



TCI – 3DEXPERIENCE TEAMCENTER INTEGRATION

T · · Systems ·

T-SYSTEMS PLM SOLUTIONS

OUR PARTNERS

Siemens PLM Software

Solution
Partner

SIEMENS

PLM

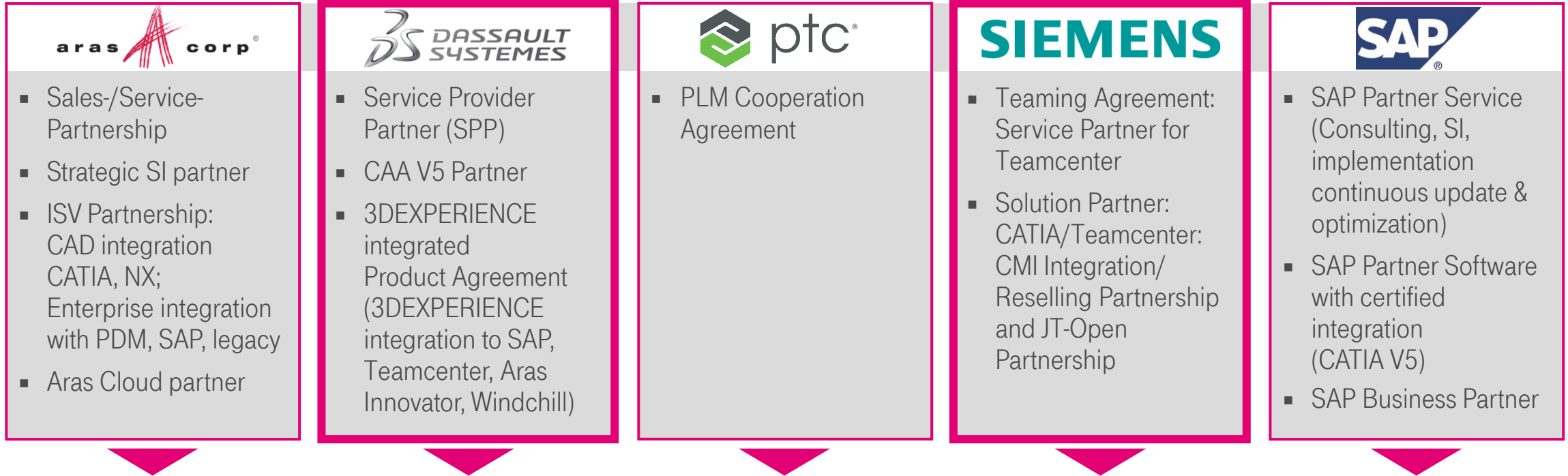
- Development Partnership
- Reseller Agreement for CMI
- Service Agreement
- JT Open Partner

Dassault Systèmes



- CAA V5 Gold Partner
- DS V6 apps Community Partner
- Service and Integration Agreement

