Functional Documentation - Stock Margin elimination (Model S)

1.0 Overview

Stock Margin elimination (Model S)

Business Context and Application Overview

The Stock Margin Elimination is more a process then a report, it's a step for the closing process where each month all the companies have to eliminate the internal margin for the stock. This is using data from the P&L Integrated margins to have the calculations for the Stock Margin elimination (for WP1).

Application User Profile

For this Application the access is provided based on the BW menu "MS - Stock Margin Elimination (Model S)" and it's done via Service one.

Fill the form
https://solvay-dwp.onbmc.com/dwp/app/#/itemprofile/622

In SAP system select the " WBP - BW Business Warehouse"

In WBP - BW Business Warehouse : Select the Business Role select the "MS - Stock Margin Elimination (Model S) "

Target Users:

Management Accounting and Reporting team.

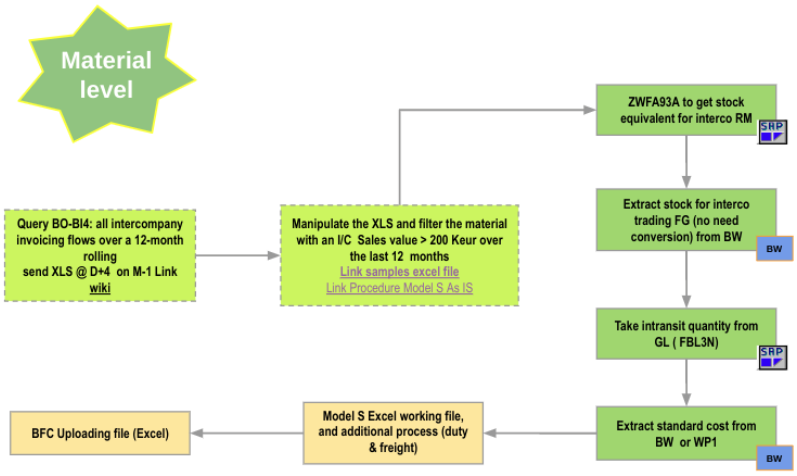
VERSION	DATE	MODIFIED BY	DESCRIPTION
0.01	24.10.2023	Inês Vilares	Initial draft

Application Type

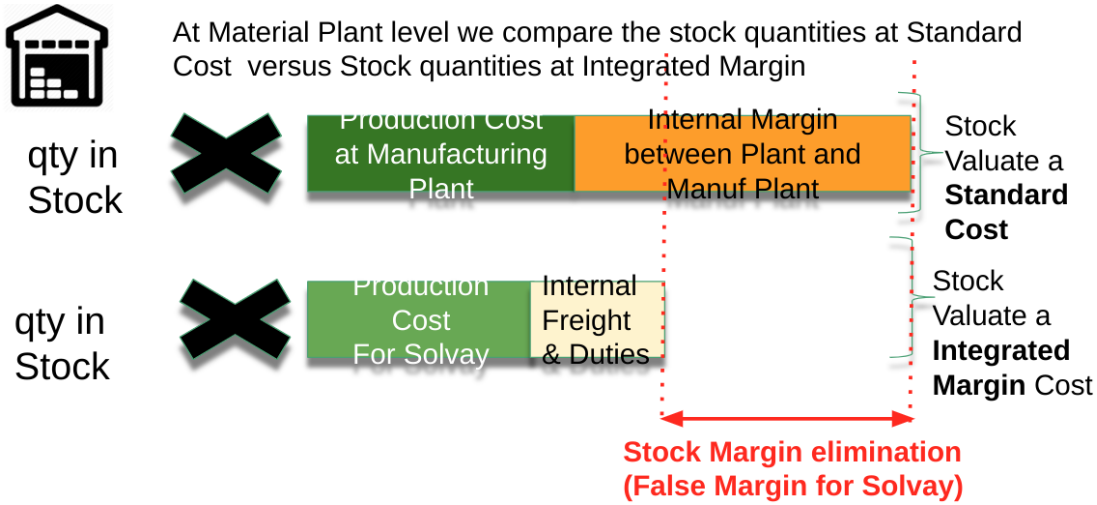
Data Product Type	☐ Dashboard ☑ Report ☐ Advanced analytics ☐ AI ☐ Others <specify which one>
Technologies	☑ BW ☐ Tableau ☐ Qliksense ☐ Talend ☐ Dataiku ☐ Others <specify which one>
Data Sources *Note: list of all applications and various environment*	☑ SAP PF1 (Production environment) ☑ SAP WP1 ☐ SAP PI1 ☐ BW (versions) ☐ iCare CRM ☐ CORE CRM ☐ Others <specify the name of the source>

2.0 Business Process

The process before it was very complex and has a big imapct for the closing process. See below the old logic:



To have a most accurate process for this and more efficient, the idea was based on the following:



For calculation we will use:
The quantities that are effectively in stock at the plant level.
We call it **LOGISTIC STOCK.**

The quantities that are being shipped to the plant . These items are not present in the factory but are its property.

We call it **STOCK IN TRANSIT.**

The goal is to use the IM cost unit to valuate the stock and in the standard cost we have the internal margin between plant and manufacturing plant and since in the IM cost unit we don't have the difference will be our stock margin elimination.

This should be done at D+3 in the morning because it's need it for the closing process. That is why this a closing tool and not a reporting tool.

The idea is to take the quantities in stock and valuate at standard cost vs at IM cost but in term of quantity we need to have two types of quantity: the real stock in plant but also the stock in transit.

3.0 Application Feature Overview

For this application find below all the workbooks available:

Reports	Definition	Prompts	BW Workbook Query	Query Technical Name
Stock Margin elimination report	In this report it's possible to check the different values for the: • Total Stock (Logistic + Transit) and see in detail the quantities for the real stock and in transit; • Total Stock IM: from the Integrated margin logic where we can see also the details for the CP/CNP/AMO values and the Freight and duties information. • Total Stock Standard Cost: the value it will depend on the month selected. • Stock Elimination: it's the result from the Total Stock Standard Cost - Total Stock IM. • Reference used for the Logistic and In Transit (month) to valuate the stock. • Lote size information for Plant and Manufactaring Plant,	Mandatory: • Calendar year/month; Optional: • Auth Scope on Comp. Code; • BFC GBU; • PRS Company Code; • Mngt zone; • Company Code; • Plant; • Material; • Source System;	BW_WBK_MS_0001	BW_QRY_CPCOMS01_0002

4.0 Functional Specification

4.1 General Data/Calculations

For these reports, it's important to understand some concepts which will allow the user to work with the reports.

Batch	It's an identification to have a track on the material and can give us a lot of information as where was produced, manufacturing plant, among others.
CP	Variable Costs.
CNP	Non Variable Costs.
Lot Size	Lot size of the costed object (such as a material or sales order) used in the product cost estimate.

