
AIRE

Specific contributions from the ANSPs

AIRE (Atlantic Interoperability Initiative to Reduce Emissions) is an environmental programme between the EC and the FAA designed to capitalise on present aircraft technologies and to enhance operational procedures that have a direct impact in the short and medium term on greenhouse gas emissions. AIRE is the first large-scale environmental initiative bringing together all aviation stakeholders from both sides of the Atlantic. The SESAR Joint Undertaking (SJU) is responsible for its management from a European perspective. FABEC fully complies with SESAR and AIRE objectives: Its ANSPs (Belgocontrol, DFS, DSN, LVNL, MUAC and skyguide) are working to perform integrated flight trials to validate solutions for the reduction of CO₂ emissions for surface, terminal and oceanic operations to substantially accelerate the pace of change.

France's initial contribution

One of the demonstration flights sponsored by SJU is being set up by DSN, with Air France, NATS, NAV Portugal and Adacel, and will perform demonstration westbound flight trials of green transatlantic gate-to-gate flights between Orly and the French West Indies. The tested procedures will be implemented in five long-haul daily flights and are planned to be extended to other regions and airlines. Based on the early AIRE 2009 findings, the consortium will optimise different segments of the flights, as follows: vertical domain of the oceanic cruise, lateral domain of the oceanic cruise and finally the approach sequence.

Dutch perspective

In the AIRE II project, LVNL, with the support of KLM and NLR and in cooperation with the EUROCONTROL Maastricht Upper Area Control Centre (MUAC), has set out to demonstrate a system innovation during night-time operations to enable inbound traffic to fly an undisturbed Continuous Descent Approach (CDA) at Schiphol Airport. The innovation consists of a pre-planning system which supports air traffic controllers in their task of planning inbound traffic streams so that the percentage of CDA flights with an ideal profile increases. The pre-planning system is fed with down-linked trajectory data from the aircraft that includes estimated times of arrival for one or more points on the route. These data are used to make an optimised pre-planning of traffic landing between 04:00am and 05:30am. The planning will be presented to the ATCOs of LVNL to detect and solve planning conflicts between inbound aircraft. Aircraft that are inbound Schiphol in the target test period will receive a Planned Time of Arrival (PTA), to coordinate and manage the arrival traffic stream. These PTAs are generated by the pre-planner and validated by the ATCOs of LVNL. The communication of the Planned Time of Arrival to the aircraft will be made by the controllers of MUAC, allowing aircraft to factor this in at a very early stage, which is expected to eliminate bunching.



Brussels B3: part of the green component

B3 is a consortium under the AIRE initiative, composed of Belgocontrol, Brussels Airport Company and Brussels Airlines and explores ways to maximise the use of Continuous Descent Operations (CDO) at Brussels Airport. Trials on the two main runways are being performed by Brussels Airlines, Thomas Cook, Jetairfly, DHL and Singapore Airlines Cargo. Data, tools and expertise of the B3 partners are being combined and developed to assess and optimise the operational results and the environmental benefits.

Flows around Cologne

Currently the traffic flows of Cologne, Düsseldorf and Frankfurt airports are segregated, which leads to inefficient flight trajectories. DFS is providing a new procedure which couples the arrival traffic flows of Düsseldorf and Cologne and therefore enables an emission-improved approach into Cologne. A first trial was conducted in September 2010 with 90 flights from Germanwings. It showed a potential fuel saving of about 200 kg per flight compared with non-optimised (“standard”) flights. This equals a reduction of CO2 emissions of around 700 kg per flight. To overcome the higher controller workload experienced and the conflict situations, DFS is examining adapted routing. If the results are positive, broader trials with other participating companies flying into Cologne are planned.

Approaching Zurich

A consortium of Swiss International Air Lines, Zurich Airport and skyguide is working towards an improved early morning arrival wave of long-haul flights into Zurich to realise SESAR's operational concept for “4D trajectory”. The basic idea is to give each flight a slot at a predefined position at the airport. This allows the pilots to better adapt fuel reserves, speed, route and departure time during the planning and flight phases in order to reach this point at the pre-defined time. Optimised top-of-descent sequencing of approaches, taxi time and docking stand assignment stem from this steering process.