PRESENTATION T-SYSTEMS PARTNERSHIPS



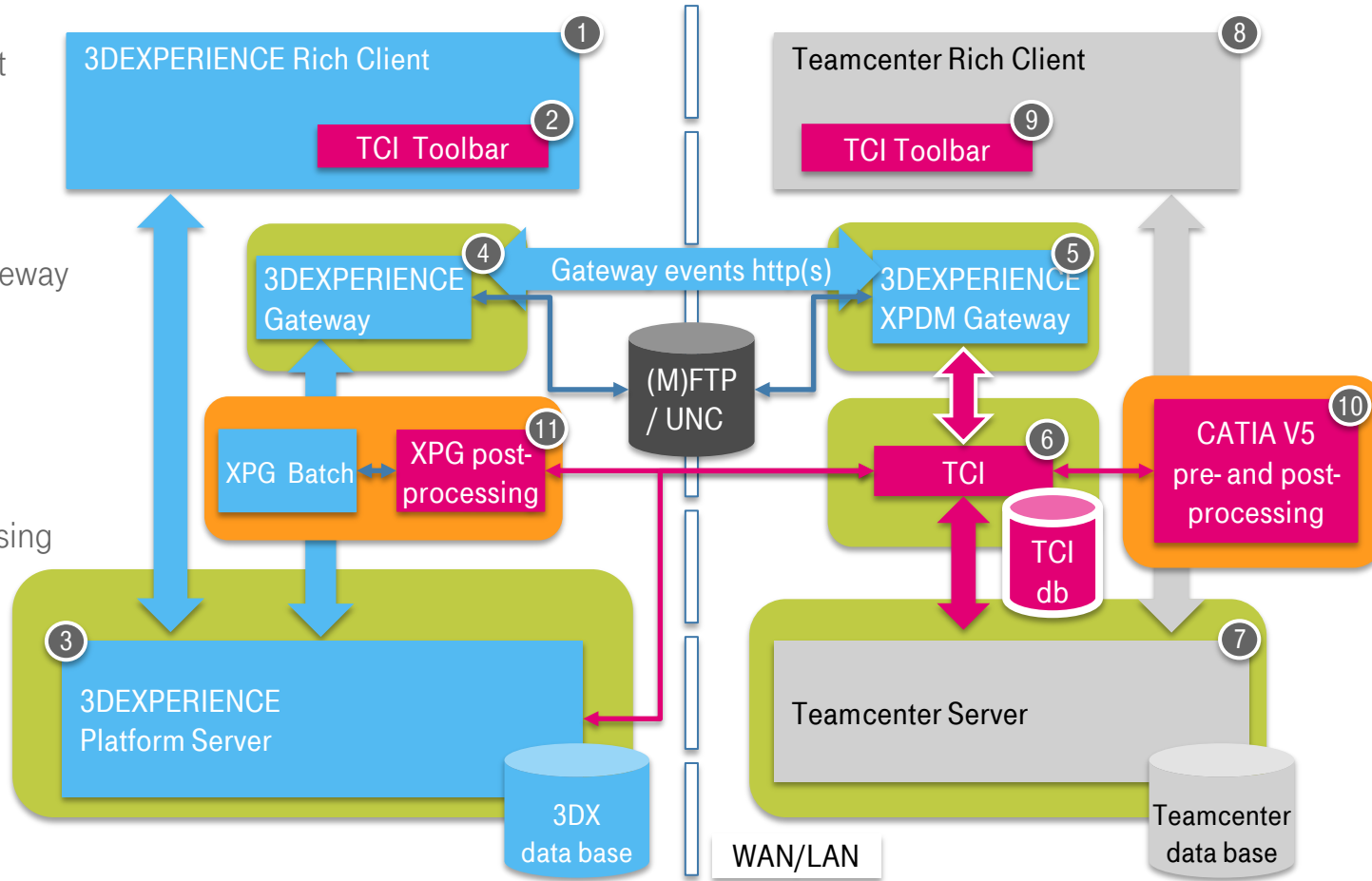
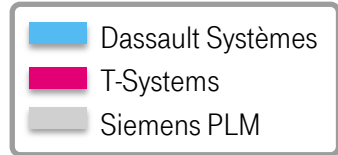
POWERFUL PARTNERSHIPS TO PROVIDE VENDOR INDEPENDENT PLM SOLUTIONS
BROAD EXPERIENCE ACROSS PLM STANDARD PRODUCTS

INTERACTIVE DATA EXCHANGE BASED ON TCI XPDM ADAPTER

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EXTENDED XPDM ARCHITECTURE

1. 3DEXPERIENCE Rich Client
2. TCI 3DEXPERIENCE RC UI
3. 3DEXPERIENCE Server
4. 3DEXPERIENCE Gateway
5. 3DEXPERIENCE XPDM Gateway
6. TCI
7. Teamcenter Server
8. Teamcenter Rich Client
9. TCI Teamcenter RC UI
10. CATIA V5 CAD data processing
11. TCI XPG post-processing



