

Oracle® Application Integration Architecture

Order Management Integration Pack for Oracle Transportation Management, Oracle E-Business Suite and Siebel CRM Implementation Guide

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Preface

Welcome to *Oracle Application Integration Architecture Order Management Integration Pack for Oracle Transportation Management, Oracle E-Business Suite and Siebel CRM Implementation Guide*.

Common Oracle AIA Pre-Built Integration Guides

Oracle Application Integration Architecture Pre-Built Integrations 11.1 includes the following guides shared by all products delivered with this release:

- Oracle Application Integration Architecture Installation and Upgrade Guide for Pre-Built Integrations Release 11.1

This guide provides an overview of the installation process, including how to install, configure, and deploy your pre-built integrations. The steps required to upgrade your pre-built integrations to the latest release are also provided.

- Oracle Application Integration Architecture Pre-Built Integrations 11.1: Utilities Guide

This guide describes:

- How to work with and configure Session Pool Manager (SPM), which is a service in the Oracle SOA Suite web server whose primary function is to manage a pool of web server session tokens that can be reused by BPEL flows.
- How to deploy and configure the AIACompositeScheduler. This is a utility component that is used by pre-built integrations to schedule a service-oriented architecture (SOA) composite to be invoked at the specified time interval.

- Oracle Application Integration Architecture Pre-Built Integrations 11.1: Product-to-Guide Index

The Product-to-Guide index lists the guides that provide information for each product delivered in this release.

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Additional Resources

The following resources are also available:

- **Oracle Application Integration Architecture Foundation Pack:**

Oracle AIA Pre-Built integrations require Foundation Pack 11.1.1.5.0 to be installed. Refer to the Foundation Pack documentation library on OTN to download the Foundation Pack guides at http://download.oracle.com/docs/cd/E21764_01/aia.htm.

- **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:**

Oracle Technology Network:
<http://www.oracle.com/technetwork/index.html>

Part I

Understanding the Delivered Process Integrations

This part contains the following chapters:

- [Chapter 1, "Oracle Order Management Integration Pack for OTM, Oracle EBS, and Siebel CRM"](#)
- [Chapter 2, "Process Integration for Customers"](#)
- [Chapter 3, "Process Integration for Location"](#)
- [Chapter 4, "Process Integration for Product"](#)
- [Chapter 5, "Process Integration for Query Transportation Order Itinerary"](#)
- [Chapter 6, "Process Integration for Order"](#)
- [Chapter 7, "Process Integration for Order Status"](#)

Oracle Order Management Integration Pack for OTM, Oracle EBS, and Siebel CRM

This chapter provides an overview of the Oracle Order Management Integration Pack for Oracle Transportation Management (OTM), Oracle E-Business Suite (EBS), and Siebel Customer Relationship Management (CRM) and includes the following sections:

- [Section 1.1, "Overview"](#)
- [Section 1.2, "Participating Applications"](#)
- [Section 1.3, "Business Process Flows"](#)
- [Section 1.4, "Assumptions and Constraints"](#)

1.1 Overview

Oracle Order Management process integration pack (PIP) provides streamlined and end-to-end order management business process flows that enable faster time to process the transportation orders and market new products and services.

This PIP interacts with the applications, such as Siebel CRM, Oracle Transportation Management (OTM), and Oracle E-Business Suite to enable the integration process.

The Transportation Order Management PIP enables you to synchronize Siebel customer information to Oracle E-Business Suite and OTM. It also enables you to synchronize location and product information from Siebel to OTM. An order is rated in Siebel from OTM and subsequently synchronized in OTM upon submission, and any change in order status in OTM is synchronized back to Siebel.

1.1.1 Key Benefits

The Transportation Order Management PIP provides these key benefits:

- Customer is kept up to date in Siebel CRM, OTM, and Oracle E-Business Suite. By having a single view of the customer, they can be served better by providing the correct products and services, up-sell and cross-sell, and so on.
- Order capturing (Siebel) and order fulfillment system (OTM) should have up-to-date, correct information about customers, locations, and products for order rating, capture, and execution.
- No manual revision of order release or sell shipment is necessary in the fulfillment (OTM) system.

- Improved customer service representative (CSR) productivity because CSR and sales representatives can execute a rating query from the order capture system (Siebel CRM) into the rating engine to provide the customer with various options about itineraries (rates and routing).
- Increased operational efficiencies because data is not manually replicated.
- Pre-integrated solution leads to lower cost and lower risk for implementation.
- Faster time from order capture to shipment delivery and then to invoicing.
- Improved customer service because real-time synchronization leads to better service to customers.
- Enhanced customer visibility and accuracy.
- Faster time-to-market with new products and services.

1.1.2 Security

Oracle Order Management Integration Pack has been enhanced with Oracle Web Services Manager (OWSM), which enables attaching OWSM policies to services and passing the OTM password information through csf-keys.

For more information about security validation and csf-key, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack*, "Working with Security" and *Oracle Fusion Middleware Installation Guide for Oracle Application Integration Architecture Foundation Pack*.

1.2 Participating Applications

This section provides an overview of the participating applications in the PIP.

1.2.1 Siebel CRM and Order Management

- Siebel applications maximize sales effectiveness in real time by accelerating the quote-to-cash process, aligning sales channels, increasing pipeline and win rates, and raising average transaction values.
- Siebel Order Management enables employees such as salespeople and call center agents to create and manage orders through their entire life cycle.

You can closely integrate Siebel Order Management with back-office systems, which enables users to perform tasks such as confirming availability and monitoring the fulfillment process.

- Create orders for new products and services.
- Modify in-process orders that have been submitted for fulfillment.

For more information about Siebel CRM, see Siebel CRM product documentation.

1.2.2 Oracle Transportation Management

OTM allows organizations to gain control of transportation and logistics operations while minimizing costs and eliminating inefficient and redundant procedures. It is a single, web-architected application for all the transportation needs that combines broad logistics capabilities with deep transportation-management functionality.

For more information about OTM, see Oracle Transportation Management product documentation

1.2.3 Oracle E-Business Suite

Oracle trading community architecture (TCA) enables you to manage complex information about the parties or customers who belong to your commercial community, including organizations and locations. The information is maintained in TCA is the single source of trading community information for Oracle E-Business Suite applications. These applications, and TCA itself, provide user interfaces and other features for you to view, create, and update customer information.

For more information about TCA, see Oracle E-Business Suite TCA documentation.

1.3 Business Process Flows

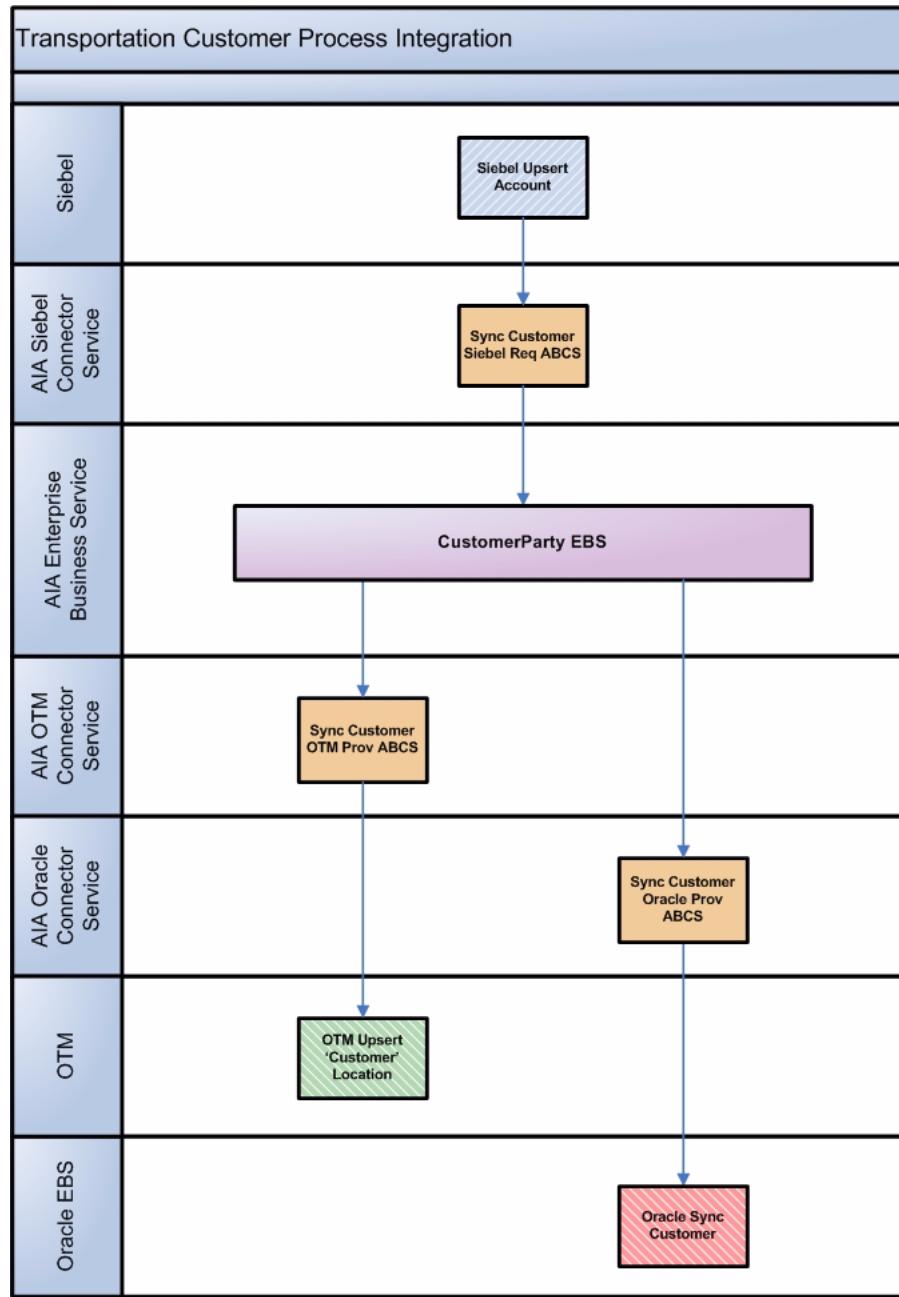
The Transportation Order Management PIP consists of these integration flows:

- Synchronizing Customer
- Synchronizing Location
- Synchronizing Product
- Querying Order Itinerary (Rates and Routes)
- Synchronizing Order and Order Status

The main focus of this integration is to support the Transportation Order Management business flow that spans the three participating applications.

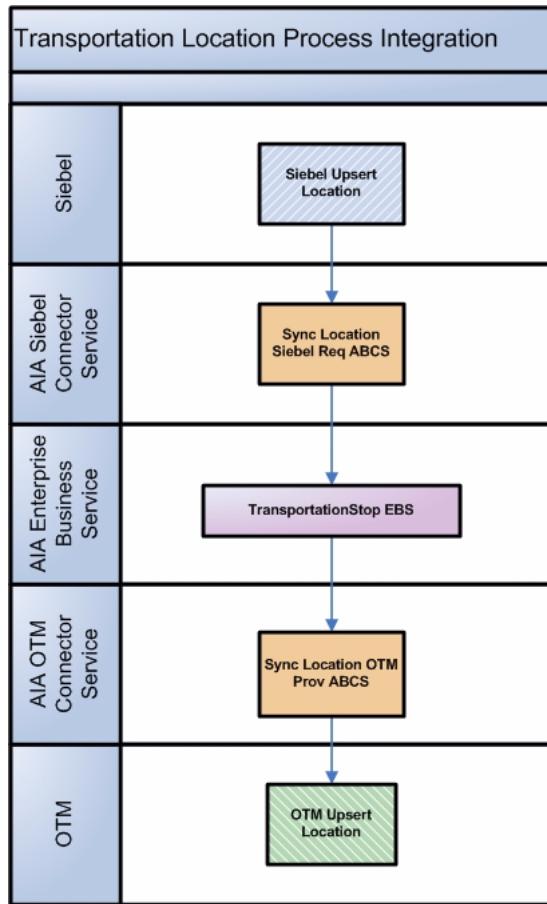
1.3.1 Synchronizing Customer Integration

[Figure 1-1](#) shows the customer process integration:

Figure 1–1 Transportation Customer Process Integration Flow

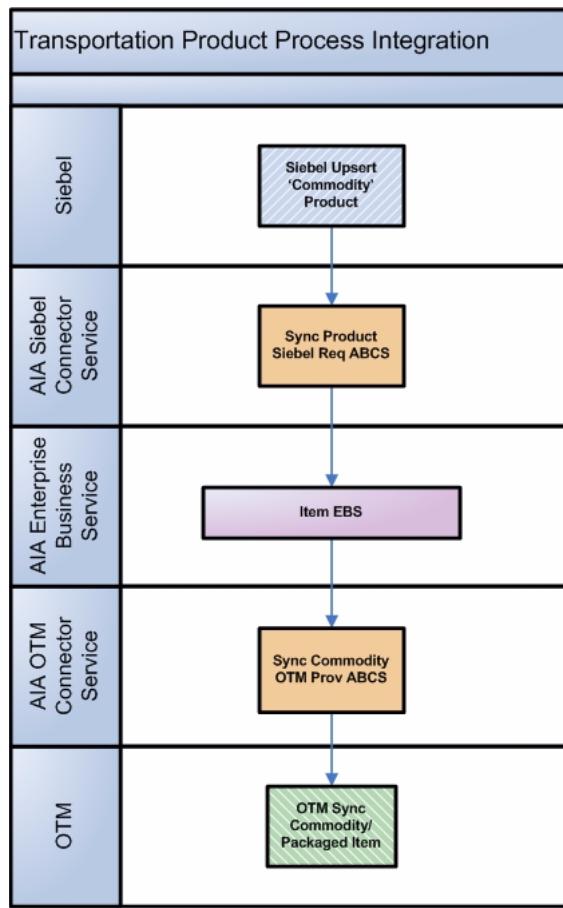
1.3.2 Synchronizing Location Integration

Figure 1–2 shows the location process integration:

Figure 1–2 Transportation Location Process Integration Flow

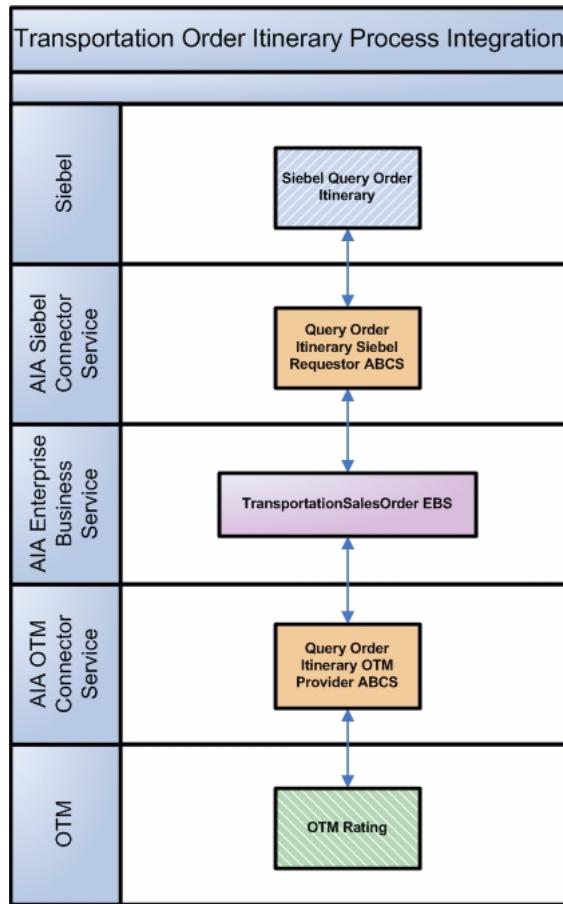
1.3.3 Synchronizing Product Integration

Figure 1–3 shows the product process integration:

Figure 1–3 Transportation Product Process Integration Flow

1.3.4 Querying Order Itinerary and Rate Integration

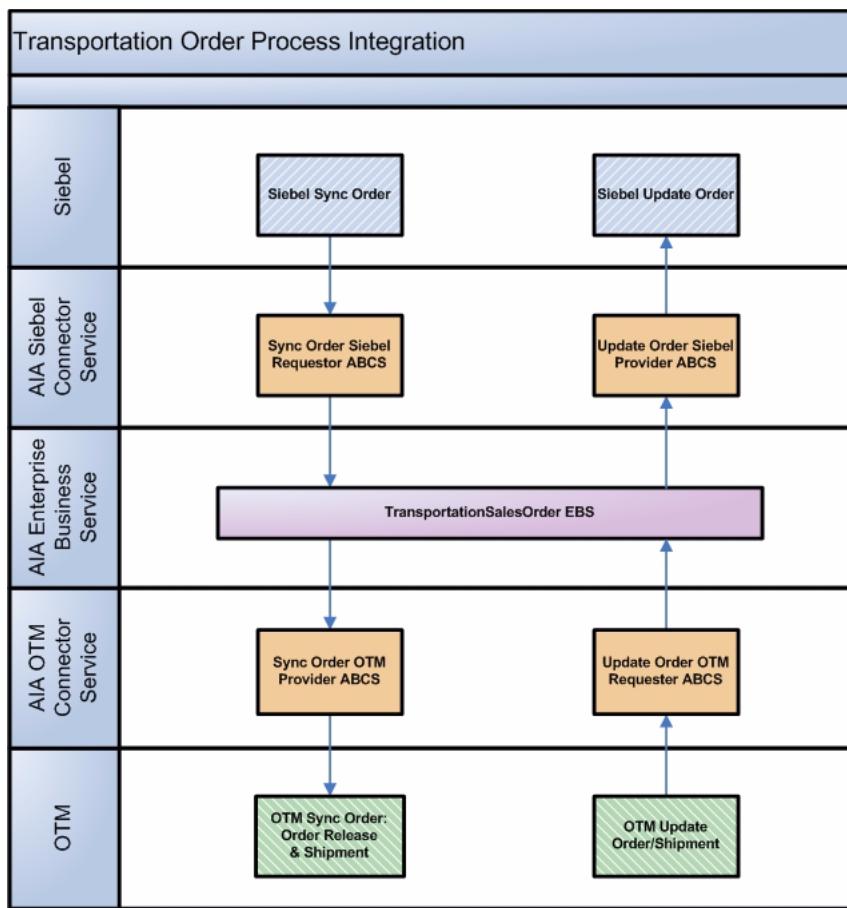
Figure 1–4 shows the query order itinerary process integration:

Figure 1–4 Transportation Order Itinerary Process Integration Flow

1.3.5 Synchronizing Order and Order Status Integration

Figure 1–5 shows the order process integration:

Figure 1–5 Transportation Order Process Integration Flow



1.4 Assumptions and Constraints

These are the assumptions and constraints for the Transportation Order Management PIP:

- This integration supports the business-to-business Transportation Order Management flows, but not the business-to-customer scenarios.
- The customer accounts in Siebel (tendering party, liable party, invoice to party) should be synchronized as part of customer synchronization. Customers must be synchronized before they can be used in order flow.
- Siebel commodity products should be synchronized to commodity and packaged items of OTM before the order flow.
- The locations in the source, destination, or any other stop should also be synchronized as part of the location flow. Locations must be set up and synchronized to OTM before they are used in order flow.
- The accessorial and the special services (actions) setup are done manually.
- No initial bulk load of any data exists between any applications.
- Deleting an order in Siebel is not supported.
- Delivered support is for Siebel SIA version only.

