

# **R/3 Tax Interface Configuration Guide**

## **Release 4.6x**

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## ***Document Overview***

### **1. Introduction**

As of release 3.0, SAP offers **three standard methods** to compute US and Canadian Sales & Use Taxes:

1. Standard SAP Sales & Use Tax Interface System to 3rd party tax packages:  
Tax calculation and reporting is performed by an external tax system. The external tax system (3<sup>rd</sup> party tax package) performs tax calculation based on its own jurisdiction codes. The external tax system communicates with R/3 through the SAP Tax Interface System.
2. Standard SAP Jurisdictional Sales & Use Taxes:  
Tax calculation is performed by R/3 and tax rates are based on jurisdiction codes defined in R/3 by the user.
3. Standard SAP Non-Jurisdictional Sales & Use Taxes:  
Tax calculation is performed by R/3 and tax rates are not based on jurisdiction codes.

This document explains in detail the configuration steps to compute US and Canadian Sales & Use Taxes using an external tax system (method 1 listed above). This document does not explain how to configure the other two SAP's tax methods listed above.

### **2. SAP Tax Interface System & External Tax System**

SAP provides a ***Standard Tax Interface System***, which is capable of passing all needed data to an external tax system which determines tax jurisdictions, calculates taxes and then returns these calculated results back to SAP. This occurs during master data address maintenance to retrieve the appropriate tax jurisdiction code and during order and invoice processing out of FI, MM, and SD, to retrieve tax rates and tax amounts. The Tax Interface System also updates the third party's software files with the appropriate tax information for legal reporting purposes.

### 3. Intended Audience

This document is intended for the use of all SAP consultants, pre-sales, customers and third party consultants who will need to know how to configure R/3 to calculate taxes using the Tax Interface System.

### 4. Release Information

This configuration guide is intended for SAP's release 4.6B and above.

In SAP's R/3 2.2 release, an advance modification of SAP's tax API (Application Programming Interface) was offered to provide customers going live with release 2.2 as an alternative tax solution. This document is not intended for SAP customers who have installed the 2.2 tax interface advance modification. A separate configuration document exists for this (see 2.2-tax interface configuration guide).

In SAP's release 3.0B and above, the Tax Interface System is delivered with the standard software. There are separate configuration documents written for SAP release 3.0C up to 4.5B.

***Please note that due to changes from release to release, certain functionality and/or configuration steps may change. It is up to the customer to keep abreast of these changes.***

#### What is new in release 4.6x?

The main new features of the Tax Interface System for release 4.6x are:

- Maximum Tax Per Document handling capability.
- New communication structures with the external tax system:
  - Separate structures for header, item and jurisdiction level.
  - Strict separation between input and output fields.
- SAP tax data is no longer incomplete when forced update to the external audit file.
- No more update programs: Update of the external system tax audit file occurs automatically when posting the document to accounting.
- Version Management: monitoring the current external tax system API version being used.
- New user-exit.
- New alternate condition type formulas.

From SAP's release 4.6A and above, the Tax Interface System unit of communication is a Document. This method is called *Tax Per Document*.

For SAP's release 3.0B to 4.5B, this method is called *Tax Per Item*.

### **What happened to alternate condition type formula 300 (FV64A300)?**

In release 4.6A we have replaced the alternate condition type formula 300 in order to deal with the new functionality. The name has been reused for compatibility reasons. Also, we have introduced alternate condition type formula 500 to handle tax per document in SD. For more information see the chapters about the pricing procedures and configuring tax per document.

## **5. Certification**

In order for the SAP Tax Interface System to communicate with a third party's tax system, the third party must develop an API (Application Programming Interface), which can communicate with SAP Tax Interface System. Once this has been completed, the communication connection is tested between SAP Tax Interface System and the third party system. If the communication works correctly, then SAP will certify the third party's connection.

SAP does not deliver the certified partner's software or API developed to communicate with SAP Tax Interface System. This software must be purchased and delivered from one of our certified partners.

A certification is required for SAP's release 3.0C up to 4.5B (*Tax Per Item*)  
*A new certification is again required for SAP's release 4.6A and above (Tax Per Document).*

## **6. Prerequisites**

In order for SAP Tax Interface System to work with an external tax package, the third party software package must be installed at the customer site. In addition to this, the appropriate version of SAP's certified tax partner's API (Application Programming Interface) must also be installed at the customer site.

In addition to the above, you must first establish the communications between R/3 and the external tax package. Communications between R/3 and the third party tax package is established using SAP RFC (Remote Function Calls) and SAP tRFC (Transactional RFC). The communication setup configuration is explained in the following documents. Please note that although the configuration within SAP in setting up the RFC call may seem straight forward, difficulties in getting the communications to work during initial setup often arise. It is therefore recommended that the customer have an experienced Basis person to assist with this initial setup.

## 7. Important Note

SAP is under no obligation to install 3rd party packaged software, or their corresponding certified API. This is the full responsibility on the 3rd party software vendor. If during the installation of the third party's API, problems have been detected with SAP's RFC libraries and then these problems should be directed to and resolved by SAP. SAP will assist our customers with communication setup and testing from within SAP as well as application configuration upon customer request. This will only be done after the third party's standard software, as well as their software needed to communicate with SAP has been properly installed and tested. Any problems our customers have with installing third party software should be directed to and resolved by the appropriate software vendor.

SAP is under no obligation to provide consulting, setup, or maintenance of a third party software package. If customers have post installation questions, problems, or maintenance issues which pertain specifically to the third party's software package, then these questions should be directed to and resolved by the appropriate software vendor. SAP is also under no obligation to provide post implementation consulting for third party software packages.

## 8. User-Exits

SAP provides a customer user-exit to handle customer specific and partner specific functionality. Any ABAP code added to this user-exit to manipulate SAP functionality or pass unique values to the third party package is considered a customer modification and is not supported by SAP hotline. The most common user-exit examples related to taxes are provided within this document. If a customer would like assistance from SAP to define their specific tax requirements, establish resolutions to these requirements, and/or to provide ABAP programming logic to the user-exit, they should direct these issues to their SAP contact person. SAP's assistance and setup is considered consulting and will be billed to the customer accordingly.

More about the Tax Interface User-Exits implementation is clarified in appendix C and in Note 302998.

## ***Basic Concepts***

In R/3, the US Sales & Use tax calculations are processed within the SD, MM and FI modules. Basic concepts about the tax calculation process within each module are described in this section.

Two important standard procedures are used as the base for tax calculation in R/3:

1. Customer Pricing procedure: RVAXUD (SD)
2. Tax Procedure: TAXUSX (SD, MM and FI)

*Both standard procedures are delivered by SAP. RVAXUD is new in release 4.6 and handles the tax per document functionality. The old SD pricing procedure - RVAXUS - is still supported. But we recommend using the new procedure RVAXUD.*

### **1. Tax calculation process in SD**

SD requires that sales orders and invoices reflect the tax applicability of each item and compute the total tax due on each line item within the sales document. Appropriate tax amounts and tax rates are determined for both orders and invoices.

Several parameters influence the tax amounts and tax rates determination. The most important ones are: the delivering country (origin), the tax class of the ship-to partner, the tax class of the material being shipped, the tax calculation date and the jurisdiction codes from the ship-to-party (customer), ship-from address (plant), point of order acceptance and point of order origin.

Please note that SAP defaults the ship-from jurisdiction maintained on the plant as the point of order acceptance, and defaults the ship-to jurisdiction maintained on the customer as the point of order origin. Order acceptance jurisdiction and order origin jurisdiction can be changed using the provided SAP Tax Interface user-exit (see appendix C and Note 302998).

Jurisdiction codes are automatically retrieved from the external tax package during creation or change of a customer master record or a plant. This occurs after the address information has been entered on the master data.

SD uses the country, customer tax classification indicator, and material tax classification indicator to read the tax condition records. During pricing execution, in the sales order processing, the system exits the 'normal' pricing upon recognizing a condition type '1' (UTXJ, as delivered by SAP). *The tax condition records are then read using the country and tax code maintained in the pricing condition record.*

The tax procedure TAXUSX and the SD pricing procedure RVAXUS contain condition formulas (**300..306**) which invoke SAP Tax Interface System. Instead of condition type *UTXJ* with formula 300 the new standard SD pricing procedure RVAXUD contains condition type *UTXD* with formula 500.

Once the Tax Interface System is invoked, a communication structure (with header and items data) is filled with the necessary information needed by our partner's tax package to calculate taxes. This communication structure is then passed to our partner's API via an RFC (remote function call).

The partner's API passes this data to its tax calculation package. The appropriate tax is calculated and returned back to the partner's API, and then onto the SAP Tax Interface System. These tax amounts and rates are applied to the SD document item's pricing at each of up to six levels of jurisdiction denoted by the Condition Types (e.g. **XR1..XR6**).

## 2. Tax calculation process in MM and FI

MM/FI provides that for each line of the purchase order (PO) created or invoice entered the sales or use tax can be computed by the system. This means the system needs to know where taxes are being charged. Therefore, a ship-to tax jurisdiction code must be maintained.

This ship-to tax jurisdiction code can reside on the plant, cost center, asset master, internal order, or project (WBS). If no jurisdiction code is maintained on the asset, order, or project, then the jurisdiction code of the responsible cost center maintained on the asset, order, or project will default into the purchase order or invoice verification document at the time of document creation. This jurisdiction code will be used as the ship-to tax destination.

In addition to the ship-to destination (plant, cost center, etc.), taxability is also influenced by the ship-from destination. A jurisdiction code can be maintained within the vendor master record. This jurisdiction code will be used as the ship-from tax destination.

Jurisdiction codes are automatically retrieved from the external tax package during creation or change of a plant, cost center, or vendor master record. This occurs after the address information has been entered on the master data. For an asset, internal order, and project one may select PF4 (possible entries) on the jurisdiction code field, and return a list of valid jurisdictions from the external tax system to choose from.

MM & FI use country and tax code to read the tax condition records. The tax procedure TAXUSX contains condition formulas (**300 ... 306, 311 ... 316**) which invoke the Tax Interface System. Once the Tax Interface System is invoked, a communication structure is filled with the necessary data needed by our partner tax packages to calculate taxes.

This communication structure is passed to our tax partner API via RFC (remote function call). The tax partner API passes this data to its tax calculation package, which in return passes the tax data back to its API. The tax partner API then passes this information back to SAP Tax Interface System onward to MM/FI.

Tax amounts and statistical rates apply to each of up to six levels of jurisdiction denoted by the Condition Types (e.g. **XP1E ... XP6E, XP1I ... XP6I, XP1U ... XP6U**).

### 3. General information about tax accounts

Each G/L account and each cost element has a tax category field with a variety of settings. **Output is for SD/AR. Input is for MM/AP.** *Blank* is used for accounts not applicable to taxes like cash or accumulated depreciation accounts. Typical accounts designated as requiring *Output Taxes* include *Revenue Accounts and Trade Receivables*. Typical accounts designated as requiring *Input Taxes* would include *Trade Payables Accounts and primary cost elements* that are normally taxable (small tools, material consumed). **In the USA, component inventory is not taxable**, but in Canada, it is usually partially taxable (GST).

## ***Required Configuration Steps***

You must perform the following configuration steps:

1. Configuring the communication
2. Testing the external system tax data retrieval
3. Activating the Tax Interface System
4. Configuring the External Tax Document
5. Defining the tax jurisdiction code structure
6. Customizing Master Data Tax Classifications (SD)
7. Customizing Master Data Tax Indicators (MM)
8. Maintaining Master Data (SD)
9. Maintaining Master data (MM)
10. Setting up tax codes
11. Setting up SD condition records
12. Configuring Tax Per Document – Max Tax

The above steps should be performed sequentially.

## Configuring the communication

### 1. Define a physical destination

Communications between R/3 and a sales/use tax package are established using SAP RFC (Remote Function Calls). You must create an RFC destination that specifies the type of communication and the directory path in which the tax package executable or shell scripts program is installed. You must set up the RFC destination as a TCP/IP communication protocol. The destination name is user defined.

