

# Mecano - Talend Detail

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    - B. Data Ocean Industrial (Talend project DATA\_OCEAN\_DOMAIN\_INDUSTRIAL)
      - B.1 F002\_BWH\_MPR\_PM05\_003\_to\_ODS
      - B.2 F010\_FACT\_notification\_planning\_to DM
    - Example Case
- Logging

Talend project = MECANO

GCP Project : prj-data-dm-industrial-[env]

GCP Product: prj-data-maintenance-dash-[env]

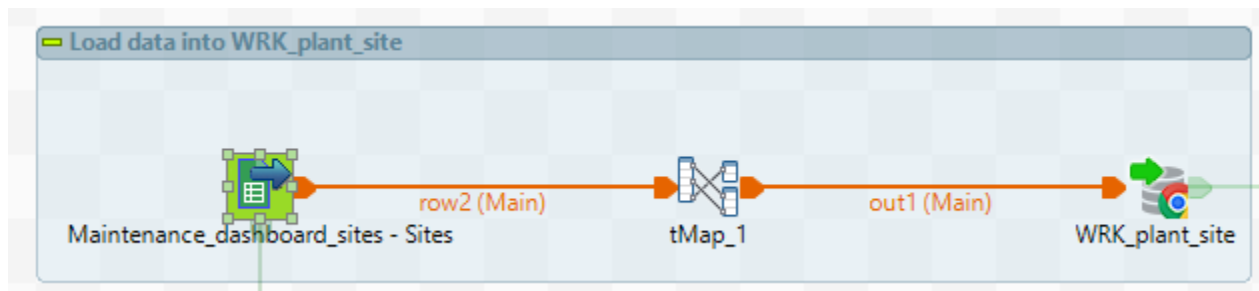
Bucket = cs-ew1-prj-data-dm-industrial-[env]-staging/MECANO/

## MECANO

### Site

To assign the right site codes and filter the data into final fact table

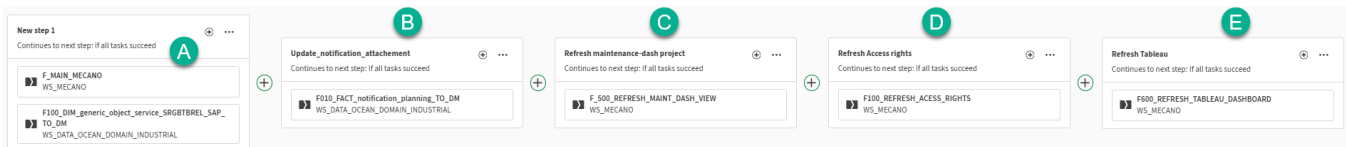
Talend job F001\_MEC\_LOAD\_MAINTENANCE\_DASH\_SITE



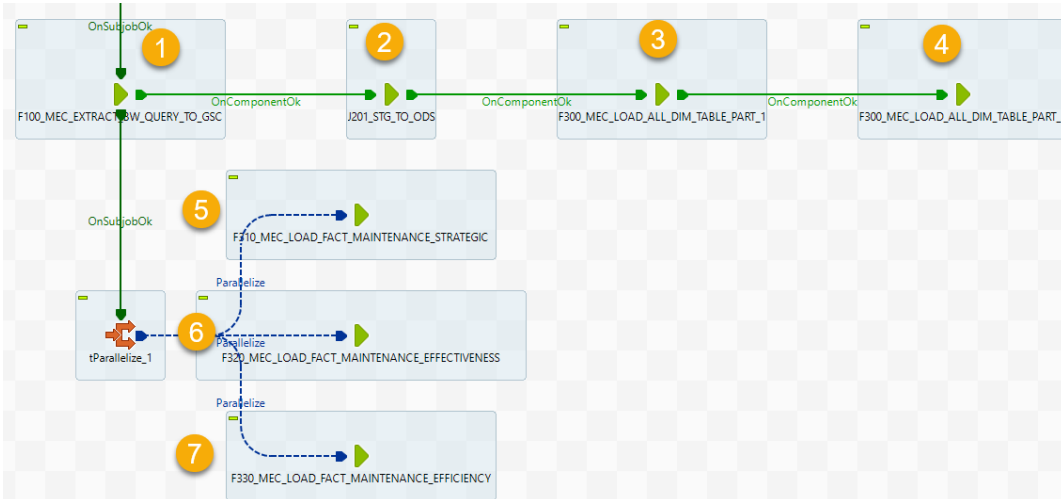
Load from this gsheets (sheet name = "SITE") to prj-data-maintenance-dash-[env].WDL.WRK\_plant\_site. There is no STG/ODS table

It is full load with truncate table and it is schedule by PL\_MECANO\_REFRESH\_SITES

### Main Data Flow

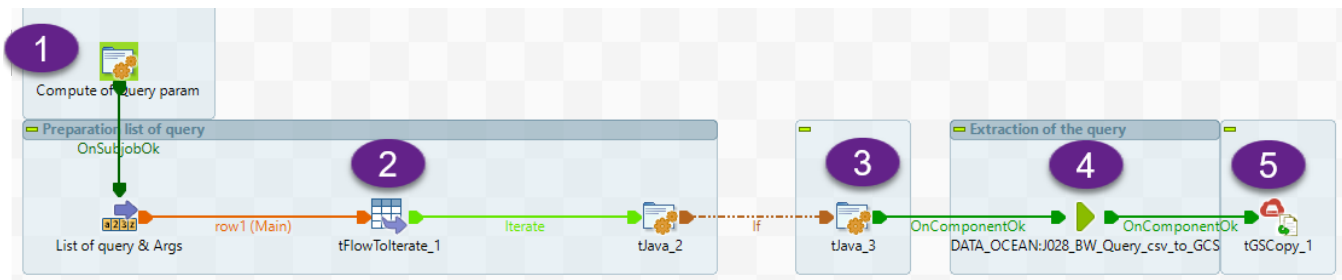


## A. F\_MAIN\_MECANO



### A.1 F100\_MEC\_EXTRACT\_BW\_QUERY\_TO\_GSC

To extract data from Xtract to Bucket



1. Compute of query parameter.

To check it is incremental or reload the data by using `I_LOCAL_VAR_RECOVERY_MODE` (true = reload, false = incremental). More detail check on reload session

There are 3 main parameter groups for BW queries.