Process Integration for Customers

This chapter provides an overview of the process integration for customers and includes the following sections:

- [Section 2.1, "Overview"](#)
- [Section 2.2, "Business Process Flows"](#)
- [Section 2.3, "Assumptions and Constraints"](#)
- [Section 2.4, "Siebel CRM Interfaces"](#)
- [Section 2.5, "Oracle E-Business Suite Interfaces"](#)
- [Section 2.6, "Oracle Transportation Management Interfaces"](#)
- [Section 2.7, "Core Application Integration Architecture Components"](#)
- [Section 2.8, "Integration Services"](#)

2.1 Overview

The process integration for creating and synchronization of customer accounts between Siebel, E-Business Suite, and Oracle Transportation Management (OTM) involves these integrations:

- Synchronize create account from Siebel CRM to OTM and Oracle E-Business Suite.
- Synchronize update account from Siebel CRM to OTM and Oracle E-Business Suite.

Customers are important for any transportation order. In Siebel, the customers are created as accounts. These accounts must be in OTM for execution of the order and the same accounts must be in Oracle E-Business Suite for billing purpose.

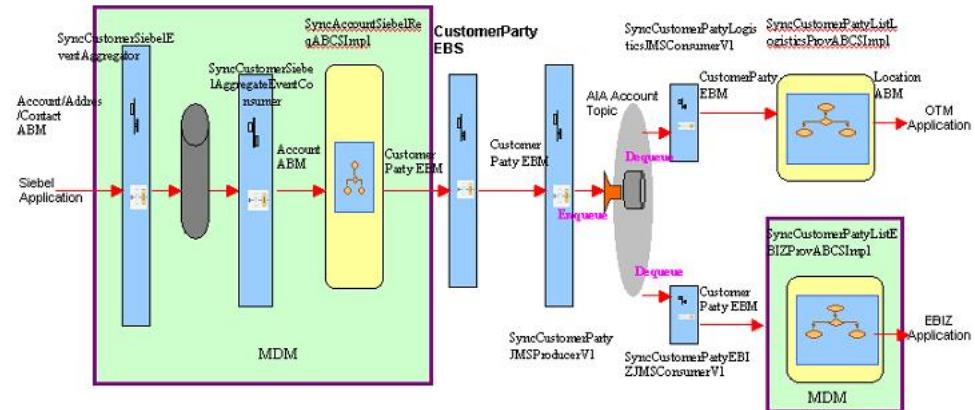
2.2 Business Process Flows

In this integration, Siebel sends accounts to OTM and Oracle E-Business Suite. Whenever a new account is created in Siebel, a real-time synchronization flow is initiated to synchronize it to a customer account in Oracle E-Business Suite. A new location and the corresponding corporation are created in OTM simultaneously for that Siebel account.

The addresses of the Siebel account are synchronized to Oracle E-Business Suite to create locations, party sites, and account sites are synchronized as separate locations in OTM. The Bill To and Ship To address relationships from Siebel are synchronized to Party Site Use and Account Site Use in Oracle E-Business Suite and to Location Roles in OTM.

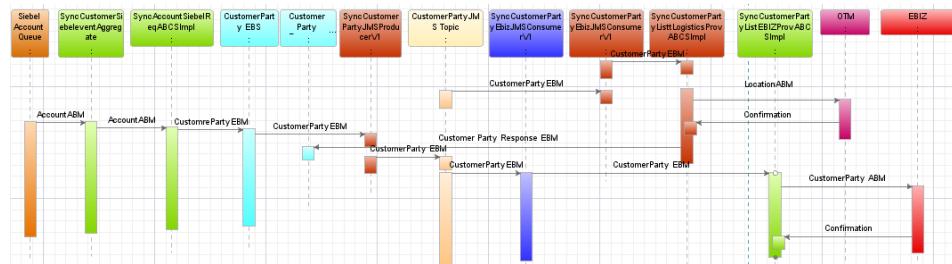
If an update to a customer record or any of the details, for example, addresses, contacts occurs in Siebel, the updated account record is synchronized to both OTM and Oracle E-Business Suite.

Figure 2–1 Customer Process Integration Flow



2.2.1 Synchronizing Account Information

Figure 2–2 Incremental Changes in the Account Sequence Diagram



Siebel application can send one of these messages:

- Account Message - This message contains the details about an account and its associated addresses and contacts. This message is sent to SyncAccountSiebelReqABCSImpl requester process. The requester process converts the message to SyncCustomerPartyListEBM and sends it to CustomerPartyEBS. From enterprise business service (EBS), the message then flows through the OTM provider and E-Business Suite provider to create the entries in the respective systems.
- Address Message - This message comes to application integration architecture (AIA) layer when an address is modified in Siebel. Siebel sends an address message that contains the changed address data and all the associated accounts and locations for that address. Master data management (MDM) code then deciphers that message, picks up the associated accounts, and for each account it creates an account message and sends it to the MDM account requester. The requester then processes the message in the same manner as described in account message.
- Contact Message - This message comes to AIA layer when a contact is modified in Siebel. Siebel sends a contact message that contains the changed contact data and all the associated accounts and locations for that contact. The MDM code then

deciphers that message, picks up the associated accounts, and for each account it creates an account message and sends it to the MDM account requester. The requester then processes the message in the same manner as described in account message.

2.3 Assumptions and Constraints

These are the solution assumptions and constraints:

- Only B2B (business to business) scenarios are supported. B2C (business to customer) scenarios are not supported.
- Siebel contacts are synchronized as account contacts to Oracle E-Business Suite, and not as person parties in Oracle E-Business Suite; however, contacts related to synced locations are synced to OTM.
- Deletion of accounts, contacts, or address associated to a customer is not supported in the synchronization.
- If any error occurs and the customer message does not reach the target application, then AIA error handling framework notifies you. You should then manually re-submit that transmission that failed for re-processing.
- This integration does not perform any business validation and thus does not raise errors for business data issues.
- The customer integration only supports the synchronization of accounts (and its addresses and contacts).
- Contacts can be shared across to multiple accounts in Siebel. In OTM, the same contact cannot be associated to multiple locations. Thus, if a contact is associated to two different locations in Siebel, then the same contact is created twice in OTM for each location.
- Prospect contacts are not synchronized from Siebel.
- Account hierarchy synchronization is not in the scope of this release.
- The process integration pack for Oracle Customer Hub master data management is used for transformation from Siebel to enterprise business object (EBO) and Oracle E-Business Suite provider (EBO to Oracle E-Business Suite) transformation.
- OTM domain value is derived from business unit mapping in cross-references. If you want to use a specific logic for deriving the domain, you must use the extensible transformation template.
- The OTM specific columns in cross-references are populated based on the identifiers derived in the OTM connector. If you want to pass a different value in the OTM identifier, you can use the transformation's extensibility to update the cross-reference as well.

The direction of data flow is only from Siebel to OTM and Oracle E-Business Suite. The reverse data flow is not supported in this integration. If any customer data is modified or created in OTM or Oracle E-Business Suite, those changes are not reflected in Siebel. Any subsequent synchronization of the same data from Siebel to OTM or Oracle E-Business Suite may overwrite the changes made in OTM or Oracle E-Business Suite.

2.4 Siebel CRM Interfaces

The schemas available for this outbound integration from Siebel are:

- Account schema

- Change Address schema
- Change Contact schema

For more information about Siebel customer WSDL and schema definition, see Oracle Customer Master Data Management Integration documentation.

2.5 Oracle E-Business Suite Interfaces

For more information about Oracle E-Business Suite web services definition language (WSDL) and schema definition, see Oracle Customer Master Data Management Integration documentation.

For more information about Oracle E-Business Suite web services and documentation prior to Release 12.1.3, see the library on Oracle Technology Network:

<http://www.oracle.com/technetwork/documentation/applications-167706.html?>

For Oracle E-Business Suite documentation for R12.1.3 and beyond, see this library:

http://download.oracle.com/docs/cd/E18727_01/index.htm.

2.6 Oracle Transportation Management Interfaces

The Oracle Transportation Management (OTM) provides an interface through a web service to connect to its application. This connectivity is established as a partner link in the provider service. The logistics web service on being called immediately returns an acknowledgment with a transmission number. When the processing is complete, it then sends a transmission report back indicating the success or the failure.

For more information about the Logistics Service, see *Oracle Transportation Management Integration Guide*.

2.7 Core Application Integration Architecture Components

The integration flow uses these components:

- CustomerPartyEBO
- CustomerPartyEBM

The core enterprise business object (EBO) and enterprise business message (EBM) XSD files can be located by EBO within the \$AIA_
HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/
parent folder.

The core enterprise business services (EBS) web services definition language (WSDL) files can be located by EBO within the \$AIA_
HOME/AIAMetaData/AIAComponents/EnterpriseBusinessServiceLibrary/Core/EB
O/ parent folder.

For detailed documentation of individual EBOs and EBMs, click AIA Reference Doc link on EBO and EBM detail pages in the 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*, "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 remain intact after a patch or an upgrade.

For more information, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack*, "Extensibility for AIA Artifacts.

2.8 Integration Services

The services delivered with the customer process integration are:

- SyncCustomerPartyListLogisticsProvABCImpl
- JMS Topic
- SyncCustomerPartyJMSProducerV1
- SyncCustomerPartyEbizJMSConsumerV1
- SyncCustomerPartyLogisticsJMSConsumer

2.8.1 SyncCustomerPartyListLogisticsProvABCImpl

The SyncCustomerPartyListLogisticsProvABCImpl service is a Business Process Execution Language (BPEL) process that receives SyncCustomerPartyListEBM as input from CustomerPartyListLogisticsJMSConsumerV1, transforms that message to Logistics application business message (ABM), and calls the Oracle Transportation Management (OTM) web service to process that message in OTM. Cross-reference values are populated upon successful message processing.

2.8.2 JMS Topic

A JMS topic receives a message from the customer party EBS and routes it to both OTM connector and Oracle E-Business Suite connector. The topic is created in the AIA database under the user JMSUSER. The topic name is AIA_CustomerPartyJMSTV1.

2.8.3 SyncCustomerPartyJMSProducerV1

This service publishes the SyncCustomerPartyListEBM JMS message from EBS into the topic.

This is a mediator service with JMS Adapter and a routing rule. It accepts SyncCustomerPartyListEBM as input from CustomerPartyEBSV2. The received Customer Party List enterprise business message (EBM) payload message is published into the JMS Topic AIA_CustomerPartyJMSTV1.

2.8.4 SyncCustomerPartyEbizJMSConsumerV1

SyncCustomerPartyEbizJMSConsumerV1service is a subscriber to the topic that dequeues the SyncCustomerPartyListEBM JMS message from the JMS Topic for Oracle E-Business Suite connector.

This is a mediator service with JMS Adapter. This adapter dequeues the SyncCustomerPartyListEBM message for the subscribed consumer from the JMS Topic AIA_CustomerPartyJMSTV1 and routes the message to the SyncCustomerPartyListEbizProvABCImpl provider service.

2.8.5 SyncCustomerPartyLogisticsJMSConsumer

SyncCustomerPartyLogisticsJMSConsumerV1 service is the other subscriber of the topic that dequeues the SyncCustomerPartyListEBM JMS message from the topic for logistics connector.

This is a mediator service with JMS Adapter. This adapter dequeues the SyncCustomerPartyListEBM message for the subscribed consumer from the JMS Topic AIA_CustomerPartyJMSTV1 and routes to the SyncCustomerPartyListLogisticsProvABCSImpl.

3

Process Integration for Location

This chapter provides an overview of the location process integration and includes the following sections:

- [Section 3.1, "Overview"](#)
- [Section 3.2, "Business Process Flows"](#)
- [Section 3.3, "Assumptions and Constraints"](#)
- [Section 3.4, "Siebel CRM Interfaces"](#)
- [Section 3.5, "Oracle Transportation Management Interfaces"](#)
- [Section 3.6, "Core Application Integration Architecture Components"](#)
- [Section 3.7, "Integration Services"](#)

3.1 Overview

In Siebel CRM, the locations are created separately from an address or an account. In Oracle Transportation Management (OTM) these locations are required for execution of the order.

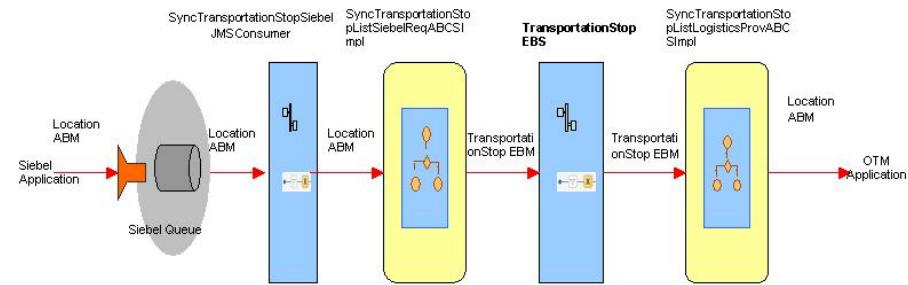
In this integration process Siebel sends locations to OTM. Whenever a location is created or updated in Siebel, a corresponding location record is created or updated in OTM. When an address, contact, or Bill To/Ship To details change in Siebel, all impacted locations and roles are synchronized to reflect the changes in OTM.

3.2 Business Process Flows

The process integration for location supports these integration flows:

- Creating Location
- Updating Location

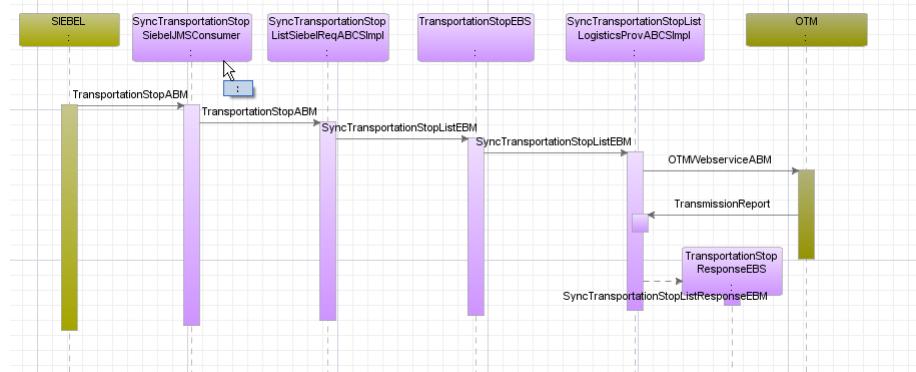
[Figure 3–1](#) shows the process integration for location:

Figure 3–1 Process Integration for Location Flow

The location process integration flow diagram displays the design where Siebel sends the location message to a queue. A JMS consumer reads the message, and sends it to the requester. The Siebel message is transformed to SyncTransportationStopListEBM in requester connector, and the requester connector sends the enterprise business message (EBM) message to Enterprise Business Service (EBS). The EBS routes the message to Oracle Transportation Management (OTM) provider. Then provider connector transforms the EBM to logistics schema and sends that logistics message to OTM web service to create location in OTM.

3.2.1 Synchronizing Location Information

Figure 3–2 shows the synchronization or location:

Figure 3–2 Synchronization or Location Sequence Diagram

3.2.2 Overall Integration Flow

Addresses and contacts are created independently of a location. When you create a location, you associate addresses and contacts with that location. When you synchronize the location to OTM, it creates a new location, and the address information is attached with that location in OTM. OTM creates new contacts for each associated contact.

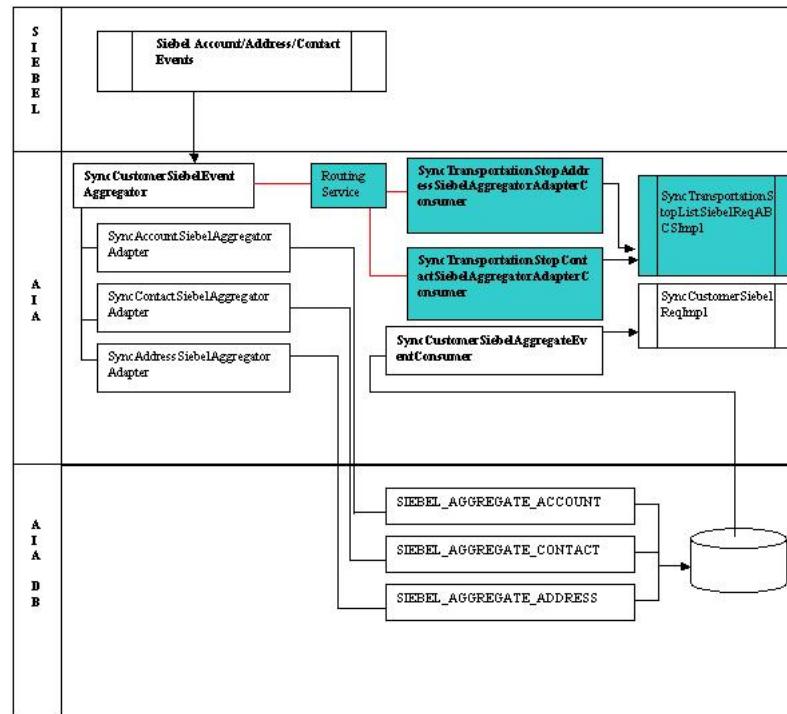
If you update any of the address or contact information in Siebel, you must change all corresponding locations to reflect the changes. For example, when you change an address in Siebel, it sends out an address message with a list of affected locations and accounts. Similarly, if you change a contact, it sends out a contact message with the list of affected locations and accounts. The system sends these messages to the Master Data Management (MDM) aggregator process.

