

ACI – 3DEXPERIENCE Aras Innovator Integration

T-Systems PLM Applications

 **T Systems**



About T-Systems

T-Systems – Trusted Partner in Digital Transformation



Advisory



Security



Cloud
Services

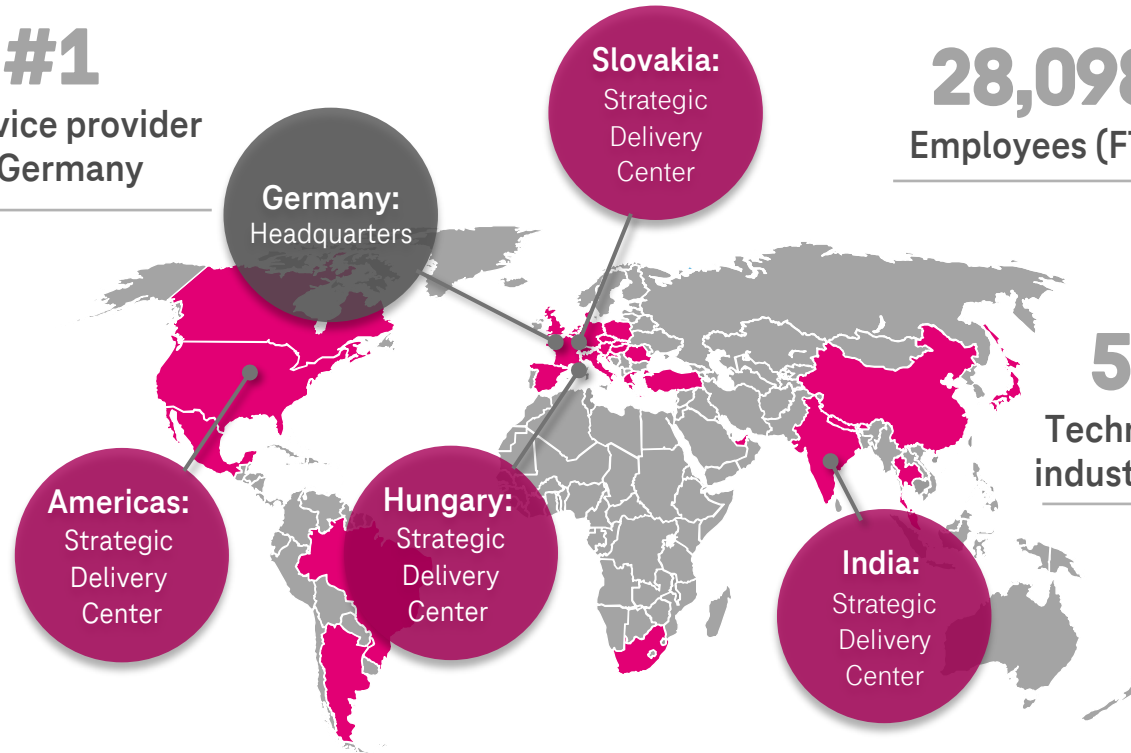
1010

Digital
Enabler

#1
IT Service provider
in DACH

20
Countries

#1
IT Service provider
in Germany



28,098
Employees (FTE)

500+
Technology and
industry partners

600+
PLM Experts

20+
Years of
experience in PLM

100+
PLM Success Stories

T-Systems PLM Solutions

**CUSTOMER
REFERENCES**



BOSCH

Gestamp

GETRAG

LEONARDO
INCENTIVITY AT YOUR SERVICE



MANN+HUMMEL

More than 500 PLM experts in our multiple PLM Competence Centers

T-SYSTEMS PLM OFFERING



PLM CONSULTING
WE ADVISE YOU TOWARDS
FUTURE ENGINEERING



**APPLICATION MANAGEMENT &
MODERNIZATION**
WE KEEP YOUR APPLICATIONS RUNN



**SMART ENGINEERING
WITH THE DIGITAL TWIN**
WE LINK YOUR DATA



IMPLEMENTATION
WE ENABLE YOUR BUSINESS
WITH MODERN PLM PLATFORMS



INTEGRATION AND MIGRATION
WE FACILITATE SEAMLESS PLM
WITH OUR PROVEN PLM PRODUCTS



PLM CLOUD
WE CLOUDIFY YOUR PRODUCT
DEVELOPMENT

**STRONG
PARTNERSHIPS**



SIEMENS



CONWEAVER



T-Systems PLM Solutions

Our Partners

Aras Corp.



