Challenge 1: PASSENGER EXPERIENCE

Excellence in improving customer experience is one of the most vital success factors in the aviation industry today. With an increase in digitalisation in aviation service delivery towards customers, the biggest names in the industry now face the challenge of designing and implementing meaningful and highly functional digital service products that enhance the passenger experience throughout the journey, while offering a chance to better monitor, understand and influence their customers' behaviour.

- How can we increase the reliability of information about delays and improve the delivery of such information? Envision and create a data platform that simplifies and accelerates the exploitation of mass delay data!
- How can we help passengers find their way in airports, helping them to follow the fastest way to reach their boarding gate? Work with the data and tools provided by the challenge partners and create a solution that would wow any aviation customer!

TECH FOCUS
Data mining, predictive modelling, machine learning, augmented reality, UX

PROVIDED DATA / TECH
Flight delay data

POSSIBLE SOLUTIONS
- A data platform that gathers and exploits mass flight delay data
- A gamified application that helps navigate to the gate and around the airport

Challenge 2: ENVIRONMENT

Emissions reductions is one of the most discussed topics for any mobility-related industry today. Despite massive reductions over recent years, the air travel industry's rapid growth has resulted in increased total emissions for aviation. From 1990 to 2006, greenhouse gas emissions caused by aviation increased by 87% while passenger kilometres in the same period increased by 5.2% per year. Furthermore, it is foreseen that the effects of climate change will have an increasing impact on airport and airline operations and will consequently be felt through the related emissions and noise.

Changing weather patterns are already observed today and better understanding their impacts will help to anticipate and mitigate them in the future. **How great has** the impact from extreme weather events been on emissions and noise from aircraft operations so far, looking at aircraft movements and other data sources like weather data and noise monitoring data for instance?

The aviation industry is implementing many environmental initiatives to address climate change. Offering less emitting transport options to access the airport is one of them, as passengers are also becoming more and more conscious about their carbon footprint. Airports need to identify the degree of uptake of the different surface access options they offer and find ways to better direct passengers to the most eco-friendly ones. **Can your green creativity come up with a multimodal mobility tool** that informs the passenger on emissions associated with different options to and from the airport, and show the airport the passenger's choice?

TECH FOCUS
Data mining, predictive modelling, machine learning, augmented reality, UX

PROVIDED DATA/TECHNOLOGY
Details to be added

POSSIBLE SOLUTIONS
Details to be added

Challenge 3: SAFETY

Aviation is the business of safety and care. Every day, thousands of aviation professionals work in Europe and worldwide to achieve the highest level of safety for passengers. It is crucial to understand safety incidents so as to be able to prevent safety risks and ensure the best safety standards. Based on safety data, can we determine how air traffic patterns influence the development of a safety incident?

Responding quickly and appropriately to safety incidents is paramount for both pilots and air traffic controllers. This can be done in the most efficient manner possible if we are able to build risk models and find risk management solutions that will enable real-time action. How can safety events be predicted considering both aircraft and external factors?

TECH FOCUS
Data mining, predictive modelling, machine learning

PROVIDED DATA/TECHNOLOGY
Details to be added

POSSIBLE SOLUTIONS
Details to be added