

Digitalization of Aerospace Processes

Executive Summary

Safran Landing Systems has tasked Team 5 from AER1601 with researching digitalization and its potential for improving the management and operations involved in the manufacturing of landing gears. The company wants to see the potential for digitalization of its processes. Digitalization is a radical change in products and services, processes, or entire business models through the application of digital technology. It can include converting paper copies to digital copies, using software modeling instead of physical modeling, and using software for testing digital models. Digitalization can improve product and organizational management, reduce design and production waste, and create a more organized workplace with better communication. However, there are some drawbacks to digitalization, such as the cost of implementation, costs of software licenses, and the cost of IT, both physical and time.

In this report, a brief overview of Safran Landing Systems was provided, and the project was justified through various case studies. Furthermore, the objectives and scope for the project were defined, roles and responsibilities for each team member were assigned, and a plan of action was presented.

To begin with, the team conducted a literature review to understand digitalization and its applications within the aerospace industry as well as other relevant sectors. Next, the team studied the design and manufacturing processes at Safran by conducting various interviews with key individuals within the company. Also, metrics were defined from the case studies to benchmark Safran against the industry based on four criteria: software, process, collaboration, and knowledge transfer. The team concluded that Safran currently has a fair level of digitalization. However, there were some areas where improvements could be made. Firstly, while Safran's processes are up to par, the accommodating software is not always optimized to streamline the process as hand-offs are made between different employees and between multiple iterations of a project. Secondly, employees sometimes struggle when it comes to communicating and collaborating with individuals or groups, they may be unfamiliar with. Thirdly, knowledge transfer was another concern, as training new employees tend to restrict the work capacity of existing employees. Based on the team's findings and the benchmarking metrics, scores were given to each area of the business and were then translated into an overall score.

Moreover, an analysis of the gap was provided, and potential improvements were identified. In order to make these improvements, numerous solutions were suggested, including online training modules, an employee directory describing detailed job functions, SAP custom add-ons, a detailed software tools database, and a review of the internal design processes. Additionally, a high-level implementation plan was provided for each solution. The team is confident that these solutions will improve day-to-day work, efficiency, cost, customer retention, and employee retention, ultimately helping Safran further establish their presence in the aerospace industry.