# Functional Documentation - Project Costs

## 1.0 Overview

Project Costs Menu

### Business Context and Application Overview

The Project Costs Reports it's part of the Finance domain using data from SAP systems related with the information from SAP Project System application tool.

These reports have the main goal to provide a detailed economic survey of projects: Budget, Commitments, Actual costs (PeC), Cash out (CAPEX) and Cash Future. In this way several reports were built so the users can check and analyze at master data level, settlements and key figures information.

### Application User Profile

For this Application the access is provided based on the BW menu "PS - Project Costs" 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 "PS - Project Costs".

**Target Users:**

Controllers / Accountants as well as Project responsibles

| VERSION | DATE | MODIFIED BY | DESCRIPTION |
|---|---|---|---|
| 0.01 | 01.07.2023 | Inês Vilares | Initial draft |
| | | | |
| | | | |

### Application Type

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

## 2.0 Business Process

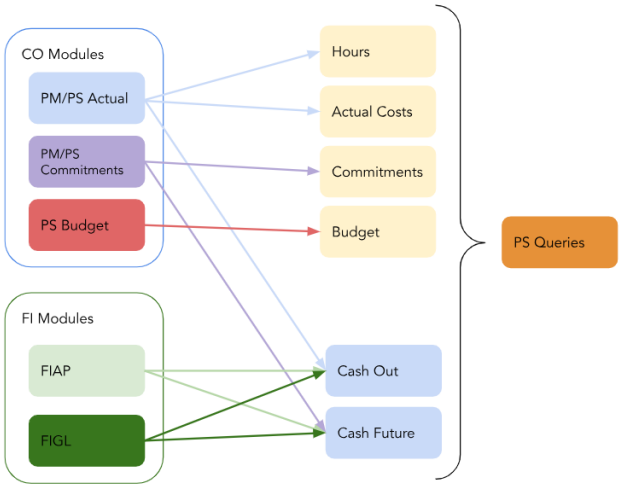
**Business Process**

SAP PS (Project System) is an integrated project management tool used for planning and managing projects. Whenever the organization has a project it's important to have a planning of all associated activities. The responsibility to manage and control the projects it's essential to ensure that the project is executed efficiently, in the timeline and within budget.

To be able to have this control and check the data we can use a structure called work breakdown structure (WBS) to see the costs and activities associated with the project and therefore the company can have a track of this information for each project.

For the Project Costs reports our data source is the SAP data from different modules.

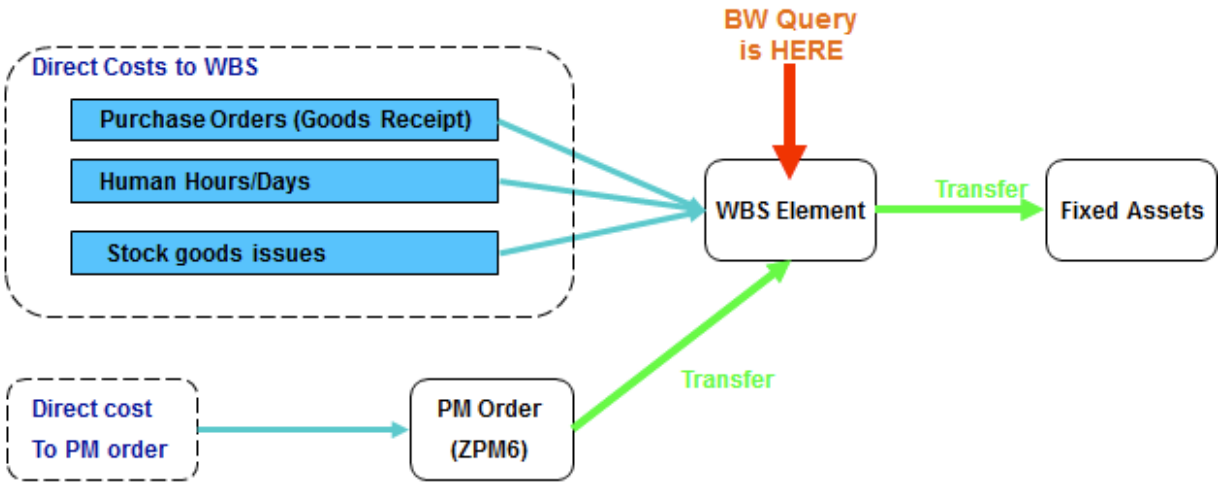
See below the figure explaining the process to have the values for the key figures on a high level information from which module in SAP:




- From the CO modules we have the information for the expenses coming from the PS/PM modules from SAP and the output can be in values or quantities.
- From the FI modules we have the information for the FAS (Fixed Asset Supplier) which can be from the vendor's side (FIAP) or in the process for the PO to have the GR where we have the accruals information (FIGL).

In this way, combining this information we will have the CAPEX data for the investment projects.

With this in general the PS Application provides reports that shows the financial indicators at project level (WBS Element) such as Budget, Commitments, Actual costs (aka PeC), Cash out (aka CAPEX) and Cash Future.




The PeC and CAPEX are words used in BFC reporting tool for investment projects.

# 3.0 Application Feature Overview

For this application we have the **main workbook New Cum. Project Costs & Cash Out (Core Workbook)** the other workbooks are just a different display of this main data. Below we have all the workbooks available:

| Reports | Definition | Prompts | BW Workbook Query | Query Technical Name |
|---|---|---|---|---|
| **Check of PM Settlements** | For checking that direct postings on PM are equals to monthly settlements from PM into PS. | Mandatory:<br>• Calendar Year /Month.<br><br>Optional:<br>• Company Code;<br>• Target Curr. for conversion;<br>• Project;<br>• Project type;<br>• WBS Element;<br>• WBSE Date of last PEC;<br>• WBSE Family;<br>• WBSE Grp Code PS;<br>• WBSE Syst. status;<br>• WBSE Type;<br>• BFC GBU;<br>• 1- BFC GBU (Resp.);<br>• Auth Scope on company Code. | BW_WBK_PROJ_0008 | BW_QRY_MPR_PS014_0008 |
| **New Capitalization Workbook - 100 lines (Core Workbook)** | Form used to request the capitalization of projects related to SAP WP1 system, therefore turning them from assets under construction to final fixed assets. Shows detailed amounts posted on the WBS element(s) that have not been capitalized yet. | Mandatory:<br>• Auth Scope on company Code;<br>• Project.<br><br>Optional:<br>• Company Code;<br>• Posting Date;<br>• WBS Element;<br>• WBSE Family;<br>• 1- WBSE BFC GBU. | BW_WBK_PROJ_0016 | BW_QRY_MPR_PS015_0001 |

| | | | | |
|---|---|---|---|---|
| **New Capitalization Workbook - 20 lines (Core Workbook)** | Form used to request the capitalization of projects related to SAP WP1 system, therefore turning them from assets under construction to final fixed assets. Shows detailed amounts posted on the WBS element(s) that have not been capitalized yet. | Mandatory:<br>• Auth Scope on company Code;<br>• Project.<br><br>Optional:<br>• Company Code;<br>• Posting Date;<br>• WBS Element;<br>• WBSE Family;<br>• 1-WBSE BFC GBU. | BW_WBK_PROJ_0017 | BW_QRY_MPR_PS015_0001 |
| **New Cum. Project Costs & Cash Out (Core Workbook)** | The report has the synthetic view of the cash out with the fields commitments, actuals, open GNRI, open invoices and the amounts for the budget and hours. | Mandatory:<br>• Calendar Year /Month;<br>• Conso. View;<br>• Project enlarg. to PM.<br><br>Optional:<br>• Auth Scope on company Code;<br>• Company Code;<br>• Target Curr. for conversion;<br>• BFC Geo /Zone;<br>• Plant;<br>• Project;<br>• Project type;<br>• WBS Element;<br>• WBSE Date of last PEC;<br>• WBSE Family;<br>• WBSE Grp Code PS;<br>• WBE Syst. status;<br>• WBSE Type;<br>• 1- BFC GBU (clt);<br>• 1- BFC GBU (Resp.). | BW_WBK_PROJ_0014 | BW_QRY_MPR_PS014_0014 |

