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IAI Bedek

MRO News
from around the world

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MRO

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Suite 305, South Tower
5811 Cooney Road
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Email: p.jorssen@avitrader.com
Tel: +1 (424) 644-6996
www.avitrader.com

Editorial

Keith Mwanalushi, Editor
Email: keith@aeropublications.co.uk
Mobile: +44 (0) 7871 769 151

Design

Volker Dannenmann,
Layout & Design
Email: volker@dannenmann.com
Mobile: +49 (0) 711 46910151

Advertising inquiries

Jenny Vogel
Head of Sales & Marketing
Email: jenny.vogel@avitrader.com
Tel: +49 (0) 8761 346007

Registration

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Opinion

Please send your comments and queries to
keith@aeropublications.co.uk

2018 in aviation

It's that time of year again. By all measures 2018 has been quite a dramatic year for the aviation industry. Globally, the industry has performed quite strongly but also persistent challenges prevailed throughout the year. The risen cost of fuel certainly had an impact, this together with overcapacity and saturation in markets like Europe saw the collapse of several airlines. And the likelihood is that we will continue to see consolidation in the industry.

It has also been quite a momentous year for the OEMs starting with Bombardier that sold its C Series programme to Airbus and has now also sold off its Q400 programme, essentially bowing out of the market. Similarly, Boeing has now jumped into bed with Embraer but the deal still faces numerous legal challenges. At the time of this writing a Brazilian federal court overturned an injunction blocking the proposed Boeing-Embraer joint venture. The plane makers announced in July that Brazil's Embraer would sell 80% of its commercial airplane

business to Boeing for \$3.8 billion. The drama continues to unfold.

In terms of safety, the year was rather disappointing compared to a record breaking 2017 that saw no fatalities in all global regions. Notably, the crash of a new 737MAX operated by Lion Air came as a blow to Boeing as the US plane maker continues to market what has become its fastest selling airplane.

In our end of year cover story, we review the year with some of the industry players to catch up on the developments that shaped the year.

As we close yet another year, its with great pleasure on behalf of all of us at AviTrader Publications, to wish our readers, editorial partners and advertisers around the world a peaceful holiday season and the very best for the New Year!

Keith Mwanalushi
Editor



Photo: Keith Mwanalushi

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Photo: ©American Airlines

American ramps up in-house engine maintenance

With the recent induction of the first CFM56-5B engine from its Tulsa, Oklahoma facility, American Airlines Group (American) has successfully transitioned, in house, maintenance work previously carried out by the engine's manufacturer, General Electric Co. The move to bring this work in-house was announced a year ago. In a statement, American said: "Bringing this work to Tulsa is a testament to the hard work and talent of the mechanics and support personnel in the engine shop and their goal to be the very best in the industry." This means American insources more work than any other airline as it also works on the CFM56-7B variant model in Tulsa. 85 additional employees have been taken on at Tulsa to deal with the increased workload as the CFM56-5B powers 151 of the American's Airbus A320 aircraft, while the -7B variant powers over 300 Boeing aircraft for the carrier. American will induct three more -5Bs this year, with 30 more engine visits planned for 2019. The process of getting the shop ready for the -5B variant of the engine in addition to the -7B work has been a massive undertaking. "You don't realize what a big project it is to get ready for something like this, especially with things like tooling," said Jim Blesi, an aviation maintenance technician, in a prepared statement. American Airlines, headquartered in Fort Worth, Texas is the world's largest airline measured by fleet size operating across a wide international and domestic network, averaging approximately 6,700 flights per day to nearly 350 destinations in over 50 countries. As at July this year, American had a fleet of 956 aircraft, the majority of which being Airbus and Boeing jets, but which also includes Embraer and McDonnell Douglas aircraft.

HAECO Private Jet Solutions obtains EASA design organization approval

HAECO Group's cabin completion specialist, HAECO Private Jet Solutions (HAECO PJS), has obtained EASA Part 21 Subpart J De-

sign Organisation Approval (DOA). The approval enables HAECO PJS to approve minor changes and repairs for parts and appliances covering cabin, structures, and electrical systems on private jets and commercial aircraft. HAECO PJS is one of Asia Pacific's leading private jet cabin completion centers. With the EASA DOA, HAECO PJS broadens its turnkey cabin design, certification, and completion solutions, delivering more robust assurance to customers on schedule integrity for modifications such as connectivity upgrade, flight deck and cabin interior refurbishment, and livery change. These modifications can be certified in-house by a dedicated team of compliance verification engineers ("CVEs") and performed on aircraft registered in multiple jurisdictions.

AAR announces partnership with Napier Park Global Capital

AAR a global aviation aftermarket leader, has announced the expansion of its commercial aircraft asset management activities by partnering with Napier Park Global Capital (Napier Park) to create a joint venture that will focus on acquiring late life commercial aircraft. AAR has been appointed the sole servicer for the newly formed strategic alliance. Under the agreement, AAR will bring its extensive aircraft MRO, leasing and trading experience to the role of asset manager. AAR will establish and manage the aircraft portfolio, as well as develop exit strategies. The main focus is on acquiring yield generating assets maximizing returns as aircraft reach the end of operational life. AAR will work with majority partner, Napier Park, to target assets that retain value in the aftermarket once aircraft retire from service. Napier Park is an alternative investment manager that, as of September 30, 2018, managed US\$11.5 billion in capital and will be the majority equity participant in the joint venture. Napier Park manages CLOs, credit and private investments on behalf of institutional investors globally. Napier Park's Real Assets group manages approximately US\$6 billion of equipment assets.

FL Technics opens new warehouse in Asia

FL Technics, a global provider of integrated aircraft maintenance, repair and overhaul services, has announced further expansion to the Asia region by opening a new warehouse in Singapore. The operations started at the beginning of November 2018. "The decision to add a warehouse location in Asia enables the company to scale up with customers who are facing increasing time pressure for parts and material delivery fueled by the booming aviation industry and fierce competition in the region," said Zilvinas Lapinskas, CEO FL Technics. Just recently, FL Technics, together with CALC (China Aircraft Leasing Group Holdings Limited) and ARI (Aircraft Recycling International Limited), launched a Joint Venture with the focus on aircraft base maintenance in Harbin, China, to provide MRO services for aircraft by targeting Asia and Europe regions. Earlier this year, FL Technics Indonesia, based in Jakarta, received the FAA Repair station 145 certificate, which allows for the provision of MRO services to aircraft registered in the United States.

Jetaire nears completion of STC for FAR 25.981 compliance solution for Boeing 777

Jetaire has reported that it is nearing completion of the work for the Supplemental Type Certificate (STC) of its Invicta™ Reticulated Foam Ignition Mitigation system for the Boeing 777. Jetaire's Invicta system is a center tank flammability reduction and ignition mitigation method solution, currently FAA-certified for the Airbus A320 family of aircraft and Boeing B737, 737NG, B757 and B767 aircraft. The system meets FAA requirements for 14CFR 25.981 and 121.117 compliance. Jetaire is the original developer of the Invicta reticulated foam technology as a means of compliance with FAR 25.981 and received a patent on the system in December 2017 (U.S. Patent 9,849,998). The Invicta technology offers a number of benefits that address FAA compliance demands. In addition, installation of the Invicta system is fast and simple, thus minimizing disruption of customers' schedules. Once installed, the Invicta system is essentially maintenance free and completely passive. Approximately 50+ aircraft are currently flying with the Invicta system onboard. Boeing, ELG Carbon Fibre find new life for airplane structure material in ground-breaking partnership

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Enter Air in Tallinn
Photo: Magnetic MRO/Anna Zvereva

Enter Air and Magnetic MRO sign PBH support contract for nineteen Boeing 737NGs

Magnetic MRO, a provider of Total Technical Care, and Poland's Enter Air have signed a three-year contract for PBH support for the airline's 19 Boeing 737-800s. The recently signed agreement includes both scheduled and 24/7 ad-hoc supply of components, component repair management, loan, exchange and warranty support services for the carrier's Boeing 737 NG fleet at Warsaw Chopin, Katowice-Pyrzowice and at its other main airports. "As a charter airline, Enter Air is nothing but a demanding customer to any PBH provider. What has brought Magnetic MRO into the arena is the fusion of our growing asset management expertise combined with extensive component maintenance capabilities by our new shareholder Guangzhou Hangxin Aviation Technology (Hangxin)," shares Inga Duglas, Commercial Director, Magnetic MRO. "Being one of the largest charter airlines in the region, we need efficient component supply in order to ensure the fleet's smooth performance. However, launching and maintaining an extended stock of non-critical components requires substantial investments and an additional team to run it. Luckily, together with Magnetic MRO and their PBH program, we will be able to keep our component supply, repair and overhaul costs optimized while maintaining high fleet performance and timely AOG support," says Mariusz Olechno, Chief Technical Officer, Enter Air.

Liebherr-Aerospace to supply NORDAM with anti-ice valves

Liebherr-Aerospace has announced an agreement with U.S.-based NORDAM to develop, manufacture, test and certify anti-

ice valves to be used in a NORDAM-developed engine build-up system for A320neos equipped with the Pratt & Whitney PW1100G engine. The contract is considered a major milestone in Liebherr's long-term strategy. According to Nicolas Bonleux, Managing Director & Chief Commercial Officer, Liebherr-Aerospace & Transportation SAS, the valves prevent ice from forming on the engine cowl. They will be manufactured at the company's center of competence for air management systems, then packaged into ship-sets of two pneumatic valves per nacelle, a redundancy designed to prevent engine overheating. "This contract marks a major milestone in our long-term strategy to offer technical solutions for aircraft engine applications, and to continuously extend and consolidate our activities in this market," Bonleux said. "We are happy to support NORDAM as we supply our products to a nacelle provider for the first time."

