Airbus

Octane leverages SAFe methodology adoption to enhance DevOps and agile software/system development and testing environment

Overview

Airbus designs, manufactures, and maintains industry-leading commercial aircraft, helicopters, military aircraft, satellites, launch vehicles and more. Boasting cutting-edge design, superior comfort, and unparalleled efficiency, they are setting the standard for the modern aviation and space industry.

Challenge

Airbus Defense and Space division is partner in production of the Eurofighter Typhoon, one of the world's most advanced new generation fighter aircraft available on the market. Eurofighter Typhoon is Europe's largest military collaborative programme. Projects like Eurofighter have a lifespan of 40-50 years with many collaborative stakeholders involved.

Frank Westerbuhr, Expert 'System Test and Test Tools' at Airbus, explains the issues in

managing system testing with a project of this size: "To illustrate the complexities involved, just look at the cabling of the Eurofighter center fuselage. This contains 12,000 single wires; a total length of 33km. There are 230 different connectors and the mass of the cabling bundle weighs 360kg. Many of the components of the aircraft connected by these cables are software-driven and have to go through rigorous testing to be cleared to fly. There are not just the customer's and Airbus's testing requirements, but our industry is subject to strict regulations that require extensive testing documentation."

Airbus wanted to create an automated end-to-end software testing process to include generating testing documentation and reduce the manual effort involved with this. Automation support and improved collaboration between all the engineering teams will accelerate the delivery process and streamline certification. An enterprise-wide focus on digitalisation supports a scalable, agile, and DevOps approach.

Solution

Westerbuhr describes the requirements: "The whole team needs full visibility of requirements, release dates, test preparations, test execution, and defects, all in one place so that relevant correlations and analysis can take place. We also want to provide automated testing; not just automated test execution, but automated triggering of tests, which means the actual test

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FRANK WESTERBUHR
Expert 'System Test and Test Tools'
Airbus

AIRBUS

At a Glance

■ **Industry**
Aerospace and Defense

■ **Location**
Germany

■ **Challenge**
Shorten project timeframes and improve engineering and development collaboration through adopting agile software development and testing

■ **Products and Services**
ALM/Quality Center
ALM Octane

■ **Results**
+ Agile and SAFe practices accelerate delivery
+ Fully automated software testing in end-to-end process
+ Full visibility improves team collaboration
+ Automatically generated testing documentation supports compliance documentation

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scripts need to reside within the automated testing solution, and the test results are captured automatically."

A long-standing partnership with Micro Focus introduced Micro Focus® ALM/Quality Center, already in use with various other Airbus projects. For an Unmanned Aerial Vehicle (UAV), ALM/QC provides the overall system and equipment testing in a laboratory setting as also at on-aircraft ground tests. Effective testing ensured the succcess of the first UAV test withoug any hitch

Full engineering teams, consisting of system-, software-, test-, and certification engineers, can all work together within ALM/QC, delivering their part of the total solution. The full visibility makes it easy to identify critical testing areas so that efforts and resources focus on the high-value items.

Airbus leverages ALM/QC to demonstrate safety compliance to customers. Test results link to requirements and are used to generate documentation that shows fulfilment of the customer contract, and certification requirements. Westerbuhr explains how the documentation process worked prior to ALM/QC: "We used Excel and Word documents to show our test results. However, this was difficult to link to the requirements and it was very time-consuming and inefficient to match the two. ALM/QC instead automatically generates Word documents of test procedures, reports, results, and compliance records. These demonstrate that our processes are robust, and this instils trust, smoothing the path to regulatory compliance."

Airbus sees additional value in more agile software development, and in a move to support this in its testing environment, it is evaluating Micro Focus ALM Octane for its testing toolchain. With ALM/QC used for large, ongoing projects, and Octane considered for new projects, Airbus leverages new capabilities, giving full visibility into pipeline coverage, analysis, and code changes to identify risks.

Having the right testing technology is only part of the solution, and with distributed engineering and development teams, it is important that Airbus applies agile processes to support an agile DevOps approach. It has chosen to adopt the Scaled Agile Framework (SAFe) across new projects. Westerbuhr comments: "SAFe provides us with organisational and workflow processes so that we can scale our agile model across the enterprise. Octane provides native support for SAFe, using the same terminology and process models. It can support thousands of concurrent users with customised workspace configurations and provide the corporate level visibility we need within Airbus."

Results

ALM/QC and Octane support legacy projects such as the Tornado and Eurofighter Avionic System Development. Westerbuhr leverages a vibrant online Micro Focus community: "As a member of various forums I often find useful hints and tips. I also attend user community meetings, which are great information sources and networking opportunities."

He concludes: "Working with ALM/QC and evaluating Octane, especially within SAFe, is promising to shorten our project timeframes, saving us time and money. As each of our projects is unique and long-term, it is hard to quantify these benefits, but it is clear to us that efficient and agile development and testing practices are supporting our competitive market position."

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