

Consolidated Financial Reports Architecture using SAP Group Reporting

Kumail Saifuddin Saif*

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***Corresponding author:** Kumail Saifuddin Saif, SAP Technical Architect & Projects Delivery Manager, Accenture LLP, USA, E-mail: kumail.saif@gmail.com

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ABSTRACT

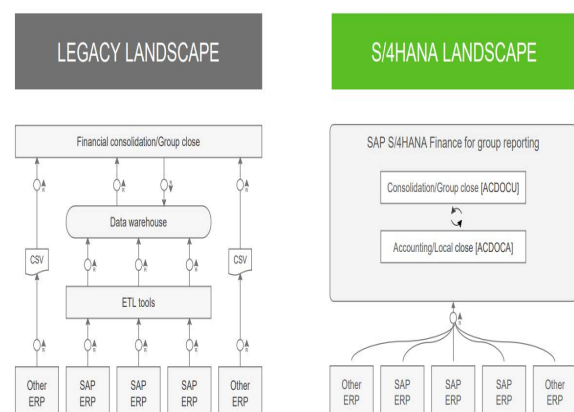
SAP S/4HANA Finance for group reporting unifies financial consolidation and reporting into a single source of truth. By consolidating data from different sources, before and after closing, without the need for multiple systems, organizations can make more informed, intelligent decisions. The final consolidation results are stored in the transaction table ACDOCU and the master data tables relevant for the Group Reporting. As a report designer, you need to develop reports based on these tables for the Business users. This paper discusses the details of the SAP standard Reporting Architecture and key components involved for customizations that may be required based on the requirements.

Keywords: SAP Group Reporting, Embedded Analytics, ABAP CDS Views, Consolidations.

1. Introduction

SAP S/4HANA Group Reporting is the latest Financial Close and Consolidation software from SAP. Group Reporting comes in two flavours: cloud and on-premise. Both versions offer the same functionality. Integration of S/4Hana Accounting data in Group Reporting is a key element, but also companies not on your S/4 platform can easily integrate with the Group Reporting application. SAP Group Reporting Data Collection (GRDC) is the set of apps in S/4HANA Finance for group reporting that are designed for the following:

- The decentralized manual collection of heterogeneous and supplemental data along corporate structures
- The transformation and load of data in ACDOCU either from an external ERP system or from the ACDOCA table.



2. SAP Standard Data Model

SAP provides several standard data models and Core Data Services (CDS) views for financial reporting based on Group Reporting data stored in the ACDOCU table. These models and views enable flexible, real-time financial analytics and reporting. They include dimensions such as consolidation units, financial

statement items, fiscal periods, and versions etc. which are specific to Group Reporting. They enable financial reporting under different accounting standards (e.g., IFRS, GAAP, STAT). These views can be directly consumed in SAP Analytics Cloud (SAC), Analysis for Office, or other analytics solutions. Some of the Key CDS views and their usage are listed as below:

- **C_ConsolidationMatrixRpt30Q**
 - CDS Query for group financial reporting, including consolidated balance sheets and profit & loss (P&L) statements.
- **C_ConsolidationMonitorQ**
 - Used for monitoring consolidation processes and results. Tracks the status of consolidation tasks, such as eliminations and adjustments.
- **C_ConsolidationMatrixRpt10Q**
 - CDS Query for group financial reporting Cash flow analysis.
- **I_ConsolidationEntryItem**
 - Contains details of consolidation journal entries, including adjustments, eliminations, and manual postings.
- **I_ConsolidatedFinancialStatementItem**
 - Financial statement line items master data view which also supports hierarchies created in this dimension. It is equivalent to the Account Number field in G/L Accounting.
- **C_InterCompanyReconciliationQ**
 - CDS Query view for intercompany reconciliation reporting by analyzing intercompany eliminations and mismatches.
- **I_CnsltdnGroup**
 - Consolidation Group master data view
- **I_MatrixCnsltdnFndnCube**
 - Consolidation foundation CDS Cube View

These data models, built on SAP HANA's in-memory capabilities, provide real-time access to consolidated data stored in the ACDOCU table and other related structures. These models can be consumed in reporting tools as needed for the available standard reporting requirements. However, if there are customizations needed for reporting, then these models can be leveraged to achieve custom logic on top of the standard logic.

The customizations in discussion here are purely related to reporting requirements and not the Consolidation process configurations and customizations like Ledger's mapping, Consolidation Groups or units definition, Financial statement items definitions. As these customizations related to the implemented consolidation process will flow through the CDS view model and available in reports. However, there could be reporting related requirements as below:

- Reporting Sign change related requirements for financial reports
- Addition of QTD (Quarter to date) period mode for reporting apart from YTD & PER.
- Custom Code block extensions done in G/L table ACDOCA and similarly needed in Consolidations reporting table ACDOCU.

