



Q&A with SUPACAT

The Project • The Stakeholders • The Engagement • The Success

As the Australian Defence Force sought to modernise its land assets and vehicles, PhoenixPLM customer Supacat was there to support. Supacat, a proven military vehicle design and development company, began consulting with PhoenixPLM Digitalization experts, forming a formidable response to the project at hand.

This interview with David Kretschmer | Rheinmetall Partnership Lead and Kevin Metcalf | Principal Engineer | Teamcenter PLM Lead from Supacat, steers through some of the processes & engagements that the two firms collaborated on and then discusses what success looked like as well as what's next for Supacat.

Prelude

Who is Supacat?

Supacat is a compact prime in Land Systems, established in Australia in 2012 and servicing the Asia-Pacific market. We do a lot of the design and development of military vehicle technology and components. We have our own vehicle platform that we provide to Defence, and we support Rheinmetall with their defence projects, such as LAND 400. Our core competencies are engineering and integrated logistics for products.

Who is PhoenixPLM?

PhoenixPLM is a leading consultancy partner for digital transformation for manufacturing businesses in Australia and New Zealand. We identify opportunities across all industries participating in the manufacturing sector. Everything we do is focussed around aligning business goals with outcome driven technology built for digital transformation.

What is the LAND 400 project?

David:

In 2016 the Government announced support to modernise Australia's defence capability. What that came to look like was a \$270 billion budget, and, within it, provision to upgrade the Army's armoured vehicle family. There are several projects within the armoured vehicle modernisation program, such as the LAND 400 Phase 2 project which will replace the ASLAV (the Army's current Australian Light Armoured Vehicle) with Rheinmetall's 8-wheeled Boxer Combat Reconnaissance Vehicles. Supacat assisted Rheinmetall with the demonstration of their vehicle to the Australian Army, and we now support them in the design and production of these vehicles.

Government Funding and Support?

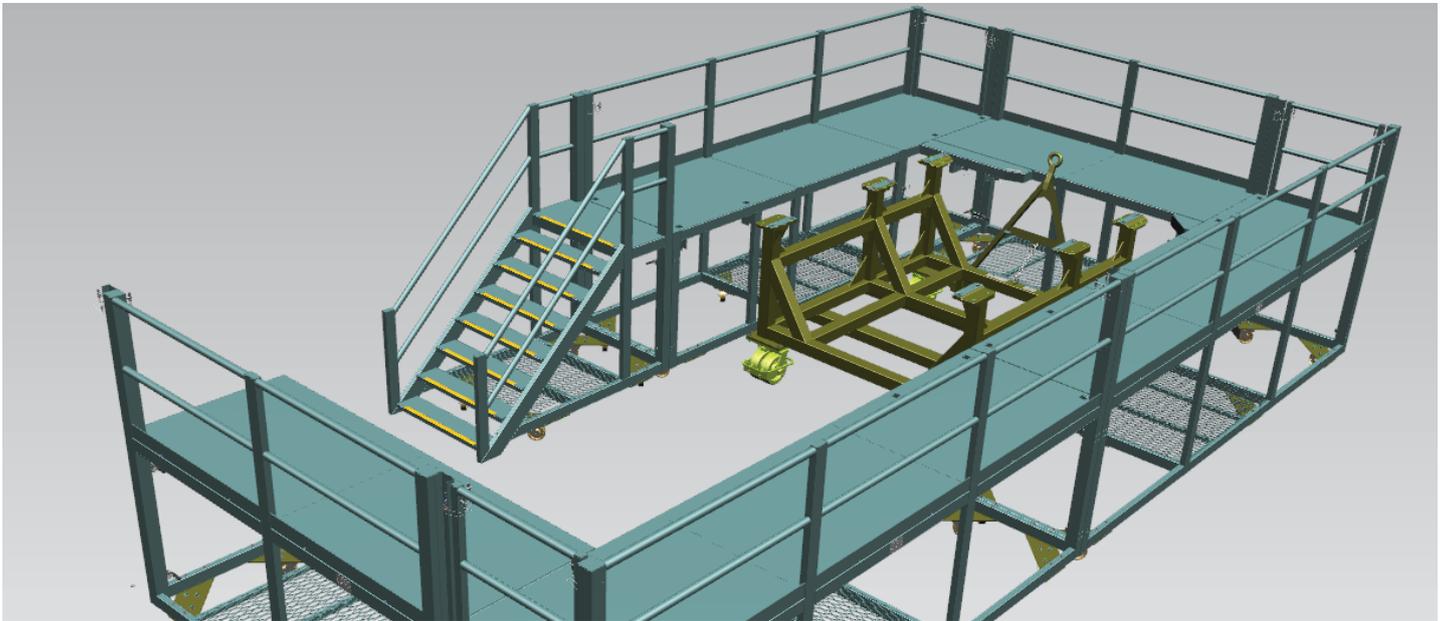
David:

The government is committed to ensuring Australian businesses like Supacat are at the heart of the \$270 billion investment in defence. Defence companies bidding for contracts were required to demonstrate commitment in their tender responses by building a team of Australian businesses, such as Supacat, into their bids and project activities. There were also a range of grant funding initiatives to support small-and-medium enterprises to enhance their capabilities. Supacat was successful in applying for a Sovereign Industrial Capability Priority grant to help fund the implementation of Siemens Teamcenter PLM platform. The grant that Supacat was awarded covered 50% of the acquisition and implementation costs for projects that support manufacturing or specialist capability to boost/uplift our capability to support Defence objectives & procure specialist engineering capability.

How did PhoenixPLM come to work with Supacat?

David:

Supacat first engaged with PhoenixPLM to acquire Siemens NX CAD, the preferred CAD software for the LAND 400 project. Engaging PhoenixPLM to assist with the design and implementation of Teamcenter was a natural extension of the relationship.



Why Digitalization?

The Implementation of Teamcenter.

David:

For Supacat, digitalization enhances our capability to work on large scale defence engineering programs.

Teamcenter enables us to scale and handle a larger volume of work without the risks and inefficiencies of manual processes. The governance and management of technical data was a big part of it. Teamcenter has allowed us to move away from manual processes – we can now rely on consistent version control and approval workflows.

Teamcenter in our world can be likened to Microsoft Word. You can't do your job without Microsoft Word. Teamcenter is our Microsoft Word, it is enablement software.

My team needs the right tools to do the job properly. Automating workflows and data management routines has been a big win for the business. It's important that the specialists in the business can focus more on the customers' projects and less on manual processes and the quality issues that arise from them. Digitalization also reduces the learning curve for new staff.

"Teamcenter allows our team of engineers to deliver more and deliver better, which is obviously good news for our customers."

Product Selection and Decision Making

Kevin:

The security element and speed of Teamcenter were the two most appealing benefits. The ability to segregate individual projects and more finely control staff access has enhanced security and protection for Intellectual Property. We have more control over the project now, whereas that had been challenging to manage across various departments when working with Windows Explorer.

Supacat had been considering Teamcenter since we first started using Siemens NX CAD, which is close to five years now. It had always been something aspirational for the business. As our projects got larger, the burden of manual workflows became unsustainable. We were using Windows Explorer and spreadsheet to manage the checking, approval and release of product, which was incredibly manual, slow and prone to error.

We spent a lot of time documenting requirements, comparing different solutions, and speaking with the greater team to figure out what functionality was really needed.

I did a detailed analysis of the manual tasks, the time they took and the demand they put on different people. I helped develop a comprehensive business case, and there was a clear return on investment.

We've made huge leaps because of Teamcenter... we are massively more efficient now than we were two years ago.

Resistance to Change

Kevin:

Implementation has been very well received by the team. The team was included in the requirements and design phase, and we also engaged PhoenixPLM to run user training for everyone. We were sensible with the scale of the initial deployment. Teamcenter has so much functionality, but we kept to the basics, focusing on good data management and key workflows. One of the success factors was not overwhelming the team with functionality. We have laid strong foundations for future enhancements.