The existing MDM process receives these messages, goes through the list of accounts, and prepares the account message. For these account messages, it calls the account

integration flow. Since location is a new object, MDM cannot update the data for affected locations; to address this gap, it adds new services to the MDM aggregator process.

Figure 3-3 illustrates the new services added in the MDM Aggregator scheme. The new services are indicated in blue boxes.

Figure 3-3 MDM Aggregator Scheme - New Services



3.3 Assumptions and Constraints

These are the solution assumptions and constraints for the Transportation Order Management PIP:

- This process integration does not support initial loading of existing location data.
- This process integration does not support delete operations for the location, contacts, or roles on accounts.
- You create contacts once in Siebel and associate them to multiple locations. In Oracle Transportation Management (OTM), the same contact cannot be associated to multiple locations. Thus, if you associate a contact to two different locations in Siebel, then you must create the same contact in OTM for each location.
- If an error occurs in the service layer and the location message does not reach the target application, then the AIA error handling framework notifies you. You should resubmit the failed transmission manually for reprocessing.
- This process integration does not perform any business validation; thus, it does not raise errors for those business validation issues.
- The location integration only supports the synchronization of locations.

- Oracle Transportation Management (OTM) domain value is derived from business unit mapping. If you want to use some logic for deriving the domain, you must use the extensible transformation template.
- The system populates the OTM-specific columns in cross-references based on the identifiers derived from main transformation to OTM. If you want to pass a different value in the OTM identifier, you must also use the extensibility of transformation to update the cross-reference.
- The list of accounts for a location from Siebel is stored till enterprise business message (EBM). OTM provider does not use the data stored in EBM since OTM does not allow multiple accounts to be associated with a location.
- To use the aggregator services with location flow, set aggregator service properties to *true* in the AIA configuration file (they are set to *false* by default).
- To synchronize a location, parent account information is mandatory. The selected parent account data is assumed to be synchronized before location information is synchronized.
- Siebel locations are not synchronized to Oracle E-Business Suite.

This integration flows in only one direction, Siebel to OTM. Any changes in OTM location or any new location created in OTM are not synchronized back to Siebel.

3.4 Siebel CRM Interfaces

These three schemas are available for this integration from Siebel:

- Location schema
- Change Address schema
- Change Contact schema

For more information about Siebel customer web services definition language (WSDL) and schema definition, see Oracle Customer Master Data Management Integration documentation

3.5 Oracle Transportation Management Interfaces

Oracle Transportation Management provides an interface through a web service to connect to its application. This connectivity is established as a partner link in the provider service. When called, the logistics web service immediately returns an acknowledgment with a transmission number. After processing is complete, it sends a transmission report back indicating the success or the failure of the process.

For more information about the Logistics Service, see *Oracle Transportation Management Integration Guide*

3.6 Core Application Integration Architecture Components

The integration flow uses these components:

- TransportationStopEBO
- SyncTransportationStopListEBM

The core enterprise business object (EBO) and enterprise business message (EBM) XSD files can be located by EBO within the \$AIA_

HOME/AIA_MetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/parent folder.

The core enterprise business services (EBS) web services definition language (WSDL) files can be located by EBO within the \$AIA_HOME/AIA_MetaData/AIAComponents/EnterpriseBusinessServiceLibrary/Core/EB O/ parent folder.

For detailed documentation of individual EBOs and EBMs, click AIA Reference Doc link on EBO and EBM detail pages in the 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*, "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 remain intact after a patch or an upgrade.

For more information, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack*, "Extensibility for AIA Artifacts.

3.7 Integration Services

These services are delivered with this integration:

- SyncTransportationStopSiebelJMSConsumer
- SyncTransportationStopListSiebelReqABCSImpl
- TransportationStopEBS
- TransportationStopResponseEBS
- SyncTransportationStopListLogisticsProvABCSImpl
- SyncTransportationStopAddressSiebelAggregatorAdapterConsumer
- SyncTransportationStopContactSiebelAggregatorAdapterConsumer
- SyncTransportationStopAggregatorRoutingService

3.7.1 AIA Transportation Stop Queue

The transportation stop queue is used to queue Siebel location messages. This is an AQ. This queue resides on any Oracle database. For this integration, this queue is located on the AIA database. The topic name is AIA_SiebelTransportStopJMSQ.

3.7.2 SyncTransportationStopSiebelJMSConsumer

SyncTransportationStopSiebelJMSConsumer is the consumer for the JMS queue that is invoked when Siebel sends a location message to the AIA_SiebelTransportStopJMSQ queue. This service routes and invokes the SyncTransportationStopListSiebelReqABCSImpl service.

3.7.3 SyncTransportationStopListSiebelReqABCSImpl

SyncTransportationStopListSiebelReqABCSImpl is a BPEL process that receives Siebel Location application business message (ABM) as input from the Siebel system and transforms that message to SyncTransportationStopListEBM. After successful transformation, the process performs mapping and also populates the enterprise

business message (EBM) header and cross-reference tables. This BPEL process invokes TransportationStopEBS with SyncTransportationStopListEBM as input.

3.7.4 TransportationStopEBS

TransportationStopEBS is an Enterprise Business Service. This service is used to route all location related actions like CreateTransportationStopList, QueryTransportationStop, SyncTransportationStopList, and UpdateTransportationStopList, and so on.

3.7.5 TransportationStopResponseEBS

TransportationStopResponseEBS is an Enterprise Business Service. This service is used to route all location related actions like CreateTransportationStopListResponse, QueryTransportationStopResponse, SyncTransportationStopListResponse and UpdateTransportationStopListResponse, and so on.

3.7.6 SyncTransportationStopListLogisticsProvABCSImpl

SyncTransportationStopListLogisticsProvABCSImpl is a BPEL process that receives the SyncTransportationStopListEBM as a request from the TransportationStopEBS and invokes the logistics web service. The web service immediately sends an acknowledgment and sends a transmission report about the success or failure of the data sent to Oracle Transportation Management (OTM). After the location is successfully processed in OTM, this process updates cross-reference data with OTM information.

3.7.7 SyncTransportationStopAddressSiebelAggregatorAdapterConsumer

SyncTransportationStopAddressSiebelAggregatorAdapterConsumer is a BPEL process. It receives Siebel Address application business message (ABM) as an input from the SyncCustomerSiebelEventAggregator, returns a Siebel location ABM message, and invokes the SyncTransportationStopSiebelReqABCSImpl service.

3.7.8 SyncTransportationStopContactSiebelAggregatorAdapterConsumer

SyncTransportationStopContactSiebelAggregatorAdapterConsumer is a BPEL process. It receives Siebel contact ABM as input from the account aggregator service SyncCustomerSiebelEventAggregator and transformed to Siebel location ABM and invokes the SyncTransportationStopSiebelReqABCSImpl service.

3.7.9 SyncTransportationStopAggregatorRoutingService

This is a mediator service that routes the ABM message received from SyncCustomerSiebelEventAggregator to SyncTransportationStopAddressSiebelAggregatorAdapterConsumer or SyncTransportationStopContactSiebelAggregatorAdapterCons.

4

Process Integration for Product

This chapter provides an overview of the process integration for product and includes the following sections:

- [Section 4.1, "Overview"](#)
- [Section 4.2, "Business Process Flows"](#)
- [Section 4.3, "Assumptions and Constraints"](#)
- [Section 4.4, "Siebel CRM Interfaces"](#)
- [Section 4.5, "Oracle Transportation Management Interfaces"](#)
- [Section 4.6, "Core Application Integration Architecture Components"](#)
- [Section 4.7, "Integration Services"](#)

4.1 Overview

In Transportation Order Management process integration pack (PIP), Siebel has four different types of products:

- Commodity
- Transportation
- Accessorial
- Special Services

Whenever a product is created or updated in Siebel, a synchronization flow is initiated to route these to AIA layer. However, AIA routes only the product type of commodity to OTM.

For every commodity type product from Siebel, these objects are created, updated, or both in OTM:

- Item
- Commodity
- Packaged Item

One-to-one mapping should exist among the item, commodity, and packaged item in OTM.

- The transportation order in Siebel has certain order lines that have product of type commodity associated to them.
- In OTM application, the order release has release lines and ship units associated to it.

- In the release line, the packaged item is associated to it, whereas in the release ship unit, a commodity is associated.
- Additionally in OTM, the packaged item is referred to in the ship unit in the sell shipment.

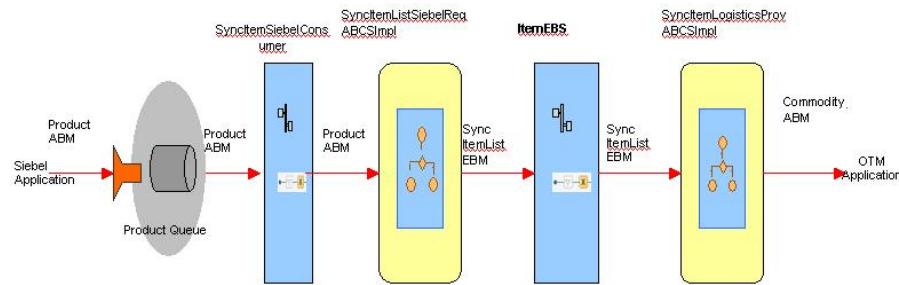
The process integration for product supports these integration flows:

- Creating product
- Updating product

4.2 Business Process Flows

[Figure 4-1](#) shows the product process integration:

Figure 4-1 Product Process Integration Flow



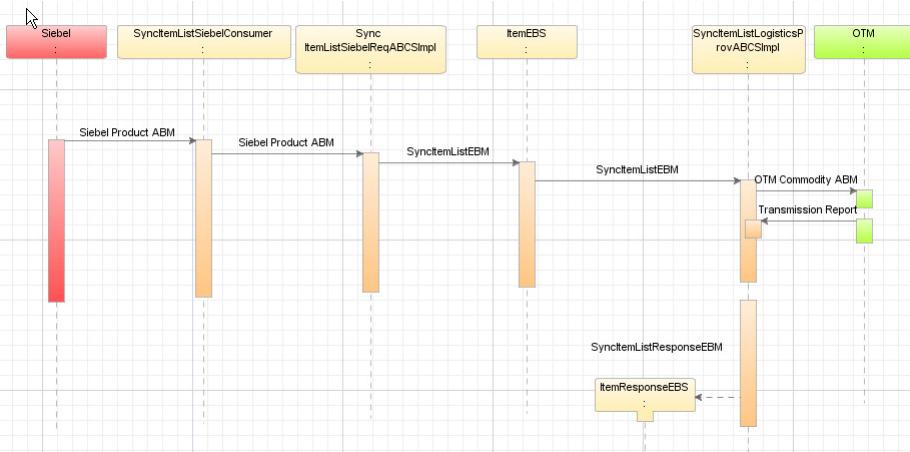
Whenever a product is created, updated, or both in Siebel, Siebel sends a message in their schema in a queue. AIA receives the message and converts it to the EBM format, and then converts the EBO into appropriate Oracle Transportation Management (OTM) format and finally sends it to OTM.

One-to-one mapping should exist among the item, commodity, and packaged item in OTM.

4.2.1 Synchronizing Product Information

When a product of type commodity is created or updated in Siebel, the updated record must be synchronized to OTM.

[Figure 4-2](#) shows the synchronization of a product details from Siebel to OTM:

Figure 4-2 Synchronizing Product Information from Siebel to OTM Sequence Diagram

4.2.1.1 Product Synchronization

The synchronization flow is described here:

1. Whenever a product is created or updated, Siebel publishes a product application business message (ABM).
2. The Siebel requester ABCS receives this message, transforms the ABM to enterprise business message (EBM), updates the Siebel, and invokes the ItemEBS service.
3. The ItemEBS service routes this message to Oracle Transportation Management (OTM) Provider ABCS.
4. OTM Provider ABCS receives this enterprise business message (EBM), checks if the product type is commodity. If so, it transforms to OTM commodity ABM and invokes the OTM web service. It then waits for the transmission report from OTM.
5. After the transmission report is received, the OTM provider ABCS checks the status. If status is OK, it updates the OTM column in the ITEM_ITEMID cross-reference with the commodity GID.

4.3 Assumptions and Constraints

These are the solution assumptions and constraints:

- This synchronization does not support initial loading of existing data of products.
- No delete transactions exist for product records.
- This integration synchronizes only products of type commodity to the OTM application.
- If any error occurs in the service layer, AIA error handling framework is invoked. You should manually resubmit that transmission at various places that failed for reprocessing.
- This integration does not validate and raise errors due to any business validation failure in OTM. It assumes such validations happen in OTM system.
- This integration supports only synchronization of products whenever a product is created or updated.

- Oracle Transportation Management (OTM) domain value is derived from business unit mapping. If you want to use your own logic for domain, you must use the extensible transformation template.
- The provider side cross-references are populated based on the identifiers passed from main transformation to OTM. If you want to pass a different value in the OTM identifier, use the extensibility of the transformation to update the cross-reference.

4.4 Siebel CRM Interfaces

Use the Siebel product schema for this integration.

4.5 Oracle Transportation Management Interfaces

OTM provides an interface through a web service to connect to its application. This connectivity is established as a partner link in the provider service. The logistics web service immediately returns an acknowledgment with a transmission number. After processing is complete, it then sends a transmission report back indicating success or failure.

4.6 Core Application Integration Architecture Components

The integration flow uses these components:

- Item EBO
- Item EBM

The core enterprise business object (EBO) and enterprise business message (EBM) XSD files can be located by EBO within the \$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ parent folder.

The core enterprise business services (EBS) web services definition language (WSDL) files can be located by EBO within the \$AIA_HOME/AIAMetaData/AIAComponents/EnterpriseBusinessServiceLibrary/Core/EB O/ parent folder.

For detailed documentation of individual EBOs and EBM, click AIA Reference Doc link on EBO and EBM detail pages in the 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*, "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 remain intact after a patch or an upgrade.

For more information, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack*, "Extensibility for AIA Artifacts".

4.7 Integration Services

These are the services delivered with this integration:

- Siebel Product Queue

- SyncItemSiebelConsumer
- SyncItemListSiebelReqABCSImpl
- ItemEBS
- SyncItemListLogisticsProvABCSImpl

4.7.1 Siebel Product Queue

Siebel Product Queue is used to queue Siebel product messages. This queue can reside on any Oracle database. For this integration, the AIA database is used as the place for this queue.

4.7.2 SyncItemSiebelConsumer

This service is invoked the moment Oracle Transportation Management (OTM) enqueues a message into AIA_SiebelItemJMSQueueV1 queue. This service routes and invokes the SyncItemListSiebelReqABCSImpl process.

4.7.3 SyncItemListSiebelReqABCSImpl

The SyncItemListSiebelReqABCSImpl is a BPEL process. This process receives the Siebel Product application business message (ABM) as input from Siebel system, transforms it to the SyncItemListEBM message, and invokes the ItemEBS service. In this transformation, in addition to mapping, the enterprise business message (EBM) Header and the cross-reference tables are populated.

4.7.4 ItemEBS

ItemEBS is the Enterprise Business Service to route all item related operations.

4.7.5 SyncItemListLogisticsProvABCSImpl

SyncItemListLogisticsProvABCSImpl is a BPEL Process. This process receives the SyncItemListEBM as input from the ItemEBS, transforms the input into the LogisticsWebServiceABM and invokes the LogisticsWebService. When logistics sends the transmission report and the status in the transmission report is success, it updates the cross-reference tables with OTM IDs.

Process Integration for Query Transportation Order Itinerary

This chapter provides an overview of the process integration for query transportation order itinerary and includes the following sections:

- [Section 5.1, "Overview"](#)
- [Section 5.2, "Business Process Flows"](#)
- [Section 5.3, "Assumptions and Constraints"](#)
- [Section 5.4, "Siebel CRM Interfaces"](#)
- [Section 5.5, "Oracle Transportation Management Interfaces"](#)
- [Section 5.6, "Core Application Integration Architecture Components"](#)
- [Section 5.7, "Integration Services"](#)

5.1 Overview

This integration flow enables Siebel users to query OTM for various itineraries, schedules, and their rates.

In the Siebel transportation order, you can query the ratings based on origin and destination location details, pickup and delivery time, and commodity (to be shipped) details. The corresponding OTM itineraries with details are pulled into Siebel solution view using AIA. You can select a solution and update the rate upon negotiation with the customer.

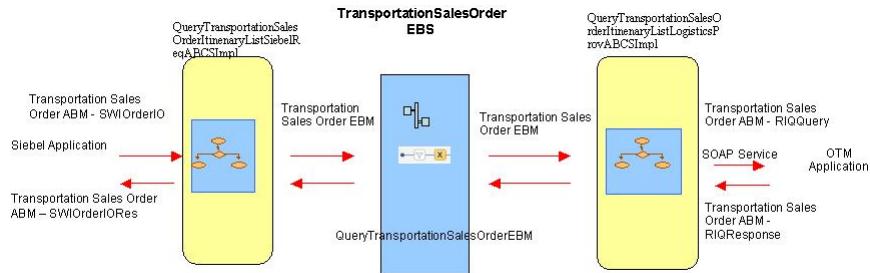
5.2 Business Process Flows

This integration flow supports these services:

- `QueryTransportationSalesOrderItineraryListSiebelReqABCSImpl`
- `TransportationSalesOrderEBS`
- `QueryTransportationSalesOrderItineraryListLogisticsProvABCSImpl`

5.2.1 Query Transportation Order Itinerary Process

Query transportation sales order process is a synchronous BPEL process. This process gets the itinerary information and rates from OTM and sends the data to Siebel for order confirmation.

