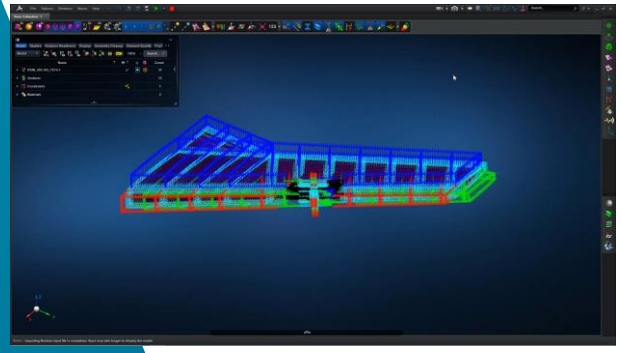

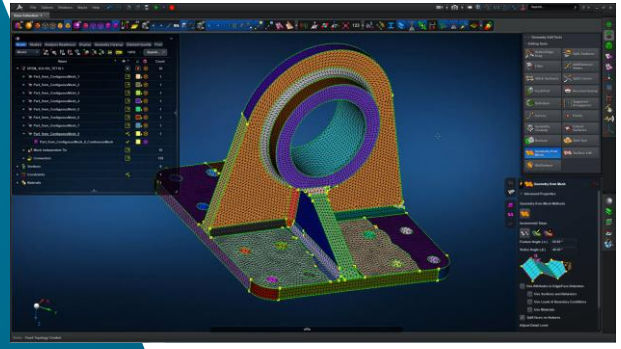

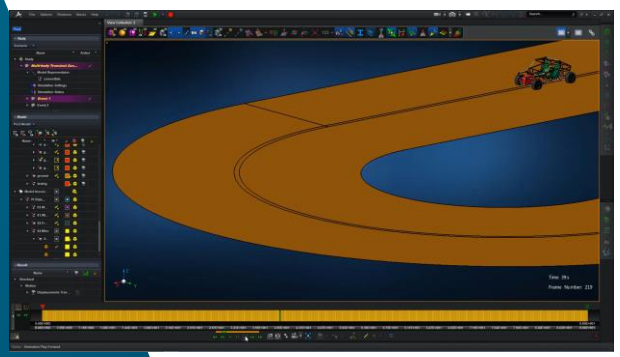

The presentation will start shortly.

Thank you for your patience.

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What's New in MSC Apex Jaguar?

Steff Evans, Lead FEA Engineer, Evotech CAE Ltd

Mitch Muncy, MSC Apex Product Manager, MSC Software

January 2020

Agenda

- Introduction
- New Capabilities and Features in MSC Apex Jaguar
- Summary, Q&A

Introduction

Mitch Muncy

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Introduction

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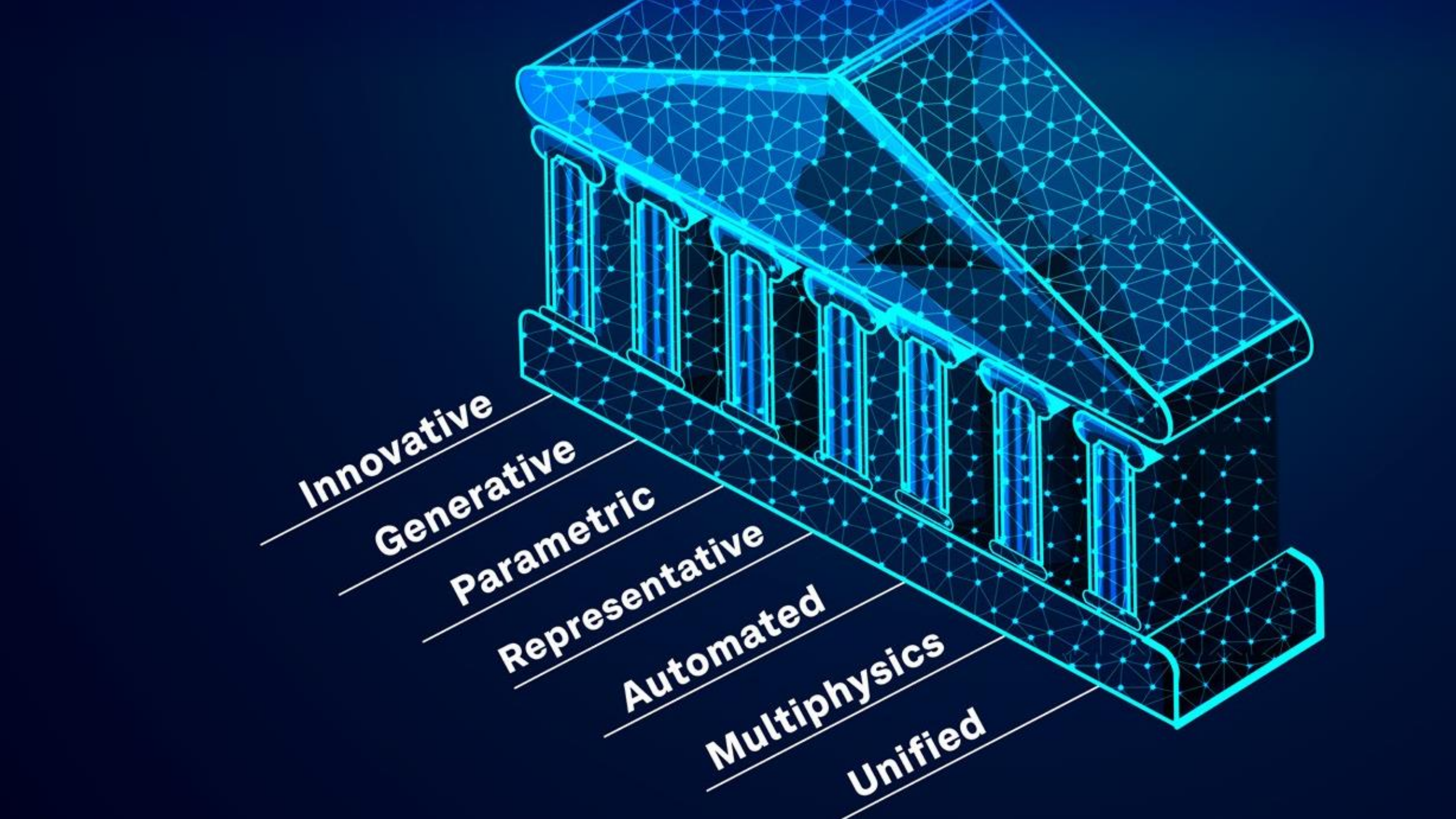
Innovative
Generative
Parametric
Representative
Automated
Multiphysics
Unified

New Capabilities and Features in MSC Apex Jaguar

Steff Evans

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New Capabilities and Features in MSC Apex Jaguar

Apex/MSC Nastran Interoperability

- Enhanced import, export and MSC Nastran-generated data support
- ‘Abstraction’ concept for closer Apex/MSC Nastran integration
- Enhanced assembly management and load transfer control with ‘Mesh Independent Ties’
- Enhanced coordinate frame definition and control
- API enhancements

Geometry, Meshing and View Enhancements

- Enhanced control, checking and export for Geometry and 2D/3D Meshing
- Ability to generate, modify and re-use/re-mesh faceted and ‘real’ NURBS geometry from legacy FEA models
- Image/movie capture and multi-view result exploration environment

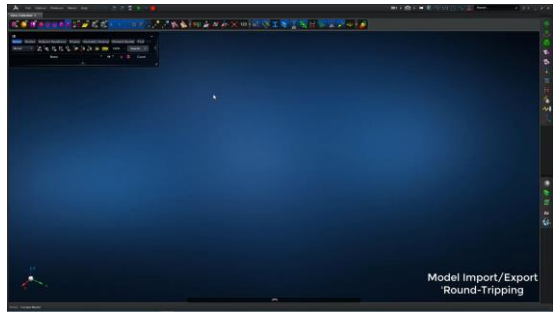
Apex/MSC Adams Interoperability

- Accessing Adams/Car model/results data
- Geometry association and interrogation of Adams/Car result data
- Loads mapping onto structural FEA model in a single environment

Workflow 1 – Apex/MSC Nastran Interoperability

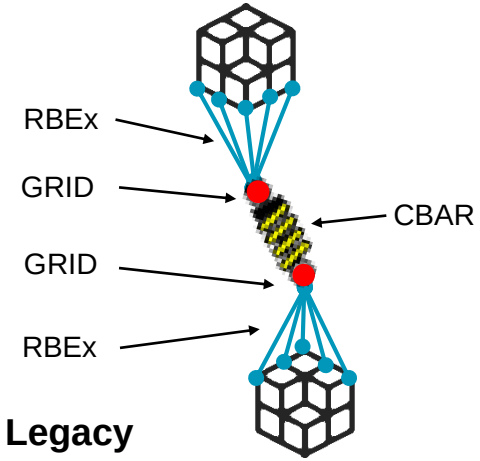
Enhanced import, export and MSC Nastran-generated data support

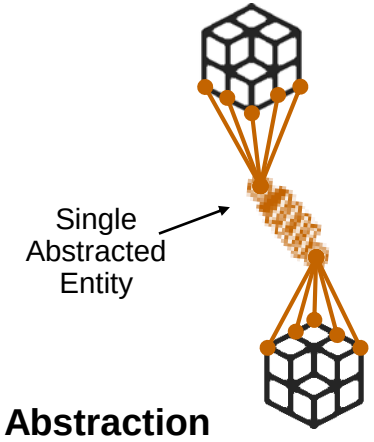
- Model import/export ‘round-tripping’ – many more keywords and concepts supported
- Streamlined HDF5 results access – enhanced support of results not generated from Apex models



‘Abstraction’ concept for closer Apex/MSC Nastran integration

- ABSNMVS/ABSTRCT keywords to group Apex abstractions in the MSC/Nastran environment
- Multiple MSC/Nastran abstractions supported by Apex (Connectors, Beam Spans, Remote LBCs etc)



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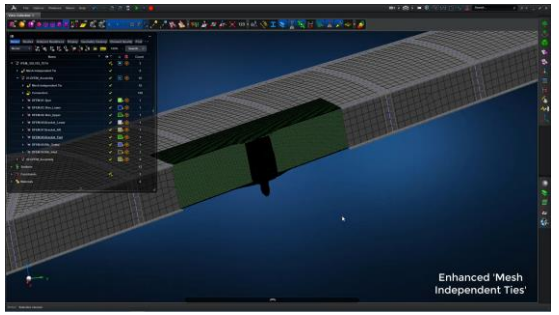
Workflow 1 – Apex/MSC Nastran Interoperability (Continued…)

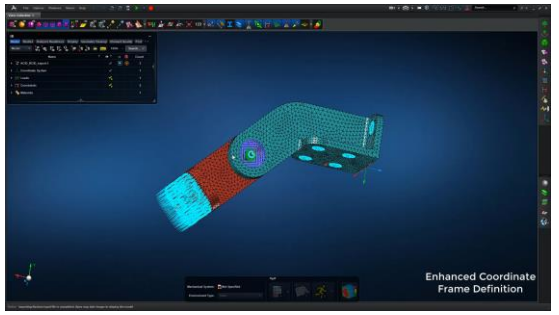
Enhanced assembly management and load transfer control with ‘Mesh Independent Ties’

- ‘Glue’ terminology replaced with ‘Mesh Independent Tie’
- Ability to create ‘MIT’ across user-specified part regions, as well as full bodies



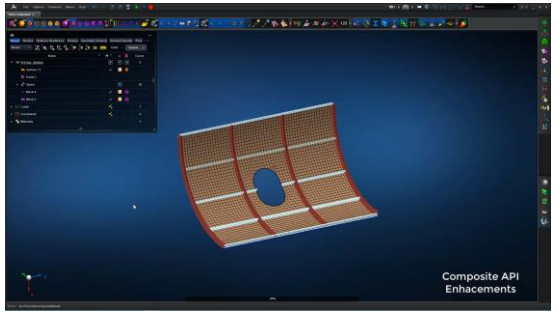
Enhanced coordinate frame definition and control

- Coordinate system import and modification – support for Reference and Displacement CID
- Beam element coordinate frame modification and display



API enhancements

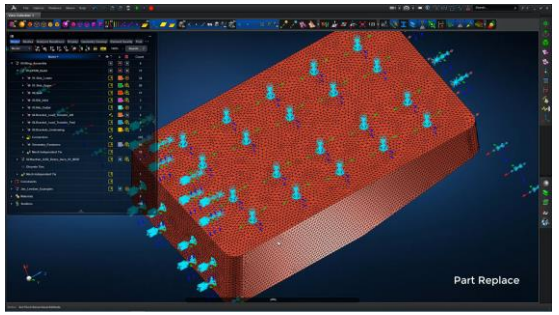
- Composites functionality
- Simple example of lay-up generation
- Accessible via the custom tool palette



Workflow 2 – Geometry, Meshing and View Enhancements

Enhanced control, checking and export for Geometry and 2D/3D Meshing

- Geometry Manipulation - *Part Replace, Parametric Primatives, Partitioning using Offset*
- Mesh Manipulation - *Mesh Control Curves, Incremental Surface Meshing*
- Check/Export - *Element Quality Checks, STEP/IGES Export*



Ability to generate, modify and re-use/re-mesh faceted and ‘real’ NURBS geometry from legacy FEA models

- Facet Body Smoothing
- ‘Real’ Geometry from Mesh (NURBS)

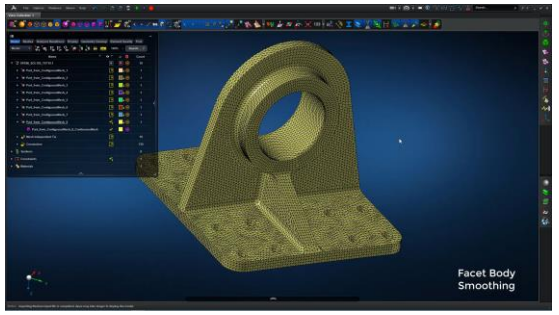
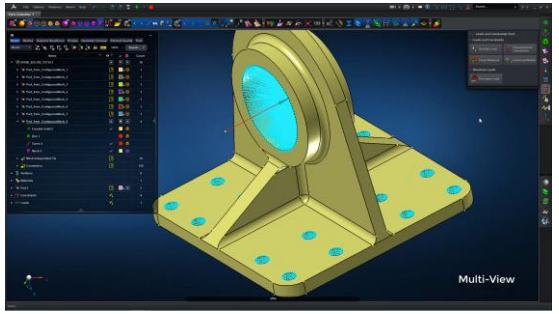


Image capture and multi-view result exploration environment

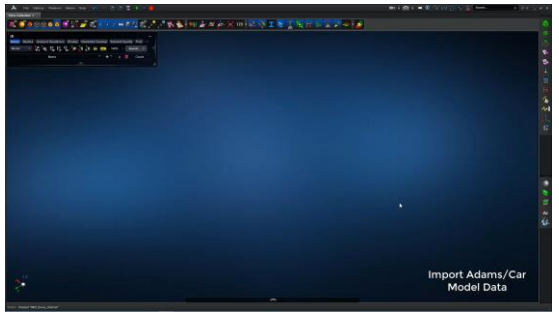
- Ability to create multiple image and movie types directly
- Multi-View visualisation across different events, result types and model configurations



Workflow 3 – Apex/MSC Adams Interoperability

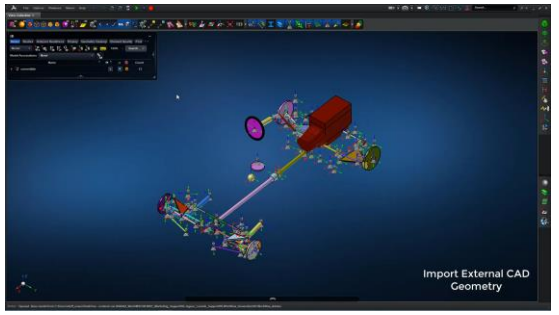
Accessing Adams/Car model/results data

- Import Adams/Car Model Data - **.cdb format*
- Display and Interrogate – *Model Browser control for geometry and interface points*
- Import/Visualize Adams/Car Results Data - **.res format*



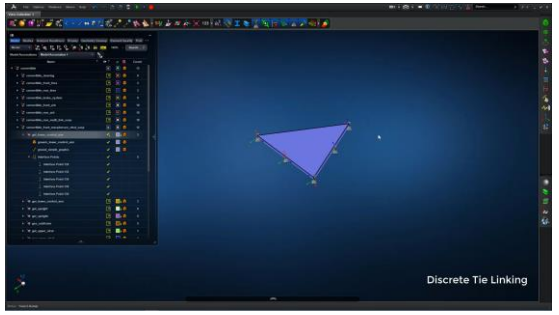
Geometry association and interrogation of Adams/Car result data

- Import external CAD geometry
- Create model association – *link external CAD data to Adams/Car model*
- Interrogate results for region of interest – *specify key time steps*



Loads mapping onto structural FEA model in a single environment

- Discrete tie linking – *connect Adams/Car interface points to FEA model*
- Map loads – *transfer Adams/Car loads onto FEA model*
- Analyse and post-process FEA model
- Part Replace and Multi-View – *assess multiple model configurations*



Summary and Q&A…

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