- Aras Business Partner
- Aras Solution Partner
- Reseller Agreement

Dassault Systèmes



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

The Product

3DEXPERIENCE Aras Innovator Integration

XCI – 3DEXPERIENCE PDM Integration Product Family

Unified access to 3DEXPERIENCE

- A dedicated solution to connect 3DEXPERIENCE to another PLM system
- Functional enhancements from all integrated PLM systems contribute to the solution
- The access to 3DEXPERIENCE is independent from the integrated PLM-system
- Combines specialized functionality within a common integration platform
- T-Systems is certified by Dassault Systems as Application Partner for the XCI integration software

Unified access to 3DEXPERIENCE (XPDM, ADK, CAA, web services, converters, file cache, web client, operating, mapping)

XCI

common process engine
common integration
infrastructure

ACI

access to
Aras Innovator

TCI

access to
Teamcenter

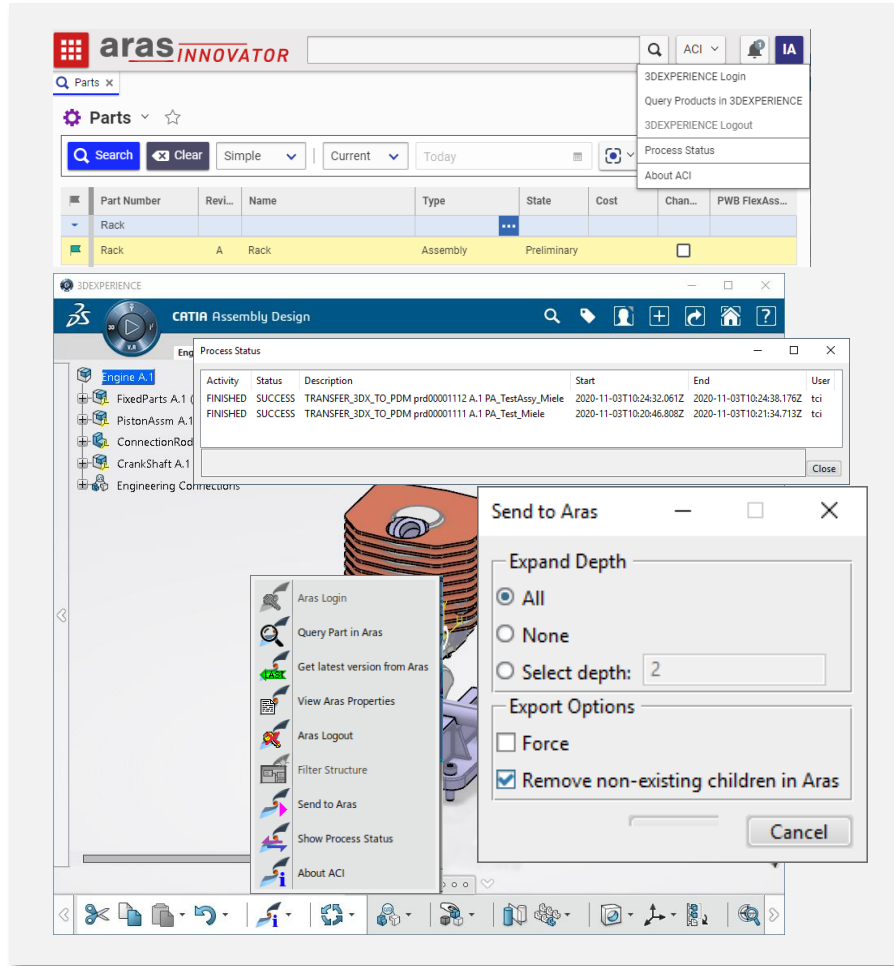
CCI

access to
CIM Database

access to
other PLM
systems¹

(¹) As project

ACI – 3DEXPERIENCE Aras Innovator Integration Overview



3DEXPERIENCE Aras Innovator Integration (ACI) is a standard product

ACI integrates asynchronously in the background

- Serves coexistence, cross-system border collaboration and migration scenarios
- Configurable for custom object, life cycle, revision, attribute mapping
- Integrates CAD data format conversion in both directions
- Supports exchange of configuration data (effectivity) and filtering
- Offers flexible support of customized data models
- Scheduled and triggered data transfer