#### There are 3 groups of loading variables

Day(yyyyMMdd,yyyyMMdd) : QVMECANOBW\_QRY\_MVPMOR01\_0002

- `I_LOCAL_VAR_MVPMOR01_YYYYMMDD_FROM` eg. 20241001
- `I_LOCAL_VAR_MVPMOR01_YYYYMMDD_TO` \*\*\*Must NOT over current Monday

Week (yyyyww) : The rest of queries

- `I_LOCAL_VAR_HISTO_YEAR` eg. 2024
- `I_LOCAL_VAR_HISTO_WEEK_END` eg. 01

Month(yyyy0MM,yyyy0MM) : QVMECANO\_BW\_QRY\_MVPMCO01\_0001

- `I_LOCAL_VAR_MVPMCO01_0001_HIST_K4YYYY0MM_PREV` eg. K42024009
- `I_LOCAL_VAR_MVPMCO01_0001_HIST_K4YYYY0MM_CURR` eg. K42024010

If the `I_LOCAL_VAR_RECOVERY_MODE` = false (normal case that load weekly on Monday)

Day : Previous Monday to current Monday

Week : Last week (last Monday to Sunday)

Month : Load last month to current month

2. List of query to extract

List of query Args(tFixedFlowInput\_1)

Basic settings

Advanced settings

Dynamic settings

View

Documentation

Validation Rules

Schema

Built-In

Edit schema

Number of rows

1

Mode

Use Single Table

Use Inline Table

Inline Table

| L_var_xtract_job                             | L_var_file                                   | valid                                        | stg_filename                                     |
|----------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------------------------------|
| context.I_VAR_mecano_xtract_DBPMMD01_0001... | context.I_VAR_mecano_xtract_DBPMMD01_0001... | context.I_VAR_mecano_xtract_DBPMMD01_000...  | "MEC_IT_0000_0000_F001_" + context.Business_d... |
| context.I_VAR_mecano_xtract_DBPMMD02_0001... | context.I_VAR_mecano_xtract_DBPMMD02_0001... | context.I_VAR_mecano_xtract_DBPMMD02_000...  | "MEC_IT_0000_0000_F002_" + context.Business_d... |
| context.I_VAR_mecano_xtract_DBPMMD05_0001... | context.I_VAR_mecano_xtract_DBPMMD05_0001... | context.I_VAR_mecano_xtract_DBPMMD05_000...  | "MEC_IT_0000_0000_F003_" + context.Business_d... |
| context.I_VAR_mecano_xtract_mvpmco01_job+... | context.I_VAR_mecano_xtract_mvpmco01_job+... | context.I_VAR_mecano_xtract_mvpmco01_valid   | "MEC_IT_0000_0000_F016_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMNO04_000...  | context.I_VAR_mecano_xtract_MVPMNO04_000...  | context.I_VAR_mecano_xtract_MVPMNO04_000...  | "MEC_IT_0000_0000_F004_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMNO04_000...  | context.I_VAR_mecano_xtract_MVPMNO04_000...  | context.I_VAR_mecano_xtract_MVPMNO04_000...  | "MEC_IT_0000_0000_F005_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMCL01_0001... | context.I_VAR_mecano_xtract_MVPMCL01_0001... | context.I_VAR_mecano_xtract_MVPMCL01_0001... | "MEC_IT_0000_0000_F006_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMOP02_0010... | context.I_VAR_mecano_xtract_MVPMOP02_0010... | context.I_VAR_mecano_xtract_MVPMOP02_001...  | "MEC_IT_0000_0000_F015_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMOP04_0001... | context.I_VAR_mecano_xtract_MVPMOP04_0001... | context.I_VAR_mecano_xtract_MVPMOP04_000...  | "MEC_IT_0000_0000_F007_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMOP04_0002... | context.I_VAR_mecano_xtract_MVPMOP04_0002... | context.I_VAR_mecano_xtract_MVPMOP04_000...  | "MEC_IT_0000_0000_F008_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMOP04_0003... | context.I_VAR_mecano_xtract_MVPMOP04_0003... | context.I_VAR_mecano_xtract_MVPMOP04_000...  | "MEC_IT_0000_0000_F009_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMOP04_0005... | context.I_VAR_mecano_xtract_MVPMOP04_0005... | context.I_VAR_mecano_xtract_MVPMOP04_000...  | "MEC_IT_0000_0000_F011_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMOP04_0006... | context.I_VAR_mecano_xtract_MVPMOP04_0006... | context.I_VAR_mecano_xtract_MVPMOP04_000...  | "MEC_IT_0000_0000_F012_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMOR01_0002... | context.I_VAR_mecano_xtract_MVPMOR01_0002... | context.I_VAR_mecano_xtract_MVPMOR01_000...  | "MEC_IT_0000_0000_F014_" + context.Business_d... |
| context.I_VAR_mecano_xtract_MVPMOR04_0001... | context.I_VAR_mecano_xtract_MVPMOR04_0001... | context.I_VAR_mecano_xtract_MVPMOR04_000...  | "MEC_IT_0000_0000_F013_" + context.Business_d... |

It control by set of parameter

Xtract Job = I\_VAR\_mecano\_xtract\_[query name]\_job = Xtract job name

Valid = I\_VAR\_mecano\_xtract\_[query name]\_valid. If it is 1, it will extract the data (check condition on "if" line)

tJava2 does not have anything

3. tJava3 just print what is the "Current Query" in order to see on the log in TMC

4. Use reference job to call BW query and save the file to GCS

5. Move from staging bucket to folder MECANO

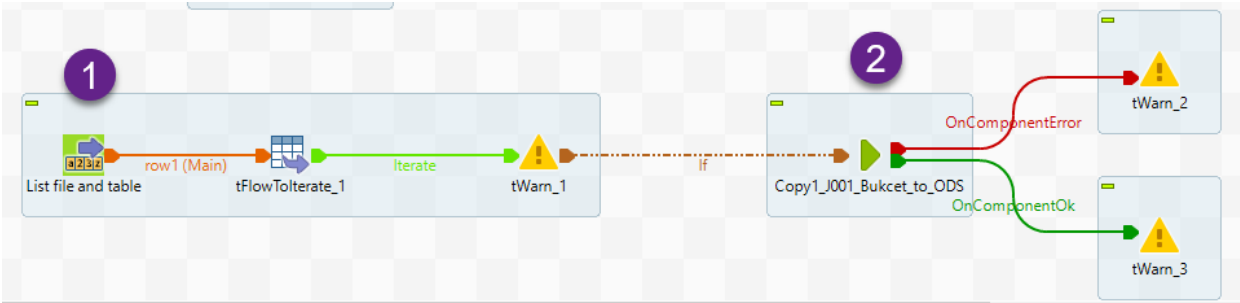
i

Xtract information

The separator in Xtract must use "%" since the data inside BW has all the characters (\$,|,% and etc) and it will split data incorrectly. It is required to use 2 chars