IMG Path: ***Financial accounting>Financial accounting global settings>Taxes on sales/purchases>Basic settings>External tax calculation>Define physical destination***

1. Choose Execute.
2. Choose Create.
3. Select and input a logical name for the RFC Destination, for example, “SABRIX” or “TAXWARE” or “VERTEX”
4. Under *Connection type* enter T.
5. Enter a short description text.
6. Choose Enter.
7. Define the directory path.

This is the directory path in which the tax package executable or shell script program is installed.

There are two recommended methods to define the directory path:

- SAP and Tax Software Package reside on the same server  
If R/3 and the external tax package are to reside on the same server, click *Application Server* to select as the program location. In the field *Program*, the external tax package’s executable or shell script program, along with the directory path in which it was installed, must be specified. Click *Save*.
- SAP and Tax Software Package reside on different servers  
If R/3 and the external tax package were to reside on different servers, then this would be an explicit communication setup. Click *Explicit host*. In the field *Program*, input the external tax package’s executable or shell script program along with the directory path in which it was installed. In the field *Target Host*, enter the host name of the server where the external tax package resides. Click *Save*.

8. If necessary, set up the correct SAP gateway host and gateway service. **This setup is frequently an area of concern. An understanding of the directory path is of utmost importance.**

## 2. Test the connection

To test the connection between R/3 and the external tax system, choose the *Test connection* button in the upper left-hand corner of the screen.

If any error occurs, verify that:

1. The connection type is TCP/IP.
2. Program location and host name are correctly specified.
3. The directory path and the name of the executable program are correct.
4. The gateway host and service name is correctly specified
5. The external tax package has been installed correctly and is the correct version.
6. The external tax package's API for the R/3 tax interface is installed correctly and is the correct version.
7. The R/3 RFC libraries are the correct version.
8. The correct permissions are set for the user account.
9. The user has read/write authority.

**If this test fails, halt the installation! This test must be successful in order for R/3 to communicate with the external tax package.**

If the connection is successful, also verify that the external tax package installed supports the R/3 4.6 version of the API. You do that by going to:

System Information → Function List

Check if the following functions are listed:

- RFC\_CALCULATE\_TAXES\_DOC
- RFC\_UPDATE\_TAXES\_DOC
- RFC\_FORCE\_TAXES\_DOC
- RFC\_DETERMINE\_JURISDICTION

**If one ore more of these functions are missing please contact your external tax system vendor for their latest version. Please note: as Sabrix has been certified as an external tax vendor for releases 4.6C and higher, they do not list these functions explicitly in the RFC Function List!**

## Testing the external system tax data retrieval

In order to test the external tax system, dummy RFC-enabled function modules were created in R/3 to simulate the external tax RFC functions. The RFC-enabled function modules can be tested with the R/3 Function Builder Test Utility.

As of release 4.6A, testing can be done for:

1. Jurisdiction code determination
2. Tax calculation
3. Tax update
4. Tax forced update

**It is imperative to perform these tests and check its results before continuing with further configuration. These tests might also be useful to resolve customer problems.**

With SE37 you can expect some of the following errors:

- *"timeout during allocate" / "CPI-C error CM\_RESOURCE\_FAILURE\_RETRY"*  
It was not possible to connect to the remote machine. See the chapter "Configuring the communication" for details.
- *Short-dump: "Start of TP ... failed" / "CPI-C error"*  
Please verify if the program name in the destination has been set up correctly. See the chapter "Configuring the communication" for details.
- *Short dump: "Function ... is not available"*  
You probably don't have a version of the external tax package that supports the R/3 4.6 release. See the chapter "Configuring the communication" for details.
- The export parameters indicate an error (RETCODE>0).  
Check your input parameters. **These errors are never R/3 errors!** If necessary, consult you external tax package vendor or the manual of the external tax system.<sup>1</sup>
- No error occurs, but nothing comes back.  
Don't forget to enter the destination of the RFC target system.

### 1. Test jurisdiction code determination

1. Menu Path: **Tools>ABAP/4 Workbench>Function Builder**  
Transaction: **SE37**
2. Function module: **RFC\_DETERMINE\_JURISDICTION.**

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<sup>1</sup> Please note that fields like DOC\_NUMBER (in the calculation) and TAX\_TYPE are optional fields. They should not be required to have a value.

3. Choose 'Single test' or F8.
4. Specify the RFC destination name - defined in *Configuring the communication*, section 1 step 3 - in the field *RFC target system*. Please note that this must be entered using uppercase letters.
5. Double click on **LOCATION\_DATA** located under *Import Parameters*. A pop-up window should appear for entering test data.

To facilitate test data entering, choose 'Single entry' or Shift+F7. Another pop-up window will appear for entering test data. Here, the input parameters are placed vertically to facilitate scrolling.

## 6. Import parameters

<b>Structure: LOCATION_DATA</b>		
<b>Parameter</b>	<b>Definition</b>	<b>Example</b>
COUNTRY	Country	US
STATE	US State or Canadian Province. In R/3, it is called 'Region'.	FL
COUNTY	In R/3, it is called 'District'	Blank
CITY	City	Miami
ZIPCODE	In R/3, it is called 'Postal code'	33186
TXJCD_L1	1 <sup>st</sup> length of Jurisd. Code	Blank or 02 – Sabrix, Blank or 02 – Taxware, Blank or 02 – Vertex
TXJCD_L2	2 <sup>nd</sup> length of Jurisd. Code	Blank or 02 – Sabrix, Blank or 05 – Taxware, Blank or 03 – Vertex
TXJCD_L3	3 <sup>rd</sup> length of Jurisd. Code	Blank or 05 – Sabrix, Blank or 02 – Taxware, Blank or 04 – Vertex
TXJCD_L4	4 <sup>th</sup> length of Jurisd. Code	Blank or 05 – Sabrix, Blank or 00 – Taxware, Blank or 01 – Vertex

*Hint:* It is recommended to enter at least STATE and ZIPCODE for a successful jurisdiction determination.

- After entering the test data, return to *Function Builder* by choosing enter and then back arrow.

*Hint:* It is possible to save test data by choosing 'Save'. A pop-up window will appear. Enter a descriptive short text and choose enter/save. You can retrieve the test data saved by choosing 'Test data directory' or Ctrl+Shift+F6. Modifying and saving existent test data creates new test data. Notice that the 'Test data directory' contents are client independent.

- Choose Execute.
- To view the results double click on **LOCATION\_RESULTS** under *Tables*. To view messages, double click on **LOCATION\_ERR** under *Export parameters*.

## 10. Output parameters

Table: LOCATION_RESULTS		
Parameter	Definition	Example
TXJCD	Tax Jurisdiction Code	It depends on the external tax system
OUT OF_CITY	In and Out City flag	

## 2. Test tax calculation

1. Menu Path: *Tools>ABAP/4 Workbench>Function Builder*  
Transaction: **SE37**
2. Function module: **RFC\_CALCULATE\_TAXES\_DOC**
3. Choose 'Single test' or F8
4. Specify the RFC destination name - defined in *Configuring the communication*, section 1 step 3 - in the field *RFC target system*. Please note that this must be entered using uppercase letters.
5. Double click on **I\_SAP\_CONTROL\_DATA**, **I\_TAX\_CAL\_HEAD\_IN** located under *Import Parameters* and **I\_TAX\_CAL\_ITEM\_IN** located under *Tables*.

Each time, a pop-up window should appear for entering test data. To facilitate test data entering, choose 'Single entry' or Shift+F7. Another pop-up window will appear for entering test data. Here, the input parameters are placed vertically to facilitate scrolling.

### 6. Import Parameters

Structure: I_SAP_CONTROL_DATA (SAP Control info)		
Parameter	Definition	Example
APP_SERVER	SAP Application Server	us01d1
SAP_VERSION	SAP Release	46B
INTERF_VERSION	SAP Tax Interface Version	TAXDOC00

<b>Structure: I_TAX_CAL_HEAD_IN (Document header input info)</b>		
<b>Parameter</b>	<b>Definition</b>	<b>Example</b>
SYST_NAME	Logical R/3 system name	DEV
CLIENT	Client number	800
COMP_CODE	Company Code	US01
DOC_NUMBER	Document number	0090007640 or blank
CURRENCY	Document currency during tax calculation	USD
CURR_DEC	Number of decimal places for currency	002
TXJCD_L1 ...L4	Length of the nth part of the tax jurisdiction code	(02, 02, 05, 05) – Sabrix (02, 05, 02, 00) – Taxware (02, 03, 04, 01) – Vertex
TAX_PER_ITEM	Tax calculation is done by line item. <sup>2</sup>	'X' (SD, MM, FI) or blank (SD only)
NR_LINE_ITEMS	Total number of lines in the external tax document. <sup>3</sup>	000001, 000002, or 000003, etc.

<b>Table: I_TAX_CAL_ITEM_IN (Item input info)</b>		
<b>Parameter</b>	<b>Definition</b>	<b>Example</b>
ITEM_NO	External tax document item number.	000001, 000002, 000003, etc.
POS_NO	Item position number in document.	000010, 000020, 000030, etc.
GROUP_ID	Set position number in document. <sup>4</sup>	000010, 000040, etc. or blank
COUNTRY	Departure country	US
DIVISION	SAP Business Area	0001
MATNR	Material number	MAT01
PROD_CODE	Material product code defined in the external system.	'XXX' or blank
GROUP_PROD_CODE	Set product code. This is the common product code of the set sub-items.	'YYY' or blank

<sup>2</sup> Each line item will be treated separately for tax calculation. Therefore, Max Tax rules across multiple lines in the same document will not be applied. For rel. 4.6x, this flag should be set when dealing with MM/FI transactions.

<sup>3</sup> Total number of entries in table I\_TAX\_CAL\_ITEM\_IN.

<sup>4</sup> Set is an item composed of sub-items. When a 'Set' is entered in the order, its components will appear as its sub-items. Each sub-item will have as its higher-level item position number the same GROUP\_ID.

QUANTITY	Item quantity <sup>5</sup>	' 2000 ' (two)
UNIT	Item selling/buying unit	'ST ' (pieces)
APAR_IND	Input or Output tax indicator.	'A' – output tax or A/R 'V' – input tax or A/P
TAX_TYPE	Tax type or category	'0' – Sales Tax '1' – Consumer Use Tax '2' – Service Tax '3' – Rental/Lease Tax
EXEMP_IND	Non-taxable transaction control indicator.	' ' or '0' – External system decides <sup>6</sup> '1' – Taxable <sup>7</sup> '2' – Non-taxable <sup>8</sup>
TAX_DATE	Transaction date for tax calculation.	19991009
TXJCD_ST	Ship-to jurisdiction code	
TXJCD_SF	Ship-from jurisdiction code	
TXJCD_POA	Jurisdiction code for Point of Order Acceptance	
TXJCD_POO	Jurisdiction code for Point of Order Origin	
AMOUNT	tax base amount <sup>9</sup>	' 300000 ' (three thousand)
GROSS_AMOUNT	Gross tax base amount <sup>10</sup>	' 300000 ' (three thousand)
FREIGHT_AM	Item freight amount	' 1500 ' (fifteen)
EXEMPT_AMT	Exempt amount	Blank
ACCNT_NO	Customer/Vendor account number. <sup>11</sup>	CUST01

<sup>5</sup> The quantity field has an implied 3 decimal places. When entering the quantity, three additional zeros must be added. Last character is reserved for the sign: space means positive. For example: ' 10000 ' is actually 10.000.

<sup>6</sup> External system decides if transaction is non-taxable vs. taxable. External system's taxability decision engine will be used (see *Setting up tax codes*, section 1).

<sup>7</sup> External system assumes transaction is taxable. Therefore, external system's taxability decision engine will be ignored and tax rates will be based solely on jurisdiction codes (see *Setting up tax codes*, section 1).

