

## CASE STUDY: DEFENSE MANUFACTURING

### SITUATION OVERVIEW

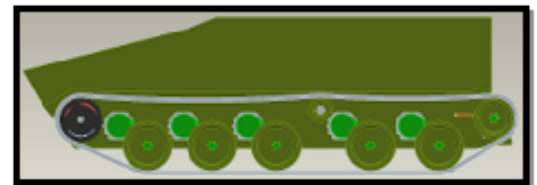
A leading defense manufacturer needed to develop an automated process for extracting modeling and simulation data to be populated into a generic vehicle configuration database to generate dynamic model inputs at the analyst level. Within the current situation, analysis models were developed by a select few analysts for specific purposes, often resulting in more rework, less integration and lower quality data pedigree.

### key issues and challenges

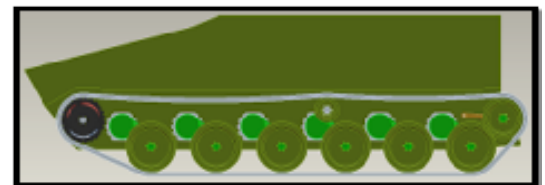
- Customer was unable to fully utilize a custom in-house tool (VCAT) because of inadequate associativity issues with commercial tools
- The process for model development was cumbersome – requiring data re-entry which was time consuming and error-prone
- The manual process used for project tracking needed to be changed

### primary project objectives

- The team defined success as the ability to work in an environment where custom tools and commercial tools are connected and the product development process is streamlined
- Improve innovation by being able to perform higher fidelity “what-if” trade studies earlier/easily
- By automating their process, the team wanted to significantly reduce time and manual errors while exploring more concepts through the reuse of data, models and activities
- Obtain traceability to models, activities and data to share best practices with the team and management



**5 Road Wheels**



**6 Road Wheels**

**MATLAB → Adams → FEA**





- The manufacturer ultimately selected Comet's Performance Engineering Workspace which utilizes simulation templates powered by an Abstract Engineering Model® (AEM.)
- By allowing engineering and analysis processes to be built around a single virtual CAD/CAE model, data is linked to the virtual model while providing a method for maintaining data pedigree

#### **ADDITIONAL CAPABILITIES**

- By utilizing Comet's performance engineering workspace, data from VCAT is automatically connected to CAD and CAE tools
- This process automation results in faster design time and the reduction of errors
- Product tracking is visible to the team through a dynamic, customized project dashboard

#### **TANGIBLE BENEFITS MEAN REAL-WORLD RESULTS**

- Compressed 3-10 week model development process to just 1-2 weeks
- By leveraging Comet, the team created a seamless process and therefore reduced manual steps and analysis errors
- Additional simulation cycles are completed in less time
- Project tracking allows for better decisions on current/future projects
- Fewer people required to set up and execute an analysis run
- Reducing physical prototype costs

***"Comet was an ideal partner for this project."***

***"While this initiative was short-term in nature, it provided lasting results with long-term impact for our organization and made us believers in the ongoing value of Comet software and the benefits it provides."***

**-Project Manager**  
Producer of military vehicles  
and aerospace systems