

LVNL drives safe, efficient tower digitalisation across the Netherlands



Since 1923, LVNL has served aviation stakeholders and the travelling public in the Netherlands with air traffic control services. At Amsterdam Airport Schiphol, LVNL is the air navigation service provider (ANSP) responsible for the safe, smooth and efficient movement of almost 500,000 aircraft in regular times.

LVNL has partnered with Frequentis to modernise its tower infrastructure from end-to-end. Beginning with a project to replace paper flight strips with an electronic solution based on Frequentis smartSTRIPS Flight Data Management, the long-term roadmap also includes automatic departure sequencing and an advanced surface movement guidance and control system (A-SMGCS).

By using Frequentis smartSTRIPS to replace paper processes in its three control towers at Schiphol, LVNL is now empowering its air traffic controllers to access, modify and share key data on aircraft movements faster and with minimal effort – contributing to more efficient, digital tower operations.

Client profile

Luchtverkeersleiding Nederland (LVNL) is responsible for the management of the country's civil airspace. For over 90 years, the organisation has worked with aviation partners across the Netherlands to ensure safe, efficient air traffic flows. www.lvnl.nl

Business situation

Passenger numbers and air freight volumes in the Netherlands were rising year-on-year. LVNL started an initiative to deploy digital solutions to support further growth effectively.

Solution

On the first step of its tower modernisation journey, LVNL worked with Frequentis to replace paper flight strips with an electronic solution: Frequentis smartSTRIPS. The new way of working eliminates the need for printers and paper in the tower, and enables air traffic controllers to share critical data fully going towards digital.

Impact

- Enriches flight strips with additional information, helping to enhance situational awareness
- Enables controllers to share flight strips between air traffic controllers located in both towers instantly, improving efficiency of handovers
- Eliminates printer noise in the tower, contributing to lower stress and higher controller performance
- Supports controllers' existing workflows, enabling a seamless transition to the new digital solution.

“The cooperation with Frequentis was great. They had a very capable project team on their side, and helped us to configure the solution to the workflow requirements of our air traffic controllers.”

Marco Eggenkamp, Product Owner smartSTRIPS, LVNL

Digitalisation drives safety, efficiency and capacity

Rapid growth, capacity challenges

As passenger numbers are expected to grow year-on-year, many hub airports around the world face the challenge of maintaining safe and effective operations without the option of expanding airport facilities. LVNL, the Dutch ANSP who also controls Amsterdam's Schiphol Airport, has a mandate under the SESAR project to prepare for these future imperatives by enhancing the efficiency of its tower operations.

LVNL put out a tender for the end-to-end modernisation of its tower operations at Schiphol. In addition to replacing its paper flight strips with an electronic solution, the organisation requested proposals for solutions to digitise the aircraft departures process, and for a trajectory monitoring solution to help deconflict aircraft movements on taxiways and the apron.

Proving the concept

Working side-by-side with subject-matter experts at LVNL, Frequentis presented an end-to-end solution to meet Schiphol's long-term requirements under the SESAR programme. LVNL laid out a detailed project roadmap, beginning with a deployment of Frequentis smartSTRIPS Flight Data Management, followed by ATRiCS Departure Manager (for the automatic sequencing of traffic based on runway and taxiway capacity) and an advanced surface movement guidance and control system (A-SMGCS) to deconflict traffic on the taxiway and apron.

LVNL was particularly impressed by the proof-of-concept exercise for Frequentis smartSTRIPS. As well as demonstrating that the solution met the proposal's technical criteria, the exercise showed that it would be straightforward for LVNL to customise Frequentis smartSTRIPS to support its Air Traffic Controllers' existing workflows.



Driving safe and efficient tower operations

Today, air traffic controllers at Schiphol's towers use smartSTRIPS to coordinate all aircraft in the movement area – eliminating the noise of strip printers and metal strip holders, and helping controllers to better focus on their work. Controllers are working from a digital control position where they see relevant information presented efficiently on an integrated controller working position. The full set of digital tower data is available when touching the screen. For example, controllers now have instant visibility of deicing waiting times, estimated off-block times, target start-up approval times, and more – a level of detail that would simply not fit on a small slip of paper.

Based on the success of the first phase of the modernisation programme, LVNL is already planning for the future. The organisation has contracted Frequentis to deploy the smartSTRIPS solution to its other airports in the Netherlands. The result will be consistently safe and efficient air traffic operations across the country – helping LVNL to meet and then exceed the requirements of the SESAR program.

“A choice of a system means a choice of a long-term relationship, and we have chosen Frequentis as the supplier for the entire tower system.”

Marcel Bakker, General Manager, Systems and Infrastructure, LVNL

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