

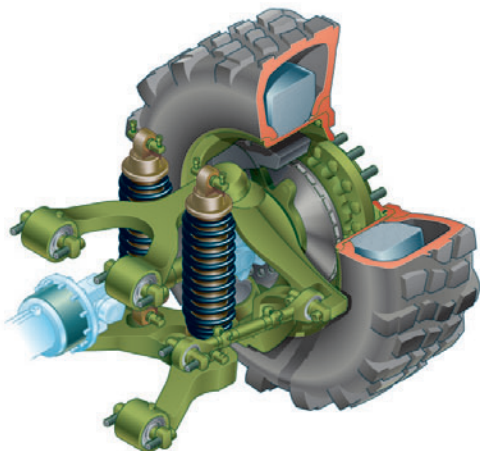


CDG Engineering Design Services

How CDG Can Help

CDG is a world-class strategic partner for engineering-driven organizations that develop, support and maintain complex equipment. With 40 years of experience and a global staff of hundreds of highly skilled engineers, CDG helps its partners and their customers ensure high-quality, cost-effective results to maximize efficiency in engineering-related processes.

A subsidiary of The Boeing Company, CDG offers its customers a high degree of confidence, backed by our reputation for long-term stability and reliability, our stringent security measures, and ISO-certified quality assurance practices.



Your engineering organization constantly faces any number of ongoing pressures and challenges, including:

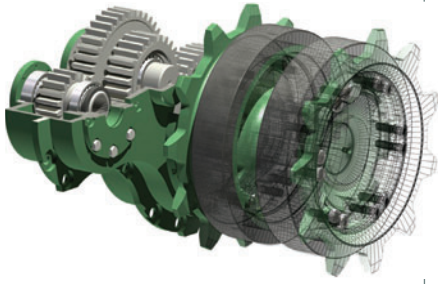
- Budget constraints
- Pressure to deliver high quality products on time, on budget
- Shrinking talent pool of experienced engineers
- Requirements for life cycle management / through-life support of engineering data
- Increasing competition in a global market environment

CDG Engineering Design Services

CDG offers comprehensive Engineering Design and Engineering Data Conversion services to help you deliver your engineering projects cost-effectively, on time, backed by experienced and skilled engineers and ISO-certified quality management systems.

Some of the speciality engineering services provided by CDG include:

- **3D Modeling and Simulation Services:** Fully constrained parametric 3D solid models and assembly models developed from source data. 3D Modeling and Simulation Services include:
 - **Full Animation Sequences Using 3D models** – to demonstrate equipment performance during engineering design processes
 - **Manufacturing Process Optimization using 3D Simulation** – used to create virtual “What If” models to pre-test new manufacturing and assembly processes and reduce up-front investment in proposed process improvements. Models can be effectively combined with Lean assessment of processes for a full-circle understanding of the potential impact of proposed changes.
 - **3D Animation Sequences for Training Materials** – used to demonstrate maintenance processes, equipment disassembly/reassembly, or other procedures.
- **Weight Optimization:** Modeling of design options to reduce equipment weight to lower shipping costs and improve operations efficiency, without compromising durability or reliability
- **Discrete Design Optimization:** Development of options for improved equipment functionality and performance, with higher perceived value and lower total cost of operations
- **Composites / Materials Engineering and Selection:** Modeling of equipment performance, peak failures, weight, repair/replacement procedures and other factors related to use of composites or other materials
- **Materials Analysis:** CFD (Computational Fluid Dynamics) Analysis, Thermal Analysis, Stress Analysis
- **Safety Analysis/Engineering:** Supporting compliance with governing body specifications and regulations, including development of safety analysis reports



Engineering Software Expertise

To support your engineering services requirements, CDG has expertise in a number of leading engineering software support tools, including:

- CATIA
- ENOVIA
- DELMIA
- SolidWorks
- AutoCAD®
- Pro/ENGINEER® (Pro/E)
- Mathcad / MATLAB / Mathematica
- Arbortext IsoDraw® & IsoDraw CAD Process
- Boeing BoGART
- And many others

Engineering design project files can be delivered to your organization in any of these formats.

Visit our web site or contact us for more information about other formats or platforms supported by our engineering design and technical authoring teams.

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Arbortext IsoDraw® and Pro/ENGINEER® are trademarks or registered trademarks of Parametric Technology Corporation or its subsidiaries in the U.S. and in other countries.

AutoCAD® is a registered trademark of Autodesk, Inc.

All other products listed are the trademarks of their respective owners.

- **Reliability and Maintainability:** Modeling, analysis, and data compilation to support functional improvements and reduce maintenance costs. Focus areas include:
 - Reliability Predictions, Design for Reliability
 - Maintainability Assessments, Modeling, and Demonstration
 - Failure Modes and Effects Analysis (FMEA / FMEACA)
 - Defect/Failure Reporting and Corrective Action System (DRACAS)

Engineering Data Conversion

CDG supports conversion of engineering data to/from a number of engineering data formats, including CATIA, AutoCAD, Pro/E, SolidWorks, and others. Services include 2D to 3D conversion (or 3D to 2D if required), and conversion of scanned raster images of engineering drawings, illustrations, or photographs to vector output in a number of selected software formats and delivery platforms.

Additional Services

- **Engineering Change Management:** Support services to create Engineering Orders (EO) / Engineering Change Notices (ECN), drawing updates as dictated by updated design data, Bill of Material (BOM) changes, and regulatory-driven specification changes.
- **Technical Publications:** Solutions covering every aspect of your technical publications process, from authoring and delivery of simple manuals or service bulletins, to development of complex interactive electronic technical manuals and publications (IETMs/IETPs).
- **Document Scanning / Digital Imaging Services:** Digital scanning and indexing of paper documents, aperture cards, microfilm, microfiche, engineering drawings, and blueprints.
- **Software Solutions:**
 - **Data Renaissance Suite™** – Interactive Electronic Technical Manual (IETM) solution designed specifically for military field equipment maintenance and support
 - **Wiring Illuminator Web™** – Interactive Wiring Troubleshooting Solution
 - **Smart IPC™** – Web-based interactive Illustrated Parts Catalog supporting configuration management
 - **Secure On-Demand™** – Secure Web Hosted Document Repository

Contact us to tell us about your specific project requirements for engineering design, engineering data conversion, or other services.



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To learn more about
CDG Engineering Services
or other CDG Services

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