Original Article

Excise Tax Calculation for the EU Member States & Third countries using SAP Cloud Solution (SCP)

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Abstract - Excise taxes are imposed on the use or consumption of goods transferred from one location to another taxable site. Excise tax authorities impose a tax on certain goods like Alcohol, Ethanol, Biodiesel, Beer, Electricity, Natural gas, coffee, and certain non-alcoholic beverages (only in NL). Most organizations struggle to calculate tax for different business processes and develop different custom reports to suffice internal and external reporting to custom authorities. SAP cloud solution (SCP) of excise tax management is a Saas-based application used to track and trace all goods movements, excise tax-relevant for a tax warehouse. It provides flexibility to maintain master data relevant for excise tax, calculate tax, and generate stock ledger reports used to report authorities. In other words, the SAP Cloud Platform (SCP) of excise tax management is the right tool to manage excise taxes and has standard integration/APIs with transactional systems like SAP S/4 HANA system without complex enhancements. This article covers functional and technical aspects of implementing excise tax and is broadly classified as 1. Business Processes, 2. Architecture and Integrating SCP with Transactional system (S/4 HANA), 3. Maintenance of master data, 4. Tax Rate, 5. Calculating excise tax for different business processes, 6. Reporting.

Keywords - SCP, SAP, ERP, SAP S/4 HANA, Fiori, API's, MM, FICO

I. INTRODUCTION

SAP Cloud Platform(SCP) is SAP's S/4 HANA cloud development and deployment platform operating on Amazon web services (AWS) or Azure or Google Cloud platform depending upon the region in Europe or the US east. SAP S/4 HANA system uses in-memory SAP HANA database and uses a web-based Fiori user interface to record and navigate transactions. SAP Fiori launchpad is a web-based portal that helps manage all apps or tiles from the end-users perspective to perform daily transactions.

SAP developed an excise tax application on SAP Cloud Platform (SCP) with seamless integration with the underlying transactional S/4 HANA system. Excise tax is the taxes levied on the use or consumption of certain goods like Alcohol, Beer, and certain member states levy excise taxes on other products like Non-Alcoholic beverages in Netherlands and coffee tax in Germany. All excise tax-related transactions posted in S/4 HANA are documented, tracked, and calculated in the SAP cloud platform of an excise tax based on different business processes.

II. STRATEGY TO PROCURE SCP OF EXCISE TAX

Warehouses that handles excise related products are called "Tax warehouses" and are subject to authorization, conditional upon strict requirements from customs authorities like registration of all flows to, at, and from the plant, detailed administrative requirements, filing of monthly declarations and annual stock reports and audited by excise tax authorities on very regular basis. Excise tax is calculated either by a per-unit tax such as liter or gallon of Alcohol or percentage of price such as an airline ticket tax. In General, excise taxes are collected from producers like multi corporations producing excise-related products embedded in the end customer's final price.

There is no in-built functionality in the SAP S/4 HANA system to calculate excise taxes and report to authorities. It will be a challenge for large organizations to handle excise tax-related products to comply with their customs regulations. Complex integrations are required for underlying transactional S/4 HANA system with third party providers to calculate and report excise taxes to custom authorities. The fundamental challenge for organizations is maintaining master data and calculating excise tax without the SAP S/4 system's inbuilt functionality. So, SAP developed an excise tax solution in SAP cloud-based platform with standard integration with SAP S/4 HANA system to handle excise taxes across all countries.

III. BUSINESS PROCESSES

Business processes are defined as goods movement transactions where excise related products are transferred from one storage location to another storage location. Different movement types in the SAP S/4 system are used to differentiate between business processes. For example, movement type 101 is goods receipts for a purchase order or production order, 261 Goods issued for an order where we issue raw materials, semi-finished goods issued to process a charge to produce finished goods. In the S/4

system, there are many movement types and tables, some of which are widely used in production, Sales, and purchase processes. Custom movement types can be defined if predelivery SAP could not suffice the business requirement, for example, if you want to differentiate postings in finance.

IV. MOVEMENT TYPE & USAGE

Movement Types	Description
101	GR Goods Receipt
102	GR for Reversal
261	GI Goods Issue for order
262	Return GI for Order
201	GI Goods Issue for Cost center
561	Initial Stock entry
601	Goods Issue to customer
311	Transfer posting storage location to another storage location

V. ARCHITECTURE AND INTEGRATING SCP WITH TRANSACTIONAL SYSTEM (S/4 HANA)

The first step in setting up the SAP Cloud platform of the Excise tax is creating a Global account and sub-account on the SAP Cloud Platform. To create a global account, we need an administrative role, following the sequence of steps to connect SAP Cloud Platform to SAP S/4 HANA to read data from the S/4 HANA transactional system for processing in the Excise tax cloud platform.

