

Lufthansa German Airlines and Lufthansa Cargo to implement AMOS

Pg 02

Satair, International Water-Guard Industries sign agreement for the innovative intelligent water quantity pre-select system

Pg 05

US Allies purchase \$71 million in BAE Systems' aircraft survivability equipment

Pg 08

Dec 1st, 2019

SANAD's leap into the future, 'Transforming in a new technology company'



In a move towards disruptive Fourth Industrial Revolution (4IR) technology implementations, Sanad Aerotech has signed a MoU with SAP. By signing this agreement, Sanad, a leading provider of aircraft MRO has reaffirmed their customer-first ethos and longstanding commitment to the aircraft engine MRO sector.

This agreement with SAP is part of Sanad's digitalisation strategy aimed at further enhancing efficiencies across its

industry-leading aircraft engine MRO process from its state-of-the-art Abu Dhabi facility.

SAP, a market leader in enterprise maintenance process tool effectively adds to Sanad's growing list of innovative technologies, which also includes TrackIT RFID technology to track and trace, monitor and manage engine parts and Blockchain Technology digital ledger.

Sanad is the first MRO to use TrackIT on

its shop floor.

Over the last two years, Sanad has deployed Honeywell's AI enabled and customised 'VoCollect' digital voice data capture solution and Atlas Copco's 'Smart Connect' digital electronic wrenches.

These technologies will help Sanad to further slash MRO services turnaround time by three days for minimum work scope level and up to 10 days for maximum work scope level.

"Time is money and this fact that has never been more relevant than in the era of the Fourth Industrial Revolution, when speed to market is a decisive competitive advantage," said Sanad Aerotech CEO, Mansoor Janahi. "These newly deployed assets are highly efficient, disruptive technologies that utilise the latest advancements in digital systems. This roll-out is in-line with Sanad's evolution into a leading global MRO player that embraces breakthrough Technologies to enhance operational efficiency and most importantly customer service."

"There is no longer any need for individuals to manually follow or track paperwork to know where parts are at any given stage of our process," ex-

Cont...pg 2



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plained Janahi. "The technology enables easier traceability of literally thousands of parts, saving days on the engine MRO maintenance cycle."

"Steve Tzikakis, President, EMEA South, SAP said, Sanad Aerotech's digital transformation with SAP shows how Intelligent Enterprises in the aerospace and aviation sectors can leverage technology innovations to optimise operations, costs, and customer experiences."

We are exchanging global best practices to support Sanad Aerotech's long-term growth and competitiveness, and Abu Dhabi Vision 2030's goals of growing the local aviation and aerospace sectors."

In order to capture distinct voice commands including observations and malfunction diagnoses - digitally, Sanad is the first to deploy 'VoCollect'

The system feeds the data into the engine MRO process to save time and

eliminate errors associated with manual processes.

"The technology involves various algorithms including machine learning to teach the system to recognise the voice of different technicians performing the work," explained Janahi. "Our initial implementation of the technology delivered hugely significant saving and elimination of data capturing errors. We are now in the process of implementing this technology in various stages of our MRO processes and across the full range of engines we maintain," added Janahi.

Sanad is using 'Smart Connect' digital wrenches in its bolt tightening operations to capture data digitally and, again, save time and eliminate human error risks.

"With thousands of bolts being tightened every day, and each joint exhibiting unique characteristics, each tightening is now performed automatically to

the required torque values suited to the unique joint specification, with information recorded directly into the system," explained Janahi. "Having demonstrated decreased time consumed in each tightening process and reduction in errors, we are now expanding the implementation of this technology to various areas within the facility."

Sanad has also adopted the use of blockchain to provide a safe way to conduct and record transactions, agreements and contracts, providing all parties with visibility, transparency and traceability of clients' assets from the start.

"We are now transforming into a new technology company," said Janahi. "As our business evolves, our goal is to invest in deploying state-of-the-art technologies to solve real life problems on the shop floor, enable growth and enhance our capabilities to deliver highly efficient and reliable customer services,"

Lufthansa German Airlines and Lufthansa Cargo to implement AMOS



Lufthansa German Airlines and Lufthansa Cargo will implement AMOS including AMOSmobile for its Line Maintenance and CAMO Operations.

Many of the Lufthansa group member airlines like the Swiss International Air Lines, Austrian Airlines, Eurowings, Brussels Airlines and Lufthansa CityLine have been using AMOS for almost 20 years now. Lufthansa German Airlines and Lufthansa is bound to benefit from this vast experience gathered by the Lufthansa group member airlines

After completing the in-depth Definition Phase including AMOS business

process/interface workshops and the specification of comprehensive business requirements, the Lufthansa Executive Board has now approved the start of the project's Implementation Phase. A highly skilled and dedicated team of Lufthansa German Airlines and Lufthansa Cargo aviation experts supported by Swiss-AS Consultants and Project Managers will guide the flag carrier through this next project phase

"With Lufthansa German Airlines we welcome a customer to our community which has decades of aviation experience and a strong focus on driving

innovation for the entire group and industry", says Ronald Schaeuffele, CEO of Swiss Aviation Software.

