

# iCARE - Sold & Pending

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## General presentation

### Objective of the application

BW application used to populate data from Order Book to Salesforce, using MFT process as middleware between the systems.

Tool and IT leaders of the application are:

- BW OtC : Felipe Rodrigues (Pending orders & Account on BW)
- Salesforce : Emmanuel Gaheri / Dina Mendes
- WebMethods : Reiner Hellstern / Nikhil Bhosle
- Developer: Felipe Rodrigues

### Usage information

This project have only Salesforce users.

### History

The project removed the SAP function module dependency, getting data directly from order book to be invoiced report.

## Roles & Access

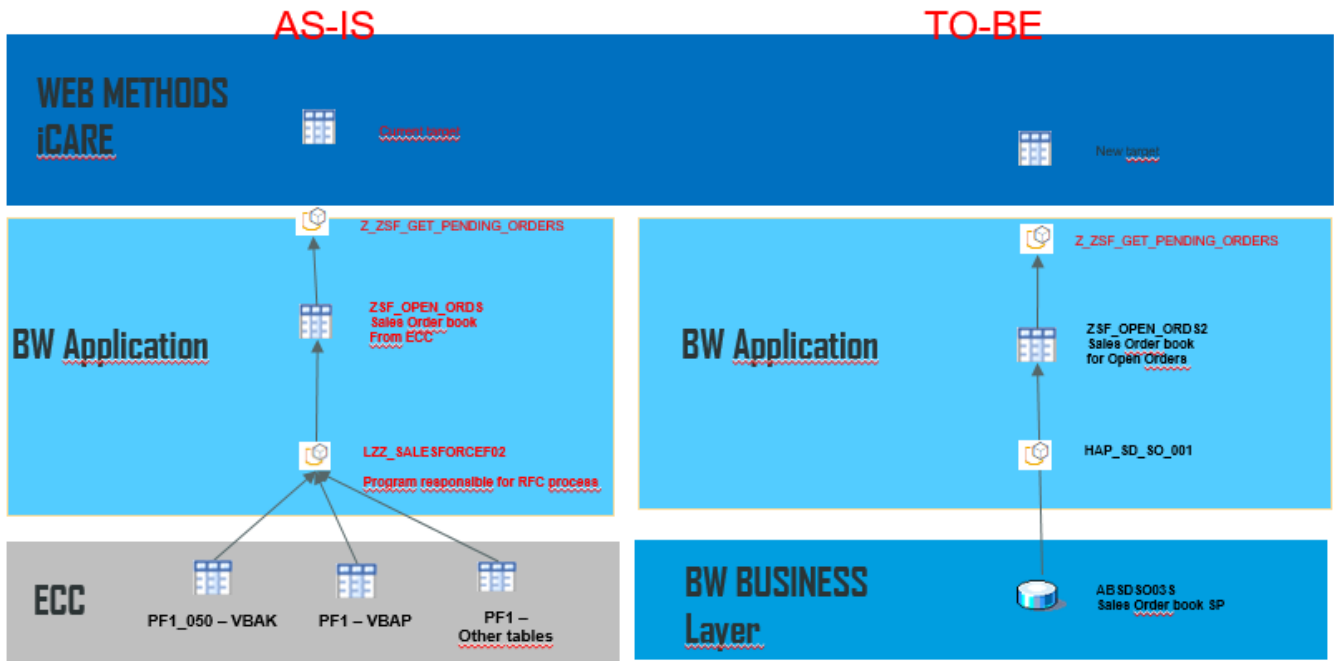
### Roles and access

List of application role + menu role and explanation if we have several applications role with specials rules.

