Ensure accurate and efficient tax calculations with your SAP system

A guide to configuring a proper taxation model

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Tax is an integral part of every sales and purchase transaction, and each country treats tax in a different manner — from the Sales and Use Tax in the US, to the Value Added Tax in Europe, to the Goods and Services Tax in Canada and Australia. Each type of tax has its own set of rules and logic, and each type is booked in its own manner in the SAP system.

There are three main challenges to dealing with tax in the SAP system:

- How to identify the tax type for a particular country
- How to maintain taxes optimally in the SAP system
- How to roll out the defined tax model

This article helps SAP implementation teams and functional users address the first two questions (the third is an article in its own right). I begin by briefly explaining the different types of tax models, and then take you on a step-by-step tour of how to configure a tax computation in the SAP system — first entirely within the SAP system, and then using an external tax software. Along the way, I provide some tips gleaned from my own experiences.

From a project management standpoint, this article helps you frame an overall taxation strategy for your organization. From a consulting perspective, it explains the differences between tax models and which configuration is best-suited to the assignment at hand.

Note!

This article applies to SAP R/3 3.1H and higher, including mySAP ERP Central Component (ECC), and assumes some basic knowledge of the SAP Financials module.

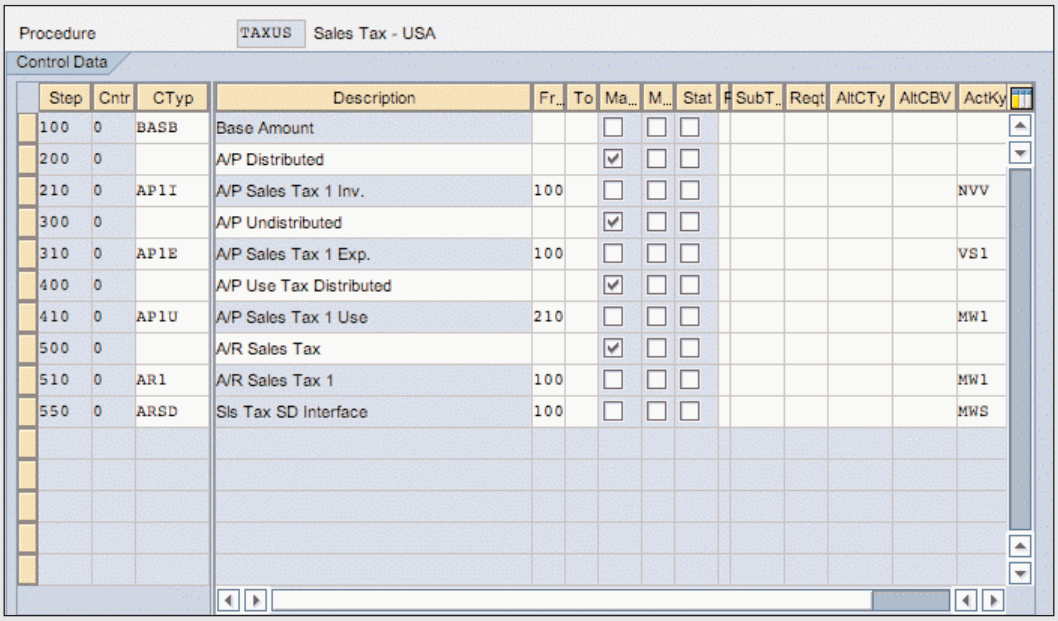


Figure 1 Example tax calculation procedure — US

Taxation models in brief

In the simplest terms, a tax is a fee paid by an individual or business to central or local regulatory authorities on the purchase of goods and services. Every country has its own tax laws and, accordingly, its own tax rules.

There are three main taxation models:

- Sales and Use Tax
- Value Added Tax
- Goods and Services Tax

We could list many more, but they are all more or less a part of or some combination of these three main models.

Sales and Use Tax

The Sales and Use Tax model is followed in the US. A *sales tax* is imposed upon specific transactions. It is calculated as a percentage of the price paid for taxable goods and services, and is charged once to the end consumer to avoid repeatedly paying tax throughout a production-to-product process. Some purchasers are exempt from the tax (for example, wholesale transactions are not taxed), and some qualify for a reduced rate (for example, books and periodicals are taxed at a reduced rate). Sales tax is legally imposed only on intrastate transactions — i.e., those in which the buyer and seller are in the same state.

For example, let's assume that State A levies a sales tax, but State B does not. A purchaser located in State A can either buy supplies from a vendor in State A, who would add the state sales tax to the purchase price (and later remit the tax to State A), or buy supplies from a vendor in State B, who would add no sales tax. In such a scenario, the purchaser would likely opt to buy supplies from the State B vendor to avoid the tax, causing the State A vendor to lose a sale and State A to lose tax revenue.

To prevent this, states that have a sales tax also have a *use tax*. A use tax is imposed on the use, storage, or consumption of property within the state — in other words, a use tax is imposed if the purchaser exercises any right or power of ownership

How to read tax calculation procedures

A tax calculation procedure contains the settings required to calculate tax, which are made using the Implementation Guide for Financial Accounting (Financial Accounting Global Settings → Tax on Sales/Purchases). Each country has its own tax calculation procedure, which consists of condition types (tax types) that specify the base amount for calculating the tax and enables integration with the Sales and Distribution (SD) and Materials Management (MM) modules by automatically posting the calculated tax to the General Ledger (G/L) tax accounts associated with SD and MM customer and material master documents.

The TAXUS procedure shown in Figure 1 is a tax calculation procedure defined for the US. The values in the Step column represent the sequence in which each condition type defined for the procedure is called. The TAXUS procedure consists of the condition types listed in the CTyp column: BASB, AP1I, AP1E, and AP1U. The BASB condition type represents the base amount referenced by the tax calculations, and is derived directly from pricing condition tables defined by the implementation team in the SAP system. Condition types AP1I, AP1E, and AP1U represent a type of calculation to be performed on the base amount. Condition types AP1I and AP1E reference the base amount stored in condition type BASB (Step 100, specified in the From column), while condition type AP1U references the amount stored in condition type AP1I (Step 210, specified in the From column), and so on.

Selecting the checkbox in the Manual column for a condition indicates that the condition is used in the price determination if the condition is manually selected — on the condition overview screen in the Purchasing component of MM, for example. In addition, there are checkboxes to set the condition as Mandatory (which means the condition will update the associated G/L tax account) or Statistical (which means the condition will update the associated infostructure for analysis purposes, but not the associated G/L tax account).

If you want the condition type to be called for a specific requirement or computed in a different fashion, you can define a Requirement (Reqt), an Alternate Condition Type (AltCTy), or an Alternate Condition Base Value (AltCBV) for that specific condition type.

Finally, you define an account key (ActKy) for all non-statistical condition types to link the condition type to the G/L accounting.

with respect to property. A vendor's statutory duty for use tax is identical to its duty for sales tax — in other words, tax is not imposed when goods are sold; rather, it is applied when goods are consumed.

Going back to our previous example, let's say that State A levies a sales tax and a use tax while State B does not, and that a purchaser in State A buys supplies from the State B vendor. If the State B vendor also has a physical presence in State A, the State B vendor collects a use tax from the purchaser and remits it to State A. If State B does not have a physical presence in State A, the purchaser assesses the value of the tax and remits it to State A.

So how is the Sales and Use Tax model reflected in the SAP tax system? **Figure 1** shows an example tax calculation procedure for the US (see the sidebar above for more on tax calculation procedures). The example TAXUS procedure shows both sales tax and use tax. The sales tax calculations (defined in condition types AP1I, AP1E, AR1, and ARSD) are based on the base amount (defined in condition type BASB) specified for the item; the use tax calculation (defined

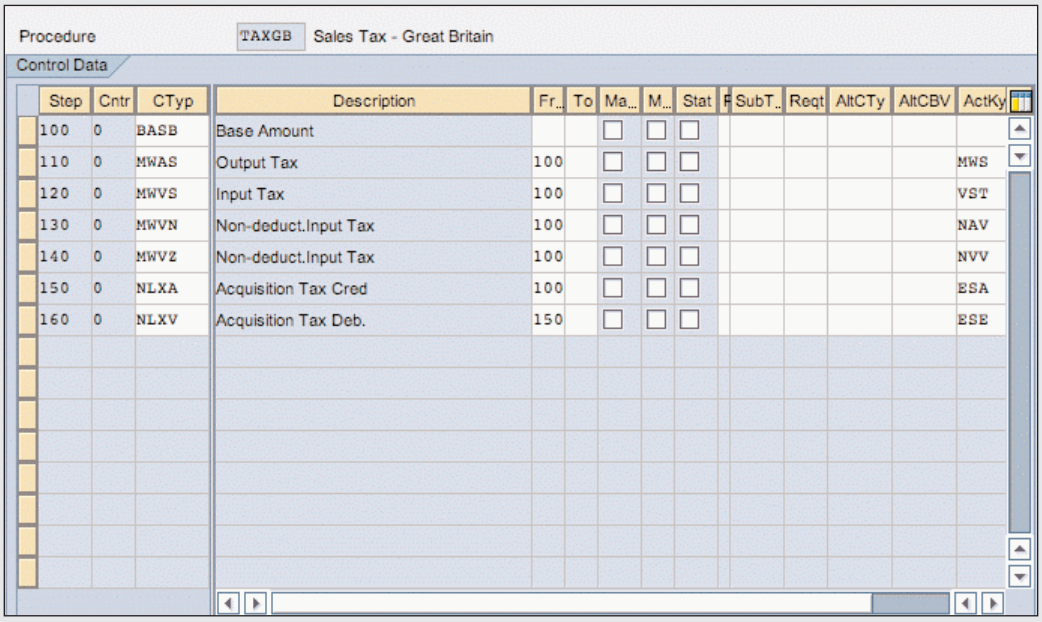


Figure 2 Example tax calculation procedure — Great Britain

in condition type AP1U) is based on the consumption of the item. In other words, sales tax is derived from the sale of an item, whereas use tax is derived from the purchase of an item. There can be more than one level of sales tax or use tax based on jurisdictions (i.e., state, district, city, or town). I will go into more detail on Sales and Use Tax calculations later in the article when I discuss external tax calculations; here, I just wanted to give you an idea of how a procedure for this type of calculation looks in the SAP system.

Value Added Tax

Value Added Tax (VAT) is a tax imposed on a business at all phases of the manufacturing and production of a good or service. VAT was originally introduced in France and has become a major part of the tax structure in the European Union. VAT calculation is based on the increase in price or value provided at each point in the supply chain. In short, VAT is a tax imposed on the "value added" to a good or service during every purchase and sales transaction in the lifecycle of the good or service.

VAT is categorized as input tax and output tax. VAT that is charged by a business and paid by its customers is known as *output tax*. VAT that is paid by a business to other businesses on the supplies that it receives is known as *input tax*. In cases where an input tax can be attributed to an output tax, a business can claim a tax credit that offsets the amount it must pay to the government. For example, when the business purchases a DVD drive and assembles and sells a laptop, the business can get credit on the input tax on the DVD drive while performing a sale of the laptop.

