

BW - PP - BO - Bill Of Material

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General presentation

Objective of the application

The objective of the application is to extract from **SAP Vault source system** Bill of Material data and explode BOM level by level with components data.

Then these data are used for the application [BW - DPS - Forecast Vs Booking / Component](#).

Tool Leader: Lei Shen

IT leader of the application: Lei Shen (PP), Craig Wanamaker (BW)

Name of project: Solstice

PMO Project: 8612 Solstice AERO

Reporting Coordinator: Lei Shen

Usage information

Number of users: tbd

Critical period: none

Geographical perimeter: worldwide

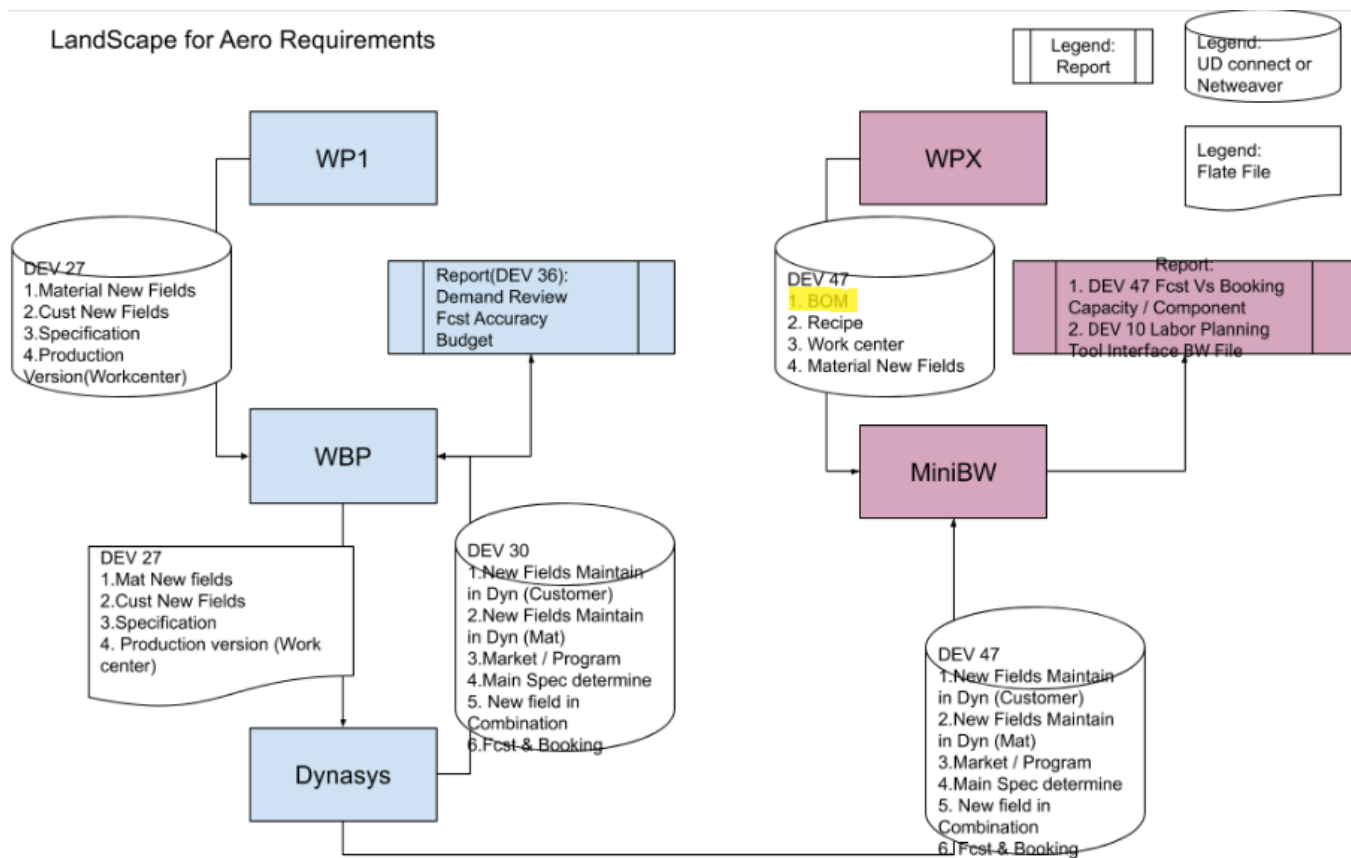
InfoArea:

- ▼ BW Repository
 - > [IA_RHODIA] RHODIA
 - > [IA_SOLVAY] SOLVAY
 - ▼ [IA_PP] Production Planning
 - ▼ [IA_PP_BO] Bill of Material (BOM)
 - > [IA_PP_BO_VIRTUAL] BOM Virtual
 - > [IA_PP_BO_BUSINESS] BOM Business
 - > [IA_PP_BO_PROPAGATION] BOM Propagation
 - > [IA_PP_BO_ACQUISITION] BOM Acquisition
 - > [IA_PP_BO_MD] BOM MasterData

History

This application is linked to the Solstice global project and this specific need was named "DEV47- Other MiniBW request for planning team".

MiniBW (CPX) dedicated platform was created for Aero Requirements about Solstice project.



Roles & Access

Roles and access

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

Role Code	Role Description	Explanation

Authorization objects

List of autorisation objects mandatory for the application.

Authorization object	Explanation

Dataflow overview

Reporting documentation drive folder

<https://drive.google.com/drive/folders/1Y2OmoBqD6VWwpmUPnuiQ6ZFm0hwIPruA>

Dataflow overview

Functional and Technical rules on Workbench + Reporting

Rules & Explanations

Specification Document

Sheet "Dim_BOM" :

BOM Master Data

BOM Number master data (C_BOMNUM) is loaded by the datasource **DTS_ZBW_V_MAST_STKO**.

The Datasource is based on table MAST (Material to BOM Link) and STKO (BOM Header) from SAP Vault source system.

BOM Item Master Data

BOM Item master data (C_BOMITM) is loaded by the datasource **DTS_ZBW_EXTRACT_BOM_ITEM**.

The datasource is based on specific function module **ZBW_EXTRACT_BOM_ITEM**.

In this function module we call the standard function **CSAP_MAT_BOM_ITEM_SELECT** to extract each item for a given material/plant.

BOM Level determination

The most important need of this dataflow is to extract (and explode) all BOM items and components for a given product.

A specific BW extractor has been developed to build the Bill of Material from SAP Vault source system : **DTS_ZBW_MAST_BOM_LEVEL**.

The extractor is based on **MAST** table to keep all Bill of material to explode and the class **ZDTS_ZBW_MAST_BOM_LEVEL** is used to extend the datasource adding new fields.

In the class, we are using the standard function module '**CS_BOM_EXPL_MAT_V2**' to build the Bill of material and BOM level. The function module is used as recursive function, as long as BOM exists and have to be explode.

The equivalent to explode BOM level by level on SAP side is T-CODE **CS11**.

See below, main fields determined or calculated in the class :

- **Product Level** : is equal to 1 when we are at component level of the master product exploded, we increment this level when we are at component level and for each new product (BOM Head) exploded
- **BOM Level** : is equal to 1 when we are at header level, is equal to 2 when we are at component level.
- **BOM Quantity** : BOM quantity is converted on Base Unit of Measure of product exploded. The quantity is duplicated of each component line linked to this product.
- **Component Quantity** : Component quantity is converted on Base Unit of Measure of the component

Taking the following example for the material 157473 :

Product	Product Level	BOM Level	BOM Head	Bill Of Material	BOM Item	BOM Component
157473	1	1	157473	01/00000170	0010	157473
	2	2	157473	01/00000170	0010	157243
	2	2	157473	01/00000170	0020	157193
	2	2	157473	01/00000170	0030	1911072
	2	2	157473	01/00000170	0040	1911076
	2	2	157473	01/00000170	0050	1911081
	2	2	157473	01/00000170	0060	1911724
	2	2	157473	01/00000170	0100	157243
	3	1	157193	01/00000195	0010	157193
	3	2	157193	01/00000195	0010	1911072
	3	2	157193	01/00000195	0020	1911076
	3	2	157193	01/00000195	0030	1911081
	3	2	157193	01/00000195	0040	1911724

Line in **yellow** is the header line of BOM Head 157473. Product Level = 1 because BOM Head = Product = 157473.

In **blue**, there are all components of BOM Head 157473, we increment BOM Level and Product Level.

In **pink**, the previous component 157193 of BOM head 157473 become the BOM Head, we incremente the Product Level.