<sup>8</sup> Call to external tax system will be bypassed during tax calculation. SAP will impose zero rates and zero amounts (see *Setting up tax codes*, section 1).

<sup>9</sup> When entering a taxable amount, add two additional zeros to take into consideration two decimal places. Last character represents the sign: ' ' or '+' for positive values and '-' for negative values. For example, ' 10000 ' is actually 100.00.

<sup>10</sup> This field is currently defaulted with AMOUNT.

<sup>11</sup> The field ACCNT\_NO has a length of 16 characters. However, the respective fields in the master data in the R/3 System only have a length of 10. Furthermore, if the account number is numeric only, thus only

ACCNT_CLS	Account class	Blank
COST_OBJECT	Cost object where the goods are consumed.	Cost Center or blank.
PTP_IND	Indicator: Point of Title Passage	Blank
EXCERTIF	Customer exempt certification defined in SAP <sup>12</sup>	It is recommended to leave this field blank
EXREASON	Exempt reason defined in SAP	It is recommended to leave this field blank
USER_DATA	User specific data to be passed to external tax system. <sup>13</sup>	It is sent during tax calculation for validation purposes only.

*Hint:* Create at least one record in input table: I\_TAX\_CAL\_ITEM\_IN. Copying and then modifying existent entries creates new records: Position the cursor on an existent record then choose 'Double line' or Ctrl+F12. After the record has been duplicated, double click on the record to be modified.

7. After entering the test data, return to *Function Builder* by choosing enter and then back arrow.

*Hint:* It is possible to save test data by choosing 'Save'. A pop-up window will appear. Enter a descriptive short text and choose enter/save. You can retrieve the test data saved by choosing 'Test data directory' or Ctrl+Shift+F6. Modifying and saving existent test data creates new test data. Notice that the 'Test data directory' contents are client independent.

8. Choose *Execute*.
9. To view the results, double click on **O\_EXT\_CONTROL\_DATA**, **O\_COM\_ERR\_DOC** under *Export parameters* and **O\_TAX\_CAL\_ITEM\_OUT**, **O\_TAX\_CAL\_JUR\_LEVEL\_OUT** under *Tables*.

consists of numbers, the sequence of the digits is stored right-justified in the R/3 System and filled up with zeros ('0') from the left. The account numbers in the external system must be maintained in the same way as stored in the R/3 System (with a field length of 10 characters). However, since the account number here has a length of 16 and not 10, the system now (during the single test) sends purely numeric account numbers with 6 additional leading zeros to the external system as it would when posting a document from SD or FI. The corresponding exemption in the external system will not be found. (Please have a look at OSS note 382090)

<sup>12</sup> If this field is blank, a possible exempt certification defined for the customer will be checked in the external system.

<sup>13</sup> It is recommended to fill this field for reporting purposes ONLY and not to use it for tax calculation.

## 10. Output parameters

<b>Structure: O_EXT_CONTROL_DATA (External System Control Info)</b>		
<b>Parameter</b>	<b>Definition</b>	<b>Example</b>
API_VERSION	External system API version	
SYST_VERSION	External system version	
DB_VERSION	Ext. system rate data file version	

<b>Structure: O_COM_ERR_DOC (External System Error Info)</b>		
<b>Parameter</b>	<b>Definition</b>	<b>Example</b>
RETCODE	<> 0 if error in at least one item or header	
ERROR_LINE	First line item number which contains error (if any)	
ERRCODE	External system specific error code	
ERRMSG	Error message	

<b>Table: O_TAX_CAL_ITEM_OUT (Tax results for item)</b>		
<b>Parameter</b>	<b>Definition</b>	<b>Example</b>
ITEM_NO	External tax document item number. <sup>14</sup>	000001, 000002, 000003, etc.
TXJCD_IND	Jurisdiction indicator used for tax calculation	
TAXPCOV	Total item tax percentage rate	
TAXAMOV	Total item tax amount	
EXMATFLAG	Reason Code for material exemption	
EXCUSFLG	Reason Code for customer tax exemption	
EXT_EXCERTIF	Ship-to exemption certificate number defined in External tax system	
EXT_EXREASON	Reason Code for tax exemption defined in External tax system	

<sup>14</sup> It corresponds with the input parameter I\_TAX\_CAL\_ITEM\_IN-ITEM\_NO

---

NR_JUR_LEVELS	Total number of tax lines by jurisdiction level for each item. <sup>15</sup>	
---------------	--	--

---

<sup>15</sup> Total number of entries in table O\_TAX\_CAL\_JUR\_LEVEL\_OUT. External system may not return a jurisdiction level if all fields are empty and the percentage is zero.

<b>Table: O_TAX_CAL_JUR_LEVEL_OUT (Tax results by jurisdiction level for item)</b>		
<b>Parameter</b>	<b>Definition</b>	<b>Example</b>
ITEM_NO	External tax document item number. <sup>16</sup>	000001, 000002, 000003, etc.
TXJLV	Jurisdiction Level	1 – State 2 – County 3 – City 4 – District 5 – Secondary City 6 – Secondary District
TAXPCT	Actual tax percentage by level	
TAXAMT	Actual tax amount by level	
TAXBAS	Actual tax base amount per level if different than TAXAMT	
EXAMT	Exempt amount by level	
EXCODE	Exempt Code by level	

### 3. Test tax update

1. Menu Path: **Tools>ABAP/4 Workbench>Function Builder**  
Transaction: **SE37**
2. Function module: **RFC\_UPDATE\_TAXES\_DOC**
3. Choose ‘Single test’ or F8
4. Specify the RFC destination name - defined in *Configuring the communication*, section 1 step 3 - in the field *RFC target system*. Please note that this must be entered using uppercase letters.
5. Double click on **I\_SAP\_CONTROL\_DATA, I\_TAX\_UPD\_HEAD\_IN** located under *Import Parameters* and **I\_TAX\_UPD\_ITEM\_IN** located under *Tables*.

Each time, a pop-up window should appear for entering test data. To facilitate test data entering, choose ‘Single entry’ or Shift+F7. Another pop-up window will appear for entering test data. Here, the input parameters are placed vertically to facilitate scrolling.

<sup>16</sup> It corresponds with the input parameter I\_TAX\_CAL\_ITEM\_IN-ITEM\_NO

## 6. Import Parameters

<b>Structure: I_SAP_CONTROL_DATA (SAP Control info)</b>
-----
Same structure defined in <i>Test tax calculation</i> – step 6.

<b>Structure: I_TAX_UPD_HEAD_IN (Document header input info)</b>		
-----		
Includes same parameters and parameter definitions from structure I_TAX_CAL_HEAD_IN defined in <i>Test tax calculation</i> – step 6, except for:		
Parameter	Definition	Example
DOC_NUMBER	Document number	0090007640 ( <i>it should not be blank</i> )
TAX_PER_ITEM	Tax calculation is done by line item. <sup>17</sup>	'X' (SD, MM, FI) or blank (SD only)
NR_LINE_ITEMS	Total number of lines in the external tax document to be updated. <sup>18</sup>	000001, 000112 or 00006, etc.

<b>Table: I_TAX_UPD_ITEM_IN (Item input info to be updated)</b>		
-----		
Include all parameters from structure I_TAX_CAL_ITEM_IN in <i>Test tax calculation</i> – step 6, plus the following additional parameters:		
Parameter	Definition	Example
REP_DATE	Reporting date	Posting date or accounting document date
CREDIT_IND	Debit/Credit transaction indicator	' ' or '0' – SAP Tax liability account is credited '1' – SAP Tax liability account is debited
STORE_CODE	Store Code for reporting purposes ONLY	
USER_REPT_DATA	User specific data for reporting purposes ONLY	

*Hint:* Create at least one record in input table: I\_TAX\_UPD\_ITEM\_IN. Copying and then modifying existent entries creates new records: Position the cursor on an existent record then choose 'Double line' or Ctrl+F12. After the record has been duplicated, double click on the record to be modified.

<sup>17</sup> Despite of the fact that the entire document is being updated, each line item might have been treated separately during tax calculation. Therefore, Max Tax rules across multiple items in the same document were not applied then. Thus, external tax system should take this in consideration during the update! For rel. 4.6x, this flag should be set when dealing with MM/FI transactions.

<sup>18</sup> Total number of entries in table I\_TAX\_UPD\_ITEM\_IN.

7. After entering the test data, return to *Function Builder* by choosing enter and then back arrow.

*Hint:* It is possible to save test data by choosing ‘Save’. A pop-up window will appear. Enter a descriptive short text and choose enter/save. You can retrieve the test data saved by choosing ‘Test data directory’ or Ctrl+Shift+F6. Modifying and saving existent test data creates new test data. Notice that the ‘Test data directory’ contents are client independent.

8. Choose *Execute*.
9. To view the results double-click on **O\_EXT\_CONTROL\_DATA**, **O\_COM\_ERR\_DOC** under *Export parameters*.

#### 10. Output parameters

<b>Structure: O_EXT_CONTROL_DATA (External System Control Info)</b>
-----
Same structure defined in <i>Test tax calculation</i> – step 10.

<b>Structure: O_COM_ERR_DOC (External System Error Info)</b>
-----
Same structure defined in <i>Test tax calculation</i> – step 10.

## 4. Test tax forced update

1. Menu Path: *Tools>ABAP/4 Workbench>Function Builder*  
Transaction: **SE37**
2. Function module: **RFC\_FORCE\_TAXES\_DOC**
3. Choose ‘Single test’ or F8
4. Specify the RFC destination name - defined in *Configuring the communication*, section 1 step 3 - in the field *RFC target system*. Please note that this must be entered using uppercase letters.
5. Double click on **I\_SAP\_CONTROL\_DATA**, **I\_TAX\_FRC\_HEAD\_IN** located under *Import Parameters* and **I\_TAX\_FRC\_ITEM\_IN**, **I\_TAX\_FRC\_JUR\_LEVEL\_IN** located under *Tables*.

Each time, a pop-up window should appear for entering test data. To facilitate test data entering, choose ‘Single entry’ or Shift+F7. Another pop-up window will appear for entering test data. Here, the input parameters are placed vertically to facilitate scrolling.

## 6. Import Parameters

**Structure: I\_SAP\_CONTROL\_DATA (SAP Control info)**

Same structure defined in *Test tax calculation* – step 6.

**Structure: I\_TAX\_FRC\_HEAD\_IN (Document header info to be forced update)**

Includes same parameters and parameter definitions from structure I\_TAX\_UPD\_HEAD\_IN defined in *Test tax update* – step 6.

**Table: I\_TAX\_FRC\_ITEM\_IN (Item info to be forced update)**

Include all parameters from structure I\_TAX\_UPD\_ITEM\_IN in *Test tax update* - step 6, plus the parameters from structure O\_TAX\_CAL\_ITEM\_OUT in *Test tax calculation* – step 10.

**Table: I\_TAX\_FRC\_JUR\_LEVEL\_IN (Tax info by jurisdiction level for item)**

Include all parameters from structure O\_TAX\_CAL\_JUR\_LEVEL\_OUT in *Test tax calculation* – step 10.

*Hint:* Create at least one record in input table: I\_TAX\_FRC\_ITEM\_IN and the correspondent records in table: I\_TAX\_FRC\_JUR\_LEVEL\_IN.  
Copying and then modifying existent entries creates new records:  
Position the cursor on an existent record then choose ‘Double line’ or Ctrl+F12.  
After the record has been duplicated, double click on the record to be modified.

7. After entering the test data, return to *Function Builder* by choosing enter and then back arrow.

*Hint:* It is possible to save test data by choosing 'Save'. A pop-up window will appear. Enter a descriptive short text and choose enter/save. You can retrieve the test data saved by choosing 'Test data directory' or Ctrl+Shift+F6. Modifying and saving existent test data creates new test data. Notice that the 'Test data directory' contents are client independent.