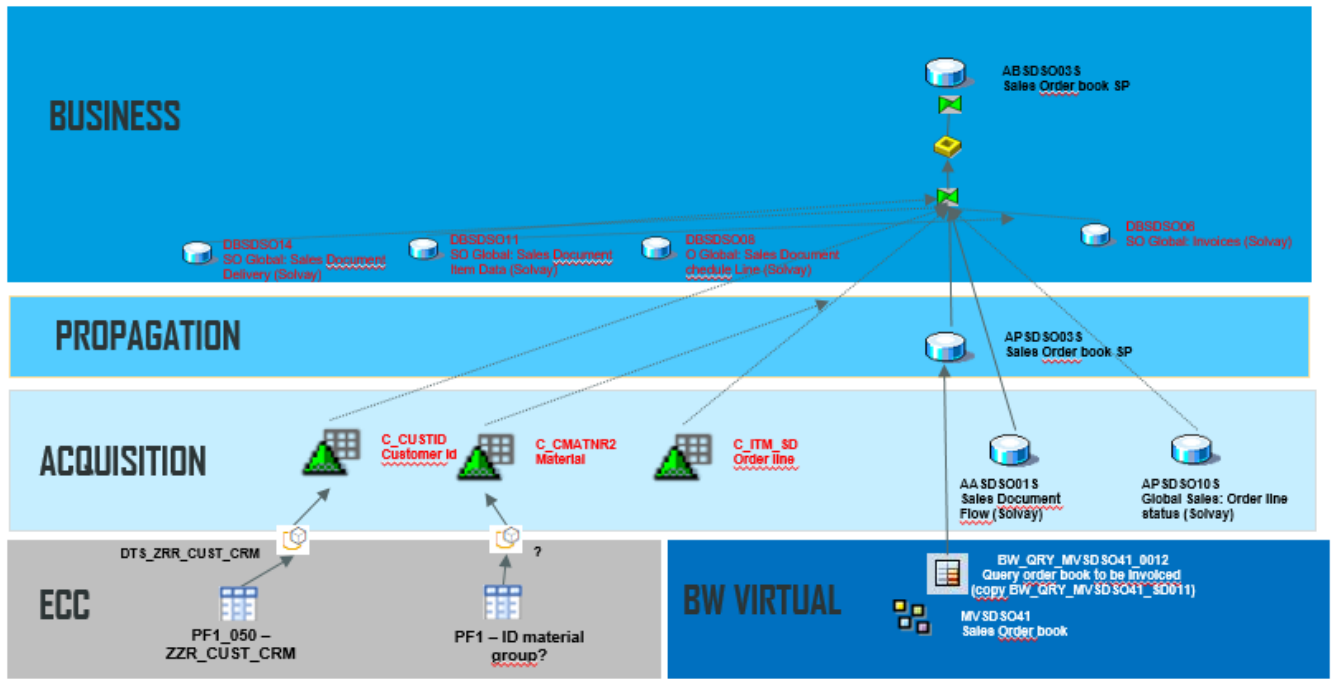
| Role Code | Role Description | Explanation |
|-----------|------------------|-------------|
|           |                  |             |
|           |                  |             |
|           |                  |             |

## Dataflow overview

The old process used to get data from PF1 tables by function module, the current process gets data from BW ADSO based on records used in the report Order book: To be invoiced Full (BW\_QRY\_MVSDSO41\_SD011).

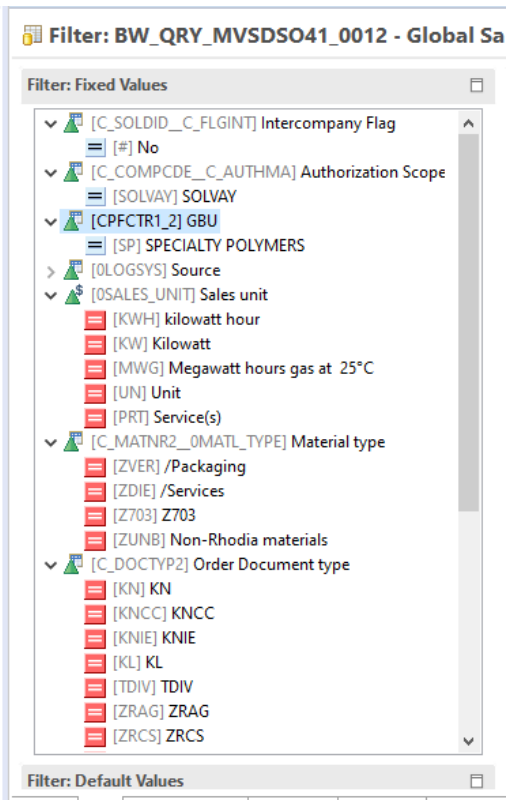


The table ABSDSO03S uses data from two queries, according to the date, the first 10 days of the month, the base is query BW\_QRY\_MVSDSO41\_0013, current and previous month data from SpP in the currency of the order, from day 11 query BW\_QRY\_MVSDSO41\_0013 using only the current month, both are a copy of the report BW\_QRY\_MVSDSO41\_SD011.



