



MARPOSS Case Study

SAFRAN CHOSE ARTIS FOR PREVENTING COLLISION DAMAGE



Customer Safran Landing Systems
Industry Aerospace
Machine Horizontal Milling for Machine 5 axis

Collision prevention can save more than 100'000\$

COMPANY

Safran Landing Systems, from Safran Group, is the world leader in aircraft landing and braking systems. The company equips the fleets of nearly 30 key airline manufacturers, and its expertise covers the entire life cycle of its products, from design and manufacturing to maintenance and repair. Due to safety and reliability needs, the aerospace industry requires the highest quality procedures and the working processes are usually complex and time-consuming. A single manufacturing operation can take tens of hours to be completed.

PROBLEM

Reports showed that the results of some production stages such as, roughing or finishing production operations, were linked to the operators' experience. To compensate for tool wear, drifts, or any other unwanted behaviors, they would manually apply adjustments to the machining process. In some cases, this created small errors that caused damage with long, unexpected downtimes.

BENEFITS

- Avoid collision downtime
- ~ 80% reduction of repair costs
- Easy installation
- Log Data (CSV File)



SOLUTION

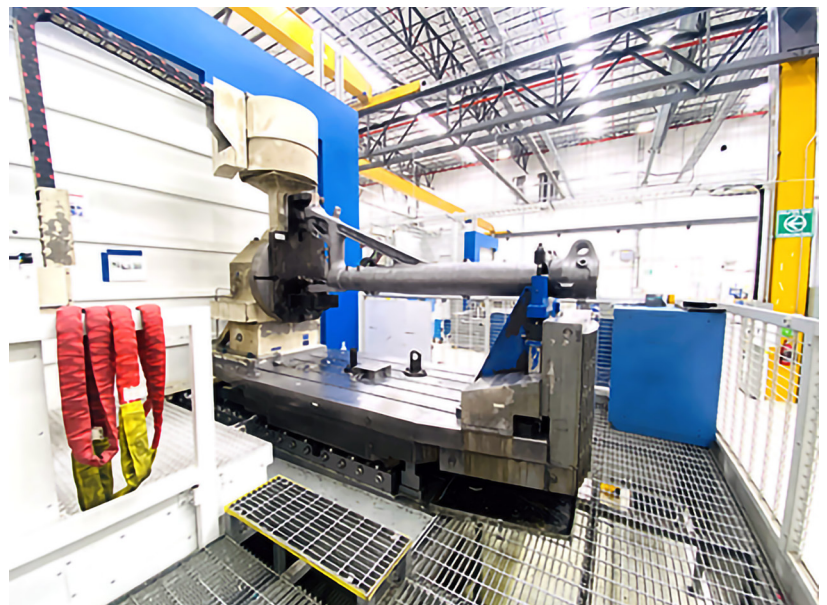
GEMCMS is a highly effective Collision Detecting System, with an activation time less than 1 millisecond, it's faster than any NC overload routine. With dedicated strain sensor, it detects any abnormal forces in the machine structure and triggers a stop signal within the elastic deformation area, keeping the damage to a minimum. With the dedicated sensor, GEMCMS can detect not only crashes but also slow collisions causing compressive forces at a lower speed typically taking place during set-up. This helps in preserving the accuracy and reliability of the machine.

GEMCMS can be used in stand-alone mode, or, thanks to the flexibility of Marposs' products, can be integrated into the GENIOR MODULAR monitoring systems for process monitoring purposes, using the strain signal.

The compact systems consist of an electronic module, a sensor, and a software package for configuration, visualization, and data management. Integration into new or existing machines and systems is simple.

RESULTS

Besides all other process disturbances, collisions between a moving axis and other components like fixtures, tables, or workpieces can cause long machine downtimes and high repair costs. It is therefore of utmost importance to minimize the damage following a collision. That is why continuous background monitoring and reaction time are so critical for these systems. Thanks to GEMCMS, costs due to collisions have been lowered by up to \$500,000. The introduced technology has helped Safran Landing reach record savings in 2019.



MORE INFORMATION

<https://artis.de/eng/application/machine-protection-for-machining-centers>