

CASE STUDY

Delivering quality data to increase mission capable aircraft readiness



The appearance of U.S. Department of Defense (DoD) visual information does not imply or constitute DoD endorsement.

Headquartered in Naval Air Station Patuxent River in St. Mary's County, Maryland, the Naval Air Systems Command (NAVAIR) provides full lifecycle support of naval aviation aircraft, weapons and systems for the United States Navy, ranging from research, design, development and systems engineering, to training facilities and equipment, repair and modification, and logistics support.



Challenge

To create a common Failure Reporting Analysis and Corrective Action System (C-FRACAS+) tool across 33 NAVAIR programmes.

Solution

HBK's Engineering Solutions team built a powerful Asset Performance Framework based on ReliaSoft XFRACAS, and has partnered with SMX to successfully meet US Navy requirements.

Result

A 20% increase in naval aircraft readiness. The success of the project, including C-FRACAS+ implementation, led NAVAIR partners to win the prestigious 2022 Department of the Navy Information Technology Excellence Award.

Enhancing NAVAIR programme performance

In 2020, HBK's Engineering Solutions embarked on the challenge of developing a common Failure Reporting, Analysis, and Corrective Action System (C-FRACAS+) for NAVAIR Command's 33 programmes, each comprising diverse aircraft and systems with unique data requirements.

The challenges included establishing a common method for failure reporting and analysis across NAVAIR programs, identifying successes and deficiencies in health monitoring, driving reliability growth in aircraft and systems, fostering collaboration among analysts, engineers, and OEMs for component failure analysis and aircraft design, and supporting all system lifecycle phases.

The solution, C-FRACAS+, is a robust asset performance system centered around ReliaSoft XFRACAS. XFRACAS is a web-based, closed-loop incident (failure) reporting, analysis, and corrective action system designed for acquiring, managing, and analyzing product quality and reliability data from various sources. It facilitates in-depth analysis of the relationship between fault diagnostics and maintenance actions, pinpointing areas for improvement and allowing for the accurate isolation of faults.



Driving insight and collaboration

The work accomplished through C-FRACAS+ offers greater insight into asset performance, the effectiveness of health monitoring, and identifies opportunities for performance improvement. HBK regularly meets with the NAVAIR R&M Community and has become a trusted partner, delivering improved readiness and quality data. This collaboration also contributes to the design of NAVAIR's future condition-based maintenance programmes.

User impact and recognition

C-FRACAS+ users extend beyond NAVAIR personnel, encompassing many of NAVAIR's major defence contractors and aircraft suppliers. Users have reported substantial improvements in data processing performance, with one platform noting a multifold increase, allowing them to eliminate a 2-year backlog in data processing. Partners in the NAVAIR programme have commended HBK as an outstanding partner, highlighting HBK's ability to listen to their needs and deliver timely solutions.

Award and recognition

The Navy programme, under which C-FRACAS+ was developed, were honoured with the 2022 Department of the Navy IT Excellence Award. This recognition was attributed to their exceptional work in "leveraging data to drive advantage. Their development of a reliability control board process, along with associated readiness analysis tools that facilitated this process, led to significant increases in promoting data interoperability across the Naval Aviation Enterprise (NAE), which resulted in an overall 20% increase in mission capable aircraft readiness."

Future collaboration and expanding capabilities

The award, for a 5-year period of performance, is a significant win for the entire NAVAIR programme team. Recognising the potential of expanding the project scope combined with the success of C-FRACAS+, NAVAIR and SMX have expressed a desire to continue working with HBK. Their eagerness to explore and promote the broader capabilities of C-FRACAS+ is a testament to the power of collaboration and commitment to driving innovation in aerospace technology.