Figure 5–1 Query Transportation Order Itinerary Process

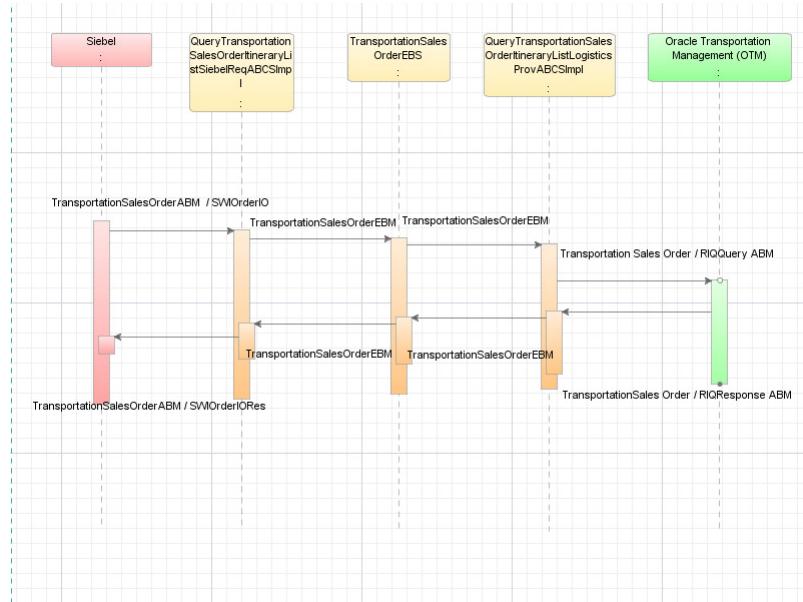
The overall flow is described here:

1. Siebel Application invokes the `QueryTransportationSalesOrderItineraryListSiebelReqABCSImpl` with the `SWIOrderIO` application business message (ABM) as an input.
2. If the `PreprocessABM` property is true in the AIA configuration file, then the `QueryTransportationSalesOrderItineraryListSiebelReqABCSImpl` service invokes the `QueryTransportationSalesOrderSiebelReqABCSImplExt` through the `PreProcessABM` operation as a synchronous process, which accepts and replies with the `TransportationSalesOrderSiebelABM` message.
3. The `TransportationSalesOrderSiebelABM` message is transformed to the `QueryTransportationSalesOrderItineraryListEBM` and the `EBMHeader` is populated.
4. If the `PreprocessEBM` property is set to true in the AIA configuration file, the `QueryTransportationSalesOrderSiebelReqABCSImplExt` is invoked through the `PreProcessEBM` operation, which is a synchronous process that accepts and replies with the `QueryTransportationSalesOrderItineraryListEBM`.
5. The `QueryTransportationSalesOrderSiebelReqABCSImpl` then invokes `TransportationSalesOrderEBS`.
6. `TransportationSalesOrderEBS` then in-turn invokes the `QueryTransportationSalesOrderItineraryListLogisticsProvABCSImpl`.
7. The `QueryTransportationSalesOrderItineraryListLogisticsProvABCSImpl` then invokes the logistics web service that returns the itineraries and rates.
8. This response is sent to `TransportationSalesOrderEBS`.
9. The `TransportationSalesOrderEBS` returns the response to `QueryTransportationSalesOrderItineraryListSiebelReqABCSImpl`.
10. The `QueryTransportationSalesOrderItineraryListSiebelReqABCSImpl` returns the response to Siebel after transformation.

5.2.2 Query Transportation Sales Order Itinerary List

Figure 5–2 shows query transportation sales order itinerary list:

Figure 5–2 Query Transportation Sales Order Itinerary List



5.3 Assumptions and Constraints

Itineraries and rates have been defined within Oracle Transportation Management (OTM).

- These are the assumptions and constraints:
 - Exchange rates required as part of the rate negotiation are manually set up in Siebel; they are not synchronized as part of this integration.
 - This query requests only sell rates, not buy rates, from OTM.

5.4 Siebel CRM Interfaces

This outbound web service is configured in Siebel for this flow: QueryTransportationSalesOrderItineraryListSiebelReqABCImpl.

This service takes the SWIOrder as input and returns the SWIOrderEntrySalesIOPes or a Fault.

For more information about Siebel CRM web services, navigate to the documentation library for Siebel applications on Oracle Technology Network and see *Siebel CRM Web Services Reference*.

5.5 Oracle Transportation Management Interfaces

Oracle Transportation Management (OTM) provides an interface through a web service to connect to its application. This connectivity is established as a partner link in the provider service. The logistics web service on being called immediately returns a response.

The RIQQuery element in OTM is used to request rate information for the order to be shipped.

For more information about the Logistics Service, see *Oracle Transportation Management Integration Guide*.

5.6 Core Application Integration Architecture Components

The integration flow uses these components:

- `TransportaionSalesOrderEBO`
- `TransportationSalesOrderEBM`

The core enterprise business object (EBO) and enterprise business message (EBM) XSD files can be located by EBO within the `$AIA_HOME/AIA_MetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/` parent folder.

The core enterprise business services (EBS) web services definition language (WSDL) files can be located by EBO within the `$AIA_HOME/AIA_MetaData/AIAComponents/EnterpriseBusinessServiceLibrary/Core/EO/` parent folder.

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

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

For more information, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack*, "Extensibility for AIA Artifacts".

5.7 Integration Services

This integration delivers these services:

- `QueryTransportationSalesOrderItineraryListSiebelReqABCSImpl`
- `TransportationSalesOrderEBS`
- `QueryTransportationSalesOrderItineraryListLogisticsProvABCSImpl`

5.7.1 `QueryTransportationSalesOrderItineraryListSiebelReqABCSImpl`

This BPEL process receives the `TransportationSalesOrderABM` as input from the Siebel application, transforms the message to the `QueryTransportationSalesOrderEBM`, and invokes the `TransportationSalesOrderEBS` service. After transformation, based on the response, the message is again transformed into Siebel application business message (ABM) and sent to Siebel application.

5.7.2 `TransportationSalesOrderEBS`

`TransportationSalesOrderEBS` is an Enterprise Business Service that exposes all the enterprise operations related to the `TransportationSalesOrder` like create `TransportationSalesOrder`, update `TransportationSalesOrder`, delete `TransportationSalesOrder`, and so on. For this flow, the `QueryTransportationSalesOrderItineraryList` operation is implemented. It routes the request to the appropriate provider like `QueryTransportationSalesOrderItineraryListLogisticsProvABCSImpl` or composite application validation system (CAVS) based on the filter condition and operation.

5.7.3 QueryTransportationSalesOrderItineraryListLogisticsProvABCImpl

This is a synchronous BPEL process. This process accepts a QueryTransportationSalesOrderItineraryListEBM as input from TransportationSalesOrderEBS, transforms this message into TransportationSalesOrderItineraryListOTMABM, and invokes the logistics webservice. This service transforms the LogisticsResponseEBM message to QueryTransportationSalesOrderItineraryListResponseEBM, and sends the message back to TransportationSalesOrderEBS.

6

Process Integration for Order

This chapter provides an overview of the process integration for transportation orders and includes the following sections:

- [Section 6.1, "Overview"](#)
- [Section 6.2, "Business Process Flows"](#)
- [Section 6.3, "Assumptions and Constraints"](#)
- [Section 6.4, "Siebel CRM Interfaces"](#)
- [Section 6.5, "Oracle Transportation Management Interfaces"](#)
- [Section 6.6, "Core Application Integration Architecture Components"](#)
- [Section 6.7, "Integration Services"](#)

6.1 Overview

In the transportation order management solution, transportation orders are created in Siebel CRM application and executed in Oracle Transportation Management (OTM) application. New or revised orders are synchronized in one direction from Siebel to OTM. Whenever a new transportation order is submitted in Siebel, a real time synchronization flow is initiated to publish it to AIA. AIA creates a corresponding order release, and sell shipment in OTM.

6.2 Business Process Flows

The process integration for order supports these integration flows:

- Creating an order
- Revising an order (including cancellation)

Each Siebel transportation order includes these components:

- Customers involved: liable, tendering, and invoice to party.
- Locations: The source and destination locations.
- Date-Time: The starting and ending date-time for pickup and delivery.
- Stops: The intermediate stops (with their locations) besides the source and destination.
- Order Line Items: These four types of products can be associated to order lines:
 - Commodities: These are the goods being shipped. No price is associated to commodity line items.

- Transportation: The price for the transportation service.
- Accessorial: Any additional equipment that would be required to fulfill the order, for example, a forklift.
- Special Services: Any additional services to fulfill the order, for example, hand unload.
- Actions: These are special services to be performed at any stop. These could be associated to a commodity as well.

The prices of the transportation, accessorial, and special service lines are retrieved from Oracle Transportation Management (OTM) through the order itinerary/rating integration as described in [Chapter 5, "Process Integration for Query Transportation Order Itinerary"](#).

Corresponding to a transportation order in Siebel, the AIA synchronization process creates an order release and a sell shipment in OTM.

The major components of order release synchronized to OTM are:

- Involved Parties: The tendering/liable/invoice-to parties from Siebel order are referenced as involved parties on the OTM release header.
- Locations: The source and destination locations are on order release header. The intermediate stops are mapped to OrStop component of release.
- Date-Time: The pickup and delivery time specified are mapped to timeline in release on the header and the stops.
- Release Lines and ShipUnits: For each Siebel order line with a commodity, a corresponding order release line, and release ship unit are created. For the commodity product in Siebel order line, a packaged item is specified in release line, and a commodity on the release ship unit.

If any order line commodity is of type Hazardous or High Value, then a special service is also created for it in the release header.

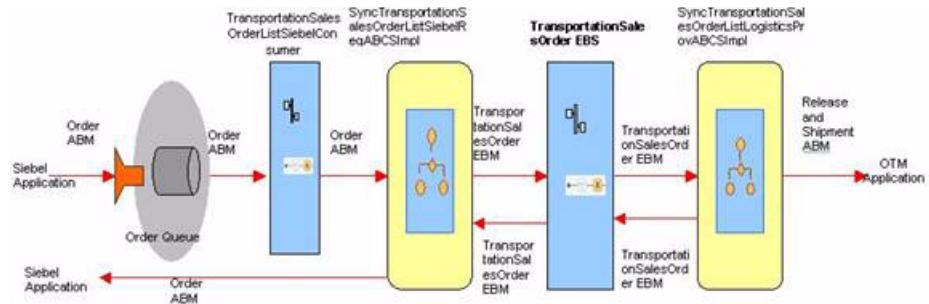
- Special Services: Corresponding to the actions captured in Siebel transportation order, the special services for the origin and destination stops are created in the release header, whereas for the intermediate stops, the special services are created in the release OrStop element.

In addition, if the commodity order line in Siebel has Actions associated to it, then special service is created for the corresponding release ship unit in OTM.

The major components of sell shipment synchronization to OTM are:

- Involved Parties: The tendering/liable/invoice-to parties in Siebel order are referenced as involved parties on the OTM sell shipment.
- Shipment Costs: The accepted prices for the transportation, accessorial and special service order lines are synchronized to shipment costs.
- Shipment ShipUnits: For each Siebel order line specifying a commodity, a corresponding shipment ShipUnit is created in OTM. For the commodity product in Siebel order line, a packaged item is specified in the shipment ShipUnit.
- Shipment Stops: A shipment stop is created for every stop specified in Siebel order.

[Figure 6-1](#) shows the order process integration:

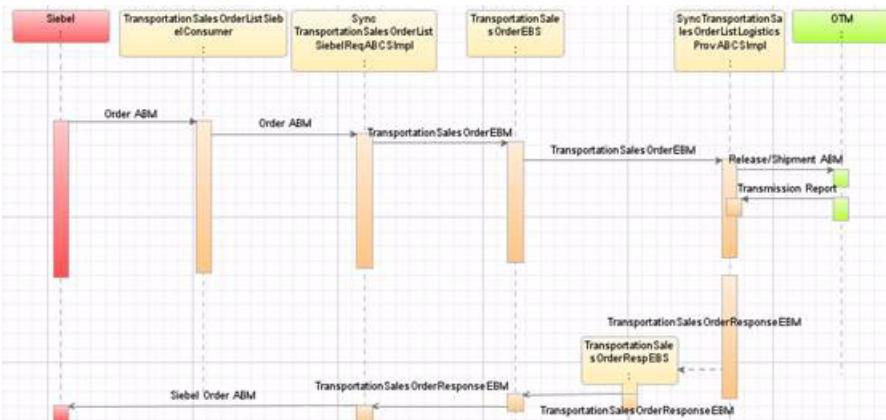
Figure 6–1 Order Process Integration Flow

This diagram shows that the Siebel application sends all its order messages in a queue. An AIA service reads that queue, gets the messages, and further sends the message to requester. Inside the requester service, Siebel application business message (ABM) message is transformed to the SyncTransportationSalesOrderListEBM, and then this service sends that EBM to transportation sales order EBS.

The TransportationSalesOrderEBS routes that SyncTransportationSalesOrderListEBM to Oracle Transportation Management (OTM) provider. Inside the provider, the EBM message is transformed to OTM ABM and that OTM ABM is send to OTM webservice to create or modify the order.

6.2.1 Synchronizing Order Information

Figure 6–2 shows the incremental changes in the account:

Figure 6–2 Synchronizing Order Information Sequence Diagram

6.3 Assumptions and Constraints

These are the assumptions and constraints:

- This solution does not support initial loading of existing orders.
- Orders have a status of accepted (or canceled) when they are submitted. Siebel CRM validates this status before any integration services are invoked.
- Outbound orders statuses from Siebel are ignored unless canceling the order.
- This synchronization does not support delete operations for an order. Use the synchronize operation to create and update orders.

- Order process integration creates order release and sell shipment in Oracle Transportation Management (OTM), but not the buy shipment.
- Stop action cross-references cannot be established from the OTM since OTM does not have any equivalent identifier.
- The customers, locations, and commodity products used in the transportation order must be synchronized before this order synchronization so that this process can inquire in the cross-reference for their existence.
- This integration does not support manual updates to orders in oracle transportation management.
- Liable party and the tendering party identifiers derived from Siebel are validated against the cross-references established in the account synchronization.
- For the liable party address and tendering party address this integration expects Siebel address identifiers (not location identifiers), and looks up the cross-references established during account synchronization.
- In case any error occurs in the service layer and the order message does not reach target application, the AIA error handling framework is invoked. You should manually resubmit that transmission that failed for reprocessing.
- This process integration does not perform any business validation, and thus does not raise errors for business validation failures.
- OTM receives order name concatenated with GUID as their ID. OTM domain value is derived from business unit mapping in cross-reference. If you want to use your own logic for deriving the domain, you must use the extensible transformation template.
- The OTM specific columns in cross-references are populated based on the identifiers derived from main transformation to OTM. If you want to pass a different value in the OTM identifier, use the transformation's extensibility to update the cross-reference as well.
- The configuration property parameter for response message should be set to true while preparing an enterprise business message (EBM) indicating that the EBM wants a response.
- Siebel can send the messages in different languages; OTM can handle only single language. The OTM installation language is captured in the configuration file. If the incoming Siebel message is of any other language that is recorded in the configuration file then that message is not sent to OTM.
- The direction of the process is one way from Siebel to OTM.
- TRANSPORTATIONSALESORDER_ORDERLINEITEMPROPERTY DVM is a seeded DVM for name value pair attributes for transportation product and Commodity. Any alteration to the seeded content causes the transformation to fail; however new records can be added.

6.4 Siebel CRM Interfaces

Use the Order schema for this integration. The interface required for updating the order in Siebel is Siebel order web services definition language (WSDL).

For more information about Siebel CRM web services, navigate to the documentation library for Siebel applications on Oracle Technology Network and see *Siebel CRM Web Services Reference*.

6.5 Oracle Transportation Management Interfaces

The Oracle Transportation Management (OTM) application provides an interface through a webservice to connect to its application. This connectivity is established as a partner link in the provider service. The logistics webservice immediately returns an acknowledgment with a transmission number when called and sends a transmission report back indicating the success or the failure when the process completes.

For more information about the Logistics Service, see *Oracle Transportation Management Integration Guide*.

6.6 Core Application Integration Architecture Components

The integration flow uses these components:

- TransportationSalesOrderEBO
- SyncTransportationSalesOrderListEBM

The core enterprise business object (EBO) and enterprise business message (EBM) XSD files can be located by EBO within the \$AIA_HOME/AIA_MetaData/AIAComponents/EnterpriseObjectLibrary/Core/EBO/ parent folder.

The core enterprise business services (EBS) web services definition language (WSDL) files can be located by EBO within the \$AIA_HOME/AIA_MetaData/AIAComponents/EnterpriseBusinessServiceLibrary/Core/EB O/ parent folder.

For detailed documentation of individual EBOs and EBMs, click AIA Reference Doc link on EBO and EBM detail pages in the 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*, "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 remain intact after a patch or an upgrade.

For more information, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack*, "Extensibility for AIA Artifacts".

6.7 Integration Services

This integration delivers these services:

- AIA Transportation Sales Order Queue
- TransportationSalesOrderListSiebelConsumer
- SyncTransportationSalesOrderListSiebelReqABCSImpl
- TransportationSalesOrderEBS
- TransportationSalesOrderResponseEBS
- SyncTransportationSalesOrderListLogisticsProvABCSImpl

6.7.1 AIA Transportation Sales Order Queue

This transportation sales order queue is used to queue Siebel order messages. This is an AQ. This queue can reside any oracle database. For this integration, AIA database is used as the place for this queue. The queue name is AIA_SiebelTransportationSalesOrderJMSQueue.

6.7.2 TransportationSalesOrderListSiebelConsumer

TransportationSalesOrderListSiebelConsumer is the consumer to the queue that is invoked when OTM places a message into the AIA_SiebelTransportationSalesOrderJMSQueue queue. This service routes and invokes SyncTransportationSalesOrderListSiebelReqABCSImpl service.

6.7.3 SyncTransportationSalesOrderListSiebelReqABCSImpl

SyncTransportationSalesOrderListSiebelReqABCSImpl is a BPEL process. This process receives Siebel application business message (ABM) as an input from Siebel system and transforms the message to SyncTransportationSalesOrderListEBM. During this transformation, Siebel ABM is transformed to SyncTransportationSalesOrderListEBM and enterprise business message (EBM) Header and cross-reference tables are populated. This process invokes TransportationSalesOrderEBS with SyncTransportationSalesOrderListEBM as an input. This process then waits for the response back from the TransportationSalesOrderResponseEBS. Based on the response received this service updates the Siebel application indicating whether the order synchronized or failed.

6.7.4 TransportationSalesOrderEBS

TransportationSalesOrderEBS is an Enterprise Business Service. This service is used to route all transportation sales order related actions like CreateTransportationSalesOrder, QueryTransportationSalesOrder, SyncTransportationSalesOrderList, and UpdateTransportationSalesOrder, and so on.