Fabiano Faccoli, COO of Swiss-AS, adds, "Swiss Aviation Software provides to its customers deep industry insight and knowledge, valuable project management experience and the necessary skillsets for complex digital transformation projects. Our customers are the key success factor in our agile development approach during and after implementation, since the customers form part of the development process from early requirement specification through testing to final product delivery".

"AMOS, which is already used as a standard tool by many LH group airlines, will also help us at Lufthansa to make our Technical Fleet Management processes even more transparent and, above all, even more efficient. Among other things, we are relying on the already very broad AMOS know-how of our sister companies. We chose AMOS because of its 30 years of success in the industry, but also because of its continuous product innovations, which help us to establish state-of-the-art processes in Technical Fleet Management at Lufthansa as well." says Klaus Froese, CEO Lufthansa German Airlines Hub Frankfurt.

Aerogility predictive maintenance solution to forecast powerplant visits for SAS

Aerogility's cloud-based predictive maintenance planning and forecasting solution will be used to plan the maintenance and engineering requirements for SAS (Scandinavian Airlines). Accordingly, there will be optimised worksopes, initially focusing on powerplant shop visits and operational costs prepared by Aerogility.

The software as a service (SaaS) solution will automatically generate optimised maintenance plans based on a multi-agent model of the SAS fleet and operations.

Arising from research into AI and autonomous systems, Aerogility's intelligent agents function as 'actors' in virtual model-driven simulations that represent SAS' entire MRO operation

Advantages -

1. SAS fleet planners can handle complex planning factors quickly and easily
2. The transparency of the simulations means the analytics and scheduling results are explicable and understandable - an important factor in safe and trusted decision-making
3. By comparing different plans and strategies, fleet planners can optimise the maintenance and engineering programmes for the SAS fleet, achieving the wider goals of overall efficiency and sustainability.

Phil Cole, Civil Aviation Business Manager at Aerogility, adds: "The key feature in the latest version of Aerogility is a functionality that enables the planner to define the workscope for each powerplant unit. Aerogility provides predicted utilisation statuses for each of the three main modules, enabling the planner to make an informed decision and customise the workscope accordingly."

Having a large and diverse fleet ranging from Airbus A319, A320, A320neo, A321 aircraft, as well as Boeing 737s, SAS wanted a solution that could not only handle powerplant shop visit scheduling, but also help in the phasing out of 737s and introduction of new Airbus aircraft.

SAS is now planning to extend its use of Aerogility to cover heavy base maintenance scheduling.

AFI KLM E&M receives CAAC approval for LEAP maintenance

AFI KLM E&M has obtained the authorisation from the CAAC to perform maintenance operations on LEAP engines (-1A / -1B).

The Chinese authority issued the certificate to AFI KLM E&M at the end of October. With this certificate the company can perform all types of operations (both on-wing and on-site) for LEAP-1A/-1B engines, parts and control units, for all customers in China - including both airlines and MROs.

As Anne Brachet, Executive Vice President Air France-KLM Engineering & Maintenance said, "AFI KLM E&M has many customers and partners in China. With CAAC approval for LEAP engine maintenance, we'll be able to broaden the range of products and services we can offer them. Our Group has already deployed its LEAP capabilities under EASA and FAA approval in order to support the engine's initial operations around the world, and we're excited to put this experience to work for the key players in the Chinese market."

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Solenta Aviation implements Rusada's ENVISION



Solenta Aviation has gone live with Rusada's maintenance management software ENVISION.

The airline will use seven of ENVISION's modules, which will ultimately be deployed across their network of 20 sites across Africa, the Middle East, Central Asia, Central America and Europe.

In 2000, Solenta Aviation was founded. They provide customised passenger and cargo solutions, aircraft charter and ACMI services to multiple industries. The airline operates and manages a fleet of around 40 aircraft which includes Beechcraft 1900's, ATR's and Embraer ERJ's, located at sites across the continent.

Solenta also does a sizeable MRO operation. They conduct both base and line maintenance from its facilities across the globe and recently adding passenger-to-freight conversions to its growing list of capabilities.

Paul Hurst, Managing Director at Solenta Aviation said, "We are a complex organisation, operating across multiple locations, so it was critical to have an experienced and knowledgeable partner such as Rusada engaged with this project. We can now roll-out ENVISION to the rest of our network knowing we are in safe hands. We are thrilled to finally get our hands on this versatile system."

Julian Stourton, CEO at Rusada said, "Deploying seven modules across 20 sites is no mean feat. I am pleased to say the first stage of this implementation has been an outstanding success. Solenta needed a system that could successfully manage their diverse operations and combine information from numerous locations. As of today, ENVISION is that system."

Elbit Systems unveils MAGNI

MAGNI, a fully autonomous and robust Multi-Rotor Vertical Take-Off and Landing (VTOL) Unmanned Aerial System (UAS) is being launched by Elbit Systems. It is designed to significantly improve the situational awareness capabilities of mobile forces.

MAGNI is compact and light-weight (2.5kg), it enables rapid deployment and launch (in less than 1 minute) from any combat vehicle transforming it to an effective intelligence gathering platform.