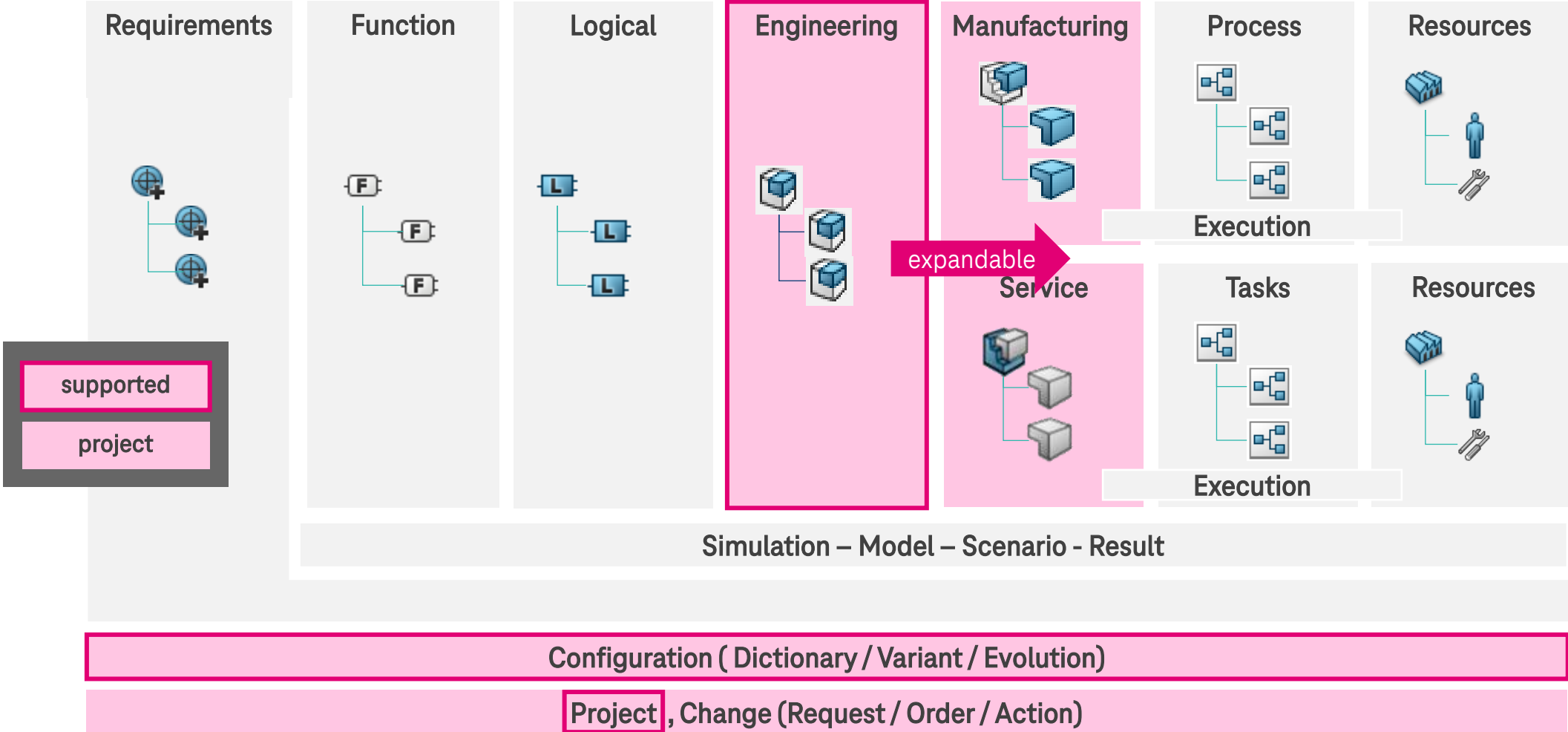
The integration is enhanced with interactive and synchronous functionality

- Client UI for Aras Innovator client and 3DEXPERIENCE Rich Client UI
- Administrative functionality in ACI web client

More information is available on: [3DEXPERIENCE Aras Innovator Integration](#)

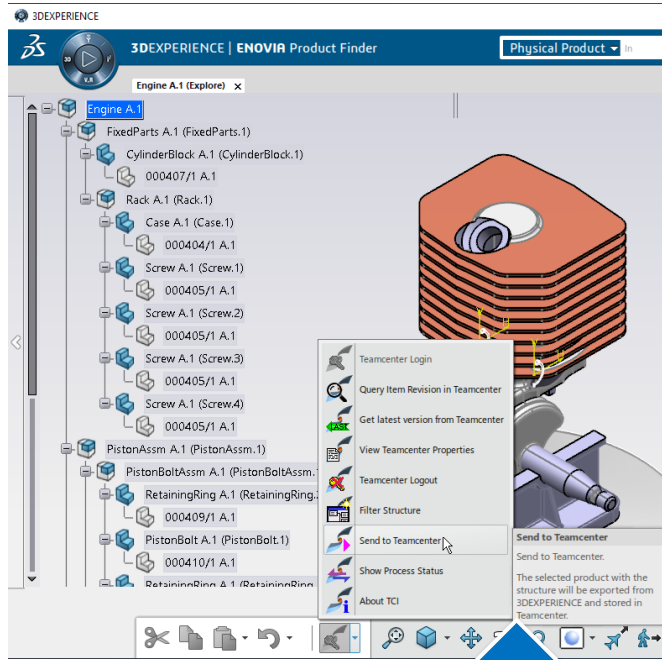
ACI – 3DEXPERIENCE Aras Innovator Integration

