Day 2 (Wednesday, 26 October) 14:30 - 16:00, Hall B
Invited Speeches

I-1

JAL's DX initiatives at the Innovation Lab

Sachiko Hiramatsu (Japan Airlines Co.,Ltd)

JAL Innovation Department was established in 2017 with the aim of maximizing EX and CX by utilizing digital technology. Our department has two missions: digital transformation and business creation. To achieve these missions, we have three mechanisms: "innovation base", "utilization of internal and external human resources", and "utilization of external partnerships". Today, I would like to focus on the innovation base, JAL Innovation Lab, and explain how we generate and implement the ideas.

JAL Innovation Lab was launched in 2018. The lab has two major values: people from inside and outside the company gather and people can try things out. At the lab, we are working with the goal of making a plan and trying it out in three months. From the lab until now we have come up with various ideas. Some of them were proof of concept and some were in full-scale implementation. In this talk, I would like to explain how the latest technology is applied to on-site improvements based on the lab, with introducing avatar robot utilization at the airport as an example, which I am in charge of.

I have always felt that robots have great potential, and I wanted to use robot technology to reduce the burden on field staff. So, first of all, we interviewed staff at various sites about what kind of robot they wanted. One of the most popular voices was the airport guidance robot. I immediately planned a guidance robot using AI and conducted a technical survey, but the technical barrier was that AI could not yet provide answers that could maintain JAL's customer service quality. However, in the process, I came across a technology called Avatar. Avatars can remotely control devices and communicate with them. With this technology, employees who come to the site and cannot work for various reasons such as childbirth, childcare, nursing care, and disabilities can continue to work from home by operating avatars, leading to work style reforms. In this way, a project to utilize avatar robots at the airport was launched.

I immediately rented an off-the-shelf robot and conducted an on-site verification of its use as an airport lobby concierge. When I actually used it for business, I found out that there are various improvements to use in airport business. Since then, based on the 3-month cycle, we have repeated verifications at various airports and airport guidance operations, developed an avatar robot dedicated to airport operations that reflects the opinions of airport staff, and identified operations that can be used. After repeated improvements, we managed to create something that can be used safely on site. We named this robot "JET".

During this process, through work verification, I realized that there seems to be some work that can be done without moving. That's why I made "Tsubasa". "Tsubasa" is a remote customer service solution that enables one-to-many communication. Through the verification of JET and Tsubasa, I have come to see how to use each effectively. Through the use of these avatars, we are currently conducting a trial operation in order to simultaneously achieve operational efficiency and work style reform. In addition, we are trying to expand the use of avatars inside and outside the company by utilizing the knowledge of avatar utilization that we have cultivated so far.

Based on the lab, we exchange opinions with people inside and outside the company, give shape to ideas, and try them out.

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I-2

4D Trajectory Based Operations

Thierry Harquin (AIRBUS)

The overarching concept of ATM modernization is the move from airspace-based operations (e.g. traffic separation based on current position and radar plot) to Trajectory Based Operations, relying mainly on accurate flight planning data, and accurate predictions of aircraft positions (the 4D aircraft trajectory), shared and synchronized between all stakeholders, including the Network Manager, the Air Traffic Control Units, the Airlines Control Centre and the aircraft.

I-3

Wake Energy Retrieval: an environmental opportunity for aviation

Philippe Masson (AIRBUS)

Wake Energy Retrieval operations in cruise, applied to aeroplanes engaged in international commercial operations, allow significant fuel burn savings and associated CO_2 emission reduction without additional ground infrastructure or aeroplane sensors. The principle relies on an aeroplane harvesting a part of the energy from the wake vortex generated by a leading aeroplane, by actually surfing it. The technical solution ensures that the aeroplanes remain safely positioned throughout the "paired" flight.
With trials, fuel savings have been confirmed for over 5% reduction of CO_2 emissions per flight, with relatively limited impacts identified on flight operations.