

Bring it all together: the fusion between PDM & PLM

Peter Van Avondt

Technical Sales Specialist D&M

Autodesk Northern Europe



AGENDA

Introduction

The Role of PDM|PLM

Combined Solutions

Integration Solution

Extended Capabilities

Summary

PETER VAN AVONDT

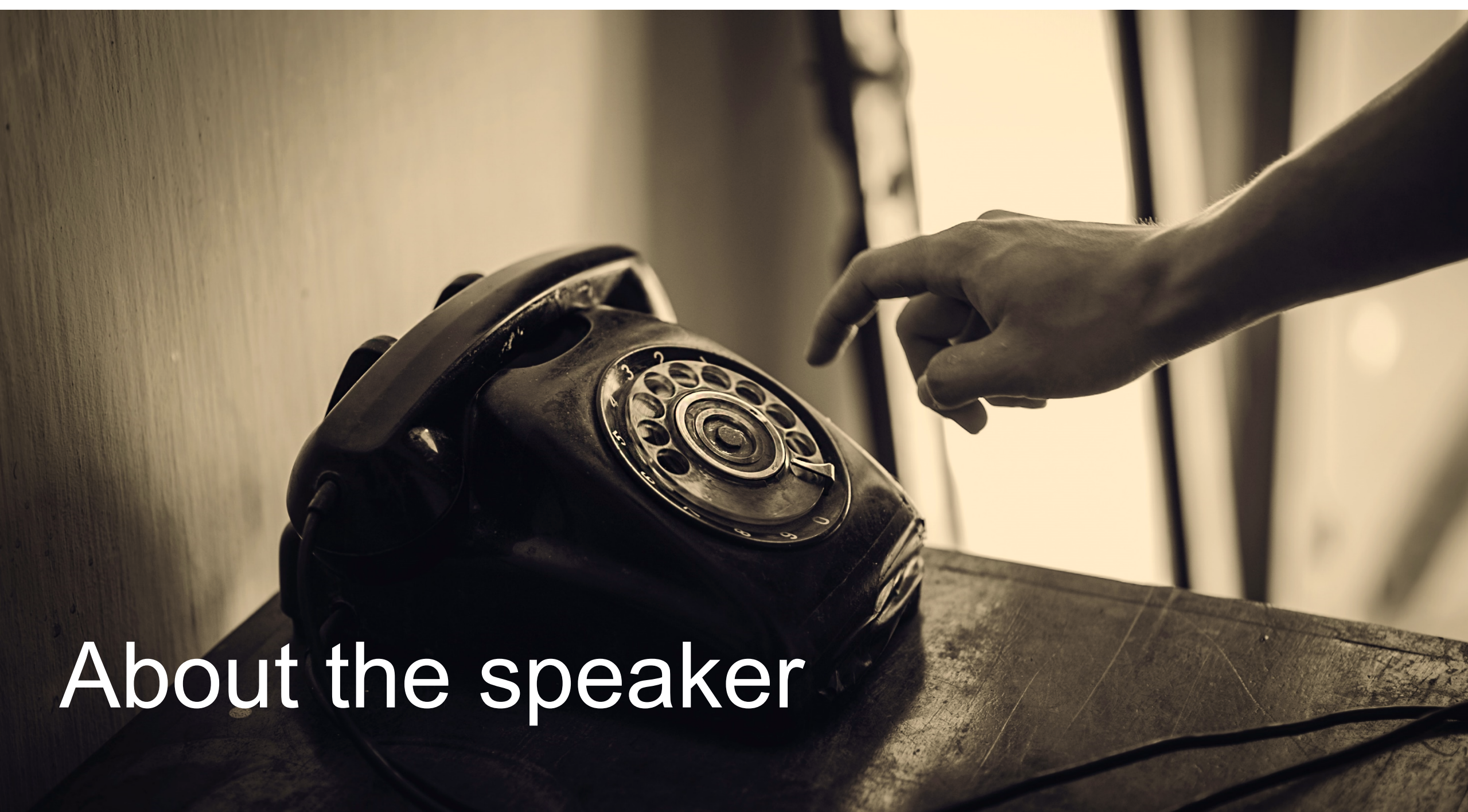
Technical Sales Specialist D&M
Autodesk Northern Europe



 peter.van.avondt@autodesk.com

 linkedin.com/in/petervanavondt





About the speaker





The RIGHT tool for the job

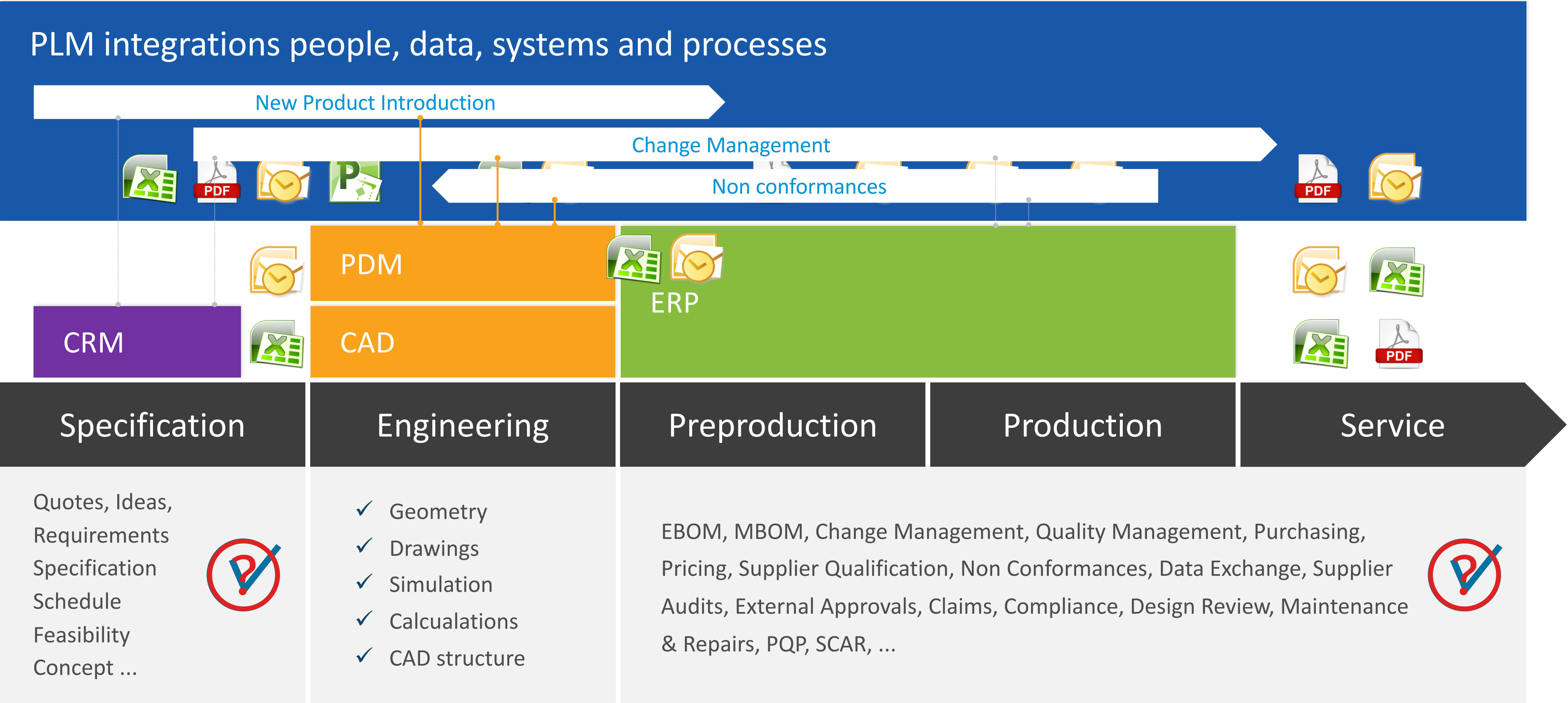


21,5

ROLE OF PDM | PLM



Efficient collaboration accross departments and systems



Product Data Management

Manage **engineering data** to enable concurrent engineering

Drawings, Models, Assemblies with metadata & related libraries

Used by **experts** who expect full coverage of their CAD design tools' capabilities

