

# Technical Documentation - RTR - Profit and Loss (P&L) + Integrated Margin (IM) (WBP)

- 1 Access Management
- 2 DataFlow
  - 2.1 Overview
  - 2.2 MVCOPA01
    - 2.2.1 P&L
  - 2.3 CPCOPA03
  - 2.4 General presentation
    - 2.4.1 Objective of the application
      - 2.4.1.1 P&L
      - 2.4.1.2 IM
      - 2.4.1.3 Solstice
    - 2.4.2 Usage information
    - 2.4.3 History
  - 2.5 Technical Rules on Workbench
    - 2.5.1 Functional rules
      - 2.5.1.1 COPA flows
      - 2.5.1.2 Rhodia legacy
      - 2.5.1.3 Solvay legacy data (PQ1 based solution)
      - 2.5.1.4 BFC Data
      - 2.5.1.5 CICC
      - 2.5.1.6 Below Gross Margin
      - 2.5.1.7 Non ERP companies
      - 2.5.1.8 Systems involved
      - 2.5.1.9 Organisation
    - 2.5.2 Technical rules
      - 2.5.2.1 P&L WP1
      - 2.5.2.2 Solstice (WP1)
      - 2.5.2.3 P&L PF1
      - 2.5.2.4 BFC
    - 2.5.3 Non-ERP
      - 2.5.3.1 PQ1
      - 2.5.3.2 Glossary
      - 2.5.3.3 Presentation
      - 2.5.3.4 Specific rules
      - 2.5.3.5 GM Flow
      - 2.5.3.6 PCA Flow : DPCOPA11 -> DBCOPA15
      - 2.5.3.7 PCA Flow : DBCOPA15 -> DBCOPA14
    - 2.5.4 Integrated Margin (IM)
      - 2.5.4.1 LER Determination
      - 2.5.4.2 IM Unit cost determination
      - 2.5.4.3 Transport Costs & Duties
      - 2.5.4.4 Case 1: WP1 - No LER No Trading Plant
      - 2.5.4.5 Case 1 & 2: 1) No LER no Trading Plant 2) No LER Trading Plant
      - 2.5.4.6 Case 3: WP1 - LER
      - 2.5.4.7 Case 4: PF1
        - 2.5.4.7.1 PF1 IM flow particularities:
        - 2.5.4.7.2 Allocation of internal logistic costs in IM (DBCOPA28 and DBCOPA36):
          - 2.5.4.7.2.1 Percentage of allocation:
          - 2.5.4.7.2.2 R1291C - Integrated Logistics costs - variable (TIERS)
      - 2.5.4.8 Case 5: Non ERP
      - 2.5.4.9 Case 7: Sales in PF1, Production in WP1
  - 2.6 Reporting
    - 2.6.1 Queries End User Documentation
    - 2.6.2 Main queries
  - 2.7 Dependencies with other applications
- 3 Data Loading
  - 3.1 Info providers and objects loaded
    - 3.1.1 Loading frequency
    - 3.1.2 Flag intra gbu decision variant:
    - 3.1.3 IM PF1 decision variants:
    - 3.1.4 Average performance
    - 3.1.5 Record Keeping
  - 3.2 Dependencies with other applications
    - 3.2.1 Broadcast
    - 3.2.2 Open Hub
    - 3.2.3 APD
- 4 Data Quality Control
- 5 Operational Documentation
  - 5.1 Procedures
  - 5.2 Scheduling
  - 5.3 Monitoring
  - 5.4 Error Handling
  - 5.5 Known Bugs

# Access Management

## Roles & Access

| Role Code      | Role Description                        | Explanation                        |
|----------------|---|------------------------------------|
| ZR_RCS_CA_M432 | P&L – Upload Data - Non-ERP ZPL_FILE    | Access to transactions<br>ZPL_FILE |
| ZR_RCS_CA_M12  | PL - P&L Reporting                      | Role menu                          |
| ZBI_RCS_FI_A33 | P & L – Profit and Loss - End User role | End user role                      |

## Authorization Object

Link to the BW Catalog of role

[https://drive.google.com/open?id=10GEfKYqrT1eeTO\\_uHYAheL1GX7L5y\\_pvH0KQU64qh5I](https://drive.google.com/open?id=10GEfKYqrT1eeTO_uHYAheL1GX7L5y_pvH0KQU64qh5I)

| Authorization object            | Explanation |
|---------------------------------|-------------|
| GBU                             | ZR_*_CA_P05 |
| PRS Company                     | ZR_*_CA_P07 |
| PRS Area(C_COMPCDE__C_MNGAREA)  | ZR_*_CA_P08 |
| GL Type(0GL_ACCOUNT__C_GL_TYPE) | ZR_*_CA_P10 |
| Plant (C_PLANT)                 | ZR_*_CA_P02 |
| Company (C_COMPCDE)             | ZR_*_CA_P01 |
| Authorization Scope (C_AUTHMA)  | ZR_*_CA_P00 |

## DataFlow

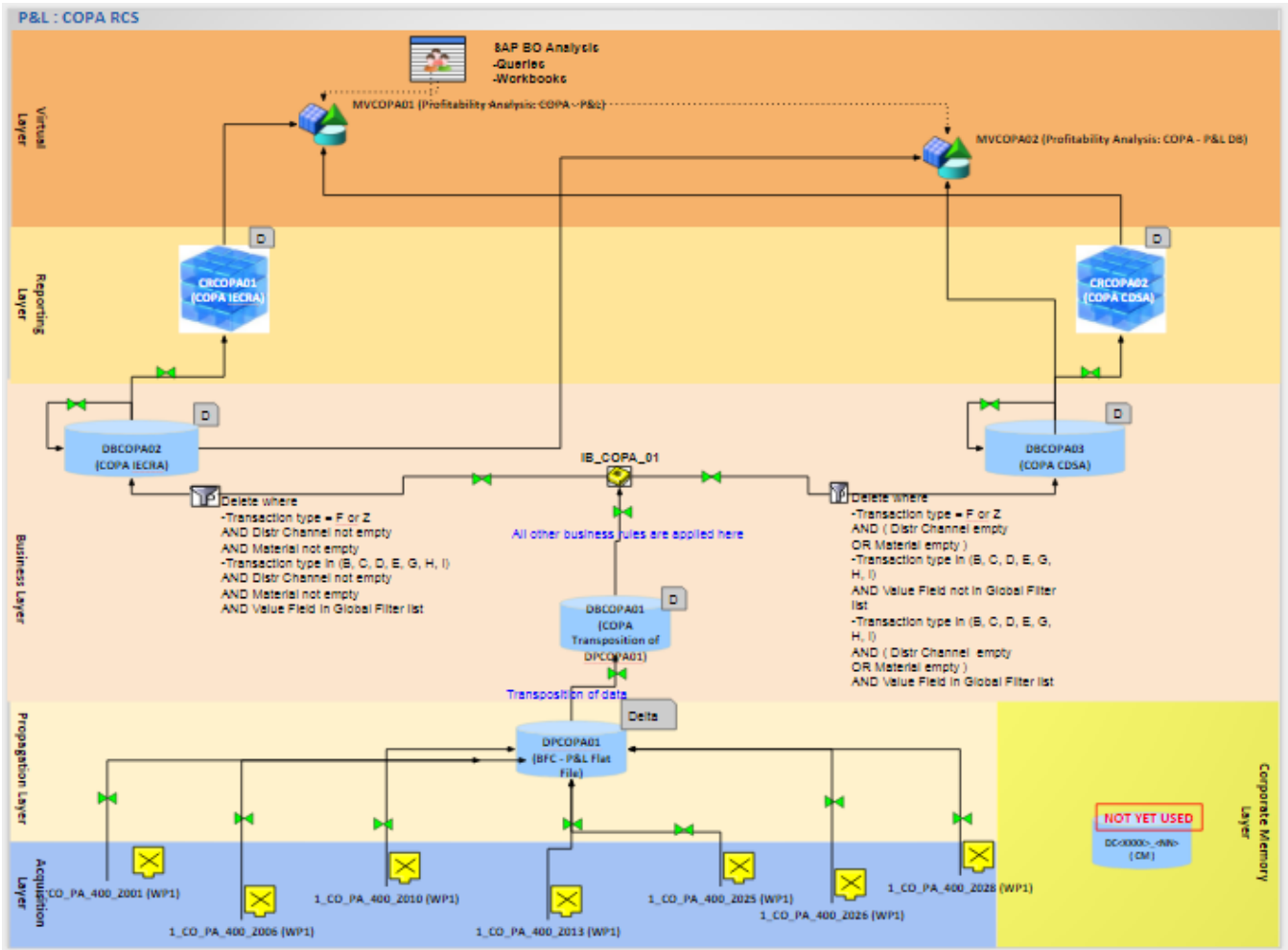
### Overview

[Solstice Google Drive document](#)

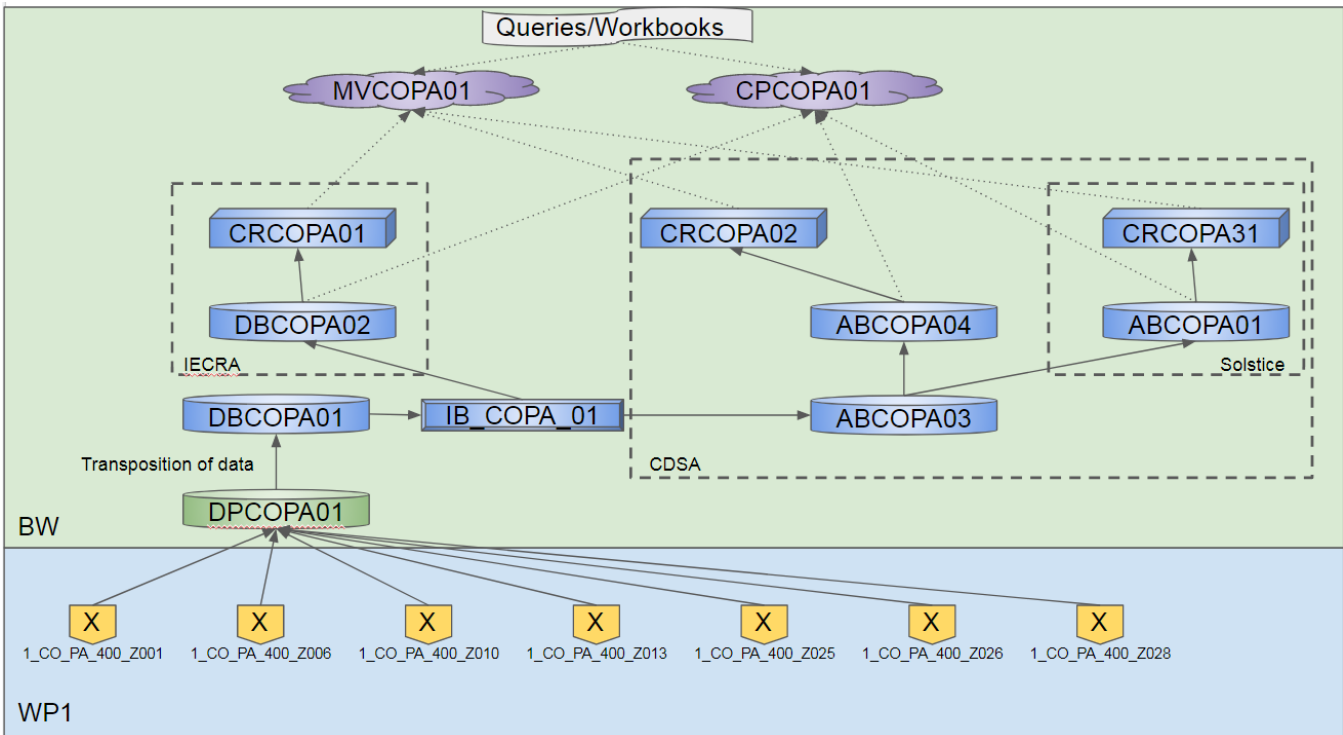
### MVCOPA01

### P&L

WP1

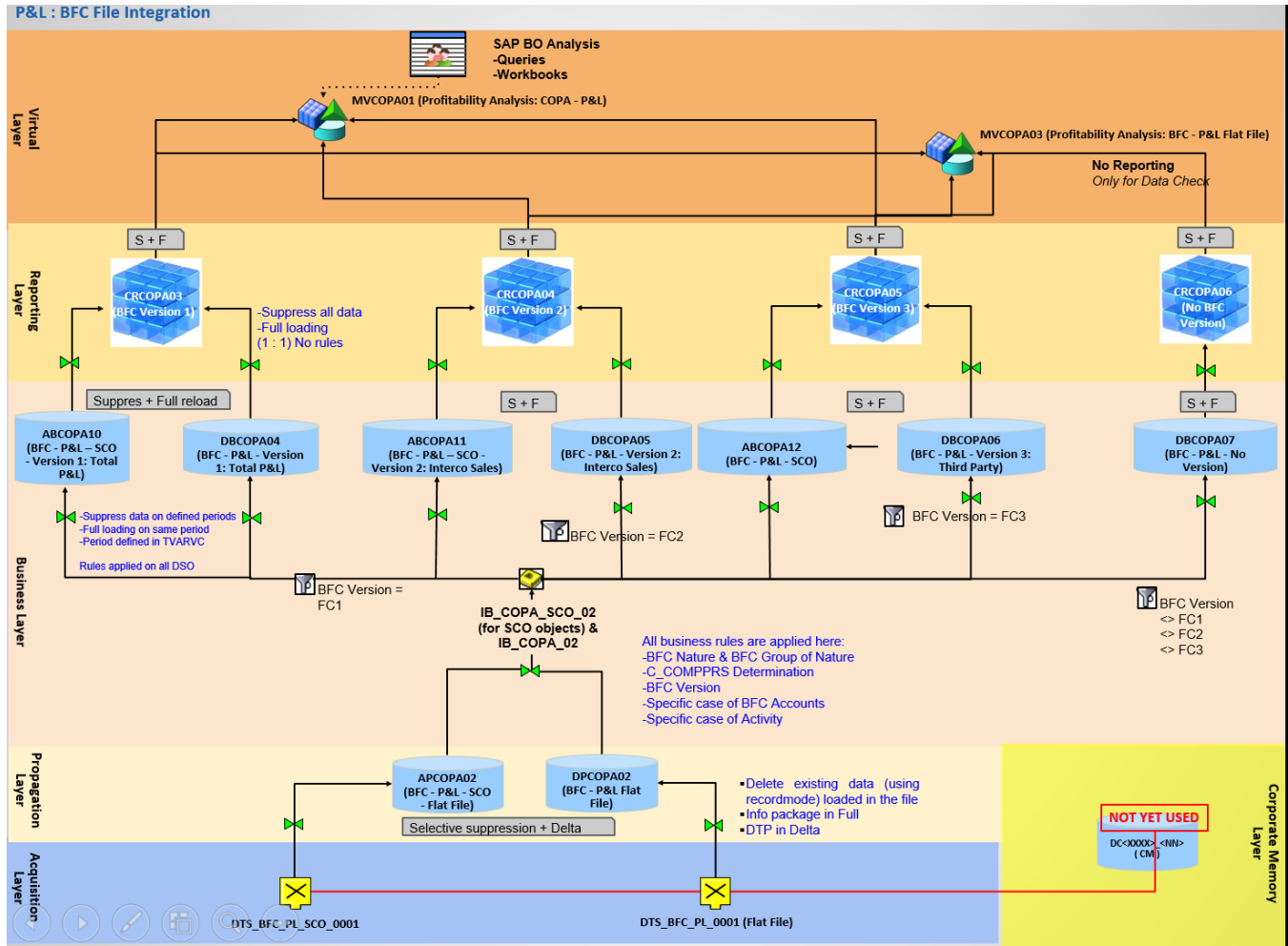


Updated dataflow after Solstice update (Rules are unchanged except for the Solstice split)