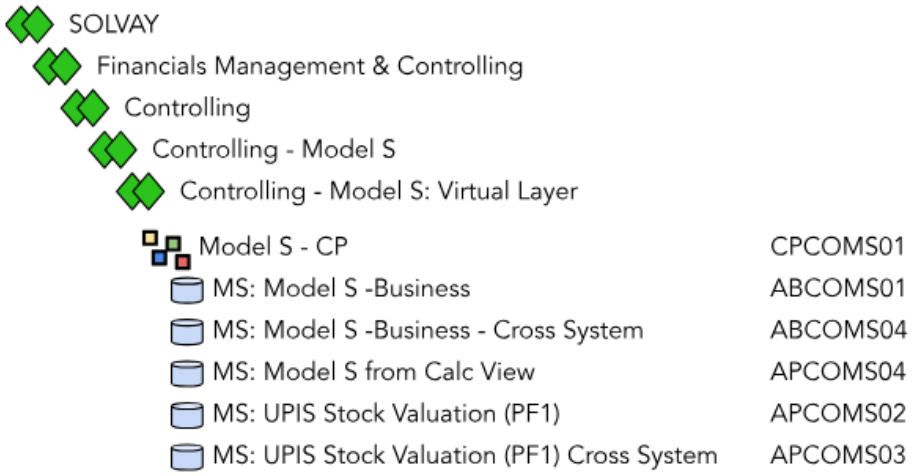
4.2 Process Detail

4.2.1. Report/Process Definition

Domain	Finance
Application	BW reports under MS - Model S
Provider	CPCOMS01

In this section we will approach:

SAP BW High Level View



BW Target Model : 2 sources / 2 ways of calculation

For PF1 the project decided to not do the calculation in BW but it's done in SAP with a program with their own claculation (run once per month).

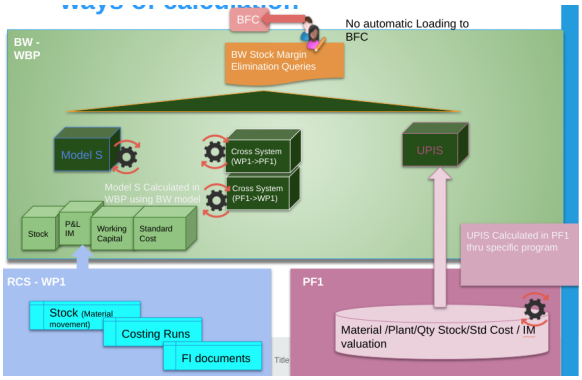
For WP1 part the calculation is done in BW, we are using:

- the material movement to have the stock model;
- the costing runs for the calculation of the IM cost unit;
- the FI documents because the stock in transit doesn't exist in logistic, in SAP we only have this coming from FI documents and we are using the information from the working capital model.

with these elements we are able to determine the stock margins for WP1 in BW.

After we also have some cross cases stock in WP1 with production in PF1 or the other way and this is also done in BW side.

With this no automatic process from BW to BFC (business needs to perform some analysis/validation).



In summary:

Provide a query that give for PF1 and WP1 :

- Stock at end of month;
- Stock valuation at Standard Cost;
- Stock valuation at Integrated Margin Cost (without internal margin);
- Delta Between Standard Cost and IM cost.

For PF1 data the calculation is done in PF1 : those results are aggregate in BW.

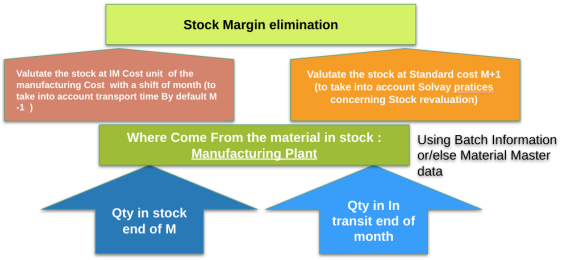
For WP1 data and Cross-system cases ; the calculations are done in BW.

The query will be formatted to be loaded manually in BFC ; but no automatic a loading . Manual adjustments/corrections can be done.
The BW stock elimination report is an help for the closing

BW Target Model: the WP1 solution in brief

1- We are extracting the data for the quantities in stock (BW stock model) and in transit (working capital information).

2- We need to identify which is the manufacturing plant of the material because this can be different from the plant. For this we can use the batch info or the material master data.

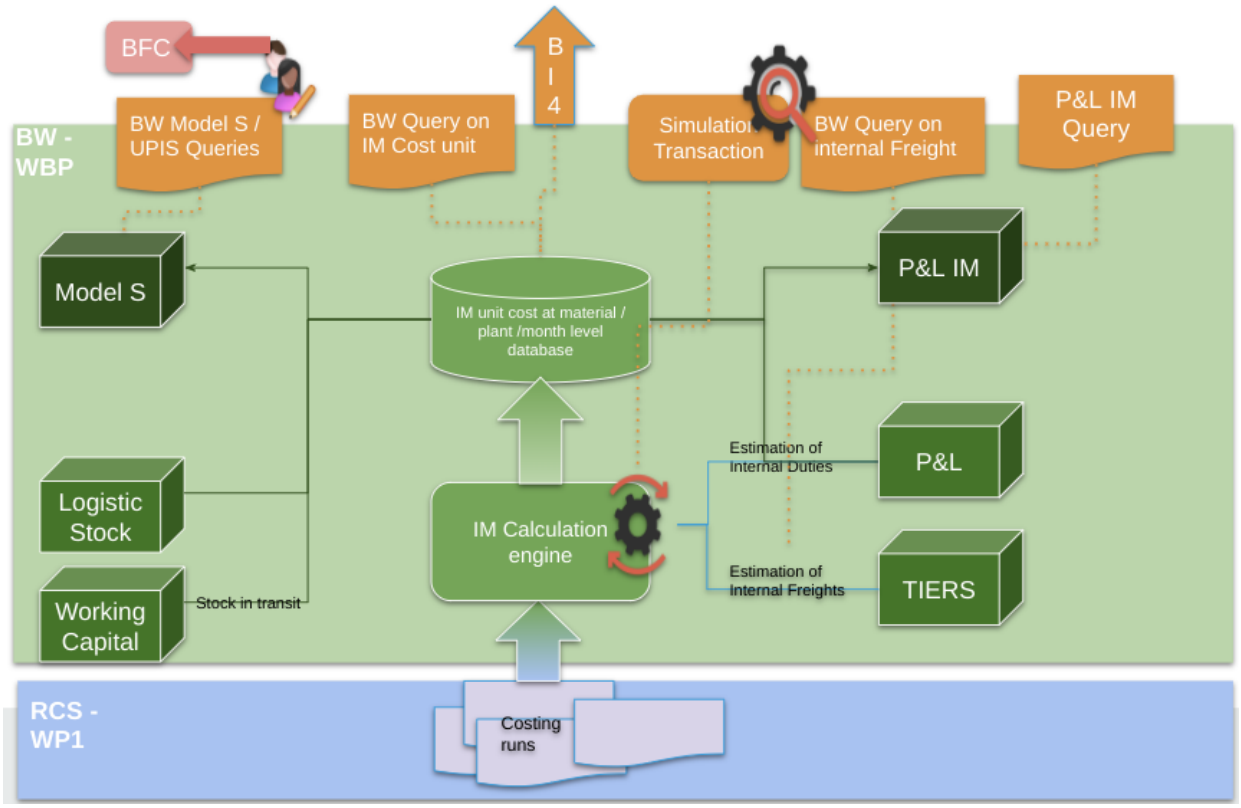


3- We will valuate the stock at IM Cost unit and to take into to account the transport time it was requested to have this shift of month. Exist a table where the shift of month can be changed by the user (Transaction ZBW_SHIFT_MONTH it will be used via uploading an xls format file in BW the table is /BIC/AAPCOMS032).