In short, a company pays tax on the value it adds to the product; hence tax rates for VAT are higher compared to other taxation models. Also, like Sales and Use Tax, VAT allows for reduced rates and exemptions in some cases — for example, in Italy, books from Italian publishers qualify for a 4% reduced rate, and NATO personnel are exempt from tax — but rate changes do not occur nearly as frequently with VAT as they do with Sales and Use Tax. VAT rates generally do not change often.

Figure 2 shows a sample VAT tax calculation procedure for Great Britain (TAXGB). The tax

Element	Manufacturer	Retailer	End consumer
No VAT	$100	$120	$150
10% VAT	$110	$132	$165
VAT to be paid	$10	$12	$15
VAT to be remitted	$0	$2	$3
10% sales tax	$100	$120	$165
Sales tax paid	$0	$0	$1

Figure 3 VAT vs. Sales and Use Tax

calculation procedure shows both output tax and input tax. The basis of the tax calculation (base amount BASB in Figure 2) remains the item's sales value for both the output and input tax. The tax procedure also shows non-deductible input tax, which is applicable to products considered beyond the purview of VAT, such as face-value vouchers, and an acquisition tax, which is applicable to goods acquired by one VAT country from another VAT country. I will go into more detail on VAT computation logic later in the article; here, I just wanted to give you an idea of how VAT is reflected in the SAP tax system.

How does VAT differ from Sales and Use Tax?

So how exactly does the VAT model differ from the Sales and Use Tax model? To answer this question, let's take a look at an example (summarized in **Figure 3**), starting with a Sales and Use Tax scenario and then continuing with a VAT scenario.

A manufacturer pays $100 USD to make a product. Assume that the manufacturer wants to sell the product to a retailer at a 20% profit. Assume further that the retailer in turn wants to sell the product to an end consumer at a 25% profit. In this case, the manufacturer would sell the item to the retailer for $120. In a Sales and Use Tax environment, no tax would be due on this transaction since it is a wholesale transaction. The retailer would then sell the item to the end consumer for $150 and apply sales tax to the total at the point of sale. Assuming a sales tax rate of 10%, this brings the total to $165, as shown in Figure 3. At the end of the fiscal reporting period, the retailer would be responsible for remitting the $15 sales tax charged to the end consumer to the government.

In the case of a 10% VAT, however, the manufacturer would have to remit tax to the government. Payment of tax does not wait until the sale to the customer. So the manufacturer's total cost would be $110 USD in this case. This includes $100 in material and labor and $10 in VAT. The manufacturer would then sell the product to the retailer at a 20% margin ($132), and the retailer would charge the end consumer $165, leaving the same profit for the manufacturer and retailer. The manufacturer has already paid $10 as input tax while charging $12 as output tax to the retailer, leaving a difference of $2 to be remitted to the government. In the same manner, the retailer has paid $12 as input tax and charges $15 as output tax to the end consumer, leaving a difference of $3 to be remitted to the government.

As shown in Figure 3, the end consumer pays the same amount of tax in the VAT and the Sales and Use tax models. What differs, however, is *when* the tax is paid in the supply chain, and *who* remits it. In short, the Sales and Use Tax model is more of a "pay at the end" system with remittance done by the retailer, whereas the VAT model is more of a "pay as you go" system with remittance at each step of the supply chain.

Goods and Services Tax

The third type of tax model is the Goods and Services Tax (GST) model, which is a version of the VAT

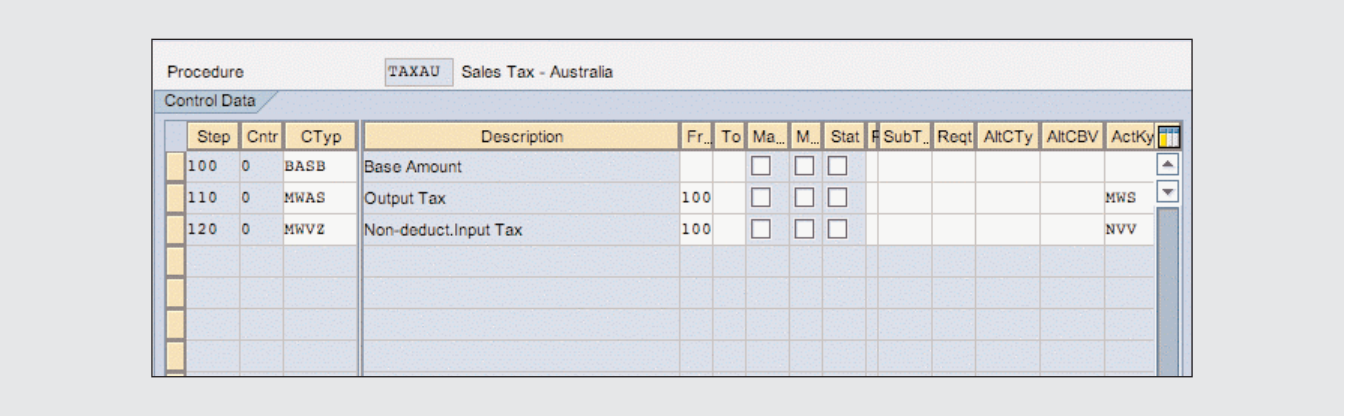


Figure 4 Example tax calculation procedure — Australia

model where the same tax rate is levied on the sale of all goods and services with no variations; VAT, on the other hand, has a system of reduced rates and exemptions based on well-defined criteria, though such occurrences are infrequent. GST is prevalent in Canada, New Zealand, and Australia, each of which has a customized version of the tax model.

In Canada, a business can claim input tax credit on its purchases. It can deduct from the amount of GST it has collected the amount of GST it has already paid, similar to the VAT model. The retailer remits the tax to the government but also claims credit on the tax paid on its purchases as a non-deductible input tax. This version of GST also resembles the Sales and Use Tax model in which the end consumer pays the tax.

> ***Note!***
>
> Canada also uses a separate concept called Harmonized Sales Tax (HST) for some provinces, such as Nova Scotia, where a Provincial Sales Tax (PST) is combined with the GST to arrive at a single HST that is remitted to the government.

New Zealand has a similar version of GST, where the end consumer pays the tax. In this case, however, the business claims credit on its purchases with a time delay — in other words the business charges GST to the end consumer at the time of sale but claims credit at a later, predefined time. The difference between this version of GST and VAT is that you cannot claim credit on purchases until you have sold the goods to the end consumer.

The version of GST used in Australia is a multi-stage sales tax of 10% applied to goods and services at the federal level; state government does not levy any sales tax. As with the Canadian version of GST, a business can claim tax credit on its purchases.

Figure 4 shows a sample tax calculation procedure for Australia (TAXAU), where the output tax is computed using the base amount (BASB) and the non-deductible input tax (MWVZ) is recorded so that the business can recover the tax it has remitted to the government. I will go into more detail on GST computation later in the article; here, I just wanted to give you an idea of how GST is reflected in the SAP tax system.

How does GST differ from VAT and Sales and Use Tax?

As you have seen, GST is a more broad-based version of VAT that is customized to the country using it. Regardless of the customizations, however, with GST only one rate is applied to all goods and services sold in that country (except for some provinces in Canada; see the note on this page).

Business scenario	US (Sales and Use Tax)	Italy (VAT)	Australia (GST)
Individual buying a laptop	8.25%	20%	10%
Disabled individual buying a laptop	8.25%	4%	10%
NATO personnel buying a laptop	8.25%	0%	10%
Individual buying a book from a French publisher	0%	20%	10%
Individual buying a book from an Italian publisher	0%	4%	10%

Figure 5 GST vs. VAT and Sales and Use Tax

VAT and Sales and Use Tax have a more complicated structure than the GST model. The VAT and Sales and Use Tax models have a reduced tax rate concept as well as exemptions based on customer characteristics. For example, France uses reduced rates of 5.5% and 2.1% VAT for materials such as books and training supplies. Great Britain uses a zero-rated VAT on books and magazines. Italy uses a 4% reduced VAT for disabled individuals and allows NATO personnel to be exempt from VAT. The US allows reduced rates and exemptions according to state laws — a particular material/customer may be exempt in one state and charged in full in another state.

Let's take a look at an example of an individual buying a laptop or book from a store in the US, a store in Italy, and a store in Australia. **Figure 5** summarizes the different business scenarios and different tax amounts based on the material/customer combination. As you can see, Australia charges GST at a 10% rate regardless of the type of material/customer, but the US and Italy have standard/reduced tax rates based on the category of material/customer and, in the case of the US, the tax laws of the particular state.

Now that you have a basic understanding of each type of tax model and how various countries use these models for different kinds of calculations, let's turn our attention to how tax is computed in the SAP system. SAP R/3 includes powerful functionality for computing tax within Materials Management (MM) and Sales and Distribution (SD) documents, and also for tracking remittance to the government. SAP also allows companies with specialized tax accounting systems to compute tax outside of the SAP system and import the final values into MM and SD documents. In the next section, we'll look at how tax is computed within the SAP system; then we'll look at how it is computed using external software.

Computing tax within the SAP system

In countries where tax rates don't change at regular intervals — such as those that use the VAT and GST models — the tax computation generally takes place within the SAP system itself, rather than passing values to an external system for computation. When tax is computed internally within the SAP system, you define tax codes for all possible tax rates within a country and then map these tax codes first to a tax procedure and then to a pricing procedure using condition determination (see the sidebar on page 114 for more on pricing procedures). Then, when you call an SAP transaction such as VA01 (Create Sales Order), the SAP system calls the pricing procedure assigned to the sales organization, derives from the pricing procedure the country in which the sales organization is located, invokes the associated country-specific tax procedure, computes the tax amounts based on the tax procedure, and passes these amounts to FI for posting.

Pricing procedures

A pricing procedure defines a combination of condition types arranged in a sequence of steps and associated with account keys. These condition types get associated with different accesses for fetching data from condition tables and passing these values to SD documents. The standard SAP system includes predefined pricing procedures containing the most commonly used condition types (prices, discounts, surcharges, etc.) and their corresponding access sequences (the order in which the condition types are used).

You can use the predefined procedures as is, you can modify them, or you can create your own. Pricing procedures are maintained in the SD module. To create a pricing procedure or access pricing procedure settings, in the customizing transaction (SPRO), follow the menu path Sales → Pricing → Pricing Control → Define and Assign Pricing Procedures.

Further discussion of pricing procedures goes beyond the scope of this article. However, for more information, go to the SAP Help Portal (http://help.sap.com), and in the documentation for mySAP ERP, navigate to SAP ERP Central Component → Logistics → Sales and Distribution (SD) → Pricing and Conditions (SD-BF-PR).

Note!

In order to complete these steps, there are a few tasks you need to perform in advance. You must define the base amount (the value of condition type BASB) in the pricing procedure (see the sidebar above); this is defined in sales condition records in the condition tables for a material and customer combination (transaction VK11). Also you need to define the G/L accounts in the Chart of Accounts and associate these G/L accounts to account keys, which have unique three-character names (for example, MWS, VST, etc.). These tasks are not covered in this article because discussion of them goes beyond the scope of this article. For information on how to perform these tasks, go to the online documentation for mySAP ERP on the SAP Help Portal at http://help.sap.com.

In the next sections, I walk you through the steps that are involved in creating a tax computation within the SAP system.