| | | | | |
|---|---|---|---|---|
| **New Project Costs - Actuals (Core Workbook)** | This report focus on Actual data drilldowned by month with WBSE Project Type, WBSE Family and WBSE 2 Function as the default dimensions for the analysis. | Mandatory:<br>• Calendar Year /Month;<br>• Conso. View;<br>• Project enlarg. to PM.<br><br>Optional:<br>• Auth Scope on company Code;<br>• Company Code;<br>• BFC Geo /Zone;<br>• WBSE Date of last PEC;<br>• WBSE Family;<br>• WBSE Grp Code PS;<br>• WBE Syst. status;<br>• WBSE Type;<br>• 1- BFC GBU (clt). | BW_WBK_PROJ_0013 | BW_QRY_MPR_PS014_0013 |
| **New Project Costs - Periodic (Core Workbook)** | This report focus on Commitments/Actual data by Project dimension by default. | Mandatory:<br>• Conso. View;<br>• Project enlarg. to PM.<br><br>Optional:<br>• Auth Scope on company Code;<br>• Calendar Year /Month;<br>• Company Code;<br>• Target Curr. for conversion;<br>• Plant;<br>• Project;<br>• Project Type;<br>• WBS Element;<br>• WBSE Date of last PEC;<br>• WBSE Family;<br>• WBSE Grp Code PS;<br>• WBE Syst. status;<br>• WBSE Type;<br>• 1- BFC GBU (clt).<br>• 1- BFC GBU (Resp.). | BW_WBK_PROJ_0012 | BW_QRY_MPR_PS014_0012 |

| | | | | |
|---|---|---|---|---|
| **New Project Costs, Cash Out & Cash Future (Core Workbook)** | Reference workbook, with all characteristics/key figures listed above, in a multi year/periodic view. It should be executed by Project resp. in Conso. view? = 0 and Project enlarg. to PM? = 1.<br><br>For the second sheet we have a detail information for the cash future values by project. | Mandatory:<br><br>• Calendar Year /Month;<br>• Conso. View;<br>• Project enlarg. to PM.<br><br>Optional:<br><br>• Auth Scope on company Code;<br>• Company Code;<br>• Target Curr. for conversion;<br>• BFC Geo /Zone;<br>• Plant;<br>• Project;<br>• Project Type;<br>• WBS Element;<br>• WBSE Date of last PEC;<br>• WBSE Grp Code PS;<br>• WBSE Person Resp.;<br>• WBE Syst. status;<br>• WBSE Type;<br>• 1- BFC GBU (clt).<br>• 1- BFC GBU (Resp.);<br>• WBSE Family. | BW_WBK_PROJ_0011 | BW_QRY_MPR_PS014_0011<br><br>BW_QRY_MPR_PS014_0015 |

| | | | | |
|---|---|---|---|---|
| **New Project Costs /qties & Cash Out /Future (Core Workbook)** | This report it's the same from the workbook "New Project Costs, Cash Out & Cash Future (Core Workbook)" for the first sheet with an addition of the key figure for the Actuals in quantity. | Mandatory:<br>• Calendar Year /Month;<br>• Conso. View;<br>• Project enlarg. to PM.<br><br>Optional:<br>• Auth Scope on company Code;<br>• Company Code;<br>• Target Curr. for conversion;<br>• BFC Geo /Zone;<br>• Plant;<br>• Project;<br>• Project Type;<br>• WBS Element;<br>• WBSE Date of last PEC;<br>• WBSE Family;<br>• WBSE Grp Code PS;<br>• WBSE Person Resp.;<br>• WBE Syst. status;<br>• WBSE Type;<br>• 1- BFC GBU (clt).<br>• 1- BFC GBU (Resp.). | BW_WBK_PROJ_0026 | BW_QRY_MPR_PS014_0016 |

| | | | | |
|---|---|---|---|---|
| **New YtD Cash Out & Cash Future (Core Workbook)** | Same as the workbook "New Project Costs, Cash Out & Cash Future (Core Workbook)", but in a YtD /monthly BFC oriented view, with detailed Cash out (PeC/FAS/DP/Lease) and detailed Cash Future. | Mandatory:<br>• Calendar Year /Month;<br>• Conso. View;<br>• Project enlarg. to PM.<br><br>Optional:<br>• Auth Scope on company Code;<br>• Company Code;<br>• Target Curr. for conversion;<br>• BFC Geo /Zone;<br>• Plant;<br>• Project;<br>• Project Type;<br>• WBS Element;<br>• WBSE Date of last PEC;<br>• WBSE Family;<br>• WBSE Grp Code PS;<br>• WBSE Person Resp.;<br>• WBE Syst. status;<br>• WBSE Type;<br>• 1- BFC GBU (clt).<br>• 1- BFC GBU (Resp.). | BW_WBK_PROJ_0015 | BW_QRY_MPR_PS014_0015 |
| **PF1 Capitalization Workbook - 100 lines (Core Workbook)** | Form used to request the capitalization of projects related to SAP PF1 system, therefore turning them from assets under construction to final fixed assets. Shows detailed amounts posted on the WBS element(s) that have not been capitalized yet. | Mandatory:<br>• Project.<br><br>Optional:<br>• Auth Scope on company Code;<br>• Company Code;<br>• Posting Date;<br>• WBS Element;<br>• WBSE Family;<br>• 1- BFC GBU (Resp.). | BW_WBK_PROJ_0111 | BW_QRY_MPR_PS015_0001 |

| | | | | |
|---|---|---|---|---|
| **Project Hours (Core Workbook)** | Focused on (valuated) quantity postings in hours (H/HR) and days (D/DAYS).<br><br>NB: In PF1 area, it also includes Network settlements on WBSE (PS entries with Partner Object Type 0NWA). | Optional:<br>• Auth Scope on company Code;<br>• Calendar Year /Month;<br>• Company Code;<br>• Target Curr. for conversion;<br>• Plant;<br>• Project;<br>• Project Type;<br>• WBS Element;<br>• WBSE Date of last PEC;<br>• WBSE Family;<br>• WBSE Grp Code PS;<br>• WBE Syst. status;<br>• WBSE Type;<br>• 1- BFC GBU (clt).<br>• 1- BFC GBU (Resp.). | BW_WBK_PROJ_0003 | BW_QRY_MPR_PS014_0003 |
| **R&I Project Costs Follow up (Core Workbook)** | This report shows the costs for the R&I projects. | Optional:<br>• Auth Scope on company Code;<br>• Company Code;<br>• Posting Date;<br>• Project;<br>• WBS Element;<br>• 1- BFC GBU (Resp.). | BW_WBK_PROJ_0002 | BW_QRY_MPR_PS015_0002 |
| **WBS Element Master Data (Core Workbook)** | For checking Project/WBSE master data, and several corresponding attributes updated from SAP. | Optional:<br>• Company Code;<br>• Date of last PEC;<br>• Family;<br>• Group Code PS;<br>• Obsolete flag;<br>• Object class;<br>• Plant;<br>• Project;<br>• Project Type;<br>• System status;<br>• WBS Element;<br>• WBSE Type; | BW_WBK_PROJ_0001 | BW_QRY_C_WBS_EL2_0001 |

| | | | | |
|---|---|---|---|---|
| **WBS Element to be closed (Core Workbook)** | To follow up investment WBSE already capitalized (settled on FXA) but not yet closed in SAP, i.e. WBSE should be closed to avoid any unexpected additional postings.<br><br>Default prompts:<br><br>Proj. System status different from 4. | Mandatory:<br>• Calendar year;<br>• Proj. System status.<br><br>Optional:<br>• Auth Scope on Company Code;<br>• Company Code;<br>• BFC Geo /Zone;<br>• Project;<br>• Proj. Created on;<br>• Proj. Finish date;<br>• Project type;<br>• WBS Element;<br>• WBSE Family;<br>• WBSE Plant;<br>• WBSE Date of last PEC;<br>• WBSE Resp. person;<br>• WBE Syst. status;<br>• Val. to be capitalized (from);<br>• Val. to be capitalized (to);<br>• 1- BFC GBU (clt).<br>• 1- BFC GBU (Resp.). | BW_WBK_PROJ_0010 | BW_QRY_MPR_PS014_0010 |