4- To valuate the stock at standard cost it's done M+1 to take into account some Solvay pratices regarding the stock revaluation process.

5- The difference will be our stock elimination.

An integrated solution:



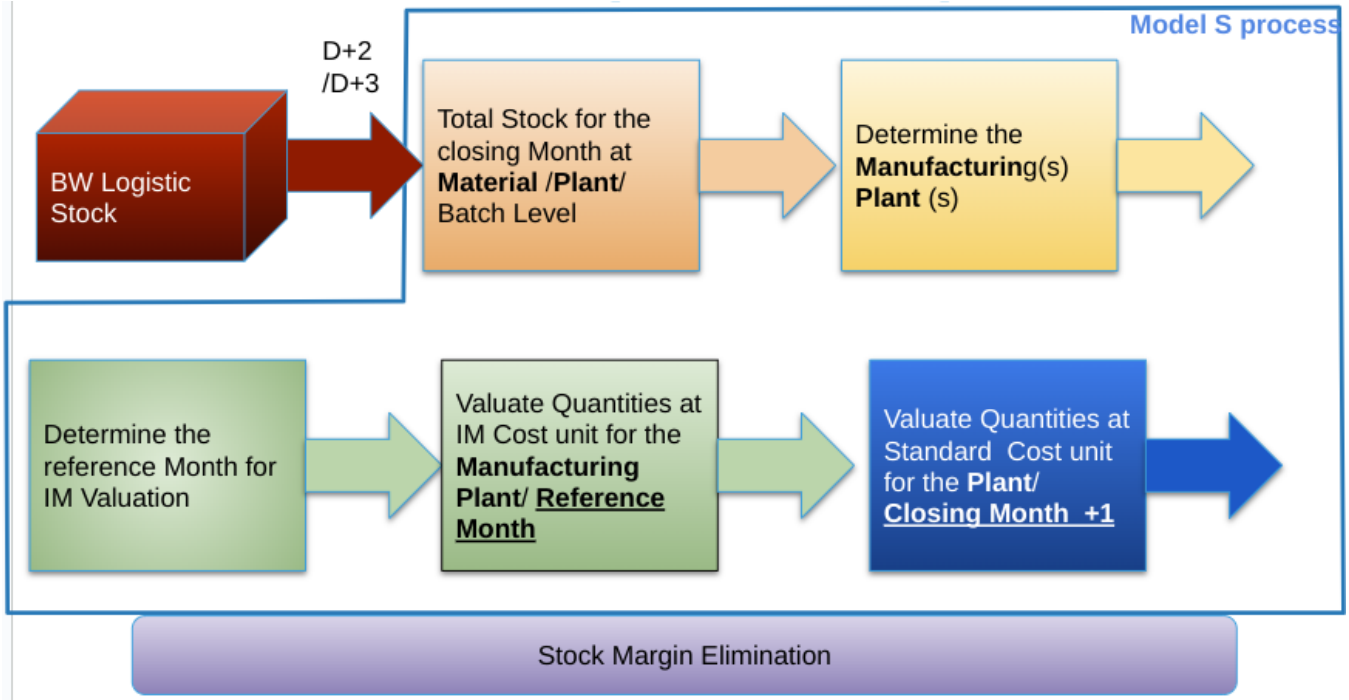
For this scope it's important to understand the logic for the integrated margins since the new BW Stock elimination Margin will share the same calculation elements as the P&L in integrated margin - the Integrated Margin (IM) cost unit.

The quantities for:
- Logistic Stock are coming from the BW stock Model;
- Stock In transit are coming From Working Capital Stock Queries.

For the integrated margins logic please check our functional documentation under the scope "Profit and Loss Integrated Costs".

BW Stock elimination Query - Calculation for WP1

i) Calculation in BW Stock Margin Elimination Report - Main process



Evaluate logistic Inventory at IM cost - Main cases

At D+2/D+3 **we extract Total Stock quantities** from BW logistic model at Material /plant / Batch Level.

At D+2/D+3 night IM cost unit for WP1 materials are calculated at:

- Month
- Plant
- Material (WP1 code)

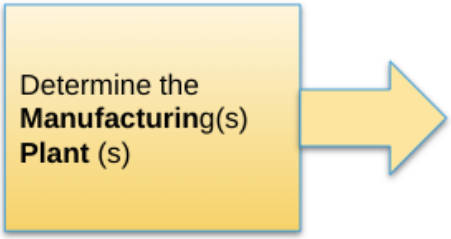
IM cost unit are splitted:

- CP
- CNP
- AMO
- Internal duties
- Internal freight

Determine Manufacturing Plant:
1. Manufacturing Plant of Batch if existing

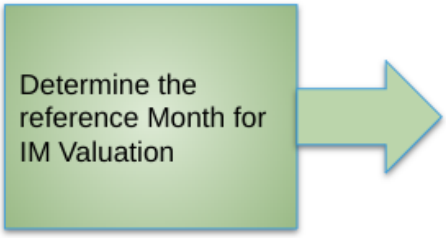
2. If no Manufacturing Plant or no Batch

- Production Plant of material master data (coming from Sp);
- Plant of Stock.



Determine Reference Month:

- We add a Shift of months:
  - The shift of month is GBU dependent
  - Exception cases maintain for a list of Material /Plant



A Self Service transaction to maintain standard Shift of month and exception will be created

We evaluate the total Stock quantity using IM Cost unit:

1. For the Manufacturing Plant
2. The reference Month (closing moth - Shift of months)
3. For the material Code

We convert at Company Code currency using:

- Exchange rate M at end of the Closing Month.

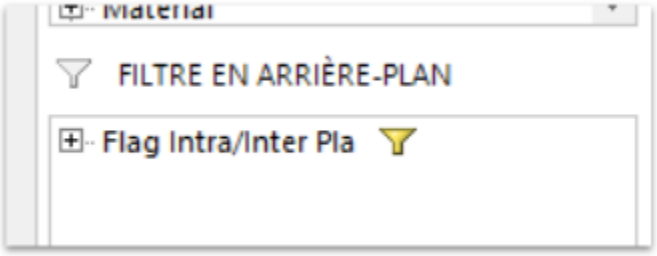
Valuate Quantities at IM Cost unit for the **Manufacturing Plant/ Reference Month**

If we don't find IM Cost unit for the manufacturing plant we take the IM cost unit at plant level

Specific Case : Manufacturing Plant = Plant

If the we determine a Manufacturing plant equal to the Stock (ie: the product is produce in the same plant) we can have Stock elimination only if raw (s) material(s) is produced from another plant. In all other cases , applying shift of months generate "fake" Stock elimination.

It was first decided to exclude from the perimeter all cases for which the plant = Manufacturing Plant before being able to refine the management rules.