Boeing, ELG Carbon Fibre find new life for airplane structure material in ground-breaking partnership

Boeing and ELG Carbon Fibre have announced a partnership to recycle excess aerospace-grade composite material, which will be used by other companies to make products such as electronic accessories and automotive equipment. The agreement covers excess carbon fiber from 11 Boeing airplane manufacturing sites and will reduce solid waste by more than one million pounds a year. Carbon-fiber reinforced material is extremely strong and lightweight, making it attractive for a variety of uses, including in the building of the super-efficient 787 Dreamliner and the all-new 777X airplane. As the largest user of aerospace-grade composites from its commercial and defense programs,

Boeing has been working for several years to create an economically viable carbon fiber reuse industry. The company improved its production methods to minimize excess and developed a model for collecting scrap material. However, technical barriers stood in the way of repurposing material that had already been "cured" or prepped for use in the airplane manufacturing process. UK-based ELG developed a proprietary method to recycle "cured" composites so they do not have to be thrown out. "Recycling cured carbon fiber was not possible just a few years ago," said Tia Benson Tolle, Boeing Materials & Fabrication director for Product Strategy & Future Airplane Development. "We are excited to collaborate with ELG and leverage innovative recycling methods to work toward a vision where no composite scrap will be sent to landfills." To prove that the recycling method can be applied on a grand scale, Boeing and ELG conducted a pilot project where they recycled excess material from Boeing's Composite Wing Center in Everett, Wash., where the massive wings for the 777X airplane are made. ELG put the excess materials through treatment in a furnace which vaporizes the resin that holds the carbon fiber layers together and leaves behind clean material. Over the course of 18 months, the companies saved 1.5 million pounds of carbon fiber which was cleaned and sold to companies in the electronics and ground transportation industries. "Security of supply is extremely important when considering using these materials in long-term automotive and electronic projects," said Frazer Barnes, managing director of ELG Carbon Fibre. "This agreement gives us the ability to provide that assurance, which gives our customers the confidence to use recycled materials." Based on the success of the pilot project, Boeing says the new agreement should save a majority of the excess composite material from its 11 sites, which will support the company's goal to reduce solid waste going to landfills 20% by 2025. "This collaboration takes Boeing's commitment to protect the environment to a whole new level. Recycling composites will eventually be as commonplace as recycling aluminum and titanium," said Kevin Bartelson, 777 Wing Operations leader. Boeing and ELG are considering expanding the agreement to include excess material from three additional Boeing sites in Canada, China and Malaysia. As a result of the partnership, ELG estimates the number of its employees will nearly triple from 39 in 2016 to an expected 112 by the end of 2019 as the recycling market continues to expand.



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A330 galleys
Photo: Bucher

TAP Air Portugal selects Bucher galleys for first A330-900neo

TAP Air Portugal has become the world's first airline to fly the new A330-900neo and has selected Bucher galleys to equip the cabins of the new aircraft. The aircraft is the first to feature the new "Airspace by Airbus" cabin concept. Airspace offers flexible zones and innovative design for the cabin crew's workspace and gives passengers a new cabin experience. The development of the Bucher galleys focused on optimizing the crew's operations but also in-creasing comfort for passengers. The finished interior layout achieves a pleasant ambience while allowing passengers to experience first-class service. Bucher Leichtbau has been given the opportunity to develop and manufacture the galleys for the Portuguese "launching opera-tor". The challenge was to develop galleys that were light, safe and which conformed to the specifications of the new aircraft while also adapting to the customer's unique ergonomic requirements.

FAA approves AerSafe™ for additional Airbus aircraft to comply with fuel tank flammability reduction rule

The Federal Aviation Administration (FAA) has issued an amended Supplemental Type Certificate (STC) to AerSale® for installation of its AerSafe system on Airbus 319 and 320 aircraft (ST04010NY), in compliance with the Fuel Tank Flammability Reduction (FTFR) rule. This amended STC, originally issued for Airbus 321 aircraft, is in addition to AerSale's STCs for the Boeing 767 series

(ST03599NY), approved by the FAA in February 2018, as well as the Boeing 737 CL series (ST03589NY) and the Boeing 737 NG series (ST02980NY), both approved in 2016. Tested and developed to exact tolerances to fill the cavity of the Airbus 319, 320, and 321 center fuel tanks, AerSafe limits the amount of available oxygen that can ignite fuel vapors and prevents sparks from igniting an explosion. AerSafe comes as a complete prefabricated kit that can be installed at any hangar around the world. After initial installation, the system requires no maintenance or spare parts. A limited number of AerSafe kits are currently available for immediate installation. For larger orders, the lead time for ordering AerSafe is currently 60 days versus the one-year lead time for the nitrogen inerting system. The FAA

enacted the FTFR rule after the crash of TWA flight 800 off the coast of New York. Federal investigations revealed that the accident was the result of an explosion caused by a spark igniting fumes in the center fuel tank of the Boeing 747. The FTFR rule requires fuel tank ignition sources and flammability exposure to be reduced in aircraft most at risk. The FAA provided two options: a flammability reduction means such as nitrogen inerting, or an ignition mitigation means such as AerSafe. These systems must be installed on all passenger aircraft that have high flammability fuel tanks and fly within or into the United States.

Airbus Helicopters expands presence in Japan

Airbus Helicopters will be adding a maintenance, repair and overhaul (MRO) complex adjacent to its existing facility in the Kobe Airport Facility in Japan. Construction will commence in June 2019, with the new facility expected to be operational in November 2019. The company's existing facility can accommodate up to 25 medium-sized helicopters simultaneously. It also houses its regional engineering hub and the country's first and only helicopter full-motion full-flight simulator, which has trained over 500 pilots and engineers in Japan and across the region. With this expansion, Airbus Helicopters will have the largest footprint in the aviation business sector of the Kobe Airport Facility, occupying a total space of 19,685 m². Its overall capacity will increase by 60% to handle about 40 medium-sized helicopters at one time. The new building will feature a state-of-the-art hangar, an administration office, and a purpose-built warehouse.



Existing facility in Kobe, Japan
Photo: Airbus Helicopters

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Arkia and LHT sign support contract
Photo: LHT

Arkia signs comprehensive support contract with Lufthansa Technik

Arkia Israeli Airlines has signed a comprehensive technical services contract with Lufthansa Technik. Within the framework of a ten-year agreement, Lufthansa Technik will support the airline with Total Technical Support (TTS®) including Technical Operations Management (TOM) for Arkia's three Airbus A321LRs. Integrating all MRO activities into one service package, Lufthansa Technik will provide engineering, line maintenance and component support including consumables and expendables, as well as wheels-and-brakes services. The first aircraft delivered from the OEM to Arkia will be the first aircraft of the A321neo type featuring the long-range configuration. The on-site services in Tel Aviv will be performed by Lufthansa Technik Maintenance International (LTMI). Over the next three years, experienced mechanics and the station manager will provide TOM and line maintenance services on site at Arkia's hub in Tel Aviv, preparing the carrier's technicians to take over line maintenance after that period.

GA Telesis Component Solutions Group (CSG) acquires Airbus A330-200 aircraft for disassembly

GA Telesis has acquired an Airbus A330-200 (MSN 255) for disassembly and support of its increase in demand for inventory. The disassembly is taking place in the United Kingdom, where key components will then be routed to its U.K.- and U.S.-based distribution facilities. The inventory will be used in support of the GA Telesis' iGEAR, SNAP and ACCESS programs as well as day-to-day sales requirements of the company's airline and MRO customers worldwide.

Barfield reinforces partnership with TAME in new components maintenance support

Barfield, an Air France KLM Engineering & Maintenance (AFI KLM E&M) subsidiary in the Americas and a major aviation industry player, has signed a multi-year components maintenance agreement with Ecuadorian based airline TAME. The flat rate agreement covers TAME's Airbus A330 aircraft. The agreement also increases Barfield's long-term partnership with TAME with the support of AFI KLM E&M. Indeed, for Franck Becker, AFI KLM E&M Regional Vice President Sales Americas, "The trusted relationship between TAME and Barfield as seen with this new agreement, increases and strengthens AFI KLM E&M position on the South American market." The

component repair contract is based on high quality engineering practices put in place to increase the flying life of the components. TAME is an airline founded in 1962 and headquartered in Quinto, Pichincha Province with the main hub in Mariscal Sucre International Airport. The airline was formed by the Air Force of Ecuador. In 2011, it became a commercial entity and now provides domestic, international and charter flights. TAME has a fleet of ten aircraft including Airbus A319s, A320s and A330s.

TAM signs comprehensive contract with Eastern Airways

Täby Air Maintenance, TAM, has signed a contract for a series of A-checks on U.K.-based Eastern Airways' fleet of Saab 2000s. The agreement covers all seven aircraft and will be executed during the spring of 2019, with the final aircraft returned to service with Eastern Airways in mid-May. "We are very pleased and grateful to signing this deal with long-time customer Eastern Airways, again confirming our position as the leading provider of maintenance and support for the large Saab 340/Saab 2000-fleet," says Pär Gulle, TAM Managing Director. "Thanks to a very close collaboration with the technical department of Eastern Airways, we have been able to schedule each and every A-check very closely to the rotating of the individual aircraft, in order to minimize Eastern's down-time. With a current high demand for our services, with staff on a two-shift scheme, TAM is proud to still be in a good position to always being able to fulfil the need from current as well as new customers," Pär Gulle summarizes.