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OVERVIEW ABOUT INTERACTIVE FUNCTIONALITY

Use Case	Teamcenter		3DExperience		3DExperience native
Login/logout in other system	Logout from 3DEXPERIENCE Login to 3DEXPERIENCE		Teamcenter Login Teamcenter Logout		
Query objects in other system	Query for objects in 3DEXPERIENCE		Query Item in Teamcenter		
Show attributes from other system	View 3DEXPERIENCE Properties		Show Teamcenter Attributes of selected item		
Push a product structure to other system	Export to 3DEXPERIENCE		Transfer Structure		Menu -> Export ... -> XPDM ... Export data to XPDM Gateway
Pull a product structure from other system	Query for objects in 3DEXPERIENCE → Transfer from 3DEXPERIENCE		Query Item in Teamcenter → Send to 3DEXPERIENCE		
Pull Change Mastership	N/A		Query Item in Teamcenter → Send to 3DEXPERIENCE with Option "Transfer location of control"		Coexistence → Change Mastership ... Set to 3DExperience Master 
Push Change Mastership	Export to 3DExperience with Option "Transfer location of control"		N/A		Coexistence → Change Mastership ... Set to V5 Master 
Export a Filter to other system	Export to 3DExperience with option Set name for structure filter		N/A		
Use a Filter from other system	N/A		Filter Structure		

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PROCESSED TEAMCENTER OBJECTS

Data objects

- Item
- Item Revision
- Datasets with Named References
- Forms (e.g. IMRF, IRF)
- Folders

Product structures and relations

- BOM View, BOM View Revision, PS-Occurrence
- TC 2007: BOM Line, BOM Window
- IMAN_specification, IMAN_Rendering (JT)

Configuration

- Revision Rule, Stored Option Set
- Variant Rule
- Options, default Options
- Variant Conditions

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PROCESSED 3DEXPERIENCE OBJECTS

Data objects

- Physical Product
- 3DPart
- Shapes
- Drawings
- Folders
- Documents

Product structures and relations

- Physical Product instances
- 3DShape instances
- Drawing instances
- Document instances
- Folder instances

Configuration

- Model and Hardware Product
- Configuration Features
- Configuration Options
- Product Configuration
- Effectivity

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ACCESS TO TEAMCENTER

SOA Client Framework

- Follows the Teamcenter rule tree
- Access rules can be configured at the Teamcenter server specifically for the SOA client

File access

- SOA file APIs (uses Teamcenter File Cache Client)

- **No direct data base access (e.g. via SQL)**
- **No Teamcenter server extensions, e.g. IDK Server customization**
- **Specific policy settings are supported!**

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SUPPORTED FILE FORMATS

Supported file formats

- 3DEXPERIENCE to Teamcenter
 - 3D: CATPart, 3DXML, JT*, STEP, CATProduct
 - 2D: CATDrawing, DWG, 2D PDF
 - Any other non-CAD formats
- Teamcenter to 3DEXPERIENCE
 - 3D: CATPart, CATProduct, CATIA V4 model, JT*
 - 2D: CATDrawing
 - Any other 3D CAD format*
 - Any other non-CAD formats

*3rd party converter required

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SUPPORTED SOFTWARE VERSIONS

Continuously developed product

- Support of the three latest 3DEXPERIENCE Platform releases
- Support of the three latest Teamcenter releases
- Older releases on request (down to 3DEXPERIENCE R2014x and Teamcenter 2007.1)

- Teamcenter releases
 - 9, 10 and 11

- 3DEXPERIENCE Platform releases
 - R2015x, R2016x, R2017x, R2018x

- Latest version 3.1.5 is available:
 - 3DEXPERIENCE R2017x support
 - “Query for objects in 3DEXPERIENCE” in Teamcenter UI
 - Send from 3DExperience command in Query dialog
 - Provide information about data exchange status

USER INTERFACE EXTENSIONS

Teamcenter

- TCI web user interface – No PDM extension required
- Teamcenter Rich Client – Teamcenter client extension
- Active Workspace – considered

3DExperience

- TCI web user interface – No PDM extension required
- 3DExperience rich client – CATIA V6 client extension
- 3DExperience web client – 3DExperience server extension

TCI

REFERENCE

3DEXPERIENCE TEAMCENTER

INTEGRATION

JAGUAR LANDROVER

PLM MIGRATION TOOLSET



Customer

Jaguar Land Rover, owned by Tata Motors Limited, is the UK's largest automotive manufacturing business, built around two British car brands. Production sites are located in the UK, India and China with local assembly facilities in Kenya, Malaysia, Pakistan and Turkey. Jaguar Land Rover employs a team of 26,000 people globally and supports more than 190,000 UK jobs through the supply chain, dealer network and wider economy.