## Functional and Technical rules on Workbench + Reporting Rules & Explanations

Source of the process: queries BW\_QRY\_MVSDSO41\_0012 and BW\_QRY\_MVSDSO41\_0013 work only with GBU SP and no as intercompany data flag.



The key figures are the same used BW\_QRY\_MVSDSO41\_SD011, the main difference as mentioned above, the second one gets data based on M-1 for the first ten days of the month.

**Sheet Definition: BW\_QRY\_MVSDSO41\_0012 - Global Sales: Orde (iCare)**

Columns

- Key Figures
  - TOTAL Net Value (CO)
    - [BW\_RKF\_MVSDSO41\_0018] Invoiced Net Sales M (CO)
    - [BW\_RKF\_MVSDSO41\_0015] Shipped Not Billed Net Value M (CO)
    - [BW\_CKF\_MVSDSO41\_0170] TOTAL Open Order Net Value (M, M+1, M+2, >M+2)
  - TOTAL QTY (UOM)
    - [BW\_CKF\_MVSDSO41\_0171] TOTAL Open Order (M, M+1, M+2, >M+2)
    - [BW\_RKF\_MVSDSO41\_0017] Shipped not invoiced qty M
    - [BW\_RKF\_MVSDSO41\_0019] Invoiced qty M

**Sheet Definition: BW\_QRY\_MVSDSO41\_0013 - Global Sales: Or first 10 days (iCare)**

Columns

- Key Figures
  - TOTAL Net Value (CO)
    - [BW\_RKF\_MVSDSO41\_0018] Invoiced Net Sales M (CO)
    - [BW\_RKF\_MVSDSO41\_0307] Invoiced Net Value M-1
    - [BW\_RKF\_MVSDSO41\_0015] Shipped Not Billed Net Value M (CO)
    - [BW\_RKF\_MVSDSO41\_0113] Shipped not invoiced net value <M
    - [BW\_CKF\_MVSDSO41\_0170] TOTAL Open Order Net Value (M, M+1, M+2, >M+2)
    - [BW\_RKF\_MVSDSO41\_0006] Open order net value <M
  - TOTAL QTY (UOM)
    - [BW\_CKF\_MVSDSO41\_0171] TOTAL Open Order (M, M+1, M+2, >M+2)
    - [BW\_RKF\_MVSDSO41\_0001] Open order QTY <M
    - [BW\_RKF\_MVSDSO41\_0017] Shipped not invoiced qty M
    - [BW\_RKF\_MVSDSO41\_0114] Shipped not invoiced qty <M
    - [BW\_RKF\_MVSDSO41\_0019] Invoiced qty M
    - [BW\_RKF\_MVSDSO41\_0308] Invoiced QTY M-1

The propagation layer ADSO APSDSO03S receives data from these queries, aggregating the key figures according to the key below.

| Rule | Rule Name | Posi | Key | InfoObject | Ico | Descript.            |
|------|-----------|------|-----|------------|-----|----------------------|
| →    | OLOGSYS   | 1    | 🔑   | OLOGSYS    | 📊   | Source System        |
| →    | C_DOCNUMB | 2    | 🔑   | C_DOCNUMB  | 📊   | Sales document       |
| →    | C_ITM_SD  | 3    | 🔑   | C_ITM_SD   | 📊   | Sales document item  |
| →    | C_DELNUM2 | 4    | 🔑   | C_DELNUM2  | 📊   | Delivery number      |
| →    | C_DELITM2 | 5    | 🔑   | C_DELITM2  | 📊   | Delivery Item (Core) |
| →    | C_BILLNUM | 6    | 🔑   | C_BILLNUM  | 📊   | Billing document     |
| →    | C_BILLITM | 7    | 🔑   | C_BILLITM  | 📊   | Billing Line         |