TAM signs contract for a series of A-checks with Eastern Airways
Photo: TAM/Anders Annerfalk

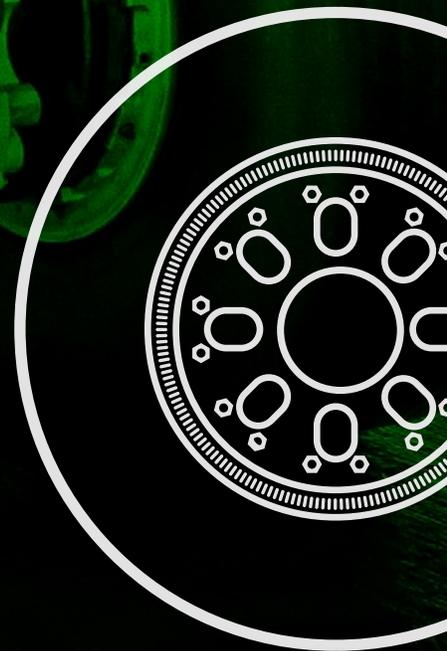
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New Hangar S at Václav Havel Airport Prague
Photo: CSAT

Czech Airlines Technics enters new aircraft maintenance season with new hangar

Czech Airlines Technics (CSAT), a daughter company of Prague Airport Group, has officially launched another season of aircraft maintenance and repairs on Prague Airport's premises with a new hangar for line maintenance. Thanks to the construction of a space opposite the existing Hangar F, the company's base maintenance capacity has also increased. Last year, CSAT employees performed over 120 base maintenance jobs for several airlines. Additional investment in the acquisition of new space, landing gear sets and certification for other aircraft are planned in the future. The company decided to build a new hangar on the premises of Václav Havel Airport, Prague, for its line maintenance purposes. Primarily designed for a lower level of maintenance checks, the hangar is located in the immediate vicinity of the original hangar used by the company and is designed for one Boeing 737, Airbus A320 Family or ATR aircraft. The construction of the new hangar, known as a Hangar S, started in September 2017 and was finished this spring. After all inspections and approval by the Civil Aviation Authority of the Czech Republic, the new hangar has gradually launched its operations. It was successfully test-run during the high summer season.

MTU Maintenance signs CFM56 engine MRO contract with Serene Air

MTU Maintenance and new customer Serene Air have signed a long-term contract. The agreement covers the maintenance, repair and overhaul of the Pakistani opera-

tor's CFM56-7 engines, powering its Boeing 737-800 fleet. Further, the agreement includes on-site support and spare engine leasing. The contract also includes the option to expand the scope in the future to include additional engines from Serene Air's fleet. Serene Air is a privately-owned start-up that has been operating out of Islamabad since 2017 and MTU Maintenance's first customer in Pakistan. The airline operates domestic flights between the cities of Islamabad, Karachi, Lahore, Peshawar, Faisalabad and Quetta. The airline is planning to expand the network to include international destinations in due course. MTU Maintenance is an independent service provider for the CFM56-3/-5B/-7B variants and is seeing strong demand for its -7B

services. The MRO provider expects to see well over 100 shop visits on the CFM56-7 in 2019.

West Star Aviation's newly expanded Chattanooga (CHA) facility celebrates operational milestones

West Star Aviation highlighted the new Paint and Maintenance Hangars at the Chattanooga facility Open House, November 7, 2018. With the completion of these new facilities, West Star now occupies over 175,000 ft² of space at the Chattanooga Metropolitan Airport. "The open house was a great way to showcase our new facilities, and to demonstrate to our customers in this area of the country that we are continuing with our heritage of quality, world-class service," said Jim Rankin, CEO, West Star Aviation. The recently completed expansion includes a new 65,000 ft² maintenance facility that includes 40,000 ft² of hangar space, and over 25,000 ft² of office and support space. This completion also includes a 45,000 ft² state-of-the-art paint facility that can accommodate the paint needs of most business aircraft flying today, including the Gulfstream G550, Embraer Lineage, and Embraer Legacy 600. West Star Aviation has already started its first customer paint and maintenance project at their newly expanded Chattanooga (CHA) facility. The first customer project to be completed will include a 3C Inspection, Service Bulletins, an avionics installation and a full paint job on a Falcon 2000. This project is anticipated for completion before Q1 of 2019.



First maintenance customer at expanded Chattanooga facility
Photo: West Star Aviation



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N3 overhauls 1000th Rolls-Royce engine in Arnstadt, Germany

A Rolls-Royce Trent 900 engine, powering an Airbus A380 of Asiana Airlines, is the 1000th aircraft engine that has undergone maintenance in the workshops of N3 Engine Overhaul Services (N3) in Arnstadt, Germany. The joint venture of Lufthansa Technik and Rolls-Royce has been in operation for 11 years and currently employs over 700 people. "This is another significant milestone of our German-British success story" says Nicole Fehr, Director and General Manager. "With this experience and over 40 international airline customers, we are now an inherent and mature partner within the global Trent MRO network". The capacity of the modern plant with its own test facility is between 150 to 200 engines per year. Besides being the repair and overhaul experts for Trent 500, Trent 700, Trent 900 and most recently the Trent XWB, N3 also continues to grow its engine component repair capabilities. N3 is currently training over 50 young people to become engine specialists and logistics experts.

Bombardier continues to expand worldwide customer support network

Bombardier has announced the latest addition to its expanding Services and Support network – a line maintenance station (LMS) located at Le Bourget Airport near Paris, France. The new facility is the seventh line maintenance station to be opened in the past 18 months, further strengthening Bombardier's OEM support services' offering for its growing European customer base. In addition to standard scheduled line maintenance, and unscheduled and AOG maintenance support, the new facility offers both wheel and battery shop maintenance services. The technical engineers supporting the facility are certified for the Learjet 60, all Challenger 300 series, all Challenger 600 series, and Global series business jets, including Bombardier's flagship Global 7500 aircraft. This month, Bombardier also expanded its North American Mobile Response Team (MRT) by adding five new trucks, bringing the worldwide total to 30 and enhancing the MRT's reach and response times. Based in San Francisco and Santa Ana,

CA, Las Vegas, NV, West Palm Beach, FL, and Scottsdale, AZ, the strategically-located MRT trucks will enhance the delivery of parts and technical support across the U.S.

HAECO Cabin Solutions expanding engineering capacity

HAECO Cabin Solutions, a division of HAECO Americas headquartered in Greensboro, NC, USA, has announced immediate expansion plans to its seating engineering and product development facilities in the Piedmont Triad, NC. This is in response to numerous customer wins on the Vector Premium and Vector Economy seating platforms. The company forecasts that it will need to grow its local engineering staff by 20% in early Q1 2019. Most recently in June, HAECO announced that Airbus had approved HAECO Cabin Solutions to be included in the A350 aircraft catalogue for line-fit selection and launched the offerability process for Vector Economy on Airbus A320. Vector seating is being installed in several air-



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line customers' aircraft, and the company has secured several new airline customers with both Boeing and Airbus single- and twin-aisle aircraft configurations.

China Eastern signs A350 components support deal with AFI KLM E&M

China Eastern has signed a new contract with AFI KLM E&M, covering its fleet of Airbus A350-900s, ultimately set to number 20 aircraft. The bespoke A350 contract covers repairs, access to a regional spares pool, and the provision of a Main Base Kit (MBK). The agreement also includes complementary training services and engineering development assistance. Based in Shanghai, China Eastern Air Holding Company (CEAH) is one of China's three largest state-owned air transport groups. As CEAH's principal company, China Eastern Airlines was the first Chinese airline to be listed on the New York, Hong Kong and Shanghai stock exchanges in 1997. It currently operates a fleet of about 600 aircraft averaging less than 5.5 years old, making it one of the youngest fleets of the world's major airlines.

Lufthansa Technik Shenzhen and Asiana Airlines sign technical support agreement

Lufthansa Technik Shenzhen and Asiana Airlines have signed a five-year agreement for technical support on the V2500 thrust reverser. Under the terms of the agreement, Lufthansa Technik Shenzhen will support Asiana Airlines in developing its in-house capabilities for the V2500 thrust reverser and other related components by providing technical training, tools and equipment as well as on-site support. The aim is to establish a flexible and mutually beneficial cooperation based on the respective expertise and needs of both companies and to deepen their relationships. With the quality standards and experience of Lufthansa Technik Shen-zhen, Asiana Airlines will take a significant step towards building its own repair capabilities instead of outsourcing these services.

Atitech adds Airbus A320neo aircraft to MRO capabilities

Atitech, the Italian MRO has been granted approval to add the Airbus A320neo aircraft to its MRO capabilities. Following the EASA

Part 145 certification, announced on Nov. 21, the new-generation aircraft type has been added to its base maintenance capability with its technicians now able to provide airframe support.