Creating a tax computation within the SAP system

To illustrate how to create a tax computation exclusively within the SAP system — without incorporating an external tax system — I show you how to create a VAT output tax for Great Britain. This involves defining condition types, attaching condition types to a tax procedure, creating tax codes, associating tax codes with G/L accounts, and then mapping tax codes to material and customer tax classifications to enable booking in sales transactions.

Specifically, we will perform the following steps:

1. Define the condition types for the tax calculation.
2. Define the tax calculation procedure.
3. Assign the tax calculation procedure to a country.

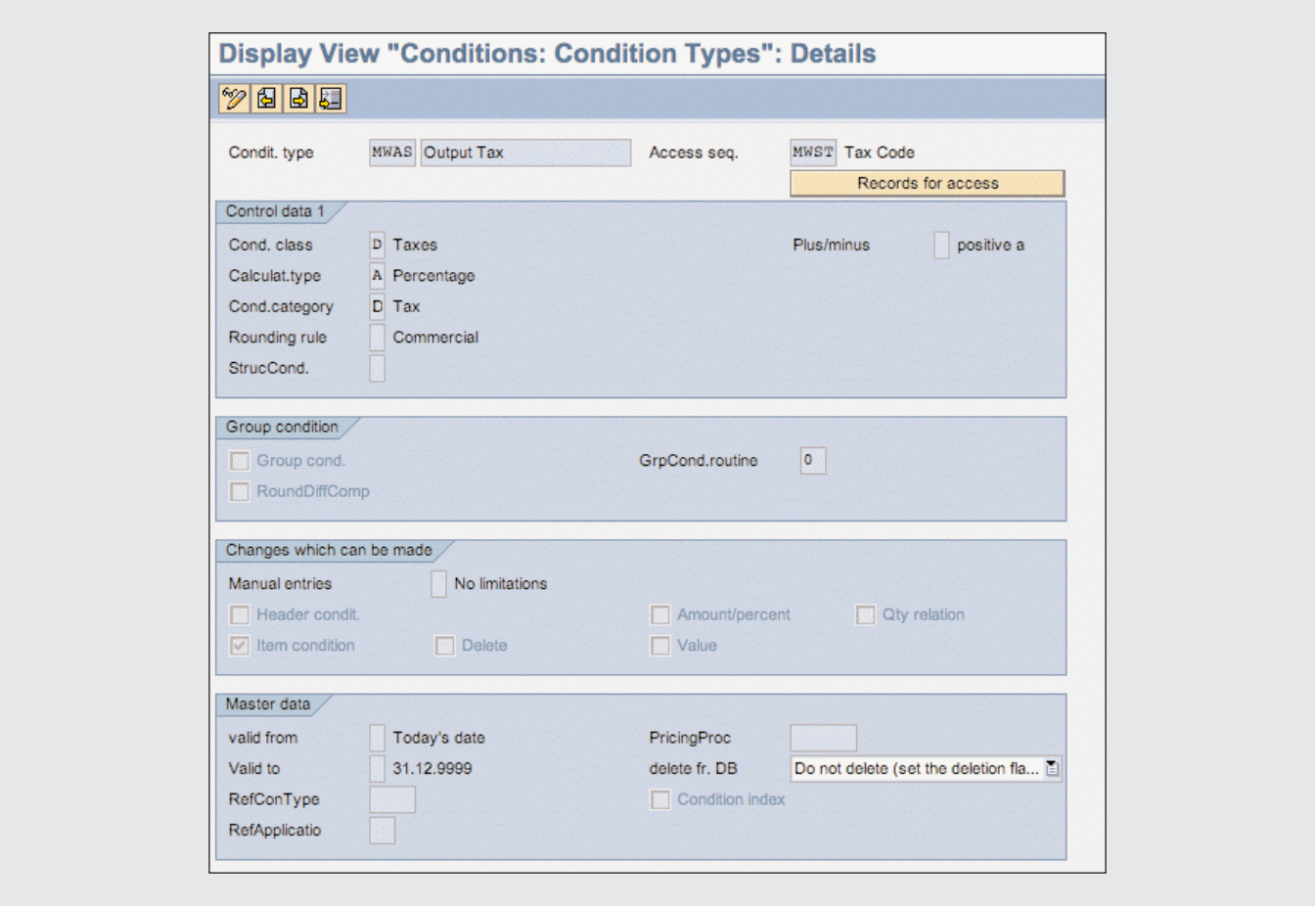


Figure 6 Defining the tax condition type

4. Define tax codes for sales and purchases.
5. Define tax codes for exemptions.
6. Define the G/L accounts to which tax calculations are posted.
7. Define material and customer classifications for tax booking.
8. Map tax codes to the material and customer classifications.

Step 1: Define the condition types for the tax calculation

We begin by defining condition types for the tax calculation, which defines the type of calculations that are performed on the base amount.

In the customizing transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Basic Settings → Check Calculation Procedure → Define Condition Type, which takes you to the screen shown in **Figure 6**. Here, we define a tax condition type called MWAS. We specify that it is an output tax, and assign it to the predefined access sequence MWST, which defines the order in which the condition types in the procedure are accessed.[1]

[1] All condition types in a tax calculation procedure use the MWST access sequence, which is a predefined sequence for fetching tax condition records. It contains SAP standard practices for fetching data for tax calculation logic.

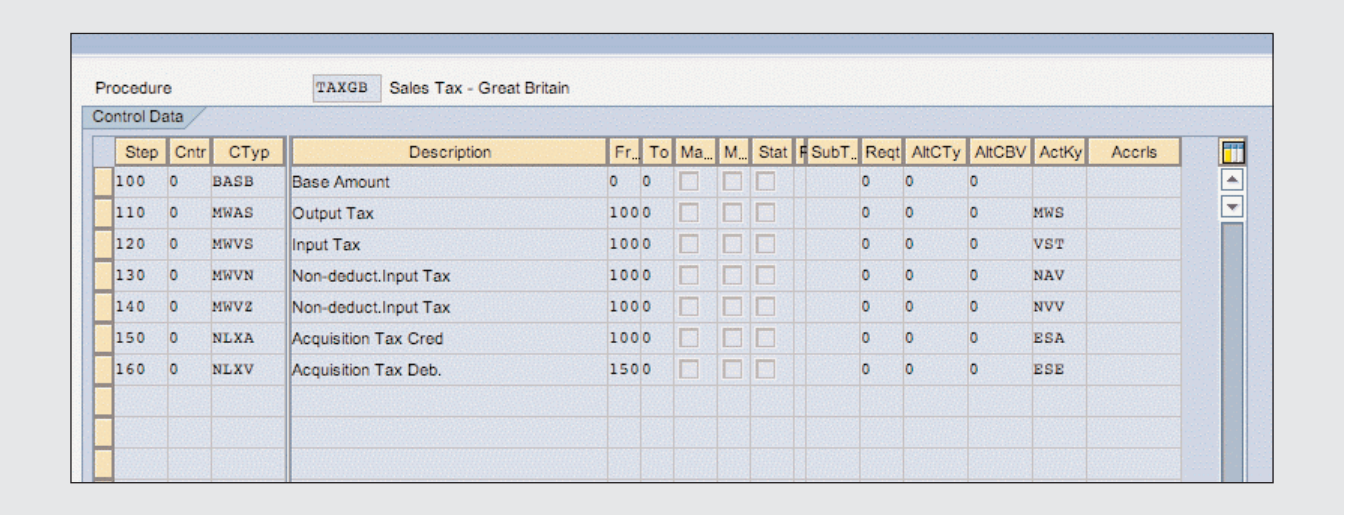


Figure 7 Defining the internal tax calculation procedure

We also enter "D" for the condition class and category to define the condition type as a tax, and we enter "A" to specify that the tax be calculated as a percentage at the item level.

I have also defined five additional condition types for the example — MWVS (input tax), MWVN (non-deductible input tax), MWVZ (non-deductible input tax), NLXA (acquisition tax credit), and NLXV (acquisition tax debit).

The remaining settings on this screen do not apply to the simple example we are creating here, so leave them as is.

Step 2: Define the tax calculation procedure

Now that we have defined the condition types that specify the type of tax to be calculated, we next need to define the tax calculation procedure for the example, which specifies the calculation itself.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Basic Settings → Check Calculation Procedure → Define Procedure. In **Figure 7**, we define a tax procedure called TAXGB to handle VAT criteria for Great Britain. First, we add the condition types created in the previous step. Next we specify the order in which the conditions are executed by defining step numbers for each condition type (e.g., Step 100, 110, 120, etc.). Then, we specify the amount on which each condition type is based by entering the corresponding Step number in the From field — as you can see in the example in Figure 7, each of the condition types is based on the value stored in condition type BASB (Step 100). Finally, we associate the condition types with predefined account keys to enable booking into G/L accounts.

Step 3: Assign the tax calculation procedure to a country

Next, we assign the tax calculation procedure to the country for which we need to calculate tax, so that when we call transaction VA01 (Create Sales Order), for example, this particular procedure is invoked to determine tax rates and compute the tax amount in the sales order document.

> ***Note!***
>
> Each country can have only one tax procedure defined for it in the SAP system.

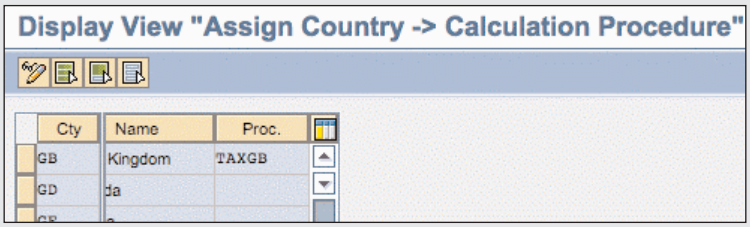


Figure 8 Assigning the tax calculation procedure to a country

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Basic Settings → Assign country to calculation procedure. In **Figure 8**, we assign the tax procedure TAXGB to country GB.

Step 4: Define tax codes for sales and purchases

We next need to define tax codes to enable automatic tax calculation for sales and purchases. A tax code must be defined for every possible tax rate applicable in the country, so that a valid tax code is attached to every taxable line item in the document for tax computation. This applies for standard rates, reduced rates, and customer exemptions.

> ***Note!***
>
> This is why it is best to use the internal computation approach with GST and VAT models instead of with the Sales and Use Tax model — each rate must be defined separately in the SAP system. Aside from some well-defined exemptions and reduced rates, GST and VAT don't change much, so the number of rates you'll need to define is limited. Sales and Use Tax, on the other hand, changes frequently depending on different individuals and items as well as the particular state involved, which increases the number of rates to define exponentially.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Calculation → Define tax codes for sales and purchases, or call transaction FTXP. On the screen that appears, enter the country key for which the tax code is being created, in this case, GB (Great Britain), and then enter the two-character tax code you would like to create (e.g., A1) and a description of the tax code (e.g., Standard rated output VAT: 17.5%), which takes you to the screen shown in **Figure 9** on page 118. The corresponding procedure (TAXGB) and its corresponding tax type (A) are provided automatically (remember that each country can have only one associated tax procedure), along with a listing of the associated condition types below. Enter a percentage rate for the particular tax for which you are creating a tax code — in the example, we enter 17.5% for the output tax. Repeat this process to create a tax code for each tax type in the procedure.

