

Oracle® Outsourced Manufacturing

User's Guide for Discrete, Seiban-Based, and Process Manufacturing
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Oracle Outsourced Manufacturing User's Guide for Discrete, Seiban-Based, and Process Manufacturing, Release 12.2

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Primary Author: Sujata Patnaik

Contributing Author: Abhishek Srivastava, Muralidharreddy Venkatesha, Swapna, Kommineni, Santosh Samantaray, Yashwant Jain, Nikhil Tungare

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Oracle welcomes customers' comments and suggestions on the quality and usefulness of this document. Your feedback is important, and helps us to best meet your needs as a user of our products. For example:

- Are the implementation steps correct and complete?
- Did you understand the context of the procedures?
- Did you find any errors in the information?
- Does the structure of the information help you with your tasks?
- Do you need different information or graphics? If so, where, and in what format?
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Note: Before sending us your comments, you might like to check that you have the latest version of the document and if any concerns are already addressed. To do this, access the new Oracle E-Business Suite Release Online Documentation CD available on My Oracle Support and www.oracle.com. It contains the most current Documentation Library plus all documents revised or released recently.

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Preface

Intended Audience

Welcome to Release 12.2 of the *Oracle Outsourced Manufacturing User's Guide for Discrete, Seiban-Based, and Process Manufacturing*.

This guide contains the information needed to implement and use Oracle Outsourced Manufacturing.

See Related Information Sources on page x for more Oracle E-Business Suite product information.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

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Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

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Related Information Sources

You can choose from many sources of information, including online documentation, training, and support services, to increase your knowledge and understanding of Oracle Outsourced Manufacturing.

If this guide refers you to other Oracle Applications documentation, use only the Release 12 versions of those guides.

Online Documentation

All Oracle Applications documentation is available online (HTML or PDF).

- Online Help - Online help patches (HTML) are available on My Oracle Support.
- About Documents - Refer to the About Document for the mini-pack or family pack that you have installed to learn about new documentation or documentation patches that you can download. About Documents are available on My Oracle Support.

Guides Related to All Products

Financials Glossary: The glossary includes definitions of common terms that are shared by all Oracle Financials products. In some cases, there may be different definitions of the same term for different Financials products. If you are unsure of the meaning of a term you see in an Oracle Financials guide, please refer to the glossary for clarification. You can find the glossary in the online help or in the *Oracle General Ledger User's Guide*.

Oracle E-Business Suite User's Guide: This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI) available with this release of Receivables (and any other Oracle Applications products). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes.

You can access this user's guide online by choosing "Getting Started with Oracle Applications" from any Oracle Applications help file.

Oracle E-Business Suite: Extending Enterprise Command Centers: This book provides an overview of the Oracle Enterprise Command Center Framework architecture and the anatomy of an Enterprise Command Center dashboard. It also describes how to extend

Enterprise Command Center dashboards to meet requirements specific to your implementation.

Oracle E-Business Suite: Administering Enterprise Command Centers: This book describes various tools and features of Oracle Enterprise Command Center Framework that can be used to manage and monitor Enterprise Command Centers.

User Guides Related to This Product

Receivables shares data and setup information with other Oracle Applications products. Even if you have not installed them as separate products, your Receivables application includes some forms and functionality from other Oracle Applications. Therefore, you may want to refer to other user guides when you set up and use Receivables.

Oracle Public Sector Financials Documentation

Information regarding public sector functionality in Receivables is documented in this guide. For information regarding public sector functionality in other Public Sector Financial's products, refer to the following documentation:

- Oracle General Ledger User Guide
- Oracle Purchasing User's Guide
- Oracle Payables User Guide

Oracle Projects Documentation Set

- **Oracle Projects Implementation Guide:** Use this manual as a guide for implementing Oracle Projects. This manual also includes appendixes covering function security, menus and responsibilities, and profile options.
- **Oracle Projects Fundamentals User Guide:** This guide provides the common foundation shared across the Oracle Projects products. Use this guide to learn fundamental information about the Oracle Projects solution. This guide includes a Navigation Paths appendix. Use this appendix to find out how to access each window in the Oracle Projects solution.
- **Oracle Project Costing User Guide:** Use this guide to learn detailed information about Oracle Project Costing. Oracle Project Costing provides the tools for processing project expenditures, including calculating their cost to each project and determining the General Ledger accounts to which the costs are posted.
- **Oracle Project Billing User Guide:** Use this guide to learn how to use Oracle Project Billing to process client invoicing and measure the profitability of your contract projects.
- **Oracle Project Management User Guide:** This guide shows you how to use Oracle Project Management to manage projects through their lifecycles - from planning, through execution, to completion.

- **Oracle Project Resource Management User Guide:** This guide provides you with information on how to use Oracle Project Resource Management. It includes information about staffing, scheduling, and reporting on project resources.
- **Oracle Projects APIs, Client Extensions, and Open Interfaces Reference:** This manual gives detailed information about all public application programming interfaces (API) that you can use to extend Oracle Projects functionality.

Oracle General Ledger User's Guide

Use this manual when you plan and define your chart of accounts, accounting period types and accounting calendar, functional currency, and set of books. It also describes how to define journal entry sources and categories so you can create journal entries for your general ledger. If you use multiple currencies, use this manual when you define additional rate types, and enter daily rates. This manual also includes complete information on implementing Budgetary Control.

Oracle Receivables Tax Manual

This manual provides everything you need to know about calculating tax within Oracle Receivables, Oracle Order Management, Oracle Sales, and Oracle Web Customers. It includes information about implementation procedures, setup forms and windows, the Oracle Receivables Tax calculation process, tax reports and listings, and open interfaces.

Oracle Cash Management User Guide

This guide provides information about using Oracle Cash Management to clear your receipts, as well as reconciling bank statements with your outstanding balances, transactions, and receipts.

Oracle HRMS Documentation Set

This set of guides explains how to define your employees, so you can give them operating unit and job assignments. It also explains how to set up an organization (operating unit). Even if you do not install Oracle HRMS, you can set up employees and organizations using Oracle HRMS windows. Specifically, the following manuals will help you set up employees and operating units:

- **Using Oracle HRMS - The Fundamentals:** This user guide explains how to set up and use enterprise modeling, organization management, and cost analysis.
- **Managing People Using Oracle HRMS:** Use this guide to find out about entering employees.

Oracle Payables User's Guide

Refer to this manual to learn how to use Invoice Import to create invoices in Oracle Payables. This manual also explains how to define suppliers, and how to specify supplier and employee numbering schemes for invoices. The guide also describes how accounts payable transactions are posted to General Ledger from the payables subledger.

Oracle Inventory User's Guide

If you install Oracle Inventory, refer to this manual to learn how to define your items, units of measure classes, units of measure, and unit of measure conversions for use in measuring amounts for your units of production items, as well as other information about setting up and using Oracle Inventory.

Country-Specific Manuals

Use these manuals to meet statutory requirements and common business practices in your country or region. They also describe additional features added to Receivables to meet those requirements. Look for a user guide appropriate to your country; for example, see the Oracle Financials for the Czech Republic User's Guide for more information about using this software in the Czech Republic.

Oracle Applications Character Mode to GUI Menu Path Changes

This is a quick reference guide for experienced Oracle Applications end users migrating from character mode to a graphical user interface (GUI). This guide lists each character mode form and describes which GUI windows or functions replace it.

Oracle Financials Open Interfaces Guide

This guide contains a brief summary of each Oracle Financial Applications open interface. You can also read about the Receivables open interface tables in the appropriate sections of the *Oracle Receivables User's Guide*.

Installation and System Administration

Oracle E-Business Suite Concepts

This book is intended for all those planning to deploy Oracle E-Business Suite Release 12, or contemplating significant changes to a configuration. After describing the Oracle E-Business Suite architecture and technology stack, it focuses on strategic topics, giving a broad outline of the actions needed to achieve a particular goal, plus the installation and configuration choices that may be available.

Oracle E-Business Suite Installation Guide: Using Rapid Install

This book is intended for use by anyone who is responsible for installing or upgrading Oracle E-Business Suite. It provides instructions for running Rapid Install either to carry out a fresh installation of Oracle E-Business Suite Release 12, or as part of an upgrade from Release 11i to Release 12. The book also describes the steps needed to install the technology stack components only, for the special situations where this is applicable.

Oracle E-Business Suite Upgrade Guide: Release 11i to Release 12.2

Refer to this guide if you are upgrading your Oracle Applications. This guide describes the upgrade process and lists database and product-specific upgrade tasks.

Maintaining Oracle E-Business Suite Documentation Set

This documentation set provides maintenance and patching information for the Oracle E-Business Suite DBA. *Oracle E-Business Suite Maintenance Procedures* provides a description of the strategies, related tasks, and troubleshooting activities that will help

ensure the continued smooth running of an Oracle E-Business Suite system. *Oracle E-Business Suite Maintenance Utilities* describes the Oracle E-Business Suite utilities that are supplied with Oracle E-Business Suite and used to maintain the application file system and database. It also provides a detailed description of the numerous options available to meet specific operational requirements. *Oracle E-Business Suite Patching Procedures* explains how to patch an Oracle E-Business Suite system, covering the key concepts and strategies. Also included are recommendations for optimizing typical patching operations and reducing downtime.

Oracle E-Business Suite System Administrator's Guide Documentation Set

This documentation set provides planning and reference information for the Oracle E-Business Suite System Administrator. *Oracle E-Business Suite Set Up Guide* contains information on system configuration steps, including defining concurrent programs and managers, enabling Oracle Applications Manager features, and setting up printers and online help. *Oracle E-Business Suite Maintenance Guide* provides information for frequent tasks such as monitoring your system with Oracle Applications Manager, administering Oracle E-Business Suite Secure Enterprise Search, managing concurrent managers and reports, using diagnostic utilities including logging, managing profile options, and using alerts. *Oracle E-Business Suite Security Guide* describes User Management, data security, function security, auditing, and security configurations.

Oracle Alert User's Guide

This guide explains how to define periodic and event alerts to monitor the status of your Oracle Applications data.

Oracle E-Business Suite Developer's Guide

This guide contains the coding standards followed by the Oracle E-Business Suite development staff. It describes the Oracle Application Object Library components needed to implement the Oracle E-Business Suite user interface described in the *Oracle E-Business Suite User Interface Standards for Forms-Based Products*. It provides information to help you build your custom Oracle Forms Developer forms so that they integrate with Oracle E-Business Suite. In addition, this guide has information for customizations in features such as concurrent programs, flexfields, messages, and logging.

Other Implementation Documentation

Oracle Applications Product Update Notes

Use this guide as a reference for upgrading an installation of Oracle Applications. It provides a history of the changes to individual Oracle Applications products between Release 11.0 and Release 12. It includes new features, enhancements, and changes made to database objects, profile options, and seed data for this interval.

Multiple Reporting Currencies in Oracle Applications If you use the Multiple Reporting Currencies feature to record transactions in more than one currency, use this manual before you implement Oracle Receivables. This manual details additional steps and setup considerations for implementing Oracle Receivables with Multiple Reporting Currencies.

Multiple Organizations in Oracle Applications

This guide describes how to set up and use Oracle Receivables with Oracle Applications' Multiple Organization support feature, so you can define and support different organization structures when running a single installation of Oracle Receivables.

Oracle Workflow Administrator's Guide

This guide explains how to complete the setup steps necessary for any Oracle Applications product that includes workflow-enabled processes, as well as how to monitor the progress of runtime workflow processes.

Oracle Workflow Developer's Guide

This guide explains how to define new workflow business processes and customize existing Oracle Applications-embedded workflow processes. It also describes how to define and customize business events and event subscriptions.

Oracle Workflow User's Guide

This guide describes how Oracle Applications users can view and respond to workflow notifications and monitor the progress of their workflow processes.

Oracle Workflow API Reference

This guide describes the APIs provided for developers and administrators to access Oracle Workflow.

Oracle E-Business Suite Flexfields Guide

This guide provides flexfields planning, setup, and reference information for the Oracle E-Business Suite implementation team, as well as for users responsible for the ongoing maintenance of Oracle E-Business Suite product data. This guide also provides information on creating custom reports on flexfields data.

Oracle eTechnical Reference Manuals

Each eTechnical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for a specific Oracle Applications product. This information helps you convert data from your existing applications and integrate Oracle Applications data with non-Oracle applications, and write custom reports for Oracle Applications products. Oracle eTRM is available on My Oracle Support.

Oracle E-Business Suite User Interface Standards for Forms-Based Products

This guide contains the user interface (UI) standards followed by the Oracle E-Business Suite development staff. It describes the UI for the Oracle E-Business Suite products and how to apply this UI to the design of an application built by using Oracle Forms.

Oracle Order Management Suite APIs and Open Interfaces Manual

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes APIs and open interfaces found in Oracle Order Management Suite.

Oracle Applications Message Reference Manual

This manual describes all Oracle Applications messages. This manual is available in HTML format on the documentation CD-ROM for Release 12.

Integration Repository

The Oracle Integration Repository is a compilation of information about the service endpoints exposed by the Oracle E-Business Suite of applications. It provides a complete catalog of Oracle E-Business Suite's business service interfaces. The tool lets users easily discover and deploy the appropriate business service interface for integration with any system, application, or business partner.

The Oracle Integration Repository is shipped as part of the Oracle E-Business Suite. As your instance is patched, the repository is automatically updated with content appropriate for the precise revisions of interfaces in your environment.

Do Not Use Database Tools to Modify Oracle E-Business Suite Data

Oracle **STRONGLY RECOMMENDS** that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle E-Business Suite data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle E-Business Suite data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle E-Business Suite tables are interrelated, any change you make using an Oracle E-Business Suite form can update many tables at once. But when you modify Oracle E-Business Suite data using anything other than Oracle E-Business Suite, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle E-Business Suite.

When you use Oracle E-Business Suite to modify your data, Oracle E-Business Suite automatically checks that your changes are valid. Oracle E-Business Suite also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

Overview

This chapter covers the following topics:

- Overview of Oracle Outsourced Manufacturing

Overview of Oracle Outsourced Manufacturing

Outsourced manufacturing, interchangeably referred to as 'Collaborative' or 'Contract' manufacturing or 'Subcontracting' in some industries, is a common business practice where a brand-owner or an Original Equipment Manufacturer (OEM) outsources its entire manufacturing operations or a portion of it by entering into a contractual agreement with a manufacturing service provider commonly known as a Manufacturing Partner (MP). The terms outsourced manufacturing or subcontracting are used to refer to this common business practice in this guide.

There are different ways in which enterprises outsource their manufacturing activities. These variations are driven by the strategic decisions that are made on some of the following factors:

- **Extent of Outsourcing:**

Enterprises can opt to outsource the entire manufacturing process or a portion of it by collaborating with a MP.

- **Nature of Component Supply:**

Enterprises can either own and manage the components for consumption at the MP's facility, or engage a supplier to either own and consign inventory, or drop ship the components at the MP's facility. In other situations, the OEM may charge the MP by registering a sale of the components resulting in a complete transfer of ownership

- **Shipment of Finished Goods:**

Enterprises can decide to either supply finished goods directly to the customer or enter into a contractual agreement with the MP to drop ship the finished goods to

the customer's facility.

- **Manufacturing Partner Type**

Manufacturing Partners can be either external or internal.

- **External Manufacturing Partner Organization:**

Enterprises can outsource the manufacturing of standard or configured assemblies to an external entity. In such cases the manufacturing partner is defined as an external MP organization. This organization is defined only for simulation purpose with Transfer to GL flag set as No.

- **Internal Manufacturing Partner Organization:**

Enterprises can outsource the manufacturing of standard or configured assemblies to affiliated companies belonging to the same organization. In such cases manufacturing partner is defined as internal MP organization. This organization is defined as any other organization with Transfer to GL flag set to Yes.

Oracle supports the following types of subcontracting business practices that involve complete outsourcing of assemblies and most importantly, component sale by an OEM to a MP:

- Chargeable (Shikyu) Subcontracting (Japan, Taiwan and Korea)
- Buy/Sell Subcontracting
- Full (Non-Chargeable) Outsourcing

Note: Buy/Sell and Full Outsourcing types of subcontracting works with both internal MP organizations and external MP organizations. Chargeable subcontracting works only with external MP organization.

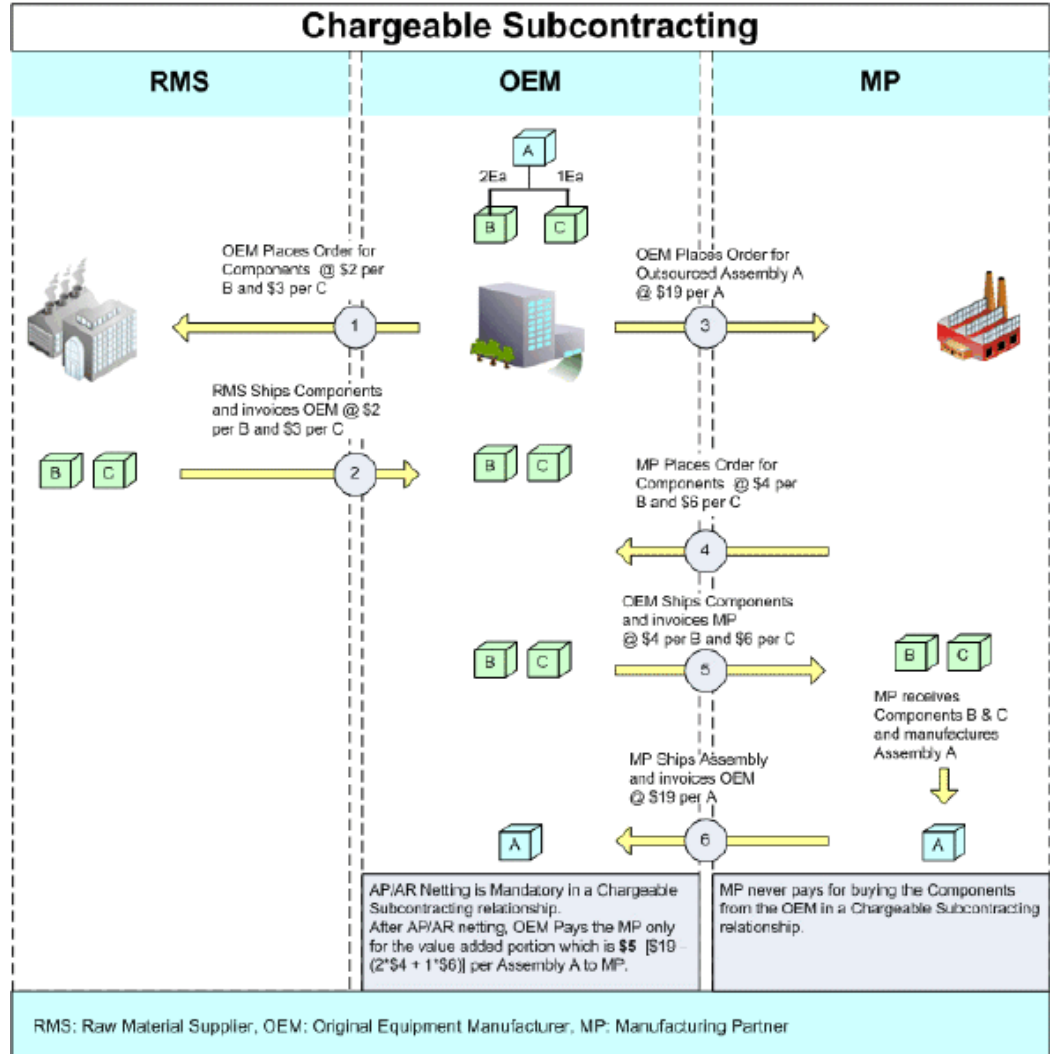
Chargeable (Shikyu) Subcontracting

Chargeable Subcontracting is a practice where the OEM completely outsources the manufacturing of an assembly to an MP and makes a provisional sale of components by invoicing the MP. These components are used to build the assembly at the MP's facility. In this practice, although the OEM registers a sale of components to the MP, the OEM still retains the ownership of the components and the inventory is reported under OEM's inventory valuation. When the OEM receives the assemblies, the MP invoices the OEM for the gross price of the assembly.

In a chargeable subcontracting relationship, the MP does not pay the OEM for purchasing the subcontracting components. The OEM pays the MP only for the value

added portion in the outsourcing process, making it mandatory to net receivables invoices for components, and payables invoices for assemblies.

Chargeable Subcontracting Process



The Chargeable Subcontracting Process diagram describes the chargeable subcontracting business flow where an OEM outsources an assembly A to a MP and makes a provisional sale of components B and C to MP that are consumed at the latter's premises to manufacture assembly A. Assembly A's bill of material constitutes of 2 Ea of B and 1 Ea of C. Although there can be different modes of component supply, in this specific example, the OEM buys components B and C from a RMS (Raw Material Supplier) and sells them to the MP. In this example:

1. OEM periodically buys Components B and C from the RMS at the rate of \$2 each unit of B and \$3 per each unit of C..

2. RMS ships components and invoices OEM for supplying B and C at the rate of \$2 per B and \$3 per C.
3. OEM outsources the manufacturing of assembly A by raising a purchase order or a blanket release on the MP at the rate of \$19 per each unit of A.

Note: The purchase price of the assembly is determined considering the components' sales price and the value added in the manufacturing process.

4. MP orders components B and C from OEM at the rate of \$4 per each unit of B and \$6 per each unit of C.

Note: Although the OEM buys components at a certain price, the OEM may sell the components to the MP at a different price to prevent visibility of the actual purchase costs. In this example, OEM procures B and C at \$2 per each unit of B and \$3 per each unit of C from RMS and sales B and C at \$4 per each unit of B and \$6 per each unit of C from MP.

5. Appropriate units of components B and C are allocated to the respective purchase order for A for the purpose of planning and tracking. The OEM then ships Components B and C, and invoices MP at the rate of \$4 per each unit of B and \$6 per each unit of C. The MP receives components B and C and manufactures A.

Note: The OEM registers a sale, but retains the ownership of the components. MP ships assembly A and invoices OEM at the rate of \$19 per each unit of A.

6. OEM receives Assembly A and nets accounts receivable invoices for selling B and C and account payable invoices for purchasing assembly. The OEM pays only for the net value added in the manufacturing of A. In this example, the added value for each unit of A is calculated as:

Purchase Price per unit of A = \$19

Selling Price per unit of B = \$4

Selling Price per unit of C = \$6

Component usage per unit of A = 2 units of B, 1 unit of C

Net Value Add per unit of A = [$\$19 - (2 * \$4 + 1 * \$6)$] = \$5

Note: In a chargeable subcontracting relation, the MP does not pay

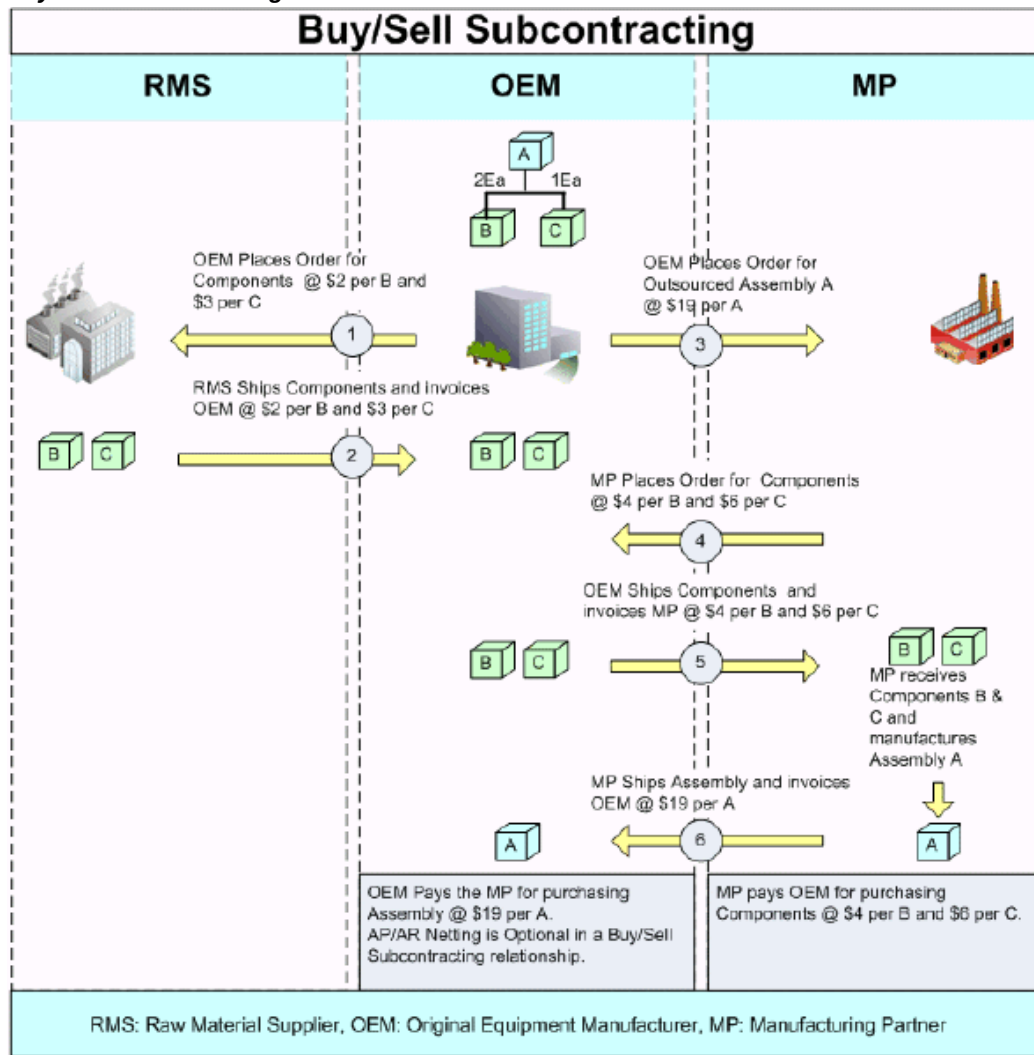
the OEM for buying the components, making it mandatory to net subcontracting account receivables and payables.

Buy/Sell Subcontracting

Buy/Sell Subcontracting is a business practice where an Original Equipment Manufacturer (OEM) completely outsources the manufacturing of an assembly to an external or internal Manufacturing Partner (MP) by buying the assembly from the MP and most importantly, selling the components to the MP that are consumed in the manufacturing of the assembly at the MP's premises. The ownership of the components is transferred to the MP immediately after the OEM ships the components to the MP unlike Chargeable Subcontracting where the OEM retains the ownership of the components throughout the subcontracting process.

In a Buy/Sell scenario, the sale of subcontracting components and purchase of outsourced assemblies are treated as independent business transactions. Receivables and Payables are generally not netted – OEM pays the MP for purchasing the outsourced assemblies and the MP pays for buying the subcontracting components from the OEM.

Buy/Sell Subcontracting Process



The Buy/Sell Subcontracting process diagram describes a buy/sell subcontracting business flow, where the OEM outsources assembly A to an MP, buys components B and C from the RMS and sells them to the MP for manufacturing A at the latter's premises. Assembly A's bill of material constitutes of 2 Ea of B and 1 Ea of C. In this example:

1. OEM periodically buys Components B and C from the RMS at the rate of \$2 per each unit of B and \$3 per each unit of C.
2. The RMS ships components and invoices the OEM for supplying B and C at the rate of \$2 per B and \$3 per C.
3. The OEM outsources the manufacturing of assembly A by raising a purchase order or a blanket release on the MP at the rate of \$19 per each unit of A.

Note: The purchase price of the assembly includes the components' sales price and the value added in the manufacturing process.

4. The MP orders components B and C from the OEM at the rate of \$4 per each unit of B and \$6 per each unit of C.

Note: Like chargeable subcontracting, the OEM may sell the components to the MP at a different price to prevent visibility of the actual purchase costs. In this example, OEM procures B and C at \$2 per each unit of B and \$3 per each unit of C from RMS and sales B and C at \$4 per each unit of B and \$6 per each unit of C from MP.

5. Appropriate units of components B and C are allocated to the respective purchase order for A for the purpose of planning and tracking. The OEM ships Components B and C, and invoices MP at the rate of \$4 per each unit of B and \$6 per each unit of C. MP receives components B and C and manufactures A.

Note: In a buy/sell subcontracting relationship, the shipment of the components to the MP results in a complete transfer of ownership of the components from the OEM to the MP.

6. The MP ships assembly A and invoices OEM at the rate of \$19 per each unit of A.
7. As the sale of subcontracting components and purchase of outsourced assemblies are treated as independent business transactions, the OEM pays the MP for buying assembly A at the rate of \$19 per unit of A, and the MP pays the OEM at the rate of \$4 per each unit of B and \$6 per each unit of C.

Note: Unlike chargeable subcontracting, netting of subcontracting account receivables and payables is optional for Buy/Sell subcontracting.

Full (Non-Chargeable) Outsourcing External Organizations

Full Outsourcing is a business practice where an Original Equipment Manufacturer (OEM) completely outsources the manufacturing of an assembly to an external Manufacturing Partner (MP) and provides components to the MP but retains ownership of the components.

In a full outsourcing relationship, components are shipped to MP on consigned basis. The OEM receives completed assemblies in return and makes a payment to the MP for

the assembly added value only.

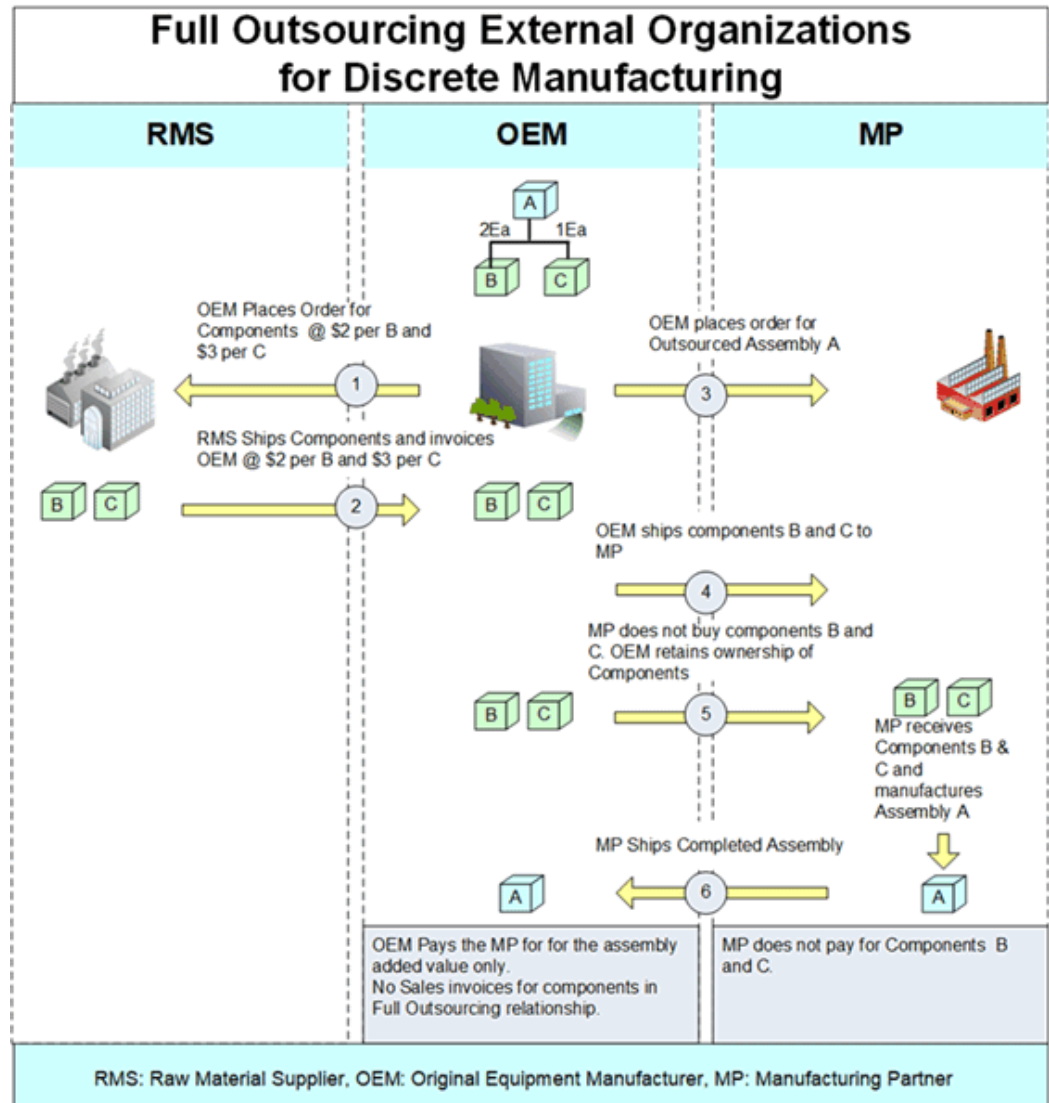
Full Outsourcing where an OEM outsources the manufacturing of an assembly to an external MP applies to both discrete and process manufacturing enabled organizations.

Also, note that only standard costing is supported for full outsourcing for both discrete and process manufacturing with external MPs.

Full Outsourcing External Organizations for Discrete Manufacturing

The Full Outsourcing for Discrete Manufacturing process diagram describes a full outsourcing business flow , where the OEM outsources Assembly A to an external MP, buys components B and C from the RMS and ships the components to the MP to manufacture A at the MP's premises while retaining ownership of components B and C:

Full Outsourcing Process for Discrete Manufacturing (External MP Organization)



1. OEM periodically buys Components B and C from the RMS at the rate of \$2 per each unit of B and \$3 per each unit of C.
2. The RMS ships components and invoices the OEM for supplying B and C at the rate of \$2 per B and \$3 per C.
3. The OEM outsources the manufacturing of assembly A to the MP, and ship components B and C to MP on a consigned basis.
4. OEM retains ownership of the materials/components while they are used in the manufacturing of assembly A. The MP makes no payment to buy and pay for the components.

Note: The purchase price of the assembly includes only the value addition and does not include the component value supplied by the OEM.

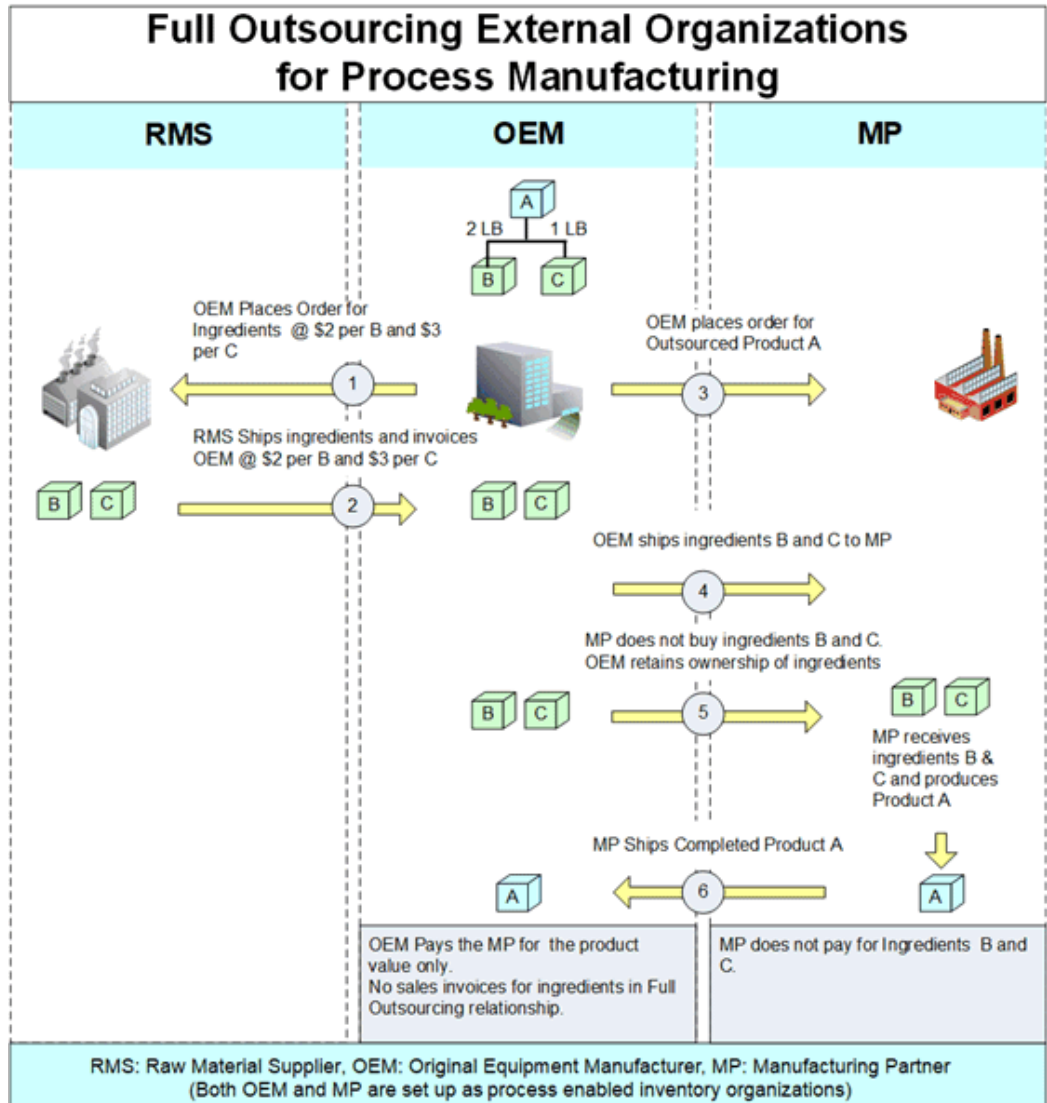
5. The MP produces the assembly A from the components B and C and ships the completed assembly A to the OEM.
6. The OEM receives the completed assembly A, and assumes the components B and C have been brought back from MP.
7. The OEM pays the MP for the assembly added value only. In Full Outsourcing, the purchase price of the assembly includes only the value addition. The component value supplied by the OEM is not included in the purchase price of the assembly.

Full Outsourcing External Organizations for Process Manufacturing

Full outsourcing with external MP for process manufacturing is when the OEM completely outsources the manufacturing of a product to an external MP and provides ingredients to the MP while retaining ownership of the ingredients but with the OEM and the MP both setup as process enabled inventory organizations.

The solution currently supports the outsourcing of the main product where the formula is defined with one product in the MP organization and it does not support if the formula contains co-products and by-products.

The Full Outsourcing for Process Manufacturing process diagram describes a full outsourcing business flow, where the OEM outsources Product A to an external MP, buys ingredients B and C from the RMS and ships these ingredients to the MP to produce Product A at the MP's premises while retaining ownership of ingredients B and C:



1. OEM periodically buys ingredients B and C from the RMS at the rate of \$2 per pound of B and \$3 per pound of C.
2. The RMS ships ingredients and invoices the OEM for supplying B and C at the rate of \$2 per B and \$3 per C.
3. The OEM outsources the production of product A to the MP, and ships ingredients B and C to MP on a consigned basis.
4. OEM retains ownership of the ingredients while they are used in the production of product A. The MP makes no payment to buy and pay for the ingredients.

Note: The purchase price of the product includes only the value

addition and does not include the ingredient value supplied by the OEM.

5. The MP produces the product A from the ingredients B and C and ships the completed product A to the OEM.
6. The OEM receives the completed product A from MP where A is produced by consuming the ingredients B and C.
7. The OEM pays the MP for the product added value only. In Full Outsourcing, the purchase price of the product includes only the value addition. The ingredient value supplied by the OEM is not included in the purchase price of the product.

See the Subcontracting for Process Manufacturing, page 11-1 chapter for more details.

Full (Non-Chargeable) Outsourcing Internal Organizations

Full Outsourcing is also available as a business practice for industries to outsource the manufacturing of standard or configured assemblies to the affiliated companies belonging to the same organization. An existing manufacturing organization can be enabled as an internal MP organization as and when required depending on the business need. The internal MP organization can operate as a normal manufacturing organization catering to other manufacturing needs other than the internal manufacturing operation's needs.

Full Outsourcing with internal MP is applicable for only discrete manufacturing organizations.

The OEM and MP can belong to different operating units in the same or different ledgers/legal entities. All feature functions like Discrete Jobs, Flow Schedules, WMS, EAM, Serial Tagging, and so on are supported. Oracle Process Manufacturing enabled organizations are not supported.

The typical business scenarios in which MPs are defined as Internal are:

- Wherein one organization acts as an OEM and another organization an internal MP organization while both belong to the same Legal Entity/Operating Unit.
- Wherein one organization acts as a MP for the OEMs within the same or different Legal Entity/Operating Unit.
- Wherein due to capacity constraints, the OEM organization sources from an internal MP organization belonging to the same or different Legal Entity/Operating Unit.

To support Full Outsourcing with Internal Organizations, the Full Outsourcing architecture for external organizations is used and all features and functions of any inventory organizations are supported in Internal MP Organizations with the restriction

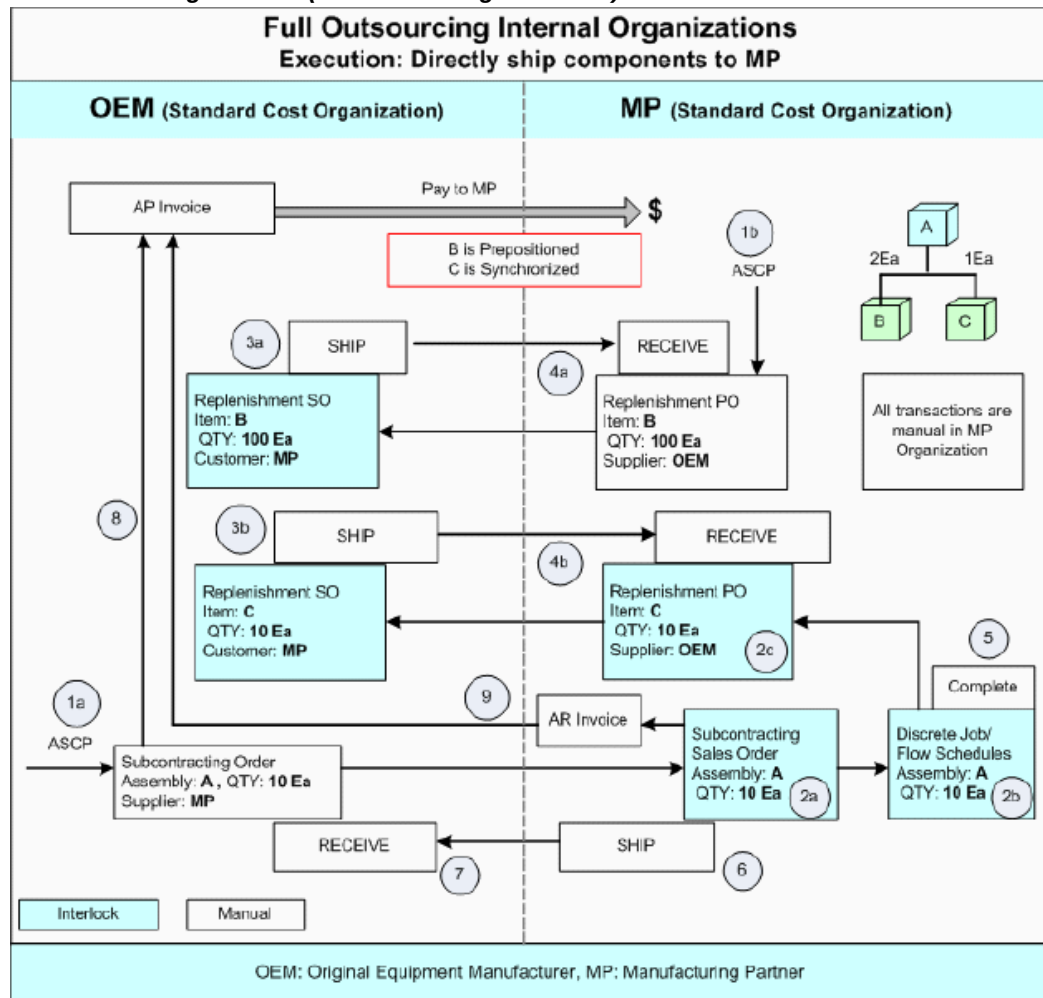
that the costing method should be Standard Costing only.

Note: Subcontracting components at MP organization item master level should be costing disabled at item level. In case Internal MP Organizations have common components e.g. components with same item code, some quantity supplied and owned by OEM and some that the MP procures and owns from external suppliers, such subcontracting components can be defined as costing enabled. However such components should be stored in expense sub-inventory and consumed from the same sub-inventory for proper accounting and tracking purposes.

To define an organization as an internal MP organization select the check box for MP organization and set the MP Type to Internal. Set the costing method in the organization parameter as Standard and the Transfer to GL flag as Yes. All the costing transactions from Internal Organizations can be transferred to GL like any other inventory organizations.

As in Full outsourcing with external MP organizations, the subcontracting Variance account is used for tracking the OEM's material at MP organizations. The same account is used in place of COGS and PPV during shipping of subcontracting components and at the receipt of Outsourced assembly respectively. This account is set up in shipping network and used in the OEM Organization. Select Full in the Shipping Network Subcontracting Type for internal MP organizations. See: Full Outsourcing Accounting Process

Full Outsourcing Process (Internal MP Organizations)



The Full Outsourcing Process: Internal Organizations diagram describes full outsourcing wherein the MP is defined as internal. The OEM and the MP are both setup as inventory organizations. The OEM organization sets up the MP as a supplier and customer. The MP also sets up the OEM as a supplier and customer. The outsourced assembly is represented as Item A and its subcontracting components are B, C.

1. Subcontracting orders and replenishment purchase orders are created for the prepositioned component item manually or from ASCP.
2. Interlock Manager is run to create subcontracting sales orders, discrete jobs, replenishment purchase orders for the synchronized component in MP as well as replenishment sales orders for synchronized and prepositioned component items in OEM.

As in full outsourcing with external organizations, the concurrent program Subcontracting: Interlock Manager is run before running ASCP collection. This is

primarily for reconciliation. During this run, the program examines all the open subcontracting purchase orders and creates or updates subcontracting sales orders of the outsourced assembly A, and the WIP job or Flow schedule of the corresponding outsourced assembly in the internal MP Organization.

For example, in a WIP job production order, the Subcontracting: Interlock Manager associates the subcontracting sales order and WIP job with the corresponding subcontracting order. If the subcontracting order contains synchronized ship components, replenishment purchase orders are created in the supplier organization and are associated with the subcontracting order. Replenishment sales orders are created in the OEM organization and are associated with the replenishment purchase orders. If Project or Task references are defined in the source purchase order, those references need to be passed to WIP Job and replenishment purchase order and sales order.

3. The OEM then ships the subcontracting components using the existing shipping process. The MP ship confirms component items against the respective replenishment sales orders manually from OEM.
4. MP receives respective replenishment purchase orders.

The internal MP organizations receiving clerk receives the subcontracting components manually in the MP organizations. Components are not automatically received in internal MP organization. The purchase order acts as a receiving document as the replenishment purchase order price is always zero and is closed for invoicing, so there is no accrual accounting and invoicing.

Note: Subcontracting: Interlock Manager concurrent program's reconciliation step reconciles date changes and quantity changes made after the previous Interlock Manager run:

- If the need by date on the subcontracting order is updated or the schedule ship date on the subcontracting sales order for the subcontracting components are updated, then the corresponding subcontracting sales order, and WIP job needs to be rescheduled. Also, the replenishment purchase order for the subcontracting components needs to be updated.
- If the quantity on the subcontracting order is updated, the quantity on the corresponding subcontracting sales order and WIP job at the MP organization needs to be updated. If there are any shipment allocations, the allocations need to be updated.
- If the subcontracting order in OEM organization is cancelled then the corresponding subcontracting sales order and WIP job

in MP organization will also be cancelled.

5. Component items are issued and the discrete job is completed in MP,
The Production Supervisor in the MP organization can release the WIP job and execute it like any other order in MP organization. Subcontracting components in MP can be flagged as serial controlled or serial tagged as the business needs. Subcontracting components can be either back-flushed or issued to the WIP job and then the Job can be completed.
6. Upon completion of the final assembly, the MP ships the Outsourced Assembly A to OEM against the subcontracting order. The OEM ship confirms the assembly item A from MP against the same sales order.
7. The OEM receives assembly item A against the subcontracting order.
8. The AP invoice is created in the OEM to pay the MP for the value addition and the ERS program is run to create AP invoices for the subcontracting order of Assembly A. This creates invoices for Pay On Receipt.
9. AR invoice is created against the ship confirmed subcontracting sales order shipped from MP.

Comparing Outsourced Manufacturing (Subcontracting) Business Types

Characteristics	Chargeable Subcontracting	Buy/Sell Subcontracting	Full Outsourcing
Subcontracting Component Ownership	Component sales is provisional and ownership lies with the OEM	Ownership is transferred to MP after the components are shipped	No component sale. Components are shipped to MP on consigned basis, and the ownership of material is with OEM.
Country Specific Deployability	Applicable to Japan, Korea and Taiwan	Applicable to all countries	Applicable to all countries
Costing Method	Available for Standard Costs Orgs only	Available for Standard, Average, FIFO and LIFO Orgs	Available for Standard Cost Orgs only

Payables/Receivables Netting	Mandatory	Optional	Not relevant as there are no sales invoices for components
Accounting setup	Requires additional setup for accounting Subcontracting components (revenue, receivables, COGS, and PPV)	Not relevant	Requires setup for accounting consigned Subcontracting components (COGS and PPV)
Costs/Price setup consideration	Assemblies/Components costs/prices need to be setup to avoid unrealized gain/loss	Not relevant	Purchase price of the assembly will be the Value addition

Major Features of Subcontracting

Subcontracting features include:

- Modeling of OEM and MP as inventory organizations to facilitate tracking and simulation of subcontracting processes.
 - Accounting transactions in the external MP org are not posted to the General Ledger (GL) to avoid any unwanted financial impact.
 - Chargeable Subcontracting support is only for Standard Costing Orgs and can be deployed in Japan, Taiwan, and Korea. This is applicable for both the Original Equipment Manufacturer (OEM) as well as Manufacturing Partner (MP).
 - Buy/Sell Subcontracting supports all costing methods and can be deployed in any country.
 - Full outsourcing for discrete manufacturing for both internal and external MP organizations works only with Standard costing method and can be deployed in any country.
 - Full outsourcing for process manufacturing for only external MP organizations works only with Standard costing method and can be deployed in any country.
- Separate tracking of accounting transactions and variances associated with assembly purchases in OEM organizations by setting up:
 - Subcontracting COGS, Subcontracting Revenue, Subcontracting receivables and

Subcontracting Variance (applicable to Chargeable Subcontracting)

- Subcontracting Intransit account (applicable to Full Outsourcing for tracking inventory value at the MP site)
- Integrated planning (using ASCP) and subcontracting execution in discrete and project manufacturing environments to manage and control processes throughout the extended supply chain.
- Support for different types of component supplies both prepositioned and synchronized, including the ability to drop ship components to partner's site that help in flexibly modelling the subcontracting process in varying business conditions.
- Automatic creation of Discrete Jobs or Flow Schedules in the MP Org to simulate assembly production at the MP's facility in response to a purchase order or a blanket release (referred to as Subcontracting Orders in the subcontracting solution) through a concurrent program referred to as Interlock Manager.
- Automatic creation of component purchase orders (referred to as Replenishment Purchase Orders in the subcontracting solution) for purchasing components from OEM and creation of corresponding component sales orders (referred to as Replenishment Sales Orders in the subcontracting solution) for shipping components to the MP through the Interlock Manager.
- Automatic allocation of the Replenishment Sales Order component supplies to corresponding Subcontracting Orders for outsourced assemblies (for both external and internal MP organizations) through the Interlock Manager.
- Automatic receipt of components in the MP Org based on in transit lead times through a concurrent program referred to as Auto Receive Components eliminate any manual effort involved in performing such transactions.
- Automatic completion of the discrete job, backflushing of components and appropriate inventory balancing in the MP Org upon receipt of the outsourced assembly in the OEM Org for ensuring accuracy of inventory records that better planning and control through a concurrent program referred to as Process Receiving Transactions.
- Dedicated Subcontracting Workbench and Reports providing better tracking and increased visibility throughout the subcontracting life cycle.
- Ability to manage subcontracting process exceptions (over or under consumption, component or ingredients, assembly returns, and so on) helps in taking care of process variations and discrepancies.
- Option to net subcontracting payables and receivables through the AP/AR Netting

feature streamlines the payment process and provides greater flexibility in conducting business with partners.

- Support of lot and serial genealogy (Note that with external MP organizations, only lot genealogy is supported).
- Enterprises can define and outsource Assemble to Order (ATO) and Configure to Order (CTO) items from external or internal manufacturing partners. For example, pre-configured or configure to order laptops, desktops, automotive components, and so on.
- Endeca support for internal MP organizations and configured assemblies.

Oracle Outsourced Manufacturing Command Center

This chapter covers the following topics:

- Outsourced Manufacturing Command Center Overview
- Order Status Dashboard
- Financials Dashboard
- Track and Trace Dashboard

Outsourced Manufacturing Command Center

Outsourced Manufacturing Command Center Overview

The Outsourced Manufacturing Command Center enables you to efficiently manage outsourcing businesses across manufacturing partners. Subcontracting supervisors, managers and buyers can analyze key metrics, drillable graphs, tag clouds, and network diagrams to proactively manage subcontract orders and monitor inventory at manufacturing partner sites. Based on your role, you can use the Outsourced Manufacturing Command Center to:

- View subcontracting status and product quality.
- View inventory balances and financial positions.
- Monitor material replenishments using replenishment status insights.
- Identify material allocation issues.
- Track delays and take corrective actions to resolve delays.
- Track and trace the complete lifecycle of the outsourcing process for a subcontract purchase order.

Before you load data from Oracle E-Business Suite into the Outsourced Manufacturing Command Center, ensure that your EBS data is accurate and current by running concurrent programs that impact attributes used in the command center. Concurrent programs to run include:

- Interlock Manager
- Auto Receive Subcontract Orders
- Process Receiving Transactions
- Reconciliation Manager

In Oracle Subcontracting, the following Outsourced Manufacturing Command Center dashboards enable search functions using Enterprise Command Center integration:

- **Order Status** dashboard , page 2-4- Use this dashboard to quickly assess the state of the outsourcing process by identifying where component shortages occur, identifying assemblies and Manufacturing Partners (MPs) with the most frequent scraps and production rejects with the most frequent reasons, and identifying the top exception causes and top corrective actions to take. Top exceptions include delays in subcontract order schedules, identifying unallocated material

requirements, and delayed component shipments to manufacturing partners. You can monitor on-hand inventory of manufacturing partners and take appropriate actions for better inventory and working capital management.

- **Financials** dashboard, page 2-13 - Use this dashboard to track component value at the manufacturing partner and reconcile inventory balances. Quickly identify components or assemblies related to specific manufacturing partners that have quality issues or excess consumption, and negotiate with manufacturing partners to improve their manufacturing efficiency.
- **Track and Trace** dashboard, page 2-20 - Use this dashboard to track and track the complete genealogy of a subcontract purchase order and all its associated documents and details using the network diagram. The Subcontract Purchase Order, Replenishment Sales Order, Replenishment Purchase Order, Work Order, and the Subcontract Sales Order nodes in the network diagram provide quick visual indicators to show delays. The Subcontract Purchase Order node also uses visual indicators to alert you to the unallocated status of a purchase order.

Note: You can use the Outsourced Manufacturing Command Center only after the installation and common configurations are completed as described in My Oracle Support Knowledge Document 2495053.1, *Installing Oracle Enterprise Command Center Framework, Release 12.2*. For additional ECC Overview information, see *Overview of Oracle Enterprise Command Center Framework, Oracle E-Business Suite User's Guide*.

Searching Enterprise Command Center Dashboards

Use the dashboard sidebars to refine (filter) the data on each dashboard. You can select a value or record from the Available Refinements component, or use Search to find a keyword, a value, or a specific record. The type-ahead feature suggests matches for your entry that correspond to the available refinements. When you submit a search, the search term is added to the Selected Refinements list, and the dashboard data is refined to include only records that match the search. You can add multiple refinements and remove any of them at any time. Use **Saved Search** to create and save your search. You can edit, delete, or refer to this saved search.

Use an asterisk (*) or percent sign (%) to perform a partial keyword or record search that matches any string of zero or more characters. You can also use a question mark (?) to perform a partial search that matches any single character.

Additional Information: For more information about searching for and refining data in enterprise command centers, see *Search in Highlights of an Enterprise Command Center, Oracle E-Business Suite User's Guide*.

Order Status Dashboard

The **Order Status** dashboard enables subcontracting managers, supervisors, and buyers to monitor the health of the outsourcing process by searching for and displaying outsourced manufacturing information. You can also open and view the network diagram for selected subcontract orders from the Subcontract Orders Details tab in the **Order Status** dashboard. Based on your role, you can use this dashboard to:

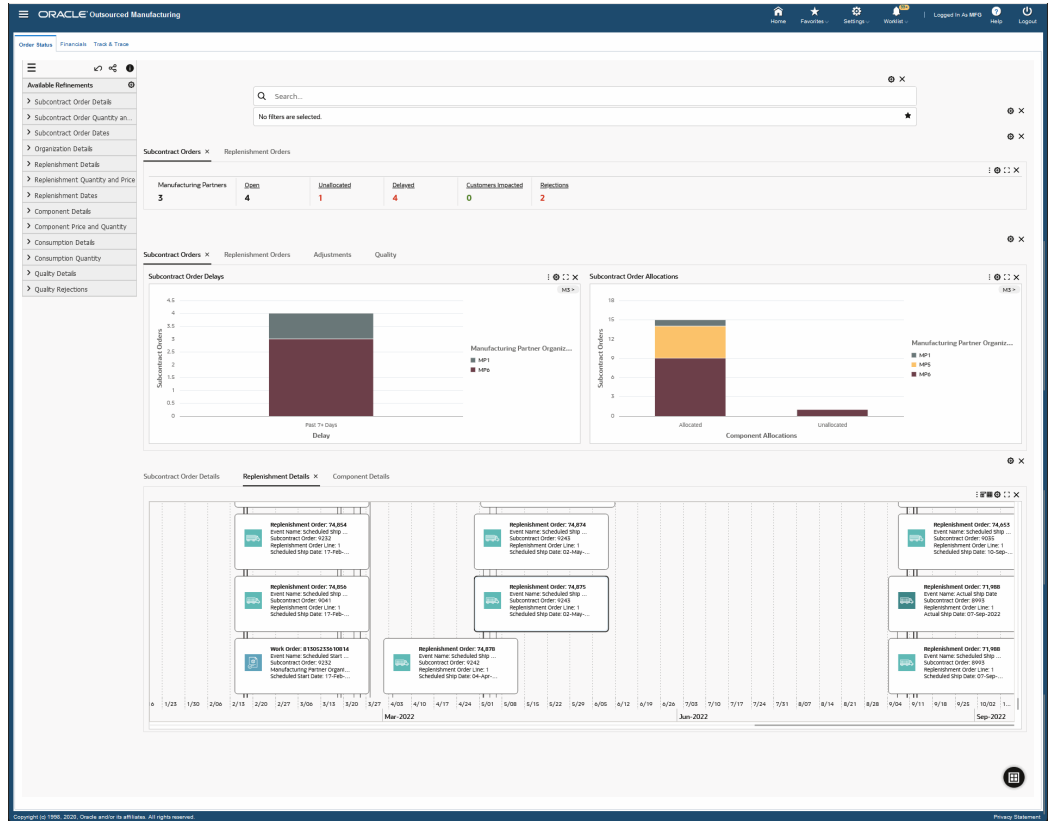
- Track subcontract order status and monitor delays and receipts.
- Ensure that the subcontracting orders are allocated along with the replenishment sales orders, and components are shipped to the manufacturing partner in a timely manner.
- Identify the component usage variations (adjustments) for assemblies, and analyze the adjustment reasons.
- Monitor the quality of outsourced assemblies received from the manufacturing partners.