6.7.5 TransportationSalesOrderResponseEBS

TransportationSalesOrderResponseEBS is the Enterprise Business Service. This service is used to route all transportation sales order response actions like CreateTransportationSalesOrderResponse, QueryTransportationSalesOrderResponse, SyncTransportationSalesOrderListResponse, UpdateTransportationSalesOrderResponse, and so on.

6.7.6 SyncTransportationSalesOrderListLogisticsProvABCSImpl

SyncTransportationSalesOrderListLogisticsProvABCSImpl is a BPEL process. This process receives SyncTransportationSalesOrderListEBM as a request from TransportationSalesOrderEBS and returns a response to TransportationSalesOrderResponseEBS. This service transforms the EBM to Oracle Transportation Management (OTM) ABM and invokes the logistics webservice using the OTM ABM. At the end the cross-reference table is updated with OTM data. Then a response message is prepared and sent back to TransportationSalesOrderResponseEBS.

Process Integration for Order Status

This chapter provides an overview of the process integration for order status and includes the following sections:

- [Section 7.1, "Overview"](#)
- [Section 7.2, "Business Process Flows"](#)
- [Section 7.3, "Assumptions and Constraints"](#)
- [Section 7.4, "Siebel CRM Interfaces"](#)
- [Section 7.5, "Oracle Transportation Management Interfaces"](#)
- [Section 7.6, "Core Application Integration Architecture Components"](#)
- [Section 7.7, "Integration Services"](#)

7.1 Overview

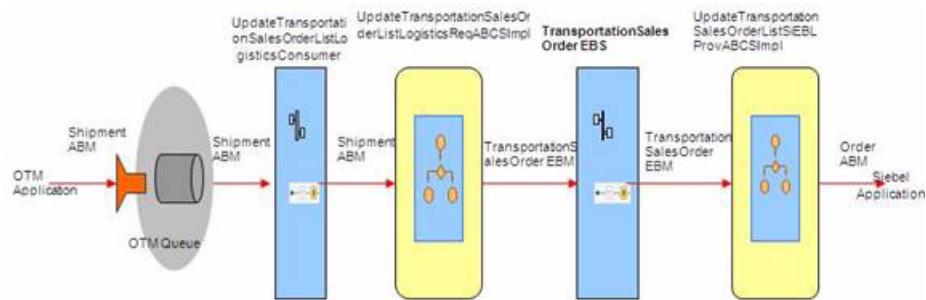
When order release and shipments (both buy and sell) are executed in Oracle Transportation Management (OTM), the status of the shipment changes in OTM. Also, as shipments at various stops get picked-up or delivered, their actual time is updated in OTM.

OTM publishes these messages to AIA using automation agents, as configured, to synchronize the information to Siebel so that the customer service representative (CSR)/sales agent can communicate these to the customers:

- Order status
- Actual time of pickup and delivery at the stops.

7.2 Business Process Flows

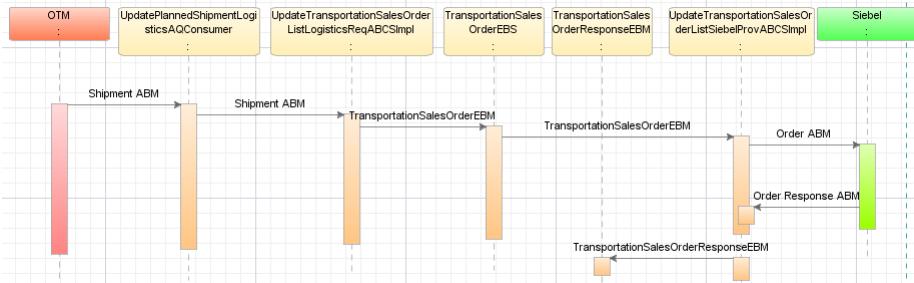
[Figure 7-1](#) shows the order status process integration:

Figure 7-1 Order Status Process Integration Flow

This integration assumes that Oracle Transportation Management (OTM) application business message (ABM) is sent in a queue inside OTM. A consumer service in application integration architecture (AIA) reads that message and calls the requester service. Requester service transforms the OTM ABM to the `UpdateTransportationSalesOrderListEBM`, and then the enterprise business message (EBM) is routed to the `TransportationSalesOrderEBS`. `TransportationSalesOrderEBS` service routes that `UpdateTransportationSalesOrderListEBM` to Siebel provider. Inside the Siebel provider this message is transformed into Siebel ABM and a Siebel webservice is called to update the Siebel order.

7.2.1 Integration Flow

Figure 7-2 shows the order status update flow:

Figure 7-2 Order Status Update Flow

7.3 Assumptions and Constraints

These are the assumptions and constraints:

- The order status integration only supports updating of order status in the header level, and date time elements at the stop level. No other data elements are updated in this flow.
- Header level statuses are sent from OTM to Siebel. For stop level, only the date time values are sent, Siebel derives the statuses on stop level and or any other levels within the application.
- A buy shipment in Oracle Transportation Management (OTM) is necessary to have the status message. Order synchronization flow does not create a buy shipment automatically. The order synchronization flows create the order release, and the sell shipment; you must generate buy shipments in OTM using agent configuration or manually.

- For Siebel, assigned and moving statuses message comes from OTM buy shipment, whereas the billed status the message comes from sell shipment.
- The agents required in OTM to send out the messages from buy or sell shipment must be defined.
- This integration does not perform any business validation and thus does not raise errors for business validation issues.
- In case of multi-leg itinerary in Siebel order, there are multiple buy shipments in OTM. Corresponding to each buy shipment, the same order status in Siebel iterates through assigned and moving values.
- When the buy shipment is created in OTM for the order status message, you should copy all the reference numbers from the sell shipment.
- In case any error occurs and the message does not reach the target application, the AIA error handling framework notifies you. You should manually re-submit that transmission that failed for re-processing.
- OTM continues to send the message into an Oracle AQ. SOA suite AQ adapter dequeues those messages in the AIA layer.
- Requests are made from OTM in fire and forget mode. Hence, OTM does not wait for the response from Siebel.
- OTM uses AQ mechanism to en-queue the outbound shipment messages. The queue is created within OTM application.
- Inbound Siebel webservice requires a user id and password to supply as part of the end point URL.

7.4 Siebel CRM Interfaces

The Siebel interfaces are:

- The Siebel ABM used for this integration is the Siebel fleet order schema.
- The interface that is required for updating the order in Siebel is the Siebel Order web services definition language (WSDL).

For more information about Siebel CRM web services, navigate to the documentation library for Siebel applications on Oracle Technology Network and see *Siebel CRM Web Services Reference*.

7.5 Oracle Transportation Management Interfaces

OTM publishes the shipment application business message (ABM) message in AQ. The element in OTM schema that is used in this process is PlannedShipment. This is the only OTM interface used in this process.

7.6 Core Application Integration Architecture Components

The integration flow uses these components:

- TransportationSalesOrderEBO
- UpdateTransportationSalesOrderListEBM

The core enterprise business object (EBO) and enterprise business message (EBM) XSD files can be located by EBO within the \$AIA_

HOME/AIA_MetaData/AIA_Components/EnterpriseObjectLibrary/Core/EBO/parent folder.

The core enterprise business services (EBS) web services definition language (WSDL) files can be located by EBO within the \$AIA_
HOME/AIA_MetaData/AIA_Components/EnterpriseBusinessServiceLibrary/Core/EB
O/ parent folder.

For detailed documentation of individual EBOs and EBMs, click AIA Reference Doc link on EBO and EBM detail pages in the 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*, "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 remain intact after a patch or an upgrade.

For more information, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack*, "Extensibility for AIA Artifacts"

7.7 Integration Services

These are the services delivered with this integration:

- UpdateTransportationSalesOrderListLogisticsReqABCImpl
- TransportationSalesOrderEBS
- TransportationSalesOrderResponseEBS
- UpdateTransportationSalesOrderListSiebelProvABCImpl
- UpdatePlannedShipmentLogisticsAQConsumer

7.7.1 UpdateTransportationSalesOrderListLogisticsReqABCImpl

UpdateTransportationSalesOrderListLogisticsReqABCImpl is a BPEL process. This process receives logistics ABM as input from OTM. This message is transformed to UpdateTransportationSalesOrderListEBM message and TransportationSalesOrderEBS service is invoked.

7.7.2 TransportationSalesOrderEBS

TransportationSalesOrderEBS is an Enterprise Business Service and is used to create, query, synchronize, and update all transportation sales orders.

7.7.3 TransportationSalesOrderResponseEBS

TransportationSalesOrderResponseEBS is the Enterprise Business Service and is used to create, query, synchronize, and update all the transportation sales order responses.

7.7.4 UpdateTransportationSalesOrderListSiebelProvABCImpl

UpdateTransportationSalesOrderListSiebelProvABCImpl is a BPEL process. This process receives the UpdateTransportationSalesOrderListEBM message from TransportationSalesOrderEBS and transformed to Siebel Order ABM. The Siebel webservice updates the order status in Siebel system and returns a success or failure message to the calling service.

7.7.5 UpdatePlannedShipmentLogisticsAQConsumer

This service is invoked the moment OTM enqueues a shipment message into AIA_TRANSPORTATIONSALESORDER_AQ queue. This service takes the xml element from the wrapper AQ schema, which contains the entire transmission element as CLOB. This service is designed using ORACLE MEDIATOR and hence it simply routes and invokes UpdateTransportationSalesOrderListLogisticsReqABCSImpl.

Part II

Configuring the Delivered Process Integrations

This part contains the following chapters:

- [Chapter 8, "Setting Up Participating Applications"](#)
- [Chapter 9, "Data Requirements and Prerequisites"](#)
- [Chapter 10, "Working with Cross-References"](#)
- [Chapter 11, "Working with Domain Value Maps"](#)
- [Chapter 12, "Setting Configuration Properties"](#)

Setting Up Participating Applications

This chapter includes the following sections:

- [Section 8.1, "Setting Up Oracle E-Business Suite"](#)
- [Section 8.1.1, "Obtaining Oracle E-Business Suite Operating Unit IDs"](#)
- [Section 8.2, "Setting Up Siebel CRM"](#)
- [Section 8.3, "Setting Up Oracle Transportation Management"](#)
- [Section 8.4, "Creating Oracle E-Business Suite System Profiles"](#)
- [Section 8.5, "Setting Up Cross-References for Siebel IDs, Oracle E-Business Suite Entities, and Oracle Transportation Management Domains"](#)
- [Section 8.6, "Setting Up Cross-References for Accessorial and Special Services Products"](#)

8.1 Setting Up Oracle E-Business Suite

This section describes how to set up organizations in Oracle E-Business Suite.

8.1.1 Obtaining Oracle E-Business Suite Operating Unit IDs

You must determine what organizations you want to support and then get the IDs for those organizations.

To get the Operating Unit details:

1. Log in to Oracle E-Business Suite database.
2. Identify the Operating Units that must be synchronized or maintained in Oracle E-Business Suite.

If you want to pick other Operating Units, use this query:

```
select organization_id, name from hr_operating_units
```

8.2 Setting Up Siebel CRM

This section describes how to map Siebel CRM organization.

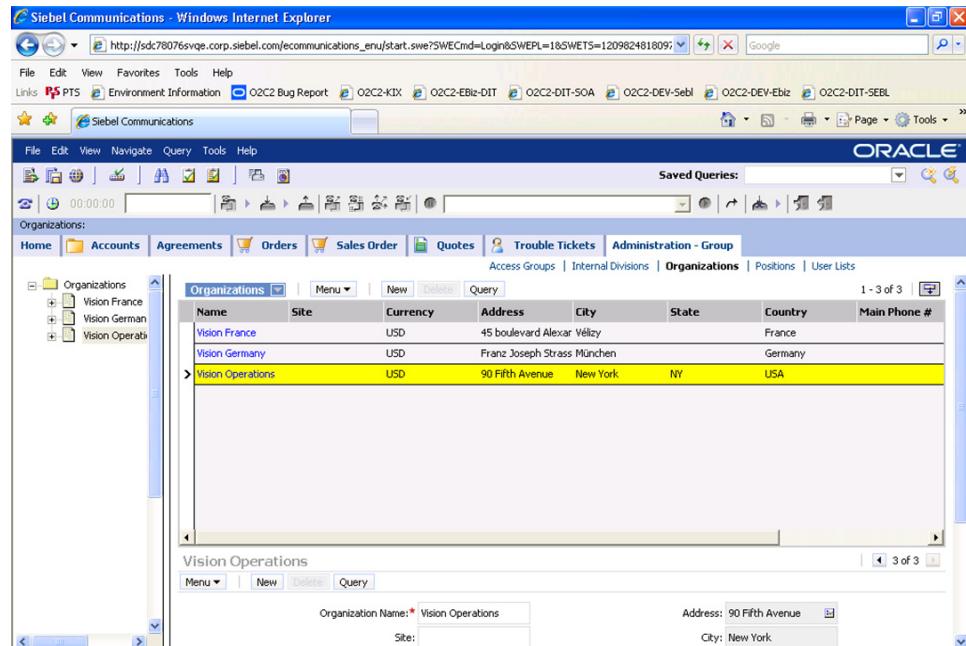
8.2.1 Mapping Siebel CRM Organizations

To map Siebel Organizations to EBS Operating Units:

1. Log in to Siebel Application.

2. Click **Site Map**.
3. Select **Administration - Group, Organizations**.
4. For the Oracle E-Business Suite Operating Units that were identified previously, create the same in Siebel CRM. See [Figure 8-1](#).

Figure 8-1 Administration - Group View Tab in Siebel



8.3 Setting Up Oracle Transportation Management

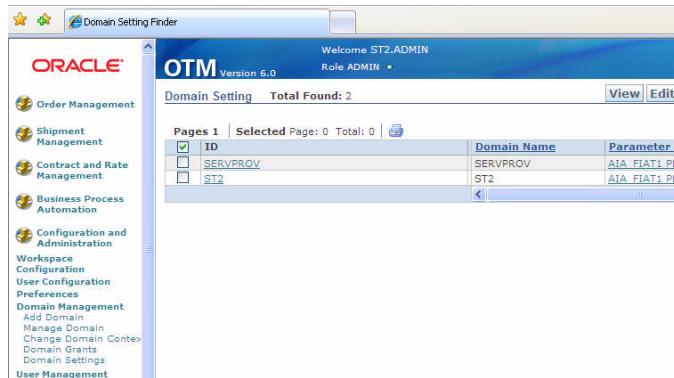
This section describes the setup to be done for Oracle Transportation Management (OTM).

8.3.1 Obtaining Oracle Transportation Management Domains

You must determine what domains in OTM must be supported.

To get the domain details:

1. Log in to OTM application.
2. Navigate to **Configuration and Administration**.
3. Click **Domain Management**.
4. Select **Domain Settings** and click **Search**. [Figure 8-2](#) shows the screen that appears with domain setup:

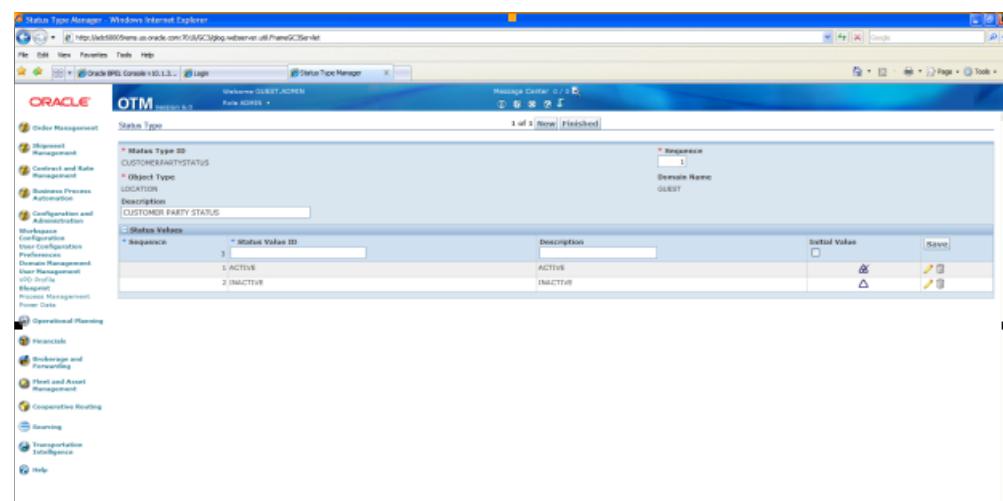
Figure 8-2 Domain Setting Screen

8.3.2 Creating Status Type for Location in Oracle Transportation Management

You must determine what StatusType in Oracle Transportation Management (OTM) is required, for example, CUSTOMERPARTYSTATUS.

To create a StatusType:

1. Log in to OTM application.
2. Navigate to **Configuration and Administration**.
3. Click the **New** button.
4. Enter a Status Type ID, for example, *CUSTOMERPARTYSTATUS*.
5. Select **LOCATION** as the Object Type.
6. Enter **Sequence 1**.
7. Enter two rows: *ACTIVE* and *INACTIVE*.
8. Check the initial value for the *ACTIVE* row:

Figure 8-3 Status Type Screen

8.3.3 Creating Contacts in Oracle Transportation Management

Create external systems for all inbound flows to OTM. This table lists the processes involved.

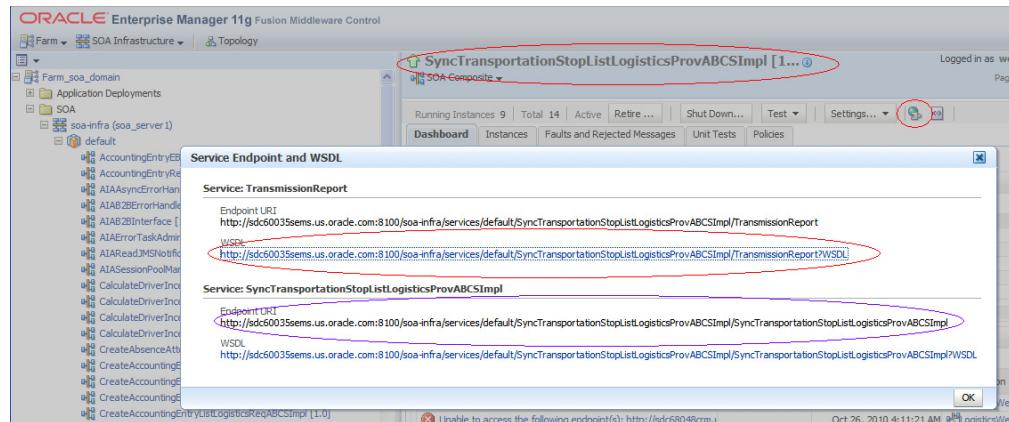
Table 8–1 Processes for Creating External Systems for Inbound Flows to OTM

Process Name	External System ID
SyncCustomerPartyListLogisticsProvABCImpl	CUSTOMERPARTY_ESID
SyncItemListLogisticsProvABCImpl	ITEM_ESID
SyncTransportationSalesOrderListLogisticsProvABCImpl	ORDER_ESID
SyncTransportationStopListLogisticsProvABCImpl	TRANSPORTATIONSTOP_ESID

Note: : External System IDs and their corresponding processes are in the *AIAConfigurationProperties.xml* file.