Supported 3DEXPERIENCE domains



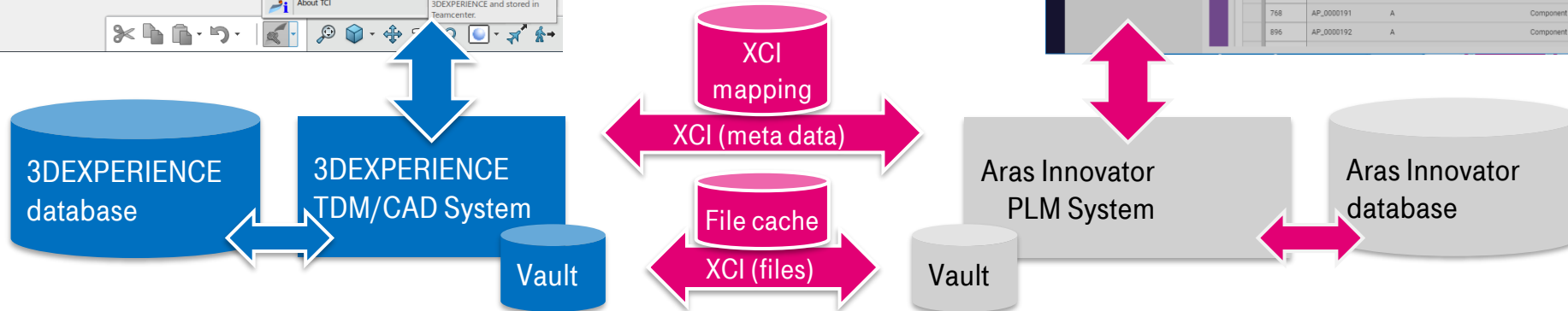
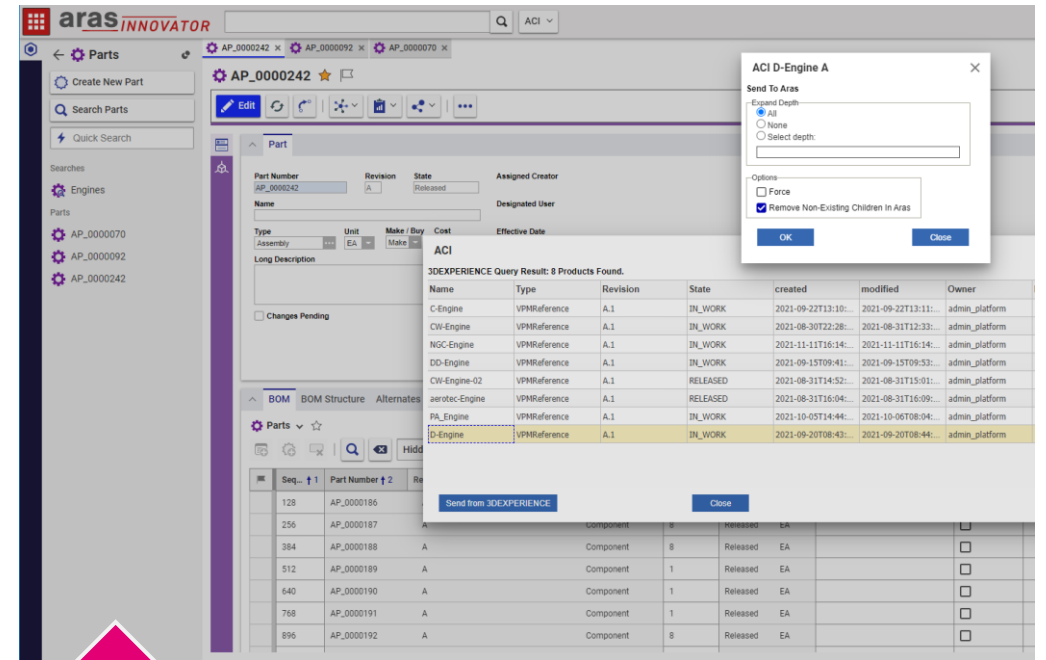
ACI – 3DEXPERIENCE Aras Innovator Integration

