



## Turning a setback into a comeback

Operators are increasingly keen on having a fully integrated ERP MRO software system.  
Photos: AAR

**Keith Mwanalushi** looks at the impact of Covid-19 on the MRO software market analysing the challenges and opportunities as the pandemic continues to evolve.

In these challenging times, both airlines and MROs are looking to control and monitor maintenance costs, especially for non-scheduled work and making MRO processes more efficient through technology.”

Operators are increasingly keen on having a fully integrated ERP MRO software system that includes the tracking of financials and a robust materials management component that helps with balancing the cost of retaining optimal inventory levels with maximising profitability, thus helping to control unscheduled maintenance costs.

In the case of airlines and MRO providers, Omar Santos Vice President, Global Services and Support at TRAX indicates that unexpected maintenance problems and protracted downtimes can take a heavy toll on profitability and customer goodwill. He says in 2019 the FAA estimated the annual cost of delays to airlines and passengers at \$33 billion.

Reduced aircraft maintenance delays can save an average of \$4,690 per hour, he reveals.

In response to the need to control costs for unexpected maintenance, TRAX developed QuickTurn as part of its suite of eMobility iOS mobile apps that allow real-time information, anytime and anywhere. QuickTurn allows mechanics to conduct the necessary gate activity for aircraft defects upon flight landing or prior to take-off. Features include delay recording, aircraft part number transactions, troubleshooting, defects deferrals or closings, dent mapping, parts requirements, notifications, among others.

“QuickTurn is an example of how mobile add-ons to the MRO software system can assist in making the maintenance process more efficient,” states Santos. He adds: “A pilot can raise a defect during a flight, which when connected through the aircraft on board Wi-Fi system, streams down to the ground

and presents a notification to a technician assigned at that location. The mechanic can prepare in advance by reviewing the OEM manuals, accessing the tools, and ordering potential replacement parts in advance.” Santos explains that



Omar Santos Vice President, Global Services and Support at TRAX

## MRO SOFTWARE

this minimises the need to return to the hangar to access manuals, get parts, or enter transactions. "Having off-line capability when connectivity is lost allows the technicians to continue working at the gate. They can continue to view documents and input their transactions which will automatically synchronise when back in wireless range. Crew chiefs will be able to view real-time information for ongoing work," he continues.

TRAX believes that technology plays an important role in improving efficiencies, processes, and lowering of costs. "This is what has driven us to develop a maintenance system with the capacity to be paperless and which will continue to incorporate innovative artificial intelligence technology, as well," says Santos.

As a software provider, SWISS-AS caters to both aircraft operators and MRO providers, to satisfy the requirements of both sections. "From the perspective of an MRO, we do want to be able to analyse the unscheduled maintenance previously performed and utilise this to not only provide more accurate quotations, but also to be able to account for expected findings against the scheduled items," says Chris Clements Sales Representative at SWISS-AS.

Approval control of findings on a customer aircraft is also fully implemented in SWISS-AS software AMOS meaning that as defects are created as findings, they can trigger an approval request to the customer representative ensuring that no chargeable services are performed until approval is granted. "AMOS also allows the customer to have their stock levels managed based on previous historical consumption to potentially make savings in storage costs without increasing the risk of having expensive nil stock situations."



Chris Clements, Sales Representative at Swiss-AS



MROs are exploring how they can use their technology to simplify and improve process.  
Photos: AAR

From the airline perspective, they have the advantage of having access to the history of their aircraft and all relevant transactions. Clements says many tools exist in AMOS to allow the operator to identify rogue units and repeated items and this supports the back office in making maintenance decisions. "To handle unscheduled events efficiently requires having access to data and accurately identify the source of the issue and release the aircraft safely whilst ensuring the configuration is also updated."

Perhaps the most talked about subject when it comes to managing unscheduled maintenance is the ability to predict failures before they occur and therefore reduce unplanned ground time and

