GE
Measurement & Control

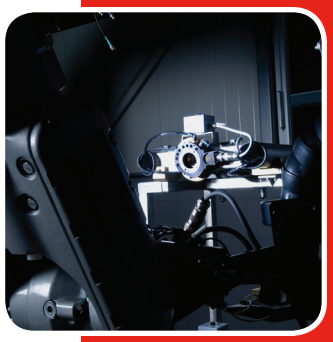
COMPOSITE INSPECTION

AN EXAMPLE OF HOW GE HELPS CUSTOMERS IN THE AEROSPACE INDUSTRY

GE's HydraStar system reduces inspection time by 33–43%.

"Great engineers...the team that helped us with the dual robot installation was top drawer."

– Composite Components Manufacturer



PROBLEM

A major composites manufacturer in southeastern Georgia manufactures structural components such as fuselages, wings, empennages, nacelles, and helicopter cabins for the commercial, military, and business jet aircraft industries. The company was using two ARGUS gantry-style non-destructive testing (NDT) machines and a flatbed scanner—all of which were 15 to 20 years old—for its inspections, but it needed to reduce inspection time to improve productivity.

SOLUTION

Recognizing GE's domain expertise, the company chose our HydraStar* dual robotic ultrasonic inspection system, which is used for inspecting composite parts such as spoilers, flaps, and ailerons for major aircraft manufacturers. Installed in January 2012, the HydraStar system was qualified a month later.

PAYBACK

GE's HydraStar system reduced part inspection time by 33 percent to 43 percent, depending on the part. For instance, it previously took two hours to inspect a particular flap cover, but with the HydraStar system, the inspection only took one hour and 25 minutes—a savings of 30 percent. GE's technology cut an hour and a half off the inspection of another part—a savings of 43 percent—and inspection of another part went from four hours to two hours and 40 minutes, a 33 percent savings.

BENEFITS

Using the HydraStar system adds up to reduced inspection times and increased productivity.

- **Faster inspections:** The machine operates at a greater inspection speed and with a larger envelope of opportunity than other machines. This allows more parts to be simultaneously set up for a batch scan process. Previously, only one part at a time could be setup in other machines.
- **Fewer machines, and associated capital and maintenance costs.** The robotic system allows parts to be inspected by fewer machines, reducing the capital investments and maintenance associated with more machines.
- **Reduced number of scans:** Larger parts can be inspected in one scan, as opposed to segmented scans requiring multiple setups.
- **Increased flexibility:** A larger variety of parts can be inspected on one machine. Previously, separate machines were required for different parts. In addition, other tools can be added to the HydraStar system to provide additional flexibility.
- **Faster machine delivery time** utilizing the robotic platform as opposed to custom designed and fabricated components.
- **Cost-effective programming** utilizing the robotic system as the drive platform with a primary and follower system.
- **Capability to expand** the programming parameters to include complex parts.

Aerospace – Composites

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