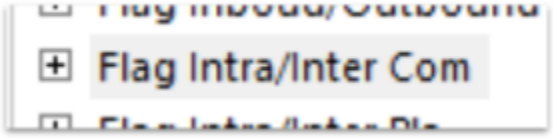


Note: This exclusion can be delete from the query.

Specific Case : Intra/Inter Company

The manufacturing Plant could come from another company code or from the same Company.

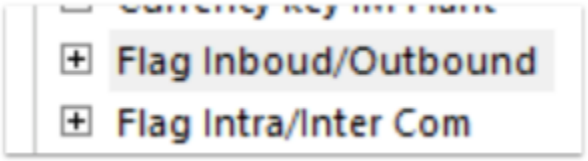
The Filter Flag Intra/Inter Com can be used to exclude/include those cases.



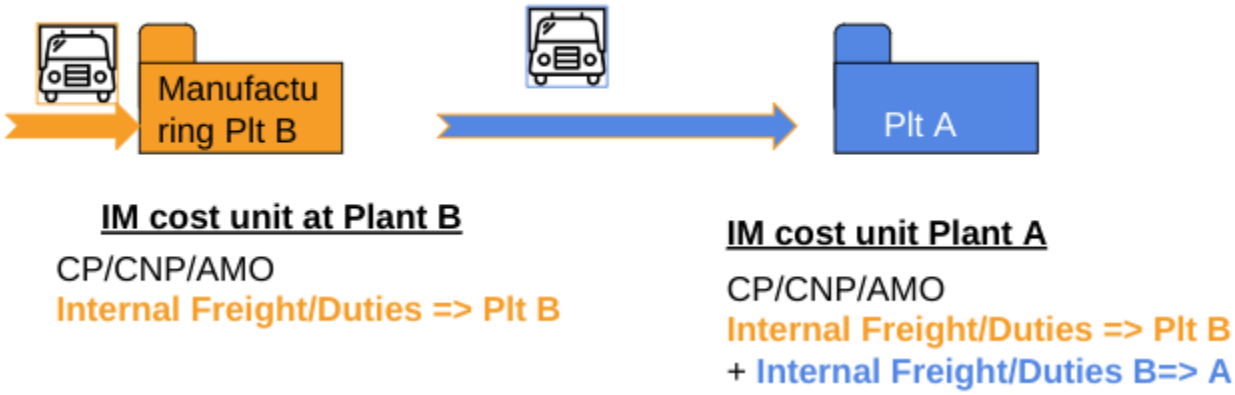
Specific Case : Inbound / Outbound cases

The model S can provide stock elimination for plant not linked to the company code . These cases are explained by dropshipping flow especially for IN TRANSIT posting.

We must take into accounts those stock margin elimination ; but we create a flag that permit to regroup these cases.



Case of Internal Freight Cost & Duties:



If we use only IM Cost unit of Manufacturing Plant B for Stock in Plant A , we lose the freight between B an A (Internal Freight/Duties B=> A).

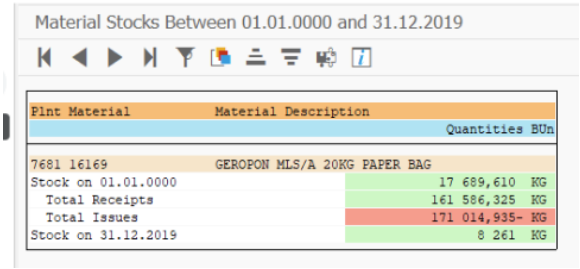
In the query : For Duties and Internal Freight we use:
- the Internal Freight and duties at Plant level if it's not empty else the Internal Freight and duties at Manufacturing Plant level (case of trading plant).

A complex Case : Plant 7681 Material 16169 for 12/2019

Quantity in stock

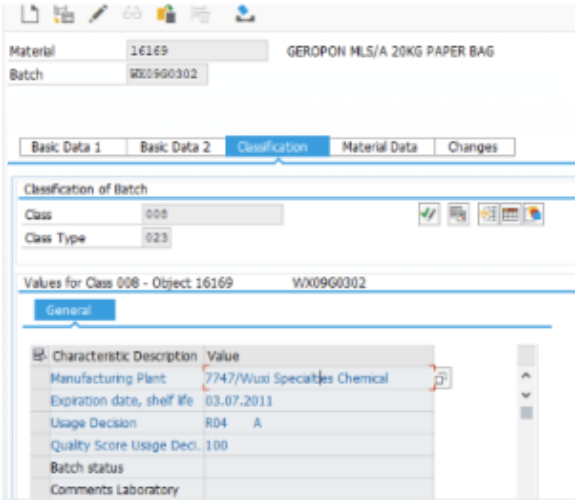
In BW

In SAP (MB5B)

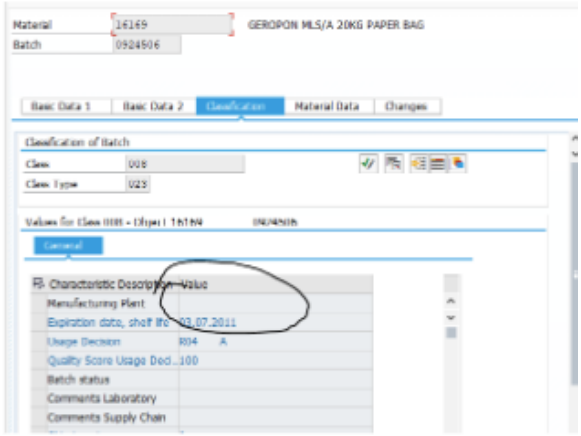


2 manufacturing Plants and 3 Batches:

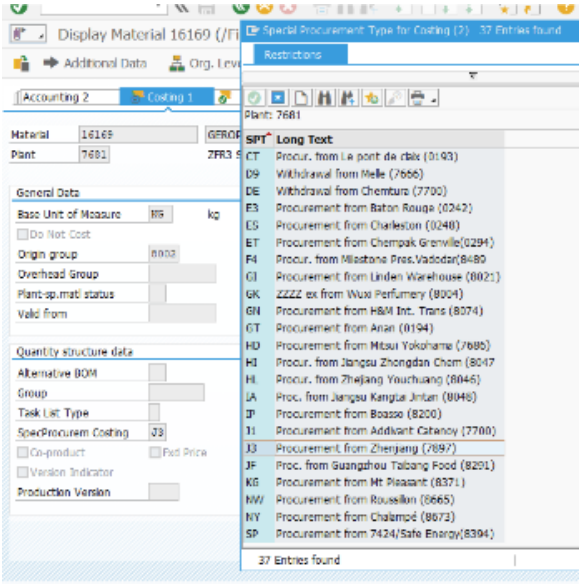
Batch WX09G0302 give the manufacturing plant 8034.



Batch 0924506 give no manufacturing plant.



Controlling SP J3 give the manufacturing plant 7897 (do not forget to control Logistic SP , if Controlling SP is empty).