A.2 J201\_STG\_TO\_ODS

To load the file from GCS to ODS



1. Control filename, STG, ODS table name, valid and separator

**List file and table(tFixedFlowInput\_1)**

Schema: Built-In Edit schema

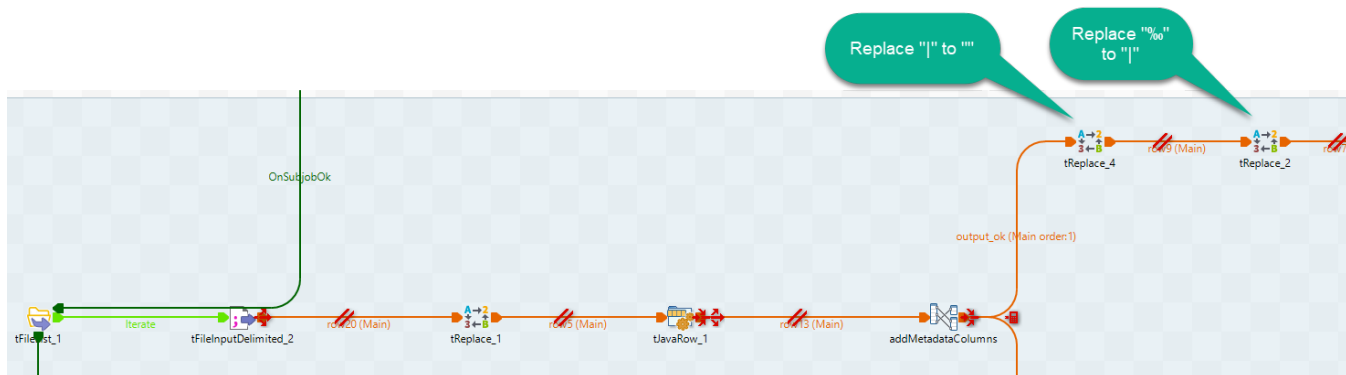
Number of rows: 1

Mode:  
☐ Use Single Table  
☒ Use Inline Table

| File_name                   | Table_name                   | ODS_table_name              | Valid                       | Separator | Escape_separator |
|-----------------------------|------------------------------|-----------------------------|-----------------------------|-----------|------------------|
| "MEC_IT_0000_0000_F016_..." | "STG_BWH_0000_0000_F016_..." | "ODS_BWH_0000_F016_F_W_..." | context.LVAR_mecano_xtra... | "%"       | "\"              |
| "MEC_IT_0000_0000_F015_..." | "STG_BWH_0000_0000_F015_..." | "ODS_BWH_0000_F015_F_W_..." | context.LVAR_mecano_xtra... | "%"       | "\"              |
| "MEC_IT_0000_0000_F014_..." | "STG_BWH_0000_0000_F014_..." | "ODS_BWH_0000_F014_F_W_..." | context.LVAR_mecano_xtra... | "%"       | "\"              |
| "MEC_IT_0000_0000_F013_..." | "STG_BWH_0000_0000_F013_..." | "ODS_BWH_0000_F013_F_W_..." | context.LVAR_mecano_xtra... | "%"       | "\"              |
| "MEC_IT_0000_0000_F012_..." | "STG_BWH_0000_0000_F012_..." | "ODS_BWH_0000_F012_F_W_..." | context.LVAR_mecano_xtra... | "%"       | "\"              |
| "MEC_IT_0000_0000_F011_..." | "STG_BWH_0000_0000_F011_..." | "ODS_BWH_0000_F011_F_W_..." | context.LVAR_mecano_xtra... | "%"       | "\"              |
| "MEC_IT_0000_0000_F009_..." | "STG_BWH_0000_0000_F009_..." | "ODS_BWH_0000_F009_F_W_..." | context.LVAR_mecano_xtra... | "%"       | "\"              |
| "MEC_IT_0000_0000_F008_..." | "STG_BWH_0000_0000_F008_..." | "ODS_BWH_0000_F008_F_W_..." | context.LVAR_mecano_xtra... | "%"       | "\"              |

It is use the same context as job F100\_MEC\_EXTRACT\_BW\_QUERY\_TO\_GSC and hardcode the separator to %

2. Up load the file from GCS to ODS table, which copy from reference job but only this part is different



### A.3 F300\_MEC\_LOAD\_ALL\_DIM\_TABLE\_PART\_1

To load ODS to DM layer for:

- DIM\_priority
- DIM\_user\_status
- DIM\_system\_status

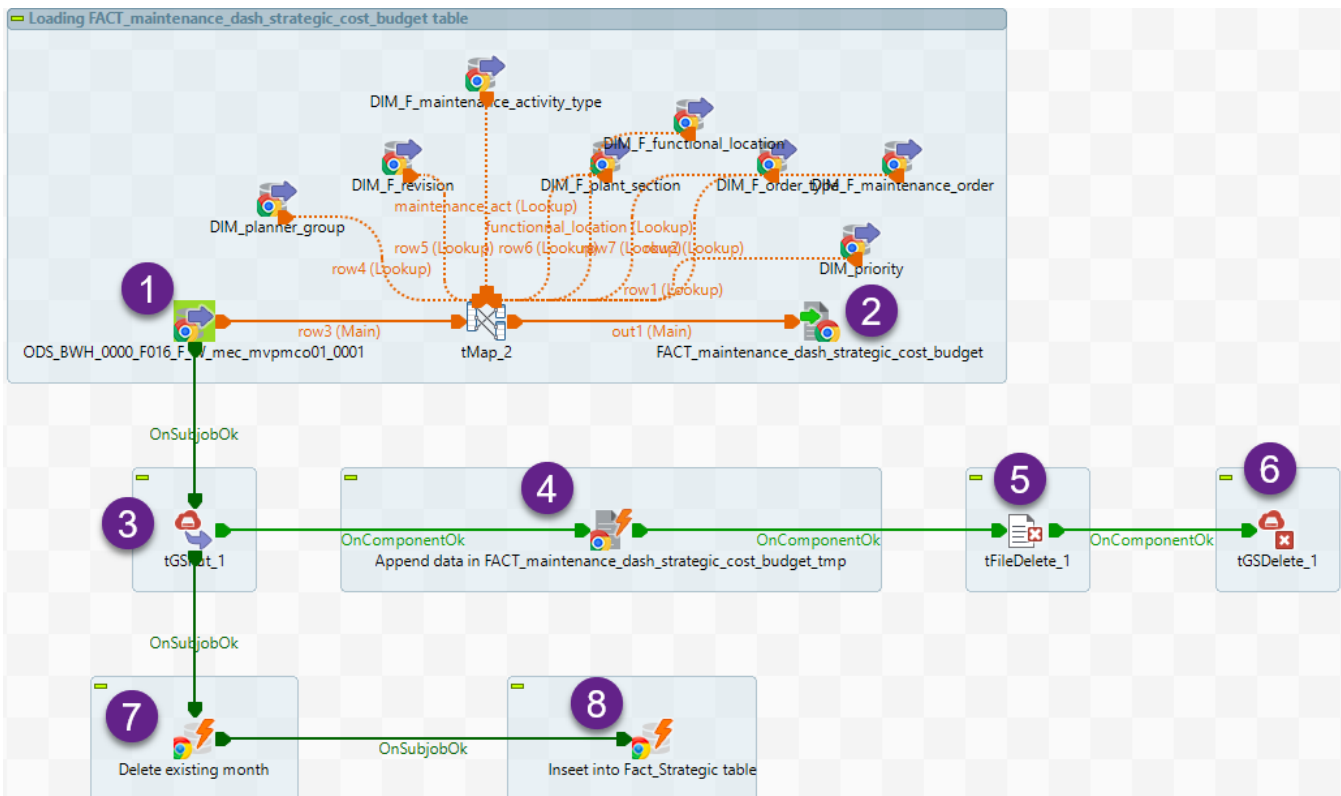
### A.4 F300\_MEC\_LOAD\_ALL\_DIM\_TABLE\_PART\_2

