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# MRO

## Management



## BIGGER & BETTER

DAE chief Jeff Wilkinson on how Joramco's Hangar 7 and new training academy are central to its future growth

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**T**he need for improved efficiency, resource allocation, cost-effectiveness and regulatory compliance in MRO and CAMO (Continuing Airworthiness Management Organisation) has never been greater given the current constraints around supply chains and staffing bottlenecks.

In this environment, planning and scheduling software has become increasingly important in enabling MROs to shed light on system time-lags or glitches in order to maintain or ramp up productivity.

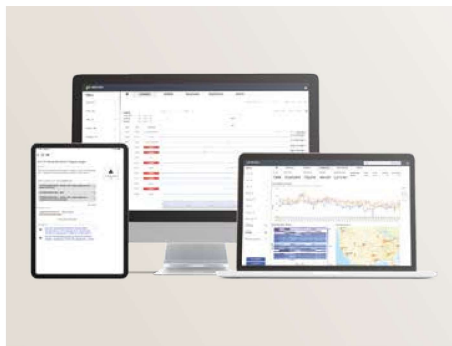
Suppliers in the sector are confident that integrated planning and scheduling software has become a 'must have', especially as machine learning (ML) and artificial intelligence (AI) bring a new level of insight to bear on the MRO business.

Cloud-based MRO software already provides enhanced scalability, accessibility and data sharing capabilities to enable better collaboration between MROs and airlines. Meanwhile real-time data analytics tools allow MROs to identify trends, optimise workflows and i

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to passenger and cargo demand which makes accurate planning and scheduling to determine any maintenance schedules all the more critical.

Rajarajan says: “They are also facing the severe challenges of an overloaded supply chain and acute labour shortages. It means the need to optimise resources has become critical to avoiding scaling back on growth.” Ramco’s maintenance planning modules integrate data on customer contracts, work scope, manpower availability, tools and parts availability, as well as historical data and leverage ML-based algorithms to produce tailored maintenance plans.

This type of smart deployment of planning and scheduling software is becoming more common in the current climate.

### INCREMENTAL GAINS

QOCO Systems’ Neitola says: “The key to managing supply chain disruptions and workforce shortages is to start by understanding your current processes and then implement improvements incrementally. If you’re collecting data manually, the first step is to adopt a system that consolidates inputs from flight operations, maintenance schedules and staff availability into a single interface.

“This system should also visualise the information in a way that makes it easy to quickly identify potential bottlenecks in resource availability, helping planners

react faster to disruptions. Once your data is centralised, the next step is to implement automation. With automation in place, planners can shift their focus to higher-value tasks and strategic decision-making, driving productivity gains even in constrained environments. It’s important to have a clear vision and end goal in mind, even when starting small.”

The rapid advancement in AI means that it is essential to focus on what an ideal solution would look like, regardless of whether existing software can meet that need. Neitola comments: “The fast pace of technology will likely bring that vision within reach sooner than expected. Moreover, setting KPIs and measurements from the outset is crucial. Start measuring key metrics right away to ensure you’re heading in the right direction.”

Veryon believes that employing an integrated MRO system that combines inventory management with maintenance scheduling helps to manage spare parts efficiently, even during supply chain disruptions. “But that is not always enough,” says Purfurst. “An organisation will need complementary solutions that are integrated to help get you the insight you need and the gain you are striving for.”

One of the key features within the Veryon Diagnostic solution is a guided troubleshooting module to help a less experienced workforce gain the knowledge they need to get an aircraft back to airworthiness status. While this does