The MAGNI system consists of a thermal payload, a communications suite (dual S-Band or LTE), an automatic coordinate tracking capability as well as a built-in interface with Battle Management Systems (BMS). Carrying up to 350gr of payloads it offers a range of up to 3km, a maximum operational altitude of 4000ft and 30 minutes of endurance.

The UAS is operated by a single user and enables vehicle mounted forces to generate beyond-the-hill visual intelligence during day and night, and seamlessly feed target information to command and control systems. Its unique Size Weight and Power (SWaP) parameters make MAGNI a good choice for squad, platoon and company levels.

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Satair, International Water-Guard Industries sign agreement for the innovative intelligent water quantity pre-select system



Satair has collaborated with International Water-Guard Industries (IWG) to reduce CO₂ emissions across the globe on both Airbus and Boeing platforms.

The agreement will cover the innovative Intelligent Water Quantity Pre-Select System, which allows airlines to accurately control the amount of water loaded on an aircraft to make sure the flight only carries the water it has historically consumed, based on the data collected by the system. City pair data, seasonality, and the time of day all play an important role in the amount of water consumed on commercial aircraft. Globally initiatives are being taken to reduce CO₂ emissions that will have an effect on aircraft efficiency by reducing the induced drag required to carry the excess weight.

Bart Reijnen, Chief Executive Officer Satair said, "We are pleased to engage in this agreement with IWG who have developed an innovative technology that contributes to reducing carbon footprint in our industry."

Satair has also signed an additional agreement for the Lavatory Hot Water Heater on the A320/321 for aftermarket support. This new technology gives better performance and weight reduction benefits along with increased reliability for Airbus operators.

Steven Bis, President, International Water-Guard Industries said, "Satair has a unique global presence and we look forward to bringing our products to the market through this extensive network."

C&L Aviation Group completes teardown of ATR42 aircraft

C&L Aerospace has acquired an ATR42-320 which is being disassembled, making parts available for sale or exchange around the globe.

Parts from this aircraft (MSN 0284) will join the over 132,000 other ATR line items in C&L's warehouses, where a unique cataloging process will make the purchasing process transparent and seamless for customers.

Some highlights from this teardown consist of Propellers, Brakes, Wheels, ATR42 Flight Controls and Leading Edges. These items will be available for lease, exchange, or sale in a short while.

"C&L has been pushing hard and making large investments the ATR business for a few years now," said Warrick Hood, Senior Vice President at C&L Aerospace. "We support operators all over the globe from radome to tailcone covering a wide portfolio of rotatables, consumables, expendables, and insurables."

This is C&L's 7th ATR purchase for teardown.



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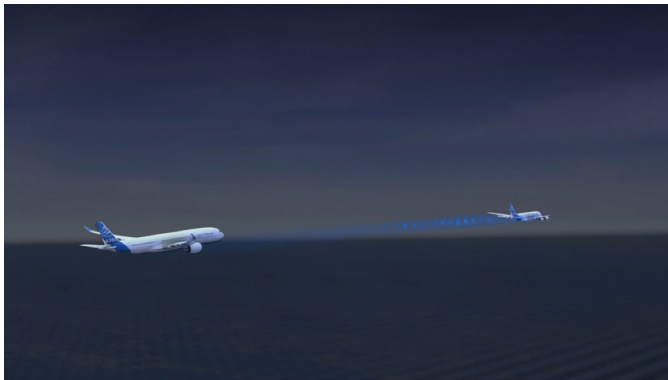
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Airbus to launch fello fly to reduce carbon emission



A small step towards greener environment, by reducing the carbon emission from commercial aircraft Airbus has come up with 'fello' fly.

It is the latest demonstrator project by Airbus. Inspired by biomimicry, this project is said to make a huge impact on the emission reduction by commercial fleet.

Airbus' fello'fly project aims to demonstrate the technical, operational and commercial viability of two aircraft flying together for long-haul flights.

'Fello' fly - the working

-A follower aircraft will retrieve the energy lost by the wake of a leader aircraft, by flying in the smooth updraft of air it creates

-This will provide a lift to the follower aircraft allowing it to decrease engine thrust and therefore reduce fuel consumption in the range of 5-10% per trip

-The aircraft should be safely positioned in the updraft of air of the aircraft they are following, maintaining the same distance, at a steady altitude.

Working on the guidelines defined by International Civil Aviation Organisation (ICAO) and the Committee on Aviation Environmental Protection (CAEP), Airbus aims at achieving standardised emission reductions. Accordingly, they are in talks with airlines and Air Traffic Control (ATC) providers to identify the operational needs and suitable solutions for planning and executing fello'fly operations.

Airbus has an ambitious plan for a controlled Entry-Into-Service by the middle of the next decade. The testing of fello fly will start with two of the A350 aircraft in 2020.



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World's most powerful engine GE9X set for a lift off

It's a history in the making with the world's most powerful engine GE9X all set for a lift off. Recently four fully compliant GE9X engines were delivered to Boeing's wide body plant in Everett, Washington.