Owned by Engineering



Seamless integration in engineering tools is key

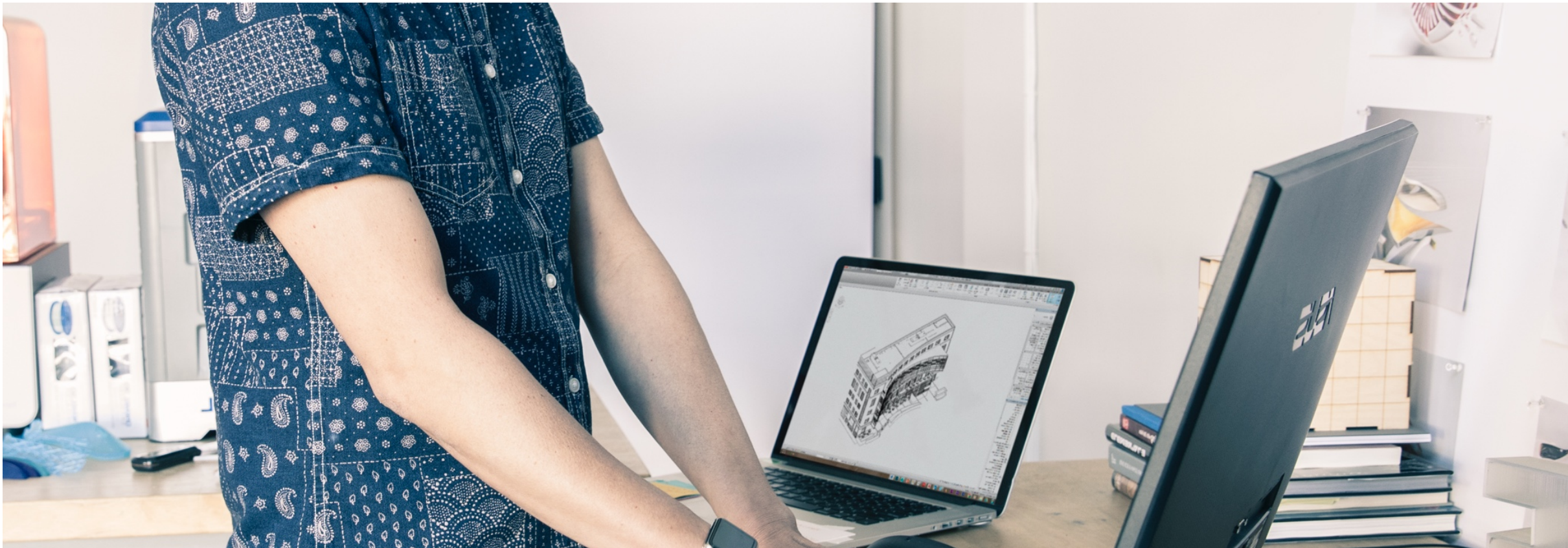
Product Lifecycle Management

Manage the product lifecycle **end-to-end** from early concept through engineering and production to services

Connects people, data, processes and systems to provide transparency & traceability

