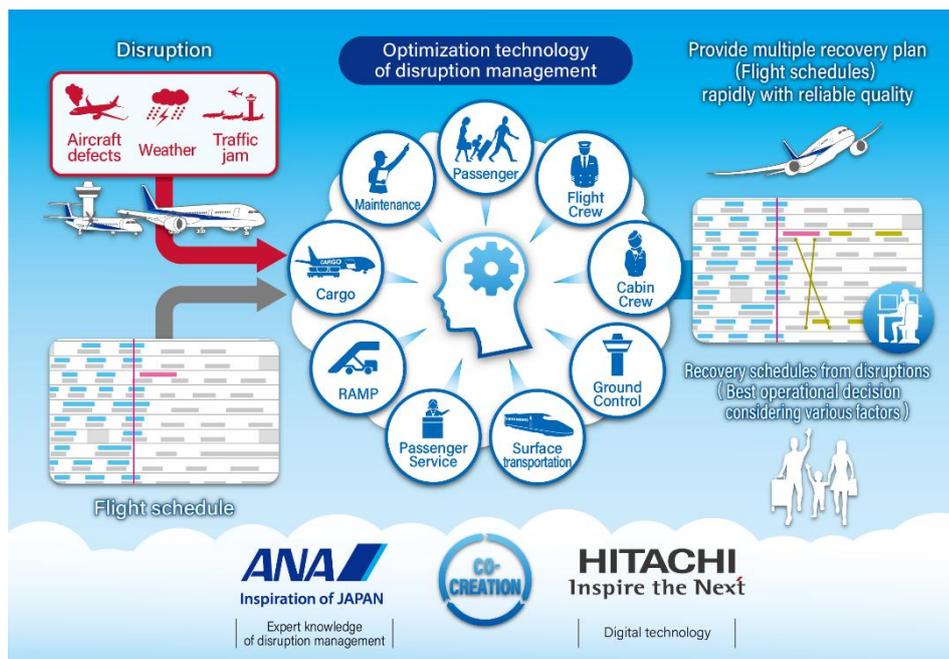


FOR IMMEDIATE RELEASE

ANA and Hitachi Engage in Demonstration Experiment to Confirm the Effectiveness of Automatic Recovery Plan Technology for Flight Schedule Revisions

Together, the respective industry leaders aim to achieve the world's highest quality operation management

- ◆ ANA applies the technology to disruption management as part of its efforts to facilitate digital transformation.
- ◆ Hitachi automatically provides multiple recovery plans of flight schedule rapidly with reliable quality by leveraging advanced digital technologies.
- ◆ The experiment confirms the viability of a switch from a manually implemented disruption management system to an automatically generated system.



Conceptual image of the demonstration experiment

All Nippon Airways Co., Ltd. (“ANA”) and Hitachi, Ltd. (TSE:6501 / “Hitachi”) are in the process of implementing a demonstration experiment to validate a technology that automatically provides recovery plans of daily revisions to aircraft flight schedules in a rapid, optimal manner (the “Technology”) by using advanced digital technologies, in cooperation with Hitachi Consulting Co., Ltd. (“Hitachi Consulting”).

The Technology is able to provide multiple reliable recovery plans for flight schedules rapidly

by leveraging high-level digital technologies that combine a number of Hitachi's original optimization models. Through the demonstration experiment has been carried out since 2019, the two companies are in the process of validating the possibility of switching from disruption management systems that were previously implemented manually by trained experts to those that depend on an automated system. The new technologies will impact daily flight services comprising approximately 800 domestic flights and approximately 200 international flights, and the implementation of flight schedule revisions will ensure the same speed and accuracy as the current manually operated systems, and simultaneous preparation of multiple recovery plans which are difficult to undertake by people. Going forward, the two companies will seek to further reduce disruption management time and increase the accuracy of disruption management to confirm their adaptability to multi-faceted and complex situations.

"We are excited to work with Hitachi to develop solutions that will make it easier to help passengers reach their destinations," said Juichi Hirasawa, Senior Vice President of ANA. "The technology will make it possible to create efficient schedules that are flexible enough to adapt to a wide range of challenges. Though this collaboration with Hitachi is still in its early stages, we are very optimistic about its potential to improve the travel experience.

"We are pleased to implement a demonstration experiment with ANA, aiming to achieve the world's highest quality operation management" said Jun Abe, Vice President and Executive Officer, CEO of Industry & Distribution Business Unit, Hitachi, Ltd. "We have confident about result of the experiment. Hitachi will develop the technology for airline companies going forward and contribute to helping airline companies enhance their social, environmental, as well as economic values."

◆ Roles of the respective companies

ANA

Presentation of conditions and constraints with respect to flight schedules and provision of knowhow on revision operations.

Hitachi and Hitachi Consulting

Establishment of optimization models that automatically provide reliable flight schedule recovery plans by taking advantage of expertise developed through efforts to optimize and automate plan preparation in a range of industries⁽¹⁾ based on digital innovations, in addition to expertise nurtured through the fusion of OT⁽²⁾ and IT and advanced digital technologies.

◆ Background of the initiative

Given growing aviation demand worldwide due to economic globalization and the expansion of flight networks in recent years, airline companies are expected to prepare detailed flight schedules and carry out operations according to these plans.

When ANA flight schedules were affected due to a range of factors such as poor weather conditions (heavy rainfall, thick fog, strong wind, typhoons, snowfall), aircraft maintenance, and airport congestions, the experts responsible for schedule adjustments made through manual revisions to flight schedules. The rescheduling was based on experience and expertise, while factoring in complex conditions such as the number of bookings made by customers, the availability of transit flights, the use of aircraft, the implementation of flight-related operations, airports' operating hours, and tarmac conditions. The sheer number of variables meant that a great deal of insight was required to prepare these revised schedules in short periods of time, and there were limitations to the conditions that people could manually perform. On top of that, given the time needed to train schedule adjustments experts, it was decided that innovative measures would be taken through the use of leading-edge digital technologies.

Through collaborative creation utilizing digital technologies, the two companies will move forward with the demonstration to further raise the level of customer satisfaction in the aviation industry. ANA will evaluate and analyze the results of the experiment and work to achieve the world's highest quality operation management through the fusion of human insight and innovative technology. Hitachi will improve its products based on performance and continue to promote it as a Lumada⁽³⁾-based service for airline companies going forward.

(1) Consulting on the optimization and automation of plan preparation

<https://www.hitachiconsulting.co.jp/solution/digital/planning/>

(2) OT: Operational Technology

(3) Lumada: A collective name for solutions, services, and technologies that use Hitachi's leading digital technology to derive value from customer data and accelerate digital innovation.

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Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