Ted Ingling, general manager for the GE9X engine program said, "the Guinness-World-Record-setting powerhouse passed recent in-house testing. GE halted production earlier this summer after detecting a durability issue causing premature deterioration on a static component in the high-pressure compressor. GE engineers ruggedized the component without changing any of the aerodynamics of the design. This improved durability while also allowing GE to retain the engine's performance and operational characteristics".

Some of the salient features of GE 9X engine are -

1.The front fan of the engine is a full 11 feet in diameter and is as wide as the body of an entire Boeing 737.

2.It uses the fourth generation of carbon-fibre composite fan blades originally developed for the GE90

3.It holds parts made from the latest materials like light and heat-resistant ceramic matrix composites, and components made by advanced manufacturing technologies like 3D printing

4.It has clocked 134,300 pounds of thrust during a test run in 2017

5.GE has received orders for more than 700 GE9X engines.

The behemoth was unveiled earlier this year at Paris Air Show. Ingling said "The ceramics allowed us to go to 60:1 [pressure ratio] inside the GE9X," As result, the GE9X engine is not dramatically larger than engines in the GE90 family, even though it's much more efficient."

Up until now, GE has built 10 compliant engines, eight of which will go on a flying test airplanes, along with two spares, for Boeing. "The remaining compliance engines and spares with the incorporated fix are on schedule to be delivered to Boeing by the end of this year", GE Aviation said.

Once the final installation work and on-wing testing is done, the first 777X will make its first flight, scheduled for the first quarter of next year. Boeing is planning for the airplane's certification in early 2021.

Ingling said, "New technologies and materials help make the engine 10% more fuel-efficient than its predecessor. This is a big deal, given that fuel costs amount to as much as 20% of an airline's operating expenses on average. "The technologies I've worked on are out of this world," he said. "I never have a dull moment."

ALS selects Rolls-Royce TotalCare for engine servicing



ALS has signed an agreement with Rolls-Royce for engine maintenance, repair and overhaul services for the airline's fleet of A3007-powered Embraer ERJ135 and ERJ145 aircraft, up to 10 in total.

According to the five year agreement, Rolls- Royce will provide the Nairobi-based specialist operator with its flagship TotalCare long-term aftercare service solution, which is designed to maximise aircraft availability.

ALS CEO, Mr Shakeel Khan said, "At ALS we are proud to be a creative airline and place great importance on partnering with organisations that share our vision and ambitions. Our existing relationship with Rolls-Royce has been very positive and we are delighted to extend it by selecting TotalCare for engine servicing of our ERJ135 and ERJ145 aircraft."

"ALS is an exciting and diverse airline and we are thrilled to strengthen our relationship with its selection of TotalCare," said Stewart Evans, Rolls-Royce, Vice President, Customers - Africa.

"We are proud of the part we play in powering the ALS fleet and look forward to working closely with its team to deliver engine efficiency for their ERJ135 and ERJ145 aircraft, which will now be enhanced by this dedicated long-term care agreement."

CAE expands its training capacity by adding Bombardier Global 7500 full-flight simulator to ECFT in Dubai

CAE is expanding its training capacity in the Middle East by deploying new Bombardier Global 7500 full-flight simulator (FFS) to the Emirates-CAE Flight Training Centre (ECFT) in Dubai.

"CAE continues to enhance its training network with the most advanced technologies to support the training needs of business aviation pilots and operators worldwide. Through our Authorized Training Provider (ATP) agreement with Bombardier, CAE will deploy a Bombardier Global 7500 FFS in the Middle East, a first outside of North America," said Nick Leontidis, CAE's Group President, Civil Aviation Training Solutions. "This latest addition will give more flexibility to Bombardier's Global 7500 operators and pilots in the region as we are bringing this unique training capability closer to them."

"We aim at providing world-class and convenient training experience in the region, and we are happy to now extend it on the Bombardier Global 7500 platform," said Gary Chapman, President, Group Services & Dubai National Air Transport Association (DNATA) at Emirates Group. "As the world's industry-leading and farthest flying business jet is growing its footprint in the region, we are happy to be supporting its operators and their growing training needs alongside our training partner CAE."

The all new Bombardier Global 7500* business jet FFS for CAE will be ready for training in 2021 at the ECFT centre in Al Garhoud, Dubai.

This is CAE's third Bombardier Global 7500* FFS as part of its current ATP agreement with Bombardier. CAE already provides Global 7500* aircraft training at CAE Montreal and CAE Dallas training centres.

Defence Exclusive

US Allies purchase \$71 million in BAE Systems' aircraft survivability equipment



BAE Systems has obtained contracts to deliver \$71 million in aircraft survivability equipment to numerous US allies via US Army Foreign Military Sales.

According to the contracts, the Netherlands, Spain, the United Kingdom, and

the United Arab Emirates have decided to purchase the AN/AAR-57 Common Missile Warning System (CMWS) and associated equipment to protect their aircraft and crews from sophisticated threats.

