PRESS RELEASE

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Worldwide unique project: Lufthansa Airbus A350 becomes climate research aircraft

- **Lufthansa pilots complete successful flight test program with specially developed measuring probe**
- **From 2024, a Lufthansa A350 will collect climate data for the first time for the European research infrastructure IAGOS-CARIBIC**
- **Lufthansa Group has been supporting global climate research for around 30 years**

In a globally unique project, the Lufthansa Group and the Karlsruhe Institute of Technology (KIT) are currently converting the Lufthansa Airbus A350-900 "Erfurt" (registration D-AIXJ) into a flying research laboratory. Now, an essential project milestone could be reached: For the first time, experts from the Lufthansa Group have attached the measuring probe system developed especially for the project to the lower fuselage of the A350 and successfully tested it in flight. Lufthansa pilots completed a flight program coordinated with the certification authorities in the airspace over southern Germany. The measuring system now being tested on the aircraft is the most complex of its kind and, in addition to the air inlet function, has sensors for high-frequency and -precision measurement of pressure and temperature. From 2024, the Airbus will collect comprehensive climate data during regular passenger flights for the European research infrastructure IAGOS-CARIBIC.

"We want to make flying more sustainable. That is why we have been supporting climate research for decades. The conversion of our Lufthansa Airbus A350 into a climate research aircraft is a globally unique project in which colleagues from a wide variety of areas at Lufthansa have been working together with partners in science for years. Our aim is to make a valuable contribution to climate research. The data that our aircraft will collect worldwide in the future will help to improve today's atmospheric and climate models and thus their informative value for the future climate on earth," says Jens Ritter, CEO Lufthansa Airlines.

Over the next few months, a measurement laboratory weighing around two tons and specially developed for the project will be set up. Some 20 measuring instruments will be installed in the laboratory, which will later be loaded into the cargo hold as a cargo container and connected to the measuring system on the outer fuselage of the aircraft. Next year, this high-tech laboratory will take off for the first time and collect climate data on selected flights in Lufthansa's worldwide

scheduled operations. The laboratory continuously records more than 100 different trace gases, aerosol, and cloud parameters from the ground to the tropopause region at an altitude of nine to thirteen kilometers. What makes it special: Climate-relevant parameters can be recorded at this altitude with significantly higher accuracy and temporal resolution on board the aircraft than would be possible with satellite- or ground-based measurement systems.

"IAGOS-CARIBC helps to close an essential gap in our understanding of the climate system. With the high-precision measurements of many parameters, we can understand which atmospheric processes are changing and how in climate change, in an altitude region where most of the atmospheric radiation budget, i.e., the greenhouse effect, is generated and changed. We can thus identify process-specific errors and their causes in climate models and subsequently improve their predictive capabilities," says Dr Andreas Zahn of KIT and coordinator of IAGOS-CARIBIC. "We are extremely grateful for Lufthansa's great commitment and support."

The conversion of the A350 "Erfurt" into a research laboratory was preceded by a planning and development phase lasting several years. In addition to the Lufthansa Group and KIT, six other companies (Lufthansa Technik, Airbus, Safran, enviscope, Dynatec, and ACC COLUMBIA Jet Service) are involved in the IAGOS-CARIBIC project. The KIT also acts as coordinator of a scientific consortium of currently twelve research institutions in Europe and the USA, whose complex measuring instruments will explore the atmosphere in the flying research laboratory. The abbreviation IAGOS stands for "In-service Aircraft for a Global Observing System" and CARIBIC for "Civil Aircraft for the Regular Investigation of the atmosphere Based on an Instrument Container".

The Lufthansa Group has been committed to climate and weather research for almost 30 years now and has equipped several aircraft with measuring instruments since then. From December 2004 to 2020, a Lufthansa Airbus A340-600 (registration D-AIHE) has already completed around 500 measurement flights in the service of climate and atmospheric research as part of the CARIBIC project.

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