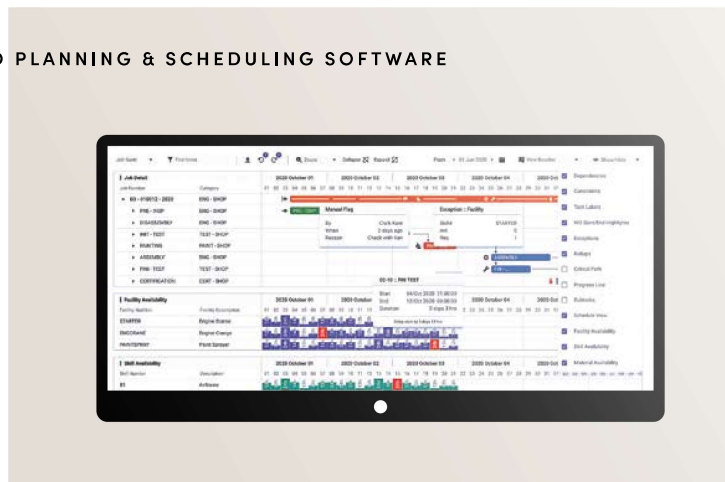


▲ Ilari Neitola, founder and executive advisor, QOCO Systems

1. QOCO Systems’ MROTools.io Assignment package uses AI to match personnel to appropriate maintenance tasks
2. The Veryon Diagnostic solution is a guided troubleshooting module

**“SUPPLIERS IN THE SECTOR ARE CONFIDENT THAT INTEGRATED PLANNING AND SCHEDULING SOFTWARE HAS BECOME A ‘MUST HAVE’”**

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not solve the workforce shortage it can plug some gaps due to lack of experience.

AI may get to do the heavy lifting before long. Ramco’s Rajarajan says: “Intelligent automation and decision-making capabilities can reduce the highly intensive manual labour involved in planning, thereby improving productivity. For example, once the input work scope is given, the planning system should provide optimised sequencing of access panel tasks and MPD tasks, plus automated assignments of the rostered staff possessing the right skills for given tasks.”

Another area where Ramco is leveraging historical data extensively is on non-routine effort and parts estimations during planning stages. This has significantly reduced order holds due to non-availability of manpower, parts and tools, claims the company.

### PLANNING AND SCHEDULING SPREADS ITS WINGS

Looking ahead, even by 12 months, software suppliers see further change, with AI playing an increasingly pivotal role. Veryon envisages MRO/CAMO solutions will become foundational. “Complementary solutions that are fully integrated will provide insight, streamlining processes and decision-making. This will move the industry into a more condition/predictive base maintenance practice,” says Purfurst.

QOCO Systems’ Neitola also sees some broader reach. He explains: “We see planning and scheduling expanding into areas we may not have anticipated. However, even within the same domain, different customer environments will demand highly tailored solutions.” He cites the Mixture of Experts (MoE) model as presenting a compelling opportunity here.

“This model allows us to create specialised, cost-effective AI solutions that can be fine-tuned

to meet the unique needs of individual customers. An additional benefit of the MoE model is improved data privacy and security. By dividing tasks among different experts, sensitive information is handled more compartmentally, limiting data exposure,” notes Neitola.

Such a structure allows experts to be updated independently, minimising the need to access full datasets and ensuring compliance with privacy regulations. This way, organisations can gain protection in their AI workflows while improving efficiency.

As these technologies evolve, QOCO Systems anticipates even greater efficiency gains and enhanced data security in an increasingly complex environment.

Ramco also sees planning creep as more sophisticated AI/ML algorithms are deployed alongside massive amounts of data. Rajarajan comments: “Planning software shall extend beyond the boundaries of the organisation, connecting ecosystems like suppliers and customers and OEMs and leveraging their data.”

Ramco recently launched Aviation Software 6.0 for smarter aircraft management. The software leverages AI and ML to drive transformation in M&E and MRO operations. Rajarajan says: “The entire process of managing the kitting and marshalling operations is streamlined with the Kitting Hub; the automated planning takes into consideration the part demand data and suggests the possible options to meet the demand or highlight the risks.”

Expect further software packages to hit the MRO market soon. Led by AI and ML, they are likely to lead to further systems integration – and hopefully better decision-making – giving MROs a more comprehensive view of maintenance activities, and how to tackle them earlier. ●



▲ Dave Purfurst, global pre-sales director at aviation tech company, Veryon

▲ Ramco maintenance scheduling