Basic Data Exchange Concept



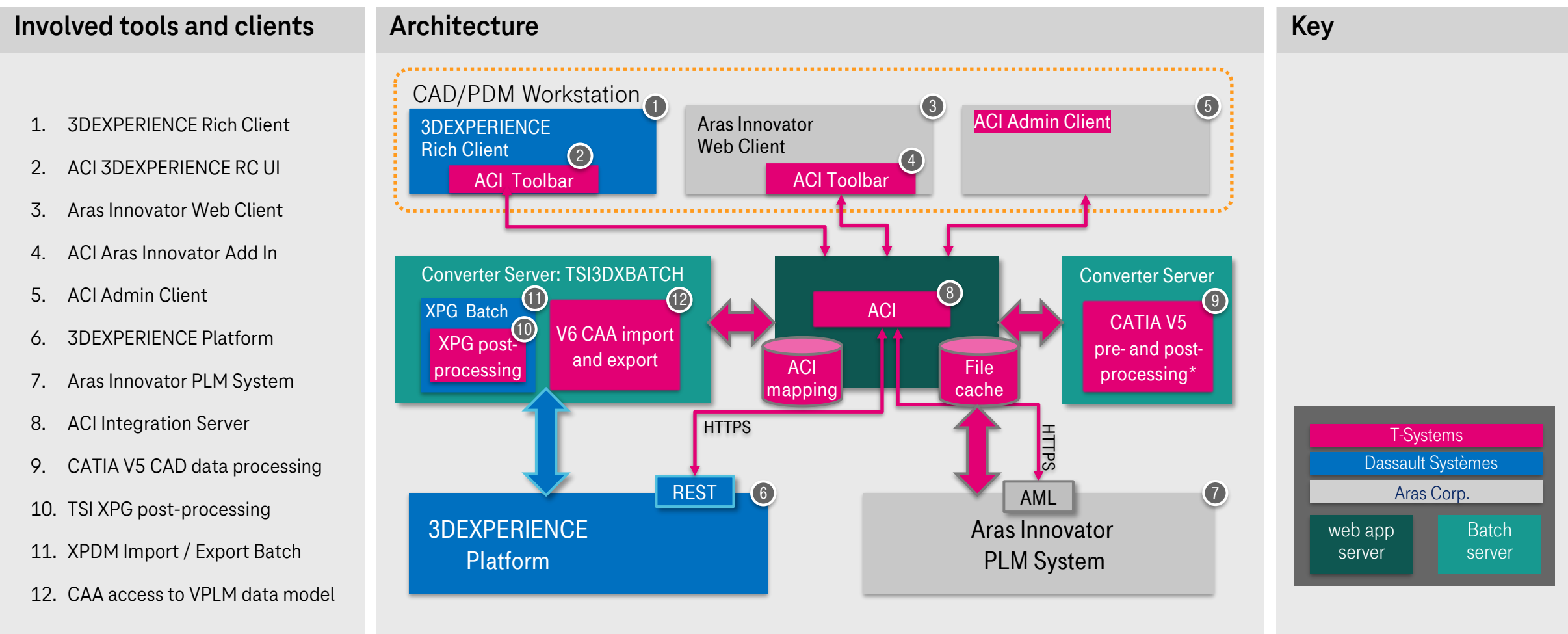
Mapping and Update of:

- Properties
- Revisions
- Product Structures
- V6 Maturity / LC Status
- V6 Workspace / Team Identity



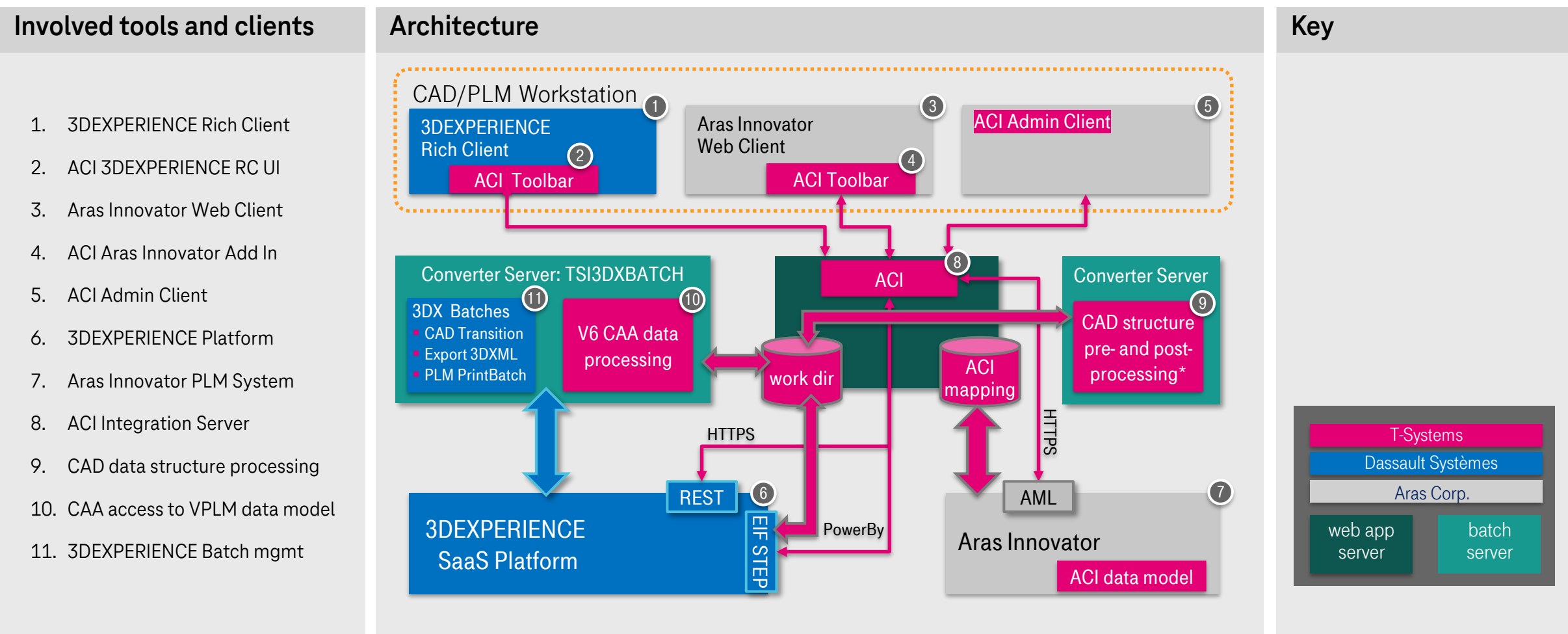
ACI – 3DEXPERIENCE Aras Innovator Integration