The benefits of Teamcenter were immediately felt by the team. There were even some unanticipated benefits.

The design engineers have much better integration with the CAE analyst engineers because Teamcenter has automated so much of the handover of technical data. Before Teamcenter, we had rudimentary version control and inter-team communications. There was often a lot of discussion and emails, and it would take up to a week to transfer a project across to the CAE team. Now, the CAE team logs into Teamcenter and there are very few follow-up emails. This has been a significant improvement to the speed and accuracy of technical handover between the two teams.

Implementation - Finding Features - Realising Benefits

Workflows

A workflow in Teamcenter allows a business to manage processes related to product data, accommodating business procedures and strengthening business performance.

Kevin:

We started with the foundational basic workflows that PhoenixPLM put together for us. We also came up with a number of workflows that were different from the original requirements as we learned more about Teamcenter's functionality.

PhoenixPLM provided a lot of coaching in parallel to their implementation. I went on their administration courses, which, with assistance from PhoenixPLM, allow me to develop workflows myself. We are now able to make improvements to existing workflows and develop new workflows. I'm looking to extend Teamcenter workflows further into our CAE analysis team, and into our supply chain / production management team.

Configuration Management – Product Baselines

Teamcenter provides a user-friendly way to create a baseline of work-in-progress and report the differences between design baselines. Baselining supports design reviews at key milestones, and reviews between teams.

Kevin:

Teamcenter has enhanced our ability to manage technical configuration baselines. Our manual processes limited the traceability between what the design team created, what was sent to the CAE analysis team, and what was delivered to the customer. Before Teamcenter, we were copying multiple files and putting date stamps on things. We now take digital snapshots of the design at various points in time and have full confidence they're going to be accurate, and version controlled.

The CAE analysis team can now start work from a technical baseline and get notified of any changes made to the design. This allows concurrent engineering design and analysis activities. The productivity gains are significant. Not only do we have better design feedback and iterations, the customer benefits from reduced project delivery times.

“Speed and accuracy of data have been by far the two of the most significant benefits we have realised.”

David shares Kevin's view on the benefits of baselines.

David:

Teamcenter's ability to quickly create snapshots has reduced response times for the customer. Prior to Teamcenter, it would take several weeks for the team to deliver a technical snapshot to the customer. Once Teamcenter was in, it took Kevin a day to provide a snapshot. And we had full confidence the snapshot did not contain configuration errors. There are two immediate payoffs from that enhancement. My project costs are reduced, and the customer receives an excellent outcome. As a business supporting large defence projects, that outcome cannot be overstated.

“David came to me with a customer request for a ‘work in progress’ snapshot. Prior to Teamcenter it would have taken a week or two to provide an accurate snapshot. With Teamcenter and with a little automation from NX open capability we were able to respond with an accurate snapshot in 24 hours. Teamcenter gives us much better efficiency and productivity.”

BOM Management

Managing the list of parts, items, assemblies, subassemblies, intermediate assemblies, documents, drawings, and other materials required to create a product using Teamcenter.

Kevin:

Supacat used a spreadsheet to track all parts from their CAD structure as our way to manage the product Bill of Materials.

Prior to Teamcenter, we would manually extract information from NX into a spreadsheet to track the status of every single part within a product. Not only were we double-handling information, we also had to maintain that spreadsheet over the project to keep it up to date so we knew what the status of everything was at that time, and how close we were to completion.

The manual process required significant effort from our design engineering team.

We estimated that maintaining that BOM (Bill of Materials) spreadsheet was about three weeks of full-time effort on a large project. With our Teamcenter implementation, we've ensured that the information inputted into the CAD environment gets mapped across to Teamcenter and is visible in the Teamcenter Structure Manager. This has replaced our spreadsheet and the manual BOM management processes. Not only have the time savings from this change been significant, but it has also eliminated another source of potential quality issues.