8. Choose *Execute*.
9. To view the results double click on **O\_EXT\_CONTROL\_DATA**, **O\_COM\_ERR\_DOC** under *Export parameters*.

## 10. Output parameters

<b>Structure: O_EXT_CONTROL_DATA (External System Control Info)</b>
-----
Same structure defined in <i>Test tax calculation</i> – step 10.

<b>Structure: O_COM_ERR_DOC (External System Error Info)</b>
-----
Same structure defined in <i>Test tax calculation</i> – step 10.

## Activating the Tax Interface System

### 1. Define a tax procedure to a country

In R/3, tax calculation/posting processing steps are defined by a tax procedure. The tax procedure TAXUSX is used to handle US Sales & Use tax calculation/postings. TAXUSX uses an external tax system to retrieve tax rates and tax amounts. TAXUSX is delivered in R/3 as a standard tax procedure along with all necessary condition types. In order for a tax procedure to be executed, it should be assigned to a country.

IMG Path: *Financial accounting>Financial accounting global settings>Tax on sales/purchases>Basic Settings>Assign country to calculation procedure*

Transaction: **OBBG**

Table: **T005**

**Each country can have only one tax procedure.**

During a particular R/3 business transaction, the tax procedure assigned to the company code country (MM/FI) or the country of the plant's company code (SD) will be executed.

### 2. Activate external tax calculation

To define *how* the tax procedure TAXUSX accesses the external tax system, the external system ID, the RFC destination and the tax interface version need to be defined.

IMG Path: *Financial Accounting>Financial accounting global settings>Tax on sales/purchases>Basic settings>External tax calculation>Activate external tax calculation*

Table: **TTXD**

Choose *Execute*.

**1. External Tax System ID (ExID):**

Define an ID for the active external tax system.

For example: 'A' (External Tax Interface ID)

In R/3, populating this field has the following consequence:

Tax calculation takes place using an external system. Therefore, when maintaining tax codes, the system does not ask for a jurisdiction code. The required jurisdiction codes will be automatically determined by the external tax system during master records creation/changes. These jurisdiction codes will be passed to the external tax system through the *tax interface system*. The tax interface system is in turn called by the tax procedure TAXUSX.

**2. RFC Destination:**

The logical name defined in *Configuring the communication*, section 1 step 3, for the **RFC destination**.

As described in *Configuring the communication*, the logical destination name defines the path for the external tax system API executable file.

Notice that the IMG activity 'Define logical destination' will no longer be relevant for configuration. Therefore, the customizing table 'TTXC' is no longer relevant.

**3. Interface Version (Int. Version):**

The current SAP-API interface version is TAXDOC00.

The tax interface version is the specific SAP-API version used by the external tax system for communicating with R/3. Each new SAP-API version comes with new functions, and usually corresponds to an R/3 release. It is advisable that the external tax system supports the latest version. After you have installed the latest version of the external tax system API, you must set this field accordingly.

***As of release 4.6A, SAP will NOT SUPPORT any interface version older than TAXDOC00.***

## ***Configuring the External Tax Document***

The ***External Tax Document*** is the entity name for tax relevant information for one particular document. This information is to be updated into the external audit register file for legal reporting purposes.

An External Tax Document is created when a SD, MM or FI document is successfully posted to accounting. The following configuration steps have to be set up:

### **1. Define Number Ranges for External Tax Documents**

IMG Path: ***Financial Accounting>Financial accounting global settings>Taxes on sales/purchases>Basic Settings>External tax calculation> Define Number Ranges for External Tax Documents***

Transaction: **OBETX**

- 1** Choose 'Change intervals'
- 2** If entry does not exist, add an entry with number range '01' by choosing 'Insert interval' or Shift+F1.  
Number range '01' will be the ONLY number range used.
- 3** You can enter '000000000001' for the lower limit and '999999999999' for the upper limit.
- 4** Initialize the External Tax Document numbering by entering '1' for current number.
- 5** The number range '01' should be internal. DO NOT SET the External number range flag.

Note: The numbers are buffered. Therefore, gaps can occur.

## 2. Activate External Tax Document

The ‘**Activ**’ flag controls if an External Tax Document can be updated into the external tax audit file for legal reporting purposes. This flag is read during the SD, MM and/or FI document posting process. *If this flag is not set, the tax information will be lost* and there will be no External Tax Document updated to the external audit file.

IMG Path:     ***Financial Accounting>Financial accounting global settings>Taxes on sales/purchases>Basic Settings>External tax calculation>Activate external updating***

Table: **TRWCA**

Appendix A describes when and how the tax data (comprised in the external tax document) is updated to the external audit file.

Appendix B describes how to view the external tax document.

## ***Defining the tax jurisdiction code structure***

This configuration step is required by “*SAP tax calculation engine*”. SAP tax calculation engine needs to know how a jurisdiction code is structured as well as if tax should be calculated/posted by line item.

Although these concepts have no meaning for external tax calculation, it influences the relevant input data passed to the tax interface system for tax calculation and postings.

IMG Path: ***Financial accounting>Financial accounting global settings>Tax on sales/purchases>Basic Settings>Specify structure for tax jurisdiction code***

Transaction: **OBCO**

Table: **TTXD**

Add entry TAXUSX (Sabrix = 2,2,5,5 or Taxware = 2,5,2 or Vertex = 2,3,4,1).

### **Indicator *TxIn*: Determine taxes by line item**

When this indicator is set, taxes are calculated on a line-by-line basis within the MM and FI application. This is necessary in order to pass on material specific data such as *material number* and *quantity* as well as to make sure that the taxes can be reported on a line-item basis. A cumulative tax amount based on the combination of tax code and jurisdiction would not apply here.

**If the taxes are entered *manually* in the transaction - the “calculate tax” button is turned off - the check is performed on a cumulative basis regardless of the determine-taxes-by-line-item indicator. This logic was changed with note 589301!**

## ***Customizing Master Data Tax Classifications (SD)***

Tax codes can be automatically derived from material and customer master file - *tax classifications*. Tax codes contain properties that are relevant for correct tax calculation within the external tax system. First, the *tax category* needs to be defined for the country, followed by the configuration of possible tax classifications for customer and material master files. Finally, the allowed tax classifications can be entered in the master files themselves. Tax category and tax classifications are described below.

### **1. Define tax category by departure country (SD)**

A tax category has to be defined by departure country. Allowable departure country is the plant's country and/or the company code's country. The tax category allows tax classification to be entered in the customer master and material master (see *Maintaining Master Data (SD)*, sections 1.2 and 2).

The tax category displayed in the customer master record depends on:

1. The customer sales organization's company code country.
2. The country of each plant assigned to that sales organization.

The tax category displayed in the material master record depends on:

1. The material sales organization's company code country.
2. The country of each plant assigned to that sales organization.

IMG Path: ***Sales and Distribution>Basic functions>Taxes>Define tax determination rules***

Transaction: **OVK1**

Table: **TSTL**

*Tax category UTXJ must be maintained using a sequence of 1 for the U.S.  
Tax category CTXJ must be maintained using a sequence of 1 for Canada.*

Note: No more than one tax category should be maintained for U.S. and for Canada. Therefore, users should delete entries UTX2, CTX2, UTX3, CTX3 to suppress them from display on the customer/material master taxes view.

## 2. Customer master configuration (SD)

This configuration defines the *possible tax classifications* for the tax category in the customer master on the billing screen.

IMG Path: *Sales and Distribution>Basic functions>Taxes>Define tax relevancy of master records>Control: Customers*

Transaction: **OVK3**

Table: **TSKD**

*Customer tax classification indicators* are defined based upon tax category **UTXJ** for the **U.S.** and **CTXJ** for **Canada**.

The *customer tax classification* indicator is used as a key in automatically determining the tax code within SD (see *Setting up SD condition records*). As described in *Setting up tax codes* – section 1, a tax code can be customized to bypass the external tax system for tax calculation and force tax exemption in SAP by returning zero tax rates and zero tax amounts.

Therefore, the tax classification is used by R/3 internally to indicate whether the customer is exempt from sales tax payment. If all tax exemption handling were done by the external tax system, then the tax classification indicator on the customer would be set to taxable. On the other side, if for some customer masters, tax exemption handling is done in SAP, then the tax classification indicator on those customer masters is set to exempt from sales tax payment.

Create the allowed customer tax classification(s). Example: ‘0’ – Tax exempt and ‘1’ – Taxable.

## 3. Material master configuration (SD)

The *A/R material tax classification* indicator is also used as a key in automatically determining the tax code within SD (see *Setting up SD condition records*). Multiple tax classifications may need to be set up for special tax rules and regulations based on material. These tax classification indicators are user defined, and point to user defined tax codes (see *Setting up tax codes*).

IMG Path: *Sales and Distribution>Basic functions>Taxes>Define tax relevancy of master records>Control: Materials*

Transaction: **OVK4**

Table: **TSKM**

*A/R material tax classification indicators are defined based upon tax category **UTXJ** for the **U.S.** and tax category **CTXJ** for **Canada**.*

For example, *tax classification 0* could represent an exempt material or service that could point to a tax code **O0**. *Tax classification 1* could represent a standard product which points to a tax code **O1**. *Tax classification 2* could represent a service which points to a tax code **O2**. *Tax classification 3* could represent a rental/lease which points to a tax code **O3**. *Tax classification 4* could point to a tax code **O4** that represents a *Taxware* product code **12000** for consulting services. *Tax classification 5* could point to a tax code **O5** that represents a user defined product code of **9937299**.

## ***Customizing Master Data Tax Indicators (MM)***

Tax codes can be automatically derived from material, plant and account assignment for purchasing transactions (see Appendix F). As with SD master data configuration, *tax classification indicators* must be maintained to determine the tax codes.

The tax code can be overwritten within the purchase order (item details) and the invoice verification document.

### **1. Material master configuration (MM)**

IMG Path: *Materials Management>Purchasing>Taxes>Set tax indicator for material*

Transaction: **OMKK**

Table: **TMKM1**

The *A/P material tax classification* indicator is used as a key to automatically determine the tax code within purchasing. Multiple tax classifications may need to be set up for special tax rules and regulations based on material. These tax classification indicators are user defined, and point to user defined tax codes (see 10.5). For example, *tax classification 0* could represent an exempt material or service which points to a tax code **I0**. *Tax classification 1* may represent a standard product which points to a tax code **I1**. *Tax classification 2* represents a service which points to a tax code **I2**. *Tax classification 3* represents a rental/lease that points to a tax code defined as **I3**. *Tax classification 4* points to a tax code **U1** that represents A/P consumer use tax. *Tax classification 5* points to a tax code **I4** that represents a *Taxware* product code of **52000** for insurance. *Tax classification 6* points to a tax code **I5** that represents a user defined product code **9937299**.

### **2. Define tax classification indicators for plant (MM)**

IMG Path: *Materials Management>Purchasing>Taxes>Set tax indicator for plant*

Transaction: **OMKM**

Table: **TMKW1**

Define the MM *plant tax classification indicators*.

### 3. Assign tax classification indicators to plant (MM)

IMG Path: *Materials Management>Purchasing>Taxes>Assign tax indicators for plants*

Transaction: **OMKN**

Table: **T001W**

Assign U.S. plants a tax classification indicator.

**Please note that this step is not mandatory. This step is only necessary if plant will be used to automatically determine the tax code on MM documents.**

### 4. Define tax classification indicators for account assignment (MM)

IMG Path: *Materials Management>Purchasing>Taxes>Set tax indicator for account assignment*

Transaction: **OMKL**

Table: **TMKK1**

Define the MM account assignment tax classification indicators.

### 5. Assign tax classification indicators for account assignments (MM)

IMG Path: *Materials Management>Purchasing>Taxes>Assign tax indicators for account assignments*

Transaction: **OMKO**

Table: **T163KS**

Assign account assignments a tax classification indicator.