Extended XPDM Architecture for Aras Innovator



ACI – 3DEXPERIENCE Aras Innovator Integration

Extended SaaS EIF Architecture for Aras Innovator



ACI – 3DEXPERIENCE Aras Innovator Integration Administration Client

The screenshot displays the ACI Administration Client interface. At the top, a navigation bar includes the ACI logo and menu items: About, Aras, 3DEXPERIENCE, LIST, Process, Monitor, and Tools. A dropdown menu is open under 'Tools', showing 'Operations Persistent', 'Configuration', and 'Job'. A 'Send to Aras' dialog box is open, showing a 'VPMReference: 000398 A' and options for 'Expand Depth' (All, None, Select depth) and 'Export options' (Force, Remove non-existing children in Aras). A pink arrow points from a 'send to Aras' button in the tree view to the dialog box.

Navigation options (indicated by callouts):

- System Information
- Access to Aras
- Access to 3DEXPERIENCE
- List Processing
- Process Management
- System Monitoring
- Cache and Configuration
- Initiate Data Transfers

ACI · 3DEXPERIENCE Information

Tree View:

- 000398 A.1 Engine
 - 000387 A.1 FixedParts
 - 000385 A.1 Rack
 - 000386 A.1 CylinderBlock
 - 000392 A.1 PistonAssm

send to Aras

Send to Aras dialog box:

VPMReference: 000398 A

Expand Depth

- All
- None
- Select depth

Export options

- Force
- Remove non-existing children in Aras

Send to Aras

Logged

Name	Value
ID	15204.30390.14088.46377
Type	VPMReference
Name	000398
Revision	A.1
Vault	vplm

ACI – 3DEXPERIENCE Aras Innovator Integration

3DEXPERIENCE Rich Client / CATIA V6 UI Extension

The screenshot displays the 3DEXPERIENCE CATIA V6 interface with several Aras integration windows overlaid on a helicopter assembly model. The main window shows the 'Helicopter_Root B.1' assembly tree on the left and a 3D model of the helicopter in the center. Four dialog boxes are highlighted with red boxes and arrows:

- Aras Attributes:** Shows '3DEXPERIENCE Selection' and 'Physical Product' details for Part Number 'prd-R1132101372317-00001564' and Version 'A'. It also displays 'Aras Attributes' for the selected part.
- Results from Aras:** A table showing search results for the part number.
- Query Part in Aras:** A dialog for searching parts in Aras with fields for Search Type, Part Number, Revision, Name, Type, and State.
- Retrieve from Aras:** A dialog for retrieving data from Aras, including options for Expand Depth (All, None, Select depth: 2) and Export Options (Force, Transfer structure filter only, Transfer location of control, Remove non-existing children in 3DEXPERIENCE, Set name for structure filter).

At the bottom, a context menu is visible with the following items: Aras Login, Query Part in Aras, Get latest version from Aras, View Aras Properties, Aras Logout, Send to Aras, Show Process Status, and About ACI. The 'Send to Aras' option is highlighted.

keyed_name	itemtype	Part Number	Revision	Name	Type	State	created_on
prd-R1132101372317-00001565	Part	prd-R1132101372317-00001565	A	PA_Sub_Assy	Assembly	Preliminary	2024-08-15T14:35

ACI – 3DEXPERIENCE Aras Innovator Integration User Interface in Aras Innovator Client

The screenshot illustrates the user interface for the ACI - 3DEXPERIENCE integration in the Aras Innovator Client. The main window displays a part record for 'prd-R1132101372317-00001564'. A context menu is open over the part, with the 'Send to 3DEXPERIENCE...' option highlighted. This action triggers a dialog box titled 'ACI - Query in 3DEXPERIENCE', where the user can specify the product type (Physical Product) and name. The 'Query' button is used to execute the search. The results are shown in a table within the 'ACI' window, displaying one product found. A 'Retrieve from 3DEXPERIENCE' button is used to fetch the data into the client. This leads to another dialog box, 'ACI: prd-R1132101372317-00001564.A', which allows the user to configure the retrieval options, such as expand depth and various transfer options. The 'Retrieve from 3DEXPERIENCE' button in the main window is also highlighted with a red arrow pointing to this dialog.

ACI - Query in 3DEXPERIENCE

Type: Physical Product

Name: [Text Field]

Revision: [Text Field]

Title: [Text Field]

Buttons: Query, Close

ACI

3DEXPERIENCE Query Result: 1 Products Found.

