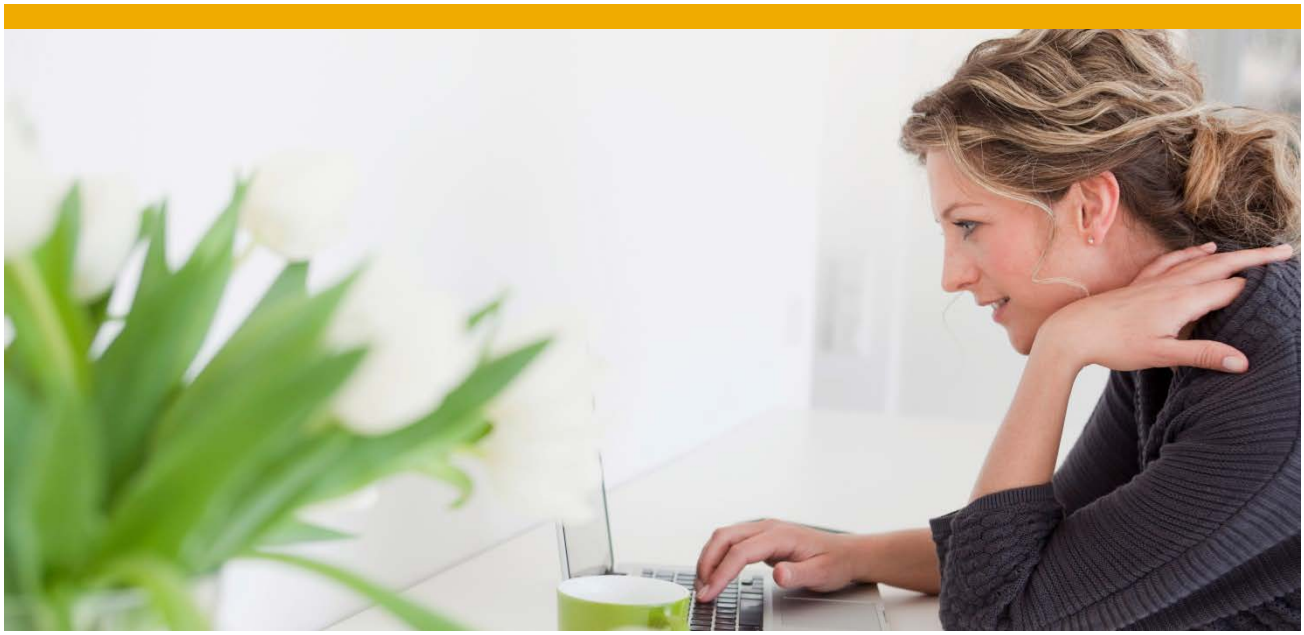

SAP Revenue Accounting and Reporting

White Paper

Knowledge Document (General Part)

Version 1

SAP FI-RA

Revenue Accounting and Reporting

KNOWLEDGE DOCUMENT

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List of abbreviations

API	Application Programming Interface
ARL	Adapter Reuse Layer
BOM	Bills of Material
BP	Billing Plan
BRF+	Business Rules Framework plus
CA	Contract Asset
CL	Contract Liability
FASB	Financial Accounting Standard Board
GI	Goods Issue
IASB	International Accounting Standard Board
IC	Integration Component
MEA	Multiple Element Arrangement
POB	Performance Obligation
RA	Revenue Accounting
RAI	Revenue Accounting Item
SSP	Standalone Selling Price
UI	User Interface
…	

1 Introduction

The International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) have jointly issued a new revenue standard, IFRS 15 Revenue from Contracts with Customers. In order to comply with the latest bookkeeping principles and current regulations, SAP provides some general recommendations and best practices for customers using SAP Revenue Accounting and Reporting. Throughout the document, the term 'Revenue Accounting' is used instead of 'SAP Revenue Accounting and Reporting'.

- Implementing Revenue Accounting in order to meet IFRS 15 / ASC 606 requirements will need a sophisticated, upfront business analysis, especially a technical accounting assessment to ensure that the system requirements are fully known. This must be driven by your business department, and by consulting with your auditor or accounting advisor before implementing the solution. A complete understanding of your company's business as regards revenue accounting and revenue recognition processes is also required during implementation.

- The entire revenue recognition process needs to be approved by the responsible head of accounting and your external auditor.

- The complexity of the topic requires expert knowledge of the solution and the underlying business requirements. We strongly recommend that you contact your SAP Account Executive or SAP Consulting Services Executive for a better understanding of the required consulting service.

- The sensitive nature of the topic - posting of revenues - requires intensive testing. Thus we strongly recommend that you implement structured and comprehensive test plans that cover all scenarios you are dealing with.

- If no Multiple Element Arrangements (MEA) or no difference in point in time for realization exist, Revenue Accounting is not necessary, that is, customer invoices can be used to handle revenue recognition. But if those processes are being used, it makes sense to use Revenue Accounting for reporting or disclosure purposes.

- Revenue Accounting can manage all data and valuations separately for parallel accounting principles. Parallel accounting principles can post to different ledgers in New GL or to different accounts. Different accounting principles may use different terms and methods of calculation to refer to the concept of contract liabilities and contract assets. You can define for each accounting principle whether it uses contract liabilities/contract assets or unbilled and deferred revenue.

- IFRS 15 / ASC 606 causes additional requirements with respect to increased data volumes. It is recommended that you perform a structured sizing to determine these requirements. You can access our sizing tool at the SAP Service Marketplace (Path: *Products - Performance & Scalability - Sizing - Sizing Guidelines – Business Application: SAP ERP - SAP Revenue Accounting and Reporting*).

- To make sure that compliance with the latest requirements is possible, always implement the latest versions of the add-on, especially the latest notes on revenue recognition. In addition, newly created notes are contained in the monthly TOP NOTES list that is sent out.

- The software needed for the installation can be found on SAP Service Marketplace and is free of charge. Further information about the add-on can be found at SAP Product Availability Matrix.

- We strongly recommend that you always apply the latest Support Package in order to avoid unnecessary issues which had already been fixed.

- Always get the latest version of the Revenue Accounting 'White Paper'. The document is attached to SAP-Note …. In addition to the 'White Paper', training for Revenue Accounting is available with the following title:

  TZRRA1: SAP Revenue Accounting and Reporting 1.0

  This training course can be found under *www.sap.com/education*.

- If you are using ERP Sales and Distribution (SD), there is a link to a special chapter in this 'White Paper'.

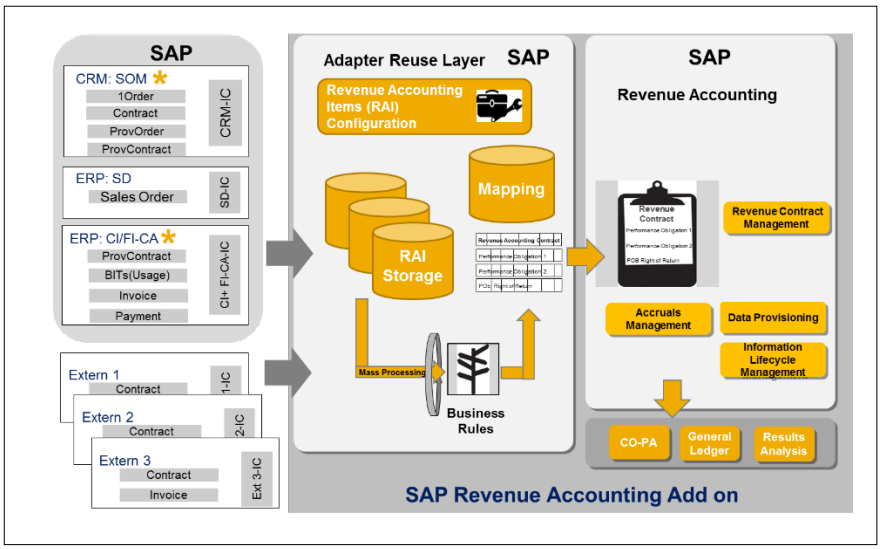
- If you are using Customer Relationship Management (CRM), there is a link to a special chapter in this 'White Paper'.