Gulf Air and CFM sign long-term LEAP-1A support agreement

Middle East airline Gulf Air and CFM International have signed a long-term agreement for the maintenance of the airline's LEAP-1A engines. The agreement is valued at just over US\$1 billion at list price. Under the terms of this 10-year Rate per Flight Hour agreement, which covers a total of 65 LEAP-1A engines that the airline ordered in 2017, CFM will provide maintenance support for Gulf Air's fleet on a dollar-per-flight-hour basis. Gulf Air has been a CFM customer since 1992 and currently operates a fleet of 16 Airbus A320neo aircraft powered by CFM56-5B engines. The company began commercial operations with the A320neo powered by LEAP-1A engines in August 2018.

Finance News

Aviation Capital Group announces closing of US\$800 million senior unsecured notes offering

Aviation Capital Group (ACG) has reported the closing of its sale of US\$800 million aggregate principal amount of senior unsecured notes, consisting of US\$300 million aggregate principal amount of its 4.375% senior unsecured notes due 2024 and US\$500 million aggregate principal amount of its floating rate senior unsecured notes due 2021. ACG intends to use the net proceeds from the Notes for general corporate purposes, including repayment of outstanding indebtedness and the purchase of commercial aircraft. The Notes are recourse only to ACG and are not guaranteed by any of ACG's equity holders or subsidiaries, or any third party.

Leonardo signs Term Loan Facility of €500 million

Leonardo has signed a new Term Loan Facility with a pool of domestic and international banks for the purpose of refinancing existing debt. The credit line amounts to €500 million and has a maturity of 5 years. Its terms include the payment of 110 basis points above 6 months Euribor and the bullet redemption of a total amount at maturity. This credit line is in accordance with the terms and conditions of the Revolving Credit Facility (re-

negotiated on 2018 February), and is under English Law. Alessandro Profumo, CEO of Leonardo, commented: "The signing of this Term Loan Facility is a sign of us of implementing our disciplined financial strategy. It means we can also reduce further the group's financial charges, in line with Industrial Plan targets. The current market conditions have enabled us to take advantage of this form of refinancing. We've achieved a successful refinancing, signed by 13 banks, and oversubscribed for more than double the requested amount. It confirms the interest of the market and allows us to better diversify our funding sources".

Safran shareholders meeting approves merger of Zodiac Aerospace into Safran with 99.88% voting in favor

At a meeting on November 27, Safran's shareholders were invited to mainly consider the plan to merge Zodiac Aerospace into Safran. All the resolutions submitted to the shareholders' vote were approved. Following presentations of the merger plan by Safran and notably the reports of the merger appraisers concluding that the exchange ratio is fair, the shareholders approved the merger of Zodiac Aerospace into Safran with 99.88% voting in favor. With the approval at the meetings on November 27, of Zodiac Aerospace and Safran shareholders, respectively, all the

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conditions precedent were satisfied. Thus, the merger will complete on December 1, 2018. Shareholders also approved a new authorization allowing Safran to repurchase its own shares with a price not to exceed €140.00 (US\$160.00) per share.

MTU Aero Engines prospects for growth better than anticipated

MTU Aero Engines AG (MTU) has released at its Capital Market Day that: "In the short and long term, the prospects for growth in all business units are better than originally assumed" with net income to rise steadily along with further improvements in free cash flow. Commercial new engine business looks to be the fastest growing segment with a low-teen income increase, while engine parts' revenue is expected to increase in the mid-to-high single-digit percentage range. Military business revenue is anticipated to increase by around ten percent. Commercial maintenance business should remain at the same high level as 2018. The group expects its EBIT margin to remain stable in 2019, despite the strong increase in the new engine production, a business which has a negative impact on earnings. MTU estimates that the cash conversion rate will reach around 50 to 60%, thus improving in line with expectations. According to CFO Peter Kameritsch: "Changes in the invoicing process as of 2019 will moderate MRO revenues. If calculated on a comparable basis, the 2019 outlook for the MRO business is high single-digit

percentage growth." Reiner Winkler stated that: "Current market indicators and the group's positioning give us reason to assume that this trend will continue and that it will have a positive impact on our business prospects through to 2025." Given the outstanding sales record of engines in MTU's OEM portfolio, the company expects to see a further increase in its production output over the next few years. Michael Schreyögg, the chief program officer commented that: "We have identified potential for growth in all market segments."

United Technologies obtains final regulatory approval for Rockwell Collins acquisition

United Technologies has received the final regulatory approval needed to close its acquisition of its US\$30 billion purchase of aircraft parts maker Rockwell Collins. The conclusion of the regulatory review by China's State Administration for Market Regulation clears the way for United Technologies to proceed with the proposed acquisition announced on September 4, 2017. The acquisition is expected to close within three business days. United Technologies Corp., based in Farmington, Connecticut, provides high-technology systems and services to the building and aerospace industries.

Other News



ST Engineering and EDB sign MOU for strategic growth partnership *Photo: ST Engineering*

ST Engineering and the **Singapore Economic Development Board (EDB)** have signed a Memorandum of Understanding (MOU) for a strategic growth partnership. The partnership aims to build new engines of growth by creating globally competitive industry ecosystems in Singapore. EDB intends to nurture and grow large Singapore enterprises that will drive economic

development outcomes for Singapore as it succeeds in global markets. ST Engineering aspires to become a global technology, defense and engineering powerhouse — including through partnerships with companies, agencies and research institutions. ST Engineering and EDB will work closely to identify and develop growth strategies for targeted industries, such as robotics, smart mobility and health tech, which could be globally competitive business areas for Singapore and ST Engineering. ST Engineering will lead or participate in consortia/alliances with MNCs, local large enterprises, SMEs and start-ups to offer end-to-end solutions. This includes collaborating with external technology partners to innovate and commercialize new products, services and solutions internationally. The partnership will also catalyze engagements with other key stakeholders such as regulators and lead demand users to build a strong track record for Singaporean companies to compete globally. The partnership will further deepen ST Engineering's capabilities in technology and innovation, including growing strategic technology centers such as in data analytics and cyber security. It will also further strengthen ST Engineering's global leadership and workforce in tandem with its global ambitions. The partnership will expand EDB's efforts to develop a cluster of global-ready companies in Singapore, with a world-class workforce that is future ready and equipped with both breadth and depth in technology and engineering capabilities.

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LIEBHERR

Commsoft's MRO IT system, OASES, has been selected by **Willis Asset Management** to support its newly launched CAMO operation, which will be a key service provision in its growing platform of aviation advisory and asset management services. Willis Asset Management, a subsidiary of **Willis Lease Finance Corporation**, provides independent and expert aviation advisory services as well as technical and commercial management solutions for both aircraft and engines. The company currently manages a global portfolio of over 700 aero engines with customers including a large variety of airlines, major lessors, OEMs, MROs and financial institutions around the globe. Karl Gibson, Vice President, commented:

"The launch of Willis Asset Management CAMO services will add a new dimension to our broad range of aviation programs. We will be growing the Willis CAMO platform in combination with our Part 145 maintenance and Airframe services to provide a truly unique service offering for our clients."

Universal Avionics (UA) has received **FAA Technical Standard Order** (TSO) authorization for the company's new touchscreen EFIS Control Display Unit (ECDU) for the InSight Display System. Designed for efficiency, the Touch ECDU provides fast, easy access of InSight user control and input. The STC is expected in the first quarter of 2019. This latest offering further improves the InSight Display System, offering the ultimate in operator choice; the ECDU is now available in touchscreen or non-touchscreen versions. Both ECDU models combine multiple InSight System controls, including the flight displays, FMS, radios, traffic, and terrain into a centralized control device. The ECDU eliminates the need for external pan-els that take up valuable cockpit space by integrating with the PFD/MFD and standalone radios. The Touch ECDU combines the functionality of the traditional ECDU with an even more intuitive interface for an enhanced, easy user experience. Operators can now use the Touch ECDU, the Cursor Control Panel (CCP), or both for unique and intuitive 'Point and Click' system control.

Honeywell has released that it will relocate its global corporate headquarters to Charlotte, North Carolina, a business- and family-friendly city close to several of Honeywell's businesses in the Southeast United States. Honeywell also announced it will relocate the headquarters of its **Safety and Productivity Solutions (SPS) business group** from Fort Mill, South Carolina, to Charlotte. The final decision is subject to the recently passed North Carolina Job Development Investment Grant (JDIG) legislation becoming law and the final award of state and local incentives, which the company expects to be completed early next week. As part of the move, about 150 to 200 New Jersey-based senior management positions and about 100 South Carolina-based positions will relocate to Charlotte between now and September 2019. The company envisions gradually adding about 500 Honeywell corporate and SPS positions to the Charlotte location over the next five years, bringing total employment numbers there to about 750 by the end of 2024. Any corporate roles that will be added in Charlotte will come from multiple locations, not just New Jersey.

With the successful acquisition of **Rockwell Collins, United Technologies Corp.** (United Technologies) has announced its intention to divide up its commercial businesses into three major companies – **United Technologies, Carrier** and **Otis**. Carrier will produce HVAC, refrigeration, building automation, fire safety and security products, while Otis will manufacture elevators, escalators and moving walkways. United Technologies will comprise Collins Aerospace Systems and Pratt & Whitney. Collins Aerospace Systems is a new company created through the acquisition of Rockwell Collins which, according to United Technologies "is one of the largest [acquisitions] in aerospace history. It brings together Rockwell Collins and **UTC Aerospace Systems** to create **Collins Aerospace Systems**, an industry leader with a global presence of 70,000 employees in 300 sites and US\$23 billion in annual sales on a 2017 pro forma basis." According to United Technologies Chairman and Chief Executive Officer Gregory Hayes, "Collins Aerospace brings together two great companies with unmatched expertise in developing electrical, mechanical and software solutions. We will have a laser focus on developing innovative solutions for customers and generating strong returns for shareowners." United Technologies will be the preeminent systems supplier to the high-growth commercial aerospace and defense industry, with a unique portfolio of technologies and scale to invest through economic cycles. Combined sales of the two businesses totaled US\$39.0 billion in 2017 on a pro forma basis. Collins Aerospace Systems will supply electrical, mechanical and software solutions across all major segments of the aerospace industry and serves commercial and military customers. **Pratt & Whitney** is a global leader in aircraft propulsion with a growing number of engine programs including the revolutionary Geared Turbofan™ commercial engine and the F135 military engine for the F-35 Joint Strike Fighter program.