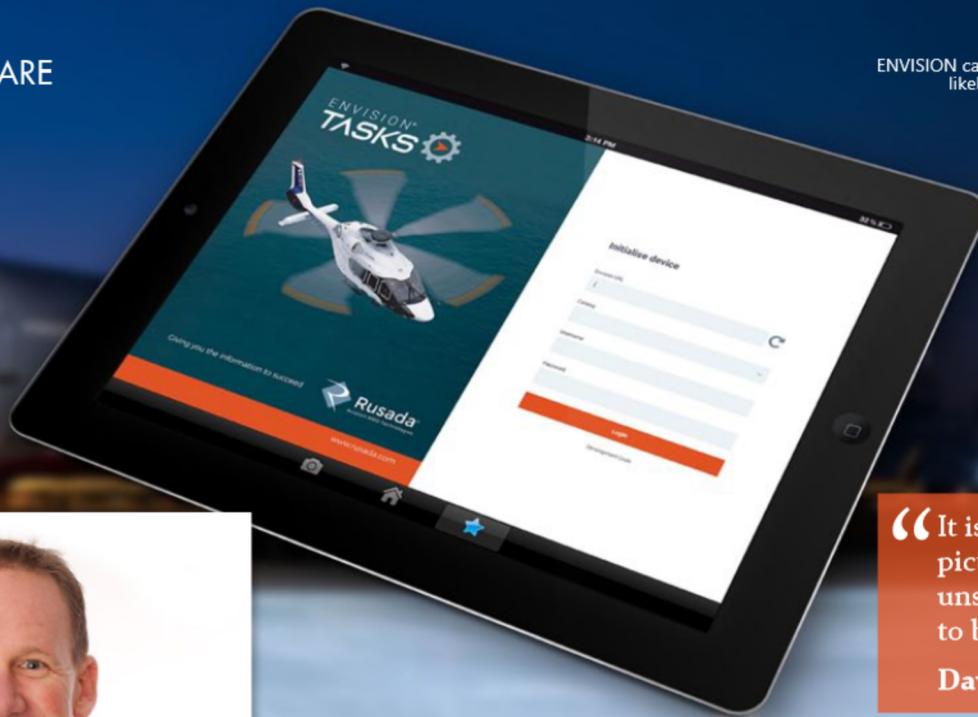
facilitate a more efficient supply chain. "Whilst we have made a conscious decision to not implement predictive maintenance directly into AMOS this type of data analysis can bring benefits to operators. We have ensured that standard interfaces are available for the community to utilise and transfer data to and from third party solutions

that can possibly draw data from a bigger fleet than just the customer, and in some cases install additional data gathering equipment on the aircraft to increase the parameters measured," Clements states.

David Purfurst, Global Pre-Sales Director at Rusada says when it comes to planning maintenance and managing costs, it is critical to have a clear picture of the amount of unscheduled work likely to be involved. "The only way to successfully do this is by analysing your past performance."

ENVISION, the solution developed by Rusada can use past events to predict the likely amount of unscheduled work and feed that into your maintenance forecasts. "This allows for more accurate budgeting and time allocation, and significantly reduces your exposure to risk," Purfurst highlights.

In neuroscience, attention management is the study of how we allocated our finite internal resources, and they have interesting parallels in MRO software, which they try to capitalise on at AAR. As an example - when a technician comes across a repetitive task or one that lacks connection to moving the maintenance process forward, he/she naturally will be less engaged and more prone to multi-tasking or not engaging at a sufficient level to produce high quality results. "From that perspective, at AAR, we see software's role as either managing or automating any non-value add aspects of a given process



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or project, preserving that valuable time and attention for the instances where it really matters - creative problem solving, critical thinking, attention to safety and even the interpersonal relationships that make up a successful team,” stresses Matthew Kammerait, Director Digital Product Management at AAR.

Over at Component Control, the Quantum-ERP solution improves efficiency and productivity by utilising best practices and workflows built into the system, comments Daniel Tautges, SVP at Component Control. “Our mobile solutions streamline operations, allowing users to effectively complete their jobs from across the shop or hangar, accommodating both scheduled and non-scheduled work. Additionally, Quantum-ERP has capabilities to automate daily processes, ensuring accurate data is maintained in the system.”

Over the last year, business intelligence and analytics have been a focus at Component Control. When they introduced the integration of Power

BI with Quantum in their version 12 application, Tautges says they added more than just a new reporting platform to Quantum, “we added actionable business intelligence, real-time reporting, and an enterprise toolkit for companies to build competitive intelligence.

“MRO is a complex task whereby work can vary by what is being repaired, complexity of repair, and chain of ownership of the repair. In-source, out-source, parts requirements, labour, all factor in the turn-around time and cost. With analytics from Component Control, data gathered from information already in the system can predict on-time deliveries, profitability, and capacity,” Tautges highlights.

### Fluctuations in demand for aviation MRO software services

The aviation industry has been especially hard hit during the pandemic, meaning survival strategies and rethinking working practices are high on corporate agendas.