Step 5: Define tax codes for exemptions

Earlier I mentioned that there are some tax scenarios that are exempt from VAT based on customer characteristics — for example, Italy allows tax exemptions for NATO personnel. To account for such irregularities, we define tax codes and assign them a specified "reason" (i.e., the exemption).

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Calculation → Tax Code for Tax-exempt sales. **Figure 10** on page 118 shows the exemption we defined for the example. We created tax code A0 for Great Britain using the

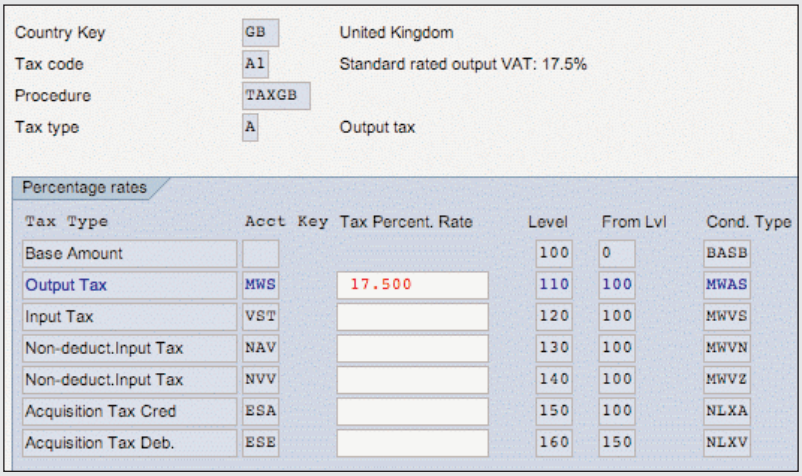


Figure 9 Defining a tax code

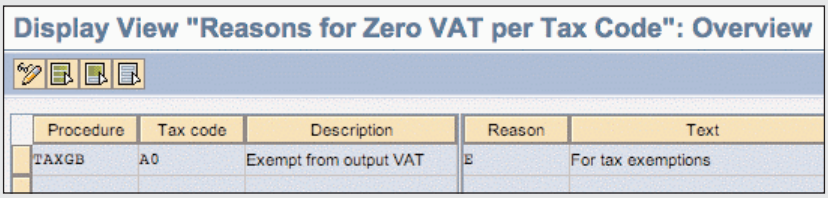


Figure 10 Defining a tax code for an exemption

Note!

To ensure that only tax transactions get posted to the correct G/L account and not any other transactions, you can set up the G/L accounts with a tax category control that specifies whether it is an output tax account, an input tax account, not relevant to tax, or has no restrictions. Also, selecting the indicator "Post automatically only" when you are creating a G/L account ensures that no manual postings to the G/L account take place (the postings should take place from a sub-ledger only).

same process outlined in the previous step. We then associated tax code A0 with reason code E.

Step 6: Define the G/L accounts to which tax calculations are posted

The next step is to define the G/L accounts to which the tax codes are to be posted. The SAP system uses this tax determination to automatically post the tax information.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Posting → Define tax accounts. **Figure 11** shows that we have associated account key MWS, which corresponds to the output tax we defined, with G/L account number

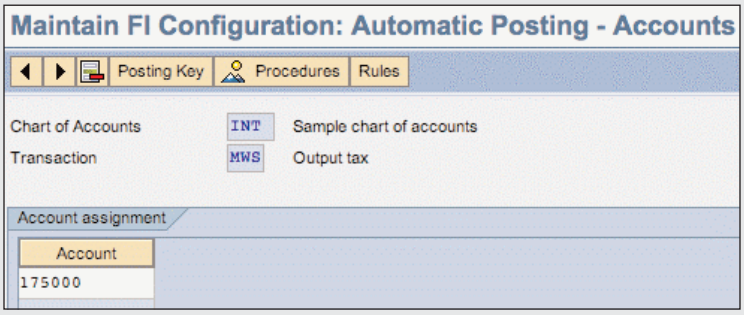


Figure 11 Defining a tax account

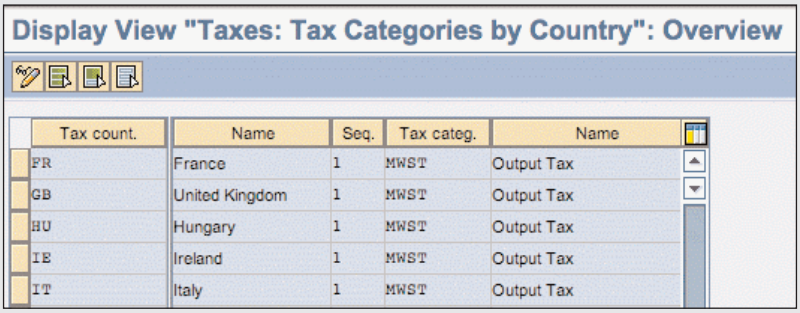


Figure 12 Associating a tax category with a tax country

175000 to perform account booking from Chart of Accounts INT. We did this by defining the account key as a unique three-character code and then mapping this account key to a G/L account. Each account key must be associated with a G/L account. Keep in mind that while different account keys can be associated to the same G/L account, different G/L accounts must be associated with different account keys.

You can also define a G/L account for each tax code by changing posting rules when you need to have separate G/L accounts for each tax code. Simply click on Rules (Figure 11) and select the tax code for which you want to define a G/L account.

Step 7: Define material and customer classifications for tax booking

Now that the tax codes have been created and associated with G/L accounts, we need to assign them to customer and material tax classifications, so that the SAP system can automatically book tax calculations properly during sales transactions.

This step contains three separate sub-steps:

1. Define a tax category and associate it with a country. The tax category enables you to enter a tax classification in customer and material master records. With a customer master record, the tax category identifies the customer's country. With a material master record, the tax category identifies the material's country. To define a tax category and associate it with a country, in transaction SPRO, follow the menu path Sales and Distribution → Basic Functions → Taxes → Define tax determination rules.

Figure 12 shows how tax category MWST has been

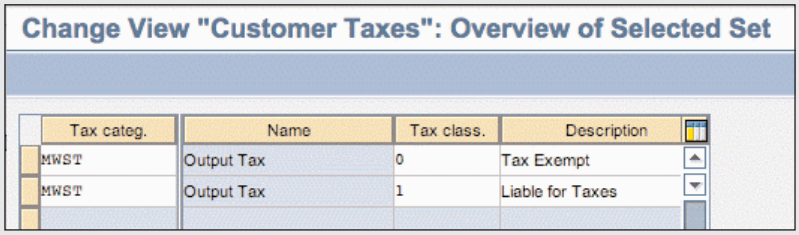


Figure 13 Defining tax classifications for a customer

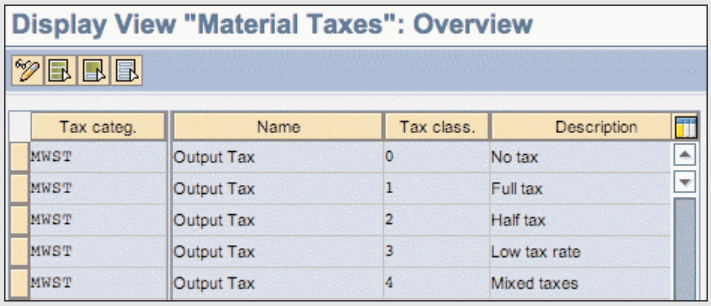


Figure 14 Defining tax classifications for a material

associated with tax country GB. We first select predefined tax category MWST. We then associated tax category MWST with tax country GB.

2. Define tax classifications for the customer or material master and associate them with the tax category. A tax classification acts as an identifier to define whether a particular customer or material is taxable or exempt from tax. To define a classification, go to transaction SPRO and follow the menu path Sales and Distribution → Basic Functions → Taxes → Define tax relevancy of master records.

   For the example, as shown in **Figure 13**, we defined the tax classification 0 for a tax-exempt customer and tax classification 1 for a taxable customer associated with tax category MWST.

   For a material, you can define a range of tax classifications when there is more than one level of tax, such as the Standard (19.6%), Reduced (5.5%), and Super-Reduced (2.1%) rates used in France. For the example, as shown in **Figure 14**, we defined multiple tax calculations for tax category MWST — tax classification 0 signifies no tax, while tax classifications 1, 2, 3, and 4 signify full tax, half tax, low tax, and mixed tax rate, respectively. We did this by defining different tax classifications 1,2,3,4 and then associating this to tax category MWST.

3. Associate the tax classification with the material or customer master on the master data screen. **Figure 15** shows the tax data of a material master that is active in several different countries. In the figure, we can see that the same material is associated with tax classification "1" in Germany and "2" in France based on the tax laws in the respective country. This means that this material is subject to full tax in Germany and half tax in France.