To load ODS to DM layer for:

1. DIM\_F\_maintenance\_activity\_type : MaintActivityType\_Key , MaintActivityType (only for PF1)
2. DIM\_F\_equipment : Equipment\_Key, Equipment
3. DIM\_F\_maintenance\_order: Maintenance\_Order\_Key, Maintenance\_Order
4. DIM\_F\_planner\_group: Planner\_Group\_Key, Planner\_Group, Source\_System\_Key
5. DIM\_F\_order\_type: Order\_Type\_Key, Order\_Type (only for WP1)
6. DIM\_F\_functional\_location: Functional\_Location\_Key, Functional\_Location, Source\_System\_Key
7. DIM\_F\_revision: Revision\_Key, Revision
8. DIM\_F\_work\_center: Work\_Center\_Key, Work\_Center
9. DIM\_F\_plant\_section : Plant\_Section\_Key, Plant\_Section, Source\_System\_Key

### A.5 F310\_MEC\_LOAD\_FACT\_MAINTENANCE\_STRATEGIC

To load ODS to DM layer for FACT\_maintenance\_strategic. There is only 1 query ODS\_BWH\_0000\_F016\_F\_W\_mec\_mvpmco01\_0001



1. Select data from ODS with condition

```
from "+context.I_CNX_GOOGLE_MECANO_ProjectID+"." +context.I_LOCAL_GOOGLE_MECANO_DATASET_ODS+"
ODS_BWH_0000_F016_F_W_mec_mvpmco01_0001
inner join "+context.I_CNX_GOOGLE_MECANO_ProjectID+"." +context.I_LOCAL_GOOGLE_MECANO_DATASET_STAGING+"
log_files on
ODS_BWH_0000_F016_F_W_mec_mvpmco01_0001.meta_run_id=log_files.meta_run_id and log_files.meta_file_name LIKE
'MEC_IT_0000_0000_F016_'+context.Business_date+'_0000_F_W_MEC_MVPMCO01_0001%.csv' and log_files.meta_status in ('OK','NOK')
```

2. Save the result of the FACT join with dimension tables to context.I\_LOCAL\_PATHDIR\_MECANO\_DATA+context.I\_LOCAL\_PATHDIR\_MECANO\_DM+"FACT\_maintenance\_strategic.csv"

3. Put the file to buckets context.I\_LOCAL\_PATHDIR\_MECANO\_DATA+context.I\_LOCAL\_PATHDIR\_MECANO\_DM+"FACT\_maintenance\_strategic.csv"

4. Upload the file to WDL.FACT\_maintenance\_dash\_strategic\_cost\_budget\_tmp

5. Delete file from 2

6. Delete file from 4

7. Delete data of existing month from the selection of ODS on DM.FACT\_maintenance\_strategic

```
DELETE FROM DM.FACT_maintenance_strategic
WHERE ref_date IN (SELECT DISTINCT CAST(ref_date as Date format 'MON YYYY') as ref_date FROM WDL
FACT_maintenance_dash_strategic_cost_budget_tmp)
8. Insert the data from ODS to DM.FACT_maintenance_strategic
```

⚠ There is no requirement to delete data manually when reload, which different from efficiency or effectiveness

## A.6 F320\_MEC\_LOAD\_FACT\_MAINTENANCE\_EFFECTIVENESS

To load ODS to DM layer for FACT\_maintenance\_effectiveness. There is only 2 queries

Special case: F12\_QVMECANO\_BW\_QRY\_MVPMOP04\_0006 will select only max reference date from ODS > fact table

## A.7 F330\_MEC\_LOAD\_FACT\_MAINTENANCE EFFICIENCY

To load ODS to DM layer for FACT\_maintenance\_efficiency. There is only 9 queries