Based out of Melbourne, Florida and Kansas City, Missouri, **STS Mod Center** and **STS AeroMod** have perfected the installation process of high-speed connectivity solutions across all commercial aircraft types. "Each connectivity package we do, regardless of aircraft type, takes about three days to complete. That's fast," says Daniel Burgess, Senior Vice President of STS AeroMod. "And given our team's ability to deploy mobile, rapid-response teams across all corners of the world, we are now completing about 70 aircraft installations per month." Low TAT's and rapid product rollout are what it is all about for STS, and customers all over the world are starting to take notice. In addition to servicing both top-tier and low-cost carriers across North America and Europe, STS Mod Center and STS AeroMod are also working with clients on the ground in Asia and the Middle East.

AMOS. AGAIN.



"Purchasing AMOS is the start point of next generation Kuwait Airways, new aircraft are being phased in and now it's time to implement a state of the art MRO software. We have a strong team in place to support integrating AMOS into our business and look forward to working with Swiss-AS, "

Chairman of Kuwait Airways.

Kuwait Airways takes off with AMOS, the world-class M&E software solution.

Kuwait Airways will further improve their engineering and inventory service levels and prepare for the next phase of their fleet renewal with the arrival of A320neos and A350 by implementing the state-of-the-art MRO system AMOS, which provides functional richness and advanced technology, paired with Swiss-AS experience and a proven track record of successful implementations.



Signs of the times

2018 has been a busy year for MROs despite the challenges.
Photo: S7 Engineering

It has been a challenging year for the aviation industry marred by higher fuel prices and saw the collapse of several airlines, but it has also been a year of significant opportunity especially in the MRO sector. **Keith Mwanalushi** reviews.

With the global aircraft fleet projected to reach almost 38,000 by 2028, the global aircraft MRO is estimated to reach a 10-year consolidated market size value of around 115 billion U.S. dollars.

AJW Group has had a very successful 2018 with several new relationships and partnerships formed and many existing global contracts extended.

"We have also grown our team both in the UK and in our locations across the globe," declares Boris Wolstenholme, Chief Strategy Officer at AJW Group.



Boris Wolstenholme, Chief Strategy Officer, AJW Group.

Airlines that were announced or extended partnerships with AJW Group in 2018 include Allegiant, Air Incheon, Azul Cargo Express, AlMasria, Air Mediterranean, Cambodia Airways, Ellinair, Electra Airways and Just Us Air.

"We are also delighted to have formed strategic partnerships with Bombardier Business Aircraft and COMAC." The partnership with Bombardier sees AJW undertake all repair management for the airframe OEMs rotatable inven-

tory. Wolstenholme explains that a key feature of the contract is the strategic sourcing of repairs from OEMs and MROs, including AJW's maintenance hub for component repair and overhaul service, AJW Technique. He says this is a huge strategic win for AJW Group.

The work with COMAC saw AJW work closely with the OEM and Iceland's airports authority, ISAVIA, since September 2017 to complete crosswind testing. "This partnership with China's flagship aircraft manufacturer is a great example of the increasingly bespoke and strategic way in which we are working with customers," he says.

ADSoftware celebrated their 20th anniversary in 2018. "In this highly competitive industry of MRO software companies it means we are doing something right," feels Frederic Ulrich, CEO of AD Software.

The MRO software company has over 50 customers worldwide, both rotary and fixed wing. "Our market share is expanding quickly, we even exceeded our objectives for this year by a margin." He adds that the new users signed up are of strategic importance. "We are now the selected MRO IT solution for ENAC, the leading aeronautics and aviation university in



Frederic Ulrich, CEO of AD Software



CSAT is expanding capability in line maintenance services.

Europe (a fleet of 130 aircraft). In East Africa we were awarded two contracts to support maintenance operations of two flag carriers (operating 787, Q400, ATR and more) with our IT solution, AirPack.”

Ulrich says a good setup phase is the foundation of any efficient MRO system. “This is why we perfected our process to make it faster and easier for operators to install AirPack. With this it takes us a few days to make a complete assessment of the operator’s aircraft records and define a tailored implementation schedule.”

Last but certainly not least, ADSoftware was selected by ATR as their partner after an extensive selection process. “We will work together to develop new processes and methods to integrate and manage key technical data. We are all extremely proud of this success; it is unquestionably a breakthrough for ADSoftware.”

2018 has also been a hugely successful year for AerFin. In terms of service agreements, AerFin has welcomed BA CityFlyer and IKAR to its BeyondPool™ support programme, offering the airlines a fixed-cost solution to cover all component requirements on their E-Jets. These two programmes collectively see AerFin support more than 30 E-jets with access to reliable and high-quality stock.

Elsewhere in the business, AerFin has strengthened its relationship with NORDAM by expanding its strategic-services agreement to include consignment, exchange and lease-management of spare nacelles for V2500-A5 and CFM56-5B engines.

In April this year, AerFin also signed a three-year TrueChoice™ Material Service Agreement with GE Aviation for serviceable OEM parts and advanced repair and technology upgrades for the CFM56 and CF34 engines.

On the acquisitions side of the business, the firm signed agreements on a range of assets, particularly in the narrow body market, including numerous Airbus A320 family airframes and several CFM56-5B,

CFM56-7B and V2500 engines.

In addition, AerFin continues to support their strategic partners with lease and sale programmes across its engine portfolio, including V2527-A5, CF34-8E and CFM56-5C. These programmes add breadth of service solutions that AerFin brings to the market.

Finally, earlier this year, AerFin CEO and Founder Bob James received an OBE in the Queen’s Birthday Honours List for services to exports in the aerospace industry.

“This year, the market has seen several operators cease trading, a trend which has been driven by the sustained increase in the cost of aviation fuel, with the weak domestic currencies and intense competition, which has left several carriers to vulnerable financial failure,” states James Bennett, Director – Sales and Marketing at AerFin.

Bennett expects this trend to continue into 2019 as we see increasing consolidation in the airline market.

The increase in fuel prices coupled with the expectant resolution of some of the OEM’s entry into service challenges for new delivery aircraft will see more aircraft retired over the coming years.

In terms of USM, demand is very buoyant, says Bennett, particularly across the CFM56-5B/7B and CF34-8 product lines where AerFin has a particular focus. “This demand will continue through the coming years as many of these engines have yet to see their first major



James Bennett, Director – Sales and Marketing at AerFin

maintenance event, and in the case of the CFM56-7B for example, the predicted peak for shop visit activity is not due until 2023.”

The engine lease market is also very strong, he continues, with availability shortages of spare engines driving lease rates upward. “This has provided an excellent opportunity for AerFin to support the CF34-8E lease market, where we currently have five engines on lease, although we expect this figure to increase next year.

“We are continuing to see vertical integration in the MRO market as OEMs and larger independent MRO shops continue to merge in an attempt to improve their range of service offerings and therefore capture as much market share as possible,” Bennett states.



Pavel Hales, Chairman of the Board of Directors, Czech Airlines Technics

This year was exciting for Czech Airlines Technics. Pavel Hales, Chairman of the Board of Directors, Czech Airlines Technics says the MRO provider has become the first independent MRO organisation in Europe to successfully pass the certification process and receive the approval of the Civil Aviation Administration of China (CAAC) covering the entire line maintenance segment for one Chinese airline. “This is a great achievement for the company as we now provide line maintenance services to Chinese carriers operating their flights to and from Václav Havel Airport Prague.”

In the line maintenance segment, CSAT has already expanded its capability for the A320neo and the B737MAX aircraft types and now offers full technical support to customers who use these types of aircraft to operate their routes from/to Prague.

During 2018, Jordanian MRO provider Joramco embarked on a transformational journey which is part of a continued focus on a newly launched commitment to excellence theme.

“The Transformation focused on, new efficient processes which combined with our expanding capabilities strive to provide our customers with flexible, high quality services at competitive prices,” reports Fraser Currie, the Chief Commercial Officer.

Joramco’s capabilities increased significantly during the year with the most recent being the additions EASA part 145 approval for B787 C check in addition to B737-9 MAX. Both types are part of a comprehensive plan to expand capabilities based on market demands. Additionally, Joramco is preparing to welcome the first B777 into its hangars.

“In line with the vision of the new majority owner, Dubai Aerospace Enterprise (DAE), and in order to provide best-in-class quality services to our valuable customers, multiple transformation projects have been initiated across the entire company. These changes have taken effect and have allowed us to improve our service offering and enhance our ability to meet and exceed customers’ expectations.

Our hangars were reinvigorated, and a new corporate uniform was introduced to capture our brand identity. Besides this we invested significantly to procure new GSE and tooling,” says Currie.

Most importantly, Currie states there is significant investment in people. “We introduced comprehensive training plans for all staff during the

summer from basic engineering courses to advanced leadership and development.