Ease-of-use and **automated processes** enable efficiency gains for anyone

Simplicity, Accessibility and Flexibility are key



Product Data Management

Engineering Data Management

Document Versioning

Seamless CAD Integration

Copy Design

Bill of Documents

Bill of Materials

Engineering Change Orders

Document Centric



Product Lifecycle Management

Bill of Materials

Change Management

Non-Conformances

Quality Management

NPI

Product Costing

Supplier Collaboration

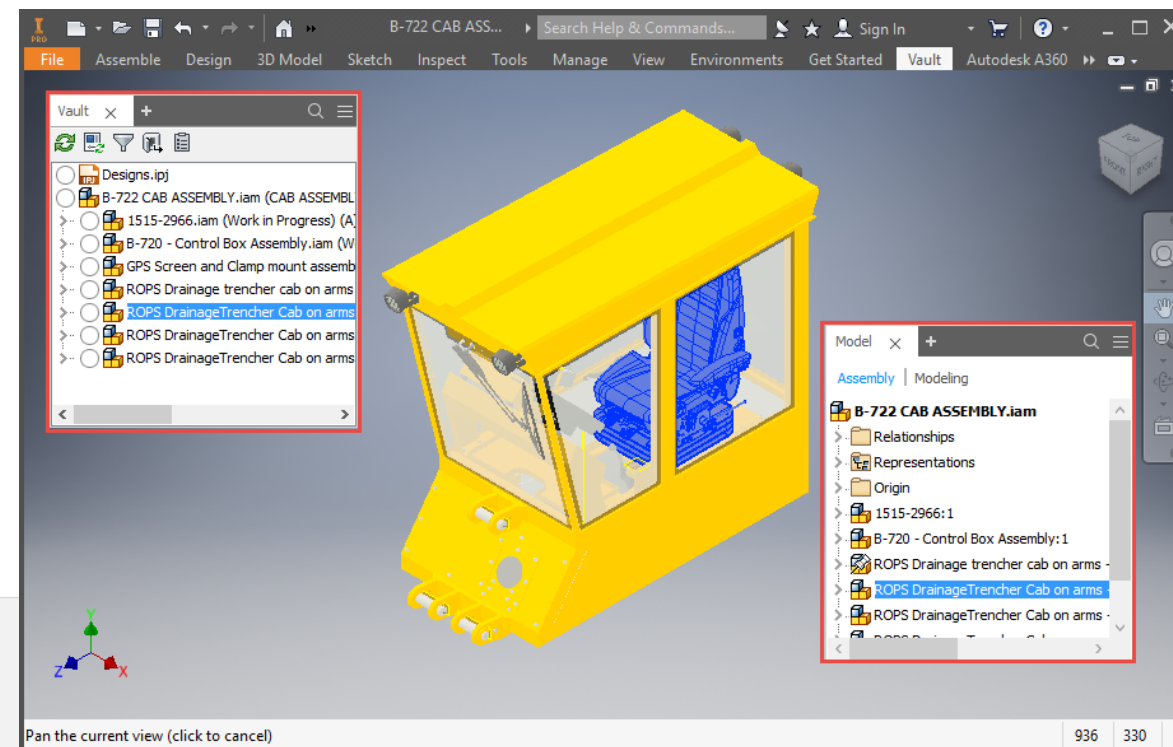
Automation & Processes



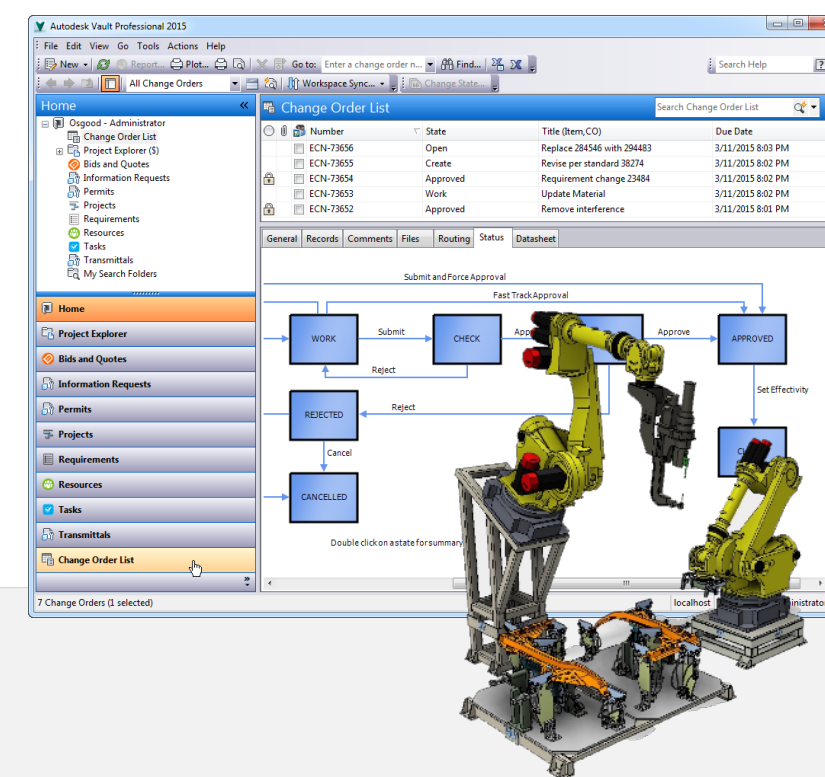
COMBINED BEST-IN-CLASS SOLUTIONS



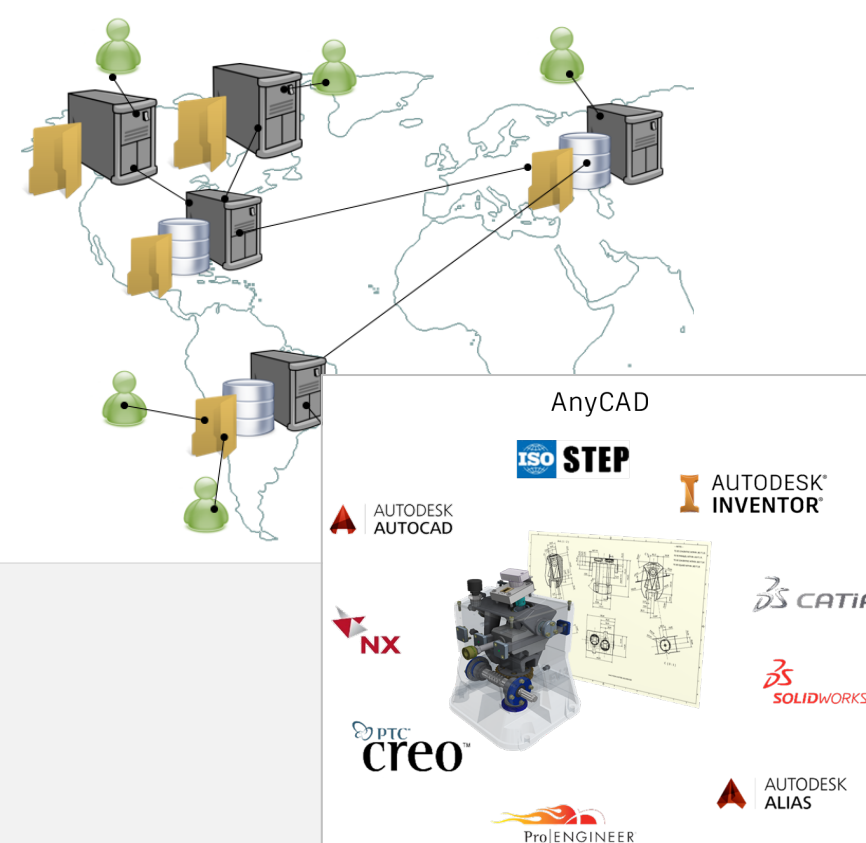




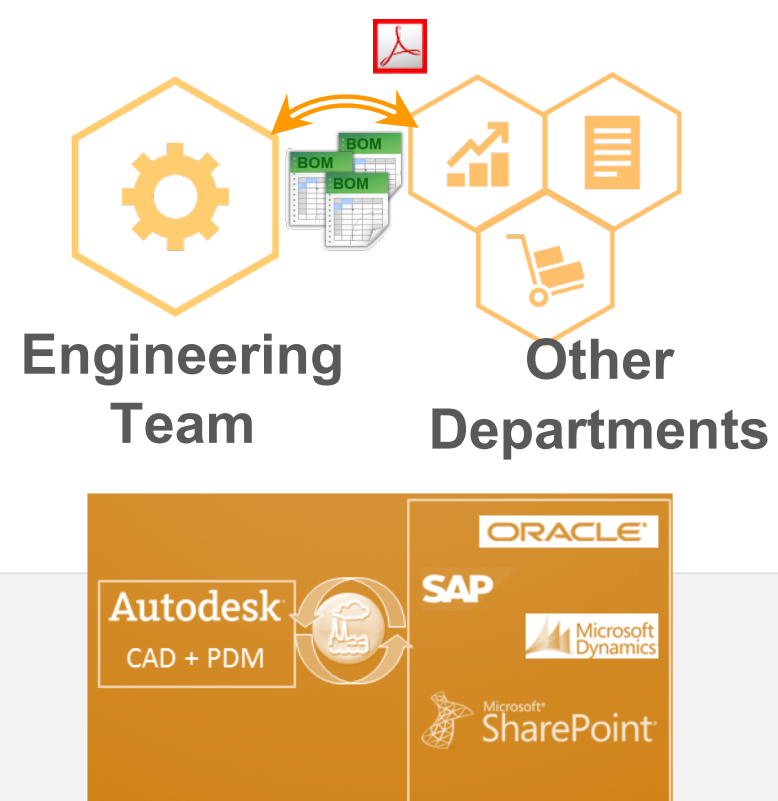
PDM and CAD must be tightly integrated to leverage best design experience & synced releases



Re-use Engineering Knowledge by delivering powerful tools and facilitate change management, tasks, requirements, bids



Utilize flexible resources by connecting global sites as well as suppliers



Connect enterprise systems to ensure smooth collaboration with other departments

BEST PDM SOLUTION

Vault Professional

Tightly integrated in Autodesk's suite of CAE tools, Vault provides a central repository for any engineering data.

Its seamless integration in the user interface of Inventor reduces data management efforts for engineers to a minimum.

