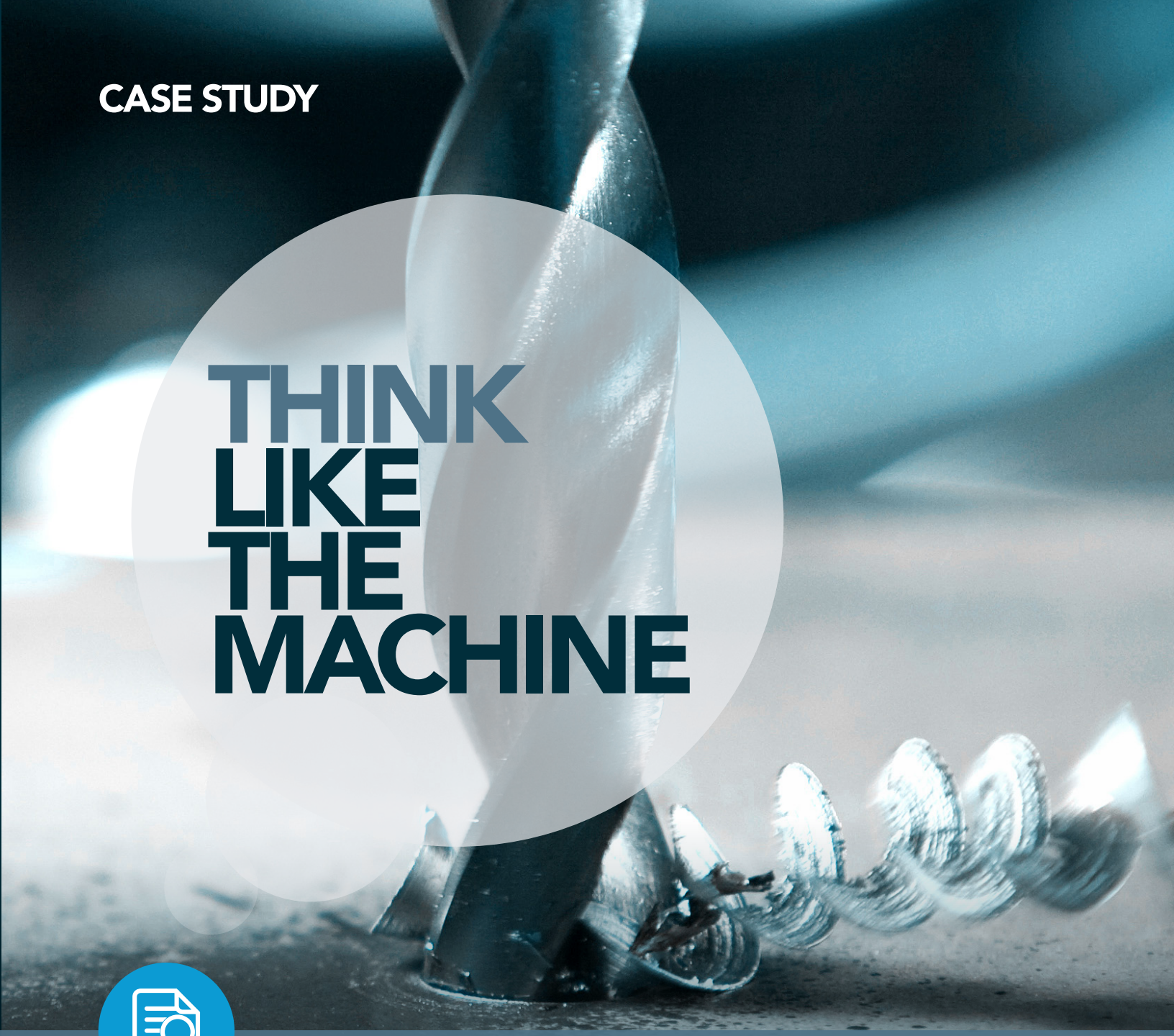
CASE STUDY



THINK LIKE THE MACHINE

OPTIS IMPROVES CYCLE TIME BY 80% FOR AEROSPACE MANUFACTURER

Gun drill optimization for SAFRAN LANDING SYSTEMS

Castrol

SAFRAN

OPTIS
A JOINT VENTURE WITH TechSolve

BACKGROUND

OPTIS, a joint venture between TechSolve and Castrol, has improved cycle time of a deep hole drilling process by up to 80% for SAFRAN LANDING SYSTEMS, the world leader in aircraft landing and braking systems. Safran Landing Systems is a partner to 30 air framers working in the fields of civil, regional, business, and military transport. Safran Landing Systems provides support for 25,000 aircraft making over 40,000 landings every day.

Safran Landing Systems has a staff of more than 7,000 in Europe, North America and Asia.

THE CHALLENGE

Before moving from a machining center with a 6,000 RPM spindle to a vertical mill-turn machining center with a 20,000 RPM spindle, Safran Landing Systems wanted to conduct preliminary tests with a new, two fluted spiral deep hole drill. The target was to define optimized machining parameters to improve the drilling process time and to extend the cutting tool life at the same time.

Jon Iverson, Chief Executive Officer at OPTIS, said:

"The client wanted to improve their drilling process to reduce overall cycle time without the risk of disrupting their current manufacturing process. As a leading provider of aircraft equipment, Safran could not afford to lose time at implementing an unstable process."

SOLUTIONS PROPOSED AND IMPLEMENTATION

Importantly, OPTIS was able to remove any risk of disruption to SAFRAN's production, shop floor or wider business, by replicating the company's in-house process in its entirety at OPTIS' state-of-the-art machining center in Cincinnati, Ohio. OPTIS reproduced identical conditions to those at SAFRAN's Walton site in Kentucky, including the drills, materials, and coolant used, as well as feed and speed rates, to set the baseline.

The OPTIS experts conducted tests with a spiral drill, and utilized a drilling dynamometer in order to collect a robust data set for investigation into the behavior of the drill.

The company measured torque, thrust, tool wear, and the straightness of the hole as well as the surface finish of the hole with a digital 3D microscope to analyze the data and identify the optimal machining parameters and recipe.

THE OUTCOME

The improved process was validated at 18 seconds per hole, and the new method was supplied and implemented globally at Safran Landing Systems plants Molsheim, France and Walton, Kentucky.

*"We could not have done this without OPTIS. Not only did they help us reduce machining cycle time from **1.5 minutes** to **18 seconds** but the whole project took just ten weeks, which is significantly less time than a similar project would've taken in house."*

Mike Michele,
VP Wheels and Brakes at SAFRAN

OPTIS is a joint venture that brings together the deep machining expertise, analytic tools, and process improvements of TechSolve with the heritage and global commercial reach of Castrol, to deliver transformative efficiency to the manufacturing industry in North America and beyond.

With the ability to mimic customer equipment and validate process solutions using its unique instrumented machining lab, OPTIS thinks like the machine. OPTIS experts deliver tangible benefits that go to the bottom line, accelerating clients' efficiency programs, solving manufacturing problems and reducing part costs.

For more information, visit: **www.optis-solutions.com**

Castrol

SAFRAN

OPTIS
A JOINT VENTURE WITH TechSolve