Supacat has seen immediate benefits from the implementation of Teamcenter.

“These areas are where weeks of effort that have been saved. But there are also plenty of smaller changes that contributed to efficiencies. These also add up to greater efficiencies across the board. And that's for every single project that we do, not just a one-off.”

The Future

Supacat have several Teamcenter enhancements on their radar which will further increase their capabilities.

Kevin:

There is more we can do to improve our CAE analysis processes. For example, we're looking at extending workflows and developing more automation routines.

Document management we have only really lightly touched on, and there's more we can do in that space.

There is also functionality in NX CAD that would be beneficial in future projects, particularly Weld Assistant Tools.

David also sees more benefits coming from Teamcenter in the future.

David:

My focus is on our customers, and that's where my strategic priority lies with Teamcenter. I'm very happy with the implementation and the benefits gained so far. Kevin has a solid roadmap for extending Teamcenter functionality, and PhoenixPLM will continue to support our Teamcenter journey. Teamcenter is a great asset, we'll continue to leverage it further for our endeavours in supporting defence capability.

There is a lot more functionality that Teamcenter has that we'd like to use, but we're taking small steps and making sure we implement everything at the right time, getting the most benefit out of what we are using.

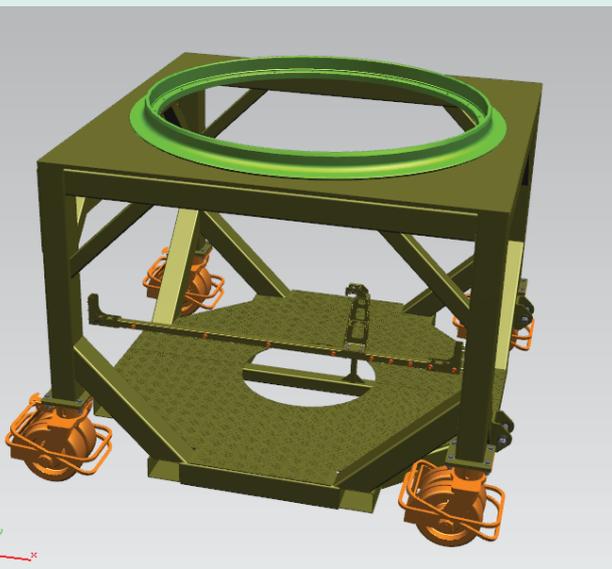


Testimonial

PhoenixPLM has been a great partner in our Teamcenter implementation. They've been very supportive, helping us get the foundations right and the product embedded into the business. They've also ensured Kevin and our team have the knowledge they need to support Teamcenter ourselves. I look forward to their continued support as we further develop Teamcenter within our business.

DAVID

The Bottom Line



- Improved customer responsiveness. Prior to Teamcenter, it took Supacat several weeks to prepare and deliver a technical snapshot to the customer. It now takes less than a day, and there is greater confidence in quality of the technical data.
- Improved handover between teams. The baseline functionality and configuration traceability for our CAE analysis and supply chain teams has reduced the time to handover a product design. It also reduces the time taken to review design changes between baselines.
- No more spreadsheets. Using manual spreadsheets to track design changes, manage BOM's (Bill of Materials) and file versions required significant effort and was prone to error. Teamcenter automates change tracking and control through attribute mapping, workflows, and structure manager.
- NX CAD loads 50% faster as it no longer needs to scan multiple directories for the correct file version.
- Users no longer need to search for the correct file revision in Windows Explorer. The latest revision is automatically presented to users with a simple navigation in My Teamcenter.
- Reduction of errors and rework. Before Teamcenter, up to a third of our CAD models had errors, primarily an incorrect revision number saved within a manual text field. File versioning is now controlled by Teamcenter, and we have eliminated the need to fix file names and versions.
- Improved security. Teamcenter has strong security management policies for managing access to sensitive data and intellectual property.