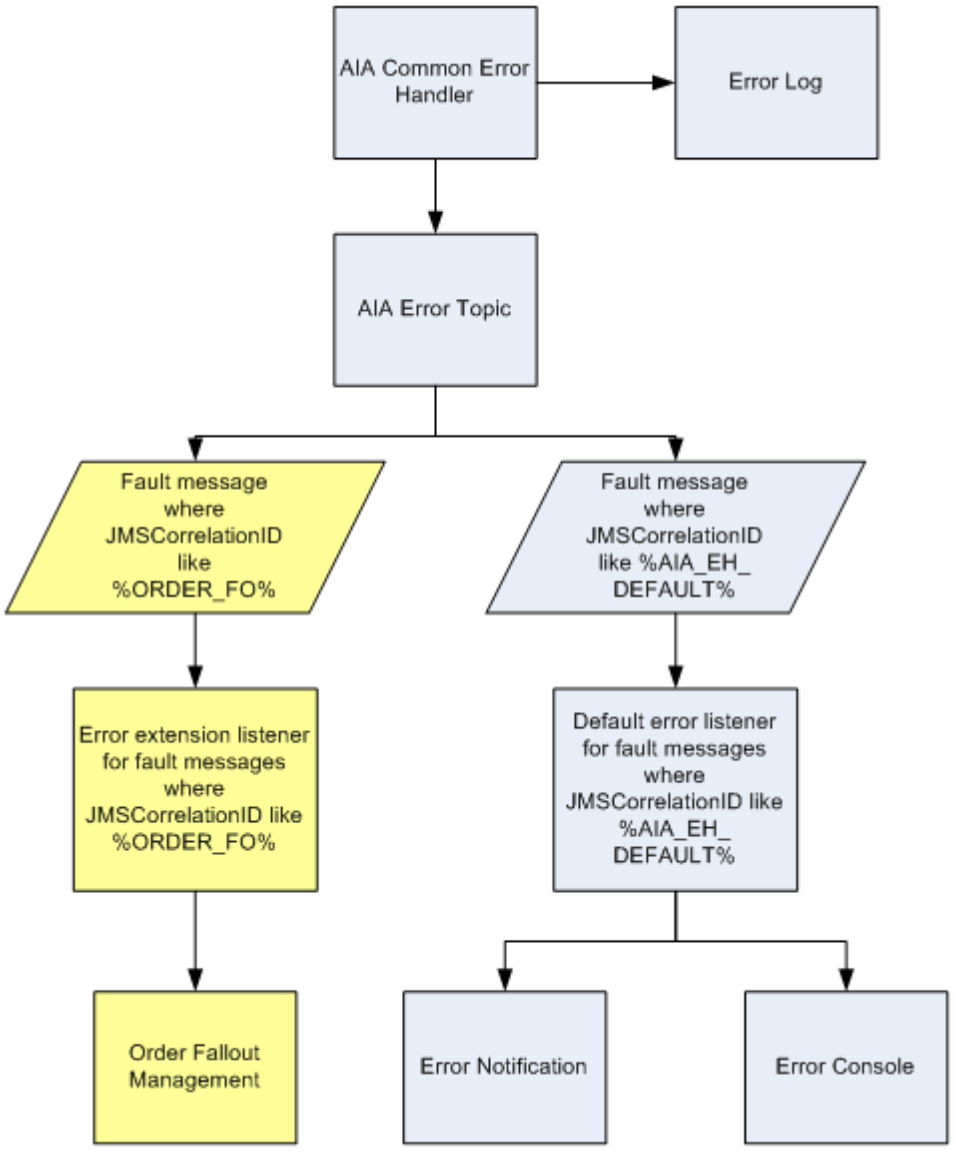


ApplicationFaultData element highlighted in Meta.xsd

Extension of Default Error Handling Behavior

The Error Handling Framework provides the ability to extend the default Oracle AIA error handling behavior of logging and issuing notifications by enabling you to register listeners with the framework.

This provides Foundation Pack implementations with the power to use elements within the fault message in the desired manner. For example, you may want a particular error to trigger extended error handling behavior, such as channeling message content to an order fallout management system.



Sample extended error handling flow alongside a default error handling flow

To implement an error handling extension, you may choose to also implement Enhanced Fault Content, another enhancement introduced in Oracle AIA Foundation Pack 2.3.