## Summary

| Group / KPI         | Tables / Dimension                                                                    | Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Pri | US | SS |
|---------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|-----|----|----|
| Strategic           | ODS_BWH_0000_F016_F_W_mec_mvpmco01_0001                                               | <ul style="list-style-type: none"> <li>actual_amount</li> <li>plan_amount</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | x |   | x | x | x | x | x |   | x | x   |    |    |
| 1.10                | ** [202410] add priority to Strategic                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Effectiveness       | ODS_BWH_0000_F006_F_W_mec_mvpmcl01_0001                                               | <ul style="list-style-type: none"> <li>planned_activity_nb_of_calls</li> <li>planned_activity_executed_nb_of_calls</li> <li>ongoing_activity_nb_of_calls</li> <li>activity_delayed_nb_of_calls</li> <li>activity_delayed_1_30_days_nb_of_calls</li> <li>activity_delayed_31_90_days_nb_of_calls</li> <li>activity_delayed_more_than_90_days_Nb_of_Calls</li> <li>planned_activity_nb_of_hours</li> <li>Planned_activity_executed_nb_of_hours</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                        | x | x | x | x | x | x | x | x | x |     |    |    |
| 3.02                |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Effectiveness       | ODS_BWH_0000_F014_F_W_mec_mvpmor01_0002                                               | <ul style="list-style-type: none"> <li>work_orders</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | x | x |   | x | x | x | x | x | x | x   |    |    |
| 3.03                | ** [202410]only this query is mapping created_on with reference_date to Effectiveness |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Efficiency          | ODS_BWH_0000_F013_F_W_mec_mvpmor04_0001                                               | <ul style="list-style-type: none"> <li>nb_of_orders_in_progress</li> <li>kpi_2_11_nb_of_orders_executed_with_a_required_end_date</li> <li>kpi_2_11_nb_of_orders_executed_before_required_date</li> <li>kpi_2_11_nb_of_orders_executed_without_a_required_end_date</li> <li>kpi_2_11_number_of_orders_executed</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | x |   |   | x | x | x | x | x | x | x   | x  | x  |
| 2.03/2.12/2.14      |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Efficiency          | ODS_BWH_0000_F015_F_W_mec_mvpmop02_0010                                               | <ul style="list-style-type: none"> <li>barcode_scan_rate</li> <li>nb_operations_well_scanned</li> <li>nb_operations_completed</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | x |   |   | x | x | x | x | x | x | -   |    |    |
| 2.11                |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Efficiency          | ODS_BWH_0000_F007_F_W_mec_mvpmop04_0001                                               | <ul style="list-style-type: none"> <li>nb_operation_scheduled_kpi6</li> <li>nb_operation_well_confirmed_kpi6</li> <li>nb_operations_in_delay</li> <li>remaining_work_backlog_h</li> <li>remaining_work_backlog_man_days</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | x |   |   | x | x | x | x | x | x | x   | xx | xx |
| 2.06/2.07/2.09      |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Efficiency          | ODS_BWH_0000_F008_F_W_mec_mvpmop04_0002                                               | <ul style="list-style-type: none"> <li>nb_operation_planned</li> <li>nb_operation_planned_good_day</li> <li>nb_operation_reactives</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | x |   |   | x | x | x | x | x | x | x   | x  | x  |
| 2.04                |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Efficiency          | ODS_BWH_0000_F009_F_W_mec_mvpmop04_0003                                               | <ul style="list-style-type: none"> <li>nb_operation_unscheduled</li> <li>nb_operation_planned</li> <li>nb_operation_planned_good_day</li> <li>nb_operation_planned_good_week</li> <li>nb_operation_reactives</li> <li>hours_of_operations_planned</li> <li>hours_of_operations_planned_good_day</li> <li>hours_of_operations_planned_good_week</li> <li>hours_of_operations_reactives</li> <li>nb_operations_with_planned_hr</li> <li>nb_operation_with_actual_hr</li> <li>hours_of_operation_actual</li> <li>hours_of_operation_actual_for_cal_delta</li> <li>hours_of_operation_planned_for_cal_delta</li> <li>nb_completed_operation_with_actual_hr</li> <li>nb_completed_operation</li> <li>posted_file_delay(V_FACT_gtbu_reactivity)</li> <li>technical_validation_delay(V_FACT_gtbu_reactivity)</li> <li>nb_rejection(V_FACT_gtbu_reactivity)</li> </ul> | x |   | x | x | x | x | x | x | x | x   | xx | xx |
| 2.06                |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Efficiency          | ODS_BWH_0000_F011_F_W_mec_mvpmop04_0005                                               | <ul style="list-style-type: none"> <li>remaining_work_hours</li> <li>available_capacity</li> <li>available_capacity_unit</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | x |   |   | x | x |   | x | x | x | x   |    |    |
| 2.08                |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Efficiency          | ODS_BWH_0000_F012_F_W_mec_mvpmop04_0006                                               | <ul style="list-style-type: none"> <li>nb_operation_planned</li> <li>nb_operation_planned_good_day</li> <li>nb_operation_reactives</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | x |   |   | x | x | x | x | x | x | x   | xx | xx |
| 2.13                | (daily load)                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Efficiency          | ODS_BWH_0000_F004_F_W_mec_mvpmno04_0001                                               | <ul style="list-style-type: none"> <li>nb_of_notification_created</li> <li>nb_of_notif_in_progress</li> <li>nb_of_notif_in_progress_without_work_order</li> <li>nb_of_notif_in_progress_with_delay</li> <li>nb_of_notif_in_progress_delay_1_to_30_days</li> <li>nb_of_notif_in_progress_delay_31_to_90_days</li> <li>nb_of_notif_in_progress_delay_more_than_91_days</li> <li>nb_of_notif_in_progress_no_required_end_date</li> <li>nb_of_notif_with_attachement</li> <li>(V_FACT_notification_planning)</li> </ul>                                                                                                                                                                                                                                                                                                                                            |   |   |   | x |   | x |   | x | x | x   | x  | x  |
| 2.01/2.02/2.05_hist |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |
| Efficiency          | ODS_BWH_0000_F005_F_W_mec_mvpmno04_0002                                               | <ul style="list-style-type: none"> <li>nb_of_notification_created</li> <li>nb_of_notif_in_progress</li> <li>nb_of_notif_in_progress_without_work_order</li> <li>nb_of_notif_in_progress_with_delay</li> <li>nb_of_notif_in_progress_delay_1_to_30_days</li> <li>nb_of_notif_in_progress_delay_31_to_90_days</li> <li>nb_of_notif_in_progress_delay_more_than_91_days</li> <li>nb_of_notif_in_progress_no_required_end_date</li> <li>nb_of_notif_with_attachement</li> <li>(V_FACT_notification_planning)</li> </ul>                                                                                                                                                                                                                                                                                                                                            |   |   |   | x |   | x |   | x | x | x   | x  | x  |
| 2.01/2.02/2.05_det  |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |   |   |     |    |    |

Note: number of 1 - 9 are the dimension and Pri = priority, US = user status and SS = system status

## Data Dictionary

Naming convention on BW provider such as MVMPO04

|                |            |                |                     |
|----------------|------------|----------------|---------------------|
| 1-2 Data layer | 3-4 Domain | 5-6 Sub domain | 7-8 only for mecano |
|----------------|------------|----------------|---------------------|

|                         |                             |                   |                         |
|-------------------------|-----------------------------|-------------------|-------------------------|
| CP = Composite provider | PM = Plant Maintenance      | CL = Plan call    | 01 Detail up to date    |
| MV = Multi provider     | FI = Financial              | CO = Cost         | 02 Detail Snapshot      |
| CR = Reporting layer    | SD = Sales and distribution | NO = Notification | 03 Aggregate up to date |
| DB = Business layer     |                             | OP = Operation    | 04 Aggregate Snapshot   |
| DP = Propagation layer  |                             | OR = Order        |                         |

Query ODS\_BWH\_0000\_F012\_F\_W\_mec\_mvpmop04\_0006 will be loaded on Daily flow as well and this query has a special component to select max (reference\_date) from the DM.FACT\_maintenance\_efficiency WHERE kpi\_no='2.13', which will be related only this query.

Then the selection from ODS will have condition to select only the data that more than max reference\_date from FACT\_maintenance\_efficiency

WHERE PARSE\_DATE('%d.%m.%Y', SnapShot\_\_Date)>" + TalendDate.formatDate("yyyy-MM-dd",((java.util.Date)globalMap.get("max\_ref\_date")))+""

## A. Additional Development on project 13129

### A1. CTBU (not yet available)

To get the information about shce\_creation\_date(C\_SEDAT), date\_file\_posted(C\_FPDAT), end\_real\_date(e\_PM\_OPE2\_C\_FINREEL) and date\_rejection(C\_SPDAT) of the PM orders in order to calculate "posted file delay", technical validation delay" and "percentage of validation rejected" by loading from BW query DO\_BW\_QRY\_MPR\_PM05\_003 via Xtract job TALEND\_DEV\_DO\_BW\_QRY\_MPR\_PM05\_003

Talend job on DATA\_OCEAN\_DOMAIN INDUSTRIAL project

F002\_BWH\_MPR\_PM05\_003\_to\_ODS-

This job use reference job and follow the standard and there is no job to load to DM layer

Context parameter-

~~I\_VAR\_XTRACT\_FILE\_TALEND\_DO\_BW\_QRY\_MPR\_PM05\_003 = from to read on Xtract server  
I\_VAR\_XTRACT\_JOB\_TALEND\_DO\_BW\_QRY\_MPR\_PM05\_003 = Xtract job name  
I\_LOCAL\_VAR\_STG\_TABLE\_TALEND\_DO\_BW\_QRY\_MPR\_PM05\_003 = STG table  
I\_LOCAL\_VAR\_ODS\_TABLE\_TALEND\_DO\_BW\_QRY\_MPR\_PM05\_003 = ODS table  
I\_VAR\_XTRACT\_PARA\_TALEND\_DO\_BW\_QRY\_MPR\_PM05\_003 = "currentmonth" for loading last month to current month OR  
"&YYYYMM\_Start=202407&YYYYMM\_End=202407" to reload~~

### A2. Notification Planning

This will load the table SRGBTBREL (Generic Object Services) from PF1 and WP1 to get the number of the notification that has attachment

Generic Object Services (GOS): provides functionality for handling attachments, notes, and links to various objects in SAP transactions. Relationships in this environment might refer to how different objects (e.g., documents, business objects) are linked or related within the system.

