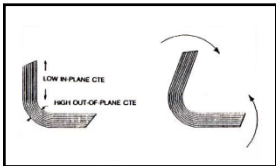
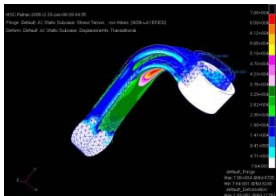


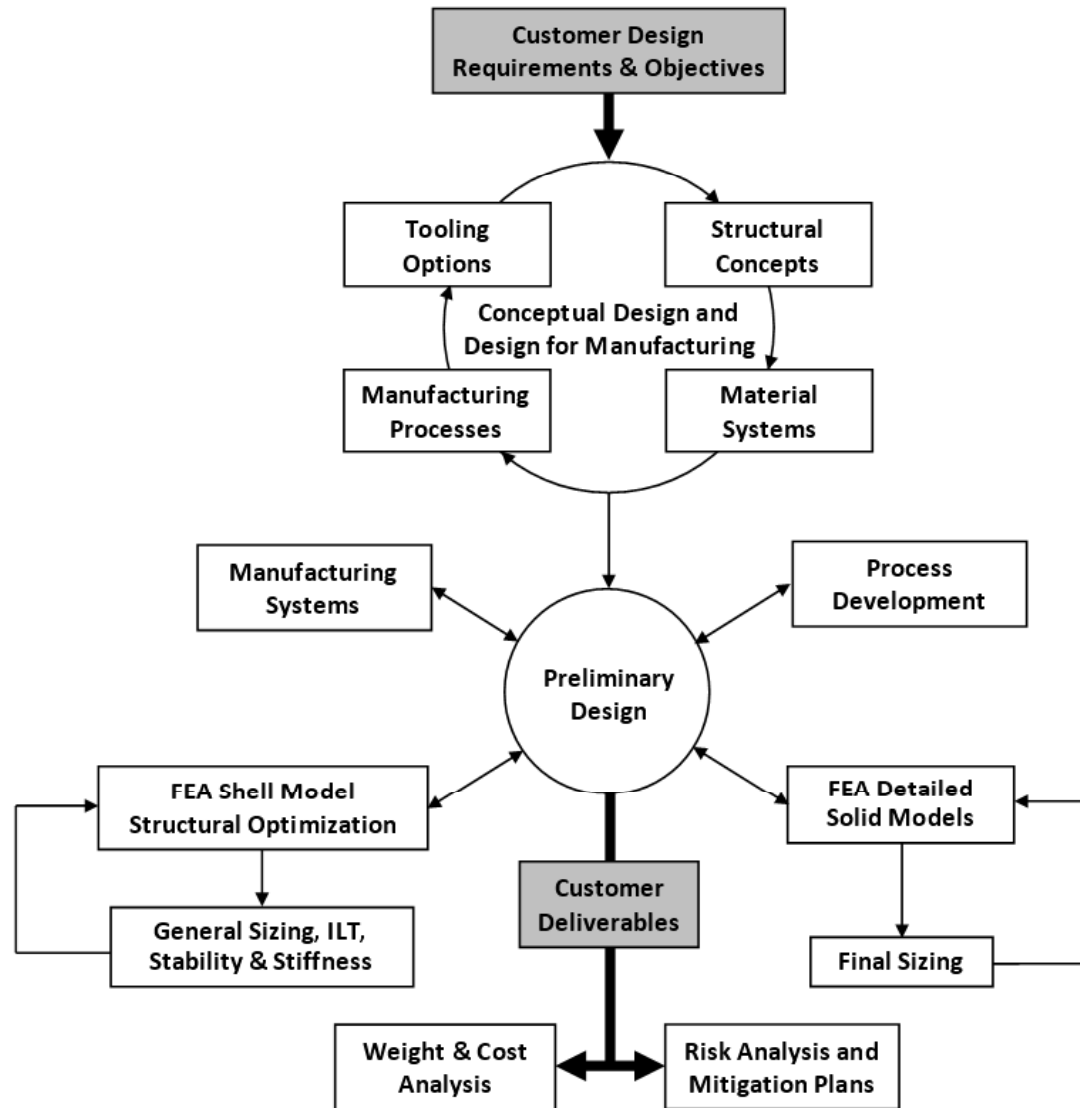
## Radius Provides Design and Analysis Capabilities Tailored to Net-Shaped Composites