This transformation was showcased during Joramco’s participation at various exhibitions and industry events such during Quarter 4 and the feedback from Industry has been exceptional, he indicates.

Looking at the wider MRO business Currie says Joramco is experiencing exceptional demand across a wide variety of fleets, attracting customers from an ever-widening radius. “The trend is showing that many airlines are looking for more than one single source provider and for an independent MRO this is what we expect. The OEM’s role is evolving, and partnerships are in focus.”

Currie stresses that these partnerships allow the OEM’s to offer a greater range of aftermarket solutions across a wider geography and for independent MRO’s this can only be good news – “The challenges are significant as operators look for reduced TAT whilst reviewing every aspect of the commercial proposition. Combined with these external challenges the MRO has to remain focused on both existing type approvals and working with airlines to meet the needs of their new types,” he says.

Over in Estonia, within Magnetic MRO the biggest highlight was certainly a successful acquisition by new shareholder. Risto Mäeots, CEO of Magnetic MRO explains that this move speaks generally about the industry which is full of growth and new opportunities but heeds on the side of caution – “The number of airlines that ceased to exist just in the second half of the year reminds us how brutal this industry can be despite the supportive macroeconomics.” Mäeots believes the trend for MRO demand is on an upswing but warns that the MROs keep increasing their capacity based on the increased demand, which in return put higher pressure on how to survive the low-season.

Today, Magnetic is still an independent MRO and continues to seek ways to be part of the OEM ecosystem and there are increasing number of opportunities Mäeots reckons.

The year has seen a hive of activity too for the MTU companies. Holger Sindemann, Executive Vice President MRO Operations at MTU Aero Engines. “We are extremely fortunate that the engine MRO market is healthy and growing,” he suggests.

The general expectation is that MRO revenues will grow at a CAGR (escalated) of 7-9% over the next ten years. The largest challenges will be in serving this growth, especially in the short to medium term.

“We are currently seeing slot capacity constraints worldwide. This is



Fraser Currie, Chief Commercial Officer at Joramco



Risto Mäeots, CEO Magnetic MRO



Holger Sindemann, Executive Vice President MRO Operations, MTU Aero Engines

the result of new generation engines entering shops earlier than planned, continued high demand for current generation engines as well as sustained demand for mature engines, such as the CF6-80C2, which are being flown longer or even revived – in some cases resulting into an immediate need for MRO services, from smaller work scopes to heavy maintenance,” says Sindemann.

MTU Maintenance is increasing capacity at all locations. By 2027, around 50% more capacity will have been added. For instance, in Hannover, they are planning additional buildings to provide space in a busy shop, in which MTU reached their 8,000th visit last year. Expansion is also underway on a new logistics centre in Berlin. Completion is slated for mid-2019 that will enable MTU Maintenance Berlin-Brandenburg to add an additional 35% production capacity by a redesign of the shop floor by 2020. Additionally, MTU Maintenance Canada introduced V2500 capabilities in late 2017 and they are considering adding CF6-80C2 capacity at this location.

Furthermore, MTU Maintenance Zhuhai, a joint venture with China Southern, is increasing capacity by 50% – taking it from 300 to 450 shop visits annually by 2021.

This was a monumental year for TrueAero. Karl Drusch, the CEO says the team has doubled in size, a 63,000 square-foot warehouse in Dallas opened as well as a sales office in France. The number of assets deployed on lease is up nearly 70% year-over-year, TrueAero completed two C-Checks and dozens of aircraft and engine deliveries and began offering multiple new product lines and services to customers.

Drusch also concurs that overall, the MRO market is still very strong. “We forecast growth in MRO as RPKs, fuel prices, interest rates, and OEM backlogs all continue to increase, motivating operators to seek lower cost solutions and extend the life of their fleets.”

That said, Drusch says the industry is going through what will ultimately be one of its more transformational phases as operators, MROs, lessors, and OEM’s all seek to deploy advanced technology, integrate vertically, merge and acquire, and consolidate market share. “Our industry will mature more in the next 5 years than it has during any other 5-year span; We’re going to see the use of artificial intelligence in predictive analytics, blockchain revolutionizing record-keeping, rapidly increasing barriers to entry for new companies, highly sophisticated operational models, and innovation as a requirement [not a competitive advantage].”



Karl Drusch, CEO True Aero

Component Control introduced several new products and enhancements to Quantum-ERP including mobile imaging and technician, MRP, and integration with Aeroexchange and

QuickBooks. Component Control also looks poised to close its largest revenue year on record and will have nearly 100 new customers.

Daniel Tautges, Sr. Vice President of Sales and Marketing says the MRO industry continues to evolve and we are seeing traditional MRO’s enter the broader service and distribution space, while distributors are moving into MRO and PMA. We see challenges existing in both logistics in Asia as well as supporting a converging service infrastructure.”



Daniel Tautges, Sr. Vice President of Sales and Marketing at Component Control

Dan Wadley, the General Manager at Bii adds that the existence of DER repairs is evidence of independent MROs’ innovation. “Components deemed BER at an OEM MRO facility can often be saved by an independent MRO using a DER repair process. In fact, there are several DER repairs available for components that the OEMs consider unrepairable, which effectively turns expendable parts into rotables! Other DER repairs consist of minor modifications, designed to improve performance or reliability.”



Dan Wadley, General Manager at Bii

at Iasi-North-Eastern Romania – “We will have the B737Max approval in place soon.”

Velescu concludes that the constant challenge is to support customers with the best strong points in the value chain: “Quality first, competitive solutions, focus on our customers’ needs and expectations. We also need to identify correctly the areas where there is still place for growth for independent MROs.”



Director Velescu and his business development team at AEROSTAR

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In the hot seat.....

Olivier Legrand, President & CEO of Revima

AviTrader MRO: Can you tell us a bit about the services Revima provides?

Legrand: Revima, an independent MRO solutions provider, unveiled its new brand identity and broader service offering in response to its customers' expectations. Furthermore, Revima has announced strengthening its international footprint. Over the last 60 years, Revima has built a solid MRO expertise, and is now one of the world leaders in its sector thanks to on-time delivery and dedicated customer support. Today, Revima supports aircraft operators, lessors, and repair stations worldwide, positioning the company as one of the most experienced MROs in the world, with extensive understanding of airline expectations, best in class value and services specialised in APU, engine parts and landing gear MRO, for civil and military aircraft, Revima has reorganised its service offering into five commercial brands:

REPAIR & OVERHAUL

APU, landing gear and associated LRUs.

ENGINE PARTS REPAIR

Sheet metal work activity for civil and military applications.

MATERIAL SOLUTIONS

Serviceable parts and complete assemblies trading activity, previously named Normandy Aero Spares (NAS).

FLEET MANAGEMENT

Digital solutions providing advanced diagnosis and prognosis for optimised APU operating and maintenance costs.

LEASING

APU and landing gear leasing activity.

AviTrader MRO: You recently undertook a new brand identity. What necessitated this?

Legrand: The choice of adopting the brand Revima for its entire service-offering, accompanied by a new visual identity went hand in hand with a strategic process on branding. Revima, recognized internationally for its unique capabilities in APUs and Landing Gears, will be the brand of choice. The dynamic colors chosen for the new visual identity comprise a deep blue representing reliability and know-how, as well as a vibrant orange, representing warmth and friendliness, with an objective to underscore the group's vision.

In this respect, the new visual identity is backed by the baseline "Service is our passion", bringing more dynamism and customer proximity. By using the term "passion", Revima's new baseline is designed to highlight its employees.

It illustrates the values of the company: commitment, team spirit, keeping it simple and well-being.

This new logo is accompanied by a redefined services portfolio to enable our customers to benefit from a broader and clearer service-offering. This major step in Revima's development is key in expanding our world class MRO solutions and being even closer to our customers.

AviTrader MRO: Revima is mostly renowned for APU maintenance. What recent gains have you made in this sector?

Legrand: A recent APU success has been a long-term TSCP700 maintenance contract with a major US carrier. The engine repair business will be extended to cover more than sheet metal work, which may be through acquisition, while material solutions will grow significantly, also supplying used serviceable material for APU activities.

AviTrader MRO: How is your fleet management work progressing?

Legrand: Fleet management has been using the WILCO system from flight watching for some time. This monitors all APU standard and abnormal reports while the aircraft is operating on the ground. It also collects maintenance messages and cockpit warnings that are correlated to APU parameters in flight in order to identify root causes of degradation. Preventive alerts have also been set up by REVIMA fleet monitoring teams to avoid APU abnormal shut downs during turnarounds. Etihad was the launch customer for this service with the latest addition being Air Serbia, for the Pratt & Whitney Canada APS3200 and Honeywell 131-9A APUs installed on A320 Family aircraft.

AviTrader MRO: Are you making any additional investments in infrastructure aside from the Normandy facility?

Legrand: With the aim of continuously improving customer service and proximity, Revima will be opening in 2020 a new state of the art landing gear overhaul facility in Thailand. The facility will initially focus on Airbus A320 and Boeing 737 family landing gears and serve as a Revima customer service center for the Asia Pacific Region.

It will be strategically located within the Eastern Economic Corridor (EEC) in Amata City Chonburi's Free Zone, a world class Industrial Park south of Bangkok, close to main highway



Olivier Legrand, President & CEO of Revima

connections, the International Airport, major Seaport and U-Tapao Airport, a growing maintenance hub being developed.