BFC

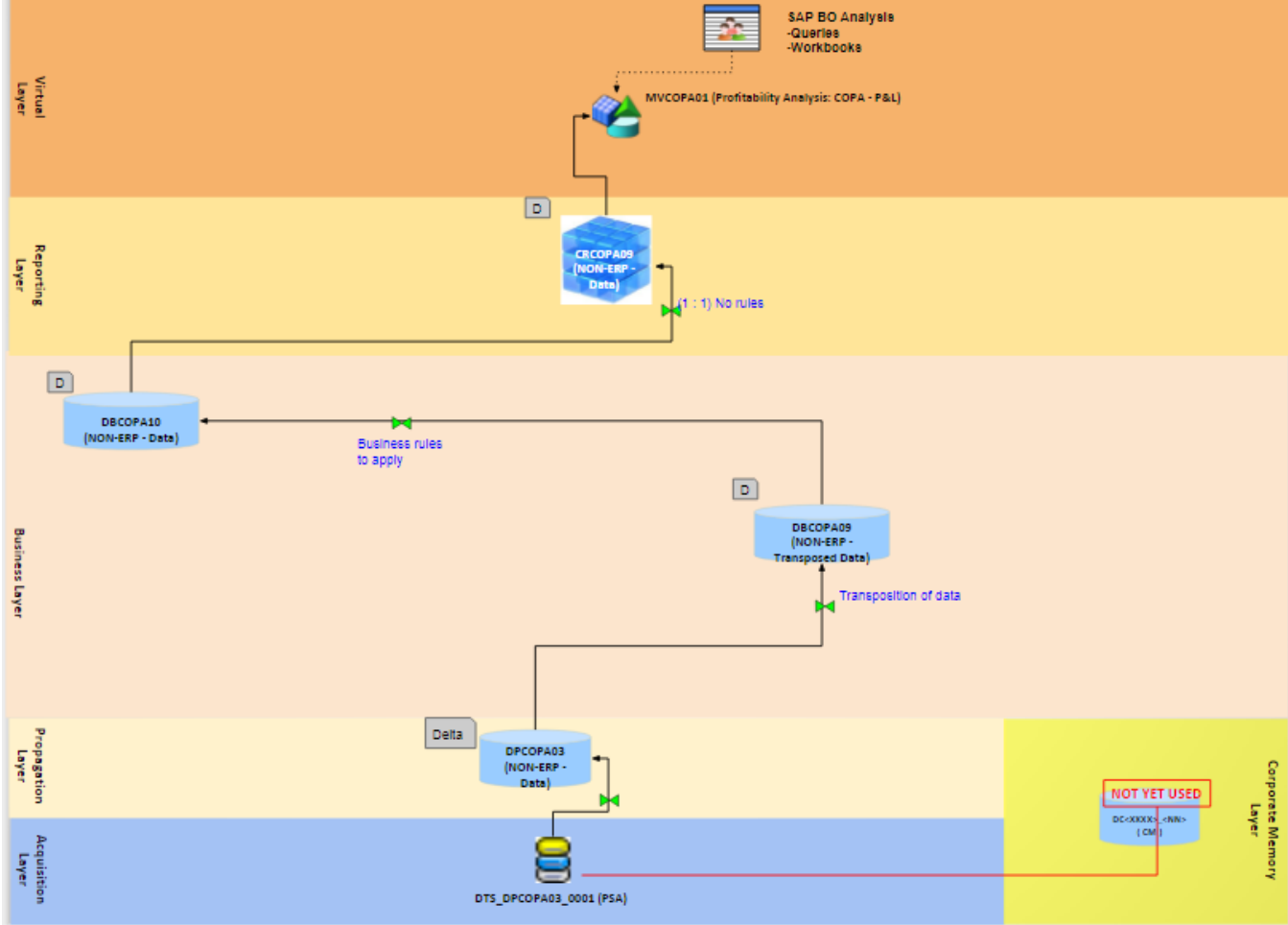
Last change : PO2 Project 08/2023



Last change : PO2 Project 08/2023

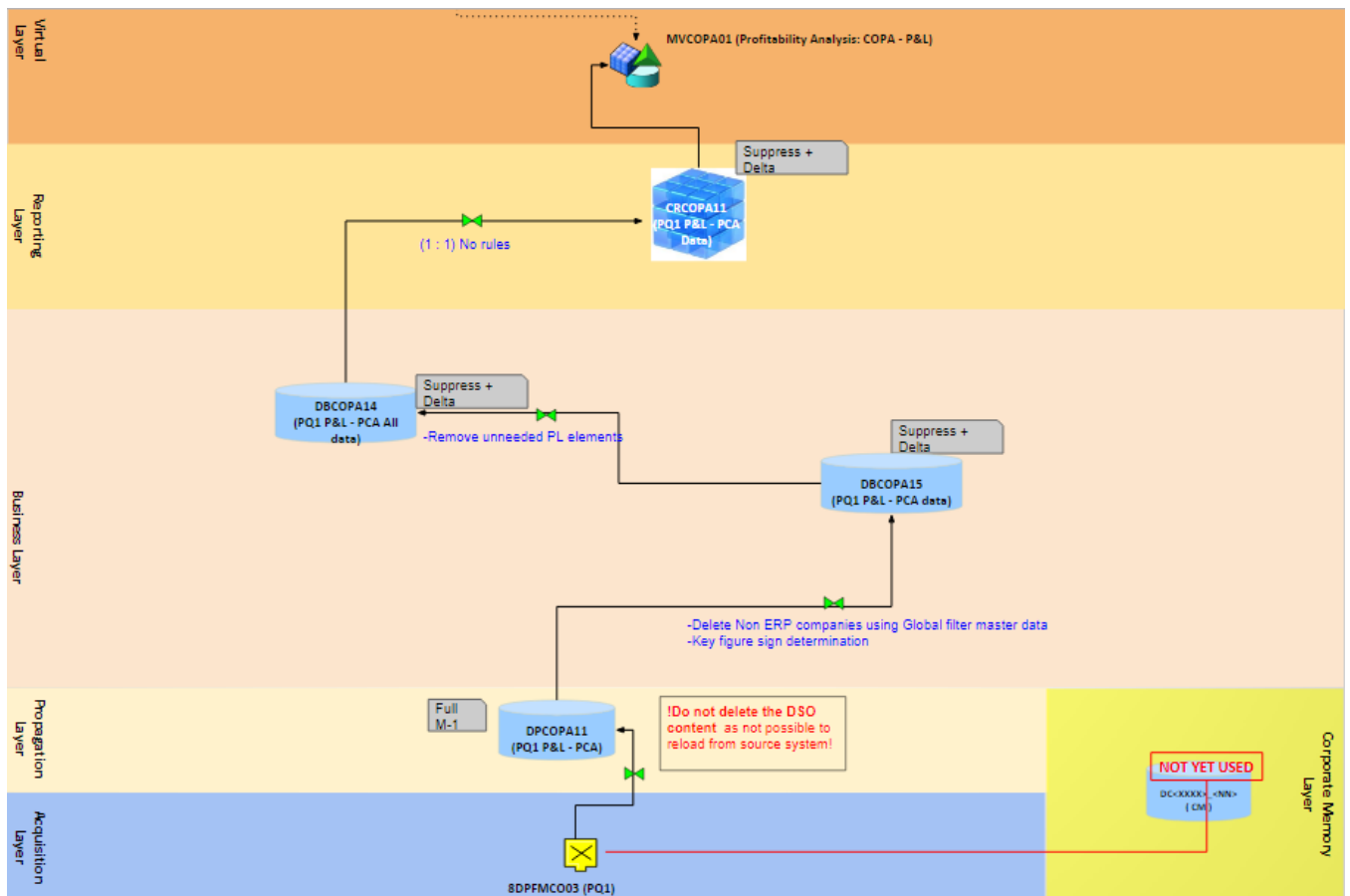
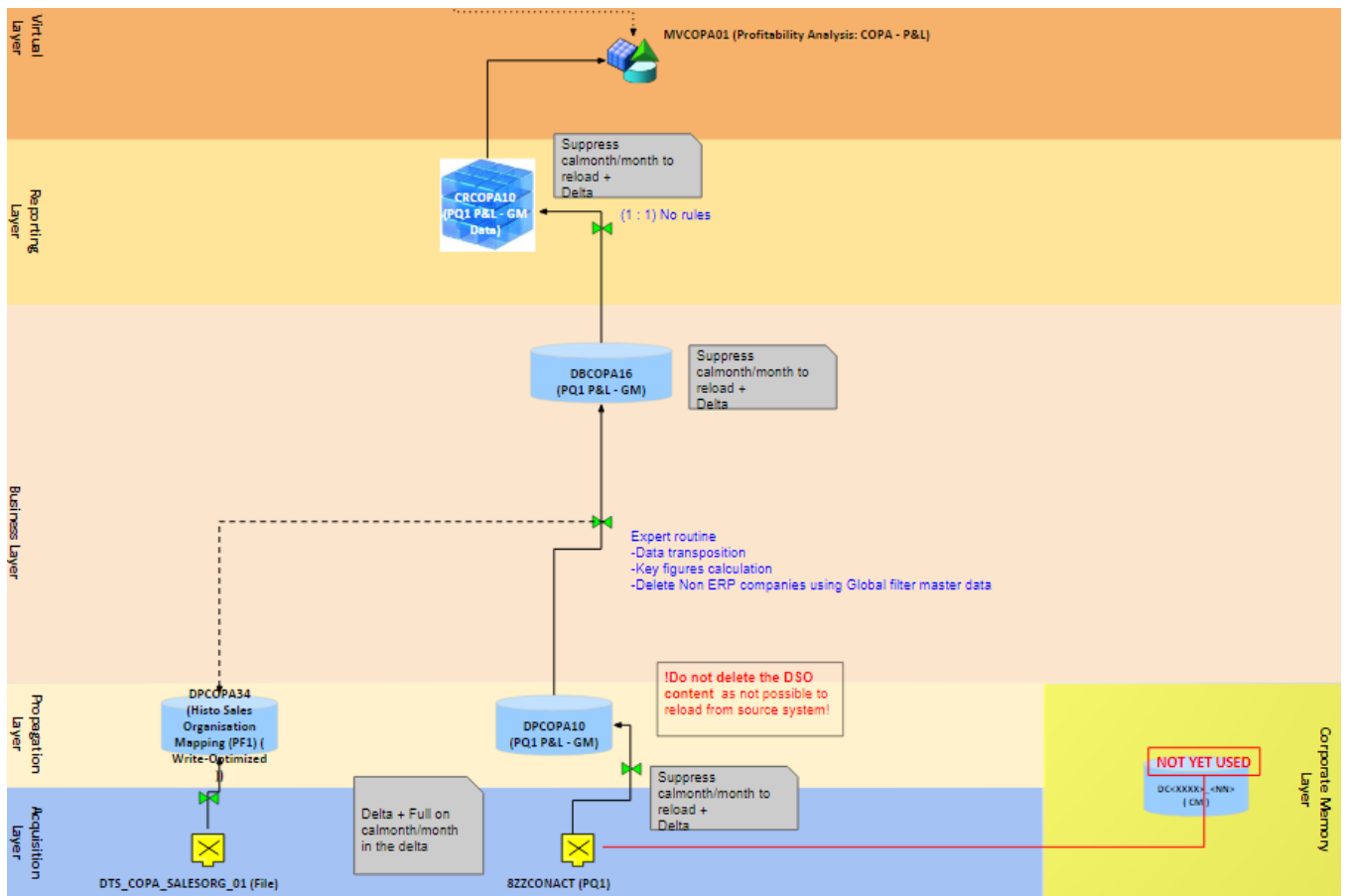


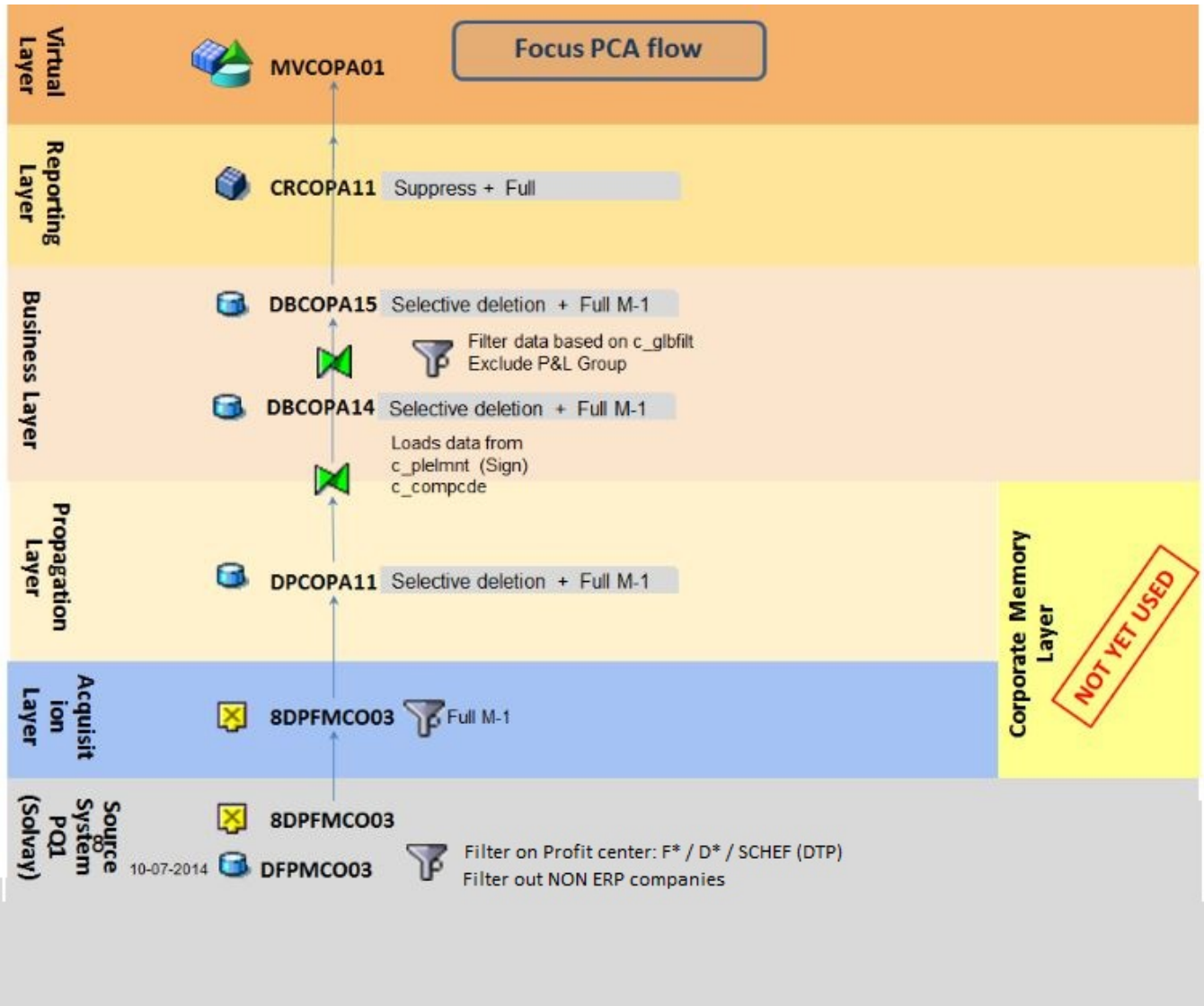
# P&L : Non-ERP Integration Transactional Data



PQ1

PQ1 flows are kept only for historical data, they are replaced by PF1 flows since 01.2018.





## Focus Master data flow – C\_PLELMNT

### Pre-requisites:

LOAD level 1 DSO (Propagation Layer) and DPCOPA13 DSO

- Load hierarchy ZFC-PL
- Load C\_PLELMNT attribute (use ZFC-PL and DPCOPA13)  
c\_plgrp default value is ZZ\_99999

Master data

1

C\_PLELMNT



2



DPCOPA13

DATEO=99991231  
+ EXISTING SID ONLY



OCOSTELMNT



Z\_PLELMNT\_HIER



ZZF\_BFC\_SETACCT



Z\_PLELMNT\_HIER



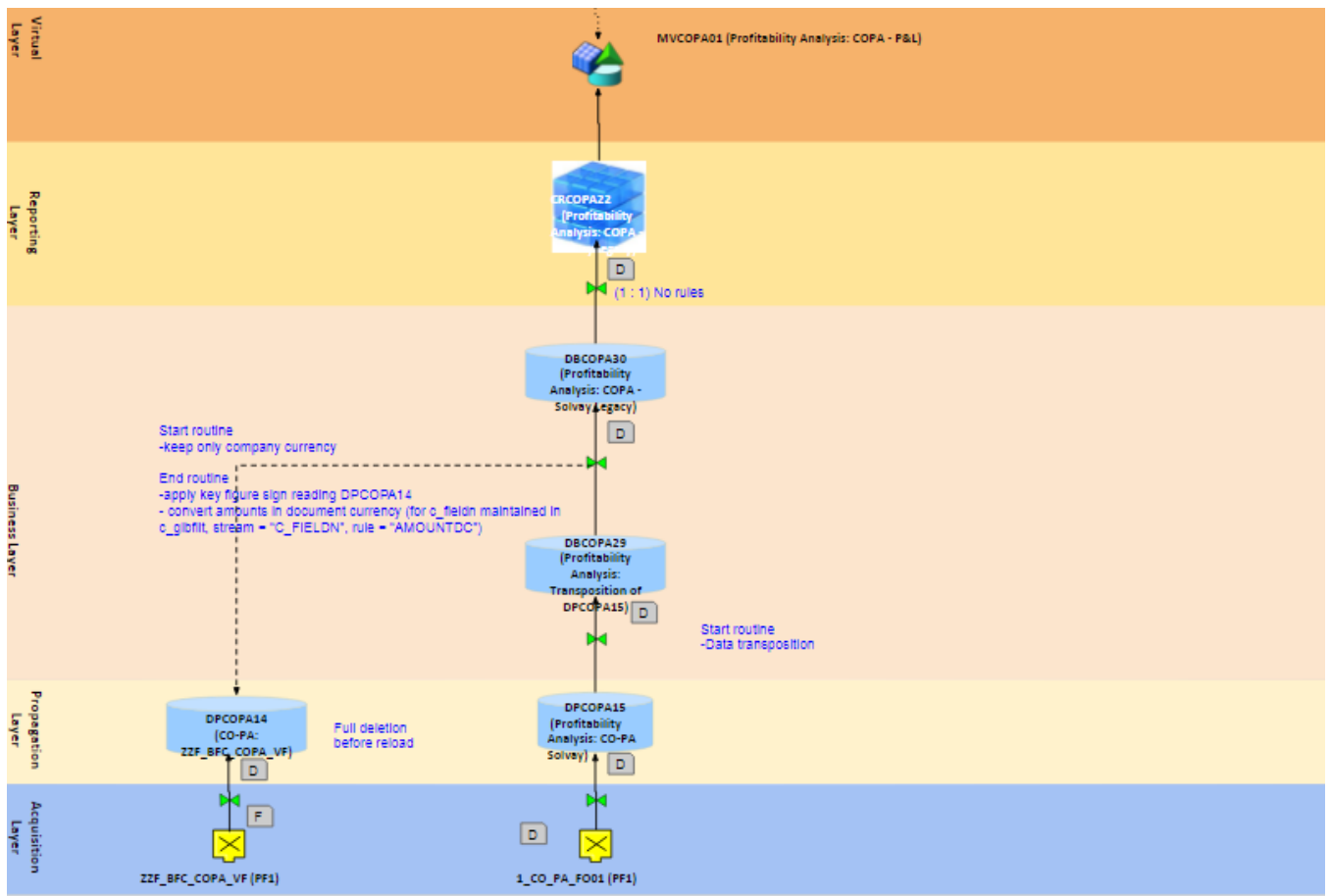
ZZF\_BFC\_SETACCT

(Solway)

Source  
to  
System  
PF1

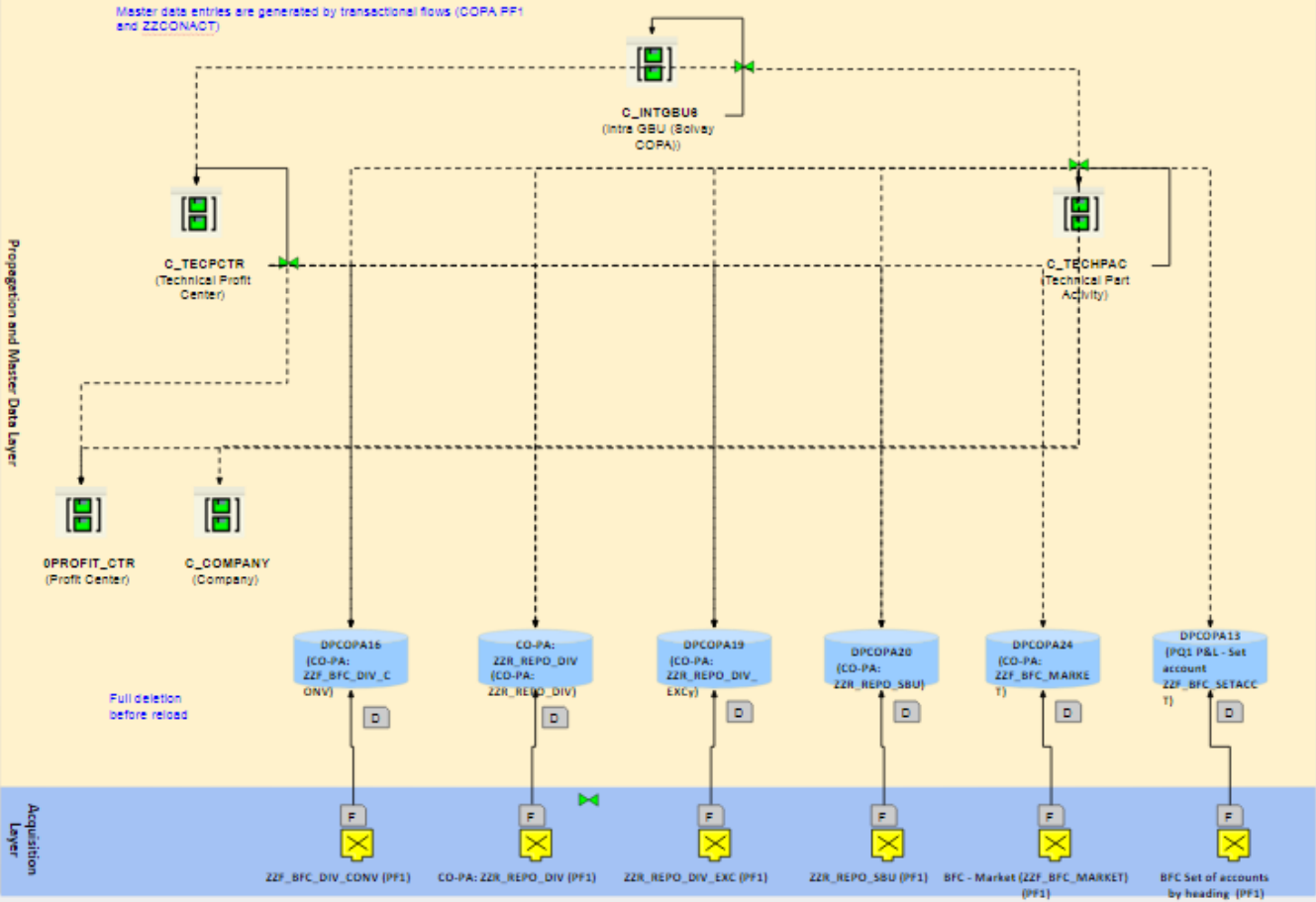
10-07-2014

PF1:



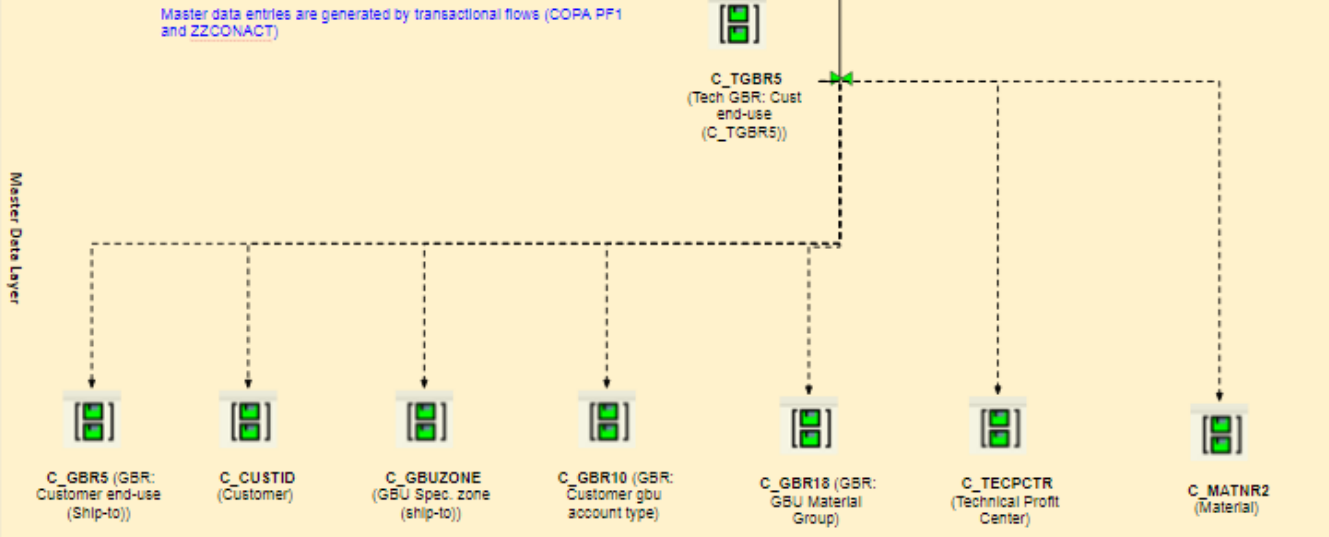
P&L : PF1 technical MD IN WBP SYSTEM (activity)

Master data entries are generated by transactional flows (COPA PF1 and Z2CONACT)



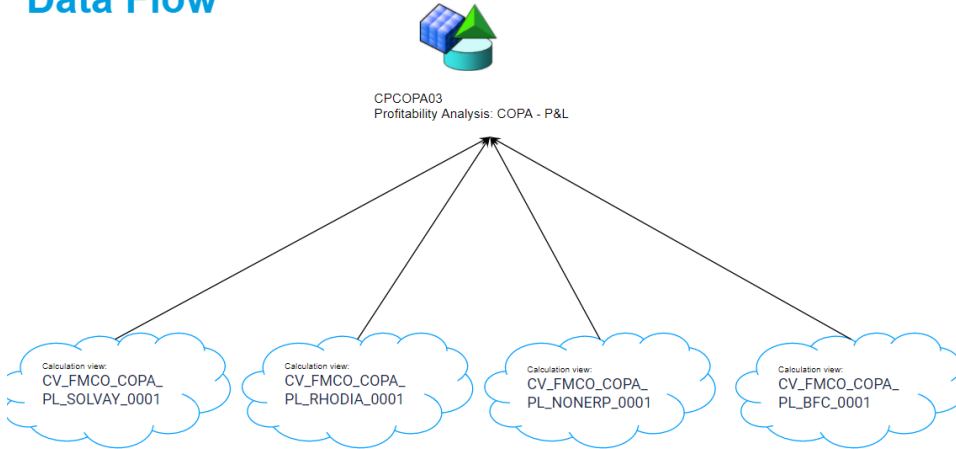
P&L : PF1 technical MD IN WBP SYSTEM (GBR)

Master data entries are generated by transactional flows (COPA PF1 and Z2CONACT)



# CPCOPA03

## Data Flow



More details [here](#).

## General presentation

### Objective of the application

#### P&L

P&L application provides reports fully aligned with BFC structure (BFC Headings) down to REBIT/REBITDA able to analyze P&L starting from the BFC view (Company/Activity) and ability to drill down to Customer Material level.

