
NEW FEATURES & FUNCTIONALITIES FOR GROWTH

Changing market demands are boosting MRO software innovation, according to *Kevin Rozario*, who spoke to a range of providers about their latest advancements



Though devastating for aviation, the Covid-19 pandemic helped to shake up some of the industry's support segments – including the MRO market – as companies moved towards more digitisation and greater efficiencies.

In some cases this was a direct result of the forced shutdown of flight. Software companies such as WinAir have reported seeing their MRO clients experiencing an “uptick in activity”. “We believe this was a direct result of the downturn in commercial flights. It was an opportunity for many of these businesses to address maintenance on their fleets,” says WinAir’s managing director Kyle Vergeer.

Other demands have come as a result of depleted manpower. David Purfurst, global pre-sales director at Rusada, says that while the functionality users require of MRO software “has not changed much since before the pandemic, there is greater focus on efficiency as people look to keep operations running with reduced resources”.

Supporting the remote workforce, efficiency and digital transformation were priorities during the pandemic, according to Component Control’s senior vice president Daniel Tautges. “Working from home while meeting the needs

Like other providers, Rusada's mobile applications have been a big part of its output this year



of the business and moving away from paper processes were transformational pre-Covid-19, but became even more important during the pandemic," he says.

But implementing these changes has not been easy given the complexity of running an MRO business during lockdown. Chris Reed, managing director at Trax, explains: "The industry is experiencing severe labour shortages, disruption of the supply chain and fluctuating demand. All these aspects impact operations and put a premium on efficiency and planning for maintenance and repairs."

A general recovery is now being seen in aviation, although it is very uneven globally, and MRO solutions providers are naturally ramping up their marketing having refined, or added new, software services to appeal to changing demands. Airlines have streamlined operations and overhauled older jets and technologies, making for an increasingly competitive MRO market, especially for independent providers.

So how have software companies adapted to new MRO needs, and which products and technologies are they banking on?

Latest developments

WinAir has focused on challenges surrounding predictability and has continued to evolve the planning

THE PANDEMIC HAS ACCELERATED PRE-COVID TRENDS AND ENCOURAGED SOFTWARE ENHANCEMENTS

capabilities of its 'WinAir Version 7' software by building on structural components already in place to improve how businesses manage, forecast and assess the workforce.

As part of this enhancement, the company has released a management tool for tracking and managing staff authorisations, qualifications and personnel requirements relative to aircraft maintenance, travel approvals and medical records. It also released the initial phases of its task assignments and hangar space management functionalities to support its vision of a comprehensive management, planning and decision-

making tool for handling all aspects of production planning.

"When the pandemic first hit in 2020, predictability reached an all-time low and this made it difficult for businesses to efficiently plan and manage maintenance projects and handle conflict resolution," says Vergeer. "Our planning enhancements will allow MROs to do all of this and more, through the end-to-end management of people, hangar space, tools and parts."

The company will also be releasing a new rostering functionality. The objective is to provide businesses with the ability to define shifts, set schedules, view when

MRO SOFTWARE

specific people will be working, make changes to shifts when required and link assigned work to shifts for personnel based on their schedules.

At Component Control, its 'Quantum Control' enterprise resource planning (ERP) software suite baselines and controls performance to help customers meet airworthy requirements. In the near-term, innovations are geared to new access-from-anywhere Quantum NexGen user interfaces. The company is also building on its API stack to add more plug-and-play third party tools. "As the recovery takes hold, our customers will need to continue to maximise their labour resources and skills," comments Tautges.

Ramco Systems is building out its software in multiple areas such as mobility applications, electronic publications (enabling customers to manage digital content from OEMs in XML and SGML formats), inventory technical management (ITM), and also defence compliance.

The company's ITM software is able to address the complex processes of aviation rotatable management including pooling, exchanges, part reliability and repairs. "We are one of the few providers of this end-to-end solution, globally," says Saravanan Rajarajan, director of aviation consulting at Ramco Aviation Software (part of Ramco Systems). "Our 'Advanced



THE MRO SECTOR WILL EXPAND ALONGSIDE AND GROW THROUGH CONTINUED SOFTWARE INNOVATION



Clockwise from above: WinAir has continued to evolve the planning capabilities of its software; Rusada's 'Envision Stock' module allows warehouse and stores personnel to conduct inventory tasks on-the-go; Ultramain Systems has added new modules including one for optimising labour scheduling

Planning & Optimization' module delivers value by optimising the inventory cost. We have released a fully fledged ITM solution and successfully gone live at one of the world's largest MROs."