**Please note that this step is not mandatory. This step is only necessary if account assignments will be used to automatically determine the tax code on MM documents.**

## ***Maintaining Master Data (SD)***

Sales & Use tax calculations require location information to properly determine where consumption of tangible personal property occurred. This information in the form of tax jurisdiction codes is stored on the master records. A tax classification indicator is also stored on some master records. The customer master jurisdiction (representing the ship-to location) and the taxability indicator assist in determining the tax. The plant master record contains a tax jurisdiction code identifying the ship-from location. The material master record has a material tax classification indicator that along with the customer tax classification indicator automatically determine the tax code.

### **1. Maintain customer master (SD)**

#### **1.1. Maintain Customer Tax Jurisdiction Code**

The customer tax jurisdiction code is automatically determined and displayed on the address data screen as well as on the control data screen. The jurisdiction code determination occurs when the address information is input into the customer master address screen. The minimum address data that must be entered for this to occur is the country (U.S. or Canada), the postal code (zip code) and the region (state or province). If multiple jurisdiction codes are associated with this minimum data, a pop-up window will display all choices by state, county and city. The user must then choose the appropriate jurisdiction code. If the district (county) is available to be sent to the third party system, the result could be a specific jurisdiction being returned. However, misspellings will return no jurisdiction codes. A pop-up window will inform the user when the jurisdiction code has been updated. When loading master data by batch input, no automatic determination of the appropriate jurisdiction code can be made if multiple jurisdiction codes are returned and the jurisdiction code will not be updated within the master record. User intervention will be required to correct those records that fail update during batch processing. The exact jurisdiction code returned would depend on the external tax system.

If tax jurisdiction code is determined using F4-possible entries on the field, the resulted tax jurisdiction code will be checked against the address data for consistency.

Menu Path: ***Logistics>Sales and distribution>Master data>Business partners>Sold-to party>Create/Change>Create/Change***

Transaction: **V-03** or **V-09** centrally create / **VD02** or **XD02** centrally change

Screens: **Address, Control data**

**Important Note:**

Messages can be displayed as a result of the tax jurisdiction determination process. For example: if jurisdiction code cannot be determined due to misspellings or due to multiple jurisdiction codes returned in batch input. These messages can behave as an error, warning or information message depending on the user customizing set up.

IMG Path: ***Financial Accounting>Financial accounting global settings>Tax on sales/purchases>Basic settings>Change Message Control for Taxes***

**1.2. Maintain Customer Tax Classification**

The customer tax classification indicator must be keyed into the billing screen of the customer master record.<sup>19</sup>

Menu Path: ***Logistics>Sales and distribution>Master data>Business partners>Sold-to party>Create/Change>Create/Change***

Transaction: **V-03** or **V-09** centrally create / **VD02** or **XD02** centrally change

Screens: **Address, Control data and Billing**

The *customer tax classification* indicator can be overwritten during sales order entry.

Menu Path: ***Logistics>Sales/distribution>Sales>Order/Inquiry/Quotation>Create/Change***

Transaction: **VA01/VA02 Sales Order**  
**VA11/VA12 Sales Inquiry**  
**VA21/VA22 Sales Quotation**

Within a sales order **Goto>Header>Billing** enter the desired indicator in the field named **Alt. tax classific.**

<sup>19</sup> The allowed customer tax classification indicators are defined in *Customizing Master Data Tax Classifications (SD)* – Section 2.

## 2. Maintain material master tax classification (SD)

The material tax classification indicator must be entered in the material master record on the Sales: sales org 1 screen.<sup>20</sup>

Menu Path: ***Logistics>Sales and distribution>Master data>Products>Material>{select one e.g. Trading goods}>Create/Change Select View>Sales: Sales Organization 1***

Transaction: **MM01** create / **MM02** change

Screens: **Sales: sales org. 1**

The *material tax classification* indicator can be overwritten during sales order entry.

Menu Path: ***Logistics>Sales/distribution>Sales>Order/Inquiry/Quotation>Create/Change***

Transaction: **VA01/VA02** Sales Order  
**VA11/VA12** Sales Inquiry  
**VA21/VA22** Sales Quotation

Within a sales order, select the line item, then ***Goto>Item>Billing*** and enter the desired indicator in the field named ***Tax classification***.

## 3. Maintain plant master jurisdiction code (SD)

The jurisdiction code relevant to a plant's location must be maintained on the plant master record. This code provides the external tax system with the ship-from location for A/R and the ship-to location in A/P.

The plant tax jurisdiction code is automatically determined and displayed on the plant address data screen.

IMG Path: ***Materials Management>Purchasing>Environment Data>Define tax jurisdiction>Details***

Transaction: **OX10**

---

<sup>20</sup> The allowed customer tax classification indicators are defined in *Customizing Master Data Tax Classifications (SD)* – Section 3.

Maintain the plant address screen by choosing 'Address' or Shift+F5.

The jurisdiction code determination for a plant works the same as a customer jurisdiction code determination described in *Maintaining Master Data (SD)* – Section 1.1.

The address information including the plant jurisdiction code will be updated into the plant's detailed information after the 'Save' button is chosen.

*Hint: It is important to maintain the jurisdiction codes for all the plants located in the US and Canada.*

**Important Note:**

As of release 4.6B, transaction OMGJ is no longer relevant for plant jurisdiction code determination and it has been replaced by transaction OX10.

## ***Maintaining Master data (MM)***

Master data must be maintained to provide ship-to and ship-from location information for procurement of goods and services within the MM and FI modules. The ship-to location represents where the consumption of goods and services occurs for sales and use tax calculations. The ship-from location is required to correctly calculate sales and use tax in certain jurisdictions. Also, the tax classification of the material must be maintained. This provides the taxability determination for the purchasing of goods and services.

### **1. Maintain plant master jurisdiction code (MM)**

The plant provides a ship-to location. This setup is the same as the one described in *Maintaining Master Data (SD)* – Section 3.

### **2. Maintain Cost Center master jurisdiction code (MM)**

The location of a cost center can also represent the ship-to location.

Menu Path: *Accounting>Controlling>Cost Center Accounting>Master data>Cost Center>Individual Processing>Create/Change*

Transaction: **KS01 create / KS02 change**

To maintain address information, choose the address icon.

### **3. Maintain Vendor master jurisdiction code (MM)**

The location of a vendor provides the ship-from location.

Menu path: *Logistics>Materials management>Purchasing>Master data>Vendor>Purchasing>Create/Change*

Transaction: **MK01 create / MK02 change**

The vendor tax jurisdiction code is automatically determined and displayed on the address data screen as well as on the control data screen.

The jurisdiction code determination for a vendor works the same as a customer jurisdiction code determination described in *Maintaining Master Data (SD)* – Section 1.1.

#### 4. Maintain material master tax indicator (MM)

The tax classification indicator on the material master provides the taxability of the material for all purchasing transactions. This indicator and the ship-to and ship-from jurisdictions provide the information necessary to calculate the sales or use tax.

Menu Path: *Logistics>Sales and distribution>Master data>Products>Material>{select one, i.e. Trading goods}>Create/Change>Select view(s)>Purchasing*

Transaction: **MM01** create / **MM02** change

Screens: **Purchasing**

Populate the field **Tax indicator for material**.

## ***Pricing Procedure and Condition Techniques***

Within the SAP business transactions, Sales & Use Tax Calculations make use of pricing procedure and condition techniques. Knowledge on condition techniques (see course LO620 – Pricing in Sales & Distribution) is necessary for further understanding of the tax calculation process.

### **1. Brief concept on Pricing Procedure and Condition Techniques:**

A pricing procedure might consist of several condition types. If a condition type is activated during the pricing procedure execution, the condition type might return an amount back, i.e. material price, discount, surcharge, freight, tax amount, etc. which in turn, might be part of the total item sales price depending on the condition type customizing set up. There are several ways to activate a condition type within a pricing procedure. One approach is using condition records. The parameters of a condition record are defined in the access sequence for the condition type. When the condition record is being read, it usually returns a value for its condition type in the pricing procedure. This value can be defined during the condition record maintenance or determined using condition value formula configured in the pricing procedure.

### **2. Tax Calculation in SD:**

In SD document transactions, tax calculation is processed within the pricing procedure. We first start with what is the minimum necessary to get US taxes calculated in SD. Further on we will explain what is necessary to include the tax per document functionality in SD. For performance reasons as well as for compliance with maximum tax laws we recommend that you use tax per document.

#### **2.1. Minimum steps for having taxes calculated in SD**

To trigger US taxes calculation using an external tax system, at least 3 conditions should be met:

1. Condition types UTXJ, XR1, XR2, XR3, XR4, XR5 and XR6 should exist in the customer pricing procedure.
2. UTXJ should have the condition value formula 300 and XR1...XR6 the respectively condition value formulas 301...306.
3. UTXJ must be active in the customer pricing procedure during the SD document transaction.

For what is necessary to include the tax per document functionality see the next paragraph. We recommend

Conditions 1 and 2 are met using the standard pricing procedure RVAXUS delivered by SAP. The pricing procedure RVAXUS can be used as a template for US tax calculation using an external tax system (RVAXUS is defined in transaction V/08).

Condition 3 is met if, during the pricing procedure execution, a condition record is found for UTXJ. Therefore, condition records for UTXJ have to be maintained. This is described in *Setting up SD condition records* – section 1.

When maintaining UTXJ condition records, you will notice that each combination must be mapped to a corresponding tax code. The SD tax codes are equivalent to those set up in FI (see *Setting up tax codes*).

Therefore, in order to maintain the UTXJ condition records, it is required to set up the tax codes first. This is described in *Setting up tax codes*.

## 2.2. Configuring Tax Per Document – Max Tax

As of release 4.6A, the Tax Per Document method is available. This method is important to allow Max Tax calculation rules across multiple items to be applied for a SD document. Tax Per Document is also important for performance reason: The RFC call made to the external tax system happens only once for the entire document instead of for each line item.

In order to make full use of the Tax Per Document method the correct configuration set up is required in SD.

The SAP standard delivered pricing procedure **RVAXUD** should be used instead of RVAXUS.

In RVAXUD, the condition type UTXJ is replaced by 2 other condition types:

- UTXD: it differs from UTXJ for being a Group condition.
- UTXE: it differs from UTXJ for being a Group condition and for having no access sequence.

As condition type UTXD has UTXJ as reference condition type, *there is no need to maintain condition records for UTXD*. The UTXJ condition records will be used for UTXD as well.

As condition type UTXE has no access sequence, it will always be active in the pricing procedure during SD document transactions.

Please note in the pricing procedure RVAXUD the condition type UTXD has condition value formula 500 (instead of 300) and UTXE has condition value formula 510. In addition, condition type UTXD contains scale base formula 500.<sup>21</sup>

During condition value formula 500, all document items will be collected and stored. After the tax relevant data is stored for all items, it will be passed to the external tax system for tax calculation. External tax system can eventually execute Max Tax calculation rules across multiple items. The tax results from the external system will be distributed back to the corresponding item through the condition value formula 510.<sup>22</sup> The condition value formulas 500 and 510 are able to operate accordingly because UTXD and UTXE are group conditions.

*Please note that pricing procedures RVAXUS and RVAXUD cannot be used simultaneously for the same sold-to party. Partial use of both pricing procedures, for example RVAXUD in the sales order/billing and RVAXUS in the credit memo, might lead to inconsistent tax calculation and reporting. SAP will not support the incorrect use of both pricing procedures RVAXUD and RVAXUS.*

### 3. Tax calculation in MM and FI:

For MM and FI transactions, tax calculation makes use of a tax procedure instead of a pricing procedure. Tax procedure also uses the condition techniques.