A profit and loss statement (P&L) is a financial statement that summarizes the revenues, costs and expenses incurred during a specific period of time, usually a fiscal quarter or year.

These records provide information about a company's ability – or lack thereof – to generate profit by increasing revenue, reducing costs, or both.

It was done in 2 phases :

**Phase 1 :** COPA model of Rhodia legacy (RCS)

**Phase 2 :**

- Solvay legacy (PQ1)
- BFC Data
- CICC
- Below Gross Margin
- Non ERP companies

Then, with SPS project, Solvay legacy PQ1 solution was replaced by PF1 flows.

#### IM

Integrated Margin is linked with P&L data and provides BW and BO reports with details of the calculation of the integrated costs

Query Technical Name: BW\_QRY\_MVCOPA01\_0004

**Note :** Don't use the info objects C\_GBR34, C\_PROD, C\_MAGNIT2 from the multi provider : MVCOPA01 in any of the queries built on the Multi provider MVCOPA01 as these objects are linked to only NON-ERP.

Documentation for IM is here:

[Technical Documentation - BW Integrated Margin \(WBP\)](#)

#### Solstice

An additional split (both in the main P&L dataflow and the IM dataflow from WP1) was deemed necessary to collect the Main Specification, Program and associated Market only for the concerned Solstice companies.

Owner : SL Finance Data & Reporting

SL Finance Data & Reporting Manager is [ROLLIER, Charlotte](#)

## Usage information

More than 500 users have access to P&L applications. Those users are worldwide and most of them are controllers.

## History

P&L was done in 2015 and IM in 2016. Solstice split was done in 2019.

## Technical Rules on Workbench

### Functional rules

#### COPA flows

- COPA module is the ancestor of BW
- COPA is divided in "tight" perimeters (in customizing, in VV list, for certain characteristics, for BW data sources) : Operating concern
- The lines of the ERP data (COPA value fields from WP1 system) must be translated in BFC account. This translation should be dynamic.

#### Value Fields

- Value Fields are the lowest key figures in COPA module (For BCS sourcing)
- Value Fields are the central elements of the BFC account determination. Since CROCO project, the determination of the BFC account depends of the value field and also the OECD activity for PF1 COPA flow.
- P&L analysis is based on BFC Account with a detail by Value Field. For now, it is not useful to have an analysis directly by value field

#### Rhodia legacy

- Historic data have been recalculated with the new allocation Value Field / BFC Account
- Historic views are available in BFC (not restated)

The organization determination must be as flexible and as dynamic as possible. We had to consider 2 cases:

- CASE A : COPA line items with Material and Distribution Channel valid
- CASE B : COPA line items with Material empty and/or Distribution Channel empty

#### Solvay legacy data (PQ1 based solution)

- Existing application in PQ1 with a lot of intelligence
- Easier to load from PQ1 than redoing what has already been done - it was a temporary solution and it is replaced with SPS project (P&L with COPA in PF1, go live was on January 2018)

#### BFC Data

- Loaded by flat files
- 3 levels:
  - Version 1: Total P&L
  - Version 2: Interco Sales
  - Version 3 : Third Party

Another DSO for data without version

#### 08/2023 : PO2 Project

BFC are data are now feeded from 2 BFC application (BFC ECO - the existing one and BFC SCO )

BFC SCO will send data from 09/2023

We still have 3 levels at cube level

- Version 1: Total P&L (CRCOPA03)
- Version 2: Interco Sales (CRCOPA04)
- Version 3 : Third Party (CRCOPA05)

But at DSO level

- ECO:
  - Version 1: Total P&L (DBCOPA04)
  - Version 2: Interco Sales (DBCOPA05)
  - Version 3 : Third Party (DBCOPA06)
- SCO:
  - Version 1: Total P&L (ABCOPA11)
  - Version 2: Interco Sales (ABCOPA10)
  - Version 3 : Third Party (ABCOPA12)
- Inside the cube we segregate the information of the three cubes from BFC ECO and BFC SCO identifiable thanks to C\_INFOPRO

| ECO  | SCO  |
|--|--|
| [C_INFOPRO] InfoProvider <ul style="list-style-type: none"> <li>[DBCOPA06] BFC - P&amp;L - Version 3: Third Party</li> <li>[DBCOPA05] BFC - P&amp;L - Version 2: Interco Sales</li> <li>[DBCOPA04] BFC - P&amp;L - Version 1: Total P&amp;L</li> </ul> | [C_INFOPRO] InfoProvi <ul style="list-style-type: none"> <li>[ABCOPA11] BFC - P</li> <li>[ABCOPA10] BFC - P</li> <li>[ABCOPA12] BFC - P</li> </ul> |

**BFC data are used in 1 Core query : BW\_BW\_QRY\_MYCOPA01\_0003**

**For PO2 project the content of BFC amounts (BFC ECO or BFC SCO) are depending**

The conso view (0, 1, 2 or 3)

The Date of analysis (before/After BFC SCO deployment ; before/After Spin Off)

We will receive 2 BFC files (some companies will be in Both) with YTD Legal and YTD Conso

| TO BE | BFC SOLVAY (BFC ECO) |           |         | BFC SCO   |           |         |
|-------|----------------------|-----------|---------|-----------|-----------|---------|
|       | YTD LEGAL            | YTD CONSO | M LEGAL | YTD LEGAL | YTD CONSO | M LEGAL |

**If the month of analysis is before BFC SCO deployment (09/2023)**

|            | BFC comparalson             | <b>BEFORE 09/2023 (&lt;)</b> |                             |                             |                         |
|------------|-----------------------------|------------------------------|-----------------------------|-----------------------------|-------------------------|
| P&L        | Legal                       | Conso SOLVAY                 | Conso ECO                   | Conso SCO                   |                         |
| Conso view |                             | 0                            | 1                           | 2                           | 3                       |
| Scope      | ECO + SCO or ECO or SCO     | ECO + SCO or ECO or SCO      | ECO + SCO or ECO or SCO     | ECO + SCO or ECO or SCO     | ECO + SCO or ECO or SCO |
|            | YTD LEGAL for ALL Companies | YTD CONSO for ALL Companies  | YTD CONSO for ECO Companies | YTD CONSO for SCO Companies |                         |

**If the month of analysis is after BFC SCO deployment (09/2023) BUT before SPIN OFF**

|            |                         |                             |                             |                             |
|------------|-------------------------|-----------------------------|-----------------------------|-----------------------------|
|            | BFC comparaison         | <b>AFTER 09/2023 (incl)</b> |                             |                             |
| P&L        | Legal                   | Conso SOLVAY                | Conso ECO                   | Conso SCO                   |
| Conso view | 0                       | 1                           | 2                           | 3                           |
| Scope      | ECO + SCO or ECO or SCO | ECO + SCO or ECO or SCO     | ECO + SCO or ECO or SCO     | ECO + SCO or ECO or SCO     |
|            | YTD LEGAL               | YTD CONSO for ALL Companies | YTD CONSO for ECO Companies |                             |
|            |                         |                             |                             | YTD CONSO for SCO Companies |

If the month of analysis is after SPIN OFF

|            |                         |                                   |                             |                             |
|------------|-------------------------|-----------------------------------|-----------------------------|-----------------------------|
|            | BFC comparaison         | <b>AFTER spin off (&gt;=2024)</b> |                             |                             |
| P&L        | Legal                   | Conso SOLVAY                      | Conso ECO                   | Conso SCO                   |
| Conso view | 0                       | 1                                 | 2                           | 3                           |
| Scope      | ECO + SCO or ECO or SCO | ECO + SCO or ECO or SCO           | ECO + SCO or ECO or SCO     | ECO + SCO or ECO or SCO     |
|            | YTD LEGAL               | 0                                 | YTD CONSO for ECO Companies |                             |
|            |                         |                                   |                             | YTD CONSO for SCO Companies |

<--- 08/2023 : PO2 Project

### CICC

- Loaded by BFC flat files
- Only for CICC companies (companies in c\_compr MD with landscape = "CICC") or Adjustment companies maintained in c\_glbflit (PL\_BFC\_ADJ/COMPANY)

### Below Gross Margin

- Loaded by BFC flat files, only for companies loaded in Non ERP for the concerned month (companies can move from Non ERP to ERP) when Below Gross Margin is not uploaded by flat file (= only Non ERP system for which a non full flat file is loaded).

### Non ERP companies

- Some companies are in Solvay group but don't use RCS or Solvay ERP : companies belonging to NOVECARE or SODA GBU

### Systems involved

- Rhodia ERP WP1
- Solvay BW PQ1 (PQ1 is the view of the P&L for PF1 data)

- BFC (flat files)
- Flat files for Non ERP

## Organisation

- BFC GBU
- BFC Group of Activities
- BFC Activity

## Technical rules

### P&L WP1

We have 2 steps in the business layer.

From the propagation layer, we transpose data from DPCOPA01 to DBCOPA01.

In DPCOPA01, each value field is in a dedicated key figures. Objective of the transposition, we have 1 key figure and 1 field in key (called Value Field) to identify them.

After the transposition, we split data in 2 target DSO: DBCOPA02 and ABCOPA03.

As we have common rules for both DSO, we use an Info source to have those rules inside an unique transformation.

Transformations on DBCOPA02 DBCOPA02 and ABCOPA03 ABCOPA03 are used to determine the flag intra gbu (C\_INTGBUF). It compares the GBU (Og\_cwwe01\_\_cpfctr1\_2 for DBCOPA02 and c\_tecmat for ABCOPA03) and the partner GBU (c\_tecpara\_\_cpfctr1\_2). It was not possible to use a technical Master Data to fill this requirement as the needed key (the keys that would permit to determine the combination GBU and partner GBU) would have been too long. These loadings are done only once a week.

BFC heading determination: the BFC heading is determined in master data C\_FIELDN using DSO dpcopaa10 (data from WP1 table ZWFAT110).

### Solstice (WP1)

An additional split is done from ABCOPA03 to 2 ADSO: ABCOPA01 and ABCOPA04. ABCOPA01 contains Solstice data and ABCOPA04 contains non-Solstice data. Split is done on a list of Company Code in the DTPs.

Delta load to ABCOPA01 determines the Specification List, Main Specification, Program, Market and Program Percentage for each new entry, using lookups in Master Data C\_ITM\_SD (Main Specification and Specification List) and ADSO ABDPDY01 (Program, Market, Program Percentage).

Delta load to ABCOPA01 cannot be determined solely from new data in ABCOPA03, as we must take into account the updates of the added fields Main Specification, Program, Market, Program Percentage. This requires to know if these values have been changed in the lookup sources. This issue is solved by the field 0RSP\_L\_TSTMP (Time Stamp of Last Change) in ABCOPA03, that is updated by 3 different Delta loads:

- Delta from ABDPDY01: If Program, Market or Program Percentage have been modified/created.
- Delta from ABDPDY02 & from ADPSDAE01: Both ADSOs are used to feed Master Data C\_ITM\_SD, if Main Specification or Specification List are created/changed.

### P&L PF1

We have 2 steps in the business layer.

From the propagation layer, we transpose data from DPCOPA15 to DBCOPA29.

In DPCOPA15, each value field is in a dedicated key figures. Objective of the transposition, we have 1 key figure and 1 field in key (called Value Field) to identify them.

After the transposition, we use a second level of Business layer for other business rules: DBCOPA29 to DBCOPA30

- we apply the sign of the key figures according to DSO DPCOPA14
- we calculate document currency amounts for the key figures maintained under c\_glbfilt (stream = "C\_FIELDN", rule = "AMOUNTDC"): to calculate the document currency amounts, we use the rate stored in the document (rate type "M"), however, it doesn't take into account the conversion factors (TCURF). In order to retrieve these factors to translate correctly the amounts, we use the **remote** Function Module "ZFM\_BW\_EXCHANGE\_RATE\_RFC" that calls in PF1, for all concerned currencies, the function module 'READ\_EXCHANGE\_RATE'. Note that an alternative solution was to load in WBP 'READ\_EXCHANGE\_RATE' results from PF1 for all possible combinations, however, it took a lot of time (the datasource created for this is DTS\_EXCHANGE\_RATE).  
We retrieve the conversion factors for the document creation date => theoretically, the TCURF factors could change during a day, so the factors at the beginning and at the end of the day could be different. If this occurs, a workaround in order to find the correct factors for a document could be to get the rate using 'READ\_EXCHANGE\_RATE' for the creation date and also for the creation date -1 and to use the factors for the day when the rate is the nearer to the document rate.
- Maintained below Global filter code to rectify the issue with the currency conversions (INR - JPY,SGD-JPY,CNY-JPY , THB-JPY & KRW - JPY) for which the amount in company code currency value is wrong in SAP .Due to this issue , Amount in document currency keyfigures K\_AMNTDC & K\_AMNTNDC are showing wrong values in BW.

```

623 | *---Get Global filter data for DBCOPA29 - PF1 TCURF Exchange rate type
624 | *M data is maintained.
625 | clear ls_tcurf_m.
626 | clear LS_C_RULE.
627 | concatenate <result_fields>-doc_currency'- '
628 | <result_fields>-currency'- '
629 | 'M' into LS_C_RULE.
630 | select single * from /BIC/PC_GLBFLT
631 | into ls_tcurf_m
632 | where /BIC/C_STREAM = 'DBCOPA29' and
633 | /BIC/C_RULE = LS_C_RULE and
634 | /BIC/C_GLBFLT = '001' and
635 | OBJVERS = 'A'.
636 |
637 | if sy-subrc NE 0.
638 |     ls_tcurf_m-/bic/c_low = 1.
639 |     ls_tcurf_m-/bic/c_high = 1.
640 | endif.
641 | "applying PF1 TCURF factor from global filter
642 | w_amount = w_amount * ( ls_tcurf_m-/bic/c_low /
643 |     ls_tcurf_m-/bic/c_high ).

```

Global filter data for Stream DBCOPA29 :

| Data Browser: Table /BIC/PC_GLBFLT Select Entries 5 |               |             |               |         |         |             |             |               |            |             |               |
|---|---------------|-------------|---------------|---------|---------|-------------|-------------|---------------|------------|-------------|---------------|
| EB  | /BIC/C_STREAM | /BIC/C_RULE | /BIC/C_GLBFLT | OBJVERS | CHANGED | /BIC/C_DESC | /BIC/C_SIGN | /BIC/C_OPTION | /BIC/C_LOW | /BIC/C_HIGH | /BIC/C_ACTIVE |
|   | DBCOPA29      | JPY-CNY-M   | 001           | A       |         |             | I           | EQ            | 100        | 1           | Y             |
|   | DBCOPA29      | JPY-INR-M   | 001           | A       |         |             | I           | EQ            | 100        | 1           | Y             |
|   | DBCOPA29      | JPY-KRW-M   | 001           | A       |         |             | I           | EQ            | 100        | 1           | Y             |
|   | DBCOPA29      | JPY-SGD-M   | 001           | A       |         |             | I           | EQ            | 100        | 1           | Y             |
|   | DBCOPA29      | JPY-THB-M   | 001           | A       |         |             | I           | EQ            | 100        | 1           | Y             |

Example :

Company Code Currency : KRW

Document Currency : JPY

COPA Document : 33649471

Amount in Document Currency = 742.400 ,Exchange Rate : 1.054,370

Amount in Comp currency should be  $742.400 * 1.054,370 = 782.764288$

But since we have conversion factor 100 maintained in TCURF table for JPY to KRW , in KE24 it's showing as 7.827.643 which is  $782.764288 / 100$ .

Requirement is to convert amount in Currency to Doc currency – KRW to JPY using the exchange rate and store the converted amount in K\_AMNTDC ( Doc Currency ) in the target DSO DBCOPA30

But since the Exchange rate function module ZFM\_BW\_EXCHANGE\_RATE RFC is not considering the factors properly for such kind of cases ( (INR - JPY,SGD-JPY,CNY-JPY , THB-JPY & KRW - JPY) , we are maintaining these cases in Global filter and multiplying the amount with 100 so that the Amount in document currency value matches with KE24 value .

| Data Browser: Table /BIC/ADBOPA3000 Select Entries 484 |              |                |         |               |         |     |               |            |          |         |           |               |                |
|--|--------------|----------------|---------|---------------|---------|-----|---------------|------------|----------|---------|-----------|---------------|----------------|
| EB   | /BIC/C_PABEL | /BIC/C_PAPOSNR | CO_AREA | /BIC/C_VERSN2 | CURTYPE | VTY | /BIC/C_FIELDN | RECORDMODE | FISCYEAR | FISCPER | AMOUNT    | /BIC/K_AMNTDC | /BIC/K_AMNTNDC |
|  | 0033649471   |                | CHEF    | 000           | 10      | 010 | FERTF         |            | 2020     | 2020001 | 2,015,940 | 0             | 0.000          |
|  | 0033649471   |                | CHEF    | 000           | 10      | 010 | FERTP         |            | 2020     | 2020001 | 2,910,785 | 0             | 0.000          |
|  | 0033649471   |                | CHEF    | 000           | 10      | 010 | QUANTITY      |            | 2020     | 2020001 | 0         | 0             | 0.000          |
|  | 0033649471   |                | CHEF    | 000           | 10      | 010 | VVF00         |            | 2020     | 2020001 | 1,006,614 | 0             | 0.000          |
|  | 0033649471   |                | CHEF    | 000           | 10      | 010 | VVINT         |            | 2020     | 2020001 | 7,827,643 | 742,400       | 742,400.000    |

Handled all the currency scenarios as below in End Routine .

Step 1 : Get data from TCURX for CompanyCode Currency ,If currency found update as '0' else 1

```

565     select single * from tcuxr
566         into ls_tcuxr
567         where currkey = <result_fields>-currency.
568     if sy-subrc eq 0 .
569         "If currency found, set 0 or 1 as per TCURX
570         ls_currbool-compcurr = 0.
571
572     else.           "If currency NOT found, set as 1
573         ls_currbool-compcurr = 1.
574     endif.
575     clear ls_tcuxr.

```

Step 2 :Get data from TCURX for Document Currency ,If currency found update as '0' else 1

```

578     select single * from tcuxr
579         into ls_tcuxr
580         where currkey = <result_fields>-doc_currency.
581     if sy-subrc eq 0 .
582         "If currency found, set 0 or 1 as per TCURX
583         ls_currbool-doccurr = 0.
584     else.           "If currency NOT found, set as 1
585         ls_currbool-doccurr = 1.
586     endif.
587     clear ls_tcuxr.

```

Step 3 :I identify HIGH and LOW using TCURX Info

\*--1:HIGH indicates there are decimals in the currency like:EUR,USD

\*--0:LOW indicates there are No decimals in the currency like:JPY,ITL,KRW

```

591     IF NOT <result_fields>-currency = <result_fields>-doc_currency.
592     case ls_currbool.
593     when '00'.  "LOW CCcurr ==>LOW DocCurr
594     "LOW CCcurr ==>HIGH DocCurr | Only external conversion of CCcurr
595     call function 'BAPI_CURRENCY_CONV_TO_EXTERNAL'
596     exporting
597         currency           = <result_fields>-currency
598         amount_internal    = w_amount
599     importing
600         amount_external   = w_amount.
601     when '11'.  "HIGH CCcurr ==>HIGH DocCurr
602     * Do Nothing
603     when '01'.
604     "LOW CCcurr ==>HIGH DocCurr | Only external conversion of CCcurr
605     call function 'BAPI_CURRENCY_CONV_TO_EXTERNAL'
606     exporting
607         currency           = <result_fields>-currency
608         amount_internal    = w_amount
609     importing
610         amount_external   = w_amount.
611
612     when '10'.
613     "HIGH CCcurr ==>LOW DocCurr | Only internal conversion input DocCurr
614     call function 'BAPI_CURRENCY_CONV_TO_INTERNAL'
615     exporting
616         currency           = <result_fields>-doc_currency
617         amount_external    = w_amount
618         max_number_of_digits = 22
619     importing
620         amount_internal    = w_amount.
621
622     endcase.

```

Above cases details are given below

| Cases | Currency in TCURX | Document currency in TCURX | Action in the result conversion | Comment                        |
|-------|-------------------|----------------------------|---------------------------------|--------------------------------|
| 00    | Yes               | Yes                        | External conversion of CCcurr   | Currency <-> Document Currency |
| 11    | No                | No                         | No Action                       | Currency <-> Document Currency |

|    |     |     |                                 |                               |
|----|-----|-----|---------------------------------|-------------------------------|
| 01 | Yes | No  | External conversion of CCcurr   | Currency <> Document Currency |
| 10 | No  | Yes | Internal conversion of DocCcurr | Currency <> Document Currency |

Step 4 : Maintained below Global filter code to rectify the issue with the currency conversions (INR - JPY,SGD-JPY,CNY-JPY , THB-JPY & KRW - JPY) for which the amount in company code currency value is wrong in SAP .Due to this issue ,Keyfigures Amount in document currencies K\_AMNTDC & K\_AMNTNDC are showing wrong values in BW.

```

623 *---Get Global filter data for DBCOPA29 - PF1 TCURF Exchange rate type
624 *M data is maintained.
625 clear ls_tcurf_m.
626 clear LS_C_RULE.
627 concatenate <result_fields>-doc_currcy'- '
628 <result_fields>-currency'- '
629 'M' into LS_C_RULE.
630 select single * from /BIC/PC_GLBFLT
631 into ls_tcurf_m
632 where /BIC/C_STREAM = 'DBCOPA29' and
633 /BIC/C_RULE = LS_C_RULE and
634 /BIC/C_GLBFLT = '001' and
635 OBJVERS = 'A'.
636 if sy-subrc NE 0.
637 ls_tcurf_m-/bic/c_low = 1.
638 ls_tcurf_m-/bic/c_high = 1.
639 endif.
640 "applying PF1 TCURF factor from global filter
641 w_amount = w_amount * ( ls_tcurf_m-/bic/c_low /
642 ls_tcurf_m-/bic/c_high ).
643

```

Step 5 : APPLY CONVERSION RATE TO CALCULATE AMOUNT IN DC

```

644 * APPLY CONVERSION RATE TO CALCULATE AMOUNT IN DC
645 IF <result_fields>-gt_tkrate <= 0.
646 <result_fields>-/bic/k_amntdc = w_amount * abs (
647 <result_fields>-gt_tkrate ).
648 ELSEIF <result_fields>-gt_tkrate > 0.
649 <result_fields>-/bic/k_amntdc = w_amount / abs (
650 <result_fields>-gt_tkrate ).
651 ENDIF.
652

```

Step 6 : Apply the correct factors using exchange rate function module .

```

655 READ TABLE itb_h_exchange_rate ASSIGNING <fs_exchge_rate>
656 WITH TABLE KEY
657 zdate = <result_fields>-createdon
658 zforeign_curr = <result_fields>-currency
659 zlocal_curr = <result_fields>-doc_currcy
660 zrate_type = c_rate_type.
661
662 *If no result => ratio 1:1
663 IF sy-subrc = 0.
664
665 w_amount = <result_fields>-/bic/k_amntdc.
666 <result_fields>-/bic/k_ffact =
667 <fs_exchge_rate>-zforeign_factor.
668 <result_fields>-/bic/k_tfact =
669 <fs_exchge_rate>-zlocal_factor.
670
671 w_amount = w_amount *
672 <result_fields>-/bic/k_tfact /
673 <result_fields>-/bic/k_ffact.
674
675 <result_fields>-/bic/k_amntdc = w_amount.
676
677 ENDIF.
678 ELSE.

