

The INDAK Group

Engineering design firm speeds review cycles, cuts document assembly time by 90%, and reduces costs by thousands of dollars collaborating on 3D models in Adobe® PDF

The INDAK Group

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Industry

Engineering Design and Manufacturing

Challenges

- Read 3D CAD geometry from a broad spectrum of CAD/CAM systems
- Enable all team members to share 3D models and engage with the design team

Solution

- Convert virtually any CAD file into 3D PDF files with precise geometry
- INDAK is converting 3D models to Adobe PDF and packaging engineering documents in PDF Portfolios to design and build components faster and more accurately and securely.

Results

- Saved thousands of dollars by eliminating the need to buy extra CAD applications and translators
- Reduced design review cycles by 15% or more
- Reduced time to package customer quotes for review by as much as 90%
- Created 3D PDF files 100 times smaller than the native CAD file
- Improved quality of design and communication process
- Enabled more stakeholders to participate in review cycles

Agile, cost-effective engineering

The INDAK Group has been involved in downstream manufacturing for more than half a century and knows firsthand the challenges—reduce costs and accelerate time to market for more advanced products—facing companies today. At its Illinois headquarters as well as additional sales, distribution, and manufacturing facilities worldwide, INDAK designs and manufactures OEM mechanical and electronic switches, resistors, clocks, and other devices for automotive, electronics, and appliance manufacturers and their suppliers worldwide.

Given the array of projects that INDAK design engineers handle and the large number of customers and outside partners they work with, INDAK staff must manage CAD files from a variety of applications. Every day, the company's design engineers receive from customers and partners complex design assemblies, dashboards, and other project information created in CATIA V4, CATIA V5, AutoCAD, SolidWorks, Pro/E, and other applications.

“We constantly exchange files with current and prospective clients,” says John Clauson, CAD and drafting manager at INDAK. “To handle quote packages from prospective customers, I previously spent hours or even days reassembling and recreating materials so our engineering teams could review them. By converting 3D models to Adobe Portable Document Format (PDF) and packaging related project documents in PDF Portfolios, I cut my time to distribute documents for project quotes by as much as 90%.”

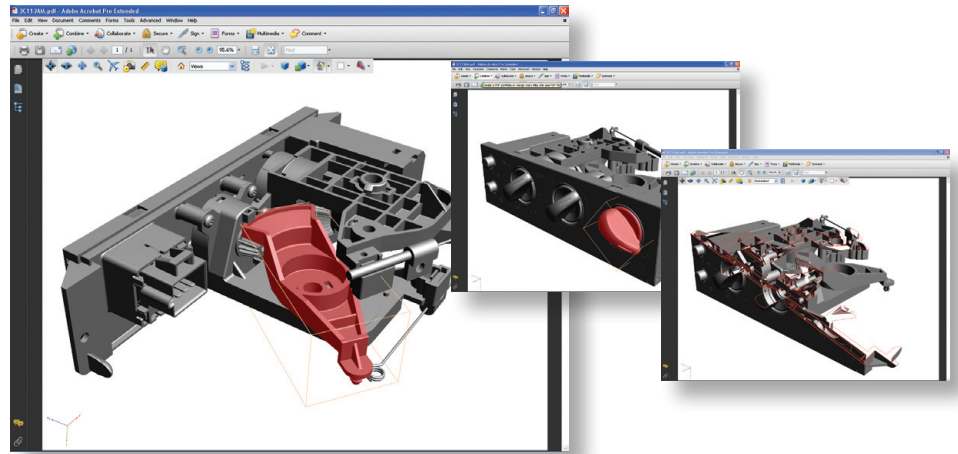
Cost-effective CAD interoperability

In addition to needing a more reliable and universal way to distribute and review engineering documents, INDAK turned to 3D PDF files for another important reason: to read all the various CAD files into the company's primary UGS NX application without having to purchase additional seats of expensive software and file translators. “I was blown away that so many native CAD formats could be converted to Adobe PDF and quickly exported to high-fidelity STEP or IGES files,” explains Clauson.

Prior to converting engineering drawings to 3D PDF, INDAK had to purchase CAD applications or expensive third-party translators to move the CATIA, AutoCAD, Pro/E, and SolidWorks files they received into UniGraphics NX. At one point, INDAK managers made a significant investment in CATIA V5 to translate the files from partners and customer, but were unhappy with the results.

“It's incredible, but I can use Adobe Acrobat® 9 Pro Extended software to convert files to readily accessible 3D files more reliably than using the CATIA software that we purchased to create 3D models for review,” says Clauson. “With 3D PDF, we save thousands of dollars by not having to purchase additional CAD software and translators. Plus, we can work faster because we know that we can efficiently handle any file that we receive.”

INDAK uses Adobe Acrobat Pro Extended and 3D PDF files to reliably distribute and review engineering documents. INDAK engineers and partners can use Adobe Reader software to review designs in detail, rotate images, cut cross sections, measure elements, and zoom in or out on designs as needed.



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John Clauson,
CAD and drafting manager,
INDAK

Systems At A Glance

- Adobe Acrobat 9 Pro Extended
- Adobe Reader
- UGS NX
- CATIA V5
- Pro/E
- SolidWorks
- AutoCAD

For More Information

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An added advantage to using Adobe tools is that INDAK staff often converts documents to 3D PDF files to clarify detail in native application files, or to ensure that content in files is accurate. “When I create a STEP file, I also convert the file to a 3D PDF, so I can review all the design details and be sure they show up properly,” explains Clauson. “Certain errors are not always clear when just looking at native application files.”

With the Adobe Acrobat solution, translators for major CAD formats are included and a highly compressible, precise B-rep solid model is maintained, providing industrial-strength format conversion and data translation that is so accurate it is used on manufacturing floors.

Overcoming collaboration barriers

Clear communication among INDAK staff and customers is essential for keeping design costs in check and production schedules on track. The goal at INDAK is to give all stakeholders—including engineers, procurement staff, sales people, internal managers, suppliers, and customers—the tools they need to rapidly make informed decisions at every point in the design and manufacturing process regardless of their technical skills.

For years, INDAK routed engineering change notices and communicated project information in Adobe PDF. While effective in many ways, the company wanted to move to more interactive collaboration built around sharing 3D product data with technical and non-technical stakeholders.

“2D images could not effectively communicate design intent of complex assemblies,” says Clauson. “Now, using 3D PDF files we deliver 3D models in a platform- and application-independent file format that teams can easily share and mark up using Adobe Reader® software. These efficiencies help us to better estimate project costs, win bids, and directly integrate customer designs into our workflows.”

The compact 3D PDF files are more than 100 times smaller than the same file in the native CAD application. Also critical, the 3D PDF files are easily managed and contain the precise geometry, PMI, and other critical data necessary for estimating costs and using downstream in other CAD, CAM, or CAE applications.

INDAK engineers and partners need only the free Adobe Reader software to review designs in detail, rotate images, cut cross sections, measure elements, and zoom in or out on designs as needed.

Accelerating time to market

Since INDAK started converting 3D models to PDF and packaging project documents in PDF Portfolios, Clauson estimates the firm is reducing project review cycles by as much as 15%.

“We’re eliminating obstacles to sharing information across technical and non-technical staff,” says Clauson. “Engaging everyone with accurate 3D PDF project documents helps catch possible design errors on OEM components long before they are integrated with outside systems. This reduces costs and shortens the time to deliver final products to our customers.”

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