

COMPANY  
**Component Engineering**

LOCATION  
**Wyoming, Michigan**

SOFTWARE  
**Tetra4D Reviewer**

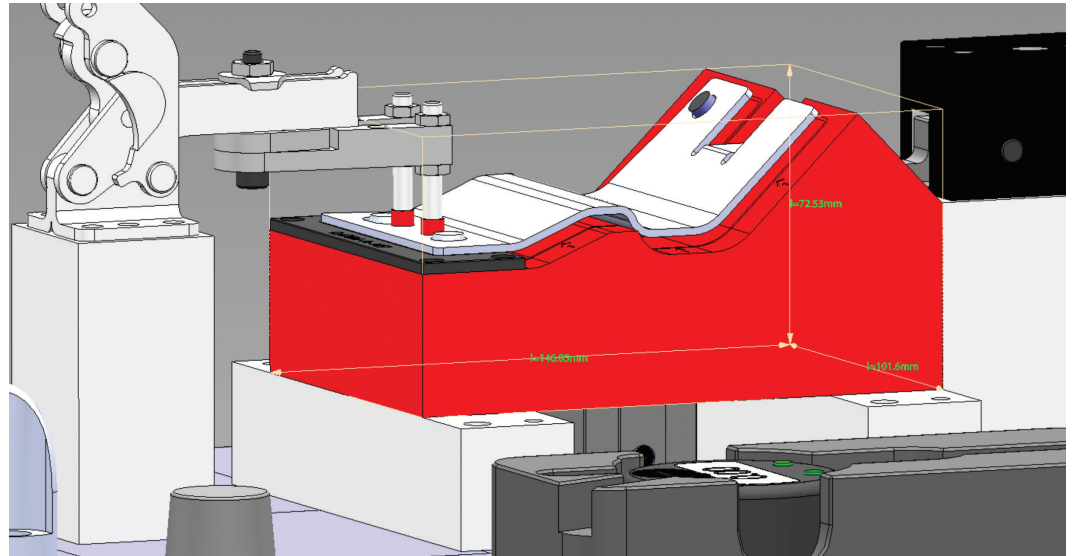
COMPANY WEBSITE  
[www.cequalitysolutions.com](http://www.cequalitysolutions.com)

# Tetra4D Case Study: Component Engineering

## Tetra4D Reviewer Helps Manufacturer Streamline Collaboration with Customers, Reducing Turnaround Time for Custom Designs

“Having the ability to quickly and easily translate CAD data during all the distinct phases of a customer project—from the initial quote, through to the final design—really speeds up the entire process. Reviewer greatly enhances our productivity as an organization, which at the end of the day, allows us to better serve our customers.”

— **Joe Stellema,**  
**Component Engineering**



### The Challenge

Since 1999, Component Engineering has developed cutting-edge custom gages, measurement equipment, test fixtures and fully automatic checking machines for customers in a wide range of industries, with a particular focus on the automotive sector.

“Essentially, we’re the quality control for the big automotive companies,” explained Joe Stellema, Engineering, Design and Quality Manager at Component Engineering. “They use our devices to make sure that their parts and components are the right size, have holes in the right places, and otherwise meet specified requirements.”

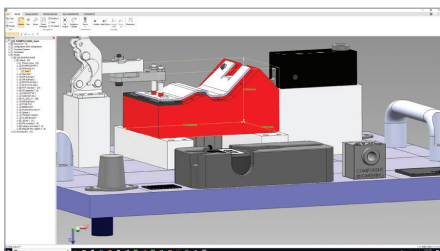
Each of Component Engineering’s products are made in-house and can be individually customized based on the type of part that needs to be measured or checked. To develop a solution, Component Engineering