- TYPEID\_A : The type of the source object (e.g., notification, work order) filter on BUS2038 in DM, which is notification.
- TYPEID\_B : The type of the target object (e.g., attached document, file)
- INSTID\_A: The id of the object, in this case it will be notification id
- INSTID\_B: If it is not empty, it means that we have attached file.
- RELTEYP: If it has value ATTA, it means that that object has attachement

There are many objects in this table. However, the notification object is

TYPEID\_A(type\_a\_of\_objects\_in\_persistent\_object\_references) = 'BUS2038'. It will be filter on DM layer

To get the information about number of attachment on the PM orders in order to calculate kpi "Notification Created with Picture" by loading from ECC table SRGBTBREL on PF1/WP1 via Talend job on DATA\_OCEAN\_DOMAIN INDUSTRIAL project. There are 2 main flow

#### 2.1 To get the attachment

F100\_DIM\_generic\_object\_service\_SRGBTBREL\_SAP\_TO\_DM main flow job that call 3 sub jobs

F001\_SPF\_F001\_I\_D\_SRGBTBREL\_TO\_BQ F001\_SPW\_F001\_I\_D\_SRGBTBREL\_TO\_BQ  
F010\_DIM\_generic\_object\_service\_SRGBTBREL\_TO\_DM

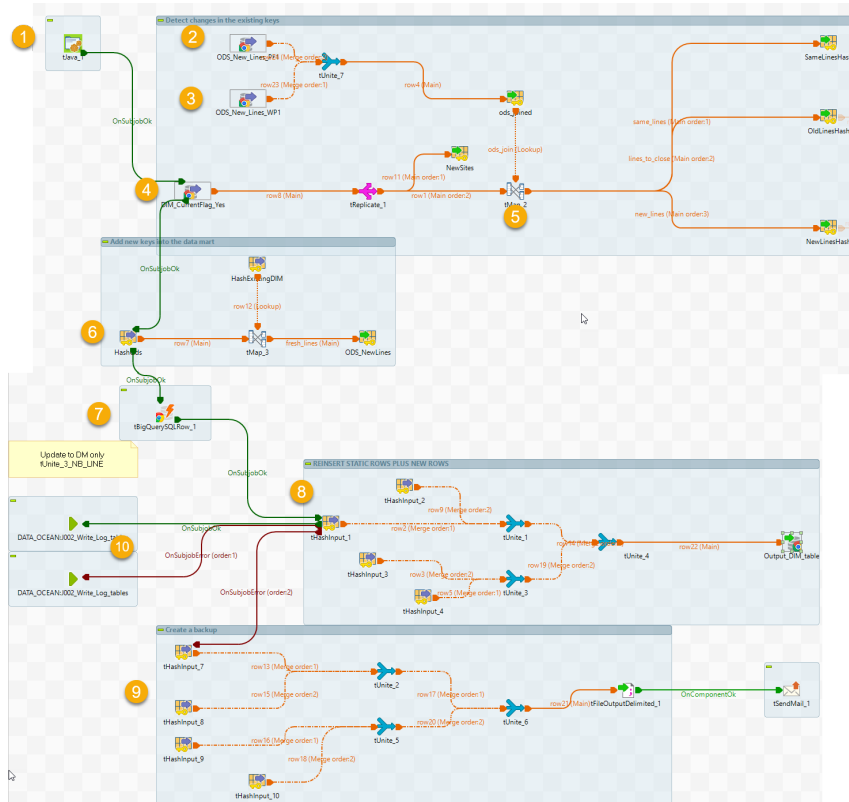
F001\_SPF\_F001\_I\_D\_SRGBTBREL\_TO\_BQ and F001\_SPW\_F001\_I\_D\_SRGBTBREL\_TO\_BQ

It is from reference job to load with incremental load by using field UTCTIME to update incremental\_loading table with value PF1\_SRGBTBREL and WP1\_SRGBTBREL

I\_VAR\_[system]\_SRGBTBREL\_BUCKET = bucket location  
 I\_VAR\_[system]\_SRGBTBREL\_BQ\_Table\_ODS = ODS table  
 I\_VAR\_[system]\_SRGBTBREL\_BQ\_Table\_STG = STG table  
 I\_VAR\_[system]\_SRGBTBREL\_INC\_LOAD = incremental load field value PF1\_SRGBTBREL or WP1\_SRGBTBREL  
 I\_VAR\_[system]\_SRGBTBREL\_additional\_filter = to filter in case of reloading  
 I\_VAR\_[system]\_SRGBTBREL\_email\_flag = yes then Talend will inform when incremental load time is equal or less than time stamp in incremental\_loading table  
 I\_VAR\_[system]\_SRGBTBREL\_email\_recipient = email address to inform  
 I\_VAR\_[system]\_SRGBTBREL\_dm\_reload\_condition = to set reload condition from ODS to DM

## F010\_DIM\_generic\_object\_service\_SRGBTBREL\_TO\_DM

Detail job = J020\_DIM\_SRGBTBREL\_SCD\_Type2



## 2.2 To get the notification data

F100\_MEC\_EXTRACT\_BW\_QUERY\_TO\_GSC J201\_STG\_TO\_ODS F010\_FACT\_notification\_planning\_TO\_DM

To load source prj-data-dm-industrial-dev.ODS.ODS\_BWH\_0000\_F005\_F\_W\_mec\_mvpmno04\_0002 fact\_notification\_planning