# 4.0 Functional Specification

## 4.1 General Data/Calculations

For these reports, it's important to understand some general concepts which are transversal to all the reports which allows the users to work with the reports in the same way as the SAP system and BFC tool.

| | |
|---|---|
| **Consolidation View** | The query takes the integration rate of the company and the partner from a table managed by GAR (Group Accounting Reporting).<br><br>• If Conso method = 50 (Equity) , 20 (Not Conso.) or 60 (Not Equity), Rate = 0%;<br>• If Conso method = 10 (Fully Conso), Rate = 100%;<br>• If Conso method = 30 (Prop), Rate = Integration percentage<br><br>The formula to retrieve the consolidated sales is in line with BFC:<br><br>**Consolidated Sales** = Amount * Max [ 0, Integration Rate of CY (tingsoc) - Integration Rate of Partner (tingpart) ]<br><br>**Internal Sales** = Amount * Min [ Integration Rate of CY (tingsoc), Integration Rate of Partner (tingpart) ]<br><br>The integration rate of the partner is managed on the TRADING PARTNER. For specific cases some external customer must be considered as internal for certain company code (joint venture for example) . For cases the Partner integration rate is taken at the crossing Sold To/Company code.<br><br>In this way, the user has **4 options**:<br><br>• Option 0 - Legal view: No intercompany eliminations are taking into account;<br>• Option 1 - Consolidated view (for Solvay group): Takes into account the intercompany eliminations (using company code master data);<br>• Option 2 - same logic as option 1 but the data is the consolidated view for Eco Companies<br>• Option 3 - same logic as option 1 but the data is the consolidated view for Sco Companies |
| **GBU Assignment** | The concept for GBU doesn't exist in SAP but it's a requirement to have in BW since in BFC we have this definition. We can see how this is defined in the Functional Documention for "Working Capital". |
| **Exchange Rate** | All the PS queries use the same type of currency conversion:<br><br>• Rate used : CAR3 (See Exchange rates page for details)<br>• Time : Fiscal Period<br><br>This means that each document will be converted with the rate available for the posting date of that document.<br><br>IE : Documents posted in January will be converted with the January rate, even if you run the report in february.<br><br>Depending on the key figure, the "Period" will be different :<br><br>Budget : the date will be the start of the project (WBS Creation date)<br><br>Commitments : Rate available at the theoretical reception date if the date is in the past, or current rate if date in the future.<br><br>Plan : Rate available at the month of the plan data.<br><br>PEC : Rate available at the reception date.<br><br>Cash – Payments : Rate available at the invoice reception date.<br><br>Cash – Down payment : Rate available at the down payment posting date.Cash – Non-Purchase requests (Stocks, Hours) : Rate available at the cost reception date |
| **PRS Concept** | The PRS is one dedicated SAP environment (based on PF1) whose aim is to unify some structural information as Master Data information for customers, vendors, company codes, etc. For this, depending on each master data we are referring to, we have specific tables created to maintain the data and have the configuration from source systems to BFC definition and alignment. |
| **Budget** | Global authorized amount for the WBSE. NB: displayed value is "at current date": it's a whole amount of budget, timely not dependent from period selected by user in the query prompt (equal to the overall budget value available in SAP transaction CJ31).<br><br>The amount comes directly from transaction ZWPST004. |
| **Assigned** | It's the sum of Actual costs + Commitments. |
| **Commitments** | It's the current amount of the purchase requests and orders not yet received. Amount is without tax and in local currency. In the purchase order (ME23N) it corresponds to the "To be delivered" in the PO header. This is not on the FI side. |
| **Actual Costs (PEC)** | "PEC" is the acronym for the french name "Prise En Charge", which translates into "Bearing of the costs". Meaning the Actual Costs of all goods/services received.<br><br>The "PEC" was used for Rhodia Legacy. It is replaced by the wording "Capital Spend".<br><br>This is referring to the expenses. All debit postings:<br><br>• On WBSE;<br>• On PM Orders linked to a WBSE according to their settlement rules. |
| **Cash Out (CAPEX)** | CAPEX stands for Capital Expenditure. It is equal to the CASH (Out) when filtering on investments only. Also can be called Cash meaning the amount that has been paid (or received for invoicing WBS). It includes both "CAPEX" (Investment Cash Out" and "OTC" (One Time Costs - Non-investment cash out).<br><br>It is the amount that was paid (Without tax) related to investment projects. |
| **Cash Future** | It is the amount that at some point will have to be paid. This includes :<br><br>• Amount of PO's not yet received<br>• Amount of invoices not yet paid<br>• Amount received but yet invoiced.<br><br>Also the Cash Future is splitted in 2 parts Due and Overdue. |
| **Fixed Asset Supplier (FAS)** | This show the information regarding the values that are open item + cleared items to see the monthly FAS in a period (selected by the user in the reports).<br><br>what was invoiced - what was paid (cleared). |

# 4.2 Process Detail

## 4.2.1. Report/Process Definition

| | |
|---|---|
| **Domain** | Finance |
| **Application** | BW reports under PS - Project Costs - Folder 1.1 |
| **Provider** | MPR_PS014 |

The PS - Project Costs Application provides reports that show the financial indicators at project level (WBS Element). This application was created in 2013 and it replaces the former RCS Project costs reporting (based on multiprovider MPR_PS004) which should not be used anymore; we now use the MPR_PS014 multiprovider.

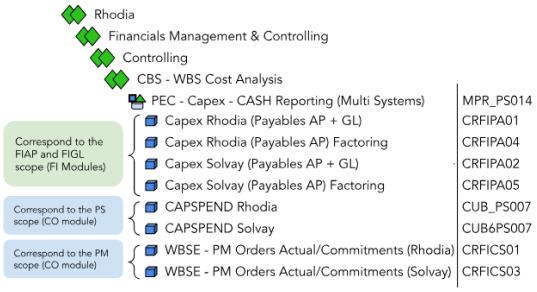
For the Project Costs everything starts on the PS/PM side where we have the information for the projects.

In this section we will approach:



## SAP BW High Level View

To see the data from the source systems see below how the information is organized in the BW perspective:

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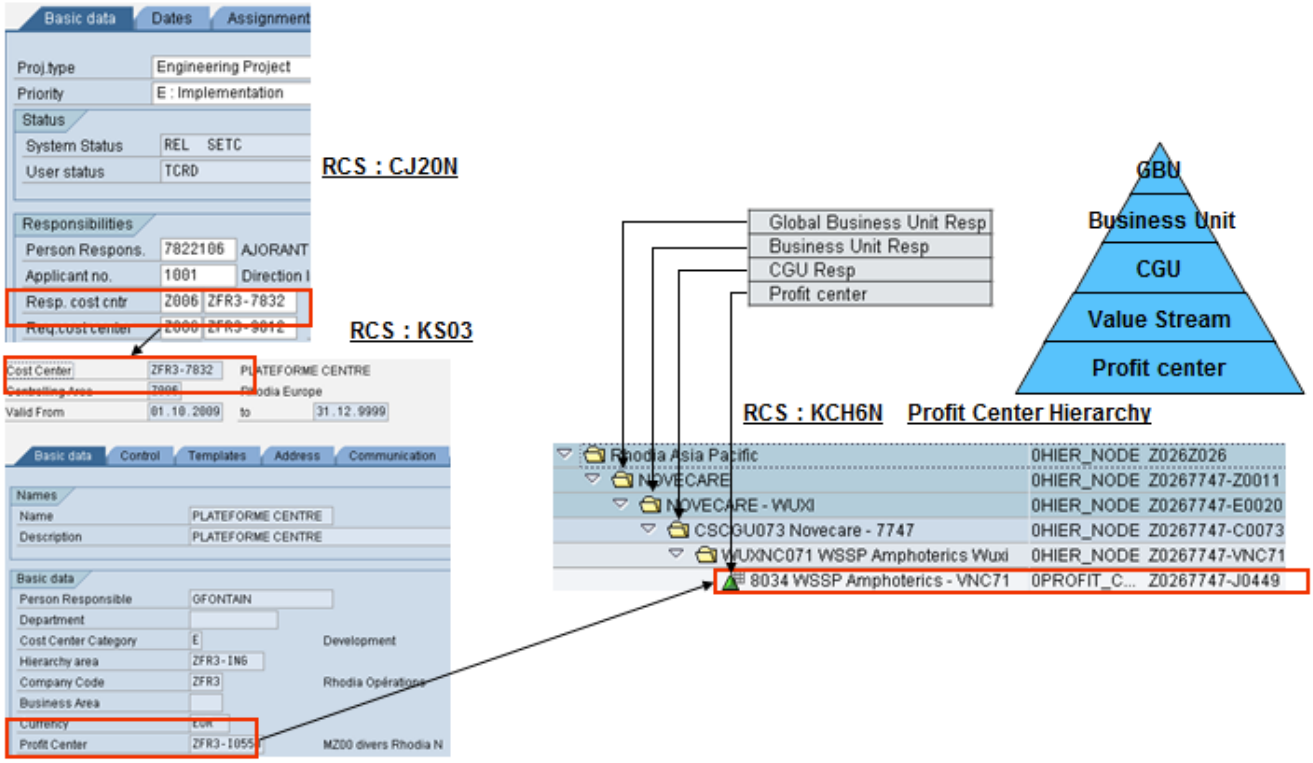
## PS Characteristics

