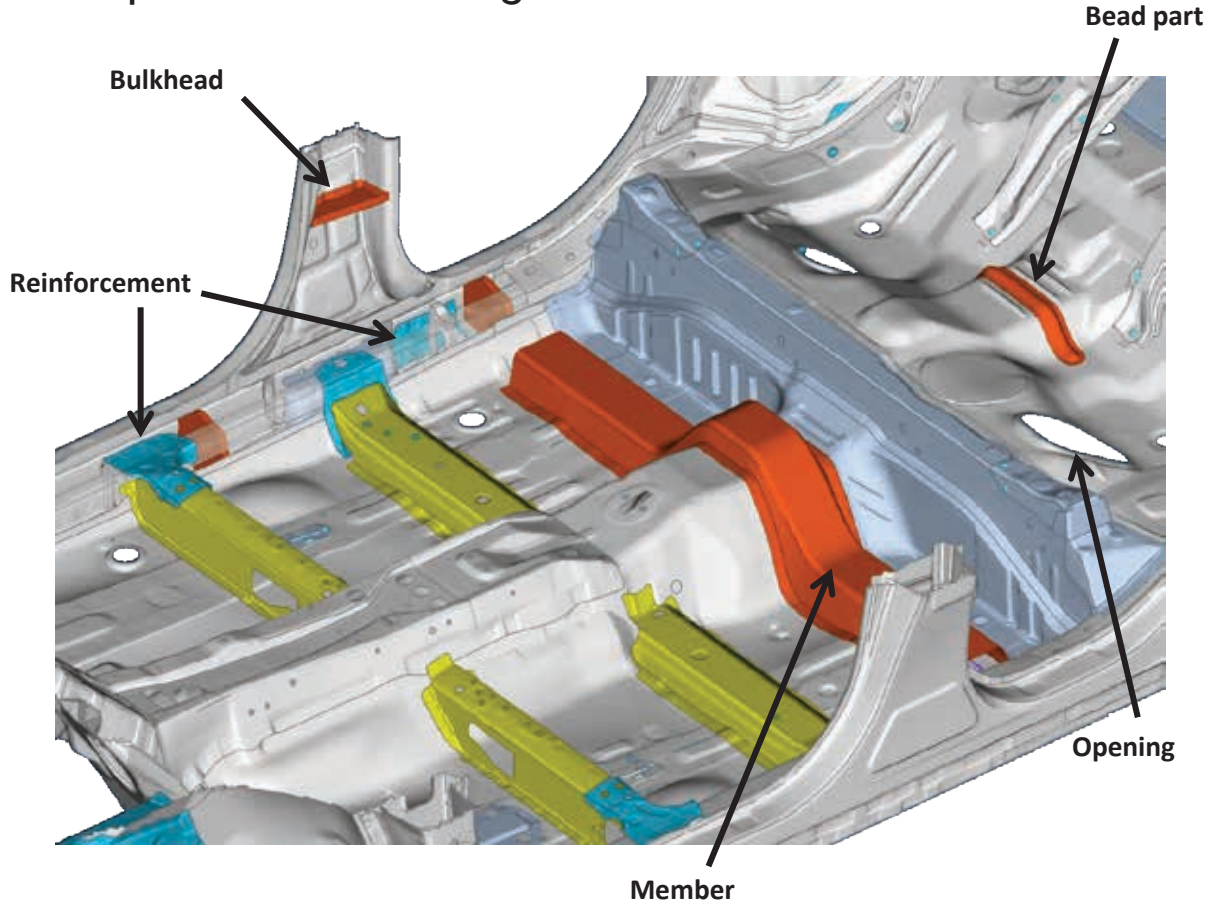**BETA**
SIMULATION SOLUTIONS

Groundbreaking Simulation Solutions

physics on screen

Latest and Future Developments for Morphing and Design Toolbar
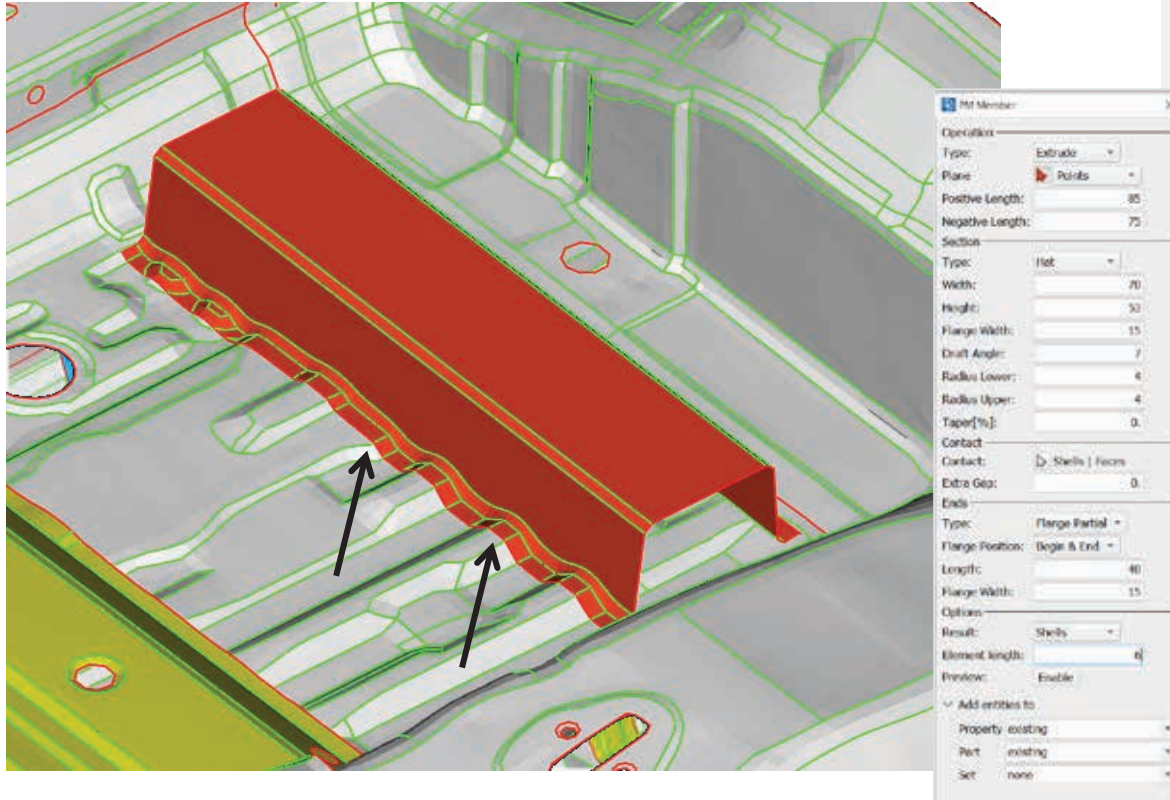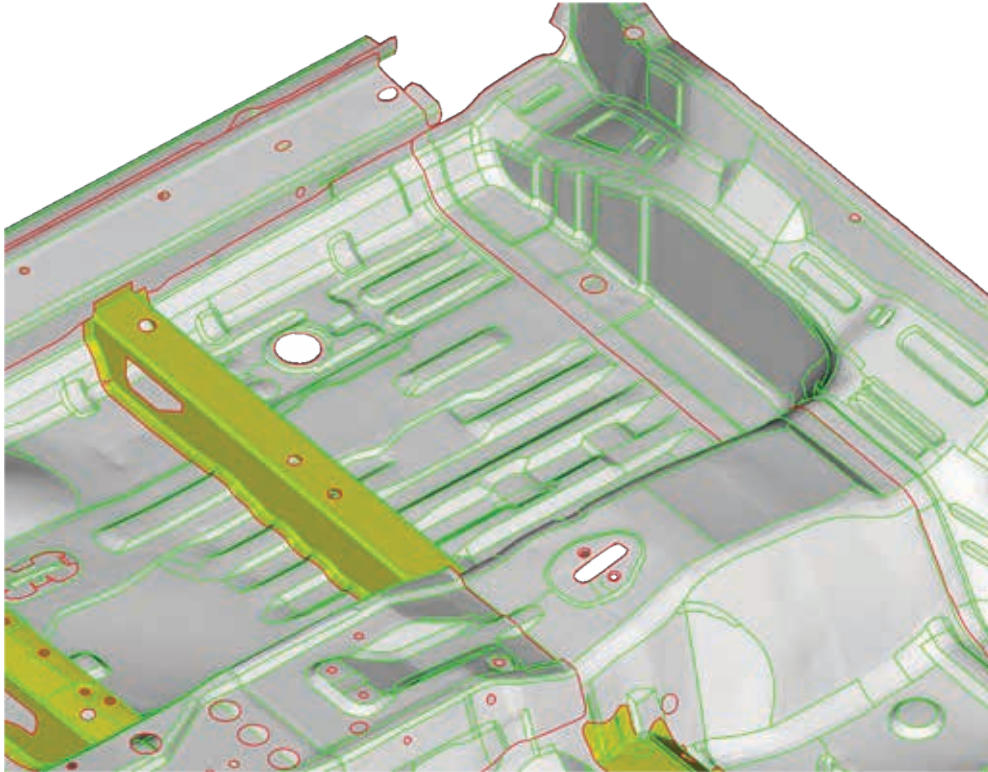
14/6/2023

Concept and Detail Design

Bead part

Bulkhead

Reinforcement

Opening

Member

Design Toolbar

Create :

- Cross Members

- Reinforcements

- Bulkheads

- Beads

- Openings

- Ribs

Concept Design

Parametric Modeling

- **Hat** Cross Section

- **Extrude** mode

- **Open** Ends

- Automatic Flanges generation & adaptation

- Real time Shape adjustments

- Interactive relocation

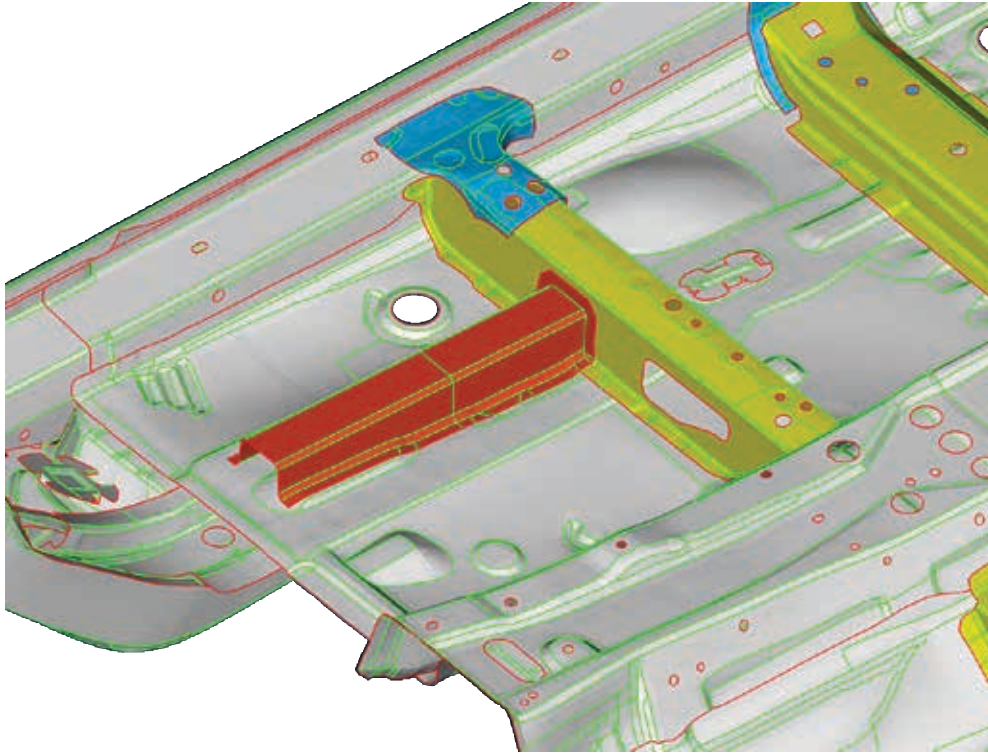- Interconnection with Optimization Tool

Concept Design

Parametric Modeling

- **Hat** Cross Section

- **Extrude** mode

- **Flanged** Ends

- Automatic Flanges generation & adaptation

- Real time Shape adjustments

- Interactive relocation
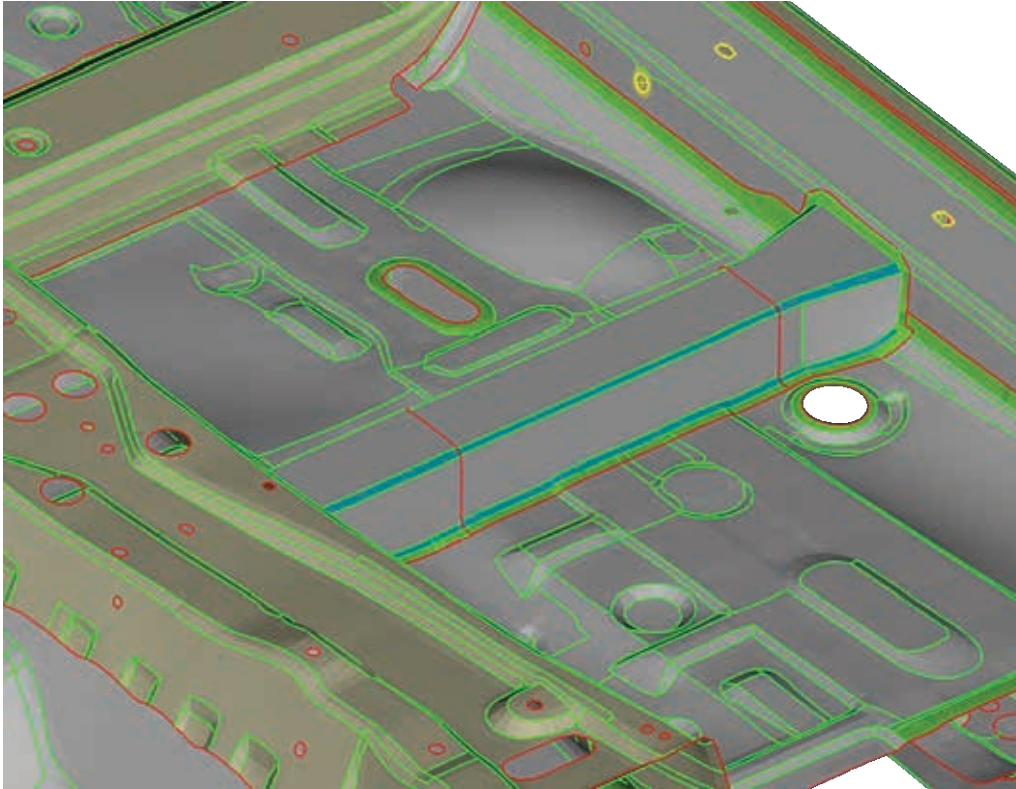
- Interconnection with Optimization Tool

Concept Design

Parametric Modeling

- **Existing** Cross Section

- **Extrude** mode

- **Flanged** Ends

- Automatic Flanges generation & adaptation

- Real time Shape adjustments

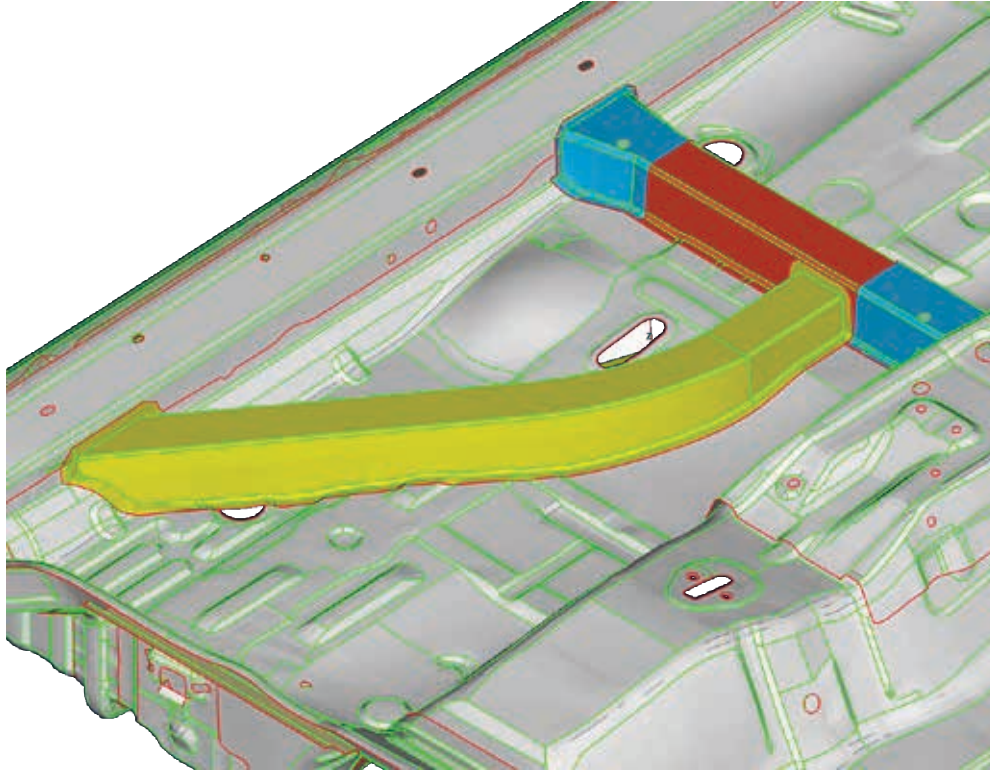- Interactive relocation

- Interconnection with Optimization Tool

Concept Design

Parametric Modeling

- **Existing** Cross Section

- **Extrude** mode

- **Flanged** Ends

- **Taper** definition

- Automatic Flanges generation & adaptation

- Real time Shape adjustments
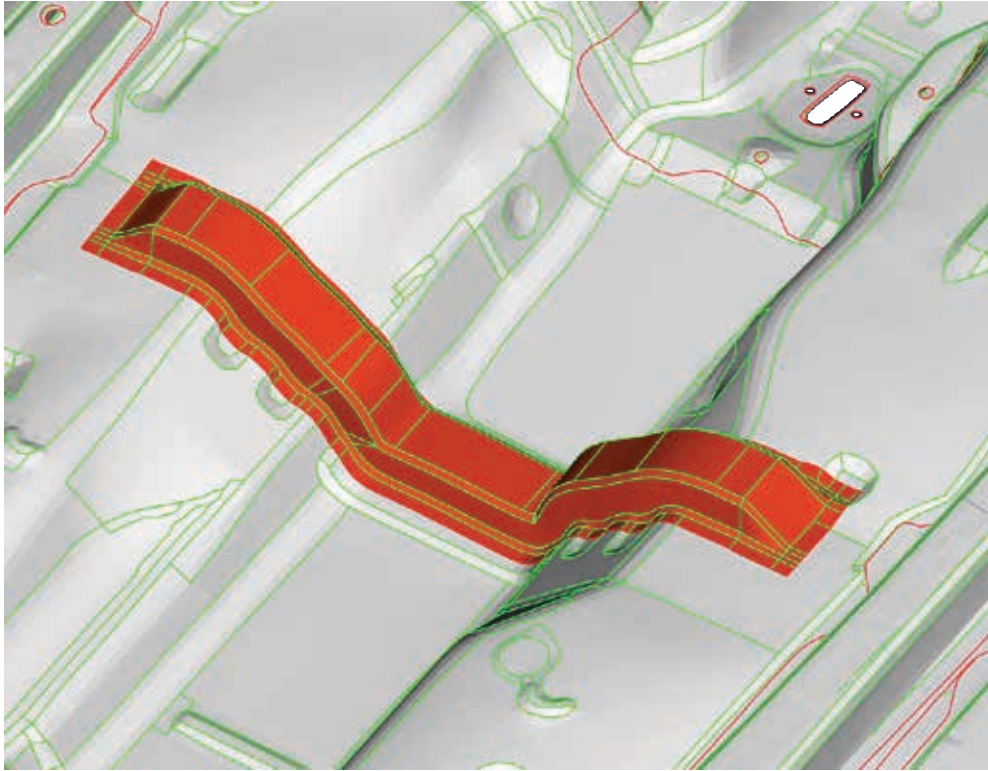
- Interconnection with Optimization Tool

Concept Design

Parametric Modeling

- **Existing** Cross Section

- **Sweep** mode

- **Flanged** Ends

- Automatic Flanges generation & adaptation

- Real time Shape adjustments

- Interactive relocation

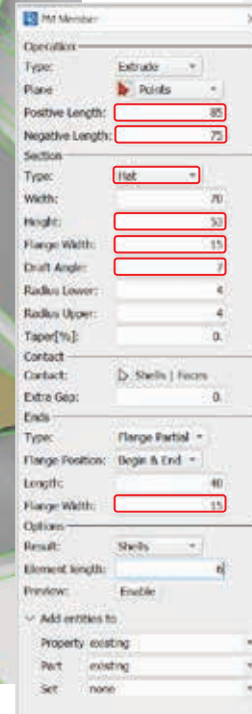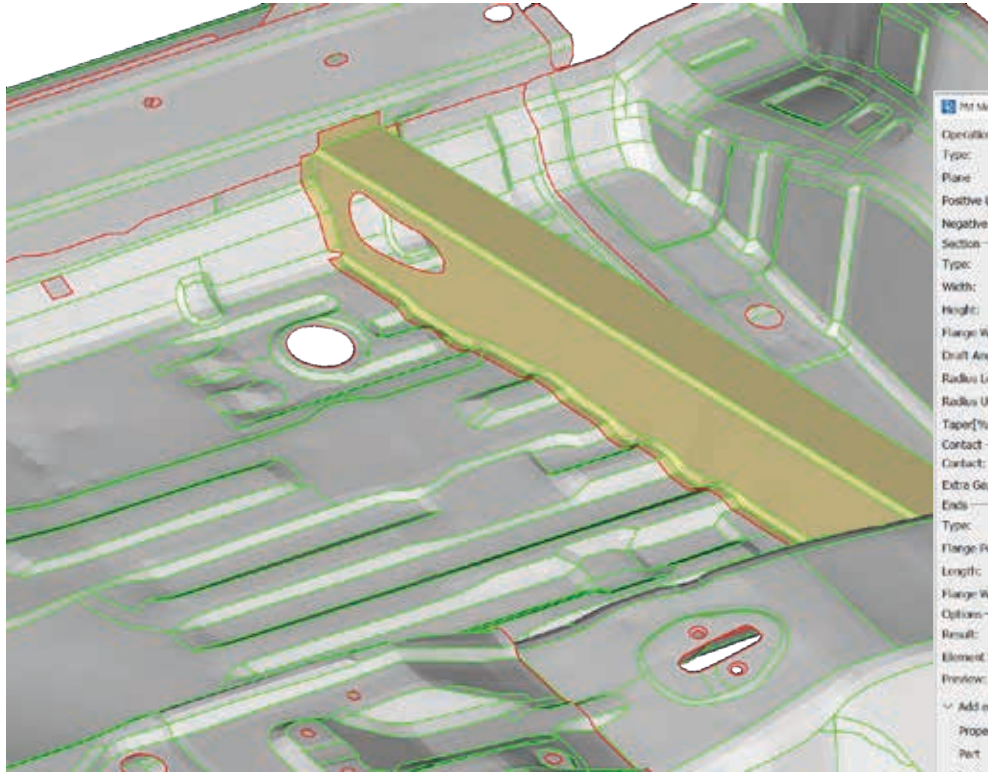- Interconnection with Optimization Tool

Concept Design

Parametric Modeling

- **Hat** Cross Section

- **Sweep** mode

- **Cap** Ends

- Automatic Flanges generation & adaptation

- Real time Shape adjustments

- Interactive relocation
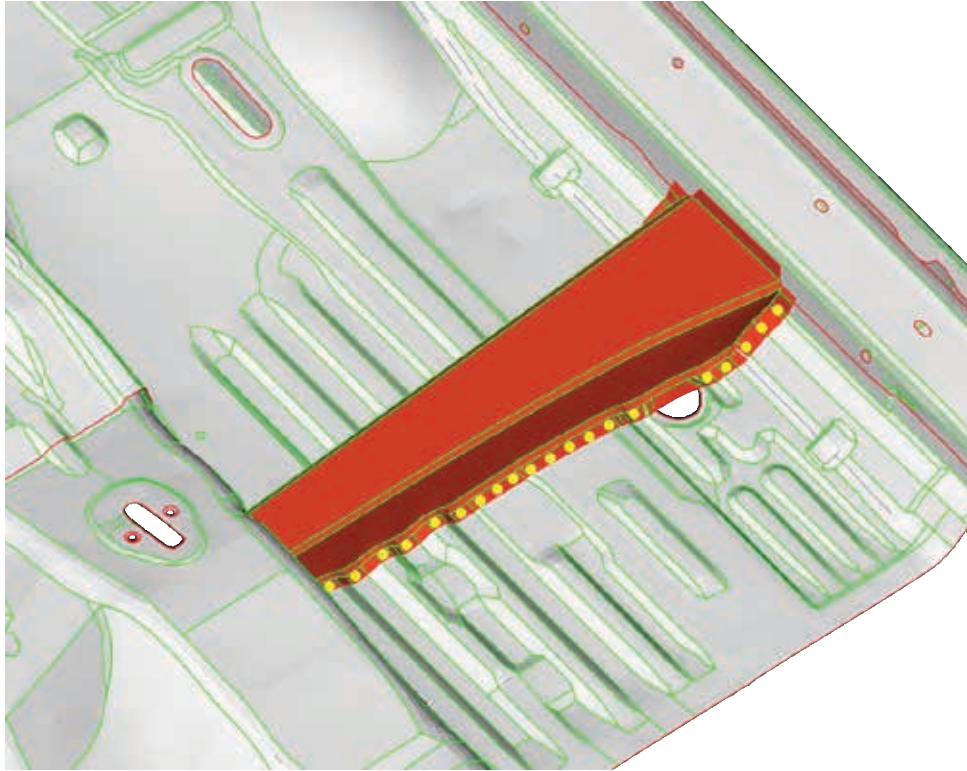
- Interconnection with Optimization Tool

Concept Design - Future Developments

Parametric Modeling

- **Auto Parameterized Member Definition**
- Dual Sweep mode
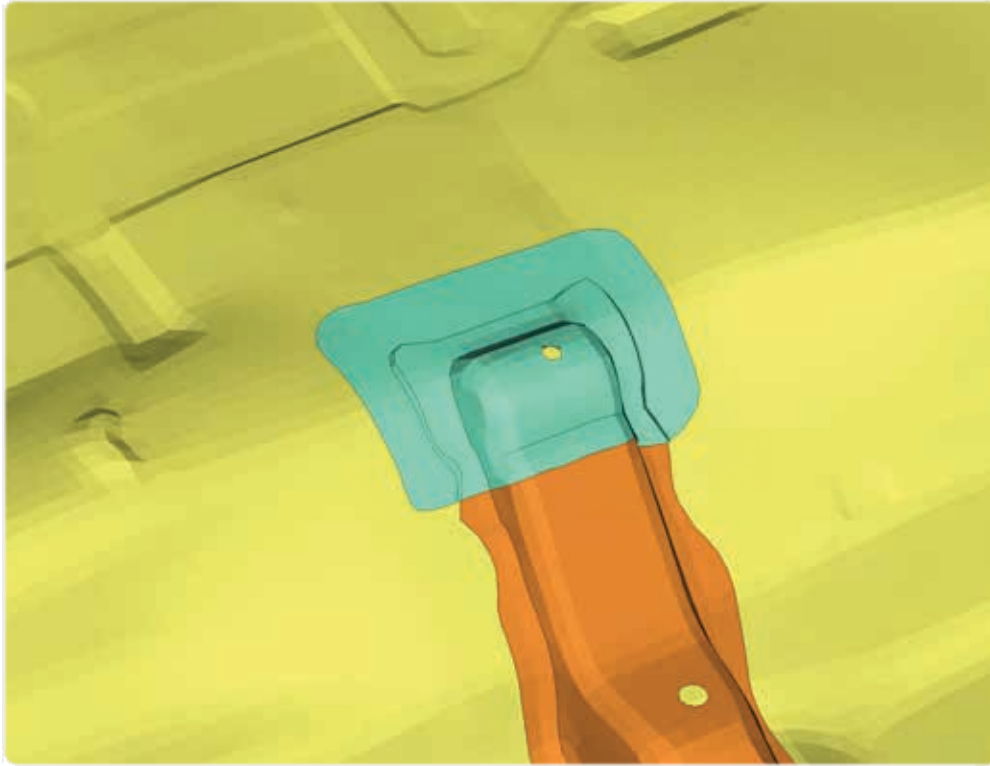- Automatic Spotweld Distribution

Concept Design - Future Developments

Parametric Modeling

- Auto Parameterized Member Definition

- Multi guided Sweep mode
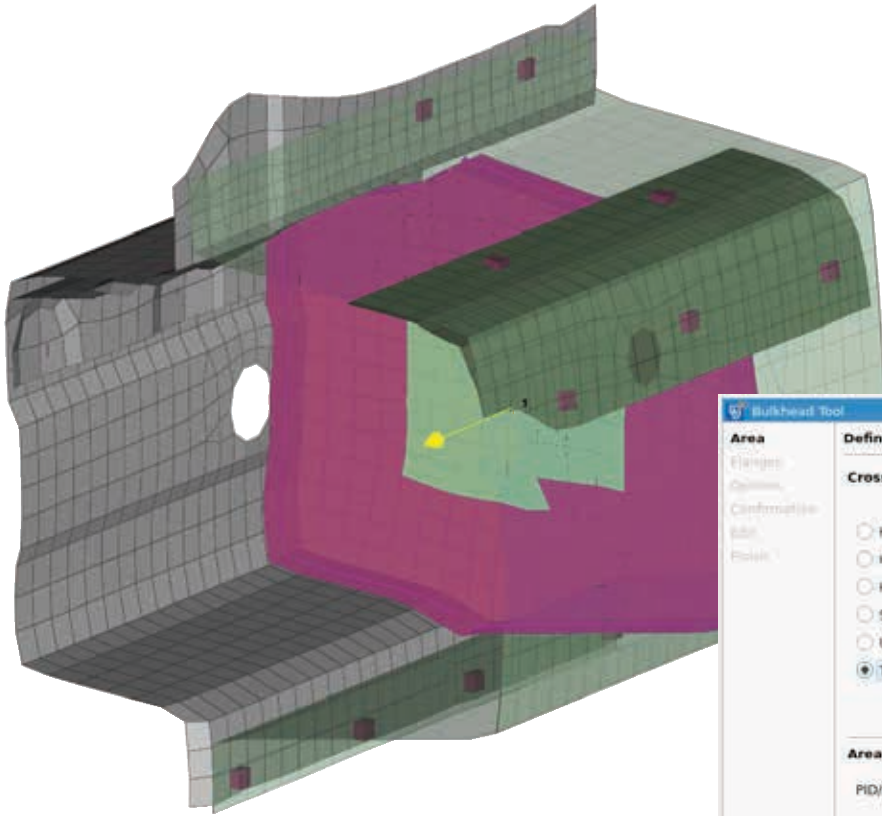
- Automatic Spotweld Distribution

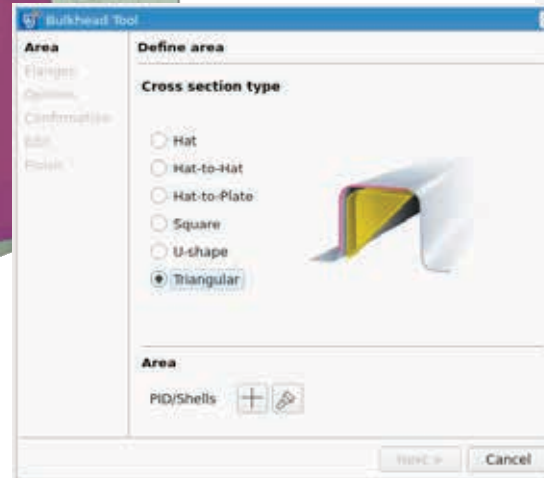# Concept Design

Reinforcement

- Reinforce with sheet metal parts

- User defined application area

- Respect underlying surface features
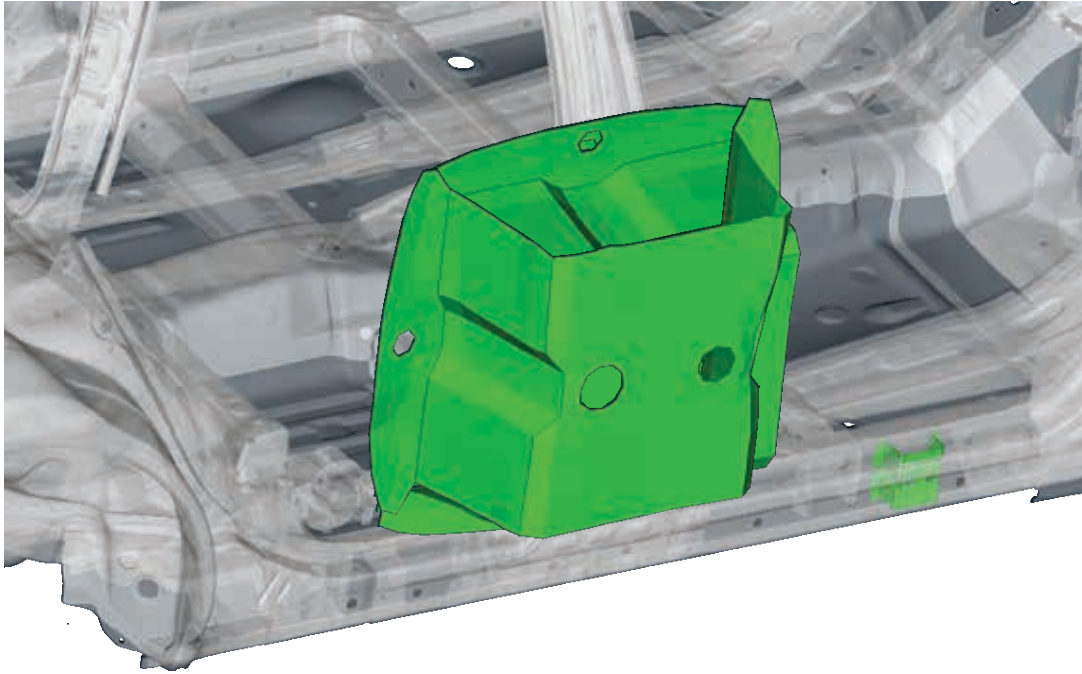
- Customizable fusing angle

Concept Design

Bulkhead Tool

- Multiple available shapes

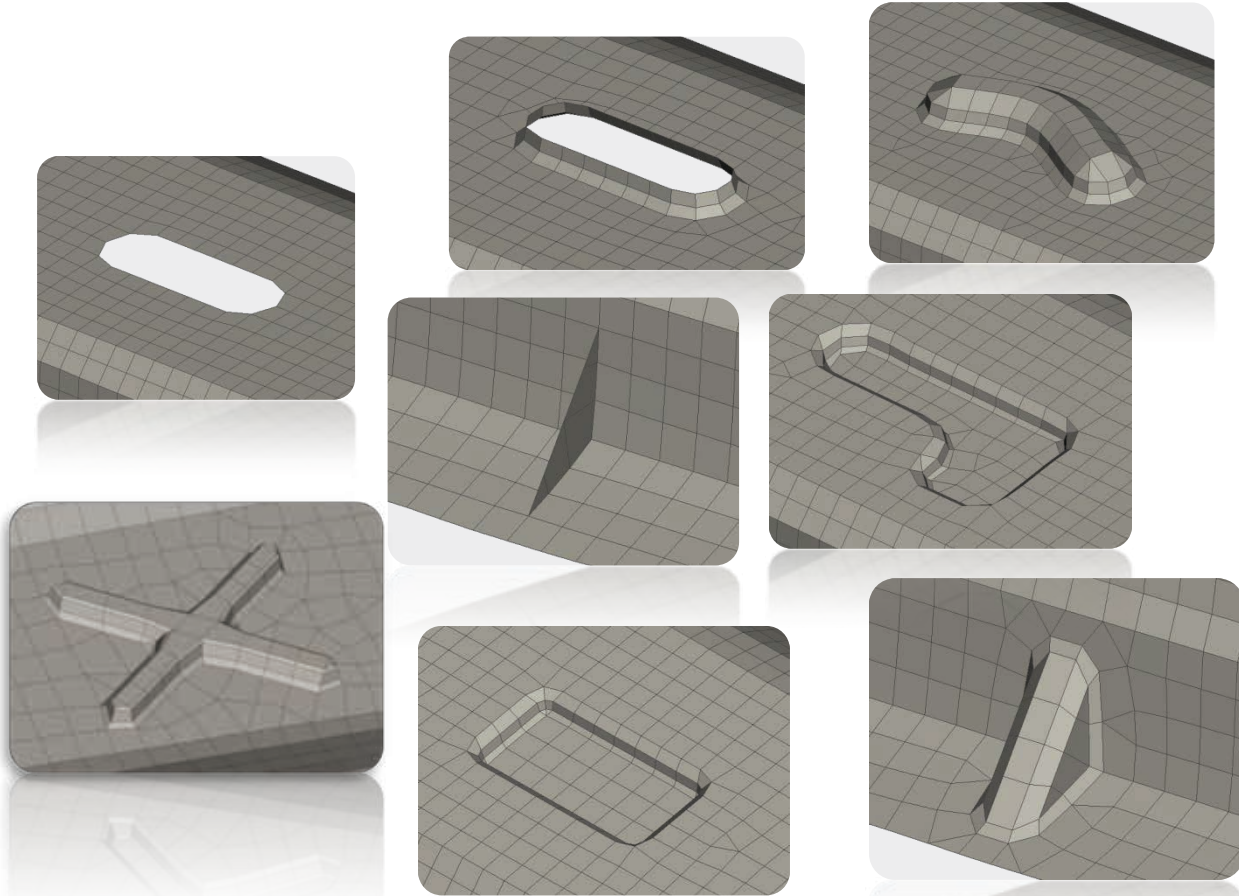- Auto flanges and Weld-lines generation

- Position parameterization

Design – Future Developments

Geometry Modification
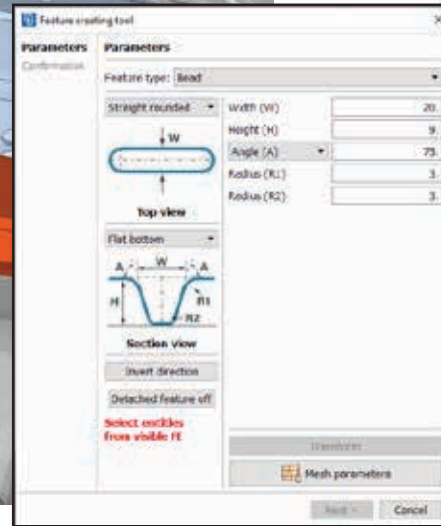
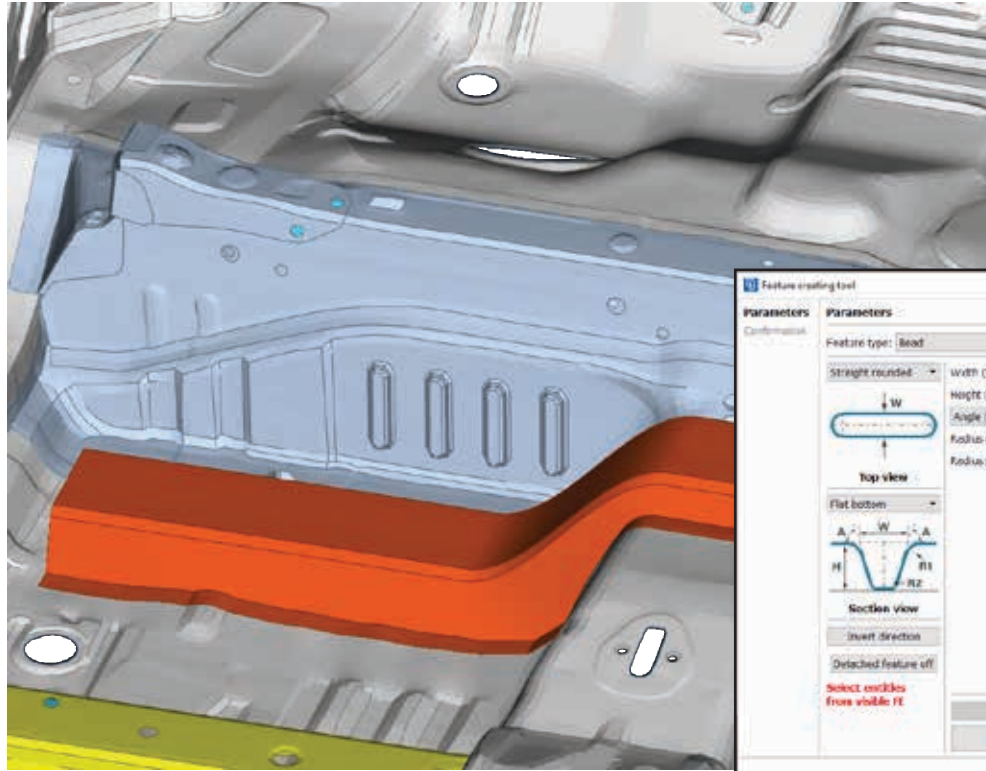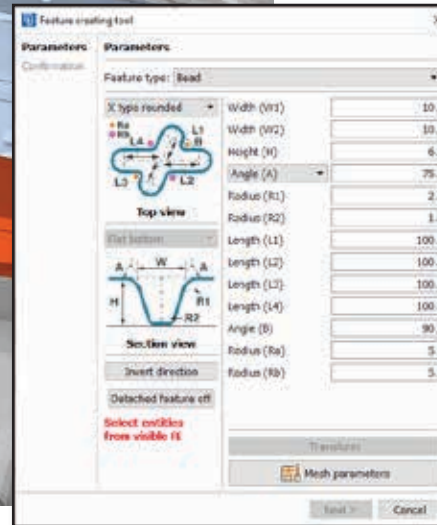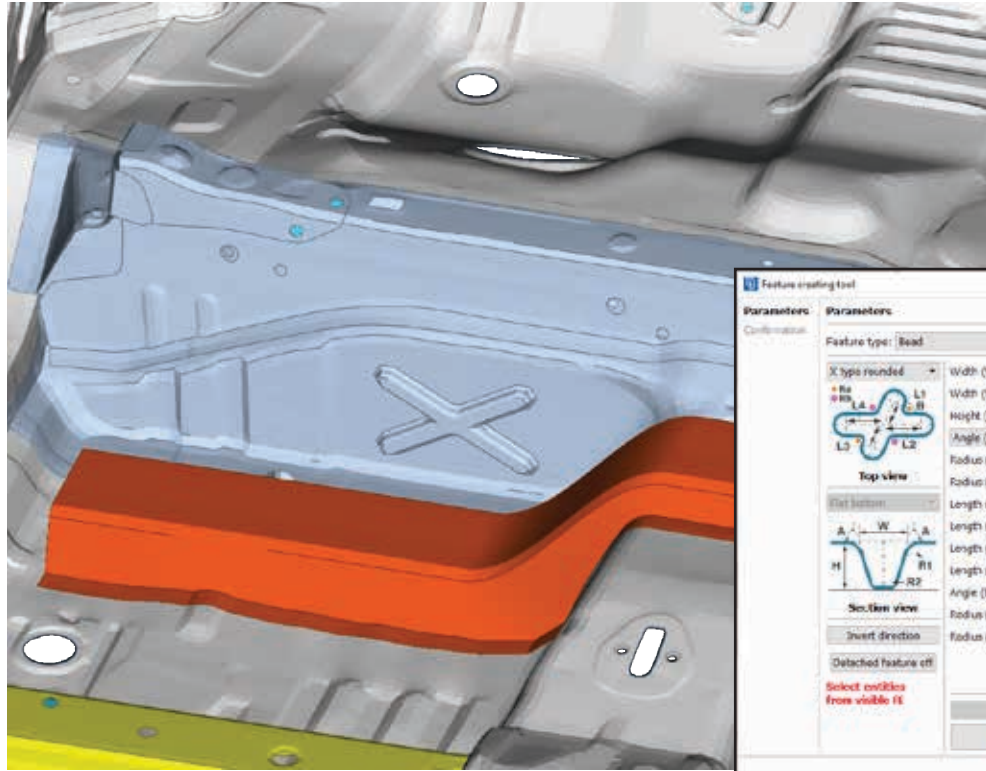- Reinforcement of arbitrary shape and position

Detail Design

Create :

- Beads

- Stamps

- Openings

- 2D-3D Ribs

Detail Design

- Interactive User Interface

- Fully customizable dimensions

- Embedded Position parameterization

- Multiple copies generation

Detail Design

Features Creation
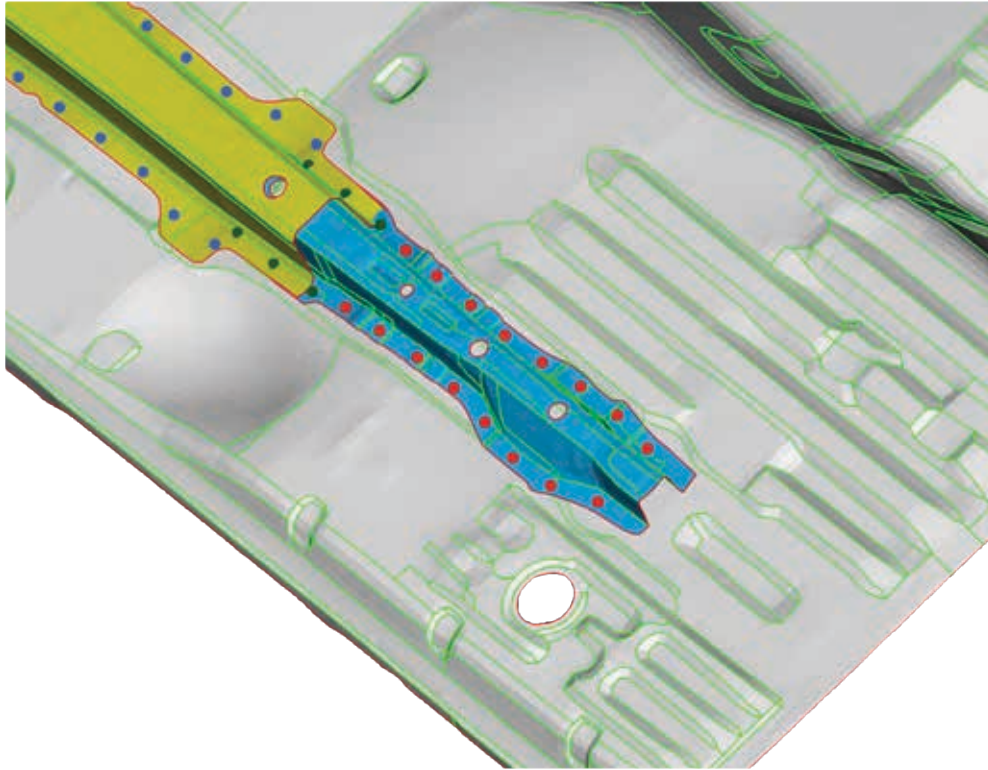
- Interactive User Interface

- Fully customizable dimensions

- Embedded Position parameterization

- Multiple copies generation
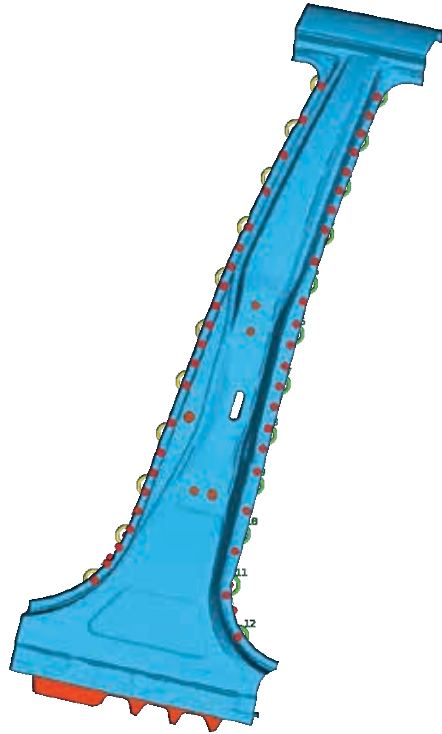
- Several new bead shapes

Concept Design

Spotweld Distribution

- Automatic spotweld distribution to *Connection Chains*

- Automatic interaction with Direct & Box Morphing functions

- Direct Spotweld Density Control and equal distribution

- Interaction with Optimization Tool

- Non-equal distribution

Concept Design

Spotweld Distribution

- Automatic spotweld distribution to *Connection Chains*

- Automatic interaction with Direct & Box Morphing functions

- Direct Spotweld Density Control and equal distribution

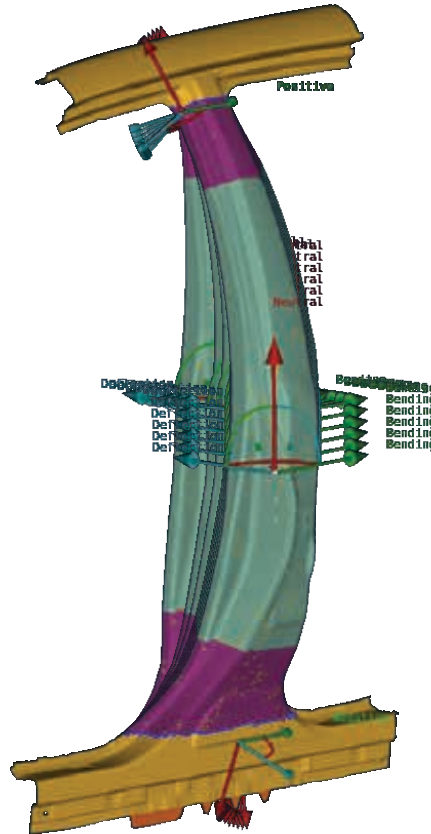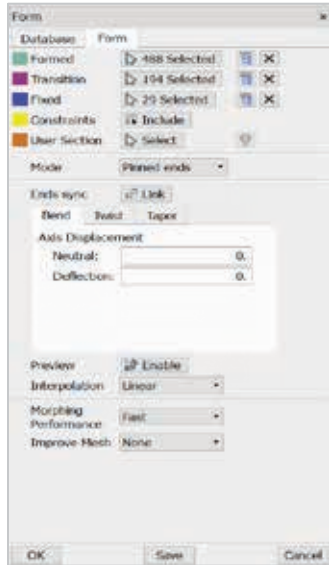- Interaction with Optimization Tool
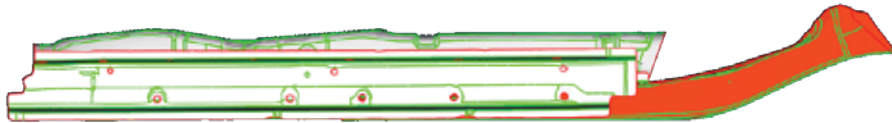
- Non-equal distribution

Direct Morphing

Steady Section Modifications

- Bend/Twist/Extend/ Taper modifications

- Pinned/ Free Ends mode

- Saved as Parameters

- Interaction with Optimization Tool

Direct Morphing

Steady Section Modifications

- Bend/Twist/Extend/ Taper modifications

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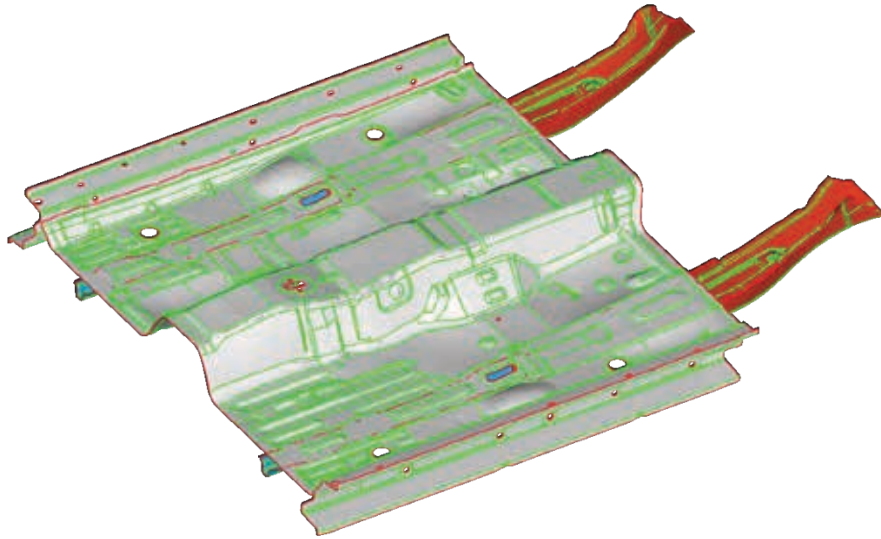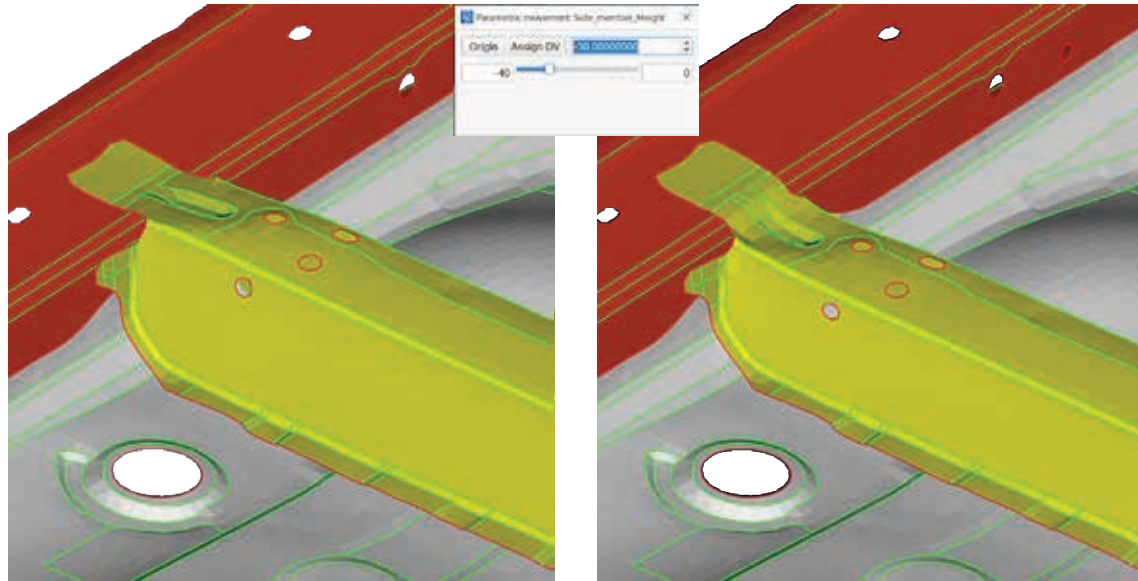
Direct Morphing

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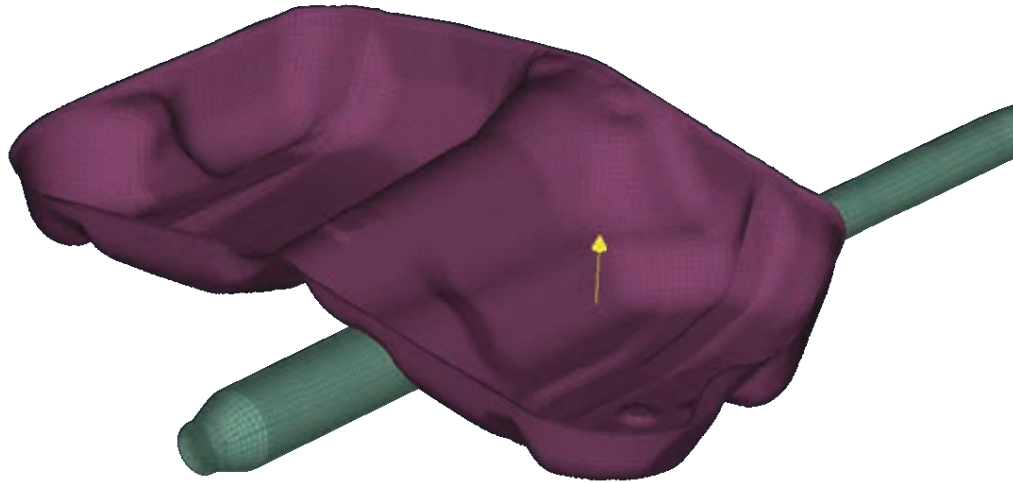
Direct Morphing

Rigid type   Deformable type

Contact Definitions

- Prevent Intersections

- Straightforward SetUp process

- Rigid/Deformable & Single Surface types

- Respect property thickness

- Interaction with DFM

Direct Morphing

Contact Definitions

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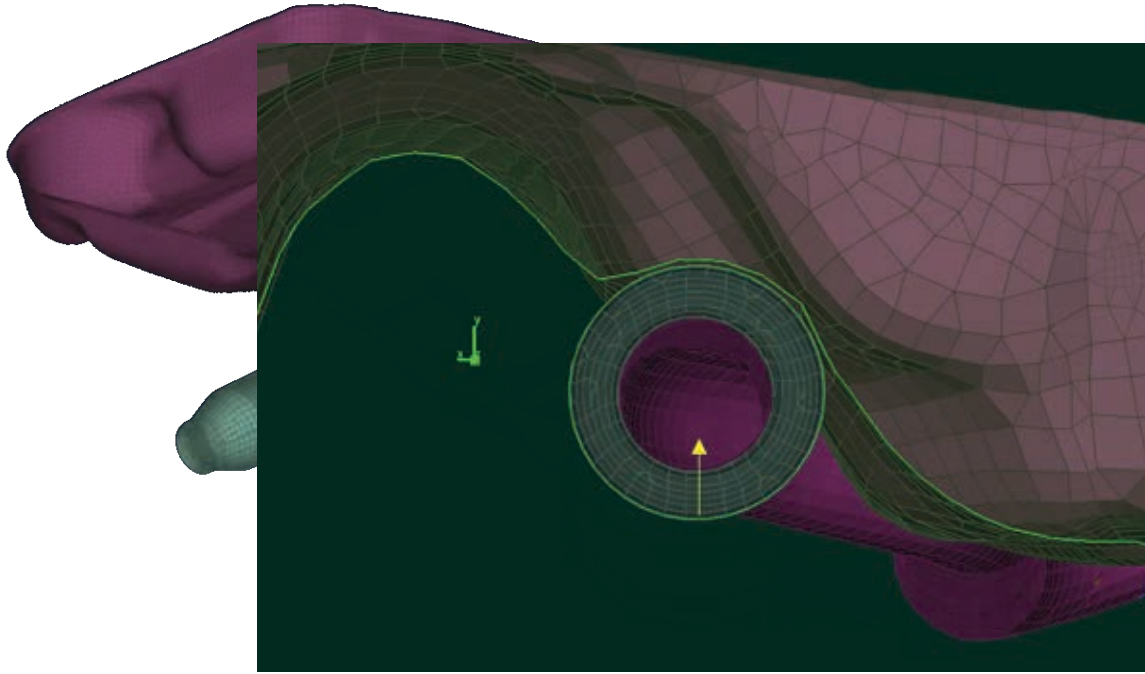
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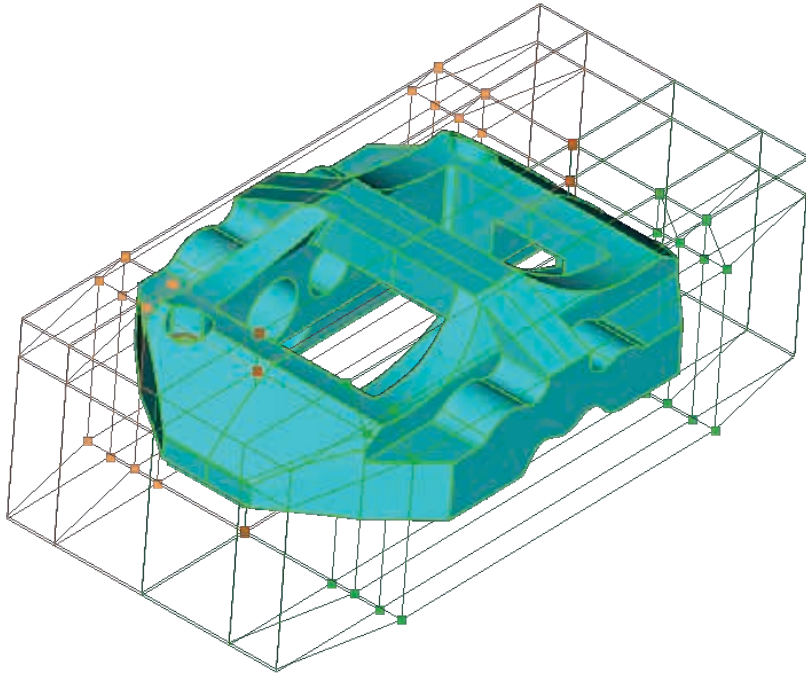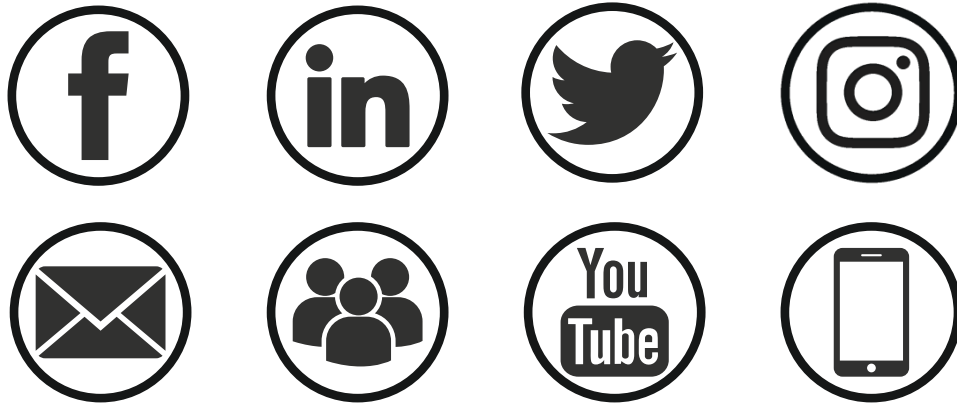
- Interaction with DFM

Box Morphing

Geometry Modification

- No Geometry Check

- Respect Mesh and Geometry Definition during modifications

Stay connected

Design tools for the Analysts
Demo Session 5G - Mars
June15th , 12:30 - 13:00