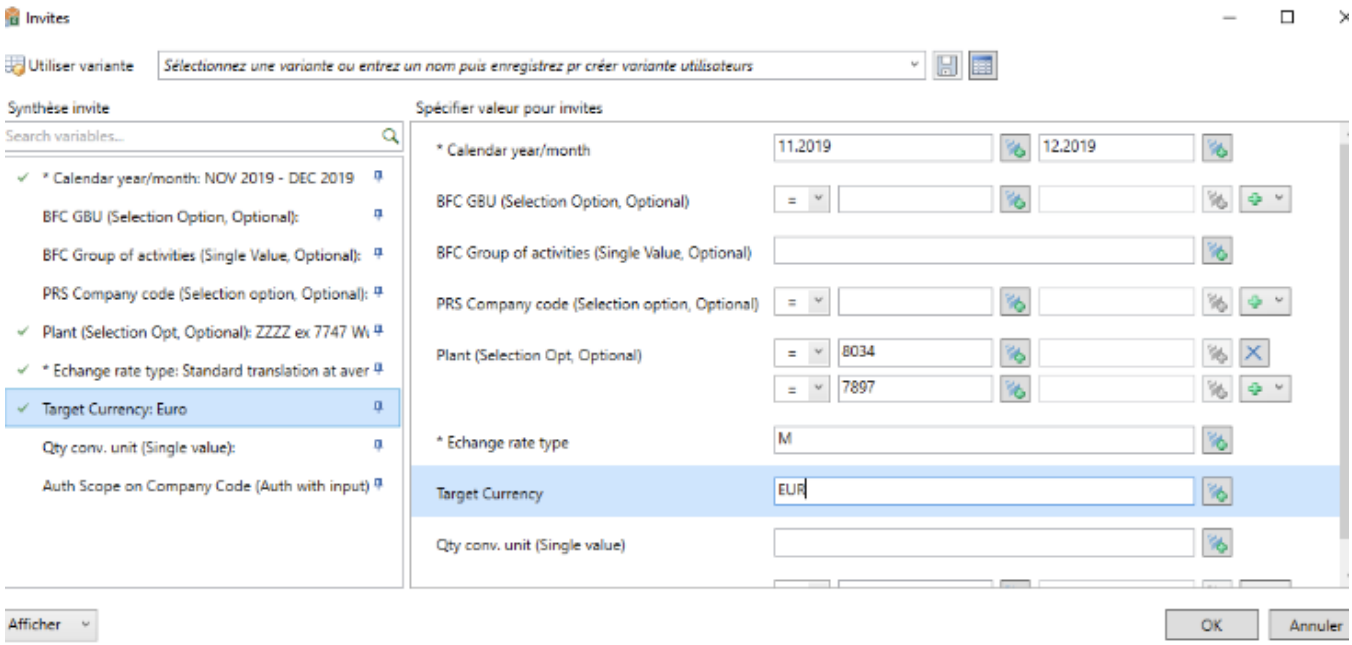


The reference Month is 11.2019

	[+] Total Stock (Log + Transit)	Total Stock IM	[+] Stock IM (CP/CNP/AMO)	[+] Stock IM - Freight	[+] Stock IM - Duty	Total Stock Standard Cost	Stock Elimination	Reference Month Logistic	Reference Month Transit	LotSize (Plant)	LotSize (ManPlant)
5	5 000- KG	31 042,90- EUR	31 042,90- EUR	0,00 EUR	0,00 EUR	1 050,00- EUR	29 992,90 EUR	2019.11		1 000 KG	1 000 KG
6	8 261 KG	51 289,08 EUR	51 289,08 EUR	0,00 EUR	0,00 EUR	1 734,81 EUR	49 554,27- EUR	2019.11		1 000 KG	1 000 KG
7	5 000 KG	31 311,40 EUR	31 311,40 EUR	0,00 EUR	0,00 EUR	1 050,00 EUR	30 261,40- EUR	2019.11		1 000 KG	0 KG
8	8 261 KG	51 557,58 EUR	51 557,58 EUR	0,00 EUR	0,00 EUR	1 734,81 EUR	49 822,77- EUR	2019.11		1 000 KG	667 KG

We use IM cost Unit for 11.2019.

We convert it in EUR (ZFR3 currency) using M end of December 2019.



By selecting November to December 2019, we select November IM cost unit and convert them at end of December.

Example IM cost unit is existing only for plant 7897 and not for plant 8034.

Integrated Margin -Cost

Source System	PRS Company code		Plant		Material		Costing Date	Lot Size	[+] IM cost unit - CP	[+] IM cost unit - CNP	[+] IM cost unit - AMO	IM Freight unit cst	IM Du
WP1_400	7811	SOLVAY ZHENJIANG CH	7897	7811 Zhenjiang	16169	GEROPON MLS/A 20KG PAPER BAG	01.11.2019	1 000 KG	6 204,33 EUR	2,82 EUR	1,43 EUR	0,00 EUR	
WP1_400	7811	SOLVAY ZHENJIANG CH	7897	7811 Zhenjiang	16169	GEROPON MLS/A 20KG PAPER BAG	01.12.2019	1 000 KG	6 200,85 EUR	0,00 EUR	0,00 EUR	0,00 EUR	

For manufacturing Plant 7897:

IM CP = 3261 kg (Total stock) * 6204.33 eur / 1000 kg (lot size Manufacturing plant) = 20 232 eur.

For manufacturing Plant 8034 : we take the default rule => IM Cost unit of the plant.

IM CP part =5000 kg (Total stock) * 6258 eur / 1000 kg (lot size plant) = 31 311, 40 EUR.

In BW report we use the standard price of the next month to take into account specific postings are done in SAP that permit by nullify SAP standard stock revaluations (PR) and post it on the next month (posting on Account 1000028227) .

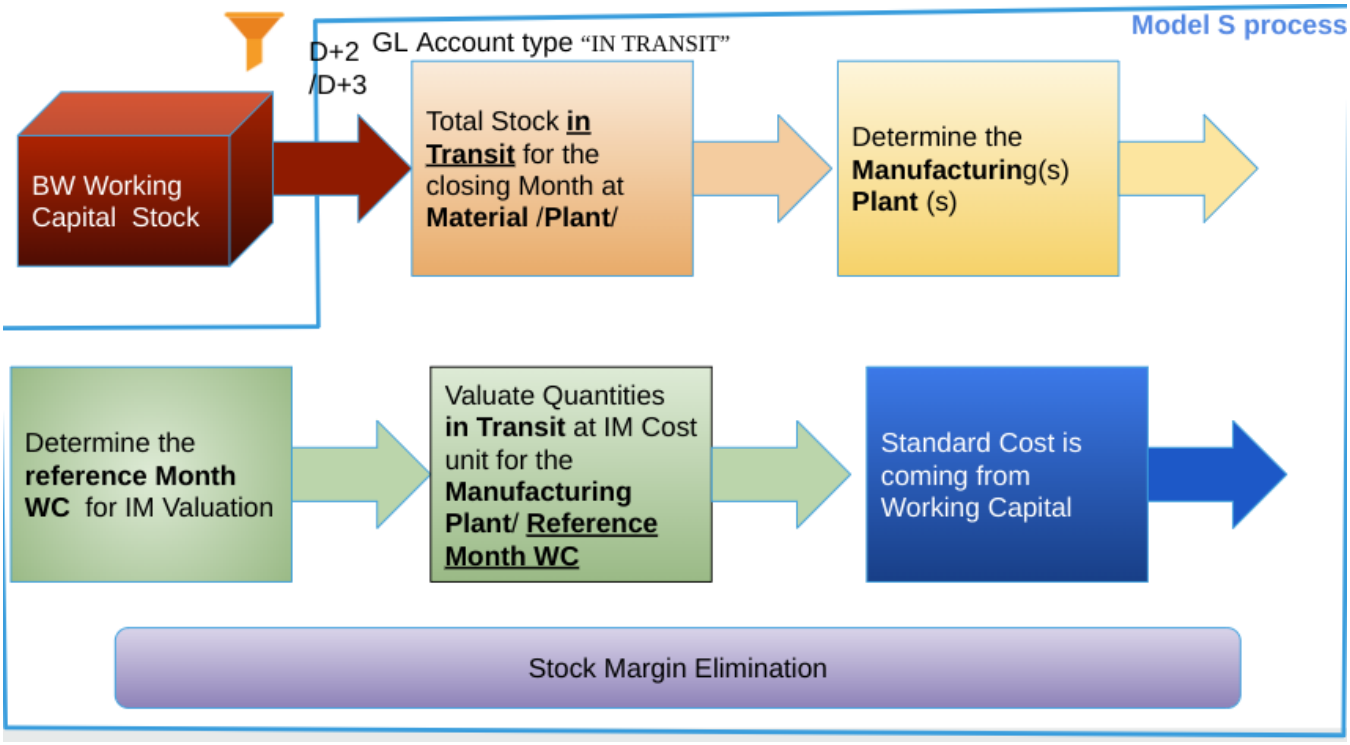
By using M+1 standard price we follow the business rule of this specific process

