

ETIHAD AIRWAYS AND MASDAR INSTITUTE SIGN AGREEMENT TO DEVELOP FOG PREDICTION SYSTEM TO REDUCE FLIGHT DISRUPTIONS AND ENHANCE PASSENGER EXPERIENCE

System developed by Coastal and Environmental Remote Sensing and Modeling Lab to use satellite-based tools for monitoring and prediction of fog

Etihad Airways, the national airline of the UAE, and the Masdar Institute of Science and Technology, an independent, research-driven graduate-level university focused on advanced energy and sustainable technologies, today signed a research agreement to develop a fog prediction and monitoring system to enhance guest experience and serve the needs of the aviation sector.

Signed on the first day of the UAE's Innovation Week 2015, the system will provide Etihad Airways' Operations with accurate fog formation and dispersion forecasts around Abu Dhabi International Airport, in addition to satellite-based tools for fog detection and tracking, contributing to the airline's objective of enhancing its air traffic management system.

The agreement was signed by Chris Youlten, Etihad Airways' Senior Vice President, Network Operations, and Dr Behjat Al Yousuf, Interim Provost, Masdar Institute, in the presence of officials from both the partners.

Mr Youlten said: "This is a very exciting partnership for a number of reasons. As Etihad Airways grows, so does the need for it to develop more sophisticated operational control practices to maintain its world-class reputation. The research and development work being done at the Masdar Institute offers Etihad Airways the unique opportunity to work closely with the scientific community in developing an innovative solution tailored to meet our operational needs.

"Following on from the very challenging fog season of winter 2014/15, we made a firm commitment to take our contingency planning to another level that supported the growth of our airline and the airport. We pride ourselves of being one step ahead of the game, but we needed assistance in developing a more scientific approach to our readiness for fog. Meteorological forecasting allows for a proactive approach, but even when we are working to a time frame of fog, we can't see it coming until it is in our midst.

“For this reason we engaged with the Masdar Institute scientists to collaborate with our Operations team to help us with fog detection and monitoring. Everyone will benefit from this innovative project including our guests, our principle partner, Abu Dhabi Airports, and the whole airport community,” he added.

Dr. Steve Griffiths, Vice-President for Research, Masdar Institute, said: “The Masdar Institute agreement with Etihad Airways demonstrates our region-relevant scientific research capabilities that can benefit various stakeholder organizations. This project aims to detect fog formation well in advance and help the aviation sector mitigate the adverse impacts of bad weather conditions. We believe the outcome of this research project will benefit not only the industry but the community as a whole.”

Titled: “Towards achieving a fog-ready air traffic management system for Etihad Airways: Numerical forecast and satellite detection,” the research project will be led by Dr. Marouane Temimi, Associate Professor of Water and Environmental Engineering and Head of the Coastal and Environmental Remote Sensing and Modeling Lab. Master’s and PhD students may contribute to the project at a later stage.

The project outcome will have far-reaching benefits for the aviation sector. At present, un-forecasted outbreaks of dense fog creates challenges such as flight delays, flight diversions, personnel disruptions, and traveller disturbance.

These result in wasted resources and additional costs to the airlines and passengers, and puts strain on the airport infrastructure. Moreover, the contingency strategy of loading extra fuel onboard aircraft so they can stay airborne longer or divert to another airport, reduces cargo capacity, generates additional financial pressures for airlines and contributes to unnecessary carbon emissions.

Abu Dhabi experiences frequent outbreaks of dense fog, especially between October/November and March/April during which visibility drops significantly. During such outbreaks, operations at Abu Dhabi Airport may be significantly disrupted or even stopped completely. Such conditions make it critical for airlines to have an accurate fog management support system that provides operators with the efficient tools to plan properly and mitigate any adverse impact.

Masdar Institute’s recently launched environmental regional observatory (<http://earth.masdar.ac.ae/>) offers comprehensive information for monitoring coastal processes in the UAE and the region. It also provides in-depth information including forecasts for the Arabian Gulf for the next five days with hourly updates. Such facilities make Masdar Institute the prime location for external organisations to conduct region-relevant research in weather conditions.

Photocaption: Dr. Behjat Al Yousuf, and Chris Youlten after signing the agreement. Others from left are Dr. Steve Griffiths, Vice-President for Research, Dr. Marouane Temimi and Dr. Hosni Ghedira.

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About UAE Innovation Week:

Taking place between 22 and 28 November 2015, UAE Innovation Week is an annual initiative launched by Sheikh Mohammed bin Rashid, Vice President and Ruler of Dubai in 2004, to make the culture of innovation a defining element of UAE society.

Activities are taking place throughout the United Arab Emirates., with public and private organisations as well as research and academic institutions participating in more than 800 events including presentations, workshops, conferences and competitions.

About Etihad Airways

Etihad Airways began operations in 2003, and in 2014 carried 14.8 million passengers. From its Abu Dhabi base, Etihad Airways flies to or has announced plans to serve 113 passenger and cargo destinations in the Middle East, Africa, Europe, Asia, Australia and the Americas. The airline has a fleet of 120 Airbus and Boeing aircraft, and more than 200 aircraft on firm order, including 66 Boeing 787s, 25 Boeing 777-X, 62 Airbus A350s and five Airbus A380s.

Etihad Airways holds equity investments in airberlin, Air Serbia, Air Seychelles, Alitalia, Jet Airways, Virgin Australia, and Swiss-based Darwin Airline, trading as Etihad Regional. Etihad Airways, along with airberlin, Air Serbia, Air Seychelles, Alitalia, Etihad Regional, Jet Airways and NIKI, also participate in Etihad Airways Partners, a new brand that brings together like-minded airlines to offer customers more choice through improved networks and schedules and enhanced frequent flyer benefits. For more information, please visit: www.etihad.com

About Masdar Institute:

The Masdar Institute of Science and Technology (Masdar Institute) was established by the government of Abu Dhabi as a not-for-profit, private graduate university to develop indigenous R&D capacity in Abu Dhabi addressing issues of importance to the region.

In collaboration with the Massachusetts Institute of Technology (MIT), Masdar Institute has developed an academic and research platform that articulates its mission and vision according to critical energy and sustainability challenges.

An important characteristic of Masdar Institute is its focus on complex real-world problems that require a multidisciplinary approach for the development of solutions from an integrated technology, systems and policy perspective. This multi-interdisciplinary and integrated approach is supported by the structure of its academic programs and by the emphasis placed on engaging external partners from industry, government, and other academic institutions in collaborative activities.

Serving as a key pillar of innovation and human capital, Masdar Institute remains fundamental to Masdar's core objectives of developing Abu Dhabi's knowledge economy and finding solutions to humanity's toughest challenges such as climate change.

Masdar Institute integrates theory and practice to incubate a culture of innovation and entrepreneurship, working to develop the critical thinkers and leaders of tomorrow. With its world-class faculty and top-tier students, the Institute is committed to finding solutions to the challenges of clean energy and climate change through education and research.

Masdar Institute offers degrees in:

- MSc Engineering Systems and Management
- MSc Computing and Information Science
- MSc Materials Science and Engineering

- MSc Mechanical Engineering
- MSc Water and Environmental Engineering
- MSc Microsystems Engineering
- MSc Electrical Power Engineering
- MSc Chemical Engineering
- MSc Sustainable Critical Infrastructure
- PhD in Interdisciplinary Engineering

Please visit our website <http://www.masdar.ac.ae/>