Message Resubmission

In an asynchronous message exchange pattern, when a hardware or software system becomes temporary unavailable, the Guaranteed Message Delivery programming model provides a way for the associated business message to be persisted in a suitable transaction milestone point.

Once an integration administrator has been notified of the unavailable resource by the Error Console, she can address the resource issue.

The integration administrator can then use the Message Resubmission Utility to resubmit the persisted message into the integration scenario from the appropriate transaction milestone point, enabling its delivery to the next component or milestone.

The Message Resubmission Utility is available as an Apache Ant script and as a Java API.

For more information about the Guaranteed Message Delivery programming model delivered in Oracle AIA Foundation Pack 2.3, see Guaranteed Message Delivery.

Artifacts Generator

The Artifacts Generator is a development tool that can help jumpstart your Oracle AIA development by autogenerating much of the common code needed to create Oracle AIA application business connector (ABC) service implementations. This can free up developers to focus on scenario-specific value-added design and development.

The Artifacts Generator is an Apache Ant-based tool that uses the FreeMarker template engine to generate all of the necessary artifacts for an ABC service using a parameter input file.

The Artifacts Generator generates the following artifacts to create Oracle AIA ABC service implementations in BPEL:

- Projects
- ABC service interfaces
- ABC service implementations using BPEL
- EBS and application service invocations
- Message exchange patterns
- Logging, error handling, and fault policies
- Composite Application Validation System (CAVS) enablement and dynamic endpoint locations
- Naming conventions
- Transformations with root element and header population
- ABC service properties for the Oracle AIA configuration properties file
- Best-practice settings

XSLT Documentation Generator

The XSLT Documentation Generator is a tool you can use to generate the mapping information from the ABC service transformation XSL into HTML.

To simplify the mapping from the source application schema to the target application schema, the XSLT Documentation Generator takes the XSLT file as input and extracts the mappings from the source to target elements and displays the mapping information in a table that is easier to understand.

The XSLT Documentation Generator output provides you with a table of input and output element mappings. Information provided in the table includes:

- Source EBO or application business object (ABO) element
- Domain value mapping (DVM) table name
- Cross-reference (Xref) table name
- Conditions for the mapping
- Corresponding EBO or ABO mapping

XSLT Document Generator

Input File :OrderEBMToProdInfoDates
Created On :2008-11-19 23:08:25

Source	DVM	XRef	Conditions	Target
FOLine[corecom:Identification/BCID = $l_CurrentLine]/FOSchedule/OwnerPartyReference/CP_ACCID/BCID		"CP_ACCID"		PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/POID
FOLine[corecom:Identification/BCID = $l_CurrentLine]/IRReference/IRIdentification/BCID		"PROD_ID"		PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/OFFERING_OBJ
FOLine[corecom:Identification/BCID = $l_CurrentLine]/ItemReference/ItemIdentification/BCID		"ITEM_ID"		PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/PRODUCT_OBJ
/sordebo:FOLine[corecom:Identification/corecom:BCID = $l_CurrentLine]/sordebo:FOSchedule/sordebo:PurchaseDate				PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/PURCHASE_START_T
Function substring(Function Get Current Time( ), 1.0, Function number (Function orcl:last-index-within-string(Function Get Current Time( ), "-")))				PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/PURCHASE_START_T
/sordebo:FOLine[corecom:Identification/corecom:BCID = $l_CurrentLine]/sordebo:FOSchedule/sordebo:PurchaseDate				PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/PURCHASE_START_T
/sordebo:FOLine[corecom:Identification/corecom:BCID = $l_CurrentLine]/sordebo:FOSchedule/sordebo:PurchaseDate				PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/PURCHASE_START_T
/sordebo:FOLine[corecom:Identification/corecom:BCID = $l_CurrentLine]/sordebo:FOSchedule/sordebo:CycleStartDate				PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/CYCLE_START_T111
/sordebo:FOLine[corecom:Identification/corecom:BCID = $l_CurrentLine]/sordebo:FOSchedule/sordebo:CycleStartDate				PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/CYCLE_START_T___
/sordebo:FOLine[corecom:Identification/corecom:BCID = $l_CurrentLine]/sordebo:FOSchedule/sordebo:CycleStartDate				PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/CYCLE_START_T333__
Function substring(Function Get Current Time( ), 1.0, Function number (Function orcl:last-index-within-string(Function Get Current Time( ), "-")))				PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/CYCLE_START_T222
/sordebo:FOLine[corecom:Identification/corecom:BCID = $l_CurrentLine]/sordebo:FOSchedule/sordebo:CycleStartDate				PCM_OP_SUBSCRIPTION_SET_PRODINFO_inputFlist/PRODUCTS/CYCLE_START_T333

Sample output from the XSLT Doc Generator

The XSLT Documentation Generator can be used to enable consistent and semantic data mapping integrity by introspecting the mapping structure of the ABC service transformations provided by existing Oracle AIA PIPs.