Comprehensive Capabilities

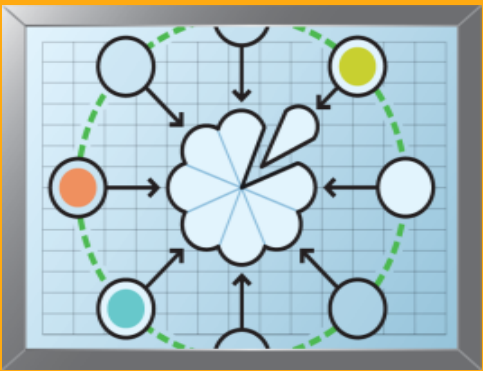


User

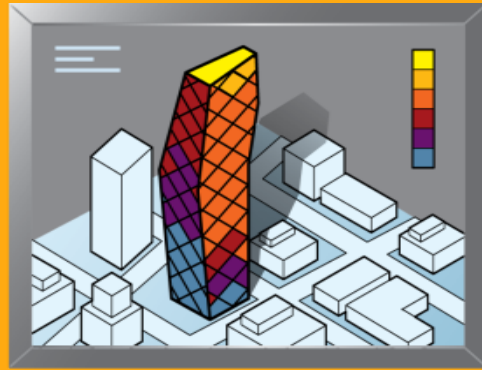
Search & Reuse



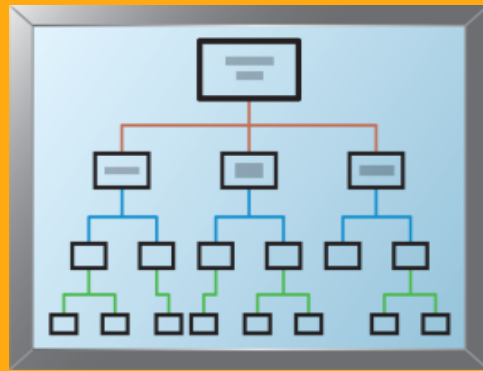
Concurrent Design



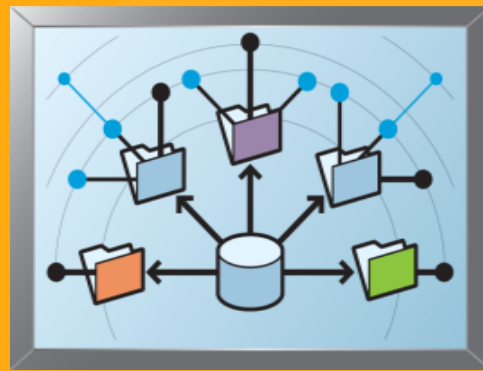
Multi-CAD Integrations



Relationships Tracking



Project Organization



Process

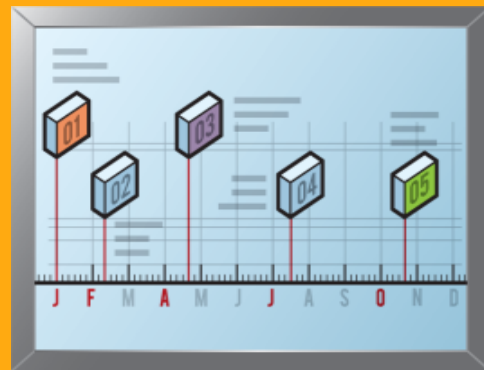
Publishing & Viewing



Content Management



Revision Management



Approvals



Engineering Change Orders



Enterprise

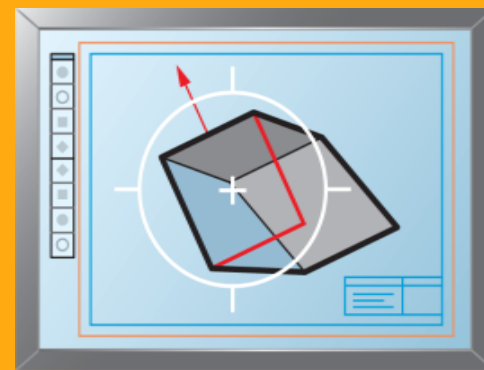
Security



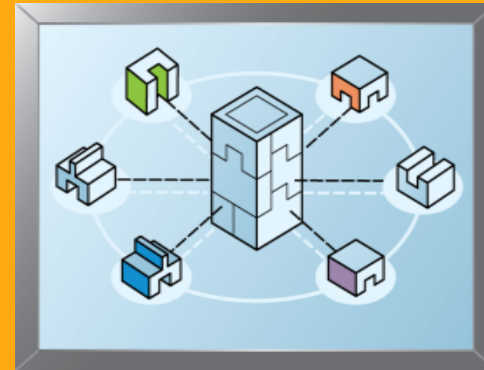
Reporting



Web Based & Remote Access



Multi-Site Replication



Enterprise Integrations





CLOUD PLM Fusion Lifecycle

Core PLM processes are provided in a ready-to-use cloud environment, enabling a quick start and short time to value.

Using graphic administration utilities, customers can adjust these processes to custom needs or even add new business processes definitions – without the need of software migration.

Have latest
product design
at hand at any
time



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FUSION LIFECYCLE

Next Generation PLM



Next Generation PLM

|

Home > Items & BOMs

699-00001 - [REV:B]

Locked
 19/02/2016
 Production

Item Details
BOM (4)
Where Used (1)
Anforderungen (0)
Attachments (2)
Terminplan (0)
More +

Edit
Add
Remove
⋮

Views: Standard ^

Standard as of Today using the Released Revisions configuration

#	Descriptor	Revision		Categories	Applicaton ...	Lifecycle
<input type="checkbox"/> 0.0	699-00001 - [REV:B]	B	2			Production
<input type="checkbox"/> > 1.1	690-00001 - [REV:A]	A	6			Production
<input type="checkbox"/> 1.2	680-00001 - [REV:A]	A	2			Production
<input type="checkbox"/> 2.1	098-00004 - [REV:A]	A	3		1.00 EA	Production
<input type="checkbox"/> 2.2	367-00002 - [REV:w]	Working	2		1.00 EA	Working
<input type="checkbox"/> 2.3	155-00001 - [REV:B]	B	1		4.00 EA	Production
<input type="checkbox"/> 2.4	285-00001 - [REV:B]	B	1		1.00 EA	Production
<input type="checkbox"/> 2.5	151-00001 - [REV:A]	A	1		1.00 EA	Production
<input type="checkbox"/> 1.3	630-00001 - [REV:A]	A			1.00 EA	Production
<input type="checkbox"/> 2.1	621-00001 - [REV:A]	A	1		1.00 EA	Production
<input type="checkbox"/> 2.2	338-00001 - [REV:A]	A			1.00 EA	Production
<input type="checkbox"/> 1.4	640-00001 - [REV:A]	A			1.00 EA	Production
<input type="checkbox"/> 2.1	171-00001 - [REV:A]	A	1		1.00 EA	Production
<input type="checkbox"/> 2.2	175-00001 - [REV:A]	A	1		1.00 EA	Production

Export

Environmental Complia...

Standard

Details

Technical Specification

Digitize & Connect anything



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FUSION LIFECYCLE

Next Generation PLM

900-00001 - DESKTOP GeForce Tesla

EntwicklungWorkflow actions

EigenschaftenDokumente (11)Stückliste (1)

Edit

Bezeichnug (1 of 8)

Projekt- / Produktbeschreibung (2 of 8)

Projektziele

Ziel ist die Entwicklung eines funktional reduzierten Produkts, um Marktanteile im unteren Preissegment gewinnen zu können.

Grenzen des Projekts

Auf die Entwicklung neuer Innovationen ist zu verzichten, da die Technologie schnell auf den Markt gebracht werden muss.

Marktsituation

Im niederen Preissegment treten vermehrt Wettbewerber auf, die die Technologie schnell auf den Markt gebracht haben.

Projektvorlage


01 - Entwicklung von Produktvarianten

Freigabeablauf (3 of 8)

Grafiken (4 of 8)

Katalogbilder

Hauptbild



Kommentar

Marketing (5 of 8)

Strategische Bewertung (6 of 8)

Ergebnisdokumente (7 of 8)

	Dokument	Status	Letzte Änderung
Anforderungsspezifikation	TS000002 - Technische Spezifikation	Prüfung durch Produktmanager	28/11/2017
Lasten-/Pflichtenheft	DOK0004 - L/PH 900-0001 [REV:w]	Neu	20/11/2017
Abnahmeprotokoll Prototyp			
Kostenabschätzung	DOK0002 - Kalkulation 900-0001 [REV:w]	Neu	20/11/2017

C00016 - Änderung des Kühlkörpers wegen Kollision mit Widerstand

GesperrtImplementierungKeine Arbeitsablaufaktionen verfügbar

EigenschaftenBetroffene Artikel (2)Anhänge (2)Maßnahmenplanung (4)Terminplan (0)ProzessablaufHistorie

Bearbeiten

Header (1 von 4)

Nummer

C00016

Bezeichnung

Änderung des Kühlkörpers wegen Kollision mit Widerstand

Betroffene Produkte

900-00001 - DESKTOP GeForce Tesla (GT) GT220 PCIe 1GB 6.6in Long

Terminplanvorlage

05 - Standard Änderungsaufträge

Geplanter Termin

25/05/2018

Änderungsanfrage

CR0013 - GT220 Kollision des Widerstands mit dem Kühlkörper

Kennzeichen

Details (2 von 4)

Änderungsgrund

Aus Änderungsanfrage

Änderungsbeschreibung

Konstruktionsfehler

Der Kühlkörper ist zu verkleinern

Die äußerste Profilkante ist um 2mm zu verschieben um die Kollision mit dem Widerstand zu beheben

Begründung

Die Maße des Kühlkörpers überschreiten die in der Spezifikation vorgesehenen Maße. Aus diesem Grund kollidiert dieser nun mit dem Widerstand.