- If you are using Billing and Revenue Innovation Management (BRIM), there is a link to a special chapter in this 'White Paper'.

The comments in these documents are binding for all customers using the 'SAP Revenue Accounting and Reporting' add-on, and the outlined recommendations have to be implemented.

2 Overview of Revenue Accounting

2.1 Architecture



Revenue Accounting is an add-on to ERP Financials, with an open interface to operational applications. Data from different operational applications can be transferred to Revenue Accounting.

In operational applications, an Integration Component (IC) creates revenue accounting items (RAIs) and sends them to Revenue Accounting. An RAI contains all data from operational items and events that are relevant for Revenue Accounting. Currently SAP allows the configuration and processing of order items, invoice items, and fulfillment items.

The Adapter Re-Use Layer (ARL) of Revenue Accounting receives RAIs and transforms them into RA contracts and performance obligations (POBs). For the transformation, different rules can be applied.

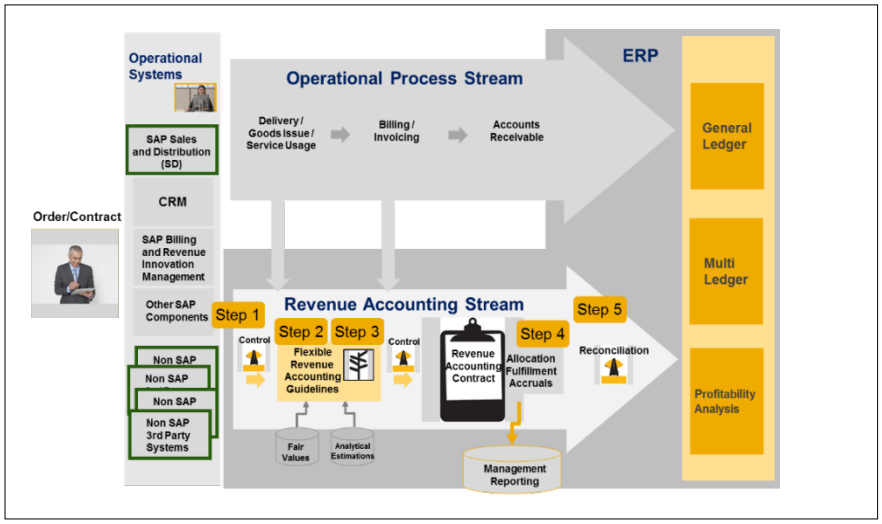
In a BAdI, customers can specify that operational contracts (or items of operational contracts) are automatically combined into one RA contract.

Business Rules Framework plus (BRFplus) is a flexible rules framework that is used to define rules for the transformation of operational items into RA contracts and POBs. In BRFplus rule sets, customers can define rules in order to determine for example the creation of additional POBs and SSP determination.

The ARL transfers RA contracts with POBs, invoice event data and fulfillment event data of the Revenue Accounting Engine. An RA contract is created. The link between the RAIs and the created POBs is stored in a mapping table. Components of the Revenue Accounting Engine are the following:

- Contract management calculates price allocation
- Process management offers manual processing
- Invoice management calculates effects from invoices
- Fulfillment management determines recognized revenue from fulfillment events
- Posting management creates postings of recognized revenue and invoice corrections
- The accrual run creates postings in FI-GL and CO-PA
- Data provisioning extracts data to BI

2.2 Legal Requirements



The framework for recognizing revenue uses the following 5-step approach:

Step 1: Identify the contract(s) with the customer

Step 2: Identify the performance obligations in the contract

Step 3: Determine the transaction price

Step 4: Allocate the transaction price

Step 5: Recognize revenue when a performance obligation is satisfied

As one can see in the above figure, the five-step model jointly issued by IASB and FASB is realized in the Revenue Accounting solution presented by SAP.

In accordance with the new standard, the first step takes place in the operational system. Steps 2 and 3 of the five-step model are implemented in the ARL. As described before, the ARL receives the RAIs and transforms them to POBs based on the rules previously defined in BRFplus. The allocation of the transaction price to the distinct POBs of a contract (Step 4) can be evaluated in the Revenue Accounting Engine (RA Engine). As a last step, FI revenue documents are posted by the accrual run. The accrual run creates aggregated actual postings to FI General Ledger, CO-PA and other relevant accounting components. Thus, Step 5 is covered by the interface between the RA Engine and FI.

2.3 Timing of Revenue Recognition: Fulfillment Types and Event Types

According to the new standard, companies recognize revenue when a performance obligation is satisfied (IFRS15, 31). Therefore, the fulfillment and event type play an important role. The present chapter briefly sets out the possible fulfillment and event types in Revenue Accounting.

2.3.1 Fulfillment Types

Revenue Accounting manages the fulfillment statuses of performance obligations on its own. When a performance obligation qualifies as fulfilled, it is tracked as fulfilled in Revenue Accounting. The corresponding revenues and costs are then recognized in a revenue posting job, typically performed at the closing of an accounting period. Therefore, the data tracked in Revenue Accounting may be inconsistent with the general ledger until a revenue posting job is performed.

Event-Based Fulfillment

A performance obligation can be fulfilled on the occurrence of a certain event, such as a goods issue. In this scenario, you can set the fulfillment type to *Event-Based* and define the appropriate type of event that triggers the fulfillment of the performance obligation.

Time-Based Fulfillment

A performance obligation can be fulfilled over a period of time. The period of time can be specified by a start date in combination with either a length of time or an end date. The fulfillment of the performance obligation can be distributed over the duration in many ways. For example, you can fulfill the performance obligation by the end of the last accounting period of the duration. Or you can distribute the fulfillment evenly among the accounting periods within the duration.

Fulfillment by Percentage of Completion

Your contracts with customers may involve a project to which quantities do not apply. The revenue is recognized according to the percentage of the project that has been completed. In this scenario, you can fulfill relevant performance obligations by percentage of completion. To fulfill a performance obligation of this kind, the accountant manually enters the progress into the Revenue Accounting system by specifying the percentage that has been completed. Furthermore it is also possible to use the amounts of the customer invoice, which was sent to the RA Engine, to get the percentage of completion (PoC) of a POB.

Manual Fulfillment

Certain business scenarios require that performance obligations can only be fulfilled manually. Manual fulfillment of performance obligations is also a type of event-based fulfillment. The only difference is that the fulfillment is not automatically triggered by incoming events. Instead, the accountant manually specifies how much of a performance obligation is delivered. The system then calculates how much of that performance obligation is actually fulfilled, based on its dependency on other performance obligations. Even though you can define your own event types that move performance obligations toward their fulfillment, *Manual* (MA) is a pre-delivered event type that indicates that the performance obligation is to be fulfilled manually. Additionally, different features are offered: manual fulfillment at contract level, manual fulfillment at performance obligation level, as well as reverse fulfillment.

2.3.2 Event Types

As previously described, a POB can have an event-based or time-based fulfillment type. For event-based types, possible event types are: goods issue, invoice, and manual fulfillment (manual input of PoC). For time-based fulfillment, the start date and duration or end date can be transferred from the operational item or maintained manually in Revenue Accounting.

