

Top 10 Use Cases for CAD Interoperability

The product development process involves collaboration between multiple teams and shared data from various software applications. Error-free interoperability is critical. But when do you need interoperability?

Changing your design and manufacturing CAD software

Every engineering organization must decide on the best CAD software to satisfy their design and manufacturing needs. It is a complex decision that involves engineering tools, collaboration capabilities, and data management. Existing engineering teams often face these choices when transitioning to new CAD software or standardizing on one platform after an acquisition.

1. Learning to work with 2D and 3D CAD together

For over twenty years, companies have realized the benefits of migrating their legacy 2D drawings to 3D models. The list of reasons why is long, including better collaboration, virtual testing, and 3 to 5-axis machining capabilities to name a few. Most companies have also realized the benefits of using both 2D and 3D CAD software together. In those cases, it's important that your data remains fully associative between your applications.

2. Bringing your data together after an acquisition

Changing CAD software can be challenging, and it is often necessary to standardize engineering teams on one platform. In the past this required CAD software to translate the data from one application to another.

Over the past few years, CAD companies have developed new technologies that enable you to open files from other CAD applications without error-prone translation and the 3D model remains associative when changes are made.

3. Switching CAD systems

Some engineering organizations are faced with a decision to switch to another 3D CAD system. It is a heavy balance between the technology benefits and cost of the switch. The cost goes well beyond the software price as there is downtime for the migration of data and training for CAD users. Companies who make the change must decide whether to keep their legacy data as-is or invest in 3rd party applications that will convert feature history into the new CAD software.

Collaboration from start to finish

The product development process commonly involves collaboration between multiple teams inside and outside your organization. This includes shared data between various software applications. It is critical that 3D models and metadata maintain accuracy and are free of errors as the product development process moves forward.

4. Using supplier data in your designs

It is ideal when you and your suppliers use the same CAD software, but what if you are using something different? If you are using the latest version, then you are probably able to open native file types from other CAD systems. Otherwise, you may find yourself searching for the most accurate and error-free method of translating 3D models provided by the supplier.

5. Making custom products for your customer

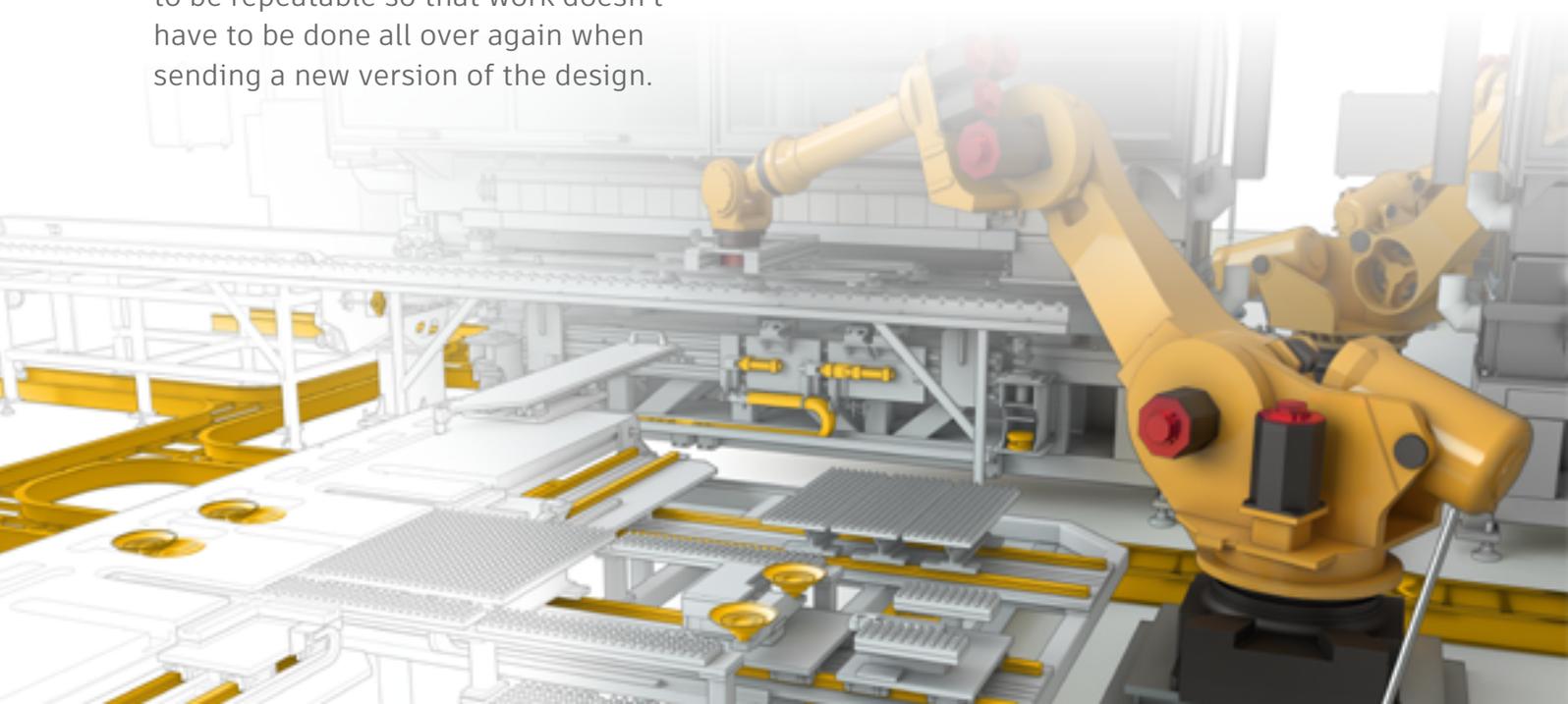
All organizations need to protect their intellectual property. How can that be done when it's time to share your 3D models with your customers? You need capabilities that enable you to develop a simplified version of your model that can be created quickly, and the process needs to be repeatable so that work doesn't have to be done all over again when sending a new version of the design.

6. People who need your model to do their job

Many of the tools that are used for downstream applications are integrated in the CAD system. However, there are times when collaboration involves highly specialized tools that can only be accomplished in separate software.

7. Participating in BIM projects

Companies that are looking to get spec'd into building projects require tools that help them to turn their designs into digital assets that architects need. Architects are looking for mechanical engineering organizations to design and manufacture custom structures for their building projects. The design requires all the details for production as well as an efficient approach toward simplification and export of a Revit family project.



8. Create quotes for customers

As customers send their data for new projects, it is important that you can read it in without errors or missing information to generate an accurate quote.

9. Aggregate all 3D data into one file for internal and external collaboration

There are some projects that require a massive amount of data from multiple teams from different disciplines. The aggregation of 3D mechanical designs, the building, HVAC, and point cloud will save time and money as you avoid costly interferences and schedule installation of equipment.

10. Take measurements virtually from the 3D model

Collaborating with others or simply walking to the shop floor to take measurements can be a time-consuming task. Access to the data, whether it is in the form of a 3D model or point cloud, enables you to measure everything from your desk or even mobile device.

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