In **brown**, it's the header line of BOM Head 157193, BOM Level =1. Others lines corresponds to components of BOM Head 157193, BOM Level = 2.

RSA3 on extractor DTS_ZBW_MAST_BOM_LEVEL for the same example : 157473

Extractor Checker S-API

DataSource: DTS_ZBW_MAST_BOM_LEVEL

Settings

Request ID: TEST

Data Records / Calls: 100

Display Extr. Calls: 10

Update mode: #

Target:

Execution Mode

☐ Debug Mode

☐ Auth. Trace

Selections (Internal Format)

Field	From value	To value	Short Text
MATNR	000000000000157473		Material Number
STLAL			Alternative BOM
STLAN			BOM Usage
STLNR			Bill of material
WERKS			Plant

Result of Extraction of DataSource DTS_ZBW_MAST_BOM_LEVEL

Result of Extraction of DataSource DTS_ZBW_MAST_BOM_LEVEL																
Master Product				BOM Base Quantity (Base Unit of Measure)				BOM Head		Product Level		BOM Level		Component Quantity (Base Unit of Measure)		
Data Package (Number of Recs) 1 (17)																
Counter	Material	Plant	BOM	Usage	AltBOM	Base qty	BU	Item	Material	BOM	AltBOM	Level	Level	Component	Object description	Quantity Unit
1	157473	8365	00000170	1	1	304,800	M	0010	157473	00000170	1	1	1	157473		304,800 M
2	157473	8365	00000170	1	1	304,800	M	0010	157473	00000170	1	2	2	157243	GLS 55 52" 1321MM NT 9720E/9699XF	609,910 M
3	157473	8365	00000170	1	1	304,800	M	0020	157473	00000170	1	2	2	157193	PW 60" 196 GSM T300 3K IT GP3-T	304,500 M
4	157473	8365	00000170	1	1	304,800	M	0030	157473	00000170	1	2	2	1911072	"BOTTOM; 65INX12INX12IN"	34 PC
5	157473	8365	00000170	1	1	304,800	M	0040	157473	00000170	1	2	2	1911076	"TOP; 65INX12INX12IN"	34 PC
6	157473	8365	00000170	1	1	304,800	M	0050	157473	00000170	1	2	2	1911081	HD CORE 64.5INX3.03INIDX0.25IN	34 PC
7	157473	8365	00000170	1	1	304,800	M	0060	157473	00000170	1	2	2	1911724	PALLET	34 PC
8	157473	8365	00000170	1	1	304,800	M	0070	157473	00000170	1	2	2		150345 PIR BMS 8-256 REV A	1,000
9	157473	8365	00000170	1	1	304,800	M	0080	157473	00000170	1	2	2		150389 PIR BMS 8-256 REV B	1,000
10	157473	8365	00000170	1	1	304,800	M	0090	157473	00000170	1	2	2		150828 WIR, STD AEROSPACE W/INSP. SHE	1,000
11	157473	8365	00000170	1	1	304,800	M	0100	157473	00000170	1	2	2	157243	GLS 55 52" 1321MM NT 9720E/9699XF	60,960 M
12	157473	8365	00000170	1	1	914,400	M	0010	157193	00000195	1	3	1	157193	PW 60" 196 GSM T300 3K IT GP3-T	914,400 M
13	157473	8365	00000170	1	1	914,400	M	0010	157193	00000195	1	3	2	1911072	"BOTTOM; 65INX12INX12IN"	33,330 PC
14	157473	8365	00000170	1	1	914,400	M	0020	157193	00000195	1	3	2	1911076	"TOP; 65INX12INX12IN"	33,330 PC
15	157473	8365	00000170	1	1	914,400	M	0030	157193	00000195	1	3	2	1911081	HD CORE 64.5INX3.03INIDX0.25IN	33,330 PC
16	157473	8365	00000170	1	1	914,400	M	0040	157193	00000195	1	3	2	1911724	PALLET	33,330 PC
17	157473	8365	00000170	1	1	914,400	M	0050	157193	00000195	1	3	2		150345 PIR BMS 8-256 REV A	1,000

Dependencies with other applications

BOM data are used in application [BW - DPS - Forecast Vs Booking / Component](#).

Data loadings

Info providers and objects loaded

Master Data

- BOM Number & BOM Item Master Data are loaded by the process chain **PC_PP_05**.

100 - PROJECT - PP	DICO_PC_PP
100 - PP - Obsolete	DICO_PC_PP_OBSO...
100 - PP - Masterdata	DICO_PC_PP_MD
PP: MD - D - Masterdata Attributs (Vault)	PC_PP_05
PP: MD - D - Masterdata Texts (Vault)	PC_PP_06
PP: MD - OnDde - Masterdata Attributs/Texts (Vault)	PC_PP_07

- BOM usage Master Data is loaded by the process chain **PC_PP_06**.

100 - PROJECT - PP	DICO_PC_PP
100 - PP - Obsolete	DICO_PC_PP_OBSO...
100 - PP - Masterdata	DICO_PC_PP_MD
PP: MD - D - Masterdata Attributs (Vault)	PC_PP_05
PP: MD - D - Masterdata Texts (Vault)	PC_PP_06
PP: MD - OnDde - Masterdata Attributs/Texts (Vault)	PC_PP_07

Transactionnal Data

There are 2 process chain :

- Acquisition Layer : **PC_PP_08**
- Propagation Layer : **PC_PP_09**

100 - PROJECT - PP	DICO_PC_PP
100 - PP - Obsolete	DICO_PC_PP_OBSO...
100 - PP - Masterdata	DICO_PC_PP_MD
100 - PP - Acquisition Layer	DICO_PC_PP_ACQU...
PP: TD - D - Acquisition Layer - BOM (Vault)	PC_PP_08
PP: TD - D - Acquisition Layer - Recipe (Vault)	PC_PP_10
100 - PP - Propagation Layer	DICO_PC_PP_PROPA
PP: TD - D - Propagation Layer - BOM (Vault)	PC_PP_09
PP: TD - D - Propagation Layer - Capacity Planning (Vault)	PC_PP_02
PP: TD - D - Propagation Layer - Recipe (Vault)	PC_PP_11

They are part of process chain **PC_PP_04** :

100 - PROJECT - PP	DICO_PC_PP
100 - PP - Obsolete	DICO_PC_PP_OBSO...
100 - PP - Masterdata	DICO_PC_PP_MD
100 - PP - Acquisition Layer	DICO_PC_PP_ACQU...
100 - PP - Propagation Layer	DICO_PC_PP_PROPA
100 - PP - Business Layer	DICO_PC_PP_BUSI...
META - D - PP - Master Chain	PC_PP_04
PP: TD - D - Acquisition Layer - BOM (Vault)	PC_PP_08
PP: TD - D - Acquisition Layer - Recipe (Vault)	PC_PP_10
PP: TD - D - Business Layer - Capacity Planning (Vault)	PC_PP_03
PP: TD - D - Propagation Layer - BOM (Vault)	PC_PP_09
PP: TD - D - Propagation Layer - Capacity Planning (Vault)	PC_PP_02
PP: TD - D - Propagation Layer - Recipe (Vault)	PC_PP_11

PC_PP_04 is part of global **RSP_DAILY** :

010 - DAILY - META Chains at fixed time	DICO_PC_DAILY_01
META - D - Daily Process Chains (Attr, Texts, Unit conv)	RSP_DAILY_GLOBAL
META - D - Daily Process Chains (Transactional)	RSP_DAILY
DPS CV Forecast Level by Level : META - D - Master Chain	PC_DPS_DYNASYS...
DPS Dynasys : TD - D - Acquisition Layer	PC_DPS_DYNASYS...
DPS Dynasys : TD - D - Propagation Layer	PC_DPS_DYNASYS...
DPS Dynasys : TD - D - Business Layer	PC_DPS_DYNASYS...
META - D - PP - Master Chain	PC_PP_04

Loading frequency

Daily loading

Average performance

Key Figure	Estimation
~ Average Process Chain Runtime	
~ Average nb of rows loaded per load	
~ Total nb of rows loaded (if full)	
~ Average Runtime for 10k lines	

Record Keeping

Reporting

Queries End User Documentation

Main queries

There is a query BW_QRY_CPPPBO01_0001 (BOM Data Reporting) based on composite provider CPPPBO01 (BOM Item Data - Virtual).

This query **was used for testing data** coming from SAP Vault source system **but it is not used and accessible by key users.**

Main functionalities

Broadcast

Maintenance

Known bugs

Recurring procedure

Planned Evolution