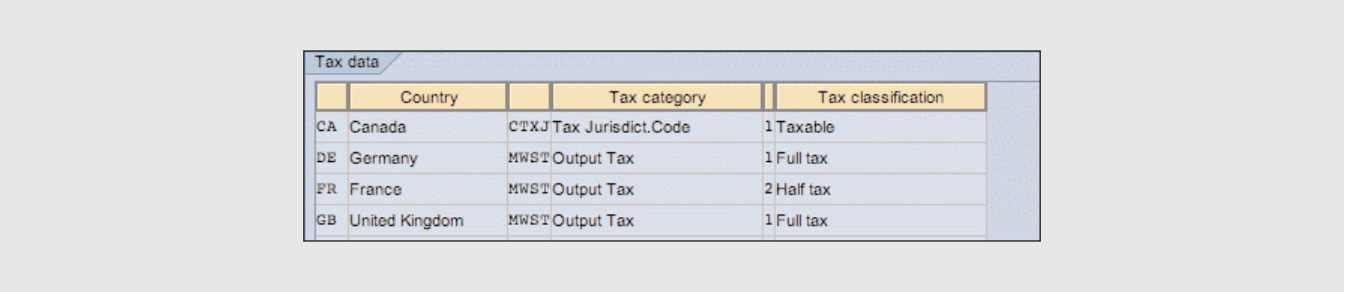


Figure 15 Material master tax data

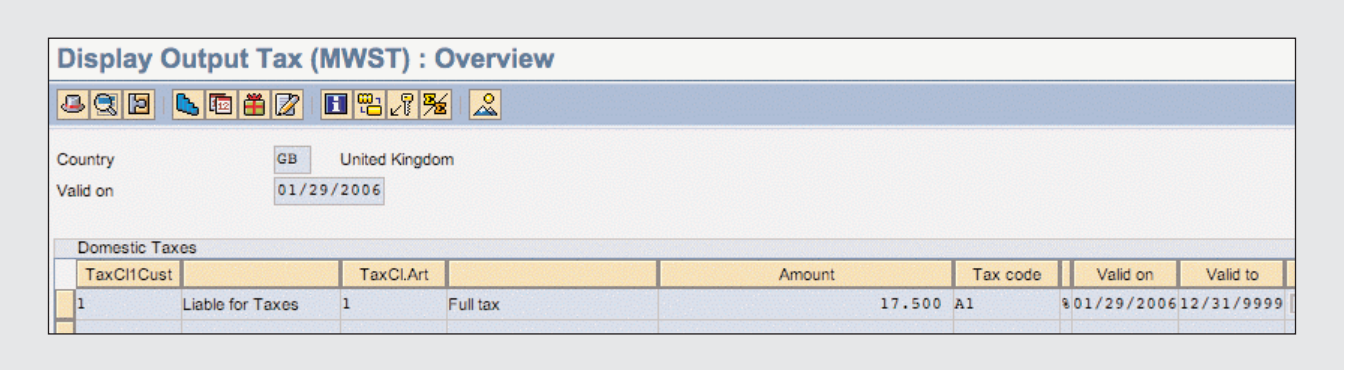


Figure 16 Mapping a tax code to tax classifications

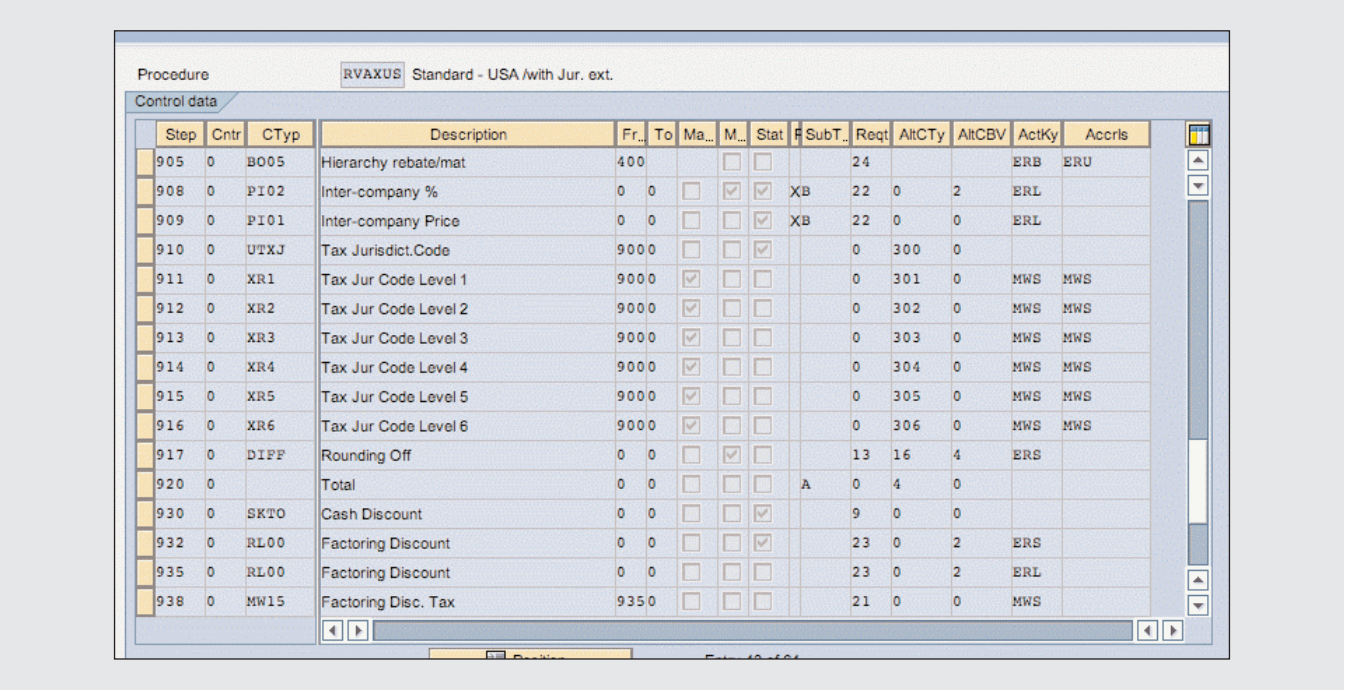
Step 8: Map tax codes to the material and customer classifications

At this point, we have defined tax codes and associated them with the appropriate G/L accounts, and we have defined tax classifications and associated them with the appropriate material and customer masters. Next, we need to associate the material and customer tax classifications with tax codes by mapping the tax codes to the tax category representing the classifications, linking SD and FI so that when a sales transaction is performed, the classification is retrieved from the material or customer master and the appropriate tax code is invoked.

Figure 16 shows tax code A1 with the tax rate 17.5% mapped to tax category MWST for customer tax classification 1 and material tax classification 1. We did this by entering the condition record for tax category MWST and associating the tax code with the customer and material tax classification for the respective country. We can have a range of values based on dates, for example. In a similar manner, we can map additional material and customer tax classifications to the respective tax code.

We have now completed the steps required to configure an internal tax calculation in the SAP system. In short, we defined condition types for each tax type, added the condition types to a tax calculation procedure, assigned the procedure to a country, defined tax codes for that country, including tax code exemptions, and then mapped the tax codes to G/L accounts for booking. We then mapped these tax codes to material and customer tax classifications so that when a sales transaction is executed, the correct tax treatment is applied and the calculation is booked into the appropriate G/L account.

You now have solid foundational knowledge of tax computation within the SAP system and how to successfully configure a procedure in this scenario. In the next section we'll look at how to compute tax using an external system.



Step	Cntr	CTyp	Description	Fr...	To	Ma...	M...	Stat	P	SubT...	Reqt	AltCTy	AltCBV	ActKy	Accrls
905	0	B005	Hierarchy rebate/mat	400							24			ERB	ERU
908	0	PI02	Inter-company %	0	0					XB	22	0	2	ERL	
909	0	PI01	Inter-company Price	0	0					XB	22	0	0	ERL	
910	0	UTXJ	Tax Jurisdict.Code	900	0						0	300	0		
911	0	XR1	Tax Jur Code Level 1	900	0						0	301	0	MWS	MWS
912	0	XR2	Tax Jur Code Level 2	900	0						0	302	0	MWS	MWS
913	0	XR3	Tax Jur Code Level 3	900	0						0	303	0	MWS	MWS
914	0	XR4	Tax Jur Code Level 4	900	0						0	304	0	MWS	MWS
915	0	XR5	Tax Jur Code Level 5	900	0						0	305	0	MWS	MWS
916	0	XR6	Tax Jur Code Level 6	900	0						0	306	0	MWS	MWS
917	0	DIFF	Rounding Off	0	0						13	16	4	ERS	
920	0		Total	0	0					A	0	4	0		
930	0	SKTO	Cash Discount	0	0						9	0	0		
932	0	RL00	Factoring Discount	0	0						23	0	2	ERS	
935	0	RL00	Factoring Discount	0	0						23	0	2	ERL	
938	0	MW15	Factoring Disc. Tax	935	0						21	0	0	MWS	

Figure 17 SD standard pricing procedure RVAXUS

Computing tax using an external tax system

While internal tax computation is quite common in scenarios where tax rates don't change often, external tax computation is prevalent in scenarios where tax rates vary frequently, in particular in the US, where tax rates vary by each state/jurisdiction and change more frequently in accordance with tax laws in the respective state/jurisdiction. Tax rates are determined for every product line in addition to the state/jurisdiction level. For example, a company with a store in Florida and another in California would need to tax the product in California, but the same product would be tax-exempt in Florida. It is a time-consuming process to monitor these rates for every product sold within each state in the US, so to help with this challenge, there are various third-party packages that handle tax rates based on the jurisdiction level.

An external tax system communicates with the SAP system using the SAP Tax Interface System, which passes data to an external tax system, like Taxware and Vertex, that determines tax jurisdictions, calculates taxes, and returns these calculated results back to the SAP system. This occurs during master data address maintenance to retrieve the appropriate tax jurisdiction code and during order and invoice processing to retrieve tax rates and tax amounts.

Once the SAP Tax Interface System is invoked, a communication structure is filled with the information needed by the external tax system. This communication structure is then passed to the API via an RFC call. The API passes this information to the external tax system, which in turn sends the tax data back through the API. The API in turn passes this information to the SAP Tax Interface System.

Figure 18 Street address section in customer master record

Parameter	Definition	Example
COUNTRY	Country	US
STATE	State/province	CA
COUNTY	District	N/A
CITY	City	Cupertino
ZIPCODE	Postal code	95014
TXJCD_L1	First length of jurisdiction code	02
TXJCD_L2	Second length of jurisdiction code	05
TXJCD_L3	Third length of jurisdiction code	02
TXJCD_L4	Fourth length of jurisdiction code	00

Figure 19 Communication structure LOCATION_DATA

For an external calculation, you can use the standard pricing procedure RVAXUS shown in **Figure 17** (see the sidebar on page 114 for more on pricing procedures). The tax calculation is influenced by different parameters, namely country of origin, tax classification of ship-to partner, tax classification of material, tax calculation date, jurisdiction codes of the plant, ship-to party, point of acceptance, and point of origin. When the pricing procedure RVAXUS encounters a condition type (UTXJ) defined with condition type 1, the system exits standard pricing and invokes external tax computation. The tax amounts and rates are applied to the item's pricing up to six jurisdiction levels, indicated by XR1 to XR6 in Figure 17.

Before turning to the steps for configuring a tax computation that uses an external system, let's take a closer look at how the SAP system interfaces with the external system to make this computation possible.

Interfacing with an external tax system

To get the values for tax postings to SD and FI documents, the SAP system interfaces with an external tax system to:

- Determine the tax jurisdiction code.
- Determine the tax rate and calculate the tax amount.
- Handle material exceptions.

Although the first two activities happen automatically behind the scenes, we'll take a brief look at each of them to provide you with a better understanding of the process. We'll then look at the manual configuration required for handling material exceptions.

Determining the tax jurisdiction code

The SAP system provides the standard function module RFC_DETERMINE_JURISDICTION to determine the tax jurisdiction code. Jurisdiction codes are automatically retrieved from the external tax system via this function module when a customer master record or vendor master record is created or changed.

Figure 18 shows a sample view of the street address section of a customer master record. You can see that the jurisdiction code has defaulted to CA9501400 based on region CA, country US, and postal code 95014.

The communication structure for the RFC_DETERMINE_JURISDICTION call (LOCATION_DATA) is shown in **Figure 19**, and its output (LOCATION_RESULTS) is shown in **Figure 20**.