Detailed rule :

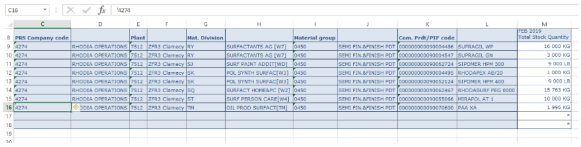
If the material is at standard Price (0PRICE_CTRL = S) we use the price Type P01

Else if the material is at movering average price (0PRICE_CTRL = v); we use P02 if P01 is negative or equal at 0 else P01.

ii) Calculation in BW Stock Margin Elimination Report - Stock in transit



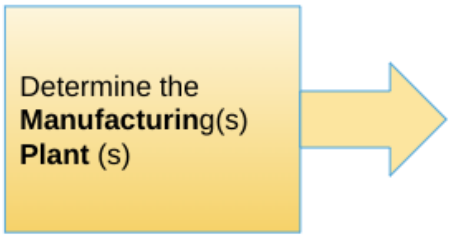
In RCS , the only way to have quantities in transit is to use FI Document . This information is provide by BW Working Capital query.



Remark: we exclude "1000028227" account because we use for stock logitic valuation the standard cost M+1.

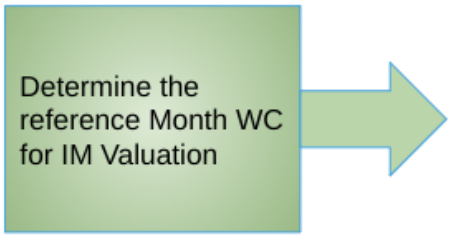
Determine Manufacturing Plant :

1. Because in FI document there is no Batch the manufacturing plant is:
   - Production Plant of material master data (coming from Sp) else .
   - Plant of Stock.



Determine Reference Month WC :

- We add a Shift of months:
  - The shift of month is GBU dependent.
  - Exception cases maintain for a list of Material /Plant.

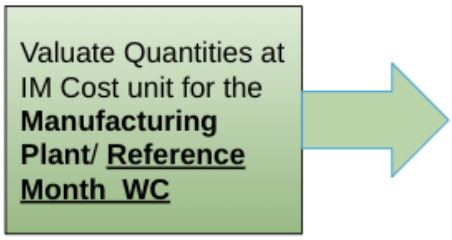


A Self Service transaction to maintain standard Shift of month and exception will be created

The shift of Month for WC could be different from Logistic Stock.

We valuate the total Stock quantity using IM Cost unit :

1. For the Manufacturing Plant.
2. The reference Month (closing month - Shift of months).
3. For the material Code.



We convert at Company Code currency using

- Exchange rate M at end of the Closing Month.

Tips

1) Loading Source axis permit to split data from their source

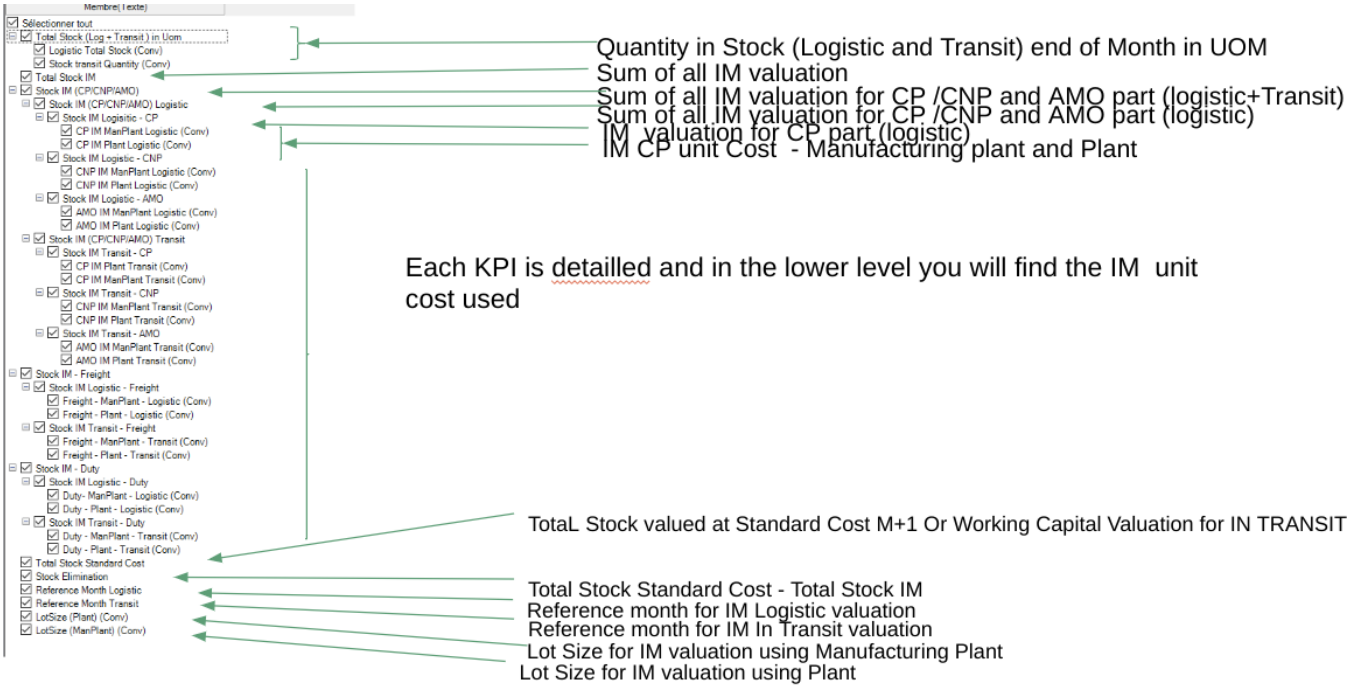
- WP1 Logistic
- WP1 Stock in transit
- Cross System Cases
- UPIS from PF1

Add attributes to the Plant or the manufacturing to know the country/ company ….