```

Step 7 : Apply external format to the amount without dimension K\_AMNTNDC

```

693 CALL FUNCTION 'BAPI_CURRENCY_CONV_TO_EXTERNAL'
694 EXPORTING
695 currency = <result_fields>-doc_currcy
696 amount_internal = w_amount
697 IMPORTING
698 amount_external = w_amount.
699
700 <result_fields>-/bic/k_amntndc = w_amount.
701
702 ENDIF.
703
704 ENDOLOOP.

```

#### BFC heading determination:

- in IM flow (ZZCONACT), the BFC heading is determined in master data C\_FIELDN (=value field) using DSO dpcopa14 (data from PF1 table ZZF\_BFC\_COPA\_VF) for the OECD activity = #.
- in COPA flow, the BFC heading is determined in master data C\_FIELDN2 (=value field and OECD activity) using DSO dpcopa14 (data from PF1 table ZZF\_BFC\_COPA\_VF) depending of the OECD activity (if no correspondance on the activity, take by default the BFC heading for activity = #). The BFC heading attribute of the MD c\_plelmn2 does not take into account the OECD activity, it is available in the report as the "Initial Heading".

#### WBS element determination:

The standard WBS element from COPA, for CROCO billing types, is always empty. In this case, the WBSE is retrieved in PF1 table Z1F\_CRC\_INV (Z1F\_CRC\_INV-PSPNR), during COPA extraction, searching on the Sales order item (VGBEL/VGPOS). It is not possible to found several WBSE for the same sales order item. This enhancement is limited to record type "F" and to CROCO billing types maintained in TVARVC parameter ZBW\_FKART\_CRC.

Z1F\_CRC\_INV-PSPNR (8 characters) must be convert into external format (POSID -> 24 characters) for BW (key of c\_wbs\_el2), we use the function "SBW\_PRPS8\_TO\_PRPS24" for mass translation.

#### The following technical MD are used in these flows:

-c\_tecpct2 (reference c\_tecpctr) - Technical Profit Center:

This object is used to determine dynamically the organisational structure (activity1, GBU...).

It follows the business rules in COPA, these rules have changed after SPS project and the old model technical MD, c\_techba, is now used for historical data only (before 2018).

cf. part "8.7 Organisation structure" of the specification document: <https://drive.google.com/file/d/19tbW1LlSkpgOQHsJAH1Aby85wZYjmRsKc6BBtE5SVM/view>

The entries in this MD are generated only by the SID generation in transactional flows then transformation from the MD to itself determines the attributes.

-c\_techpac - Technical Part Activity:

This object is used to determine dynamically the partner organisational structure.

It follows the business rules in COPA, these rules have changed after SPS project and the old model technical MD, c\_techpba, is now used for historical data only (before 2018).

cf. part "8.8 Partner Organisation structure" of the specification document: <https://drive.google.com/file/d/19tbW1LlSkpgOQHsJAH1Aby85wZYjmRsKc6BBtE5SVM/view>

The entries in this MD are generated only by the SID generation in transactional flows then transformation from the MD to itself determines the attributes.

The MD is compounded with the Partner activity. This field is used for the partner organisation structure determination in the COPA flow, not in IM flow, and it allows to keep the Partner activity determinated in the document.

-c\_intgbu7 (reference c\_intgbu6) - Intra GBU (Solvay COPA):

This object is used to determine dynamically the intra GBU flag, reading the GBU and partner GBU in c\_tecpctr and c\_techpac.

The entries in this MD are generated only by the SID generation in transactional flows then transformation from the MD to itself determines the attributes.

The MD is compounded with the Partner activity. This field is used for the partner organisation structure determination in the COPA flow, not in IM flow, and it allows to keep the Partner activity determinated in the document.

-c\_tgbr5:

This object is used to determine dynamically the GBR axis.

cf. specifications: <https://drive.google.com/file/d/1AL5UzU3olFqyzMAwU9Dv6Ko6SNWQcF6Z992nB5WxhAU/view>

The entries in this MD are generated only by the SID generation in transactional flows then transformation from the MD to itself determines the attributes.

## **BFC**

### **08/2023 : PO2 Project changes**

BFC Data comes from extraction sent by Marie-Yolande KUCZYNSKI

- Every day between 3rd and 20th day + 25th day of the month at 3:30AM (FR)
- Format: txt
- Directory: /BW/exploit/PandL
- Loaded files:
  - BFC\_vs\_BW\_PandL.txt
  - **BFC\_vs\_BW\_PandL\_SCO.txt**

The file is loaded by Process chain BFC: Global Process Chain (PC\_COPA\_PL\_12). This one is a subchain called in metachains:

- COPA: PL Global Process Chain (*PC\_COPA\_PL\_GLOBAL*), called in Daily Process chain (*RSP\_DAILY*). So it is executed everyday (except saturday and sunday), even during closing period, between 1H45 and 2H30.
  - COPA: PL - 2 extra loadings during the closing period - P&L (*PC\_COPA\_PL\_22*). Chain *PC\_COPA\_PL\_12* is at the end of the process chain. It is executed only during closing months, between 2nd and 5th closing day. In fact it depends on value of global filters:
    - Rule *RUN\_CAL\_EX*, Stream *PL\_COPA*, Active = 'Y'. Calendar to use (=50 for Solvay working days)
    - Rule *RUN\_PER\_EX*, Stream *PL\_COPA*, Active = 'Y'. Days on which process chain is executed. Now between 2 and 5.
    - Rule *CHECK\_LOAD*, Stream *PL\_ELEMENT*, Low = *PL*, Active = 'Y'. Hours on which proces chain should be executed (in the period indicated by the 2 variables above). Now: 08H ,13H ,15H, 20H.
- Notice that process chain is scheduled for every hours, (except saturday and sunday). But execution of loadings is done with enhanced decision tree, according to those variable values.

The file loaded by cancel and replace (using recordmode to delete active records) to propagation layer. For this part, we don't respect LSA methodology.

All business rules calculated between propa DSO *DPCOPA02* and Info source

- Easier for maintenance
- Very simple business rules
- Only exclusion of data between info source and business layer

For business and reporting layers, we load by Delete + Full.

From the BFC File (**BFC ECO or BFC SCO**) , we also load 2 other targets :

- CICC system and adjustment companies
- Companies not working on ERP : only a part of P&L

Those targets are in business layer.

**(BFC ECO or BFC SCO) we manage in C\_GLBFLT (Stream PL\_BFC\_ADJ) the authorization scope allowed by Origin DSO**

**For instance Cube CRCOPA08**

Table: /BIC/PC\_GLBFLT

|                          | /BIC/C_STREA | /BIC/C_RULE | /BIC/... | OBJVERS | CI/BIC/C_DESC                                   | /BIC/C_SIGN | /BIC/C_OPTION | /BIC/C_LOW | /BIC/C_HIGH | /BIC/C_ACTIVE |
|--------------------------|--------------|-------------|----------|---------|---|-------------|---------------|------------|-------------|---------------|
| <input type="checkbox"/> | PL_BFC_A     | ABCOPA14    | 001      | A       | Authorize Login Scope in the Cube CICC CRCOPA08 | I           | EQ            | ECO        |             | N             |
| <input type="checkbox"/> | PL_BFC_ADJ   | ABCOPA14    | 002      | A       | Authorize Login Scope in the Cube CICC CRCOPA08 | I           | EQ            | SCO        |             | Y             |
| <input type="checkbox"/> | PL_BFC_ADJ   | DBCOPA12    | 001      | A       | Authorize Login Scope in the Cube CICC CRCOPA08 | I           | EQ            | ECO        |             | Y             |
| <input type="checkbox"/> | PL_BFC_ADJ   | DBCOPA12    | 002      | A       | Authorize Login Scope in the Cube CICC CRCOPA08 | I           | EQ            | SCO        |             | N             |

**Only Company with authorization scope ECO are allowed from DSO DBCOPA12**

**Only Company with authorization scope SCO are allowed from DSO ABCOPA14**

**For instance Cube CRCOPA07**

Table: /BIC/PC\_GLBFLT

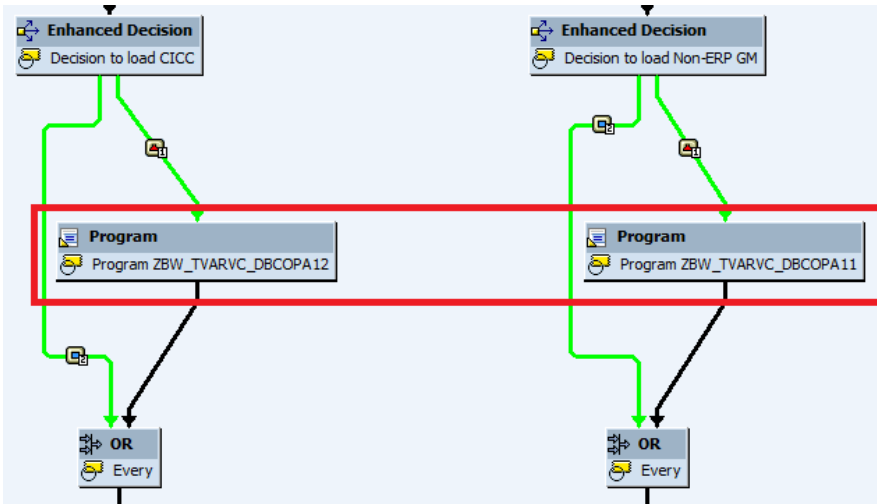
|                          | /BIC/C_STREA | /BIC/C_RULE | /BIC/... | OBJVERS | CI/BIC/C_DESC                                      | /BIC/C_SIGN | /BIC/C_OPTION | /BIC/C_LOW | /BIC/C_HIGH | /BIC/C_ACTIVE |
|--------------------------|--------------|-------------|----------|---------|--|-------------|---------------|------------|-------------|---------------|
| <input type="checkbox"/> | PL_BFC_ADJ   | ABCOPA13    | 001      | A       | Authorize Login Scope in the Cube NON ERP CRCOPA07 | I           | EQ            | ECO        |             | N             |
| <input type="checkbox"/> | PL_BFC_ADJ   | ABCOPA13    | 002      | A       | Authorize Login Scope in the Cube NON ERP CRCOPA07 | I           | EQ            | SCO        |             | N             |
| <input type="checkbox"/> | PL_BFC_ADJ   | DBCOPA11    | 001      | A       | Authorize Login Scope in the Cube NON ERP CRCOPA07 | I           | EQ            | ECO        |             | Y             |
| <input type="checkbox"/> | PL_BFC_ADJ   | DBCOPA11    | 002      | A       | Authorize Login Scope in the Cube NON ERP CRCOPA07 | I           | EQ            | SCO        |             | Y             |

**Company with authorization scope ECO and SCO are coming from DBCOPA11**

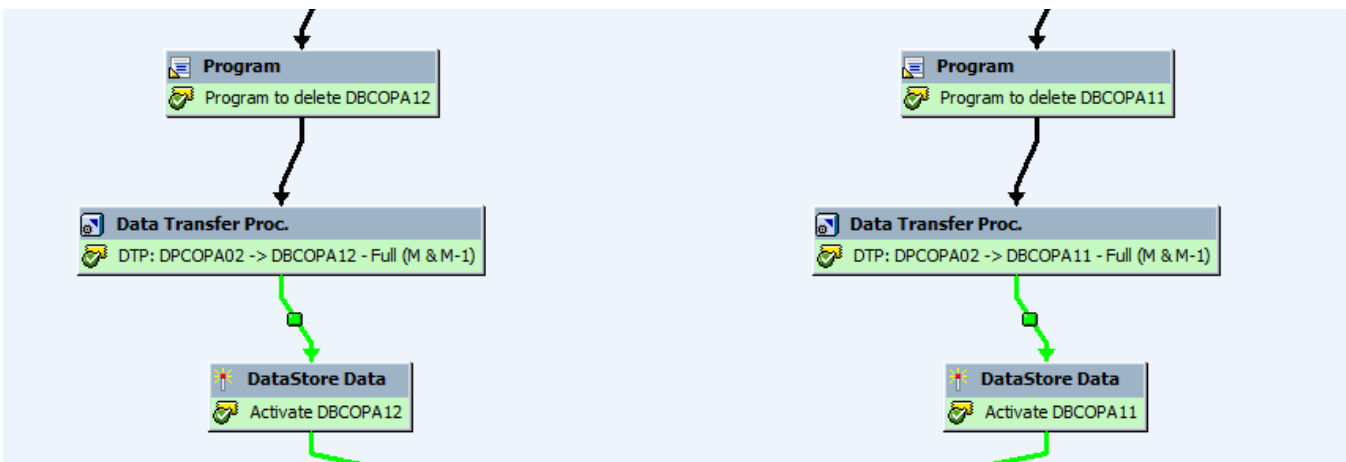
**Those parameters will allow to manage the period BEFORE BFC SCO ; Between BFC SCO -> SPIN OFF and after SPIN OFF**

We load them by Delete + Full for current and previous months :

determination in process chains to update TVARVC table



We do selective deletion using programs and loading with selections in DTP



The time reference could be changed manually. There is a written procedure for that

The reporting layer is loaded by deletion and full loading.

Adjustment companies and CICC companies shared the same flow. The source system has to be determined:

- CICC companies : companies in c\_compprs with landscape = "CICC" and conso method = "10" and "30" => source system is PI1\_020
- Adjustment companies: PRS company code maintained in c\_glbflit (stream = "PL\_BFC\_ADJ", rule = "COMPANY") => the source system is obtained from c\_compprs MD, the read of the MD is restricted to the landscape listed in c\_glbflit (stream = "PL\_BFC\_ADJ", rule = "LANDSCAPE").

This flow is restricted to the magnitude nature 0LIA01 for CICC and 1RET90 (maintained in c\_glbflit PL\_BFC\_ADJ/NATMAG) for Adjustment companies.

## Non-ERP

We needed a solution for companies not working on ERP. We have created a specific transaction : **ZPL\_FILE**

The transaction is based on program : **ZBW\_PL\_PC**

Documentation about this transaction :

[https://docs.google.com/document/d/1gF426ok7VvnF1-idi\\_j\\_FCsMt7HMYQuY4LiN34CseSZs/edit](https://docs.google.com/document/d/1gF426ok7VvnF1-idi_j_FCsMt7HMYQuY4LiN34CseSZs/edit)

With this transaction, user can load excel file for

- Customer master data
- Material master data
- Non-ERP transactional data

This program will save the file from user upload to format filename + upload time + user ID in folder /exploit/BW/PandL

and copy to the constant files basing on user selection what the data is updated to

- customer\_master\_data.csv
- material\_master\_data.csv
- non-erp\_data.csv

Example of user manual to upload non-ERP file

Dataflow :

[https://docs.google.com/presentation/d/1fmDajNiJ7SF12m8K\\_ytJgScvxoamMcEnUCVP7-S1d8w/edit](https://docs.google.com/presentation/d/1fmDajNiJ7SF12m8K_ytJgScvxoamMcEnUCVP7-S1d8w/edit)

Process chain:

- PC\_COPA\_PL\_06
- PC\_COPA\_PL\_07
- PC\_COPA\_PL\_08

The transaction available in SOLIA portal. For information, it's better to use IE and not Chrome

We have created a new authorization object (C\_SRSYST) to be sure that users can only load data for companies they have access to.

We test user's authorizations with **DPAUTH01** DSO

For master data, we can display content of master data in the screen and also save it in an excel file

For master data and transactional data, user can load excel file.

We control content of the file to be sure that there is no error (missing field or incorrect value)

Once data is loaded:

- Save file in csv in /BW/exploit/BW/PandL
- Execute process chain
  - By event
  - Load file to PSA
  - Manage "delta queue" is several loadings at the same time
- Another process chains to load from PSA to BW Info provider
  - 1 for Master data
  - 1 for DSO and cubes
  - Process chain runs 3 times a day (managed in Global filter master data)

Link to the functional document:

Link to the files description:

**Profit Center check:**

As per the business requirement, program do lot of validations before loading the data. As part of this, For few source systems, there should not be profit center check. Where as for few other source systems, there must be a check for profit center (it should check against the profit center master data). The new source systems can be added into that list.

To have this functionality, program is modified and introduced global filter.

| Stream    | Rule | Counter | Global Filter Descri | Sign | Option | Low     | Hight | Active |
|-----------|------|---------|----------------------|------|--------|---------|-------|--------|
| ZBW_PL_PC | NERP | 1       | Non ERP Syststems    | I    | EQ     | NERP001 |       | Y      |
| ZBW_PL_PC | NERP | 2       | Non ERP Syststems    | I    | EQ     | NERP002 |       | N      |
| ZBW_PL_PC | NERP | 3       | Non ERP Syststems    | I    | EQ     | NERP003 |       | N      |
| ZBW_PL_PC | NERP | 4       | Non ERP Syststems    | I    | EQ     | NERP004 |       | N      |
| ZBW_PL_PC | NERP | 5       | Non ERP Syststems    | I    | EQ     | NERP005 |       | N      |
| ZBW_PL_PC | NERP | 6       | Non ERP Syststems    | I    | EQ     | NERPCYT |       | Y      |

NERP system with Y No profit center

NERP system with N Profit center is mandatory & it checks the profit center against master data

In future, based on the business decision, by controlling the active parameter to Y/N for each system, we can handle whether profit center check is required or not.

This change is handled as part of UC#400005270

**Currency check:**

The currency is retrieved from c\_compprs where c\_compprs\_\_company = c\_company in the file during the integration by the transaction ZPL\_FILE. An error is raised if the currency can't be determined.

**Full flat file check:**

Using c\_glbflit parameter (steam = "FULLFF", rule = "NERP"), we control the list of source systems for which a full flat file is required:

| Stream | Rule | Counter | Global Filter Descri                 | Sign | Option | Low     | High | Active |
|--------|------|---------|--------------------------------------|------|--------|---------|------|--------|
| FULLFF | NERP | 1       | NON ERP SOURCE SYSTEM FULL FLAT FILE | I    | EQ     | NERPCYT |      | Y      |

When a full flat file is expected, that means below gross margin part should not comes from BFC but from the file uploaded using ZPL\_FILE. The key figures only in full flat file are maintained in the structure ZNERP\_FF\_KF and a warning is raised if none of those key figures is filled. It is forbidden to fill one of those key figures if the source system is not in the c\_glbflit list.

Full flat file information is kept under the propagation DSO (DPCOPA03) using infoObject c\_fullff = "X".

**MD Company update:**

The MD company is updated for Non ERP source system from the company and the trading partner in the flat file.

All attributes are retrieved from MD PRS company (c\_compprs). The rules are the same for the company and the trading partner, a rule group "Partner" was created to process them in the same transformation:

**Display Transformation**

Transformation: TRFN: DTS\_DPCOPA03\_0001 -> C\_COMPANY

Source: Non-ERP Data (DTS\_DPCOPA03\_0001)

Target: Company (C\_COMPANY)

Version: Active

Active Version: Executable

Rule Group: Partner

| Posi | Ke | Field    | Descript.           |
|------|----|----------|---------------------|
| 1    |    | LOGSYS   | Source System       |
| 2    |    | CAIMONTH | Calendar Year/Month |

**Problem with old BFC company code:** If the BFC company in the file has no correspondance in c\_compprs, it is certainly because the file has the old BFC company code => we must use the current BFC company code even for historical data upload. For instance, BFC company code 7989 must be used instead of 7988:

**Characteristic C\_COMPPRS - maintain master data: List**

Data Records to be Edited

| PRs Company code | Chart of a | Company | Country | Currency | Credit Con | Fiscal Yea | Srcs Sys. |
|------------------|------------|---------|---------|----------|------------|------------|-----------|
| 7988             | COCA       | 7989    | KR      | KRW      | SOLV       | K4         | PRS_020   |

**IM valuation for Non ERP entries in P&L flows :**

The goal is to value IM Cost for NON ERP flow using WP1 Material IM Cost unit (for a restricted list of companies); if no correspondance can be found, current business rules is applied (IM Costs = Standard Costs)

[Link to the functional document](#)

BW implementation :

|   |             |
|---|-------------|
| IM - NON-ERP - Data                       | DBCOPA27    |
| TRFN: DBCOPA09 -> DBCOPA27                | 0PZMAL5ESI  |
| NON-ERP - Data: Transposition of DPCOPA03 | DBCOPA09    |
| TRFN: DPCOPA03 -> DBCOPA09                | 0KEV735W30  |
| NON-ERP - Data                            | DPCOPA03    |
| TRCS IA_COPA_03 -> ODSO DPCOPA03          | 00U93WHG5   |
| TRFN: DTS_DPCOPA03_0001 PC_FILE -> DP     | 0P4PLICPU7I |
| TRFN: ODSO DPCOPA03 -> ODSO DPCOPA0       | 0FDVA8HZZ2  |

In "start routine" of the transformation TRFN: DBCOPA09 -> DBCOPA27, for a company list defined in the master data C\_GLBFIILT (See after below).