Priorität

Hoch

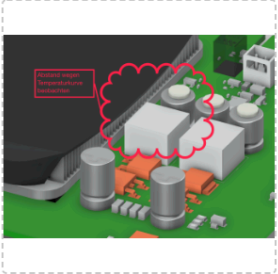
Bilder / Grafiken (3 von 4)

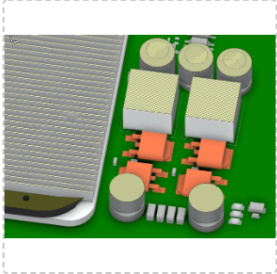
Bild

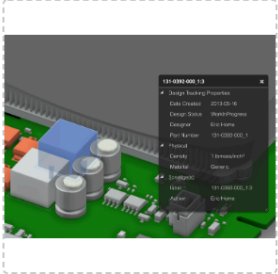
#1

#2

#3







Anmerkungen

Kollision der Geometrie

Schnitttdarstellung

Bauteileigenschaften

Freigabeablauf (4 von 4)

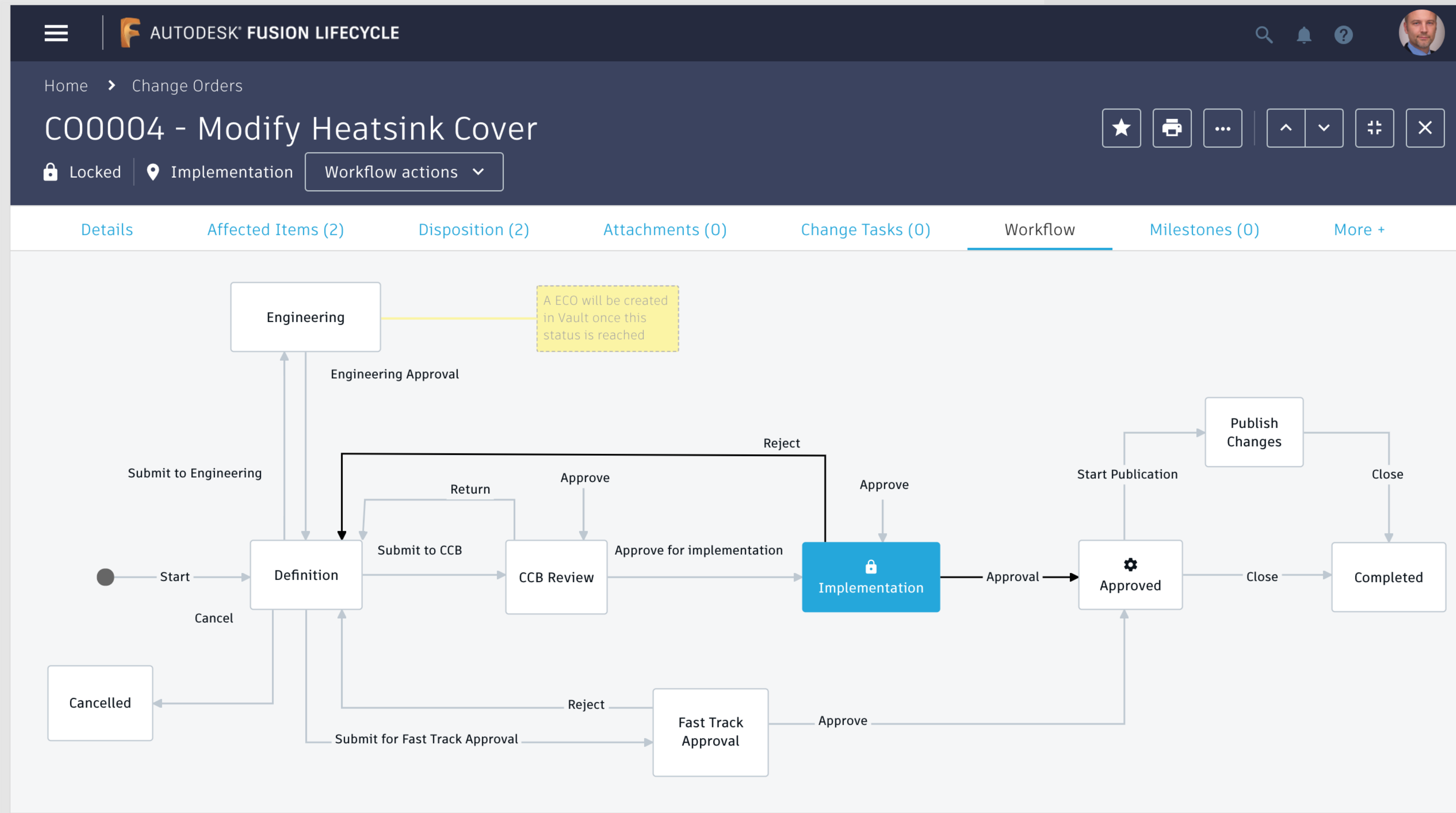
	Verantwortlicher	Zieltermin	Status	Tats. Termin	Verzug
Technische Umsetzung	Anderson, Alex	21/05/2018	OK	20/05/2018	-1
Prüfung	Baker, Ben	25/05/2018	OK	25/05/2018	0
Implementierung	Dickmans, Sven	24/05/2018	VERZUG		251
Kenntnisnahme Lieferant	Carter, Chris	28/05/2018	VERZUG		247

Prevent delays in business processes



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Next Generation PLM





Next Generation PLM

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Home > Products HighTech

900-00001 - DESKTOP GeForce Tesla (GT) GT220 PCIe 1GB

Spezifikation

Workflow actions ▾

Details
Bill of Materials (1)
Tasks & Deliverables (13)
Milestones (6)
Approval Workflow
More +

Edit

Add ▾

Remove

⋮

Gantt Chart:

×

☰

●

Time Scale:

Quarters ▾

	#	Title/ Item	Start Date	End Date	Duration	↗	Progress %	Status	2016	
									Q1	Q2
<input type="checkbox"/>	1	> TK0050 -	02/04/2016	06/04/2016	4 days		0	Definition		0%
<input type="checkbox"/>	2	> TK0057 -	04/04/2016	06/04/2016	2 days		0	Definition		0%
<input type="checkbox"/>	3	> TK0052 -	10/04/2016	12/04/2016	2 days		0	Definition		0%
<input type="checkbox"/>	4	> TK0049 -	12/04/2016	14/04/2016	2 days		0	Definition		0%
<input type="checkbox"/>	5	> TK0060 -	27/04/2016	02/05/2016	5 days		0	Definition		0%
<input type="checkbox"/>	6	> TK0059 -	27/04/2016	09/05/2016	12 days		0	Definition		0%
<input type="checkbox"/>	7	> TK0053 -	02/05/2016	04/05/2016	2 days		0	Definition		0%
<input type="checkbox"/>	8	> TK0054 -	02/05/2016	04/05/2016	2 days		0	Definition		0%
<input type="checkbox"/>	9	> TK0055 -	02/05/2016	04/05/2016	2 days		0	Definition		0%
<input type="checkbox"/>	10	> TK0061 -	12/05/2016	17/05/2016	5 days		0	Definition		0%
<input type="checkbox"/>	11	> TK0058 -	12/05/2016	17/05/2016	5 days		0	Definition		0%
<input type="checkbox"/>	12	> TK0051 - ...	12/05/2016	04/08/2017	449 days		0	Definition		> 0%
<input type="checkbox"/>	13	> TK0056 -	22/05/2016	24/05/2016	2 days		0	Definition		0%

Efficient Global Collaboration



Smart solutions to address unique challenges

On-Premise

Engineering Data

 AUTODESK®
INVENTOR®

 AUTODESK®
AUTOCAD®



- Integrated in CAD User Interface
- Local file storage for best performance
- Best support for CAD possible
- Software release to match CAD

Files remain in Intranet

Cloud

Metadata & Processes



- Easily Accessible
- Instant worldwide deployment
- No software installation and maintenance
- Flexible & automated business processes

Global Process Efficiency

Why offer a combination of two solutions instead of one?