Name	Type	Revision	State	created	modified	Owner	ID
prd-R113210137231...	VPMReference	A.1	IN_WORK	3/25/2024 4:08:45 ...	3/25/2024 4:08:45 ...	paretz	prd-R11321013723...

Buttons: Retrieve from 3DEXPERIENCE..., Close

ACI: prd-R1132101372317-00001564.A

Send To 3DEXPERIENCE

Expand Depth:

- All
- None
- Select Depth: [Text Field]

Transfer Substructures At Expand Depth In Parallel

Options:

- Force
- Transfer Structure Filter Only
- Transfer Location Of Control
- Remove Non-Existing Children In 3DEXPERIENCE
- Set Name For Structure Filter

Buttons: OK, Close

Data and Technology

3DEXPERIENCE Aras Innovator Integration

ACI – 3DEXPERIENCE Aras Innovator Integration

Processed Aras Innovator Items

Data objects

- Part Version
- CAD document with native_file and files
- Documents

Product structures and relations

- Part BOM
- BOM Instance
- Part CAD

ACI – 3DEXPERIENCE Aras Innovator Integration

Processed 3DEXPERIENCE Objects

Data objects

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

Product structures and relations

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

Configuration*

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

*in customer specific implementation projects

ACI – 3DEXPERIENCE Aras Innovator Integration

Low-Footprint Access To PLM Systems

Access to Aras Innovator

- Adaptive Markup Language (AML)
- REST API

Access to 3DEXPERIENCE

- REST API
- 3DEXPERIENCE batch infrastructure
- CAA Framework API
- Access follows P&O rules

Only On Premise

- MQL web servlet API
- XPDM Interface with post-processing

Only for Public Cloud

- EIF STEP Export / Import

ACI acts as client to the connected systems. No 3DEXPERIENCE server extensions is required!

Release Plan

3DEXPERIENCE Aras Innovator Integration

Product features and supported versions of integrated systems

ACI – 3DEXPERIENCE Aras Innovator Integration

Supported Software Versions

Continuously developed product (see release plan for details)

- Support of the four latest 3DEXPERIENCE Platform releases
- Support of the four latest Aras Innovator releases
- Older releases on request (down to 3DEXPERIENCE R2019x and Aras Innovator 12)
- Flexible combination of Aras Innovator and 3DEXPERIENCE versions

ACI – 3DEXPERIENCE Aras Innovator Integration Roadmap 2025

V 3.13 / V 3.14 – Supported PDM System Versions

Aras Innovator 12 (all SPs)

Aras Innovator 14+

Aras SaaS (29)

3DEXPERIENCE R2019x⁽²⁾, R2020x⁽²⁾

3DEXPERIENCE R2021x, R2022x, R2023x, R2024x, R2025x

3DEXPERIENCE Public Cloud (2025x)

⁽¹⁾ With availability

⁽²⁾ On demand

V 3.14 – Selected Features

- T.b.d

V 3.13 – Selected Features

- Enhanced 3DX Cloud support
 - EIF STEP Import: custom properties
- Simplified configuration
- Creation of CAD Structures in Aras Innovator

Q1 2025

Q2 2025

Q3 2025

Q4 2025

ACI – 3DEXPERIENCE Aras Innovator Integration Roadmap 2024

V 3.11 / V 3.12 – Supported PDM System Versions

Aras Innovator 12 (all SPs)

Aras Innovator 14+

Aras SaaS (29)

3DEXPERIENCE R2019x⁽²⁾, R2020x⁽²⁾

3DEXPERIENCE R2021x, R2022x, R2023x, R2024x

3DEXPERIENCE Public Cloud (2024x)

⁽¹⁾ With availability

⁽²⁾ On demand

V 3.12 – Selected Features

- Enhanced 3DX Cloud support
 - STEP Import: import unmodified Parts "as Reference"
 - Improved performance with REST services
- Map attributes with unit conversions

V 3.11 – Selected Features

- Split Level option for data transfer of large structures from 3DX to Aras Innovator
- Export of CGR from 3DX with REST services
- Support for all 3DXM batch export parameters

Q1 2024

Q2 2024

Q3 2024

Q4 2024

Commercial Aspects

3DEXPERIENCE Aras Innovator Integration

XCI – 3DEXPERIENCE PDM Integration Product Family Evaluation Support

T-Systems is not a vendor of a PLM system but a vendor-neutral integrator. T-Systems consults and supports customers with decision making. In comparison with PLM systems the TCO of the offered integration product is low. To evaluate and to use the T-Systems' integration products is a value by itself as it reveals weaknesses and strengths of the integrated PLM systems and its concepts. It helps the customer to understand and to define their needs and use cases better in a concrete and practical way. T-Systems ACI integration can transform the gained industrial expertise and make it available for customers.

