Greenfield ARAS implementation for F&B major in EU

Technical Stack: ARAS Innovator

Background:The customer migrated from a legacy PLM system to ARAS Innovator to enhance product lifecycle management, improve compliance tracking, and scale with business growth.

Solution details: The solution involves migration from the legacy PLM, implementation of Recipe, Raw Material related business data model, lifecycles and workflows and customization to implement Compliance and Quality Management.

Challenges Faced:

- Lab Testing Views: OOTB views for lab testing comparison were not available - Developed enhanced customized comparison views for lab testing data.
- Change Management: Implemented complex business rules for change requests and approvals.
- Project Management: Adapted workflows to meet evolving business needs.
- Data Integrity: Migrating inconsistent legacy data required significant cleansing and validation.

Project Management using ARAS for Marine Domain

Technical Stack: ARAS Innovator
Background:The customer operates a consultancy in marine domain and required a web application to manage user information and provide manufacturing details of ships and vessels.

Solution details: The solution encompassed, comprehensive customization and configuration, including Excel digitization, to seamlessly integrate existing data into the ARAS system. Implemented role-based access to ensure secure and appropriate user permissions also customizing the system to automatically add relationships between data entities. Additionally , carried out extensive UI customization, including theme changes, to enhance user experience.

Challenges Faced:Handling extensive and intricate project data, including vessel specifications and compliance records. Required load testing the ARAS system to ensure handling of large data volumes and user loads. Navigating and embedding various maritime regulations and standards into the ARAS workflows.

ARAS implementation for a FMCG manufacturer

Technical Stack: ARAS Innovator
Background:The company operates within the commercial industry vertical and aimed to leverage Product Lifecycle Management (PLM) to managing data. Their previous PLM was Agile PLM

Solution details : The implemented solution not only addressed current data management but also provided a scalable foundation for future growth and innovation. Using ARAS Innovator, the project encompasses all stages of the product lifecycle, including design, product development and testing, production and launch, market introduction and growth , where the goal is to manage and store the data of entire lifecycle of the product, from raw material gathering to packaging and marketing.

Challenges Faced: Extensive customization including customization using third party front end and backend libraries. Complex rules that required developing a Business Rule Engine.

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ARAS performance consultation

Technical Stack: ARAS Innovator

Background: A French industrial group was facing performance and customization issues with their ARAS installations across different geographical locations.

Solution details : In the discovery phase, developed a proposal, technical solution and roadmap to resolve their performance and customization issues, suggest best practices migrate data from their legacy systems and the optimum way to upgrade to the latest ARAS version.

Challenges Faced: Multiple sites in different continents, heavy CAD usage.

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ARAS Import utility

Technical Stack: ARAS Innovator, C#

Background: A lot of customers have bespoke ERP/PLM systems and they want to import artefacts from source systems into ARAS for any greenfield implementation.

Solution details : An import utility was developed that parsed XML files containing CAD and non-CAD data as well as metadata, and using ARAS APIs created artefacts as well as datasets into the ARAS system.

Challenges Faced: Corrupted data generated by the source system. Validation failure during import into the ARAS system due to incompatible data types

Outcome: Diverse data was successfully imported from bespoke systems to ARAS

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PLM Mobility using ARAS

Technical Stack: ARAS, NodeJS

Background: This was a proof of concept for developing a mobility platform for ARAS.

Solution details : The front end sent lightweight http requests to the NodeJS server. The NodeJS server adaptor converted the requests into XML over http service calls to the ARAS server.

Challenges Faced: Performance issues due to conversion, issues with connectivity and XML transformation

Outcome: Iristechsys was able to successfully demonstrate that any mobility client capable of sending lightweight http requests will be able to carry out complex manipulations on the ARAS server.

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Ticket Management System using ARAS

Technical Stack: ARAS

Background: There was a need to streamline process for employees to raise issues and queries and request each others help.

Solution details : The solution had five key aspects:
1. Changes to the data model - Ticket and related artefacts were created including appropriate properties such as Owner, priority, technology.
2. Changes to the forms - Forms were amended to add the appropriate UI widgets and also manage the enablement/disabling of certain properties. For eg, the resolved date-time was hidden until the ticket was in a new or assigned state.
3. New Lifecycle states - A new lifecycle map was introduced to manage the state of the Ticket. A server method was introduced during transition that automatically set few ticket properties
4. New Server side methods - appropriate server side methods were added for promotion of Ticket item and setting properties.
5. Identities and permissions - New identities were added that mapped to employees and they were assigned appropriate permissions

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Teamcenter migration + Enhancements

Technical Stack: Tc ITK, Tc csv2tcxml, Tc tcplm_import utility, scripts, BMIDE, RAC Stylesheet changes

Background: The customer is a Fortune 500 company and required to migrate parts, documents from legacy inhouse system to Teamcenter in addition to some Teamcenter enhancements

Solution details: The solution had five major components.
1. A script that transformed legacy system data to a csv format that Tc utilities could parse.
2. Data model and stylesheet changes
3. Workflow related changes to enable new part approval workflows
4. Changes in the T4EA mapping
5. Custom ITK utility to apply correct statuses on the revisions

Challenges faced: Few parts had alternate ids provided in input files – so required brute force search in database. Multiple runs on SIT required to weed out unwanted data before moving it on to the production.