The peculiar aspects of tax procedures:

- Every condition type in a tax procedure has the same access sequence MWST.
- Access sequence MWST has 2 parameters: country and tax code.
- The tax condition records for each condition type is created through the FI condition record maintenance (see *Setting up tax codes* – Section 2).
- The FI tax condition records are based on the tax code and are created in central configuration for tax code condition records. The tax codes are used in accounts receivable sales and use tax, accounts payable sales tax and accounts payable self-assessment / use tax.
- For MM and FI document transactions, the company code's country and the tax code entered will form the FI tax condition records for the country tax procedure.
- For MM, if the tax code is not entered manually, an automatic tax code determination is necessary. Configuration set up for automatic tax code determination in MM is described in appendix F.
- Tax procedure also determines the G/L (tax liability) accounts to which the tax amounts are to be posted to accounting. A correct configuration set up is required for

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<sup>21</sup> Add the scale formula using transaction V/06 (maintain condition types). In case there are problems adding the scale formula (blanks out immediately) you have to check with OSS note 188732 to see how to get around this problem.

<sup>22</sup> From release 4.6C formula 510 has been moved to formula 501. In your tax per document pricing procedure replace alternate condition type formula 510 with 501.

automatic G/L account determination. The configuration set up is described in *Setting up tax codes* – Section 3.

The standard tax procedure delivered by SAP for tax calculation using external tax system is TAXUSX.

The tax procedure TAXUSX is configured to call the tax interface system through the Condition Value Formulas: 300...306. The tax interface system passes tax relevant information to the external tax system like tax code properties, ship-to and ship-from jurisdiction codes, taxable amount, etc. and returns the tax amounts and tax rates from the external tax system back to the transaction.

#### 4. Why is tax procedure TAXUSX important for SD?

During SD document transactions, *tax procedure TAXUSX is only relevant to determine the tax liability accounts* for output sales tax. Notice that in pricing procedure RVAXUS, the condition types XR1...XR6 will carry the tax rates and tax amounts - resulted from the external tax system calculation - which will be posted to tax G/L accounts. *However, the tax accounts are not specified in the pricing procedure but rather in the tax procedure (see *Setting up tax codes* – Section 2).* **Tax codes are the link between pricing procedure and tax procedure.**

As mentioned in above Section 2 (Tax Calculation in SD), the SD tax codes are equivalent to those set up in FI. When the tax code is automatically determined in SD, through UTXJ condition records, it and the departure country are used to read the appropriate tax condition record maintained in FI (see *Setting up tax codes*).

The condition records for XR1...XR6 in SD pricing procedure are ‘activated’ through the activation of the same condition records in FI tax procedure. Therefore, the *condition type names have to coincide* in both: SD pricing and FI tax procedure.

## Setting up tax codes

Here are templates for the most common types of tax code that can be set for US Sales & Use taxes:

**I1 – Sales input taxes:** used mainly during Purchase Orders, Invoice Verifications and Accounts Payable.

**I0 – Sales exemption input taxes:** used mainly during Purchase Orders, Invoice Verifications and Accounts Payable for (ship-to location and/or material) exempt transactions.

**O1 – Sales output taxes:** used mainly during Sales Orders, Billings and Accounts Receivable.

**O0 – Sales exemption output taxes:** used mainly during Sales Orders, Billings and Accounts Receivable for (customer and/or material) exempt transactions.

**U1 – Use input taxes:** used mainly during Purchase Orders, Invoice Verifications and Accounts Payable.

*Hint:* The above tax code names are using SAP naming convention. Users can also create new tax codes if necessary, i.e. for different product codes.

To create a tax code, three main steps are required:

1. Maintain tax code properties
2. Maintain tax code condition record(s)
3. Maintain tax accounts

### 1. Maintain tax code property

Tax code properties have to be set first during tax code creation in order to define it as input/ output tax, sales/use tax, etc.

IMG Path: *Financial Accounting>Financial Accounting Global Settings> Tax on Sales/Purchases>Calculation>Define tax codes for sales and purchases*

Transaction: **FTXP**

Table: **T007A**

When creating a new tax code condition record, a pop-up window will display after a country is specified. Tax code properties are maintained via this pop-up window. These properties are stored in **T007A** under the key fields *tax procedure (KALSM)* and *tax code (MWSKZ)*.

**DO NOT USE TRANSACTION SM31 (UPDATE) TO MAINTAIN T007A BECAUSE LINKS TO OTHER TABLES WILL NOT BE PROPERLY MAINTAINED. SM31 may only be used to view table T007A.**

Table T007A stores the allowable combination of tax procedure with tax code and tax type. This table is checked when condition records for tax codes are created. The properties define each tax code and must be maintained. These properties are in order:

<b>Tax code</b>	2 position identifier and description field
<b>Tax type</b>	V - input (A/P, MM) or A – output (A/R, SD)
<b>Check</b>	error message indicator for calculated versus entered tax amounts – <b>Blank</b> means a <b>warning</b> message will be returned or <b>setting</b> the radio button means an <b>error</b> will be returned
<b>EC code</b>	not relevant for tax interface
<b>Target tax code</b>	not relevant for tax interface
<b>Relevant to tax</b>	<p><b>Blank</b> or <b>O</b> - External system decides if transaction is non-taxable vs. taxable. External system's taxability decision engine will be used.</p> <p><b>1</b> – External system assumes transaction is taxable. Therefore, external system's taxability decision engine will be ignored and tax rates will be based solely on jurisdiction codes.</p> <p><b>2</b> – Call to external tax system will be bypassed during tax calculation. SAP will impose zero rates and zero amounts.</p>
<b>Tax category</b>	<p><b>Blank</b> or <b>0</b> – Normal Sales Tax</p> <p><b>1</b> – Consumer Use Tax (for A/P self-assessment tax)</p> <p><b>2</b> – Service Tax</p> <p><b>3</b> – Rental/Lease Tax</p>
<b>Product code</b>	Used to map to external tax system's product code in conjunction with product code table <b>TTXP</b> .
	You can edit table <b>TTXP</b> using the view <b>V_TTXP</b> and transaction <b>SM31</b> .

## 2. Maintain tax code condition records

IMG Path: *Financial Accounting>Financial Accounting Global Settings>Tax on Sales/Purchases>Calculation>Define tax codes for sales and purchases*

Transaction: **FTXP**

Table: **A003**

Tax code condition records are stored in condition table **A003**. The plant's country (SD) or the company code's country (MM) along with the tax code, which was automatically determined from the SD/MM condition records, are used to read the tax condition records stored in table A003. The tax code also be entered and changed manually in both MM and FI.

To create the tax code condition record, enter tax percentage rates in the six fields provided as follows:

<b>Tax Code</b>	<b>Condition Type</b>	<b>Tax percent. Rate</b>
I1 and I0	XP1I	100
I1 and I0	XP2I	100
I1 and I0	XP3I	100
I1 and I0	XP4I	100
I1 and I0	XP5I	100
I1 and I0	XP6I	100

<b>Tax Code</b>	<b>Condition Type</b>	<b>Tax percent. Rate</b>
01 and O0	XR1	100
01 and O0	XR2	100
01 and O0	XR3	100
01 and O0	XR4	100
01 and O0	XR5	100
01 and O0	XR6	100

<b>Tax Code</b>	<b>Condition Type</b>	<b>Tax percent. Rate</b>
U1	XP1I	100
U1	XP2I	100
U1	XP3I	100
U1	XP4I	100
U1	XP5I	100
U1	XP6I	100
U1	XP1U	100-
U1	XP2U	100-
U1	XP3U	100-
U1	XP4U	100-
U1	XP5U	100-
U1	XP6U	100-

### **Important comments:**

Tax codes I0 and O0 have the same settings as its correspondent tax codes I1 and O1. The only difference is the **Relevant to tax** indicator set up that is part of the tax code properties (see above section 1 – Maintain tax code property). The **Relevant to tax** indicator must be set to **2** – External system is not called and tax rates and tax amounts are force to zero. Here, R/3 determines the exemption handling. If the external tax system is used for exemption handling, the indicator must be **blank** or **0**.

For tax codes that indicate use tax or self-assessment tax (i.e. U1), the condition types XP1U...XP6U (marked with 100-) creates the credit entry to tax liability accounts and the condition types XP1I...XP6I (marked with 100) records the offset entry for the tax to the expense/inventory accounts.

## **3. Maintain tax accounts for tax codes**

As mentioned in 9.3: Tax procedure also determines the G/L (tax liability) accounts to which the tax amounts are to be posted to accounting.

In order for the tax procedure to determine the desired G/L (tax liability) accounts per tax code, it makes uses of three interconnected concepts:

1. Accounting key
2. Process key

### 3. Transaction key

Each condition type amount - calculated during the tax procedure execution – can be posted to the desired G/L account. This is accomplished by the *accounting key*, which is assigned for each relevant condition type in the tax procedure TAXUSX. Check for each tax code the corresponding accounting key for all ‘active’ condition types using transaction FTXP.

#### **Accounting key is equal to process key.**

The *process key* defines through the **posting indicator** if a tax liability account can be assigned for a tax code or if tax amounts are to be distributed to the expense items.

IMG Path: *Financial accounting>Financial accounting global settings>Taxes on sales/purchases>Basic settings>Check and change settings for tax processing*

Transaction: **OBCN**

Table: **T007B**

Process keys for condition types XP1E...XP6E, XP1U...XP6U and XR1...XR6 should have the posting indicator set to ‘2’ (separate line item). Process keys for condition types XP1I...XP6I should have the posting indicator set to ‘3’ (distribute to relevant expense/revenue items).

#### **Only the process keys, which have the posting indicator unequal to ‘3’ is also transaction key.**

The *transaction key* defines the **tax liability account and posting keys** for line items that are created automatically during posting to accounting.

#### **Transaction keys (or account keys) are defined for each chart of accounts.**

IMG Path: *Financial accounting>Financial accounting global settings>Tax on sales/purchases>Posting>Define tax accounts*

Transaction: **OB40**

Table: **T030K**

Verify that the transaction keys (or account keys) used (like VS1...VS4 and MW1...MW4) are defined. Then confirm that account keys (i.e. NVV with a posting indicator of ‘3’) where the original account on the document line is to be

charged do not exist. This allows the system to book tax expense to the same account as the tax base.

Set up:

1. Rules (tax liability account is the same for all tax codes or it differs per tax code)
2. GL or Cost Element account assignment (liability or expense)
3. Posting keys (i.e. 40 or 50)

#### 4. Set dummy jurisdiction code for non-tax relevant transactions

Good receipt and goods issue transactions are non- Sales & Use tax relevant transactions. However, due to design reasons, tax code and jurisdiction code is required. Therefore, it is enough to assign the exempt tax codes and a dummy jurisdiction code that has no purpose in taxation.

IMG Path: *Financial Accounting>Financial Accounting Global Settings>Tax on Sales/Purchases>Posting>Allocate tax codes for non-taxable transactions*

Transaction: **OBCL**

Enter I0 (for input tax), O0 (for output tax) and a dummy jurisdiction code for the relevant company code(s) using TAXUSX.

The system uses this dummy jurisdiction code also for export business transactions. (If you create a billing document in a country with tax jurisdiction code, when the goods recipient is in a different country with or without tax jurisdiction code.) Please have a look at note 419124 where the suggested export jurisdiction codes used by the different External Tax Interface Partners are listed.

## Setting up SD condition records

As mentioned in *Pricing Procedure and Condition Techniques*, section 2: Condition records for UTXJ have to be maintained beforehand.

After you have set up the tax codes, you must now maintain SD condition records.

### 1. Maintain SD condition record

The parameters for maintaining UTXJ condition records depend on its access sequence. UTXJ access sequence is UTX1 (defined in transaction V/06).