We read the DSO of the integration margin ODS\_PCP4 with the specific key.

In case we find a matching entry with the requested KPI different from 0, we create a new line by adjusting the amount and the Magnitu account as follows:

- C\_MGN\_ACC = R1540C / 0AMOUNT = Qty VV04 \* Integrated variable Cost Unit (C\_AMT\_CP) \*-1/ Lot Size
- C\_MGN\_ACC= R1290C / 0AMOUNT = Qty VV04\* Integrated Duty costs (K\_INTDUT) \*-1/ Lot Size
- C\_MGN\_ACC = R1291C / 0AMOUNT = Qty VV04\* KeyFigure Integrated Transport Cost K\_INTFRG \*-1/ Lot Size
- C\_MGN\_ACC = R2549C / 0AMOUNT = Qty VV04\* Integrated CNP part (C\_MVR\_CNP) \*-1 / Lot Size

```
* APPEND FOR EACH RULES

IF <fs_pcp4>-/bic/c_amt_cp IS NOT INITIAL AND
<fs_pcp4>-/bic/c_amt_cp <> 0 AND
<fs_pcp4>-/bic/c_amt_cp <> '0.00' AND
<fs_pcp4>-/bic/k_lotSize <> 0.
wa_source_package-/bic/C_MGN_ACC = 'R1540C'.
wa_source_package-amount = -1 *
( wa_source_package-g_qvva01 * w_c_amt_cp ) / w_lotsize.
W_FLAG = 1.
COLLECT wa_source_package INTO it_source_package.
ENDIF.

IF <fs_pcp4>-/bic/k_intdut IS NOT INITIAL AND
<fs_pcp4>-/bic/k_intdut <> 0 AND
<fs_pcp4>-/bic/k_intdut <> '0.00' AND
<fs_pcp4>-/bic/k_lotsize <> 0.
wa_source_package-/bic/C_MGN_ACC = 'R1290C'.
wa_source_package-amount = -1 *
( wa_source_package-g_qvva01 * w_k_intdut ) / w_lotsize.
W_FLAG = 1.
COLLECT wa_source_package INTO it_source_package.
ENDIF.
```

Unit and currency Conversion :

In case the above calculation is applied be careful to standardize the units and currency between the two sources via the updated function module :

- Z\_MD\_CONVERT\_MATERIAL\_UNIT3
- Z\_CONVERT\_CURRENCY

Master Data C\_GLBFIILT - Global Filter :

The list of companies can be changed with the Master Data global filter with the following parameters :

| Global Filter Stream (Application) | "Global Filter Rule" | "Global Filter" | Global Filter Active | Global Filter Description | Global Filter High Value | Global Filter Low Value | Global Filter Option | Global Filter Sign |
|------------------------------------|----------------------|-----------------|----------------------|---------------------------|--------------------------|-------------------------|----------------------|--------------------|
| CO_NONERP                          | COMPCode             | 1               | Y                    | Company Code              |                          | 07735                   | EQ                   | E                  |

**PQ1**

**PQ1 flows are kept only for historical data, they are replaced by PF1 flows since 01.2018!**

## Glossary

PCA: Profit Center Accounting  
GM: Gross-Margin

## Presentation

We needed a solution to get the P&L data for Solvay legacy.

- part of data are in GM Flow at detailed level loaded from a ZZ program
- rest of data are in PCA flow at aggregated level
- data are merged at multiprovider level, excluding duplicate data at business layer level

## Specific rules

We synchronize process chain between PQ1 and WBP systems:

- WBP PCA **PC\_COPA\_PL\_17** is executed from PQ1 **ZZKPCA\_PL\_TR** and **ZZKPCA\_PL\_TR\_2**
- WBP GM **PC\_COPA\_PL\_23** is executed from PQ1 **ZZCONEXIA\_04**
- WBP C\_TECHSEM **PC\_COPA\_PL\_14** and TECHBA / TECHPBA are executed from PQ1 **ZZF\_MD\_BFC\_PL**

Key figure aggregation : Overwrite in WBP and Summation in PQ1

DSO keys are identical in PQ1 and WBP

Aggregation is done during transformation between DSO and Cube

P&L Element attributes

- Determined from ZFC-PL hierarchy for C\_PLGRP (P&L Group)
  - P&L Group is the father node of P&L Element
  - When P&L Element is out of hierarchy (no P&L Group), the default P&L Group is ZZ\_99999 (these values need to be updated by business in hierarchy)
- From dpcopa13 DSO for c\_mgn\_acc (BFC Account) and sign

C\_TECHBA and C\_TECHPBA attributes are determined by reading OG\_CWWE01 attributes

Sales view:

The distribution channel and sales organisation in PQ1 flow is determined, depending of the customer and business area, reading the DSO DPCOPA34. It was updated by a flat file based on PQ1 combinations (the link customer / business area sales organisation is not unique, so this Business rule was estimated to be correct at 98%).

The file loaded in WBP was stored the following directory: <https://drive.google.com/drive/folders/1sPk5Jh8nJBNVeYIV2dX2yOB23XDQCjyU>

GBU: the GBU in the reporting is the attribute of c\_techba. The GBU stored in the DSO from the Business transformation layer is also the attribute of c\_techba (replaced between propagation and business layer) and not the GBU from PQ1 which is linked to the business area in ZZCONACT.

Some objects in the DSO, as the GBU, the division and material group, are stored instead of being determined dynamically. It was required in order to determine some attributes (GBR axis or sales employee) in the reporting and it was considered not necessary to develop a more complex solution for this historical data flow.

## GM Flow

Classic delta loading is currently not possible in Solvay side due to cumulated key figure:

after delta infopackage ran, the list of companies in the PSA is updated in TVARVC parameter PL\_TVARVC\_COMPANY\_GM by the program Z\_UPDATE\_COMP\_TVARVC\_GM in Process chains. Moreover, the calmonth in the PSA is read in a decision form in the Process Chain and updated in TVARVC parameter PL\_TVARVC\_CALMONTH\_GM => the Process chain allow only to load one month, if there is several month in the PSA, the loads are aborted.

In order to be sure to have all data concerning the companies/month in the delta, a full infopackage is then executed using the companies in parameter PL\_TVARVC\_COMPANY\_GM and the calmonth in PL\_TVARVC\_CALMONTH\_GM.

Before, to load each target in this flow, a selective deletion is done on the companies in the parameter PL\_TVARVC\_COMPANY\_GM and the month in PL\_TVARVC\_CALMONTH\_GM.

The GM flow works with expert routines:

There is a simple ABAP to determine Source system, /BIC/C\_PCOMPAN and /BIC/C\_COMPPRS and a more complex ABAP to transpose Source Key Figure into Z\* P&L Elements:

- Read table c\_keyfigr and loop on each value
- Uses field symbol to assign Key Figure source field and Unit source field
- Depending on c\_ratioim (Ratio Type) value, we have 3 different cases:

- X means that key figure is assigned to 0AMOUNT and will be used in main P&L query
- Q means that key figure is assigned to invoice quantity (G\_QVVA01)
- Empty value means that corresponding key figure will be loaded in K\_AMNTDC (Amount in DC)

### PCA Flow : DPCOPA11 -> DBCOPA15

There is an ABAP Rule to determine Sign, C\_PCOMPRS and Logical System (simple rules)  
Be aware that data are filtered on PQ1 side to load only profit center:

- S\*
- D\*
- SCHEF\* (redundant)
- Note that a security filter has been added to DTP on WBP side

### PCA Flow : DBCOPA15 -> DBCOPA14

There is a start Routine used to exclude value. It was a functional need to have all value for reporting in one DSO DBCOPA15 and filtered value in DSO DBCOPA14.

## Integrated Margin (IM)

### LER Determination

LER stands for Legal Entity Reduction. It allows to identify companies that work both in WP1 and PF1 systems.

We have 3 cases for LER

- 1: Company is not LER and Plant is not Trading Plant
- 2: Company is not LER and Plant is Trading Plant
- 3: Company is LER

The list of companies is managed in Global filter master data **C\_GLBFLT** manually or by flat file:

| <b>Characteristic C_GLBFLT - maintain master data: List</b> |      |         |                         |      |        |        |        |        |  |
|---|------|---------|-------------------------|------|--------|--------|--------|--------|--|
| Data Records to be Edited                                   |      |         |                         |      |        |        |        |        |  |
| Stream  | Rule | Counter | Global Filter Descri    | Sign | Option | Low    | Hight  | Active |  |
| LER   | 0001 | 1       | COMPANY IS LER ELIGIBLE | I    | BT     | 200401 | 299912 | N      |  |
| LER   | 0005 | 1       | COMPANY IS LER ELIGIBLE | I    | BT     | 200401 | 299912 | N      |  |
| LER   | 0125 | 1       | COMPANY IS LER ELIGIBLE | I    | BT     | 200401 | 299912 | N      |  |
| LER   | 0128 | 1       | COMPANY IS LER ELIGIBLE | I    | BT     | 200401 | 299912 | N      |  |
| LER   | 0134 | 1       | COMPANY IS LER ELIGIBLE | I    | BT     | 200401 | 299912 | N      |  |
| LER   | 0143 | 1       | COMPANY IS LER ELIGIBLE | I    | BT     | 200401 | 299912 | N      |  |
| LER   | 0192 | 1       | COMPANY IS LER ELIGIBLE | I    | BT     | 200401 | 299912 | N      |  |
| LER   | 0210 | 1       | COMPANY IS LER ELIGIBLE | I    | BT     | 200401 | 299912 | N      |  |

The Trading plant is managed in **C\_PLANT** master data through attribute **C\_SORT2**. If C\_SORT2 = 'NDR', it means the plant is a trading plant.

In transactional data flow, we determine the LER case using function module **ZDETERMINE\_LER**

```

CLEAR w_lerflag.
CALL FUNCTION 'ZDETERMINE_LER'
  EXPORTING
    IP_CALMONTH      = <result_fields>-calmonth
    IP_LOGSYS        = <result_fields>-logsys
    IP_PLANT         = <result_fields>-/bic/c_plant
    IP_COMPCDE      = <result_fields>-/bic/c_compcde
  IMPORTING
    EP_LER_FLAG     = w_lerflag
  TABLES
    IT_PLANT        = ITB_PLANT
    IT_GLBFLT       = ITB_GLBFLT.
IF w_lerflag IS NOT INITIAL.
  <result_fields>-/bic/c_lerflag = w_lerflag.
ENDIF.

```

itb\_plant is the list of plant with C\_PLANT\_\_C\_SORT2 = NDIR and itb\_glbflt is the list extracted from C\_GLBFLT master data

In the function module, we check if the company is in itb\_glbflt for the period. If yes, LER value = 3. If not, we check if the plant is in itb\_plant. If yes, LER value= 2 else LER value = 1

### IM Unit cost determination

Basically, LER companies are selling in WP1 products made in PF1. So to calculate integrated margin we need to have the cost unit price from PF1 system.

To do so, we use IM from PQ1 DSO (explained after in case 4)

- IM - LER Cost Unit
    - TRFN: DBCOPA16 -> DBCOPA25 (OBSOLETE)
    - TRFN: DBCOPA26 -> DBCOPA25
      - IM - PQ1 - GM Data

```

DBCOPA25
0MTCBFEIF2P46EHN08CYZP1UFT34AYR5
0LWAYZE0G6O8MA75COTCB1LYCOKNY1AJ
DBCOPA26

```

In the DSO, the key is the material, the origin plant in PF1, the calendar month and the value field

| IM - LER Cost Unit (DBCOPA25) Rule Group: Standard Group |                                    |      |     |            |     |                               |
|--|------------------------------------|------|-----|------------|-----|-------------------------------|
| Rule   | Rule Name                          | Posi | Key | InfoObject | Ico | Descript.                     |
| ▶  | 0LOGSYS                            | 1    | 🔑   | 0LOGSYS    | 🏠   | Source System                 |
| ▶  | C_MATNR2                           | 2    | 🔑   | C_MATNR2   | 🏠   | Material                      |
| ▶  | C_ZZWWWE41                         | 3    | 🔑   | C_ZZWWWE41 | 🏠   | Origin Plant                  |
| 🕒  | 0CALMONTH                          | 4    | 🔑   | 0CALMONTH  | 🕒   | Calendar Year/Month           |
| ▶  | C_FIELDN                           | 5    | 🔑   | C_FIELDN   | 🏠   | Value Field                   |
| ▶  | Take data from C_KEYFIGR__C_LERFLD | 7    |     | C_PLELMN2  | 🏠   | P&L Element                   |
| ▶  | 0G_QVVA04                          | 8    |     | 0G_QVVA04  | 🏠   | Qty unit base                 |
| ▶  | 0AMOUNT                            | 9    |     | 0AMOUNT    | 🏠   | Amount                        |
| ▶  | 0G_UVVA04                          | 10   |     | 0G_UVVA04  | 🏠   | Un Qty unit base              |
| ▶  | 0CURRENCY                          | 11   |     | 0CURRENCY  | 🏠   | Currency key                  |
| 🕒  | Calculated in end routine          | 12   |     | K_INTVCU   | 🏠   | Integrated Variable cost unit |
| 🕒  | Calculated in end routine          | 13   |     | K_INTNPCU  | 🏠   | Integrated Non prop cost unit |
| 🕒  | Calculated in end routine          | 14   |     | K_INTDUT   | 🏠   | Integrated Duty unit cost     |
| 🕒  | Calculated in end routine          | 15   |     | K_INTOFCC  | 🏠   | Integrated Other Fixed Costs  |

Example of results in DBCOPA25

| Data Browser: Table /BIC/ADBCOPA2500: 3 of 3 Hits |          |              |          |             |   |             |               |             |            |          |           |                    |                  |                  |
|---|----------|--------------|----------|-------------|---|-------------|---------------|-------------|------------|----------|-----------|--------------------|------------------|------------------|
| Source  | Material | Origin Plant | Calendar | Value Field | R | P&L Element | Qty unit b... | Amount      | Un Qty uni | Currency | Integ Var | Integ NP cost unit | Integ Duty un... | Integrated Ot... |
| PF1_020   | 41476    | LHC          | 05.2016  | VVD0C       |   | VVD0C       | 17.940        | 130.221,08- | KG         | EUR      | 7,259-    | 0,000              | 0,00             | 0,00             |
| PF1_020   | 41476    | LHC          | 05.2016  | VVE0C       |   | VVE0C       | 17.940        | 6.895,06-   | KG         | EUR      | 0,000     | 0,384-             | 0,00             | 0,00             |
| PF1_020   | 41476    | LHC          | 05.2016  | VVE2C       |   | VVE2C       | 17.940        | 87.309,32-  | KG         | EUR      | 0,000     | 0,000              | 0,00             | 4,87-            |

Note: there is very important semantic group in the DTP

CALMONTH  
 C\_MATNR2  
 C\_MATGR1

**Transport Costs & Duties**

To calculate costs and duties costs, we use TIERS application.  
 The easiest and most efficient for us was to use APD.

We have created 2 APD using the same query APD\_DPCOPC01\_0001 and APD\_DPCOPC01\_0002.  
 We need to run APD 2 times in the same process chain, for current and previous months. It was not possible to run the same APD 2 times so we had to create 2 identical APD

**Description**  
 Calendar Year/Month Period (Interval, Mandatory)  
 Use Standard Text

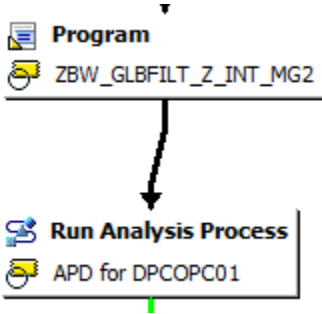
**Technical Name**  
 V\_OCALMONTH\_0010

**Global Settings**  
 Type of Variable  
 Characteristic Value  
 Processing By  
 Customer Exit  
 Reference Characteristic  
 Calendar Year/Month

The customer exit is updated in the process chain

Program ZBW\_GLBFLT\_Z\_INT\_MG2 setup global filter Stream = 'Z\_INT\_MG' and Rule = 'CALMONTH' to be M-2 to M-1

Program ZBW\_GLBFLT\_Z\_INT\_MG setup global filter Stream = 'Z\_INT\_MG' and Rule = 'CALMONTH' to be M-1 to M



APD will use query BW\_QRY\_MVSDTR01\_9999.

In the query, the month is determined by a customer exit (class ZCL\_BIU001\_V\_OCALMONTH\_0010 - After variable)

Query will select Stream = 'Z\_INT\_MG' and Rule = 'TIERS\_MTH' for the high value = period and minus low value (normally last 6 month)

| Stream   | Rule      | Counter | V | Change flag ( 1 inserted / D deleted...) | Global Filter Descri                                 | Sign | Opti... | Low | Hight  | Active |
|----------|-----------|---------|---|--|--|------|---------|-----|--------|--------|
| Z_INT_MG | TIERS_MTH | 001     | A |  | CALMONTH REFERENCE TO USE FOR DBCOPA24 (TIERS QUERY) | I    | EQ      | 6   | 202306 | Y      |

BW\_QRY\_MVSDTR01\_9999 (APD\_DPCOPC01\_0001) -> DPCOPC01 -> DBCOPA24

⚠ The date is using 0RSTT\_RMNTN while Tiers query using C\_SHIPNU2\_\_C\_COMPMON. It is correct from ticket WO0000000137785 (May 2022) to change from 0CALMONTH to 0RSTT\_RMNTN

We store result of the APD in DPCOPC01.

Then DPCOPC01 is loaded into DBCOPA24.  
 After that we load data from DBCOPA01.

The order is important, DPCOPC01 then DBCOPA24 because we don't fill K\_LOTSZE key figures when data exists in DPCOPC01 and DBCOPA01 (it would double the key figure)

Becareful : there is an exclusion of GBU

The authorized GBU are managed in Global Filter

Stream : Z\_INT\_MG

Rule GBU

Active : Y

| Stream   | Rule | Counter | V | Change flag ( I inserted / D deleted ) | Global Filter Descri                                      | Sign | Option | Low | Hight | Active |
|----------|------|---------|---|--|---|------|--------|-----|-------|--------|
| Z_INT_MG | GBU  | 001     | A |  | GBU TO KEEP IN DBCOPA24                                   | I    | EQ     | CS  |       | Y      |
| Z_INT_MG | GBU  | 002     | A |  | GBU TO KEEP IN DBCOPA24                                   | I    | EQ     | PM  |       | N      |
| Z_INT_MG | GBU  | 003     | A |  | GBU to benefit automatisaion of freight in IM calculation | I    | EQ     | TS  |       | Y      |
| Z_INT_MG | GBU  | 004     | A |  | GBU SILICA to benefit automatisaion of freight in IM calc | I    | EQ     | SI  |       | Y      |
| Z_INT_MG | GBU  | 005     | A |  | GBU AROMA to benefit automatisaion of freight in IM calc  | I    | EQ     | PA  |       | Y      |

### Case 1: WP1 - No LER No Trading Plant

For WP1 flow, we have 2 sub-flows, 1 for CDSA and 1 for IECRA. And for each sub-flow, we split in 3 cases. So at the end, from 2 source DSO we have 6 target DSO.

To have a BW model as simple as possible to maintain, we have decided to use an Info source between sources and targets:

- IM - RCS - CDSA NO LER NO TP
  - TRFN: IB\_COPA\_03 -> DBCOPA21
    - Integrated Margin - Business rules
      - TRFN: DBCOPA02 -> IB\_COPA\_03
      - TRFN: DBCOPA03 -> IB\_COPA\_03

|                    |        |
|--------------------|--------|
| DBCOPA21           | Manage |
| 07JX9AWBTHNC4T...  | Change |
| IB_COPA_03         | Change |
| 075LJDYI5LXW2ZP... | Change |
| ONEHEJ60ASPVRRL... | Change |

From source DSO to Info source we only have the LER determination rule to apply (function module **ZDETERMINE\_LER**). In term of maintenance, it's easier because if we need to modify the rule, we only have the change the function module and not the transformation.

ZDETERMINE\_LER is used in:

- TRFN: DBCOPA02 -> IB\_COPA\_03
- TRSF: ABCOPA04 -> IB\_COPA\_03
- TRSF: ABCOPA03 -> IB\_COPA\_03
- TRFN: DBCOPA03 -> IB\_COPA\_03
- TRSF: ABCOPA01 -> IB\_COPA\_07

From Info source to target DSO, we have a start routine calling program **Z\_LER\_RULES**

```

* DELETE RECORDS
  DELETE SOURCE_PACKAGE WHERE /bic/c_lerflag <> '1'.
  DELETE SOURCE_PACKAGE WHERE /bic/c_fieldn <> 'QUANTITY'
                                AND /bic/c_fieldn <> 'VVD00'
                                AND /bic/c_fieldn <> 'VVE00'
                                AND /bic/c_fieldn <> 'VVF00'.

* CALL PROGRAM FOR LER
  INCLUDE Z_LER_RULES.

* DELETE RECORDS WITH VALUE FIELD QUANTITY
  DELETE SOURCE_PACKAGE WHERE /bic/c_fieldn = 'QUANTITY'
                                OR /bic/c_fieldn = 'VVD00'
                                OR /bic/c_fieldn = 'VVE00'
                                OR /bic/c_fieldn = 'VVF00'.

```

The first row with LER flag is using the function module **ZDETERMINE\_LER** and we keep useful data. The following rows are to be sure that we keep only useful value fields. This filter is also set in the DTP.

After the program, as we generated new value fields, we delete the original ones.

