

GO Publisher helps cut Heathrow stack holding as part of groundbreaking cross-border arrivals trial

Background

NATS is the UK's leading provider of air traffic control services. Each year the organisation handles 2.2 million flights and 220 million passengers in UK airspace.

Challenge

One of the main challenges for Air Navigation Service Providers (ANSPs) providing air traffic services to airlines is how to reduce costs whilst maintaining efficient operations, increasing safety and reducing the impact on the environment. In addition, an important aspect of the SESAR programme involves looking at how latest technologies can support concepts to optimise arrivals into airports; minimising aircraft 'stack' holding, enabling reduced aircraft fuel burn and airline operating costs.

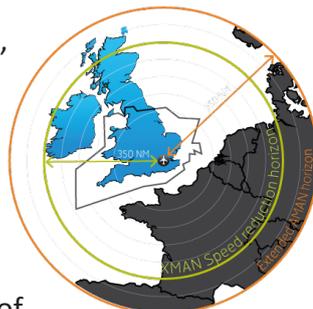
Solution

To address these challenges, NATS and Snowflake Software collaborated in the 2013 EUROCONTROL SWIM Master Class and developed a prototype to demonstrate how reduced stack holding over London Heathrow could provide both economic and environmental savings.

Snowflake provided a SWIM compliant information loading, management and distribution platform via its GO Publisher software, installed in the NATS Test and Development infrastructure, and linked to Harris Orthogon's Arrival Management System (AMAN). GO Publisher enables the publication of arrival sequence and temporal information to the adjacent control centres via configurable schema adaptive web services. By decoupling the arrival management from the data exchange service, Snowflake and NATS have been able to realise a key goal of SWIM; to store data once and reuse many times.

From prototype to fully operational

The successful project, now fully operational, has enabled NATS to provide a new arrival sequence service - known as Heathrow XMAN - for Heathrow Airport. The new service is subscribed to by IAA Shannon, DSNA Reims, DSNA Brest, Eurocontrol Maastricht and NATS Prestwick Air Traffic Control Centres, and is the first deployment of a virtualised System Wide Information Management (SWIM) enabled system using Open Standards in an operational environment at NATS.



Customer

NATS

Location

United Kingdom

Industry

Air Navigation Service Provider (ANSP)

Challenge

An important aspect of the SESAR programme involves looking at how the latest technologies can support concepts to optimise arrivals into airports minimising aircraft 'stack' holding, enabling reduced aircraft fuel burn, emissions and airline operating costs.

Solution

GO Publisher

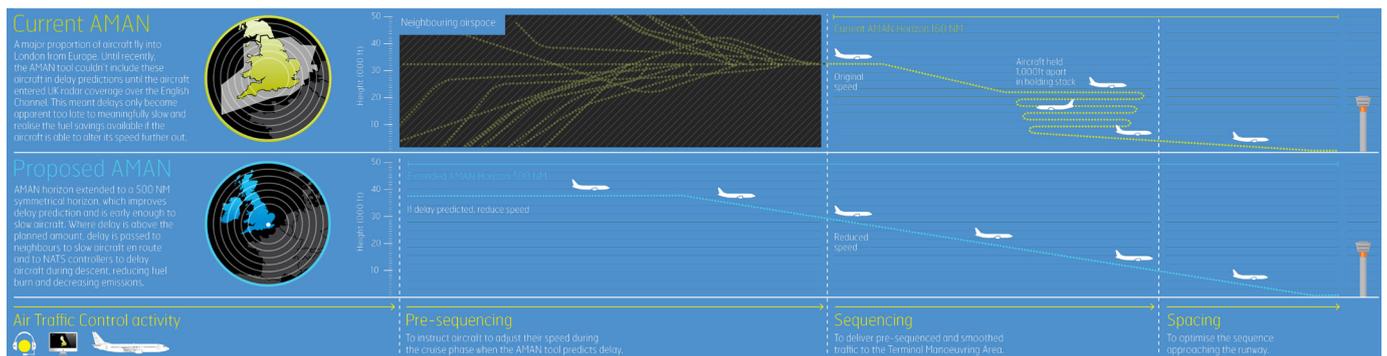
Benefits

"This is a powerful demonstration of how quickly Snowflake Software's technology can help legacy systems become good SWIM citizens, saving money for the airlines and having a positive effect on the environment." commented Alexis James Brooker, Professional Services Director at Snowflake Software.



“The engineering behind XMAN supports a Service Oriented Architecture (SOA) which has tangible benefits in terms of cost, development time and potential for new services. Snowflake’s software has been deployed in a virtual machine (VM) environment which offers some exciting advantages over dedicated machines. Snowflake and NATS Engineering teams have developed a strong working relationship since the SWIM Master Class 2013 which has made it possible to overcome the significant challenges of introducing this technology into the operational environment for the first time.” commented David Tomlin, NATS System Engineering Manager.

Heathrow XMAN exchanges arrival information relating to aircraft landing at Heathrow airport with air traffic controllers in different European countries, enabling collaboration to reduce the time aircraft spend circling in ‘holding stacks’ around London by slowing aircraft 350 nautical miles from the runway. The effect is a saving in fuel and carbon emissions as aircraft are more efficient when flying at high level, yielding a significant benefit to airline customers.



Significant savings

Since April 2014, the trial system has saved an estimated 8000 tonnes of CO2 and £1.65 million in airline and ground costs, and an increase in efficiency with a reduction in minimum stack delay thresholds over Heathrow from nine minutes to seven.

Kevin Loy, NATS Information Strategy Manager, commented *“This is a demonstration of how SESAR concepts such as SWIM can provide early and significant benefits to the airspace user community.”*

The benefits of SWIM enabled systems

The Heathrow XMAN system has demonstrated that the use of SWIM concepts and technologies not only have tangible benefits in terms of providing economic and environmental savings, but also the ability to reduce development costs and a potential for new services through open information exchange between partners. Consortium ANSPs have been able to implement their own client applications based on local requirements whilst complying with the XMAN concept.

“Bringing NATS’ first SWIM service to operational trial across European airspace is an important step forward for the AIM industry and is a world first for cross border management. This is also a powerful demonstration of how quickly Snowflake Software’s technology can help legacy systems become good SWIM citizens, saving money for the airlines and having a positive effect on the environment.” commented Alexis James Brooker, Professional Services Director at Snowflake Software.

About Snowflake Software

Founded in 2001, Snowflake Software is an award-winning provider of on-premise and cloud-based software solutions, consultancy and training for loading, managing and sharing aeronautical, weather and flight data. Active in the aviation market since 2008, Snowflake has built its reputation as an expert in data exchange receiving a number of prestigious industry awards for its work, including 2-time SESAR Master Class winner, recipient of the 2013 Geospatial Technology Company of the Year, and winner of the 2015 IHS Jane’s ATC Award.