On this point, the key figures are checked to identify and threat, the currency without decimal places, like JPY and CLP by the BAPI: BAPI\_CURRENCY\_C ONV\_TO\_INTERNAL

```

133 IF SOURCE_FIELDS-FIELDNM003 <> 0
134 AND SOURCE_FIELDS-DOC_CURRCY NE 'EUR'.
135
136 CLEAR: lv_amount_ext, lv_amount.
137 lv_Amount_Ext = SOURCE_FIELDS-FIELDNM003.
138
139 CALL FUNCTION 'BAPI_CURRENCY_CONV_TO_INTERNAL'
140 EXPORTING
141     currency           = SOURCE_FIELDS-DOC_CURRCY
142     amount_external    = lv_Amount_Ext
143     max_number_of_digits = 23
144 IMPORTING
145     AMOUNT_INTERNAL    = lv_amount.
146
147 CLEAR: V_IN, V_OUT, v_date, v_endmonth.
148
149 v_date = sy-datum.
150
151 CALL FUNCTION 'SN_LAST_DAY_OF_MONTH'
152 EXPORTING
153     DAY_IN           = v_date
154 IMPORTING
155     END_OF_MONTH    = V_ENDMONTH.
156
157 V_CURR = SOURCE_FIELDS-DOC_CURRCY.

```

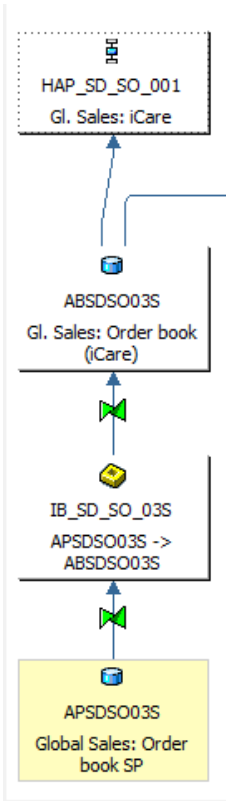
And the conversion to VKG by Z\_MD\_CONVERT\_MATERIAL\_UNIT2,

```

144
145 V_UNIT = SOURCE_FIELDS-fieldnm002.
146 V_Q_IN = SOURCE_FIELDS-FIELDNM001.
147
148 CALL FUNCTION 'Z_MD_CONVERT_MATERIAL_UNIT2'
149 EXPORTING
150     I_MATNR           = SOURCE_FIELDS-/BIC/C_MATNR2
151     I_LOGSYS          = SOURCE_FIELDS-LOGSYS
152     I_IN_ME           = V_UNIT
153     I_OUT_ME          = 'VKG'
154     I_MENGE           = V_Q_IN
155 IMPORTING
156     E_MENGE           = V_Q_OUT
157 EXCEPTIONS
158     ERROR_IN_APPLICATION = 1
159     ERROR                = 2
160     OTHERS               = 3.
161
162 IF SY-SUBRC = 0.
163     RESULT = V_Q_OUT.
164 ENDIF.
165 ELSE.
166     RESULT = SOURCE_FIELDS-FIELDNM001.
167 ENDIF.

```

The dataflow upwards to the business layer, ABSDSO03S, is divided by an infosource, where in the transformation before that, we concentrate all look-up processes to select data from other tables in complement to the data requested by iCARE, using AMDP code, and the data after infosource is used to currency conversion by ABAP code.



### AMDP Code

Rule1) Check the last requested date corresponding to last schedule line

```

--> Get the last requested date by order line
SCHTAB = SELECT c."LOGSYS",
               c."/BIC/C_DOCNUMB",
               c."/BIC/C_ITM_SD",
               d.REQ_DATE
             FROM ( SELECT a."LOGSYS",
                          a."/BIC/C_DOCNUMB",
                          a."/BIC/C_ITM_SD",
                          MAX ( j."SCHED_LINE" ) AS SCHED_LINE
                    FROM :INTAB AS a
                    INNER JOIN "/BIC/ADBSO00800" AS j
                          ON a."LOGSYS" = j."LOGSYS"
                          AND a."/BIC/C_DOCNUMB" = j."/BIC/C_DOCNUMB"
                          AND a."/BIC/C_ITM_SD" = j."/BIC/C_ITM_SD"
                    GROUP BY a."LOGSYS", a."/BIC/C_DOCNUMB", a."/BIC/C_ITM_SD" ) AS c
             INNER JOIN "/BIC/ADBSO00800" AS d
                   ON c."LOGSYS" = d."LOGSYS"
                   AND c."/BIC/C_DOCNUMB" = d."/BIC/C_DOCNUMB"
                   AND c."/BIC/C_ITM_SD" = d."/BIC/C_ITM_SD"
                   AND c.SCHED_LINE = d.SCHED_LINE;
  