ZDETERMINE\_LER is used in transformations:

```

TRFN: IB_COPA_03 -> DBCOPA22
TRFN: IB_COPA_03 -> DBCOPA21
TRSF: IB_COPA_07 -> ABCOPA02
TRFN: IB_COPA_03 -> DBCOPA18
TRFN: IB_COPA_03 -> DBCOPA20
TRFN: IB_COPA_03 -> DBCOPA19
TRFN: IB_COPA_03 -> DBCOPA23

```

To have more details about **Z\_LER\_RULES**, there is a dedicated document about it:

<https://drive.google.com/file/d/1AXQaMXmP4AdN9FeP8eByaRVQqDgs59BJBPL3NxSAhfc/view>

1) determine where the program is used to be able to select the data from corresponding dso:

```

639     WHEN 'DBCOPA03'.
640 * FOR AMOUNT
641     SELECT /bic/c_pabelnr /bic/c_paposnr co_area /bic/c_versn2
642           vtype /bic/c_fieldn amount
643     INTO TABLE itb_dbcopa
644     FROM /bic/adbcopa0300
645     FOR ALL ENTRIES IN itb_hashed_dbcopa
646     WHERE /bic/c_pabelnr = itb_hashed_dbcopa-/bic/c_pabelnr
647     AND   /bic/c_paposnr = itb_hashed_dbcopa-/bic/c_paposnr
648     AND   co_area       = itb_hashed_dbcopa-co_area
649     AND   /bic/c_versn2 = itb_hashed_dbcopa-/bic/c_versn2
650     AND   curtype       = itb_hashed_dbcopa-curtype "CBE02++
651     AND   vtype         = itb_hashed_dbcopa-vtype
652     AND   ( /bic/c_fieldn = 'VVD00'
653     OR     /bic/c_fieldn = 'VVE00'
654     OR     /bic/c_fieldn = 'VVF00' ).
655 * FOR QUANTITY
656     SELECT /bic/c_pabelnr /bic/c_paposnr co_area /bic/c_versn2
657           vtype /bic/c_fieldn g_qvva04
658     INTO TABLE itb_qvva04
659     FROM /bic/adbcopa0300
660     FOR ALL ENTRIES IN itb_hashed_dbcopa
661     WHERE /bic/c_pabelnr = itb_hashed_dbcopa-/bic/c_pabelnr
662     AND   /bic/c_paposnr = itb_hashed_dbcopa-/bic/c_paposnr
663     AND   co_area       = itb_hashed_dbcopa-co_area
664     AND   /bic/c_versn2 = itb_hashed_dbcopa-/bic/c_versn2
665     AND   curtype       = itb_hashed_dbcopa-curtype "CBE02++
666     AND   vtype         = itb_hashed_dbcopa-vtype
667     AND   /bic/c_fieldn = 'QUANTITY'.
668     WHEN 'ABCOPA03'.
669 * FOR AMOUNT
670     SELECT /bic/c_pabelnr /bic/c_paposnr co_area /bic/c_versn2
671           vtype /bic/c_fieldn amount
672     INTO TABLE itb_dbcopa
673     FROM /bic/aabcopa032
674     FOR ALL ENTRIES IN itb_hashed_dbcopa
675     WHERE /bic/c_pabelnr = itb_hashed_dbcopa-/bic/c_pabelnr
676     AND   /bic/c_paposnr = itb_hashed_dbcopa-/bic/c_paposnr
677     AND   co_area       = itb_hashed_dbcopa-co_area
678     AND   /bic/c_versn2 = itb_hashed_dbcopa-/bic/c_versn2
679     AND   curtype       = itb_hashed_dbcopa-curtype "CBE02++
680     AND   vtype         = itb_hashed_dbcopa-vtype

```

2) Select data from DBCOPA25:

```

* LOADING OF DBCOPA25
SELECT logsys /bic/c_matnr2 /bic/c_zzwwe41 calmonth
      /bic/c_fieldn g_qvva04 amount g_uvva04 currency
      /bic/k_intvcu /bic/k_intnpcu /bic/k_intdut /bic/k_intofc
INTO TABLE itb_dbcopa25
FROM /bic/adbcopa2500
FOR ALL ENTRIES IN itb_hashed_dbcopa25
WHERE /bic/c_zzwwe41 = itb_hashed_dbcopa25-/bic/c_zzwwe41
      AND /bic/c_zzwwe41 <> ''
      AND calmonth <= w_lastmth.
SORT itb_dbcopa25 DESCENDING BY logsys /bic/c_matnr2 /bic/c_zzwwe41
calmonth.

```

3) Determine the last day of COPA delivery month:

```

CALL FUNCTION 'SLS_MISC_GET_LAST_DAY_OF_MONTH'
EXPORTING
  day_in          = w_costdate
IMPORTING
  last_day_of_month = w_lcostdate
EXCEPTIONS
  day_in_not_valid = 1
  OTHERS          = 2.
.
IF sy-subrc <> 0.
*   Implement suitable error handling here
ENDIF.

```

4) Determine the LER FLag with help of DSO DBCOPA25 or master data C\_PLANT:

```

READ TABLE itb_dbcopa25 ASSIGNING <fs_dbcopa25>
WITH KEY logsys          = w_logsys2
      /bic/c_matnr2     = w_bismt
      /bic/c_zzwe41     = wa_source_package_tmp-/bic/c_zzwe41
BINARY SEARCH.

IF sy-subrc = 0.
  LOOP AT itb_dbcopa25 FROM sy-tabix ASSIGNING <fs_dbcopa25>
  WHERE logsys = w_logsys2
    AND /bic/c_matnr2 = w_bismt
    AND /bic/c_zzwe41 = wa_source_package_tmp-/bic/c_zzwe41.
  IF <fs_dbcopa25>-calmonth <= wa_source_package_tmp-calmonth.
    w_dbcopa25_flg = 1.
    EXIT.
  ENDIF.
ENDLOOP.
ENDIF.

* IF C_MATNR2_C_BISMT/C_ZZWE41 IN DBCOPA25
  IF w_dbcopa25_flg = 1.
*End of Insertion - CBE01

* IF C_MATNR2_C_BISMT/C_ZZWE41 NOT IN DBCOPA25 => NOT REAL LER
  ELSEIF wa_source_package_tmp-/bic/c_plant IS NOT INITIAL.
* CHECK IF C_PLANT IS 'NDIR' (TRADING PLANT)
  READ TABLE itb_plant ASSIGNING <fs_plant>
  WITH TABLE KEY logsys          = wa_source_package_tmp-logsys
                  /bic/c_plant    = wa_source_package_tmp-/bic/c_plant.

```

```

] *****
* CASE OF LER FLAG = 3 : LER BUT NOT FOUND IN LER TABLE
* SUB-CASE PLANT IS TRADING PLANT, SAME CODE AS LER FLAG = 2, ELSE LER FLAG = 1
- *****
] IF sy-subrc = 0." AND wa_source_package_tmp-/bic/c_fieldn <> 'QUANTITY'.
  w_ler = 2.
] *****
* CASE OF LER FLAG = 3 : LER BUT NOT FOUND IN LER TABLE
* SUB-CASE PLANT IS NOT TRADING PLANT, SAME CODE AS LER FLAG = 1
- *****
) ELSE."IF wa_source_package_tmp-/bic/c_fieldn <> 'VVD00'.
  w_ler = 1.
- ENDIF.
] *****
* CASE OF LER FLAG = 3 : LER BUT NOT FOUND IN LER TABLE
* SUB-CASE PLANT IS NULL, SAME CODE AS LER FLAG = 1
- *****
* ELSEIF wa_source_package_tmp-/bic/c_fieldn <> 'VVD00'.
) ELSE.
  w_ler = 1.
- ENDIF.
] *****
* CASE OF LER FLAG = 2 : NO LER TRADING PLANT
- *****
) WHEN '2'.
  w_ler = 2.
] *****
* CASE OF LER FLAG = 1 : NO LER NO TRADING PLANT
- *****
) WHEN '1'.
  w_ler = 1.
) WHEN OTHERS.
ENDCASE.

```

In function of LER Flag:

**Case 1 & 2: 1) No LER no Trading Plant 2) No LER Trading Plant**

If c\_fieldn = VVD00 or VVE00 or VVF00 and transaction Type = B and Z:

Read data from COPA table and if g\_qvva04 is empty + if amount is not empty Create a new line with fieldn VVD0C:

```

WHEN 1 or 2. "RI235773 - 27/12/2022 - UC - 4000003116
*
  CLEAR: w_flagpcp4.
  IF wa_source_package_tmp-/bic/c_fieldn = 'VVD00' OR
     wa_source_package_tmp-/bic/c_fieldn = 'VVE00' OR
     wa_source_package_tmp-/bic/c_fieldn = 'VVF00'.
* SPECIAL CASE FOR REC TYPE B OR Z AND QUANTITY EMPTY
  IF ( wa_source_package_tmp-rec_type = 'B' OR wa_source_package_tmp-rec_type = '
* VALUE FIELD VVDOC
    READ TABLE itb_qvva04 ASSIGNING <fs_qvva04>
    WITH TABLE KEY
      /bic/c_pabelnr = wa_source_package_tmp-/bic/c_pabelnr
      /bic/c_paposnr = wa_source_package_tmp-/bic/c_paposnr
      co_area       = wa_source_package_tmp-co_area
      /bic/c_versn2 = wa_source_package_tmp-/bic/c_versn2
      vtype         = wa_source_package_tmp-vtype
      /bic/c_fieldn = 'QUANTITY'.
    IF ( sy-subrc = 0 AND (
      <fs_qvva04>-g_qvva04 IS INITIAL OR <fs_qvva04>-g_qvva04 = 0 OR
      <fs_qvva04>-g_qvva04 = '0.000' ) OR sy-subrc <> 0 ).
*Start of Insertion - CBE02
* We do not create line if amount 0 => no risk with delta as the COPA line can't change
  IF wa_source_package_tmp-amount IS NOT INITIAL AND
     wa_source_package_tmp-amount <> 0 AND
     wa_source_package_tmp-amount <> '0.00'.
*Generate line VVDOC (resp. VVE0C, VVF0C) = VVD00 (resp. VVE00, VVF00)
  wa_source_package_tmp-/bic/c_fieldn+4(1) = 'C'.
  COLLECT wa_source_package_tmp INTO it_source_package.
*Start of Deletion - CBE03
**Generate line VVD0M (resp. VVE0M, VVF0M) = VVD00 (resp. VVE00, VVF00)
*
  wa_source_package_tmp-/bic/c_fieldn+4(1) = 'M'.
*
  COLLECT wa_source_package_tmp INTO it_source_package.
*End of Deletion - CBE03
  ENDIF.
*End of Insertion - CBE02

```

If c\_fieldn = QUANTITY (standard case): we pick data from ODS\_PCP4

```

1164 * CBI01 - 20191128 - UC 4000021782 - END
1165 * GET AMOUNT CP FROM ODS_PCP4 WITH COSTVAR 'ZFO'
1166     UNASSIGN <fs_pcp4>.
1167 *         READ TABLE itb_pcp4 ASSIGNING <fs_pcp4> "CBE02--
1168     READ TABLE itb_pcp4_zfo ASSIGNING <fs_pcp4> "CBE02++
1169     WITH TABLE KEY costdate = w_costdat_shft
1170 *         costvar = 'ZFO' "CBE02--
1171         plant =
1172         wa_source_package_tmp-/bic/c_plant
1173         /bic/c_matnr =
1174         wa_source_package_tmp-/bic/c_matnr2.
1175 * IF NO RECORD FOUND IN ODS_PCP4 WITH ZFO, TRY WITHOUT ZFO and ZIP
1176 * IF sy-subrc <> 0.
1177     UNASSIGN <fs_pcp4>.
1178 *         READ TABLE itb_pcp4_zfo ASSIGNING <fs_pcp4> "CBE02--
1179     READ TABLE itb_pcp4 ASSIGNING <fs_pcp4> "CBE02++
1180     WITH TABLE KEY costdate = w_costdat_shft
1181         plant =
1182         wa_source_package_tmp-/bic/c_plant
1183         /bic/c_matnr =
1184         wa_source_package_tmp-/bic/c_matnr2.
1185 * IF NO RECORD FOUND IN ODS_PCP4, NO ENTRY
1186 * IF sy-subrc <> 0.
1187     ENDIF.
1188     ENDIF.

```

```

1193 * IF <fs_pcp4>-currency <> wa_source_package_tmp-currency.
1194 * NEED TO MULTIPLY AMOUNT BY 100 TO AVOID DECIMALS
1195     w_c_amt_cp = <fs_pcp4>-/bic/c_amt_cp * 100.
1196     w_c_amt_cnp = <fs_pcp4>-/bic/c_amt_cnp * 100.
1197     w_c_amt_amo = <fs_pcp4>-/bic/c_amt_amo * 100.
1198     w_k_intfrg = <fs_pcp4>-/bic/k_intfrg *
1199     100.
1200     w_k_intdut = <fs_pcp4>-/bic/k_intdut *
1201     100.
1202 * JBU 20/07/2021 UC 4000029887 - START
1203     w_c_amt_raw = <fs_pcp4>-/bic/c_amt_raw * 100.
1204     w_c_amt_pck = <fs_pcp4>-/bic/c_amt_pck * 100.
1205     w_c_amt_tol = <fs_pcp4>-/bic/c_amt_tol * 100.
1206     w_c_amt_uti = <fs_pcp4>-/bic/c_amt_uti * 100.
1207 * JBU 20/07/2021 UC 4000029887 - END

```

If necessary, we convert quantities and amounts with module functions: 'Z\_CONVERT\_CURRENCY' with type of rate CAR3 + 'Z\_MD\_CONVERT\_MATERIAL\_UNIT\_F'

And we calculate new value fields:

```

1451 * CREATE NEW VALUE FIELDS
1452 * JBU 20/07/2021 UC 4000029887 - START
1453 CLEAR: w_c_amt_total.
1454 w_c_amt_total = <FS_PCP4>-/BIC/C_AMT_RAW + <FS_PCP4>-/BIC/C_AMT_PCK + <FS_P
1455
1456 IF w_c_amt_total = 0 OR w_c_amt_total = '0.00'.
1457 * VALUE FIELD VVDOC - OLD CP Detail if no split available
1458 IF <fs_pcp4>-/bic/c_amt_cp IS NOT INITIAL AND
1459 <fs_pcp4>-/bic/c_amt_cp <> 0 AND
1460 <fs_pcp4>-/bic/c_amt_cp <> '0.00' AND
1461 <fs_pcp4>-/bic/k_lotsize <> 0.
1462 wa_source_package_tmp-/bic/c_fieldn = 'VVDOC'.
1463 wa_source_package_tmp-amount = -1 *
1464 ( wa_source_package_tmp-g_qvva04 * w_c_amt_cp ) / w_lotsize.
1465 COLLECT wa_source_package_tmp INTO it_source_package.
1466 ENDIF.
1467 ELSE.
1468 * VALUE FIELD VVDOC - CP SPLIT: RAW
1469 IF <FS_PCP4>-/BIC/C_AMT_RAW IS NOT INITIAL AND
1470 <FS_PCP4>-/BIC/C_AMT_RAW <> 0 AND
1471 <FS_PCP4>-/BIC/C_AMT_RAW <> '0.00' AND
1472 <FS_PCP4>-/BIC/K_LOTSIZE <> 0.
1473 WA_SOURCE_PACKAGE_TMP-/BIC/C_FIELDN = 'VVDOC'.
1474 WA_SOURCE_PACKAGE_TMP-AMOUNT = -1 *
1475 ( WA_SOURCE_PACKAGE_TMP-G_QVVA04 * W_C_AMT_RAW ) / W_LOTSIZE
1476 .
1477 COLLECT WA_SOURCE_PACKAGE_TMP INTO IT_SOURCE_PACKAGE.
1478 ENDIF.
1479 * VALUE FIELD VPDOC - CP SPLIT: PCK
1480 IF <FS_PCP4>-/BIC/C_AMT_PCK IS NOT INITIAL AND

```

If no records are found in ODS\_PCP4, we determine value fields from source DSO

```

* IF WE DIDN'T FIND RECORDS IN ODS_PCP4, WE CHECK IN DBCOPA02
ELSE.
* VALUE FIELD VVDOC
READ TABLE itb_dbcopa ASSIGNING <fs_dbcopa>
WITH TABLE KEY
/bic/c_pabelnr = wa_source_package_tmp-/bic/c_pabelnr
/bic/c_paposnr = wa_source_package_tmp-/bic/c_paposnr
co_area = wa_source_package_tmp-co_area
/bic/c_versn2 = wa_source_package_tmp-/bic/c_versn2
vtype = wa_source_package_tmp-vtype
/bic/c_fieldn = 'VV00'.
IF sy-subrc = 0 AND <fs_dbcopa>-amount IS NOT INITIAL AND <fs_dbcopa>-amount <> 0 AND <fs_dbcopa>-amount <> '0.00'.
wa_source_package_tmp-/bic/c_fieldn = 'VVDOC'.
wa_source_package_tmp-amount =
<fs_dbcopa>-amount.
COLLECT wa_source_package_tmp INTO it_source_package.
ENDIF.
* VALUE FIELD VVEOC
READ TABLE itb_dbcopa ASSIGNING <fs_dbcopa>
WITH TABLE KEY
/bic/c_pabelnr = wa_source_package_tmp-/bic/c_pabelnr
/bic/c_paposnr = wa_source_package_tmp-/bic/c_paposnr
co_area = wa_source_package_tmp-co_area
/bic/c_versn2 = wa_source_package_tmp-/bic/c_versn2
vtype = wa_source_package_tmp-vtype
/bic/c_fieldn = 'VVE00'.
IF sy-subrc = 0.
wa_source_package_tmp-/bic/c_fieldn = 'VVEOC'.
wa_source_package_tmp-amount =
<fs_dbcopa>-amount.
COLLECT wa_source_package_tmp INTO it_source_package.
ENDIF.
* VALUE FIELD VVFOC
READ TABLE itb_dbcopa ASSIGNING <fs_dbcopa>
WITH TABLE KEY
/bic/c_pabelnr = wa_source_package_tmp-/bic/c_pabelnr
/bic/c_paposnr = wa_source_package_tmp-/bic/c_paposnr
co_area = wa_source_package_tmp-co_area
/bic/c_versn2 = wa_source_package_tmp-/bic/c_versn2
vtype = wa_source_package_tmp-vtype
/bic/c_fieldn = 'VVFO0'.
IF sy-subrc = 0.
wa_source_package_tmp-/bic/c_fieldn = 'VVFOC'.
wa_source_package_tmp-amount =
<fs_dbcopa>-amount.
COLLECT wa_source_package_tmp INTO it_source_package.
ENDIF.

```

### Case 3: WP1 - LER

This case works only with quantity value field. We read COPA data.

```
      WHEN 3.
*****
* CASE OF LER FLAG = 3 : LER
*****
*****
* THIS CASE WORKS ONLY WITH QUANTITY
  IF wa_source_package_tmp-/bic/c_fieldn = 'QUANTITY'.
* RECOVER QUANTITY
  READ TABLE itb_qvva04 ASSIGNING <fs_qvva04>
  WITH TABLE KEY
    /bic/c_pabelnr = wa_source_package_tmp-/bic/c_pabelnr
    /bic/c_paposnr = wa_source_package_tmp-/bic/c_paposnr
    co_area       = wa_source_package_tmp-co_area
    /bic/c_versn2 = wa_source_package_tmp-/bic/c_versn2
    vtype        = wa_source_package_tmp-vtype
    /bic/c_fieldn = 'QUANTITY'.
*****
```

We get the value field VVDOC from DBCOPA25 (IM Cost Unit) to calculate new value field

```
1908 *Start of Insertion - CBE01
1909     CLEAR w_dbcopa25_flg.
1910
1911     READ TABLE itb_dbcopa25_2 ASSIGNING <fs_dbcopa25_2>
1912     WITH KEY logsys      = w_logsys2
1913             /bic/c_matnr2 = w_bismt
1914             /bic/c_zzwwe41 = wa_source_package_tmp-/bic/c_zzwwe41
1915             /bic/c_fieldn = 'VVDOC'
1916     BINARY SEARCH.
1917
1918     IF sy-subrc = 0.
1919     LOOP AT itb_dbcopa25_2 FROM sy-tabix ASSIGNING <fs_dbcopa25_2>
1920     WHERE logsys = w_logsys2
1921           AND /bic/c_matnr2 = w_bismt
1922           AND /bic/c_zzwwe41 = wa_source_package_tmp-/bic/c_zzwwe41
1923           AND /bic/c_fieldn = 'VVDOC'.
1924
1925     IF <fs_dbcopa25_2>-calmonth <= wa_source_package_tmp-calmonth.
1926     w_dbcopa25_flg = 1.
1927     EXIT.
1928     ENDIF.
1929     ENDLIF.
1930     ENDIF.
1931
1932     IF w_dbcopa25_flg = 1.
1933     *End of Insertion - CBE01
```

If necessary, we convert quantities with module function 'Z\_MD\_CONVERT\_MATERIAL\_UNIT\_F'

And we calculate new value fields:

```
2006     IF <fs_dbcopa25_2>-/bic/k_intvcu IS NOT INITIAL AND
2007     <fs_dbcopa25_2>-/bic/k_intvcu <> 0.
2008     wa_source_package_tmp-/bic/c_fieldn = 'VVDOC'.
2009     wa_source_package_tmp-amount      =
2010     <fs_qvva04>-g_qvva04 * w_k_intvcu.
2011     COLLECT wa_source_package_tmp INTO it_source_package.
2012     ENDIF.
2013     ENDIF.
2014     *****
```

It's the same logic for value fields VVE0C and VVE2C.

At the beginning of the project, we determined also VVC3C but it was dropped later. The code is in comments so it's easy to add it.

#### Case 4: PF1

For PF1 system, we only use the GM flow (concerning the PQ1 flow<sup>22w</sup>).