Using refinements, you can search on organization details, subcontract order details, replenishment details, component details, consumption details, and quality details and view the subcontracting metrics, charts, and transaction results tables. You can refine the data that is displayed in the dashboard by clicking on the metrics, the data points on the charts, and the dimension and metric value for a data point. See the Outsourced Manufacturing Command Center Overview , page 2-2 for more information.

From the Subcontracting Super User responsibility, navigate to the **Order Status** dashboard:

(N) **Subcontracting >Outsourced Manufacturing Command Center >Order Status**
(tab)

Order Status Dashboard



The following table describes the **Order Status** dashboard components:

Component	Description
Subcontract Orders (tab)	<p>The Subcontract Orders tab displays the following key metrics that summarize subcontract orders information:</p> <ul style="list-style-type: none"> <li data-bbox="878 428 1182 459">• Manufacturing Partners This metric displays the number of manufacturing partners engaged to manufacture the assemblies. <li data-bbox="878 617 1330 795">• Open This metric displays the number of subcontract orders placed with manufacturing partners for assemblies that have not yet been fully received. <li data-bbox="878 837 1365 1016">• Unallocated This metric displays the number of distinct subcontracting orders with one or more component requirements that are not yet fully allocated. <li data-bbox="878 1058 1321 1205">• Delayed This metric displays the number of subcontracting orders that are not yet fully received by the need-by dates. <li data-bbox="878 1247 1325 1425">• Customers Impacted This metric displays the number of customer shipments that may be impacted due to delays in subcontract orders. <li data-bbox="878 1467 1338 1646">• Rejections This metric displays the number of distinct subcontract orders with one or more assemblies rejected due to quality issues. <p>Click a metric link to refine the dashboard data.</p>

Component	Description
Replenishment Orders (tab)	<p>The Replenishment Orders tab displays the following key metrics that summarize replenishment orders information:</p> <ul style="list-style-type: none"><li data-bbox="971 428 1349 455">• Subcontracting Organizations This metric displays the number of subcontract organizations that are outsourcing the assemblies.<li data-bbox="971 617 1081 644">• Open This metric displays the number of replenishment orders for the components that are not yet fully shipped to manufacturing partners.<li data-bbox="971 835 1110 863">• Delayed This metric displays the number of replenishment orders that have not yet been fully shipped by the shipment date. <p>Click a metric link to refine the dashboard data.</p>

Component	Description
Subcontract Orders (tab)	<p>The Subcontract Orders tab displays the following charts:</p> <ul style="list-style-type: none"> <li data-bbox="878 394 1365 716"> <p>• Subcontract Order Delays - This chart displays the number of delayed subcontract orders. Click the Options icon to select Subcontracting Organization Code, Manufacturing Partner Organization Code, Assembly, or Customer from the Dimension menu. Subcontract Order Schedule is the available option from the Group Dimensions menu.</p> <li data-bbox="878 751 1365 1041"> <p>• Subcontract Order Allocations - This chart displays the number of allocated and unallocated subcontract orders. Click the Options icon to select Subcontracting Organization Code, Manufacturing Partner Organization Code, Assembly, or Customer from the Dimension menu. Allocation Status is the available option from the Group Dimensions menu.</p>

Component	Description
Replenishment Orders (tab)	<p>The Replenishment Orders tab displays the following charts:</p> <ul style="list-style-type: none"> <p>Replenishment Order Delays - This chart displays the number of delayed replenishment orders. Click the Options icon to select Subcontracting Organization Code, Manufacturing Partner Organization Code, or Component from the Dimension menu. Replenishment Order Schedule is the available option from the Group Dimensions menu.</p> <p>Replenishment Order Allocations - This chart displays the number of allocated and unallocated replenishment orders. Click the Options icon to select Subcontracting Organization Code, Manufacturing Partner Organization Code, Component, or Assembly from the Dimension menu. Sales Order Allocation is the available option from the Group Dimensions menu.</p>
Adjustments (tab)	<p>The Adjustments tab displays the following chart and results table:</p> <ul style="list-style-type: none"> <p>Component Consumption Adjustments - This chart displays the number of subcontract orders with component consumption adjustments and reasons. Click the Options icon to select Subcontract Adjustment Reason, Subcontracting Organization Code, Manufacturing Partner Organization Code, or Assembly from the Dimension menu. Component is the available option from the Group Dimensions menu.</p> <p>The Adjustment Details - This results table displays attributes pertaining to component consumption adjustments.</p>

Component	Description
Quality (tab)	<p>The Quality tab displays the following chart and results table:</p> <ul style="list-style-type: none"><li data-bbox="878 394 1344 716">• Subcontract Order Rejections - This chart displays the number of rejected subcontract orders and rejected assemblies. Click the Options icon to select, Rejection Reason, Subcontracting Organization Code, or Manufacturing Partner Organization Code from the Dimension menu. Assembly is the available option from the Group Dimensions menu.<li data-bbox="878 751 1344 848">• Quality Details - This results table displays attributes pertaining to quality inspections.

Component	Description
Results Tables (tab layout)	<p>The Order Status dashboard results tables display subcontracting information in the following tabs:</p> <ul style="list-style-type: none"> • Subcontract Order Details <p>Use this tab to select and view subcontract order details based on the following options available from the drop-down list:</p> <ul style="list-style-type: none"> • Subcontract Order Details • Work Order Details • Customer Sales Order Details • Assembly Details • Organization Details • Subcontract Quantity and Price <p>Select a subcontract order and click the Actions icon to:</p> <ul style="list-style-type: none"> • Notify Supplier - Click this link to navigate to the Suppliers page. • View Network - Click this link to view the Outsourced Manufacturing Track and Trace diagram for a subcontract order in the Track & Trace dashboard. <p>You can also select multiple subcontract orders in the Subcontract Order Details tab and then select View Network from the Actions menu to view the multiple orders in the Track & Trace dashboard.</p> • Replenishment Details <p>Use this tab to select and view replenishment details based on the following options available from the</p>

Component	Description
	<p data-bbox="922 310 1084 338">drop-down list:</p> <ul data-bbox="922 363 1367 636" style="list-style-type: none"> <li data-bbox="922 363 1338 390">• Replenishment Sales Order Details <li data-bbox="922 432 1367 495">• Replenishment Sales Order Quantity and Price <li data-bbox="922 537 1192 564">• Organization Details <li data-bbox="922 606 1162 634">• Drop-Ship Details <p data-bbox="922 676 1367 894">You can view information in the Replenishment Details tab using the default Table View or the Timeline View. To view key events for subcontract orders, replenishment sales orders, and work orders, click the Timeline View icon in the Replenishment Details tab.</p> <p data-bbox="922 919 1321 982">In the Timeline View, you can see the following events for:</p> <ul data-bbox="922 1008 1367 1398" style="list-style-type: none"> <li data-bbox="922 1008 1367 1104">• Subcontract Orders – View the Required Date, Inspection Date, and Receipt Date. <li data-bbox="922 1146 1367 1243">• Replenishment Sales Orders – View the Schedule Ship Date, Actual Ship Date, and Expected Receipt Date. <li data-bbox="922 1285 1367 1398">• Work Orders – View the Scheduled Start Date, Scheduled Completion Date, Actual Start Date, and Actual Completion date. <p data-bbox="922 1440 1367 1537">Click Timeline View Option to enable the overview display and the maximum number of events of up to 500.</p> <ul data-bbox="876 1579 1367 1776" style="list-style-type: none"> <li data-bbox="876 1579 1367 1776">• Component Details Use this tab to select and view component details based on the following options available from the drop-down list: <ul data-bbox="922 1747 1175 1774" style="list-style-type: none"> <li data-bbox="922 1747 1175 1774">• Component Details

Component	Description
	<ul style="list-style-type: none"> Component Quantities and Price <p>Click the links in the table columns to refine the information available on the dashboard.</p> <p>The following actions are available from the Options icon in the Order Status dashboard tables:</p> <ul style="list-style-type: none"> Compare - Select multiple rows to compare information. Export - Export the search results in a comma-separated values (CSV) file format.

Financials Dashboard

The **Financials** dashboard enables cost managers and buyers to monitor inventory at the manufacturing partner site and track adjustments and financial transactions to ensure proper costing and accounting for a seamless outsourcing process. Based on your role, you can use the this dashboard to:

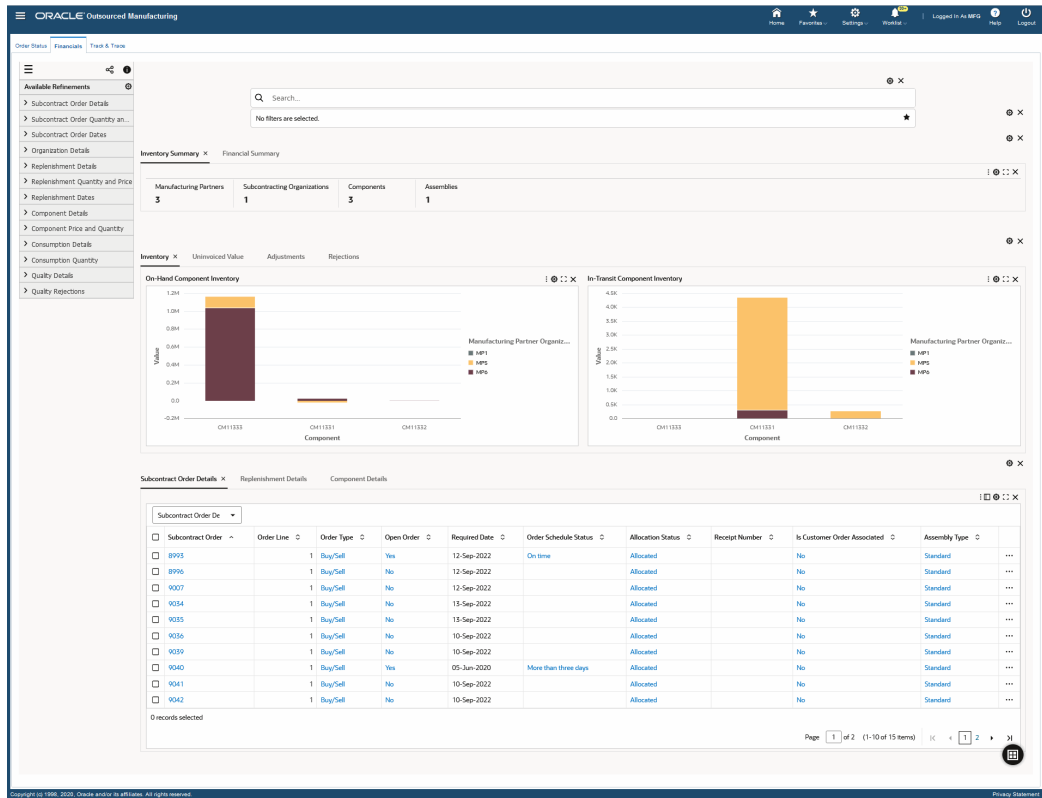
- Track the value of open subcontracting order quantity that has not been received.
- Track the value of component inventory at the manufacturing partner site. Use this for standard cost update in the OEM organization.
- Monitor assemblies and components that are not yet invoiced.
- Track the cost of component adjustments and assembly rejections.

Using refinements, you can search on organization details, subcontract order details, subcontract order quantities, subcontract order dates, replenishment details, replenishment quantities, replenishment dates, and component details and view the subcontracting metrics, charts, and transaction results tables. You can refine the data that is displayed in the dashboard by clicking on the metrics, the data points on the charts, and the dimension and metric value for a data point. See the *Outsourced Manufacturing Command Center Overview*, page 2-2 for more information.

From the Subcontracting Super User responsibility, navigate to the **Financials** dashboard:

(N) **Subcontracting >Outsourced Manufacturing Command Center >Financials** (tab)

Financials Dashboard



The following table describes the **Financials** dashboard components:

Component	Description
Inventory Summary (tab)	<p>The Inventory Summary tab displays the following key inventory metrics:</p> <ul style="list-style-type: none"><li data-bbox="971 394 1448 716">• Manufacturing Partners This metric displays the number of manufacturing partners engaged to manufacture the assemblies. Subcontracting Organizations This metric displays the number of subcontract organizations that are outsourcing the assemblies.<li data-bbox="971 751 1448 905">• Components This metric displays the number of components that are replenished to manufacturing partners.<li data-bbox="971 940 1448 1087">• Assemblies This metric displays the number of assemblies that are outsourced to manufacturing partners. <p>Click a metric to refine the information in the dashboard.</p>

Component	Description
Financial Summary (tab)	<p>The Financial Summary tab displays the following key metrics that summarize financial information:</p> <ul style="list-style-type: none"> <li data-bbox="878 428 1354 541"> <p>• Currency</p> <p>This metric displays the functional currency.</p> <li data-bbox="878 583 1354 697"> <p>• In-Transit Inventory Value</p> <p>This metric displays the value of in-transit inventory.</p> <li data-bbox="878 739 1354 886"> <p>• On-Hand Inventory Value</p> <p>This metric displays the on-hand inventory value at the manufacturing partner.</p> <li data-bbox="878 928 1354 1041"> <p>• Uninvoiced Assemblies Value</p> <p>This metric displays the value of assemblies received but not invoiced.</p> <li data-bbox="878 1083 1354 1251"> <p>• Uninvoiced Component Value</p> <p>This metric displays the value of component shipments sent to the manufacturing partner but not currently billed.</p> <li data-bbox="878 1293 1354 1440"> <p>• Component Adjustment Value</p> <p>This metric displays the value of components that are over-consumed and adjusted.</p> <p>Click a metric to refine the information in the dashboard.</p>

Component	Description
Inventory (tab)	<p>The Inventory tab displays the following charts:</p> <ul style="list-style-type: none"> • On-Hand Component Inventory - This chart displays the value of components that are on hand and in inventory. Click the Options icon to select Manufacturing Partner Organization Code, or Subcontracting Organization Code from the Dimension menu. Component is the available option from the Group Dimensions menu. • In-Transit Component Inventory - This chart displays the value of components that are in transit. Click the Options icon to select Manufacturing Partner Organization, Code, or Subcontracting Organization Code from the Dimension menu. Component is the available option from the Group Dimensions menu.
Uninvoiced Value (tab)	<p>The Uninvoiced Value tab displays the following charts:</p> <ul style="list-style-type: none"> • Uninvoiced Assemblies - This chart displays the value of assemblies that have not been invoiced. Click the Options icon to select Manufacturing Partner Organization Code, or Subcontracting Organization Code from the Dimension menu. Assembly is the available option from the Group Dimensions menu. • Uninvoiced Components - This chart displays the value of components that have not been invoiced. Click the Options icon to select Manufacturing Partner Organization Code, or Subcontracting Organization Code from the Dimension menu. Component is the available option from the Group Dimensions menu.

Component	Description
Adjustments (tab)	<p>The Adjustments tab displays the following chart and results table:</p> <ul style="list-style-type: none"> • Consumption Adjustments - This chart displays the value of component consumption adjustments and reasons. Click the Options icon to select, Subcontract Adjustment Reason, Manufacturing Partner Organization Code, or Subcontracting Organization Code from the Dimension menu. Component is the available option from the Group Dimensions menu. • Adjustment Details - This results table displays attributes pertaining to component consumption adjustments.
Rejections (tab)	<p>The Rejections tab displays the following chart and results table:</p> <ul style="list-style-type: none"> • Assembly Rejections - This chart displays the value of rejected assemblies. Click the Options icon to select Rejection Reason, Manufacturing Partner Organization Code, Subcontracting Organization Code, or Assembly from the Dimension menu. Assembly is the available option from the Group Dimensions menu. • Rejection Details - This results table displays attributes pertaining to rejected assemblies.

Component	Description
Results Tables (tab layout)	<p>The Financials dashboard results tables display subcontracting information under the following tabs:</p> <ul style="list-style-type: none"> • Subcontract Order Details <p>Use this tab to select and view subcontract order details based on the following options available from the drop-down list:</p> <ul style="list-style-type: none"> • Subcontract Order Details • Work Order Details • Customer Sales Order Details • Assembly Details • Organization Details • Subcontract Quantity and Price <p>Select a subcontract order and click the Actions icon to:</p> <ul style="list-style-type: none"> • Notify Supplier - Click this link to navigate to the Suppliers page. • View Network - Click this link to view the Outsourced Manufacturing Track and Trace diagram for a subcontract order in the Track & Trace dashboard. <p>You can also select multiple subcontract orders in the Subcontract Order Details tab and then select View Network from the Actions menu to view the multiple orders in the Track & Trace dashboard.</p> • Replenishment Details <p>Use this tab to select and view replenishment details based on the following options available from the</p>

Component	Description
	<p>drop-down list:</p> <ul style="list-style-type: none"> • Replenishment Sales Order Details • Replenishment Sales Order Quantity and Price • Organization Details • Drop-Ship Details <ul style="list-style-type: none"> • Component Details <p>Use this tab to select and view component details based on the following options available from the drop-down list:</p> <ul style="list-style-type: none"> • Component Details • Component Quantities and Price <p>Click the links in the table columns to refine the information available on the dashboard.</p> <p>The following actions are available from the Options icon in the Financials dashboard tables:</p> <ul style="list-style-type: none"> • Compare - Select multiple rows to compare information. • Export - Export the search results in a comma-separated values (CSV) file format.

Track and Trace Dashboard

The **Track & Trace** dashboard enables subcontracting managers to view the complete lifecycle of the outsourcing process for a subcontract purchase order in the **Outsourced Manufacturing Track and Trace** diagram. The network diagram provides a traceability solution to track and trace a subcontract purchase order using all the related documents. This dashboard provides visibility into delays in the outsourcing process using visual indicators for allocation status and delays in the network diagram nodes. You can use this dashboard to:

- Track any delays in shipment of subcontract components to the manufacturing partner (MP).
- Monitor delay alerts in the Replenishment Sales Order node and proactively collaborate with the raw material supplier to resolve shipment delays in of drop-ship subcontract components to the MP.
- Monitor delay alerts in the Work Order node and proactively collaborate with the MP to resolve these delays in the manufacturing of an outsourced assembly.
- Track unallocated subcontract purchase orders to avoid delays in planning of pre-positioned components.
- View and monitor outsourced assembly quality and rejections, if any.
- View and monitor component adjustments and their reasons.

You can query and search for a subcontract order to view or use the available refinements to filter the information displayed in the network diagram. You can view details by clicking on each network diagram node. See the Outsourced Manufacturing Command Center Overview , page 2-2 for more information.

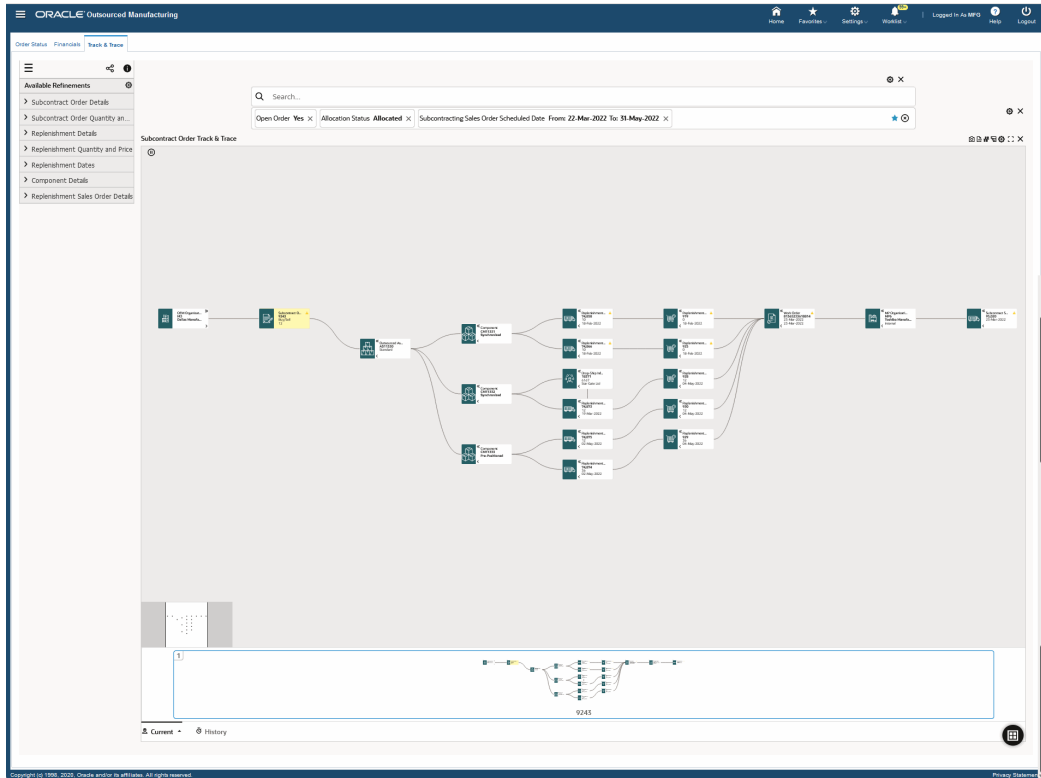
From the Subcontracting Super User responsibility, navigate to the **Track & Trace** dashboard:

(N) **Subcontracting >Outsourced Manufacturing Command Center >Track & Trace** (tab)

Note: To navigate to the **Track & Trace** dashboard, you can also:

- Click the link icon in the **Network** column on the **Subcontract Order Details** tab in the **Order Status** and the **Financials** dashboards for selected subcontract orders.
- Select multiple subcontract purchase orders in the **Order Status** and **Financials** dashboards, and then select **View Network** from the **Actions** menu.

Track and Trace Dashboard



The following table describes the **Track & Trace** dashboard components:

Component	Description
-----------	-------------

Outsourced Manufacturing Track and Trace
(diagram)

This diagram displays the network details for the node you query or the refinements that you select. Right-click a node to select the following options available for the node:

- **Make Anchor Node** - Select this option to make a node the main node.
- **Show Adjacent Nodes** - Select this option to expand a node to see its related nodes.
- **Highlight Path** - Select this option to highlight the specific path of a node. You can right-click and select **Unhighlight Path** to remove highlighting a path.
- **Explore Node** - Depending on the node you select, click this option to explore that specific node. For example, for a subcontract order node, you can explore the subcontract order node further and for an OEM organization node, you can explore the OEM organization node.
- **Compare** - Select multiple nodes and click Compare for a side-by-side comparison of the records of each selected node.
- **Show Details** - Select this to view details for a node. On the Details window that opens, select multiple filters and then click **Find Similar** to apply these filters to the diagram.

Based on your search and selected refinements, this diagram displays the following nodes:

- **OEM Organization** - Click **Show Details** to view the organization name and organization code for the Original Equipment Manufacturer (OEM) organization.
- **Subcontract Purchase Order** - Click **Show Details** to view the subcontract

purchase order number and the subcontracting type such as Full, Buy and Sell, or Chargeable subcontracting. This node also shows information on ordered quantity, received quantity, allocated quantity, unallocated quantity, and the order schedule status.

- **Outsourced Assembly** - Click **Show Details** to view the assembly name, assembly description, and assembly type.
- **Subcontract Component** - Click **Show Details** to view the component name, component description, component type, allocated quantity, and unallocated quantity.
- **Dropship Information** - Click **Show Details** to view the drop-ship requisition number, drop-ship purchase order number, and the drop-ship purchase order supplier.
- **Replenishment Sales Order** - Click **Show Details** to view the replenishment sales order number, ordered quantity, allocated quantity, unallocated quantity, schedule ship date, actual ship date, and shipment schedule status.
- **Replenishment Purchase Order** - Click **Show Details** to view the replenishment purchase order number, received quantity, and the expected receipt date.
- **Work Order** - Click **Show Details** to view the work order number, scheduled start date, scheduled completion date, and the actual completion date.
- **MP Organization** - Click **Show Details** to view the organization name and the organization code for the Manufacturing Partner (MP) organization.
- **Subcontract Sales Order** - Click **Show**

Details to view the sales order number, schedule ship date, and actual ship date.

- **Quality Inspection** - Click **Show Details** to view the inspection result, inspection date, rejection reason, and the rejected quantity.
- **Component Adjustment** - Click **Show Details** to view the adjustment reason, adjustment quantity, and adjustment value.

Click the **View Timeline** link from the **Subcontract Order**, **Replenishment Sales Order**, and **Work Order** nodes to view the following key events in the Timeline View:

- Required Date, Inspection Date, and Receipt Date for subcontract orders.
- Schedule Ship Date, Actual Ship Date, and Expected Receipt Date for replenishment sales orders.
- Scheduled Start Date, Scheduled Completion Date, Actual Start Date, and Actual Completion Date for work orders.

Click **Timeline View Option** to enable the overview display and the maximum number of events of up to 500.

The following nodes will display the **Order Schedule Status** icon, if any associated document is still open and is past its expected fulfillment date:

- Subcontract Purchase Order
 - Subcontract Sales Order
 - Dropship Information
 - Replenishment Sales Order
 - Replenishment Purchase Order
-

-
- **Work Order**

As a subcontracting manager you can use the **Order Schedule Status** icon to monitor delays for a node and quickly take actions to resolve issues.

The **Subcontract Purchase Order** node also displays the **Allocation Status** icon if the subcontract purchase order is unallocated. This visual indicator alerts you to the unallocated status and enables you to then plan the placement of prepositioned components at the MP organization.

The following icons are available for the **Outsourced Manufacturing Track and Trace** diagram:

- **Export to Image** - Export the Outsourced Manufacturing Track and Trace image.
 - **Export to CSV** - Download and export the information as a CSV file.
 - **Export to PDF** - Download and export the information in the PDF format.
 - **Row Expander** - View the outsourced manufacturing information for a subcontract order in rows instead of a diagram, at levels such as subcontract header, outsourced assembly, components level and so on. To go back to the diagram view, click the **Network Diagram** icon.
-

Setting Up for Discrete Manufacturing

This chapter covers the following topics:

- Overview of Setting Up Subcontracting
- Setting Profile Options
- Setting up OEM Organizations
- Setting Up Manufacturing Partner Organizations
- Defining Customers and Suppliers
- Associating Customers and Suppliers
- Setting Up Item Definitions
- Setting Up Bills of Material for Outsourced Assemblies
- Setting Up Specific Subcontracting Accounting
- Defining Specific Receivables Transaction Types for Chargeable Subcontracting
- Defining Specific Transaction Sources for Chargeable Subcontracting
- Setting Up Specific Order Management Transaction Types for Subcontracting
- Setting Up Standard Costs of Components and Assemblies for Subcontracting
- Defining Price Lists for Subcontracting Components
- Setting Up Purchase Price of an Outsourced Assembly
- Setting Up a Shipping Network
- Defining Sourcing Rules
- Defining Netting Agreements
- Using Setup Diagnostics

Overview of Setting Up Subcontracting

The following sections describe the common setup steps that are required for implementing Outsourced Manufacturing solutions with an emphasis on set up steps required for Chargeable Subcontracting, Buy/Sell Subcontracting, and Full Outsourcing for discrete manufacturing.

For specific subcontracting set up for seiban-based manufacturing, see Seiban-Based Manufacturing Setup, page 10-1.

For specific subcontracting set up for process manufacturing, see Subcontracting Setup for Process Manufacturing, page 11-3.

Setup Steps

The key setup steps are:

1. Enable subcontracting profile options.
2. Define Customers and Suppliers.
3. Define OEM and MP Organizations, and associate customers and suppliers defined in the previous step.
4. Define components and assemblies in both the MP and OEM organizations.
5. Define specific accounts, AR, and OM transaction types for execution and accounting.

Note: This step is required only for Chargeable Subcontracting.

6. Define shipping networks between the OEM and MP, and enable subcontracting relationships.
7. Setup AP/AR Netting Agreements (mandatory for Chargeable Subcontracting, optional for Buy/Sell, and not required for Full Outsourcing).

Process Steps

The Subcontracting process includes these steps:

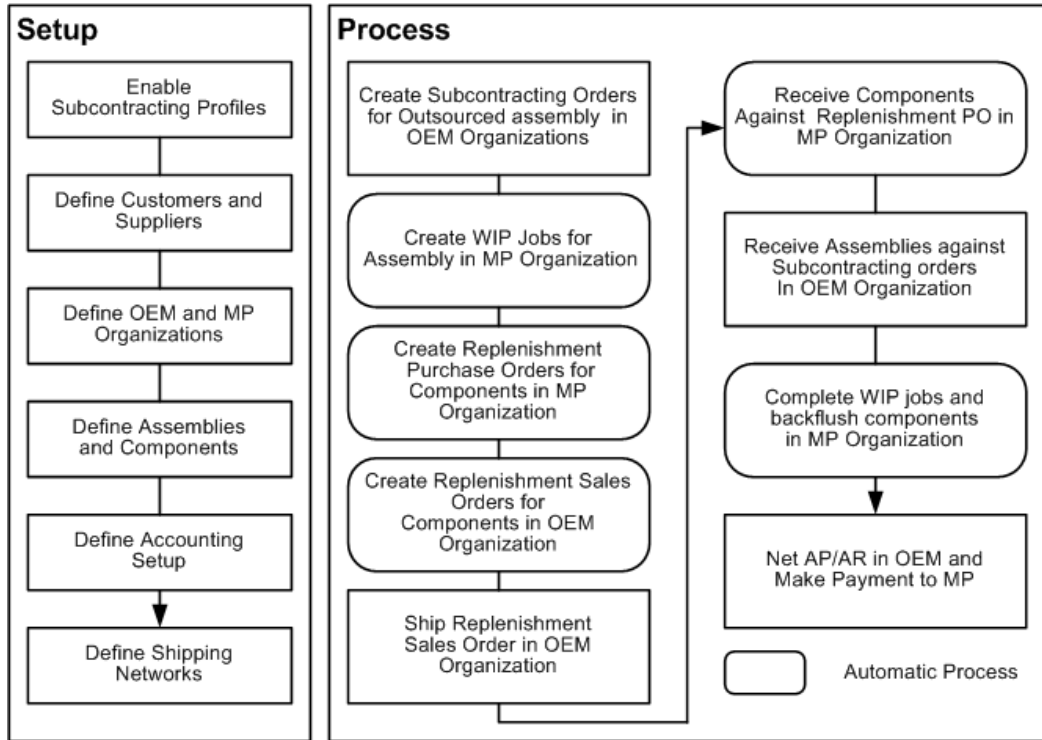
1. Creating a purchase order (referred to as Subcontracting Order) for buying the outsourced assembly from the MP.
2. Creating a Discrete Job in the MP Organization or a Flow Schedule (for assemblies with flow routing) in Internal MP Organization against the Subcontracting Order

automatically, using the Interlock Manager.

3. Creating Replenishment Purchase Orders (RPOs) in the MP Organization for procuring components from the OEM. RPOs are automatically created for synchronized components using the Interlock Manager. For prepositioned components you can manually create RPOs, or use ASCP to create RPOs automatically
4. Creating Replenishment Sales Orders in the OEM Organization for shipping components from OEM to MP automatically using the Interlock Manager.
5. Ship-Confirming Replenishment Sales Orders in the OEM Organization to ship components to MP.
6. Running the Auto Receive Components concurrent program to automatically receive the components in the MP.
7. Receiving the outsourced assemblies in the OEM Organization against subcontracting orders created in Step 1.
8. Running the Process Receiving Transactions concurrent program when the MP is external. This step completes the WIP job and backflushes the components and reduces the inventory of the outsourced assembly by an appropriate amount in the MP Organization.
9. Performing batch netting for AP and AR invoices, for paying the MP. This is an optional step for Buy/Sell Subcontracting and not required for Full Outsourcing.

Chargeable Subcontracting Setup and Process:

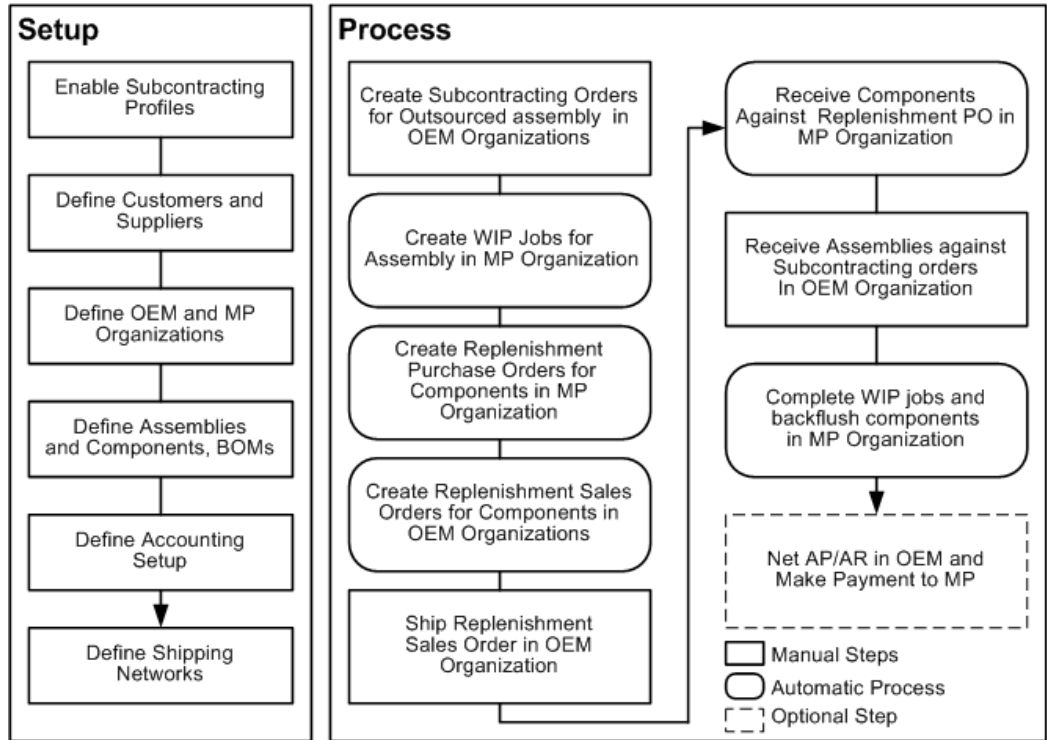
This diagram illustrates the setup and process flow for Chargeable Subcontracting:



Note: Replenishment Purchase Orders (RPOs) are automatically created for synchronized components using the Interlock Manager. For prepositioned components you can manually create RPOs, or use ASCP to create RPOs automatically. See the Subcontracting Process for Discrete Manufacturing chapter.

Buy/Sell Subcontracting Setup and Process :

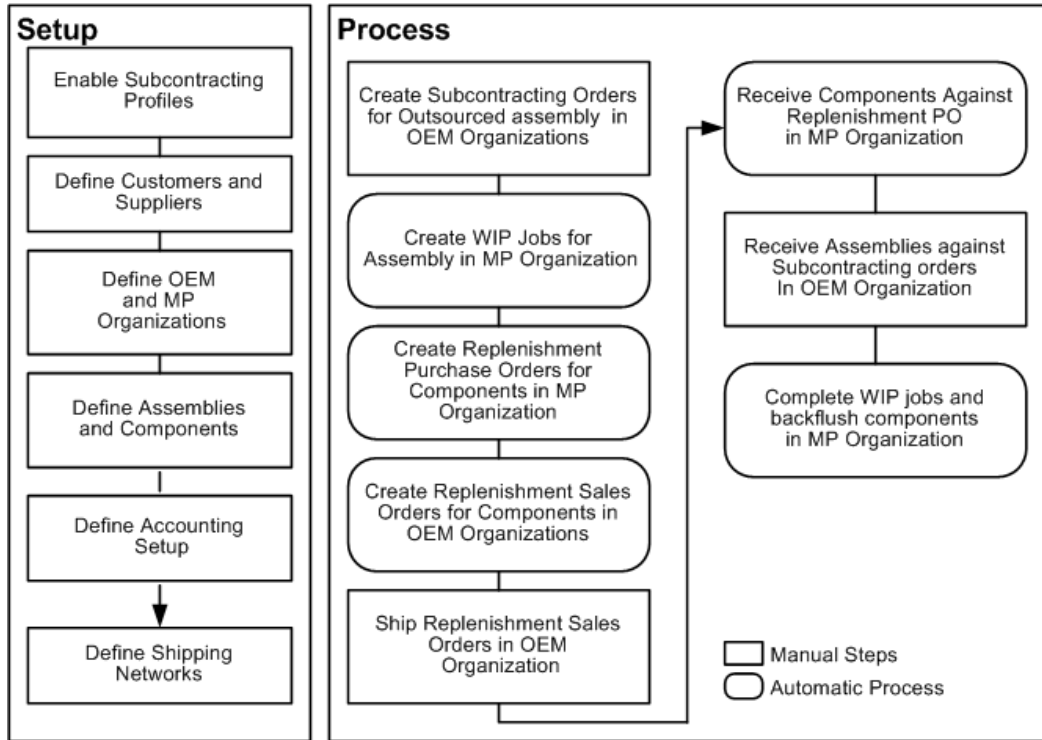
This diagram illustrates the setup and process flow for Buy/Sell Subcontracting:



Note: Replenishment Purchase Orders (RPOs) are automatically created for synchronized components using the Interlock Manager. For prepositioned components you can manually create RPOs, or use ASCP to create RPOs automatically. See the Subcontracting Process for Discrete Manufacturing chapter.

Full Outsourcing with External MP Setup and Process

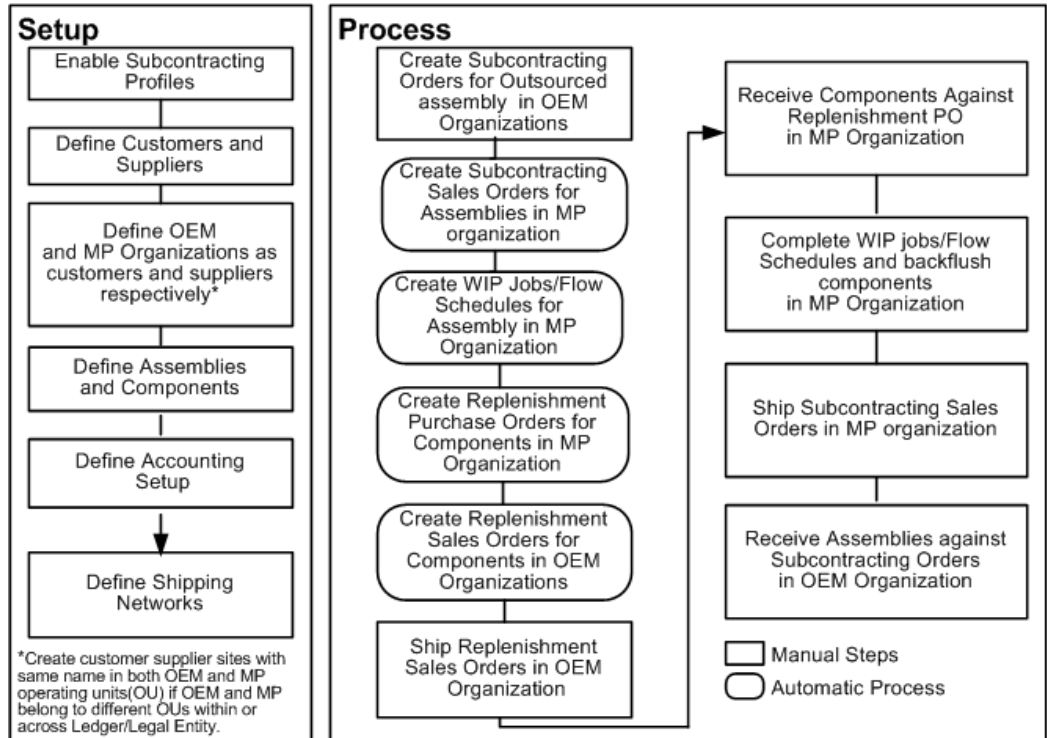
This diagram illustrates the setup and process flow for Full Outsourcing with External MP Organizations:



Note: Replenishment Purchase Orders (RPOs) are automatically created for synchronized components using the Interlock Manager. For prepositioned components you can manually create RPOs, or use ASCP to create RPOs automatically. See the Subcontracting Process for Discrete Manufacturing chapter.

Full Outsourcing with Internal MP Setup and Process

This diagram illustrates the setup and process flow for Full Outsourcing with Internal MP Organizations:



Note: Replenishment Purchase Orders (RPOs) are automatically created for synchronized components using the Interlock Manager. For prepositioned components you can manually create RPOs, or use ASCP to create RPOs automatically. See the Subcontracting Process for Discrete Manufacturing chapter.

Setting Profile Options

Subcontracting uses the following profile options:

- JMF: Enable Subcontracting
- Subcontracting Enabled

	User	Sys Admin	Sys Admin	Sys Admin	Sys Admin		
Profile Option	User	User	Resp	App	Site	Required	Default Value
JMF: Enable Subcontracting	-	-	-	-	Yes	No	No
Subcontracting Enabled	-	-	-	-	Yes	No	No
Yes	You can update the profile option						
-	You can view the profile option value but you cannot change it.						
No	You cannot view or change the profile option value.						

JMF: Enable Subcontracting

This profile should be set to Yes to use the subcontracting features. You can update this profile option at the site level only.

Yes: Enables Subcontracting.

No: Disables Subcontracting.

Subcontracting Enabled

This profile should be set to Yes to consider outsourced assembly item invoices in AP and AR Netting. You can update this profile option at the site level only.

Yes: Enables Subcontracting AP/AR Netting

No: Disables Subcontracting AP/AR Netting

Related Topics

See: Profile Options, *Oracle E-Business Suite System Administrator's Guide - Maintenance*.

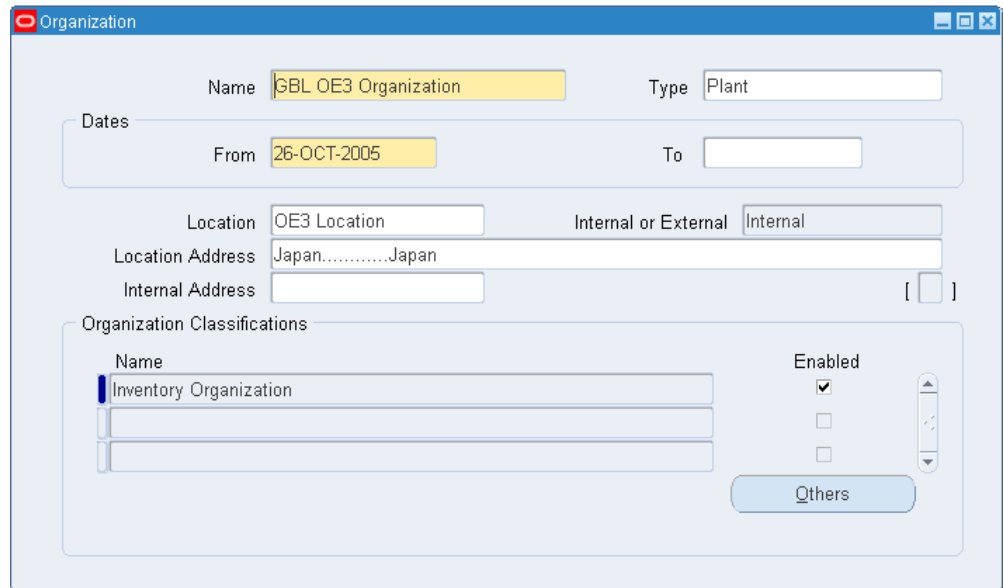
Setting up OEM Organizations

Define and set up the Original Equipment Manufacturer (OEM).

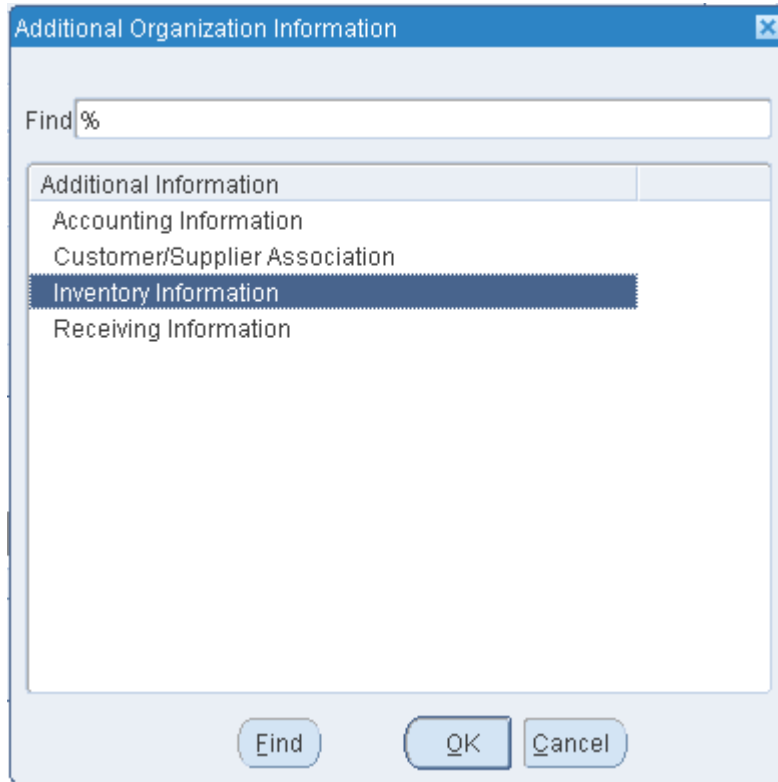
The OEM organization is the organization that buys an outsourced assembly, and ships subcontracting components to the manufacturing partners.

To set up OEM organizations:

1. From the Inventory responsibility, navigate to the Organization window.
2. Define the OEM organization as an inventory organization. Select the Location Address of the country for which you are setting up Chargeable Subcontracting or Buy/Sell Subcontracting or Full Outsourcing.



3. Select Others. The Additional Organization Information window appears.



4. Select Inventory Information to view the Organization Parameters window.
5. Select the Costing Information tab.
6. Set the Costing Method of the OEM Org as below:
 - For Chargeable Subcontracting, set the Costing Method to Standard.
 - For Buy/Sell Subcontracting, set the Costing Method to any of the following costing methods: Standard, Average, FIFO and LIFO.
 - For Full Outsourcing set the Costing Method to Standard.
7. Since the OEM is a regular inventory organization, select *Yes* for Transfer to GL to post all accounting transactions to the general ledger.

Organization Parameters (OE3)

Inventory Parameters | Costing Information | Revision, Lot, Serial And LPN | ATP, Pick, Item-Sourcing

Costing Organization: GBL OE3 Organization

Costing Method: Standard

Rates Cost Type:

Transfer to GL: Yes

Reverse Encumbrance

Project Cost Collect. Enabled

Defer Logical Transactions

Cost Cutoff Date:

Default Material Sub-Element:

Material Overhead Sub-Element:

Default Cost Group: CG-120504

Valuation Accounts

Material	01-000-1410-0000-000
Outside Processing	01-000-1450-0000-000
Material Overhead	01-000-1420-0000-000
Overhead	01-000-1430-0000-000
Resource	01-000-1440-0000-000
Expense	01-520-7530-0000-000

Note: Warehouse Management (WMS) and EAM-enabled organizations are supported as OEM organizations. You can assign or define outsourced assemblies and subcontracting components for these organizations.

To set up OEM organizations in process-enabled inventory organizations see Subcontracting Setup for Process Manufacturing, page 11-3.

8. Save your work.

For additional information about organization setup, see: Defining Inter-Organization Information, *Oracle Inventory User's Guide* and Organization Parameters Window, *Oracle Inventory User's Guide*.

Setting Up Manufacturing Partner Organizations

To use the Chargeable, Buy/Sell Subcontracting and Full Outsourcing features, define the Manufacturing Partner Organization.

To set up MP organizations:

1. Navigate to the Organization window.
2. Define the MP organization as an inventory organization. Select the Location Address of the country for which you are setting up Chargeable Subcontracting or Buy/Sell Subcontracting or Full Outsourcing.

Organization

Name: GBL TP1 Organization Type: Third Party

Dates: From: 26-OCT-2005 To: []

Location: TP1 Location Internal or External: External

Location Address: Japan.....Japan

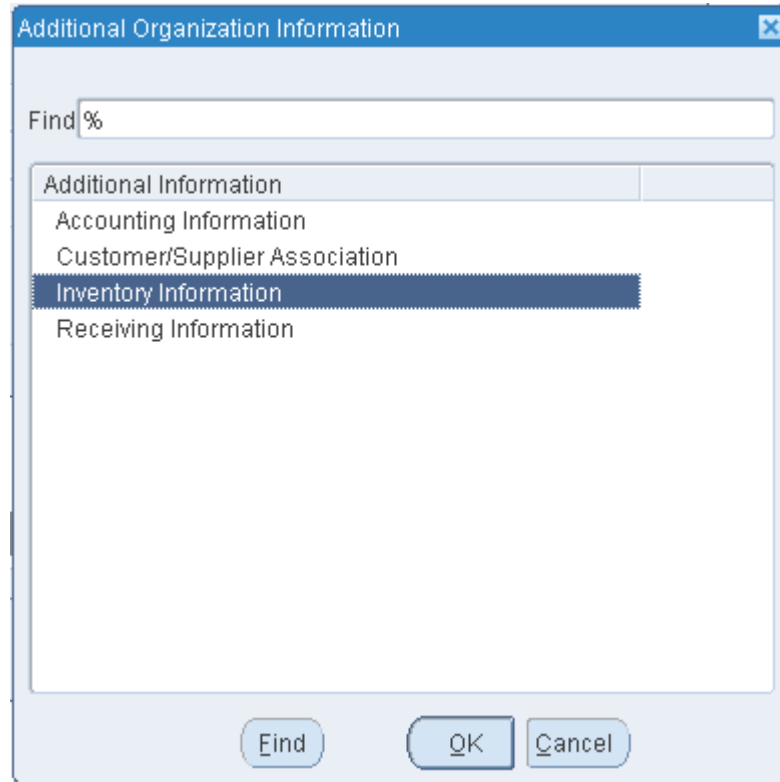
Internal Address: []

Organization Classifications

Name	Enabled
Inventory Organization	<input checked="" type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>

Others

3. Click Others. The Additional Organization Information window appears.



4. Select Inventory Information. The Organization Parameters window appears.
5. In the Organization Parameters window, check the Manufacturing Partner Organization indicator to select the Manufacturing Partner Type.

Organization Parameters (MP4)

Inventory Parameters Costing Information Revision, Lot, Serial And LPN ATP, Pick, Item-Sourcing

Organization Code

Item Master Organization

Calendar

Demand Class

Move Order Timeout Period

Move Order Timeout Action

Locator Control

Default On-Hand Material Status

Enforce Locator Alias Uniqueness

Quality Skipping Inspection Control

Allow Negative Balances

Auto Delete Allocations at Move Order Cancel

Enabled Products & Features

Manufacturing Partner Organization

Type

Process Manufacturing Enabled

EAM Enabled

WMS Enabled

WCS Enabled

LCM Enabled

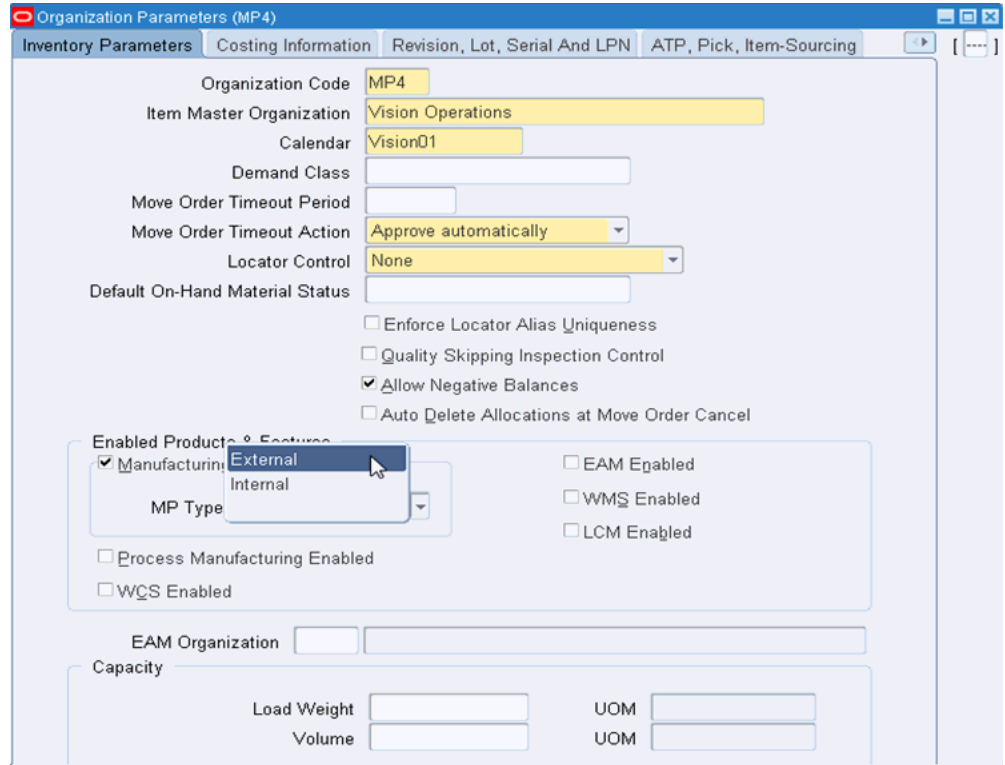
EAM Organization

Capacity

Load Weight UOM

Volume UOM

6. Select Manufacturing Partner Type as either External or Internal.



7. Select the Costing Information tab.
8. Select *No* for Transfer to GL if the MP organization type is external as the MP organization is created for simulation and the accounting transactions for this organization should not be transferred to the general ledger.

Select *Yes* for Transfer to GL if the MP organization type is internal to transfer accounting transactions for this organization to the general ledger. For internal MP organization types, the costing method in the organization parameter should be Standard and Process Manufacturing Enabled should be not checked.

Organization Parameters (TP1)

Inventory Parameters | **Costing Information** | Revision, Lot, Serial And LPN | ATP, Pick, Item-Sourcing

Costing Organization: GBL TP1 Organization

Costing Method: Standard

Rates Cost Type:

Transfer to GL: No

Reverse Encumbrance

Project Cost Collect. Enabled

Defer Logical Transactions

Cost Cutoff Date:

Default Material Sub-Element:

Material Overhead Sub-Element:

Default Cost Group: CG-121504

Valuation Accounts

Material	01-580-7740-0000-000
Outside Processing	01-580-7740-0000-000
Material Overhead	01-580-7740-0000-000
Overhead	01-580-7740-0000-000
Resource	01-580-7740-0000-000
Expense	01-580-7740-0000-000

9. Save your work.

For additional information about setting up an Organization, see: *Defining Inter-Organization Information, Oracle Inventory User's Guide* and *Organization Parameters Window, Oracle Inventory User's Guide*.

To set up receiving options for MP organizations:

In Chargeable, Buy/Sell, and Full Outsourcing subcontracting practices, the MP procures subcontracting components from the OEM. To support this, the system automatically creates replenishment purchase orders and receives components in the MP organization. Set up the receiving options in the MP organization to enable this.

1. From the Purchasing responsibility, navigate to the Setup/Organizations/Receiving options page.
2. Select the MP Organization and click Go. The Receiving Options page appears.
3. Enter **Receipt Days Early** equals 100, **Receipt days Late** equals 100, and **Receipt Days Exceeded Action** equals none.

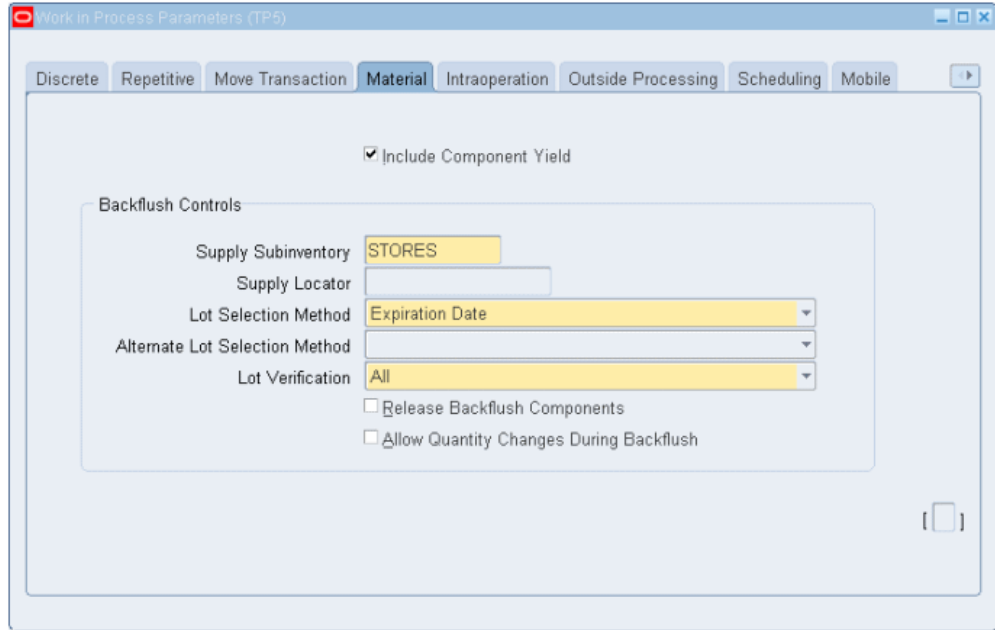
4. Enter **Over Receipt Tolerance** equals 100 and **Over Receipt Action** equals none.
5. Enter **Receipt Routing** equals Direct Delivery.
6. Set Mandatory Accounts as miscellaneous accounts and leave all others blank. This is because as the MP is created for simulation and the costs are not posted to the general ledger, the accounts are not significant.

7. Save your work.

To define WIP parameters:

Define WIP Parameters for the MP organization. See: *Defining WIP Parameters, Oracle Work in Process User's Guide*. Accounts are not significant; therefore, you can set the WIP accounting class with miscellaneous accounts and then define it in the WIP Parameters window. The system uses the supply subinventory defined in the WIP Parameters window to receive the components when the replenishment purchase order is received in the MP organization. The system also uses it to backflush the inventory when the WIP job is completed for simulating the material consumption at the MP Organization after the outsourced assemblies are received against the subcontracting purchase orders in the OEM organization.

1. From the WIP responsibility, navigate to the Work in Process Parameters window.
2. Select the MP Organization.
3. Enter WIP parameters.



4. Save your work.

Defining Customers and Suppliers

When using the Subcontracting application, the MP acts as both supplier and customer, and the OEM acts as a supplier. Define the OEM as a supplier/site, and the MP as both a customer/site and a supplier, and associate these roles in the OEM and MP organizations, respectively.