3DEXPERIENCE – required licenses

On Premise

Product	Trigram
Collaborative Business & Industry Innovation, includes: CSV (Platform Contributor) IFW (Platform Member)	PCS
Engineering Adapter for X-PDM	MUX (not required for XPDM import with POWER'BY)
Engineering Data Exchange Manager	EXH (not required for XPDM import with POWER'BY)
Optional	
Product Manager	PDM (for Configuration / Variant Management)(required for authoring only)
Collaborative Designer for CATIA V5	UE5 (for CATIA V5 POWER'BY import)
Conversion Data Integrator	FO* (for XCAD conversion of specific format, e.g., FOJ for JT support)

3DEXPERIENCE – required licenses

Public Cloud

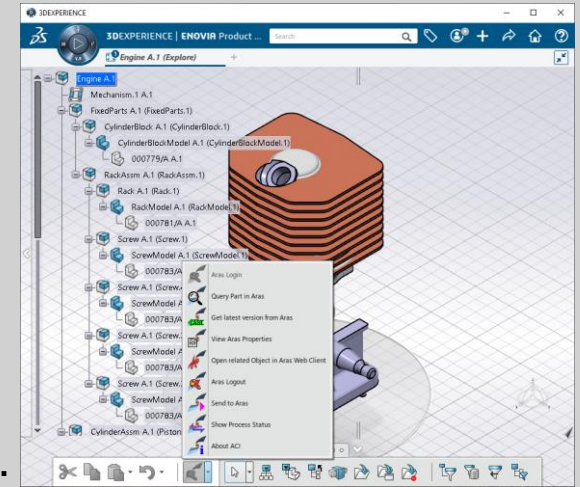
Product	Trigram
Collaborative Business & Industry Innovation, includes: CSV (Platform Contributor) IFW (Platform Member)	PCS-OC
Optional	
Enterprise IP Exchange Manager	XXH-OC (only for EIF STEP export/import)
Enterprise IP Exchange Package	XXK-OC (only for EIF STEP export)
Engineering Data Exchange Manager	EXH-OC (only for file batch export)

ACI – 3DEXPERIENCE Aras Innovator Integration Express Installation Package

10-days Express Installation Package



- ✓ Installation and configuration of an Aras Innovator environment.
- ✓ Import and validation of the Aras Innovator CAD data model.
- ✓ Basic configuration of T-Systems' ACI.
- ✓ Initial test of the environment.
- ✓ Training on the environment and methodology of Aras Innovator and ACI.



Easy Configuration & Installation
→ either by the customer or with the help of T-Systems experts.



T-Systems Product Support
with product and industry expertise
are available whenever needed

ACI – 3DEXPERIENCE Aras Innovator Integration

Services around the Integration – Functional Enhancement

Express Installation Package

Out of the Box (OOTB)

The ACI product comes with many OOTB functionality, which is defined as such:

- After installation and setup at the customer site the respective use case is working without need to modify the integration software
- A clear 1:1 mapping is available in both the standard 3DEXPERIENCE and Aras Innovator data models.
- The OOTB functionality is maintained for new versions of Teamcenter and 3DEXPERIENCE by T-Systems.

Configuration and Customization

To adapt the Integration to the needs of the customer. Such services are usually performed during an initial support project.

Configuration

- Will satisfy use cases by modifying the ACI configuration files (data mapping file) or integration setup (eg., batch modules used).
- Covers any data model customizations in 3DEXPERIENCE or Aras Innovator

Customization

- Ad-hoc implementation for small custom-specific changes in the behavior which differ from the standard behavior of the integration

Custom Project

Functional Enhancement

In addition to the standard services T-Systems offers extended services to satisfy additional use cases

- To cover a specific use of functionality in one or both PLM systems (Aras Innovator or 3DEXPERIENCE) that is not commonly used or deprecated.
- To cover scenarios where there is no direct match of the functionality in the other PLM system.
- When new functionality is required outside of the regular release cycle of the software (which requires a customer-specific release).

Customer References

3DEXPERIENCE Aras Innovator Integration

XCI – 3DEXPERIENCE PLM Integration

Key References



Automotive OEM

TCI –3DEXPERIENCE Teamcenter Integration

United Kingdom, in use since 2014, company license

Full scale migration of configured vehicle structures and back-propagation of changes



Jewelry Manufacturer

ACI –3DEXPERIENCE Aras Innovator Integration

Valenza in Italy, in use since 2016, one server license, 13 user licenses

3DEXPERIENCE design structures are updated to a marketing BOM in Aras Innovator



Mahindra

Automotive OEM

TCI –3DEXPERIENCE Teamcenter Integration

India, in use since 2022, one server license

Full scale migration of configured vehicle structures with classification



翌耀科技

Easun Technology

CCI –3DEXPERIENCE CIM Database Integration

China, in use since 2022, one server license, 10 user licenses

Export of 3DEXPERIENCE product structures and import as CIM DB Document Structures with Part creation. Export of various file formats, also for visualization in CMI DB

Thank you!

 **Systems**

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3DEXPERIENCE Aras Innovator Integration

<https://plm.t-systems.net/aci>