Expert routine is the same except for the selection of key figures (C\_KEYFIGR info object)

In IM, we keep key figures with the flag as X and ZN8110BQTY P&L element. In the normal flow (concerning the PQ1 flow) , we exclude key figures with flag as X

| <b>Characteristic C_KEYFIGR - maintain master data: List</b> |                 |           |       |      |      |                |           |            |            |           |  |
|--|-----------------|-----------|-------|------|------|----------------|-----------|------------|------------|-----------|--|
| Data Records to be Edited                                    |                 |           |       |      |      |                |           |            |            |           |  |
| Key Figure   | PF1/P&L Element | Magnitude | Ratio | Type | Sign | Unit           | InfoObjet | Flag for I | Srcce Sys. | LER Value | Long Description                               |
| K_SALQTYK  | ZN8110BQTY      | N8110     | Q     |      |      | BASE_UOM       |           |            |            | QUANTITY  | Sales Quantity in KG                           |
| K_ZCNGDEP  | ZDEPC           | R2549C    | X     |      | -    | /BIC/C_CNCRCDV | X         |            |            | VVE0C     | Cdv conso depreciations                        |
| K_ZCNGOFC  | ZFIXCOSTC       | R2549C    | X     |      | -    | /BIC/C_CNCRCDV | X         |            |            | VVE2C     | Cdv conso other fix costs                      |
| K_ZCNGRMT  | ZMATC           | R1540C    | X     |      | -    | /BIC/C_CNCRCDV | X         |            |            | VVD0C     | Cdv conso raw materials                        |
| K_ZCNGTOL  | ZTOLLINGC       | R1540C    | X     |      | -    | /BIC/C_CNCRCDV | X         |            |            | VVD0C     | Cdv conso tollings                             |
| K_ZCNGUTL  | ZUTILC          | R1540C    | X     |      | -    | /BIC/C_CNCRCDV | X         |            |            | VVD0C     | Cdv conso utilities                            |
| K_ZDISC  | ZR10000DIL      | R10000    | X     |      |      | LOC_CURRCY     |           |            |            |           | Discounts & surcharges (invoiced)              |
| K_ZDISCOC  | ZR10000DID      | R10000    |       |      |      | DOC_CURRCY     |           |            |            |           | Discounts in transaction currency              |
| K_ZDUTY  | ZDUTYC          | R1290C    | X     |      | -    | LOC_CURRCY     | X         |            |            | VVC3C     | Duty   |
| K_ZGROSS   | ZR10000GRL      | R10000    | X     |      |      | LOC_CURRCY     |           |            |            |           | Invoiced Gross amount                          |
| K_ZGROSSC  | ZR10000GAD      | R10000    |       |      |      | DOC_CURRCY     |           |            |            |           | Gross amount in transaction currency (invoice) |
| K_ZLEGDLT  | ZDCOPAL         | R15400    | X     |      | -    | LOC_CURRCY     |           |            |            |           | Cdv legal delta COPCA                          |
| K_ZLEGDFC  | ZFIXCOSTL       | R25490    | X     |      | -    | LOC_CURRCY     |           |            |            |           | Cdv legal other fix costs                      |
| K_ZLEGRMT  | ZMATL           | R15400    | X     |      | -    | LOC_CURRCY     |           |            |            |           | Cdv legal raw materials                        |
| K_ZLEGTOL  | ZTOLLINGL       | R15400    | X     |      | -    | LOC_CURRCY     |           |            |            |           | Cdv legal tollings                             |
| K_ZLEGUTL  | ZUTILL          | R15400    | X     |      | -    | LOC_CURRCY     |           |            |            |           | Cdv legal utilities                            |
| K_ZLGDEP   | ZDEPL           | R25490    | X     |      | -    | LOC_CURRCY     |           |            |            |           | Cdv legal depreciations                        |
| K_ZREBAT   | ZR10000REL      | R10000    | X     |      |      | LOC_CURRCY     |           |            |            |           | Rebates  |
| K_ZREBATC  | ZR10000RED      | R10000    |       |      |      | DOC_CURRCY     |           |            |            |           | Rebates in transaction currency                |
| K_ZTRNSPT  | ZR12910         | R12910    | X     |      | -    | LOC_CURRCY     |           |            |            |           | Transport                                      |

#### PF1 IM flow particularities:

ZZCONACT table in PF1 is the source for IM key figures in P&L model.

ZZCONACT is fully emptied each time a recalculation occurs. A recalculation is done for **only one month** and a list of companies (not always all the companies) => the solution should be adapted if several months are calculated at the same time.

ZZCONACT is loaded in DPCOPA23.

In WBP, a selective deletion on the recalculated perimeter (reading the PSA content) is done at each level of DSO/cube before loading. In consequence, no need to activate the data in DSO, so it was chosen to use write optimised DSO instead of standard one.

Selectives deletions are done in PC\_COPA\_PL\_30 and PC\_COPA\_PL\_33.

**As the selective deletion is done according to PSA content, and only one month is allowed, please think to delete request in the PSA after a manual update!**

All characteristics should part of the key but BW do not permit more than 16 Infoobjects, in consequence, technical objects were created to concatenate the value of several characteristic into one objet (similarly to the PQ1 solution) in dso *DPCOPA23* and *DBCOPA34*.

If there is duplicated data in the DSO, it could be due to an incorrect recovery procedure or because a new field was added to the ZZCONACT table and should be part of the key.

#### Allocation of internal logistic costs in IM (DBCOPA28 and DBCOPA36):

Percentage of allocation:

The DSO DPCOPA08 contains the result of the APD ADP\_DSO\_DPCOPA08. This APD retrieve, from the query BW\_QRY\_MVCOPA01\_0011, the internal logistic costs (Euros) and the external sold quantity (VKG) at level industrial origin / business area / country of destination for the period [M-2 to M-1]:

- M = month defined in c\_glbfilt\_\_c\_high stream = "PL\_ELEMENT", rule = "INT\_MARG", counter = "1", it is equal to the month being uploaded from ZZCONACT, derived from TVARVC parameter PL\_TVAVVC\_CALMONTH\_GM - 1.
- The number of months to take into account for the calculation, currently 2, can be changed using c\_glbfilt\_\_c\_low stream = "PL\_ELEMENT", rule = "INT\_MARG", counter = "1" (if c\_low = "1" => calculation is done on M-2 to M-1, if c\_low = "2" => calculation is done on M-3 to M-1,...)
- The percentage of allocation is calculated in the APD by the formula :  $(100 * R12910 - \text{Internal Log}) / \text{ABS}(N8110 - \text{Qty Sold Ext})$ .

Remarks: DPCOPA08 contains only the result of the last APD execution. These data are then loaded into DBCOPA13 which keeps all historical data.

For the moment, the query BW\_QRY\_MVCOPA01\_0011 can't give the result for several GBU (today only one GBU = SD) and it would not be easy to create a unique query that determine the key figure "R12910- Internal Logistic Cost" for several GBU as it should be filtered, for each GBU, by the partner = # or the concerned GBU. If necessary to enhance to several GBU in the future, a solution could be to determine the key figures split by GBU and Partner GBU and to complete the calculation in a transformation.

Reloading procedure:

The following steps must be done once by month to recover (it would be interesting to create a recovery Process Chain, that load for instance one complete year automatically, updating global filter before each APD execution)

- 1) Change the month in c\_glbfilt\_\_c\_high for stream = "PL\_ELEMENT", rule = "INT\_MARG", counter = "1" to the month to reload -1.
- 2) Execute APD ADP\_DSO\_DPCOPA08
- 3) Selective deletion on the month to recover in DBCOPA13
- 4) Execute DTP: DPCOPA08 -> DBCOPA13 - Full then activate load requests in DBCOPA13

R1291C - Integrated Logistics costs - variable (TIERS)

**The original solution (DBCOPA28) was created for PQ1 flow and is kept for historical data (<2018). This solution was reproduced for PF1 flow (DBCOPA36) for data >= 2018, the main difference between historical and new solution is that quantities are not coming from ZZCONACT anymore but from COPA.**

PQ1 flow (<2018):

It consists to generate a line on P&L element ZR1291C => it is derived from the quantities on which we **apply the percentage of allocation (= the internal logistic costs / the external sold quantity) in the DSO DBCOPA13** at a level industrial origin / business area / country of destination.

The quantities are determined from ZZCONACT lines with P&L element = "ZN8110BQTY".

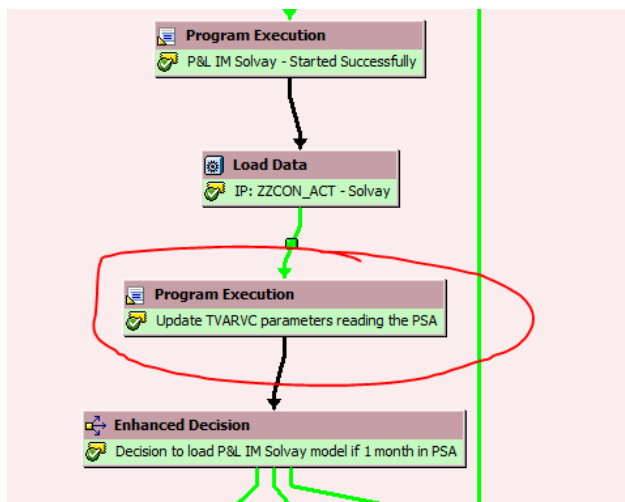
This solution is currently used only for Soda-Ash: DTP and start routine filtered on C\_TechBA\_\_CPFCTR1\_2="SD", the GBU is maintained in C\_GLBFIL MD: stream = "PL\_ELEMENT", rule = "IM\_IL\_GBU". In order to enhance to other GBU, it would be necessary to update DBCOPA13 to have the percentage of allocation by GBU.

PF1 flow:

It consists to generate a line on P&L element ZR1291C => it is derived from the quantities on which we **apply the percentage of allocation (= the internal logistic costs / the external sold quantity) in the DSO DBCOPA13** at a level industrial origin / business area / country of destination.

The quantities are determined from COPA lines. Following CROCO project, some quantities are in unity "PRT" (services), these quantities must not be taken into account in the calculation.

The Process Chain is synchronised with ZZCONACT loading as it will determine the month to calculate (as today the percentage of allocation for M-1 is determined using costs on [M-3;M-2] there is no real dependance). This month is updated in TVARVC variable "PL\_TVAVVC\_CALMONTH\_IM\_SOLV" updated in PF1 IM Process Chain PC\_COPA\_PL\_36:



Deletion of the data on the month to reload is done on the DSO in case the keys are not the same after reload (change on BU, country of destination or restated BA determination or less lines after ZZCONACT recalculation) but it should not be usefull normally.

This solution is currently used only for Soda-Ash: end routine filtered on C\_TECPCT2\_\_CPFCTR1\_2="SD", the GBU is maintained in C\_GLBFLT MD: stream = "PL\_ELEMENT", rule = "IM\_IL\_GBU"). In order to enhance to other GBU, it would be necessary to update DBCOPA13 to have the percentage of allocation by GBU (TRFN: DBCOPA29 -> DBCOPA36)

### Case 5: Non ERP

For Non ERP we load data from propagation layer but we only keep some value fields we modify (TRFN: DBCOPA09 -> DBCOPA27)

```
3239
3240 CASE wa_source_package-/bic/c_mgn_acc.
3241   WHEN 'R15400'.
3242     wa_source_package-/bic/c_mgn_acc = 'R1540C'.
3243     COLLECT wa_source_package INTO it_source_package.
3244   * WHEN 'R12910'. FD3612850
3245     * wa_source_package-/bic/c_mgn_acc = 'R1291C'.
3246     * COLLECT wa_source_package INTO it_source_package.
3247     * WHEN 'R12900'. FD3612850
3248     * wa_source_package-/bic/c_mgn_acc = 'R1290C'.
3249     * COLLECT wa_source_package INTO it_source_package.
3250   WHEN 'R25490'.
3251     wa_source_package-/bic/c_mgn_acc = 'R2549C'.
3252     COLLECT wa_source_package INTO it_source_package.
3253   WHEN OTHERS.
3254   ENDCASE.
3255   ENDIF.
3256   ENDLOOP.
3257
3258   * REFRESH SOURCE PACKAGE AND FILL IT WITH SPLITTED RECORDS
3259   REFRESH: SOURCE_PACKAGE.
3260   IF it_source_package[] IS NOT INITIAL.
3261     SOURCE_PACKAGE[] = it_source_package[].
3262   ENDIF.
3263
3264   * FREE INTERNAL TABLE
3265   REFRESH: it_source_package.
3266   FREE: it_source_package.
3267
3268   *****START CBE 06/2022*****
3269   * DELETE SOURCE PACKAGE TO KEEP ONLY R15400, R12910, R12900 AND R25490
3270   DELETE SOURCE_PACKAGE WHERE /bic/c_mgn_acc <> 'R2549C'
3271     AND /bic/c_mgn_acc <> 'R1540C'
3272     AND /bic/c_mgn_acc <> 'R1291C'
3273     AND /bic/c_mgn_acc <> 'R1290C'.
3274   *****END CBE 06/2022*****
3275
3276   * DELETE SOURCE_PACKAGE WHERE /bic/c_mgn_acc = 'R15400'
3277     * OR /bic/c_mgn_acc = 'R12910' FD 3612850
3278     ** OR /bic/c_mgn_acc = 'R12900' FD
3279     *3612850
3280     * OR /bic/c_mgn_acc = 'R25490'.
3281
3282   ENDMETHOD. "start routine
```

## Case 7: Sales in PF1, Production in WP1

In some cases, Integrated Margin needs to be calculated for a sale stored in Solvay system PF1, containing materials produced by a RCS plant and thus stored in WP1 system.

A set of eligibility rules has been established to qualify the need to check in WP1 system for Integrated Margin, as displayed in the graph below.

To calculate Integrated Margin in these cases, we must:

1. Collect the Material information from WP1, associate the quantity discovered to an entry in the Cost Unit DSO (*ODS\_PCP4*).
2. Suppress the existing Integrated Margin value calculated from PF1 entries (these "negative" entries are stored in *DBCOPA41*).
3. Make the data available for Reporting, via a new cube *CRCOPA30* added to MultiProvider *MVCOPA01*.

Every one of these operations are centered around new DataStore Object *IM - Solvay Sales at Rhodia IM costs* (*DBCOPA35*), which

- Collects data from existing Solvay DataFlow (DSO *Profitability Analysis: COPA - Solvay Legacy* *DBCOPA30*), **Note:** *There is a filter in transformation between DBCOPA30 and IB\_COPA\_06 to delete all but Novecare (CS) data.*
- Proceeds with eligibility checks (reading DSOs *Profitability Analysis: COPA - Origin/Plant Match-up* *DPCOPA35* and *IM - Solvay PF1 - GM Data ( Write-Optimized )* *DBCOPA34* to qualify eligibility),
- Calculates Integrated Margin on eligible entries,
- Feeds the list of eligible entries to *IM - Solvay PF1 - GM Data Annulation ( Write-Optimized )* *DBCOPA41* to negate existing Integrated Margin entries in *DBCOPA34*,
- Feeds cube *IM - Solvay PF1 - GM Data Annulation* *CRCOPA30* for Reporting of the new WP1 Integrated Margins.

**Process Chain:** *PC\_COPA\_PL\_45* - IM: RCS-Produced Solvay Materials

This PC will delete/reload the data on *0CALMONTH* = parameter in *C\_GLBFILTER*

Stream = COPA  
Rule = *DBCOPA35*  
Counter = 001

on following infoproviders (program *Z\_DEL\_DBCOPA41* variant *Z\_MAIN*)

*DBCOPA41*, *DBCOPA35*, *CRCOPA30*

Filter data to load from *DBCOPA30* to *DBCOPA35* on TRSF: *ODSO DBCOPA30 -> TRCS IB\_COPA\_06*

Counter 002 by company code

Counter 003 by GBU

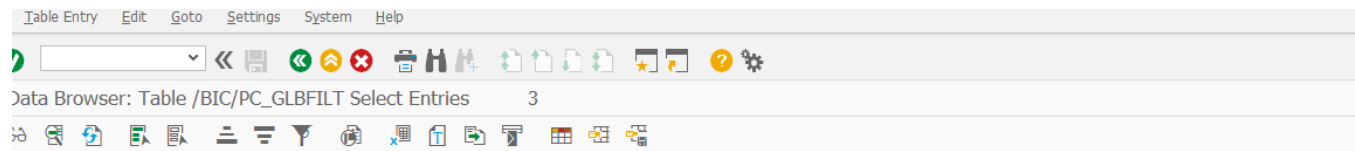


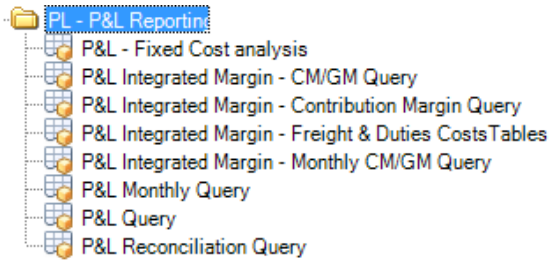
Table: */BIC/PC\_GLBFILT*

| Stream | Rule            | Counter | V | Change flag ( I inserted / D deleted ) | Global Filter Descri                         | Sign | Option | Low            | Hight  | Active |
|--------|-----------------|---------|---|--|--|------|--------|----------------|--------|--------|
| COPA   | <i>DBCOPA35</i> | 001     | A |  | Period for <i>DBCOPA35</i> update            | I    | BT     | 202110         | 202111 | Y      |
| COPA   | <i>DBCOPA35</i> | 002     | A |  | Company Code list for <i>DBCOPA35</i> update | I    | EQ     | 5726/5785/5686 |        | Y      |
| COPA   | <i>DBCOPA35</i> | 003     | A |  | GBU List for the <i>DBCOPA35</i> Update      | I    | EQ     | CS/PA          |        | Y      |

## Reporting

### Queries End User Documentation

All the reporting is available throught workbooks in the role "PL - P&L Reporting" *ZR\_RCS\_CA\_M12*



ZR\_RCS\_CA\_M12  
 BW\_WBK\_PL\_0008  
 BW\_WBK\_PL\_0004  
 BW\_WBK\_PL\_0005  
 BW\_WBK\_PL\_0006  
 BW\_WBK\_PL\_0007  
 BW\_WBK\_PL\_0002  
 BW\_WBK\_PL\_0001  
 BW\_WBK\_PL\_0003

Query documentation:

[https://drive.google.com/drive/folders/1pFQ\\_tfTUYK1xEz4-cz0JFel7arKyY7Nn?usp=drive\\_link](https://drive.google.com/drive/folders/1pFQ_tfTUYK1xEz4-cz0JFel7arKyY7Nn?usp=drive_link)

**Reporting documentation drive folder:**

<https://drive.google.com/drive/folders/19pPWUmAkTcW1aYlzlqyHOxvL6JfDdaKe>

<https://drive.google.com/drive/folders/1zF0862L7nRnu39MXdtVORT-HkmHavs-R>

[https://drive.google.com/open?id=0B\\_p\\_Afe8sjVITEVnc3NjdDV5U0U](https://drive.google.com/open?id=0B_p_Afe8sjVITEVnc3NjdDV5U0U) [https://drive.google.com/drive/folders/1miRFX\\_LJKQ5YGWq-r3-YETCNkZcRhLvy](https://drive.google.com/drive/folders/1miRFX_LJKQ5YGWq-r3-YETCNkZcRhLvy)

<https://drive.google.com/drive/folders/1xY6QOu8gmrvmyncdpSu5trUA5SQIIRX>

<https://drive.google.com/drive/folders/1rzUHdVecCOROXOkZBpp7uhbHNJqlc63Y>

## Main queries

There are several queries but the main ones are:

BW\_QRY\_MVCOPA01\_0001 BW P&L Query

BW\_QRY\_MVCOPA01\_0002 BW P&L - Monthly Query

BW\_QRY\_MVCOPA01\_0003 BW P&L Reconciliation Query

BW\_QRY\_MVCOPA01\_0005 BW Integrated Contribution Margin Query

All queries use structures for key figures. There are many key figures, using calculated and restricted key figures inside.

[Key figures logic](#)

Main fonctionnalités: Jump query available

## Dependencies with other applications

List of APD:

| APD         | Description                                     |
|-------------|---|
| APD_PL_0007 | ADP P&L Contrib (current month - Conso)         |
| APD_PL_0006 | ADP P&L Contrib (current month - Detailed)      |
| APD_PL_0005 | ADP P&L Sales Contrib (current and last month)  |
| APD_PL_0004 | ADP P&L VC+QTY current month                    |
| APD_PL_0001 | ADP P&L VC+QTY last month                       |
| APD_PL_0003 | ADP P&L VSE+QTY current month                   |
| APD_PL_0002 | ADP P&L VSE+QTY last 2 months                   |
| APD_PL_0008 | APD MM - SMOG Evolution                         |
| APD_PL_0009 | APD P&L - Contrib for Global Sales M (Solvay)   |
| APD_PL_0012 | APD P&L - Contrib for Global Sales M-1 (Rhodia) |

|             |   |
|-------------|---|
| APD_PL_0013 | APD P&L - Contrib for Global Sales M-1 (Solvay) |
| APD_PL_0023 | APD P&L Smartfloat                              |
| APD_PL_0022 | APD P&L: ICM Current month (Rhodia)             |

## Data Loading

### Info providers and objects loaded

List on info providers inside the technical cockpit.

Main process chains are:

**PC\_COPA\_PL\_GLOBAL** : Load WP1 & PF1 COPA, BFC and WP1 IM daily

**PC\_COPA\_PL\_22** : Load WP1 & PF1 COPA Extra load during closing period. This chain included too chain PC\_COPA\_PL\_12, which load BFC File in WBP.