- Creating Global Account on SAP Cloud Platform.
- Create a subaccount on the SAP Cloud Platform.
- Create spaces, instances, and service keys on subaccounts for services like Tax calculation, read master data.
- Install and configure the cloud connector on our on-premise S/4 HANA system, which is required to enable API calls from the cloud to the customer network via a secure channel.
- Activate OData services where standard SAP S/4 HANA delivery API's like a Business partner, Storage location, product, plant, and company code to pass information from S/4 to SAP cloud platform excise tax.
- Creation of technical user with necessary authorizations to communicate data from SAP cloud platform to S/4 HANA system.
- Set up an RFC connection and import certificates to pass S/4 HANA data to the SAP Cloud platform to

calculate tax in S/4 while creating sales orders or purchase orders.

VI. MAINTENANCE OF MASTER DATA

Warehouse needs to be defined in SCP of excise tax and store excise tax-related products by tax type for tracking and reporting to legal authorities. Warehouses are assigned to plant and storage locations where goods movements happen in the transactional system. Fig 3 depicts a warehouse set up in SCP of excise tax solution.

Most ERP systems, especially in the SAP S/4 HANA system, have different data types like Master data, transactional, and customizing data. Master data typically includes materials/products, customers, vendors/suppliers whom organizations perform business with. Transactional information typically includes sales orders, purchase orders, outbound deliveries, and material documents. Customizing data includes defining company codes, plants, storage location, sales, and purchasing organization. All these master data is maintained in SAP S/4 and transmitted to the SAP cloud platform of excise tax via standard API's. Required master data in SCP Excise tax is material master, an alternative unit of measure, company code, plant, storage location, business partner–vendor, and ship-to party. In SCP, an excise tax background job is executed to perform master data Synchronization for all the above objects. Figure 1 depicts master data synchronization and what objects are updated from the S/4 HANA system to SCP excise tax. Customer invoice/Billing document and Financial postings synchronization are possible in SCP of excise tax via document selection functionality.

Material document synchronization is a major component to sync material documents when posted in the S/4 HANA system to SCP of excise tax. Material documents can be outbound deliveries or inbound deliveries. All goods receipts and goods Issue transactions are posted in the S/4 HANA system via sales order, purchase order, or production process. Figure 2 depicts document selection functionality how documents are retrieved from S/4 HANA to SCP of excise tax. The processing overview shows the timeline when material documents are extracted in the last hour, today, yesterday, and the last 30 days. The excise tax is calculated based on the alcohol percentage maintained on that material on each material document.

Master Data Synchronization

Go to Master Data Synchronization

Last Run:	Oct 7, 2020, 4:30:45 PM
Material Master:	☐ Successful Without a Delta Change
Alternative Unit Of Measure:	☐ Successful Without a Delta Change
Plants:	☐ Successful Without a Delta Change
Storage Location:	☐ Successful Without a Delta Change
Company Code:	☐ Successful Without a Delta Change
Business Partner - Vendor:	☐ Successful Without a Delta Change
Business Partner - Ship-To:	☐ Successful Without a Delta Change

Fig. 1 Master data synchronization from S/4 HANA to SCP

Material Document Synchronization

Go to Material Document Synchronization

Last Run: Oct 7, 2020, 2:01:36 AM
Status: ☐ Executed
Next Run: Oct 8, 2020, 2:01:34 AM
Run Frequency: 1 Days

< SAP   Execute Document Selection ▾   ⑦ 👤

Document Processing Summary

Start Document Selection   Block Document Selectio

Material Documents Last Fetched At: Oct 7, 2020, 10:21:40 AM
Pending Documents: 102
Next Scheduled Document Selection: None

Processing Overview (4)   ⚙

Timeline	Total Fetched	In Stock Ledger	Rejected	Disregarded	In Process
Last Hour	0	0	0	0	0
Today	0	0	0	0	0
Yesterday	95	7	0	88	0
Last 30 Days	10,100	656	4	9,440	0

Fig. 2 Document selection functionality from S/4 to SCP of Excise tax

< SAP   Warehouse ▾

New Object

Define Warehouse   Warehouse Details ∨

Tax Type: *	Warehouse Owner Number:	Storage Indicator for Procurement Type Change: ☐	Stock Ledger Update Options
Warehouse ID: *	Warehouse License Number:	Stock Ledger Type for Warehouse: *	Stock Ledger Subdivisions: ☐
Description:	Warehouse Registration :	Country Code:	No Extended Stock Ledger: ☐
Valid From: * MMM d, y	Warehouse Registration 1:	Retrograde Shrinkage Assignment to Warehouse: *	Stock Transfer Alcohol Change: ☐
Valid To: MMM d, y	Warehouse Registration 2:	Assigned Stock Ledger for Production Area:	Log Material Change : ☐
Go-Live Date: MMM d, y			Log Internal Adjustment: ☐
Tax Period Profile : *			
Company Code: *			