As such CordobaQ has been contacted by many MRO facilities wanting to explore how they can use their technology to simplify and improve process flows, save costs and ensure that employees are being utilised in the most productive and effective ways.

“Technology has become more important than ever for businesses

during the pandemic, and I see this trend continuing. Yes, we are all very much looking forward to less video calls and more face-to-face connection again in the future, but I also see that businesses are starting to understand that technologies, such as MRO software, are helping them to work better, cheaper and faster. Once they discover the edge this gives them, there is no turning back,” comments Jason Cordoba, CEO of CordobaQ.

At the beginning of the pandemic when aircraft were being grounded and travel was severely restricted, at TRAX, they thought that demand for aviation MRO software would plummet, however, the reverse was true. Santos says it was not long until cargo operators and start-up airlines seized on industry opportunities. “It was no surprise that cargo rebounded somewhat due to the uptick in online purchasing of goods and commodities for populations that were homebound, as well as the movement of urgently required PPE products. The cargo market has further expanded in the past half year due to the shipment of vaccines. MROs saw an increase in cabin modifications work to make pandemic adjustments.”

What was unexpected was the appetite of start-ups to launch their airlines amidst the Covid crisis, which has won TRAX new clients. “This, combined with the foresight of many of our customers to use this



Matthew Kammerait, Director Digital Product Management at AAR.

time to push forward their technological advancement plans for mobile maintenance, has kept TRAX remarkably busy during the past year."

Airlines and MROs are still feeling the pain but understand the centrality of the aviation industry. "Therefore, they know that the trajectory for a return to normal is upward. This explains the willingness of those in a position to do so to expend capital now on projects to build a more efficient, digital, and paperless operation that will drive efficiency and future earnings. Our expectations are that we will experience continued demand for MRO software and services in the mid-term," suggests Santos.

In general, demand has remained firm for AMOS and SWISS-AS has adapted well to having to deliver implementation services remotely. In fact, SWISS-AS succeeded in inducting more new customers to the AMOS community in 2020 than in 2019, which was already a healthy year, reports Clements. He says 2021 shows no signs in slowing and projects which may have paused last year have been keen to re-start. "It is clear that the market situation has made those seeking to improve their market position more cautious and it could be argued that the pre-sales period has increased slightly with budgets tightened and risks having to be mitigated."

Perhaps a slight fluctuation that could be observed are the businesses

that SWISS-AS are attracting. "As well as airlines and MRO organisations we have welcomed more rotor wing and executive aviation operators to the community and more increasingly sectors of the industry that may not have considered AMOS, such as pure CAMO and aircraft transition and recycling. As different areas of aviation have seen an increase in business, they must also look towards identifying how they can streamline and digitalise their business. Another unexpected outcome of the pandemic is that we already see a greater variety of customers finding that a solution such as AMOS not only has the potential to bring efficiency to their business, but to also align themselves with other sectors of the industry that may not



Daniel Tautges, SVP at Component Control

have been considered in the past."

AAR has over 1700 global aviation customers, and they have seen a fluctuation in the demand for their products but as Kammerait states, AAR's clients continue to push for productivity utilising digital paperless solutions and actionable analytics. "Gaining efficiencies, reducing risk, and driving more top line revenue are the main advantages of our ERP software. The pandemic has driven a leaner operating environment and support for remote workforce, so the take-up of our cloud solutions continues to grow. We project continued efforts for digital transformation and process automation using ERP software solutions

such as Quantum Control. Predictive maintenance continues to be a focus for many MRO organisations as well. Many are still figuring out details on the best way to deploy these processes in their facilities, but it appears to be more of a priority now than ever before. MRO software solutions are a key element to these efforts."

Demand for services at Rusada has continued to grow over the last 14 months, albeit at a slower rate than prior to the pandemic. "There was an initial lull in the first three to four months as operators and maintainers took some time to assess the situation and redraw their plans for the future. However, since that time things have picked up again and we are having more discussions with more potential clients. We predict this demand will continue to increase as restrictions begin to ease and the world opens up again," says Purfurst.

He points out that potential clients are now taking longer to make their selections and diving deeper into the product before signing. "While this has lengthened the selection process, it improves their understanding of the system and results in a speedier implementation. Our belief is that by this time next year things will probably revert to a slightly longer sales cycle than pre-pandemic but shorter than at present. Overall, the level of interest has been surprisingly high given the circumstances," Purfurst concludes.



Jason Cordoba, CEO of CordobaQ