Access sequence UTX1 is delivered with 3 access numbers:

1. Access number 8 with the following access<sup>23</sup> (defined in condition table 78):  
Departure Country / Destination Country (Export)
2. Access number 10 with the following access (defined in condition table 40):  
Country/State/Customer Classif.1/Material Classification 1
3. Access number 20 with the following access (defined in condition table 2)<sup>24</sup>:  
Domestic Taxes (Country/ Customer Classif.1/Material Classification 1)

*It is sufficient to create condition records for the 3<sup>rd</sup> access number 20 (condition table 2) by maintaining the following parameters:*

- Plant Delivery Country
- Customer tax classification
- Material tax classification

Therefore, it is necessary to create a condition record for all *Customer tax classification and Material tax classification* (see *Customizing Master Data Tax Classification (SD)* - Section 2 and 3) combinations being used. These combinations must be matched to the corresponding tax code. As already mentioned in *Tax Calculation in SD* – Section 2: The SD tax codes are equivalent to those set up in FI. The properties contained in the tax code, the jurisdiction code of the ship-to address of the customer, the jurisdiction code of the ship-from address of the plant, the taxable amount, and other fields are passed to external tax system, which calculates the tax.

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<sup>23</sup> An access identifies the document fields used by the system to search for a condition record.

<sup>24</sup> If access number 20 (for condition table 2) is not available for access sequence UTX1, it has to be added using transaction V/07.

Menu Path: *Logistics>Sales and distribution>Master data>Conditions>Prices>Taxes>Create/Change*

Transaction: **VK11** create / **VK12** change

To maintain U.S. condition records, select the condition type **UTXJ** or to maintain Canadian condition records, select **CTXJ**.

Example:

<b>Delivery country</b>	<b>Customer tax classification</b>	<b>Material tax classification</b>	<b>Rate</b>	<b>Tax Code</b>
US	1 (taxable)	1 (taxable)	100%	O1
US	1 (taxable)	0 (non-taxable)	100%	O0
US	0 (exempt)	1 (taxable)	100%	O0
US	0 (exempt)	0 (non-taxable)	100%	O0

## **Appendix A: Update of the External Tax System Audit File**

The third-party tax system is not just responsible for the tax calculation but also for the tax reporting. The tax data (comprised in the *external tax document*) is ready for reporting when the accounting document is saved from the invoice or credit memo. *Therefore, we update the external audit file immediately when the accounting document is saved.* The technique we use for making a real-time update possible is the *Transactional RFC (tRFC)*.

### **A.1 Scenarios when taxes are posted with the accounting document.**

Currently, there are the following scenarios in the core R/3 where taxes are posted together with the accounting document.

- SD: the billing document is released to accounting and saved.
- MM-LIV (Logistics Invoice Verification): the logistics invoice is saved and posted to accounting.
- MM-IV (old Invoice Verification): the accounting document is created directly from the logistics data.
- MM-ERS (Evaluated Receipt Settlement): During the ERS-run, the logistics invoice is created automatically based on the information of the goods received and then posted to accounting.
- FI-AP: the vendor invoice is manually posted to G/L accounts.
- FI-AR: the customer invoice is manually posted to G/L accounts.

Please note that in the U.S. no taxes are calculated or posted during the goods receipt or goods issue.

**If there are no taxes posted to a separate tax liability account for an invoice, there will be nothing updated to the external audit file (Example: I1).** Also, with free-of-charge deliveries where no accounting document is created at all, no taxes are updated to the external audit file.

## A.2 “Normal” update vs. “Forced” update

When the accounting document is being created all the tax information that is to be updated to the external system is first checked for inconsistencies. A recalculation is performed to make sure that no invalid jurisdiction codes will be posted. If this is the case, an error will occur and the accounting document cannot be posted. The second purpose of the recalculation is to check if the input data for the audit file will generate the same tax amounts as posted in the General Ledger. If the tax amounts are different, the tax data will be “forced” to the external system. The taxes will always be forced to the external system when the document (invoice) currency is different from the local (company) currency. Only if there is no inconsistency in the tax amounts, a “normal” update will take place. This should normally be the case.

**In releases prior to 4.6 a forced update could lead to a summarized and incomplete update of the tax audit file.** From now on, during a forced update, also the ship-from jurisdiction codes, product code etc. will be sent to the external system for update.

## A.3 Monitoring the Transactional RFC

In order to update the external audit file immediately when saving the accounting document the Transactional RFC is used. When the document is being updated, the function RFC\_UPDATE\_TAXES\_DOC is invoked in background task. In case of a forced update, this is RFC\_FORCE\_TAXES\_DOC.

However, the actual call to the external system only takes place if the R/3 database was successfully updated. In case of an error during the COMMIT WORK, no call to the external system will be performed.

**It can be that the update RFC results in an error, for example, when the connection is broken, or there is no more disk space to store the data.** The status of the update calls can be monitored with the *tRFC monitor* (transaction SM58) using the destination name. Calls that were successfully updated will be automatically removed from the list. So, no entries in the list means good news.

For reasons of performance the tRFC calls are serialized using the *tRFC Queue*. In addition to SM58, the status of the last tRFC call not yet updated to the external system can be monitored with the qRFC monitor (SMQ1). Also here: an empty queue means that all calls were successfully updated to the external system.

## Appendix B: Display the documents sent to the external system

There is the possibility to list in R/3 the external tax documents (the tax audit data for an invoice) updated to the external system. The report RFYTXDISPLAY can be used for that. For every document the following information is available:

- The status of the update and the error message if applicable.
- Whether the document was “forced” and, if so, what is the possible reason.
- The date and user who updated the document. Because of the on-line update, this is equal to the creation date and user of the corresponding accounting document.
- The corresponding accounting document, and from there the original invoice.
- An overview of the tax data updated to the external system.

### B.1 Display the status list

Report RFYTXDISPLAY can show the status for a list of documents as follows:

Status	Reference Document	Date and User	Text
Green	BKPF 1800000022 USXV1999	06.08.1999 DEBRUYNG	Updated to external system
Green	VBRK 90007687	08.04.1999 OEII	Forced to external system
	Possible reason for force: The document currency and the G/L currency differ		
Red	BKPF 1900000067 USXV1999	26.08.1999 DEBRUYNG	Error occurred in update
	Error message: doc: 1900000067; 1234 No more disk space		
Yellow	BKPF 1900000068 USXV1999	10.09.1999 DEBRUYNG	Scheduled in tRFC queue for update

## B.2 Display the tax data for a document

With RFYTXDISPLAY you can also display the tax data sent to the external system. One can configure a *display variant* to select certain fields and filter data from a certain document. It is possible to feed this data into a spreadsheet and do a further analysis from there.

**The tax data shown is not meant for legal reporting directly.** This is the responsibility of the external system. In addition, some data such as the Exempt Certificate may be in the audit file of the external system but does not show up on the display-taxes screen.

The tax data for some selected fields could look like this on the spreadsheet:

Tax item	Tx	Jur. level	Material	Tax date	Jur.Shipto	Jur.Shipfr	Account number	Cred	G/L acct	LC tax amount	Rate
000010	O1	1	Mat. 123	19990714	CA04120601	CA08131201	Cust. 1	1	175001	12.00	6.00
000010	O1	2	Mat. 123	19990714	CA04120601	CA08131201	Cust. 1	1	175002	2.50	1.25
000010	O1	3	Mat. 123	19990714	CA04120601	CA08131201	Cust. 1	1	175003	0.00	0.00
000010	O1	4	Mat. 123	19990714	CA04120601	CA08131201	Cust. 1	1	175004	0.00	0.00
000010	O1	5	Mat. 123	19990714	CA04120601	CA08131201	Cust. 1	1	175004	0.00	0.00
000010	O1	6	Mat. 123	19990714	CA04120601	CA08131201	Cust. 1	1	175004	0.00	0.00

## Appendix C: User-Exit

Due to the complexities of U.S. tax rules and regulations which seem to vary based on everything from type of industry to business practice, a user-exit has been provided within the tax interface programming logic. Customer user-exits are provided by SAP to handle customer specific modifications.

A customer user-exit is essentially a function module using a unique naming convention, in which set import and export parameters are defined to limit the data that can be manipulated. This is to safeguard certain data from being changed. This function module is attached to an enhancement that may contain other function modules. A user-exit should only be used if the possibilities for customizing or application specific user-exit exits are running out. This section explains how to set up and use the tax interface enhancement FYTX0002. You might also want to take note 302998 into consideration.

### C.1 Setting up enhancement FYTX0002.<sup>25</sup>

The SAP enhancement FYTX0002 can be viewed with transaction **SMOD** and consists of the following components:

1. Function module EXIT\_SAPLFYTX\_USER\_001
2. Include structure CI\_TAX\_INPUT\_USER

In function module EXIT\_SAPLFYTX\_USER\_001 one can fill or change some fields for the external system. The include structure CI\_TAX\_INPUT\_USER can be used to pass additional fields from the Pricing structures to the user-exit. The following steps have to be performed to install the user-exit:

1. With transaction **CMOD**: define a project, for example **ZTAXDOC0**, and assign the enhancement FYTX0002 to this project.
2. With transaction **SE37**: display function module EXIT\_SAPLFYTX\_USER\_001. Double-click on **ZXFYTU03** to create the program that will contain the custom changes.
3. With transaction **SE11**: add to the custom structure CI\_TAX\_INPUT\_USER additional fields from pricing that are not yet included in the input parameters of the function module.
4. Activate the project with transaction **CMOD**.

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<sup>25</sup> For customers who upgrade from a release prior to 4.6: The old user-exit of enhancement FYTX0001 (containing the COM\_TAX fields) is still executed before calling the new user-exit. However, new fields are not included. In addition, only those fields of COM\_TAX in structure TAX\_ALLOWED\_FIELDS can be changed. So, fields like COM\_TAX-TAXBAS1 can be no longer misused.

## C.2 How to use enhancement FYTX0002

With transaction SE37 you can see that Function module **EXIT\_SAPLFYTX\_USER\_001** has the following input parameters:

I_T007A:	Tax Code information
I_TTXD:	Additional information on interface version etc.
I_TAX_HEADER_INPUT:	Item-independent input data for taxes
I_TAX_ITEM_INPUT:	Item-dependent input data for taxes
I_INPUT_USER:	Includes the fields from CI_TAX_INPUT_USER

In the alternate condition type formulas FV64A500 (SD, tax per document) and FV64A300 (FI, MM, SD tax per item) these input parameters will be filled based on the pricing structures KOMP, KOMK and XKOMV.

**The input parameters cannot be changed.** Any modification will immediately result in a syntax error. Or, if dirty tricks are used, a run-time error will occur at the time of execution.

Those fields of the input parameters that can be changed inside the function module are included in the *changing* parameter CH\_USER\_CHANGED\_FIELDS (of type TAX\_ALLOWED\_FIELDS). Some fields in TAX\_ALLOWED\_FIELDS may already have a default value assigned to it before the user-exit is being called.

The structure TAX\_ALLOWED\_FIELDS has the following fields that can be changed:

Field name	Default value taken from	Comments
GROUP_ID	KOMP-UEPOS	
DIVISION	KOMK-GSBER	
PROD_CODE	T007A- PROCD	Or TTXP-XPRCD if exists
GROUP_PROD_CODE		Filled in user-exit
QUANTITY	KOMP-MGMLE	
UNIT	KOMP-VRKME	
TXJCD_SF	T001W-TXJCD or LFA1-TXJCD	Depends on MWART
TXJCD_POA	TXJCD_SF	
TXJCD_POO	TXJCD_ST	Can be changed to TXJCD_SF in user-exit
FREIGHT_AM		Included in AMOUNT
EXEMPT_AMT		Filled in user-exit
ACCNT_NO	KOMK-KUNWE or LIFNR	Depends on MWART
ACCNT_CLS		Filled in user-exit
COST_OBJECT		Filled in user-exit

PTP_IND		Filled in user-exit
EXCERTIF		Filled in user-exit
EXREASON		Filled in user-exit
USER_DATA		Filled in user-exit
STORE_CODE		Only sent during the update
USER_REPT_DATA		Only sent during the update

### C.3 Some examples using the User-exit

In our examples we need additional fields from KOMP and KOMK that will not come standard with the I\_TAX\_HEADER\_INPUT and I\_TAX\_ITEM\_INPUT parameters of the user-exit. Therefore, we add the following fields to CI\_TAX\_INPUT\_USER:

VKORG as in KOMK-VKORG

KDGRP as in KOMK-KDGRP

Those fields will be filled automatically from KOMK.