ENGINEERING EFFICIENCY



Ease of use

INVESTMENT PROTECTION



Flexibility

CAD RELEASE MATCH



Latest PLM Features

PROCESS CENTRIC COLLABORATION



File based authoring

ON PREMISE PERFORMANCE



Cloud Benefits

REAL TIME INFORMATION SHARING



IP Protection

SCALABLE INFRASTRUCTURE



Easy Deployment

INTEGRATION

SOLUTION



Vault-FLC Connector

Out of the Box integration

Vault & Fusion Lifecycle Connection Use Cases

- New Product Introduction/Development
- BoM, files push to FLC
- Change Management FLC to Vault

Efficient and consistent integration

- Easy to configure
- Simple install
- Compliant with standard schemas (Forge, FLC V3 API)
- Compatibility with Vault 2019, 2020+

Vault FLC Connector Settings

Fusion Lifecycle Authentication

Tenant Name

Projects | Change Orders | Items / BOMs

Pull Fusion Lifecycle Projects to Vault Projects, on time interval

☒ Activate Project Synchronization

Fusion Lifecycle

Workspace

Project Name

Valid States

Vault

Target Folder

Folder Category

☒ Copy Folder Structure from Template Folder when new Folders are created in Vault

Folder Structure Template Folder

Property Mapping

Fusion Lifecycle	Vault
Description	Description
Product Name	Title
Number	Project Number
Estimated Completion Date	Date End

New

Delete

Scheduled Job

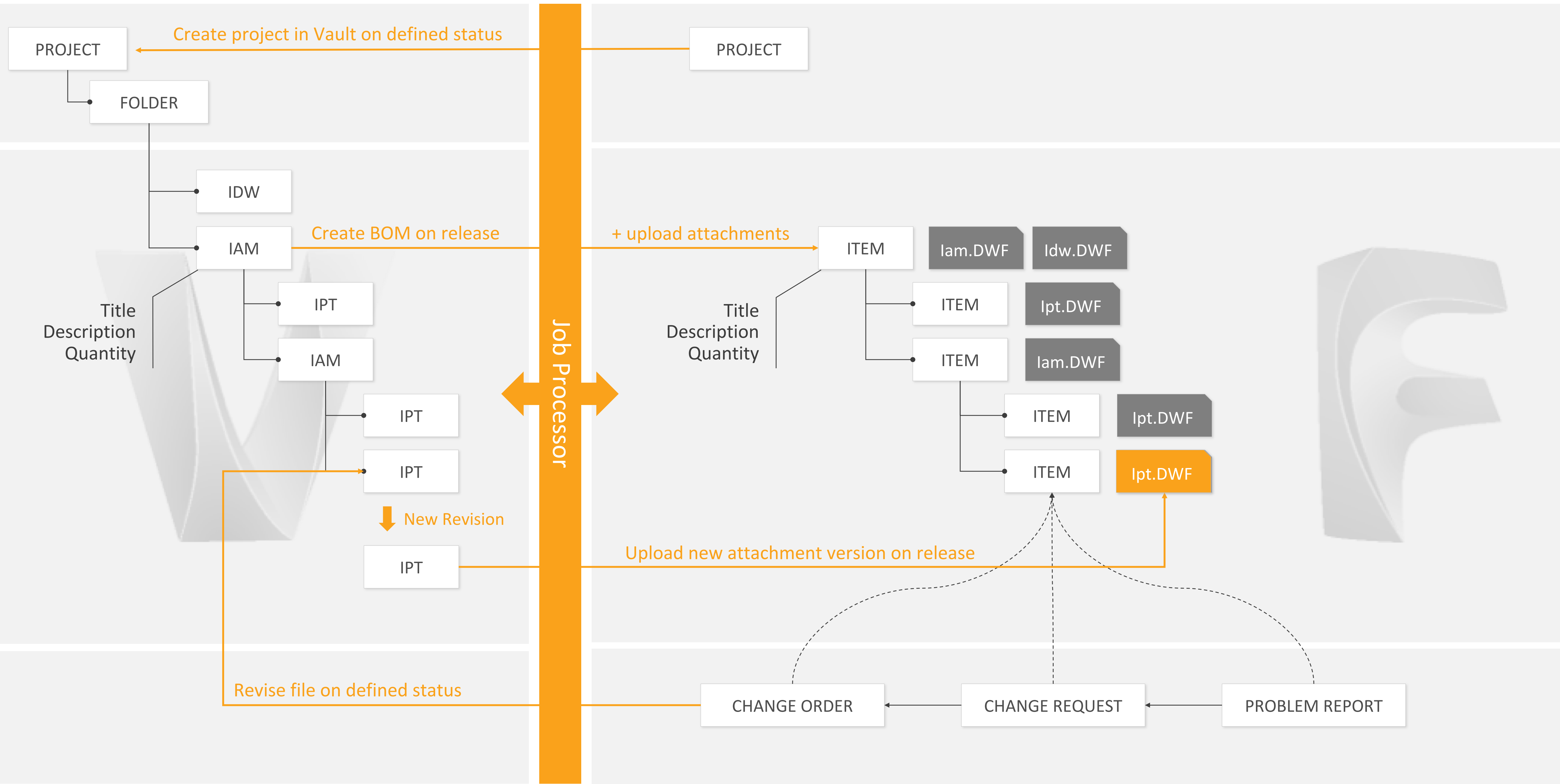
Interval Minutes

Priority

Save

Cancel

Standard Integration Capabilities



Case #1 New Product Introduction (NPI/NPD)

Fusion Lifecycle in control of the whole product development process

1. Idea/product/project begins in FLC

- Follows NPI/NPD process

2. When “ready”, FLC pushes data into Vault

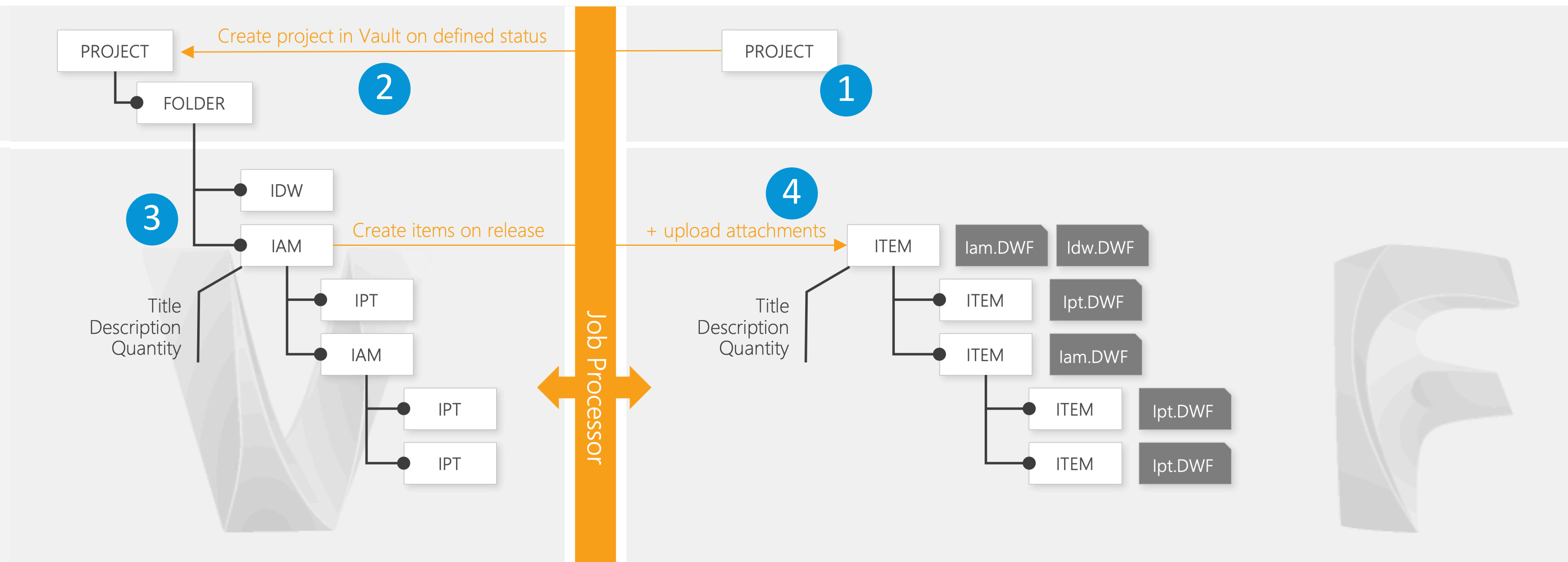
- Creates project structure
- Shares information