### WBS/Project Master Data (CJ20N)

The "responsible" structure

- Global Business Unit Responsible of WBS
- Business Unit Responsible of WBS
- CGU Responsible of WBS
- Responsible Cost Center of WBS
- Profit Center of the WBS: This is the responsible profit center. It is NOT the profit center from the WBS found in CJ20N, **but the profit center linked to the Responsible cost center**

The responsible structure is all based on the Responsible Cost Center of the WBS. It corresponds to the organisation that is actually running the project. From the Responsible CC, BW determines the Profit center and then the CGU/BU/GBU structure from the standard hierarchy.

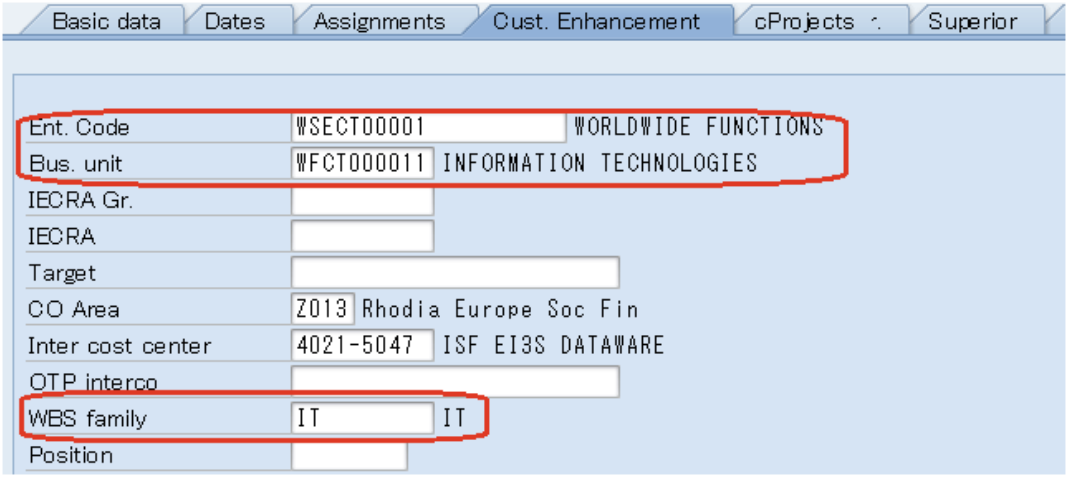



In addition, there are also 4 characteristics from the standard costt center hierarchy based on the Responsible Cost center :

- 1 Organisation of WBS
- 2 Function of WBS
- 3 Sub-Funct Grouping of WBS
- 4 Sub-Function of WBS

### The WBS Family

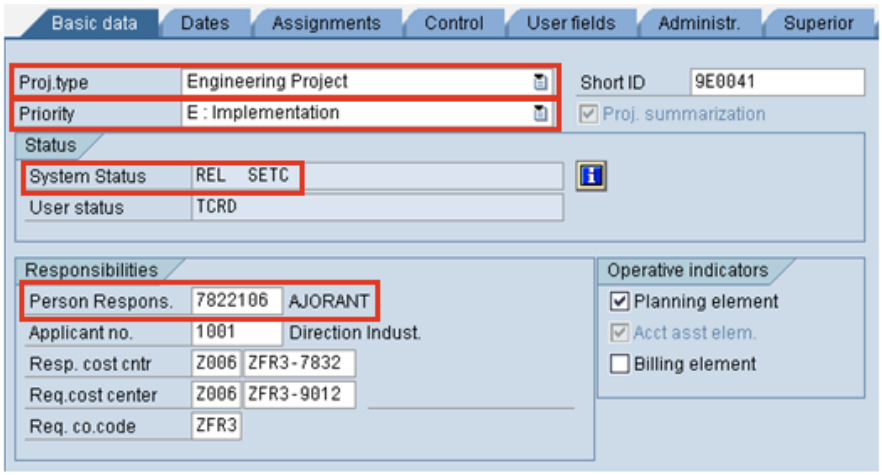
* WBS Family : This is the family of the WBS found in the "Customer Enhancement" tab in RCS CJ20N. It corresponds to the professional family of the project.




### WBS/Project Basic Data tab

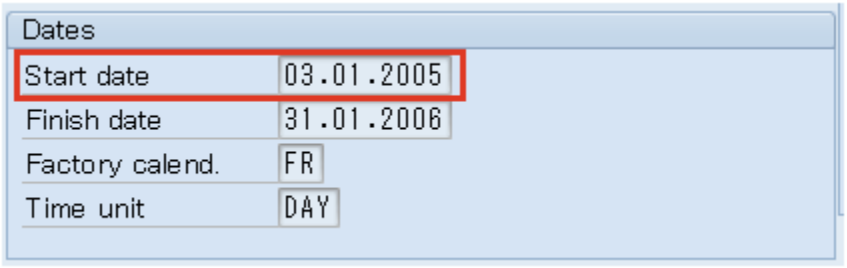
- Requesting Cost center of the WBS : Req Cost Center from the WBS (Directly from CJ20N)
- Project Type: Classification of the project (used to differentiate investments vs non-invst
- Project Status : Not directly the system status from RCS, but a simplifed status based on it.
- Person Responsible of WBS : Person Respons. in CJ20N (in WBS)
- Person Responsible of Project : Person Respons in CJ20N (in project)

- Priority PS of WBS : Priority in CJ20N.
- Est. Auth. Date (Project) : Start date of the project (for project only)




### WBS/Project Dates tab

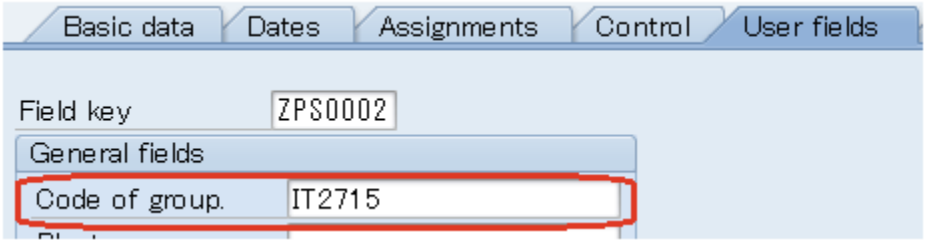
- Project Start Date
- Project Finish Date




### WBS/Project Assignments tab

- Controlling Area of the WBS : CO area in CJ20N
- Company code
- Object Class of the WBS : Object Class in CJ20N* Plant
- Location of the WBS: Location in CJ20N