When using Full or Buy/Sell Outsourcing with Internal MP organization, both the MP and the OEM act as supplier and customer. Define a customer and a customer site and a supplier and a supplier site for both OEM and MP. If the OEM and MP belong to different Operating Units in the same or different ledgers/legal entities, then create customer/supplier sites with the same names in both the operating units.

For additional customer setup information, see: *Adding Customers, Oracle Order Management User's Guide*.

To define a customer/site:

1. From the Order Management responsibility, navigate to the Customers page.
2. Add your Manufacturing Partner as a customer/site.

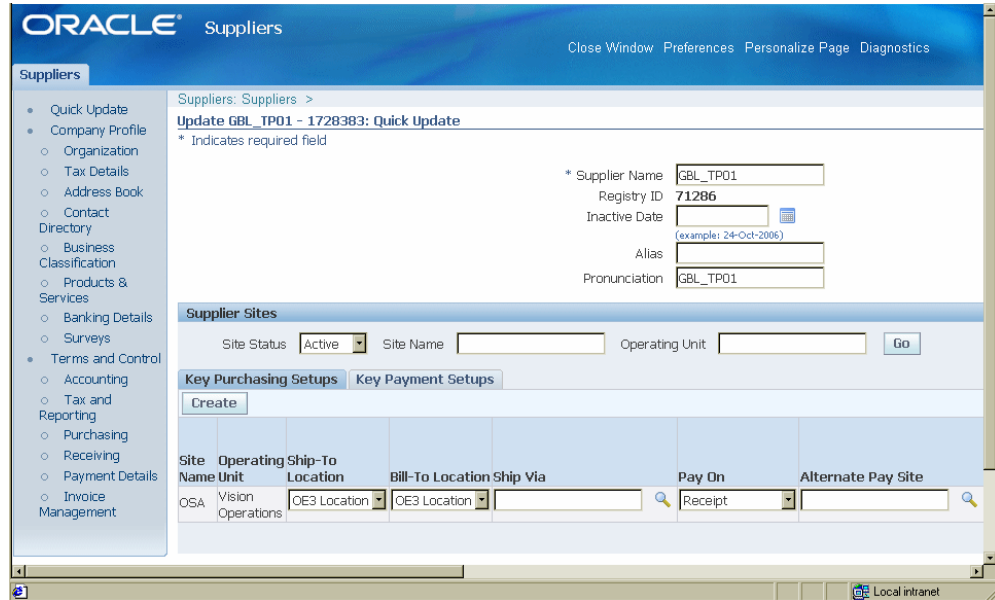
The screenshot shows the Oracle Trading Community interface for defining a customer organization. The page title is "ORACLE Trading Community" with navigation links for "Close Window", "Preferences", "Personalize Page", and "Diagnostics". The main heading is "Customers" with a sub-heading "Customer: GBL TP1 Organization". The "Customer Type" is set to "Organization". The "Customer Information" section includes fields for "Organization Name" (GBL TP1 Organization), "Registry ID" (70069), "Context Value" (dropdown), "FSCSM_g 1 (150 c)", "FSCSM_g 2 (3 d)", "FSCSM_g 3 (3 c)", and "AST_GDE_PartyHeader". Below this are tabs for "Profile", "Communication", "Party Relationships", and "Tax Profile". The "Main Information" section is partially visible at the bottom. The browser window title is "Local intranet".

To define a supplier/site:

Set up both the MP and the OEM as suppliers.

For additional supplier setup information, see: *Entering RFQ Supplier Information, Oracle Purchasing User's Guide.*

1. From the Purchasing responsibility, navigate to the Suppliers page.
2. Enter supplier information.



3. Save your work.

Associating Customers and Suppliers

For the OEM Organization, you must associate the supplier and supplier site. For the MP Organization, you must associate the customer and customer site, as well as the supplier and supplier site. The Advanced Supply Chain Planning (ASCP) application uses this information to transfer the net demands of assemblies and components between the OEM and MP organizations.

To associate customers and suppliers:

You must associate the supplier with the OEM. In this example, the OEM supplies components to the MP and maintains the role of a supplier.

1. From the Inventory responsibility, navigate to the Organization window.
2. Select your OEM organization.
3. Select Others. The Additional Organization Information window appears.
4. Select Customer/Supplier Association and click OK. The Customer/Supplier Association window appears.
5. Enter the Supplier that you are associating with the OEM.
6. Enter the Supplier Site.

The screenshot shows a dialog box titled "Customer/Supplier Association". It contains four text input fields: "Customer", "Customer Site", "Supplier" (with the value "GBL_OEM_SP3"), and "Supplier Site" (with the value "BUY"). Below the fields is a horizontal scrollbar. At the bottom right, there are four buttons: "OK", "Cancel", "Clear", and "Help".

If using Full Outsourcing with Internal MP organization, where the OEM is defined as customer/customer site and supplier/supplier site, enter customer/customer site details for the OEM in the Customer/Supplier Association form.

7. Choose OK.
8. Save your work.

To associate customers and suppliers:

In this example, the MP supplies assemblies, procures components from OEM, and maintains the role as both supplier and customer.

1. From the Inventory responsibility, navigate to the Organization window.
2. Choose the MP organization.
3. Select Others. The Additional Organization Information window appears.
4. Select Customer/Supplier Association and select OK. The Customer/Supplier Association window appears.
5. Enter Customer. This entry is the MP organization.
6. Enter the Customer Site to which to ship.
7. Enter the Supplier. This entry is the MP organization.
8. Enter the Supplier Site.

The screenshot shows a dialog box titled "Customer/Supplier Association". It contains four text input fields: "Customer" with the value "GBL_TP01 (7331)", "Customer Site" with "Dummy1 (Ship To)", "Supplier" with "GBL_TP01", and "Supplier Site" with "OSA". Below the fields is a horizontal scrollbar. At the bottom right, there are four buttons: "OK", "Cancel", "Clear", and "Help".

9. Click OK.
10. Save your work.

Setting Up Item Definitions

You must define items and bills in the OEM and the MP organizations. Define items as:

- **Outsourced Assemblies:** Assembly items designed by the OEM and manufactured by the MP and the MP's site using components supplied by the OEM. Assemblies can be standard or ATO/CTO outsourced assemblies. Users can also define and configure ATO/CTO Items and outsource these Configured Assemblies to external and internal MP Organizations.
- **Subcontracting Components:** Components sent by the OEM to the MP for the manufacturing of outsourced assemblies. The two types of subcontracting components supported are:
 - Prepositioned - Components that are shipped to the MP without reference to any specific subcontracting order ahead of placement of such orders by the OEM. These components are typically low cost items and the OEM stores these components in larger quantities at Manufacturing Partner site well ahead of ordering outsourced assemblies.
 - Synchronized - Components that are shipped to the MP with reference to a specific subcontracting order along with the order. These components are generally high cost items and are shipped when the order is placed with the MP and in the quantities required to produce the outsourced assembly in the subcontracting order.

To define outsourced assemblies in the OEM organization:

You can follow the standard item setup steps for defining outsourced assemblies and subcontracting components. The following key attributes and values are used for defining an item as an outsourced assembly or a subcontracting component:

1. From the Inventory responsibility, navigate to the Organization Item window. The Find Organization Items window appears.

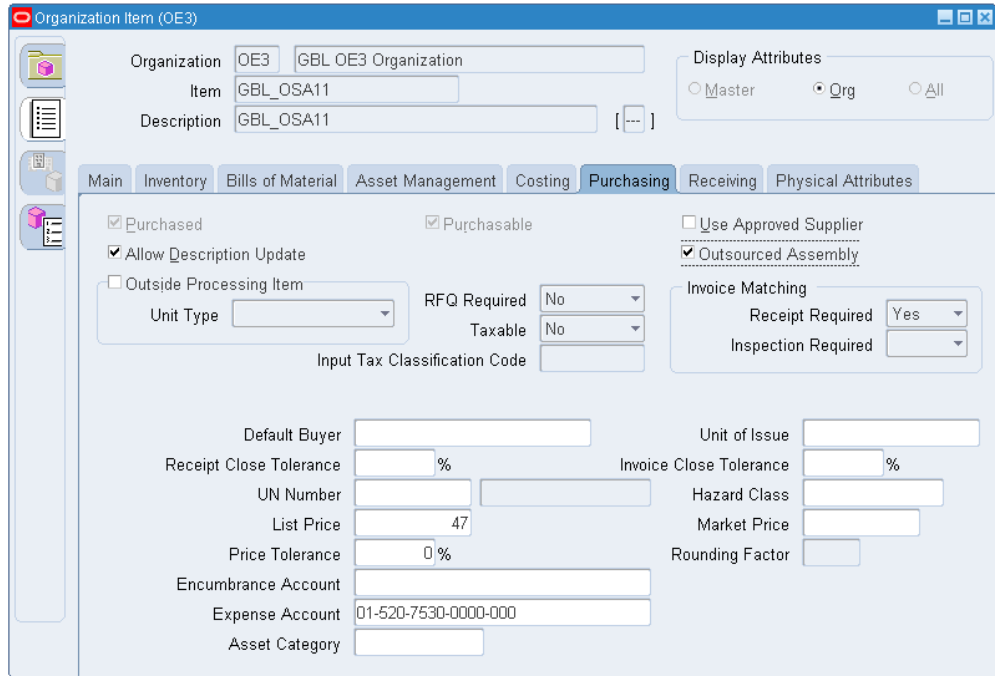
The screenshot shows the 'Find Organization Items (OE3)' window with the following fields and options:

- Item:
- Items: -
- Description:
- Long Description:
- Item Status:
- User Item Type:
- Category Set:
- Catalog Group:
- Primary Unit of Measure:
- BOM Item Type:
- Category:
- EAM Item Type:
- Inventory Item:
- Transactable:
- Purchased:
- Customer Ordered:
- Internal Ordered:
- Invoiceable:
- Build in WIP:
- Recipe Enabled:
- Process Quality Enabled:
- Stockable:
- Costing Enabled:
- Purchasable:
- Customer Orders Enabled:
- Internal Orders Enabled:
- Invoice Enabled:
- BOM Allowed:
- Process Execution Enabled:
- Process Costing Enabled:

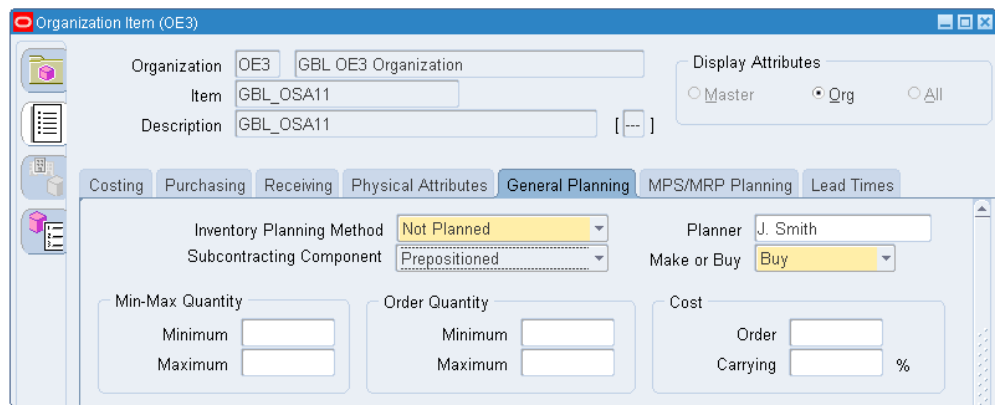
Buttons:

2. Enter Item search criteria for the OEM organization and click Find. The Organization Item window appears.
3. Select the Purchasing tab.
4. Define this item as an outsourced assembly by selecting the Outsourced Assembly checkbox.

Note: You must set the profile option JMF:Enable Subcontracting to Yes to enable the Outsourced Assembly checkbox.

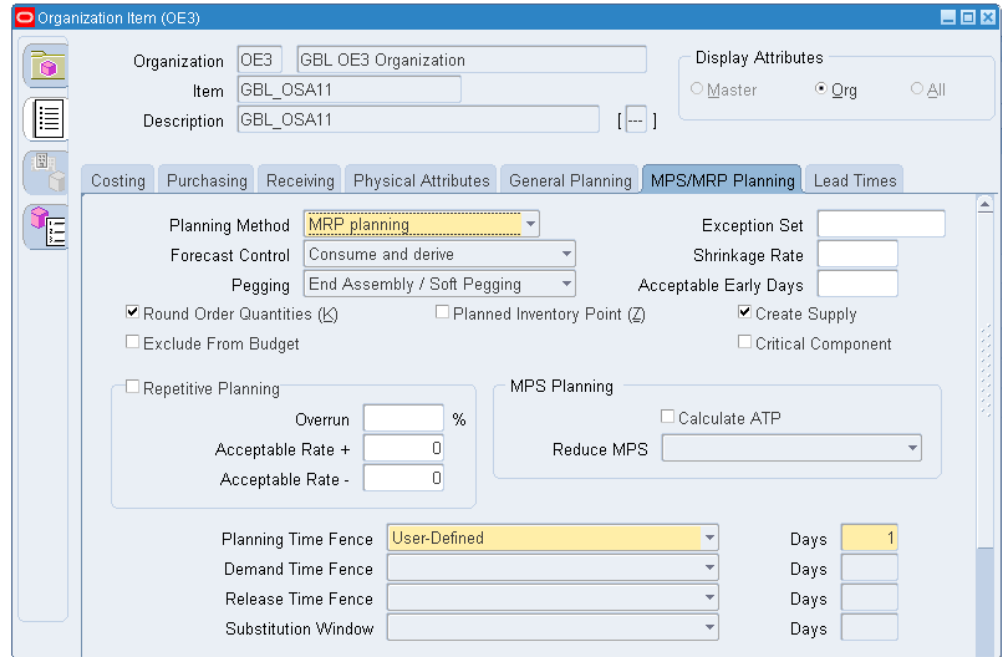


5. Select the General Planning tab and define the outsourced assembly as a Buy item for planning.



6. Select the MPS/MRP Planning tab and verify that Release Time Fence is empty (Null). This setting allows ASCP to release and transfer buy planned orders of assembly to purchasing as purchase orders or releases in the OEM organization.

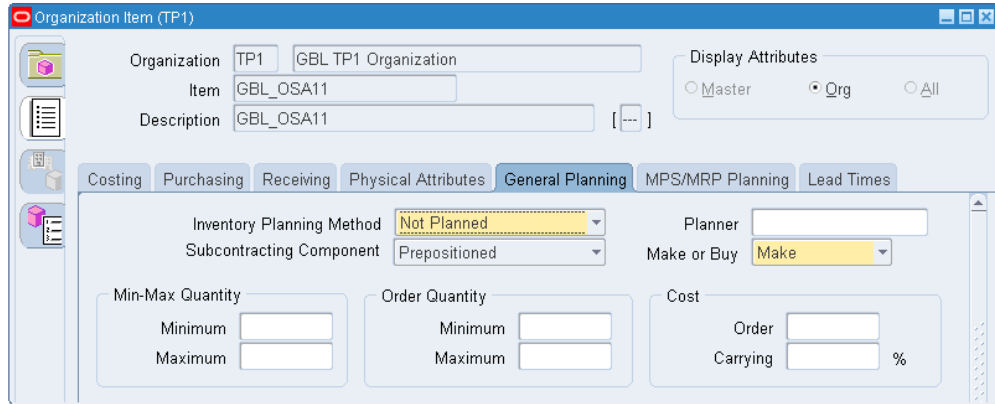
Note: Outsourced Assemblies can have routings in OEM organizations and it is not necessary to change the existing routings while outsourcing the assembly to an MP.



7. Save your work.

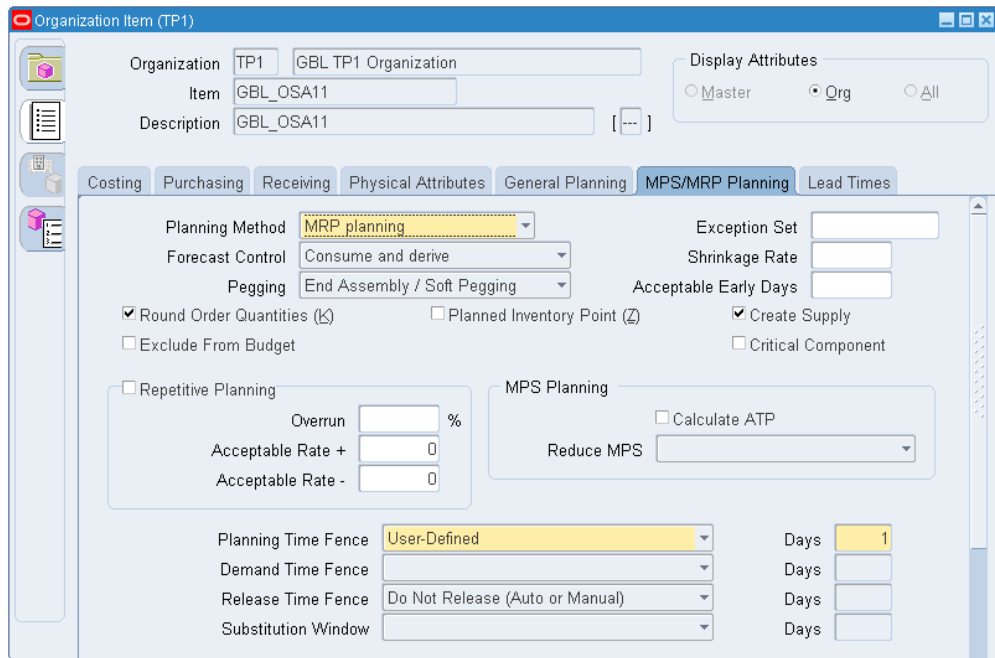
To define outsourced assemblies in the MP organization:

1. From the Inventory responsibility, navigate to the Organization Item window. The Find Organization Items window appears.
2. Enter Item search criteria for the MP organization and click Find. The Organization Item window appears.
3. Select the General Planning tab and define the outsourced assembly as a Make item for planning. Production of this assembly is simulated in the MP organization.



4. Select the MPS/MRP Planning tab and select Do Not Release (Auto or Manual) for Release Time Fence. This setting prevents Make planned orders of assembly from being transferred as discrete jobs in the MP organization.

Note: Outsourced assemblies cannot have routings in MP organizations.



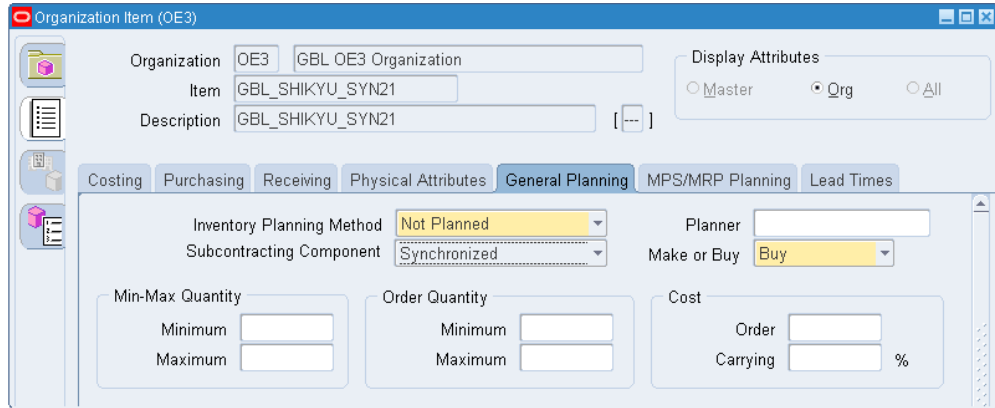
5. Select the Purchasing tab.
6. Define this item as an outsourced assembly by selecting the Outsourced Assembly checkbox.

Note: Outsourced assemblies cannot have routings in MP organizations.

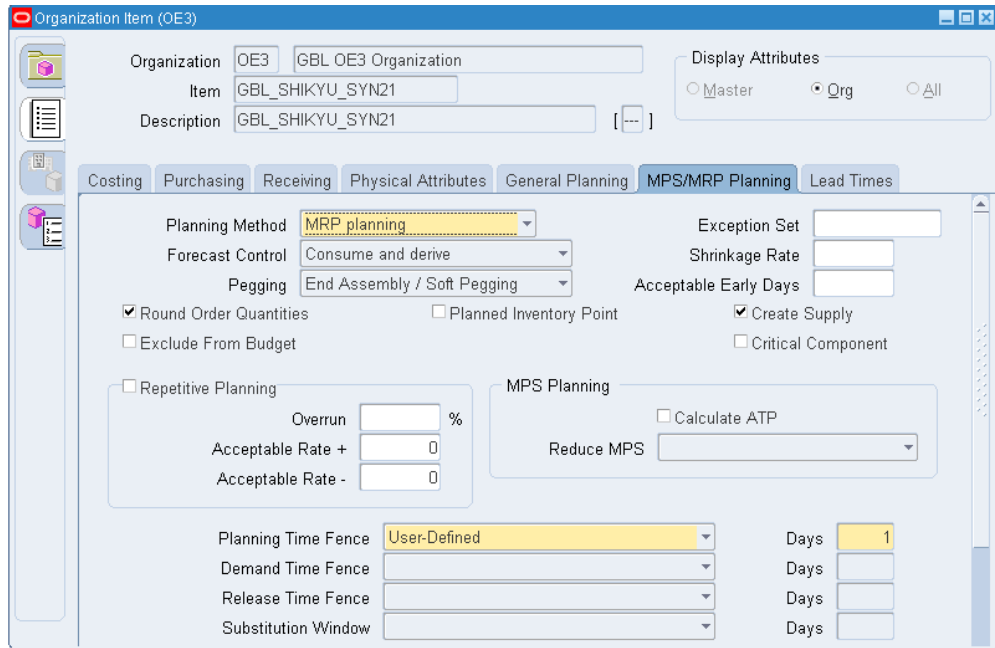
7. Save your work.

To define subcontracting components in the OEM organization:

1. From the Inventory responsibility, navigate to the Organization Item window. The Find Organization Items window appears.
2. Enter Item search criteria for the OEM Organization and click Find. The Organization Item window appears.
3. Select the General Planning tab and enter the Subcontracting Component. Valid values are Synchronized or Prepositioned based on the subcontracting process requirement.



4. Select the MPS/MRP Planning tab and verify that Release Time Fence is empty (Null). This allows ASCP to release and transfer planned orders of components to purchasing as purchase orders or releases in the OEM organization.



5. Save your work.

To define subcontracting components in the MP organization:

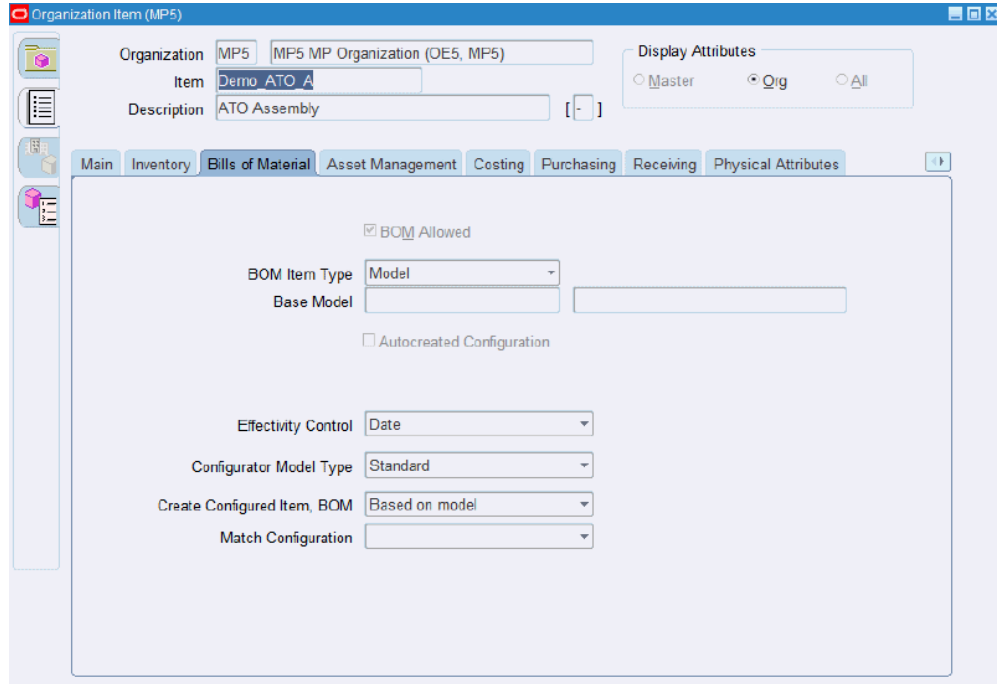
1. From the Inventory responsibility, navigate to the Organization Item window. The Find Organization Items window appears.
2. Enter Item search criteria for the MP Organization and click Find. The Organization Item window appears.

3. Select the General Planning tab and enter the Subcontracting Component. Valid values are Synchronized or Prepositioned based on the subcontracting process requirement.
4. Select the MPS/MRP Planning tab and enter Release Time Fence values:
Do not Release (Auto or Manual): Use this value when you use synchronized components. ASCP should not release planned orders of synchronized components in the MP organization.
Null: Leave this field empty when using prepositioned components.
5. Save your work.

To define ATO/CTO item as configured assemblies:

1. From the Inventory responsibility, navigate to the Organization Item window. The Find Organization Items window appears.
2. Enter Item search criteria for the OEM organization and click Find. The Organization Item window appears.
3. Select the Bills of Materials tab. For the ATO/CTO model item, ensure that the BOM attribute Create Configured Item, BOM is set to Based on Model.

Note: This setup is required to create the configured Star (*) item, BOM, and routing details in MP organization during the Star (*) item creation process.



4. Select the Purchasing tab. Define this item as an outsourced assembly by selecting the Outsourced Assembly checkbox. Outsourced Assembly flag for the star item is copied in the MP organization.

Note: You must set the profile option JMF:Enable Subcontracting to Yes to enable the Outsourced Assembly checkbox.

5. Save your work.

Note: When configuring ATO/CTO items, the process creates Star (*) items, assemblies in both OEM and MP organizations. If the MP is internal organization then routings are copied to MP organization. Routings are not copied for external MPs

Supply chain Cost rollup program ignores sourcing rules and considers component cost in OEM org for Cost rollup and this program also updates list price of Star (*) Items with the OSP charge.

When the subcontracting PO is created for the Star (*) Item assembly, the list price is stamped as the PO price of the Star (*) Item assembly in the Item Master.

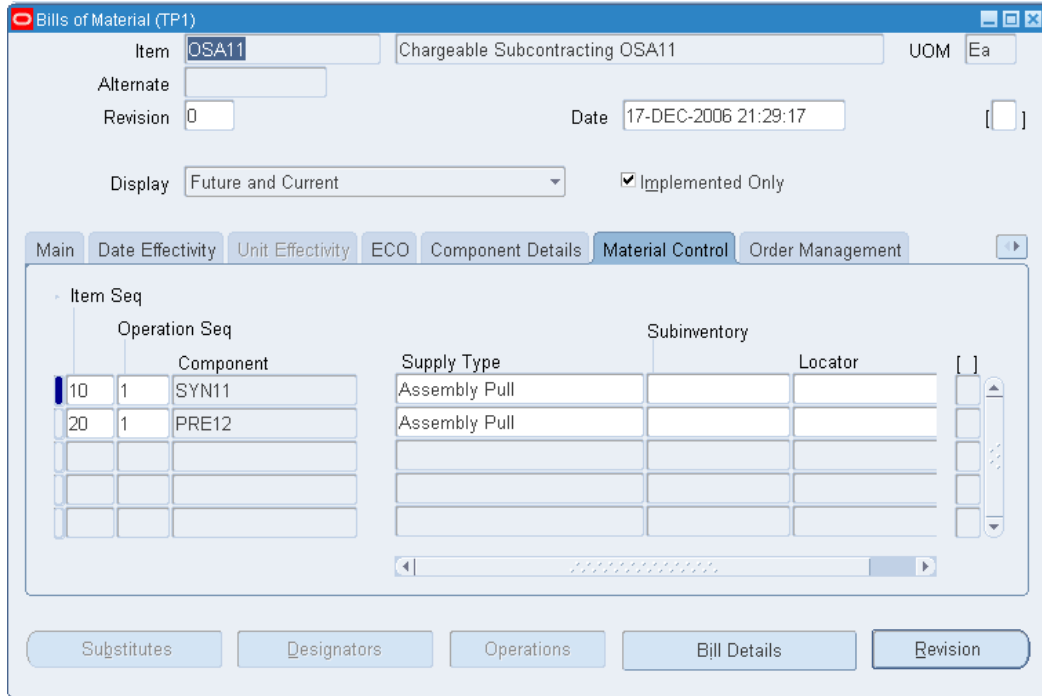
Setting Up Bills of Material for Outsourced Assemblies

Bills of Material (BOM) must be set up for outsourced assemblies in both the OEM and MP organizations. These two bills should be the same for proper planning and execution. If the BOM already exists for outsourced assembly in the OEM organization, then set up the same BOM in the MP organization. The prerequisites for outsourcing the assemblies are:

- You must define all of the components of the outsourced assembly as Subcontracting Components, either prepositioned or synchronized in both OEM and MP organizations.
- In the MP organization, select the Material Control tab and define BOM Component and Supply Type as the following:

Assembly Pull:	For physically shipping components to the MP.
Phantom:	For components not physically shipped but used in planning.
Supplier Supplied:	For components procured by the supplier and used in the manufacturing of the assembly.
Bulk:	For defining software components in the assembly.

Note: For Full Outsourcing with internal MP organizations all the available supply types excluding Phantom and Supplier Supplied are supported.



Note: You can define bills of material with dual UOM items as assembly and component items.

Setting Up Specific Subcontracting Accounting

Subcontracting Accounting Process

The OEM ships components to the MP using a replenishment sales order for the manufacturing of an assembly, but the revenue is not recognized as sales revenue. This revenue is tracked in a separate account for analysis at a later stage.

The MP is not liable for the payment of components, therefore the OEM cannot consider the receivables amount of the replenishment sales orders as actual receivables, and the amount is tracked in a separate receivables account. COGS of Subcontracting Components are also tracked in separate accounts. Purchase price of the assembly is set up to include sales price of the components and the added value, which is always different than the standard cost of the assembly. The Purchase Price Variance (PPV) at the time of receiving the subcontracting order in the OEM organization is not a real purchase price variance, and must be tracked in a separate account. You must set up following accounts to use the subcontracting process for Chargeable Subcontracting:

- **Subcontracting Receivables:** Used to track the receivables from the sale of components to the MP.
- **Subcontracting Revenue:** Used to track the revenue from the sale of components to

the MP.

- **Subcontracting COGS:** Used to track COGS from the sale of components to the MP.
- **Subcontracting Variance:** Purchase price variance at the time of receiving assembly is posted to this account. This variance arises due to differences between the standard cost and purchase price of the assembly.

See: Updating Balancing Segment Values, *Oracle General Ledger User's Guide*.

Setting Up Accounting for Full Outsourcing:

To set up accounting for Full Outsourcing, use the same steps given in the topic "To define subcontracting accounts" but only set up the following account:

- **Subcontracting Intransit:** This is an asset account.

To define subcontracting accounts:

1. From the General Ledger responsibility, navigate to the Segment Value window. The Find Key Flexfield Segment window appears.
2. Select the Value Set indicator and select the Value Set Name.
3. Click Find. The Segment Values displays all Values (Value Set).
4. Enter account details for the four Subcontracting accounts described previously.

Segment Values

Value Set
 Key Flexfield
 Descriptive Flexfield
 Concurrent Program

Name: Operations Account Operations Account

Dependent Value Set:

Independent Value:

Values (Operations Account)

Values, Effective Values, Hierarchy, Qualifiers

Value	Translated Value	Description	Enabled	From		To	[]
1221	1221	Subcontracting Receivables	<input checked="" type="checkbox"/>				
2557	2557	Subcontracting Revenue	<input checked="" type="checkbox"/>				
5112	5112	Subcontracting COGS	<input checked="" type="checkbox"/>				
5215	5215	Subcontracting Variance	<input checked="" type="checkbox"/>				
			<input type="checkbox"/>				
			<input type="checkbox"/>				
			<input type="checkbox"/>				

Define Child Ranges Move Child Ranges View Hierarchies

5. Save your work.

Related Topics

Transaction Batch Sources, *Oracle Receivables User's Guide*

Defining Specific Receivables Transaction Types for Chargeable Subcontracting

Define a separate receivable transaction type and associate:

- Subcontracting receivables
- Subcontracting revenue accounts (from the previous step). See: Setting Up Subcontracting Accounting, page 3-32.

To define a receivables transaction type and associate it to Subcontracting receivables:

1. From the Receivables responsibility, navigate to the Transaction Types window.
2. Enter the receivables transaction type details.

3. In the Name field, enter the transaction type of Subcontracting.
4. For the Receivable Account, enter the subcontracting receivables account for tracking the subcontracting component receivable amount.
5. For the Revenue Account, enter the Subcontracting Revenue Account for tracking subcontracting component revenue.
6. Save your work.

Related Topics

Transaction Types, *Oracle Receivables User's Guide*

Defining Specific Transaction Sources for Chargeable Subcontracting

Batch sources control the standard transaction type assigned to a transaction and determine whether the Receivables application automatically numbers your transactions and transaction batches.

To associate a subcontracting receivables transaction type with an order management order type and line type, you must define a receivables transaction source. This step is referred to when receivables invoices are imported from order management to accounts receivable.

For transaction batch source setup information, see: Transaction Batch Sources, *Oracle*

To define a subcontracting transaction source:

1. From the Receivables responsibility, navigate to the Transaction Sources window.
2. Enter the Transaction Source: Subcontracting.

The screenshot shows the 'Transaction Sources (Receivables Manager)' window. The 'Operating Unit' is 'Vision Operations', 'Legal Entity' is blank, 'Name' is 'Chargeable Subcontracting', and 'Type' is 'Imported'. The 'Batch Source' tab is selected, showing a 'Description' of 'Chargeable Subcontracting'. The 'Active' checkbox is checked, with 'Effective Dates' set to '24-JUL-2006'. Other options include 'Automatic Batch Numbering' (unchecked), 'Automatic Transaction Numbering' (checked), 'Copy Document Number to Transaction Number' (unchecked), 'Allow Duplicate Transaction Numbers' (unchecked), and 'Copy Transaction Information Flexfield to Credit Memo' (unchecked). There are also fields for 'Receipt Handling for Credits', 'Reference Field Default Value' (set to 'interface_header_attribute1'), 'Standard Transaction Type', and 'Credit Memo Batch Source'.

3. Save your work.

Setting Up Specific Order Management Transaction Types for Subcontracting

You must set up a separate order type for creating replenishment sales orders for component shipments to the MP.

Receivables Transaction Type, Receivables Transaction Source, and Subcontracting COGS accounts created in previous steps must be associated with this Order Management transaction type. When the replenishment sales order for the subcontracting component is shipped and invoiced, COGS, revenue, and receivables are posted to subcontracting COGS, subcontracting revenue, and subcontracting

receivables, respectively.

See: Accounting Setup.

To define Order Management transaction types:

1. From the Order Management responsibility, navigate to the Transaction Types window.
2. Select an **Operating Unit** (required).
3. Enter a **Description**
4. Select an **Order Category** (required).
5. Select a Fulfillment Flow.
6. Enter **Effective Dates** (required).
7. Enter a **Transaction Type** (required).
8. Select a **Sales Document Type**.
9. Select a **Transaction Type Code** (required).
10. For Full Outsourcing, use Assign Line Flows to set up Ship Only transactions.
11. Select the Finance tab and enter an **Invoice Source** and a **Receivables Transaction Type** and COGS account defined in the previous setup for subcontracting process.

Note: To associate a subcontracting AR transaction type with an OM order type and line type, you must define a separate invoice source and AR transaction type, and attach them to the OM transaction type. This invoice source and transaction type are referred to when an AR invoice is imported from OM to AR. See: *Transaction Types, Oracle Receivables User's Guide* and *Setting Up Subcontracting Accounting*, page 3-32.

Note: For Full Outsourcing, Receivables Transaction Type is optional but COGs is mandatory and should be Subcontracting Intransit account.

12. Save your work.

Setting Up Standard Costs of Components and Assemblies for Subcontracting

Set up the standard costs of subcontracting components and outsourced assembly in the OEM organization. The MP organization is a simulation organization, and accounting transactions are not transferred to GL. Therefore, no costing setup is required in the MP

organization.

Standard Cost of Subcontracting Components in the OEM Organization

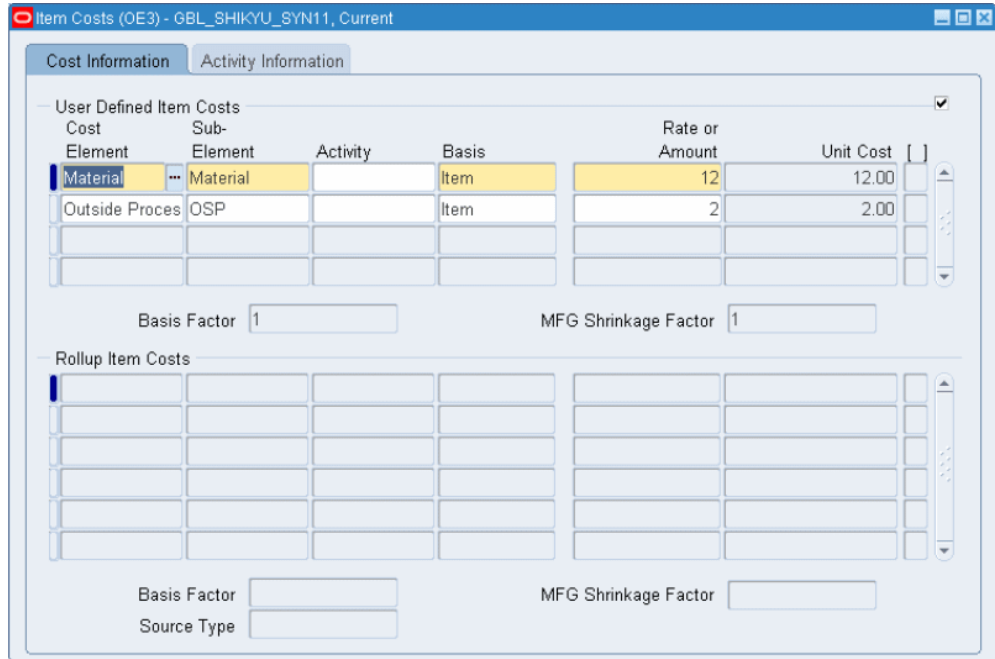
Subcontracting components can be purchase items or assembly items. The cost is set up like any standard component.

Standard Cost of Outsourced Assemblies in the OEM Organization

Standard cost of the outsourced assembly must include material cost and the added value. While setting up the cost, include component cost as material cost and added value as OSP (define an OSP resourced in the OEM organization and define an OSP charge as added value) charges and run cost update.

To set up a standard cost of an outsourced assembly:

1. From the Costing responsibility, navigate to the Item Costs window and select an OEM Organization. The Find Item/Cost Type window appears.
2. Click Find to open an existing assembly item and cost type, or click New to create a new item cost. The Item Costs Summary window appears.
3. Fill Component costs as Material cost and Value addition as OSP (define OSP resource before creating the cost).



4. Save your work.
5. Run Standard Cost Update to update the Frozen cost type with the Current cost type.

Defining Price Lists for Subcontracting Components

Define Price Lists for Subcontracting Components for both Chargeable and Buy/Sell Subcontracting. Sales price of the components are defined in the price lists and are associated with Customer Ship To and Bill To sites of the MP organization (customer sites represents the MP organization).

Sales Price of Prepositioned Components

These components are shipped to the MP in bulk quantities in advance of the subcontracting order requirements. You can create the replenishment purchase order for these components in the primary UOM, or in a secondary UOM. Replenishment sales orders are created based on its replenishment purchase orders. Therefore, the sales order UOM is always the same as its corresponding replenishment purchase order UOM. You can define price lists in either the primary UOM, or in the secondary UOM, but only one UOM is effective at any point in time.

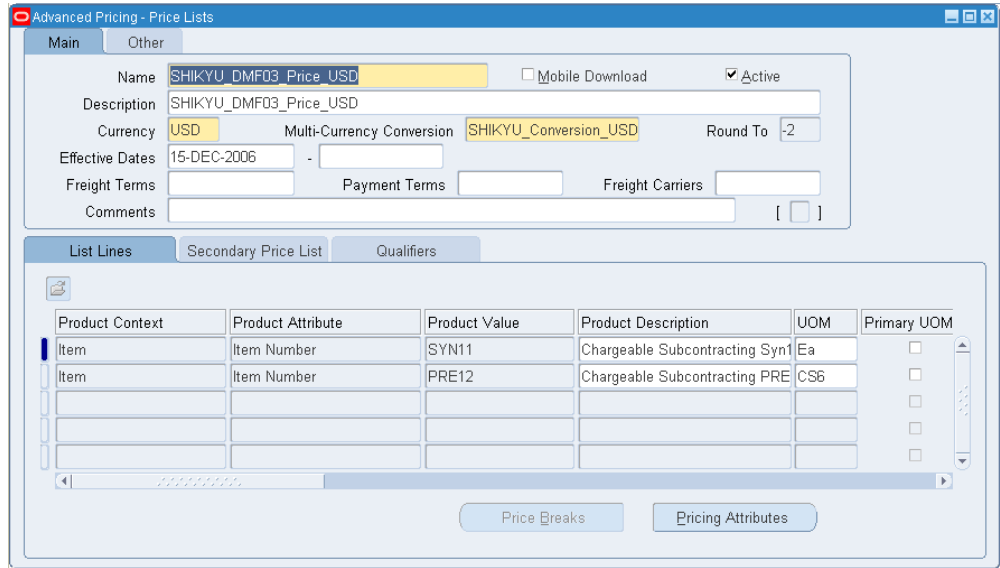
Sales Price of Synchronized Components

These components are shipped along with the subcontracting order. The Interlock Manager creates replenishment sales orders of these components always in the primary UOM of the component based on subcontracting order requirements. Since only

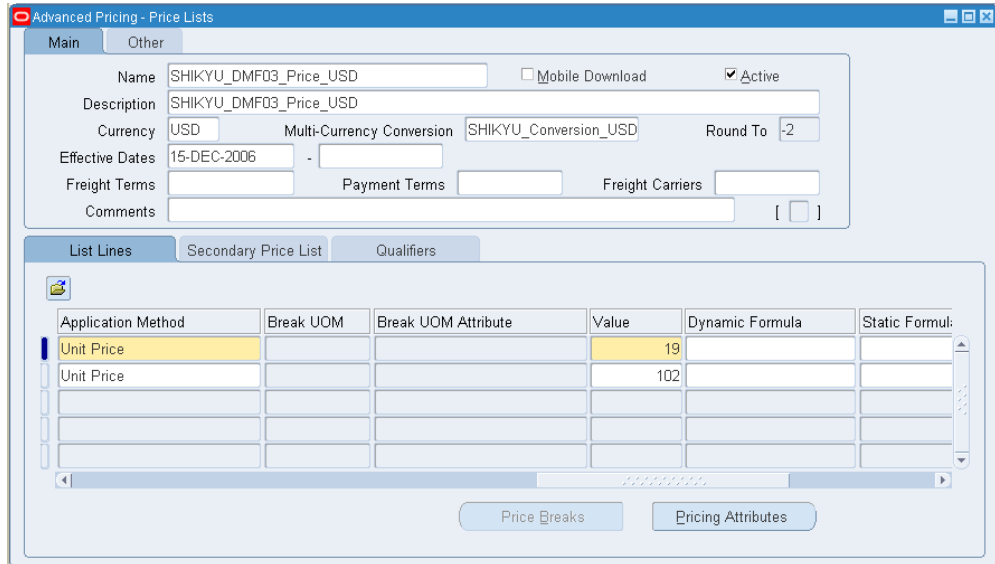
shipping of the components is always supported in the primary UOM, price lists are always created in the primary UOM for synchronized components.

To define price lists:

1. From the Order Management responsibility, navigate to the Pricing, Price Lists, Price List Setup, and Open Price List window.
2. Define price lists in the transaction currency of the MP.



3. In the List Lines tab, enter a subcontracting component code for defining the price.
4. UOM should be the primary UOM for synchronized components. UOM for prepositioned components can be either the primary or secondary UOM, however, only one UOM is effective at any time.
5. Enter Values (prices) in the UOM.



6. Save your work.

Important: Do not define modifiers for subcontracting components. The Subcontracting process does not work correctly if modifiers are implemented.

To associate price lists with a customer site (MP):

1. From the Order Management responsibility, navigate to the Customers page.
2. Select the Business Purpose tab.

3. Navigate to the Ship-To Details page and associate the price lists defined in the previous step.

4. Associate the price list to the Bill-to details.
5. Save your work.

Setting Up Purchase Price of an Outsourced Assembly

In Chargeable Subcontracting, the OEM ships components to the MP, but retains the ownership of the components. When the OEM receives the assembly, the assumption is

that the components were returned from the MP and the inventory was adjusted accordingly. The OEM makes payment to the MP for the added value after netting the receivables invoices of the components shipped and receiving the payables invoices of the outsourced assemblies. This requires that the purchase price of the assembly is defined to include the components sales price and the added value in the manufacturing process..

Assembly Purchase Price = [(Component quantity based on the Bills * Component Sales price defined in the Price lists) + Value added during manufacturing of the Assembly at the MP].

For example:

Net Value Add per unit of Assembly A at Partner's site = \$5

Selling Price per unit of Component B on Price List=\$4

Selling Price per unit of Component C on Price List =\$6

Component usage per unit of Assembly A = 2 units of Component B, 1 unit of Component C

Purchase Price per unit of A = [(2*\$4 + 1*\$6) + \$5] = \$19

Once the purchase price of assembly is calculated based on the bills and price lists, setup should be:

- If the standard purchase order is used for procuring the assembly, then define the calculated assembly price in the Organization Items window.
- If a blanket release is used, then define a blanket agreement with the assembly price calculated as described previously.

The same reasoning can be applied to determine the purchase price of the outsourced assembly for Buy/Sell Subcontracting.

For Full Outsourcing, the purchase price of the outsourced assembly is equal to the value addition.

To set the purchase price of an outsourced assembly:

1. From the Inventory responsibility, navigate to the Organization Item window.
2. Enter an Organization and Item.
3. Select the Purchasing tab.
4. Enter the **List Price**.

Organization Item (OE3)

Organization: OE3 | OE3 Organization

Item: OSA11

Description: Chargeable Subcontracting OSA11

Display Attributes: Master (selected), Org, All

Navigation: Main | Inventory | Bills of Material | Asset Management | Costing | **Purchasing** | Receiving | Physical Attributes

Purchased Purchasable
 Allow Description Update Use Approved Supplier
 Outside Processing Item RFQ Required: No Outsourced Assembly
 Unit Type: [] Taxable: No Invoice Matching: Receipt Required: Yes, Inspection Required: []
 Input Tax Classification Code: []

Default Buyer: [] Unit of Issue: []
 Receipt Close Tolerance: [] % Invoice Close Tolerance: [] %
 UN Number: [] Hazard Class: []
 List Price: 47 Market Price: []
 Price Tolerance: 0 % Rounding Factor: []
 Encumbrance Account: []
 Expense Account: 01-520-7530-0000-000
 Asset Category: []

5. Save your work.

Setting Up a Shipping Network

In Chargeable, Buy/Sell subcontracting, and Full Outsourcing components move from OEM organizations to MP organizations, and outsourced assemblies move from MP organizations to OEM organizations. To define inventory shipping networks between the OEM and the MP:

- Define a shipping network to enable material flow from OEM to MP, selecting the desired subcontracting relationship. Select Buy/Sell or Chargeable or Full from the Subcontracting Type.
- Define a shipping network to enable material flow from MP to OEM. Select blank from the Subcontracting Type LOV.

For additional information, see: *Inter-Organization Shipping Networks, Oracle Inventory User's Guide*.

To set up a subcontracting shipping network:

1. From the Inventory responsibility, navigate to the Shipping Networks window.
2. Select the OEM Organization, and the Shipping Networks window appears.

- Choose Find to open existing networks, or choose New to set up a new shipping network. Select the Subcontracting tab.

Shipping Networks (OE4)

Organization: OE4 OE4 Organization - BuySell Find

Scope: From or To Organization:

Shipping Networks

Main Transfer, Distance Primary Accounts Secondary Accounts Other Accounts **Subcontracting** Transfer Price

Organization		Subcontracting Type	Default Order Type	Variance
From	To			[]
MP3	OE4			
MP4	OE4			
OE4	MP3	Buy/Sell	DMFSHIKYU	
OE4	MP4	Buy/Sell	DMFSHIKYU	
		Chargeable		
		Full		

Organization Name

From: OE4 Organization - BuySell

To: MP4 Organization - BuySell

New Open

- In the Subcontracting Type field, select Buy/Sell or Chargeable or Full to define the subcontracting relationship between the OEM and the MP.

The subcontracting relationship between the OEM and the MP for:

- Chargeable Subcontracting should be Chargeable.
- Buy/Sell Subcontracting with both external and internal should be Buy/Sell.
- Full Outsourcing with both external and internal MP organizations should be Full.

- Specify the Default Order Type to be used for creating replenishment sales orders, and to ship components to the MP.

Note: For Chargeable Subcontracting, specify the default order type as the Order Management transaction type defined in the previous steps using subcontracting specific accounts. The Order Management transaction type is used when the Interlock Manager concurrent program in subcontracting creates replenishment sales orders. For Buy/Sell Subcontracting, it can be a generic.

Note: In the Shipping Network from MP to OEM for internal MP organizations, the order type field is enabled to populate the order type for the subcontracting sales order of the assembly item to be shipped from MP to OEM.

6. Select a Variance account for a Chargeable Subcontracting relationship to capture and track Purchase Price Variance of outsourced assembly receipts separately. Subcontracting Variance account set up on the Shipping Networks form will not be applicable for Buy/Sell. Select Subcontracting Intransit as the account for Full Outsourcing.
7. Select an Offset account that is used for reducing the outsourced assembly on-hand quantity by miscellaneous issues, and is part of simulation. See the Subcontracting Process chapter for additional details.
8. Choose Open to view details in the Shipping Network window for a selected line.

Shipping Network (OE2)

Inter-organization Distance

UOM Value

Transfer Credit

Purchase Price Variance

Receivable

Payable

Intransit Inventory

Profit In Inventory

Subcontracting

Subcontracting Type

Default Order Type

Variance

Offset

Transfer Price

Price List

Interorg Profit Account

[.]

- If you choose New, then the Shipping Network window appears and you can enter additional network details.

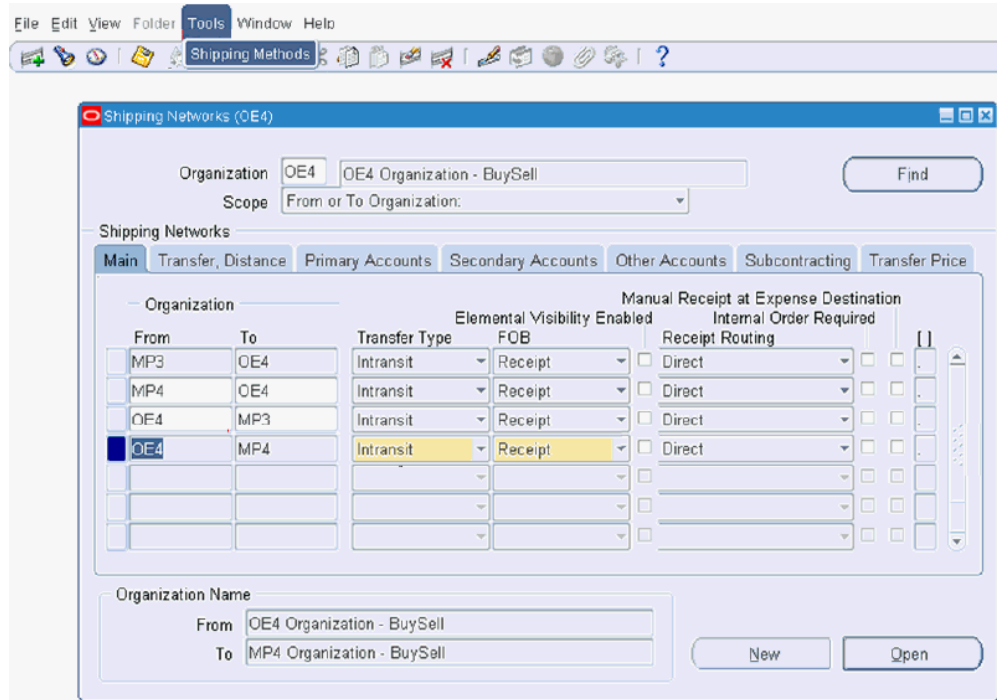
10. Save your work.

Note: At any point of time, an OEM can either have a Buy/Sell or a Chargeable Subcontracting relationship with a particular MP. However, on the other hand, an OEM can outsource the same assembly to multiple Manufacturing Partners by having either Chargeable or Buy/Sell relationship

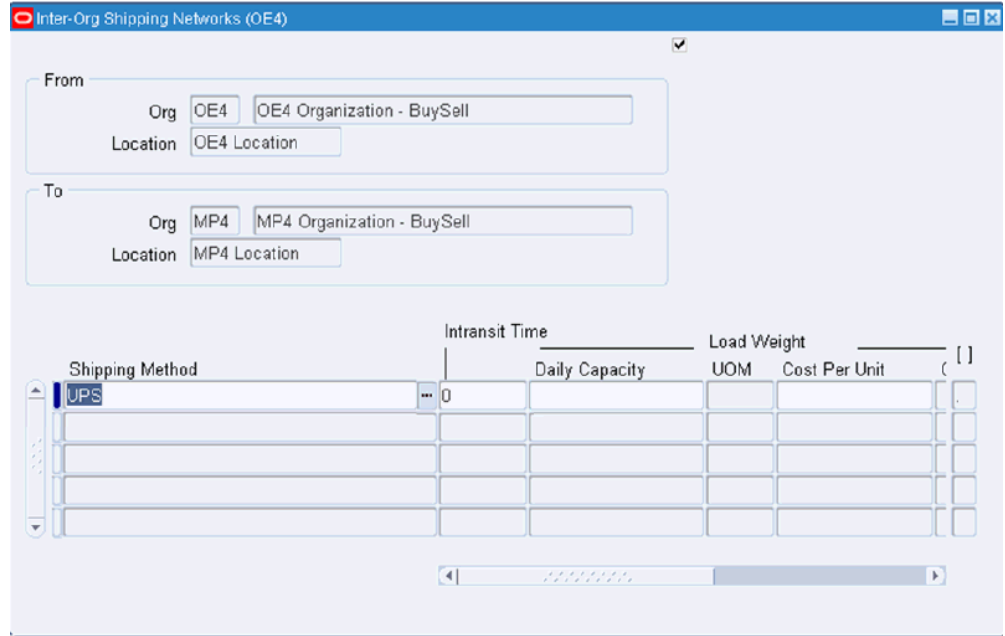
To set up a default shipping method:

The shipping network between two organizations should have at least one shipping method defined for it. Out of these shipping methods, one should be made default.

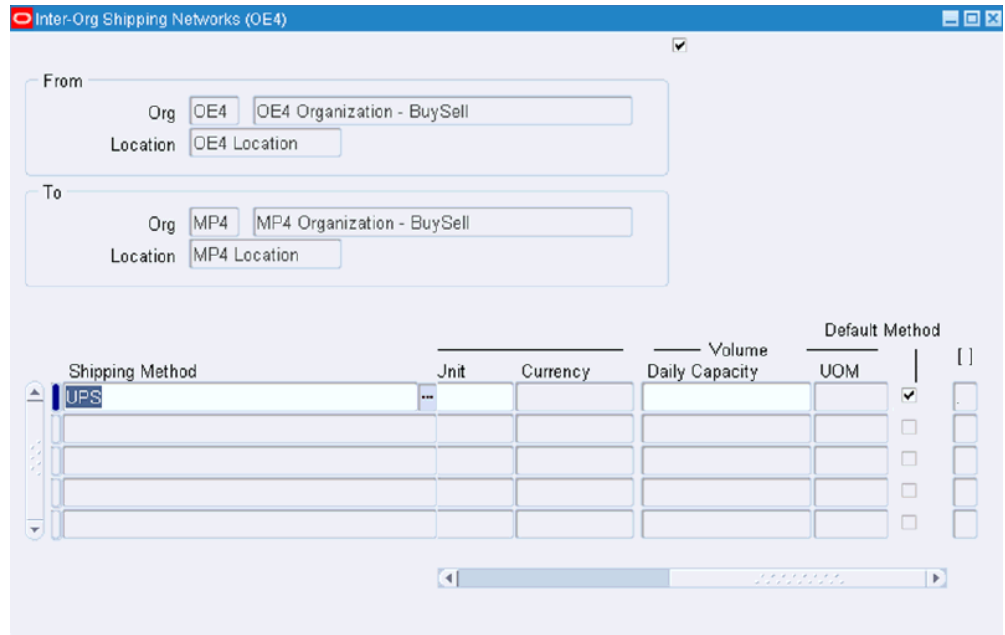
1. From the Inventory responsibility, navigate to the Shipping Networks window.
2. Select the record for which you need to define shipping method. Select Shipping Method from the Tools menu to navigate to the Inter-Org Shipping Networks window.



3. Create shipping methods in the Inter-Org Shipping Networks window. Enter a value for Intransit Time for each shipping method.



4. Ensure that you select one of the shipping methods as default by checking the Default Method check box.



5. Save your work.

Defining Sourcing Rules

Sourcing rules and bills of distribution determine the movement of material between organizations. These organizations include suppliers, manufacturers, and distribution facilities. You must define sourcing rules and assignments for the OEM and the MP organizations for planning purposes:

- In the OEM organization, define the sourcing rules to Buy components from the RMS, if the OEM procures components from an external supplier, and to Buy outsourced assemblies from the MP
- In the MP Organization, define the sourcing rules to Buy components from the OEM, and Make assembly at the MP

Note: For the outsourced assembly item, if the OEM and MP belong to different operating units within or across Ledger/Legal Entity, create same supplier site names in both OEM and MP operating units:

1. In OEM Organization, while defining buy from sourcing rule for the assembly, associate supplier/site of MP organization. For components there is no change.
2. In MP organization, while defining sourcing rule for the components, associate supplier/site of OEM organization. For assemblies there is no change.

Advanced Supply Chain Planning (ASCP) creates Make or Buy planned orders based on the sourcing rules.

For additional sourcing rules setup information, see: *Defining Sourcing Rules, Oracle Purchasing User's Guide* and the *Oracle MRP User's Guide*.

Defining Netting Agreements

Netting agreements control how trading partners calculate net payables and receivables transactions. You must set up netting agreements to enable netting calculations for receivables invoices for components and for payables invoices for assemblies.

Note that while defining netting agreements is mandatory for Chargeable Subcontracting, it is optional for Buy/Sell Subcontracting. Netting agreements are not required for Full Outsourcing.

For additional Subcontracting Netting Agreement information, see: *Netting Agreement, Oracle Payables User's Guide*.