Detailed information and required settings are available in 'Fulfillment of Performance Obligations' at SAP Help Portal.

2.4 Amount of Revenue Recognition: Price Allocation

According to the new standard, companies recognize the amount of consideration to which an entity expects to be entitled in exchange for transferring goods or services to the customer (IFRS15, 73ff.).

For Multiple Element Arrangement (MEA) companies need to allocate the complete transaction price on the basis of the relative standalone selling price (SSP). Revenue Accounting allows you to allocate the transaction price among the POBs in an RA contract. The standard price allocation is based on SSP. However, the system allows you to specify other methods of price allocation to address your specific business scenarios.

Detailed descriptions with some posting examples, as well as information about allocation effects and required settings are provided in 'Price Allocation' at SAP Help Portal. Price allocation will be also discussed in the training session TZRRA1: SAP Revenue Accounting and Reporting 1.0.

2.5 Posting Run and Logic of Revenue Accounting

The Revenue Accounting system manages revenue recognition by using objects like RA contracts and POBs. The system receives events that relate to revenue recognition and tracks the fulfillment of POBs. However, revenue postings are not made at the times of those events. The accountant performs revenue posting jobs regularly to post FI documents to the general ledger. Before the postings are made, the accountant can choose to perform the calculation of time-based revenue, contract liabilities, and contract assets. For example, after calculating time-based revenue, contract liabilities and contract assets, the accountant can perform a revenue posting run at the end of each accounting period to transfer revenue recognition transactions to the general ledger.

To enable revenue postings, you need to perform the following Customizing activities:

- Define accounting principles and enabled company codes for Revenue Accounting.
- Define tax codes for non-taxable transactions.
- Configure parallel processing for the posting of revenue.
- Define the transfer account, posting keys, document type, and account assignments.
- Configure account determination.

Further information about Customizing is provided in chapter 3.2 as well as at SAP Help Portal. The Help Portal describes prerequisites and further features that support you during the revenue posting run.

The section ‘Revenue-Related Events and Postings’ at SAP Help Portal provides an overview of the activities that involve revenue postings, typical postings that are made outside Revenue Accounting for those activities, and corresponding corrective postings made by Revenue Accounting.

In addition, the training course TZRRA1: SAP Revenue Accounting and Reporting 1.0 imparts the necessary knowledge about the revenue posting logic.

3 Implementing Revenue Accounting

3.1 Getting Started

3.1.1 Required Releases and Support Packages

The first step of implementing Revenue Accounting is checking your system status. Please do not start implementing or customizing Revenue Accounting, if you do not have the latest support packages for your SAP release.

Current information about related product versions and support package stacks will be provided at the SAP Product Availability Matrix. Please consider that there will be regular updates.

Available products for Revenue Accounting are:

- SAP Revenue Accounting 1.0 - SAP Revenue Accounting and Reporting 1.0
- SAP Revenue Accounting 1.1 - SAP Revenue Accounting and Reporting 1.1

3.1.2 Available Documentation

Before starting with the implementation of Revenue Accounting, it is essential to know which processes are supported by SAP.

The supported processes and functions are described in the document 'SAP Revenue Accounting and Reporting – White Paper'.

For processes that are not described in this document, please contact your SAP Account Executive or SAP Consulting Services Executive.

This document contains detailed information about and hyperlinks relating to:

- A guide for implementation
- Necessary Customizing settings
- Supported processes and scenarios
- General recommendations

In addition to this 'White Paper' document, training for Revenue Accounting is available with the following title:

- TZRRA1: SAP Revenue Accounting and Reporting 1.0

This training course can be found under http://www.sap.com/education.

Besides this document, information is available on how to configure, manage, maintain, and optimize your installation, as well as information about the functionality and further product information:

- Help Portal SAP Revenue Accounting and Reporting 1.0
- Help Portal SAP Revenue Accounting and Reporting 1.1
- SAP System IMG
-

3.1.3 Initial Installation

The software needed for the installation is available at SAP Service Marketplace and is free of charge. Further information about the add-on can be found at SAP Product Availability Matrix.

Please follow the instructions given on the SAP home page: Revenue Accounting and Reporting 1.1.

On this home page, the Admin Guide can be found, which contains important information for the installation and setup of the add-on. Please check the home page for the latest version.

To make sure that compliance with the latest requirements is possible, always implement the latest version of the add-on, especially the latest notes on Revenue Accounting. We strongly recommend that you always apply the latest support package in order to avoid unnecessary issues which had already been fixed.

For using Revenue Accounting, it is essential to install SAP NetWeaver Business Client (NWBC). SAP NWBC is a rich UI client that offers a single point of entry to SAP applications, especially harmonizing access to existing SAP GUI transactions and newly developed applications based on Web Dynpro. NWBC itself is a high-fidelity shell that aims at harmonizing the user experience over different UI technologies. For further information please refer to the SAP documentation for NWBC.

3.1.4 Authorizations and Roles

Make sure the user is assigned to the following roles:

- SAP_SR_FARR_REV_ACCOUNTANT
- SAP_SR_FARR_REV_ACCOUNTANT_A
- SAP_SR_FARR_REV_ADMIN
- SAP_SR_FARR_REV_ADMIN_A
- SAP_SR_FARR_REV_AUDITOR
- SAP_SR_FARR_REV_AUDITOR_A

The authorization profiles for the following roles need to be generated:

- SAP_SR_FARR_REV_ACCOUNTANT_A
- SAP_SR_FARR_REV_ADMIN_A
- SAP_SR_FARR_REV_AUDITOR_A

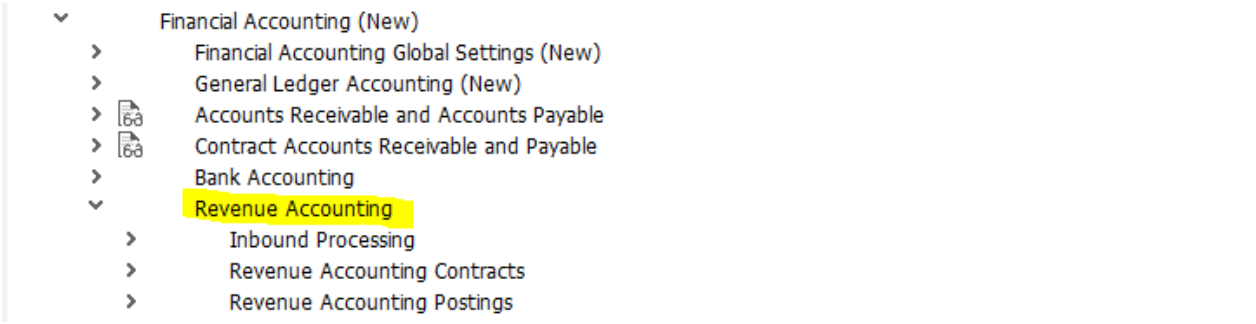
Additionally an RFC user is needed that has the standard authorization to execute RFC and in addition is assigned to the role SAP_SR_FARR_REV_RFCUSER_A.

For more information related to available roles in Revenue Accounting, see the SAP library: Roles.

Furthermore, BRFplus authorizations have to be granted since they are a precondition for working in Revenue Accounting. The name of the related SAP standard role is: SAP_BC_FDT_ADMINISTRATOR. More information related to BRFplus can be found here.

3.1.5 RAI Setup and Management Described Using Example of SD Classes

Customizing for RAIs (revenue accounting items) is located in the “Financial Accounting (New)” branch of the SAP reference IMG. Alternatively you can access the IMG using transaction FARR_IMG.