To create external systems:

1. Log in to Oracle Enterprise Manager Fusion Middleware Control.
2. Click the desired process.
3. Click **Show WSDL and endpoint URI** icon.

Figure 8–4 Creating Contacts

4. Click **Concrete WSDL URI** and add **style="document"** attribute to **soap:binding**.
5. Save the source on your local system.
6. Log in to OTM.
7. Go to **Business Process Automation, Communication Management, Web Services** and click **New**.
8. Click **New for WSDL Document**.
9. Click **Document Detail**.
Enter name for ID.
Upload the saved concrete WSDL.
Ensure **Storage** is set to *Text* and **Mime Type** as *text/xml*.
10. Click **Finished**.
11. Click **Service Details**.
Enter Service ID, Service Endpoint ID

Enter Service Endpoint as *Endpoint URI* as depicted in the screen. See: [Section 8.3.3, "Creating Contacts in Oracle Transportation Management"](#).

Enter username and password of your weblogic server.

Note: For Oracle Transportation Management (OTM) versions earlier than 6.1.2 encrypt the password before entering using Base64 encoding.

12. Click **Finished**.
13. Go to **Business Process Automation, Communication Management, External Systems**.
14. Click **New**.
 - a. Enter value for **External System ID**. See: [Section 8.3.3, "Creating Contacts in Oracle Transportation Management"](#) for these values.
 - b. Select the web service created previously.
 - c. Select **Operation as TransmissionReport**.
 - d. Select the Service Endpoint created earlier.
15. Click **Finished**.

Doing these steps creates a contact automatically in Oracle Transportation Management (OTM) with the same name as of External System ID.

To verify, go to **Business Process Automation, Communication Management, Contacts**.

Note: : Update OTM_01.Contact_Domain Property in *AIAConfigurationProperties.xml* for each process with the domain in which External System is created for the corresponding process.

For more information about Oracle Transportation Management, refer *Oracle Transportation Management User Guide*.

8.3.4 Setting Up External Systems for Queues

To setup external systems

1. Login to OTM.
2. Go to **Business Process Automation, Communication Management, External Systems**.
3. Click **New**.
4. Enter **External System ID** as *AIA_PLANNEDSHIPMENT_AQ* and add a description.
5. Enter the **Queue Name** as *AIA_PLANNEDSHIPMENT_AQ* under the **For Queue** section.

Figure 8–5 External System Manager Screen

The screenshot shows the 'External System Manager' screen with the following configuration:

- External System ID:** AIA_PLANNEDSHIPMENT_AQ
- Description:** AIA_PLANNEDSHIPMENT
- Integration Preference ID:** AIA_PLANNEDSHIPMENT
- User Name:** (empty)
- Password:** (empty)
- Use Credential:**
- Active Mode:** Enabled
- Reattempt Mode:** None - ERROR Status
- Max Bytes Per Trans.:** (empty)
- Max Transactions Per Trans.:** (empty)
- Log Response:**
- Transport Through Data Stream:**
- Socket Timeout:** 30
- For HTTP/HTTPS:** URL: (empty)
- Read Response Code:**
- Trans Ack Expected:**
- Use Ack Status:**
- Close HTTP Connection:**
- For FTP:** Hostname: (empty), Remote Directory: (empty), Connection Mode: Passive, Use FTP Append:
- For Queue:** Queue Name: AIA_PLANNEDSHIPMENT

- In the **Out XML Profiles** section, click 'n' for **New XML profile**.
- Enter **Out XML Profile ID** as **MAX**.
- Choose **Default Mode** as **MAX**.

Keep **Validate for Max** check box unchecked.

Figure 8–6 Out XML Profile

The screenshot shows the 'Out XML Profile' screen with the following configuration:

- Out XML Profile ID:** MAX
- Default Mode:** MAX
- Domain Name:** PUBLIC
- Use Template:**
- Validate for Max:**
- XML Template ID:** (empty)
- Out XML Profile Details:** Exclude XML Builder ID
- Out XML Profile Child:** Child XML Profile ID
- Out XML Profile XPath:** Sequence Number: (empty), Excluded Xpath: (empty)

- Click **Finished**.
- In the **Out XML Profiles** section, choose the **XML Element ID** as *PlannedShipment*.
- Click **Save**.

Figure 8–7 Out XML Profiles

The screenshot shows the 'Out XML Profiles' screen with the following configuration:

- Out XML Profile ID:** MAX
- XML Element ID:** PlannedShipment
- Priority:** (empty)
- Save** button

- Click **Finished**.

8.4 Creating Oracle E-Business Suite System Profiles

You set specific profile options for the customer process integrations in Oracle E-Business Suite.

8.4.1 Creating System Profile Values for the Customer Integration

To set specific profile options for the Customer Management integration:

1. Log in to Oracle E-Business Suite using the System Administrator responsibility.
2. Open the System Profile Values form.
3. Query these profile options and set the indicated values at the site level:

For E-Business Suite:

- HZ: Generate Party Number to Yes
- HZ: Generate Party Site Number to Yes

8.5 Setting Up Cross-References for Siebel IDs, Oracle E-Business Suite Entities, and Oracle Transportation Management Domains

Cross-references can be created after organizations have been created in Siebel CRM, operating unit in Oracle E-Business Suite, and domain in Oracle Transportation Management (OTM).

8.5.1 Identifying Siebel Row IDs

To set up a cross-reference:

1. Log in to the Siebel database as the table owner.
2. Run this query to get the IDs for the organizations created in the previous step:

```
select row_id, name from s_org_ext where name like '%Vision%'
```

8.5.2 Identifying Oracle E-Business Suite Entities

To get the operating unit details:

1. Log in to Oracle E-Business Suite database (Apps/Apps).
2. Identify the operating units that must be synchronized or maintained in Oracle E-Business Suite.
3. Log in to Oracle Applications and get the exact name for the operating units. For example:
 1. Vision Operations (204)
 2. Vision Germany (888)
4. To pick other operating units, use this query:

```
select organization_id, name from hr_operating_units
```

8.5.3 Populating Cross-References

To populate Cross reference values for ORGANIZATION_ID table:

1. Log in to database.

2. Connect to schema <AIA_INSTANCE>_xref.
3. Enter values into cross-reference table using the insert command. See [Example 8-1](#).

Example 8-1 Insert Command for Cross-References

```
INSERT INTO XREF_DATA VALUES ('oramds:/apps/AIAMetaData/xref/ORGANIZATION_ID.xref', 'EBIZ_01', '27F4D6303B2511DFBFA11DB680CBD54F', '204', 'N', '25-AUG-10 02.26.11.000000000 AM')

INSERT INTO XREF_DATA VALUES ('oramds:/apps/AIAMetaData/xref/ORGANIZATION_ID.xref', 'COMMON', '27F4D6303B2511DFBFA11DB680CBD54F', 'COMMON_ORG_ID', 'N', '25-AUG-10 02.26.11.000000000 AM')

INSERT INTO XREF_DATA VALUES
('oramds:/apps/AIAMetaData/xref/ORGANIZATION_ID.xref', 'OTM_01', '27F4D6303B2511DFBFA11DB680CBD54F', 'OTM_ORG_VALUE', 'N', '25-AUG-10 02.26.11.000000000 AM')
```

Note: : Keep the row number (third column) same while inserting date for each pair of cross-reference values.

For more information about creating the cross-references, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*, "Working with Cross References".

8.6 Setting Up Cross-References for Accessorial and Special Services Products

Cross-references must be manually maintained for accessorial and special service products that are part of the Orders.

8.6.1 Identifying Siebel Row IDs

To set up a cross-reference:

1. Log in to the Siebel application.
2. Navigate to the Accessorial Product created in Siebel through **Administration - Product**.
3. Click the product and then **Menu, About Record**; the system displays a Row # label. This label is the Row ID of the Accessorial Product in Siebel.
4. In the same manner, the row ID can be determined for the Special Service product.

8.6.2 Identifying Cross-Reference Row Number

To get the row number for the equivalent product ID in Siebel:

1. Log in to AIA XREF database (aia/aia).
2. Identify the cross-reference row number of the accessorial or special service product maintained in Siebel by executing this query:

```
select row_number from xref_data where value = '<SIEBEL ROW ID>' and
xref_table_name = 'oramds:/apps/AIAMetaData/xref/ITEM_ITEMID.xref'
```

3. To pick other row_number, repeat the above query with appropriate value for the Siebel row ID.

8.6.3 Create the Accessorials/Special Services in Oracle Transportation Management

For more information about creating the accessorials and specials, see *Oracle Transportation Management Guide*.

8.6.4 Populating Cross-References

To populate cross-references:

1. Log in to the AIA XREF database (aia/aia).
2. Create the corresponding entries for the Oracle Transportation Management (OTM) in XREF table. Siebel and COMMON entries would be available in the XREF table.
3. Create the corresponding OTM entries in XREF manually. Run the query in [Example 8-2](#) to insert the cross-reference values for the accessorials created in OTM.

Example 8-2 Query to Create OTM Entries in XREF

```
insert into xref_data values ('oramds:/apps/AIAMetaData/xref/ITEM_
ITEMID.xref','ACCESSORIAL_OTM_01',<row number found in the section Identifying
XREF Section>,<OTM DOMAIN::otm accessorial product>,'N','17-SEP-10
02.26.11.00000000 AM')
```

[Example 8-3](#) is the query used to enter the accessorial item Forklift present in the GUEST domain in OTM.

Example 8-3 Query to Enter Forklift Item

```
insert into xref_data values ('oramds:/apps/AIAMetaData/xref/ITEM_
ITEMID.xref','ACCESSORIAL_OTM_01',F40CCE8024C911DE8F559994B8D73F6F,'GUEST::
Forklift','N','17-SEP-10 02.26.11.00000000 AM')
```

For more information about creating the cross-references, see *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*, "Working with Cross References".

4. Run the query in [Example 8-4](#) to insert the cross-reference values for the special services created in OTM.

Example 8-4 Query to Insert the Cross-Reference Values for Special Services

```
insert into xref_data values ('oramds:/apps/AIAMetaData/xref/ITEM_
ITEMID.xref','SPECIALSERVICE_OTM_01',<row number found in the section Identifying
XREF Section>,<OTM DOMAIN::otm Special service product id>,'N','17-SEP-10
02.26.11.00000000 AM')
```

[Example 8-5](#) is the query used to enter the special service Customer Unload present in the GUEST domain in Oracle Transportation Management (OTM).

Example 8-5 Query to Enter Customer Upload Special Service

```
insert into xref_data values ('oramds:/apps/AIAMetaData/xref/ITEM_
ITEMID.xref','SPECIALSERVICE_OTM_
01',F40CCE8024C911DE8F559994B8D73F6F,'GUEST::Customer Unload','N','17-SEP-10
```

02.26.11.000000000 AM')

Data Requirements and Prerequisites

This chapter covers data requirements, prerequisites, or both for Oracle Transportation Order Management integrations and includes the following sections:

- [Section 9.1, "Customer Integration"](#)
- [Section 9.2, "Location Integration"](#)
- [Section 9.3, "Order Integration"](#)
- [Section 9.4, "Order Status Integration"](#)
- [Section 9.5, "Product Integration"](#)
- [Section 9.6, "Query Transportation Order Itinerary Integration"](#)

9.1 Customer Integration

As a prerequisite, the customer management process integration is not dependent on other processes being run; however, the organization cross-reference must be set up first. See [Chapter 10, "Working with Cross-References"](#).

The data requirements for customer process integration are:

- The business units being used must be seeded in all applications and in cross-references.
- Address is required to create an account in Oracle E-Business Suite.
- The address must have Address Line 1, City, State, Country, and Zip Code.

9.2 Location Integration

As a prerequisite, before synchronizing a location, you must synchronize the corresponding parent account to Oracle Transportation Management (OTM).

9.3 Order Integration

The prerequisites are:

- Customer Synchronization. See: [Chapter 2, "Process Integration for Customers"](#).
- Location Synchronization. See: [Chapter 3, "Process Integration for Location"](#).
- Product Synchronization. See: [Chapter 4, "Process Integration for Product"](#).

The data requirements are:

- The customers, locations, and commodity products used in the transportation order must be synchronized before submitting the Order.
- The **Verify** button can be used in the Siebel transportation sales order to validate that all the data has been appropriately populated.
- Order validation processes are successfully executed before the start of the transportation order integration flow.
- The order rating must be done to determine a rating solution for the transportation order to be submitted.

9.4 Order Status Integration

The prerequisites are:

- In Oracle Transportation Management (OTM) an external system must be defined for element PlannedShipment for the OTM outbound messages to be published.
- Automation agents must be defined in OTM to listen for certain events and trigger the planned shipment out of OTM upon this event taking place, or when the dates or defined statuses are updated on the buy shipment, and to send the Sell Shipment out when its status is set to BILLED_APPROVED.
- The cross-references for the order header and lines are established through order synchronization before this flow.

The data requirements are:

- A buy shipment in OTM is necessary to provide the assigned and moving status values to Siebel.
- A sell shipment has to be invoiced in OTM to send the billed status to Siebel.

9.5 Product Integration

This integration has no specific requirements.

9.6 Query Transportation Order Itinerary Integration

The prerequisites are:

- Location synchronization. See: [Chapter 3, "Process Integration for Location"](#).

Note: If the location is used as an origin and destination, then the role type is mandatory in OTM.

- Product synchronization. See: [Chapter 4, "Process Integration for Product"](#).

For the rating query to get the appropriate data from OTM the origin and destination location, earliest pickup time, and latest delivery time for the order should be included. In addition, you must provide commodity to be shipped, number of units to be shipped, weight, and volume.

Working with Cross-References

Cross-references map and connect the records within the application network, and enable these applications to communicate in the same language. The integration server stores the relationship in a persistent way so that others can refer to it.

For more information about cross-references, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack*.

This table lists the order management cross-references:

Table 10–1 Order Management Cross-References

Name	Columns	Description
CUSTOMERPARTY_ACCOUNTID	SEBL_01, COMMON, OTM_01, EBIZ_01	BillToPartyReference/AccountID Common column value is a GUID generated by BPEL. OTM column value is concatenation of Domain and OTM Identifier with ":" separating them.
CUSTOMERPARTY_ADDRESSID	SEBL_01, COMMON, OTM_01, EBIZ_01	BillToPartyReference/Address Common column value is a GUID generated by BPEL. OTM column value is concatenation of Domain and OTM Identifier with ":" separating them.
CUSTOMERPARTY_CONTACT_EMAILCOMMID	SEBL_01, COMMON, OTM_01, EBIZ_01	Common column value is a GUID generated by BPEL. OTM column value is concatenation of Domain and OTM Identifier with ":" separating them.
CUSTOMERPARTY_CONTACT_FAXCOMMID	SEBL_01, COMMON, OTM_01, EBIZ_01	Common column value is a GUID generated by BPEL. OTM column value is concatenation of Domain and OTM Identifier with ":" separating them.
CUSTOMERPARTY_CONTACT_PHONECOMMID	SEBL_01, COMMON, OTM_01, EBIZ_01	Common column value is a GUID generated by BPEL. OTM column value is concatenation of Domain and OTM Identifier with ":" separating them.
CUSTOMERPARTY_CONTACTID	SEBL_01, COMMON, OTM_01, EBIZ_01	Common column value is a GUID generated by BPEL. OTM column value is concatenation of Domain and OTM Identifier with ":" separating them.
CUSTOMERPARTY_LOCATIONREFID	SEBL_01, COMMON, OTM_01, EBIZ_01	BillToPartyReference/LocationReference Common column value is a GUID generated by BPEL. OTM column value is concatenation of Domain and OTM Identifier with ":" separating them.
CUSTOMERPARTY_PARTYID	SEBL_01, COMMON, OTM_01, EBIZ_01	BillToPartyReference Common column value is a GUID generated by BPEL. Oracle Transportation Management (OTM) column value is concatenation of Domain and OTM Identifier with ":" separating them.
ITEM_ID	SEBL_01, COMMON, OTM_01, ACCESSORIAL_01, OTM_01, SPECIALSERVICE_01, OTM_01	Concatenation of DomainName and CommodityID for OTM_01. Siebel ROW ID for SEBL_01

Table 10–1 (Cont.) Order Management Cross-References

Name	Columns	Description
ORGANIZATION_ID	SEBL_01, COMMON, OTM_01, EBIZ_01	This XREF is used to map the Siebel ORG_UNIT to Oracle Transportation Management (OTM) Domain and Oracle E-Business Suite ORG_UNIT
ORGANIZATION_ID	/	Location/LocationGID/GID/DomainName
TRANSPORTATIONS ALESORDER_ID	SEBL_01, COMMON, OTM_01_RELEASE, OTM_01_SHIPMENT	Header cross-reference Siebel ID is populated in the SEBL_01, Common is GUID generated by BPEL. Cross-reference value for OTM columns is concatenation of OTM Domain name, Order number coming from Siebel along with the corresponding COMMON column GUID value.
TRANSPORTATIONS ALESORDER_ID	SEBL_01, COMMON, OTM_01_RELEASE, OTM_01_SHIPMENT	To determine the Siebel Order Id based on Common or Oracle Transportation Management (OTM) Release ID This is used only for look up purpose.
TRANSPORTATIONS ALESORDER_LINEID	SEBL_01, COMMON, OTM_01_RELLINE, OTM_01_RELSHIPUNIT, OTM_01_SELLSHIPUNIT	Order Line cross-reference Siebel LineID is populated in the SEBL_01, Common is GUID generated by BPEL. Cross-reference value for OTM columns is concatenation of OTM Domain name, hard coded string TSOL, and the corresponding COMMON column GUID value
TRANSPORTATIONS ALESORDER_STOPACTIONID	SEBL_01, COMMON, OTM_01_RELEASE	Stop Action Cross-reference Siebel StopActionID is populated in the SEBL_01, Common is GUID generated by BPEL. No value for OTM column is populated.
TRANSPORTATIONS ALESORDER_STOPID	SEBL_01, COMMON, OTM_01_RELEASE, OTM_01_SHIPMENT	Order Stop cross-reference Siebel StopID is populated in the SEBL_01, Common is GUID generated by BPEL. Cross-reference value for OTM columns is concatenation of OTM Domain name, hard coded string TSOS, and the corresponding COMMON column GUID value
TRANSPORTATIONS ALESORDER_STOPID	SEBL_01, COMMON, OTM_01_RELEASE, OTM_01_SHIPMENT	This is used only for look up purpose
TRANSPORTATIONS ALESORDER_STOPLINEID	SEBL_01, COMMON, OTM_01_RELEASE	Line and Stop association cross-reference Siebel Line Stop ID is populated in the SEBL_01, Common is a GUID generated by BPEL. Cross-reference value for OTM columns is concatenation of OTM Domain name, hard coded string TSOS, and the corresponding COMMON column GUID value
TRANSPORTATIONS TOP_ACCOUNTID	SEBL_01, COMMON, OTM_01	Common is GUID generated by BPEL. Cross-reference value for OTM is TransportationStopCustomerParty/Identification /ApplicationObjectID
TRANSPORTATIONS TOP_CONTACTID	SEBL_01, COMMON, OTM_01	Common is GUID generated by BPEL. Cross-reference value for OTM is Location/ContactGid/Gid.
TRANSPORTATIONS TOP_ID	SEBL_01, COMMON, OTM_01	Common is GUID generated by BPEL. Cross-reference value for OTM is concatenation of /LocationGID/GID/DomainName & LocationGID/GID/Xid
TRANSPORTATIONS TOP_ID	SEBL_01, COMMON, OTM_01	This is used only for look up purpose.
TRANSPORTATIONS TOP_ROLEID	SEBL_01, COMMON, OTM_01	TransportationStopUsage/Identification /ApplicationObjectID

Working with Domain Value Maps

Domain value maps (DVMs) are a standard feature of the Oracle Service Oriented Architecture (SOA) suite. They are tables containing mapping between related information in the participating applications. They enable you to equate lookup codes and other static values across applications, for example, FOOT and FT or US and USA. These DVM tables are maintained in the AIA layer. The AIA layer uses these DVM tables in transforming the messages from one system in the expected format of the other system.