The Challenge

- Migrate up to two million vehicle structure datasets from existing Teamcenter Engineering system to 3DEXPERIENCE Product Lifecycle Management (PLM) within the next three years
- Phased migration of sixteen complete vehicle programs from Teamcenter to 3DEXPERIENCE with systems coexisting during migration and with bi-directional synchronization of modified data

The Solution

- Consulting services and toolset to perform the phased migration
- Definition and implementation of dedicated migration processes executed with the T-Systems product PDM WebConnector
- Implementation of bi-directional synchronization
- Migration of PDM (part master, product structure, configuration data) and CAD data, including background data conversion during migration

The Benefits

- Increased efficiency through consolidation of disparate CAD and manufacturing systems in single Product Lifecycle Management solution
- No interruption to normal business during phased transition from Teamcenter to 3DEXPERIENCE
- Traceability of migrated vehicle structures at process level
- Allows system coexistence for smooth and flexible transition of vehicle programs

TCI – 3DEXPERIENCE TEAMCENTER INTEGRATION REFERENCE „JAGUAR LANDROVER“

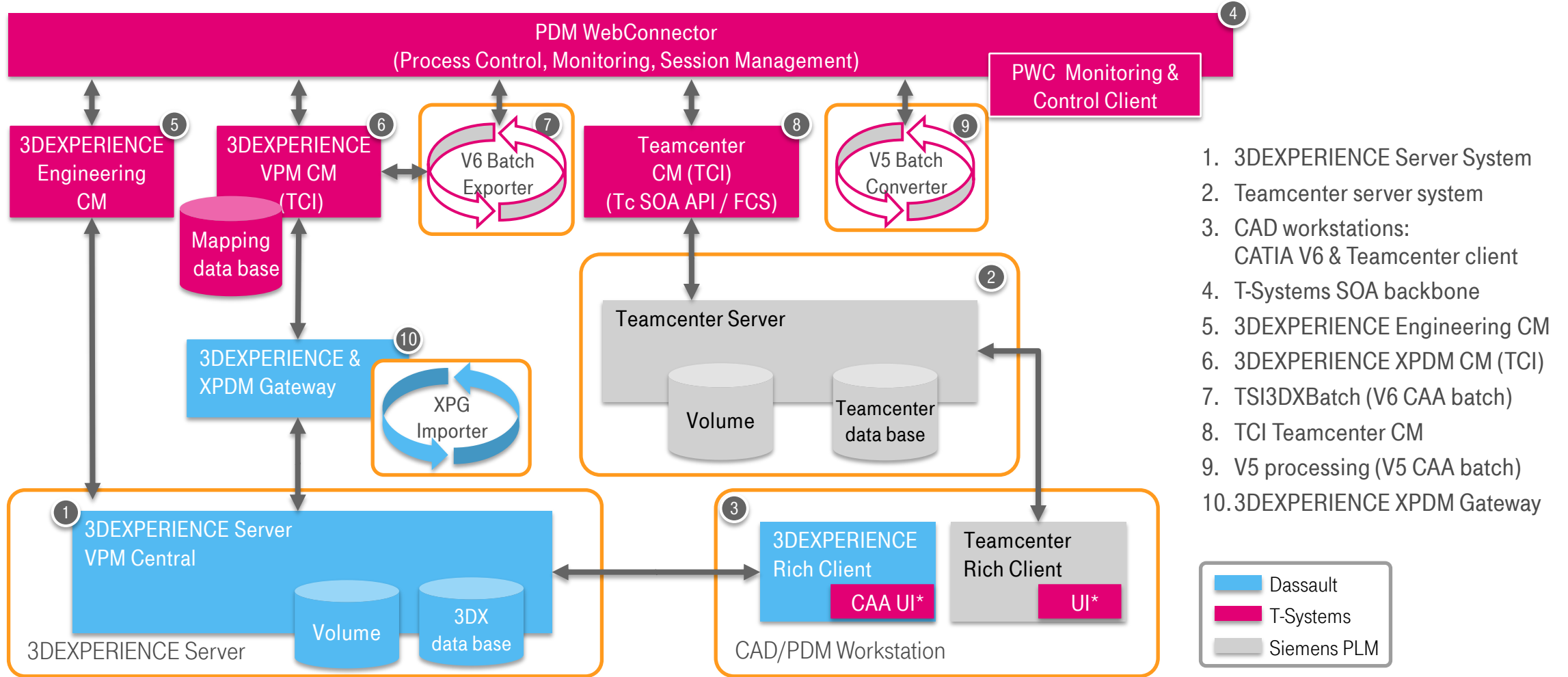


Covered topics

- Align CATIA V5 product structures with Teamcenter PDM structure
- CAD data structure export and import (CATIA V5 and CATIA V6)
- CATIA V5 to JT data conversion
- External batch integration with distributed file cache
- Object, type, attribute, revision and life cycle state mapping
- User and rights mapping
- Location of Control management (system ownership)
- Migration infrastructure (design, set-up, configuration)
- Configuration data migration (Product Configuration, Effectivities, Configuration Features)
- Folder export and import
- Process engine: export, import, list-processing, delta-processing, scheduled processes
- Reporting and monitoring

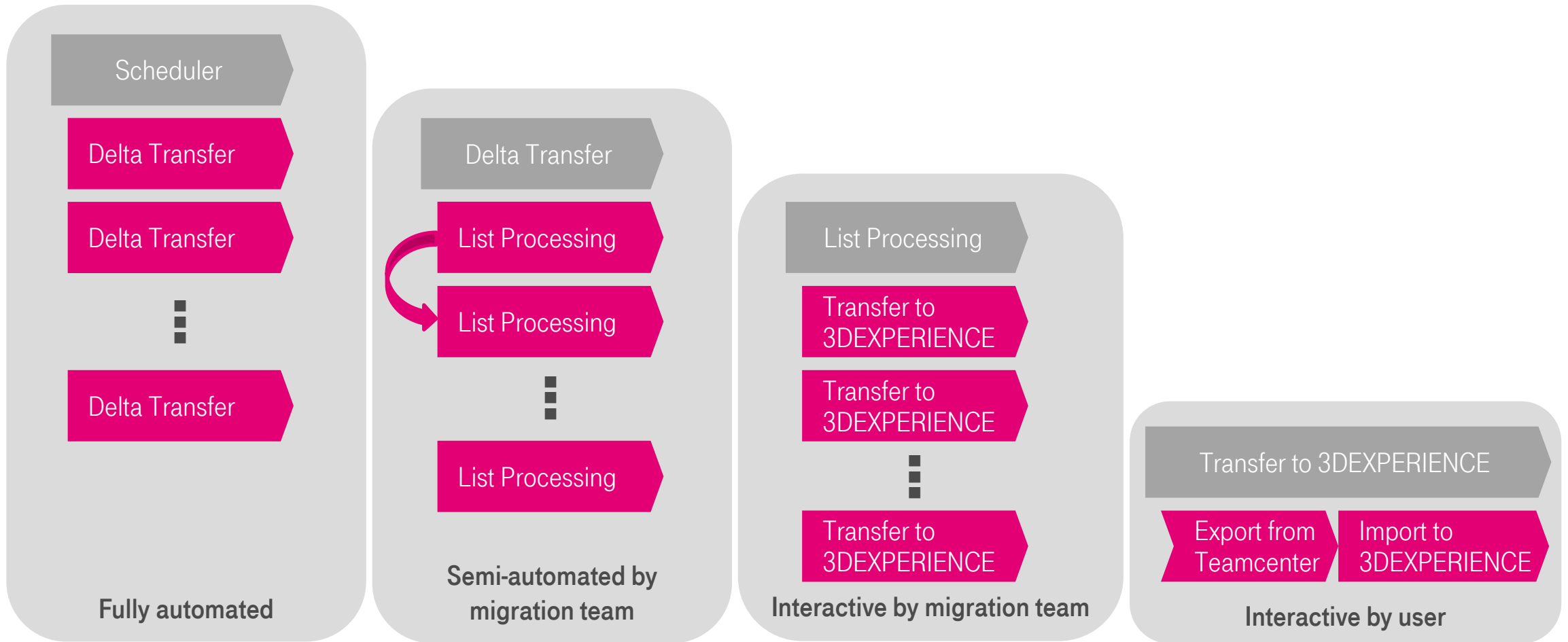
INTEGRATION ARCHITECTURE

PDM WEBCONNECTOR BACKBONE



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PROCESS TEMPLATES FOR MIGRATION