CMWS has delivered unmatched, combat-proven aircraft survivability to US and allied forces for more than 15 years by providing superior threat detection and enhanced situational awareness. CMWS is designed to detect a wide range of infrared-guided missiles and hostile fire threats, giving warnings to pilots and cueing laser-based and expendable countermeasures. The system's rapid response capabilities increase survivability and decrease the cognitive load on pilots - allowing them to focus on their missions.

"Our customers that fly low and slow in dangerous situations face unobserved threats that can strike without warning in seconds," said Cheryl Paradis, director of Optical Electronic Warfare Systems at BAE Systems. "We level the playing field for pilots and crews with proven threat detection and countermeasures that quickly and automatically engage and defeat threats and help warfighters return home safely."

Airbus Helicopters & Heli-Union to support French Cougar and Caracal fleets



A global support contract has been signed by Airbus Helicopters and its partner Heli-Union for the Cougar and Caracal helicopters in service in the French Army and Air Force.

The contract has been signed with the DMAe, the defence agency in charge of improving the availability of military aircraft in France, is the first contract that Airbus Helicopters has signed as part of the new approach initiated by the French Minister of the Armed Forces, Florence Parly.

The main goal of this long term contract is to increase the availability of the Caracal and Cougar fleets by making Airbus Helicopters responsible for the entire scope of the aircraft's support.

Airbus Helicopters has decided to limit the number of aircraft in heavy maintenance by reducing the duration of the maintenance cycles for each helicopter type by up to 20 per cent. Also, the commitments taken on logistics and technical assistance will decrease the downtime linked to these activities.

"Airbus Helicopters has committed to ambitious performance levels for the support of the Cougar and Caracal helicopters in service in the French Army and Air Force" said Bruno Even, Airbus Helicopters CEO. "This contract is the result of months of cooperation with the DMAe, and I am confident it will deliver the level of support that the French armed forces.

NATO Alliance Ground Surveillance Aircraft completes ferry flight

Northrop Grumman Corporation has transported the first of five NATO Alliance Ground Surveillance (AGS) aircraft, in a non-stop, 22-hour transatlantic flight.

The aircraft has taken off on 20th November from Palmdale, California and landed around 22 hours later on 21st November at Sigonella Air Base, Sigonella, Italy.

"Northrop Grumman is proud to support NATO in its mission to protect and defend global security, while maintaining a position of collective deterrence for the Alliance," said Brian Chappel, vice president and general manager, autonomous systems, Northrop Grumman. "NATO missions will be enhanced by the strategic surveillance capability NATO AGS provides."

The NATO AGS RQ-4D aircraft is based on the US Air Force wide area surveillance Global Hawk. It works according to the requirements of NATO and will provide them with state-of-the-art intelligence, surveillance and reconnaissance capability. This includes protecting ground troops, civilian populations and international borders in peacetime, times of conflict and for humanitarian missions during natural disasters.

Hungary receives its first two H145Ms



Hungarian Defence Forces have received the first two of twenty H145M military helicopters.

The H145Ms of the Hungarian fleet have the fast roping system, high-performance camera, dual cargo hook, hoist, disaster management kit, ballistic protection as well as an electronic countermeasures system to support the most demanding operational requirements.

They are also equipped with the HForce weapon management system, developed by Airbus Helicopters, which permits Hungary to equip and operate their aircraft with a large set of ballistic or guided air-to-ground and air-to-air weapons.

Hungary has also ordered 16 H225M multi-purpose helicopters equipped with HForce. The cost-efficient H145M / H225M tandem will allow the Hungarian Defence Forces to cover missions from light utility, tactical transport, combat search and rescue up to light attack.

C&L Aerospace signs exclusive supplier agreement with Thai Aviation Industries

C&L Aerospace has signed an exclusive supplier agreement with Thai Aviation Industries (TAI), Thailand's aircraft repair and maintenance service centre. This partnership will permit C&L to better support the Royal Thai Airforce's fleet of Saab aircraft through Thai Aviation Services.

The two year agreement is the continuation of the successful history of the two companies working closely together to provide cost-effective solutions for Saab operators.

"TAI has been dealing with C&L for a number of years now and this agreement that we have just signed shows our confidence in their ability to provide us with the solutions for our Saab platform customer," said Anun Chansongserm, Managing Director for TAI.

"Having this deal in place allows for fluid communication and inventory movement between both TAI and C&L," said Jameel Wazir, C&L's Executive Vice President. "Our commitment remains to be able to understand and anticipate the customer needs to provide the best possible support."

AMMROC and CAE partner to provide skilled workforce to meet defence challenges

In order to provide enhanced training that equip local and international professionals with the cutting-edge skills in most demanding defence challenges, AMMROC and CAE have signed an MoU.

Executives from AMMROC and CAE along with a representative from the Embassy of Canada to the UAE were present at the Dubai Air Show today where the signing of MoU took place.

Details of the MoU -

- To pursue training sustainment services and offset opportunities in the Middle East.

