

LVNL accelerates and optimises tower digitalisation with automated testing



As the organisation responsible for managing civil and military airspace in the Netherlands, Luchtverkeersleiding Nederland (LVNL) has ensured that air traffic flows safely through the region for more than 90 years. LVNL continues to lead the way in developing new safety, efficiency and environmental measures, aiming to improve airspace capacity and minimise delays.

In pursuit of these goals, LVNL 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 organisation is now deploying the Frequentis Departure Manager (DMAN) and plans to develop a completely new integrated tower suite. To ensure operational readiness of the tower systems and a timely roll-out of new components and security patches LVNL adopted the Frequentis CATS Test Automation Platform for distributed testing. Frequentis and LVNL have now built a unique relationship that is helping to advance the capabilities of the CATS Automation Platform, yielding benefits for both parties.

Customer profile

Luchtverkeersleiding Nederland (LVNL) is responsible for the management of the country's civil and military 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

To enable efficient scaling, partly as a post-COVID-19 measure, LVNL is introducing digital tower solutions that will help meet escalating demand with a high degree of efficiency and safety. Continuous innovation, system updates and security patches are an essential part of this multi-year journey.

Solution

LVNL deployed the Frequentis CATS Test Automation Platform to automate distributed testing of its digital tower systems. The move is helping to accelerate the digital tower initiative at the organisation.

Impact

- Increase the speed of testing for security patches for better management of cyber security
- Up to 50% and rising of distributed software testing in the LVNL digital tower initiative is now automated using CATS
- Saves the LVNL digital tower roll-out team significant time, which can be diverted to higher-value work
- Accelerates assurance and testing cycles prior to operation and consequently reduces risk

“With the CATS test automation platform from Frequentis, we can run automated testing overnight and see the results in the morning. It's taken our testing cycles from days to hours, helping us bring new tower digitalisation innovations to users sooner.”

Ronald Grove, System/Test specialist at LVNL

Fostering progress

Pursuing the drive to do better

Continual improvement is an intrinsic part of the DNA at LVNL, with the organisation looking for opportunities for optimisation on a non-stop basis. One key initiative at LVNL is the modernisation of its tower infrastructure, a multi-year effort that will transform workflows.

With LVNL undertaking up to eight major milestones in the digital tower project each year, its team must roll out frequent software updates and patches, verifying safety for every system change. The organisation wanted to free engineers from the repetitive, time-consuming tasks involved in manual testing. And with air traffic approaching pre-pandemic levels, the organisation wanted to find a way to accommodate growing demand without stifling innovation.

Embracing a fresh approach

LVNL approached long-time partner Frequentis to enquire about automated testing as part of the digital tower programme. In response, Frequentis proposed that the organisation adopt Frequentis' in-house solution: the CATS Automation Platform.

Beginning with simple test cases, LVNL now uses the test platform for extended regression testing with multiple cycles. Today, between 33% and 50% of distributed testing of digital tower systems at LVNL is automated using the CATS Test Automation Platform, with plans to increase usage even further.

The LVNL team discovered that it can also use CATS for role simulation, which forms part of the training for air traffic control officers.

Fast, flexible testing

Using the CATS Test Automation Platform, LVNL can bring enhancements to users sooner, by cutting assurance and testing cycles and increasing quality. The solution supports earlier detection of any errors, allowing engineers to take proactive measures to correct issues before new systems are put into production. It provides a full audit trail so LVNL can easily reproduce any failures in test scenarios and carry out root-cause analysis.

LVNL is conducting comprehensive load testing on its systems to ensure it is ready to handle growth in air traffic. With automated testing, the organisation can sustain a high pace of innovation even as demand grows on its resources.

Already, the CATS Test Automation Platform has delivered tangible benefits as LVNL worked with Frequentis to modernise its tower system. Now, the organisation is utilising the solution to facilitate a smooth upgrade to MosaiX, the aviation integration platform, and to deploy the Departure Manager (DMAN) planning tool, both supplied by Frequentis.

“Together, Frequentis and LVNL have developed a highly cooperative relationship in which we continually learn from each other and drive ongoing improvement. Air traffic control is a fast-changing, dynamic environment that requires agility from all organisations, and that's what we are achieving in partnership with LVNL.”

Hannu Juurakko, VP ATM Civil, Chairman of the ATM Executive Board, Frequentis



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