USE CASES AND LIVE DEMO

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SUPPORTED USE CASES

- Transfer Design Data as Reference to 3DEXPERIENCE
 - Design from Teamcenter is consumed in 3DEXPERIENCE product structure
- Transfer Design Data as Reference to Teamcenter
 - Design from 3DEXPERIENCE is consumed in Teamcenter product structure
- Transfer authoring rights from Teamcenter to 3DEXPERIENCE
 - New Revisions can be created in 3DEXPERIENCE and sent back as reference design to Teamcenter
- Transfer authoring rights from 3DEXPERIENCE to Teamcenter
 - New Revisions can be created in Teamcenter and sent back as reference design to 3DEXPERIENCE
- Apply filters based on Teamcenter configurations in 3DEXPERIENCE
 - Filter out configurations from 150% product structures

SCENARIO 1

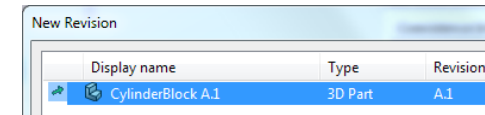
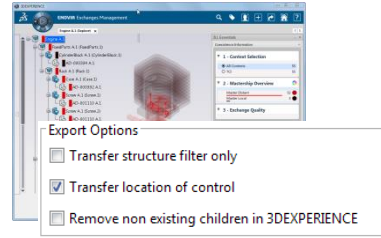
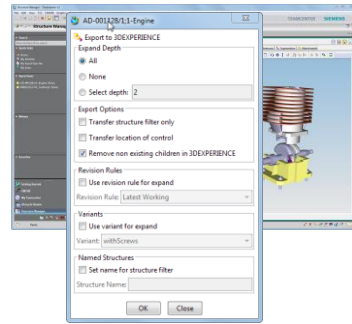
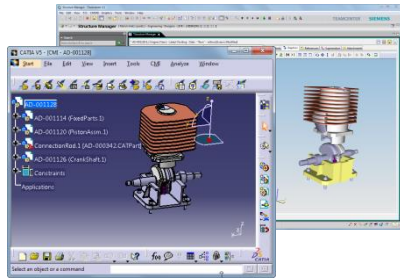
DESIGN ROUND TRIP 3DEXPERIENCE TO TEAMCENTER

1) Create CATIA V5 structure in Teamcenter

2) Export Structure to 3DEXPERIENCE

3) Change Mastership to 3DEXPERIENCE

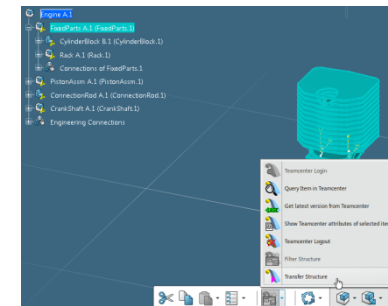
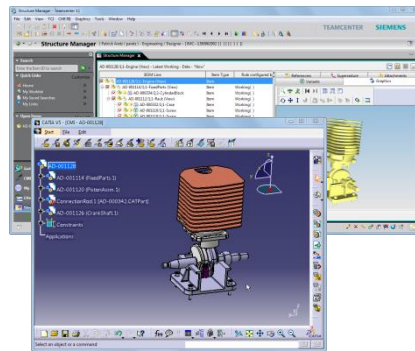
4) Revise in 3DEXPERIENCE