- To provide maintenance and support of simulators and training devices, contractor logistics support, courseware development, and instructors, all of which will provide offset opportunities to further support local industry

"This MoU represents AMMROC's continued collaboration and investments with leading global entities in aviation and defence such as CAE. Long term partnerships with our clients is the very basis of our business model and we are keen to work alongside CAE to improve and diversify our capabilities through enhanced training

that equip local and international professionals with the cutting-edge skills they need to face some of most demanding defence challenges," said Abdul Hakeem Al Muflahi, Chief Executive Officer of AMMROC.

"This cooperation with the leading maintenance, repair and overhaul company in the region will help us grow our training services in the UAE and the Middle East," said Marc-Olivier Sabourin, Vice President and General Manager, Defence & Security International, CAE. "We are excited to partner with AMMROC and contribute to developing a highly skilled workforce locally that can meet the needs of military customers in the Middle East region."

The two companies already provide maintenance and support services on the UAE Air Force and Air Defence A330 Multi-Role Tanker Transport (MRTT) training devices. The CAE-built A330 MRTT air refueling officer part-task trainer (ARO PTT) and CAE Simfinity A330 MRTT integrated procedures trainer (IPT) were delivered in 2013 and are used to support the training of pilots and boom operators.



Air France saves millions on baggage handling, thanks to 'Witness simulation software'

**photo for illustration purposes only*

Air France uses WITNESS simulation software from Lanner to determine resource requirements for baggage handling at Roissy Charles de Gaulle airport.

Several simulation studies have been carried out for and by Air France in their baggage sorting centres at Roissy Charles de Gaulle 2 (CdG2) airport in France. The main purpose of these studies was to determine resource requirements for the various baggage handling operations. The simulation models were built using WITNESS by trained Air France engineers and by a team of experienced Lanner consultants. The models were run using data recorded day-to-day and provided resourcing estimates that yielded a significant reduction in the number of operator placements. These studies have enabled Air France to negotiate better contract terms with personnel providers, thereby saving several million Euros per year on its baggage handling costs.

On 5th May 2004, Air France and

KLM merged to become a world leader in air transport in terms of passenger throughput, freight handling and maintenance.

In the 2003-2004 financial years, Air France carried 43.7 million passengers. The company reported a turnover of 12.34 billion Euros and a consolidated net profit of 93 million Euros for a market share of 17.3%.

The Roissy/Charles-de-Gaulle hub (CdG2) handles 710 flights and 75,400 passengers every day. 53% of these passengers transfer to a connecting flight and generate an average baggage flow of 26,500 items daily. The flights are organised into six rendezvous slots, each consisting of an arrival wave and a departure wave.

Context

Baggage handling operations at an airport hub such as CdG2 require very considerable equipment and labour resources to cope with flight schedules concentrated into short time slots. Thus,

CdG2 will ultimately have 50 km of conveyors linking several different baggage sorting centres. CdG2 has a current requirement for several hundred baggage handling operatives.

Baggage handling involves precise timing of baggage movements for passengers flying out of CdG2 to connect with aircraft departures. Operators are involved at different stages of the process: unloading of aircraft, transfer of connecting baggage to sorting centres, placement on conveyors, manual indexing, containerisation, delivery, etc. Air France outsources these operations to service providers and service contracts are renegotiated on a regular basis. Simulation offers a means of obtaining robust resource estimates tailored to operational requirements, thus providing Air France with effective negotiating tools.

Model Building and Analysis

Several models were constructed to represent different scenarios, but in

all cases, the main objective was to determine resource requirements. These models, therefore, detail all of the tasks calling for the use of operators, taking into account the variables of operating schedules, special handling requirements (such as manual indexing of baggage with illegible labels) and daily fluctuations of baggage flow. These tasks are allocated between different teams of operators and the simulator tracks the number of operators occupied in each of these teams over the course of the day. During the simulation run, the WITNESS models export these results to Excel. It is then relatively simple to determine the resource allocations required in order to meet the performance commitment.

The models use a wide variety of data to describe:

- The physical system (length and speed of conveyor sections, storage capacities, number of setdown conveyors, etc.). This data was recorded on-site for existing facilities or obtained from engineering studies when the facilities were at the design stage.
- Process data (cycle times, work rates, rejection rates at different checkpoints, etc.). This data was recorded on a daily basis over several days.

• Baggage flow inputs to the modelled system. Air France has a connecting flight baggage tracking tool which provides day-to-day indication, for each connecting flight combination (inbound/outbound), of incoming and outgoing flights (with scheduled and actual flight arrival times, parking positions, aircraft type, etc.), the number of baggage items involved, entry location in the system, baggage sorting location, etc. For local baggage, i.e. baggage checked in by passengers in the terminals, this data is not directly available and is therefore reconstructed using a computer program based in particular on passenger check-in profiles by connection slot.

Implementation of the models

Each commercial negotiation with a service provider called for the construction of a simulation model in order to validate their proposed costing. In the past two years, several simulation models have been developed in this way, taking a more or less detailed view of the system (sorting centres in isolation or the CdG2 platform as a whole) and on variable timeframes (current situation or to 2006).

The model simulation and configuration strategy invariably addressed the

worst-case scenario in terms of operator involvement. In addition, resourcing estimates were made using parameters corresponding to a representative selection of actual days (different days of the week, week-ends with greater or lesser workload, etc.). These precautions ensure that a credible and robust resource estimate is obtained. Deployment of the simulation-based estimates effectively achieved the expected results.