2) Model S reports works even if you decide to delete some axis from the report; for instance the material.

But keep in mind some Keyfigures will not be relevant at an agregated level: Cost unit; Reference Month, Lot Size.

3) Reference Month Logistic / Reference Month in Transit give you the month used for The IM valuation.



Tips : how to Control/ understand Models S calculations

	Logistic part	**Stock In transit part**
Total Stock	transaction MB5B in **WP1.**	Workbook Working Capital Inventory Extract in **WBP.**

Manufacturing Plant	Transaction MSC3N to see the batch attributes (WP1). Material Master data(Transaction MM03) for special procurment key: COSTING view or MRP2 view.	Material Master data for special procurement key: COSTING view or MRP2 view.
Reference Month	By default M -1 no exception currently.	By default M no exception currently.
IM cost unit for reference month	Launch the P&L query P&L Integrated Margin - IM cost unit from Reference month to closing with exchange rate M and manufacturing plant in Analysis Launch transaction Z_INT_COST for Reference month M-1 and manufacturing plant.	Launch the P&L query P&L Integrated Margin - IM cost unit for Reference month and manufacturing plant in Analysis. Launch transaction Z_INT_COST for Reference month and manufacturing plant.

IM valuation (CP /CNP/AMO)	If IM Cost Unit of Manufacturing plant is existing then
	
	Qty in stock * IM cost unit of Manufacturing plant for the reference month / Lot Size Manufacturing Plant
	
	Else
	
	Qty in stock * IM cost unit of Plant for the reference month / Lot Size Plant
	
	We convert at end of month using the exchange rate of the prompt -> Currently we concert in currency of the plant (to be change).
		Idem

IM valuation (Freight & Duties)	If IM Cost Unit for freight and duties of Plant is existing then
	
	Qty in stock * IM cost unit of Plant for the reference month / Lot Size Plant
	
	Else
	
	Qty in stock * IM cost unit of Manufacturing Plant for the reference month / Lot Size Manufacturing Plant
	
	We convert at end of month using the exchange rate of the prompt -> Currently we concert in currency of the plant (to be change).
		Idem

Standard Cost	Use transaction CK13N for the material and the plant and for the Month M+1 in WP1 to obtain the standard unit cost for M+1 By multiplying by Total stock and divide by Lot Size Plant we calculate the standard Cost.	

Stock Margin elimination From PF1

BW Stock Margin elimination provide WP1 and PF1 stock Margin elimination. While the WP1 part is calculated in BW, the PF1 part is entirely calculated in PF1 .

For mode details of PF1 calculation see : https://drive.google.com/file/d/13BOVNKDkFTURCzwOAO8bu7augGbjN9RAmvEqJcJ0sZA/view

The results of the PF1 calculation are extracted. The only enriched elements in BW are:

- The attributes of Material /manufacturing Plant.
- The BFC GBU by reading the Material /plant.

The other Characteristics (Manufacturing plant ,Batch , plant company , material …) are determined in PF1.

All the Keyfigures (except Standard Cost) are calculated in PF1 : IM cost ; and Stock Margin Elimination.

The only calculation done in BW is the Standard Cost Which is the summation of LEGAL VARIABLE + LEGAL FIX + LEGAL DEPRECIATION + LCM.

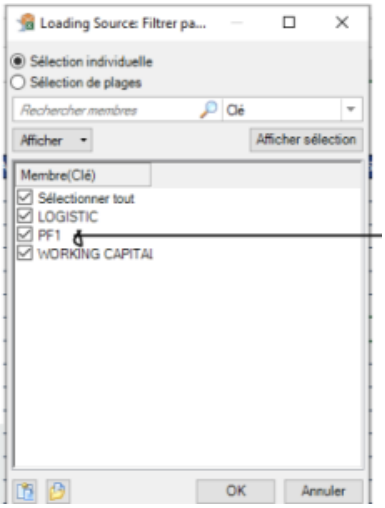
How to identify PF1 datas in BW query

Stock margin elimination PF1 & WP1 are mixed in BW Stock Margin elimination query.

How to Exclude/Select UPIS in the BW query prompt? By selecting the Source system you are able to select (or exclude as you want) PF1 calculation data from the reporting.

How To identify UPIS data in the query?

If you have decided to select WP1 and PF1 in the report (it's more longer) , you can identify PF1 data thru Characteristic 'Loading Source'.



If we need some assistence with the logic for PF1 we can contact Jimmy Goh or Rita Vieira for this topic.

Calculation in BW Stock Margin Elimination Report - Cross System cases

In the real life there is Cross system cases:

- Stock in PF1 with production in WP1
- Stock in WP1 with production in PF1

The difficulties are:
- identifying Cross System cases;
- Translate Master Data code PF1<->WP;1
- Valuate at IM of Erp X the stock of the Erp Y.

How to identify Coss System cases

The unique object which is transversal for both PF1 and WP1 is the Batch.

In the Batch we have the information of the plant (so by consequence the Erp Origin).

If a stock in Erp x for a Batch, we have a Manufacturing plant from another ERP , we will consider this entry as Cross System. Else the BW model consider it as MonERP case.

Remark: Only data with Batch information feeded can tested and considered as Cross System .

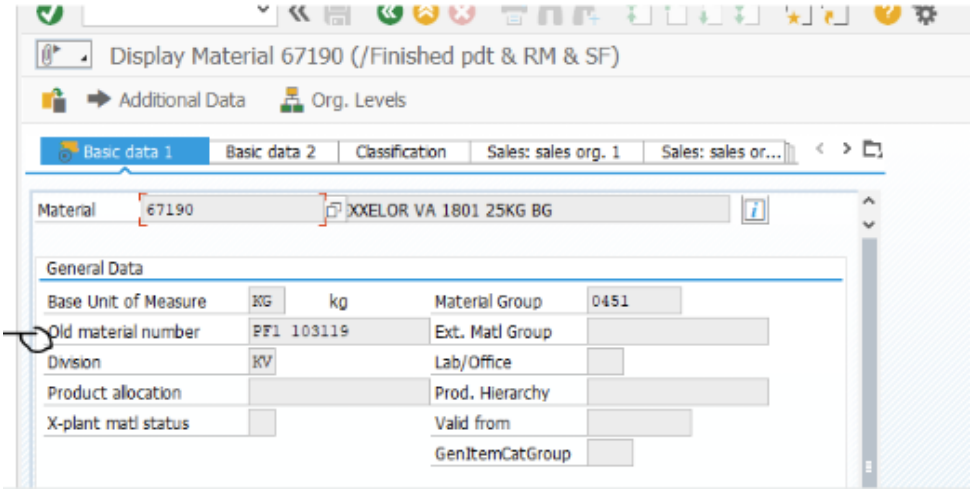
Remark 2: Batch master data are central to identify cross system cases.