7) New Item Revision is available in Teamcenter

6) Transfer new Version to Teamcenter

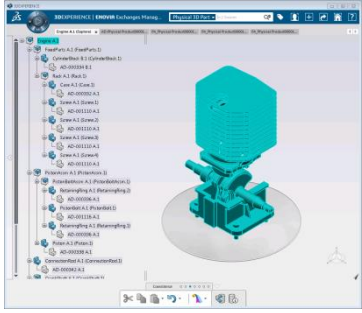
5) Modify new Version in 3DEXPERIENCE



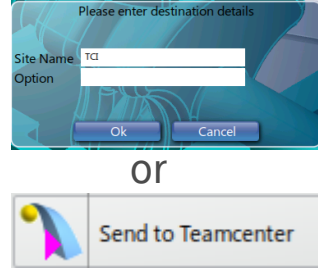
SCENARIO 2

DESIGN ROUND TRIP TEAMCENTER TO 3DEXPERIENCE

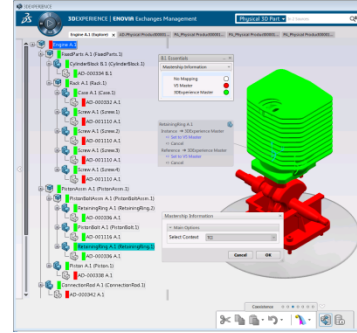
1) Create CATIA V6 structure in 3DEXPERIENCE



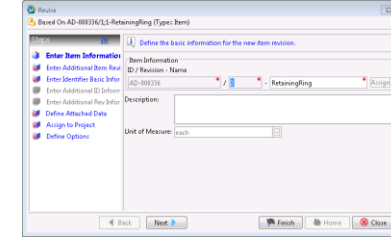
2) Export Structure to Teamcenter with XPDM



3) Change Mastership to Teamcenter



4) Revise in Teamcenter

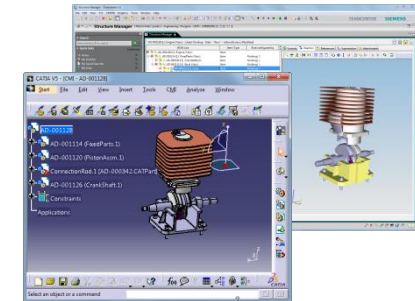
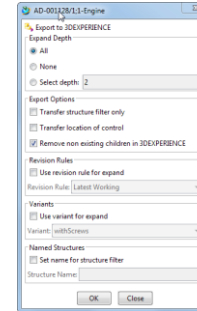


7) New Version is available in 3DEXPERIENCE

6) Transfer new version to 3DEXPERIENCE

5) Modify new revision in Teamcenter/CATIA V5

#	Display name ▲	Title	Name	Revision
1	PA_Physical Product0001164 A.1	PA_Physical Product0001164	prd00001164	A.1
2	PA_Physical Product0001164 B.1	PA_Physical Product0001164	prd00001164	B.1



RELEASE PLAN

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ROADMAP 2017

V 3.1.5 – Supported PDM System Versions

Teamcenter 9.1 (4-tier)
Teamcenter 10.1 (4-tier)
Teamcenter 11.2 (4-tier)
3DEXPERIENCE R2015x
3DEXPERIENCE R2016x
3DEXPERIENCE R2017x

V 3.1.5 – Added Features

- Provide information about data exchange status
- New Teamcenter export option “Transfer structure filter only”
- New 3DEXPERIENCE export command “Send to Teamcenter” with XPDM or direct export option
- Enhanced Send to 3DEXPERIENCE Dialog in 3DEXPERIENCE UI
- Enhanced UI functionality in Teamcenter and 3DEXPERIENCE
 - New command “Query for objects in 3DEXPERIENCE” in Teamcenter UI
 - New send from 3DEXPERIENCE command in Query dialog

Q1 2017

Q2 2017

Q3 2017

Q4 2017

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ROADMAP 2018

V 3.2.0 – Supported PDM System Versions

Teamcenter 10.1 (4-tier)
Teamcenter 11.2 (4-tier)
Teamcenter 11.3 (4-tier)
3DEXPERIENCE R2015x
3DEXPERIENCE R2016x
3DEXPERIENCE R2017x
3DEXPERIENCE R2018x

V 3.2.0 – Added Features

- Web UI for administration and process execution
- Show transfer status in CATIA V6
- Web file server with cache
- Distribution of batch-jobs for pre- and post-processing
- Use VPM filters for Teamcenter configurations

Q1 2018

Q2 2018

Q3 2018

Q4 2018

T . . . **Systems** .

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THANK YOU!