```

Rule2) Check if there is any corresponding precedent document for each order line, this process is used to assign the billing status in case of the order line is not completely assigned by the vbuk/vbup.

```

-- Check precedent documents for each order line.
PRECTBA = SELECT a."LOGSYS",
                a."/BIC/C_DOCNUMB",
                a."/BIC/C_ITM_SD",
                b.VBELN,
                c.FKSTK,
                c.FKSAK
FROM :INTAB AS a
INNER JOIN "/BIC/AAASDS001S2" AS b
  ON a."LOGSYS" = b."LOGSYS"
  AND a."/BIC/C_DOCNUMB" = b.VBELV
  AND RIGHT( a."/BIC/C_ITM_SD", 6 ) = b.POSNV
INNER JOIN "/BIC/AAASDS009S2" AS c
  ON a."LOGSYS" = c."LOGSYS"
  AND c."VBELN" = b.VBELN
WHERE b.vbtyp_n IN ( 'J', 'T' )
  AND b.stufe IN ( '00', '01' )
  AND ( c.FKSTK <> ''
        OR c.FKSAK <> '' );

-- Build the status according to the order line.
VBFA = SELECT "LOGSYS",
             "/BIC/C_DOCNUMB",
             "/BIC/C_ITM_SD",
             MAX( FKSTK ) AS FKSTK,
             MAX( FKSAK ) AS FKSAK
FROM :PRECTBA AS a
GROUP BY a."LOGSYS", a."/BIC/C_DOCNUMB", a."/BIC/C_ITM_SD";

```

Rule3) It's assign values into fields for all tables mentioned in the list below.

```

METHOD PROCEDURE BY DATABASE PROCEDURE FOR HDB LANGUAGE SQLSCRIPT OPTIONS READ-ONLY USING /BIC/ADBS01100 /BIC/PC_ITM_SD
/BIC/PC_CUSTID /BIC/PC_MATNR2 /BIC/ADBS01400 /BIC/ADBS00800 /BIC/ADBS00600 /BIC/ADPS01600 /BIC/ADPSDTR3200
/BIC/AAASDS010S2 /BIC/AAASDS001S2 /BIC/AAASDS009S2.

```

```

LEFT JOIN "/BIC/ADBS01100" AS b
  ON a."LOGSYS" = b."LOGSYS"
  AND a."/BIC/C_DOCNUMB" = b."/BIC/C_DOCNUMB"
  AND a."/BIC/C_ITM_SD" = b."/BIC/C_ITM_SD"
LEFT JOIN "/BIC/PC_ITM_SD" AS c
  ON a."LOGSYS" = c."LOGSYS"
  AND a."/BIC/C_DOCNUMB" = c."/BIC/C_DOCNUMB"
  AND a."/BIC/C_ITM_SD" = c."/BIC/C_ITM_SD"
  AND c.OBJVERS = 'A'
LEFT JOIN "/BIC/PC_CUSTID" AS f
  ON a."LOGSYS" = f."LOGSYS"
  AND a."/BIC/C_SOLDID" = f."/BIC/C_CUSTID"
  AND f.OBJVERS = 'A'
LEFT JOIN "/BIC/PC_CUSTID" AS g
  ON a."LOGSYS" = g."LOGSYS"
  AND a."/BIC/C_SHIPTID" = g."/BIC/C_CUSTID"
  AND g.OBJVERS = 'A'
LEFT JOIN "/BIC/PC_MATNR2" AS h
  ON a."LOGSYS" = h."LOGSYS"
  AND a."/BIC/C_MATNR2" = h."/BIC/C_MATNR2"
  AND h.OBJVERS = 'A'
LEFT JOIN "/BIC/ADBS01400" AS i
  ON a."LOGSYS" = i."LOGSYS"
  AND a."/BIC/C_DELNUM2" = i."/BIC/C_DELNUM2"
  AND a."/BIC/C_DELITM2" = i."/BIC/C_DELITM2"
LEFT JOIN :SCTAB AS j
  ON a."LOGSYS" = j."LOGSYS"
  AND a."/BIC/C_DOCNUMB" = j."/BIC/C_DOCNUMB"
  AND a."/BIC/C_ITM_SD" = j."/BIC/C_ITM_SD"
LEFT JOIN "/BIC/ADBS00600" AS k
  ON a."LOGSYS" = k."LOGSYS"
  AND a."/BIC/C_BILLNUM" = k."/BIC/C_BILLNUM"
  AND a."/BIC/C_BILLITM" = k."/BIC/C_BILLITM"
  AND a."/BIC/C_DOCNUMB" = k."/BIC/C_DOCNUMB"
  AND a."/BIC/C_ITM_SD" = k."/BIC/C_ITM_SD"
LEFT JOIN "/BIC/ADBS01000" AS l