To define netting agreements:

1. From the Payables responsibility, navigate to the Netting page.
2. Define the netting balance rule as Net When Payables Greater than Receivables. This setting ensures that the OEM always pays the added value to the MP.

The screenshot displays the Oracle Netting interface for creating a netting agreement. The page is titled "ORACLE Netting" and includes navigation links for "Diagnostics", "Home", "Logout", "Preferences", and "Personalize Page". The main section is "Create Netting Agreement: Business Rules", which is the first step of a three-step process. The form includes the following fields and options:

- Operating Unit:** Vision Operations
- Netting Agreement Name:** GBL_TP05
- Trading Partner Reference:** GBL_TP05
- Start Date:** 01-Nov-2005 (with an example: 18-Oct-2006)
- End Date:** 30-Nov-2006
- Trading Partner Approval Required:**
- Netting Preferences:**
 - Netting Bank Account:** Chargeable Subcontracting
 - Select Only Past Due Receivables Transactions:** Yes
 - Days Past Due:** 60
 - Netting Order Rule:** Due Date (Oldest to most recent)
 - Netting Balance Rule:** Net when Payables greater than Receivables
 - Netting Currency Rule:** Convert to Accounting Currency
- Payables Invoice Types:**
 - Select only Invoices matched to Purchase Orders with Outsourced Assemblies:** Yes
 - Invoice Type:** Standard
 - Remove:**
 - Add Another Row:**

3. In the Payable invoice type, set the option Select only Invoices matched to Purchase Orders with Outsourced Assemblies to Yes. This setting ensures that only payable invoices of outsourced assemblies are included in the netting process. This option is available only when the Enable Subcontracting profile is set to Yes.
4. Set the Receivables Transaction type to be the same as the invoice source in the Order Management transaction type. Receivable transactions stamped with source are considered for netting.
5. Under Trading partners, enter the MP as both customer and supplier.

indicates required field

Cancel Step 1 of 3 Next

* Operating Unit * Start Date
(example: 18-Oct-2006)

* Netting Agreement Name End Date
 Trading Partner Reference Trading Partner Approval Required

Netting Preferences

* Netting Bank Account

Select Only Past Due Receivables Transactions

* Days Past Due

Netting Order Rule

Netting Balance Rule

Netting Currency Rule

Payables Invoice Types

Select only Invoices matched to Purchase Orders with Outsourced Assemblies

*Invoice Type	Remove
<input type="text" value="Standard"/>	<input type="text" value=""/>
<input type="button" value="Add Another Row"/>	

Receivables Transaction Type

*Transaction Type	Transaction Class	Remove
<input type="text" value="Chargeable Subcontract"/>	<input type="text" value=""/>	<input type="text" value=""/>
<input type="button" value="Add Another Row"/>		

Cancel Step 1 of 3 Next

6. Save your work.

Using Setup Diagnostics

Outsourced Manufacturing provides setup diagnostics that can be run for an Original Equipment Manufacturer (OEM), Manufacturing Partner (MP), and Outsourced Assembly (OSA) combination for discrete manufacturing and process manufacturing.

The setup diagnostics generates a report with details of setup related information for this combination. The information includes setup information related to organizations, component items, assembly, purchasing, receiving, order management, and so on. The diagnostics also flags setup related issues. When you run setup diagnostics for Outsourced Manufacturing, you can view set up information on:

- Internal and external MP organizations.
- Operating unit information for OEMs and MPs (for cross operating unit cases).
- Supply type details on the outsourced assembly for a discrete job, flow schedule, and process manufacturing batch.
- Configured or regular outsourced assembly details.
- Lot controlled OSA and components.

- Direct ship and dropship information for components.
- Routing type details for components.

Additionally, the diagnostics validates that:

- Serial enabled assembly and component is for internal organizations only.
- Subcontracting type should be Full Outsourcing for process manufacturing and no routings exist for process manufacturing organizations.
- Supply type information for lot controlled components is Push.
- WIP parameters are removed for process manufacturing organizations.

To execute setup diagnostics:

1. Begin by logging in as a discrete manufacturing or process manufacturing user. Navigate to the Diagnostics Tests page.
(N) Application Diagnostics > Diagnose
2. Click Select Applications. Use the Search and Select: Applications page to search and select the application name.
3. Click to expand Setup Diagnostics.
4. Select the Setup Diagnostics check box.
5. Click Execute.
6. On the Execute Test: Setup Diagnostics page, you can use the Request Name field to enter a name for the request, or use the system-generated default value.
7. Select and enter a value for the following fields:
 - Responsibility ID - Enter the Order Management Super User ID number.
 - Mp Organization - Enter the manufacturing partner organization ID number.
 - Outsourced Assembly - Enter the outsourced assembly ID number.
 - Oem Organization - Enter the original equipment manufacturer organization ID number.
8. Click Submit.
9. On the View Execution Results page, click View Report.

10. Use the View Log Details page to review the detailed diagnostics information that displays.

Outsourced Manufacturing Command Center Setup

This chapter covers the following topics:

- Setting Up Outsourced Manufacturing Command Center
- Setup and Configuration Steps
- Setting Profile Options for Outsourced Manufacturing Command Center
- Loading Outsourced Manufacturing Data

Outsourced Manufacturing Command Center Product Configuration

Setting Up Outsourced Manufacturing Command Center

The Outsourced Manufacturing Command Center product configuration setup must be completed after the installation and common configurations are completed as described in My Oracle Support Knowledge Document 2495053.1, *Installing Oracle Enterprise Command Center Framework, 12.2*.

Setup and Configuration Steps

To complete the setup of the Oracle Outsourced Manufacturing Command Center:

1. Set profile options, page 4-2
2. Load Outsourced Manufacturing data, page 4-3

Setting Profile Options for Outsourced Manufacturing Command Center

Set values for these profile options to specify the loading of data in days into the Outsourced Manufacturing Command Center:

Profile Option Name	Description	Default Value
JMF: ECC Full Load Days	Specifies the number of days of old data that needs to be loaded into the command center. Note: You can opt to specify the number of days or else the default value of 90 days is retained.	The default value is 90 days.

Profile Option Name	Description	Default Value
JMF: ECC Track And Trace Offset Days	<p>This site level profile sets a threshold for subcontract orders that are updated so that the Incremental Load can load these subcontract orders again.</p> <p>For example, if you set this profile to 30 days, all subcontract orders that were created in the past 30 days will have their last update date set to the current date and time and the Incremental Load then processes these subcontract orders again and loads them into the Outsourced Manufacturing Command Center.</p>	100 days

Loading Outsourced Manufacturing Data

To load Oracle E-Business Suite data into the Outsourced Manufacturing Command Center, run the Outsourced Manufacturing Command Center Data Load program . You can find this concurrent program under Requests in the Subcontracting application.

Note: To set up profile options before running data loads, see: Setting Profile Options for Outsourced Manufacturing Command Center, page 4-2.

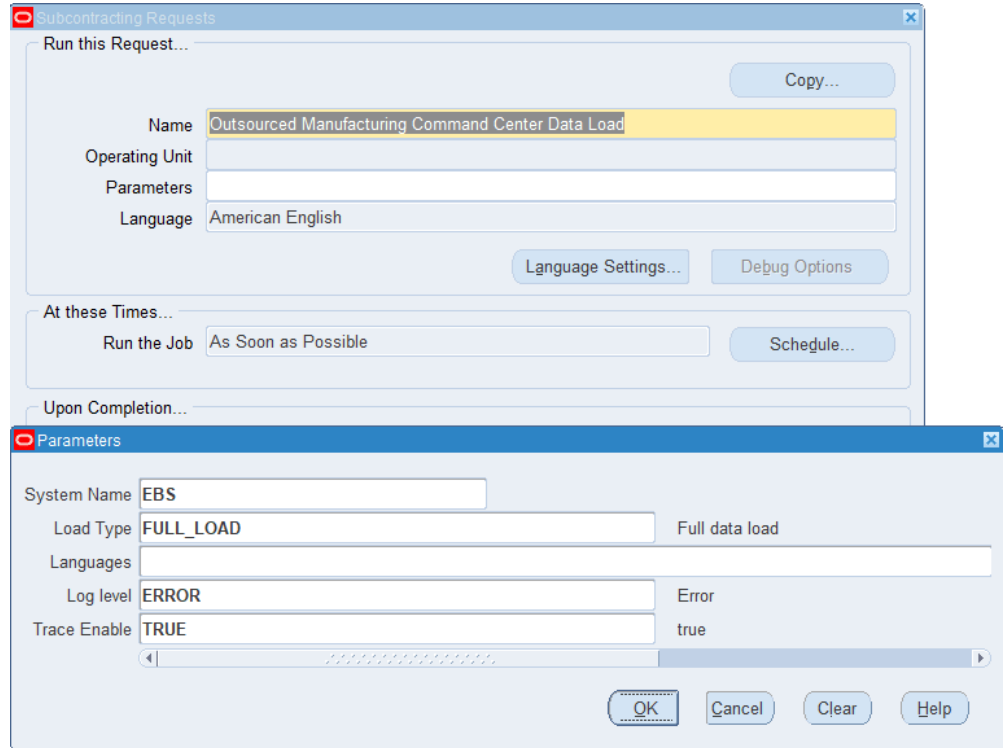
Run the concurrent program from the **Subcontracting Requests** window.

(N) **Subcontracting >Requests**

To load Outsourced Manufacturing data:

1. Choose **Single Request** and click **OK**.
2. In the **Name** field on the **Subcontracting Requests** window, select **Outsourced Manufacturing Command Center Data Load**.
3. Use the **Parameters** window to enter the parameters information.
4. The **System Name** field defaults to **EBS**.

5. Select the appropriate load type:
 - **Full Load** - This process loads all Outsourced Manufacturing data and is required to be run for the first data load. The full data load process also includes metadata load. If you select and run full load for subsequent requests, then this program clears all Outsourced Manufacturing data from ECC and loads fresh data.
 - **Incremental Load** - This program loads the data modified and updated from the previous load only. Incremental load should be scheduled to run as often as required to keep the ECC dashboard current.
 - **Metadata Load** - This process ensures the application waits for other tasks such as consolidation, data entry, or other load processes to finish before it loads the files. Note that the full data load process includes metadata load.
6. Enter one or more language codes in the **Languages** field for the output. For multiple language codes, use the format AA,BB,NN. For example, enter US,AR,KO. If the field is left blank, then the data will be loaded for the base language only (usually US).
7. In the **Log Level** field, select the program that you want to report. The default value is **Error**.
8. In the **Trace Enable** field, select **True** to enable SQL trace. Otherwise, select **False**.



9. Click **OK** on the **Parameters** window.
10. Click **Submit** to submit the concurrent request.
11. Review your request using the **Requests** page.
12. Monitor data loading using the **Data Load Tracking** page of the ECC Developer responsibility.

To review request details:

1. From the menu, click **Requests**. The **Find Requests** window appears.
2. Select the **All My Requests** radio button and click **Find**. The **Requests** window appears and displays all of your requests.
3. In the **Requests** window, select the row that contains your request and then click **View Details**. The **Request Detail** window appears and displays the ECC- Run Data Load information.
4. Click **OK** to exit and close the window.

Subcontracting Process for Discrete Manufacturing

This chapter covers the following topics:

- Subcontracting Planning for Discrete Manufacturing
- Subcontracting Process Execution for Discrete Manufacturing

Subcontracting Planning for Discrete Manufacturing

The following sections describe the Subcontracting planning processes for discrete manufacturing:

Note: Chargeable Subcontracting , Buy/Sell Subcontracting and Full Outsourcing share the same subcontracting planning process.

Overview

In the Subcontracting solution, Advanced Supply Chain Planning (ASCP) plans the component requirements in both OEM and MP organizations, and uses organization definitions (customer supplier associations) and sourcing rules defined as a part of the subcontracting setup steps. ASCP nets the demand and supply and creates planned orders for the components and assemblies in both the OEM and MP organizations. The setup for ASCP is the same as those of the standard planning setup for items. No special setups are required for subcontracting.

The steps required to set up and run ASCP are summarized as follows:

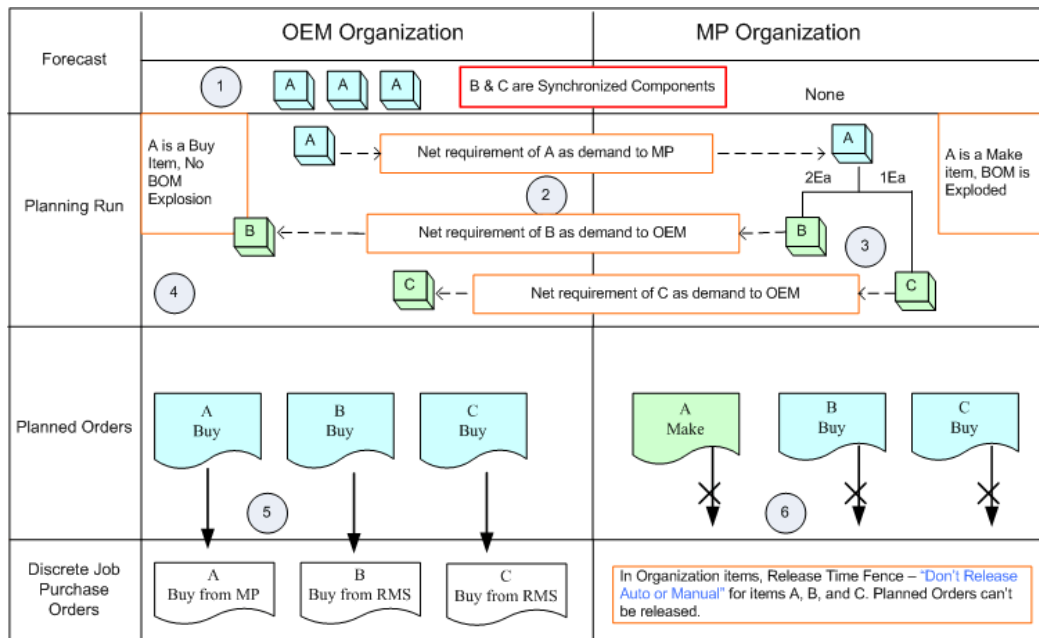
1. Add OEM and MP organizations to the planning instance.
2. Run collections and transfer data (items, sourcing rules, demand, supply, and so on) to the planning instance.

3. Define Organization security to run the plans for the OEM and MP organizations.
4. Define forecast sets for outsourced assembly if the outsourced assembly is an independent demand item. Otherwise, no forecast set definition is required.
5. Create and run the supply chain plans.
6. View the newly created planned orders by using the Planner Workbench.

For more detailed planning setup, refer to the *Oracle Advanced Supply Chain Planning User's Guide*.

Outsourced Assembly with Synchronized Components

In this scenario, the outsourced assembly is A and its components, B and C, are synchronized components.



The Planning process starts when:

1. The forecast is defined for an outsourced assembly in the OEM organization, if the outsourced assembly A is an independent demand item. If A is a dependent demand item, the demand comes from its parent assembly.
2. The planning run considers the forecast or dependent demand of A, calculates the net requirements of A in the OEM organization, and creates a buy planned order for assembly A in the OEM organization. A is a **buy** item and is sourced from MP organization, based on the sourcing rule and Organization Supplier customer associations. Therefore, the planned order demand of A in the OEM organization is

transferred to the MP organization as demand of A.

3. In the MP organization, A is a **make** item, for which demand is netted, and a make planned order is created for Assembly A. When the BOM is exploded, components B and C requirements are calculated, netted, and buy planned orders are created. Since these components are sourced from the OEM organization (based on the sourcing rules, supplier and site associations of the OEM organization), the buy planned order demand for components B and C is transferred to the OEM organization.
4. In the OEM organization, components B and C requirements are netted because these components are sourced from RMS (based on sourcing rules) so, buy planned orders are created for these components in the OEM organization.
5. In the OEM organization, buy planned orders can be transferred from Planning to Purchasing as purchase requisitions. (The release time fence is set to Null for outsourced assembly A, and components B and C in Organization Items.) Purchase orders and blanket releases are created from these purchase requisitions. Purchase orders and blanket releases created for outsourced assemblies are referred to as *subcontracting orders*.
6. In the MP organization, make and buy planned orders of the outsourced assembly A and components B and C cannot be transferred as WIP jobs or purchase requisitions because the Release time fence is set to *Don't Release Auto or Manual* for all of them in the MP organization. For these planned orders, the Attribute Action is set to *None*, which prevents releasing these planned orders.

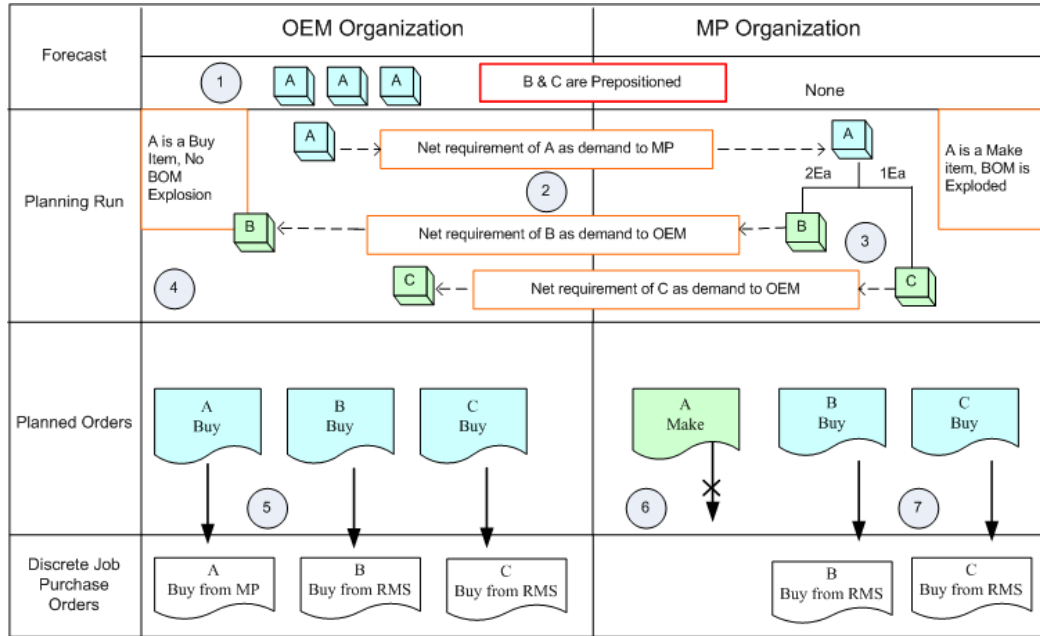
Note: You can view planned work orders using the Planner Workbench.

The Interlock Manager concurrent request creates WIP jobs for assembly A and purchase orders for components B and C during the simulation run. This topic is discussed in detail in the execution section. These WIP jobs and purchase orders represent supply and are considered in subsequent planning runs.

For more information on concurrent programs, see *Overview of Subcontracting Concurrent Programs*, page 6-1.

Outsourced Assembly with Prepositioned Components

In this scenario, the outsourced assembly is A and its components, B and C, are prepositioned components:



The planning process is the same as that of the outsourced assembly with synchronized components. The only exception is that planned orders of prepositioned components B and C can be transferred to Purchasing as purchase requisitions:

1. The forecast is defined for the outsourced assembly in the OEM organization, if the outsourced assembly A is an independent demand item. If A is a dependent demand item, demand comes from its parent assembly.
2. The planning run considers forecast or dependent demand of A, calculates the net requirements of A in the OEM organization, and creates a buy planned order for assembly A in the OEM organization. Since Assembly A is a buy item and is sourced from the MP organization, the planned order demand of A in the OEM organization is transferred to the MP organization as demand of A.
3. In the MP organization, A is a make item based on the organization, demand is net calculation, and a make planned order is created for Assembly A. When the BOM is exploded, the requirements for components B and C are calculated, the net calculated, and buy planned orders are created. Since these components are sourced from the OEM organization, buy planned order demand of components B and C is transferred to the OEM organization.
4. In the OEM organization, requirements for components B and C are netted because these components are sourced from RMS (based on sourcing rules). Therefore, buy planned orders are created for these components in OEM organization
5. In the OEM organization, buy planned orders can be transferred from Planning to Purchasing as purchase requisitions. (The release time fence is set to *Null* for outsourced assembly A, components B and C in organization items). Purchase

orders and blanket releases are created from these purchase requisitions. Purchase orders and blanket releases created for the outsourced assemblies are referred to as subcontracting orders.

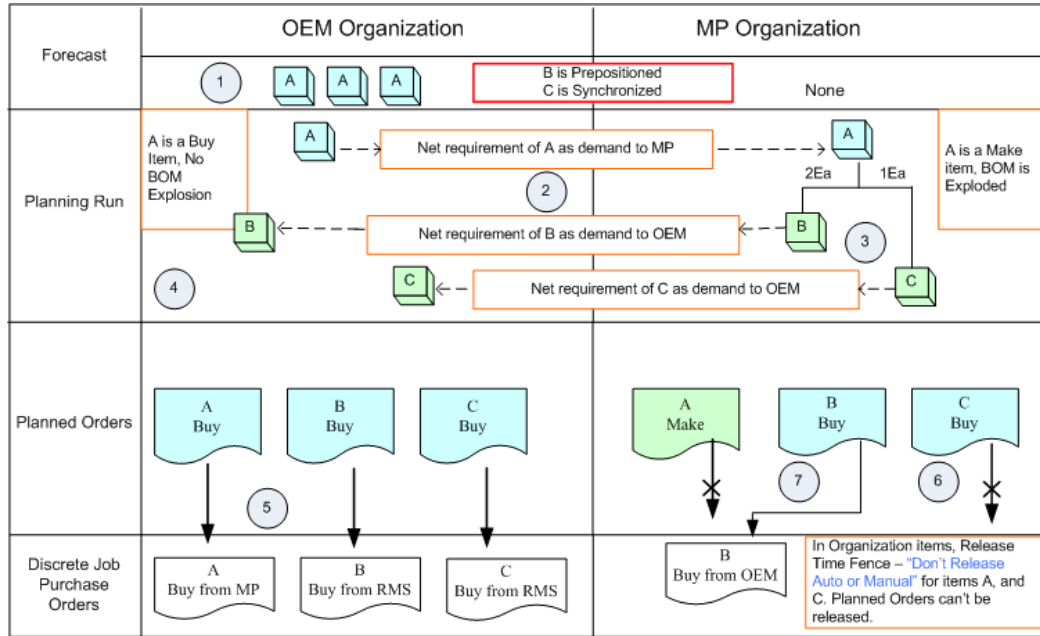
6. In the MP organization, make planned orders of outsourced assembly A can be transferred as WIP jobs as the release time fence is set to *Don't Release Auto or Manual* for the outsourced assembly in MP organization. The make planned order Attribute Action is set to *None* (it can be viewed on the planning workbench), which prevents the release of these planned orders.
7. Buy Planned orders of components B and C can be transferred to Purchasing as requisitions as the release time fence is set to *Null* for both the components in the MP organization.

The Interlock Manager concurrent request creates WIP jobs for assembly A during the interlock run. These WIP jobs represent supply, and are considered in subsequent planning runs.

For more information on concurrent programs, see *Overview of Subcontracting Concurrent Programs*, page 6-1.

Outsourced Assembly with Prepositioned and Synchronized Components

In this scenario, the outsourced assembly is A and its components, B and C are prepositioned and synchronized components respectively:



The planning process is a combination of the given processes involving synchronized components and prepositioned components:

1. The forecast is defined for the outsourced assembly in the OEM organization, if the outsourced assembly A is an independent demand item. If A is a dependent demand item, then demand comes from its parent assembly.
2. The planning run considers forecast or dependent demand of A, calculates the net requirements of A in the OEM organization, and creates a buy planned order for assembly A in the OEM organization. A is a buy item that is sourced from the MP organization, therefore, the planned order demand of A in the OEM organization is transferred to the MP organization as demand of A.
3. In the MP organization, A is a make item, demand is netted, and a make planned order is created for Assembly A. When the BOM is exploded, components B and C requirements are calculated, netted, and buy planned orders are created. Since these components are sourced from the OEM organization, the buy planned order demand of components B and C is transferred to the OEM organization.
4. In the OEM organization, components B and C requirements are netted, these components are sourced from the RMS (based on sourcing rules), and the buy planned orders are created for these components in the OEM organization.
5. In the OEM organization, buy planned orders can be transferred from Planning to Purchasing as purchase requisitions. Purchase orders and blanket releases are created from these purchase requisitions. Purchase orders and blanket releases created for the outsourced assembly are referred to as subcontracting orders.

6. In the MP organization, make planned orders of outsourced assembly A and Buy Planned orders of Component C cannot be transferred as WIP jobs because purchase requisitions as the Release Time Fence is set to *Don't Release Auto or Manual* in the MP organization. The Planned Order Attribute Action is set to *None* which prevents releasing these planned orders. You can use the Planner Workbench to view the planned orders.
7. Buy planned orders of components B can be transferred to Purchasing as requisitions as the Release Time Fence is set to *Null* for both the components in MP organization.

The Interlock Manager concurrent request creates WIP jobs for assembly A and replenishment purchase orders for component B during the interlock run. These WIP jobs and replenishment purchase orders represent supply, and are considered in the subsequent planning runs.

For more information on concurrent programs, see *Overview of Subcontracting Concurrent Programs*, page 6-1.

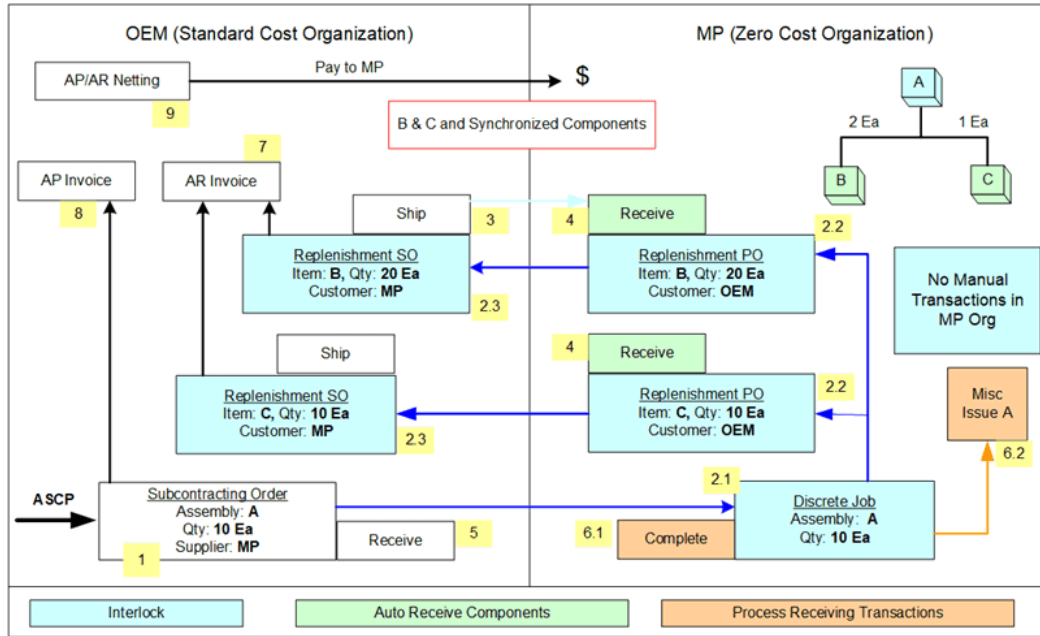
Subcontracting Process Execution for Discrete Manufacturing

The Subcontracting execution process begins with the subcontracting orders for the outsourced assemblies and the replenishment purchase orders for the components. The following sections detail the process steps for each scenario.

Note: Creating price breaks for subcontract order shipments is not recommended. This can have downstream implications on financials.

Outsourced Assembly with Synchronized Components

In this scenario, the execution starts with the subcontracting orders being transferred from ASCP. You can also create subcontracting orders manually.



1. The execution process starts with the subcontracting order of Assembly A. These subcontracting orders are the standard purchase orders and blanket releases, and in the shipments, the outsourced assembly attribute is set to Yes, indicating that the purchase order is created for the outsourced assembly.
2. Interlock Manager picks up the subcontracting orders which were not processed in the previous run of the subcontracting orders and performs the following:
 - 2.1. The Interlock Manager creates a discrete job for the subcontracted order quantity for simulating the manufacturing in the MP organization.
 - 2.2. The OEM supplies components B and C which are required to manufacture this assembly. Since B and C are synchronized components, (meaning that these components need to be shipped along with the order), the Interlock Manager creates a replenishment purchase order for the components with the supplier associated with the OEM organization. The replenishment purchase order created in the MP organization denotes the supply and is considered by ASCP as supply.
 - 2.3. The Interlock Manager also creates a replenishment sales order for shipping the components in the OEM for the corresponding replenishment purchase order in the MP organization. Replenishment sales orders created in the OEM will always have reference to its corresponding purchase order in the MP organization. Order type is retrieved from shipping networks (From Org: OEM and To Org: MP). The subcontracting default order type and the components price are picked from price lists associated with the customer site in the sales order (defined in the price lists setup). Sales orders are always created with a

booked status and are ready for shipment. These replenishment sales orders are allocated to the respective subcontracting orders to meet the component requirements for manufacturing the assembly at the MP's site. (The Allocations Table in the Subcontracting Data Model holds this information for tracking.)

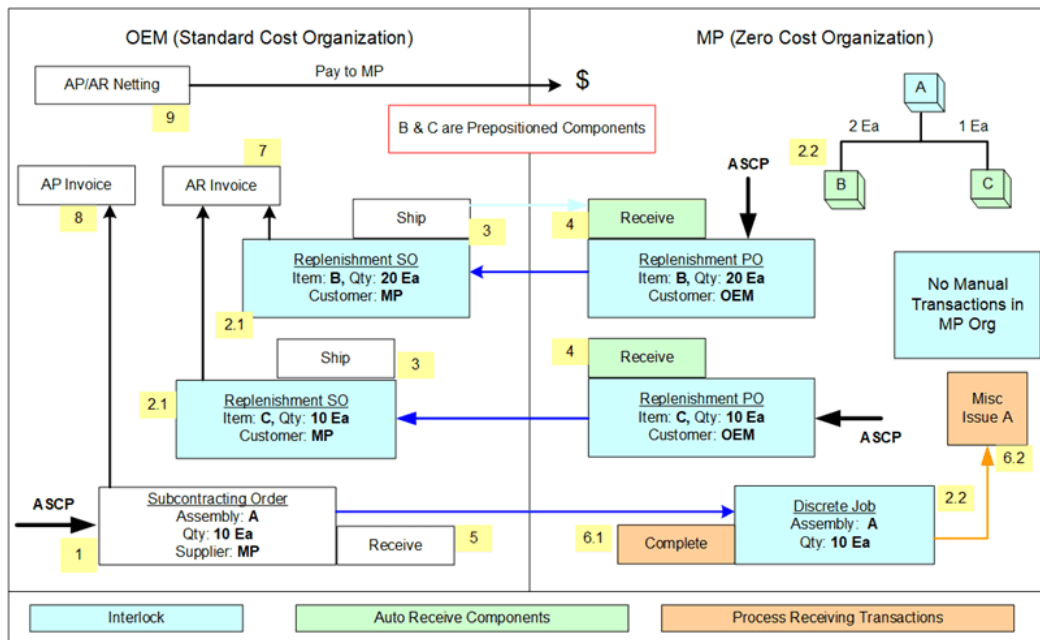
3. Replenishment sales orders created for the subcontracting components are used for shipping the components like any other standard sales orders.
4. The Auto Receive Components concurrent request picks up these shipments in the OEM organization, and creates receipts in the MP organization against the corresponding purchase order. Sales orders with shipped date and the in-transit lead time (defined in the shipping networks default shipping method) that is less than or equal to the current date, are automatically received to simulate the receipts in the MP organization.
5. The MP manufactures the components and ships the manufactured assemblies to the OEM, and the OEM receives these receipts like other purchase order receipts.
6. The Process Receiving Transactions concurrent request picks up these receipts in the OEM organization and performs the following:
 - 6.1. Completes the WIP job for the assembly. When the WIP job is completed, components are backflushed, and the inventory is reduced in the MP organization. However, the completed assembly in the MP remains in inventory.
 - 6.2. Reduces the inventory of assemblies (completed through discrete jobs) in the MP organization by performing by miscellaneous issues, to maintain the accuracy of the inventory records. This is because, the subcontracting order of the assembly is normally received in the OEM after the MP manufactures the assembly and sends it to the OEM. The Offset account defined in shipping networks is used for creating miscellaneous issues.
7. AR invoices are created for those components shipped to the MP.
8. AP invoices are created for subcontracting orders received from the MP.
9. In Payables, based on the Netting agreement, AP and AR invoices are netted and payment is made to the MP.

Note: This step is optional for Buy/Sell Subcontracting and not required for Full Outsourcing.

For more information on concurrent programs, see Overview of Subcontracting Concurrent Programs, page 6-1.

Outsourced Assembly with Prepositioned Components

In this scenario, process execution begins with the subcontracting orders for the outsourced assembly and the replenishment purchase orders for the prepositioned components transferred from ASCP. You can also create subcontracting orders for outsourced assemblies and replenishment purchase orders for prepositioned components manually.



1. The execution process begins with the subcontracting order of the Assembly A and replenishment purchase orders of the prepositioned components. Subcontracting orders are the standard purchase orders and blanket releases, and if the shipments for the outsourced assembly are set to Yes, then the purchase order is created for the outsourced assembly. Replenishment purchase orders are the standard purchase orders or blanket releases created to simulate how MP procures components from the OEM.
2. Interlock Manager concurrent request selects:
 - 2.1. Replenishment purchase orders of the components in the MP, and creates corresponding replenishment sales orders in the OEM for shipment of components to the MP. Replenishment sales orders that are created in the OEM always reference their associated purchase orders in the MP organization. The order type is retrieved from default order type of the shipping network (From Org: OEM and To Org: MP), and the components price is retrieved from the price lists associated with the customer site in the sales order. Sales orders are always created with booked status and are ready for shipment.

- 2.2. Interlock Manager then picks up the subcontracting orders that were not processed in the previous run of the subcontracting orders and creates a discrete job for the subcontracted order quantity for simulating the manufacturing in the MP organization. For manufacturing this assembly, components B and C are required in the MP organization, and the OEM must supply those materials to the MP. Since B and C are prepositioned components, meaning that components would have been shipped ahead of requirements, Interlock Manager does not create replenishment purchase orders or sales orders for these components. Instead, it looks for previously created and unallocated sales orders, and then makes allocations to these requirements. If unallocated replenishment sales orders are insufficient for the subcontracting order requirements, then Interlock Manager allocates to the available quantity and leaves the remaining quantity unallocated. (This situation should not happen if replenishments are available). If replenishments are available, then Interlock Manager attempts to allocate them in subsequent interlock runs.
- 3. Replenishment sales orders created for the subcontracting components are used for shipping the components like any other standard sales orders.
- 4. The Auto Receive Components concurrent request picks up these shipments in the OEM organization and creates receipts against the associated purchase orders in the MP organization. Sales orders with shipped date and in-transit lead time (defined in the shipping networks default shipping method) that is less than or equal to the current date will be automatically received to simulate the receipts in the MP organization.
- 5. The MP manufactures components and ships the manufactured assemblies to the OEM, and the OEM receives these receipts the same as other purchase order receipts.
- 6. The Receiving Transactions concurrent request picks up these receipts in the OEM organization and:
 - 6.1. Completes the WIP job for the assembly. When the WIP job is completed, components are backflushed, and the inventory is reduced in the MP organization. However, the completed assembly in the MP remains in inventory.
 - 6.2. Reduces the inventory of assemblies (completed through discrete jobs) in the MP organization by performing miscellaneous issues, for maintaining the accuracy of the inventory records. This is because, the subcontracting order of the assembly is normally received in the OEM after the MP manufactures the assembly and sends it to the OEM. The Offset account defined in shipping networks is used for creating miscellaneous issues.
- 7. Account Receivables invoices are created for the components shipped to the MP.

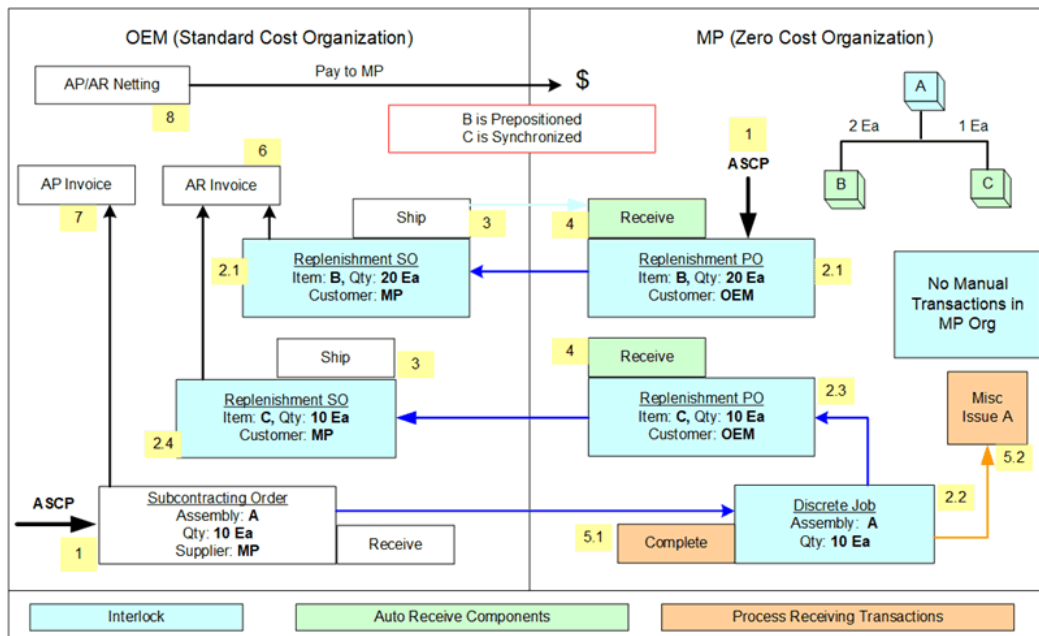
8. Accounts Payables invoices are created for the subcontracting orders received from the MP.
9. In Payables, based on the Netting agreement, AP and AR invoices are netted and payment is made to the MP.

Note: This step is optional for Buy/Sell Subcontracting.

For more information on concurrent programs, see Overview of Subcontracting Concurrent Programs, page 6-1.

Outsourced Assembly with Prepositioned and Synchronized Components

In this scenario, execution begins with the subcontracting orders of the outsourced assembly and replenishment purchase orders of the pre-positioned components being transferred from ASCP. Also, you can manually create subcontracting orders for the outsourced assembly and replenishment purchase orders for the pre-positioned components.



1. The execution process begins with the subcontracting order for assembly A and the replenishment purchase order for prepositioned component B.
2. The Interlock Manager concurrent request:
 - 2.1 Picks up the replenishment purchase for component B in MP and creates associated replenishment sales orders in OEM for shipment to MP.

- 2.2 Interlock Manager then picks up the subcontracting orders that were not processed in the previous run, and creates a discrete job for the subcontracting order quantity. To manufacture this assembly, MP needs components B and C, and OEM must supply those materials to MP.

Because Component B is a prepositioned component, Interlock Manager looks for available replenishment sales orders and attempts to allocate them to satisfy the subcontracting order requirement.

- 2.3. Because component C is a synchronized component, Interlock Manager creates replenishment purchase order for this component.
- 2.4. Interlock Manager creates a replenishment sales order for component C with its associated replenishment purchase order in MP, and then allocates the sales order to the subcontracting order requirements.

Note: Replenishment sales orders are created for shipping the components like other sales orders.

3. The Auto Receive Components concurrent request picks up these shipments in OEM and creates receipts in MP using the associated purchase order. Sales orders whose shipped date and In transit Lead time (defined in the shipping networks default shipping method) are less than or equal to the current date will be automatically received to simulate the receipts in MP organization.
4. MP manufactures the components and ships the manufactured assembly to OEM. OEM receives these receipts like other purchase order receipts.
5. The Process Receiving Transactions concurrent request picks up these receipts in OEM and:
 - 5.1. Completes the WIP job for the assembly. When the WIP job is completed, components are backflushed, and the inventory is reduced in the MP organization. However, the completed assembly in the MP remains in inventory.
 - 5.2. Reduces the inventory of assemblies (completed through discrete jobs) in the MP organization by performing miscellaneous issues, for maintaining the accuracy of the inventory records. This is because, the subcontracting order of the assembly is normally received in the OEM after the MP manufactures the assembly and sends it to the OEM. The Offset account defined in shipping networks is used for creating miscellaneous issues.

The completed inventory of the assembly in MP is reduced by miscellaneous issues which causes the inventory figures in the MP organization to be accurate. The Offset account defined in shipping networks is used to create

miscellaneous issues.

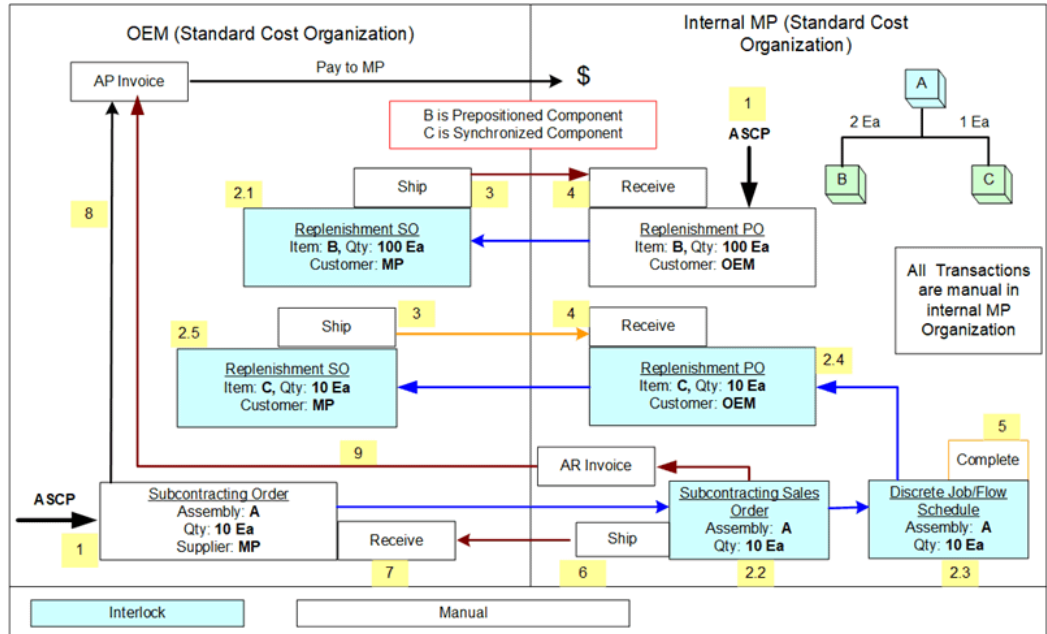
6. Accounts Receivables invoices are created for components shipped to MP.
7. Accounts Payables invoices are created for subcontracting orders received from MP.
8. In Payables, based on the Netting agreement, AP and AR invoices are netted and payment is made to the MP.

Note: This step is optional for Buy/Sell Subcontracting and not required for Full Outsourcing.

For more information on concurrent programs, see *Overview of Subcontracting Concurrent Programs*, page 6-1.

Outsourced Assembly with Prepositioned and Synchronized Components (Internal MP Organization)

In this scenario, execution begins with the subcontracting orders of the outsourced assembly and replenishment purchase orders of the pre-positioned components being transferred from ASCP or manually created. Subcontracting orders are created for outsourced assemblies in OEM and corresponding subcontracting sales orders for the outsourced assemblies are created in the internal MP organization by Interlock Manager. All transactions in the internal MP organization are manual.



1. The execution process begins with the subcontracting order for assembly A and the replenishment purchase order for prepositioned component B.
2. The Interlock Manager concurrent request:
 - 2.1 Picks up the replenishment purchase for component B in MP and creates associated replenishment sales orders in OEM for shipment to MP.
 - 2.2 Picks up open subcontracting orders and creates subcontracting sales orders for Assembly A in the internal MP Organization
 - 2.3 Creates the WIP job /Flow schedule for the subcontracting order quantity in the Internal MP. It associates the subcontracting sales order and WIP job/Flow schedule with the corresponding subcontracting order.
 - 2.4 Creates replenishment purchase order for synchronized component C in MP.
 - 2.5. Creates a replenishment sales order for component C in OEM, and then allocates the replenishment sales order to the subcontracting order requirements.
3. To manufacture this assembly, OEM must supply materials to the MP. OEM then ships the Subcontracting components B and C using the existing shipping process.
4. Components are automatically received in internal MP organizations using the Auto Receive Components program (see: Auto Receive Components, page 6-11 for more details). The MP manually receives replenishment POs for components B and

C.

5. Once the component items are issued, MP completes the discrete job/flow schedules.
6. After Assembly A is complete, MP ships it to OEM against the subcontracting sales order.
7. OEM receives Assembly A against the subcontracting order.
8. Accounts Payables invoices are created for subcontracting orders received from MP.
9. Accounts Receivables invoices are created for components shipped to MP.

For more information on concurrent programs, see Overview of Subcontracting Concurrent Programs, page 6-1.

Subcontracting Concurrent Programs

This chapter covers the following topics:

- Overview of Subcontracting Concurrent Programs
- Interlock Manager
- Reconciliation Manager
- Auto Receive Components
- Process Receiving Transactions
- Processing Logic
- Remove Allocations

Overview of Subcontracting Concurrent Programs

Subcontracting concurrent programs are common to discrete manufacturing, seiban-based manufacturing, and process manufacturing. These sections describe the following subcontracting concurrent programs:

- Interlock Manager, page 6-1
- Reconciliation Manager, page 6-7
- Auto Receive Components, page 6-11
- Process Receiving Transactions, page 6-14
- Remove Allocations, page 6-18

Interlock Manager

Interlock Manager is a concurrent request that should be run immediately after running the ASCP plan and transferring the planned orders for outsourced assemblies and

subcontracting components to Purchasing. Interlock Manager picks up the subcontracting orders and replenishment purchase orders and performs the following:

- Creates discrete jobs for assemblies and replenishment purchase orders for synchronized components in the MP organization.

For every subcontract order, all the multiple synchronized component requirements are grouped by the Interlock Manager into a single replenishment purchase order (RPO) with multiple lines for each of the synchronized components. This single RPO contains multiple lines for each of the synchronized component in an assembly with details of the required quantities and the need by dates.

- Creates replenishment sales orders for prepositioned and synchronized components in the OEM organization only if the supply type is Assembly Pull.

Note: Components with supply type as Supplier Supplied, Phantom, and Bulk will be ignored as they do not require replenishment. Operation pull is not supported.

For multiple synchronized components in an assembly, Interlock Manager creates one replenishment purchase order with multiple lines for the synchronized components. On the basis of this replenishment purchase order, Interlock Manager creates a single replenishment sales order with multiple lines for the synchronized components.

For multiple prepositioned components in an assembly, when ASCP creates replenishment purchase orders or you create replenishment purchase orders manually, you can:

- Create one replenishment purchase order (RPO) with multiple lines for each prepositioned component. On the basis of this single replenishment purchase order, Interlock Manager creates one replenishment sales order with multiple lines corresponding to each prepositioned component.
- Create separate replenishment purchase order for each prepositioned component. On the basis of each of the separate replenishment purchase order for each component, Interlock Manager creates separate replenishment sales order for each prepositioned component.
- Allocates the replenishment sales orders to the corresponding subcontracting order to meet the component requirements at the partner's facility.
- Defaults subinventory for synchronized common components during PO receipt by identifying whether a purchase order is a replenishment purchase order using item, supplier, supplier site, and ship-to location values and then using a custom API to derive and update the sub-inventory in RPO distributions.

Note: A common component is one that is used both in the outsourced manufacturing process and the normal manufacturing process at the internal MP location.

Attributes of Interlock Manager

Selection of Subcontracting Orders for Processing

Interlock Manager processes the subcontracting orders only if the following conditions are satisfied:

- The MP organization can be WMS and EAM enabled.
- Process-enabled organizations are also supported for full outsourcing with external manufacturing partners only.
- For external MP organizations, serial controlled outsourced assemblies or components are not supported. Both lot and serial controlled outsourced assemblies or components are supported for internal MP organizations
- For full outsourcing with external MP in process enabled organizations, the Interlock Manager creates the production batches for the outsourced product corresponding to the subcontracting orders created in the OEM organization.
- Inventory periods are open in the MP organization.
- WIP parameters are defined in the MP organization for discrete manufacturing organizations.
- Process execution parameters are defined in the MP organization for the process enabled organizations.
- Allocations are required for the proper planning, execution, and simulation of the manufacturing process at an MP site. Allocations refer to the designation of replenishment sales orders to the respective subcontracting orders to meet the component requirements for manufacturing the assembly at the MP's site. In Chargeable Subcontracting, although the components are shipped, the OEM retains ownership. When the OEM receives assemblies from MP, it is assumed as though the components are brought back from the MP when the OEM receives the assemblies. To support this practice, the sales price of the components shipped or to be shipped needs to be the same as the current list price. Also, the purchase price of the assembly includes the sales price of the components. Including the sales process is necessary in order to track the component consumption at the MP by the sales price of the components.

When Interlock Manager makes allocations, it validates based on two conditions:

- Shipped components are available in the MP when the assembly is ready to be manufactured (replenishment sales order shipment date and the in transit lead time from the OEM to the MP is less than the discrete job start date).
- For Chargeable Subcontracting, sales price of the components shipped or to be shipped is the same as the current list price.

When both conditions are satisfied, Interlock Manager allocates the replenishment order to the subcontracting order. For synchronized components, replenishment sales orders are created and automatically allocated at the same time. For prepositioned components, components are shipped in advance of requirements to ensure that the sales price of the components shipped is allocated at the correct price for proper accounting.

Subcontracting Sales Orders Creation for Outsourced Assemblies in Internal MP Organizations

In internal MP organizations, once the assembled item has been manufactured against the WIP job or Flow Schedule, it needs to be shipped to the OEM organization. A subcontracting sales order document is required against which the assembled item can be shipped.

The Subcontracting: Interlock Manager, creates a Subcontracting Sales Order in the MP organization linking to the Subcontracting Order created for the outsourced assembly in the OEM organization. This enables the end to end traceability of the material movement across the OEM and MP organizations.

Subcontracting: Interlock Manager creates a subcontracting sales order for an outsourced assembly in the internal MP Organization to enable shipment of the outsourced assembly from internal MP organization to the OEM organization after the completion of the manufacturing of the assembly in the MP organization. While creating the subcontracting sales order following are the mandatory fields that default:

- Customer/Customer site – from the customer/supplier relationship defined in Customer/Supplier Association in Additional Organization Information.
- Order type – from the shipping network.
- Price list – from customer master.
- Warehouse – MP organization.
- Schedule Ship Date – Need by date on Subcontracting Order and Shipping Lead Time in shipping network. This will also be the completion date on the work order.

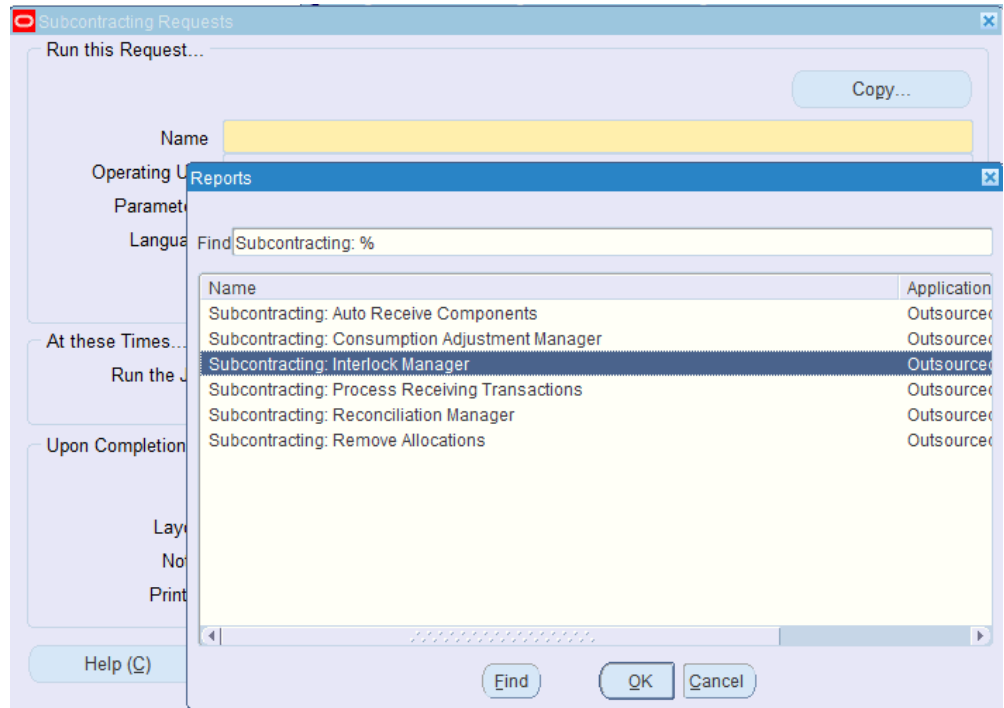
Additionally, Outsourced Manufacturing provides the ability to peg the work order to the subcontracting sales order in internal MP organizations. This pegging is achieved:

- For Discrete Jobs, by reserving the work order to the subcontracting sales order in the Internal MP organization for all the items.

- For Flow Schedule, by setting the sales order line status to Production Open for all the items.

To run Subcontracting: Interlock Manager

1. From the Subcontracting responsibility, navigate to the Requests window.
2. Use the list of values in the Name field, to select Subcontracting: Interlock Manager.



3. Click OK. The Parameters window appears.

The screenshot shows a 'Parameters' dialog box with the following fields and buttons:

- Batch Size
- Maximum Workers
- Subcontracting Organization From
- Subcontracting Organization To
- Subcontracting PO Number From
- Subcontracting PO Number To
- Number of days in advance
- OK
- Cancel
- Clear
- Help

4. Enter the optional parameters:
 - Batch Size
 - Maximum Workers
 - Subcontracting Organization From
 - Subcontracting Organization To
 - Subcontracting PO From
 - Subcontracting PO To
 - Number of days in advance
5. Click OK.
6. Click Submit in the Subcontracting Requests window to run Interlock Manager.

Reconciliation Manager

The Reconciliation Manager concurrent request processes the change management of subcontracting orders. It identifies changes to the subcontracting orders and updates the discrete jobs, replenishment purchase orders, and replenishment sales orders.

These changes to subcontracting orders are considered for reconciliation:

- Subcontracting order quantity
- Promise or need-by dates
- Both quantity and dates
- Replenishment sales orders
- Cancellations

Change in the Subcontracting Order Quantity

Reconciliation Manager considers the change in the subcontracting order quantity and any increase or decrease in the quantity of the discrete job associated with the subcontracting order in the MP organization.

- If the subcontracting order is increased:

- For synchronized components, new replenishment purchase orders and sales orders are created for any additional quantity for shipment of additional material from OEM to MP and then they are allocated to the subcontracting order.
- For prepositioned components, if sufficient unallocated replenishment quantity currently exists, then additional allocations will be made for the increased (additional) subcontracting order requirements. If the unallocated replenishment quantity is not sufficient, then no new replenishments will be created because by definition, these components are stored in advance and shortages do not occur; therefore, reconciliation does not take any action.
- If the subcontracting order quantity is decreased:
 - For synchronized components, allocations are decreased, leaving some unallocated replenishments. These replenishments are allocated to other requirements. Interlock Manager or Reconciliation Manager considers such unallocated replenishments of synchronized components (similar to prepositioned components), and then creates new replenishments.
 - For prepositioned components, allocations are decreased.

Changes to the Promise or Need-by Dates

Reconciliation Manager considers these changes to the promise or need-by dates:

- If the date is moved forward:
 - The discrete job associated with the subcontracting order is moved forward.
 - The subcontracting orders (replenishment purchase orders and replenishment sales orders for the components) and allocations are not changed.
- If the date is moved backwards:
 - The discrete job associated with the subcontracting order is moved backwards. If the new date is less than or equal to the current date, then the current date is set as the new date.
 - For synchronized components, associated replenishment purchase orders and replenishment sales orders are moved backwards. If the new date is less than the current date, then the date is moved back to the current date. The synchronized components are allocated to the subcontracting orders. Allocations are not changed.
 - For prepositioned components, allocations are removed and then new allocations are made based on the new due date.

Simultaneous Changes to Quantity and Dates

Reconciliation Manager:

1. Reconciles date changes.
2. Makes changes to the order quantity.

Changes in the Replenishment Sales Orders

Reconciliation Manager considers these changes to replenishment sales orders:

- Short shipments of the replenishment sales orders
- Replenishment sales order returns
- Over shipments
- Backorder sales orders
- Cancellation of replenishment sales orders

Interlock Manager considers changes to replenishment sales order quantities and dates.

Interlock Manager:

- Changes the allocations so that the new shipment quantity is reflected in the subcontracting order requirements.
- Creates new replenishment sales orders, when applicable.

Note: In internal MP organizations, the following changes originating from subcontracting orders in OEM organization are automatically propagated to the corresponding subcontracting sales order, WIP job/Flow schedules in the MP organization:

- Subcontracting Order quantity (both positive and negative)
- Promise or need-by dates (both forward and backward)
- Both quantity and dates
- Cancellations

The change is initiated at the source document only which in internal MP organizations is subcontracting order. Note that reverse change management is not supported.

APIs are provided for inclusion in the PO approval workflow to allow or disallow the changes in the subcontracting order considering the status of the downstream, subcontracting sales order and work

order/flow schedule status.

Changes to subcontracting orders are allowed only if:

- Work order status is Unreleased
- Subcontracting sales order header status is Entered or Booked
- Subcontracting sales order line status is Awaiting Shipping and delivery line status is Ready to Release.

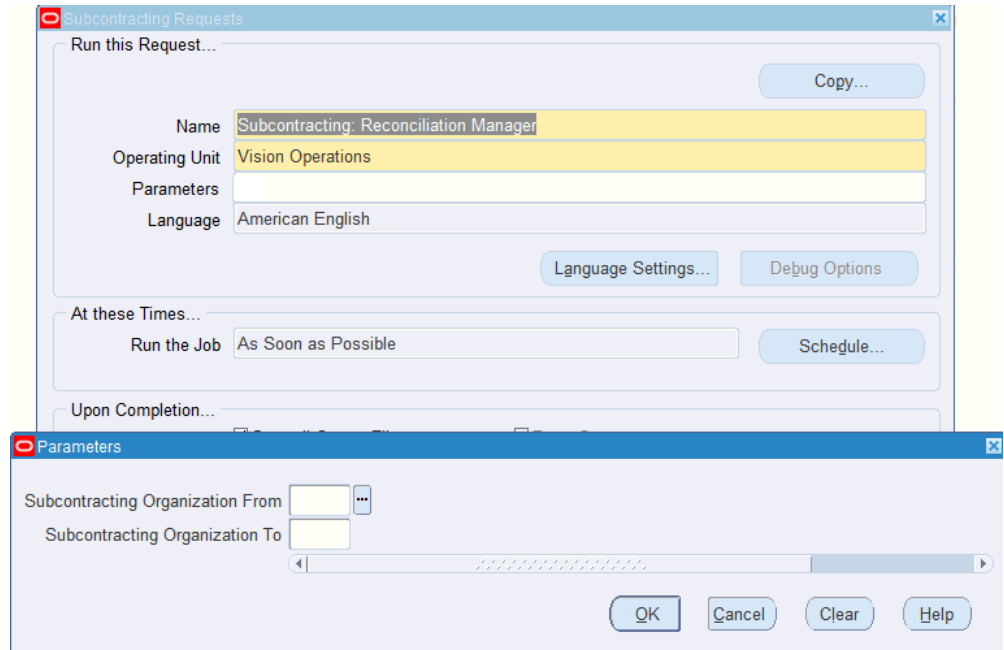
For any other status the changes on the subcontracting order is not allowed. Refer to the Integration Repository for API details.