Outcome: About 200000+ artefacts (Parts, Documents) were successfully migrated to Teamcenter. In addition, about 20000 parts were applied custom relationship in Teamcenter.

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Pro-Intralink to Teamcenter migration

Technical Stack: Pro-Intralink, Teamcenter- ITK, XML Parsers

Background: The client was in a hi-tech industry vertical and it was required to migrate both CAD data and metadata of assemblies from Pro-Intralink to Teamcenter

Solution details: The solution had two major components.
1. The export component exported metadata of Pro-Intralink Artefacts along with the CAD data (ProE).
2. The import component consisted of an ITK script which parsed XML business rules, XML metadata and the CAD data and accordingly imported it in Teamcenter.

Challenges faced: Multiple challenges including CAD data quality issues, missing references, missing meta-data, business rule failure for specific assemblies, corrupted CAD data.

Outcome: About 10000+ multilevel assemblies were successfully migrated from Pro-Intralink to Teamcenter

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Teamcenter Configurator Implementation

Technical Stack: Classic Options and Variants, ITK

Background: The customer was a valve manufacturing company. A valve has dozens of parts and variants. It was increasingly becoming difficult for the customer to correctly configure and assemble valves for the customer.

Solution details: The solution consisted of three steps.
Step 1 was to create a generic valve assembly consisting of all the variants.
Step 2 was to create variant rules in Teamcenter.
Step 3 was to parse an excel sheet and apply specific variant conditions so that the assembly is fully configured. All the steps were implemented using ITK scripts and O&V ITK API.

Challenges faced: Setting up a generic assembly, creation of O&V business rules using ITK API due to scant documentation.

Outcome: The time required to configure valve assemblies against a customer order dropped from 8 hours to 2 hours.

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SOA based Teamcenter connector

Technical Stack: Teamcenter SOA, Spring Boot

Background: The customer is an automotive company. They wanted to integrate Teamcenter with a third party app

Solution details: The aim of the project was to create a SOA based Teamcenter connector to implement functionalities like: a. Search and fetch object properties in batch mode b. Upload/download files to Teamcenter c. Create relationships between different business objects d. Recursively process folder contents The above functionalities are exposed through spring boot REST APIs

Challenges faced: Scant documentation for SOA, firewall issues preventing successful invocation of the exposed APIs. Also build dependencies across Teamcenter versions as the deployed Tc minor version was different than the version where the SOA connector was developed.

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CAD connectors implementation (Tc Product development)

Technical Stack: NX, SolidEdge, SolidWorks API, Teamcenter Rich Client

Background: This was a part of the Teamcenter product development within Siemens PLM.

Solution details: The application was designed keeping in mind CAD engineers who want a seamless interface with PDM systems. It involves full-fledged business logic to interface with Teamcenter system and has a number of CAD connector modules, which communicate with various CAD tools using SOAP or JNI calls and using respective CAD APIs.
Specific business logic included:
- Reconciliation of CAD assembly and parts
- Reconciliation of CAD attributes (like UOM, batch number etc)
- Exchange other data such as parametric modelling variables, transformation matrices etc.
using CAD API

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CAD Customization for a Malaysian Client

Technical Stack: DraftSight API, .NET framework

Challenge:
- Inconsistent 2D CAD drawings with duplicate symbols, outdated tolerances, and non-standard colors.
- Manual cleanup was time-consuming and error-prone.

Solution:
- Automated scripts for drawing cleanup, tolerance adjustments, and scaling.
- Automated scripts to detect and remove duplicate symbols.
- Parametric scaling for uniform adjustments across multiple drawings.
- Standardized color conversion for better visualization and compliance.

Impact:
60% reduction in manual effort

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Automated G-Code & M-Code Generation for Crankshaft Journal Turning

Tech Stack: AutoCAD API, .NET framework

Challenge:
This was a part of low cost automation. A low cost automation CNC lathe was installed at the site for crankshaft journal rough turning.
Manual programming of G-Code and M-Code for crankshaft Journal turning was time-consuming and error-prone. Inconsistent toolpath optimization led to inefficiencies in machining.

Solution:
Automated extraction of geometric features i.e crankshaft journal regions from AutoCAD models. Scripts to generate optimized G-Code and M-Code based on the models. Toolpath depth standardization for improved machining precision.

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