```

#### ABAP Code

Rule1) Case the order is not in EUR, the process convert to EUR according to the billing status.

1.1) Fully invoiced (STS\_BILL = 'C')

Last day of month, based on CAR3 rate.

```

IF SOURCE_FIELDS-sts_bill = 'C'.

v_date = SOURCE_FIELDS-/bic/c_tbidate.

CALL FUNCTION 'SN_LAST_DAY_OF_MONTH'
  EXPORTING
    DAY_IN      = v_date
  IMPORTING
    END_OF_MONTH = v_endmonth.

CALL FUNCTION 'CONVERT_TO_LOCAL_CURRENCY'
  EXPORTING
    DATE           = v_endmonth
    FOREIGN_AMOUNT = V_IN
    FOREIGN_CURRENCY = V_CURR
    LOCAL_CURRENCY = 'EUR'
    TYPE_OF_RATE   = 'CAR3'
    READ_TCURR    = 'X'
  IMPORTING
    LOCAL_AMOUNT = V_OUT
  EXCEPTIONS
    NO_RATE_FOUND = 1
    OVERFLOW      = 2
    NO_FACTORS_FOUND = 3
    NO_SPREAD_FOUND = 4

```

## 1.2) Pending orders

CAR4, based on begin of the month.

```

CONCATENATE SOURCE_FIELDS-/bic/c_tbidate(6) '01' INTO v_date.

CALL FUNCTION 'CONVERT_TO_LOCAL_CURRENCY'
  EXPORTING
    DATE           = v_date
    FOREIGN_AMOUNT = V_IN
    FOREIGN_CURRENCY = V_CURR
    LOCAL_CURRENCY = 'EUR'
    TYPE_OF_RATE   = 'CAR4'
    READ_TCURR    = 'X'
  IMPORTING
    LOCAL_AMOUNT = V_OUT
  EXCEPTIONS
    NO_RATE_FOUND = 1
    OVERFLOW      = 2
    NO_FACTORS_FOUND = 3
    NO_SPREAD_FOUND = 4
    DERIVED_2_TIMES = 5.

```

The last BW object used is the HANA Analysis Process, which is responsible to get the codes from ABSDSO03S, convert them into texts according to their respective master data in the procedure, and store the results to be used by webMethods interface (Z\_ZSF\_GET\_PENDING\_ORDERS) into ZSF\_OPEN\_ORDS2 table.

## Display SAP HANA Analysis Process HAP\_SD\_SO\_001

SAP HANA Analysis Process      HAP\_SD\_SO\_001      Gl. Sales: iCare

Overview    Data Source    Data Target

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**Data Source**

InfoProvider            Gl. Sales: Order book (iCare)

Near-Line Access

Database Table     

SAP HANA Analysis Process     

---

**Data Analysis**

Function or Script     

Procedure            HANA Procedure

Generate Procedure

Schema            Package     

ABAP Managed Database Procedure

Name     

---

**Data Target**

Analytic Index     

DataStore Object (Classic)     

Database Table            Table to keep pending orders

Embedded in Data Transfer Process

i.e.:

Data Browser: Table ZSF\_OPEN\_ORDS2 Select Entries      200

| Cl. | VBELN      | POSNR  | Date       | B | Text: Id CRM    | Customer   | Ctr | SD_I_STATU | DELIV_STAT    | BILL_STATUS        | SD_TYPE           | Billing Date | SD_CREATEDBY          | Customer   | SHIPTO_NAME   |
|-----|------------|--------|------------|---|-----------------|------------|-----|------------|---------------|--------------------|-------------------|--------------|-----------------------|------------|---------------|
| 400 | 0005435629 | 000010 | 03.03.2021 |   | 0016000000Vqpn  | 0000019264 | ES  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Stephane Daniel MOULY | 0000019264 | MINERCOM S.L  |
| 400 | 0005448593 | 000010 | 03.03.2021 |   | 0013200001Gz3K  | 0004013742 | CN  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Flora HUANG           | 0004024068 | SUZHOU IBOS   |
| 400 | 0005449378 | 000010 | 03.03.2021 |   | 0010e000010sVd  | 0004024622 | CN  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Si Jun (Nicole) MENG  | 0004024622 | SUZHOU GENE   |
| 400 | 0005449387 | 000010 | 03.03.2021 |   | 0016000000VqsNY | 0004403041 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Aya KODO-EXT          | 0004414103 | NOK CORPORA   |
| 400 | 0005450092 | 000010 | 03.03.2021 |   | 0013200001Gz3K  | 0004013742 | CN  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Flora HUANG           | 0004024068 | SUZHOU IBOS   |
| 400 | 0005455684 | 000010 | 03.03.2021 |   | 0016000000U7Dk8 | 0004404652 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Aya KODO-EXT          | 0004404657 | TORAY INDUS   |
| 400 | 0005458754 | 000010 | 03.03.2021 |   | 0016000000VqsNQ | 0004401880 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Ayumi MORIKURA        | 0004401880 | KURABE INDUS  |
| 400 | 0005458820 | 000010 | 03.03.2021 |   | 0010e0000113Tlx | 0004022377 | CN  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Hui Qing CHEN         | 0004022377 | COOPER STAN   |
| 400 | 0005463203 | 000010 | 03.03.2021 |   | 0016000000U7Djd | 0004402533 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Kayo SEKIGUCHI        | 0004404085 | SUNLINE CO.,I |
| 400 | 0005463205 | 000010 | 03.03.2021 |   | 0016000000U7Djd | 0004402533 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Kayo SEKIGUCHI        | 0004404085 | SUNLINE CO.,I |
| 400 | 0005468899 | 000010 | 03.03.2021 |   | 0016000000FRh08 | 0001024416 | DE  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Dario MORETTI         | 0001024416 | ROECHLING PF  |
| 400 | 0005470095 | 000010 | 03.03.2021 |   | 0016000000VqsNI | 0004404256 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Aya KODO-EXT          | 0004404256 | TAKEHARA RU   |
| 400 | 0005472356 | 000010 | 03.03.2021 |   | 0016000000VqsNI | 0004400928 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Ayumi MORIKURA        | 0004400928 | GOMUNOINAK    |
| 400 | 0005473127 | 000010 | 03.03.2021 |   | 0016000000eNmFF | 0004401540 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Noriko YOKOI          | 0004411321 | TONAMI TRAN   |
| 400 | 0005473143 | 000010 | 03.03.2021 |   | 0016000000eNmFF | 0004401540 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Noriko YOKOI          | 0004417178 | KANAMORI INI  |
| 400 | 0005473265 | 000010 | 03.03.2021 |   | 0016000000eNltI | 0004400008 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Kayo SEKIGUCHI        | 0004400008 | A RAYMOND J   |
| 400 | 0005475558 | 000010 | 03.03.2021 |   | 0016000000f3WVo | 0004413858 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Ayumi MORIKURA        | 0004416118 | GOTSU CO, LT  |
| 400 | 0005476377 | 000010 | 03.03.2021 |   | 0016000000W055J | 0004404841 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Ayumi MORIKURA        | 0004410623 | UCHIYAMA MA   |
| 400 | 0005477044 | 000010 | 03.03.2021 |   | 0016000000eNmFF | 0004401540 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Noriko YOKOI          | 0004401541 | KANAMORI INI  |
| 400 | 0005480153 | 000010 | 03.03.2021 |   | 0016000000VqsNf | 0004403812 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Ayumi MORIKURA        | 0004416583 | KIMURA-UNITY  |
| 400 | 0005482610 | 000010 | 03.03.2021 |   | 0016000000RnUzx | 0004400012 | JP  | Open       | Not delivered | Not relev for bill | TD Standard Order |              | Noriko YOKOI          | 0004410765 | FUJI LOGISTIC |