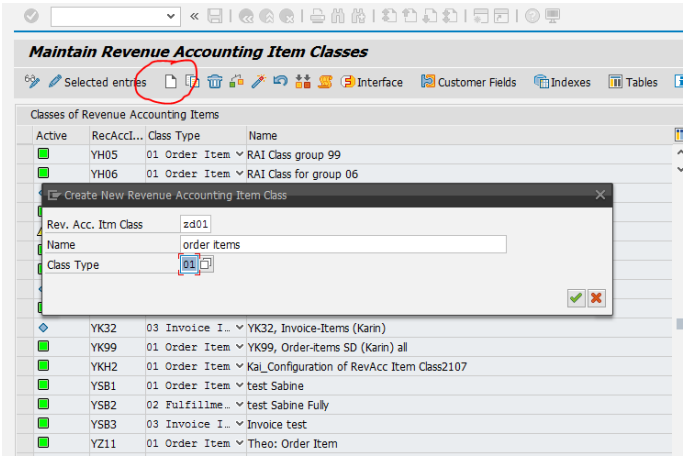


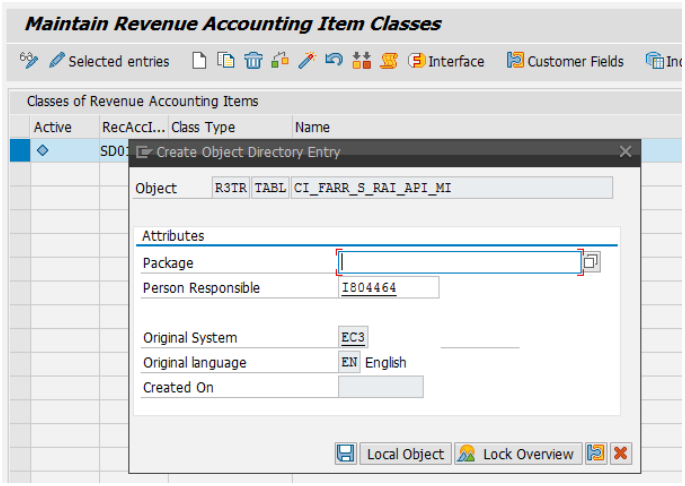
3.1.5.1 RAI Classes

For integration with the SAP SD module, for example, you need to create, activate and generate the RAI classes SD01 (Order Items), SD02 (Fulfillment Items) and SD03 (Invoice Items).

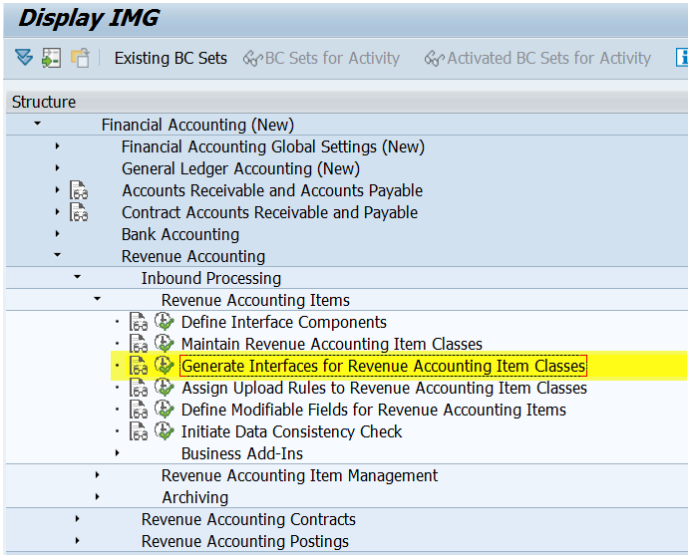
3.1.5.1.1 Creation and Activation

Choose IMG activity '*Inbound Processing -> Revenue Accounting Items - > Maintain Revenue Accounting Item Classes*' or use transaction code 'FARR_RAI_CONF'.



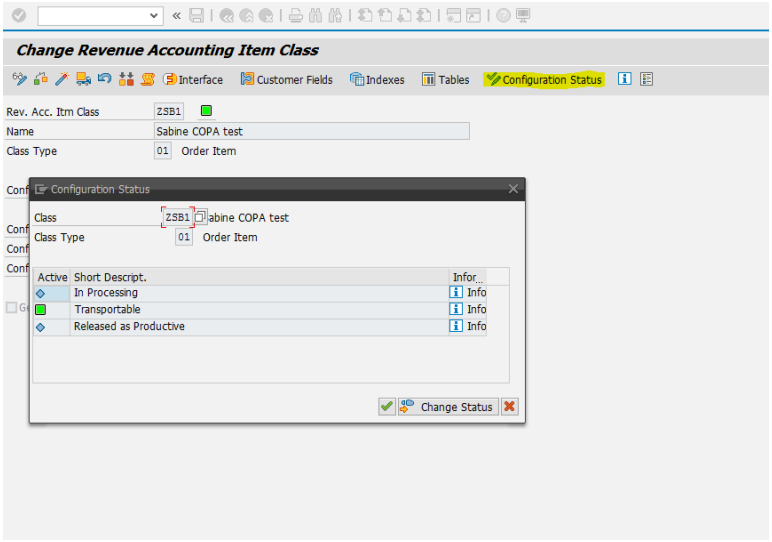


3.1.5.1.2 Generation



The classes for the revenue accounting items (RAI classes) have one of these configuration statuses:

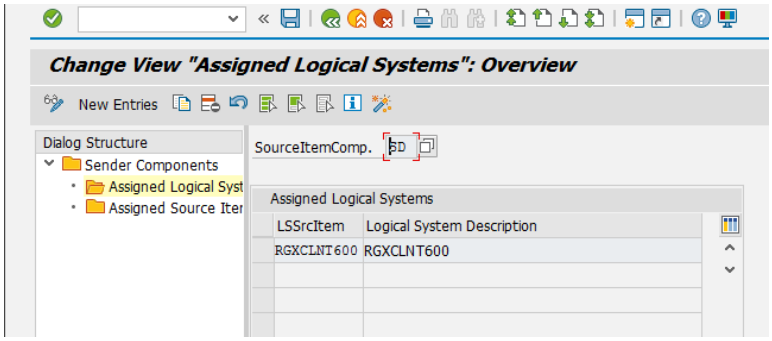
- In Processing
- Transportable
- Released as Productive



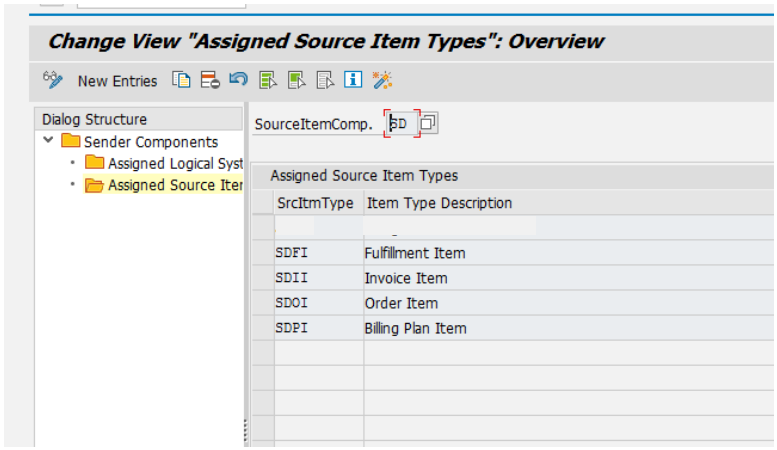
For an explanation of the statuses, choose the information button to the right of the *Configuration Status* button (highlighted in yellow here). You can also choose to generate the objects in the target system using an after-import method. Development authorization is requested if objects are generated locally.

