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## Software and tools Czero uses for advanced, full-service mechanical engineering R&D

### Solid Modeling/Design

- SolidWorks Premium
- Autodesk Inventor
- Pro/ENGINEER
- AutoCAD
- SolidWorks PhotoView 360
- Autodesk Inventor Showcase
- Microsoft Visio
- Engineering drawings using GD&T per ASME Y14.5 2009

### Analysis

- Finite Element Analysis
  - SolidWorks Simulation
  - Autodesk Inventor Algor
- Computational Fluid Dynamics – Star CD
- Magnetic Modeling
  - Maxwell
  - FEMM
- Dynamic modeling
  - MATLAB/Simulink/SimScape
  - SolidWorks Motion Study
- Hydraulic Simulation
  - MATLAB/Simulink/SimScape
  - HYSAN

### Embedded Systems

- Rapid prototyping of real time controls systems
  - Motoron/ Simulink/Stateflow
  - dSPACE/Simulink/Stateflow
  - Woodward/GAP
  - National Instruments/LabVIEW
  - Custom systems using Freescale MPC 555, MPC 5554, Siemens 167, Motorola MPC 755 Power PC
- Programming
  - C, C++, Visual Basic, Visual Studio Suite FORTRAN
  - MATLAB Real Time Workshop
- Instrumentation and data acquisitions
  - National Instruments/LabVIEW
  - dSPACE/Simulink/MATLAB
  - custom designed systems

### Data processing and presentation

- MATLAB
- JMP
- National Instruments DIAdem
- Excel
- Mathcad
- Powerpoint

### Project and Program Management

- Microsoft Project