Interoperability between ABC services is only possible if all ABC services that need to work together use the exact same mapping, the same DVM and Xref table names, and the right translation functions.

When developing a new ABC service to work with an existing PIP ABC service, you can use this tool to help identify the mapping semantics in an easier to understand format than the underlying XSL. However, in some cases, the transformation complexity may still necessitate looking up the detailed code in the XSL files.

The XSLT Documentation Generator also allows visual identification of extensions to delivered XSLT mappings. This enables you to review updated mappings when upgrading a PIP. This can help you identify conflicting or incompatible mappings provided by the newly upgraded PIP, which earlier, were handled through extensions. This can help pinpoint the implementation effort required for PIP upgrades in cases in which there were XSLT mapping extensions used with the original PIP.

Programming Models

This section discusses the following new programming models delivered with Oracle AIA Foundation Pack 2.3:

- Event Aggregation
- Guaranteed Message Delivery
- Publish-and-Subscribe

Event Aggregation

The Event Aggregation programming model provides a comprehensive methodology for business use cases in which event, entity, and message aggregation is necessary.

For example, Event Aggregation may be needed in a case in which multiple events are being raised before the completion of a business message, and each incomplete message triggers an event, which causes a business event in the integration layer.

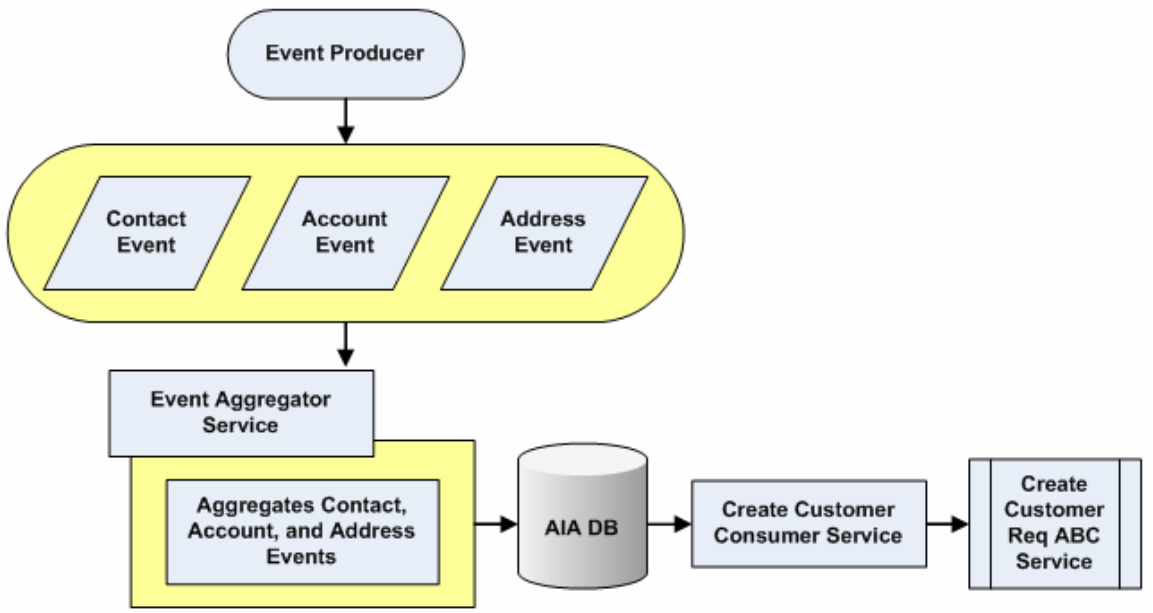
The Event Aggregation programming model helps to create a coarse-grained message (event) from fine-grained messages (events) generated at discrete intervals. The messages, which are generated at certain intervals, may be incomplete or duplicates.

The Event Aggregation programming model can be used for relationship- and time-based aggregation.

