

A word cloud featuring various terms related to digitalization and aerospace technology. The most prominent word is 'Digitalization' in a large, dark red font at the bottom center. Other words include 'Automation', 'Instrumentation', 'Monitoring', 'Application', 'Control', 'Analysis', 'Optimization', 'Modelling', 'Simulation', 'Remote', 'Robust', 'Big', 'System', 'Data', 'Process', 'Artificial', 'Government', 'Law', 'Sensor', 'Solution', and 'Remote'. The words are arranged in a circular pattern around the central 'Digitalization' word.

Digitalization

How will digitalisation transform the Aerospace Industry in a near future?

Design and production

Digitalization will enhance **collaborative work** by providing easy-to-use **remote support** solutions. A lot has already been done with cloud and synchronisation services but with the rise of **digital** and **virtual reality**, can we imagine how collaborative work will continue to evolve and change the way we design and produce?

Simulation and **modelling** will be supplemented by **robust algorithm** and analysis of **Big data** that will help companies to understand when and where failure can occur on a given flight pattern, giving key information to engineers to design a safer system.

Will it radically change the engineer's way to work?

Revising the Airspace Model

With the development of small unit aircraft, like drones, it's no secret that operations and **management of the airspace** will change radically. Segregating the airspace will allow fully **automated** small unit aircraft to navigate and do their intended function, in the safest and most efficient environment.

How will airspace be segregated? What is the interest for the Government? Does it require public financial support?

Toward full automation?

Fully automated air traffic management (**ATM**) represents the ultimate evolution as more than a half of all aircraft accidents are due to human errors. Digitalization and **data mining algorithm** could help create a system containing **built-in rules** to handle emergency situation where pilots do not have to interact with the aircraft unless it is vital. Take-off and landing could be carried-out by a **fully automated system** that analyzes and **processes real-time data** coming from sensors all over the aircraft.

What are the technical boundaries we need to overcome? Who's liable when a fully/partially automated aircraft have a technical issue?

Passenger oriented airport & automated operation

There are several issues on travel experiences like lost luggage, check-in time delay, delayed or canceled flights or also being lost in the airport which hinder passengers.

In order to improve passenger satisfaction, digitalization can be used to communicate throughout the journey with the customer in many ways by delivering personalized services.

The digitalization and digital technologies will create an intersection between passenger expectations and airport business imperatives. Thus, sharing information between different airport services and the use of mobile phones will be able to form a unified interconnect.

Optimized automated on-ground traffic management, powered by **instrumentation** and **monitoring**, could also have a major impact on time-delay.

What kind of expectations? How can we reach efficient and effective passenger services? To what extent can digitalization increase revenue?

By developing a human-machine interface, could digitalization transform the whole passenger experience? What are the technical boundaries?

By analysing data, as their volume will continue to grow, could digitalization help to build predictive scenarios of structure failure and automated flight responses to reach full automation? Could it be for small unit aircraft, like drones, or even more?

In this near future, what are the governmental and legal responsibilities? Do they have a specific role?