Parameter	Definition	Example
TXJCD	Tax jurisdiction code	CA9501400

Figure 20 Communication structure output LOCATION_RESULTS

Parameter	Definition	Input to external system	Output to SAP system
CLIENT	Client	030	030
COMP_CODE	Company code	0001	0001
DIVISION	Business area	-*	-**
COUNTRY	Tax departure country	US	US
DOC_NUMBER	Accounting document	900000001	900000001
POS_NO	Sales document item	01	01
ACCNT_NO	Account number	100000	100000
TAX_DATE	Tax date	01/01/2006	01/01/2006
TXJCD_ST	Jurisdiction of ship-to	CA9408700	CA9408700
TXJCD_SF	Jurisdiction of ship-from	CA9501400	CA9501400
TXJCD_POA	Jurisdiction of POA	CA9408700	CA9408700
TXJCD_POO	Jurisdiction of point of origin	CA9501400	CA9501400
TXJCD_IND	Indicator	N/A in this example	N/A in this example
APAR_IND	Indicator for A/P or A/R	A/R	A/R
TXJCD_L1	First length of jurisdiction code	02	02
TXJCD_L2	Second length of jurisdiction code	05	05
TXJCD_L3	Third length of jurisdiction code	02	02
TXJCD_L4	Fourth length of jurisdiction code	00	00
TAX_TYPE	Indicator for tax type	S	S
MATNR	Material number	A0001	A0001
PROD_CODE	SAP internal product code	M00	73212***
QUANTITY	Quantity	1	1
UNIT	Unit	EA	EA
AMOUNT	Tax base amount	100	100
CURRENCY	Currency key	USD	USD
CURR_DEC	Number of decimal places	2	2
EXEMPT_AMT	Exempt amount	0	0
EXEMPT_IND	Whether tax exempt or taxable	Taxable	Taxable
TAXPCT0 … TAXPCT9	Tax rate	-*	6.25,1.75,1.25
TAXPCOV	Total tax rate	-*	8.25
TAXAMT0 … TAXAMT9	Tax amount	-*	6.25,1.75,1.25
TAXAMOV	Total tax amount	-*	8.25
TAXBAS1 … TAXBAS9	Tax base amount	-*	100
EXMATFLG	Code for material tax exemption	N/A in this example	N/A in this example
EXCUSFLG	Code for customer tax exemption	N/A in this example	N/A in this example
EXAMT0 … EXAMT9	Exempt amount	N/A in this example	N/A in this example
EXCODE0 … EXCODE9	Exemption reason code	N/A in this example	N/A in this example
EXCERTIF	Exemption certificate	N/A in this example	N/A in this example

* Not sent to the external tax system (Taxware in this case) as input from the SAP system in this example.
** Not sent to the SAP system as output from the external tax system (Taxware in this case) in this example.
*** This output value from the external tax system (Taxware in this case) differs from the input value from the SAP system because it is Taxware-specific code.

Figure 21 Communication structure COM_TAX

Once all input parameters are passed to the function module, the external tax system provides the tax jurisdiction code as shown in Figure 20.

Determining the tax rate and calculating the tax amount

The SAP system provides the standard function module RFC_CALCULATE_TAXES to calculate the tax rates retrieved from the external system in SAP documents. For each line item, the function module identifies whether the tax is applicable and then calculates the tax amount. The parameters that influence the tax determination are the delivering country, tax classification of ship-to party, tax classification of the material, tax calculation date and jurisdiction codes of ship-to party, ship-from address, point of order acceptance, and point of origin.

The commonly used fields in the communication structure for this RFC call (COM_TAX) are shown in **Figure 21**, where the input represents the values passed to the external tax software and the output represents the values passed back to the SAP system from the external tax software in response to the input. Once all required parameters are passed to RFC_CALCULATE_TAXES, the tax rates are determined individually in the external tax system and sent to the SAP system. In Figure 21, we see that different tax rates are determined for parameters TAXPCT0, TAXPCT1, TAXPCT2, etc. as 6.25, 1.75, and 1.25, with a total tax rate of 8.25. These rates reflect a breakdown of state treasury and local jurisdiction taxes.

If there are any errors in input parameters or if any of the data is missing, the external tax system is unable to determine the tax rate and tax amount and returns an error message (COM_ERR), as shown in **Figure 22**.

Parameter	Definition	Output
RETCODE	Return code	01
ERRCODE	Error number	010
ERRMSG	Error message	N/A in this example

Figure 22 Error structure COM_ERR

Handling material exceptions

A material exception means that the tax rate for a product line may be handled differently in a particular jurisdiction. The SAP system maintains all material exceptions for product lines in table TTXP, shown in **Figure 23**. Entries maintained in this table have a different tax rate than the standard tax rate. As you can see in Figure 23, we have associated the SAP field PROCD with the Taxware field XPRCD in order to link the Material group field in SAP with the Material group code in Taxware, so that we can get the proper tax rates from Taxware. The SAP system sends this information with a product code via RFC to the external tax system. The external tax system derives a tax rate based on a combination of the material and the jurisdiction code.

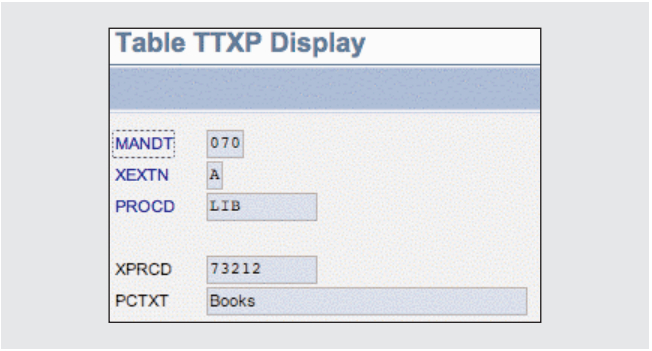


Figure 23 Associating the SAP material code with the Taxware code to handle exceptions

In the next sections, I walk you through the steps that are involved in creating a tax computation using an external tax system.

Creating an external tax computation using an external tax system

In the next sections, we will create a tax computation for the US that involves an external tax system (Taxware in the example). I show you how to define

a physical and logical destination for the external tax system, define condition types for the external tax calculation procedure, assign the tax procedure to the US, define a tax code and associate it with a G/L account, define and map the material and customer classifications, maintain a number range for the external tax document, activate the external tax document, and maintain the tax jurisdiction field in the customer master.

Specifically, we will perform the following steps (note that some of the steps are similar to those for an internal tax computation but are repeated here for completeness):

1. Define a physical destination.
2. Define a logical destination.
3. Define the condition types for the external tax calculation.
4. Define the external tax calculation procedure.
5. Assign the external tax calculation procedure to a country.
6. Activate the external tax calculation procedure.
7. Define tax codes for sales and purchases.
8. Define the G/L accounts to which tax calculations are posted.
9. Define material and customer classifications for tax booking.
10. Map tax codes to the material and customer classifications.
11. Define a number range for the external tax document.
12. Activate the external tax document.
13. Define the structure of the tax jurisdiction field in the customer master.

Note!

In order to complete these steps, there are a few tasks you need to perform in advance. You must use the standard pricing procedure RVAXUS shown in Figure 17 (see the sidebar on page 114 for more on pricing procedures); you must maintain condition records for customer and material combinations. As with the internal tax calculation procedure, you need to define the G/L accounts in the Chart of Accounts and associate these G/L accounts to account keys, which have unique three-character names (for example, MWS, VST, etc.). Discussion of these tasks goes beyond the scope of this article. For information on them, go to the SAP Help Portal (http://help.sap.com), and in the documentation for mySAP ERP, navigate to SAP ERP Central Component → Logistics → Sales and Distribution (SD) → Pricing and Conditions (SD-BF-PR).

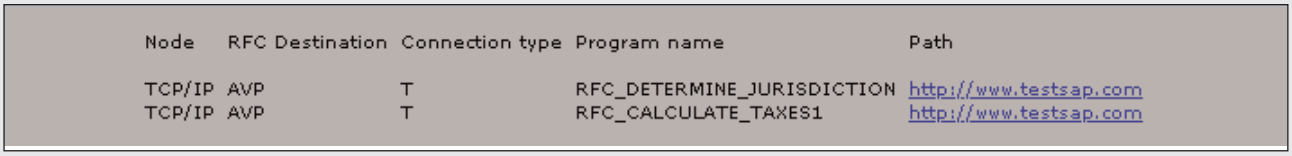
Step 1: Define a physical destination

We begin by setting up a physical destination for the external tax software to interface with the SAP system. This interface is enabled through a registered gateway process that is constantly running on the external tax system. The gateway facilitates continuous communication between the external tax system and the SAP system.

To define a physical destination, in transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Basic Settings → External Tax Calculation → Define Physical Destination. We create an RFC destination that specifies the type of the communication and the directory path in which the external tax package resides. As you can see in **Figure 24**, for the example we have defined AVP as an RFC destination with the path http://www.testsap.com. All the files of the external software package reside in this physical destination.

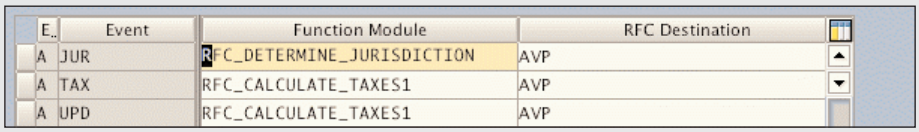
Step 2: Define a logical destination

Once the physical destination is set up, we define function modules in the form of RFCs to enable communication between the SAP system and the external tax software.



Node	RFC Destination	Connection type	Program name	Path
TCP/IP	AVP	T	RFC_DETERMINE_JURISDICTION	http://www.testsap.com
TCP/IP	AVP	T	RFC_CALCULATE_TAXES1	http://www.testsap.com

Figure 24 Defining a physical destination



E..	Event	Function Module	RFC Destination
A	JUR	RFC_DETERMINE_JURISDICTION	AVP
A	TAX	RFC_CALCULATE_TAXES1	AVP
A	UPD	RFC_CALCULATE_TAXES1	AVP

Figure 25 Defining a logical destination

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Basic Settings → External Tax Calculation → Define Logical Destination. As shown in **Figure 25**, the SAP system talks to the external tax software to determine the tax jurisdiction code and to calculate tax values. Here, we define AVP as the logical RFC destination by associating the logical destination for each type of tax event. We have associated AVP to three events — JUR, TAX and UPD — that determine tax jurisdiction code, calculate tax, and update tax in the tax tables. We specify that the external tax system be mapped to the physical destination (Figure 24) by associating the RFC destination to the external path where the external tax package resides.

Note!

Remember that the SAP system talks to external tax software using two RFC calls — RFC_DETERMINE_JURISDICTION to determine the tax jurisdiction code and RFC_CALCULATE_TAXES to calculate taxes.

Step 3: Define the condition types for the external tax calculation

As with the internal calculation configuration, we next need to define condition types to use as a foundation for the external tax calculation procedure. Defining the condition types for an external calculation is a bit more complex than defining them for an internal calculation, however, since various jurisdiction levels are involved.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Basic Settings → Check Calculation Procedure → Define Condition Type. As you can see in **Figure 26** (page 128), we have defined an external tax condition type XR1. We specify that it is an accounts receivable sales tax and assign it to the access sequence MWST. We enter "D" for the condition class to specify it as a tax, and we enter "A" to specify that the tax be calculated as a percentage at the item level. We also specify a tax jurisdiction level of 1, which means that this condition type applies at the state level. We can define four levels of tax jurisdiction and attach different tax condition types to different tax jurisdiction levels — for example, we can have tax jurisdictions at the state level, county level, city level, and sub-city level. For the example, we similarly define XR2, XR3, and XR4