On the upgraded management of digital content, Rajarajan adds: "These capabilities, along with mobility, have made digital transformation of shop floors a reality. It has also had an exponential impact on cycle time, data accuracy, decision-making quality and operational agility/scalability."

Like other providers, Rusada's mobile applications have been a big part of

its output this year. "We have created three fully native mobile applications for tablets and phones, all with full approval from Apple and Google," says Purfurst. The latest is 'Envision Stock', which allows warehouse and stores personnel to conduct multiple common inventory tasks on-the-go, removing the need for paper printouts and hand-written notes. "This is vital for organisations as so much time is wasted and effort duplicated when users are required to perform an activity, record it on paper in situ, go back to a desk and then update a system," he points out.

The company has also streamlined the back end of its 'Envision' software by updating elements of its technology stack, simplifying user interfaces and shortening load times. "This has reduced the time required to complete many common tasks by a minute or more," Purfurst notes. "This doesn't sound like a lot, but if you multiply this by the number of occurrences across all users over one year, it adds up to huge amounts of time saved and major increases in productivity."

On the fully paperless 'Ultramain' intelligent M&E/MRO/ELB software platform, which addresses and integrates

a broad spectrum of aviation maintenance needs, new application modules have been added, according to Ultramain Systems' vice president of product management John Stone.

One of the latest involves optimisation for labour scheduling, hangar planning, maintenance scheduling, check execution and materials stocking and ordering.

"In each of these processes Ultramain algorithms optimise the outcome based on operator inputs," he says. "What-if' modelling is used to allow comparisons to help MROs select the outcome they desire. Optimisation allows MROs to know in advance what they should be doing and how to achieve it."

Another software platform, 'AMOS' from Swiss AviationSoftware, has benefitted from new mobile solution apps, adding greater efficiency to the maintenance process. Work assignments can be directly communicated to the technician allowing for more flexibility in planning the efficient use of resources.

"With these resources in mind, capacity planning is an area that has seen advances in AMOS," says Swiss AviationSoftware's sales representative Chris Clements. "We have improved the staff capacity planning solutions for line and base maintenance. AMOS can be configured to automatically generate work packages and event assignments using rule-based logic with variables such as expected ground-time, type of work, staff qualifications and staff availability. Optimisation of labour and aircraft ground-time is achieved by matching demand

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Capacity planning and task management have seen advances in Swiss AviationSoftware's 'AMOS'



\$82
BILLION

MRO players typically expect the market to bounce back, but estimates of the size and growth potential of the global civil aviation MRO market vary. Statista points to a business worth US\$82 billion by 2023, while Global Market Insights says the segment "exceeded \$70 billion in 2020" and is expected to grow at a CAGR of over 4.9 per cent from 2021 to 2027

60%

A new Trax app has resulted in savings including a 60 per cent reduction in off-site physical data storage, and an 80 per cent reduction in human errors, according to the company

and capacity. This automation enables planners to focus on solving exceptional situations such as operational disruptions."

Trax has taken specific measures to address industry flux around the number of aircraft in a fleet that will be deployed based on the lifting of travel restrictions. The company has adapted the software to manage planning for grounded aircraft – to enable customers to keep 'automated' control over these essential maintenance items. "We understand that other operators must use manual and time-consuming Excel sheets to manage the grounded aircraft inspections that our enhanced software functionality has automated," says Reed.

Aircraft redelivery services are integral to fleet management, which is Trax's speciality, and with the very fluid market situation in the leasing sector, the need to reduce redelivery times is paramount. "Enhanced digitisation via the new 'eContent Control' app we developed has streamlined the process by providing accurate and easily accessible data, eliminating the need to scan documents, and facilitating the extraction of printed reports," Reed says.

The company claims that, according to some customers, the app led to 60-80 per cent savings on the lease return process, representing US\$100,000 per aircraft in savings. Additional savings include a 60 per cent reduction in off-site physical data storage, and an 80 per cent reduction in human errors due to digital records and better auditing.

Continuous innovation

It seems that like other aviation sectors, the pandemic has accelerated pre-Covid trends in the MRO market and encouraged software enhancements to manage new scenarios faced by airlines and supply chains.

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Looking ahead, Ramco's Rajarajan believes the "confluence of artificial intelligence, machine learning, advanced analytics, mobile and 5G will be game changers and enable MROs to achieve higher operational efficiencies. This may involve bringing together ERP systems, EFBs, mobile and wearable technologies, embedded IOT and external systems and seamlessly interlinking them. By embracing these advances, MROs are well positioned."

Hopefully he is right. More immediately, with aviation opening up to international travel including the crucial transatlantic market, as well as strictly Covid-controlled markets like Australia and Singapore, the MRO sector will be able to expand alongside and grow through continued software innovation. 📱