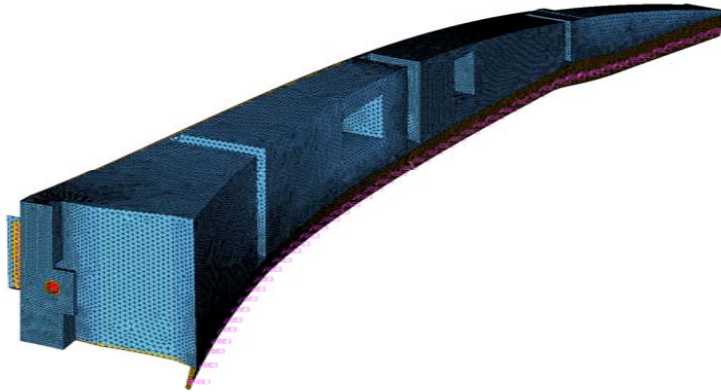
- ▶ Radius uses CATIA V5 and I-DEAS for solid modeling
- ▶ Radius performs structural analysis using finite element analysis (FEA) and traditional handbook methods
- ▶ Designs are optimized through a series of analysis iterations within NASTRAN or through the use of automated optimizers such as Altair Optistruct
- ▶ Dimensional change analyses can be performed with both empirical and analytical models to understand the effects of dimensional changes during cure
- ▶ Radius manufactures and tests a wide range of composite parts from standard material specimens to full-scale structures

The Radius Engineering Team possess a thorough understanding of how composite materials, manufacturing processes and closed mold tooling technology influence the design and analysis process.

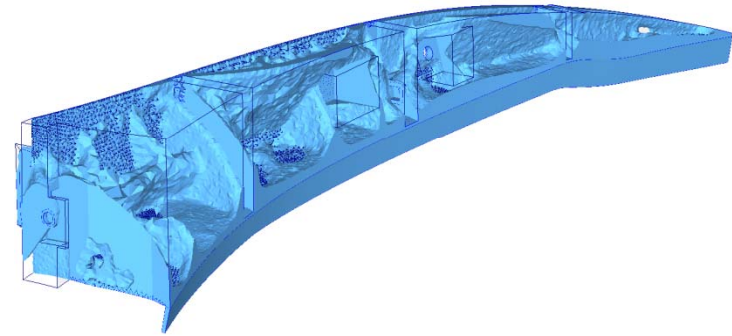
## Radius Provides a Multi-Disciplined Approach to the Design and Analysis of Net-Shaped Composites



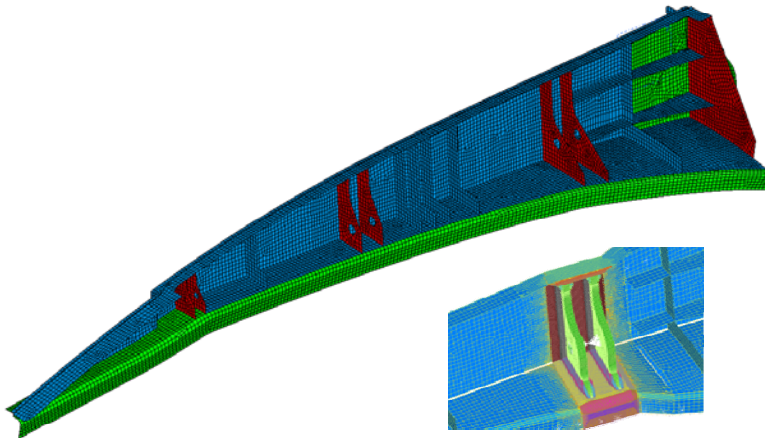
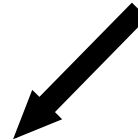
## Radius D & A Methods Provide Solutions



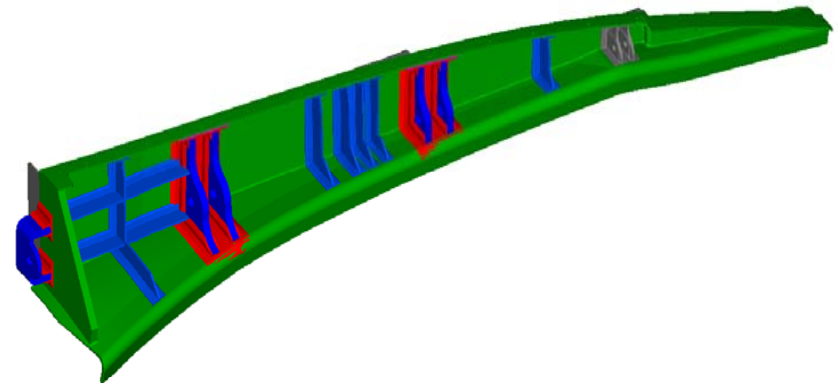
Customer requirements define envelope, mesh fills all 'allowed' volume, constraints and loads are applied.



Altair Optistruct suggests where material will be most effective, gives a very 'organic' result that guides next design iteration.



Nastran shell and brick FEA models used for sizing, stability and stiffness analyses.



Solid model incorporates final sizing, basis for weight & cost analyses and tooling design.