Warehouse Details

Warehouse Owner Details

Search

Tax ...	Warehouse ID	Warehouse Owner Number	Valid From	Valid To

Fig. 3 Warehouse setup and assigned to the legal entity/company code
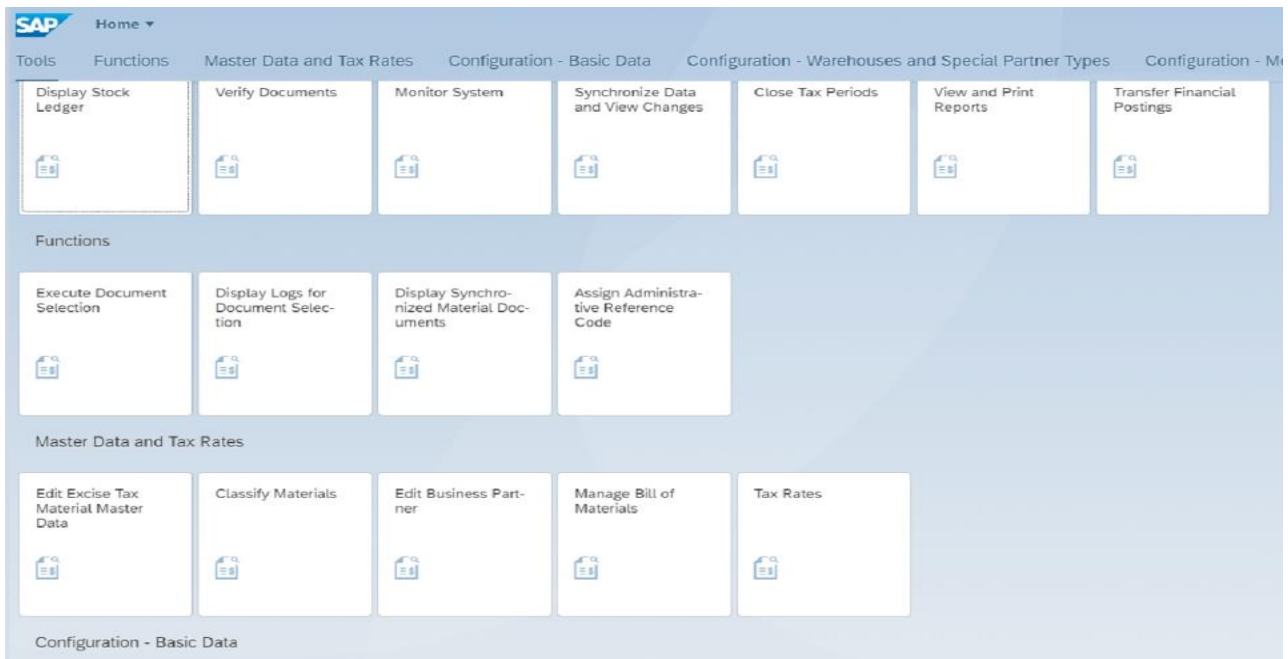
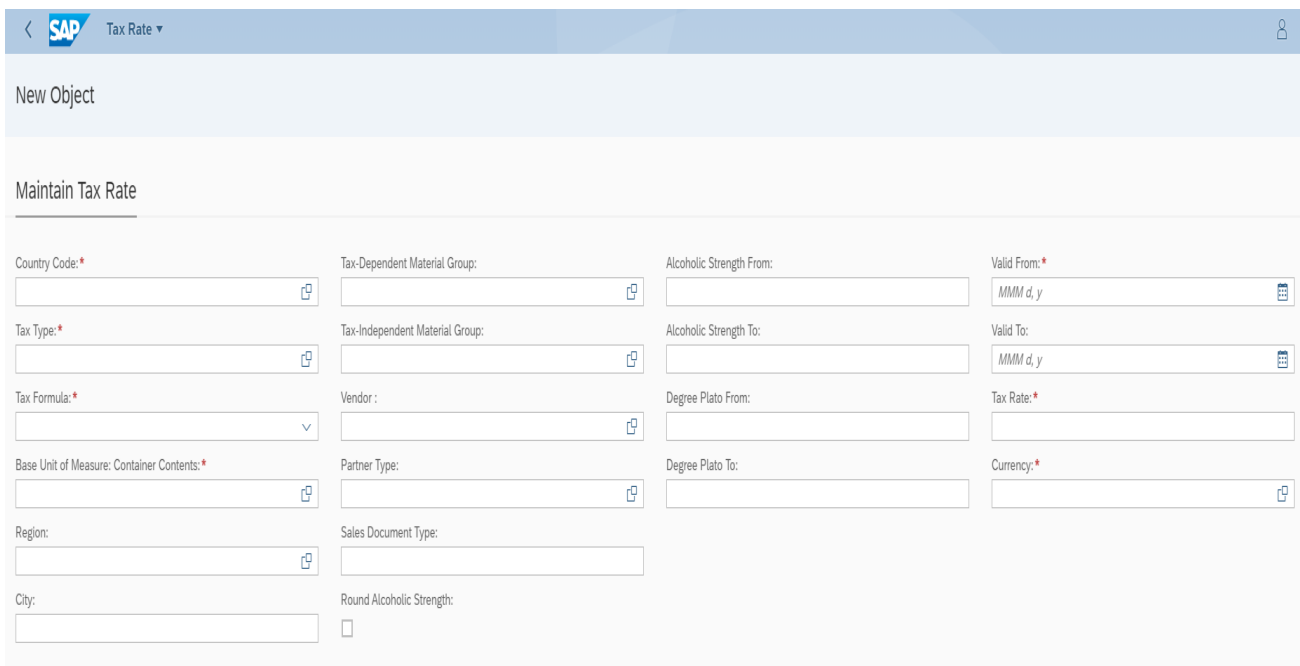**Fig. 4 SCP Home page for displaying all activities of excise tax**

