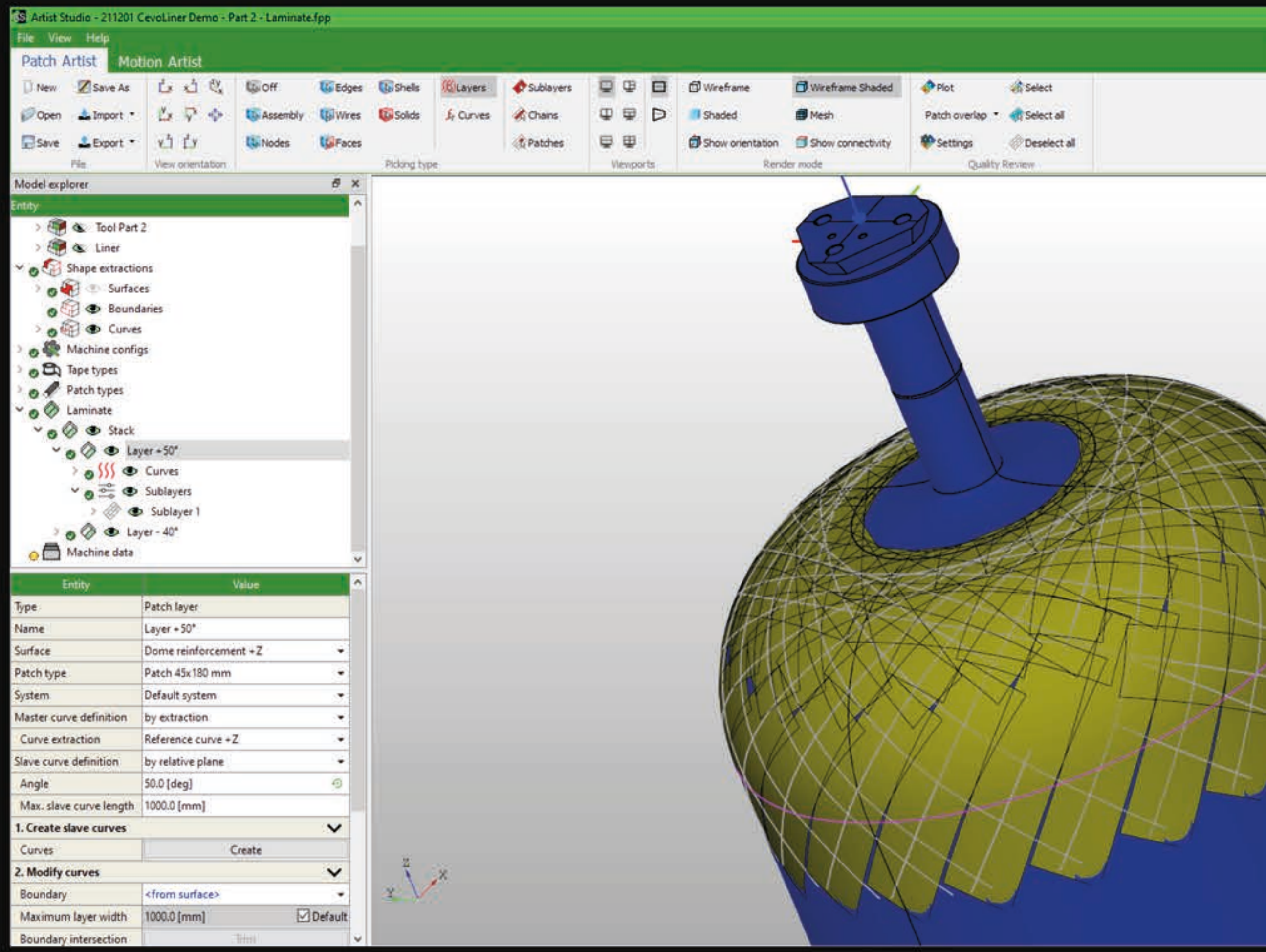
ARTIST STUDIO: CAD-CAM software with FE interface

Your engineering team requires digital tools that reduce the time for product development and integrate smoothly with production planning. ARTIST STUDIO is the perfect tool for digital product development and automated robot offline programming with Fiber Patch Placement. The software creates optimized patch laminates and generates the machine programs for the SAMBA systems.

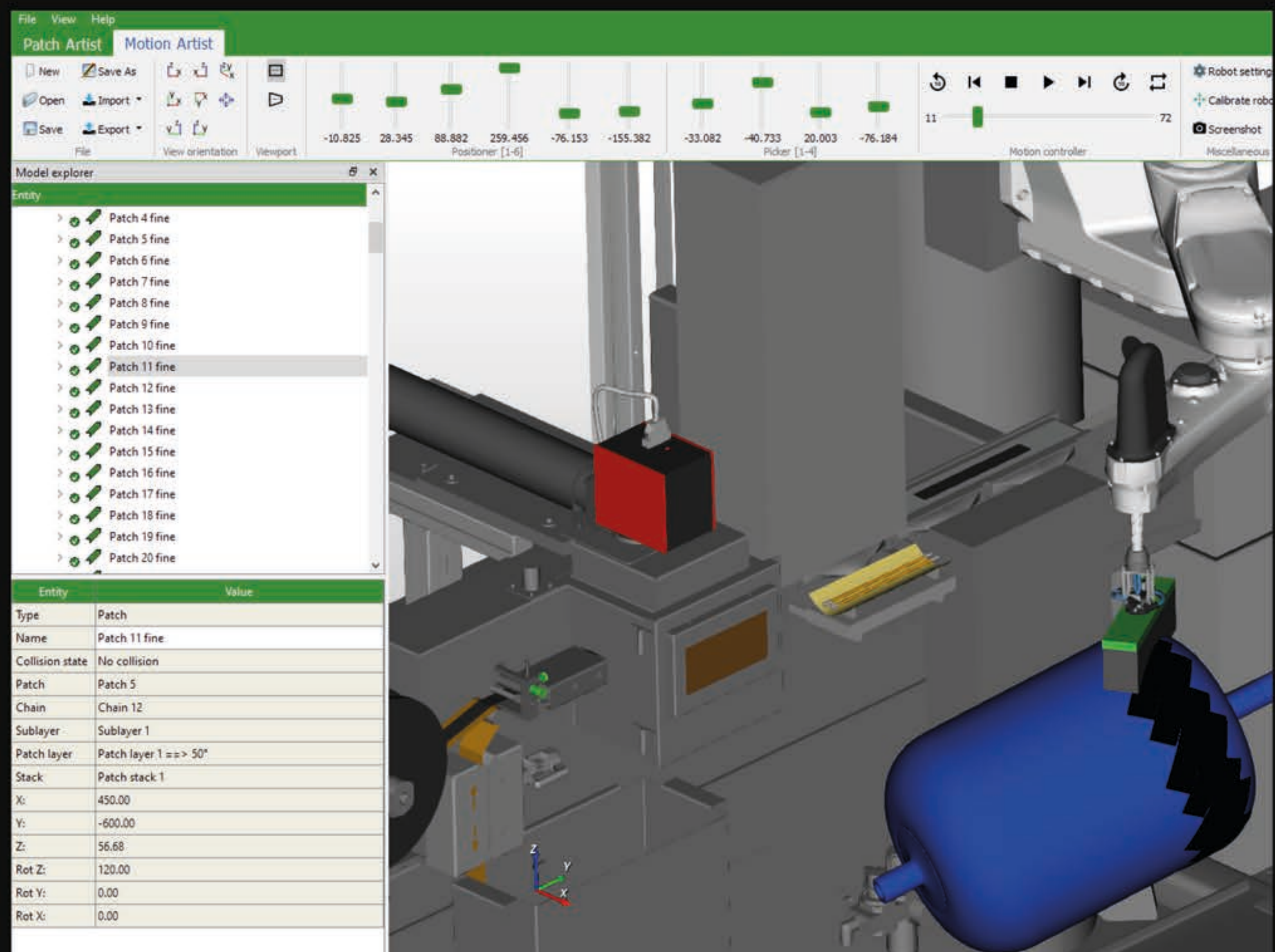


PATCH ARTIST - laminate design (CAD)

Interface:	Import of STEP, IGES, STL, CATPart with basic FiberSim support
Laminate:	Layer definition with specific material properties and constraints
Boundary:	Different lay-up strategies at boundaries (reducing scrap, constant layer thickness)
Fiber orientation definition:	Multiple methods to best suit your design specifications Reference curve, plane intersection, reference orientation, geodesic curve
Optimization:	Mechanical performance
Draping:	Accurate patch shape prediction on highly curved surfaces based on a kinematic draping approach
Visualization:	Mold, laminate, surface normal, fiber orientation deviation Patches and patch normals Individual patch overlap quality and length Laminate thickness distribution
Manual fine tuning:	Position adjustement for individual patches
New features 2022:	Local patch length optimization: faster production and improved mechanical performance More complex patch geometries Support for thick laminates using intermediate offset surfaces

MOTION ARTIST - robot offline programming (CAM)

Robot kinematics:	Digital twin of 4 and 6 axis robots, robot on linear axis Robot-to-robot interaction logic
Tool kinematics:	Robot-assisted, linear axis, rotational axis
Mold mount point:	Coordinate-based position and orientation
Calibration:	Robot to robot positioning, tool positioning
Robot movement:	Point-to-Point (PTP), linear
Optimization:	Robot movements with consideration of axis limits, robot range, singularities, collision detection, rolling movements for large patches
Visualization:	Production cell, robot movements, collisions, laminate
Analyses:	Material consumption, production time
Interface:	Input: laminate design from PATCH ARTIST Output: machine data program for SAMBA systems



ARTIST STUDIO support for FE-modeling (FEA)

Availability:	Menu-bar for FEA preprocessor HyperMesh release version 2017 and up, and/or FE-modelling support in Artist Studio (currently supported formats: OptiStruct PCOMPP/G and Nastran POMPG)
Interface:	Expects an existing FEA solver input deck and enhances it with additional FPP laminate properties Requires an existing mesh
Properties:	Automated modeling of patches, fiber orientation, thickness, patch overlaps Various element selection methods and multiple patch merging strategies available

Additional solver support possible upon request.