## B Loading to Data Ocean Industrial

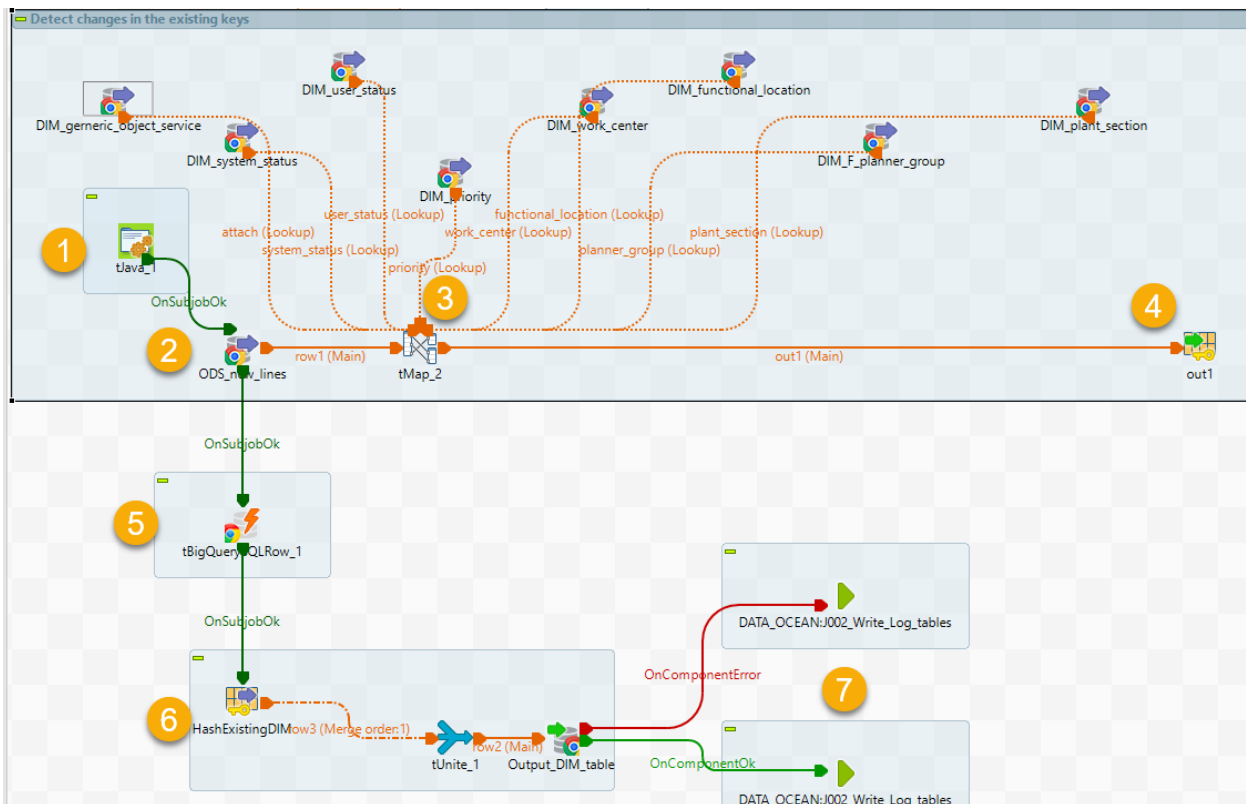
The new development in 2025 to add new KPI

### ~~B.1 F002\_BWH\_MPR\_PM05\_003\_to\_ODS (not yet available)~~

This will load the maintenance operation order with the important date such as date\_file\_posted(C\_FPDAT), end\_real\_date(e\_PM\_OPE2\_C\_FINREEL), shce\_creation\_date(C\_SEDAT), and date\_rejection(C\_SPDAT) from BW query. These dates can calculate the KPI Posted File Delay, Technical Validation Delay, Validation Rejected%

### B.2 F010\_FACT\_notification\_planning\_to DM

Detail job is J020\_FACT\_notification\_planning



1. Check reload on DM.FACT\_notification\_planning condition for incremental or reload
2. Select data from ODS\_BWH\_0000\_F005\_F\_W\_mec\_mvpmno04\_0002 only the max meta\_business\_date for incremental and status loading is OK
3. Join with dimension (the attachment will be on dimension DIM\_generic\_object\_service)
  - a. nb\_of\_notif\_with\_attachment = Relational.ISNULL(attach.generic\_object\_services\_key)?0:1
  - b. selection from DIM\_generic\_object\_service  
 SELECT generic\_object\_services\_key,  
 concat(upper(substr(meta\_source\_system,1,3)), '\_client/', REGEXP\_REPLACE  
 (instance\_ident\_a\_in\_bor\_compat\_persistent\_object\_references, '^0+', ''))  
 instance\_ident\_a\_in\_bor\_compat\_persistent\_object\_references,  
 FROM DM.DIM\_generic\_object\_services  
 where type\_a\_of\_objects\_in\_persistent\_object\_references = 'BUS2038'  
 and relationship\_type = 'ATTA'  
 and current\_flag  
 QUALIFY ROW\_NUMBER() OVER (PARTITION BY meta\_source\_system,  
 instance\_ident\_a\_in\_bor\_compat\_persistent\_object\_references, start\_date ORDER BY inserted\_date DESC) = 1
4. Keep output in memory
5. Delete the data of the fact table that have the same key in the ODS
6. Update the new records to the fact table
7. Update log

The new DM.FACT\_notification\_planning will join in the prj-data-maintenance-dash-dev.DM.FACT\_maintenance\_dash (part of V\_FACT\_maintenance\_efficiency)

## C. F\_500\_REFRESH\_MAINT\_DASH\_VIEW

This job will run **sql query** to delete prj-data-maintenance-dash-[env].DM.FACT\_maintenance\_dash and fill the table again with the view prj-data-maintenance-dash-[env].DM.FACT\_maintenance\_dash with parameter I\_LOCAL\_VAR\_FACT\_HISTORY\_NUM\_MONTH in order to control how many months that need for the final table for dashboard. Normally it is 6 month

## D. F100\_REFRESH\_ACCESS\_RIGHTS

To update authorization from **gsheet** (sheet name = "for training sessions and acces") : save to prj-data-dm-industrial-[env].WDL.WRK\_maintenance\_dash\_access to assign permissions to end users

## E. Refresh Tableau

To trigger Tableau to load data from GCP

## Loading Data

### A. MECANO (Talend project MECANO but using Data Ocean Industrial)

Normally it will be incremental load every week on PL\_MECANO\_DASH every Monday at 04:30 AM CET

and PL\_MECANO\_DAILY\_LOAD will load with delete data on xtract TALEND\_QVMECANO\_BW\_QRY\_MVPMOP04\_0006 only on Tue, Wed, Thur, Fri at 04:30 CET

[Reloading data detail in this link](#)

### B. Data Ocean Industrial (Talend project DATA\_OCEAN\_DOMAIN\_INDUSTRIAL)

#### ~~B.1 F002\_BWH\_MPR\_PM05\_003 to ODS~~

~~This data flow will be incremental and it is added to the plan PL\_MECANO\_DASH~~

##### ~~Reload data~~

~~I\_VAR\_XTRACT\_PARA\_TALEND\_DO\_BW\_QRY\_MPR\_PM05\_003 = "&YYYYMM\_Start=202407&YYYYMM\_End=202407" (in case reload July 2024)~~

~~If it is normal load this variable should be "currentmonth"~~

#### B.2 F010\_FACT\_notification\_planning\_to DM

This job is also added to PL\_MECANO\_DASH

##### Reload data

ODS: it is in [the mecano loading MVPMNO04\\_0002](#)

ODS: SRGBTBREL tables

Just change value WP1\_SRGBTBREL, PF1\_SRGBTBREL on table prj-data-dm-industrial-[evn].STG.incremental\_loading

[UPDATE](#) STG.incremental\_loading

[SET](#) meta\_last\_process\_date = '2024-06-06 00:00:00'

[where](#) meta\_file\_name = ' WP1\_SRGBTBREL '

DM: DIM\_generic\_object\_service

Control the reload by I\_VAR\_SPF\_SRGBTBREL\_dm\_reload\_condition and I\_VAR\_SPF\_SRGBTBREL\_dm\_reload\_condition such as QUALIFY ROW\_NUMBER() OVER (PARTITION BY CONCAT(meta\_source\_system,CLIENT,BRELGUID) ORDER BY meta\_ods\_insert\_date DESC) = 1 in order to reload everything from ODS.

