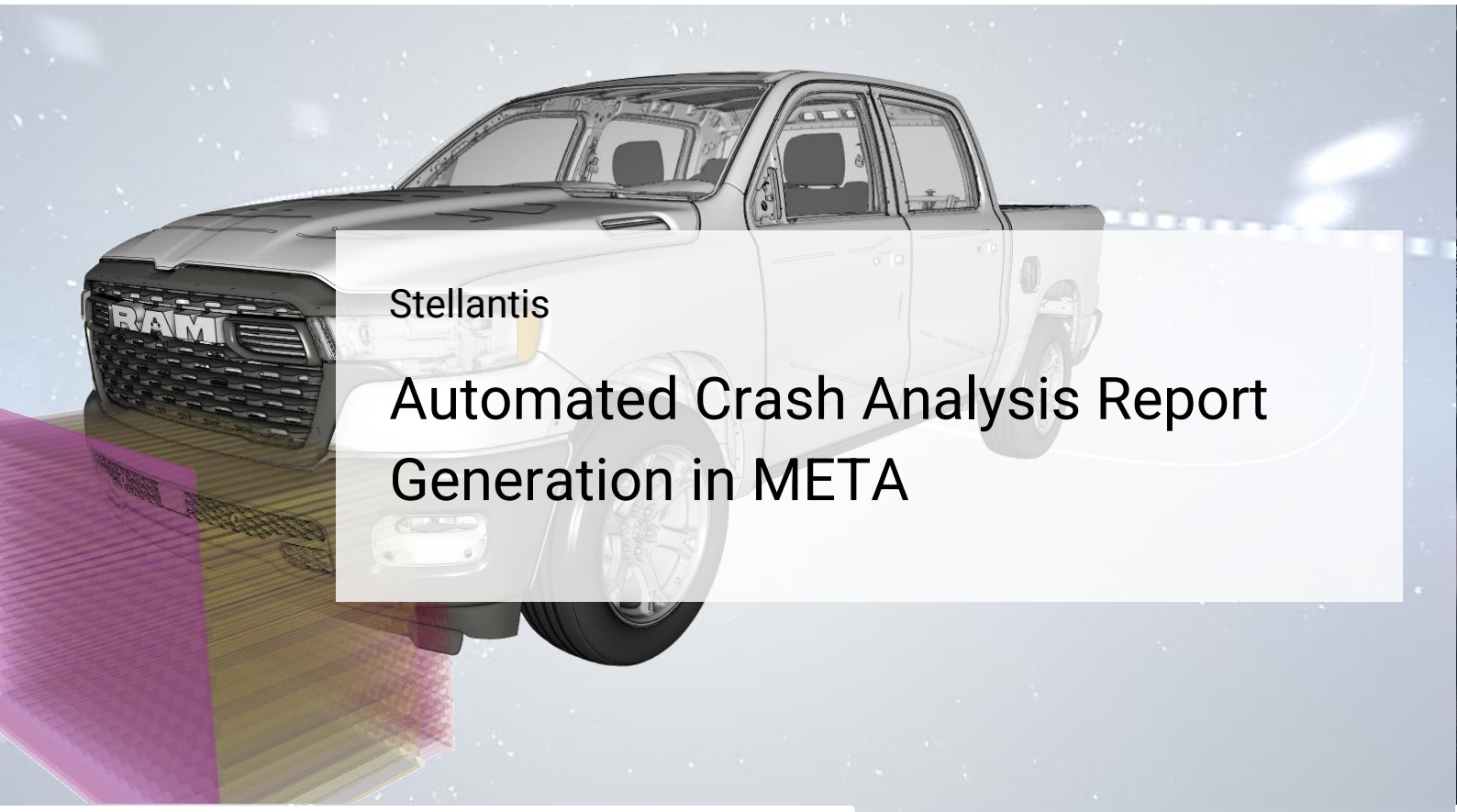
BETA
SIMULATION SOLUTIONS



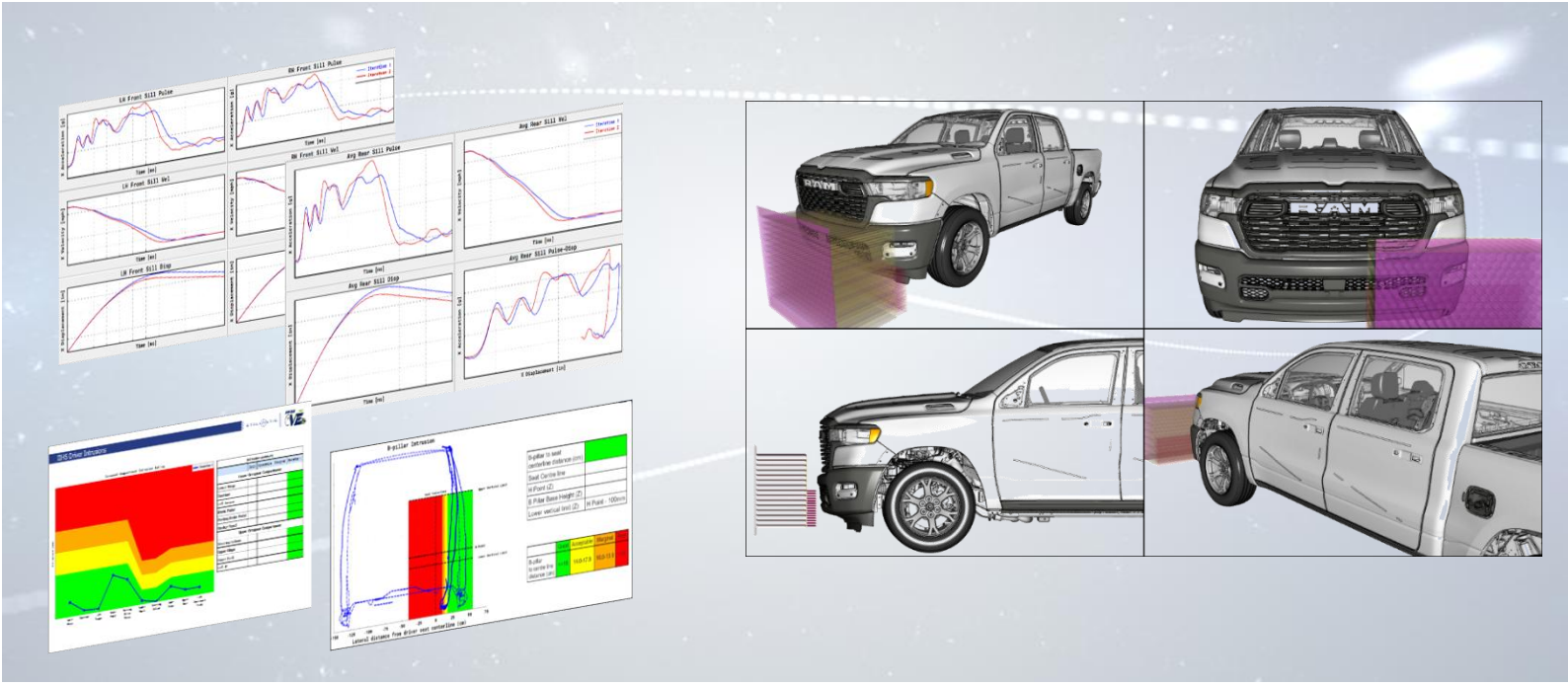
Stellantis

Automated Crash Analysis Report Generation in META

Effective crash analysis plays a critical role in ensuring vehicle safety and regulatory compliance. As simulation complexity increases and global teams rely on detailed insights to inform design decisions, the demand for efficient, standardized reporting continues to grow. Traditional manual methods for compiling simulation results, creating visualizations, and assembling reports are time-consuming and susceptible to errors. To improve productivity and reporting quality, a configuration-driven automation tool was introduced, significantly reducing manual effort while enhancing consistency across crash analysis documentation.

“What used to take an entire day of manual work can now be accomplished in less than 30 minutes, with guaranteed consistency and precision!”

Raj Rajagopalan
Sr. Manager Virtual Engineering - Global Safety
Stellantis



Challenge

Vehicle crash analysis requires extensive documentation ana structured presentation of results. Traditionally, engineers have had to manually:

- Extract and compile simulation results.
- Generate multiple visualization slides.
- Standardize reporting formats.
- Ensure data consistency across reports.

These repetitive and labour-intensive tasks consume considerable engineering time, diverting focus from critical safety evaluations and design innovation.

Approach

To address these challenges, Stellantis with the help of BETA CAE Systems developed a configuration-based automation tool that revolutionizes crash analysis presentations generation. Built on the scripting framework of META, the solution integrates seamlessly into existing post-processing workflows and supports a wide range of crash simulation scenarios.

The tool automates key steps in the reporting process:

- Automatic extraction of critical simulation metrics.
- Generation of standardized presentation slides, including plots, images, and animations.
- Dynamic content population based on user-defined configuration files.
- Consistent formatting across different vehicle programs and analysis types.
- Automated data validation to ensure the accuracy and reliability of reported results.

The system employs a configurable template structure, allowing engineering teams to tailor outputs while maintaining consistency and quality across global operations.

Results

- 90% reduction in time spent preparing crash analysis presentations.
- Elimination of manual data transcription errors.
- Acceleration of design iteration cycles through faster feedback.
- Global standardization of reporting practices across engineering teams.

Engineering teams are now able to focus more on advanced safety analysis and design exploration, rather than manual documentation tasks. The solution accelerates decision-making and reinforces Stellantis' commitment to advancing automotive safety through innovation.

For more about BETA CAE Systems, visit www.beta-cae.com