3. Design begins, iterates, check in/out with Vault

- New CAD data
- Copy Design

4. When ready, data is pushed to FLC

- BOM Structure, viewable (non-native) geometry
- Qty, Titles, Desc, and attachment



New Product Introduction Workflow

Autodesk Vault & Fusion Lifecycle Connector

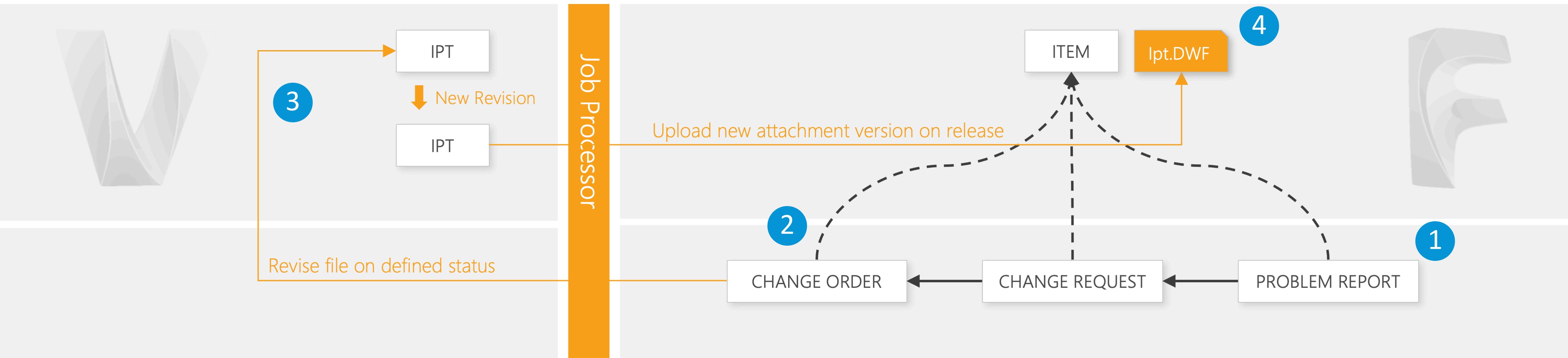
Peter Van Avondt
Technical Sales Specialist D&M



Case #2 Change Management

Closed Loop Manufacturing to Engineering

1. Issues from Field, Supplier, Customer, shop floor
 - Capture issues digitally
2. Routed through Quality to Engineering Change
 - Follow a pre-defined process
 - PR > CR > CO
3. Change Management & Approval with Vault
 - Revise File on CO status change
 - Now ECO's needed
4. Close loop Change Management
 - New Item information (Qty, Structure)
 - New viewable



Change Management Workflow

Autodesk Vault & Fusion Lifecycle Connector

Peter Van Avondt
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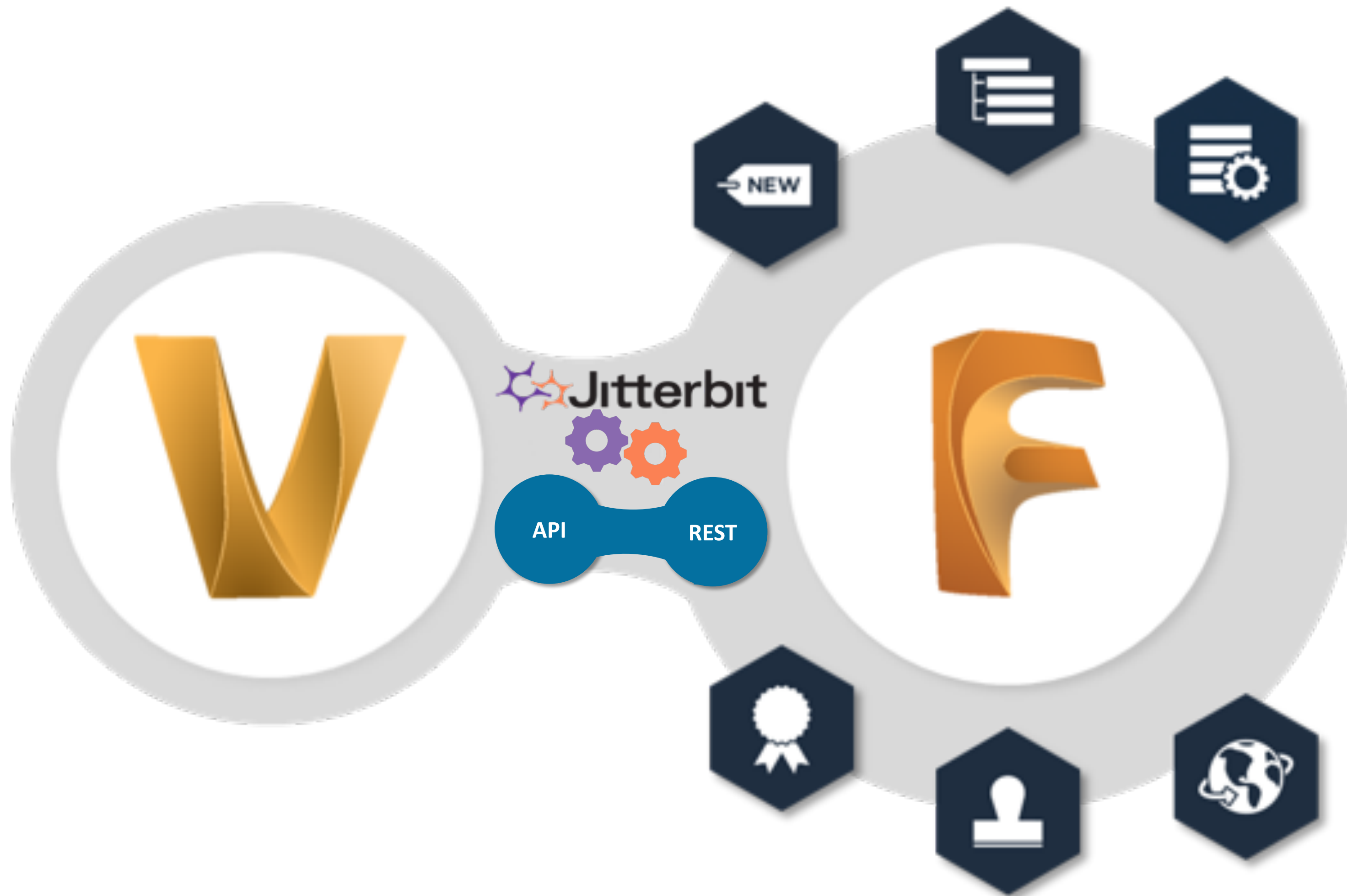
EXTENDED