The Event Aggregation programming model provides the following:

- Synchronization of an entity, providing a single, holistic view of the entity
- Consolidation of several fine-grained events into a single coarse-grained event
- Merging of duplicates of the same event
- Increased performance

Parallel simulations of fine-grained applications usually generate a large number of messages. The overhead for sending these messages over a network can dramatically limit the speed of a parallel simulation. In this case, using the Event Aggregation programming model can increase the granularity of the application and reduce the communication overhead.



The Event Aggregation service raises a single coarse-grained event from multiple fine-grained events

Guaranteed Message Delivery

In the context of the Oracle AIA, guaranteed message delivery for the asynchronous message exchange pattern means that the message initiated from a sender is persisted until it is successfully delivered to and acknowledged by the receiver, if acknowledgement is expected.

The sender and receiver are not necessarily the participating applications. Rather, they are logical milestones in an Oracle AIA integration scenario. There could be multiple milestones in an Oracle AIA integration scenario.

Temporary unavailability of any hardware or software service in an asynchronous message flow does not result in a lost message or a delivery failure. The Guaranteed Message Delivery programming model provides a way for the message to be persisted until the hardware or software service becomes available.

Once an integration administrator has been notified of the unavailable resource by the Error Console, she can address the resource issue. The integration administrator can then use the Message Resubmission Utility to resubmit the persisted message into the integration scenario from the appropriate transaction milestone point, enabling its delivery to the next component or milestone.

For more information about the Message Resubmission Utility delivered in Oracle AIA Foundation Pack 2.3, see Message Resubmission.

The Guaranteed Message Delivery programming model involves implementing the following concepts:

- Configuring services between milestones
- Populating message resubmission values

- Configuring fault policies to not issue rollback messages
- Configuring all services to participate in a single global transaction

Publish-and-Subscribe

There are multiple integration scenarios in which participating applications publish events and messages that are subscribed to by multiple participating applications. This pattern is transactional in the sense that changes are made to the object instances in the participating applications. These scenarios require an asynchronous and durable implementation model.

The Publish-and-Subscribe programming model applies to the following scenario types:

- One publisher, multiple subscribers

  In this case, a Master Data Management (MDM) application is the master application or a participating application is the master application. For example, Oracle Customer Hub (OCH), an MDM application, is the Customer master or the Siebel CRM participating application is the Customer master.

  Customer information can be created, updated, and deleted in multiple participating applications and sent to the master application or MDM for updating, cleaning, and validation.

  Subsequently, the master application or MDM, as the single source of truth, publishes the customer information for multiple subscribing participating applications to consume.

- Multiple publishers, multiple subscribers

  In this case, there is a bi-directional synchronization of object instances with no application designated as a master. Multiple applications participating in the integration scenario can create, update, and delete the same entity and publish those changes. These changes are picked up by subscribing applications. Oracle AIA services should provide features that enable filtering and routing to subscribing applications.

The Oracle AIA Publish-and-Subscribe programming model walks through solutions for these scenario types and lists possible development activities. The model also provides instructions for accomplishing these development activities.

Resequencing in the Asynchronous Message Exchange Pattern

In the Oracle AIA asynchronous message exchange pattern, participating applications push messages to the Oracle AIA layer and are processed in a store-and-forward fashion. In this situation, there is a need to process messages pertaining to the same entity in the same sequence in which they are generated. In addition, there is a need to ensure guaranteed delivery of messages to the destination.

The Oracle SOA Suite 10.1.3.4 ESB Resequencer helps to ensure the sequence of processing. Oracle AIA Foundation Pack 2.3 provides details for setting up and using the Oracle ESB Resequencer to achieve appropriate sequencing in the context of the Oracle AIA asynchronous message exchange pattern.

Additional Resources

There are additional resources that can help your organization learn more about this release.

Resource	Navigation
User Guides	My Oracle Support: Knowledge > Oracle Applications > Integrations > Application Integration Architecture > Oracle Application Integration Architecture Foundation Pack Classic MetaLink: Knowledge > Application Integration Architecture > Foundation Pack
Installation and Upgrade Guide	My Oracle Support: Knowledge > Oracle Applications > Integrations > Application Integration Architecture > Oracle Application Integration Architecture Foundation Pack Classic MetaLink: Knowledge > Application Integration Architecture > Foundation Pack

Visit the Oracle Metalink website frequently to keep apprised of ongoing changes.

For other sources of documentation, visit Oracle Technology Network: Oracle Documentation.

For training opportunities, visit Oracle University.