How to identify Convert PF1 Material Code <-> WP1 Material code

For the material managed in MDG , we take in priority the link managed in MDG

Else

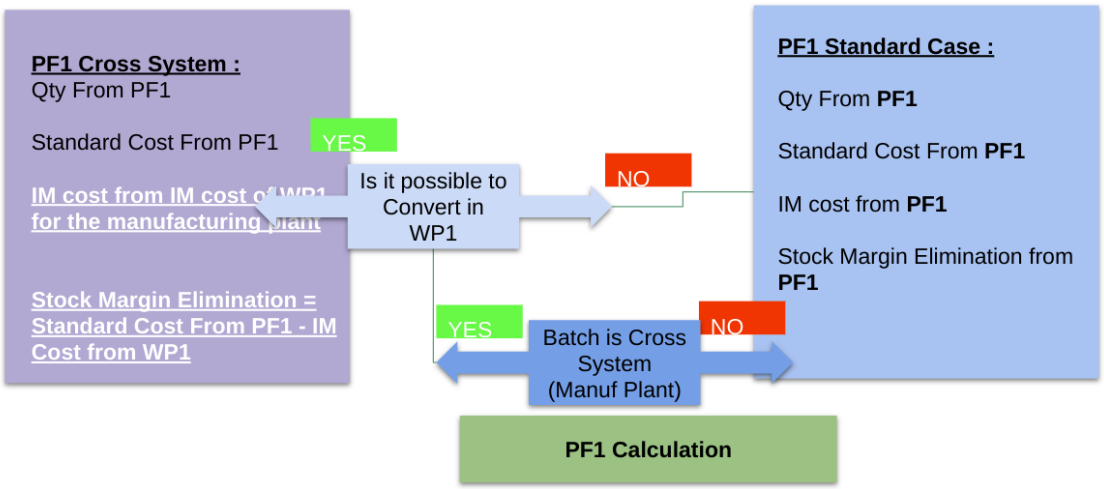
We use the information managed in the Material Master Data : the field Old material code



How to Valuate PF1 stock at WP1 IM Cost unit at Batch level

- The quantity in Stock and the Standard Cost are the same than the quantities and the standard Cost calculated in in PF1.
- if we can:
  - translate PF1 Material Code in WP1 Material Code.
  - we find a real WP1 plant in the Batch.
  - we find a WP1 IM Cost for the closing month.
- Then :
  - IM Cost valuation (CP / CNP / AMO / Freight /Duty) = Quantity in Stock for PF1 material Code * IM Cost unit for WP1 Material Code / Manufacturing Plant for the Closing Month (no shift of month because in PF1 there is no shift of month).

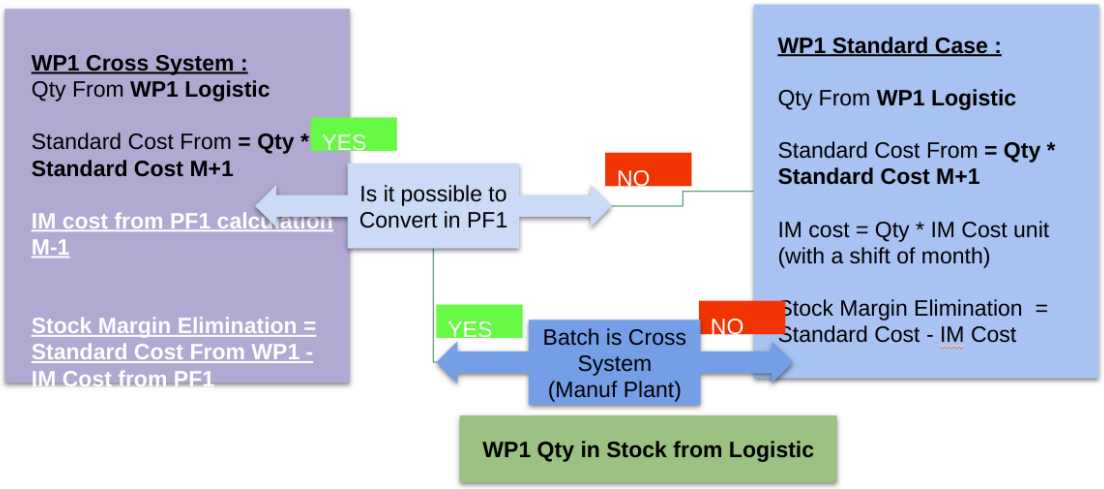
If we are not able to convert or find any IM cost unit we take the IM valuation (CONSO) done PF1.



How to Valuate WP1stock at PF1 IM Cost unit (conso) at Batch level

- The quantity in Stock and the Standard Cost are the same than the quantities and the standard Cost calculated in WP1.
- It concern only Logistic Part (there is no Batch for In transit).
- if we can:
  - translate WP1 Material Code in PF1 Material Code .
  - we find a real PF1 plant in the Batch.
- Using PF1 calculation done in Month M-1
  - We recalculate IM unit cost at Material/ plant level by dividing Stock quantity by Conso value.
- Then :
  - IM Cost valuation (CP / CNP / AMO) = Quantity in Stock for WP1 material Code * IM Cost unit for PF1 Material Code / Manufacturing Plant for the Closing Month M-1.

If we are not able to convert or find any IM cost unit we take the IM valuation (CONSO) done WP1 as in Model S standard model.



5.0 Non-functional Descriptions

5.1 Usability

as per standard.

5.2 Regulatory Compliance

as per standard.

5.3 Security

as per standard.

5.4 Performance

as per standard.

5.5 Reliability

as per standard.

5.6 Scalability

as per standard.

5.7 Compatibility

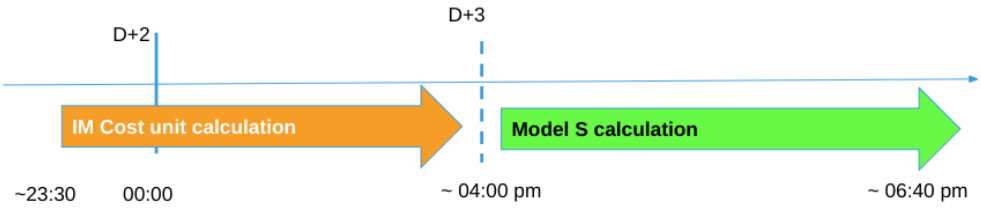
as per standard.

5.8 Availability

as per standard.

5.9 Refresh of the Data

Inputs WP1 part:



Inputs :
- Costing run M/M+1 (loaded in PC)
- CPX (vault) IM calculations
- Exchange rate CAR3
- Standard Cost(loaded in PC)
- Duty % table(loaded in PC)
-Default Freight cost table

Inputs :
-FI documents from WC (last update ~ 22:30 D+2)
- Exchange rate M (update at 00:30)
- Material Movement (loaded in PC)
- Shift of Months customizing table
-Standard Cost-P01 (Monthly j+2 04:00 AM)
Standard Cost-P02 (Daily j+2 00:30 AM)-

D : Working Day
J : Calendar day

Inputs PF1 part: