



Tips voor een topdag

 **visiativ**



Connect 2024

Welkom!

Visiativ PLM

BOM MANAGEMENT

KURT PONJAERT



Agenda

- PDM → PLM
- Scope + praktische opzet
- Peilers
- BOM Management
- BOM Tools
- SOLIDWORKS integratie

PDM → PLM / Engineering → Organisatie

- PDM: Product **Data** Management
 - Beheer van de correcte documenten
 - Alle (historische) informatiebronnen en gegevens die het product correct beschrijven
 - Verdere ontwikkelingen op engineering vlak - **engineering** revisies/historiek

- PLM: Product **Lifecycle** Management (PDM+++)
 - Regelen hoe we het product in de praktijk gaan realiseren
 - Opvolgen van wijzigingen, verbeteringen aan productie-, lever- en servicemethodiek - **product** revisies/historiek
 - Plannen van de realisatie
 - Aansturen van praktische processen

Scope – Praktische opzet

- Bestaat al tientallen jaren. Nu in nieuw jasje VPLM
- **Items/Objects** (Classes): bepalen “dingen” met eigen specifieke kenmerken en infokaarten
 - Document: cad, office, afbeelding, technische fiche, verslag, ...
 - Relatie: bestaat uit, bevat, alternatief, documentatie, certificaat, instructie, ...
 - Actie: export, conversie, verstuur bericht, start applicatie, ...
 - Folder
 - BOM
 - ... (Template, Product, Wijziging, Materiaal, Gebruiker, Groep, Handeling, ...)
- Items/Objects hebben **attachments** = files
- Basis opzet beschikbaar + aanbevolen
- Implementatie in stappen: basis tot geavanceerd
- Licentie: jaarlijkse subscriptie - totaalpakket
- Eigen infrastructuur: (virtual) server - SQL - Clients (web-interface)

Peilers

- BOM Management
 - Cad BOM
 - eBom
 - xBom (m, s, p)
- Change Management
 - ECR: Engineering Change Request
 - ECO: Engineering Change Order
 - ECN: Engineering Change Notification
 - Ook geschikt voor opvolging Onderhoud en Service (Issues)
- Actions - Planning
- Processes
 - Steps (workflow)
 - Actions

BOM Management: BOM types

- CAD BOM
 - Design tree vanuit CAD applicatie
 - Generatie vanuit diverse CAD-applicaties (SOLIDWORKS, Catia, Creo, ...)
- eBOM: engineering BOM
 - Samengesteld uit componenten van CAD BOM
 - Aantallen aanpasbaar
 - Omschrijvingen aanpasbaar
 - Onderdelen weglaten
 - Aangevuld met niet mechanische artikelen (lijm, verf, verpakking, ...)
 - Combineerbaar met BOMs uit andere disciplines: electrical, routing, software
 - Volledige structuur van het product
 - Opties
 - Sales blokken - 1op1 offertes
- xBOM: manufacturing / purchase / service
 - ERP link
 - Groeperen per kenmerk: maaddelen, koopdelen, plaatwerk, ...
 - Op maat aan te vullen: afwerking kleur, taal, keuring, kaliber, transport, ...
 - Op maat van doel: eigen productie, uitbesteding, prototype, service, ...
 - STATUS: voorbereiding, in productie, on hold, ... met artikelen op datum

BOM Management: voorbeelden

Reference: SW001 | Version: 01 | Revision: 2

Designation: MTB 17 inch ShockWave | Status: Initial

Components: 13 | 04/12/2024 14:05:31

Tree	Defi...	Refe...	Version	Revis...	Designation	Item
Product item		SW001	01	2	MTB 17 inch ShockWave	
Product A	[1] YES	SW001	A	1	MTB 17 inch ShockWave	[1] YI
Sub-assembly A		AS001	A	1	Frame	[1] YI
Sub-assembly A		P016	A	1	Swing Arm	[1] YI
Sub-assembly A		P041	A	1	Shock Absorber Arm	[1] YI
Sub-assembly A		P044	A	1	Equipped rod	[1] YI
Part A		PC007	A	1	Shock absorber body	[1] YI
Part A		PC008	A	1	Shock absorber axle	[1] YI
Sub-assembly A		P046	A	1	Senior manager	[1] YI
Sub-assembly A		P051	A	1	Front wheel assembly	[1] YI
Sub-assembly A		P069	A	1	Rear wheel	[1] YI
Part A		PC015	A	1	saddle	[1] YI

Detail | cadBOM | eBOM | xBOM | Documents | Alternates | ERP | Follow-up

Components: 14 | 04/12/2024 14:05:31 | Depth: 1

Tree	Reference	Version	Revis...	Designation	St...
Product item	SW001	01	2	MTB 17 inch ShockWave	Initial
Designed item	1 AS001	01	1	Frame	Initial
Designed item	1 P016	01	1	Swing Arm	Initial
Designed item	1 P041	01	1	Shock Absorber Arm	Initial
Designed item	1 P044	01	1	Equipped rod	Initial
Designed item	1 PC007	01	1	Shock absorber body	Initial
Designed item	1 PC008	01	1	Shock absorber axle	Initial
Designed item	1 P046	01	1	Senior manager	Initial
Designed item	1 P051	01	1	Front wheel assembly	Initial
Designed item	1 P069	02	1	Rear wheel	Initial
Designed item	1 PC015	01	1	saddle	Initial
Designed item	1 PC016	01	1	Spring	Initial
Designed item	1 PC017	01	1	Complete crankset	Initial
Purchase item	1 DEGRAIS01	01	1	Degreaser	Initial
Electrical BOM	1 AE_0585-T0001	01	1	BOM Elec: AE_0585-T0001	Valid

Components: 20

Tree	Reference	Version	Revis...
Product item	SW001	01	1
xBOM	1 MB_0000003054	A	1
Manuf. BOM group	GRP_0000000027	A	1
Designed item	1 AS001	01	1
Designed item	1 P016	01	1
Designed item	1 P041	01	1
Designed item	1 P044	01	1
Designed item	1 PC007	01	1
Designed item	1 PC008	01	1
Designed item	1 P046	01	1
Designed item	1 P051	01	1
Designed item	1 P069	01	1
Designed item	1 PC015	01	1
Designed item	2 PC016	01	1
Designed item	1 PC017	01	1
Manuf. BOM group	1 KIT01 VTT	A	1
Purchase item	1 DEGRAIS01	01	1
Purchase item	1 EMB VTT	01	1
xBOM	1 MB_0000003055	A	1
Manuf. BOM group	GRP_0000000028	A	1
Manuf. BOM group	1 KIT01 VTT	A	1

Frame	Initial	vplm
Swing Arm	Initial	vplm
Shock Absorber Arm	Initial	vplm
Equipped rod	Initial	vplm
Shock absorber body	Initial	vplm
Shock absorber axle	Initial	vplm
Senior manager	Initial	vplm
Front wheel assembly	Initial	vplm
Rear wheel	Initial	vplm
saddle	Initial	vplm
Spring	Initial	vplm
Complete crankset	Initial	vplm
Kit of consumables parts	Initial	vplm
Degreaser	Initial	vplm
Cardboard MTB packaging	Initial	vplm
Subcontracting	Initial	vplm
eBOM Group	Initial	vplm
Kit of consumables parts	Initial	vplm

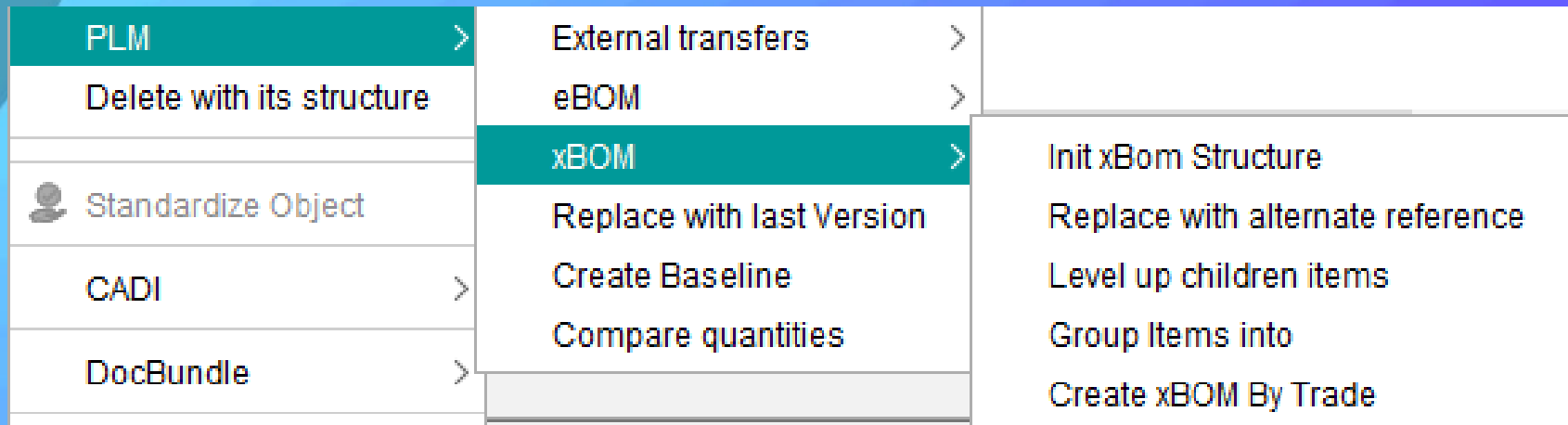
ECO_000082

PRINCIPAL

BOM Management in actie

- Filmpjes

BOM Tools 1



- Init BOM
- Alternate reference
- Replace with latest version
- Group items into
- Create xBOM By Trade

BOM Tools: Compare quantities

Quantity verification

SW001 (01.2) => SW001 (01.2) **manquant** ajouté modifié

PLM_View_cadBOM PLM_View_eBOM

Reference	Version	Qté	Designation
8030303	01.1	2	ASP/REF ADAPTER SET
8561092	01.1	2	CRANKCASE RESISTANCE
AE_0585-T0001	01.1	1	BOM Elec: AE_0585-T0001
AS001	A.1 => 01.1	1	Frame
CHC_M4	A.1 => 01.1	12 => 24	Vis M4
CHC_M5X10	A.1 => 01.1		
DEGRAIS01	01.1		
E2V30BSM00 (FILTRE INTEGRE)	01.1		
E2VCABS300	01.1		
ECR_M4	A.1 => 01.1	1	

OK

Quantity verification

SW001 (01.2) => SW001 (01.2) **manquant** ajouté modifié

PLM_View_eBOM PLM_View_cadBOM

Reference	Version	Qté	Designation
8030303	01.1	2	ASP/REF ADAPTER SET
8561092	01.1	2	CRANKCASE RESISTANCE
AE_0585-T0001	01.1	1	BOM Elec: AE_0585-T0001
AS001	01.1 => A.1	1	Frame
CHC_M4	01.1 => A.1	24 => 12	Vis M4
CHC_M5X10	01.1 => A.1	12	Vis CHC M5X10

BOM Tools: Compare Structures

Compare the structures

Use-case Left relationship: All Date left: 10/08/2024 15: Results: All Depth: 2

Struct... Right relationship: All Date right: 11/01/2024 15: Reference,... Take class into account

Left relationship:

Link	Qty	Mark	Tree
....	1		P005 (01.1) SCHOCK plate
....	1		P007 (01.1) Left main frame
....	1		P008 (01.1) Raight main fraim
....	1		P009 (01.1) MF Collar
....	1		P010 (01.1) Derailleur bracket
....	1		P006 (01.1) right SHOWK plate
....	3		P013 (01.1) Bog door stud
....	3		PC001 (01.1) cable pass

Right relationship:

Link	Qty	Mark	Tree
....	1		P009 (01.1) MF Collar
....	1		P006 (01.1) right SHOWK plate
....	3		P013 (01.1) Bog door stud
....	3		PC001 (01.1) cable pass
....	1		P014 (01.1) mounting plate
....	1		P015 (01.1) Pivot axis
....	2		SHCS_M6X35 (01.1) M6X35 SHCS Scr
....	2		PC002 (01.1) Pivot bearing

...	Ref...	V.	R.	Designation	Result
...	P008	01	1	Raight main fraim	Identical
...	P009	01	1	MF Collar	Identical
...	P010	01	1	Derailleur bracket	Version has been upgraded (02) for SW001/01/2
...	P013	01	1	Bog door stud	Identical
...	P014	01	1	mounting plate	Identical

Compare the structures

Use-case Left relationship: All Date left: 10/08/2024 15: Results: All Depth: 2

Struct... Right relationship: All Date right: 11/01/2024 15: Reference,... Take class into account

Left relationship:

Link	Qty	Mark	Tree
....	1		P005 (01.1) SCHOCK plate
....	1		P007 (01.1) Left main frame
....	1		P008 (01.1) Raight main fraim
....	1		P009 (01.1) MF Collar
....	1		P010 (01.1) Derailleur bracket
....	1		P006 (01.1) right SHOWK plate
....	3		P013 (01.1) Bog door stud
....	3		PC001 (01.1) cable pass

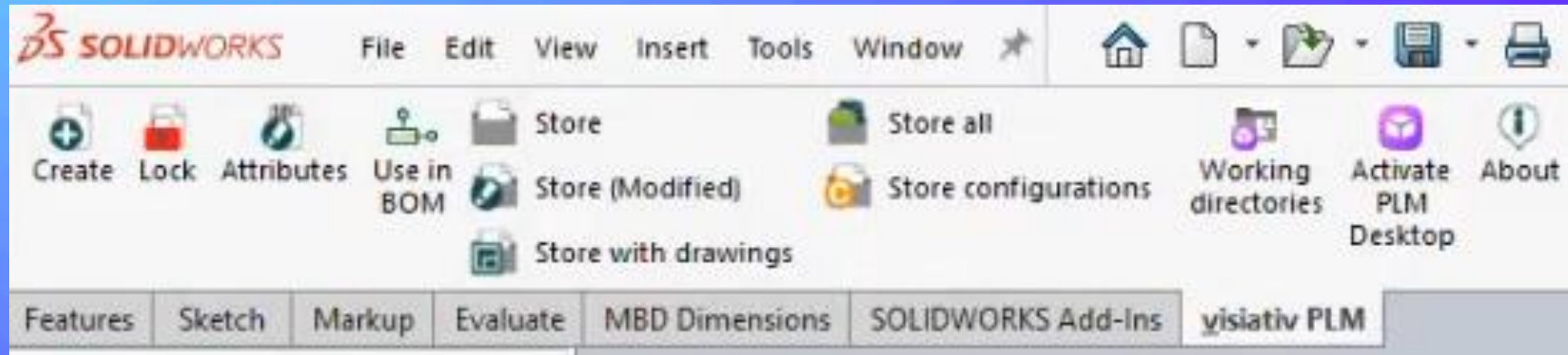
Right relationship:

Link	Qty	Mark	Tree
....	1		P009 (01.1) MF Collar
....	1		P006 (01.1) right SHOWK plate
....	3		P013 (01.1) Bog door stud
....	3		PC001 (01.1) cable pass
....	1		P014 (01.1) mounting plate
....	1		P015 (01.1) Pivot axis
....	2		SHCS_M6X35 (01.1) M6X35 SHCS Scr
....	2		PC002 (01.1) Pivot bearing

...	Ref...	V.	R.	Designation	Result
...	P008	01	1	Raight main fraim	Identical
...	P009	01	1	MF Collar	Identical
...	P010	01	1	Derailleur bracket	Version has been upgraded (02) for SW001/01/2
...	P013	01	1	Bog door stud	Identical
...	P014	01	1	mounting plate	Identical

SOLIDWORKS Integratie

- Add-in Visiativ PLM met eigen Toolbar



SOLIDWORKS Integratie

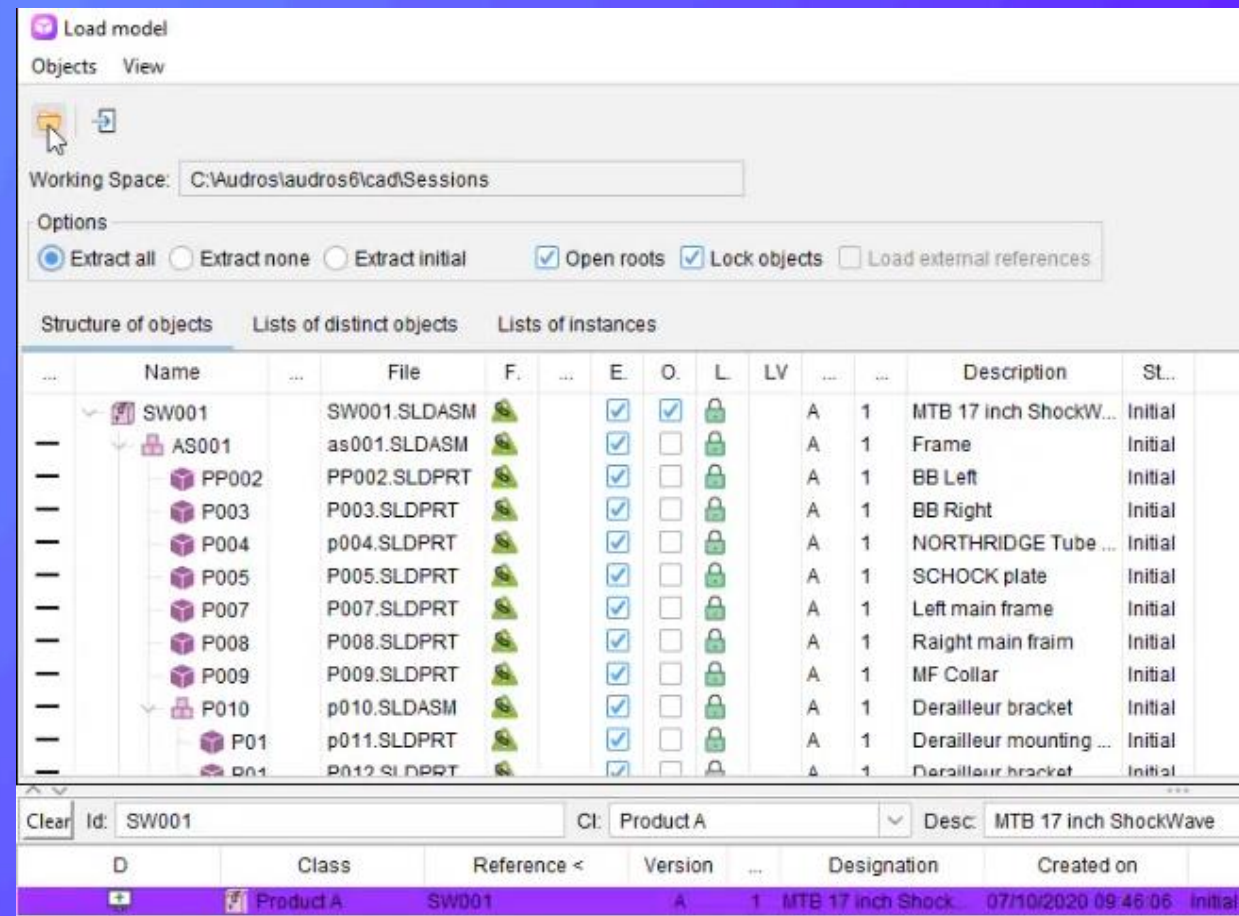
- Working Directory – Workspace(s)

The screenshot displays the 'Working Spaces Manager' window in SolidWorks. The 'Workspaces' pane on the left shows a tree view with 'vplm' and 'C:\Audros\audros6\cad\Sessions' selected. The main area shows the 'CAD Model' structure for 'C:\Audros\audros6\cad\Sessions - Manage'. Below this, there are three tabs: 'Structure of objects', 'List of objects', and 'Tree of instances'. The 'List of objects' tab is active, showing a table of CAD objects.

Name	File	R.	Class	Description	St..	...	Workspace	L	...	D	F	U
PRT042	PRT042.SLDPRT	✓	Part A	Disc for formation	B	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		⚠️	
SW001	SW001.SLDASM	✓	Product A	MTB 17 inch ShockWave	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
P041	p041.SLDASM	✓	Sub-assembly A	Shock Absorber Arm	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
SHC	SHCS_M6X35.SLDPRT	✓	Purchased part A	M6X35 SHCS Screw	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
ECR	ecr_m6_nylock.SLDPRT	✓	Purchased part A	NYLOK M6 nut	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
P042	p042.SLDPRT	✓	Part A	Shock Absorber Arm	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
PC005	pc005.SLDPRT	✓	Part A	O-ring 375	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
P043	p043.SLDPRT	✓	Part A	Connecting axis	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	🔒
PC004	pc004.SLDPRT	✓	Part A	IGUS Spacer	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	🔒
PC007	pc007.SLDPRT	✓	Part A	Shock absorber body	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
PC008	pc008.SLDPRT	✓	Part A	Shock absorber axle	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
P046	p046.SLDASM	✓	Sub-assembly A	Senior manager	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
P047	p047.SLDPRT	✓	Part A	Plaque montage	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
P048	p048.SLDPRT	✓	Part A	Cadre Supérieur Gauche	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	
P049	p049.SLDPRT	✓	Part A	Cadre Supérieur Droit	A	1	Initial	---	C:\Audros\audros6\cad\Sessions	🔒	☐		👁️	

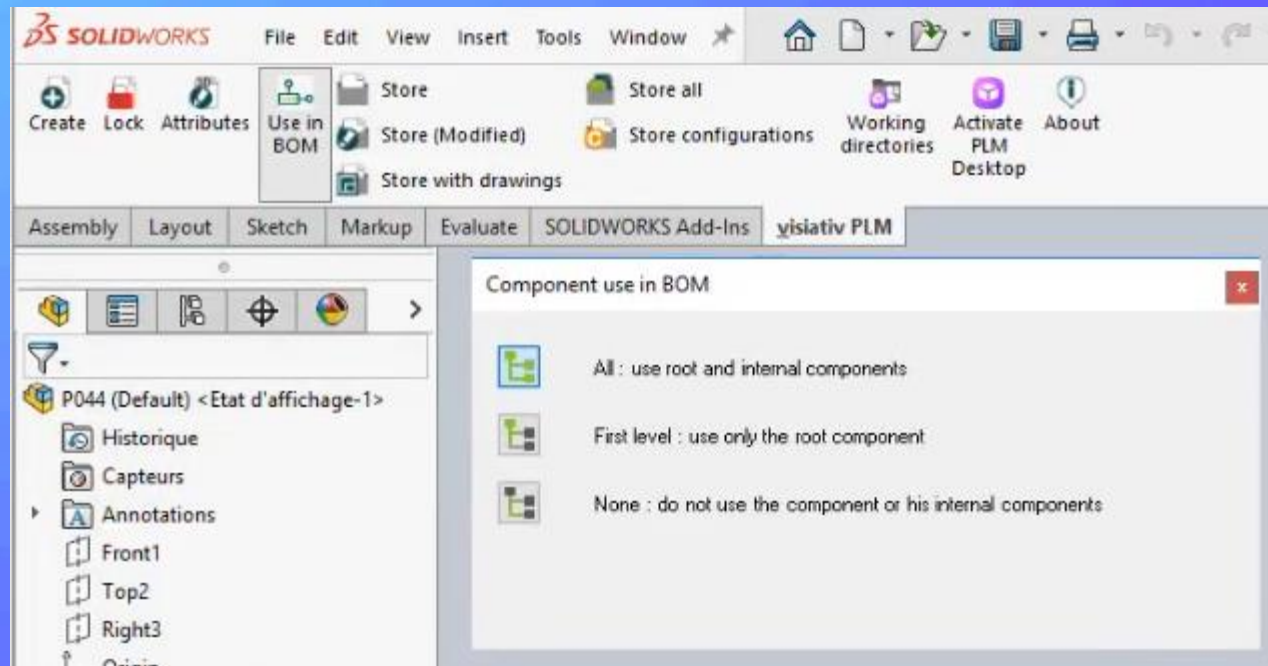
SOLIDWORKS integratie

- Load from CADI (Cad Interface)
- Lock / Unlock



SOLIDWORKS integratie

- BOM opties





Vragen !
Antwoorden ?

Bedankt voor jullie aandacht.

Recap + Giveaway
winner

15.10 – 15:30

By Dolf Broekaart

Go Digital, Stay
Human

15:30

By Christian Kromme



Break-out sessions

	ROOM 1 AUDITORIUM	ROOM 2 ZEEMAN	ROOM 3 LORENTZ	ROOM 4 ZERNIKE
ROUND 1 11:45	What's New SW 25	MBSE	myCADtools & myPDMtools	Formlabs BOM- Visiativ PLM
ROUND 2 13:10		3D EXPERIENCE	Peel 3D Scanner	Virtual Twins
ROUND 3 14:00				DriveWorks Automation Simulation vs. Abaqus DriveWorks CPQ
GIVEAWAY WINNEN?			Naam: _____	Inleveren vóór 14.45

Round 1:

11:45 – 12:30

Break:

12:30 – 13:10

Round 2:

13:10 – 13:55

Round 3:

14:00 – 14:45

Break:

14:45 – 15:10