CAPABILITIES



Extended Capabilities

Using Rest API or Integration Hub



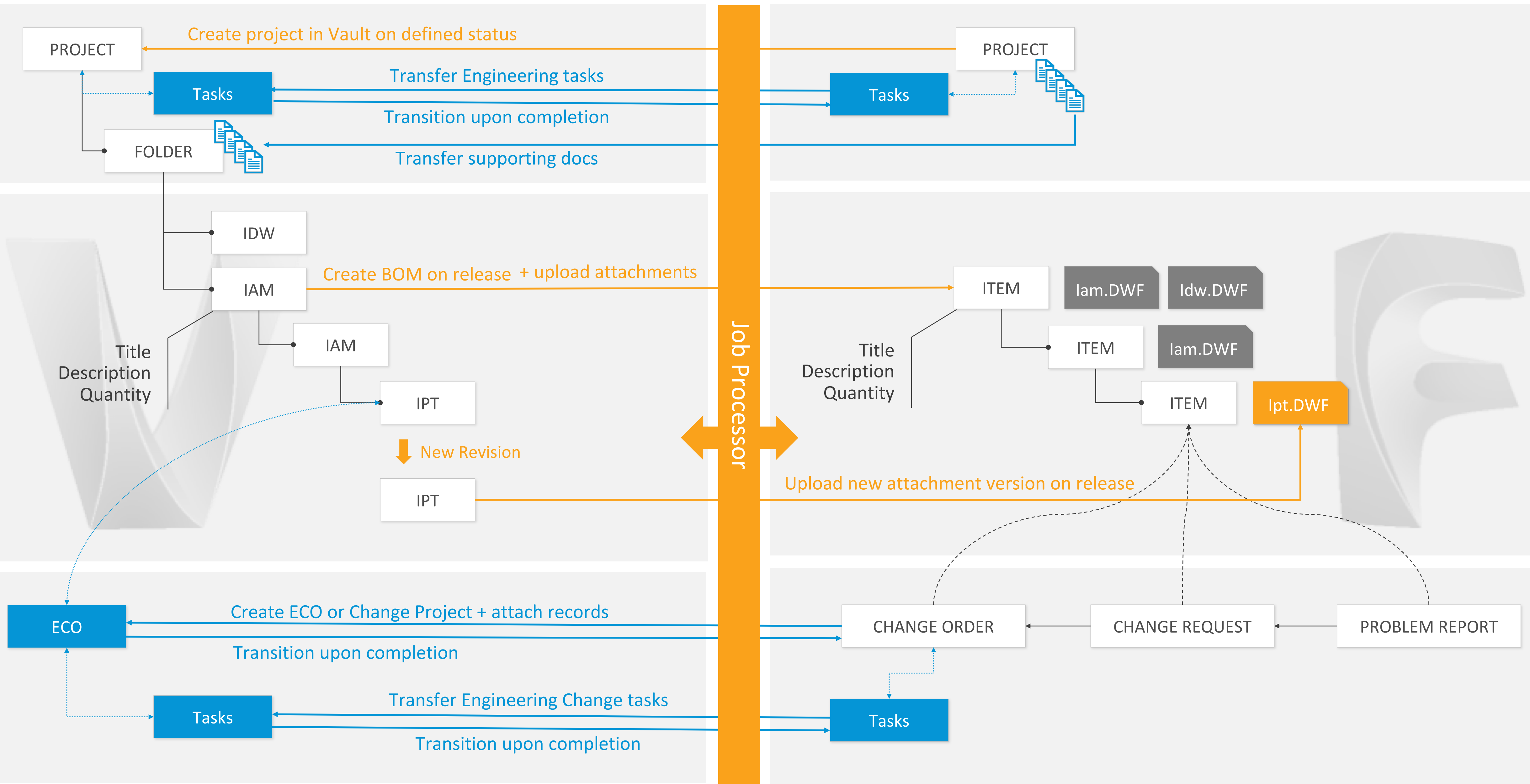
A. Development Framework (API)

- ▶ Requires Coding
- ▶ *Support for On-site and On-Premise*
- ▶ *Use SOAP, REST*

B. Integration Hub (Jitterbit)

- ▶ Little Coding
- ▶ Costly to implement
- ▶ Standard connectors
- ▶ Support for On-site and On-Premise

Extended Integration Capabilities



Case #3 Advanced Change Management & Engineering Task Management

Vault's Engineering Change Orders and Tasks integrated in the broader Change Management

1. Change Management & Approval with Vault

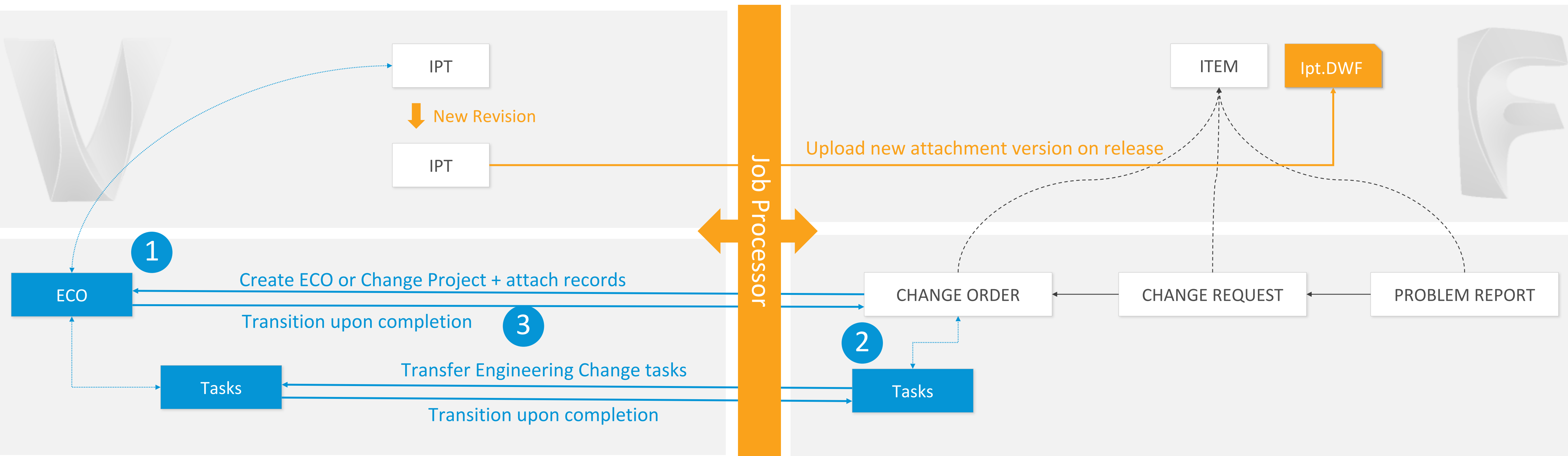
- Engineering Change Order or Change Project folder
- Collects all involved files

2. Engineering Task Management

- Feed Task information to Engineers
- Using Custom Objects in Vault

3. Close loop status management

- ECO and Task status feedback



Home > Items and B...

+

My Default Vi... ▾

☰

Item Descriptor ▾

01-0745 - Discharge Unit

01-0744 - Discharge Chute Frame

01-0745 - Discharge Unit

[REV:w] ▾

★

🖨

⋮

⬆

⬇

🔄

✕

👤

🕒 Pending

📦 Unreleased

Details

Bill of Materials (6)

Where Used (0)

Related Changes (1)

Relationships (1)

Attachments (0)

Change Log

Edit

Summary (1 of 6)

Number

01-0745

Title

Discharge Unit

Description

Discharge Unit

Unit of Measure

Each

Spare / Wear Part

--

Engineering Data (2 of 6)

3D

2D

Reference

01-0745 - Discharge Unit - A.7

Preview

Filename

01-0745.iam

Version

35

Designer

storrieg

Technical Details (3 of 6)

Material

Mass

Dimensions

Physical Properties

68,499 kg

1385,6x1072,7x669,1 mm

Semi-Finished

Length (Cut)

Stock Number

Total number of records in this view: 2

AUTODESK

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F

AUTODESK FUSION LIFECYCLE

SUMMARY



Combined Best-in-class Solutions

On-Premise

Engineering Data

 AUTODESK®
INVENTOR®

 AUTODESK®
AUTOCAD®



- Integrated in CAD User Interface
- Local file storage for best performance
- Best support for CAD possible
- Software release to match CAD

Files remain in Intranet

Cloud

Metadata & Processes



- Easily Accessible
- Instant worldwide deployment
- No software installation and maintenance
- Flexible & automated business processes

Global Process Efficiency

The RIGHT tools for the job...





... tight together



Questions?



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Make anything™

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