Live Demo 1: ANSA Pre-processing for Flow Simulations of a Formula Student Car
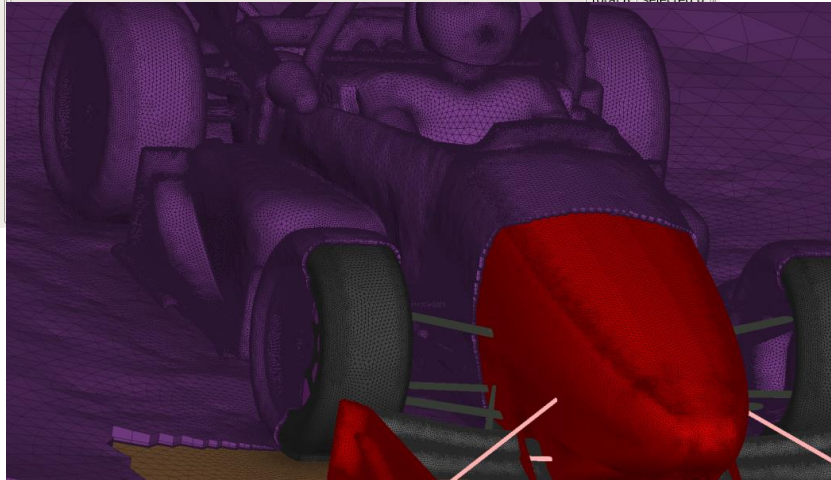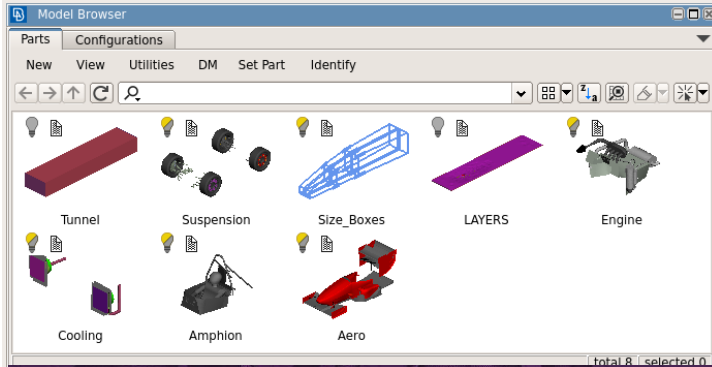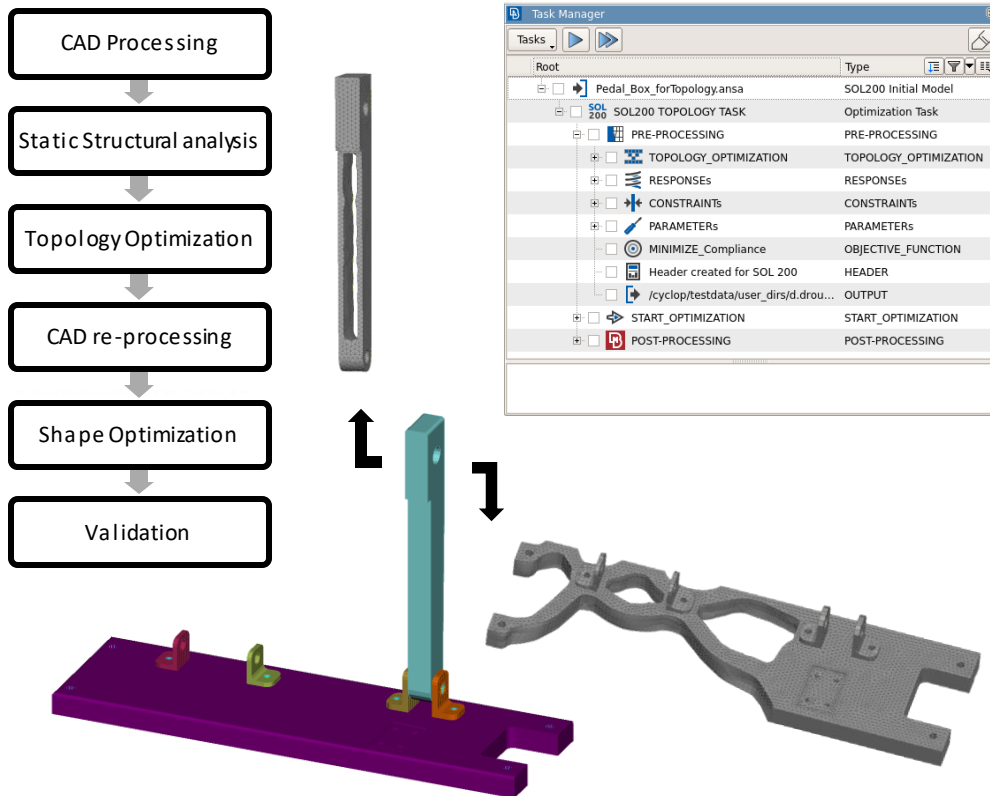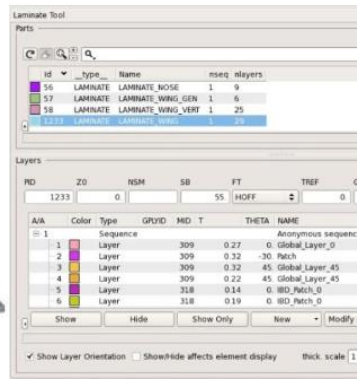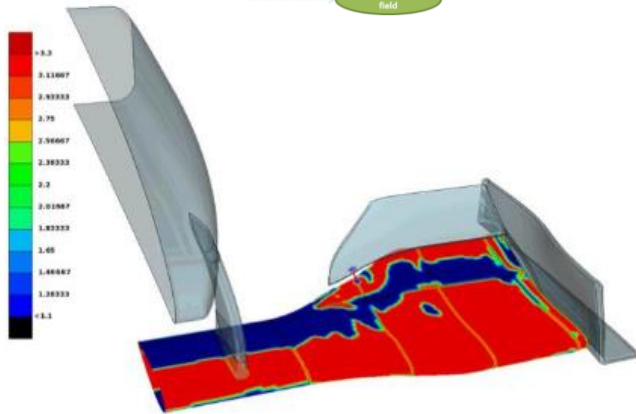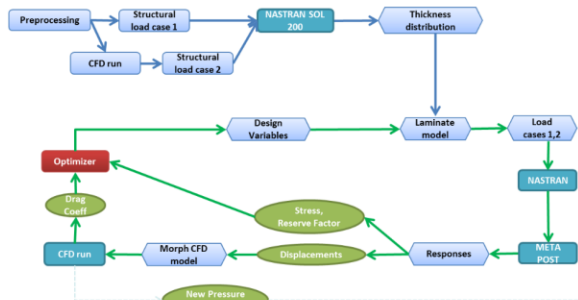