For more information about DVMs, see *Oracle Fusion Middleware Developer's Guide for Oracle Application Integration Architecture Foundation Pack*, "Working with Message Transformations" and *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*, "Working with Domain Value Maps."

These are the DVMs for the customer process flow:

Table 11–1 DVMs for the Customer Process Flow

Name	Columns	Description
ADDRESS_COUNTRYID	COMMON, Siebel, OTM_01	/
COMMUNICATION_METHOD	COMMON, OTM_01	Fax, Phone, and so on
CONTACT_SALUTATION	COMMON, Siebel, OTM_01	Mr., Mrs., and so on
LOCATION_ROLE	COMMON, OTM_01	Ship To, Bill To, and so on
STATE	COMMON, Siebel, OTM_01	State code

Note: Customer flow reuses some components from Oracle Customer Master Data Management Integration, which use some more DVMs.

For more information about the Customer MDM components and DVMs being used by those components, refer *Oracle Customer Master Data Management Integration - Implementation Guide*.

These are the DVMs for the location process flow:

Table 11–2 DVMs for the Location Process Flow

Name	Columns	Description
ADDRESS_COUNTRYID	Siebel, COMMON, OTM_01	Country code
COMMUNICATION_METHOD	Siebel, COMMON, OTM_01	Phone, Fax, and so on
CONTACT_SALUTATION	Siebel, COMMON, OTM_01	Salutation of a contact

Table 11–2 (Cont.) DVMs for the Location Process Flow

Name	Columns	Description
LOCATION_ROLE	COMMON, OTM_01	Ship To, Bill To, and so on
PHONENUMBER_TYPE	PHONENUMBER_TYPE	Types of Phone number
STATE	Siebel, COMMON, OTM_01	State code
TIMEZONE_ID	Siebel, COMMON, OTM_01	Time zone description
TRANSPORTATIONSTOP_TYPE	Siebel, COMMON, OTM_01	TransportationStopType

These are the DVMs for the order process flow:

Table 11–3 DVMs for the Order Process Flow

Name	Columns	Description
CURRENCY_CODE	SEBL_01,COMMON, OTM_01	Used to convert the Siebel Currency Data to Oracle Transportation Management (OTM) Currency Data
EQUIPMENT_TYPE	SEBL_01,COMMON, OTM_01	Equipment Type DVM
ORDER_DIVISION	SEBL_01,COMMON, OTM_01	Siebel Division Code equivalent
ORDER_STATUSCODE	SEBL_01,COMMON, OTM_01	Relates the status of the order whether it is accepted or rejected.
SHIP_DEVICE	SEBL_01,COMMON, OTM_01	Shipping Device DVM
STOP_TYPE	SEBL_01,COMMON, OTM_01	Type of Stops
TRANSPORT_MODE	SEBL_01,COMMON, OTM_01	Transport Mode DVM
TRANSPORTATIONSALESORDER	SEBL_01,COMMON, OTM_01	Relates the Siebel Items to the OTM Items.
_ORDERLINEITEMPROPERTY		
TRANSPORTATIONSALESORDER	SEBL_01,COMMON, OTM_01	Relates the type of Product at the Line Item level, whether Accessorial product or Transportation product or Commodity.
_PRODUCTTYPECODE		
TRANSPORTATIONSALESORDER	SEBL_01,COMMON, OTM_01	Relates the Stop action types.
_STOPACTIONTYPE		
TRANSPORTSALESORDER_PACKAGING	SEBL_01,COMMON, OTM_01	Relates the Packaging of the Items.
TRANSPORTSALESORDER_TYPE	SEBL_01,COMMON, OTM_01	Relates the CarrierRouteStopPickUp or DropOff.
UNIT_OF_MEASURE	SEBL_01,COMMON, OTM_01	Relates the Volume, Weight and Distance units compatible to OTM.

These are the DVMs for the order status process flow:

Table 11–4 DVMs for the Order Status Process Flow

Name	Columns	Description
ORDER_STATUS	COMMON, OTM_01, Siebel_01	Derives the status type value for one system.
TRANSPORTATIONSALESORDER_STATUSCODE	COMMON, OTM_01, Siebel_01	Derives the status values for one system.

These are the DVMs for the product process flow:

Table 11–5 DVMs for the Product Process Flow

Name	Columns	Description
ITEM_INDICATOR	Siebel, COMMON, OTM	Item Indicator

Table 11–5 (Cont.) DVMs for the Product Process Flow

Name	Columns	Description
ITEM_TYPE.xml	Siebel, COMMON, OTM	Item type
PRODUCT_STATUS	Siebel, COMMON, OTM	Product Status
UNIT_OF_MEASURE	Siebel, COMMON, OTM	Unit of Measure

These are the DVMs for the query transportation sales order process flow:

Table 11–6 DVMs for the Query Transportation Sales Order Process Flow

Name	Columns	Description
Country Code in Address (ADDRESS_COUNTRYID)	SEBL_01,COMMON, OTM_01	Used to identify the Country codes in the Address.
CURRENCY_CODE	SEBL_01,COMMON, OTM_01	Currency codes
FEASIBLE_FLAG	SEBL_01,COMMON, OTM_01	Relates the Feasible Solution for the Itineraries time wise.
ITEM_TYPE	SEBL_01,COMMON, OTM_01	Relates the type of Costs associated with the itineraries.
State Code in Address (STATE)	SEBL_01,COMMON, OTM_01	Used to identify the State Code in Destination and Origin Location.
TRANSPORTATIONSALESORDER_TRANSPORTMODE	SEBL_01,COMMON, OTM_01	Relates mode of Transport for the commodities, for example, Rail, Road, and Truck.
TRANSPORTATIONSTOP_TYPE	EBL_01,COMMON, OTM_01	TransportationStopType
UNIT_OF_MEASURE	SEBL_01,COMMON, OTM_01	Relates the Weight Units, Volume units and Distance Units compatible to Oracle Transportation Management (OTM).

Setting Configuration Properties

This chapter includes the following sections:

- [Section 12.1, "SyncCustomerPartyListLogisticsProvABCSImpl"](#)
- [Section 12.2, "SyncTransportationStopListLogisticsProvABCSImpl"](#)
- [Section 12.3, "SyncTransportationStopContactSiebelAggregatorAdapterConsumer"](#)
- [Section 12.4, "SyncTransportationStopAddressSiebelAggregatorAdapter"](#)
- [Section 12.5, "SyncTransportationStopListSiebelReqABCSImpl"](#)
- [Section 12.6, "SyncTransportationSalesOrderListLogisticsProvABCSImpl"](#)
- [Section 12.7, "SyncTransportationSalesOrderListSiebelReqABCSImpl"](#)
- [Section 12.8, "UpdateTransportationSalesOrderListSiebelProvABCSImpl"](#)
- [Section 12.9, "UpdateTransportationSalesOrderListLogisticsReqABCSImpl"](#)
- [Section 12.10, "SyncItemListSiebelReqABCSImpl"](#)
- [Section 12.11, "SyncItemListLogisticsProvABCSImpl"](#)
- [Section 12.12, "QueryTransportationSalesOrderItineraryListSiebelReqABCSImpl"](#)
- [Section 12.13, "QueryTransportationSalesOrderItineraryListLogisticsProvABCSImpl"](#)
- [Section 12.14, "Handling Errors"](#)
- [Section 12.15, "Enterprise Business Object Implementation Maps"](#)

Each section includes details required for the properties that must be set in the *AIAConfigurationProperties.xml* file. The file is located in <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*, "Building AIA Integration Flows," How to Set Up AIA Workstation.

12.1 SyncCustomerPartyListLogisticsProvABCImpl

Table 12-1 SyncCustomerPartyListLogisticsProvABCImpl

Property Name	Value/Default Value	Description
Default.SystemID	OTM_01	Based on the SenderHostName obtained from application business message (ABM), sender SystemID is derived, but if that value is not available in ABM, AIA reads it from the config file using this property.
Routing.LogisticsWebService.RouteToCAVS	True/False, Default=False	Determines whether the EndpointURI should be routed either to the end application service or CAVS for simulating the service.
Routing.LogisticsWebService.OTM_01.EndpointURI	/	This property is used to derive the EndpointURI for the target application.
Routing.CustomerPartyResponseEB / SV2.SyncCustomerPartyList.CAVS.EndpointURI	/	This property is used to determine the end point URI when the response message should be routed to composite application validation system (CAVS).
Routing.CustomerPartyResponseEB SV2.SyncCustomerPartyList.MessageProcessingInstruction.EnvironmentCode	CAVS/PRODUCTION	Sets the Response enterprise business message (EBM) message header EnvironmentCode element to the value depending on what is mentioned here.
OTM_01.CONTACT_DOMAIN	/	Property specifies the domain of the Oracle Transportation Management (OTM) instance in which the Contact for the external system has been created.
OTM_01.Contact_Gid	/	Property specifies the Contact created in the OTM instance for the external system.
LogisticsWebService.LanguageCode	/	This property is used for checking the LanguageCode coming from requester. If that code matches with the acceptable language code of Oracle Transportation Management (OTM), then the processing moves on forward. If the language codes do not match, the process is terminated.
CallBackURL	/	Property specifies the URL used by OTM to return the response.
ABCSExtension.PreProcessABM	True/False Default=False	This property sets an extension point before enterprise business message (EBM) is transformed to application business message (ABM). It determines whether a service has to be invoked or not based on its value.
ABCSExtension.PreProcessEBM	True/False Default=False	This property sets an extension point before EBM is transformed to ABM. It determines whether a service has to be invoked or not based on its value.
ABCSExtension.PostProcessABM	True/False Default=False	This property is used as an extension point after EBM is transformed to ABM and after invoking Logistic web service. It determines whether a service has to be invoked or not based on its value.
ABCSExtension.PostProcessEBM	True/False Default=False	This property sets an extension point before EBM is transformed to ABM and after invoking Logistic web service. It determines whether a service has to be invoked or not based on its value.
Routing.LogisticsWebService.CAVS.EndpointURI	/	This property sets the EndpointURI for the composite application validation system (CAVS) simulator.
Routing.CustomerPartyResponseEB SV2.SyncCustomerPartyList.RouteToCAVS	True/False Default=False	Determines whether the response message from the provider application should be sent to the requester application or to CAVS.
Transformation.EnableExtensions	True/False Default=False	This property determines enabling extensions in the transformations based on customer requirements.
Default.ComMethod	FAX	This property is used to read the default communication method of a contact for a location.
Default.CustomerPartyStatusType	CUSTOMERPARTYSTATUS	Determines the StatusType value to be used for the Location in Oracle Transportation Management (OTM).

For more information about Oracle Customer Hub master data management (MDM) service related configuration properties, see *Oracle Customer Master Data Management Integration* documentation.

12.2 SyncTransportationStopListLogisticsProvABCImpl

Table 12-2 SyncTransportationStopListLogisticsProvABCImpl

Property Name	Value/Default Value	Description
ABCSExtension.PostProcessABM	True/False Default=False	This property is used as an extension point after EBM is transformed to application business message (ABM) and after invoking Logistic web service. It determines whether a service has to be invoked or not based on its value.
ABCSExtension.PostProcessEBM	True/False Default=False	This property sets an extension point before enterprise business message (EBM) is transformed to ABM and after invoking Logistic web service. It determines whether a service has to be invoked or not based on its value.
Default.SystemID	OTM_01	Sender SystemId is obtained from ABM to be used in EBMHeader. If it is not available in ABM, AIA reads it from the config file using this property.
Routing.LogisticsWebService.Rout eToCAVS	True/False Default=False	Determines whether the EndpointURI should be routed either to the end application service or composite application validation system (CAVS) for simulating the service.
Routing.LogisticsWebService.OT M_01.EndpointURI	/	This property sets the EndpointURI for the target application.
Routing.LogisticsWebService.CAV S.EndpointURI	/	This property defines the Endpoint URI for the CAVS simulator.
Routing.TransportationStopRespo nseEBS.	True/False Default=False	This property determines whether the response message should be routed to CAVS or not.
SyncTransportationStopListRespo nse.RouteToCAVS		
Routing.TransportationStopRespo nseEBS.	CAVS/PRODUCTION	Sets the response message EBM header Environment Code element to this value.
SyncTransportationStopListRespo nse.MessageProcessingInstruction .EnvironmentCode		
Routing.TransportationStopRespo nseEBS	/	Defines the CAVS EndpointURI for response message.
SyncTransportationStopListRespo nse.CAVS.EndpointURI		
ABCSExtension.PreInvokeABS	True/False Default=False	This property is used as an extension point after enterprise business message (EBM) to ABM transformation and before invoking the target. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
ABCSExtension.PreXformEBMto ABM	True/False Default=False	This property is used as an extension point before EBM is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Transformation.EnableExtensions	True/False Default=False	Property used to determine enabling extensions in the Transformations based on the customer requirements.
LogisticsWebService.LanguageCo de	ENU	This property indicates the language code for the Oracle Transportation Management (OTM) system. It is used for matching the LanguageCode coming from requester. If the language code does not match, the process is terminated.
CallBackURL	/	Property specifies the URL used by OTM to return the response.
Default.ComMethod	FAX	This property is used to read the default communication method for a location contact.

Table 12–2 (Cont.) SyncTransportationStopListLogisticsProvABCSImpl

Property Name	Value/Default Value	Description
Default.SystemID	OTM_01	Sender SystemId is obtained from EBMHeader, but if it is empty AIA reads it from the config file using this property.
Routing.LogisticsWebService.RouteToCAVS	True/False	Determines whether the EndpointURI should be routed either to the end application service or composite application validation system (CAVS) for simulating the service.
Routing.LogisticsWebService.OTM_01.EndpointURI	/	This property sets the EndpointURI for the target application.
Routing.LogisticsWebService.CAVS.EndpointURI	/	This property sets the EndpointURI for the CAVS simulator.
Routing.TransportationStopResponse.OTM_01.RouteToCAVS	True/False	This property determines whether the response message should be routed to CAVS or not.
Routing.TransportationStopResponse.OTM_01.EnvironmentCode	CAVS	Sets the EnvironmentCode element to the value PRODUCTION.
SyncTransportationStopListResponse.MessageProcessingInstruction.EnvironmentCode		
Routing.TransportationStopResponse.OTM_01.CONTACT_DOMAIN	/	Defines the CAVS EndpointURI.
OTM_01.Contact_Gid	/	Property specifies the domain of the OTM instance in which the Contact for the external system has been created.
OTM_01.Contact_Gid	/	Property specifies the Contact created in the OTM instance for the external system.
ABCSExtension.PreInvokeABS	True/False	This property is used as an extension point after enterprise business message (EBM) to application business message (ABM) transformation and before invoking the target. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
ABCSExtension.PreXformEBMtoABM	True/False	This property is used as an extension point before enterprise business message (EBM) is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Transformation.EnableExtensions	False	Property used to determine enabling extensions in the Transformations based on the customer requirements.
LogisticsWebService.LanguageCode	ENG	This property is used for checking the LanguageCode coming from Seibel matches with the acceptable code of Oracle Transportation Management (OTM). If the language code does not match, the process is terminated.
Default.ComMethod	/	This property is used to set the default communication method.

12.3 SyncTransportationStopContactSiebelAggregatorAdapterConsumer

Table 12-3 SyncTransportationStopContactSiebelAggregatorAdapterConsumer

Property Name	Value/Default Value	Description
Default.SystemID	SEBL_01	It is the responsibility of the application to send the SystemID from which the request is being sent. If any requester application fails to send the SystemID, AIA picks the default SystemID from this property.
Routing.SiebelWebService.RouteToCAVS	True/False Default=False	If this property value is set to false, then invokes the Siebel webservice endpoint web services definition language (WSDL). If the property value is set to true, then it invokes simulator.
Routing.SiebelWebService.CAVS.EndpointURI	/	This holds the URI of composite application validation system (CAVS) simulator where the aggregator should send the request.
Routing.SiebelWebService.SEBL_01.EndpointURI	/	This holds the URI of Siebel webs service where the aggregator should send the request.