For Full Outsourcing with External MP in process enabled organizations, the Reconciliation Manager also:

- Processes the changes in the subcontracting order and updates the production batches and replenishment sales orders.
- Reschedules the production batch and associated replenishment purchase order and sales order in case of changes in the need by date of the subcontracting order.
- Updates the production batch quantity and the associated allocations of replenishment purchase order when there are changes in the quantity of the subcontracting order.

To run Subcontracting: Reconciliation Manager

1. From the Subcontracting responsibility, navigate to the Requests window.
2. In the Name field, select Subcontracting: Reconciliation Manager.
3. Click OK. The Parameters window appears.



4. Enter the optional Parameters:
 - Subcontracting Organization From
 - Subcontracting Organization To
5. Click OK.
6. Click Submit in the Subcontracting Requests window to run the Reconciliation Manager.

Auto Receive Components

The Subcontracting: Auto Receive Components concurrent request performs the following:

- Automatically receives subcontracting components into supplier organizations after the predefined in-transit lead time.
- Selects the shipped replenishment sales orders in the OEM organization based on the MP organization specified in the concurrent request parameters window.
- Creates component receipts for the corresponding purchase orders in the MP organization.
- Selects shipped sales orders that are expected to be received in the MP organization

after considering the in-transit lead time defined in the shipping networks.

- Selects shipping transactions against subcontracting replenishment sales orders in the OEM organization after considering in-transit lead time defined in the shipping networks.
- Creates receipts against corresponding replenishment purchase orders in the supplier organizations.
- Receives drop ship RPOs for internal MPs. For direct ship RPOs, the optional Include Direct Ship RSOs parameter is enabled in the Auto Recieve Components program when users select Internal for MP Organization Type.

If Include Direct ship RSOs parameter is set to Yes the system checks for the quantity partially received, if any, and performs auto receipt of the quantity not received. This would also be applicable for drop ship POs.

- Receives all the replenishments sales orders (directship and dropship) for an external MP.
- For Full Outsourcing with External MP in process enabled organizations, the Auto Receive Components concurrent program automatically receives subcontracting ingredients of outsourced products after the predefined in-transit lead time into Manufacturing Partner organization on behalf of Manufacturing Partner. For process organizations, the Auto Receive Components concurrent program:
 - Finds the list of all replenishment sales orders where:
 - The Order status is Booked or Shipped.
 - The Warehouse defined in the header is the OEM organization, and the MP is the customer organization.
 - The Order type is the same as the Order Type defined in Shipping Network between OEM organization and MP organization.
 - If the user has given the concurrent program input parameter organization then it finds associated customer and customer site using the Customer-Supplier relationship in Organization definition. The program considers only those replenishment sales orders which are associated with this customer.
 - Searches sales order lines to find cumulative shipped quantity against a combination of customer purchase order, customer purchase order line, and customer shipment number where the warehouse at line level is the same as OEM organization and where the actual shipped date and In-transit Lead Time is lesser than or equal to the current date. It considers In-transit Lead Time corresponding to Default Ship Method from Shipping Network.

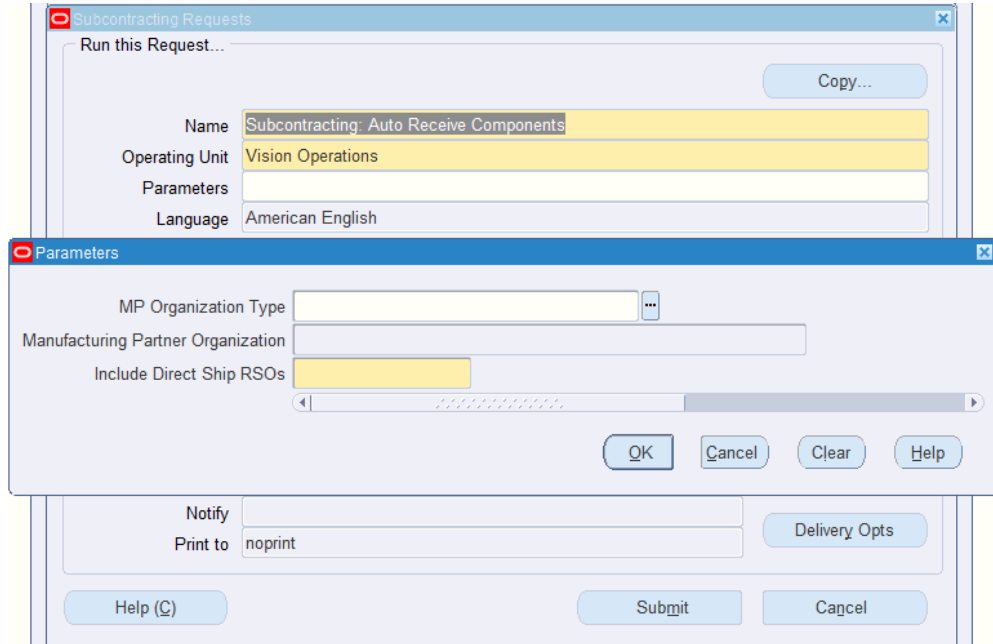
- Finds quantity received against replenishment purchase orders for a combination of customer purchase order, customer purchase order line, customer shipment number, and Unit of Measure (UOM).
- If shipped quantity is greater than the received quantity, the program auto receives by entering and recording shipped quantity at sales order level records, and received quantity at purchase order level in the receiving transactions interface tables and then runs Receiving Transaction Processor concurrent program.

You can run the Auto Receive Components request daily, weekly, or periodically to create receipts of subcontracting components in the supplier organizations.

Note: You can track the status using the Subcontracting Workbench.

To run the Auto Receive Components concurrent request:

1. From the Subcontracting responsibility, navigate to the Subcontracting Requests window.
2. Select Subcontracting: Auto Receive Components in the Name field.
3. Click OK. The Parameters window appears.



4. Select from either Internal or External for MP Organization Type.
5. Enter the Manufacturing Partner Organization.
6. Select Yes or No for Include Direct Ship RSOs. Note that this parameter is only enabled if you select Internal for MP Organization Type.
7. Click OK.
8. Click Submit to run the request.

Process Receiving Transactions

The Process Receiving Transactions program is applicable only for external manufacturing partners. Before you run this program, enter component lots using the Component Lot Entry tab in the Subcontracting Workbench for lot based components in external MP organizations. See: Entering Component Lots, page 7-11.

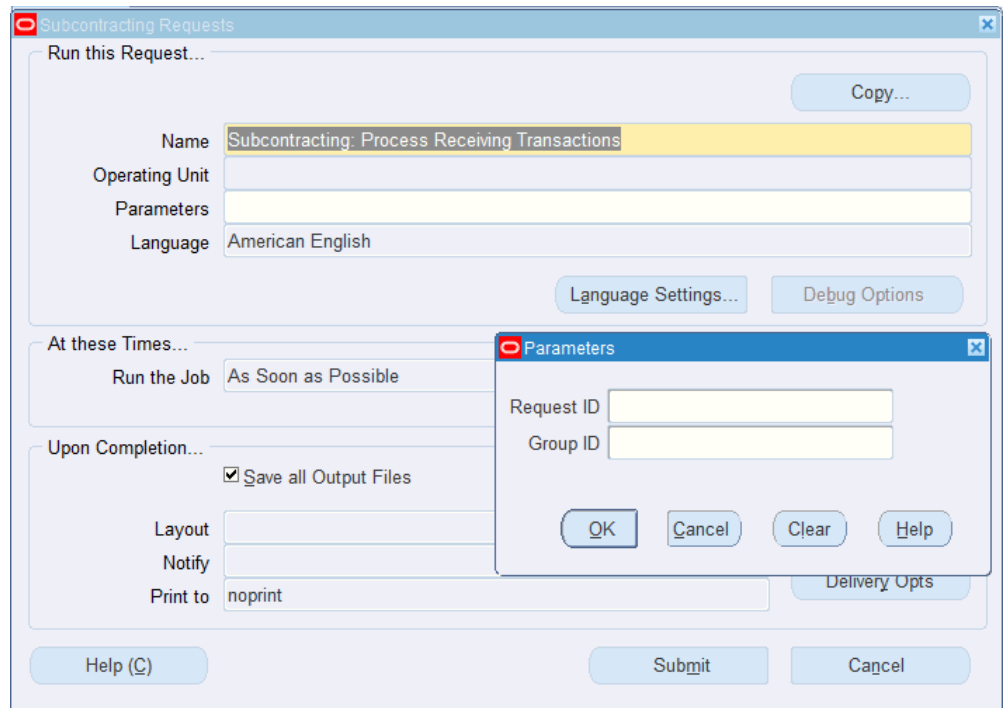
The Subcontracting: Process Receiving Transactions concurrent request:

- Selects assembly receipts in the OEM organization and initiates WIP job completions and miscellaneous issues to adjust inventory in the MP organization.
- Processes assembly returns, receipts, return corrections of assemblies, and RMA receipts for components in the OEM organization.
- For full outsourcing with external MP in process enabled organizations:

- Selects product receipts in the OEM organization and initiates production batch completions and miscellaneous issues to adjust inventory in the MP organization.
- Processes product returns, receipts, return corrections of products, and RMA receipts for ingredients in the OEM organization.

To run the Subcontracting: Process Receiving Transactions concurrent request

1. From the Subcontracting responsibility, navigate to the Subcontracting Requests window.
2. Select Subcontracting: Process Receiving Transactions in the Name field.
3. Click OK. The Parameters window appears.



4. Enter an optional Request ID. Valid characters are 0 through 9.
5. Enter an optional Group ID. Valid characters are 0 through 9.
6. Click OK.
7. Click Submit to run the request.

Processing Logic

The Process Receiving Transactions manager picks up the subcontracting order receipts and RMA receipts for replenishment sales orders in the OEM. Then it creates corresponding transactions in the MP organization.

Subcontracting Order Receipts

Receipts are processed only if the following conditions are met:

- Subcontracting order is fully allocated
- Subcontracting is not over-received

Tip: The subcontracting order receipt tolerance should be zero so that it will never be over-received.

- Manufacturing partner is external.

Once the above conditions are met, the Process Receiving Transactions program performs the following:

For discrete manufacturing organizations:

- Completes the WIP job of the associated subcontracting order in the MP organization and then:
 - Backflushes the components and reduces the component inventory in the MP organization.
 - Moves the completed assemblies to inventory.
- Reduces the completed WIP job quantity in the previous step by miscellaneous issue for the assembly in the MP organization. The offset account defined in the subcontracting options in the shipping network is used for these miscellaneous issues.

For process manufacturing organizations:

- Completes the production batch of the associated subcontracting order in the MP organization and then:
 - Backflushes the ingredients and reduces the ingredients inventory in the MP organization.
 - Moves the completed products to inventory.

Note: The completion of the batch would be done only after receiving the complete quantity of the purchase order without the receipt tolerances into consideration.

- Reduces the completed production batch quantity in the previous step by miscellaneous issue for the product in the MP organization. The account, derived based on the ADR rules setup under SLA events for the event class Miscellaneous Transactions, is used for these miscellaneous issues.

Subcontracting Order Returns (RTVs)

The Pickup RTV program processes the subcontracting order transactions in the OEM organization and creates the following transactions in the MP organization:

For discrete manufacturing organizations:

- Increases the inventory of outsourced assembly in the MP organization using miscellaneous receipts, which represent the return of assemblies from the OEM.
- Creates assembly returns (WIP returns) in the MP organization for the associated discrete jobs, which:
 - Reduces the assembly inventory in the MP organization for returns to the shop floor.
 - Reverses backflushed component transactions.

Note: In internal MP organizations for the return of outsourced assembly items to MP due to quality, non-conformance or any other issues, create RTV manually in OEM against the corresponding RMA transaction in MP organization. For component returns, the steps remain same as external MP organizations.

For process manufacturing organizations:

- Increases the inventory of the outsourced product in the MP organization using miscellaneous receipts, which represent the return of products from the OEM.
- Creates product returns (WIP returns) in the MP organization for the associated production batch, which:
 - Reduces the product inventory in the MP organization for returns to the shop floor.
 - Reverses backflushed ingredient transactions.

Subcontracting Order Receipt and RTV Corrections

The Process Receiving Transactions concurrent request handles receipt and return corrections for subcontracting orders in the OEM. It processes them as WIP completions or WIP returns in the MP organization.

Replenishment Sales Order Returns (RMA Returns)

The Process Receiving Transactions concurrent request selects the RMAs linked to the replenishment sales orders and then creates RTV transactions for the corresponding replenishment purchase order in the MP organization.

Note: Only the RMAs with references to the original replenishment sales order shipped to the MP organization are considered. RMAs without references are not considered for processing.

These steps are performed for accurate simulation of inventory at the MP site.

Remove Allocations

The Subcontracting: Remove Allocations program enables users to remove allocations of components for subcontracting orders. You can remove allocations from an existing subcontracting order/RSO and perform reallocations to another subcontracting order using the interlock manager.

This program only considers unreleased and released work order/flow schedules but with an extent of quantity that is not complete. This program would de-allocate components linked to the specified subcontracting order and enable the next run of interlock manager to perform reallocations.

If no value is specified in the Subcontracting Order or Replenishment SO parameter, the program de-allocates all the components and the next run of the interlock manager would re-allocate the components. Users should run this program followed by the Subcontracting: Interlock Manager program.

The program uses the start and completion date of the WIP job linked to the subcontracting order being processed to ascertain whether the allocations can actually be removed. If the job is already completed, the allocations are left untouched. If the job has started but is not complete, the allocations are removed to the extent of unused quantity. If the job is yet to start, the order is totally de-allocated.

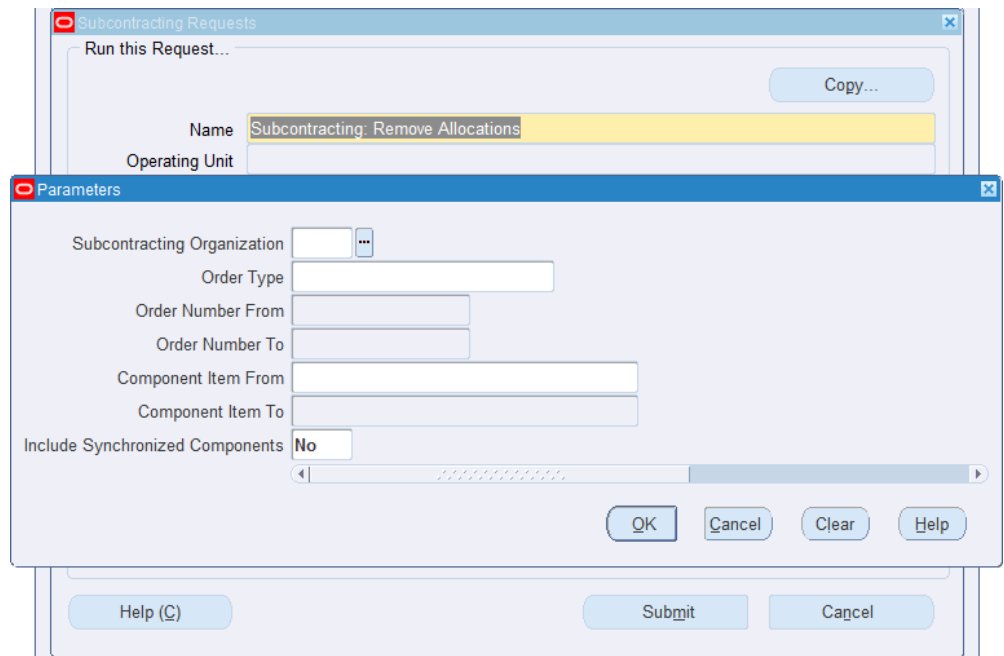
This program is applicable for both internal and external manufacturing partner organizations.

This program is also applicable for full outsourcing with external MP for process manufacturing enabled organizations.

To run Subcontracting: Remove Allocation

1. From the Subcontracting responsibility, navigate to the Requests window.

2. In the Name field, select Subcontracting: Remove Allocations.
3. Click OK. The Parameters window appears.



4. Enter information in the following parameters:
 - Subcontracting Organization: Select the OEM organization code. Allocations are removed for those subcontracting purchase orders that have the OEM organization specified in this parameter.
 - Order Type: Select either Subcontracting Order or Replenishment Order.
 - Order Number From: This field is enabled only when users select an Order Type. If the order type Subcontracting Order is selected, enter the first order number for the order number range.
 - Order Number To: This field is enabled only when a value is entered for Order Number From. If the order type Subcontracting Order is selected, enter the last order number for the order number range.
 - Component Item From: Enter the starting item name for the item range.
 - Component Item To: Enter the last item name for the item range. This field is enabled only when users enter a value for Subcontracting Component From.
 - Include Synchronized Components: Select Yes or No. If Yes is selected allocations are removed for synchronized components also. The default value of

this parameter is No.

5. Click OK.
6. Click Submit to run the request.

Note: It is recommended to run the Interlock Manager after running the Remove Allocation program in order to make the re-allocations. This has to be considered during implementation.

Subcontracting Workbench

This chapter covers the following topics:

- Overview
- Viewing Subcontracting Orders
- Viewing Replenishment Orders
- Consumption Adjustments
- Processing Consumption Adjustments
- Entering Component Lots

Overview

The Subcontracting Workbench User Interface is common to discrete manufacturing, seiban-based manufacturing, and process manufacturing. The Subcontracting Workbench enables you to view subcontracting orders and replenishment orders and take appropriate actions for better control of the subcontracting process. Use the workbench to:

- View subcontracting orders, page 7-2
- View replenishment information for components, page 7-4
- Create manual shipment allocations, page 7-4
- Adjust subcontracting component consumptions, page 7-6
- Enter lots for components, page 7-11

The Subcontracting Workbench also displays the production batch information instead of WIP jobs for the process enabled inventory organizations that are available as ship to organization in the subcontracting orders.

Viewing Subcontracting Orders

On the Components page of the Workbench, you can search and view Subcontracting Orders by manufacturing partner, or by an assembly. If you are using Project Manufacturing, then you can also search and view the subcontracting orders by project.

These subcontracting orders are regular purchase orders and releases created for outsourced assemblies. You can view header details in the Workbench.

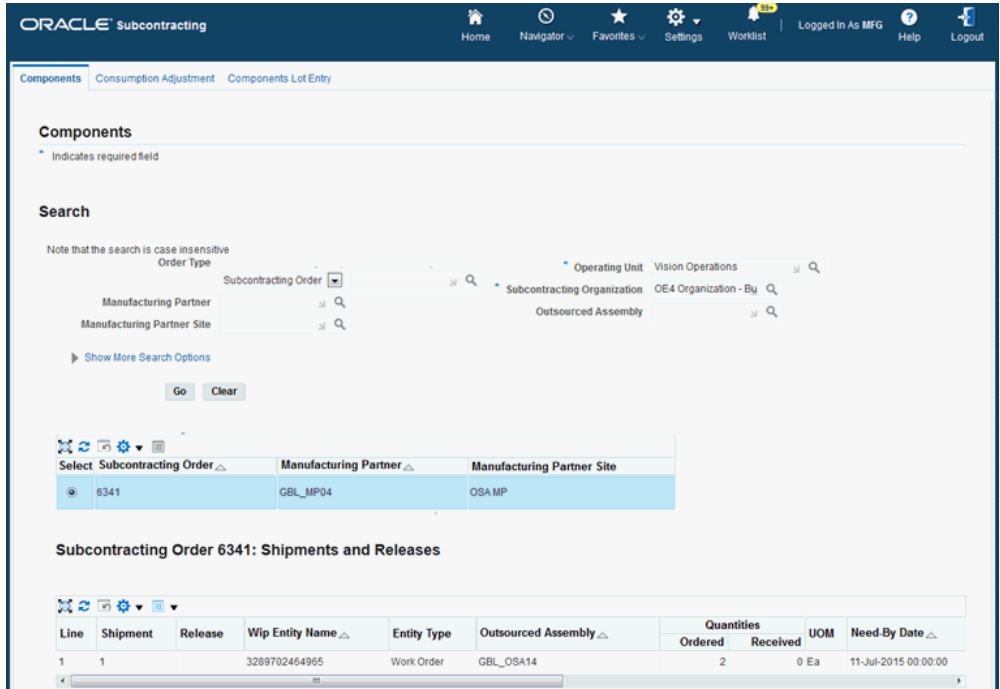
Subcontracting order lines contain details of the outsourced assembly ordered through the MP.

Details of the components required for manufacturing the outsourced assembly at the MP's site can be viewed on the shipment details page.

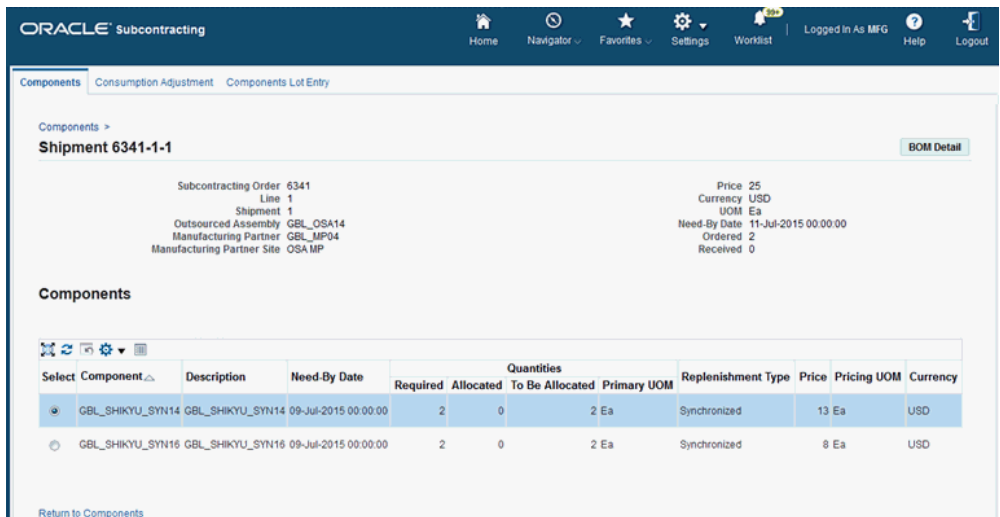
To view subcontracting orders:

1. Navigate to the Subcontracting Workbench User Interface.
2. Select the Components tab.
3. Select the Subcontracting Order type from the list of values.
4. Enter an Operating Unit and Subcontracting Organization (required).
5. Additional search parameters include:
 - Subcontracting Order and Order number, or Replenishment Order and Order number
 - Operating Unit
 - Subcontracting Organization
 - Outsourced Assembly
 - Subcontracting Order Date From and To
 - Manufacturing Partner
 - Manufacturing Partner Site
 - Purchase Order Status
 - Allocation Needed

Enter additional search options as desired, and click Go.

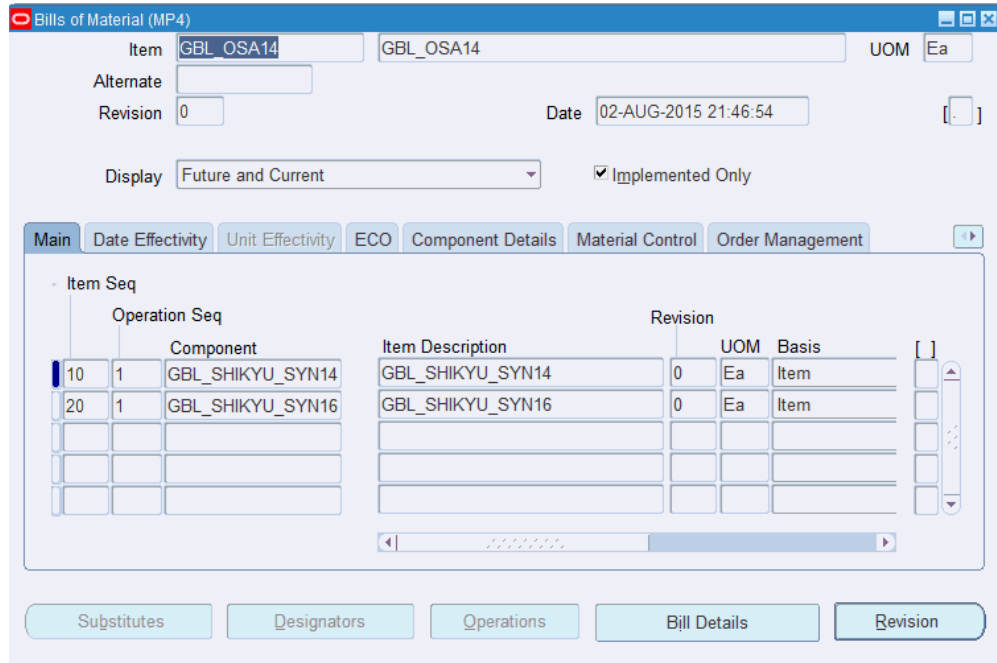


- Click the Shipment Details icon to navigate to the shipment details page. The Shipment Details page displays the components to be shipped by the OEM to the MP for manufacturing the assembly.



This page shows the details of component requirements and allocations for manufacturing the assembly and list price (sales price) of the components at the time of creating the subcontracting order.

- Click BOM Detail to view the current BOM details of the outsourced assembly.



The Bills Of Material window appears and displays component details. This is useful for comparing the components with the current BOM components in case the components are different from the BOM due to revision change introduced after creating the subcontracting order. You must cancel the subcontracting order and then recreate a new subcontracting order and run the Reconciliation Manager and Interlock Manager. The new subcontracting order and components are created with the new BOM.

Viewing Replenishment Orders

On the Components page of the Workbench, you can search and view replenishment orders created in the OEM organization for shipping components to the MP. You can search for replenishment orders by MP, by component, and by project. On the Components page:

- Search results display as replenishment order headers
- When selecting a specific order, you can view the replenishment sales order lines for shipping the components. For synchronized components, the replenishment order is allocated to one subcontracting order for the outsourced assembly. For prepositioned components, the replenishment order is generally allocated to multiple subcontracting orders.
- Click Allocate Components to view and create allocations

The Subcontracting workbench lets you manually allocate shipments if necessary.

To view replenishment orders:

1. Navigate to the Subcontracting Workbench User Interface.
2. Select the Replenishment Order type from the list of values.
3. Enter an Operating Unit and Subcontracting Organization (required).
4. Enter additional search options as desired, and click Go. The Components page appears and displays a list of Replenishment Orders. The page also displays order lines for selected orders.

The screenshot shows the Oracle Subcontracting Components page. The search section includes the following filters:

- Order Type: Replenishment Order
- Operating Unit: Vision Operations
- Subcontracting Organization: OES Organization - C
- Manufacturing Partner: (empty)
- Manufacturing Partner Site: (empty)
- Component: (empty)

The search results table is as follows:

Select	Replenishment Order	Replenishment Purchase Order	Manufacturing Partner	Manufacturing Partner Site	Payment Term
154	6352		GEL_MP01	OSAMP	IMMEDIATE

Below the search results, the page displays the details for Replenishment Order 154:

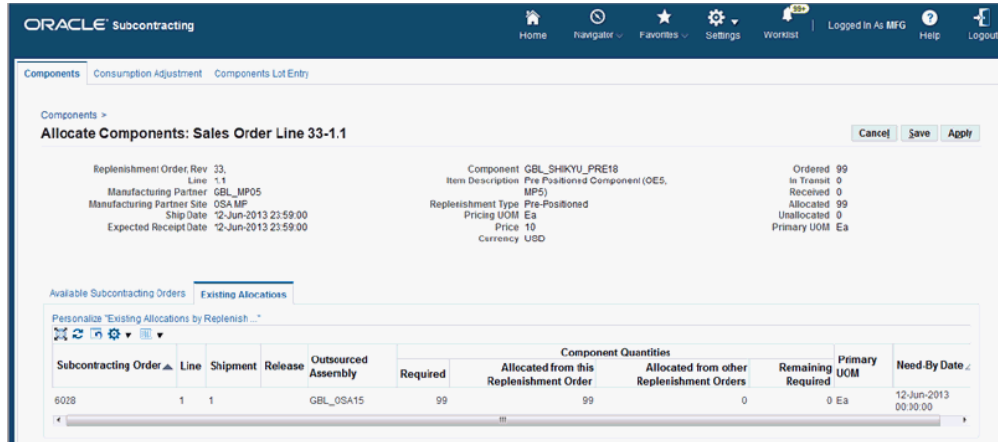
Replenishment Order 154: Lines

Select	Line	Component	Ordered	Received	In Transit	Unallocated	Primary UCM	Price	Extended Price	Pricing UOM	Currency	Ship Date	Expected Receipt Date
1.1	OGM_Chargeable_P	2	0	0	0	2 Ea		4	0 Ea		USD	09-Jul-2015 23:55:00	01-Jul-2015 00:00:00

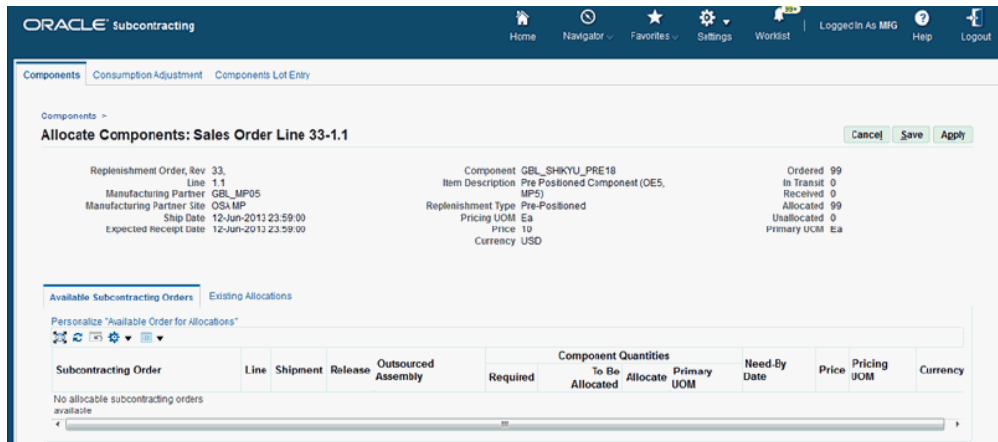
To view and create allocations:

On the allocations page, you can view existing allocations that were created by Interlock Manager, and create allocations manually if required. For synchronized components, replenishment orders are always created for the required quantity of the discrete job associated to a subcontracting order. These replenishment orders are always fully allocated. For prepositioned components, replenishment orders are created well ahead of requirements, and are allocated periodically. As a result, these orders can have unallocated quantities.

1. From the Components page, click Allocate Components. The Allocations page appears and displays allocation details for the selected order.
2. Select the Existing Allocations tab to view details of the subcontracting orders allocated to the current replenishment order.



3. Select the Available Subcontracting Orders tab to display a list of subcontracting orders that require component allocations. For replenishment sales orders of prepositioned components, there may be unallocated quantity. If prepositioned components are not fully allocated, then you can manually allocate them in this page.



4. Enter the quantity to allocate in the Allocate column and click Apply.

Consumption Adjustments

Subcontracting orders are executed based on the planned component requirements as per the BOM of the outsourced assembly. It is assumed that the MP consumes the components based on the planned BOM component quantity and yield, and the inventory records of the MP organizations are processed accordingly. However, the MP might consume more or less components for manufacturing the assembly due to process variations, and the OEM must adjust the records of the MP organization for proper inventory and financial accounting. Additionally, an internal MP might perform

physical inventory or cycle count transactions which also should be adjusted for by the OEM.

Consumption Adjustments in External MP Organization:

The MP sends a report of actual material usage at the period end, and the OEM verifies and adjusts the simulated records.

Use the Consumption Adjustments page to enter adjustments for the subcontracting component based on reports sent by the MP. You can search subcontracting order components by OEM organization, subcontracting order number, or component. Enter the actual consumption of the subcontracting order component at the manufacturer partner's facility.

The component adjustments reported through the workbench are further processed by the Subcontracting Consumption Adjustment Manager concurrent request. It adjusts subcontracting components on-hand quantity in supplier organizations, and adjusts allocations between subcontracting replenishment orders and subcontracting orders.

For Full Outsourcing with External MP in process enabled organizations, the Subcontracting Workbench displays the subcontracting orders and their corresponding production batches. You can enter the adjustments for the subcontracting ingredient consumptions based on the report sent from the MP.

To report consumption adjustments in an external MP organization

1. Navigate to the Subcontracting Workbench.
2. Select Consumption Adjustment.
3. Select Subcontracting Order or Component.

Note: If the adjustment type is by Subcontracting Order, then input into the Purchase Order number is required. If adjustment type is by Component, then input into the Component is required.

4. Enter an Operating Unit and Subcontracting Organization (required).
5. Enter additional search options as desired, and click Go. The Consumption Adjustments page appears and displays subcontracting order line details.

Subcontracting Order	Line	Shipment	Release	Outourced Assembly	Manufacturing Partner	Manufacturing Partner Site	Component	Item Description	Estimated	Actual	Adjustment Amount	UOM	Reason	End Lots
3002	1	1		GEL_OSA14	GEL_MP06	MP SITE	GEL_SHKTYL_SYN14	GEL_SHKTYL_SYN14	2	0	0	Ea		
3002	1	1		GEL_OSA14	GEL_MP06	MP SITE	GEL_SHKTYL_SYN16	GEL_SHKTYL_SYN16	2	0	0	Ea		
3003	1	1		rs01	GEL_MP06	MP SITE	rs01 comp01	rs01 comp01	10	0	0	Ea		
3003	1	1		rs01	GEL_MP06	MP SITE	rs01 comp02	rs01 comp02	10	0	0	Ea		
3010	1	1		osa-do-01*1061122	GEL_MP06	MP SITE	osa config purch01	osa config purch01	2	0	0	Ea		
3010	1	1		osa-do-01*1061122	GEL_MP06	MP SITE	osa config purch03	osa config purch03	2	0	0	Ea		
3014	1	1		GEL_ASS22	GEL_MP06	MP SITE	GEL_OSA01_P	Pre-position	3	0	0	Ea		
3014	1	1		GEL_ASS22	GEL_MP06	MP SITE	GEL_OSA01_S	Syn	3	0	0	Ea		
3016	1	1		GEL_ASS24	GEL_MP06	MP SITE	GEL_OSA03_P	P	3	3	0	Ea		
3016	1	1		GEL_ASS24	GEL_MP06	MP SITE	GEL_OSA03_S	Syn	3	3	0	Ea		

- Enter the adjustment amount, a reason for the adjustment and lot information for the component (if applicable).
- Click Save.

Note: The application displays required quantity based on the BOM. Actual consumption will be the same as planned consumption. You must enter the variation in the consumption. If the consumption is more, then enter positive quantity in the adjustment amount indicating more consumption than planned quantity. If consumption is less, then enter quantity with a minus (-) sign, indicating that quantity consumed is less than the planned quantity.

Note: Only subcontracting orders created against an external MP organization are available in the Consumption Adjustments page. Consumption adjustments against an internal MP organization are processed automatically by the Consumption Adjustments Manager program.

Consumption Adjustments in Internal MP Organization:

Unlike in external MP organizations, the work orders or flow schedules are manually progressed in internal MP organizations. The Consumption Adjustments Manager automatically detects any over or under consumption and adjusts the allocations for the corresponding subcontracting purchase orders accordingly.

The physical inventory or cycle count related transactions in internal MP organizations result in change in on-hand of the subcontracting components available for

consumption in the work orders or flow schedules (henceforth referred to as WIP jobs). A positive adjustment increases the on-hand and more components become available for allocations. A negative adjustment reduces the on-hand resulting in lesser components available for consumption and allocations. The Consumption Adjustments Manager automatically detects any physical inventory or cycle count related transactions and adjusts the allocations for the corresponding replenishment orders accordingly.

Related Topics

Processing Consumption Adjustments, page 7-9

Processing Consumption Adjustments

The consumption adjustment manager processes adjustments entered on the workbench for an external MP. Allocations are readjusted, and WIP component issues or WIP component returns are made to adjust the actual consumption of the simulated discrete job in the external MP organization. The program also automatically adjusts the allocations against physical inventory or cycle count transactions or WIP over and under consumptions in an internal MP.

Note: While adjusting in an internal MP, only the allocations are adjusted. The component quantities aren't issued in or out of the job. This is because users are expected to take care of component issues or returns manually.

For Full Outsourcing with External MP in process enabled organizations, Subcontracting Consumption Adjustment Manager adjusts the:

- Production batch material transactions.
- Onhand quantity of the outsourced product.
- Allocations between the replenishment orders and subcontracting orders.

Processing Logic for Consumption Adjustments Manager

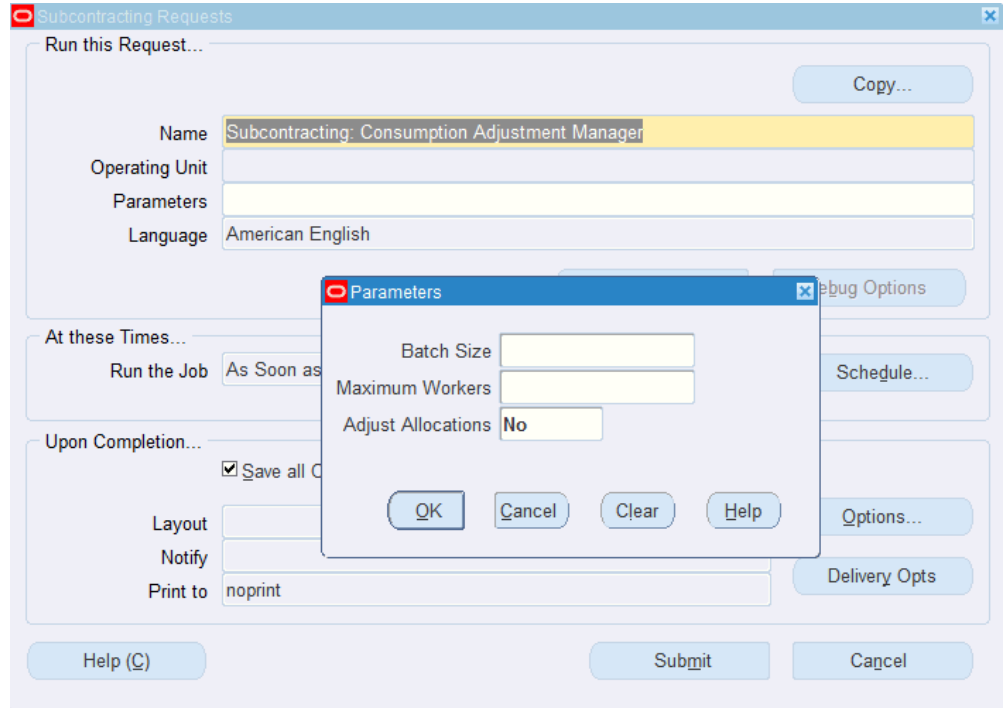
1. The Manager finds the eligible physical inventory and cycle count transactions in internal MP organizations that happened after the last run of this program.
 - For negative adjustments: The program tries to find replenishment sales order lines for the component being processed that have some unallocated quantity. If such sales order lines are found, the allocable quantity value for these lines is reduced. If no such allocable replenishment sales orders are found, the latest replenishment sales orders for this component are found and allocations are reduced from these sales order lines. It should also be noted that the work

orders or flow schedules attached to such sales order lines should not have completed.

- For positive adjustments: The program finds the latest replenishment sales orders and increases the allocable quantity value for such lines.
2. The Manager then finds under and over consumed work orders/flow schedules in internal MP organizations. Such work orders should be in status Completed, No Charges or Closed. The status of the flow schedules should be Closed. Under consumption results in negative adjustment and over consumption results in positive adjustments. Such records are inserted in the adjustments table to be processed along side WIP adjustments for external MP.
 3. The Manager then picks up the positive and negative adjustments of the components entered on the workbench.
 4. For positive component consumption adjustments, the program:
 - Creates WIP issues for the discrete job associated with the subcontracting order in the MP organization. This happens only if the adjustment is for an external MP organization.
 - Increases allocations for the subcontracting order.
 - If there is not enough replenishments available, the program does not process those adjustments entered on the workbench. This scenario probably will not occur because adjustments are made at the end of a period, by which time the OEM would have sent enough material to the MP for this additional requirement. This scenario could occur if you enter only positive adjustments first. Therefore, we recommend that you do not process all of the adjustments (positive and negative) at one time.
 5. For negative component consumption adjustments, the program:
 - Creates WIP returns for the discrete job associated with the subcontracting order in the MP organization. This happens only if the adjustment is for an external MP organization.
 - Decreases allocations for the subcontracting order.

To process consumption adjustment:

1. From the Subcontracting responsibility, navigate to the Requests window.
2. Select Subcontracting: Consumption Adjustment Manager from the Requests window and click OK. The Parameters window appears.



3. Enter an optional Batch Size. Valid characters are 0 through 9.
4. Optionally, enter a value for Maximum Workers. Valid characters are 0 through 9.
5. Select Yes or No in the Adjust Allocations field. The default value is No.
6. Click OK.
7. Click Submit to run the request.

Entering Component Lots

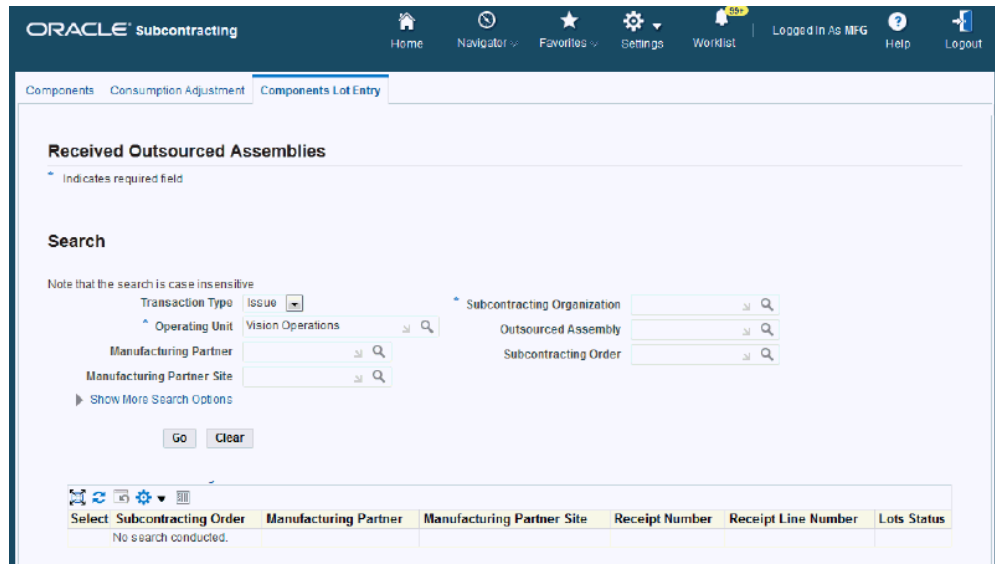
On the Components Lot Entry page of the Workbench, you can search for and enter lots information for lot controlled components for external MP organization. This is required to enable back-flush of the component lots to the work order created in MP for the outsourced assembly. For the components that are lot controlled, once the assembly is received (and delivered) in the OEM organization, you need to enter the lot information for the components.

Note: This step should be performed before running Process Receiving Transactions program.

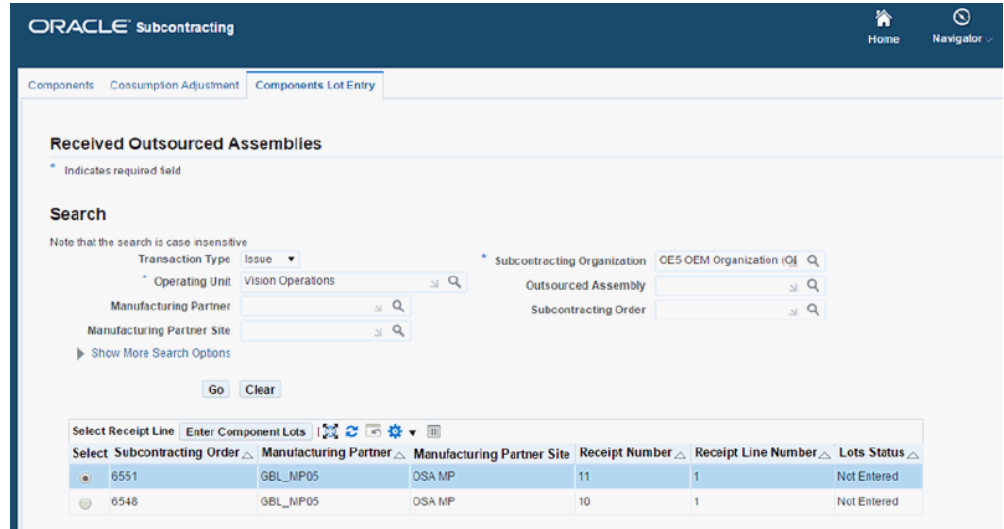
You also need to enter lot information when assemblies are returned to the external MP organization after the Auto Receive Components is run for MP organization.

To enter lots for components:

1. Navigate to the Subcontracting Workbench User Interface.
2. Select the Component Lot Entry tab.
3. In the Received Assemblies page select Issue or Return from the Transactions Type list of values.

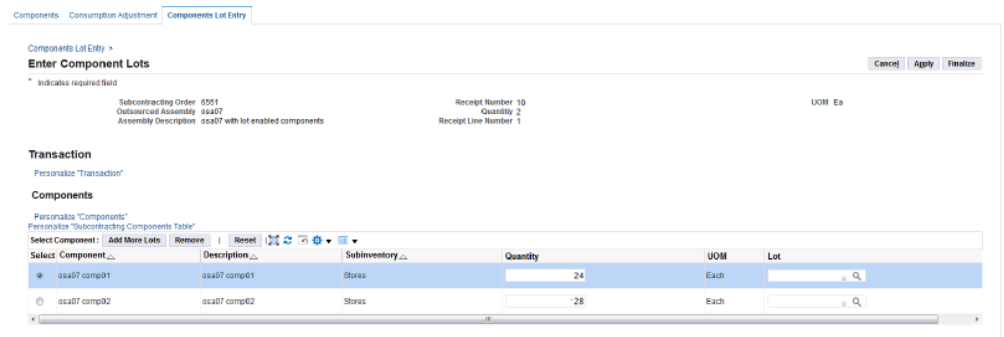


4. Enter an Operating Unit and Subcontracting Organization (required).
5. Enter additional search options as desired, and click Go.



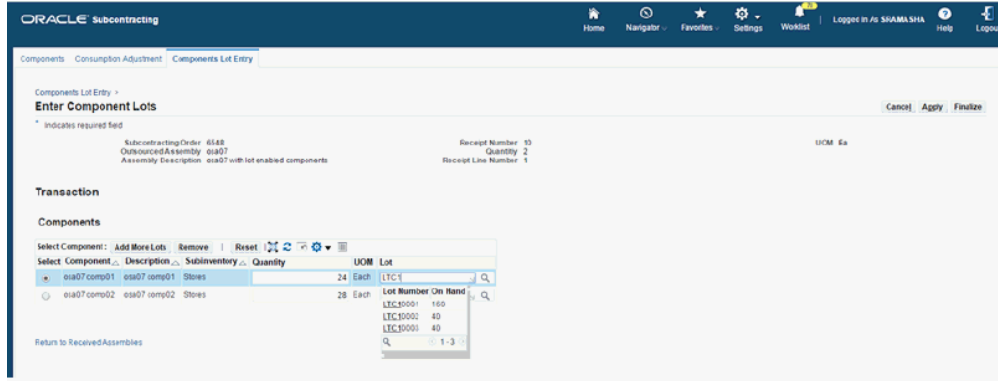
The list of received outsourced assemblies for external MP organizations appears. Note that these are only the received assemblies for which lot information has not been entered and finalized.

6. Select a subcontracting order and click on Enter Component Lot.

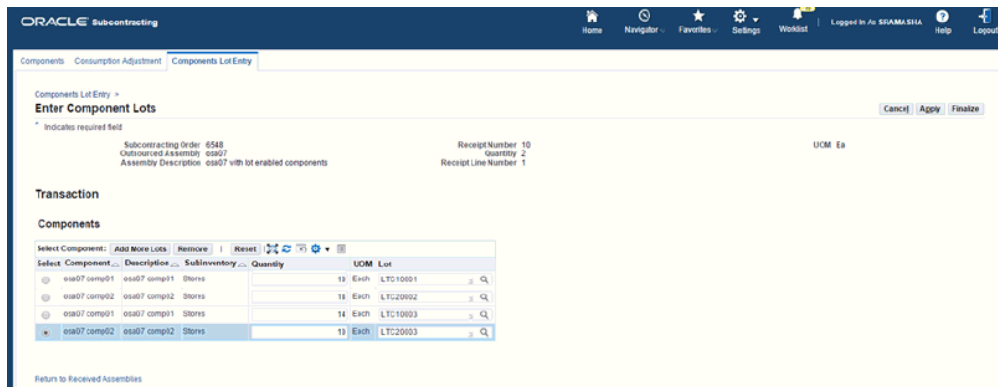


The header information captures details of the subcontracting order, receipt number and line number, outsourced assembly name and description, and quantity. Details of the components appear in the Subcontracting Component Table

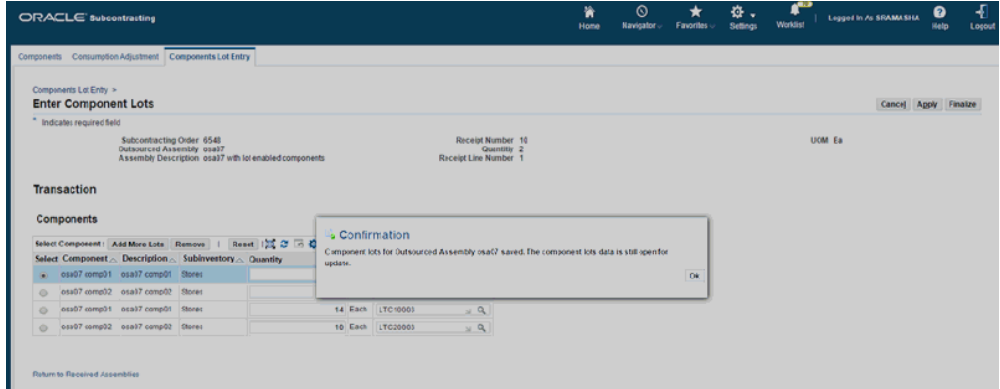
7. To enter lot information, select a component.
8. The Quantity field defaults the total component quantity to be issued. Update the quantity of the component and respective lot as required.
9. In the Lot field, select a lot from the list of values which lists the lots with onhand quantity in the external MP organization.



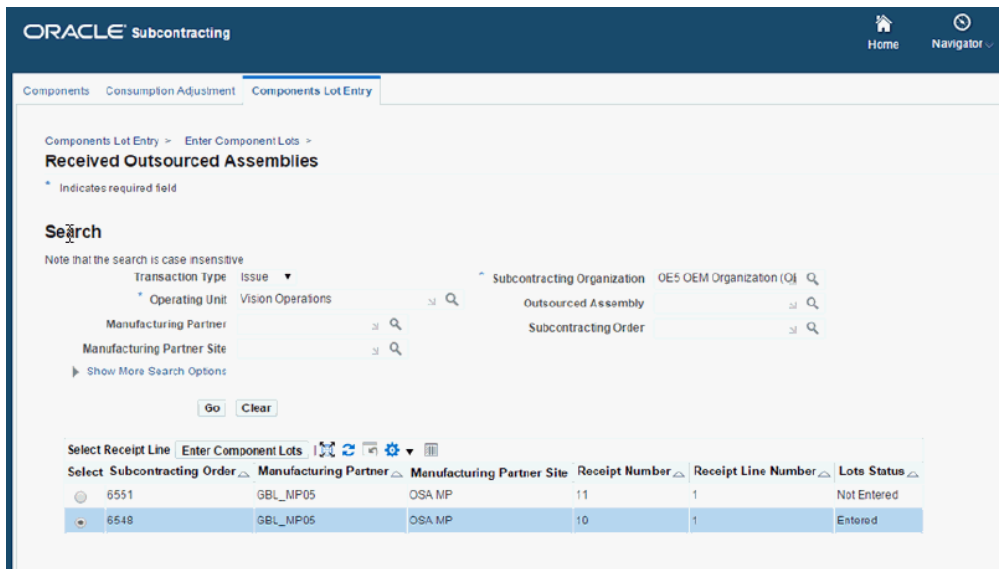
10. Use Add More Lots to enter lot information if the assembly has components with multiple lots. Select the component and click Add More Lots to add a new row which defaults the remaining quantity. Select the appropriate lot.



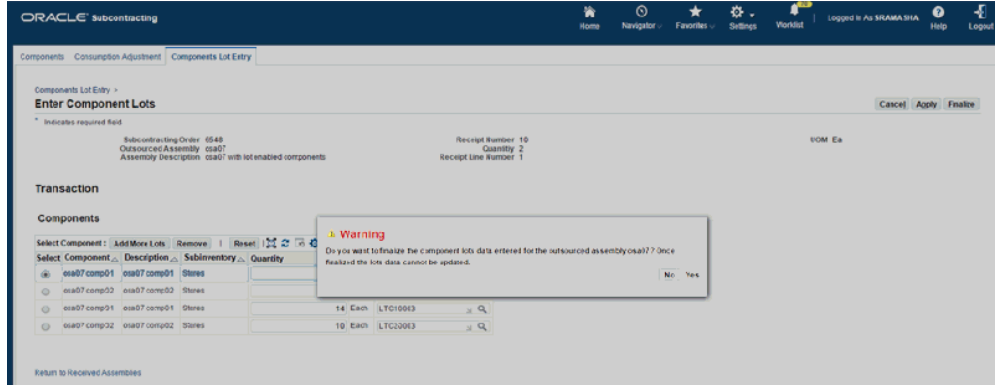
11. Use Remove to remove a selected component the table.
12. Use Reset to reset the information for a selected component.
13. Use Cancel to return to the Received Assemblies page without saving the changes.
14. Click Apply to save the changes



- Confirming the changes returns you to the Received Assemblies page. The information for the Component Lots are saved and entered but not finalized. To update the entered data for Lot information, select Enter Component Lots.



- Before finalizing the lot information entered ensure that the sum of the lot quantities match the total component quantity to be issued which defaulted in the Quantity field.
Click Finalize to complete the Components Lot Entry.



- Click No to discard the entered lot information. Click Yes to confirm the finalization of the entered lot data. Lot information cannot be modified after finalizing component lot entry.

Subcontracting Accounting Process for Discrete Manufacturing

This chapter covers the following topics:

- Chargeable Subcontracting Accounting Process
- Buy/Sell Subcontracting Accounting Process
- Full Outsourcing Accounting Process
- Additional Processes to Manage Subcontracting

Chargeable Subcontracting Accounting Process

The Chargeable Subcontracting Accounting Process considers the following:

- OEM ships components to the MP to manufacture the outsourced assembly, but retains the ownership of the components.

Therefore, the MP is not liable for the payment for the components received from the OEM.

- MP manufactures the assemblies (added value) from the OEM supplied components, and ships them to the OEM.
- OEM receives the assemblies, and pays only the added value amount to the MP organization.

Note: The MP organization is a simulated organization and is used for inventory planning and tracking and has no impact on costing. For this purpose, all accounting transactions in the MP organization are not posted to the general ledger (The Transfer to GL is set to No for the MP organization.)

For additional information, see: Setting Up Subcontracting Accounting, page 3-32.

Sales orders are used for shipping the components to the MP organization, and subcontracting orders are used to procure the assemblies from the MP. Invoices for Accounts Payables and Accounts Receivables are netted, and the OEM pays the MP only for the value added in the manufacturing at the MP's factory.

Key accounting concepts include:

- OEM makes a provisional sale and ships the components but retains the ownership. Therefore, accounting transactions associated with shipping subcontracting components should be tracked separately. These transactions are processed by posting to the Subcontracting COGS, Subcontracting Revenue, and Subcontracting Receivables accounts specifically defined for subcontracting, and are associated with the OM transaction type. This transaction type is defined in shipping networks and when the Interlock Manager creates replenishment sales orders for the components, they are created with the OM transaction type defined in the shipping networks. The respective accounts are posted during the execution of sales orders for subcontracting components.
- At period end, the OEM must account for the component inventory in its book of accounts. A report is provided to identify and calculate the component on-hand inventory and the value based on the simulated records.

Important: You must manually enter the appropriate book of accounts and reverse the same entry at the beginning of the next period.

- The subcontracting order is used to procure the assembly from the MP. After receiving the assembly from MP, the OEM nets the Accounts Payables invoices with the Accounts Receivables invoices for the components shipped to manufacture the assembly. OEM makes the payment to the MP for the added value amount. The purchase price of the assembly is calculated based on the BOM requirement quantity and sales price of the components.

See Setting Up for Discrete Manufacturing chapter:

- Setting Up Standard Costs of Components and Assemblies for Subcontracting, page 3-38
- Defining Price Lists for Subcontracting Components, page 3-40
- Setting Up Purchase Price of an Outsourced Assembly, page 3-43
- The purchase price of the assembly is defined to include the sales price of the components and added value amounts to support the payment process. Therefore, any purchase price variances associated to assembly receipts in the OEM should be tracked using a Subcontracting Variance account defined for subcontracting purposes. This account is associated with shipping networks, and when purchase

order receipts are made, the purchase price variance is posted to the Subcontracting Variance account.

- Since the entire process uses the fixed sales price of the components, the standard cost of components and assembly, and the purchase price of the assembly, any variations in the price and cost could affect the accounting process. A set of utilities (that is, reports) is provided to identify these changes and their effect.

Important: You must manually adjust the accounting records for consistency.

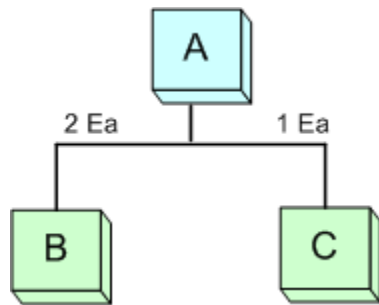
Costs and Prices

For subcontracting accounting, the costs and prices of the components and assemblies should be defined such that the net gain arising out the virtual sales transactions will be offset by the gain or loss associated with the purchasing of the assembly.

For details on setting up costs and prices, see the Setting Up for Discrete Manufacturing chapter.