The same models are also used to address other requirements such as positioning and sizing of container inventories, validation and optimisation of flight allocations to baggage sorters.

Results

WITNESS is actively used by Air France as a support tool for the purchase of baggage handling logistics services. The simulation models developed using this tool have resulted in the establishment of more effective resource solutions than those proposed by service providers. The efficiencies obtained are primarily financial, yielding a saving of several million Euros per year. They also have an organisational dimension in that the service providers are now committed to a constructive process to improve their overall performance.



**photo for illustration purposes only*

Executives in Focus

KLM UK Engineering names Graham Casbourne as Business Development & Sales Director

KLM UK Engineering Limited has appointed Graham Casbourne as Business Development & Sales Director.

Graham has been working for KLM UK Engineering from 30 years and has held many positions in operations and sales.

Graham joined the Sales & Marketing department in 2012 as Sales Manager.

Graham Casbourne said, "I am very proud to have been appointed as Business Development & Sales Director. With my experience and network I look forward to supporting the Sales & Marketing team to deliver year on year growth for the business."

C&L Aerospace appoints Miguel Delgado as Regional Sales Manager for Latin America /Caribbean

C&L Aerospace has appointed Miguel A. Delgado as its Regional Sales Manager responsible for Latin America and the Caribbean. He is based out in Miami, Florida.

Delgado has more than 30 years of Latin American aviation parts sales experience and expertise in creating innovative solutions for customers.

"Miguel's ability to create long-term and PBH solutions for customers, enhanced market development skill, and extensive Latin American experience will be a tremendous asset to C&L," said Martin Cooper, Senior Vice President of Sales. "We're very excited that he has chosen to join C&L, and look forward to him creating cost-saving programmes for our customer."

Delgado will be looking into developing C&L's relationships with Latin American regional airlines, specialising in ATR, ERJ, Beech 1900, and Saab 340 aircraft along with military operators utilising T700 and CT7 engine platforms.



Sarith Vaikuntan joins Metrojet Engineering Clark as General Manager

Metrojet Engineering Clark has appointed Sarith Vaikuntan as the General Manager. In this new role, Sarith will be responsible for all aspects of Metrojet Clark MRO's operations, including the US Federal Aviation Administration (FAA) Part 145 Repair Station Accountable Manager responsibilities and business development.

Previously, Sarith worked at Zenith Jet as Executive Vice President. He worked at Bombardier for 10 years where he held several managerial positions, including Customer Support Manager and Regional Support Office Manager for South East Asia, Oceanic and India regions. He served as Maintenance Controller with Jet Aviation Singapore for 3 years. Sarith started his career as Chief Engineer with the Dubai Central Air Force for 14 years.

"It is with greatest honour to bring my engineering, customer service and various experience gained from top-tier business aviation companies to Metrojet. Together with the well-established international team here, I will

also oversee and ensure our new Hangar Parking & Maintenance Facility is in smooth operation starting from Q2 next year and gradually becomes the MRO of choice in the region," said Sarith Vaikuntan, General Manager of Metrojet Engineering Clark.

Metrojet's CEO Gary Dolski adds, "I am very pleased to have Sarith join our team in Clark. Sarith is a seasoned business aviation professional with significant Asia region experience who understands the customers, their expectations and special needs. On behalf of all Metrojet, a big warm welcome to Sarith."



FlightSafety International names Mike King as President of FlightSafety Services

FlightSafety International has appointed Mike King as President, FlightSafety Services.

In this new role, Mike will be responsible for the aircrew training systems and contractor logistics support provided to government and military agencies worldwide. The responsibilities also include the delivery of training and advanced technology devices, as well as support for computer-based workstations and simulators at 21 US military bases.

Mike had first joined FlightSafety in 1990 and worked for the company till 2014. At that time, Mike held various positions of increasing responsibility like Center Manager and Director of Business Development.

"We are pleased to welcome Mike back to FlightSafety and look forward to his contributions as President of FlightSafety Services," said David Davenport, President & CEO. "Mike is an outstanding, highly-experienced leader, who possesses exceptional business acumen. Our government and military Customers, and the Teammates who support this important part of our business, will appreciate and value his leadership and commitment to excellence. Mike assumes this important responsibility from Hector Zarate. We thank Hector for his many contributions as President, and look forward to his continued service with the company in programme management."