The user-exit may look as follows:

```
*-----*
* INCLUDE ZXFYTU03 *
*-----*
```

```
if i_t007a-mwart = 'A'.           " Accounts Receivable
```

```
*----Division code (Example 1: Based on sales organization)
```

```
  ch_user_changed_fields-division = i_input_user-vkorg.
```

```
*----Division code (Example 2: Based on company code)
```

```
  ch_user_changed_fields-division = i_tax_header_input-comp_code.
```

```
*----Tax Exemption Reason Code (Example: taken from customer group)
```

```
  if sy-subrc = 0.
```

```
    ch_user_changed_fields-exreason = i_input_user-kdgrp.
```

```
                                " Customer group (Sales)
```

```
  endif.
```

**\*----Tax Exemption Reason Code (Example 2: taken from tax code)**

```
ch_user_changed_fields-exreason = i_t007a-mwskz.
```

**\*----Product Code (Example 2: defined product field exists in mara)**

```
data: matkl type mara-matkl,
```

```
xprcd type ttxp-xprcd.
```

```
select single matkl from mara into matkl
```

```
      where matnr = i_tax_item_input-matnr.
```

```
if sy-subrc = 0.
```

```
  select single xprcd from ttxp into xprcd
```

```
        where xextn = i_tax_header_input-xextn
```

```
        and  procd = matkl.          " Material Group
```

```
if sy-subrc = 0.
```

```
  ch_user_changed_fields-prod_code = xprcd.
```

```
endif.
```

```
endif.
```

```
endif.
```

## **Appendix D: Handling the Freight**

The freight amount is included in the tax base amount. But in some jurisdictions the freight amount has a separate taxability. Therefore, the freight amount needs to be mentioned separately. There are two ways to do that:

### **D.1 Freight included on the line item**

The freight is passed to the external system by populating the field FREIGHT. The freight amount is always included in the base amount.

An example to fill the freight using the user-exit:

1. In the customer pricing procedure (for example RVADUS) enter '4' in the subtotal field of the freight condition type (for example HD00).
2. In the customer structure CI\_TAX\_INPUT\_USER, add the field KZWI4 as in KOMP-KZWI4.
3. In the user-exit, add the code CH\_USER\_CHANGED\_FIELDS-FREIGHT\_AM = I\_INPUT\_USER-KZWI4.

Please note that if the document currency differs from the company code currency the freight amount will not be mentioned separately in the update of the external system. Only the amount field (already includes the freight amount) and the tax amounts will be converted. You can prevent this by keeping customizable message FS 885 as an Error Message (Table T100C).

### **D.2 Freight on a separate line item**

A separate line item with a "freight material" is added to the document that contains the freight amount. The product code can be used (e.g., via the tax code) to indicate that this item represents the freight amount.

## ***Appendix E: Group Product Code for tax per document***

In some states there is a maximum tax per invoice or per a set of components. In order to send information about the group material when pricing is configured on the component level the field GROUP\_PROD\_CODE can be used.

```
data: matkl type mara-matkl,
      xprcd type ttxp-xprcd.
      select single matkl from mara into matkl
      where matnr = i_tax_item_input-upmat.
      if sy-subrc = 0.
      select single xprcd from ttxp into xprcd
      where xextn = 'V'
      and   procd = matkl. " Material Group
      if sy-subrc = 0.
      ch_user_changed_fields-group_prod_code = xprcd.
      endif.
      endif.
```

Note that by default the field GROUP\_ID already indicates that this item is a component of a set. All components of the same set will already have the same group\_id and is defaulted with the higher-level item number.

Also note that the field i\_tax\_item\_input-upmat contains the higher-level item material number.

## Appendix F: MM condition record maintenance

A tax condition record can also be created within the MM module. This is not required, but is necessary to automatically determine the tax code.

### F.1 Condition type maintenance

The MM tax condition record is based on the condition type **NAVS** and access sequence **0003**.

IMG Path: *Materials Management>Purchasing>Conditions>Define Price Determination Process>Define condition types*

Transaction: **M/06**

Select condition type **NAVS** and assign access sequence **0003** to it. This step is only necessary to automatically determine the tax code. Tax codes can be entered or changed manually in MM processing.

### F.2 Condition record maintenance

Menu Path: *Logistics>Materials management>Purchasing>Master data>Taxes>Create/Change*

Transaction: **MEK1** create/ **MEK2** change

Select the condition type **NAVS** and choose the desired **Key Combination**. The material classification indicators based on Import and Region is hard coded.

**IMPORT (TAXIL):** **0** – Domestic purchase  
**1** – Intercompany purchase  
**2** – EC intercompany purchase

**REGION (TAXIR):** **0** – Intrastate purchase  
**1** – Interstate purchase

Input the appropriate indicator(s), depending on the **Key Combination** chosen and associate them with the corresponding tax code created in FI.

## **Appendix G: General Ledger Tax Accounts maintenance**

If a General Ledger account is set up to be tax relevant, then tax amounts must be present in a financial transaction in order to create a financial document. To make a revenue account tax relevant, fill the tax category field in the G/L account master record with an output tax indicator. When posting a customer invoice to FI, the system will determine if tax line items are in the invoice. If no tax line items exist, a financial document cannot be created. Output tax indicators are used for accounts receivable (FI) and sales (SD) and input tax indicators are used for accounts payable (FI) and purchases (MM).

Menu Path: ***Accounting>Financial accounting>General ledger>Master records>Create or Change or Display***

Transaction: **FS01 or FS02 or FS03**

For the accounts in the prior step (T030K) review the account definition **and Tax Category** field in the account master records that will be used for tax liabilities. The Input or Output determination is very important. Then consider the asset accounts for nontaxable purchases of inventory. Also consider the set of accounts and primary cost elements that correspond to the **NVV** account key; the Tax Category should be Input or nothing. Review the revenue accounts used in SD.

The sales and use tax procedure for MM/FI allows the charge (debit) for taxes to post to a separate account. This is typically titled 'sales tax expense clearing'. As delivered, the G/L accounts corresponding to 'expense to separate accounts' (XP1E...XP6E) are clearing accounts. Most users will not utilize this posting, instead, choosing to record taxes in the same account as the charge; using the account key with rules like NVV. Liability accounts for A/P sales and use tax liability and A/R sales tax liability (XP1U...XP6U and XR1...XR6) need to be defined. The G/L accounts corresponding to the account keys need to be setup appropriately.

Following is an example of the Tax Category configuration in the template chart of accounts CANA:

Trade Payables - Domestic	211000	*	(All tax types allowed)
Trade Receivables – Domestic	121000	*	(All tax types allowed)
Sales Revenue - Domestic	410000	+	(Only output tax allowed)
Consumption – Misc. Inventory	510060	-	(Only input tax allowed)
Sales Tax A/R - State	216100	>	(Output Tax)
Sales Tax A/R - County	216110	>	(Output Tax)
Use Tax A/P - State	216200	<	(Input Tax)

## **Appendix H: Calculate Taxes on Net Amount from Cash Discount**

For the US Sales & Use tax, the rules for determining the tax base amount - net or gross from cash discount – depends on the respective State laws.

In R/3, base amount determination is controlled based on the Company Code or Ship-to 'State jurisdiction code'. However, for those State jurisdiction codes for which the settings were specified, the company code settings do not have any effect.

### **H.1 Based on Company Code**

IMG Path: *Financial accounting>Financial accounting global settings>Tax on sales/purchases>Calculation>Specify base amount*

Transaction: **OB69**

Choose the appropriate company code and activate.

### **H.2 Based on State jurisdiction code**

IMG Path: *Financial accounting>Financial accounting global settings>Tax on sales/purchases>Basic settings>Define tax jurisdictions*

Procedure: **TAXUSX**

Transaction: **OBCP**

Within the 'Define tax jurisdiction transaction', it is necessary to maintain the highest-level jurisdiction code, which represents the state. Taxes on net base amount TxN and discount on net amount DiN are set with this transaction.

**It is important to realize that R/3 does not allow posting of a document if jurisdiction settings are different per line item. For example, a line item containing a New Jersey jurisdiction which has a calculation setting based on gross amount and a line item containing an Illinois jurisdiction which has a calculation setting based on net amount cannot exist in the same document. All line items must be set to calculate taxes using the same base, net or gross. This rule applies to calculating discounts, as well.**

## **Appendix I: Calculate Discount on Net Base Amount**

To calculate discounts without considering tax, utilize:

IMG Path: *Financial accounting>Financial accounting global settings>Tax on sales/purchases>Calculation>Specify base amount*

Transaction: **OB70**

Set the cash discount base amount to net value excluding taxes based on company code. This functionality will only work in conjunction with setting the tax jurisdiction to calculate taxes on net base amount as well.

IMG Path: *Financial accounting>Financial accounting global settings>Tax on sales/purchases>Basic settings>Define tax jurisdictions*

Procedure: **TAXUSX**

Transaction: **OBCP**

Within the 'Define tax jurisdiction transaction', it is necessary to maintain the highest-level jurisdiction code, which represents the state. Taxes on net base amount TxN and discount on net amount DiN are set with this transaction. This works only after transaction OB69 has been performed for the company code.

**It is important to realize that R/3 does not allow posting of a document if jurisdiction settings are different per line item. For example, a line item containing a New Jersey jurisdiction which has a calculation setting based on gross amount and a line item containing an Illinois jurisdiction which has a calculation setting based on net amount cannot exist in the same document. All line items must be set to calculate taxes using the same base, net or gross. This rule applies to calculating discounts, as well.**

## Appendix J: Tax Only Adjustments

Tax only debits and credits are generally accumulated over time and may not correspond to a single invoice. This standard R/3 functionality is not specific to the tax interface.

### J.1 A/R Customer Invoice

In a typical customer invoice the customer account is debited the total sales amount including tax. The revenue account is credited with the revenue amount and tax liability accounts are credited with the tax. If this was supposed to be a tax-exempt transaction, taxes must now be adjusted. A customer credit would have to be created to adjust the tax amounts, which were billed to the customer. The total tax amount would be credited to the customer account using posting key 11 and the individual tax amounts would be debited to the various tax liability accounts using posting key 40. Since taxes are determined automatically, a tax base amount must be provided to calculate the tax. The taxable amount with a tax code of O1 would be entered as a debit (posting key 40) to the revenue account so that the tax amounts can be calculated and debited to the appropriate tax accounts. This will cause an out-of-balance condition, which is corrected by re-entering the taxable amount with a tax code of O0 as a credit (posting key 50), to the revenue account. This procedure adjusts the taxes.

### J.2 A/P Vendor Invoice

If a vendor charges sales tax, the amount credited to the vendor account is the taxable amount and the tax with posting key 31 and the taxable amount including the tax is debited to the cost account using posting key 40 with a tax code of I1. If the vendor should not have collected tax, then the tax amount must be debited to the vendor account using posting key 21 and the cost account must be credited with the tax amount using posting key I0. Since taxes are calculated automatically, a credit amount equal to the tax base must be posted to the cost account (posting key 50) using a tax code of I1. To offset this credit, an amount equal to the tax base amount would be debited to the cost account (posting key 40) using a tax exempt code of I0.

**Example Posting:** Manual tax adjustment:

Item	Posting Key	Account	Tax Code	Amount
1	21	VENDOR	* *	8,25
2	50	400000	I1	108,25-
3	40	400000	I0	100,00

**Detailed Steps:**

- 1) Enter the overcharged tax amount USD 8.25 in the amount field (WRBTR) **and** in the tax amount field (WMWST). Turn OFF "Calculate tax"!
- 2) Enter tax base amount 100 in regular amount field, tax code I1 (taxable sales tax).
- 3) DR expense account with tax base amount USD 100, tax code I0, to offset entry.
- 4) When transaction is posted, the amount for line item 2 changes to 108.25.