It will be equipped with the latest state-of-the-art machines and will include all necessary special processes for full in-house repair and overhaul landing gear operations.

Revima's Thailand facility will be digitally connected from its machines, to its technical documentation, warehouses, monitoring and customer communication systems. It will also be environmentally friendly, with zero rejection waste water systems and state-of-the-art fire detection and suppression technology.

Revima has over 45 years of landing gear MRO experience that our new facility in Thailand will benefit from. We have assembled an initial team of highly experienced personnel in support of this important project to be able to expand our offering on the fast-growing single aisle market in the region. Our objective is to deliver a top-notch value proposal in the region, with best in class quality and customer service.

AviTrader MRO: What's next in store at Revima?

Legrand: Landing gear activities are expanding rapidly: the A320 Family workload has quadrupled in four years; A330 capability has grown to include the enhanced model; and a significant investment is being made in A380. Malaysia Airlines is the latest customer announcement, for 19 A330 aircraft, covering overhaul of landing gear and related components, a component exchange pool, and the provision of engineering and on-site support.

SR TECHNICS – A leading MRO services provider



Line Maintenance
All photos: SR Technics

SR Technics is a world leading MRO services provider for the civil aviation sector offering its customer airlines comprehensive and totally-tailored solutions for the technical support and full spectrum of maintenance, repair and overhaul of their aircraft fleets, engines and components. This is coupled with extensive engineering know-how, 24/7 availability and broad technical training offerings.

SR Technics builds long-term partnerships with its diverse global customer base, which includes flagship and low-cost carriers, aircraft leasing companies, and original equipment manufacturers.

With its head office at Zurich Airport and additional 25 locations, SR Technics provides its services to about 500 airline customers through an extensive international network in Europe, America, Asia and the Middle East. For further information please visit www.srtechnics.com.

Maximising your fleet time in the air

The SR Technics product portfolio extends from a wide range of single event services to complete packages, allowing customers to entrust the company with all technical aspects of MRO activities related to their engines, components and aircraft. SR Technics has earned a reputation for uncompromising **safety and quality** in a business where standards are high, and sets its own standards even higher, which has helped the company obtain an impressive list of certifications and approvals worldwide.

Aircraft Services: In Malta, SR Technics developed a competitive Centre of Excellence for narrow-body aircraft (A320 family, B737 NG) offering comprehensive base maintenance solutions, cabin modifications, engineering design and innovative products like VIP consulting services and aircraft lease transitions – thus providing the required services to serve its customers.

Component Services: The wide range of SR Technics' component services covers all aircraft operating availability requirements in-

cluding pooling solutions, repair, loan and exchange on A320f, A330, B737, B787 and E-Jets. Customer proximity and optimised inventory management are a key part of the service portfolio, which flexibly accommodates the needs of each customer.

Engine Services: As an authorised CFMI and Pratt & Whitney MRO engine shop, SR Technics has performed over 4,300 shops visits. For decades, the company's services have made the difference to its customers, affirming its position as a provider of efficient and high-quality support at lowest industry turnaround times.

Line Maintenance: SR Technics performs over 120,000 line maintenance events yearly, supporting both routine and non-routine tasks while ensuring the highest technical dispatch reliability and standards. With unrivalled knowledge and experience combined with a comprehensive tooling and equipment inventory, the company offers best-in-class service.

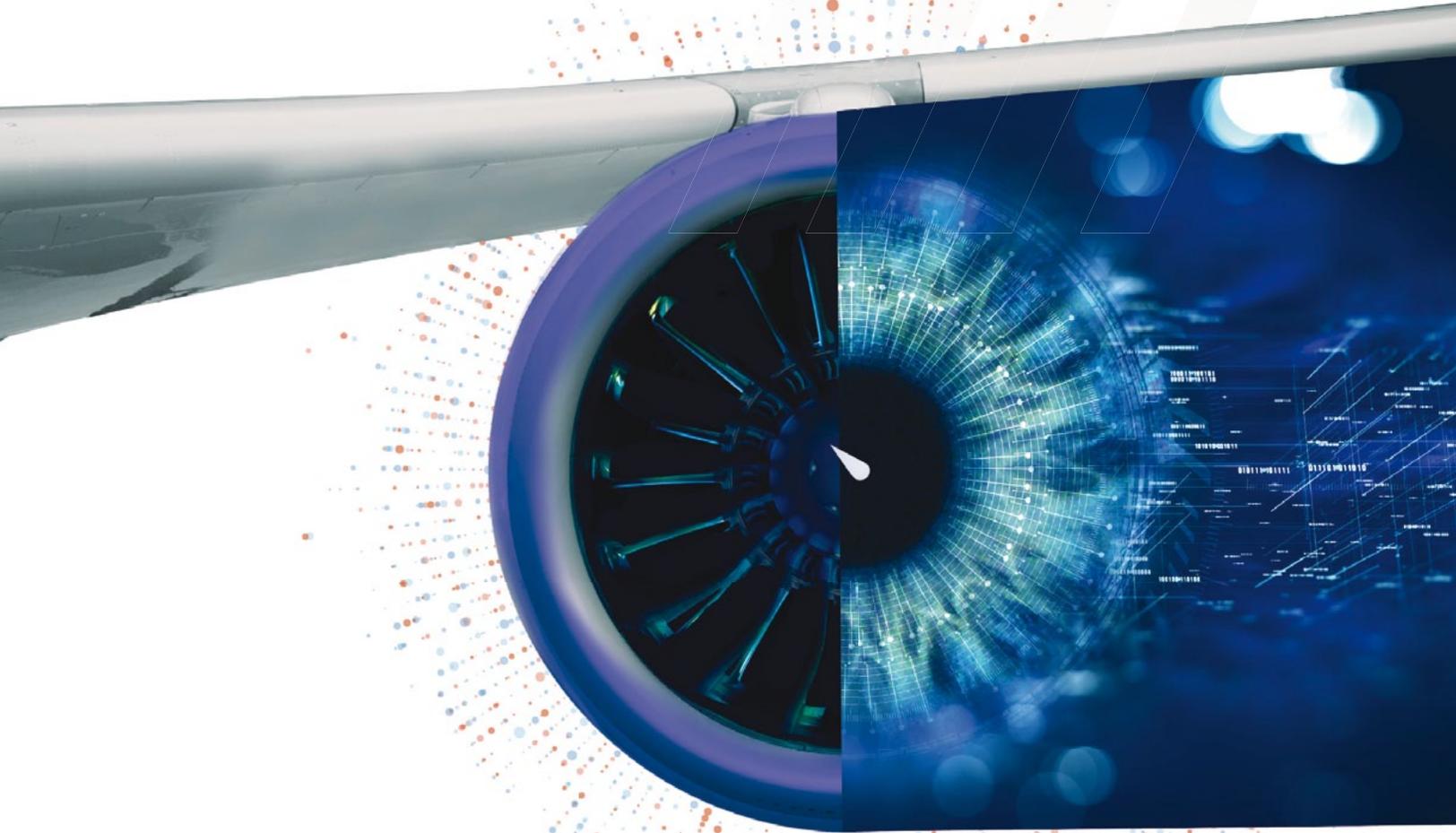
Training Services: SR Technics' training services cover mobile training products, consulting solutions and the complete range of standard MRO training products. This includes immersive learning products, and regulatory and training consultancy, on top of our traditional approved VET, basic and type training solutions.



Component Services



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BEDEK Aviation Group of Israel Aerospace Industries Ltd



Airframe capability includes the classic 737s.
Photo: IAI BEDEK

AI-BEDEK provides high-value, comprehensive maintenance services "Under One Roof".

BEDEK is a full-service provider (MRO) for a wide range of aircraft, engines and components, as well as having comprehensive cargo conversion programmes and conversion and upgrade of special mission aircraft, based on full in-house development engineering capability and production.

BEDEK services include total maintenance service packages for airlines, heavy airframe maintenance services, overhaul and repair of wide range of engines and components.

BEDEK is an STC holder for cargo conversions and weight upgrades for B747-400, B767-200/300, B737-300/400/700/800.

Being a large independent one-stop maintenance centre, BEDEK holds the highest level of international certifications in work practices and safety and is licensed by most of the major Civil Aviation Authorities, including FAA, EASA and ICAA (Israel Civil Aviation Authorities in Israel), India, Taiwan and many other countries.

BEDEK holds the highest military aviation certifications from the US Air Force and Navy, and the Israeli Air Force.

Airframe Capability Services:

- A319, A320, A321 Series; A330-200/-300; A330-200/-300; A340-200/-300
- B707, B737 Classic/NG, B747 Classic/400, B757-200/-300, B767-200/-300, B777-200/-300, B787 Line Maintenance
- Lockheed Martin C-130/L382

Engine capability services:

BEDEK Aviation Group provides repair, maintenance and overhaul services for a wide range of civilian and military aircraft engines: CFM56 -3/-5/-7, PW4000, JT9D, V2500, J52, F100, PT6A, J79, F110, T56 and F124 with in-house major parts repair. Short turnaround time (TAT) is accomplished with the help of a computerized planning, production and inventory control system that gives up-to-date information.

We provide comprehensive engine lease programmes, trade and exchange solutions, both long and short term for customers around the world.

