



## NATS

### PARTNER

NATS

### LOCATION

London Terminal Control Centre, Swanwick, U.K.  
The London Terminal Control operation is responsible for one of the busiest air spaces in the world.

### SOLUTION

EXCDS – NAVCANATM electronic flight strip solution

- An advanced, integrated and enterprise-wide coordination system offering controllers automated flight data management online using touch-sensitive display screens.
- The LTC project installation included the EXCDS system and 72 touch-screen terminals.
- Nearly 330 controllers and 80 assistants now use EXCDS.

### BENEFITS

- Enables air traffic controllers to coordinate electronically, reducing time-consuming phone calls they previously made to one another.
- Enhances safety, such as helping reduce 'level busts', where an aircraft deviates from the altitude it was instructed to fly. EXCDS provides controllers with an alert on the cleared flight level versus the flight level selected by the pilot, making human errors easier to detect and resolve.
- Allows for automation of repetitive tasks, removing ambiguity from data manipulation by controllers and making data easily retrievable for analytics review using standard computer applications.
- Added efficiency and scalability of the system helps safeguard NATS' ability to meet capacity demands of the future.

### AWARDS

NAV CANADA received the 2018 D-SESAR Supplier of the Year Award from NATS for the LTC project.

## Extended Computer Display System (EXCDS) for London Terminal Control (LTC), NATS, UK

NAV CANADA has had a strong, collaborative relationship with NATS, the United Kingdom's leading provider of air traffic control services, for many years. In 2018, EXCDS, an electronic integrated flight data system developed and certified by NAV CANADA was brought to the NATS London Terminal Control as a result of nearly three years of collaboration between the two ANSPs.

### THE CHALLENGE

Paper flight strips have been used in air traffic management around the world for decades to record information for controllers, from airport and gate data to flight level and destination. As part of NATS' ten-year technology transformation program to update their foundational ATM systems to respond to forecasted traffic growth, and maximise the benefits from modern communications, surveillance and data processing tools, they wished to transition their London Terminal Control operation to a modern, digital means of manipulating and sharing aircraft data using a system that offered immediate online access to electronic data via touch screens.

Moving to electronic strips has many advantages, such as the ability to coordinate electronically, thus reducing manual tasks, enhancing safety and building in efficiency and scalability. However, the way that controllers interact with, and manage their tasks using paper strips is deeply ingrained and change requires careful design and training.

### THE SOLUTION

NAV CANATM, a subsidiary of NAV CANADA, provided a world-leading electronic flight strip solution for this project. This solution, called EXCDS, takes information that was previously printed and hand-written on paper flight strips, and provides immediate online access via touch screens.

EXCDS technology, developed by NAV CANADA (NAVCANstrips) has been in enterprise-wide operational use for nearly 20 years, and is used by thousands of controllers worldwide.

## HOW WE DID IT

This successful project was the culmination of nearly three years of collaboration between NATS and NAV CANADA.

Close collaboration between the companies began at the feasibility and definition phases: delivering high level requirements to ensure the EXCDS adaptation would meet NATS' unique operational and HMI needs.

A cross-functional NATS and NAV CANADA team completed the adaptations for EXCDS. With NATS handling system testing and ATC training, and NAV CANADA managing software customization and delivery over 24-months, both parties effectively worked together to ensure system readiness

Customizations of EXCDS included ingesting data from other ATM systems, like the Flight Data Processor and Arrival Manager and consolidating data to each ATC user, reducing the need to switch focus across multiple screens of information. As NATS' major air traffic control towers were already running the digital platform EXCDS, departure data from the nearby airports were also presented to EXCDS LTC for reduced verbal coordination between sites.

This project also posed a challenging transformational and cultural shift. With the system already in place at other NATS locations, EXCDS was a known quantity from technology standpoint. But with previous unsuccessful attempts at undergoing a change in LTC, there needed be a new methodology to address skepticism by employees. A new process was implemented to determine and validate product fit, followed by tailored training and the opening of a purpose-built high-fidelity facility.

## THE RESULT

NATS transitioned the system around the Operations room in a phased approach, adding sectors bi-monthly. Care was taken for a smooth and safe transition from paper strips to a digital interface, including detailed work by NATS' Human Factors specialists, extensive simulator testing and structured safety assessments. Full operations with all sectors running on EXCDS was achieved June 29, 2018.

In addition to the successful delivery of EXCDS into all of London Terminal Control on time and on budget, significant benefits have already been realized in its first year of operations including:

- a quieter operations room with reduced phone calls to towers and less need for verbal coordination between sectors.
- controllers can work faster, with less chance for error through standardized inputs, and an HMI created for each sector's working needs.
- positive employee and customer feedback, and a proven model that can be used for future technology transitions

NATS won two awards for the EXCDS project at the 2018 Association of Project Management (APM) Awards