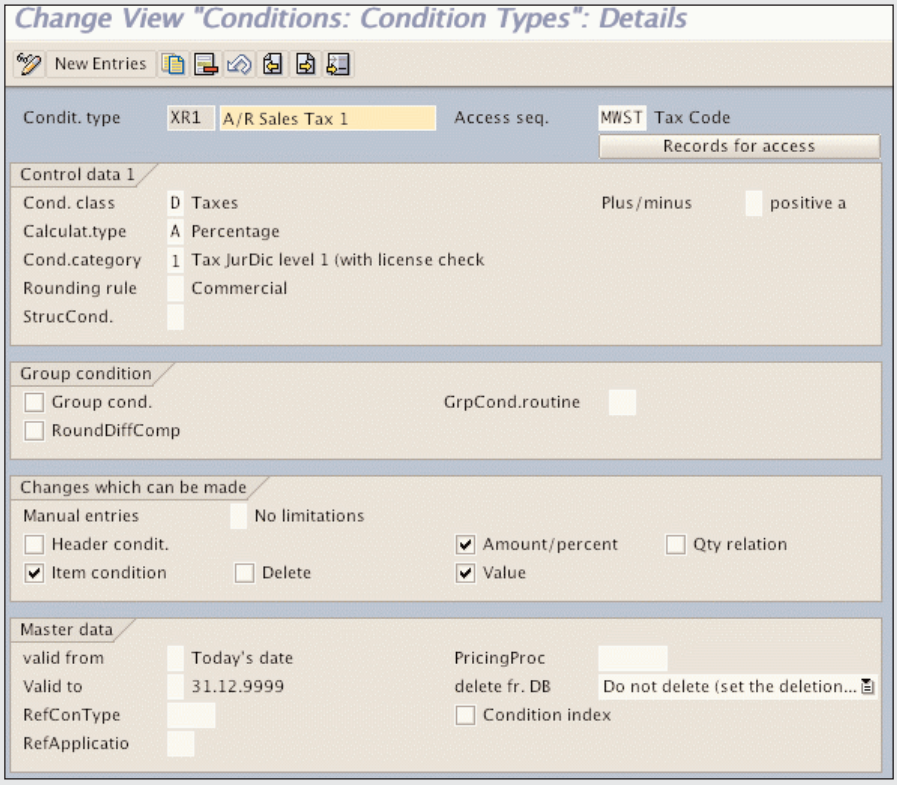


Figure 26 Define a condition type

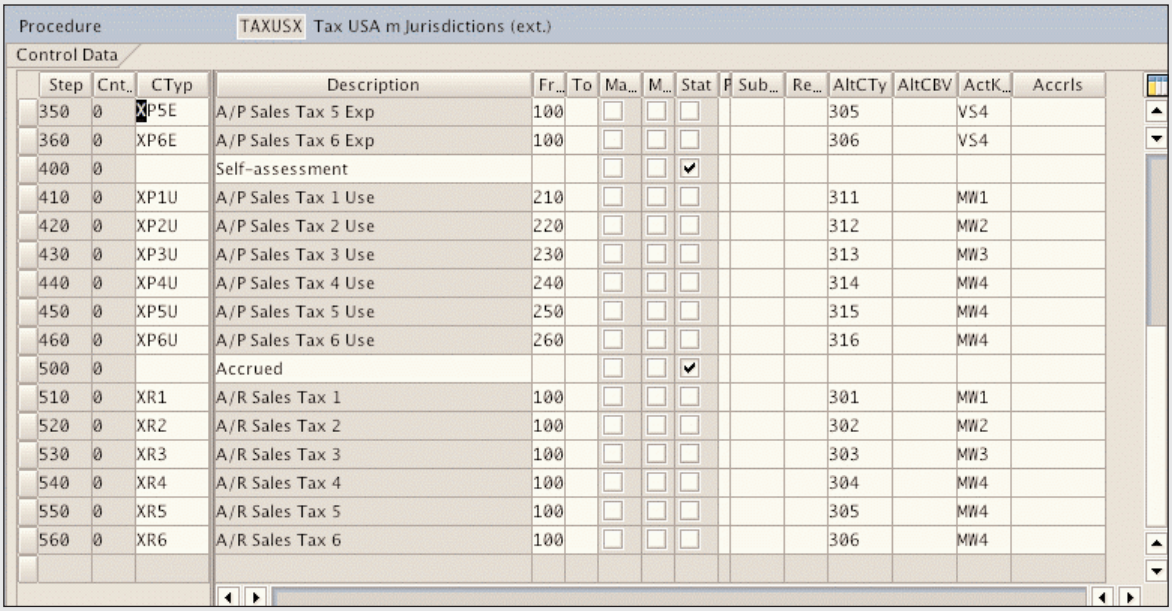
in the same manner as we have defined XR1. We can also define alternate condition types for each of the sales condition types when we need to treat tax rates received from the external system in a different manner. For the example we define XR5 and XR6 as alternate condition types.

We also define XP1E, XP2E, XP3E, XP4E, XP5E, and XP6E as condition types for booking expenses on purchases, as well as XP1U, XP2U, XP3U, XP4U, XP5U, and XP6U as condition types for booking usage on purchases. These condition types are defined in the same manner as XR1.

Step 4: Define the external tax calculation procedure

We next define the tax calculation procedure using the tax condition types we just defined. The tax procedure calls the external tax system to get the tax amount, which is then distributed to the various condition types in the tax procedure.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Basic Settings → Check Calculation Procedure → Define Procedure. In **Figure 27**, we define a tax procedure called TAXUSX to handle Sales and Use Tax criteria for the US. First, we add the condition types created in the previous step. Next we specify the order in which the conditions are executed by specifying a step number for each condition type. Then, we specify the amount that each of the condition types are based on by entering the corresponding Step number in the From field — as you can see in the example in Figure 27, some of the condition types are based on the value stored in condition type BASB (Step 100), while others are based upon a calculation performed on the value stored in



Step	Cnt…	CTyp	Description	Fr…	To	Ma…	M…	Stat	P	Sub…	Re…	AltCTy	AltCBV	ActK…	Accrls
350	0	XP5E	A/P Sales Tax 5 Exp	100								305		VS4	
360	0	XP6E	A/P Sales Tax 6 Exp	100								306		VS4	
400	0		Self-assessment					✔							
410	0	XP1U	A/P Sales Tax 1 Use	210								311		MW1	
420	0	XP2U	A/P Sales Tax 2 Use	220								312		MW2	
430	0	XP3U	A/P Sales Tax 3 Use	230								313		MW3	
440	0	XP4U	A/P Sales Tax 4 Use	240								314		MW4	
450	0	XP5U	A/P Sales Tax 5 Use	250								315		MW4	
460	0	XP6U	A/P Sales Tax 6 Use	260								316		MW4	
500	0		Accrued					✔							
510	0	XR1	A/R Sales Tax 1	100								301		MW1	
520	0	XR2	A/R Sales Tax 2	100								302		MW2	
530	0	XR3	A/R Sales Tax 3	100								303		MW3	
540	0	XR4	A/R Sales Tax 4	100								304		MW4	
550	0	XR5	A/R Sales Tax 5	100								305		MW4	
560	0	XR6	A/R Sales Tax 6	100								306		MW4	

Figure 27 Define the external tax calculation procedure

BASB (for example, calculations performed in Step 210, 220, 230, 240, 250, and 260). Finally, we associate the condition types with predefined account keys to enable booking into G/L accounts.

Step 5: Assign the external tax calculation procedure to a country

As we did when we created the internal tax procedure, we next need to assign the tax calculation procedure to the country for which we need to calculate tax.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Basic Settings → Assign country to calculation procedure. In **Figure 28** on page 130, we assign the tax procedure TAXUSX to country US.

> ***Note!***
>
> Remember that each country can have only one tax procedure.

Step 6: Activate the external tax calculation procedure

In order for the external tax procedure to access the external tax system, we need to activate the procedure by specifying the version of the SAP Tax Interface System and the RFC destination.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Basic Settings → External Tax Calculation → Activate external tax calculation. As shown in **Figure 29** on page 130, we specify TAXDOC00 as the API version used by the external tax system for communication with the SAP system, and we specify AVP as the RFC destination. We enter "A" as the indicator for the external system and then associate it to the tax calculation procedure TAXUSX.

Step 7: Define tax codes for sales and purchases

We next need to define tax codes for computing the tax rates stored in the external tax system in purchase and sales documents in the SAP system and assign

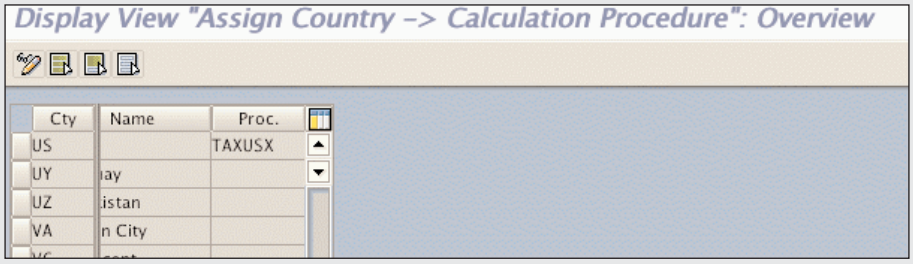


Figure 28 Assigning the tax calculation procedure to a country

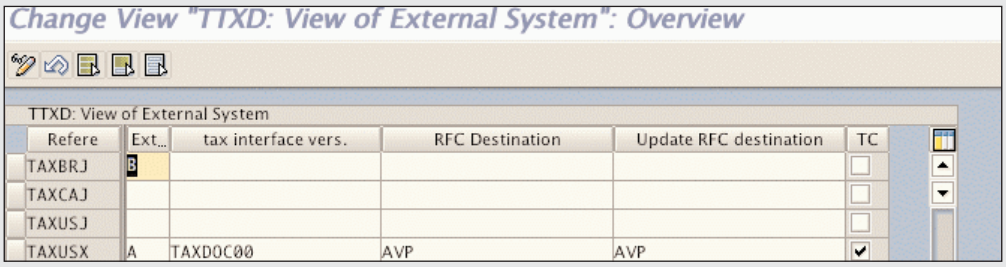


Figure 29 Activating the external tax calculation

> ***Note!***
>
> How can you tell the difference between an external tax calculation procedure and an internal tax calculation procedure? The tax procedure entry in table TTXD (shown in Figure 29) shows the procedure's associated RFC destination and external software package version.

them to the tax procedure using transaction FTXP (Maintain Tax Code).