- Setting Up Standard Costs of Components and Assemblies for Subcontracting, page 3-38
- Defining Price Lists for Subcontracting Components, page 3-40
- Setting Up Purchase Price of an Outsourced Assembly, page 3-43

This figure illustrates the method for setting costs and prices. All amounts are in USD:



Item	Material Cost	OSP (Added Value by MP)	Unit Cost
B	2	-	2
C	3	-	3

Item	Material Cost	OSP (Added Value by MP)	Unit Cost
A	$2*2 + 3*1 = 7$ USD	5	12

Item	Item Cost	Sales Price	Purchase Price	Gain/Loss per 1 Ea of Assembly A
B	2	4	N/A	$2*(4 - 2) = 4$
C	3	6	N/A	$1*(6 - 3) = 3$
A	12	N/A	19	$19 - 12 = 7$

Gain or loss by shipping Components B and C to the MP on a replenishment sales order for manufacturing 1 each of Assembly A = $4 + 3 = 7$ USD

Gain or loss offset by purchasing 1 each of Assembly A from the MP = **7 USD**

The Original Equipment Manufacturer (OEM) should set up item prices so that the gain or loss by shipping the components to the MP is offset the gain or loss associated with the purchase of the assembly from the MP:

- Define material costs for the components. Define material and OSP charges for assembly and update standard costs in the OEM organization. OSP charges are the added-value amounts added by the MP organization. The costing in the MP organization is of no significance.
- Define the sales price of the components and purchase price of the assembly so that the gain or loss from the virtual sale of components to MP is offset by the purchase price of the assembly. Gain or loss is the difference between the components sales price and standard cost, and the offset is the difference between the purchase price of the assembly and its standard cost. In addition, the difference between the purchase price of assembly and the sales price of the component is the added-value amount. After the OEM receives the assembly, it makes a payment to the MP organization for the added-value amount.
- In the previous example, the respective standard cost of components B and C is 2 USD and 3 USD, and the respective sales prices are 4 USD and 6 USD. The sale of 2 units of B and 1 unit of C to the MP results in a virtual gain of 7 USD, 4 USD of which is from B and 3 USD of which is from C.

To offset the virtual gain, the purchase price of assembly is set at 19 USD, and its standard cost is 12 USD. The difference in the purchase price and standard cost is 7 USD, which offsets the virtual gain due to the sale of components.

- The net amount of the Accounts Receivables invoice is 14 USD, 8 USD of which is for 2 units of B and 6 USD of which is for 1 unit of C. This net amount is calculated against an Accounts Payables invoice in the amount of 19 USD and the balance of 5 USD, which represents the added value that is paid to the MP organization.

Replenishment Sales Orders Shipments

Accounting transactions associated with the provisional sale of components are tracked in separate accounts.

At Ship Confirm Replenishment Sales Orders

This example shows the accounting entries at Ship Confirm: Components B and C. All amounts are in USD:

Account	Debit	Credit
For Component B (2 each)		
Deferred COGS (item cost 2 USD)	4	-
Inventory Valuation (item cost 2 USD)	-	4
For Component C (1 each)		
Deferred COGS (item cost 2 USD)	3	-
Inventory Valuation (item cost 2 USD)	-	3

These are regular transactions. Although the inventory appears as a credit to the OEM book of accounts, the OEM organization still owns the inventory. At the period end, run a report and calculate the on-hand inventory and value at the MP site, and then adjust the OEM books for proper accounting.

Invoicing Replenishment Sales Orders

This example shows the accounting entries for AR Invoice: Components B and C. All amounts are in USD:

Account	Debit	Credit
For Component B (2 each)		
Subcontracting COGS (deferred amount 4 USD)	4	-

Account	Debit	Credit
Deferred COGS (deferred amount 4 USD)	-	4
Subcontracting AR (sales price 4 USD)	8	-
Subcontracting Revenue (sales price 4 USD)	-	8
For Component C (1 EA)		
Subcontracting COGS (deferred amount 3 USD)	3	-
Deferred COGS (deferred amount 3 USD)	-	3
Subcontracting AR (sales price 6 USD)	6	-
Subcontracting Revenue (sales price 6 USD)	-	6

COGS, revenue, and receivable transactions associated with invoicing replenishment sales orders for subcontracting components are posted to subcontracting accounts for tracking.

Subcontracting Orders Receipts

Subcontracting orders are the standard purchase orders or releases created to procure the outsourced assemblies from the MP. Purchase orders include these events:

1. Receiving the assembly into the receiving location
2. Delivering the assembly to Inventory

All amounts are shown in USD.

Receiving for Assembly A

Account	Debit	Credit
For Assembly A (1 each)		
Inventory Receiving (PO Price 19 USD)	19	-
AP Accrual (PO Price 19 USD)	-	19

These entries are similar to standard items.

Delivery for Assembly A

Account	Debit	Credit
For Assembly A (1 each)		
Inventory Valuation (Item Cost 12 USD)	12	-
Subcontracting Variance (PO Price - Item Cost)	7	-
Inventory Receiving (PO Price 19 USD)	-	19

Inventory is debited at 12 USD, which includes the component costs and added value. The purchase price variance is posted to the Subcontracting Variance account for tracking.

AP Invoicing for Assembly A

Account	Debit	Credit
For Assembly A (1 each)		
AP Accrual	19	-
Accounts Payable (Outsourced Assembly)	-	19

Accounting entries after the Accounts Payable invoice is created.

Once the Accounts Payables and Accounts Receivables invoices are ready to be processed, you must use the Accounts Payable and Accounts Receivables Netting functionality available in Oracle Payables, and make payments to the MP only for the added value in the outsourcing process.

Accounts Payables and Accounts Receivables Netting

Account	Debit	Credit
AP (Outsourced Assembly): 19 USD, Subcontracting AR: 14 USD		
AP (Outsourced Assembly)	14	-

Account	Debit	Credit
Subcontracting AR	-	14

After netting Accounts Receivables, the amount of 14 USD is adjusted as a partial payment, and the balance of 5 USD can be paid to the MP.

For more details on AP and AR netting, see the *Oracle Payables User's Guide*.

Buy/Sell Subcontracting Accounting Process

In Buy/Sell Subcontracting, the sale of subcontracting components and the purchase of outsourced assemblies are treated as independent business transactions. They are similar to standard sales and purchase of items. Therefore, the specific accounting of subcontracting transactions required for Chargeable Subcontracting is not relevant in the context of Buy/Sell Subcontracting. Also, Subcontracting Receivables and Payables are generally not netted in Buy/Sell Subcontracting. The OEM pays the MP for purchasing the outsourced assemblies and the MP pays for buying the subcontracting components from the OEM. However, system allows for netting of Payables and Receivables even for a Buy/Sell relationship.

Full Outsourcing Accounting Process

In Full Outsourcing, all the specific accounting steps required for Chargeable Subcontracting are followed except that for Full Outsourcing you set up and define Subcontracting Intransit (COGS) account in the Order Management transaction type, and Subcontracting Intransit (PPV) in the Shipping Networks. Additionally, Subcontracting Receivables and Payables are not netted in Full Outsourcing. The OEM retains ownership of the components used to manufacture the outsourced assembly so the MP does not explicitly pay for the Components. Keeping this in mind, the purchase price of the assembly includes only the value addition and does not include the component value supplied by the OEM.

Costs and Prices

This section describes the setups, and modeling for the costing, prices and accounting of outsourced assemblies in Full Outsourcing in both external and internal MP organizations.

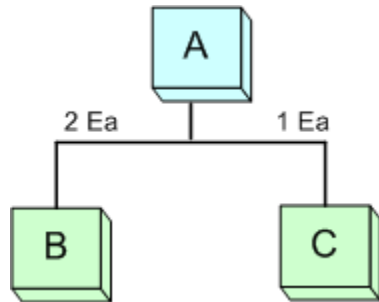
Costing and Prices in External MP Organizations

For Full Outsourcing accounting for external MP organizations, the value addition should be defined as OSP charges in the costing setup and the assembly purchase order price should be the same as the value addition.

For details on setting up costs and prices, see the Setting Up for Discrete Manufacturing chapter.

- Setting Up Standard Costs of Components and Assemblies for Subcontracting, page 3-38
- Defining Price Lists for Subcontracting Components, page 3-40
- Setting Up Purchase Price of an Outsourced Assembly, page 3-43

This figure illustrates the method for setting costs and prices. All amounts are in USD:



Item	Material Cost	OSP (Added Value by MP)	Unit Cost
B	\$2	-	\$2
C	\$3	-	\$3
A	$2*2 + 3*1 = \$7$	\$5	\$12

Item	Item Cost	Sales Price	Purchase Price
B	\$2	N/A	N/A
C	\$3	N/A	N/A
A	\$12	N/A	\$5

To set up item prices, the Original Equipment Manufacturer (OEM) should:

- Define material costs for the components.
- Define material and OSP charges for assembly and update standard costs in the OEM organization.

OSP charges are the added-value amounts added by the MP organization. The costing in the MP organization is of no significance.

Costing of Outsourced Assemblies in Internal MP Organizations

In case of external MP organizations, Transfer to GL is set as No to exclude any accounting that takes place in the organization. For internal MP organizations, however, Transfer to GL can be set as Yes and subsequently, all transactions of the organization, whether they are from the outsourced manufacturing flow, or otherwise, will be subject to the principles of accounting and valuation.

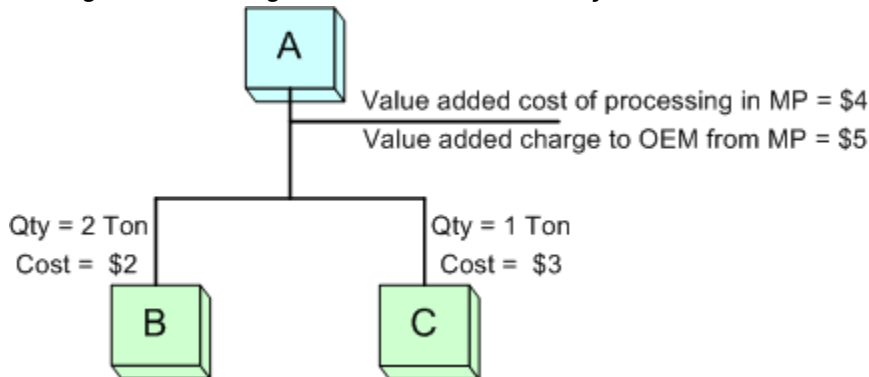
Following are the notable transactions created in the MP organization as part of the outsourced manufacturing flow:

- Purchase Order Receipt of subcontracting components
- Component issue of subcontracting components
- Assembly completion of Outsourced assembly
- Sales Order Issue of Outsourced assembly

The following setup is required for costing/accounting of the above transactions are:

- Price the replenishment purchase orders for the subcontracting components at zero to prevent any accruals from being generated. The Interlock Manager concurrent request is automated to handle above functionality.
- The replenishment purchase order is created with status of Closed for invoicing. This is also, handled by the Interlock Manager concurrent request.
- Define the subcontracting components as costing disabled items in the Internal Manufacturing Partner organization to prevent the generation of inventory valuation when they are received and transacted within the MP organization.

Costing and accounting of an Outsourced Assembly



Item Cost in OEM

Item	Material Cost	Processing Charges	Unit Cost
B	\$2 (Qty = 2 ton)		\$2
C	\$3 (Qty = 1 ton)		\$3
A	2 *\$2 + \$3	\$5	\$12

Item Cost in MP

Item	Material Cost	Processing Charges	Unit Cost
B (Costing Disabled)	\$0		\$0
C (Costing Disabled)	\$0		\$0
A	\$0	\$4	\$4

Accounting Template for Transactions in OEM Organizations

Transaction	Item	Price/Cost	Account	Dr	Cr
Ship Confirm of Replenishment Sales Orders	Subcontracting Component B	Qty 2 @ \$2	Inventory Valuation		\$4
			Subcontracting Intransit	\$4	
	Subcontracting Component C	Qty 1 @ \$3	Inventory Valuation		\$3
			Subcontracting Intransit	\$3	

PO Receipt of Subcontracting PO	Outsourced Assembly A	Qty = 1 Cost = \$12 PO Price= \$5	A/P Accrual	\$5
			Subcontracting Intransit (PPV)	\$7
			Inventory Valuation	\$12

Accounting Template for Transactions in MP Organization

Transaction	Item	Price/Cost	Account	Dr	Cr
Receiving	Subcontracting Components B & C	PO Price = \$0	Accrual		\$0
			Receiving Inspection	\$0	
PO Receipt	Subcontracting Component	Cost = \$0	Receiving Inspection		\$0
			Inventory Valuation	\$0	
Component Issue	Subcontracting Component	\$0	Inventory Valuation		\$0
			WIP Valuation	\$0	
Resource		\$4	WIP Valuation	\$4	
			Resource Absorption		\$4

Assembly Completion	Outsourced Assembly	Cost of Subcontracting components (\$0) + Value added charge (=Cost of MP owned material + Resources and Overheads)	WIP Valuation	\$4
			Inventory Valuation	\$4
SO Issue	Outsourced Assembly	Value Added Charge	Inventory Valuation	\$4
			Deferred COGS	\$4
COGS Recognition	Outsourced Assembly	Value Added Charge	Deferred COGS	\$4
			COGS	\$4
AR Invoice	Outsourced Assembly	Selling Price	Revenue	\$5
			Receivables	\$5

Note: If the subcontracting components specific to the outsourced manufacturing flows are also being used by the internal manufacturing partner for purposes other than outsourced manufacturing jobs for the OEM, then users will have to setup the bill of material and inventory (e.g. through usage of expense subinventories) to suppress the costing, accounting and valuation of the component quantities.

Costing of Configured Outsourced Assemblies

The costing of the full outsourcing flow of configured assemblies is as follows:

- Users will have to setup the value addition charge as a resource on the Model's BOM or as an OSP cost on the Model.
- The configured assembly in the OEM and MP organization will have its costs rolled up like a make assembly, as per the BOM and the Routing. The cost in OEM will

include the cost of material and value added charge. The cost in MP will be equal to only the value added charge, if it is an internal organization (See: Costing of Outsourced Assemblies in Internal MP Organizations)

- The list price of the assembly in OEM will be equal to the value added charge.

For accounting, see: Costing of Outsourced Assemblies in Internal MP Organizations.

Replenishment Sales Order Shipments

Accounting transactions associated with the shipping of components to MP are tracked in Intransit Account

At Ship Confirm Replenishment Sales Orders

Account	Debit	Credit
For Component B (2 EA)		
COGS (item cost 2 USD)	4	-
Inventory Valuation (item cost 2 USD)	-	4
For Component C (1 EA)		
COGS (item cost 3 USD)	3	-
Inventory Valuation (item cost 2 USD)	-	3

These are regular transactions. Although the inventory appears as a debit to the COGS accounts, COGS is an intransit account, reflecting the value of the material at MP site, but still owned by OEM. At the period end, use Endeca Information Discovery to view the onhand at MP site. In this example, the Intransit Value of components is 7USD.

Invoicing Replenishment Sales Orders

Since the OM transaction type is Ship only, there will not be any AR transactions generated.

Subcontracting Order Receipts

Subcontracting orders are the standard purchase orders or releases created to procure the outsourced assemblies from the MP. Purchase orders include these events:

1. Receiving the assembly into the receiving location

2. Delivering the assembly to Inventory

All amounts are shown in USD.

Receiving for Assembly A

Account	Debit	Credit
For Assembly A (1 EA)		
Inventory Receiving (PO Price 5 USD)	5	-
AP Accrual (PO Price 5 USD)	-	5

These entries are similar to standard items.

Delivery for Assembly A

Account	Debit	Credit
For Assembly A (1 EA)		
Inventory Valuation (Item Cost 12 USD)	12	-
Subcontracting Variance (PO Price - Item Cost)	-	7
Inventory Receiving (PO Price 5 USD)	-	5

Inventory is debited at 12 USD, which includes the component costs and added value. The Purchase Price Variance is posted to Subcontracting Variance, which is the Subcontracting Intransit account, reflecting the consumption of onhand inventory at MP site. At this moment the net debit Value in the Intransit account is zero, showing the Value of inventory at MP site as zero as they are consumed in the manufacturing of the assembly and OEM receives the assembly.

Additional Processes to Manage Subcontracting

In Chargeable Subcontracting and Full Outsourcing, accounts are posted correctly if all standard costs, sales price, and purchase price of the components and assemblies are unchanged. These costs and prices could undergo changes due to various business reasons such as an increase in the cost of raw material, changes to added value charges etc., that force the OEM to make changes in the standard cost prices and also the sales and purchase prices. This in turn influences accounting.

The following set of utilities and procedures are provided to help identify the impact of those changes in advance and assist you in managing them for proper accounting:

- Standard cost updates
- Sales price changes
- Consumption adjustments
- Component returns

Standard Cost Updates

You must run the Cost Update Analysis report to find the impact of proposed cost changes. This report gives the cumulative impact of all the components and assemblies by the MP for the proposed cost change. You must make manual adjustments to the general ledger accounts, and then update the standard costs of the components and assemblies as follows:

For Chargeable Subcontracting:

- Debit the Inventory Valuation account if the value is positive
- Credit the Inventory Valuation account if the value is negative

For Full Outsourcing:

- Debit the subcontracting intransit account if the value is positive
- Credit the subcontracting intransit account if the value is negative

Sales Price Changes

The sales price of the components will generally be changed at the beginning of the period. Like standard costs, changes in sales price will also affect gain or loss.

Note: This is applicable only for Chargeable Subcontracting. In Full Outsourcing, replenishment sales orders are ship only sales orders and no invoices are created so sales price changes do not have any impact on accounting.

To null the impact of sales price changes, the OEM must:

1. Reconcile the inventory in the MP organization by using the confirmation report.
2. Make *logical* returns of the unallocated replenishment sales order quantity by creating sales order returns (RMA). (Logical returns mean that the returns are made in the OEM records, but the components are still physically located in the MP)

organization.)

3. Change the component sales prices in the price list to the new sales price.
4. Create new replenishment purchase orders for the returned quantity and run the Interloc Manager:
 - Interlock Manager creates replenishment sales orders with the new price
 - make logical shipments; components are still with the MP but shipments are registered with the new price.

After this process, you can continue with the execution process.

Consumption Adjustments

Variances in the consumption of components over the planned consumption based on the BOM are registered and processed using the consumption adjustment processing at the MP organization. This process will adjust the on-hand inventory of simulated records in the MP organization for planning and execution.

In Chargeable Subcontracting, the impact of the variances in OEM organization on payments process must be handled manually.

In the case of over consumptions, the MP consumes more quantity than the planned quantity, and the sales price of this excess consumption is not part of the purchase price of the assembly. Consequently, the Accounts Receivables amount will be more than the Accounts Payables amount and netting will suggest payments to the MP organization. To overcome this situation, the OEM must create a credit note for the excess consumption and then make payments for the value addition.

In the case of under consumptions, the MP consumes less than the planned quantity, resulting in the Accounts Payable amount being more than the Accounts Receivable amount, and netting will suggest paying more than the value addition. Creating a debit note for the less consumption amount, and then paying only the value addition, can resolve this condition.

Both the scenarios can be handled by using either by using proper netting setup or manually.

See: Accounts Payables and Accounts Receivables feature in the *Oracle Payables User's Guide*

In Full Outsourcing, the variances in the consumption at MP site results in the variation in the onhand inventory value at MP site (tracked in the subcontracting intransit account), which must be handled manually. You can do the following to adjust the accounts:

1. Use Endeca Information Discovery, and take snapshot of onhand inventory Value in MP site before adjustments.

2. Make adjustments.
3. Refresh Endeca Data and take the new snap shot of onhand inventory Value at MP site after adjustments
4. Compare the inventory value at MP site, before and after the adjustments and make the following adjustments:
 - Debit the Inventory Valuation account if the adjusted value is positive.
 - Credit the Inventory Valuation account if the adjusted value is negative.

Component Returns

The MP returns components to the OEM for various business reasons such as:

- Defective components
- Excess components due to better yield
- Obsolete components
- Logical returns due to price change differences in the standard cost at the time of shipping the components and at the time

RMA receipts are created impact the gain or loss. Use the following procedure to null any gain or loss due to returns:

- Run the Cost Update Analysis report with the Period End option to calculate the gain or loss.

For Chargeable Subcontracting:

- Debit the Inventory Valuation account if the value is positive.
- Credit the Inventory Valuation account if the value is negative.

For Full Outsourcing:

- Debit the subcontracting intransit account if the value is positive.
- Credit the subcontracting intransit account if the value is negative.

Reports

This chapter covers the following topics:

- Reports Overview
- Subcontracting: Subcontracting Order Report
- Subcontracting: Confirmation Report (External Mode)
- Subcontracting Confirmation Report (Internal Mode)
- Subcontracting: Cost Update Analysis Report

Reports Overview

Oracle's Subcontracting provides the following Subcontracting reports for managing fiscal and internal control:

- Subcontracting Order Report, page 9-2
- Confirmation Report (External Mode), page 9-5
- Confirmation Report (Internal Mode), page 9-10
- Cost Update Analysis Report, page 9-11

You can create your own layouts and publish your reports using Business Intelligence Publisher. Business Intelligence Publisher is a template-based publishing tool that is delivered with the Oracle E-Business suite. This tool enables you to develop and maintain custom report formats. You can design and control how your reports are presented by using report templates. When you generate a report, Business Intelligence Publisher merges report template files with report data to create documents that support numerous formatting options, such as color, images, font styles, and headers and footers.

Subcontracting: Subcontracting Order Report

The Subcontracting Order Report prints purchase order information about outsourced assemblies. In addition to printing purchase order report information (standard and BPA release), this report prints information about components that are required for manufacturing the assembly at the Manufacturing Partner (MP) site and replenishment sales orders created for shipping the components to the MP for manufacturing the assembly. The information in this report is grouped by subcontracting orders, replenishments, allocations, and so on and is printed by subcontracting order.

For Full Outsourcing with External MP in process enabled organizations, the Subcontracting Order Report also displays the:

- Purchase order information for the outsourced products.
- Ingredients required for manufacturing the product at the MP organization.

Report Parameters

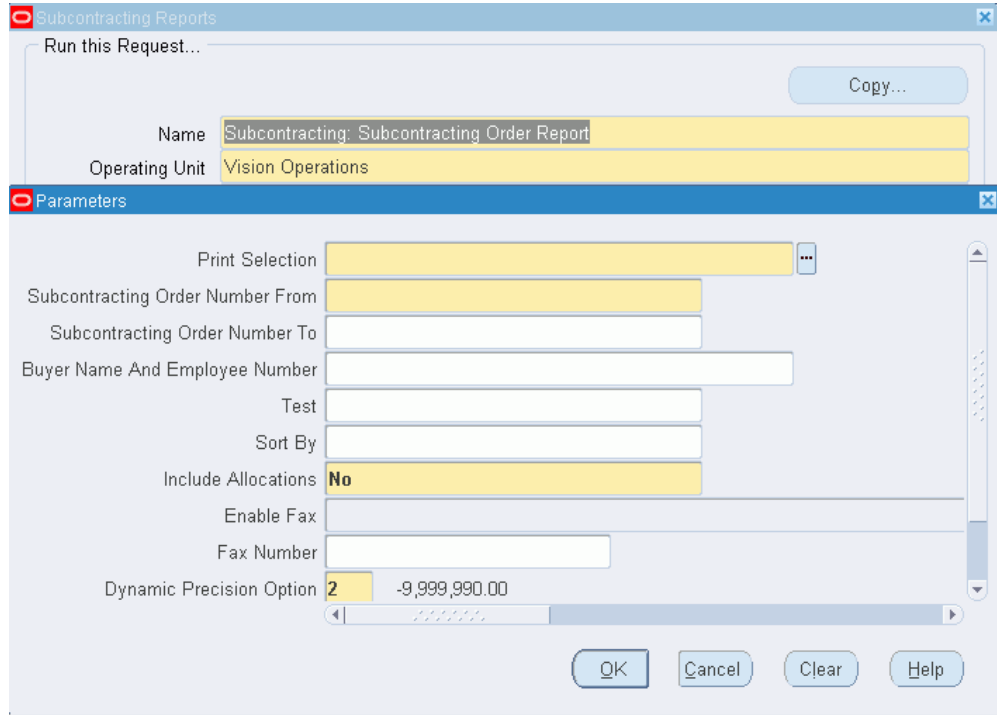
This table lists and describes the report parameters:

Parameter	Required	Default Value	List of Values
Operating Unit (OU)	Yes	Current OU	List of OU to which the user has access
Print Selection	Yes	-	All, Changed, and New
Subcontracting Order Number From	Yes	-	PO Numbers
Subcontracting Order Number To	No	-	PO Numbers
Buyer Name and Employee Number	No	-	Buyer/Employee Name
Test	No	-	Yes/No
Sort By	No	-	Buyer/PO Number
Include Allocations	Yes	No	Yes/No
Enable Fax	No	-	Yes/No

Parameter	Required	Default Value	List of Values
Fax Number	No	-	-
Dynamic Precision Option	Yes	2	Precision
Print Canceled Lines	No	Yes	Yes/No
Approved	No	-	Yes/No

To run the Subcontracting Order Report:

1. From the Subcontracting responsibility, navigate to the Subcontracting Reports window.
2. In the Name field, select Subcontracting: Subcontracting Order Report.
3. Enter an Operating Unit (required). The Subcontracting Parameters window appears.



4. Enter report parameters and click OK. The Contracting Reports window appears.
5. Enter report request parameters and click Submit. You can view the report output after the concurrent request completes.

Report Parameters	
Operating Unit Name	Vision Operations
Print Selection	All
Subcontracting Order Numbers From	5986
Subcontracting Order Numbers To	5986
Buyer Name	
Test	
Sort By	
Include Allocations	YES
Dynamic Precision Option	2
Print Cancel Lines	YES
Approved	YES

Vision Operations
475 Park Avenue
New York, NY 10022
AMERICA

Subcontracting Order	Subcontracting Order
Order Type	Subcontracting Order
Order Number	5986
Buyer	Stock, Ms. Pat
Line	1
Shipment / Release	1
Revision	0
Order Date	Apr 8, 2008
Created By	SNIKAM
Revision Date	
Received By	SNIKAM

Manufacturing Partner	MP01	Manufacturing Partner Site	OSA MP 10, SN Towers US
-----------------------	------	----------------------------	-------------------------------

Bill To	OE2 Location	Ship To	OE2 Location
	US		US

Customer Account Number	Manufacturing Partner Number	Payment Terms	Freight Terms	FOB	Transportation	Ship Via
	30026	Immediate	Due	Origin		
Confirm To / Telephone	Requester / Deliver To					
/						

Note

Line	Shipment	Outsourced Assembly Part Number / Description	Project / Task	Need By Date	Quantity	UOM	Unit Price	Tax	Amount (USD)
1	1	OSA11 / OSA11	/	Apr 11, 2008	11	Each	47.00	0.00	517.00

Line	Subcontracting Component Part Number / Description	Replenishment Type	Subcontracting Unit Price	Currency	Quantity	UOM
1	SYN11 / SYN11	Synchronized	19.00	USD	11	Each

Line	Subcontracting Component Replenishment Number	Scheduled Ship Date	Quantity	UOM
1	22	Apr 10, 2008	11	Each

Line	Subcontracting Component Part Number / Description	Replenishment Type	Subcontracting Unit Price	Currency	Quantity	UOM
2	PRE12 / PRE12	Pre-Positioned	17.00	USD	11	Each

Subcontracting: Confirmation Report (External Mode)

Use the Confirmation Report to reconcile inventory at the MP site at the end of the period. During the reconciliation process, the Original Equipment Manufacturer (OEM) prints the confirmation report in external mode to estimate the on-hand quantity and the consumption of components for each subcontracting order based on the simulated MP organization records. This report is sent to the MP for confirmation. The MP verifies records and returns the report with variations to the consumption. The OEM then adjusts the inventory in the simulated MP organization by making consumption adjustments and processes the variations. The adjustments increase the accuracy of the simulated records and reflect actual inventory at the MP for better planning and execution.

Confirmation Report in External Mode

At the end of the period, the OEM prints the Confirmation Report in External mode and sends it to the MP for component physical inventory in subcontracting. When a report

is printed in External mode, sensitive cost information does not appear on the report. One report is created for each MP. The MP fills in the on-hand quantity and actual consumptions of subcontracting components against subcontracting orders, along with reasons for any discrepancies. The MP then returns the report to the OEM for corrections.

The Confirmation Report prints:

- Estimated on-hand quantity by component based on the MP site simulation.
- Details of subcontracting orders that consumed components during a given period. Estimated on-hand and consumption quantities are based on bills of material quantities.
- Details of in-transit inventory (components shipped in OEM but not yet received in the MP organization based on the simulation).
- Details of sales orders not yet shipped.

This report does not print cost information.

Report Parameters

This table lists and describes the report parameters:

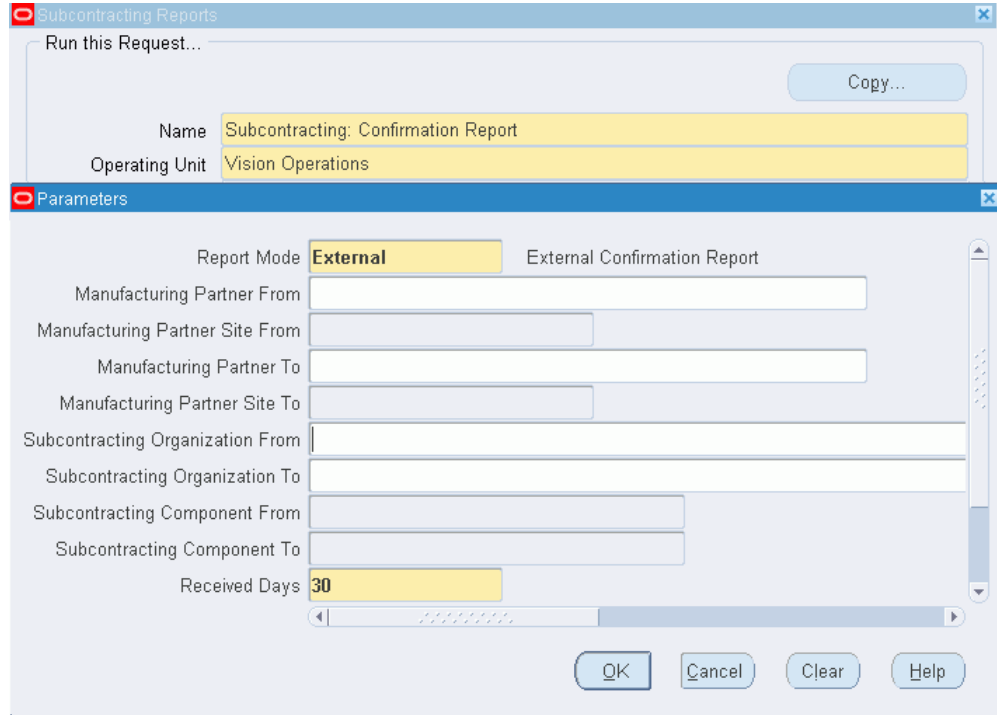
Parameter	Required	Default Value	List of Values
Report Mode	Yes	-	External or Internal
Manufacturing Partner From	No	-	All manufacturing partners
Manufacturing Partner Site From	No	-	All sites of the MP
Manufacturing Partner To	No	-	All manufacturing partners
Manufacturing Partner Site To	No	-	All sites of the MP
Subcontracting Organization From	No	-	All subcontracting organizations
Subcontracting Organization To	No	-	All subcontracting organizations

Parameter	Required	Default Value	List of Values
Subcontracting Component From	No	-	All subcontracting components
Subcontracting Component To	No	-	All subcontracting components
Received Days	Yes	10	-
Sort By	Yes	Supplier Site	Supplier Site (Item when the mode is set to External) This value is always Supplier Site
Currency Conversion Type	No	-	Defined types
Currency Conversion Date	No	-	Calendar

To run the report in internal mode, refer to Subcontracting Confirmation Report (Internal Mode), page 9-10.

To run the Subcontracting: Confirmation Report in External mode

1. From the Subcontracting responsibility, navigate to the Subcontracting Reports window.
2. In the Name field, select Subcontracting: Confirmation Report.
3. Enter an Operating Unit (required). The Parameters window appears.



4. Enter report parameters and choose OK. The Subcontracting Reports window appears.
5. Enter report request parameters and choose Submit. You can view the report output after the concurrent request completes.

Subcontracting Confirmation Report

Vision Operations

Period

Apr 20, 2008 - Apr 22, 2008

Report Date Apr 23, 2008
Page 1 of 2

Report Parameters		Mode	Internal	Operating Unit Name	Vision Operations
From Manufacturing Partner	To Manufacturing Partner			From Manufacturing Partner Site	
From Subcontracting Organization	To Subcontracting Organization			To Subcontracting Organization	
From Subcontracting Component	To Subcontracting Component			To Subcontracting Component	
Period	Apr-08	Sort By	Item		
Currency Conversion Type		Currency Conversion Date			

OEM Organization OE3 Organization

Subcontracting Component		PRE12	Subcontracting Component Description		PRE12	Project	Task	
Manufacturing Partner Name	Manufacturing Partner Site Name	Manufacturing Partner Organization	On Hand Quantity (Primary)	UOM	Subcontracting Price	Extended (Primary) Subcontracting Price	Item Cost	Extended Item Cost (Primary)
MP01	OSA MP	MP1	948.25	Each	Unit Price: 17.00 USD, Quantity: 948.25 Each	16,120.25 (USD)	13.00 (USD)	12,327.25 (USD)
Subcontracting Component Total						16,120.25	12,327.25	USD

Subcontracting Component		SYN11	Subcontracting Component Description		SYN11	Project	Task	
Manufacturing Partner Name	Manufacturing Partner Site Name	Manufacturing Partner Organization	On Hand Quantity (Primary)	UOM	Subcontracting Price	Extended (Primary) Subcontracting Price	Item Cost	Extended Item Cost (Primary)
MP01	OSA MP	MP1	78	Each	Unit Price: 19.00 USD, Quantity: 78 Each	1,482.00 (USD)	12.00 (USD)	936.00 (USD)
Subcontracting Component Total						1,482.00	936.00	USD

Subcontracting Component		SNSC002-P	Subcontracting Component Description		SNSC002-P	Project	Task

Subcontracting Confirmation Report

Vision Operations

Period

Mar 24, 2008 - Apr 23, 2008

Report Date Apr 24, 2008
Page 2 of 3

Subcontracting Organization	OE2 Organization	OE2 Location	US	Currency	USD
Manufacturing Partner	MP01	OSA MP	10, SN Towers	Manufacturing Partner Contact Counted By (Printed Name)	
				Signature	
				Signed Date	

Subcontracting Component	Description	Replenishment Type	Subcontracting Price	Currency	UOM	Project / Task	Estimated On Hand Quantity	Adjustments	UOM
PRE12	PRE12	Pre-Positioned	17.00	USD	Each	/	89.25		Each
Number	Subcontracting PO Number / Blanket PO Number	Line	Shipment / Release	Outsourced Assembly Part Number / Description	Requested Quantity	Adjustments	UOM	Discrepancy Reason	
5981		1	1 /	OSA11 / OSA11	11		Each		
5986		1	1 /	OSA11 / OSA11	11		Each		
6008		1	1 /	OSA11 / OSA11	13.75		Each		
6008		2	1 /	OSA11 / OSA11	25		Each		

Notes Replenishments Yet to Be Received

Replenishment	Sales Order	Line	PO	Line	Shipment / Release	Subcontracting Component	Quantity	UOM	Shipped Date	Expected Received Date	Received Yes / No
---------------	-------------	------	----	------	--------------------	--------------------------	----------	-----	--------------	------------------------	-------------------

Notes Received Replenishments Past Number of Days 30

Replenishment	Sales Order	Line	PO	Line	Shipment / Release	Subcontracting Component	Quantity	UOM	Shipped Date	Expected Received Date	Received Yes / No
20	1	5987	1	1 /	SYN11	11	Ea	Apr 9, 2008 5:07 AM	Apr 10, 2008 12:00 AM	2008	
21	1	5989	1	1 /	SYN11	11	Ea	Apr 10, 2008 10:22 AM	Apr 10, 2008 12:00 AM	2008	
22	1	5990	1	1 /	SYN11	11	Ea	Apr 10, 2008 10:22 AM	Apr 10, 2008 12:00 AM	2008	

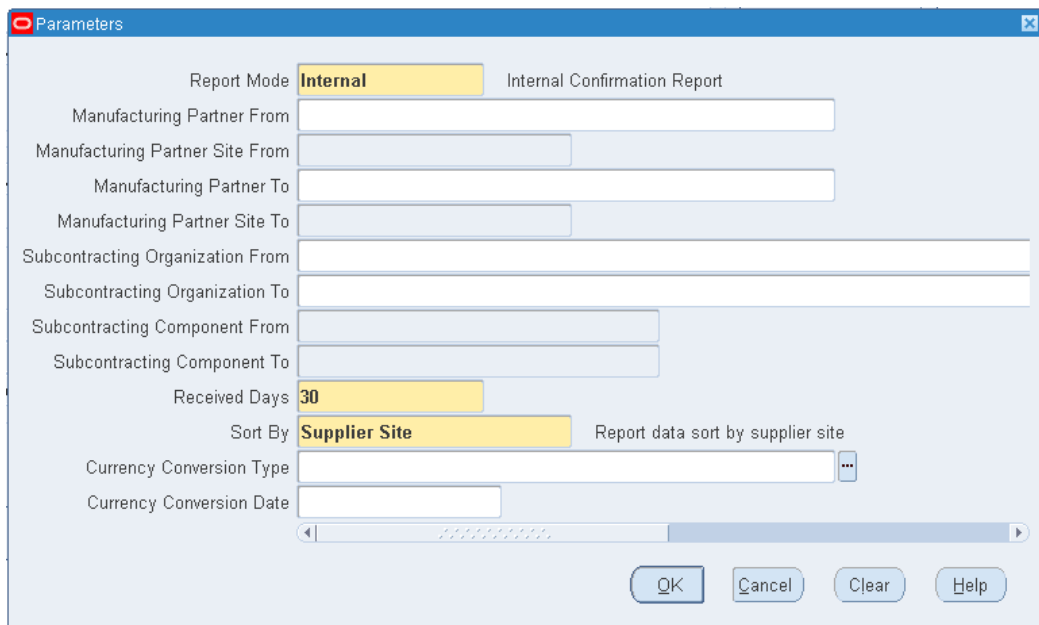
Adjustment columns in the report (Pages 2 and 3) are left blank. The MP is expected to enter the variations in these columns and return the report to the OEM.

Subcontracting Confirmation Report (Internal Mode)

The Subcontracting Confirmation Report (Internal Mode) is applicable only to Chargeable Subcontracting. The Confirmation Report run in internal mode, calculates on-hand inventory, and its inventory value is based on the standard in the OEM organization. Component inventory is calculated based on the simulated records of the MP organization, and the on-hand inventory is multiplied with its standard cost in the OEM organization to arrive at the inventory value. The report prints:

- Component on-hand inventory
- Component standard cost
- Inventory value

The Confirmation Report for internal mode is run the same as external mode (see: Subcontracting Confirmation Report (External Mode), page 9-5 for more details). The Report Mode parameter must be set to External. All other parameters remain the same.



The screenshot shows a "Parameters" dialog box with the following fields and values:

- Report Mode: **Internal** (highlighted in yellow), Internal Confirmation Report
- Manufacturing Partner From: [Empty text box]
- Manufacturing Partner Site From: [Empty text box]
- Manufacturing Partner To: [Empty text box]
- Manufacturing Partner Site To: [Empty text box]
- Subcontracting Organization From: [Empty text box]
- Subcontracting Organization To: [Empty text box]
- Subcontracting Component From: [Empty text box]
- Subcontracting Component To: [Empty text box]
- Received Days: **30** (highlighted in yellow)
- Sort By: **Supplier Site** (highlighted in yellow), Report data sort by supplier site
- Currency Conversion Type: [Empty dropdown menu]
- Currency Conversion Date: [Empty text box]

At the bottom right, there are four buttons: OK, Cancel, Clear, and Help.

Vision Operations

Period

Nov 19, 2006 - Dec 19, 2006

Report Parameters			
Mode	Internal	Operating Unit Name	Vision Operations
From Manufacturing Partner To Manufacturing Partner		From Manufacturing Partner Site To Manufacturing Partner Site	
From Subcontracting Organization To Subcontracting Component		From Subcontracting Organization To Subcontracting Component	
Period	Dec-06	Sort By	Supplier Site
Currency Conversion Type		Currency Conversion Date	

OEM Organization	OE3 Organization
------------------	------------------

Manufacturing Partner	Site	Organization	Project	Task
GBL_TP01	OSA	TP1		

Chargeable Subcontracting Component	Description	On Hand Quantity (Primary)	UOM	Chargeable Subcontracting Price				Extended (Primary) Chargeable Subcontracting Price (USD)	Item Cost (USD)	Extended (Primary) Item Cost (USD)
				Unit Price	Currency	Quantity	UOM			
SYN21	Chargeable Subcontracting SYN21	29	Each	9.20	EUR	29	Each	232.00	0.00	0.00
SYN22	Chargeable Subcontracting SYN22	29	Each	9.20	EUR	29	Each	232.00	0.00	0.00
Manufacturing Partner Total								464.00	0.00	USD
OEM Organization Total								464.00	0.00	USD
Chargeable Subcontracting Price Total								464.00	0.00	USD

The report shows on-hand inventory at the MP site and its value based on the standard cost of the component in the OEM organization.

Subcontracting: Cost Update Analysis Report

The Subcontracting Cost Update Analysis Report is applicable only to Chargeable Subcontracting. In the Subcontracting application, the price of components and outsourced assemblies is defined in such a way that gain or loss due to component sales is offset by the Purchase Price Variance (PPV) of assembly receipts. A change to the standard cost of either components or assembly creates an imbalance in gain or loss.

When costs of outsourced assemblies or subcontracting components are updated, you must create adjustment journal entries to eliminate unrealized gain or loss. The Cost Update Analysis Report shows the adjustment amount required for non-received subcontracting items, unshipped subcontracting components, and returned subcontracting components. You are responsible for creating adjustment accounting entries.

The Cost Update Analysis Report provides the OEM with a way to estimate the effect before the cost change. Based on this report, the OEM can adjust the general ledger accounts manually and then run a standard cost update. You can estimate the effect of the proposed standard cost by running the report with the Run parameter set to Before Cost Update.

Cost Update Analysis Report (Before Cost Update)

The Cost Update Analysis report with the Before Cost Update option selected prints the estimated effect of standard cost changes for both components and assemblies.

Report Parameters

This table lists and describes the report parameters:

Parameter	Required	Default Value	List of Values
Cost Type	Yes	-	All cost types
Subcontracting Organization From	No	-	All subcontracting organizations
Subcontracting Organization To	No	-	All subcontracting organizations
Run	Yes	Before Cost Update	Before Cost Update or At Period End Update
Currency Conversion Type	No	-	All defined conversion types
Currency Conversion Date	No	-	Calendar

To run the Cost Update Analysis Report before a cost update:

1. From the Subcontracting responsibility, navigate to the Subcontracting Reports window.
2. In the Name field, select Subcontracting: Cost Update Analysis Report.
3. Enter an Operating Unit (required). The Parameters window appears.

4. Enter report parameters and click OK. The Subcontracting Reports window appears.

- Enter report request parameters and click Submit. You can view the report output after the concurrent request completes.

Report Parameters			
Cost Type:	Current	Run:	Before cost update
Operating Unit Name:	Vision Operations	Currency Conversion Type:	
From Organization:	GBL OE4 Organization	Currency Conversion Date:	
To Organization:	GBL OE4 Organization		

Chargeable Subcontracting COST Update Analysis Un-Received
Subcontracting PO QTY
SEP-2006

Destination Organization: GBL OE4 Organization

Project:

Task:

Manufacturing partner Name	Manufacturing partner Site Name	Order No.	Line	Outsourced Assembly	Description	Unit Price	Currency	Converted Unit Price	Un-received Qty	UOM	Frozen, Before Update			Planned Cost Type OCT-2006			Adjustment Amount	Currency
											Unit Cost	Unit Unrealized gain/loss	Extended Unrealized gain/loss	Unit Cost	Unit Unrealized gain/loss	Extended Unrealized gain/loss		
GBL_TP08	OSA	637	8	1	GBL_OS A13	92	USD	92	10	Each	76	16	160	84	8	80	-80	USD
GBL_TP08	OSA	638	2	1	GBL_OS A13	92	USD	92	10	Each	76	16	160	84	8	80	-80	USD
GBL_TP08	OSA	639	2	1	GBL_OS A13	92	USD	92	200	Each	76	16	3200	84	8	1600	-1600	USD
Organization Total																	-1760	USD
Grand Total																	-1760	USD

Chargeable Subcontracting COST Update Analysis Un-Shipped
Replenishment SO QTY
SEP-2006

Ship from Organization: GBL OE4 Organization

Project:

Task:

Sales Order No.	Line	Chargeable Subcontracting Component	Description	Unit Chargeable Subcontracting Price	Currency	Converted Unit Price	Un-shipped Qty	UOM	Frozen, Before Update			Planned Cost Type OCT-2006			Adjustment Amount	Currency	
									Unit Cost	Unit Unrealized gain/loss	Extended Unrealized gain/loss	Unit Cost	Unit Unrealized gain/loss	Extended Unrealized gain/loss			
343	1	GBL_SHIK YU_SYN14	GBL_SHIKY U_SYN14	13	USD	13	20	Ea	11	2	40	15	-2	-40	-80	USD	
304	1	GBL_SHIK YU_SYN14	GBL_SHIKY U_SYN14	13	USD	13	400	Ea	11	2	800	15	-2	-800	-1600	USD	
Organization Total																-1650	USD
Grand Total																-1650	USD

Pages 2 and 3 show the effect of assembly standard costs, and page 3 shows the effect of component costs. You must make general ledger entries based on the value of the cost effect.

To run the Cost Update Analysis Report at the end of a period:

The Cost Update Analysis Report run at the end of a period prints the effect of component returns due to the change in cost. The standard cost of the component can be different at the time the component is shipped to the MP and at the time when returns from the MP are realized. This difference causes imbalances in unrealized gain

and loss, and it must be estimated and adjusted at the end of the period.

The Cost Update Analysis Report at period end is run similarly to the Costs Update Analysis Report before a cost update. In the Parameters window, select **At period end** in the Run field.

Report Parameters			
Cost Type:	Current	Run:	At period end
Operating Unit Name:	Vision Operations	Currency Conversion Type:	
From Organization:	GBL OE4 Organization	Currency Conversion Date:	
To Organization:	GBL OE4 Organization		

Chargeable Subcontracting COST Update Analysis Returned Chargeable Subcontracting Component Qty SEP-2006

Ship from Organization: GBL OE4 Organization Currency: USD Project: Task:

Sales Order No.	Line	Chargeable Subcontracting Component	Description	Returned Qty	COGS at Salse Order Issue MMT		COGS Reversed by RMA		Adjustment Amount	
					Unit Cost	COGS Amount	Unit Cost	COGS Amount		
348	1	GBL_SHIKYU_SYN14	GBL_SHIKYU_SYN14	5	11	55	15	75	20	
									Organization Total	20
									Grand Total	20

You must make general ledger entries to offset unrealized gain or loss.

Subcontracting For Seiban-Based Manufacturing

This chapter covers the following topics:

- Overview of Seiban-Based Manufacturing
- Seiban-Based Manufacturing Setup
- Organization Setup
- Defining Cost Groups for MP Organizations
- Defining Seiban Numbers
- Organization Items
- Seiban-Based Subcontracting Planning
- Seiban-Based Subcontracting Execution

Overview of Seiban-Based Manufacturing

Oracle Subcontracting supports subcontracting in Seiban-Based Manufacturing. In Seiban-Based Manufacturing, outsourced assemblies and components are planned based on Seiban numbers (project numbers) using Advanced Supply Chain Planning (ASCP) and hard pegging. The subcontracting process is also executed using locator-controlled OEM and MP organizations and Seiban numbering.

The Subcontracting feature can be used in both discrete and Seiban-Based Manufacturing environments. The following sections describe the additional setup and execution steps required to use subcontracting in Seiban-Based Manufacturing.

Seiban-Based Manufacturing Setup

The setup steps described in the chapter *Setting Up for Discrete Subcontracting*, apply to Seiban-Based Manufacturing. See, *Overview of Setting Up*, page 3-2.

The following sections are for planning components and executing the subcontracting process using Seiban (project) numbers:

- Organization Setup, page 10-2
- Defining Cost Groups for MP Organizations, page 10-6
- Defining Seiban Numbers, page 10-6
- Organization Items, page 10-12

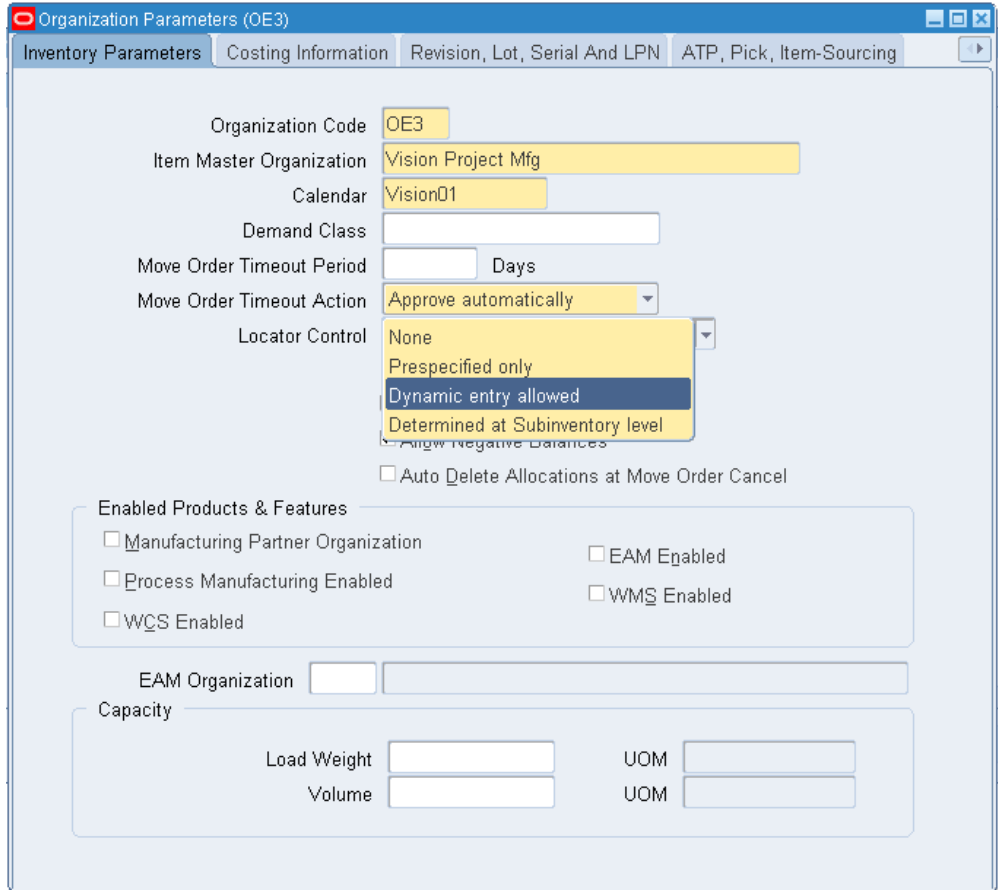
Organization Setup

Inventory Parameters

For Seiban-Based Manufacturing, Locator Control should be defined as dynamic entry allowed in Inventory parameters for both the OEM and MP organizations.

To set up Seiban inventory parameters:

1. From the Inventory responsibility, navigate to the Organization Parameters window.



You use locator control to identify project inventory.

2. Save your work.

Project Manufacturing Parameters:

Define the OEM and MP organizations as Project Manufacturing Organizations by adding Organization Classification as Project Manufacturing for both.

1. From the Inventory responsibility, navigate to the Organization window.

Organization

Name: GBL OE5 Proj Organization Type: Plant

Dates: From: 23-OCT-2005 To:

Location: GBL OE5 Proj Location Internal or External: Internal

Location Address: Japan (International).123-4567.Dummy.....Japan

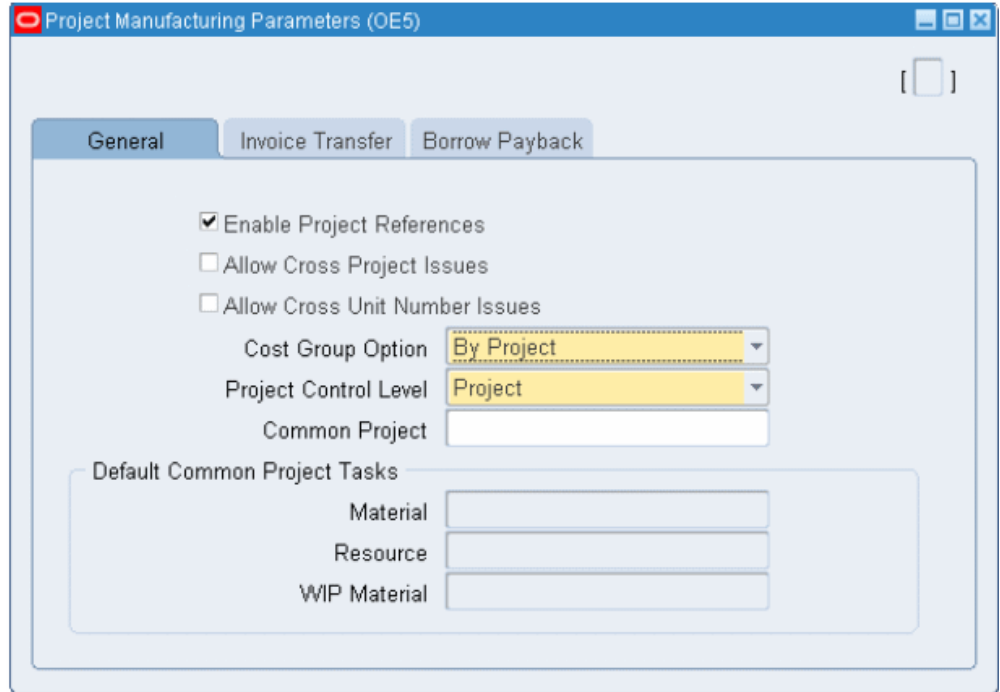
Internal Address: []

Organization Classifications

Name	Enabled
HR Organization	<input checked="" type="checkbox"/>
Inventory Organization	<input checked="" type="checkbox"/>
Project Manufacturing Organization	<input checked="" type="checkbox"/>

Others

2. Navigate to the Project Manufacturing Parameters window, and click the General tab.
3. Select the Enable Project References indicator.
4. Set Project Control Level to Project.

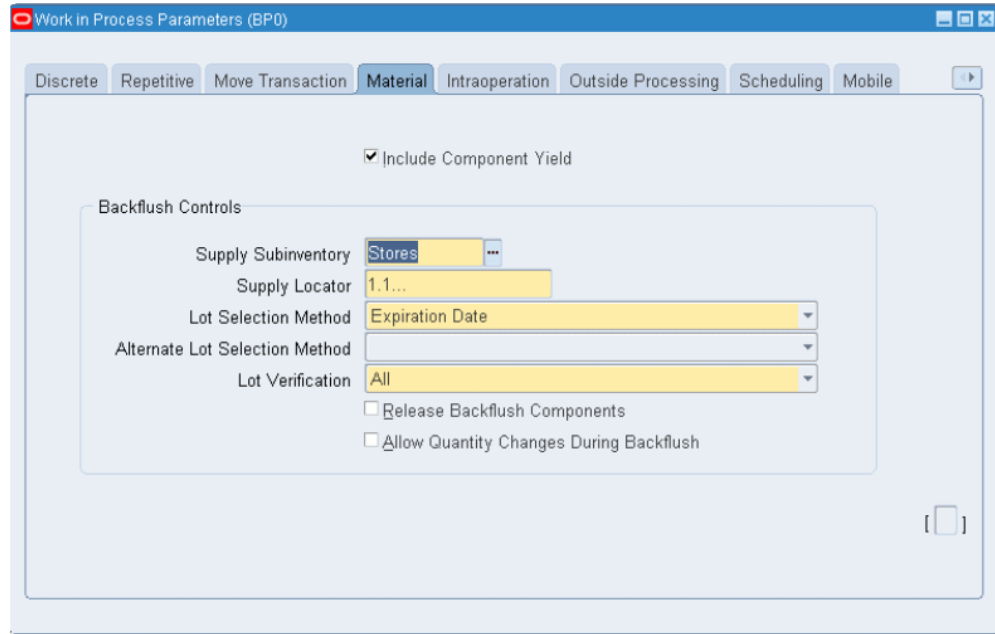


5. Save your work.

To define WIP parameters:

Seiban-Based Manufacturing uses locator-controlled subinventories for inventory transactions. To support the simulation of discrete jobs in the MP organization, supply subinventory should be a locator-controlled subinventory. Interlock Manager creates WIP jobs with this subinventory as component subinventory for back flushing. The Auto Receive concurrent program also receives components into this subinventory for simulation.

1. Navigate to the Work in Process Parameters window.
2. Select the Material tab and associate Locator Controlled Subinventory as Supply Subinventory. In addition, associate Supply Locator leaving Project/Task as blank. (For details about Locators in PJM, refer to the *Oracle Project Manufacturing User's Guide*.)



3. Save your work.

Defining Cost Groups for MP Organizations

You must define Cost groups and associate a WIP accounting class (defined at the time of creating the WIP parameters for MP organizations). This action is required for simulating WIP jobs by project numbers, and it is part of the Project Manufacturing (PJM) setup.

See: *Oracle Project Manufacturing User's Guide*

The MP organization is a zero-cost organization, and transfer to general ledger is set to No. Cost group setup is required to facilitate the simulation of assembly manufacturing in the MP organization using discrete jobs and project numbers. This setup does not have financial implications.

To define cost groups for MP organizations:

1. From the Cost Management responsibility, navigate to the Cost Groups window.
2. Define the cost group with Type set to Inventory. You can use any existing cost group.