3.1.5.2 Define Sender Component

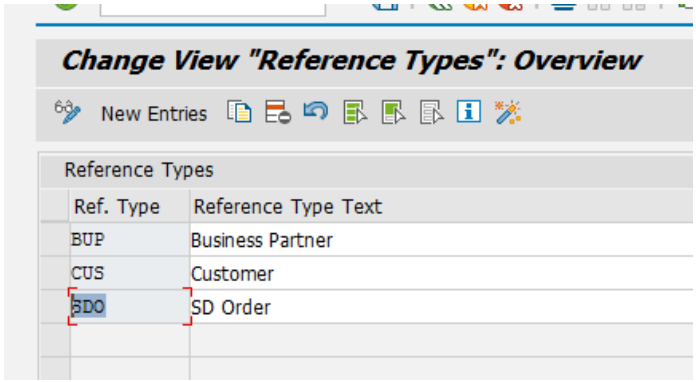
Assign a logical system to the sender component, such as SD. (Enter the same logical system, if SD is running in the same system as Revenue Accounting).



Assign source item types to sender component, for example SD (if not yet assigned).



3.1.5.3 Reference Type



Note: The reference type is used to bundle POBs. In the standard system, all POBs created for one sales order are bundled in one RA contract (reference type: SDO).

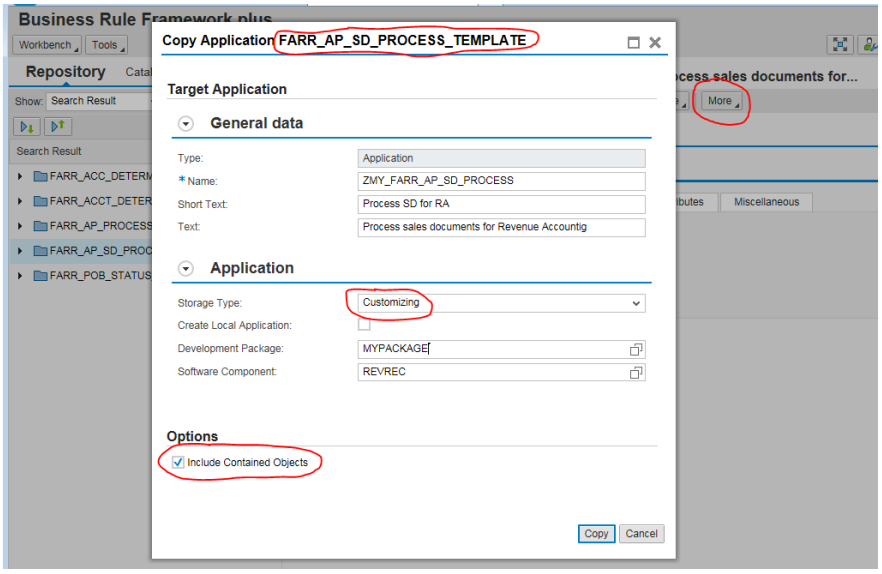
3.1.5.4 RAI Processing

Generated RAIs can be processed in transaction FARR_RAI_MON. For test purposes, you can directly create revenue accounting contracts by setting user parameter ‘FARR_RAI_TEST’ to ‘X’.

3.1.5.4.1 Copy BRFplus Template for RAI processing and Assign to RAI Class

Start transaction BRF+ and search for a BRFplus application, such as FARR_AP_SD_PROCESS_TEMPLATE. You see the technical name of the application in the tree on the left side only if you are in “Expert mode”. Otherwise you see the text “Process sales documents for Revenue Accounting”.

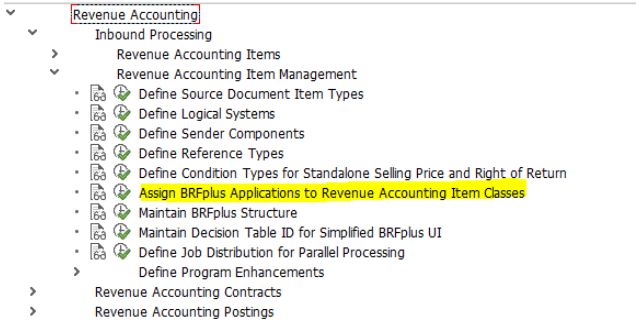
Choose the “More” button and use the copy function. The “Include Contained Objects” flag needs to be set and you need to decide on the storage type.



You must not change the names of the functions such as FC_PROCESS_POB. You may change the names of the decision tables or rule sets.

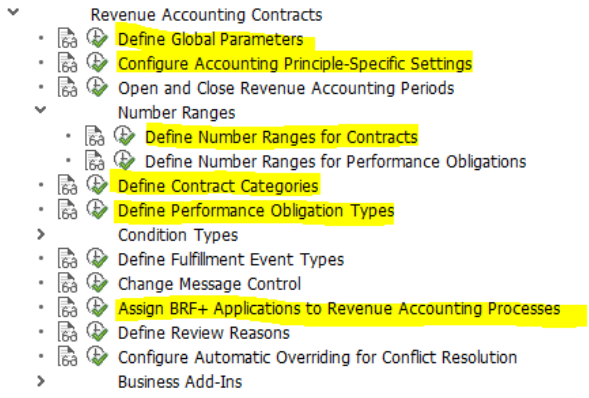
You can access and maintain these applications either from assigned roles or by calling transaction BRF+.

3.1.5.4.2 Assign BRF+ application to RAI class



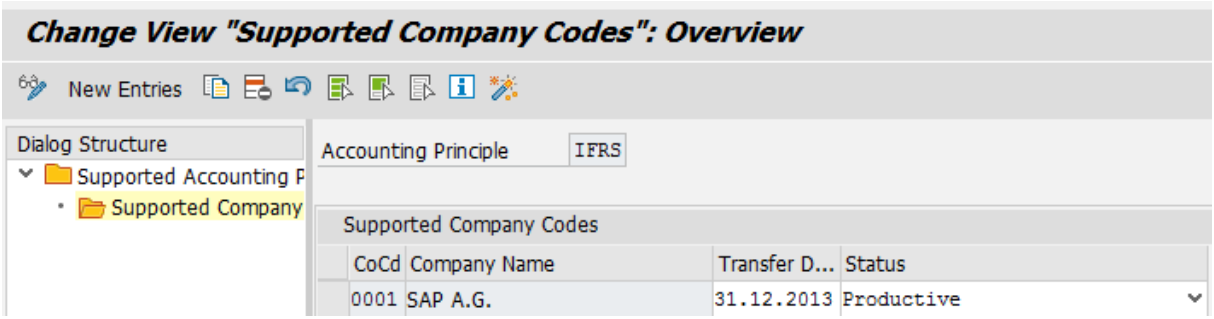
3.1.6 Revenue Accounting Contracts

You have to perform the following highlighted IMG activities. Good information on these activities can be found on the left hand side.



Note: Number range for contracts is buffered due to performance (parallelization). Therefore, some numbers might be lost in case of restart of the application server.

In the activity '*Configure Accounting Principle-Specific Settings*', you need to specify a transfer date as well as a status. These settings are important once you start to migrate legacy data to Revenue Accounting. For more information, see the Administrator Guide: Chapter 5 - Migration (Release 1.0). In order to transfer the first RAIs into Revenue Accounting, you need to set the status to *Productive* and enter a transfer date in the past.