Fig. 5 Tax rate maintenance in SCP of Excise tax

VII. TAX RATES

Different types of tax rates like Alcohol tax, Beer, and coffee tax by country should be maintained in the excise tax's SAP cloud platform to maintain rates per regulations. Different parameters must be maintained to calculate excise tax accurately while posting goods movement. Mandatory parameters include country code, Tax type, Tax formula, Base unit of measure, Alcohol strength from, Alcohol strength to, Valid from, Tax rate, and currency. Tax type should include Alcohol, Beer, coffee, and tax formula should be quantity in settlement unit times tax rate, the tax rate is maintained as per regulations like 1%. Figure 5 depicts parameters that need to be maintained in tax rate configuration. Figure 4 depicts the home page of the SAP cloud platform of excise tax solution where different apps are displayed like master data maintenance and stock ledger.

VIII. CALCULATING EXCISE TAX FOR DIFFERENT BUSINESS PROCESSES

The business process defined in the excise tax solution is goods receipt external, which includes a production

process where goods are taken back to inventory when produced and a purchase order process where goods are purchased from an external supplier. Goods issue tax paid

The scenario includes sales to the customer where outbound deliveries to end customers. All these business processes excise tax value based on the rate maintained in SCP of excise tax solution. When creating a sales order or purchase order, the excise tax condition type is populated with the tax rate maintained in SCP via a standard API service called "TaxRateCalculation." Excise tax conditions by tax type are maintained in the pricing procedure via standard routine. This routine will pass the information from SAP S/4 HANA transactional system to SCP of excise tax by passing ship-to party and material information from S/4 to SCP and, in turn, returns the tax rate from SCP where tax value is populated in the sales order. Accrued liabilities are posted for every goods movement from SCP of Excise tax to the S/4 HANA system.

IX. REPORTING OF TAX LIABILITIES TO CUSTOMS AUTHORITIES

Different stock ledger groups are defined in the cloud platform of excise tax. Stock ledger groups include sales to the customer (EU taxed), official stock ledgers or internal reports. The excise tax movement category is an issue from the sale to customer, assigning movement types to the movement category. For example, the 601 movement type in which goods Issue for outbound delivery is mapped excise tax movement category as [6]

"101". These categories are mapped to stock ledger groups for official reporting to custom authorities. An app on a cloud solution called "Display stock ledger" is used for official reporting and displays all types of goods movement transactions in SCP of excise tax.

X. CONCLUSION

SAP Cloud Platform of the excise tax is the only tool available to calculate excise tax for the SAP S/4 HANA system. Excise tax reporting and calculation become comfortable with an SAP cloud solution, and with this, multinational organizations can comply with legal regulations with minimal manual intervention. With this cloud platform, master data maintenance becomes easier and can be maintained with the tool for calculating tax without complicating the transactional system. Finally, SCP of excise tax will be able to suffice all legal requirements and is good for organizations because of standard integrations with the S/4 transactional system without a lot of customizations and minimal maintenance after implementation.

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