- **Geometry cleanup, defeaturing & watertight model preparation**
- **Model organization**
- **Automatic surface meshing**
  - **Curvature & proximity refinement**
  - **Size boxes**
- **Batch Mesh**
- **Layers generation**
- **Volume meshing algorithms**
- **Quality criteria and mesh improvement**

Live Demo 2: Part 1: ANSA Pre-processing & META Post-processing for Topology Optimization of an FSAE PedalBox assembly

CAD Processing

Static Structural analysis

Topology Optimization

CAD re-processing

Shape Optimization

Validation

Task Manager

Root	Type
Pedal_Box_forTopology.ansa	SOL200 Initial Model
SOL200 TOPOLOGY TASK	Optimization Task
PRE-PROCESSING	PRE-PROCESSING
TOPOLOGY_OPTIMIZATION	TOPOLOGY_OPTIMIZATION
RESPONSEs	RESPONSEs
CONSTRAINTs	CONSTRAINTs
PARAMETERs	PARAMETERs
MINIMIZE_Compliance	OBJECTIVE_FUNCTION
Header created for SOL 200	HEADER
/cyclop/testdata/user_dirs/d.drou...	OUTPUT
START_OPTIMIZATION	START_OPTIMIZATION
POST-PROCESSING	POST-PROCESSING

- **Model refinement, global geometry checks**
- **Batch meshing, shell mesh treatment, automatic volume mesh generation**
- **Assembly handling via the automated Connection Manager**
- **Topology Optimization via the GUI shaped optimization problem within the Task Manager**
- **Post-processing via the innovative user toolbars for optimization cases**

Live Demo 2: Part 2: ANSA's Laminate Tool functionality for Topometry-Composite Optimization of a F1 Front Wing

- **CFD results mapping as input for a structural analysis**
- **Topometry optimization of the isotropic airfoil**
- **Laminate tool's functionality for direct layer handling**
- **Composite Optimization for optimal ply thickness & orientation**
- **Post processing: animated visualization of layer & thickness distribution during each step, CompositePost toolbar**