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International Events

MRO EVENTS		
DATE	EVENT	VENUE
06-07 Feb 2020	3rd Aerospace & Defence MRO South Asia Summit 2020	New Delhi, India
24-26 Feb 2020	MRO Middle East 2020	DWTC, Dubai
10-11 Mar 2020	MRO Russia & CIS 2020	World Trade Center, Moscow, Russia
10-12 Mar 2020	MRO Australasia 2020	Brisbane, Queensland, Australia

AIRSHOWS		
DATE	EVENT	VENUE
11-16 Feb 2020	Singapore Airshow	Changi Exhibition Centre, Singapore
13-17 May 2020	ILA Berlin	ExpoCenter Airport, Germany
20-24 July 2020	Farnborough International Airshow 2020	Farnborough, England
08-10 Dec 2020	MEBAA Show 2020	DWC, Dubai Airshow Site

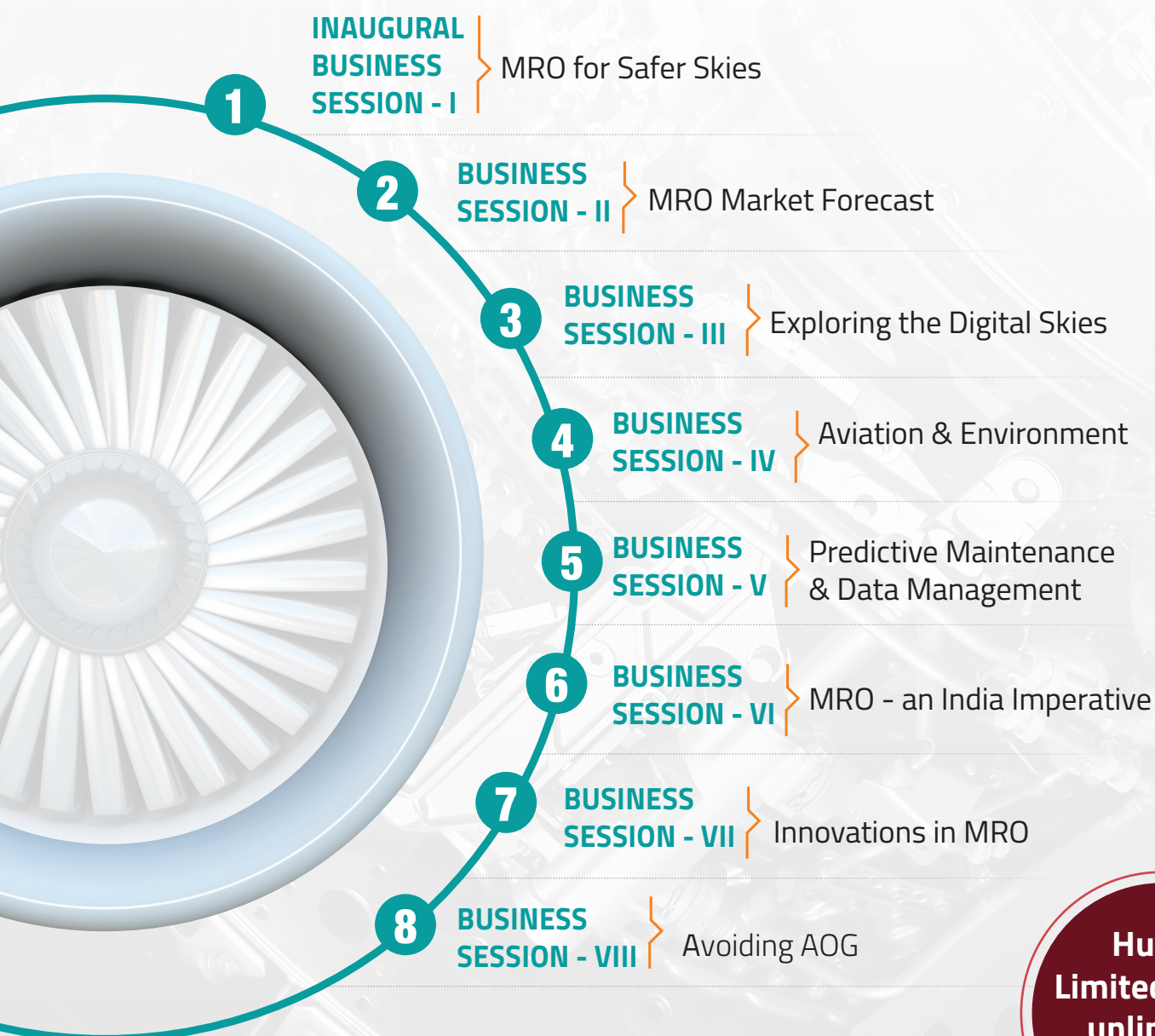
OTHER AVIATION EVENTS		
DATE	EVENT	VENUE
04 - 05 Dec 2019	Airport Solutions Indonesia 2019	Convention center in Central Jakarta, Indonesia
27- 29 Jan 2020	Global Investment in Aviation Summit(GIAS)	Dubai, United Arab Emirates
18 - 19 Feb 2020	Aviation Festival Asia 2020	Suntec Singapore Convention & Exhibition Centre, Singapore
04 - 05 Mar 2020	1st Korea Aero Summit 2020	Seoul, South Korea
10 - 12 Mar 2020	World ATM Congress 2020	Madrid, Spain
12 - 14 Mar 2020	ATCA Technical Symposium	Atlantic city, NJ, New Jersey, USA
21- 23 April 2020	Asian Business Aviation Conference & Exhibition (ABACE)	Shanghai, China

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AGENDA PANEL DISCUSSIONS

MRO FOR SAFER SKIES



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