

Validate Complex Manufacturing Processes and New Facility Design with Process Simulator PRO

Large Government Contractor

Project Review

Manufacturing & Logistics

Process Simulator



CHALLENGES

A diversified, global defense and information solutions company is successfully using Process Simulator Professional to model and simulate their complex, large scale manufacturing processes. This organization provides mission-critical, next generation solutions for the command, control, communications, computers, intelligence, surveillance and reconnaissance markets. It employs approximately 10,000 people and generated over \$3 billion in revenue last fiscal year.

When this organization bids a project in the areas of integrated electronic warfare, sensing and surveillance, air traffic management, information, cyber-security, or networked communications, it must leverage its years of experience, knowledge and technical expertise. Its markets demand a lot and the risks in meeting these demands must be all but eliminated. Bidding such projects requires proof and validation.

Some of its clients include:

US Army
US Airforce

US Navy
Marine Corp.

Homeland Security
FAA

NASA

OBJECTIVES

A tool that helps them answer a variety of predictive and prescriptive questions for complex projects:

- What resources will they need, how many, and by when?
- In their high-mix production processes, where are the bottlenecks?
- Can their manufacturing process meet the demands of the new program without jeopardizing current contracts?
- How long will it take to ramp up to maximum utilization?
- How do they layout a new manufacturing line or facility?

VALUE PROVIDED

A reusable modeling and simulation tool that allows them to measure and validate manufacturing processes data prior to actual manufacturing. Process Simulator Professional is a reliable and easy to use Visio® plug-in. This analysis tool allows this customer to build models of complicated interdependent manufacturing processes and new facility designs. These models are used to simulate the process before contracts are signed and projects begin. They provide the proof and validation needed to determine if and how to meet the stringent requirements of this customer's contract obligations.

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SOLUTION

When a new contract is bid, this organization must know how to meet the production requirements of the contract and what it will cost. For one project they may need to model 90 different manufacturing processes or parts. Some of these processes may require new and expensive equipment. Process Simulator helps them determine what equipment is needed, how many pieces of that equipment are necessary and other data needed to meet the designated delivery dates.

A manufacturing process might include the following steps, or any combination thereof for each of 90 different parts:

1. Material Cutting



2. Layup



3. Curing



4. Machining

5. Inspection

6. Painting

7. Assembly

Each complex process must be analyzed as a dynamic system because the production ramp-up and learning curve (cycle time) for each process is so critical to their business success. Accounting for the learning curve is essential to their profitability. Often at the beginning of production, a contract sells product below cost and over time moves from a loss to a profit. This organization must know when this will occur, how many resources will be required to meet delivery dates, and what training will be required and for how long.

Process Simulator Professional is a modeling and simulation tool that allows them to easily build many unique process models and later connect these models to one another. It can also be used to help determine the footprint and space requirements needed to house large scale equipment and the correct and efficient placement of manufacturing tools and other resources.