### WBS User Fields tab

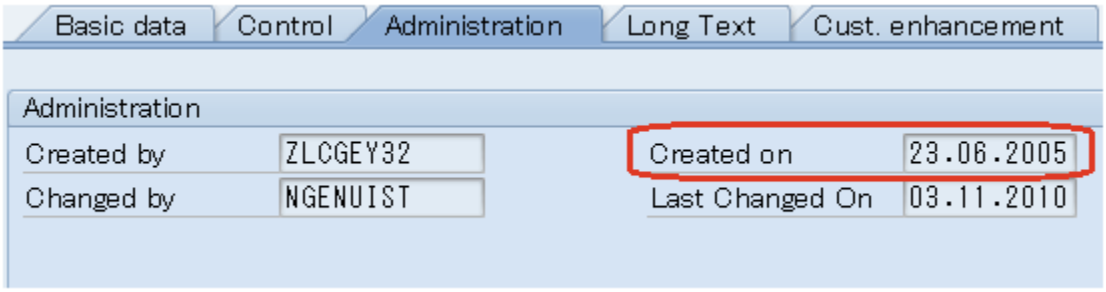



Group Code PS : Code of group of the WBS from the user fields tab in CJ20N. This a code used to regroup several WBS. It is used mostly by IT and R&D to group under a single code several projects handled in different companies/controlling areas

### WBS/Project Administration tab

- Creation Date (Project) : Creation of the Project object in RCS

- Created By (WBS) : User that created the WBS object in RCS




#### WBS/Project Control tab

- investment Reason of WBS
- Investment Reason of Project
- Investment Measure Profile of WBS : Investment profile in CJ20N
- Scale (IM) of WBS : Scale in CJ20N (WBS)
- Scale (IM) of Project : Scale in CJ20N (Project)


#### Transaction Characteristics

## Document Characteristics

- Key Figure Type : Indicator used to split the data in 3 categories. Field is calculated by BW (doesnt exist in RCS)
  Costs and relevant quantities : PEC & Commitments
    - Down Payment as Operating Expenses : Downpayments
    - Payables Variation : Invoices and GNRI data (FIGL/FIAP)

- Indicator: Cap Goods : Flag from the Invoice that defines if the invoice is related to an investment (Capitalized Goods) or not.
- G/L Account : General Ledger Account.
- Supplier RCS Code : Number and description of the supplier (usually from the PO but could also be from the invoice when there is no PO).
- Purchase Order Number : Contains both the Purchase Order number (45XXXX) and the Purchase Requisition (40XXXX)
- Purchase Order Item Number

**Note**: The Purchase Order (PO) number and item will only show if the cost is directly coming from a purchased linked to the WBS element. EX : In the case of the PO done on a Project Maintenance Order, the cost will be shown in the report but with no PO number (the information is lost when the cost is transferred from PM Order to WBS)

**Note**:The Open Invoices and CASH key figures may present issues when displayed at the PO and PO item level. See below about "Invoice Split".Time /Date characteristics

- Calendar fields (Quarter + Year/Month+ Month + Year/Quarter) : This corresponds to the Posting date of the documents.
- Clearing fields (Year/Month + Year + Month + Clearing) : This corresponds to the current clearing date of the documents (Clearing being the date itself).
- Net Due Date + Net Due Month : This corresponds to the Net Due Date of the document.

For the invoices data (FIAP) it's the actual net due date from the invoice.
For the commitments and GNRI (FIGL) the date is estimated by BW based on the net due date of purchase order (see below "Net due date estimation")

- Date of last PEC of WBS : This is the posting date of the last cost (debit) on each WBS. This field doesn't exist in RCS and is updated by BW each time a new CO document is posted on a WBS.

#### Miscellaneous characteristics

- Infoprovider : This is a technical field which contains the source database in BW. It's only used by IT as debug information.
- Source System : Technical field to be used in the case of several source systems. Currently un-used since data coming only from RCS
- Currency : This is the local currency. Even if the amounts are converted, this will still show the local currency.

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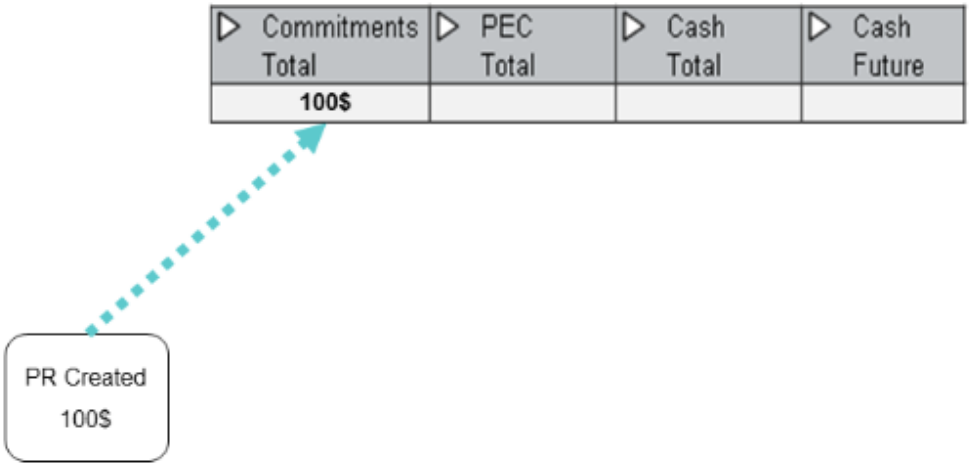
## PS Key Figures

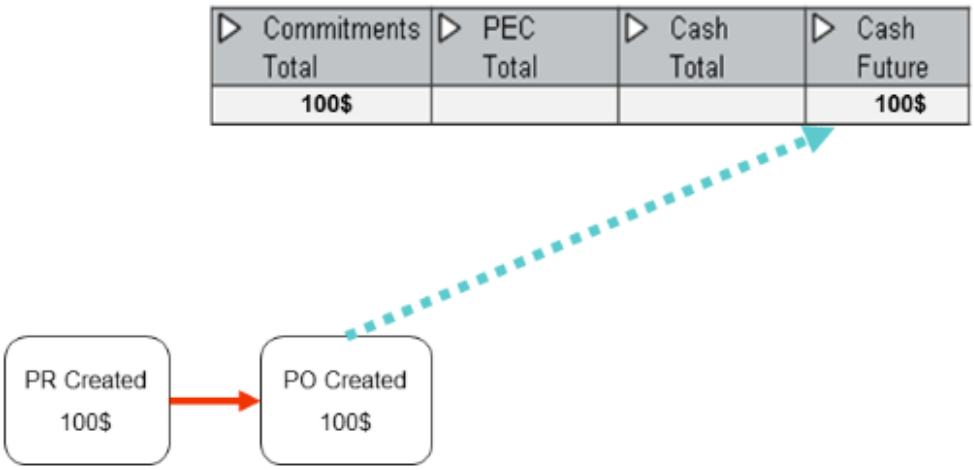
## Overview - Simple example

In this example we consider the case where a purchase order with a value of 100$ w/o tax (116$ with tax) was created and assigned on the project.

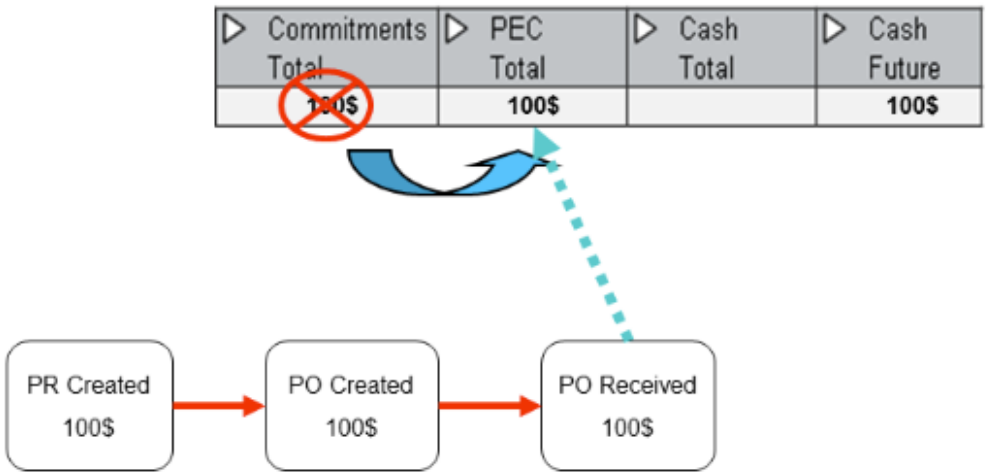
Step 1 - The Purchase Request (PR) is created - There is no cost yet, but there is a commitment.