3. Customizations for Reporting

As per the Business requirement, certain customizations are needed for reporting. We will discuss the commonly used requirements and their solution.

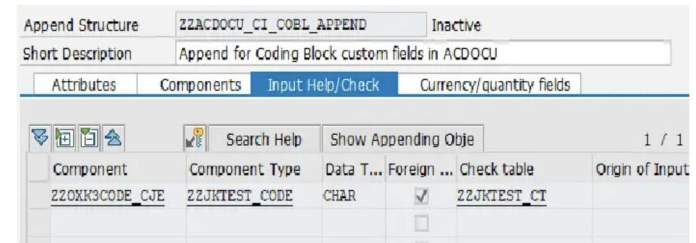
3.1. Custom code block extensions for table ACDOCU

Custom Fields and Logic app can be used to create two identical fields for the 'Accounting: Coding Block' business context, and for the 'Group Reporting: Journal Entry Item' context. Then, under business scenarios, enable the relationship between the two contexts. Once the change has been published, SAP will generate view extensions to add the custom field(s) to the Release Universal Journal task.

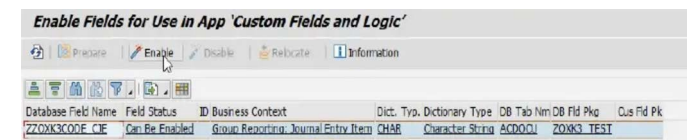


However, there could be a very common scenario where the ACDOCA table for G/L documents is already enhanced with custom code block fields using traditional coding block extension transaction code OXK3 and Group reporting is being implemented later as an upgrade from previous consolidation solution called BPC. As part of BPC implementation these fields were available to the other table ACDOCC but not available in ACDOCU. In such cases we need to link those fields created in ACDOCA to the ACDOCU table. Steps to be followed in this scenario as below:

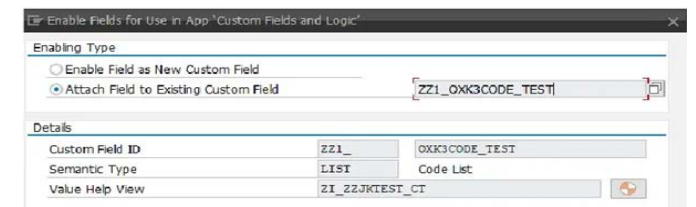
- Create an append structure to CJE_S_INCL_EEW_PS with the required fields in ACDOCU.
- Add the fields with the same data element but with different names. For example, using a suffix like _CJE (Consolidated Journal Entry).



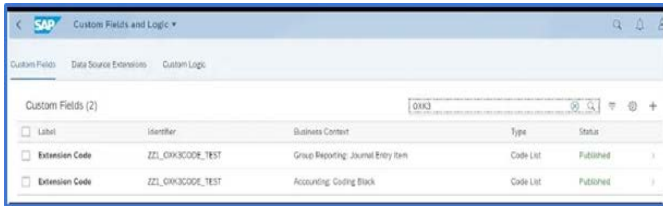
- Enable field using SCFD_EUI for Group Reporting, database table ACDOCU.
- Enable field using the option 'Attach field to existing custom field'.



- The field is now available for Group Reporting with the check table as per the code block on the G/L side.



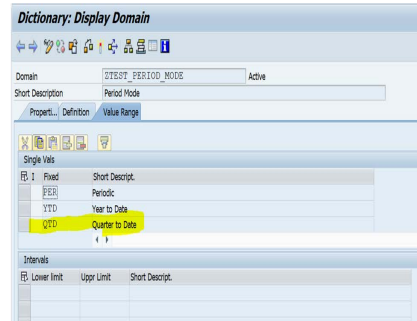
- The Created field is now connected to Group Reporting.



data, and then writes the delta amount to the specified period.

However, as per the business requirement, there could be a need for QTD (quarter to date) mode. This can be achieved by customization as follows.

- A standard domain (FINCS_PERIOD_MODE) is available for period mode. We need to create a custom one to add QTD as an additional option. Example as below:



3.2. Addition of QTD (Quarter to date) period mode:

As per the design, there are two period modes available as a standard solution in Group Reporting:

- Periodic:** The source data is interpreted as periodic data, that is, the source data is written to the specified period with no additional calculation.
- Year-to-Date:** The source data is interpreted as cumulative (year-to-date) data, that is, the system subtracts the data of the previous periods of the fiscal year from the cumulative

Now we need to create custom CDS views using Period mode in the model similar to the standard CDS views and modify the logic for QTD mode. List of CDS views to be altered as below:

SAP Standard CDS View	Suggested Custom CDS view	Logic to be added or created
P_MATRIX_CNSLDTNFNDN_2	ZP_MATRIX_CNSLDTNFNDN_2	Add UNION ALL clause for QTD logic
P_MATRIX_CNSLDTNFNDNWITHHIER_2	ZP_MATRIX_CNSLDTNFNDNWITHHIER_2	Need to change the SOURCE CDS to the Custom one
P_MATRIX_CNSLDTNFNDNFOUNDATION_2	ZP_MATRIX_CNSLDTNFNDNFOUNDATION_2	Need to change the SOURCE CDS to the Custom one
I_MATRIXCNSLDTNFNDNFOUNDATION_2	ZI_MATRIXCNSLDTNFNDNFOUNDATION_2	Need to change the SOURCE CDS to the Custom one
I_MATRIXCNSLDTNFNDNFOUNDATIONCUBE	ZI_MATRIXCNSLDTNFNDNFOUNDATIONCUBE	Need to change the SOURCE CDS to the Custom one
C_CNSLDTNRPT30Q	ZC_CNSLDTNRPT30Q	Need to change the SOURCE CDS to the Custom one
P_MATRIX_CNSLDTNFNDNYTD	ZP_MATRIX_CNSLDTNFNDNQTD	New Custom CDS for QTD logic
P_MATRIX_CNSLDTNFNDNWHIERFYTD	ZP_MATRIX_CNSLDTNFNDNWHIERFQTD	New Custom CDS for QTD logic
P_MATRIX_CNSLDTNFNDNFOUNDATIONYTD	ZP_MATRIX_CNSLDTNFNDNFOUNDATIONQTD	New Custom CDS for QTD logic
I_MATRIXCNSLDTNFNDNFORYTDMODE	ZI_MATRIXCNSLDTNFNDNFORQYTDMODE	New Custom CDS for QTD logic
P_MATRIX_YTDPERIODMAPPING	ZP_MATRIX_QTDPERIODMAPPING	CDS view for QTD mapping

Once these changes are done, then we need to modify the two ABAP classes used in the logic for processing of the results and passing to the reporting layer.

- Create a copy custom class for SAP standard class and modify methods as below **CL_FINCS_GRP_DATA_ANALYS_COMMON**:
 - CONSTRUCTOR - Update Custom Cube view name
 - SET_GLOBAL_VARIABLES - Update the logic to add Global variable value for period mode QTD
 - CALCULATE_FISCAL_YEAR_PERIOD - Logic for QTD to be added similar to existing YTD and PER
 - EXECUTE_FOUNDATION_LAYER- Data type of the result set to be modified as per the custom CDS Cube view.
 - CREATE_FROM_CLAUSE - Add logic for QTD
 - GET_RESULT_SET_REFERENCE - Set reference for the result set as per the Custom Cube CDS view.
 - GET_FOUNDATION_LAYER_REFERENCE - Set reference for the result set as per the Custom Cube CDS view.
 - GET_FISCAL_YEAR_PERIOD_QTD - Calculate the fiscal year period for the period mode QTD.
- Create a copy custom class for SAP standard class and modify methods as below **CL_FINCS_GROUP_DATA_ANALYSIS**
 - CONSTRUCTOR - Update Custom Cube view name

- IF_RSRTS_CDS_READ~READ - Update the custom CDS cube view name.
- GET_FOUNDATION_CDS_VIEW_NAME - Get foundation view name as per the input value of period mode

By performing above changes, the new period mode QTD has been added to the reporting data model.

3.3. Reporting sign change

In SAP reporting, a ‘reporting sign change requirement’ refers to the ability to reverse the positive/negative sign of values displayed in a financial statement report, allowing you to present data with the desired sign (e.g., showing revenue as a positive value even if it’s stored as a negative in the system) without altering the underlying data. This can be achieved by performing following changes in the data model.

- Add a parameter to the custom CUBE view created above which takes input for the SIGN change parameter. Let’s say possible values are ‘Y’ (change the sign) and ‘N’ (keep original sign).
- Create a copy custom class for SAP standard class and modify the method as below **CL_FINCS_GRP_DATA_ANALYS_COMMON**.
- Method **PREPARE_RESULT_FOR_BW** - Add Logic for Reporting SIGN. For example multiply the balances by -1 to reverse the SIGN

4. Conclusion

SAP Group Reporting is a latest solution for the financial Consolidation process and is an advancement to the technology of BPC (Business Planning and Consolidations). It has entirely new architecture and a new database table to store the consolidated records. It is helpful to understand the architecture of the data model provided by SAP as a standard solution. This not only helps creating efficient reports using the SAP standard model but also helps to customize the model as per the business requirements for reporting such as custom code block extensions, Reporting sign changes and addition of period QTD mode.

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