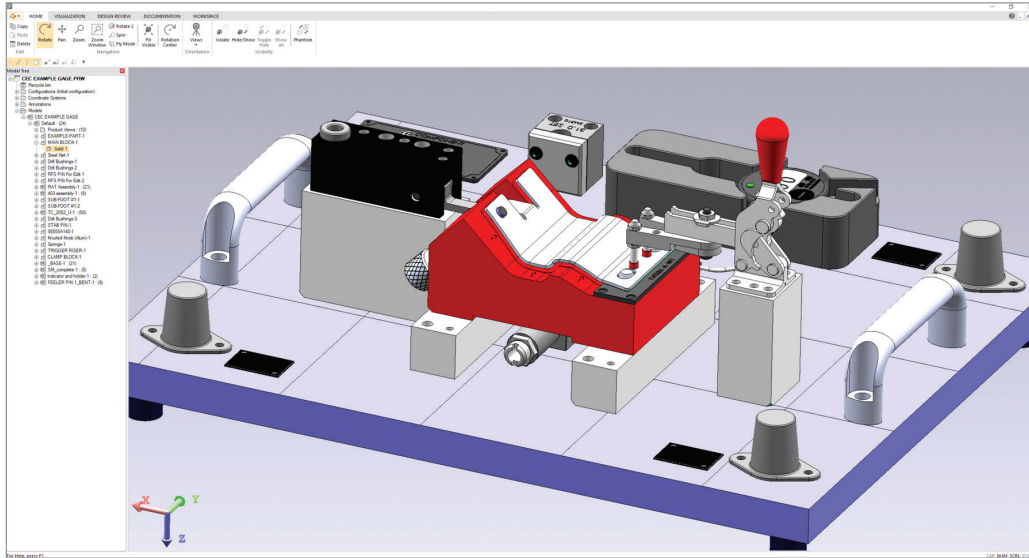
first needs to review a 3D CAD model of the part, which can arrive from the customer in a variety of formats.

“The challenge that a lot of businesses like ours face is translation,” said Stellema. “The customer might send you a CATIA file, but not everyone has a copy of CATIA installed on their desktop. If you can’t open the file, you have to go back to the customer and request a different format. You’re looking at losing two or three days just in the back and forth.”

### Converting and Collaborating with Tetra4D Reviewer

Component Engineering was able to address this challenge by using Tetra4D Reviewer, a standalone product for converting native 3D CAD data into rich, interactive 3D PDF documents that contain all of the solid geometry and Product Manufacturing Information (PMI) needed to manufacture a piece of equipment.





The 3D PDFs can be opened and viewed by anyone with a copy of the free and readily available Adobe Acrobat Reader. As a result, Component Engineering doesn't need seats of multiple CAD applications to view and interact with the 3D models from customers.

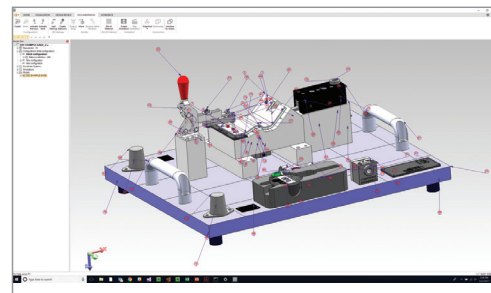
"During the initial quoting phase, I'll use Reviewer to open the file and get a rough idea of the geometry of the part," said Stellema. "The fact that Reviewer brings in all of the hidden Geometric Dimensioning and Tolerancing (GD&T) and other PMI from the CAD model allows us to get a much better understanding of what type of solution we need to design for the customer, allowing us to prepare an accurate price quote."

Once a job has been secured, Reviewer plays a critical role again during the design phase. Component Engineering can use Reviewer to export the 3D PDFs to neutral formats such as IGES, STEP, Parasolid, STL and JT—and from there, they can import the file into SolidWorks to begin the design phase in earnest.

As the design moves through various iterations, some of the more advanced functionality in Reviewer helps Component

Engineering stay on top of changes as the design evolves. "Sometimes the customer will make changes to the original part design and send along an updated model," said Stellema. "With Reviewer, I can import the new part and overlay it on top of the old part to easily compare the two versions and see what's changed, so that we can adjust our design accordingly."

"Having the ability to quickly and easily translate CAD data during all the distinct phases of a customer project—from the initial quote, through to the final design—really speeds up the entire process," concluded Stellema. "Reviewer greatly enhances our productivity as an organization, which at the end of the day, allows us to better serve our customers."



**Contact Tetra4D to learn more about how 3D PDF can benefit your organization.**

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**Industry:**

- Manufacturing

**Challenge:**

- Prepare custom-designed solutions for customers who share 3D CAD data in a variety of formats

- Compare original vs updated customer part models to see changes

**Solution:**

- Tetra4D Reviewer

**Results:**

- Easily open multiple types of 3D CAD files from customers without requiring licenses for each different CAD solution

- Reduce amount of time required to prepare accurate price quotes for customers

- Simplify customer collaboration and streamline the iterative process during the design phase