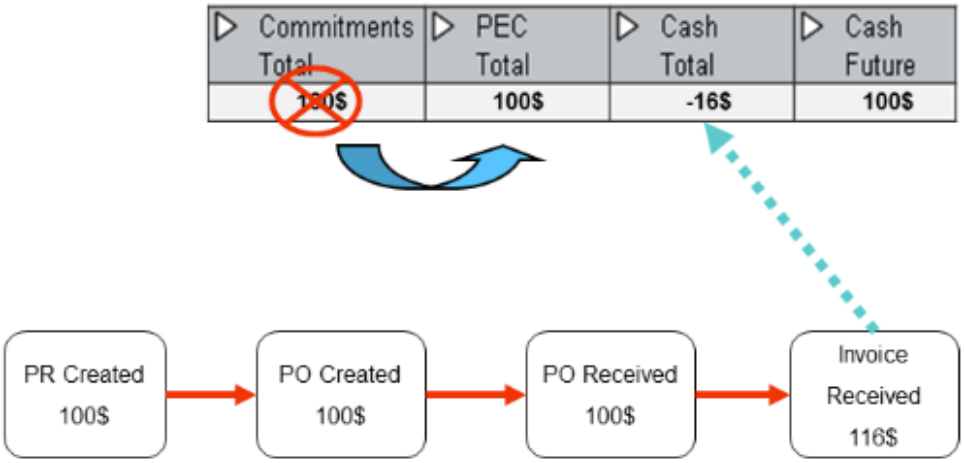

Step 2 - The PR is approved and the Purchase Order is created. In this case, the amount of the PO will be added into the "Cash Future" as at some point in the future this will have to be paid.



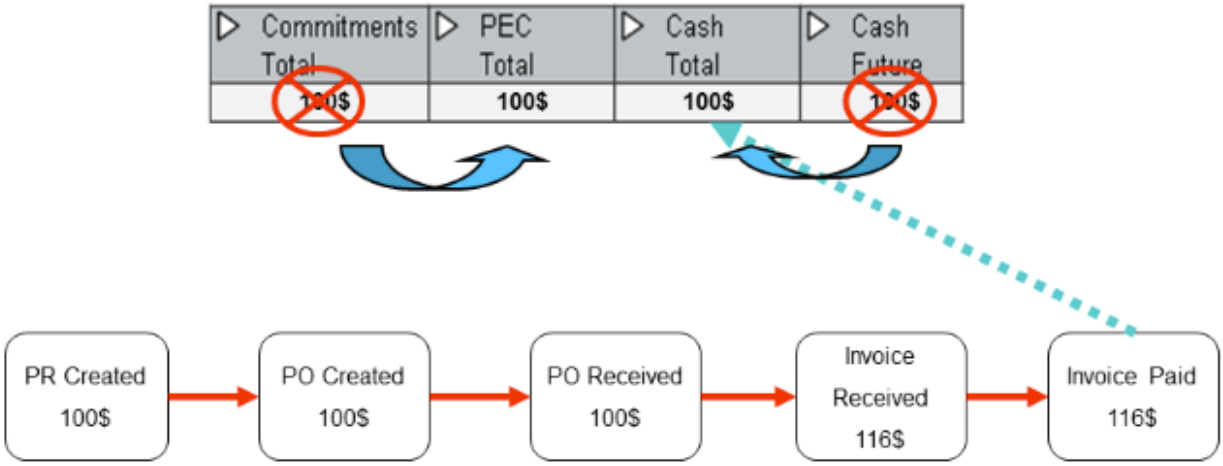

Step 3 - The goods (or service) are received (GR). We received everything, so a value of 100$. The commitments are now 0 (since everyting was received) and the PEC (Actual Cost) is 100$. Nothing has yet been paid for CASH is still 0.




Step 4 - The invoice is received. Total value with tax is 116$. The tax is instantly "recovered" : we will have a CASH of -16$.



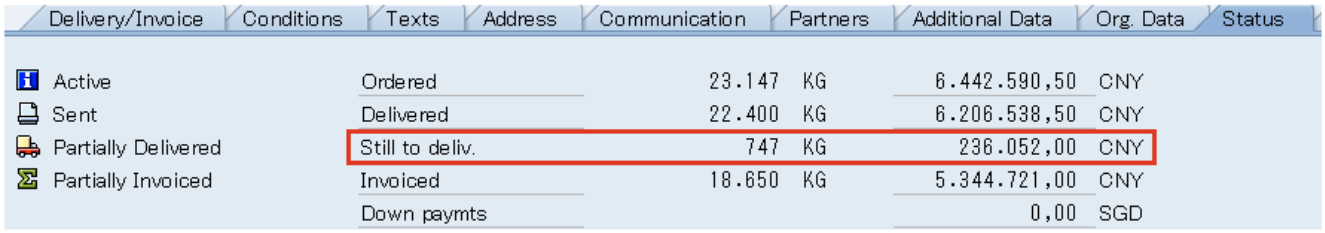

Step 5 - The invoice is paid. As we pay 116$ but we had a -16$ (Tax recovery) CASH, at the end the CASH is equal to 100$, the amount without tax. The Cash Future becomes 0 as everything was paid.




## Definitions

### Commitments (Current)

Definition : It's the current amount of the purchase requests and orders not yet received. Amount is without tax and in local currency. In the purchase order (ME23N) it corresponds to the "To be delivered"  in the PO header :




Calculation: None. Amount comes directly from SAP. You can see the details/documents via the CJI5 transaction

About the Posting date for commitments: For the commitment data, the posting date (and all linked characteristics : year, quarter, month) is based on the expected delivery date of the PO/PR :

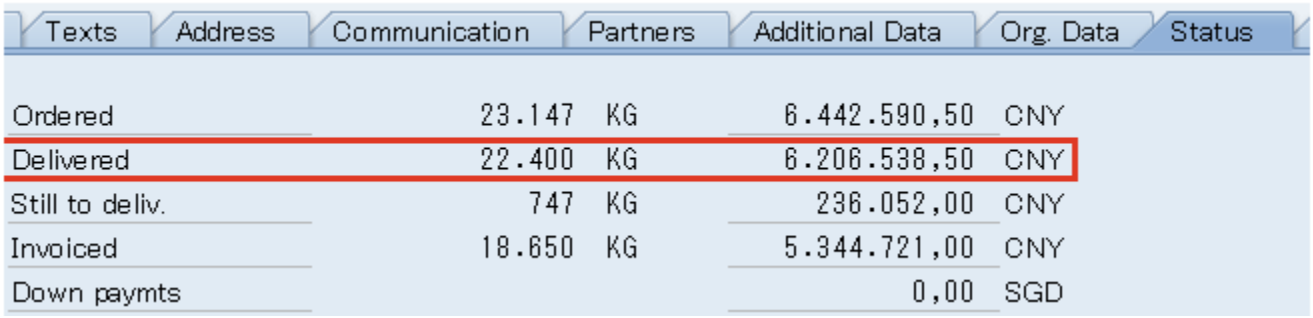
**Note:** This is the present (previous day or current day) value. It doesn't take into account the period selected in the query prompt (it is not possible to get the commitments at a selected date due to the way SAP manages that data)

## PEC

Definition : The PEC (Capital Spend) is the actual costs (received costs). **This includes the downpayments.** The cost can correspond to :

- Purchase orders, the reception of services/goods (at GR date)
- Stock issue : value of the material (at stock issue date)
- Hours : standard cost defined for each hour.
- Transfers (from Maintenance orders etc...)
- Manual entries (CO document) and other adjustments.
- **Downpayments**

In the purchase order header this corresponds to the "Delivered" value + Downpayments :




Calculation : None. Data comes directly from RCS and can be checked by transaction CJI6.