12.4 SyncTransportationStopAddressSiebelAggregatorAdapter

Table 12-4 SyncTransportationStopAddressSiebelAggregatorAdapter

Property Name	Value/Default Value	Description
Default.SystemID	SEBL_01	It is the responsibility of the application to send the SystemID from which the request is being sent. If any requester application SystemID, AIA picks the default SystemID from this config property.
Routing.SiebelWebService.RouteToCAVS	True/false Default=False	If this property value is set to false, then the service invokes the Siebel webservice endpoint WSDL. If the property value is set to true, then it invokes simulator.
Routing.SiebelWebService.CAVS.EndpointURI	/	This holds the URI of CAVS simulator where the aggregator should send the request.
Routing.SiebelWebService.SEBL_01.EndpointURI	/	This holds the URI of Siebel web service where the aggregator should send the request.

12.5 SyncTransportationStopListSiebelReqABCSImpl

Table 12-5 SyncTransportationStopListSiebelReqABCSImpl

Property Name	Value/Default Value	Description
Default.SystemID	SEBL_01	Based on the SenderHostName obtained from application business message (ABM), sender SystemID is derived. If ABM sends that as empty, AIA reads it from the config file using this property.
ABCSExtension.PreXformABMtoEBM	True/False Default=False	This property is used as an extension point before ABM is transformed to enterprise business message (EBM). It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Routing.TransportationStopEBS.SyncTransportationStopList.RouteToCAVS	True/False Default=False	This property is used to determine whether to route the request to CAVS.
Routing.TransportationStopEBS.SyncTransportationStopList.CAVS.EndpointURI	/	This property is used to get End Point URI when Routing.TransportationStopEBS.SyncTransportationStopList.RouteToCAVS is true.

Table 12–5 (Cont.) SyncTransportationStopListSiebelReqABCImpl

Property Name	Value/Default Value	Description
Routing.TransportationStopEBS.SyncTransportationStopList.MessageProcessingInstruction.EnvironmentCode	CAVS/PRODUCTION default=PRODUCTION	This property is used to set the environment code in the EBM header of the request message.
Transformation.EnableExtensions	True/False Default=False	This property should be set to True, when customers want to customize the attribute mapping done in XSL.
ABCSExtension.PreInvokeEBS	True/False Default=False	This property is used as an extension point after ABM to enterprise business message (EBM) transformation and before Invoking the EBS. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.

12.6 SyncTransportationSalesOrderListLogisticsProvABCImpl

Table 12–6 SyncTransportationSalesOrderListLogisticsProvABCImpl

Property Name	Value/Default Value	Description
ABCSExtension.PostProcessABM	True/False Default=False	This property is used as an extension point after EBM is transformed to application business message (ABM) and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
ABCSExtension.PostProcessEBM	True/False Default=False	This property sets an extension point before EBM is transformed to ABM and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
Default.SystemID	OTM_01	Based on the SenderHostName obtained from ABM, sender SystemID is derived, but if it is empty, AIA reads it from the config file using this property.
Routing.LogisticsWebService.RouteToCAVS	True/False Default=False	Determines whether the EndpointURI should be routed either to the end application service or composite application validation system (CAVS) for simulating the service.
Routing.LogisticsWebService.OTM_01.EndpointURI	/	This property defines the EndpointURI for the target application.
Routing.LogisticsWebService.CAVS.EndpointURI	/	This property defines the EndpointURI for the CAVS simulator.
Routing.TransportationSalesOrderResponseEBS.SyncTransportationSalesOrderList.RouteToCAVS	/	This property determines whether the response message must be routed to CAVS or not.
Routing.TransportationSalesOrderResponseEBS.SyncTransportationSalesOrderList.MessageProcessingInstruction.EnvironmentCode	CAVS/PRODUCTION Default=PRODUCTION	This property value is used to set the EnvironmentCode element of the Response message.
Routing.TransportationSalesOrderResponseEBS.SyncTransportationSalesOrderList.CAVS.EndpointURI	/	Defines the composite application validation system (CAVS) EndpointURI for the response message.
OTM_01.CONTACT_DOMAIN	/	Property specifies the domain of the OTM instance in which the Contact for the external system has been created.
OTM_01.Contact_Gid	/	Property specifies the Contact created in the Oracle Transportation Management (OTM) instance for the external system.

Table 12–6 (Cont.) SyncTransportationSalesOrderListLogisticsProvABCSImpl

Property Name	Value/Default Value	Description
ABCSExtension.PreInvokeABS	True/False Default=False	This property is used as an extension point after enterprise business message (EBM) to ABM transformation and before invoking the target end point application for extensibility of application business message (ABM) message. It determines invocation of extension point is to be made or not depending on whether it is true or false.
ABCSExtension.PreXformEBMtoABM	True/False Default=False	This property is used as an extension point before EBM is transformed to ABM for extensibility of EBM message. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Transformation.EnableExtensions	True/False Default=False	Used for determining enabling extensions in the Transformations based on customer requirements.
LogisticsWebService.LanguageCode	ENU	This property indicates the language code for the OTM system. It is used for matching the LanguageCode coming from requester. If the language code does not match, the process is terminated.
CallBackURL	/	Property specifies the URL used by OTM to return the response.

12.7 SyncTransportationSalesOrderListSiebelReqABCSImpl

Table 12–7 SyncTransportationSalesOrderListSiebelReqABCSImpl

Property Name	Value/Default Value	Description
ABCSExtension.PostProcessABM	True/False Default=False	This property is used as an extension point after EBM is transformed to ABM and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
ABCSExtension.PostProcessEBM	True/False Default=False	This property sets an extension point before EBM is transformed to ABM and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
Default.SystemID	SEBL_01	Based on the SenderHostName obtained from application business message (ABM), sender SystemID is derived, but if it is empty, AIA reads it from the config file using this property.
ABCSExtension.PreXformABMtoEBM	True/False Default=False	This property is used as an extension point before enterprise business message (EBM) is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Routing.TransportationSalesOrderList.RouteToCAVS	True/False Default=False	This property determines whether the message should be routed to composite application validation system (CAVS) or not.
Routing.TransportationSalesOrderList.CAVS.EndpointURI	/	This property defines the CAVS Endpoint.

Table 12–7 (Cont.) SyncTransportationSalesOrderListSiebelReqABCImpl

Property Name	Value/Default Value	Description
Routing.TransportationSalesOrder EBS.SyncTransportationSalesOrde rList.MessageProcessingInstructio n.EnvironmentCode	CAVS/PRODUCTION Default=PRODUCTION	This property is used to set the EnvironmentCode element in the request message.
ABCSExtension.PreInvokeEBS	True/false. Default=false.	This property is used as an extension point before EBM is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Routing.SWIOOrderUpsertRef.SEB / L_01.EndpointURI		Property specifies the URL for routing to the Siebel application.

12.8 UpdateTransportationSalesOrderListSiebelProvABCImpl

Table 12–8 UpdateTransportationSalesOrderListSiebelProvABCImpl

Property Name	Value/Default Value	Description
ABCSExtension.PostProcessABM	True/False Default=False	This property is used as an extension point after EBM is transformed to ABM and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
ABCSExtension.PostProcessEBM	True/False Default=False	This property sets an extension point before EBM is transformed to ABM and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
Default.SystemID	SEBL_01	Based on the SenderHostName obtained from application business message (ABM), sender SystemID is derived and set in EBMHeader. If it is empty, AIA reads it from the config file using this property.
Routing.SiebelWebService.RouteToCAVS	True/False Default=False	Determines whether the EndpointURI should be routed either to the end application service or CAVS for simulating the service.
Routing.SiebelWebService.SEBL_ / 01.EndpointURI		This property defines the EndpointURI for the target application.
Routing.SiebelWebService.CAVS.EndpointURI /		This property defines the EndpointURI for the CAVS simulator.
Routing.TransportationSalesOrderResponseEBS. UpdateTransportationSalesOrderListResponse.R outeToCAVS	True/False Default=False	This property determines whether the response message must be routed to CAVS or not.
Routing.TransportationSalesOrderResponseEBS. UpdateTransportationSalesOrderListResponse. MessageProcessingInstruction.EnvironmentCod e	CAVS/PRODUCTION Default=PRODUCTION	This property is used to set the environment code element of the response message.
Routing.TransportationSalesOrderResponseEBS. / UpdateTransportationSalesOrderListResponse.C AVS.EndpointURI		Defines the CAVS EndpointURI for response message.

Table 12-8 (Cont.) UpdateTransportationSalesOrderListSiebelProvABCImpl

Property Name	Value/Default Value	Description
ABCSExtension.PreInvokeABS	True/False Default=False	This property is used as an extension point after enterprise business message (EBM) to ABM transformation and before invoking the target. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
ABCSExtension.PreXformEBMtoABM	True/False Default=False	This property is used as an extension point before EBM is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Transformation.EnableExtensions	True/False Default=False	Property used to determine enabling extensions in the Transformations based on customer requirements.

12.9 UpdateTransportationSalesOrderListLogisticsReqABCImpl

Table 12-9 UpdateTransportationSalesOrderListLogisticsReqABCImpl

Property Name	Value/Default Value	Description
Default.SystemID	OTM_01	Sender SystemID is obtained from application business message (ABM) and set into EBMHeader. If it is empty, AIA reads it from the config file using this property.
ABCSExtension.PreXformABMtoEBM	True/False Default=False	This property is used as an extension point before EBM is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false
Routing.TransportationSalesOrderEBS V1.UpdateTransportationSalesOrderList.CAVS.EndpointURI	True/False Default=False	This property defines the end point URI of CAVS.
Routing.TransportationSalesOrderEBS V1.UpdateTransportationSalesOrderList.RouteToCAVS	True/False Default=False	EnvironmentCode in the Header population is derived based on this value. If this property value is set to true, then the EnvironmentCode value is set to CAVS and if the property value is not set, then the environment code is set to Production by default.
Routing.TransportationSalesOrderEBS V1.UpdateTransportationSalesOrderList.MessageProcessingInstruction.EnvironmentCode	CAVS/PRODUCTION Default=PRODUCTION	This property is used to set the Environment Code element of the request message.
ABCSExtension.PreInvokeEBS	True/false. Default = false.	This property is used as an extension point before enterprise business message (EBM) is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Transformation.EnableExtensions	True/False Default=False	This property should be set to true when customers want to customize the attribute mapping done in xsl.
Default.Languages	ENG	This property is used to set the default language of Oracle Transportation Management (OTM).

12.10 SyncItemListSiebelReqABCImpl

Table 12-10 SyncItemListSiebelReqABCImpl

Property Name	Property Value	Description
Default.SystemID	SEBL_01	Based on the SenderHostName obtained from ABM, sender SystemID is derived, but if it is empty, AIA reads it from the config file using this property.
ABCSExtension.PreXformABMtoEBM	True/False, Default = False	This property is used as an extension point before the ABM is transformed to EBM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
ABCSExtension.PreInvokeEBS	True/False	This property is used as an extension point after the ABM is transformed to EBM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Transformation.EnableExtensions	True/False	Property used for determining enabling XSL 2.0 extensions in the Transformations.
Routing.ItemEBSV2.SyncItemList.RouteToCAVS	True/False	Determines whether the EndpointURI should be routed either to the end application service or CAVS for simulating the service.
Routing.ItemEBSV2.SyncItemList.MessageProcessingInstruction.EnvironmentCode	PRODUCTION/CAVS	Sets the EnvironmentCode element to the value PRODUCTION.
Routing.ItemEBSV2.SyncItemList.CAVS.EndpointURI	/	This property sets the EndpointURI for the composite application validation system (CAVS) simulator.

12.11 SyncItemListLogisticsProvABCImpl

Table 12-11 SyncItemListLogisticsProvABCImpl

Property Name	Property Value	Description
ABCSExtension.PostProcessABM	True/False Default=False	This property is used as an extension point after enterprise business message (EBM) is transformed to application business message (ABM) and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
ABCSExtension.PostProcessEBM	True/False Default=False	This property sets an extension point before EBM is transformed to ABM and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
Default.SystemID	OTM_01	Sender SystemId is obtained from EBMHeader, but if it is empty, AIA reads it from the config file using this property.
ABCSExtension.PreProcessEBM	True/False, Default = False	This property is used as an extension point before EBM is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false
ABCSExtension.PreProcessABM	True/False	This property is used as an extension point After the EBM is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false
ABCSExtension.PostProcessABM	True/False	This property is used as an extension point after the response ABM is received from the provider and before it is transformed to response EBM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false

Table 12-11 (Cont.) SyncItemListLogisticsProvABCImpl

Property Name	Property Value	Description
ABCSExtension.PostProcessEBM	True/False	This property is used as an extension point after the response application business message (ABM) is received from the provider and before it is transformed to response EBM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false
Transformation.EnableExtensions	True/False	Property used for determining enabling XSL 2.0 extensions in the Transformations.
Routing.LogisticsWebServiceV1.Ro uteToCAVS	True/False	Determines whether the EndpointURI should be routed either to the end application service or CAVS for simulating the service.
Routing.LogisticsWebServiceV1.CA /VS.EndpointURI	/	This property sets the EndpointURI for the composite application validation system (CAVS) simulator.
Routing.LogisticsWebServiceV1.OT /M_01.EndpointURI	/	This property sets the EndpointURI for the target application.
Routing.LogisticsWebServiceV1.Me ssageProcessingInstruction.Environ mentCode	PRODUCTION	Sets the EnvironmentCode element to the value PRODUCTION.
ABCs.CallbackURL	/	Property specifies the URL used by Oracle Transportation Management (OTM) to return the response.
OTM_01.CONTACT_DOMAIN	/	Property specifies the OTM instance user name.
OTM_01.Contact_Gid	/	Property specifies the Contact created in the OTM instance for the external system.

12.12 QueryTransportationSalesOrderItineraryListSiebelReqABCImpl

Table 12-12 QueryTransportationSalesOrderItineraryListSiebelReqABCImpl

Property Name	Property Value	Description
Default.SystemID	SEBL_01	Sender SystemId is obtained from ABM to be used in EBMHeader. If it is not available, then the AIA reads it from the config file using this property.
Routing.TransportationSalesO rderEBS.RouteToCAVS	True / false Default=false	<p>This property, which is used for populating EBMHeader's EnvironmentCode, decides whether the TransportationSalesOrderEBS should invoke CAVS or the Provider application's business connector service.</p> <p>If the value is set to true, EBMHeader's EnvironmentCode is set to CAVS and the EBS routes the request to CAVS.</p> <p>If the value is set to false, EBMHeader's EnvironmentCode is set to the EnvironmentCode mentioned in AIAConfiguration property</p> <p>Routing.TransportationSalesOrderEBS.MessageProcessingInstru ction.EnvironmentCode, or if this property is not set, then the default EnvironmentCode is PRODUCTION. And in the EBS routing rules decide based on the EnvironmentCode where it should route.</p>
Routing.TransportationSalesO rderEBS.MessageProcessingIns truction.EnvironmentCode	PRODUCTION	This property defines the Environment Code to be populated in EBMHeader, which is used by the EBS to route it to the corresponding provider application business connector service or CAVS. This property is used while checking the RouteToCAVS property.
Routing.TransportationSalesO rderEBS.CAVS.EndpointURI	/	This property defines the Definition Id to be populated in MessageProcessingInstruction of the EBMHeader, when the RouteToCAVS property is set to true. This holds the URI of CAVS simulator where the EBS should the request.

Table 12-12 (Cont.) QueryTransportationSalesOrderItineraryListSiebelReqABCImpl

Property Name	Property Value	Description
ABCSExtension.PreXformAB MtoEBMTransportationSalesOrderItineraryListABM	True/false Default=false	This property is used as an extension point before ABM is transformed to enterprise business message (EBM). It determines invocation of service at the extension point is to be made or not depending on its value.
ABCSExtension.PostXformAB MtoEBMTransportationSalesOrderItineraryListABM	True/false Default=false	This property is used as an extension point before ABM is transformed to EBM. It determines invocation of service at the extension point is to be made or not depending on its value.
Transformation.EnableExtensions	True/false	This property determines enabling extensions in the transformations based on customer requirements.

12.13 QueryTransportationSalesOrderItineraryListLogisticsProvABCImpl

Table 12-13 QueryTransportationSalesOrderItineraryListLogisticsProvABCImpl

Property Name	Property Value	Description
ABCSExtension.PostProcessABM	True/False Default=False	This property is used as an extension point after EBM is transformed to application business message (ABM) and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
ABCSExtension.PostProcessEBM	True/False Default=False	This property sets an extension point before EBM is transformed to ABM and after invoking Logistic webservice. It determines whether a service has to be invoked or not based on its value.
Default.SystemID	OTM_01	Sender SystemId is obtained from application business message (ABM) to be used in EBMHeader. If it is not available in ABM, AIA reads it from the config file using this property.
Routing.LogisticsWebService.RouteToCAVS	true/false Default=false	<p>This property indicates whether the message should be sent to the target application or to CAVS.</p> <p>If this property is set to true, the message is routed to CAVS, else it is routed to target application through adapter service if any. The URI of partnerlink is dynamically decided through a java activity based on this property.</p>
Routing.LogisticsWebService.CAVS.EndpointURI	/	If the RouteToCAVS property is set to true, the URI of the simulator is dynamically derived by the java activity from this property
Routing.LogisticsWebService.OTM_01.EndpointURI	/	If the RouteToCAVS property is set to false, the URI of the partnerlink is dynamically derived by the java activity from this property. This property should hold the endpoint URI of the provider application or that of the adapter service connected to provider application if any.
ABCSExtension.PreXformEBMtoABM	true/false Default=false	This property is used as an extension point before enterprise business message (EBM) is transformed to ABM. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
ABCSExtension.PostXformABMtoEBM	true/false Default=false	This property is used as an extension point after EBM is transformed to ABM and before invoking the target application. It determines invocation of service at the extension point is to be made or not depending on whether it is true or false.
Transformation.EnableExtensions	true/false	This property should be set to true when customers want to customize the attribute mapping done in xsl.

12.14 Handling Errors

For more information about AIA error handling, see the *Oracle Fusion Middleware Infrastructure Components and Utilities User's Guide for Oracle Application Integration Architecture Foundation Pack*, "Setting Up and Using Error Handling and Logging."

12.15 Enterprise Business Object Implementation Maps

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*, Using the XSL Mapping Analyzer. For more information about how services are mapped, see *EBO Implementation Maps (EIMs) 881022.1* at My Oracle Support (<https://support.oracle.com/>).