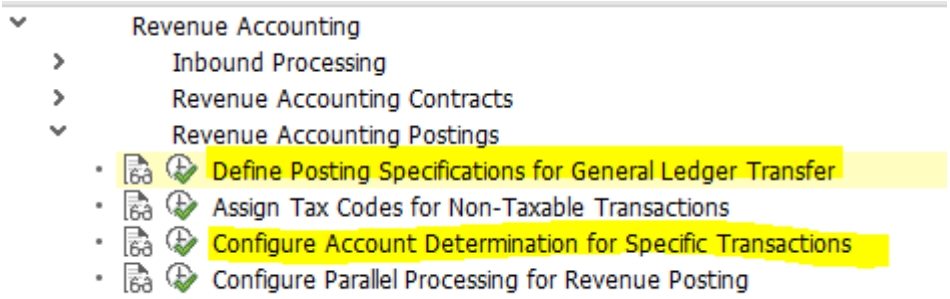
This migration function is enhanced in Release 1.1 such that a migration can be performed with higher granularity, based on Migration Packages.

After having defined performance obligation types, you need to assign these types to your order data (such as material MATNR) within your copy of BRFplus decision table DT_PROCESS_POB.

In the activity '*Assign BRF+ Applications to Revenue Accounting Processes*', you need to copy FARR_ACC_DETERMINE_TEMPLATE to a local namespace and assign the copy to the BRFplus rule category 'Account Determination'.

3.1.7 Postings

For postings you need to perform the highlighted activities.



You can define the account determination from the above activity with the simplified ABAP Web Dynpro UI. Or you can access your copy of the template application FARR_ACC_DETERMINE_TEMPLATE in BRFplus, if you need enhanced features like ranges for account assignment.

The main account determination is made in the RA Engine, which is available in Release 1.0. In Release 1.1 there is another account determination available which is called in the ARL. Here the customer is able to determine reconciliation accounts, revenue accounts, and costs accounts, if the sender component can determine such accounts by itself.

The account determination in the RA Engine uses the reconciliation account from the customer master data to determine the following accounts.

- Reconciliation account from customer master data

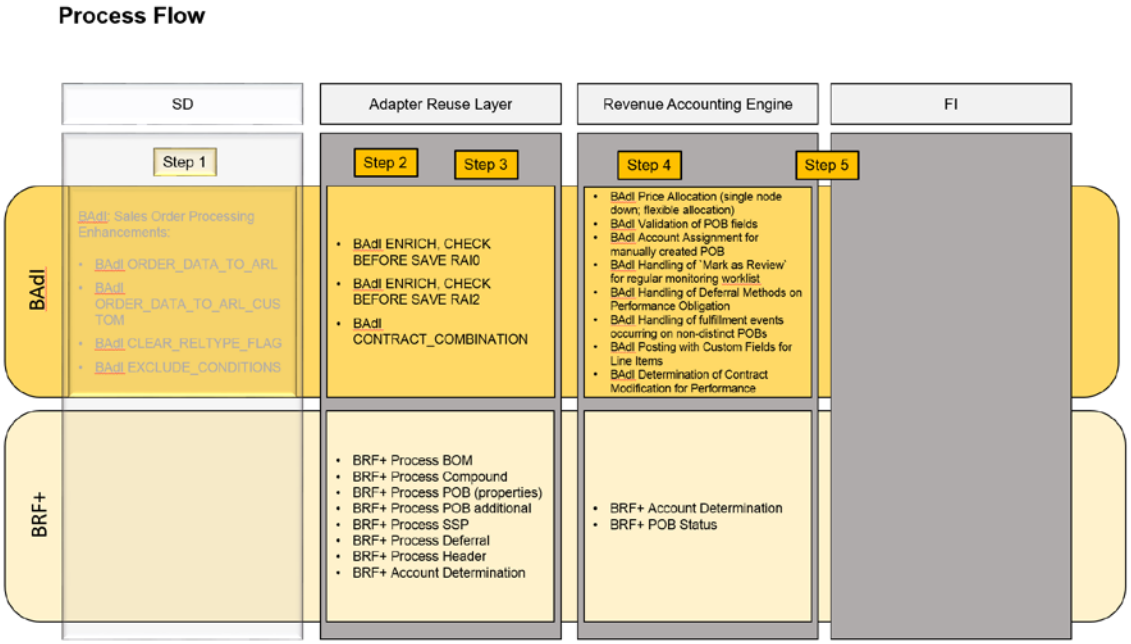
  Determine: Contract Asset

Contract Liability
Receivable Adjustment
Revenue Adjustment for Allocation Effect
Revenue Adjustments for Linked Performance Obligation

For the account assignment, you don't need to maintain deferred costs or recognized costs, as these features are not yet available. Also right of return accounts don't need to be maintained.

With these settings, sales orders with the proper item category create RAIs which can be processed in transaction FARR_RAI_MON in order to create revenue accounting contracts. In contract management (assigned via roles), you can process these contracts further. An accrual run shows results once revenue has been posted (possible both in simulation and posting mode).

3.2 Process Flow and Possibilities for Intervention



The following chapter presents the possibilities that Revenue Accounting offers for intervening during the various stages of the process flow. There are two different ways: Business Add-Ins (BAdI) and the Business Rules Framework plus (BRFplus).

3.2.1 Business Add-Ins

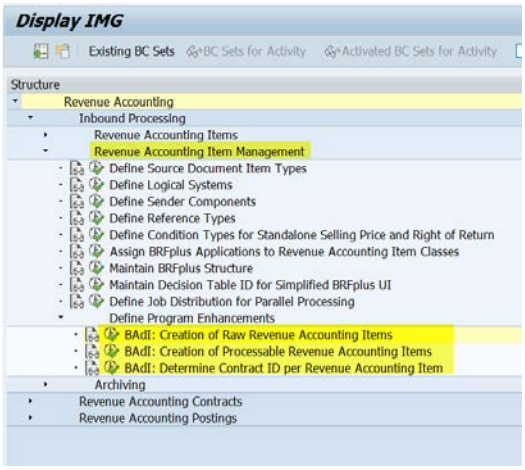
BAdIs are enhancements to the standard version of the SAP system. They can be inserted into the system to accommodate user requirements too specific to be included in the standard delivery. The configuration for Revenue Accounting is in the IMG under "Financial Accounting (New)".

This chapter provides an overview of the existing BAdIs in Revenue Accounting for different stages. Detailed information and guidance material as well as information about limitations is available in your SAP reference IMG.

There are also BAdIs in different sender components, such as in the Integration Component (IC) for SD. Further description of these BAdIs can be found in "special White Papers" which are linked to this document in chapter.

Configuration Adapter Reuse Layer

BAdIs for intervening in the Adapter Reuse Layer can be found under FARR_IMG by following the path: *Revenue Accounting → Inbound Processing → Revenue Accounting Item Management → Define Program Enhancements*



BAdI Definition: FARR_BADI_RAI0 / FARR_BADI_RAI2

The BAdI FARR_BADI_RAI0 is used when RAIs with status *raw* are to be created. The BAdI FARR_BADI_RAI2 is used when RAIs are to be transferred from status *raw* to status *processable*. By implementing this BAdI you can fill additional attributes of RAIs with status *raw* (RAI0) / *processable* (RAI2) depending on the RAI class. You can also introduce additional checks that you want to perform before the items are saved to the database. For more information, refer to the IMG activity documentation. It also includes an example.