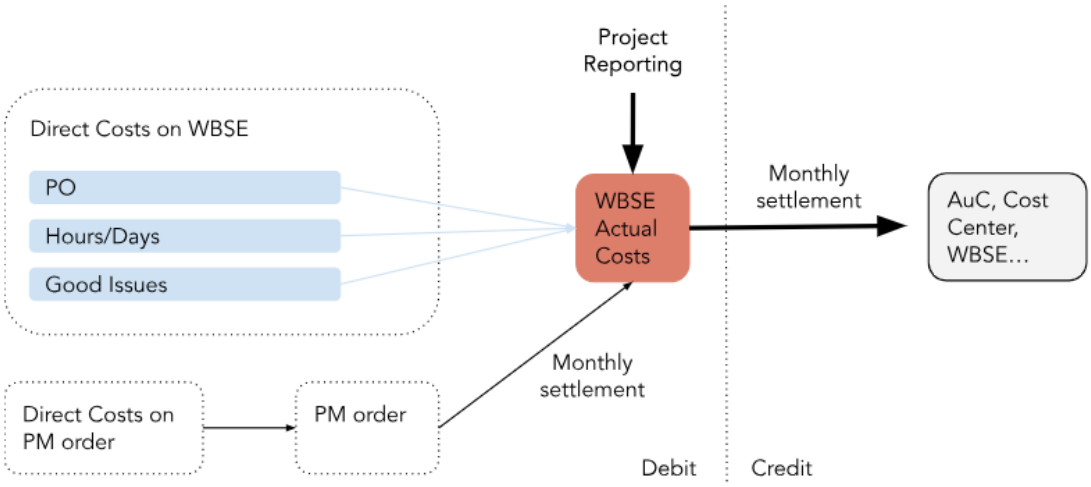
**Splitting the GR & Downpayments**

If you want to show separately the downpayments and the actual costs (GR - Goods receipt) you can use the "Key Figure Type" :

| | PEC Total |
|---|---|
| **Key Figure Type** | CNY |
| Costs and Relevant Quantities | 3,301,013 |
| Down Payment as Operating Expense | 223,676 |

**Project Reporting by WBSE:**

For the actual costs/PeC we have the information through the costs posted (values or quantities) directly to the WBSE or the information can be from a PM Order first. As we saw in the example above in the PO document we can assign the data to a different CO objects. With this, depending on the assignment, we can have the following distribution:




When the costs are assigned to a PM Order, we can have some limitations:

- Only in the month end it's possible to see the values in the WBSE (due to the settlements which is a process in the end of each month to transfer the values from a CO object to another CO object);
- When the settlement is done, the information assigned to the PM Order is lost (e.g.: PO number, vendor information, etc).

Since it's possible to have the costs from two different ways to be allocated to the WBSE, in the BW we have two views to facilitate the information to the users and they can see what is the best fit for their analysis.

In the reports we can have the variable "Project enlarg. To PM (1=Yes/0=No)" in the prompts:

Value 0: contains PS + PM entries on WBSE where we have all the data but without the details from the primary posting on PM Orders;

Value 1: Value 0: contains PS + PM Orders with the most detailed information related to primary posting on PM Order (PO, Vendor…) on a daily basis.

## Downpayments

Definition : The down-payment is the value of the advanced payments done to the supplier. It is also included in the PEC.

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Calculation : None. The data comes directly from RCS and can be checked by transaction CJI6, or directly on the purchase order history (ME23N).

## Cash

Cash (or "Cash Out") is the amount paid (Without tax).

- **If cost is linked to a purchase order, then it's the amount once the invoice has been paid.**
- **If cost is not related a purchase order, then it's equal to the PEC (GR).**

Formula is **CASH = PEC + Variation of the payables balance.** In other words :

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Where :

- Balance = Amount of all open documents (documents not cleared)
- FIAP = Payables ledger = Invoices.payments, **Excluding Downpayments** (as DP are already included in the PEC).
- FIGL = General ledger = Provisions/GRNI

> ⚠ **Tax Recovery**
>
> Due to the way the formula works, between the time where the invoice is received and the time where it is paid, the CASH will show a negative amount equal to the tax value. This is intended. Basically, we consider that the tax is recovered instantly (Negative cash) when the invoice is received. Then the invoice is paid (with tax) and the end cash result is without tax.

## Cash Out - About Invoices split by WBS element

In some cases, **a Purchase Order (PO) can be assigned to several costing elements** (Cost Centers, WBS elements, Orders).

This happens in two ways :

- **Different items in the PO are assigned to different costing elements** (Ex : Item 1 on WBS A, Item 2 on Cost Center B)
- There is a **settlement rule to share** the cost of the item (Ex : 40% on WBS A, 60% on Cost center B).

In this case, the GR will be correctly split and the cost assigned to each element but as there will be only one invoice, **SAP will not split the value of the invoice (Payable - FIAP) into each assigned element**.

The result is that by default, the full amount of the invoice will be assigned on the first element found by SAP and the CASH will not reflect the reality.

In order to avoid this, the **BW system will split the invoice by WBS/CostCenter/Orde**r in the BW reports.

**Case 1 - 1 PO with multiple items assigned to several elements - But 1 single invoice**

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In this case BW will split proportional the amount of the invoice by element. In this example, the CASH will reflect only 115$ on WBS1 even though the full value of the invoice (1160$) is assigned on WBS1 in SAP.

**Case 2 - 1 PO with 1 item, 1 settlement rule with 2 objects, 1 invoice**

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BW will split the amount of the invoice based on the settlement rule.

**Simple example (PO - No downpayment)**

Step 1 - PR and then PO are created. No costs or payments yet.

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Step 2 - Goods/services are received for 100$. PEC, which is getting the data from CO, will show 100$ due to the GR and there will be a FIGL posting of -100$ for the GRNI.

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Step 3 - The invoice (116$ with tax) is received. The FIGL GRNI is cleared and there is a new FIAP posting for 116$. PEC + FIGL Posted + FIGL Cleared + FIAP Posted = -16$. This corresponds to the tax value that is "recovered".

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Step 4 - The invoice is paid. The FIAP document (invoice) is cleared. At the end FIGL Posted + FIGL Cleared + FIAP Posted + FIGL cleared = 0, so the CASH out is equal to the PEC. 100$ which is the amount without tax.

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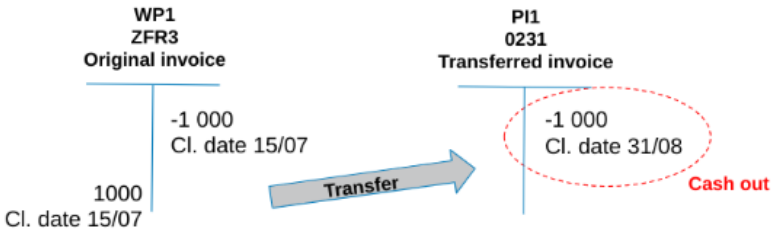
Additionally, as in working capital we have the factoring part, where due to specific conditions we have some cases where the postings are transferred to the CICC company and the data in the SAP systems (PF1/WP1) will be cleared.

With this, when the invoices are transferred to CICC according to CAMS process are considered to be paid when they are cleared in CICC (PI1 Legal company 0231/4044), and not when they are cleared in the original company (ex. WP1 Affiliate ZFR3) at the time of the transfer. Also the cash out is displayed in the Affiliate (and not in the CICC) point of view.




| | Company (Affiliate) | Legal Company |
|---|---|---|
| No transfer | ZFR3 | ZFR3 |
| Transfer (CAMS) | ZFR3 | 0231 |

## Cash Future (and details)

CASH Future is the amount that at some point will have to be paid. This includes :

- Amount of PO's not yet received
- Amount of invoices not yet paid
- Amount received but yet invoiced.

The Cash Future is then split into 2 parts:

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- Cash Due  : amounts that are estimated to be due in the future. This is then split by month : Due M (this month), Due M+1 etc...
- Cash Overdue : amounts that are **estimated** to be overdue already.