Components Capability Services:

BEDEK Aviation Group is a recognized world leader in the field of maintenance, overhaul and repair of over 13,000 individual aircraft component types, including: B717, B737 CL/NG,



There are a wide range of engine MRO services.
Photo: IAI BEDEK

Transmissions, CSD & IDG, Pressurization, Pneumatic Control, Communication & Navigation, Flight Control Systems, Electrical & Avionics, Radar Systems, Hydraulics, Oxygen & Safety Equipment, Electrical Power Control and more. In addition we provide customer on-site Base Stock,

Access to Pool, Technical and Engineering Support, Monitoring and 24/7 AOG Desk.

APU's:

GTCP 331-200/-250
GTCP 131-9A/-9B/-9D

Landing Gears:

Boeing: B737NG, B717, Brakes & Wheels Maintenance Services,
Propeller Maintenance Services

Helicopters:

Bell 204/205/206/212/412, CH-53, Mi-8/17, Mi-24/35, AH-1, AH-64 and UH-60.

- Main and Tail Rotor Heads, Main Rotor Mast
- Gearboxes/Transmissions - Main/Intermediate/Tail
- Upgrade of Main Transmission

Israel Aerospace Industries

IAI Ltd. is Israel's largest aerospace and defense company and a globally recognised technology and innovation leader, specialising in developing and manufacturing advanced, state-of-the-art systems for air, space, sea, land, cyber and homeland security.

Since 1953, the company has provided advanced technology solutions to government and commercial customers worldwide including: satellites, missiles, weapon systems and munitions, unmanned and robotic systems, radars, C4ISR and more. IAI also designs and manufactures business jets and aerostructures, performs overhaul and maintenance on commercial aircraft and converts passenger aircraft to refueling and cargo configurations.

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Malynn, Trevor Jenkins and Keith McKerchar

Eirtech Aviation Services (EAS) has formally announced some significant changes in its Part 21J DOA Engineering Leadership team. **Keith McKerchar** (Director of Engineering) is joined by **Trevor Jenkins** (ex CDG Boeing) as Head of Design and **Tom Malynn** (ex B/E Aerospace) as Head of Airworthiness. Bringing over thirty years of aircraft structures, cabin interiors and advanced materials engineering experience, Trevor Jenkins is a member of the Institute of Engineering and Technology and a Chartered Engineer. In addition to several Head of Design and Office of Airworthiness roles in Part 21 Subpart J approved organizations, he previously held roles as Technical Director with B/E Aerospace, Engineering Director with PremiAir and more recently Integration Engineering Manager for CDG Boeing. Tom Malynn joins Eirtech with over 30 year's aerospace experience. Previous roles have included research and development on navigation systems before entering the Cabin Interiors Sector where he worked on a variety of products/projects including aircraft STC programs. In the last 18 years, Malynn has been in senior technical positions encompassing stress, cabin systems and airworthiness. In addition, **John Mulvaney** has recently joined Eirtech Aviation Services having spent over 19 years with SR Technics, he brings a wealth of experience in both design and embodiment of aircraft changes to the Eirtech engineering team. Further-more, the Singapore office has also expanded with the addition of **Valerie Lin** and **Pallani-yappan Soma Arunachalam** with more engineers joining in 2019. **Eamonn McAuley** is moving on from Eirtech Aviation Services to pursue other interests. The growing Eirtech engineering team now totals 27 design engineers including 7 CVE's and it expect to add to a CVE team in 2019, covering all engineering disciplines; cabin safety, structures and avionics. The team coverage now extends to Shannon, Dublin, Belfast and Singapore offices.



Stuart Locke

Oriens Aviation, the exclusive British Isles Pilatus Centre and sales distributor of the PC-12, will bolster its MRO team. TAG Aviation Farnborough Head of Maintenance **Stuart Locke** is taking up the post of General Manager of the Oriens Maintenance London Biggin Hill Airport facility in January. Joining TAG Aviation in April 2013 to manage the business' Part 145 maintenance activity, Locke was instrumental in doubling its business – from 50,000 to 100,000 manhours today with an 80-strong workforce.

Jeff Yeager has been promoted to Program Manager, Landing Gear/Accessory Program at West Star's GJT facility. Yeager was hired in 2011 and has been instrumental in helping to develop West Star's Grand Junction Landing Gear Program, which includes service for Challenger, Hawker/Textron and Phenom, while also expanding our Learjet and King Air capabilities. In addition to be a Certified Trainer on the Phenom 100/300, he participated in the planning, develop-

ment and execution of the readiness plan for the Phenom Landing Gear contract. Yeager will report to **Dave Krogman**, General Manager, West Star Aviation – Grand Junction.



André-Hubert Roussel

Joint shareholders Airbus SE and Safran have proposed to the Board of Directors of ArianeGroup that **André-Hubert Roussel**, currently Head of Operations at Airbus Defence and Space, should succeed Alain Charmeau as Chief Executive Officer (CEO) of ArianeGroup, effective January 1, 2019. Alain Charmeau, an accomplished executive in the aerospace industry, will retire in 2019 after a transition phase from January 1 to March 31, 2019, during which he will serve as Special Advisor to the new CEO of ArianeGroup.



Michael Schöllhorn



Dominik Asam

Airbus has appointed **Michael Schöllhorn** as Chief Operating Officer (COO) for Airbus Commercial Aircraft, effective February 1, 2019 and **Dominik Asam**, to succeed **Harald Wilhelm**, as Chief Financial Officer (CFO) in April 2019. Schöllhorn, currently COO for BSH Home Appliances GmbH in Munich, will succeed **Tom Williams**, who retires December 31, 2018 after 50 successful years in the aerospace industry, 19 of which were in top Airbus management positions. Dominik Asam, currently CFO of Munich-based Infineon Technologies AG, will join Airbus on April 1, 2019, ensuring a smooth handover with Harald Wilhelm, who remains in charge in his current role until the Annual General Meeting on April 10, 2019.

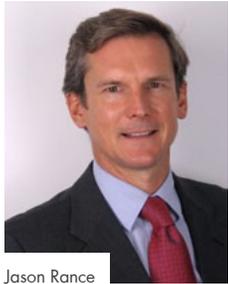


Darren Waltier

Cadence Aerospace, a provider of highly complex aerospace components and assemblies to commercial and defense customers, has appointed **Darren Waltier** as Director, Business Development, Cadence Aerospace—Aerostructures. Waltier brings an expansive portfolio of skills to his new role of building new business for Cadence while helping to enhance and deepen relationships with existing customers. He reports to Robert Saia, Senior Vice President, Business Development for Cadence Aerospace, and joins the Company's growing and continuously strengthening Business Development team.

Lease Corporation International (LCI), the aviation division of the Libra Group, has further strengthened its operation with the appointments of **John Gumulak** as Technical Director and **Eric Sherlock** as Legal Counsel. John Gumulak joins LCI from Westpac Rescue Helicopter Service (WHRS) in Australia, where he oversaw the continued airworthiness of Westpac's fleet of AW139 helicopters and was the chief point of liaison for Original Equipment Manufacturers (OEMs), including Leonardo Helicopters, on all technical matters. As Technical Director based at LCI's Singapore office, Gumulak will augment the existing technical team to support LCI and its customers in the region. Eric Sherlock joins LCI from Elix Aviation Capital, where he managed the legal team on behalf of the turboprop lessor. Previously, he worked

as a capital markets and corporate finance associate at **Arthur Cox** and **Clifford Chance**. Sherlock joins a highly experienced legal team at LCI's HQ in Dublin, and will work across all aspects of aircraft leasing, purchasing and financing.



Jason Rance

Global aerospace and defense supply chain provider, Pattonair has hired its first Group Innovation Director to drive the implementation of the company's strategy of applying leadingedge technologies to deliver innovative solutions across the supply chain. **Jason Rance** has been appointed to the new role, reporting to Pattonair CEO, **Wayne Hollinshead**. Rance has a successful track record in developing growth and innovation strategies for world-class consumer brands and in disruptive e-commerce and service businesses.

The International Air Transport Association (IATA) has announced the retirement of **Baojian Zhang**, IATA's Regional Vice President (RVP) for North Asia, effective December 14, 2018. Zhang joined IATA from the Civil Aviation Administration of China (CAAC) in 1994 and founded IATA's operations in China. Under Zhang's strong leadership, IATA membership in North Asia has grown to 36 airlines with China having the largest concentration of IATA member airlines of any country. Over the last 24 years IATA's China team grew from three to exceed 130 today, and IATA's BSP in China is the largest in the world, recording

nearly 190 million transactions in 2017. Until a permanent successor is named, **Conrad Clifford**, IATA's RVP for Asia Pacific, will also lead IATA's efforts in North Asia.



Owen McClave

MRO service provider SR Technics has named **Owen McClave** as Senior Vice President Engine Services, effective as of January 1, 2019, reporting directly to **Jean-Marc Lenz**, Chief Operating Officer. He will succeed Roberto Furlan, who has decided to step down. Owen McClave is a senior-level executive with strong commercial and financial acumen. Over three decades of work with OEMs, independent MROs and leasing companies, mainly on engine and component business, he has increased the operational excellence of a range of organizations in the aviation industry.

Spirit AeroSystems has reported that **Sanjay Kapoor**, Executive Vice President and Chief Financial Officer, plans to retire in the first quarter of 2019. Kapoor has been in this role since he joined the company in August 2013. Kapoor will continue in his role as the chief financial officer and assist in the transition once a successor is named. During his time as the chief executive officer, Kapoor worked to enhance Spirit's operating performance and the company's competitiveness. Prior to Spirit, Kapoor held executive leadership roles at Raytheon and United Technologies Corporation.

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