

Hong Kong Civil Aviation Department

Faster decision making with award-winning electronic flight strips

Hong Kong International Airport



Hong Kong International Airport experiences a constant year-over-year increase in aircraft movements. From 2009 to 2012, annual aircraft movements have increased by more than 25%. To cope with such rapid development, the Hong Kong Civil Aviation Department (HKCAD) replaced paper strips in the tower with a customised solution from Frequentis to automate data retrieval, minimise manual controller tasks, and combine data from various systems in an integrated display. The new solution comprising of smartSTRIPS electronic flight data and smartTOOLS meteorological/airport data display, has become a valuable tool for HKCAD. However, the transition to electronic flight data with automated workflows and decision support tools posed a tremendous challenge as it changes the working environment of the controllers. After classroom / simulator training and live-traffic familiarisation, the system was accepted and became part of the controllers' working environment.

Client profile

Hong Kong Civil Aviation Department is the air navigation service provider for air traffic control services to all aircraft operating in and out of Hong Kong International Airport and within the Hong Kong Flight Information Region (FIR).

Business situation

As a world-leading cargo gateway and busy passenger hub, Hong Kong International Airport operates 24/7. Paper strips require a great deal of time and effort to prepare, distribute and collect. Information that needs the attention of each controller has to be manually copied on to each paper strip.

Solution

smartSTRIPS electronic flight data, advanced smartTOOLS and integrated datalink capabilities (DCL) automate information retrieval and workflow processes.

- Key flight information and other ATM data are collected and presented on a single highly configurable interface.
- Controllers can view and manage information efficiently and quickly.
- Maintain, development and test systems covering all availability and training needs.

Impact

Improved Usability: Automation and a single user interface replace manual tasks and multiple systems and displays.

Increased Efficiency: Integrated and immediate access to all relevant information improves controller situational awareness and decision making, while saving time. Automation, integration and data-link features improve data and decision quality, and reduce controller workloads.

Reduced Maintenance Costs: Through a long-term, flexible, integrated solution.

Improving ATM by improving the controller workspace

A high-demand airspace requires a high-quality tower solution

HKCAD manages one of the world's busiest airspaces. Since 2003, total aircraft movements have almost doubled. There was a clear need to integrate and automate data retrieval, and display, and free controllers to focus on their key task to manage air traffic. As a result, HKCAD contracted Frequentis in 2011 to upgrade tower operations with new flight data management, data display and airfield management.

Better data, better decisions, more safety

Hong Kong Civil Aviation Department began using the new systems in 2012. The combination of controller-guided development, proven products and technological innovation has clearly brought efficiency improvements in HKCAD's tower operations. Controllers now have an intuitive user interface to instantly access and share accurate, up-to-date flight and airport data. Automation and digital technology has reduced workloads. The result is improved situational awareness and efficiency, leading to faster and better decision making, all of which reflect two key goals at Frequentis: making life easier for controllers and making skies safer.

Solution features

1. The smartSTRIPS electronic flight data solution uses electronic flight strips to replace paper strips with digital flight data management built into the controller's interface. Flight data updates automatically and controllers no longer spend time handling and interpreting paper records. smartSTRIPS connects to a wide range of flight data processing and automation systems, including standardised AFTN connections.
2. The smartTOOLS information display and airfield management solution adds further automation and integration of data sources into the user interface.



For example, an automatic alert warns the controller when runways are blocked by traffic.

Data link services

The system uses datalink communications to integrate the departure clearance service. It reduces controller workloads, frequency occupation the risk of error issuing verbal departure clearances. Frequentis Automation Solutions cover a range of datalink services, fielded and in operation today, such as D-ATIS or CPDLC.

Winner IFATCA 2016 Technical Award

The International Federation of Air Traffic Controllers' Associations (IFATCA) awarded the 2016 Technical Award for the system deployed at Hong Kong International Airport.

“Operational feedback from controllers in various parts of the world indicated that the Frequentis systems provide a highly reliable and user-friendly experience, thereby enhancing safety and efficiency”,

Ben Gorrie, Chairman of IFATCA's
Technical & Operational Committee

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