



## ▶ Customer Profile

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# From Chaos to Clarity: How Solumina Transformed the McDonnell Douglas C-17 Program and Aerospace Manufacturing

## ▶ Industry Aerospace and Defense

### ▶ The Challenge

In the early 1990s, the U.S. Air Force faced **massive delays and cost overruns** with the brand-new C-17 aircraft. With tens of thousands of engineering changes overwhelming the system, they needed a radical solution—**\$500 million had to be cut** from the program.

### ▶ The Turning Point

The Air Force partnered with McDonnell Douglas and provided a grant to explore **new manufacturing methods**. The existing systems were siloed: designs, instructions, and execution data were scattered across platforms, leading to **major inefficiencies and costly errors**.

### ▶ Solution Solumina Is Born

A new integrated approach was pioneered:

- **Unified process planning, execution, and quality tracking**
- **Connected “as-designed” to “as-built”**—introducing digital traceability before it was mainstream
- Supported by **time and motion studies**, Solumina demonstrated significant improvements in speed, accuracy, and responsiveness to change

### ▶ The Impact

- **\$150M saved** over the life of the C-17 program
- **\$1.5M saved per aircraft** through gains in productivity and quality
- **Fewer errors, faster implementation of changes**, and better shop floor agility
- McDonnell Douglas **won the Malcolm Baldrige National Quality Award**—a recognition for delivering not just what was promised, but **what the customer actually needed** with exceptional quality