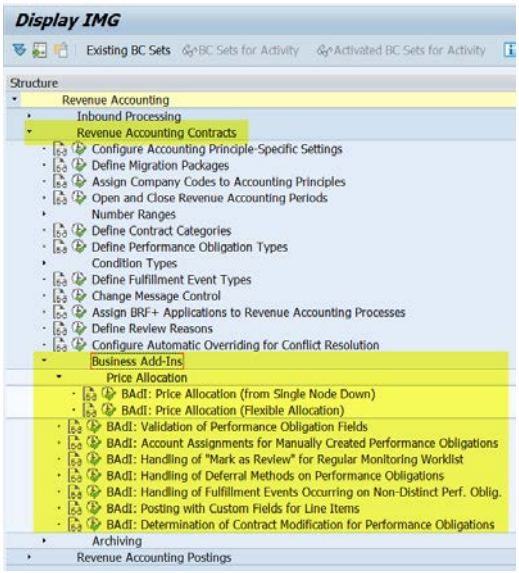
BAdI Definition: FARR_BADI_CONTRACT_COMBINATION

This BAdI is used for determining a contract ID for each RAI in order to group all items that belong together. By implementing this BAdI, you can add to or change the logic for how RAIs should be grouped in one RA contract during processing. All RAIs belonging together receive the same contract ID.

Configuration Revenue Accounting Engine

BAdIs for intervening in the Adapter Reuse Layer can be found under FARR_IMG by following the path: *Revenue Accounting → Revenue Accounting Contracts → Business Add-Ins*

For more information about the standard settings (filters, single or multiple uses), see the Enhancement Spot Element Definitions tab in the BAdI Builder (transaction SE18). Examples and detailed information for the described BAdIs will be provided in the IMG activity documentation. Please carefully read the provided information in the system and consider the guidance material.



BAdI: Price Allocation (from Single Node Down; Flexible Allocation)

These BAdIs are used in the Revenue Accounting (FI-RA) component. Revenue Accounting provides two BAdIs for price allocation. You can use the BAdI *Price Allocation (from Single Node Down)* to allocate the total amount of a certain condition type among performance obligations. And you can use the BAdI *Price Allocation (Flexible Allocation)* to allocate the transaction price among performance obligations. These BAdIs allow for flexible allocation when standard allocation, such as *Allocate by Standalone Selling Price*, does not suit your requirements.

BAdI: Validation of Performance Obligation Fields

You can apply your own logic for validating fields on performance obligations. This BAdI does not allow you to skip the validation checks that the Revenue Accounting system applies. Instead, it allows you to apply additional checks after the system has performed the standard part of validation.

BAdI: Account Assignments for Manually Created Performance Obligation

You can use the DERIVE_DEFAULT_ACCT_ASSIGNMENT method to provide default values for account assignment fields on the dialog box that appears when the user adds a manual performance obligation. The account assignment fields include the following: *Profitability Segment Number, Functional Area, Business Area, Segment for Segmental Reporting* and *Profit Center*. For all the fields other than the profitability segment number, the values provided by the method are default values and can be edited by the user. The profitability segment number is calculated and cannot be edited.

BAdI: Handling of "Mark as Reviewed" for Regular Monitoring Worklist

You can use this BAdI to apply your own processing logic when the user clicks *Mark as Reviewed* on the Regular Monitoring Worklist.

BAdI: Handling of Deferral Methods on Performance Obligation

You can use this BAdI to handle fulfillment events that are transferred from the operational system. When a fulfillment event occurs, this BAdI takes the event data and returns the fulfillment items to be created. Your implementation of this BAdI works only when the fulfillment type of the corresponding deferral item is *Time*, because other fulfillment types have their own built-in logic to handle fulfillment events. The default implementations that address typical scenarios of fulfillment event handling are available in the IMG in your SAP system.

BAdI: Handling of Fulfillment Events Occurring on Non-Distinct POBs

Fulfillment events that occur on non-distinct performance obligations can only be accounted for on their corresponding compound performance obligations. This BAdI lets you apply your own logic to assess the completion of the compound performance obligation when events occur on non-distinct performance obligations. An example for this BAdI is available in the IMG.

BAdI: Posting with Custom Fields for Line Items

You can extend the line item structure of FI documents to include custom fields. However, the system by default does not use your custom fields when making revenue postings to the general ledger. For each line item that is to include those additional fields, you can use this BAdI to provide values for the fields. Corresponding requirements are available in the IMG.

BAdI: Determination of Contract Modification for Performance

You can use this BAdI to apply your own processing logic when making prospective or retrospective adjustments to address changes made to performance obligations. When a change is made to a performance obligation that involves a price change, you can use this BAdI to determine whether retrospective adjustments and prospective adjustments should be made to accommodate this change. Depending on the price allocation method, performance obligations in a contract are sorted into two categories, each using a method to determine the adjustment mode. If this BAdI is not implemented, the system determines the use of prospective adjustments or retrospective adjustment by using its own logic, depending on the changes to the quantity, the price, and the duration.

3.2.2 Business Rules Framework Plus

BRFplus provides a comprehensive application programming interface (API) and user interface (UI) for defining and processing business rules. It allows you to model rules in an intuitive way and to reuse these rules in different applications.

Major BRFplus components include application, function, catalog, expression, action, and data object. The interface between a business rule modeled with BRFplus and an application using that rule is provided by a BRFplus function. The function serves as a container for the entire business logic of a rule, no matter how complex it may be. Rules are implemented as expressions which are assigned to a function. The rule input is known as context and the rule output is called result. Context and result consist of data objects of one of the following types: element, structure, and table.

Detailed information as well as tutorials are available at SAP Help Portal.

The following functions are provided in BRFplus:

- FC_PROCESS_BOM: You determine whether bills of material (BOM) are managed as distinct or non-distinct POBs.
- FC_PROCESS_COMPOUND: You determine whether non-BOMs are managed as distinct or non-distinct POBs.
- FC_PROCESS_POB: You specify POB attributes. You can use the default attributes from a POB type.
- FC_PROCESS_POB_ADD: You create links to implicit POBs.
- FC_PROCESS_SSP: You can maintain or upload the standalone selling price (SSP) in BRFplus. You can send them with special conditions from the operational application, too.
- FC_PROCESS_DEFERRAL: You create additional POBs from defined special condition types (for example, right of return).

- FC_PROCESS_HEADER (optional): You maintain contract header attributes.

For more information, see Customizing in FARR_IMG: *Revenue Accounting → Inbound Processing → Revenue Accounting Item Management*.

The BRFplus simplified user interface (UI) is an alternative to the standard BRFplus UI. You use the simplified BRFplus UI to maintain decision tables used in Revenue Accounting and Reporting. For more information, please refer to BRFplus Simplified User Interface.

Customizing steps and general remarks are already described in chapter *3.1.5.4.1 Copy BRF+ Template for RAI processing and assign to RAI class.*

For how to extend a BRFplus decision table by a standard field or a customer field, see this document.

The application help includes details for BRFplus functions on

- POB Processing
- Account Determination

For account determination two options are available. You can determine the target accounts that are to be posted by using Customizing rules from reference accounts that the sender system transfers in order items and invoice items. The target accounts are used, for example, for posting recognized revenue or for adjusting receivables.

However, as a separate option, you can determine G/L accounts completely within Revenue Accounting, using characteristics of order items. To derive the G/L accounts from characteristics of order items, the sender system has to set the *Determine Revenue Accounts with BRFplus* indicator in main conditions.

Further information is available in 'Enhancement of Account Determination' at SAP Help Portal. In addition, account determination will be also part of the Training TZRRA1: SAP Revenue Accounting and Reporting 1.0.

4 Contract Modifications

The Revenue Accounting system can perform contract modifications from customer invoices passed on from the back-end operational system. Contract modification includes modification of the contractual price and conditions. The Revenue Accounting system determines whether the change is a prospective change or a retrospective change. A prospective change or retrospective change can change the total price and quantity of a contract.

4.1 Invoicing

The back-end operational system can transfer customer invoices to the Revenue Accounting system. Each invoicing event can modify the revenue accounting contract or report a fulfillment event, such as Percentage of Completion (PoC) using event type 'CI' (Customer Invoice).