Due/Overdue are determined by looking at the Net Due Date of the document. Either the actual one (for invoices), or a estimated one (when there is no invoice yet) :

> Purchase Requisitions are not included in the Cash Future (or commitments). Only costs related to a purchase order are included in the Cash Future.

Cash Due and Cash Overdue can be then split into the different types :

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> **Estimated Net Due Date**
>
> If the invoice was not received, the future cash period will be based on an estimated Net Due Date. This Net Due date is calculated from the Payment Terms. SAP doesn't store due date in database tables but stores the baseline date. In this way, the due date is calculated based on baseline date plus the payment terms defined in the posting or in the vendor master data.
>
> **If the Payment Term is complex (Multiple payments) or doesnt correspond to the reality (Ex : Payment based on the progress of construction) then the period will be incorrect/irrelevant.**

**Cash Due (Actual or estimated Net due Date is in the future):**

- Ordered but Receipt Late : Order exists, but no GR or invoice yet and the requested delivery date is in the past. Net due date is calculated based on the requested delivery date + Terms of payment.
- Ordered,  Receipt in Future : Order exists, but no GR or invoice and the requested delivery date is in the future.Net due date is calculated based on the requested delivery date + Terms of payment.
- Received : GR is done, but no invoice and the **estimated net due date is in the future**. Net due date is calculated based on the GR date + Terms of payment..
- Invoiced : Invoice has been received but not yet cleared. The net due date is coming from the invoice and is a future date.

**Cash Overdue (Actual or estimated Net due Date is in the past):**

- Received : GR is done, but no invoice and the **estimated net due date is in the past**. Net due date is calculated based on the GR date + Terms of payment..
- Invoiced : Invoice has been received but not yet cleared. The net due date is coming from the invoice and is a past date.

**The Cash Due can also be split by month :**

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The period (M for current month, M+1 for next month etc...) is based on the Net Due date. Depending on the case the Net Due date is the actual one from the invoice, or an estimated one based on a date + the payment erms :

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## Quantity

It's the quantity received in the costs :

- If the cost is related to a purchase order, then it's the goods receipt quantity
- If the cost is related to a stock issue, then it's the quantity issued
- If the cost is related to hours/days worked, then it's the number of hours.

## Hours

Definition : Number of Hours allocated to the WBS. The value associated is included in the PEC.

Calculation : None. The data comes directly from RCS and can be checked in transaction CJI3.

## Assigned / Commited

It's the sum of the **current** received costs (PEC, excluding Downpayments) and to be received costs from purchase orders (Commitment)

> **Time**
>
> Note that if you try to display the Assigned costs by period, the month will represent the posting month for the actual costs and the requested delivery date for the commitments.

### Budget

Definition : Global authorized amount for the project. The amount is not time-dependant (it's a global amount for the overall duration of the project). Amount is in local currency.

Calculation : None. The data comes directly from RCS and can be checked CJ31.

> **Time**
>
> There is normally no time dimension for the budget, but we added Project Start Date in it.

### Group code PS Budget

Definition : Budget for the PS Group code projects grouping. This is currently mostly used by IT and R&D to allocate an overall budget to multi-company projects. **Amount is always in EUR**

Calculation : None. The amount comes directly from transaction ZWPST004.

### PEC Forecast

**Obsolete Key Figure - No longer used.**

### CASH Forecast

**Obsolete Key Figure - No longer used.**.

**BW - Cumulated PEC & CASH, BW - Project Cost detail, BW - Projects PEC & Cash - *This will be checked to see if we need to maintain this documentation or not.***

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## PS - Project costs - Troubleshooting

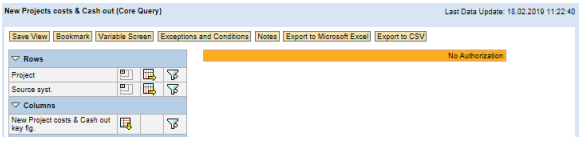
> From March 2019, some users of the application PS - Project System (WBP) were not able to refresh their personnal workbook created with the core queries **BW_QRY_MPR_PS014_00**xx Projects costs & Cash out
>
> They can find below the description of the problem and a procedure to solve it.

### Enter the GBU in the prompt

#### Problem

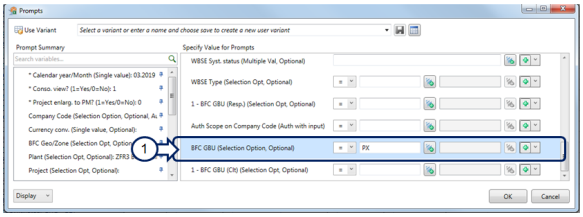
When the workbook is refreshed, there is a message:

"No Authorization"




#### Solution

Open the prompt

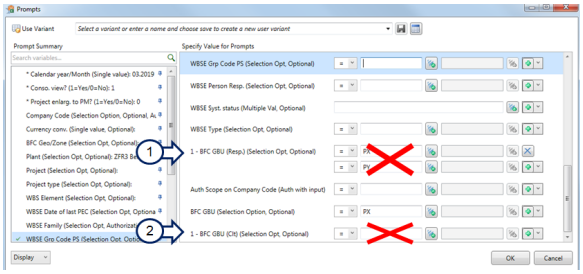




1. Enter the GBU you have access in the field "BFC GBU (Selection Option, Optional)

**Note - Use the right field**

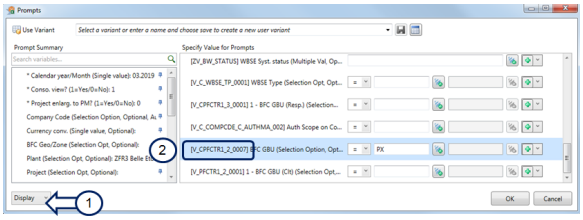
To avoid any authorization conflict, it is recommended to clear other fields that can be used to filter a GBU:

1. "1 - BFC GBU (Resp.) (Selection Opt, Optional)"
2. "1 - BFC GBU (Clt) (Selection Opt. Optional)"




**Note - Technical name**

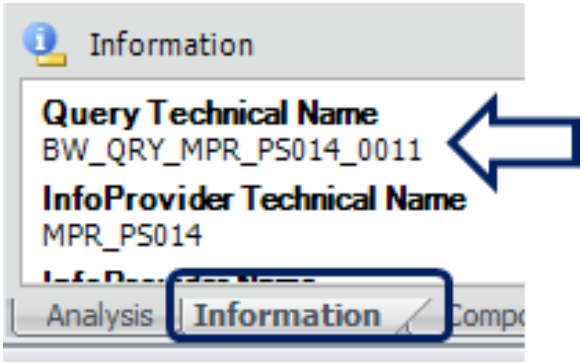
In case of doubt you can click (1) "Diplay" then "Show technical names". The technical name of the field to be used to enter the GBU is (2) "V_CPFCTR1_2_0007"




## Frequently Asked Questions

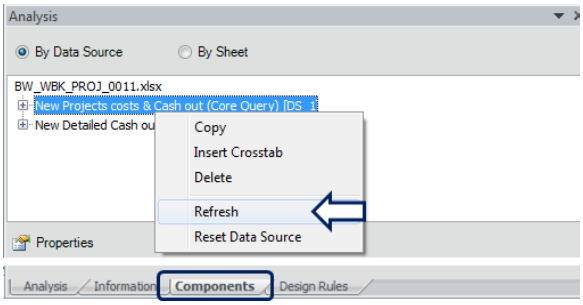
### How do I know my workbook is based on a query **BW_QRY_MPR_PS014_00**xx ?

Go to the design panel and open the tab "information". In the pane "Information", you will see the name of the query you are using.



### What can I do if I do not see the field "BFC GBU" in the prompt of my workbook ?

Go to the design panel and open the tab "Components". In the pane "Analysis", right click on the data source and click "refresh" as below:




### What can I do if after having followed the procedure, my workbook is not fixed ?

If you have followed the procedure and there is still no data in your workbook, you may contact the Contact SBS Support .

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## 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

*The load of the data into BW is on a daily basis at 4 a.m Paris Time.*