## Dependencies with other applications

**Salesforce** : is the CRM which receives data from SAP (PF1 WBP SF)  
Monitoring :

- Check if SFDC job is complete with success : Setup Jobs Apex Jobs Apply View: [Select a View]
- For more detailed info, please refer to Document : [IS - Appl - CRM - Monitor Interfaces](#)
- In case of failure : please contact : [fas-salesforce@solvay.com](mailto:fas-salesforce@solvay.com)

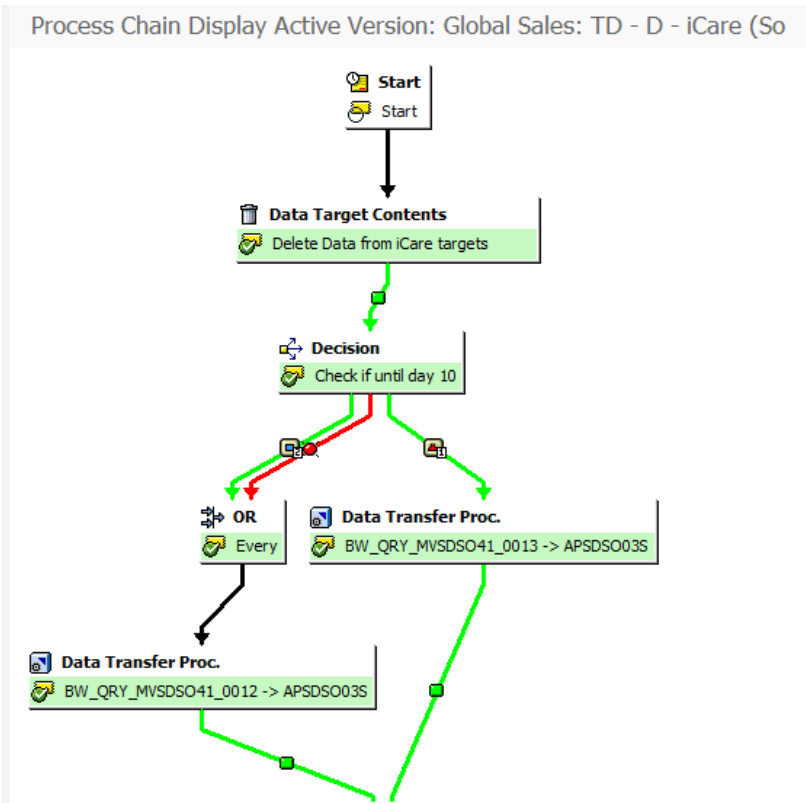
**WebMethods** : is the middleware which triggers the step from SAP and SF.

- [Technical document of WM process is here](#)
- In case of failure : create a freshdesk ticket and assign it to IS-CAPG-ERP group

## Data loadings

# Info providers and objects loaded

PC\_SDSO\_03



Loading frequency

Full load daily, except weekends and holidays (BE calendar).

## Average performance

The process is linked to the PC\_OBAS\_REPORTING, starting around 5:30 AM and it takes around 5 minutes to be complete daily.

| Key Figure                           | Estimation     |
|--------------------------------------|----------------|
| ~ Average Process Chain Runtime      | 5 min          |
| ~ Average nb of rows loaded per load |                |
| ~ Total nb of rows loaded (if full)  | 19.000 records |
| ~ Average Runtime for 10k lines      | 2 min          |

## Record Keeping

Full load keeping only the last two months in the first ten days of the month and the current month in the other days.

## Reporting

### Queries End User Documentation

N/a

## Maintenance

### Known bugs

The Salesforce interface requires corresponding Salesforce ID for the fields customer (table ZSF\_ACCOUNTS) and material group (ZSF\_PRODUCTS), the Salesforce should be contacted in these cases.

The same in case of creation of the new pick list.