An invoice transferred to the Revenue Accounting system can trigger contract modifications as follows:

- Modifying the contractual price
- Modifying the conditions
- Preventing changes from being made to account determination

Please consider the description of the different contract modifications at SAP Help Portal.

You will also find the following information:

- Marking an Invoice as Final
- Due Date of Invoice
- Credit Memos and Debit Memos
- Invoicing for Milestone Billing Plans
- Invoicing for Time-and-Material Projects
- Planned Invoices

4.2 Distinction between Prospective and Retrospective Changes

Contract modifications that have resulted from changes to scope or price (or both) lead either to a prospective change or a retrospective change. Retrospective changes apply the modification to both fulfilled and unfulfilled parts in a revenue accounting contract. Prospective changes only apply the modification to unfulfilled parts.

When processing changes made to RA contracts and POBs, RA determines whether the changes are handled as prospective changes or retrospective changes. The total price and quantity of a contract may change after part of it has already been fulfilled. This may change the value of the part that remains to be fulfilled. The calculations of prospective changes or retrospective changes have different ways of handling the part that has already been fulfilled before the change.

An example with an RA contract and the result after a prospective as well as retrospective change will be provided at SAP Help Portal.

When a change is requested by the operational application, RA determines whether it is a prospective change or a retrospective change, depending on the type of change. To differentiate these two types of change, the system follows certain rules. Therefore please consider the following chapters at SAP Help Portal:

- Handling of the 'Exclude from Allocation' attribute
- Changes applied by the user on the operational document
- Changes as a result of changes to the BRF+ rules
- Changes manually applied by the user to the contract

By default, the system uses standard rules to determine whether a change is prospective or retrospective. You can enhance the BAdI 'FARR_CHANGE_MODE_DETERMINATION' by defining your own rules. Information about the BAdI was already provided in chapter 3.3.1. Detailed information and guidance material are available in your SAP reference IMG.

4.3 Prospective Change Processing

When Revenue Accounting determines that a requested price change is a prospective change, it applies the price change on the unfulfilled part of all performance obligations. Specifically, the system performs the following processing.

- The system calculates the percentage of the unfulfilled part of each performance obligation in the contract.
- The system determines whether a price re-allocation in prospective mode is required.
- The system performs allocation in prospective mode.
- The system handles fulfillments that occur after a prospective change.

Detailed information about the above mentioned processes will be described at SAP Help Portal.

There you can also find some detailed examples. This examples of sequence of changes shows the following options:

- Prospective change after retrospective change (Changes with the Same Period / Changes across Different Periods)
- Prospective change after prospective change
- Retrospective change after prospective change

Furthermore you can find information about the following topics:

- Effective Date of the Change
- Fulfillments Being Canceled After a Prospective Change
- Negative Revenue

5 Migration and Consistency Checks

5.1 Migration

After you install all required components of the Revenue Accounting and Reporting solution, you can load data of your existing open contracts into the new system. This process is referred to as ‘Migration’ or ‘Initial Load`.

Here you find available documentation and references about how to transfer data of existing contracts from operational applications and from legacy revenue accounting systems to Revenue Accounting and Reporting.

A typical setup of your system landscape may have one or more operational applications that manage the operational processes of delivery and billing of goods or services to customers. The administration guide describes the migration and relates in some chapters to SAP Sales and Distribution (SAP SD), for which a program is already available for initial load. But in future, other sender components like BRIM or CRM will also be supported with a special report. More information about the initial load will be found in chapter 6. which is reserved for special sender components. To load data from operational applications other than SAP components, you have to develop your own initial load program to perform the data processing described in this guide.

You may have one or more legacy systems where you manage valuation for revenue recognition. This includes, for example, the SAP SD Revenue Recognition solution or some spreadsheet applications. If you use your own operational applications to manage valuation for revenue recognition, you must transfer operational data and revenue recognition legacy data in separate steps as described in the administration guide.

To ensure a successful migration, please consider chapter 5 of the administrator guide 1.0. This chapter provides detailed information on the following topics:

- Data Migration Overview
- Prerequisites for Migration
  - Data in the Operational Application and in Legacy System
  - Consistency before Initial Load
  - Configuration in SAP SD
  - Configuration in Revenue Accounting
- Execution of Initial Load
  - Testing the Initial Load
  - Operational Load
  - Loading Data from a Legacy System
  - Processing RAIs from Initial Load
  - Reconciliation of Loaded Data
  - Marking Company Codes as Productive

Up to now, means until Release 1.0, it was only possible to perform the initial load for a complete company code. But with Release 1.1 you can load revenue accounting items to Revenue Accounting with finer granularity than an entire company code. Also it is possible to migrate to a company code which is already used productively.

To load data to already productive company codes, you define migration packages. Further hints on the usage of ‘migration by package’ and all functions in detail can be found at SAP Help Portal.

5.2 Consistency Checks after Migration

It is very important that all data is consistent during the migration. Therefore, SAP performs necessary consistency checks. Please be aware of the following checks and keep your data consistent.

Step	Consistency check	ARL	RA Engine
Allocation Migration	The total allocated amount must be equal to total price of the contract		X
	Exclude allocation POB shall not have CORR condition		X
Migrate Revenue	Report Migrated contract balance only in migration period		X
	Migrated revenue must have the same revenue portion per condition		X
	If Migrated Revenue = 0; FULFILL_QTY must also be zero.		X
	There shall be no migrated revenue if start date is after take over date		X
	POB has 'DEFITEMs' in case there is migrated revenue of this POB		X
	Revenue Currency = Currency of the POBs and contract		X
	The condition to migrate revenue must already exist in migrated Contract		X
	For event-based: Should not put any data in the TM_QUANTITY field		X
Migrate Invoice	Invoice amount cannot be bigger than the contractual price		X
	If the final Invoice flag is set, invoice amount must be equal to contractual price		X

6 Supported Sender Components and their Business Processes

In this chapter the business processes will be described that are supported by Revenue Accounting. Furthermore special information about supported sender components can also be found in these descriptions, which are placed in separate documents. These documents are linked to this “White Paper” in the following sub chapters.

6.1 SAP Sales and Distribution (SAP SD)

For SAP SD, an add-on, called Integration Component (IC), is available. Together with some core code changes it is possible to send logistics data from SD to Revenue Accounting. Further details can be found in the following document:

SAP Revenue Recognition and Reporting – White Paper (SD Part)

6.2 SAP Billing and Revenue Innovation Management (SAP BRIM)

For SAP BRIM, some core code changes were made. With these changes, it is possible to send logistics and billing data from BRIM to Revenue Accounting. Further details can be found in the following document:

SAP Revenue Recognition and Reporting – White Paper (BRIM Part) (to be released soon)

6.3 SAP Customer Relationship Management (SAP CRM)

For SAP CRM, some core code changes were made. With these changes, it is possible to send logistics and billing data from CRM to Revenue Accounting. Further details can be found in the following document:

SAP Revenue Recognition and Reporting – White Paper (CRM Part) (to be released soon)

7 Special Considerations

This chapter provides important information and remarks for successful implementation of Revenue Accounting:

7.1 Marking an Invoice as ‘Final’

When the back-end system transfers an invoice to the Revenue Accounting system, it indicates whether the invoice is final for the contract. If the invoice is marked as final, the system assumes that no more invoices are to be issued for this contract and that the totally invoiced amount is the final price of the contract. If the invoiced amount then isn’t equal to the contractual price, a contract modification is triggered and the contractual price is adjusted based on the invoiced amount. But this doesn’t mean that a sales order can be changed later on, for instance that the quantity is increased and a new delivery will be processed and invoiced. In such cases, the new invoice also gets the final invoice flag and creates adjustments again if necessary.