Cost Groups (OE5)

Cost Group: CG-87504 Type: Inventory

Description: _____

Inactive On: _____

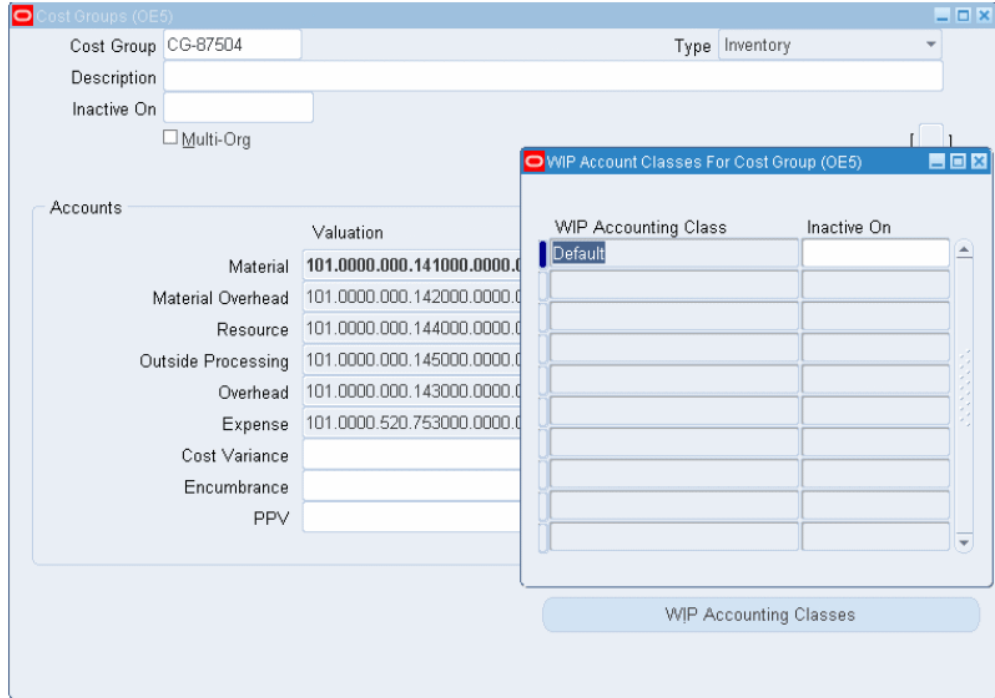
Multi-Org []

Accounts

	Valuation	Payback Variance
Material	101.0000.000.141000.0000.000.0000.000	_____
Material Overhead	101.0000.000.142000.0000.000.0000.000	_____
Resource	101.0000.000.144000.0000.000.0000.000	_____
Outside Processing	101.0000.000.145000.0000.000.0000.000	_____
Overhead	101.0000.000.143000.0000.000.0000.000	_____
Expense	101.0000.520.753000.0000.000.0000.000	_____
Cost Variance	_____	_____
Encumbrance	_____	_____
PPV	_____	_____

WIP Accounting Classes

3. Click WIP Accounting Classes to define WIP Accounting Classes for this cost group (use the same WIP accounting class defined at the time of defining WIP Parameters of MP Organization). The WIP Account Classes for Cost Group window appears.



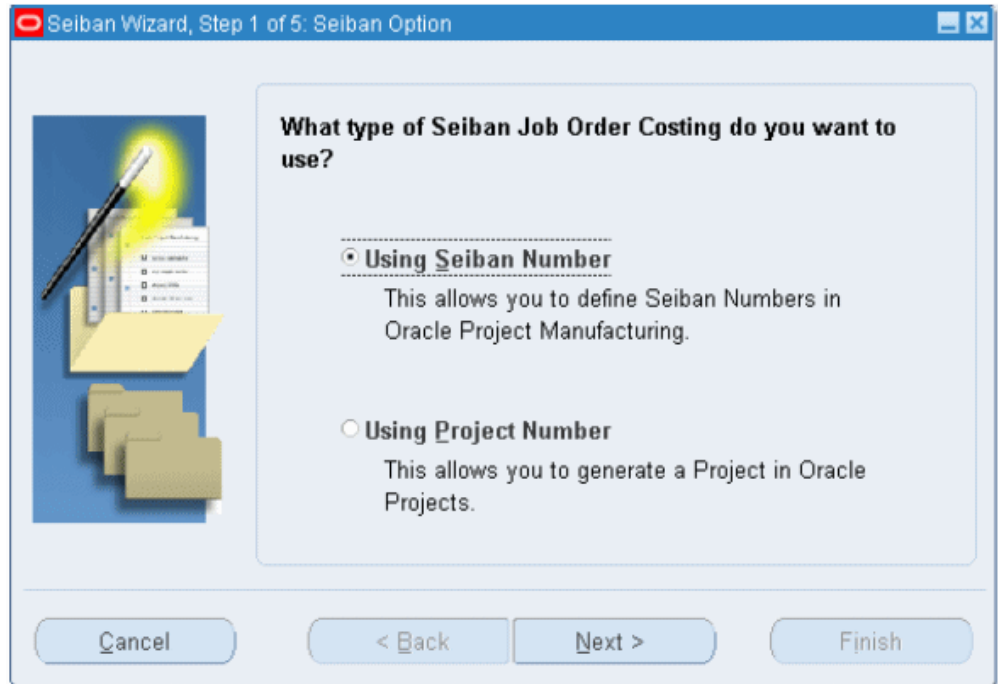
4. Save your work.

Defining Seiban Numbers

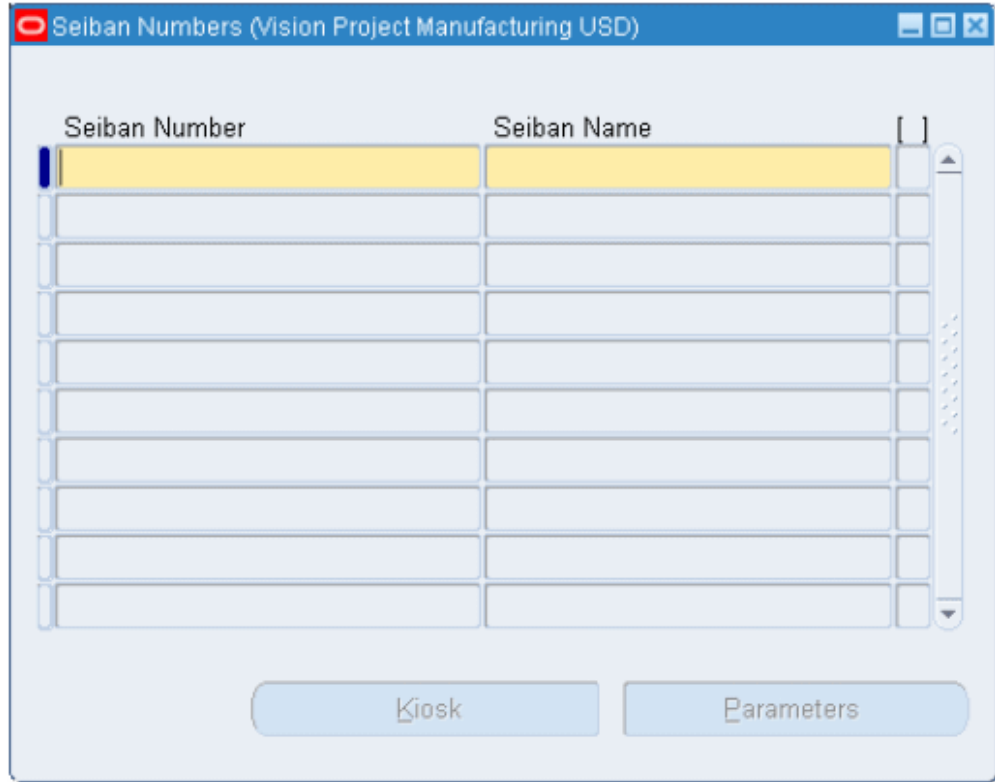
Before you plan and execute subcontracting in Seiban-Based Manufacturing environments, you define project numbers.

To define Seiban numbers:

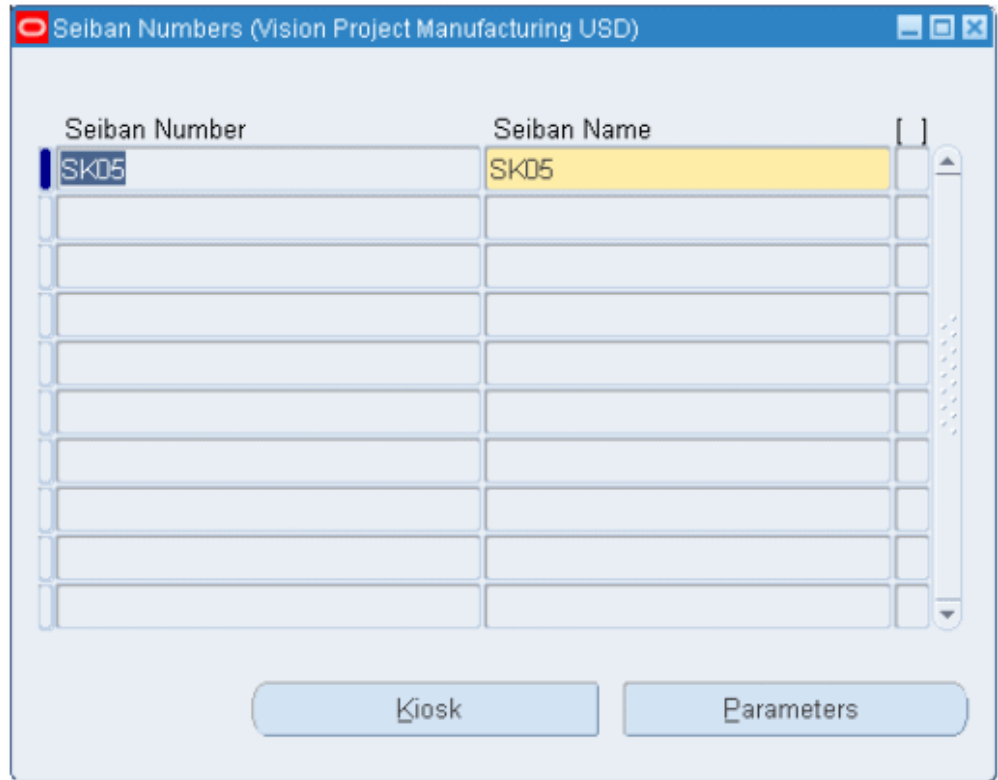
1. From the Project Manufacturing responsibility, navigate to the Seiban Wizard.



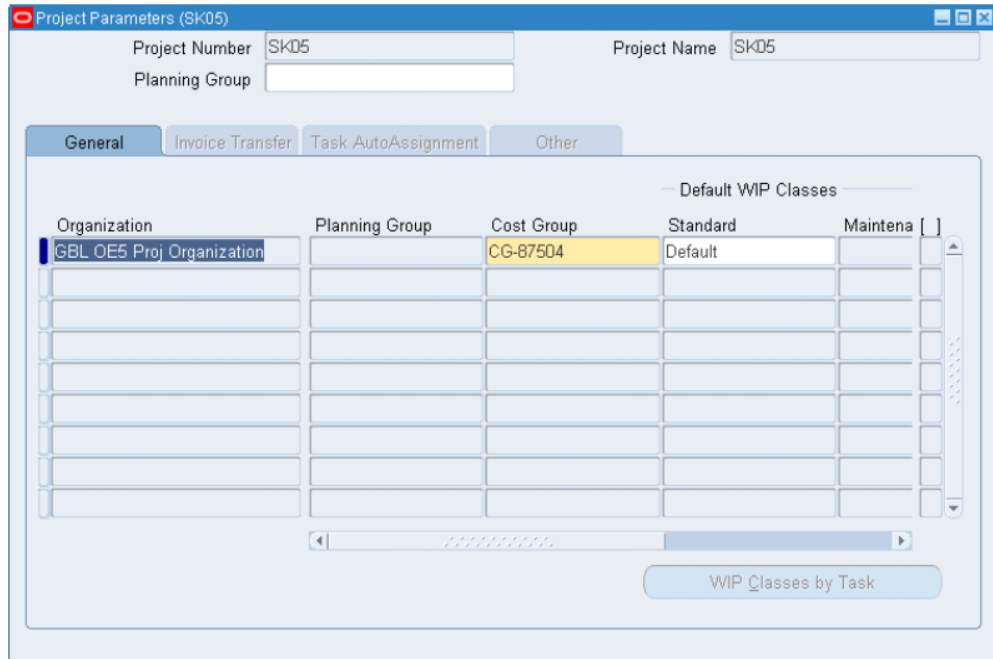
2. Select the Using Seiban Number indicator and click Next. The Seiban window appears.



3. Enter Seiban (project) Numbers.



4. Save your work.
5. Click Parameters to define the parameters for the Seiban Number (project). The Project Parameters window appears.



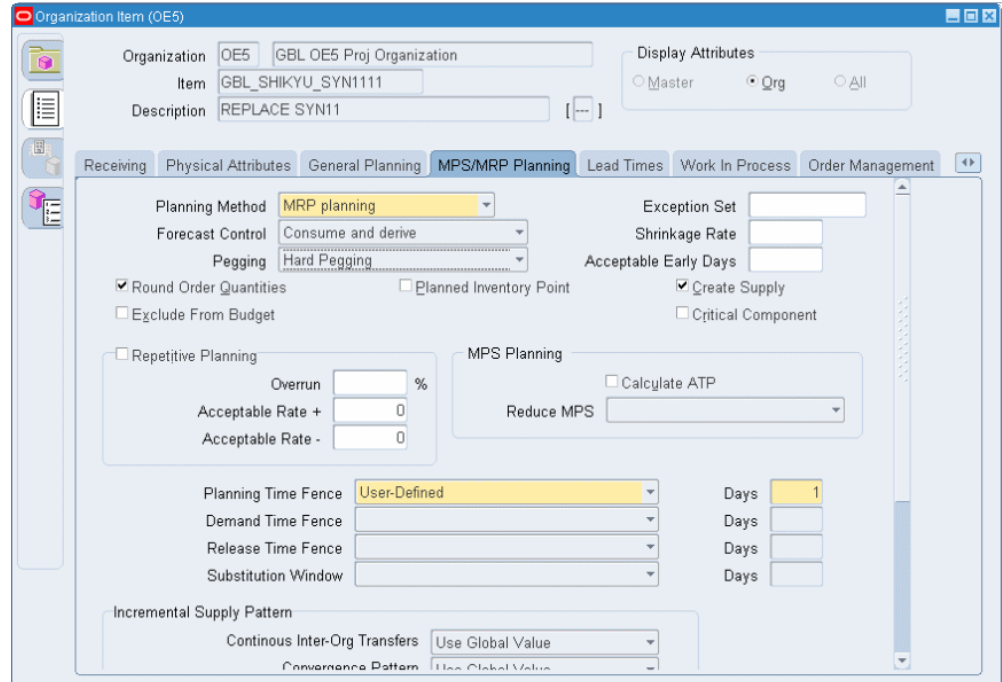
6. Select the General tab and enter Inventory Organizations that use the project numbers. In this scenario, the OEM and MP organizations should be included.
7. Associate a cost group, which was defined in the previous procedure.
8. Associate a WIP Accounting Class. This value should be same as the WIP accounting class associated with the WIP parameters of the MP organization.
9. Save your work.

Organization Items

In Seiban-Based Manufacturing, outsourced assemblies and components must be defined as *hard pegged* items for planning and execution using Seiban numbers.

To define items as hard pegged:

1. From the Inventory responsibility, navigate to the Organization Item window.
2. Select the MPS/MRP Planning tab, and set the attribute Pegging to Hard Pegging. This information is used to for planning the demand and supply by project numbers.



3. Save your work.

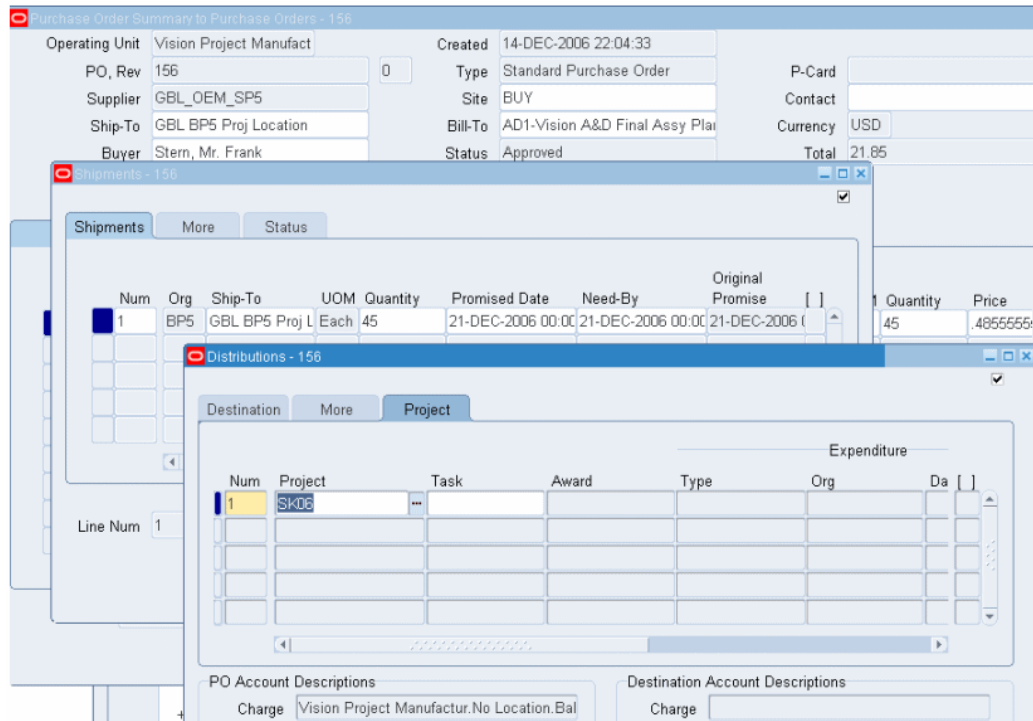
All outsourced assemblies and subcontracting components should be defined as hard pegged in both OEM and MP organizations.

Seiban-Based Subcontracting Planning

The steps and processes of planning are similar to those of discrete manufacturing.

For Seiban-Based Manufacturing, the differences are:

- Forecast must be defined by project.
- ASCP plans the components and assemblies by project. Demand and supply are considered and calculated by project.
- Planned orders are created by project.
- Planned orders are outsourced as assemblies and prepositioned components. They are transferred to purchasing as purchase requisitions. The purchase orders are created with project as shipment lines.
- For outsourced assemblies, the purchase order is called as a subcontracting order, and the project number is stamped in the purchase order line shipment distributions.



Note: Subcontracting Orders and Replenishment Purchase Orders of the prepositioned components should always have one Shipment and Distribution for every purchase order line. Multiple shipments and distributions are not supported. When you create subcontracting orders and replenishment purchase orders manually, you can create multiple purchase order lines. However, only one shipment and distribution is allowed for each purchase order line. Interlock Manager discards purchase order lines if it has more than one shipment or distribution for each PO line, and it will not process them.

For more information on concurrent programs, see *Overview of Subcontracting Concurrent Programs*, page 6-1.

Seiban-Based Subcontracting Execution

The process for executing Subcontracting in the Seiban-Based Manufacturing environment is the same as for discrete manufacturing.

Interlock Manager

The Interlock Manager concurrent request picks up subcontracting orders and processes them by creating WIP jobs in the MP organization. Interlock Manager also creates replenishment purchase and sales orders, and it allocates the replenishment sales orders according to subcontracting order requirements in the same way described in the

Subcontracting Process chapter of this guide.

- Work In Process (WIP) jobs are created with Seiban (project) references
- Replenishment purchase orders and replenishment sales orders are created with Seiban (project) references
- Allocations are made with the same conditions of shipment dates and price of replenishment order, and the project number must be the same for subcontracting orders and replenishment orders for allocation in the Seiban environment.

Auto Receive Components

Same as Discrete Manufacturing

Reconciliation Manager

Same as Discrete Manufacturing

Process Receiving Transactions

Same as Discrete Manufacturing

Subcontracting Workbench

Workbench functionality is the same as for Discrete Manufacturing. All search options can be executed with a Seiban (project) number. The project number is available in additional search options, and you can personalize the search and results to view them by project number.

Subcontracting Accounting

In Seiban-Based Manufacturing, accounting is the same as discrete manufacturing. Concepts and posting of accounts remain the same.

Reports

Seiban (project) numbers are printed with all the reports, and the remaining features and functions are the same as for Discrete Manufacturing.

For more information on subcontracting concurrent programs, see *Overview of Subcontracting Concurrent Programs*, page 6-1.

For more information on subcontracting reports, see *Reports Overview*, page 9-1.

Subcontracting for Process Manufacturing

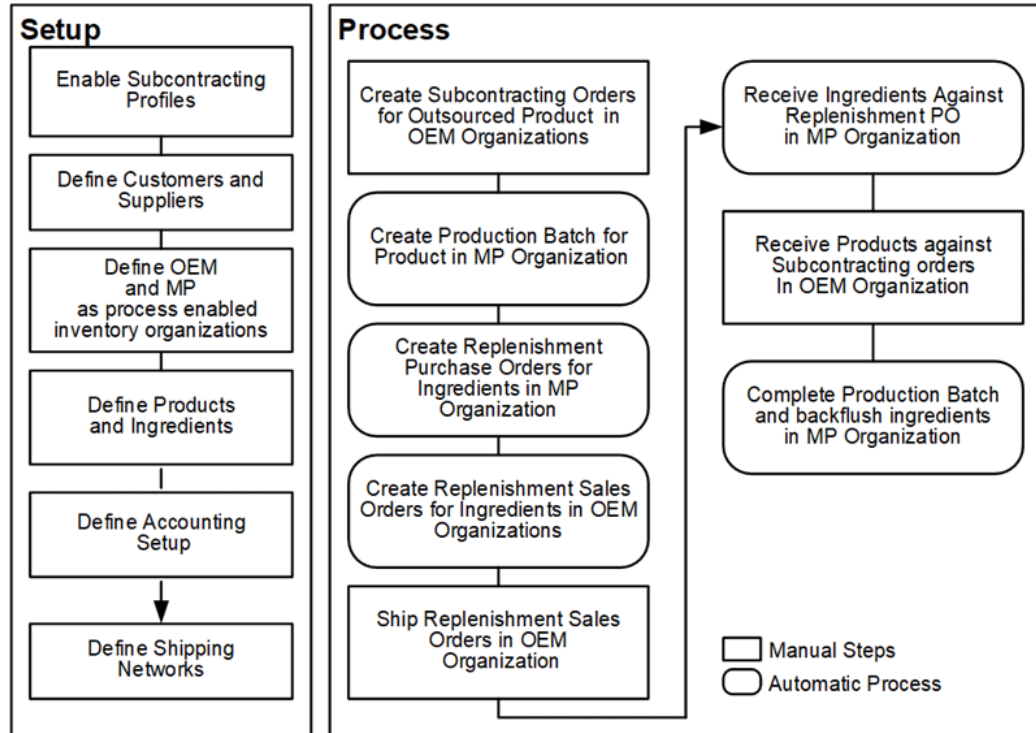
This chapter covers the following topics:

- Overview of Full Outsourcing for Process Manufacturing
- Subcontracting Setup for Process Manufacturing
- Subcontracting Planning for Process Manufacturing
- Subcontracting Execution for Process Manufacturing
- Full Outsourcing Accounting Process for Process Manufacturing

Overview of Full Outsourcing for Process Manufacturing

Oracle Subcontracting supports full outsourcing with external manufacturing partners in process enabled inventory organizations.

The following diagram illustrates the setup and process flow for Full Outsourcing with External MP Organizations for process manufacturing:



The key setup steps for subcontracting for process manufacturing are:

1. Enable subcontracting profile options.
2. Define Customers and Suppliers.
3. Define OEM and MP organizations and process enables inventory organizations, and associate customers and suppliers you have defined.
4. Define ingredients and products in both the MP and OEM organizations.
5. Define accounting set up.
6. Define shipping networks between the OEM and MP, and enable subcontracting relationships.

The subcontracting process for process manufacturing includes the following steps:

1. Begin by creating a purchase order (referred to as Subcontracting Order) for buying the outsourced product from the MP.
2. Create a production batch in the MP Organization against the subcontracting order automatically, using the Interlock Manager.
3. Create replenishment purchase orders in the MP Organization for procuring components from the OEM. Replenishment Purchase Orders (RPOs) are

automatically created for synchronized components using the Interlock Manager. For pre-positioned components you can manually create RPOs, or use ASCP to create RPOs automatically.

4. The Interlock Manager also creates replenishment sales orders in the OEM Organization for shipping ingredients from the OEM to MP automatically.
5. Ship-confirm replenishment sales orders in the OEM Organization to ship ingredients to the MP.
6. Run the Auto Receive Components concurrent program to automatically receive the ingredients in the MP.
7. Receive the outsourced products in the OEM Organization against subcontracting orders created in Step 1.
8. Run the Process Receiving Transactions concurrent program. This step completes the production batch, backflushes the ingredients, and reduces the inventory of the outsourced product by an appropriate amount in the MP organization.

Subcontracting Setup for Process Manufacturing

The setup steps described in the chapter Setting Up Subcontracting for Discrete Manufacturing, apply to full outsourcing with external MP for Process Manufacturing, the difference being that both the OEM and the MP are set up as process enabled inventory organizations. Define the OEM and MP organizations as Process Manufacturing Organizations by adding Organization Classification as Process Manufacturing for both.

To review the set up steps for discrete manufacturing, see, Overview of Setting Up, page 3-2

Setting Profile Options:

In the System Profile Values form, query for the profile JMF: Enable Subcontracting", and set this profile option to Yes at site level.

See: Setting Profile Options, page 3-7.

Setting Up OEM Organizations:

The Original Equipment Manufacturer (OEM) is the manufacturing company that owns the product designs it sells. The OEM manages its supply chain whether the manufacturing processes are internal or outsourced to Manufacturing Partner (MP). The OEM organization is the organization that buys an outsourced product, and ships subcontracting ingredients to the MP.

For Full Outsourcing with External MP in process enabled organizations, define and set

up the Original Equipment Manufacturer (OEM) as process manufacturing enabled:

1. From the Inventory responsibility, navigate to the Organization window.
2. Define the OEM organization as an inventory organization. Select the Location, and Location Address of the country for which you are setting up Full Outsourcing.
3. Select Others. The Additional Organization Information window appears.
4. Select Inventory Information to view the Organization Parameters window.
5. Select the Process Manufacturing Enabled check box.
6. Select the Costing Information tab.
7. For full outsourcing, set the Costing Method of the OEM to Standard.
8. Since the OEM is a regular inventory organization, select Yes for Transfer to GL to post all accounting transactions to the general ledger.
9. Save your work.

Setting Up MP Organizations:

A Manufacturing Partner (MP) is a business that performs a contract manufacturing function for the OEM. It receives intermediate products from an OEM or from other trading partners on which it perform additional work.

For Full Outsourcing with External MP in process enabled organizations, define and set up the MP as process manufacturing enabled:

1. Navigate to the Organization window.
2. Define the MP organization as an inventory organization. Select the Location and the Location Address of the country for which you are setting up full outsourcing for process manufacturing organizations.
3. Click Others. The Additional Organization Information window appears.
4. Select Inventory Information. The Organization Parameters window appears.
5. In the Organization Parameters window, check the Manufacturing Partner Organization indicator to select the Manufacturing Partner Type.
6. Select Manufacturing Partner Type as External.
7. Select the Process Manufacturing Enabled check box.
8. Select the Costing Information tab.

9. Select No for Transfer to GL if the MP organization type is external, as the MP organization is created for simulation and the accounting transactions for this organization should not be transferred to the general ledger.

10. Save your work.

For additional information about setting up an Organization, see:

- Defining Inter-Organization Information, *Oracle Inventory User's Guide*
- Organization Parameters Window, *Oracle Inventory User's Guide*

To enable the automatic creation of replenishment purchase orders and automatic receiving of components in the MP organization, set up the receiving options in the MP organization. See: To set up receiving options for MP organizations in Setting up Manufacturing Partner Organizations, page 3-11.

Setting Up Product Development Parameters for Process Enabled Organizations:

To use the full outsourcing solution for process enabled organizations, you will need to set up parameters for new organizations, or query and modify parameters for existing organizations.

1. Navigate to the Product Development Parameters window to enter parameters for new organizations.

Navigate to the Find Product Development Parameters window to enter parameters for existing organizations.

2. To enter the required parameter information see the topic Setting Up Parameters, *Oracle Process Manufacturing Product Development User's Guide*.

Setting Up Formulas, Recipes, and Routings:

To use the full outsourcing solution for process enabled organizations, you will need to create and set up:

- Formulas in the OEM or MP organization for the outsourced product and include the ingredients required to produce that outsourced product.
- Recipes without routing in the OEM or MP organization.
- Validity rules for the recipes that you create. Rules should be valid for the MP to create production batches in the MP organization.

To set up a formula for full outsourcing external organizations for process manufacturing

Create a formula in the OEM or MP organization for the outsourced product and

include the ingredients required to produce the product.

1. Navigate to the Formula Details window.

Enter information as described in the topic *Entering Formula Details, Oracle Process Manufacturing Product Development User's Guide*.

2. In the Products tab of the Formula Details form, set yield type to incremental for the product.
3. In the Ingredients tab of the Formula Details form, set the consumption type to incremental for the ingredient.

To set up a recipe for full outsourcing external organizations for process manufacturing

1. Navigate to the Recipe Details window.

Enter information as described in the topic *Entering Recipe Details, Oracle Process Manufacturing Product Development User's Guide*.

2. Create a recipe without routing in the OEM or MP organization.

To set up a validity rule for a recipe for full outsourcing external organizations for process manufacturing

1. Navigate to the Recipe Validity Rule Details window.

Enter information as described in the topic *Editing Recipe Validity Rules, Oracle Process Manufacturing Product Development User's Guide*.

2. Create a global or organization specific validity rule for the recipe you have created.

Setting Up Process Execution Parameters:

Ensure that you validate that the supply subinventory, and yield subinventory are defined if the organization is Manufacturing Partner enabled.

1. Navigate to the Process Execution Parameters window.

See: *Setting Up Parameters, Oracle Process Manufacturing Process Execution User's Guide*.

2. In the Process Execution Parameters window, search for the MP organization
3. In the Inventory Transactions tab, enter the values for the Supply Subinventory and Yield Subinventory field values. If the subcontracting product and ingredient items are locator controlled, enter Supply Locator and Yield Locator values.

Defining Customers and Suppliers:

Full outsourcing with external MPs in process enabled inventory organizations follows the same setup steps for defining customers and suppliers. The MP acts as both supplier and customer, and the OEM acts as a supplier. Define the OEM as a supplier and supplier site, and the MP as a customer and customer site as well as a supplier and supplier site. You will then associate these roles in the OEM and MP organizations, respectively. See: *Defining Customers and Suppliers*, page 3-18.

Associating Customers and Suppliers:

Full outsourcing with external MPs in process enabled inventory organizations follows the same setup steps for associating customers and suppliers. For the OEM organization, associate the supplier and supplier site. For the MP organization, associate the customer and customer site, as well as the supplier and supplier site. See: *Associating Customers and Suppliers*, page 3-20 *Associating Customers and Suppliers*.

Setting Up Order Management Transaction Types:

Set up the following in Oracle Order Management:

- Define new transaction type for AR.
- Define new transaction source.
- Define price list.
- Define document sequence for new created order management type.
- Assign Document sequence to new created order management type.

See the *Oracle Order Management User's Guide* for detailed information.

Full outsourcing with external MPs in process enabled inventory organizations follows the same setup steps to set up a separate order type for creating replenishment sales orders for component shipments to the MP. See: *Setting Up Specific Order Management Transaction Types for Subcontracting*, page 3-36.

Setting up Shipping Networks:

Use the Subcontracting tab in the Shipping Network window and select the:

- Subcontracting Type as Full.
- Default Order Type as OM truncation type defined.

Ensure you update the relevant accounts in the Shipping Networks window.

Full outsourcing with external MPs in process enabled inventory organizations follows the same setup steps to define inventory shipping networks between the OEM and the

MP. See: Setting Up a Shipping Network, page 3-45.

Setting Up Standard Costs of Ingredients and Products:

Set up the standard costs of subcontracting ingredients and outsourced product in the OEM organization. The MP organization is a simulation organization, and accounting transactions are not transferred to GL. Therefore, no costing setup is required in the MP organization.

To setup standard cost of subcontracting ingredients in the OEM organization

Subcontracting ingredients can be purchase items or product items. The cost is set up like any standard ingredient.

To setup standard cost of outsourced products in the OEM organization

Standard cost of the outsourced product must include material cost and the added value. While setting up the cost, include ingredient cost as material cost and added value as OSP (define an OSP resourced in the OEM organization and define an OSP charge as added value) charges and run cost update.

1. Navigate to the Item Costs window.
2. Enter information as given in the topic Defining Standard Item Costs in the *Oracle Process Manufacturing Cost Management User's Guide*.

Setting Up Subcontracting Accounting:

To set up accounting for full outsourcing for process enabled inventory organizations, perform the following setup in Oracle Subledger Accounting (SLA):

1. Assign source, Outsource Manufacturing Flag to the event class Shipments and Deliver to or Return from Inventory.
2. Create new account derivation rules populating the subcontracting in transit account for the journal line type, DCOGS, COGS and PPV.
3. Assign the new account derivation rules defined for DCOGS to the journal line definition, Sales Order Issue of event class Shipments.
4. Assign the new account derivation rules defined for COGS to the journal line definition, COGS Recognition of event class Shipments.
5. Assign the new account derivation rules defined for PPV to the journal line definition, PO Receipt of event class Deliver to or Return from Inventory.
6. Assign the journal line definition to Application Accounting Definition.
7. Assign Application Accounting Definition to Subledger Accounting Method.
See the following topics in *Oracle Subledger Accounting Implementation Guide*:

- Subledger Accounting Options Setup Overview
- Journal Lines Definitions
- Account Derivation Rules
- Application Accounting Definitions
- Subledger Accounting Methods

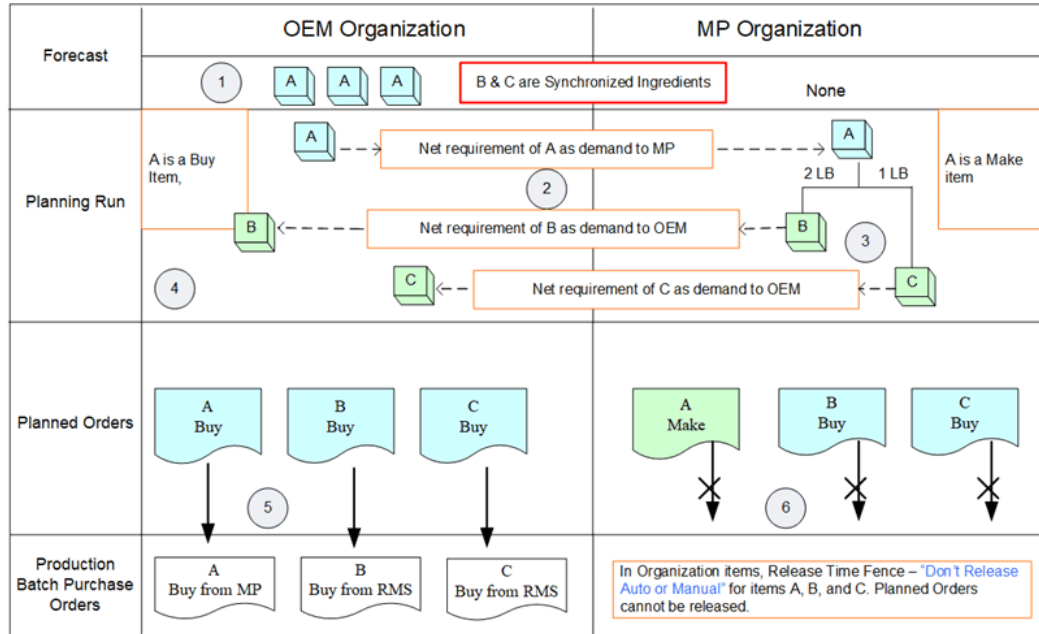
Subcontracting Planning for Process Manufacturing

For the full outsourcing with external organization subcontracting solution for process manufacturing, Advanced Supply Chain Planning (ASCP) plans the ingredient requirements in both OEM and MP organizations, and uses organization definitions and customer-supplier associations you have defined as a part of the subcontracting setup steps. ASCP nets the demand and supply and creates planned orders for the ingredients and products in both the OEM and MP organizations. The setup for ASCP is the same as those of the standard planning setup for items. No special setups are required for subcontracting. See the Overview of Subcontracting Planning for Discrete Manufacturing, page 5-1 for a summary of how to set up and run ASCP.

The following topics describe the subcontracting planning process in process enabled inventory organizations if the ingredients are synchronized, prepositioned or both:

Outsourced Product with Synchronized Ingredients

In this scenario, the outsourced product is A and its ingredients, B and C, are synchronized ingredients.



The Planning process starts when:

1. The forecast is defined for an outsourced product in the OEM organization, if the outsourced product A is an independent demand item. If A is a dependent demand item, the demand comes from its parent product.
2. The planning run considers the forecast or dependent demand of A, calculates the net requirements of A in the OEM organization, and creates a buy planned order for product A in the OEM organization. A is a buy item and is sourced from the MP organization, based on the sourcing rule and organization supplier-customer associations. The planned order demand of A in the OEM organization is transferred to the MP organization as demand of A.
3. In the MP organization, A is a make item, demand is netted, and a make planned order is created for Product A. Ingredients B and C requirements are calculated, netted, and buy planned orders are created. Since these ingredients are sourced from the OEM organization (based on the sourcing rules, supplier, and site associations of the OEM organization), the buy planned order demand for ingredients B and C is transferred to the OEM organization.
4. In the OEM organization, ingredients B and C requirements are netted because these ingredients are sourced from the RMS (based on sourcing rules). Buy planned orders are created for these ingredients in the OEM organization.
5. In the OEM organization, buy planned orders can be transferred from Planning to Purchasing as purchase requisitions. (The release time fence is set to Null for outsourced product A, and ingredients B and C in Organization Items.) Purchase orders and blanket releases are created from these purchase requisitions. Purchase

orders and blanket releases created for outsourced products are referred to as subcontracting orders.

6. In the MP organization, make and buy planned orders of the outsourced product A and ingredients B and C cannot be transferred as production batches or purchase requisitions because the release time fence is set to Don't Release Auto or Manual for all of them in the MP organization. For these planned orders, the Attribute Action is set to None, which prevents releasing these planned orders.

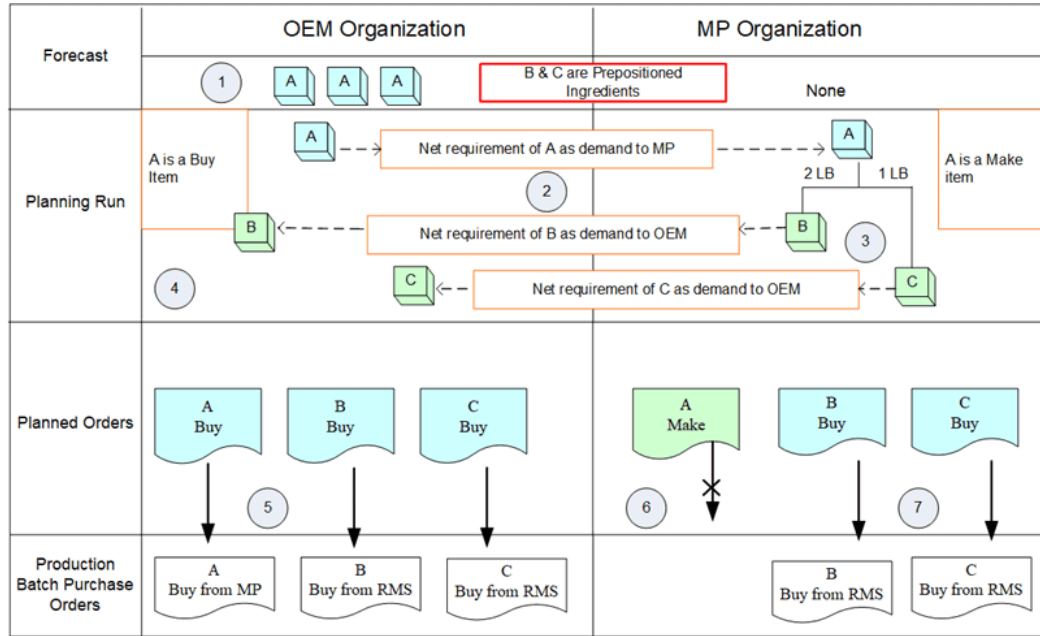
Note: You can view planned work orders using the Planner Workbench.

The Interlock Manager concurrent request creates production batches for product A and purchase orders for ingredients B and C during the simulation run (for details see: Subcontracting Execution for Process Manufacturing, page 11-15). These production jobs and purchase orders represent supply and are considered in subsequent planning runs.

For more information on subcontracting concurrent programs, see Overview of Subcontracting Concurrent Programs, page 6-1.

Outsourced Product with Prepositioned Ingredients

In this scenario, the outsourced product is A and its ingredients, B and C, are prepositioned ingredients:



The planning process is the same as that of the outsourced product with synchronized ingredients. The only exception is that planned orders of prepositioned ingredients B and C can be transferred to Purchasing as purchase requisitions:

1. The forecast is defined for the outsourced product in the OEM organization, if the outsourced product A is an independent demand item. If A is a dependent demand item, demand comes from its parent product.
2. The planning run considers forecast or dependent demand of A, calculates the net requirements of A in the OEM organization, and creates a buy planned order for product A in the OEM organization. Since Product A is a buy item and is sourced from the MP organization, the planned order demand of A in the OEM organization is transferred to the MP organization as demand of A.
3. In the MP organization, A is a make item based on the organization, demand is net calculation, and a make planned order is created for Product A. The requirements for ingredients B and C are calculated, the net calculated, and buy planned orders are created. Since these components are sourced from the OEM organization, and the buy planned order demand of ingredients B and C is transferred to the OEM organization.
4. In the OEM organization, requirements for ingredients B and C are netted because these ingredients are sourced from the RMS (based on sourcing rules). Buy planned orders are created for these ingredients in the OEM organization.
5. In the OEM organization, buy planned orders can be transferred from Planning to Purchasing as purchase requisitions. (The release time fence is set to Null for outsourced product A, and ingredients B and C in Organization Items). Purchase

orders and blanket releases are created from these purchase requisitions. Purchase orders and blanket releases created for the outsourced products are referred to as subcontracting orders.

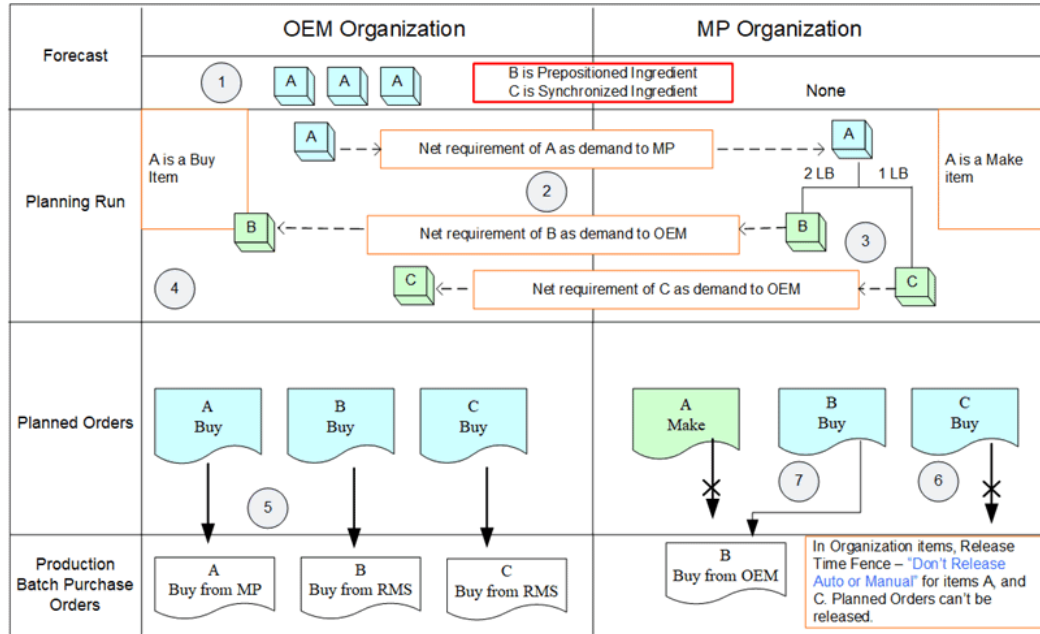
6. In the MP organization, make planned orders of outsourced product A can be transferred as WIP jobs as the release time fence is set to Don't Release Auto or Manual for the outsourced product in MP organization. The make planned order Attribute Action is set to None (it can be viewed on the planning workbench), which prevents the release of these planned orders.
7. Buy Planned orders of ingredients B and C can be transferred to Purchasing as requisitions as the release time fence is set to Null for both the ingredients in the MP organization.

The Interlock Manager concurrent request creates production batches for product A during the interlock run. These production batches represent supply, and are considered in subsequent planning runs.

For more information on subcontracting concurrent programs, see *Overview of Subcontracting Concurrent Programs*, page 6-1.

Outsourced Product with Prepositioned and Synchronized Ingredients

In this scenario, the outsourced product is A and its ingredients, B and C are prepositioned and synchronized ingredients respectively:



The planning process is a combination of the given processes involving synchronized ingredients and prepositioned ingredients:

1. The forecast is defined for the outsourced product in the OEM organization, if the outsourced product A is an independent demand item. If A is a dependent demand item, then demand comes from its parent product.
2. The planning run considers forecast or dependent demand of A, calculates the net requirements of A in the OEM organization, and creates a buy planned order for product A in the OEM organization. A is a buy item that is sourced from the MP organization, so the planned order demand of A in the OEM organization is transferred to the MP organization as demand of A.
3. In the MP organization, A is a make item, demand is netted, and a make planned order is created for Product A. Ingredients B and C requirements are calculated, netted, and buy planned orders are created. Since these ingredients are sourced from the OEM organization, the buy planned order demand of ingredients B and C is transferred to the OEM organization.
4. In the OEM organization, ingredients B and C requirements are netted, and sourced from the RMS (based on sourcing rules). The buy planned orders are created for these ingredients in the OEM organization.
5. In the OEM organization, buy planned orders can be transferred from Planning to Purchasing as purchase requisitions. Purchase orders and blanket releases are created from these purchase requisitions. Purchase orders and blanket releases created for the outsourced product are referred to as subcontracting orders.

6. In the MP organization, make planned orders of outsourced product A and buy planned orders of Component C cannot be transferred as production batches because purchase requisitions as the Release Time Fence is set to Don't Release Auto or Manual in the MP organization. The Planned Order Attribute Action is set to None which prevents releasing these planned orders. You can use the Planner Workbench to view the planned orders.
7. Buy planned orders of ingredient B can be transferred to Purchasing as requisitions as the Release Time Fence is set to Null for both the components in MP organization.

The Interlock Manager concurrent request creates production batches for product A and replenishment purchase orders for ingredient B during the interlock run. These production batches and replenishment purchase orders represent supply, and are considered in the subsequent planning runs.

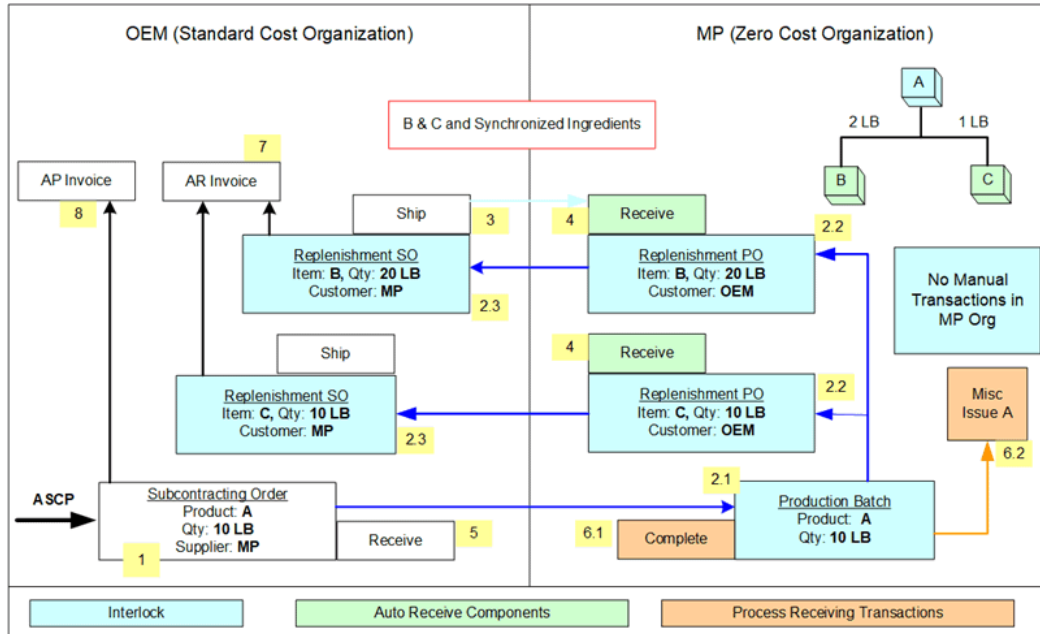
For more information on subcontracting concurrent programs, see *Overview of Subcontracting Concurrent Programs*, page 6-1.

Subcontracting Execution for Process Manufacturing

The Subcontracting execution process for process enabled inventory organizations begins with the subcontracting orders for the outsourced products and the replenishment purchase orders for the ingredients. The following sections detail the process steps for each scenario.

Outsourced Products with Synchronized Ingredients

In this scenario, the execution starts with the subcontracting orders being transferred from ASCP. You can also create subcontracting orders manually.



1. The execution process starts with the subcontracting order of Product A. These subcontracting orders are the standard purchase orders and blanket releases, and in the shipments, the outsourced Product attribute is set to Yes, indicating that the purchase order is created for the outsourced product.
2. The Interlock Manager picks up the subcontracting orders which were not processed in the previous run of the subcontracting orders and performs the following:
 - 2.1. The Interlock Manager creates a production batch for the subcontracted order quantity for simulating the manufacturing in the MP organization.
 - 2.2. The OEM supplies ingredients B and C which are required to manufacture this product. Since B and C are synchronized ingredients, (meaning that these ingredients need to be shipped along with the order), the Interlock Manager creates a replenishment purchase order for the ingredients with the supplier associated with the OEM organization. The replenishment purchase order created in the MP organization denotes the supply and is considered by ASCP as supply.
 - 2.3. The Interlock Manager also creates a replenishment sales order for shipping the ingredients in the OEM for the corresponding replenishment purchase order in the MP organization. Replenishment sales orders created in the OEM will always have a reference to its corresponding purchase order in the MP organization. The order type is retrieved from shipping networks (From Org: OEM and To Org: MP). The subcontracting default order type and the prices of the components are picked from price lists associated with the customer site in

the sales order (defined in the price lists setup). Sales orders are always created with a booked status and are ready for shipment. These replenishment sales orders are allocated to the respective subcontracting orders to meet the ingredient requirements for manufacturing the product at the MP's site. (The Allocations Table in the Subcontracting Data Model holds this information for tracking.)

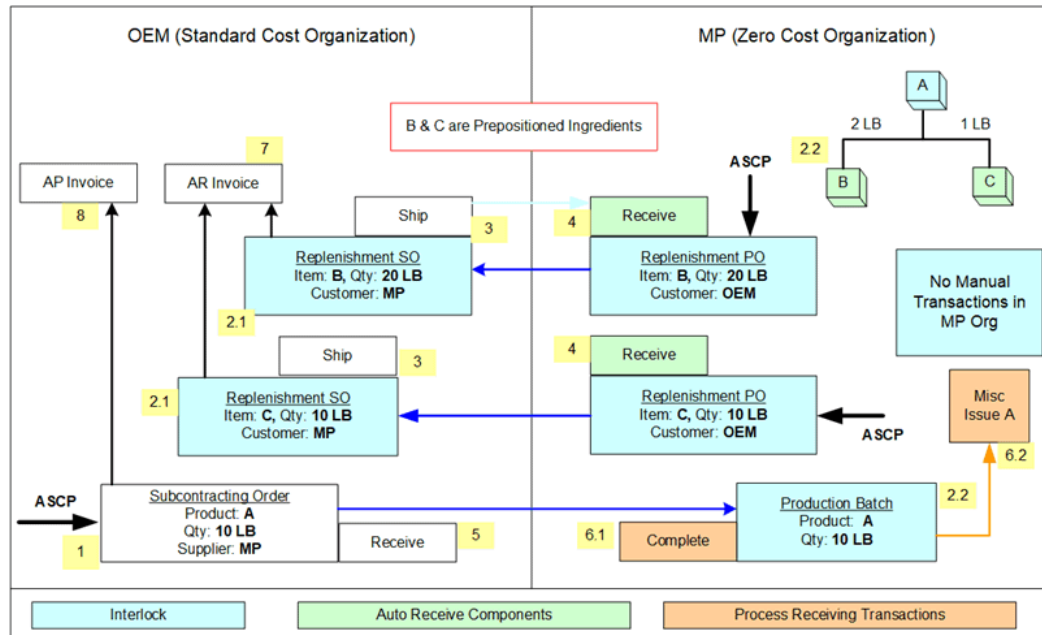
3. Replenishment sales orders created for the subcontracting ingredients are used for shipping the ingredients like any other standard sales orders.
4. The Auto Receive Components concurrent request picks up these shipments in the OEM organization, and creates receipts in the MP organization against the corresponding purchase order. Sales orders with shipped date and the in-transit lead time (defined in the shipping networks default shipping method) that is less than or equal to the current date, are automatically received to simulate the receipts in the MP organization.
5. The MP manufactures the product and ships the manufactured products to the OEM, and the OEM receives these receipts like other purchase order receipts.
6. The Process Receiving Transactions concurrent request picks up these receipts in the OEM organization and performs the following:
 - 6.1. Completes the production batch for the product. When the production batch is completed, ingredients are backflushed, and the inventory is reduced in the MP organization. However, the completed product in the MP remains in inventory.
 - 6.2. Reduces the inventory of products (completed through production batches) in the MP organization by performing by miscellaneous issues, to maintain the accuracy of the inventory records. This is because, the subcontracting order of the product is normally received in the OEM after the MP manufactures the product and sends it to the OEM. The Offset account defined in shipping networks is used for creating miscellaneous issues.
7. AR invoices are created for those ingredients shipped to the MP.
8. AP invoices are created for subcontracting orders received from the MP.

For more information on subcontracting concurrent programs, see *Overview of Subcontracting Concurrent Programs*, page 6-1.

Outsourced Product with Prepositioned Ingredients

In this scenario, process execution begins with the subcontracting orders for the outsourced product and the replenishment purchase orders for the prepositioned ingredients transferred from ASCP. You can also create subcontracting orders for

outsourced products and replenishment purchase orders for prepositioned ingredients manually.



1. The execution process begins with the subcontracting order of the Product A and replenishment purchase orders of the prepositioned ingredients. Subcontracting orders are the standard purchase orders and blanket releases, and if the shipments for the outsourced product are set to Yes, then the purchase order is created for the outsourced product. Replenishment purchase orders are the standard purchase orders or blanket releases created to simulate how MP procures ingredients from the OEM.
2. The Interlock Manager concurrent request selects:
 - 2.1. Replenishment purchase orders of the ingredients in the MP, and creates corresponding replenishment sales orders in the OEM for shipment of ingredients to the MP. Replenishment sales orders that are created in the OEM always reference their associated purchase orders in the MP organization. The order type is retrieved from default order type of the shipping network (From Org: OEM and To Org: MP), and the ingredients price is retrieved from the price lists associated with the customer site in the sales order. Sales orders are always created with booked status and are ready for shipment.
 - 2.2. Interlock Manager then picks up the subcontracting orders that were not processed in the previous run of the subcontracting orders and creates a production batch for the subcontracted order quantity for simulating the manufacturing in the MP organization. For manufacturing this product, ingredients B and C are required in the MP organization, and the OEM must supply those materials to the MP. Since B and C are prepositioned components

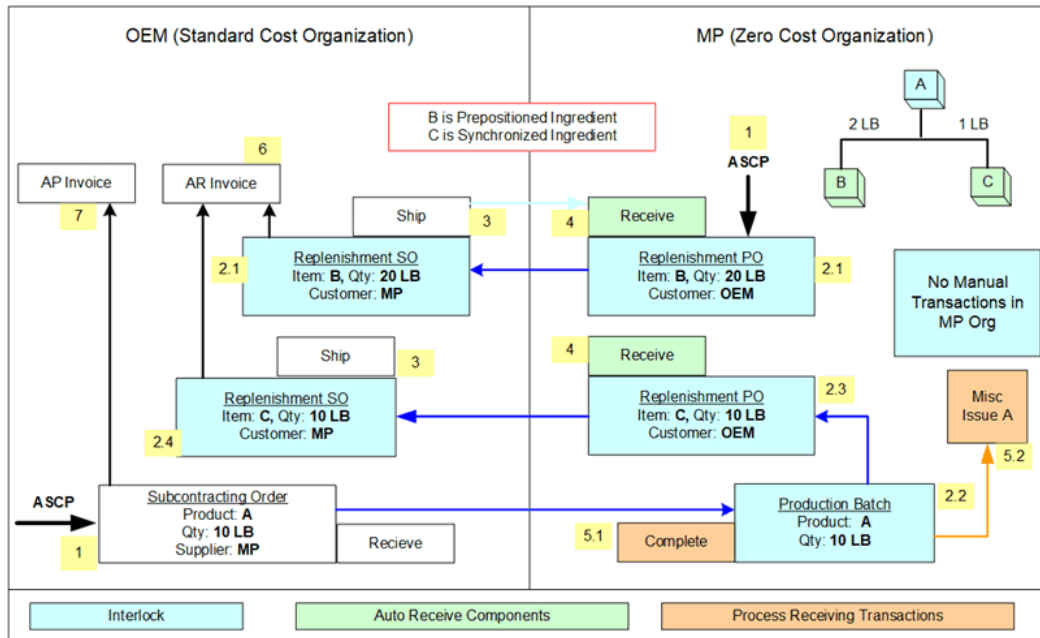
(meaning that components would have been shipped ahead of requirements), the Interlock Manager does not create replenishment purchase orders or sales orders for these ingredients. Instead, it looks for previously created and unallocated sales orders, and then makes allocations to these requirements. If unallocated replenishment sales orders are insufficient for the subcontracting order requirements, then Interlock Manager allocates the available quantity and leaves the remaining quantity unallocated. This situation should not happen if replenishments are available. If replenishments are available, then Interlock Manager attempts to allocate them in subsequent interlock runs.

3. Replenishment sales orders created for the subcontracting ingredients are used for shipping the ingredients like any other standard sales orders.
4. The Auto Receive Components concurrent request picks up these shipments in the OEM organization and creates receipts against the associated purchase orders in the MP organization. Sales orders with shipped date and in-transit lead time (defined in the shipping networks default shipping method) that is less than or equal to the current date will be automatically received to simulate the receipts in the MP organization.
5. The MP manufactures the product and ships the manufactured products to the OEM. The OEM receives these receipts the same as other purchase order receipts.
6. The Receiving Transactions concurrent request picks up these receipts in the OEM organization and:
 - 6.1. Completes the production batch for the product. When the production batch is completed, ingredients are backflushed, and the inventory is reduced in the MP organization. However, the completed product in the MP remains in inventory.
 - 6.2. Reduces the inventory of products (completed through production batch) in the MP organization by performing miscellaneous issues, for maintaining the accuracy of the inventory records. This is because, the subcontracting order of the product is normally received in the OEM after the MP manufactures the product and sends it to the OEM. The Offset account defined in shipping networks is used for creating miscellaneous issues. The Offset account defined in shipping networks is used for creating miscellaneous issues.
7. Account Receivables invoices are created for the components shipped to the MP.
8. Accounts Payables invoices are created for the subcontracting orders received from the MP.

For more information on subcontracting concurrent programs, see Overview of Subcontracting Concurrent Programs, page 6-1.