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Calculation → Define tax codes for sales and purchases, or call transaction FTXP. On the screen that appears enter the country key for which the tax code is being created, in this case, US, and then enter the tax code you would like to create (e.g., CA) and a description of the tax code (e.g., A/R Sales Tax – California), which takes you to the screen shown in **Figure 30**. The corresponding procedure (TAXUSX) and its corresponding tax type (A) are provided automatically (remember that each country can have only one associated tax procedure), along with a listing of the condition types below. Enter a percentage rate for the particular tax for which you are creating a tax code — in the example, we enter 100.00% for the output tax, which means that SAP documents receive tax from the external tax software at 100% for the four jurisdiction levels XR1, XR2, XR3, and XR4 (remember that XR5

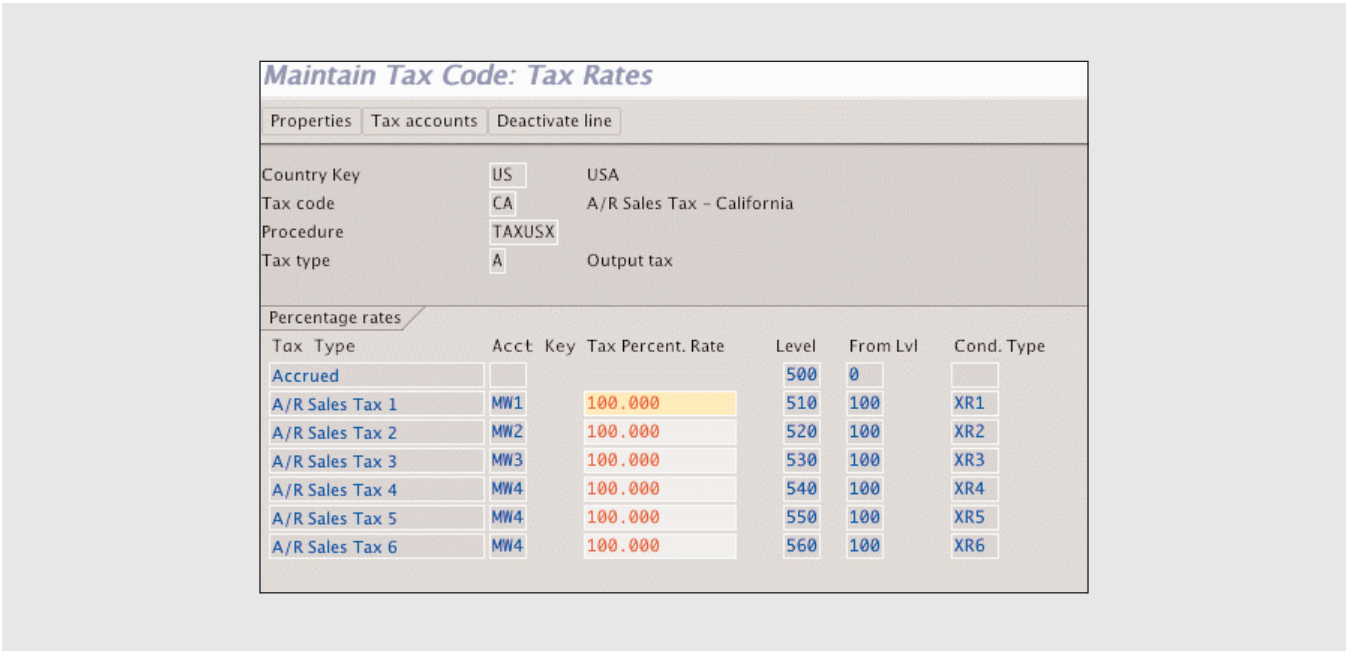


Figure 30 Defining a tax code

and XR6 are supplementary condition types for XR4; XR4, XR5, and XR6 are stored in account key MW4). Repeat this process to create a tax code for each tax type in the procedure.

Step 8: Define the G/L accounts to which tax calculations are posted

Next we need to define the G/L accounts to which the tax codes are to be posted. The SAP system uses this tax determination to automatically post the tax information. Refer to Step 6 (page 118) of the internal tax calculation for details on how to perform this step.

Step 9: Define material and customer classifications for tax booking

We next need to assign the tax codes to customer and material tax classifications, so that the SAP system can automatically book tax calculations properly during sales transactions. Refer to Step 7 (page 119) of the internal tax calculation for details on how to perform this step.

Step 10: Map tax codes to the material and customer classifications

Next we need to associate the material and customer tax classifications with tax codes by mapping the tax codes to the tax category representing the classifications. Refer to Step 8 (page 121) of the internal tax calculation for details on how to perform this step.

Step 11: Define a number range for the external tax document

At this point we have defined condition types for the calculation, added these types to a tax calculation procedure, assigned the procedure to a country, defined tax codes for the country, and mapped the tax codes to G/L accounts and material and customer tax classifications so that when a sales transaction is executed, the correct tax treatment is applied and the calculation is booked into the appropriate G/L account. We next need to maintain the external documents associated with tax calculation for tax regulatory purposes. External tax documents contain tax-relevant information that is used to update the

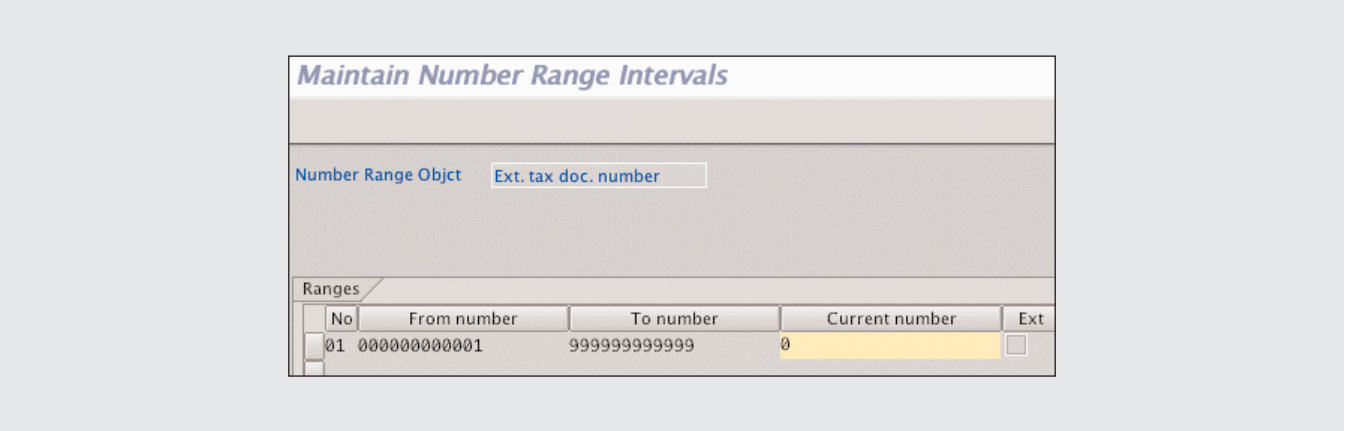


Figure 31 Maintaining the number range interval for the external document

external tax audit file. An external document is generated for every tax-relevant transaction sent to external tax software. Each document in the SAP system must have a unique number, so you must specify a number range for external tax documents.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Calculation → Basic Settings → External Tax Calculation → Define Number Ranges for External Tax Returns. Select Insert Intervals and define the number range 01 shown in **Figure 31** that begins at 000000000001 and ends at 999999999999. This setting ensures that every SAP document gets associated with a unique number.

Step 12: Activate the external tax document

This step enables the external tax document to update the external tax audit file for legal reporting purposes. This activation flag is read during the MM, FI, and SD document posting processes. If this flag is not set, tax information is lost and the external tax audit file will not be updated.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Calculation → Basic Settings → External Tax Calculation → Activate external updating. In **Figure 32**, we have activated the flag for SD in table TRWCA, so that

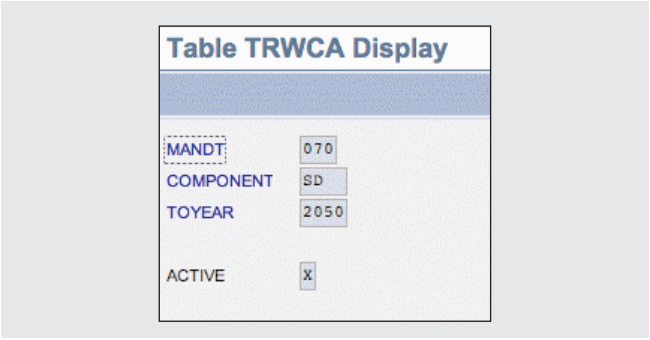


Figure 32 Activating the external tax document

all SD document postings will also update the external tax audit file for legal reporting.

Step 13: Define the structure of the tax jurisdiction field in the customer master

In this step, we need to define how the jurisdiction field in the customer master is structured as well as whether tax is to be calculated by line item.

In transaction SPRO, follow the menu path Financial Accounting → Financial Accounting Global Settings → Tax on Sales/Purchases/Calculation → Basic Settings → Specify Structure for Tax Jurisdiction. **Figure 33** shows the definition of a tax jurisdiction code where Taxware is used as the external tax system. As you can see, we have defined

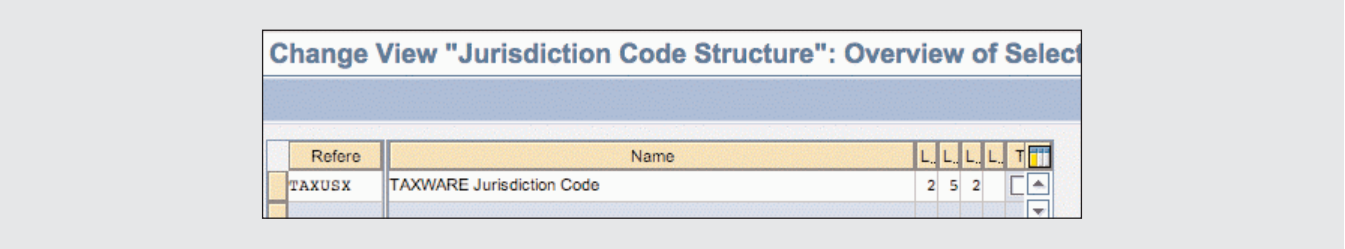


Figure 33 Defining the structure of the tax jurisdiction field

three levels of jurisdiction for state, city, and postal code: “2”, “5,” and “2.” In the US, tax jurisdiction is usually defined at three levels — state, city, and postal code, but it can also be defined at four levels — state, county, city, and postal code.

We have now completed the steps required to configure an external tax calculation in the SAP system. In short, we defined physical and logical destinations for external tax software, defined condition types for each tax type, added the condition types to a tax calculation procedure, assigned the procedure to a country, defined tax codes for that country, and then mapped the tax codes to G/L accounts for booking. We then mapped these tax codes to material and customer tax classifications so that when a sales transaction is executed, the correct tax treatment is applied and the calculation is booked into the appropriate G/L account.

This concludes our discussion of how tax can be computed internally within the SAP system, and how it can be computed using an external software package, which can be particularly useful for countries that have jurisdictions, and therefore have more complicated calculations. Before I leave you, I’d like to share a few additional tips based on my experiences to help you avoid some bumps in the road during your own tax calculation configurations.

Helpful hints

- SAP does not allow tax rates to be transported from a source system to a target system. When you create a transport, tax codes are created with blank values for tax rates. You need to run program RFTAXIMP in every target system so that tax rates are populated for tax codes in the target system. This process needs to be followed whenever you create a new tax code and modify the tax rate for an existing tax code.
- You can test the different scenarios in which tax rates are retrieved from the external tax system using BAPIs. As mentioned earlier in the article, SAP provides RFC_CALCULATE_TAXES1 and RFC_DETERMINE_JURISDICTION, which can be tested in isolation with logical destination AVP to retrieve correct tax rates and ensure that there is a secure connection with the external tax system.
- The external tax system is regularly updated regarding changes in tax laws. These changes need to be applied to the server so that tax parameters are sent properly and correct tax rates are retrieved from the external system.
- In this article, we used a combination of material and customer tax classifications to link FI and SD and get a tax code. You could also add more parameters, like domestic country and export country, to retrieve a tax code.

Conclusion

This article has hopefully provided you with a solid understanding of the taxation models used in different countries across the globe, and how to configure tax computations for these models in the SAP system. In this article, you learned the difference between the

various tax models used across the globe. You also learned the step-by-step procedures of computing tax using internal and external tax computation for these models. I also focused on the integration aspects between FI and SD and how tax codes defined in FI can be fetched in SD sales documents.

With the basics provided in this article, you now have a foundation for working on more complex tax computation scenarios and using your newfound knowledge to improve the accuracy and efficiency of your organization's tax calculations.