DM : maintain I\_VAR\_BWH\_notification\_planning\_dm\_reload\_condition. The query to select ODS will be:

```
select xxx FROM ODS."+context.I_VAR_ODS_TABLE+" o
JOIN STG.log_files log_files ON o.meta_run_id = log_files.meta_run_id and lower(log_files.meta_file_name) like '%mvpmno04_0002%'
WHERE log_files.meta_status = 'OK' "+ context.I_VAR_BWH_notification_planning_dm_reload_condition
```

Therefore, it can enter where condition in order to specific to reload such as

"and SnapShot\_\_Week = '20.2024'

If it is normal load this variable should be "incremental"

Note: Reload of this fact table will cause the selected week to update the number of attachment is the latest one based on DIM\_generic\_object\_services. It is better to NOT reload this fact table

## Example Case

The number of attachment is too low on week 11.2025

```
select reference_week , sum ( nb_of_notification_created ) nb_of_created , sum ( nb_of_notif_with_attachement ) nb_of_attachement
from `prj-data-dm-industrial-dev.DM.FACT_notification_planning`
where reference_week in ( '10.2025' , '11.2025' , '12.2025' )
and nb_of_notification_created = 1
group by reference_week
order by reference_week ;
```

| reference_week ▼ | nb_of_created ▼ | nb_of_attachement ▼ |
|------------------|-----------------|---------------------|
| 10.2025          | 8633            | 576                 |
| 11.2025          | 8934            | 76                  |
| 12.2025          | 9352            | 705                 |

Random validate with table SRGBTBREL

```
select instance_ident_a_in_bor_compat_persistent_object_references from `prj-data-dm-industrial-dev.DM.DIM_generic_object_services`
where instance_ident_a_in_bor_compat_persistent_object_references like '%1102765340'
```

=> No data

```
select RELTYPE , INSTID_A , TYPEID_A from prj-data-dm-industrial-dev.ODS.ODS_SPF_0000_F001_I_D_SRGBTBREL
where INSTID_A like '%1102765340'
```

| RELTYPE ▼ | INSTID_A ▼   | TYPEID_A ▼ |
|-----------|--------------|------------|
| ATTA      | 001102765340 | BUS2038    |
| ATTA      | 001102765340 | BUS2038    |
| ATTA      | 001102765340 | BUS2038    |
| ATTA      | 001102765340 | BUS2038    |
| ATTA      | 001102765340 | BUS2038    |

It means that data in DIM\_generic\_object\_services has something wrong.

#### Solution:

1. Reload DIM\_generic\_object\_services by change following parameter:

**I\_VAR\_SPF\_SRGBTBREL\_dm\_reload\_condition** = "where UTCTIME > 20250301000000"

**I\_VAR\_SPW\_SRGBTBREL\_dm\_reload\_condition** = "where UTCTIME > 20250301000000"

To reload all data that more than 1 Mar 2025 from ODS both PF1 and WP1 to DIM\_generic\_object\_services by running job F100\_DIM\_generic\_object\_service\_SRGBTBREL\_SAP\_TO\_DM.

Note: it may need to change process to have more memory in TMC in order to reload this.

2. Reload FACT\_notification\_planning by changing parameter:

**I\_VAR\_BWH\_notification\_planning\_dm\_reload\_condition** = "and SnapShot\_Week = '11.2025'"

To reload ODS\_BWH\_0000\_F005\_F\_W\_mec\_mvpmno04\_0002 only week 11.2025 to mapping with DIM\_generic\_object\_services to find the number of attachment again.

Run job F010\_FACT\_notification\_planning\_TO\_DM

3. Change parameters back to 'incremental'

4. Test with script above again, the number of attachment should be increased on week 11.2025

| reference_week ▼ | nb_of_created ▼ | nb_of_attachement |
|------------------|-----------------|-------------------|
| 10.2025          | 8633            | 576               |
| 11.2025          | 8934            | 710               |
| 12.2025          | 9352            | 705               |

5. Run job F\_500\_REFRESH\_MAINT\_DASH\_VIEW to update prj-data-maintenance-dash-dev.DM.FACT\_maintenace\_dash

## Logging

### Loading job

in `prj-data-dm-industrial-[environment].STG.[table]`

```
select job.job_name , job.meta_start_date , logs.meta_run_id , logs.meta_source_system , logs.meta_step , logs.meta_status , logs.meta_num_lines , logs
.meta_error_lines from STG.log_tables logs join STG.run_jobs job on logs.meta_run_id = job.meta_run_id
```

```
where logs.meta_run_id in ( SELECT meta_run_id FROM STG.run_jobs order by meta_start_date desc limit 1000 )
```

```
and ( ( meta_source_system like '%MVP%' or meta_source_system like '%DBPMMD%' ) or
```

```
lower ( job_name ) like '%srgbtbre%' or lower ( job_name ) like '%do_bw_qry_mpr_pm05_003%')
```

```
and meta_step = 'Bucket to Staging'
```

```
and meta_start_date > DATE_SUB ( CURRENT_TIMESTAMP () , INTERVAL 7 DAY )
```

```
order by job.meta_start_date desc , meta_source_system
```

⚠ Loading on Monday must have 17 lines

Check loading from Xtract in detail

```
select count ( distinct kpi_no ) , DATE ( inserted_date ) ins_date , meta_run_id from `DM.FACT_maintenance_efficiency`
```

```
where EXTRACT ( DAYOFWEEK FROM inserted_date ) = 2
```

```
and kpi_no != '2.13'
```

```
group by ins_date , meta_run_id
```

```
order by ins_date desc
```

| f0_ ▼ | ins_date ▼ | meta_run_id ▼                   |
|-------|------------|---------------------------------|
| 8     | 2025-03-24 | 6e60caf1-f995-48e7-816f-19aa... |
| 7     | 2025-03-17 | 7f325782-3e1d-4553-b429-317...  |
| 7     | 2025-03-10 | 3d18b3fd-44a2-4511-b113-618...  |
| 7     | 2025-03-03 | ab5fbf0a-aec3-4e9d-aa17-b7a...  |
| 7     | 2025-02-24 | 50ad526f-98ea-4085-bedc-c59...  |
| 7     | 2025-02-17 | 4302b82c-1df5-4e47-8e4f-28d...  |
| 7     | 2025-02-10 | 5e4b470e-bd26-49e3-82cb-4a0...  |

Current Monday must have 8 , Previous Monday must have 7 (exclude 2.13, which daily load and it can be miss on Monday). In case, there is missing kpi\_no. Check further

```
select distinct kpi_no , DATE ( inserted_date ) from `DM.FACT_maintenance_efficiency`
```

```
where meta_run_id = meta_run_id from above
```

order by kpi\_no