Outsourced Product with Prepositioned and Synchronized Ingredients

In this scenario, execution begins with the subcontracting orders of the outsourced product and replenishment purchase orders of the prepositioned ingredient being transferred from ASCP. Also, you can manually create subcontracting orders for the outsourced product and replenishment purchase orders for the prepositioned ingredients.



1. The execution process begins with the subcontracting order for Product A and the replenishment purchase order for prepositioned ingredient B.
2. The Interlock Manager concurrent request:
 - 2.1. Picks up the replenishment purchase for ingredient B in MP and creates associated replenishment sales orders in OEM for shipment to MP.

- 2.2. Picks up the subcontracting orders that were not processed in the previous run, and creates a production batch for the subcontracting order quantity. To manufacture this product, MP needs ingredients B and C, which the OEM will supply to the MP.

As ingredient B is a prepositioned ingredient, Interlock Manager looks for available replenishment sales orders and attempts to allocate them to satisfy the subcontracting order requirement.

- 2.3. As ingredient C is a synchronized ingredient, Interlock Manager creates replenishment purchase order for this ingredient.

- 2.4. Interlock Manager creates a replenishment sales order for ingredient C with its associated replenishment purchase order in MP, and then allocates the sales order to the subcontracting order requirements.

Note: Replenishment sales orders are created for shipping the ingredients like other sales orders.

3. The Auto Receive Components concurrent request picks up these shipments in OEM and creates receipts in the MP using the associated purchase order. Sales orders whose shipped date and In transit Lead time (defined in the shipping networks default shipping method) are less than or equal to the current date will be automatically received to simulate the receipts in MP organization.
4. The MP manufactures the product and ships the manufactured product to the OEM. The OEM receives these receipts like other purchase order receipts.
5. The Process Receiving Transactions concurrent request picks up these receipts in OEM and:
 - 5.1. Completes the production batch for the product. When the WIP job is completed, ingredients are backflushed, and the inventory is reduced in the MP organization. However, the completed product in the MP remains in inventory.
 - 5.2. Reduces the inventory of products (completed through production batches) in the MP organization by performing miscellaneous issues, for maintaining the accuracy of the inventory records. This is because, the subcontracting order of the product is normally received in the OEM after the MP manufactures the product and sends it to the OEM. The Offset account defined in shipping networks is used for creating miscellaneous issues. The Offset account defined in shipping networks is used for creating miscellaneous issues.

The completed inventory of the product in MP is reduced by miscellaneous issues which causes the inventory figures in the MP organization to be accurate. The Offset account defined in shipping networks is used to create miscellaneous issues.
6. Accounts Receivables invoices are created for ingredients shipped to MP.
7. Accounts Payables invoices are created for subcontracting orders received from MP.

For more information on subcontracting concurrent programs, see Overview of Subcontracting Concurrent Programs, page 6-1.

Full Outsourcing Accounting Process for Process Manufacturing

For Full Outsourcing with external manufacturing partners in process enabled

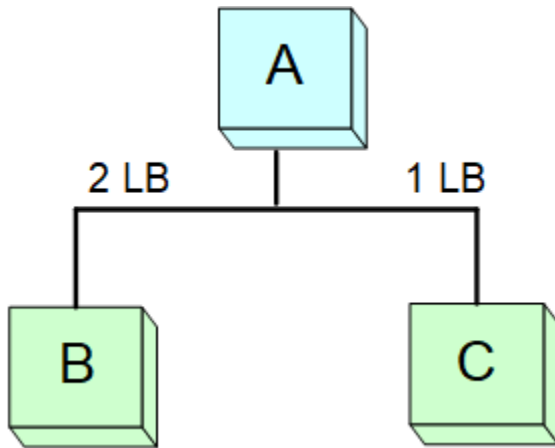
organization, the cost of the outsourced product and the subcontracting ingredients are defined by standard costing only.

Costs and Prices

For Full Outsourcing accounting for external MP organizations, the value addition should be defined as OSP charges in the costing setup and the product purchase order price should be the same as the value addition.

For details on setting up costs and prices, see *Setting Up Subcontracting*.

This figure illustrates the method for setting costs and prices. All amounts are in USD:



Item	Material Cost	OSP (Added Value by MP)	Unit Cost
B	\$2	-	\$2
C	\$3	-	\$3
A	$\$2*2 + 3*1 = \7	\$5	\$12

Item	Item Cost	Sales Price	Purchase Price
B	\$2	N/A	N/A
C	\$3	N/A	N/A
A	\$12	N/A	\$12

To set up item prices, the Original Equipment Manufacturer (OEM) should:

- Define material costs for the ingredients.
- Define material and OSP charges for the product and update standard costs in the OEM organization.

OSP charges are the added-value amounts added by the MP organization. The costing in the MP organization is of no significance.

Replenishment Sales Order Shipments

This topic describes the accounting entry templates used for the replenishment sales order shipment transactions and subcontracting order receipt transactions. The journal line entries are generated upon running the OPM Accounting Pre-processor and Create Accounting programs.

Accounting transactions associated with the shipping of ingredients to MP are tracked in Intransit Account

At Ship Confirm Replenishment Sales Orders

Account	Debit	Credit
For Ingredient B (2 LB)		
COGS (item cost 2 USD)	4	-
Inventory Valuation (item cost 2 USD)	-	4
For Ingredient C (1 LB)		
COGS (item cost 3 USD)	3	-
Inventory Valuation (item cost 2 USD)	-	3

These are regular transactions. Although the inventory appears as a debit to the COGS accounts, COGS is an intransit account, reflecting the value of the material at MP site, but still owned by OEM. At the period end, use Endeca Information Discovery to view the onhand at MP site. In this example, the Intransit Value of ingredients is 7USD.

Invoicing Replenishment Sales Orders

Since the OM transaction type is Ship only, there will not be any AR transactions generated.

Subcontracting Orders Receipts

Subcontracting orders are the standard purchase orders or releases created to procure

the outsourced products from the MP. Purchase orders include these events:

1. Receiving the product into the receiving location
2. Delivering the product to Inventory

All amounts are shown is USD.

Receiving for Product A

Account	Debit	Credit
For Product A (1 LB)		
Inventory Receiving (PO Price 5 USD)	5	-
AP Accrual (PO Price 5 USD)	-	5

These entries are similar to standard items.

Delivery for Product A

Account	Debit	Credit
For Product A (1 LB)		
Inventory Valuation (Item Cost 12 USD)	12	-
Subcontracting Variance (PO Price - Item Cost)	-	7
Inventory Receiving (PO Price 5 USD)	-	5

Inventory is debited at 12 USD, which includes the ingredient costs and added value. The Purchase Price Variance is posted to Subcontracting Variance, which is the Subcontracting Intransit account, reflecting the consumption of onhand inventory at MP site. At this moment the net debit value in the Intransit account is zero, showing the value of inventory at MP site as zero as they are consumed in the manufacturing of the product and OEM receives the product.

Subcontracting Business Flows

This chapter covers the following topics:

- Drop Ship Components from RMS to MP
- Modeling Components for Drop Ship
- Planning Drop Ship Components
- Process Execution Drop Ship Components
- Multi-Level Outsourcing
- Outsourcing Phantom Assemblies
- Outsourcing Lot and Serial-Controlled Items

Drop Ship Components from RMS to MP

Oracle Subcontracting application supports drop shipping of components from the Raw Material Supplier (RMS) to the Manufacturing Partner (MP) from planning to execution as follows:

- All components of the outsourced assembly must be drop shipped from the RMS to the MP. Drop shipping of a few components of the outsourced assembly and normal shipping of the remainder to the MP is not supported.
- Subcontracting components are drop shipped to all of the MPs if defined. Drop shipping the same component to one MP and normal shipment to another MP is not supported.
- Both prepositioned and synchronized components can be drop shipped to the MP

Modeling Components for Drop Ship

Item Definition

For drop shipment, replenishment sales orders created for shipping the components from the OEM to the MP must have the source type as *External*. You can do this using two setup methods:

Method 1: Define Item Attribute Default Sales Order source type as *External* and define Order Management defaults so that this attribute is provided by default to the Sales Order line source type.

Method 2: Define Source Type as *External* in the Order Management Transaction Type window (this will be used for creating replenishment sales orders) and set Order Management Defaulting Rules to provide this source type by default from Order Management Transaction Type to the Sales Order line.

Also, define the Organization Item attribute Release Time Fence to *Don't Release Auto or Manual* for subcontracting components in the OEM organization.

To define attribute Source Type in items:

1. From the Inventory responsibility, navigate to the Master Item window.

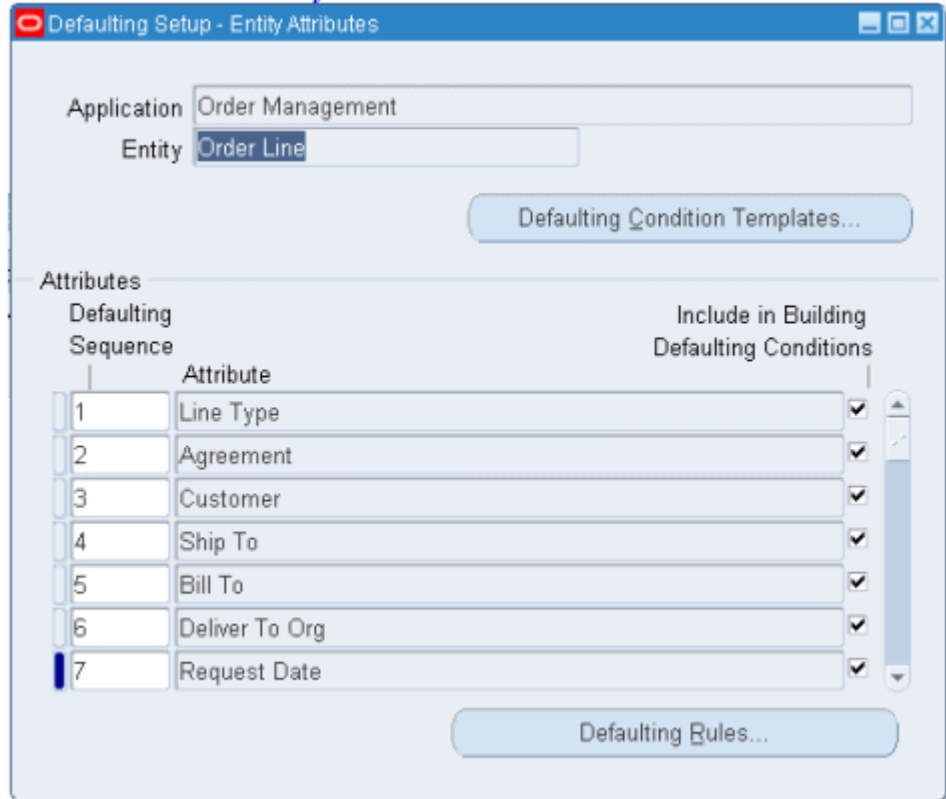
The screenshot shows the 'Master Item (V1)' window with the 'Order Management' tab selected. The 'Organization' is 'V1 Vision Operations' and the 'Item' is 'GBL_SHIKYU_SYN21'. The 'Default SO Source Type' is set to 'External'. Other settings include 'Customer Ordered' checked, 'Customer Orders Enabled' checked, 'Shippable' checked, and 'OE Transactable' checked. The 'Check ATP' and 'ATP Components' are set to 'None'. The 'Tolerances' section has four empty input fields for 'Over Shipment', 'Over Return', 'Under Shipment', and 'Under Return'.

2. Select the Order Management tab and set Default SO Source Type to *External*.
3. Save your work.

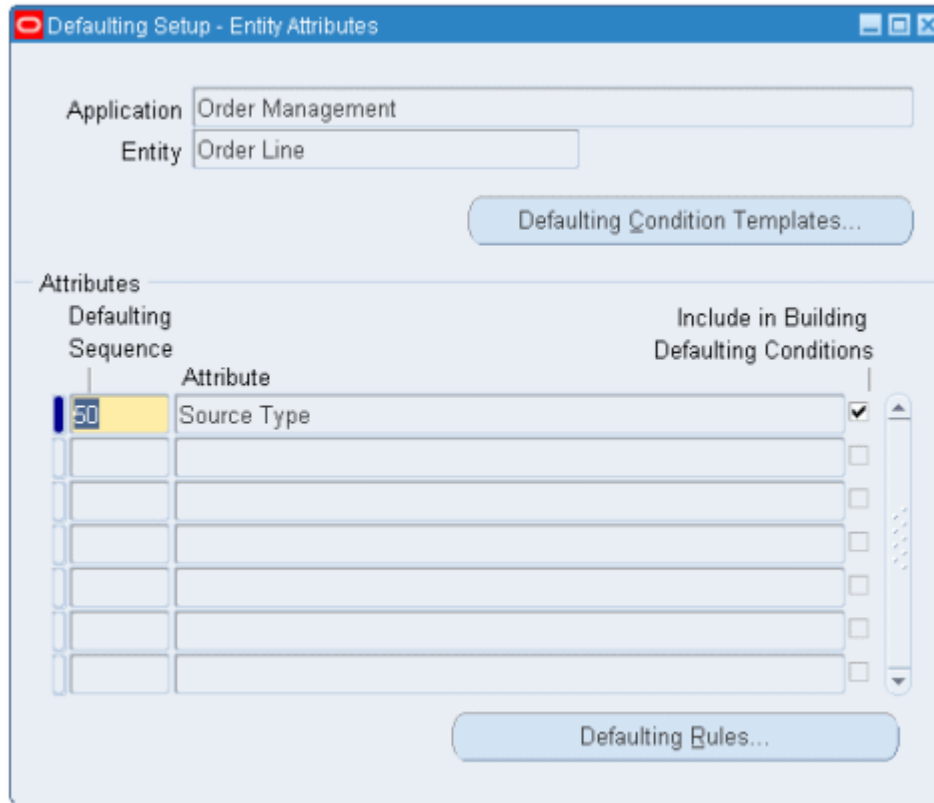
To define OM default rules:

1. From the Order Management responsibility, navigate to the Defaulting Setup window.

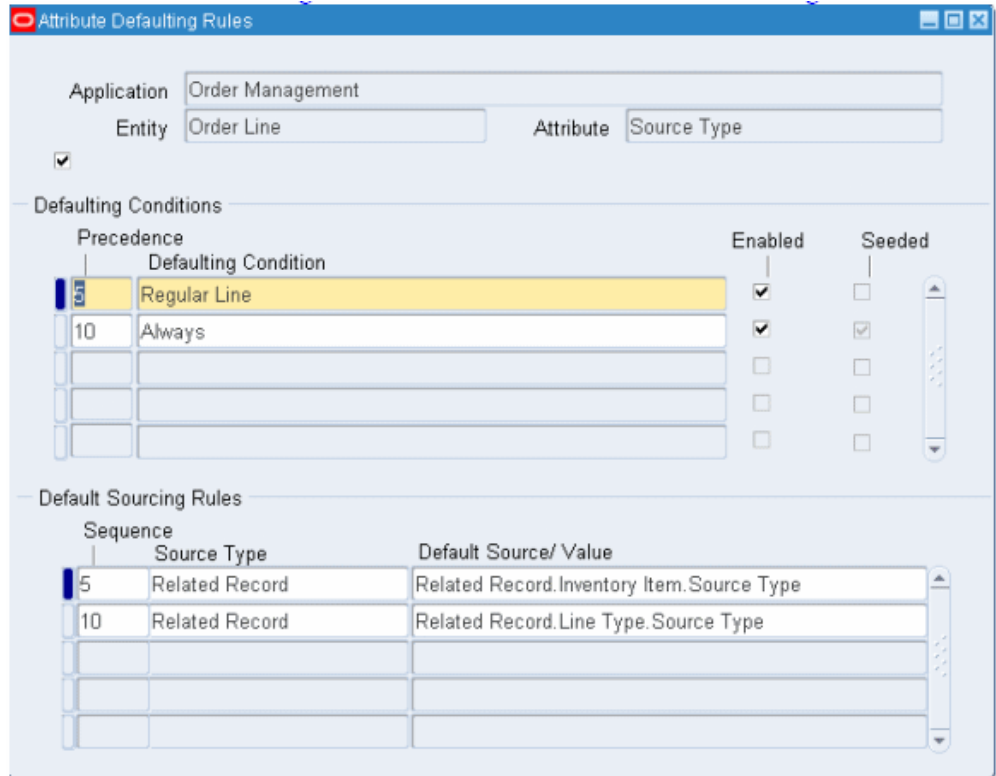
2. Search for default attributes:
 - Application: Order Management
 - Entity: Order Line



3. In the Attribute region, search for Source Type.



4. Click Defaulting Rules. The Attribute Defaulting Rules window appears.



5. Set defaulting conditions and rules for defaulting the Source Type from Items. See: *Oracle Order Management User's Guide* for Order Management defaulting rules.

Shipping Lead Times from the RMS to the MP:

Define the shipping Lead Time from the RMS to the MP in the shipping networks between the OEM and the MP. The application uses this lead time to simulate component procurement and to automatically receive drop ship components in the MP organization.

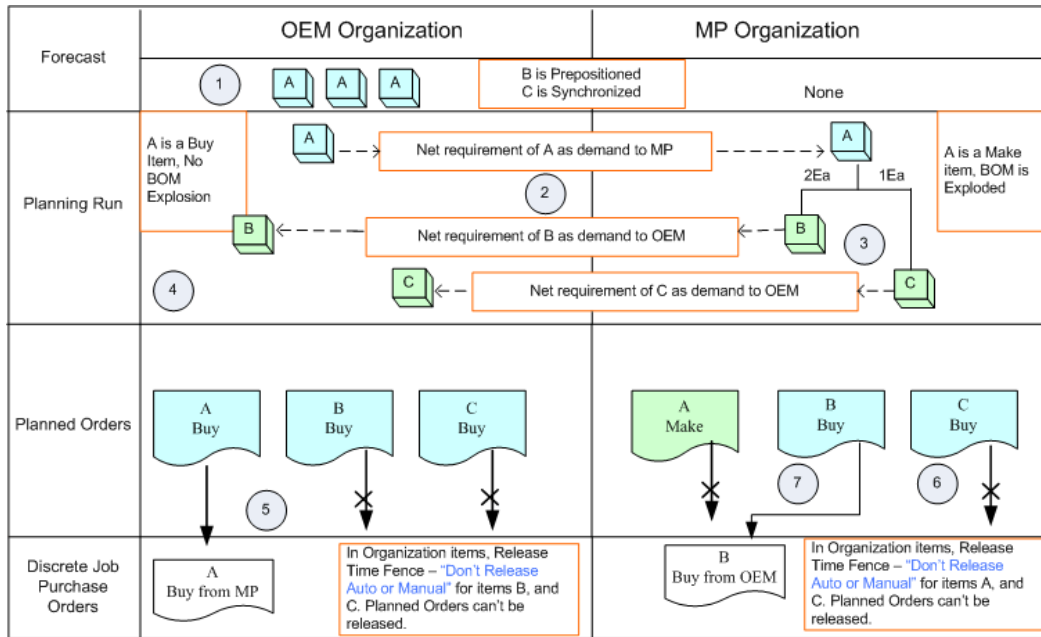
Others:

All other setup steps remain the same.

Planning Drop Ship Components

The planning functions for drop ship components are similar to those for standard items. However, the planned orders of the components in the OEM organization cannot be transferred as purchase orders because of the release time fence setup in the OEM organization. Drop ship purchase orders are created from drop ship replenishment sales orders for the components at a later stage for procuring components from the RMS.

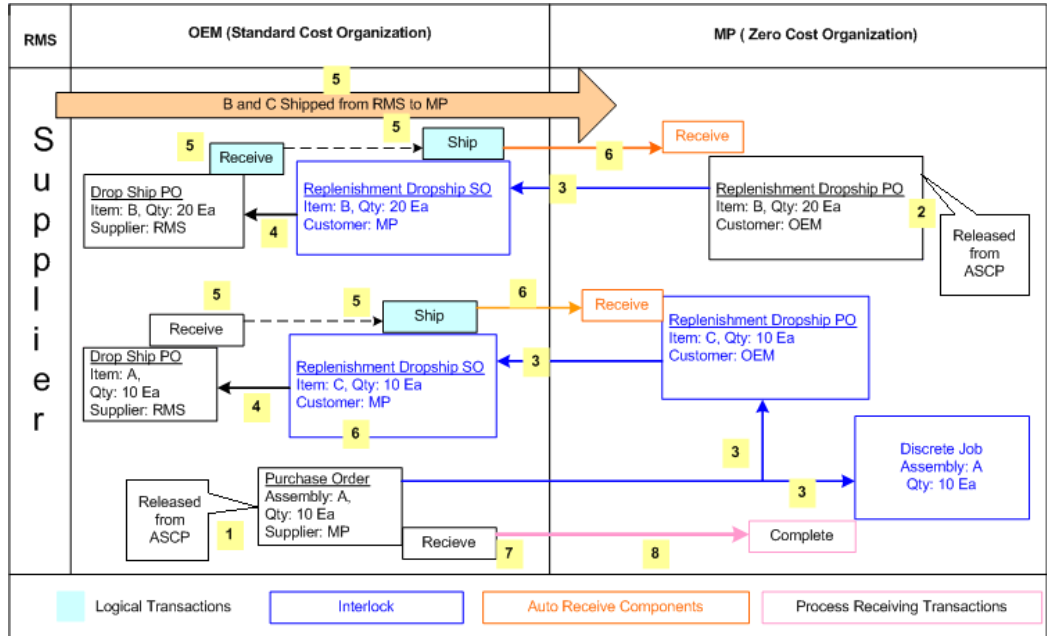
This diagram illustrates the planning process in a drop-shipment flow:



Process Execution Drop Ship Components

The process execution for Subcontracting is similar to that for standard items. Key aspects include:

- Interlock Manager creates replenishment drop ship sales orders in the OEM organization for components (based on the item and order management defaulting rules setup.)
- Drop ship purchase orders are created from replenishment drop ship sales orders. See: Drop Shipments, *Oracle Order Management User's Guide*
- When the RMS ships the components, the OEM is notified. The OEM reports the drop ship purchase order of the components received, and it updates the drop ship sales orders to Shipped status
- The Auto Receive Components concurrent request receives the components into the MP organization based on the shipping Lead Time set in shipping networks of the OEM and the MP.
- Payments to the RMS and the MP are similar to payments to standard purchasing and subcontracting, respectively.



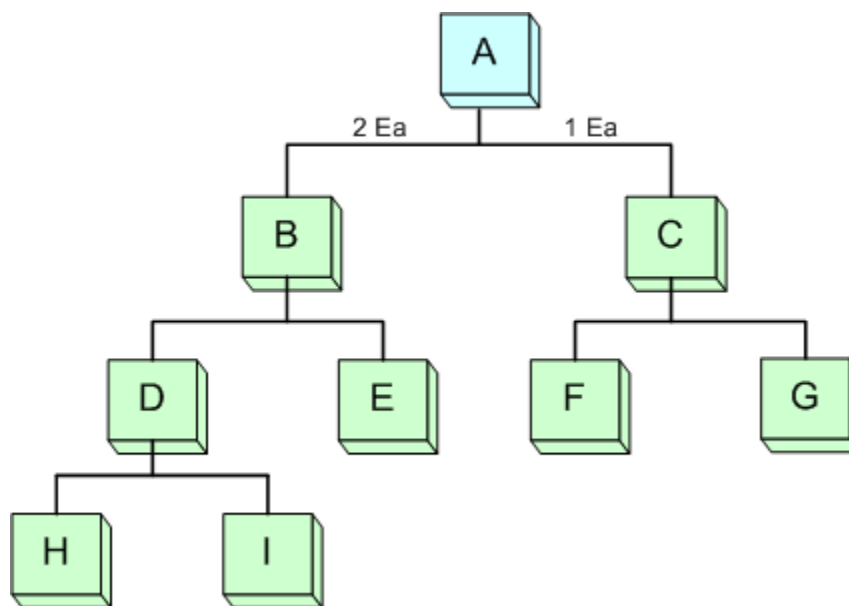
The details of the process are:

1. Planned Order of A in ASCP is released as a purchase order in the OEM.
2. Planned Order of B (prepositioned component) is released as a purchase order in the MP.
3. The Interlock Manager concurrent request:
 - Picks the replenishment purchase orders of prepositioned components B in the MP, and creates a drop ship sales order for B in the OEM
 - Picks purchase orders of outsourced Assembly A in the OEM and creates:
 - WIP job for A in the MP organization
 - Replenishment purchase order for Synchronized ship component C in the MP and drop ship sales order for C in the OEM
 - Makes allocations for the discrete JOB component requirements
4. Drop ship purchase orders are created from the drop ship sales orders.
5. The RMS ships components to the MP, and the OEM creates logical drop ship purchase order receipts for components B and C in the OEM organization. This action sets the corresponding drop ship sales order line status of B and C to Shipped.

6. The Auto Receive Components concurrent request selects the component shipments in the OEM and creates purchase order receipts in the MP.
7. Purchase Orders of outsourced assemblies are received in the OEM organization.
8. The Process Receiving Transaction Processor selects assembly receipts in the OEM and completes the discrete job in the MP. This action also back flushes components B and C in the MP.

Multi-Level Outsourcing

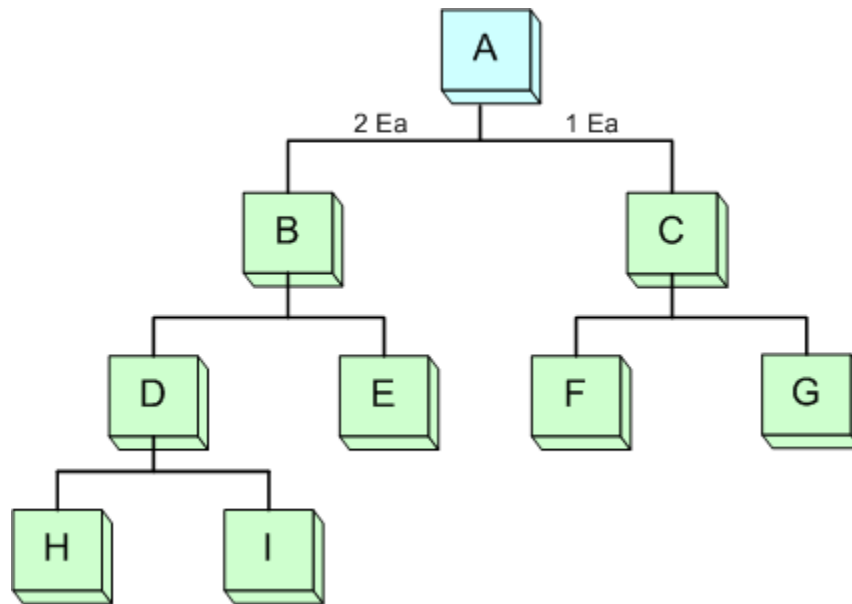
You can set up your system to outsource subassemblies at several levels of the final assembly. In the following example, A is the final assembly containing subassemblies D, B, and C. Using the Subcontracting application, you can set up your system to outsource all subassemblies and the final assembly or to outsource only a specified number of subassemblies and the final assembly. The only condition is that the outsourced assembly must return to the OEM from the MP before it is sent to the customer or sent to another MP for further processing.



Outsourcing Phantom Assemblies

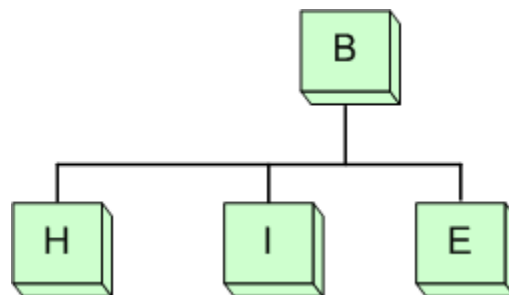
Subcontracting supports the outsourcing of phantom assemblies. You can define phantom bills of material (BOM) for design control purposes, and you can use the same BOM structure for outsourcing. Interlock Manager compresses the phantom BOM to a single-level bill of material with all the regular components and processes, making them similar to standard assemblies.

In this diagram, D is a phantom assembly and all others are standard assemblies and components. Assembly B is outsourced. The same phantom BOM structure is defined both in the OEM and the MP organizations, and all other setup steps are the same.



When Interlock Manager processes the subcontracting order of outsourced assembly B, it also compresses phantom assemblies and then processes the assembly as it would any other assembly.

This diagram illustrates Assembly B after BOM Compression.



All other execution processes are the same.

You can also outsource assemblies with multi-level phantoms. Interlock Manager compresses the BOM and then processes them as standard BOM.

Outsourcing Lot and Serial-Controlled Items

To use lot and serial-controlled components and assemblies in Outsourced Manufacturing:

- Items are defined as lot or serial-controlled items in the OEM organization.
- Items and components can be defined as both Lot and Lot and Serial controlled in internal MP organizations.
- Items and components can be defined as Lot controlled only in the external MP organization.
- Subcontracting components and Outsourcing assemblies can be defined as Lot controlled in both MP and OEM organizations.
- The BOM supply type attribute of the lot and serial controlled component of the outsourced assembly in OEM and MP organizations should be defined as Push. This is a mandatory setup for external MP organizations only.
- Replenishment sales orders are shipped with component lot numbers, and the Auto Receive Component program receives these components in the external MP with same lot numbers.
- Interlock manager processes subcontracting orders if the assembly or component items are lot controlled only for external MP organizations.
- Lot details are entered in Component Lot Entry before running Process Receiving Transactions.
- Process Receiving Transactions program processes the lot controlled assembly receipt and creates the WIP assembly completion and component issue transactions at the lot level.
- Subcontracting Workbench displays lot information for the adjustments in Consumption Adjustments.
- Subcontracting workbench displays the component lots for external MP organizations only in Component Lot Entry.

Lot and Serial Genealogy in Outsourced Manufacturing

Genealogy by Serial:

The screenshot shows the 'Genealogy by Serial' window. The left pane displays a tree view of source materials. The right pane shows the 'Item Details' and 'Transaction Details' for the selected item.

Item Details:

- Item: osa cto 01*1066122-3313702531966
- Organization: TAX Vision eTax
- Shelf Life: 0
- Retest Interval:

Transaction Details:

Transaction Date	Organization	Subinve	Transaction Type	Transaction
14-JUL-2015 00:13:00	TAX	Stores	PO Receipt	1
14-JUL-2015 00:02:00	MP6	Staging	Sales order issue	-1
14-JUL-2015 00:01:00	MP6	Staging	Sales Order Pick	1
14-JUL-2015 00:01:00	MP6	Stores	Sales Order Pick	-1
13-JUL-2015 23:02:00	MP6	Stores	WIP Completion	1

Genealogy by Lot:

The screenshot shows the 'Genealogy by Lot' window. The left pane displays a tree view of source materials. The right pane shows the 'Item Details' and 'Transaction Details' for the selected item.

Item Details:

- Item: osa cto 01*1066122-3313702531966-MP607105
- Organization: TAX Vision eTax
- Shelf Life: 0
- Retest Interval:

Transaction Details:

Transaction Date	Organiz	Subinve	Transaction Type	Transaction Qty	Transac	P
14-JUL-2015 00:13:00	TAX	Stores	PO Receipt	1	Ea	1
14-JUL-2015 00:02:00	MP6	Staging	Sales order issue	-1	Ea	-1
14-JUL-2015 00:01:00	MP6	Staging	Sales Order Pick	1	Ea	1
14-JUL-2015 00:01:00	MP6	Stores	Sales Order Pick	-1	Ea	-1
13-JUL-2015 23:02:00	MP6	Stores	WIP Completion	1	Ea	1

For both Internal and External MP Organizations the genealogy link is built between the subcontracting component lot in OEM and MP when the PO receipt transaction of the subcontracting component is processed in the MP organization. This enables users view to the genealogy of the lot in case of component being the subassembly.

For External MP Organizations:

- When replenishment sales orders are shipped with component lot numbers, the

Auto Receive Component program receives these components in the external MP with same lot numbers. This establishes a link between Component Lots in OEM (shipped on sales order) with replenishment PO in the external MP, which builds the genealogy later on.

- When the WIP completion transaction of the Outsourced Assembly is processed, genealogy is built between the Outsourced Assembly Receipt transactions and the WIP job Completion lots.
- When the WIP completion return transaction of the Outsourced Assembly is processed for the full quantity, the existing genealogy link between the Outsourced Assembly Receipt transactions and the WIP job Completion is delinked.

For Internal MP Organizations:

- When the Subcontracting PO Receipt transaction of the Outsource Assembly is processed, genealogy is built between the Outsource Assembly Receipt transactions and the WIP job Completion lots in MP.
- When the PO receipt transaction of the subcontracting component is processed in the MP organization, the serial genealogy is built between the subcontracting component serials in OEM and MP so that the genealogy of the serial can be viewed in case of component being the subassembly.
- When the Subcontracting PO Receipt transaction of the Outsource Assembly is processed, genealogy is built between the Outsource Assembly Receipt serials and the WIP job Completion serials in MP for the lot and serial or serial controlled assembly.
- When the RMA receipt transaction is processed (RMA for the subcontracting purchase order) for the full quantity, the existing lot genealogy link between the Outsource Assembly Receipt transactions and the WIP job Completion lots is delinked. The existing serial genealogy link between the Outsource Assembly Receipt transactions and the WIP job Completion serials is also delinked.

Troubleshooting

This chapter covers the following topics:

- Overview
- Interlock Manager
- Auto Receive Components
- Process Receiving Transactions

Overview

Oracle Subcontracting, works effectively if you closely follow the setup steps described in the Setting Up for Discrete Manufacturing chapter. For more information see: Overview of Setting Up Subcontracting, page 3-2. If you set up subcontracting incorrectly, then some of the subcontracting concurrent programs will not process the data and the execution process will not function properly. You must correct an erroneous data setup and rerun the processes.

Use the checkpoints provided in this chapter to verify whether concurrent programs are not processing the data.

Interlock Manager

You can classify Interlock Manager process steps into three sets:

1. Creating WIP jobs in the MP organization. During this process, you can view subcontracting orders on the workbench. If WIP jobs are not created, then the subcontracting order is not visible on the Subcontracting Workbench.
2. Create replenishment Sales orders. You can view replenishment orders on the Subcontracting Workbench.
3. Allocate replenishment orders in accordance with subcontracting order requirements.

The Interlock Manager concurrent request executes all steps at once if the data is correctly set up. If the setup is not complete, then Interlock Manager may execute only a few steps or it may not execute any steps. Review the setup and make the necessary corrections.

Problem at Step 1: WIP Jobs Are Not Created in the MP Organization

Any of the following issues can cause this problem. Verify and correct the setup.

- The profile MO: Default Operating Unit is not set to the operating unit of the OEM organization.
- The profile MO: Security is not set.
- Inventory Periods are not opened in the MP organization.
- WIP Parameters are not defined for the MP organization.
- Customer and supplier relationships are not defined in the OEM and MP organizations.
- Check the validity of BOM and components in the MP organization.
- Check and ensure that routing does not exist in the MP organization.
- Ensure that OEM and MP organizations are not Process-enabled organizations. EAM and WMS enabled OEM and MP organizations are supported.
- Check that components and assemblies are defined in the OEM and MP organizations as outsourced assemblies and are prepositioned or synchronized components respectively. If this is the problem, then you must cancel the current PO and create a new PO with the same details.

Problem at Step 2: Interlock Is Not Creating Replenishment Orders

- Shipping networks are not defined for the OEM and MP
- No valid price exists for the components
- Document sequence is not defined for the Order Management transaction type associated in the shipping networks of OEM to the MP
- Profile sequential numbering is not set as Partially Used or Always used

Problem at Step 3: Replenishment Sales Orders are Not Allocated

In the case of synchronized components if the replenishment sales order is created, it will always be allocated, so this issue might not arise. In the case of prepositioned components, which would be a common problem, allocations are made to the existing replenishment sales orders.

- For Chargeable Subcontracting, the sales price of the replenishment sales order is different than the component price of the subcontracting order (you can see both the prices on the workbench).
- Replenishment sales order shipment date is earlier than the requirement date of the component.

Auto Receive Components

If auto receive is not receiving the components in the MP organization after shipping the components in the OEM organization, then these problems could occur:

- Replenishment sales order ship date plus shipment lead-time defined in the shipping networks between OEM to the MP is less than the current date (date at which the Auto Receive Components concurrent request is run).
- Purchasing periods are not open.

Process Receiving Transactions

If the Process Receiving Transactions concurrent request does not complete WIP jobs in the MP organization, then subcontracting order components may not be fully allocated.

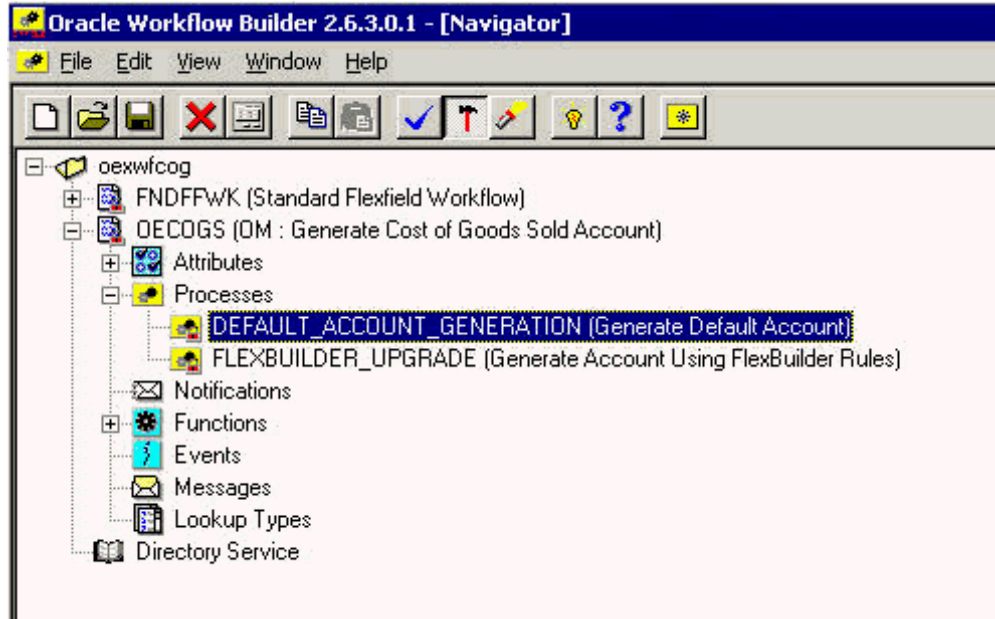
Workflows

Generating the COGS Account from the Order Type

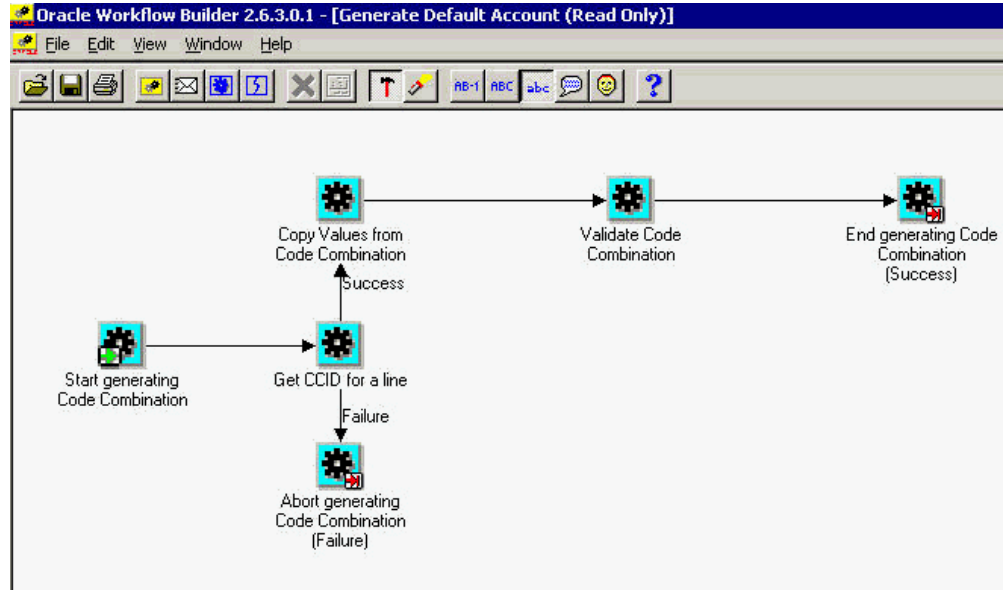
The COGS Account Generator is a Workflow Process that derives the Cost of Goods Sold account for a transaction interfaced to Inventory from Order Management / Shipping. To generate the COGS account from the Cost of Goods Sold account assigned to the Order Management Transaction Type of the order, you will need to modify the seeded COGS workflow. To modify this workflow, you will need to change the default node from Get CCID for a line to Get CCID from the Order Type ID in the Generate Default Account process. The workflow item type OM: Generate Cost of Goods Sold Account (which has an internal name of OECOGS) encompasses all processes designed to build the COGS.

Modifying the Generate Default Account to derive the Cost of Goods Sold account from the Order Type:

1. Open the OM workflow OECOGS in workflow builder.



2. Copy the existing Generate Default Account process and give a new name, e.g. NEW_DEFAULT_ACCOUNT_GENERATOR, in the property sheet Internal Name field.
3. Double-click on the new process from within the Navigator. Delete the link between the Start generating Code Combination and the Get CCID for a line functions.
4. In place of the deleted link, insert the function Get CCID from the Order Type ID by dragging it from the Navigator to the process screen.
5. Use the right-click functionality to draw a line connecting the Start generating Code Combination to the Get CCID from the Order Type ID function.



6. Save this process definition to the database.
7. Define the relationship between the Chart of Accounts structure and the new Workflow Process for the OM: Generate Cost of Good Sold item type in the Account Generator Processes form:
OM: Setup > Financials > Flexfields > Key > Accounts
8. Use the flashlight icon to choose the applicable Chart of Accounts.
9. Assign the new Workflow process to the OM: Generate Cost of Good Sold' Item Type.

Determining the Chart of Accounts:

1. Navigate to the Organization form:
Inventory: Setup > Organization > Organizations.
2. Determine and note the value of the Primary Ledger for the inventory organization for which you wish to interface the transactions. Query the name of the inventory organization desired. In the Organization Classification region, select Inventory Organization line > Others > Accounting Information.
3. Determine and note the Primary Ledger for the Order Management responsibility for which the order is assigned in the Organization Definitions form. Query the name of the operating unit desired. In the Organization Classification region select the Operating Unit line > Others > Operating Unit Information.
4. Query the Primary Ledger in the Accounting Setup page:

Inventory > Setup > Financials > Accounting Setup Manager > Accounting Setups

5. Note the value for the Chart of Accounts.

Custom APIs for Outsourced Manufacturing

JMF Custom Packages

Outsourced Manufacturing provides custom packages that enable users to:

- Populate header and line level descriptive flexfield attributes when creating replenishment and subcontracting sales orders.
- Populate work order level descriptive flexfield attributes when creating work orders or flow schedules for a subcontracting purchase order.
- Create work orders or flow schedules with an accounting class different from the one defined at the WIP parameters level.
- Control modifications to subcontracting orders by allowing or disallowing PO approval after any PO changes.

Populate DFF attributes for Sales Orders

Outsourced Manufacturing provides two APIs that can be used to populate the DFF attributes for Replenishment and Subcontracting Sales Orders.

Default_OE_Hdr_Attr

This API can be used to populate sales order header level descriptive flex field attributes. The details of this API are as follows:

File Name: JMFCUSHS.pls (Package Specification)

JMFCUSHB.pls (Package Body)

Package Name: JMF_CUSTOM_HOOK

Procedure Name: Default_OE_Hdr_Attr

The procedure has the following important parameters:

```

p_x_header_Rec  IN OE_Order_PUB.Header_Rec_Type
x_attribute1    OUT NOCOPY VARCHAR2
...
x_attribute20   OUT NOCOPY VARCHAR2
x_return_status OUT NOCOPY VARCHAR2

```

The parameter `p_x_header_Rec` is a record that contains information about the sales order header. Customers can use the information in this record to control what information gets populated in the DFF attributes.

The parameters `x_attribute1` to `x_attribute20` are the 20 DFF attributes that can be set by customers.

To set these values:

1. Open the package body in a text editor.
2. In the procedure `Default_OE_Hdr_Attr`, find the DFF attribute for which they want to set their own values.
3. Un-comment the attribute line by removing '--'.
4. Insert their own values by replacing `attributeX` with their values in single quotes.
5. Save the package body and compile it on their instance database.

The parameter `x_return_status` is used to convey to the calling function whether any errors were encountered while inserting header level DFF values. By default, it returns `FND_API.G_RET_STS_SUCCESS` (Success) and can be modified to return following values:

- `FND_API.G_RET_STS_SUCCESS` - for successful processing.
- `FND_API.G_RET_STS_ERROR` - for expected errors.
- `FND_API.G_RET_STS_UNEXP_ERROR` - for unexpected errors.

Default_OE_Line_Attr

This API can be used to populate sales order line level descriptive flex field attributes. The details of this API are as follows:

File Name: `JMFCUSHS.pls` (Package Specification),

`JMFCUSHB.pls` (Package Body)

Package Name: `JMF_CUSTOM_HOOK`

Procedure Name: `Default_OE_Line_Attr`

The procedure has the following important parameters:

```

p_x_line_tbl    IN OE_Order_PUB.Line_Tbl_Type

```

```
x_line_attr_tbl OUT NOCOPY Line_Attr_Tbl_Type
x_return_status OUT NOCOPY VARCHAR2
```

The parameter `p_x_line_tbl` is a table of records that contains information about the sales order line. Customers can use the information in this table to control what information gets populated in the DFF attributes.

The parameter `x_line_attr_tbl` is a table of records for the 20 DFF attributes that can be set by customers for each line in the `p_x_line_tbl` table.

To set these values:

1. Open the package body in a text editor.
2. In the procedure `Default_OE_Line_Attr`, find the DFF attribute for which they want to set their own values.
3. Un-comment the attribute line by removing '--'.
4. Insert their own values by replacing `attributeX` with their values in single quotes.
5. Save the package body and compile it on their instance database.

The parameter `x_return_status` is used to convey to the calling function whether any errors were encountered while inserting line level DFF values. By default, it returns `FND_API.G_RET_STS_SUCCESS` (Success) and can be modified to return following values:

`FND_API.G_RET_STS_SUCCESS` - for successful processing.

`FND_API.G_RET_STS_ERROR` - for expected errors.

`FND_API.G_RET_STS_UNEXP_ERROR` - for unexpected errors.

Populate DFF attributes for Work Orders or Flow Schedules

Outsourced Manufacturing provides the following API that can be used to populate the DFF attributes for Work Orders and Flow Schedules.

Populate_Wjsi_Dff_Attr

This API gets called before WIP Mass Load or Flow Schedule creation APIs are called. The details of this API are as follows:

File Name: `JMFCUSHS.pls` (Package Specification)

`JMFCUSHB.pls` (Package Body)

Package Name: `JMF_CUSTOM_HOOK`

Procedure Name: `Populate_Wjsi_Dff_Attr`

The procedure has the following important parameters:

```
p_subcontract_po_shipment_id IN NUMBER
```

```

p_oem_organization_id      IN NUMBER
p_mp_organization_id      IN NUMBER
p_item_id                 IN NUMBER
p_start_quantity         IN NUMBER
p_wjsi_rec                IN OUT NOCOPY
JMF_SHIKYU_WIP_PVT.wjsi_dff_rec_type
x_return_status           OUT NOCOPY VARCHAR2

```

The parameter `p_subcontract_po_shipment_id` is the PO shipment id for the shipment being processed. Customers can use this value to control what information gets populated in the DFF attributes.

The parameter `p_oem_organization_id` is the organization id for the OEM organization. Customers can use this value to control what information gets populated in the DFF attributes.

The parameter `p_mp_organization_id` is the organization id for the MP organization. Customers can use this value to control what information gets populated in the DFF attributes.

The parameter `p_item_id` is the inventory item id for the outsourced assembly. Customers can use this value to control what information gets populated in the DFF attributes.

The parameter `p_start_quantity` is the start quantity for the work order or the flow schedule. Customers can use this value to control what information gets populated in the DFF attributes.

The parameter `p_wjsi_rec` is a record for the 15 DFF attributes that can be set by customers.

To set these values:

1. Open the package body in a text editor.
2. In the procedure `Populate_Wjsi_Dff_Attr`, find the DFF attribute for which they want to set their own values
3. Un-comment the attribute line by removing '--'.
4. Insert their own values by replacing `attributeX` with their values in single quotes.
5. Save the package body and compile it on their instance database.

The parameter `x_return_status` is used to convey to the calling function whether any errors were encountered while inserting line level DFF values. By default, it returns `FND_API.G_RET_STS_SUCCESS` (Success) and can be modified to return following values:

- `FND_API.G_RET_STS_SUCCESS` - for successful processing.

- FND_API.G_RET_STS_ERROR - for expected errors.
- FND_API.G_RET_STS_UNEXP_ERROR - for unexpected errors.

Use a WIP Accounting Class that is different from the one defined at WIP parameters level

Customers can sometime have requirements to create work orders and flow schedules using an accounting class that is derived by their own logic instead of using the accounting class defined at WIP parameters level. The following API facilitates this:

Get_WIP_Accounting_Class

This procedure gets called just before inserting records in wip interface table wip_job_schedule_interface. Users can write their own custom logic to derive the correct accounting class they want the work orders to be created with. This API, by default, returns a NULL value for accounting class resulting in WIP Mass Load deriving the default accounting class value from WIP parameters for the MP organization. Users can override this by commenting out this return statement and writing their own return statement instead.

The details of this API are as follows:

File Name: JMF_CUSHS.pls (Package Specification)

JMF_CUSHB.pls (Package Body)

Package Name: JMF_CUSTOM_HOOK

Procedure Name: Get_WIP_Accounting_Class

The procedure has the following important parameters:

```

p_subcontract_po_shipment_id IN NUMBER
p_oem_organization_id        IN NUMBER
p_mp_organization_id         IN NUMBER
p_item_id                    IN NUMBER
p_start_quantity             IN NUMBER
x_class_code                  OUT NOCOPY VARCHAR2
x_return_status               OUT NOCOPY VARCHAR2

```

The parameter p_subcontract_po_shipment_id is the PO shipment id for the shipment being processed. Customers can use this value to control what information gets populated in the DFF attributes.

The parameter p_oem_organization_id is the organization id for the OEM organization. Customers can use this value to control what information gets populated in the DFF attributes.

The parameter p_mp_organization_id is the organization id for the MP organization. Customers can use this value to control what information gets populated in the DFF

attributes.

The parameter `p_item_id` is the inventory item id for the outsourced assembly. Customers can use this value to control what information gets populated in the DFF attributes.

The parameter `p_start_quantity` is the start quantity for the work order or the flow schedule. Customers can use this value to control what information gets populated in the DFF attributes.

The parameter `x_class_code` is the out variable which will store the user defined accounting class value. By default, this value is returned as NULL.

Note: Customers will have to ensure that the value they set for `x_class_code` variable is a valid value for the `WIP_ACCOUNTING_CLASSES.class_code` field. The custom API doesn't verify whether the value being returned is valid.

The parameter `x_return_status` is used to convey to the calling function whether any errors were encountered while inserting line level DFF values. By default, it returns `FND_API.G_RET_STS_SUCCESS` (Success) and can be modified to return following values:

- `FND_API.G_RET_STS_SUCCESS` - for successful processing.
- `FND_API.G_RET_STS_ERROR` - for expected errors.
- `FND_API.G_RET_STS_UNEXP_ERROR` - for unexpected errors.

Control modifications to subcontracting PO by allowing or disallowing PO approval after any PO changes

There is a requirement for a change management API which can control any changes made to the subcontract purchase orders. The API provided for this controls the changes by allowing or disallowing the approval of the subcontract PO after the changes are made.

Note: This API controls the changes only if the MP is an internal organization.

This is not a custom API in the sense that users cannot modify the code. Customers will have to create a custom node in their PO Approval workflow. This custom workflow node should call this API.

The details of this API are as follows:

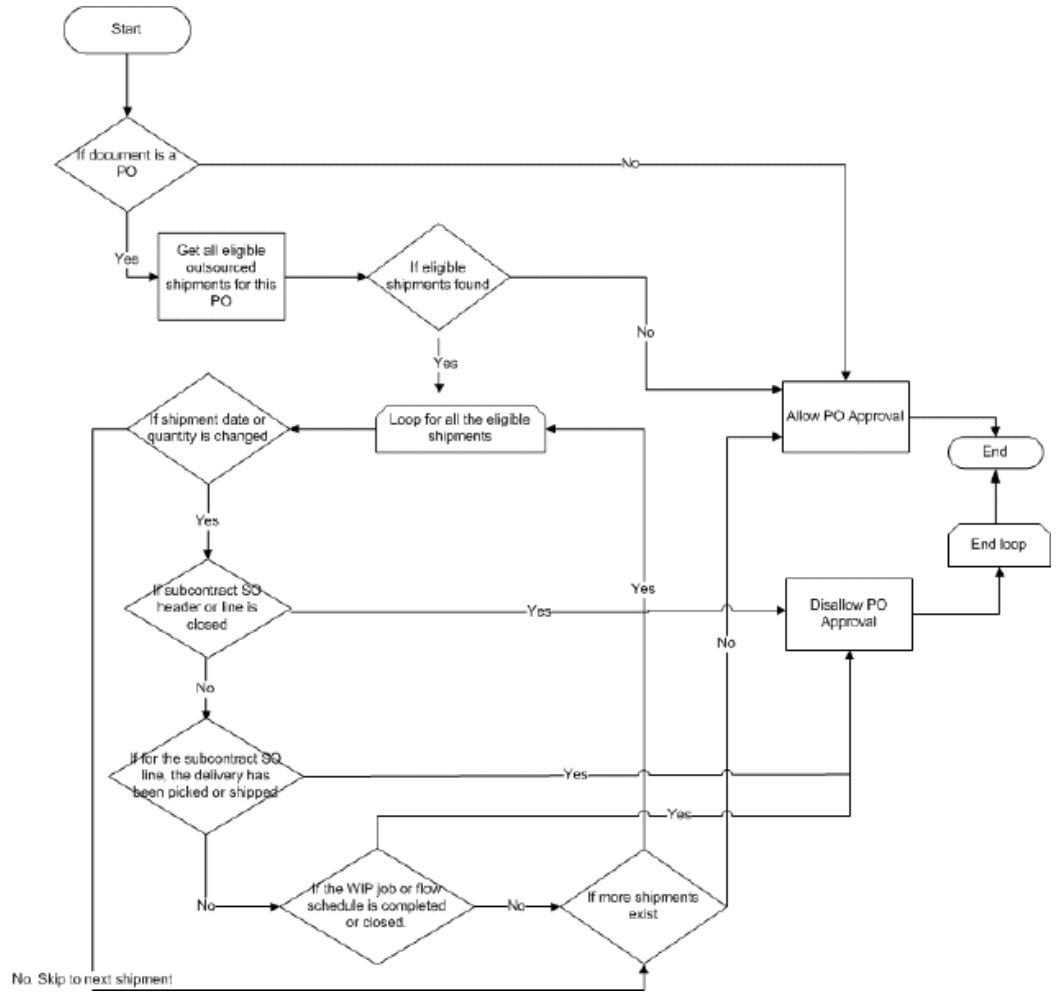
File Name: `JMFGSHKS.pls` (Package Specification)

`JMFGSHKB.pls` (Package Body)

Package Name: JMF_SHIKYU_GRP

Procedure Name: Allow_Subcontract_PO_Approval

The following flowchart design summarizes how this API controls the changes:



Windows and Navigator Paths

This appendix covers the following topics:

- Windows and Navigator Paths

Windows and Navigator Paths

This table lists typical navigator paths. Text in brackets ([]) indicates a button.

Your system administrator may have customized your navigator.

Window Name	Navigation Path
Additional Organization Information	Inventory > Setup > Organizations > Organizations [Others]
Customers	Order Management > Customers > Standard
Customer/Supplier Association	Inventory > Setup > Organizations > Organizations [Others] > Customer/Supplier Association
Find Organization Items	Inventory > Items > Organization Items
Netting	Payables > Payments > Entry > Netting > Netting Agreement
Organization	Inventory > Setup > Organizations > Organizations
Organization Item	Inventory > Items > Organization Items > Find Organization Items [Find]

Window Name	Navigation Path
Organization Parameters	Inventory > Setup > Organizations > Organizations [Others] > Inventory Information
Segment Values	General Ledger > Setup > Financials > Values
Shipping Networks	Inventory > Setup > Organizations > Shipping Networks
Suppliers	Purchasing > Payables > Suppliers > Entry
Transaction Sources	Accounts Receivable > Setup > Transactions > Transaction Sources
Transaction Types	Order Management > Setup > Transaction Types > Define
Transaction Types (Receivables)	Accounts Receivable > Setup > Transactions > Transaction Types
Subcontracting Workbench	Subcontracting > Workbench

Glossary

Original Equipment Manufacturer (OEM)

A company that owns the product designs that it sells, and manufactures the products either in its own factory or by outsourcing to Manufacturing Partners (MP).

Manufacturing Partner (MP)

A company that provides manufacturing services, and manufactures assemblies and products for OEMs.

Chargeable Subcontracting

In Chargeable Subcontracting, the Original Equipment Manufacturer (OEM) completely outsources the manufacturing of an assembly to an Manufacturing Partner (MP) and makes a provisional sale of components by invoicing the MP. The OEM retains the ownership of the components even after registering the sale of components. Chargeable subcontracting support is available for Japan, Taiwan, and Korea

Buy/Sell Subcontracting

In Buy/Sell Subcontracting the Original Equipment Manufacturer (OEM) completely outsources the manufacturing of an assembly to a Manufacturing Partner (MP) by buying the assembly from the MP and most importantly, sells the components to the MP that are consumed in the manufacturing of the assembly at the MP's premises. Buy/Sell subcontracting support is available for all countries.

Full Outsourcing

In Full Outsourcing, the Original Equipment Manufacturer (OEM) completely outsources the manufacturing of an assembly to an Manufacturing Partner (MP) and ships the components to the MP but retains the ownership of the components while they are used in the manufacturing of the assembly. The MP makes no payment to buy the components. Full Outsourcing support is available for all countries.

Outsourced Assembly

Assembly item that is designed by the OEM, and outsourced to a MP for manufacturing at the latter's site.

Subcontracting Components

Components sent by the OEM to the MP for the manufacture of outsourced assemblies.

Subcontracting Sales Order

Sales Order created in Internal MP organizations to ship the finished outsourced assembly to OEM organization.

Prepositioned

Components are shipped to the MP without reference to any subcontracting order ahead of assembly requirements. When the subcontracting order is created, these components are hard allocated.

Synchronized

Components shipped along with the order, to the MP with references to specific subcontracting orders.

Subcontracting Order

Purchase order (or Blanket Release) created by the OEM to procure outsourced assemblies from the MP.

Replenishment PO

Purchase order created for the MP in the Subcontracting process to procure subcontracting components from the OEM. This purchase order is not visible on the Subcontracting Workbench. The PO is also closed for invoicing.

Replenishment SO

Sales order created in the Subcontracting process to ship subcontracting components to the MP.

Allocations

Pegging of replenishment sales orders created in the OEM organizations in accordance with component requirements for the manufacture of outsourced assemblies at the MP site.

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