**PC\_COPA\_PL\_36** : Load PF1 IM and allocation of transportation costs PF1

**PC\_COPA\_PL\_09** : Load Non ERP Master data and Transactional data

Other chains:

| Process chain | Providers Loaded   | Frequency                    | Time Start                            | Duration        |
|---------------|--|------------------------------|---------------------------------------|-----------------|
| PC_COPA_PL_03 | CRCOPA29<br>CRCOPA31<br>CRCOPA02<br>CRCOPA01   | Daily                        | Arround 1:20am                        | Arround 5 mins  |
| PC_COPA_PL_12 | CRCOPA03<br>CRCOPA04<br>CRCOPA05<br>CRCOPA06<br>CRCOPA07<br>CRCOPA08                         | Daily                        | Arround 2am                           | Arround 8 mins  |
| PC_COPA_PL_20 | CRCOPA21   | Daily                        | Every hour                            | Arround 2 mins  |
| PC_COPA_PL_21 | CRCOPA18<br>CRCOPA14<br>CRCOPA17<br>CRCOPA13<br>CRCOPA15<br>CRCOPA16<br>CRCOPA20<br>CRCOPA32 | Daily                        | Arround 2:15am                        | Arround 6 mins  |
| PC_COPA_PL_32 | CRCOPA22   | Daily                        | Arround 1:10am                        | Arround 3 mins  |
| PC_COPA_PL_33 | CRCOPA23   | Third and Fourth working day | Several execution between 2am and 4pm | Arround 5 mins  |
| PC_COPA_PL_42 | CRCOPA26   | Third and Fourth working day | Several execution between 2am and 4pm | Arround 5 mins  |
| PC_COPA_PL_45 | CRCOPA30   | Third and Fourth working day | Several execution between 2am and 4pm | Arround 8 mins  |
| PC_GBR_14     | CRCOPA09<br>CRCOPA20   | Daily                        | Arround 3:40am                        | Arround 20 mins |

### Loading frequency

WP1 and PF1(except for PF1 IM) are loaded daily at 1h30 am (french time) and also 4 other times between working day 2 and 4 (8am, 1pm, 3pm and 8pm, managed in c\_glbfil PL\_ELEMENT/CHECK\_LOAD).

PF1 IM are loaded usually once by day from D+2 to D+5 (it is executed automatically on event after ZZCONACT update in PF1)

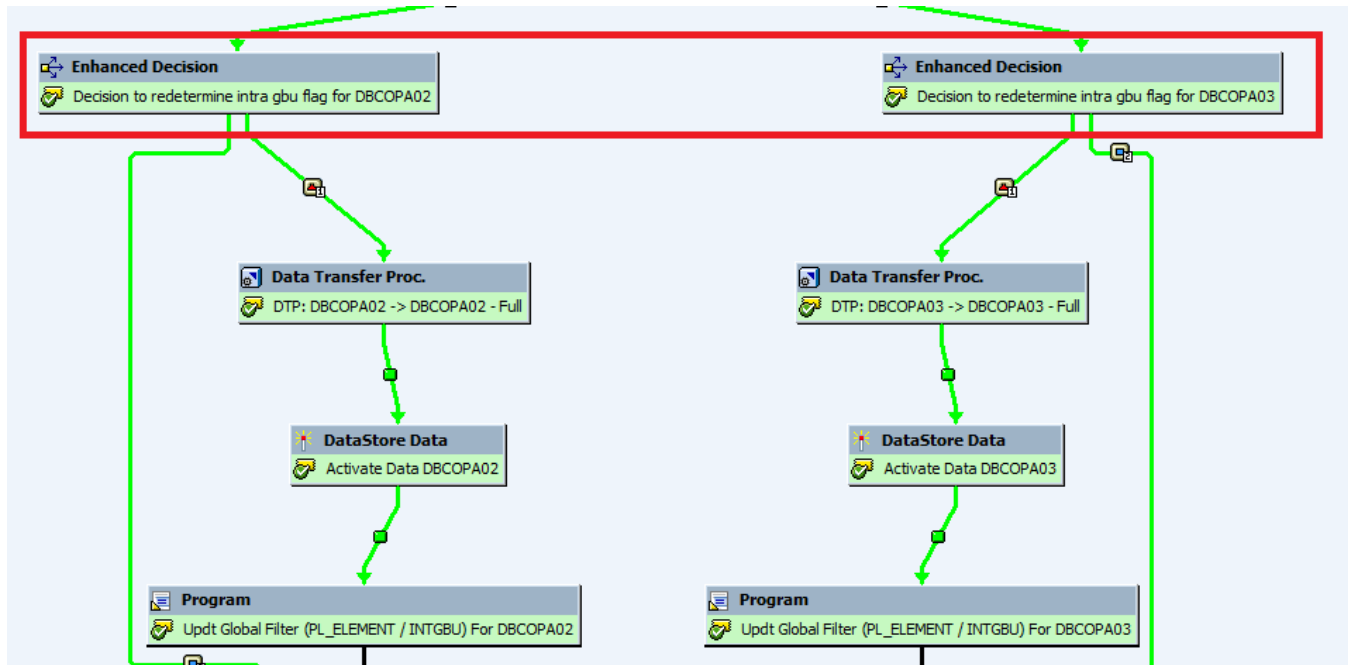
BFC is loaded daily at 1h30 am (french time). On closing period from D+2 to D+5 it is loaded too on 08H, 13H, 15H and 20H.

NON ERP is loaded 4 times a day (7 AM, 13 PM, 18 PM, 24 PM):

PQ1 loading: on demand from PQ1 system => PQ1 is now decommissioned, no more loading

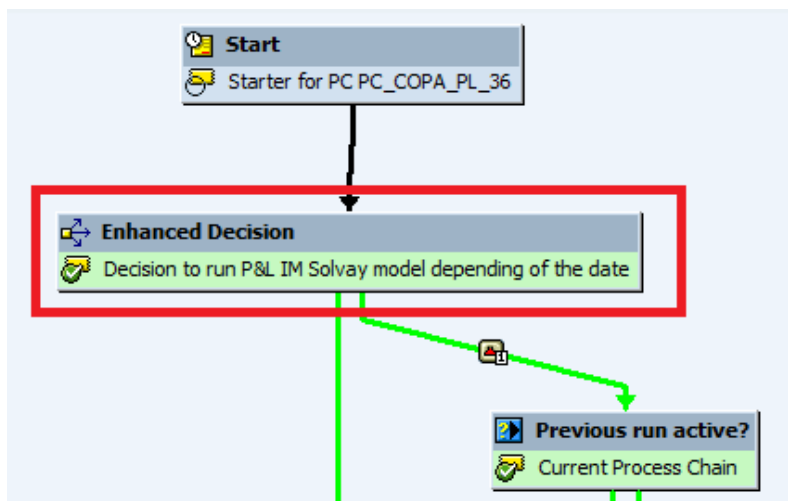
### Flag intra gbu decision variant:

Inside the PC PC\_COPA\_PL\_03 (WP1 P&L), the loadings of DBCOPA02 DBCOPA02 and ABCOPA03 ABCOPA03 to redetermine the flag intra GBU are only once a week, determined by enhanced decision variants that read the last week of redetermination using MD c\_glbfil ( stream = "PL\_ELEMENT", rule = "INTGBU")



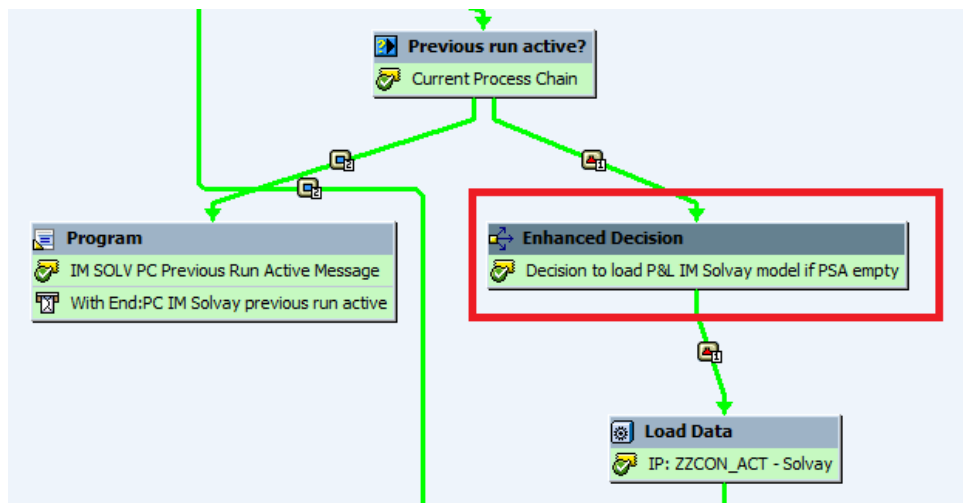
### IM PF1 decision variants:

- In PC PC\_COPA\_PL\_36, the first decision variant is used to determine when loading is allowed, depending of the date => it is currently set to run from workday D to D+31 (so no restriction anymore). This interval of workdays is defined in c\_glbfil MD, for stream = "PL\_SOLV" and rule = "IM\_RUN\_PER". The calendar used to determine the workday is also set in c\_glbfil, for stream = "PL\_SOLV" and rule = "IM\_RUN\_CAL".

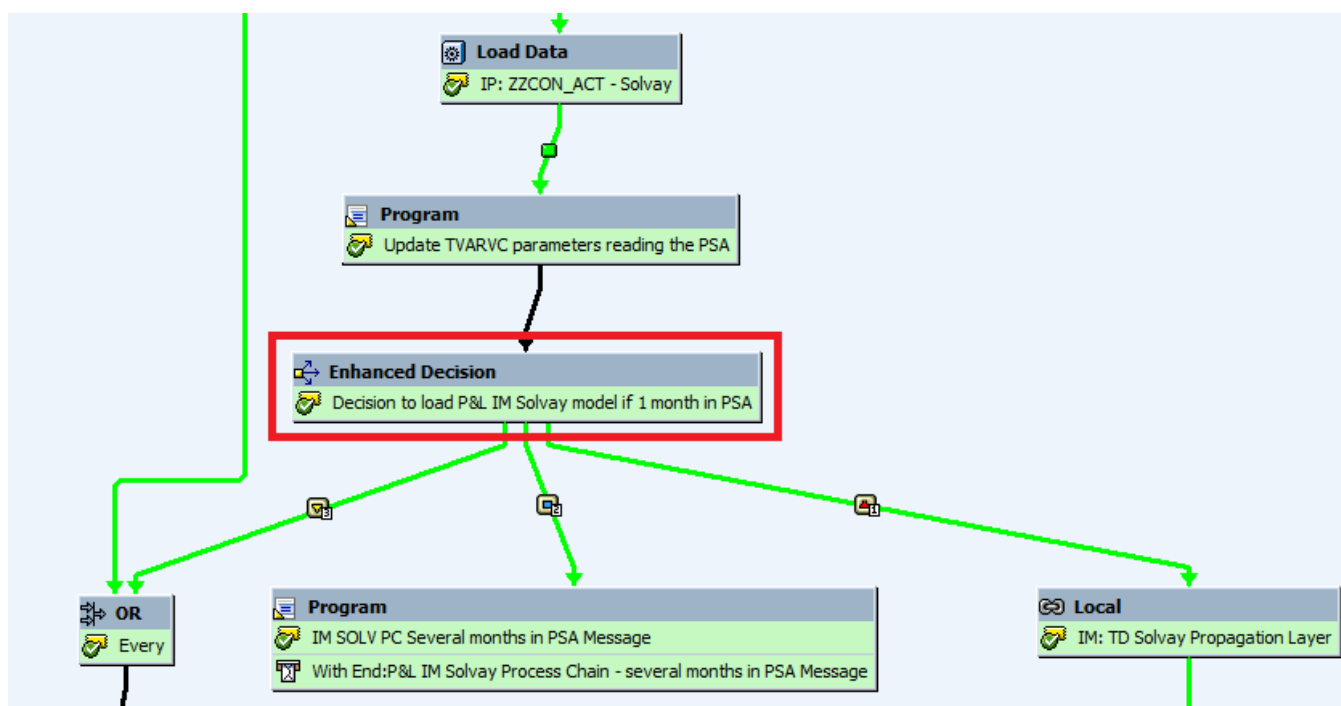


- The second decision variant read the PSA, using PSA table name in table RSTSODS for the datasource set in c\_glbfil MD (stream = "PL\_SOLV", rule ="DSNAME"). It ensures that there is no remaining request in the PSA before to start a new loading which could mean a

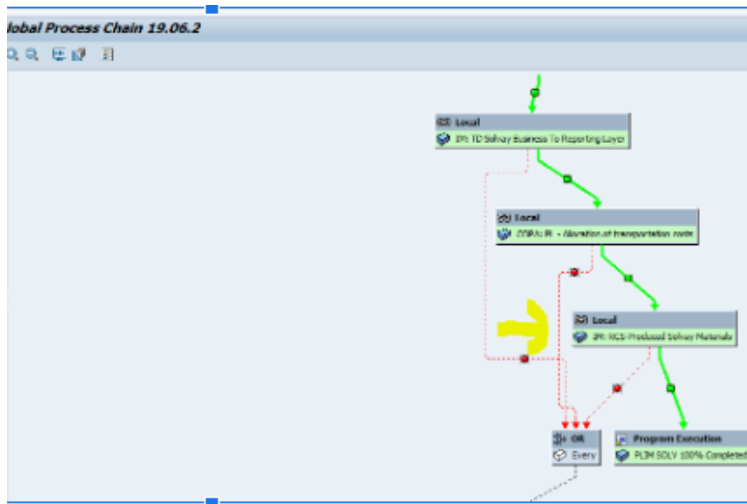
potential problem: that the last run was not completed as PSA is emptied at the end of the Process chain or the PSA was not cleaned after a manual loading.



- The third decision variant read the TVARV parameter "PL\_TVARVC\_CALMONTH\_IM\_SOLV" which contains the calmonths that were loaded in the PSA. The TVARV was updated previously in ABAP variant "Z\_UPDATE\_TVARVC\_PL\_IM\_SOLV" which uses PSA table name in table RSTSODS for the datasource set in c\_glbfilt MD (stream = "PL\_SOLV", rule = "DSNAME").
  - If there is only one month in the PSA, then it is the normal behaviour and the loading is authorized.
  - If there are several months in the PSA, the PC is aborted and an error message is sent. In that case, an analysis must be done to understand why there are several months before to reload the data.



As part of the change # 4287353 , In the meta chain PC\_COPA\_PL\_36,added the PC\_COPA\_PL\_45 process chain after the execution of PC\_COPA\_PL\_42.



## Average performance

WP1: 1h40 for P&L and IM

PF1: 20min for COPA and 20min for IM

BFC: 10 min

Non ERP: 5 min

PQ1: 10min for GM and 1h for PCA

## Record Keeping

We keep all records.

## Dependencies with other applications

### Broadcast

No broadcast

### Open Hub

| Domain  | OH        | Name                     | Query                | Target                   |
|---------|-----------|--------------------------|----------------------|--------------------------|
| Finance | OH_IMEP1  | IMEP-WP1/PF1dataforPCFOH | BW_QRY_MVCOPP01_0021 | Z_BW_PCF_IMEP            |
| Finance | OH_SOL002 | Solstice:CPCOPA01        | BW_QRY_MVCOPA02_0002 | Z_SOLSTICE_OHSOL002_FILE |

## APD

| DOM AIN | PROCESS     | NAME   | QUERY                 | TARGET  | PC                      |
|---------|-------------|--|-----------------------|---------|-------------------------|
| Finance | APD_PL_0003 | ADP P&L VSE+QTY current month                  | APD_QRY_MVCOPA01_0001 | DPDS070 | PC_GL_SALES_APD0003     |
| Finance | APD_PL_0002 | ADP P&L VSE+QTY last 2 months                  | APD_QRY_MVCOPA01_0002 | DPDS069 | -                       |
| Finance | APD_PL_0001 | ADP P&L VC+QTY last month                      | APD_QRY_MVCOPA01_0003 | DPDS072 | -                       |
| Finance | APD_PL_0004 | ADP P&L VC+QTY current month                   | APD_QRY_MVCOPA01_0004 | DPDS073 | PC_GL_SALES_APD001      |
| Finance | APD_PL_0005 | ADP P&L Sales Contrib (current and last month) | APD_QRY_MVCOPA01_0005 | DPDS074 | PC_GL_SALES_APD_CONTRIB |

|         |                       |   |                               |                         |   |
|---------|-----------------------|---|-------------------------------|-------------------------|---|
| Finance | APD_PL_0006           | ADP P&L Contrib (current month - Detailed)                | APD_QRY_MVCOPA01_0007         | DPSDSO75                | PC_GL_SALES_APD_CONTRIB                         |
| Finance | APD_PL_0007           | ADP P&L Contrib (current month - Conso)                   | APD_QRY_MVCOPA01_0007         | DPSDSO95                | PC_GL_SALES_APD_CONTRIB                         |
| Finance | APD_PL_0009           | ADP P&L - Contrib for Global Sales M (Solvay)             | APD_QRY_MVCOPA01_0009         | DPSDSO81                | -   |
| Finance | APD_PL_0010           | SPM - APD P&L (Rhodia) - curr + prev month                | APD_QRY_MVCOPA01_0010         | DPSDSP10                | PC_SPM_TRANS_01                                 |
| Finance | APD_PL_0011           | SPM - APD P&L (Solvay) - curr + prev month                | APD_QRY_MVCOPA01_0011         | DPSDSP11                | PC_SPM_TRANS_02                                 |
| Finance | APD_PL_0012           | APD P&L - Contrib for Global Sales M-1 (Rhodia)           | APD_QRY_MVCOPA01_0013         | DPSDSO88                | -   |
| Finance | APD_PL_0013           | APD P&L - Contrib for Global Sales M-1 (Solvay)           | APD_QRY_MVCOPA01_0014         | DPSDSO89                | -   |
| Finance | APD_PL_0022           | APD P&L: ICM Current month (Rhodia)                       | APD_QRY_MVCOPA01_0015         | DPSDSO95                | -   |
| Finance | APD_PL_0020           | SPM - APD P&L (Rhodia) - any period                       | APD_QRY_MVCOPA01_0020         | DPSDSP10                | PC_SPM_RELOAD_01                                |
| Finance | APD_PL_0021           | SPM - APD P&L (Solvay) - any period                       | APD_QRY_MVCOPA01_0021         | DPSDSP11                | -   |
| Finance | APD_PL_0023           | APD P&L Smartfloat  | APD_QRY_MVCOPA01_0023         | Z_BW_SMARTFLOAT_EXTRACT | PC_PL_APD0001                                   |
| Finance | APD_PL_GS_0030        | Netback Sales P&L   | APD_QRY_MVCOPA01_NBA CK_0001  | DPSDSO7A                | PC_GL_SALES_APD030                              |
| Finance | APD_PL_GS_0031        | Netback Sales P&L (w/o interval)                          | APD_QRY_MVCOPA01_NBA CK_0002  | DPSDSO7A                | -   |
| Finance | ADP_DSO_DPCOPA08      | APD for DSO DPCOPA08                                      | BW_QRY_MVCOPA01_0011          | DPCOPA08                | PC_COPA_PL_23<br>PC_COPA_PL_42<br>PC_COPA_PL_25 |
| Dynasys | APD_DPS_DYNASY S_0023 | Dynasys - ICM COPA  | BW_QRY_MVCOPA01_0027          | Z_BW_DYNASYS_ICM_COPA   | PC_DPS_DYNASYS_09                               |
| Dynasys | APD_DPS_DYNASY S_0046 | Dynasys - Contribution Margin SKU                         | BW_QRY_MVCOPA01_0029          | Z_BW_DYNASYS_CM_SKU     | PC_DPS_DYNASYS_09                               |
| EHS     | APD_EHS_SVHC_001      | EHS - SVHC - Previous Month Sales                         | BW_QRY_MVCOPA01_EHS_001A      | DPEHS024                | -   |
| EHS     | APD_EHS_SVHC_002      | EHS - SVHC - Quarterly Sales                              | BW_QRY_MVCOPA01_EHS_001B      | DPEHS024                | -   |
| EHS     | APD_EHS_SHVC_003      | EHS - SVHC - Last 12 months Sales excluding current month | BW_QRY_MVCOPA01_EHS_001C      | DPEHS024                | PC_EHS_SVHC_006                                 |
| Dynasys | APD_DPS_DYNASY S_0068 | Dynasys - Netback COPA                                    | BW_QRY_MVCOPA01_NETB ACK_0002 | Z_BW_DYNASYS_NETB ACK   | PC_DPS_DYNASYS_09                               |

## Data Quality Control

Data come from SAP system. To compare data between BW and sources systems, check propagation layers.

Table KE30 can valid with P&L on non-console view.

Table CE1+ Operating concern in the source should be the same value as Propagation layer of COPA data.

## Operational Documentation

### Procedures

P&L : Non ERP transaction

<https://drive.google.com/file/d/1Mqb9wnFqnp2tl6j4AFKbWjm6BnDGSxPTQJHyOYvwspQ/view>

P&L : Time reference for CICC and GM flat files

[https://drive.google.com/file/d/1EoZAJLveLXL2wASs1m-l1D8LO8l28y5A\\_Jze6sO-bS4/view](https://drive.google.com/file/d/1EoZAJLveLXL2wASs1m-l1D8LO8l28y5A_Jze6sO-bS4/view)

IM: Delta + full load of current and previous months.

Program for LER determination

<https://drive.google.com/file/d/1VnOBO-jeV85c6kJYram-fulh70U3gWU7LHiTHtB8e0l/view>

<https://drive.google.com/file/d/12hYsIOncEYpMI6aeOjtZtIHS3o2-GCLnnCZiKzJOUiU/view>

Program for LER info providers

<https://drive.google.com/file/d/1AXQaMXmP4AdN9FeP8eByaRVQqDgs59BJBPL3NxSAhfc/view>

## Scheduling

<Describe the scheduling in place for the application (eg. existing jobs, trigger time/event based, dependencies)>

## Monitoring

<Describe the monitoring checks to confirm the application is performing well (eg. check the overall status, check performance metrics like runtime/data volume/memory/disk/CPU, maintain and react to alerts/notifications)>

## Error Handling

<Describe how to handle errors (eg. error codes, description and respective resolution, alert users)>

## Known Bugs

<List the existing bugs, its criticality, workarounds and resolution plan.>

## Roadmap

Todo list: <https://drive.google.com/file/d/1cvHfPpBByAQnYIZUZpvMkwFQmGmGESkSdrQrBhcTz9s/view>