Thomas Cook Airlines implement a new eTechLog
Working across a multi-AOC environment
Robotic process
Using software to create work packages
A growing digital landscape
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NEWS • JOB CARDS: ULTRAMAIN SYSTEMS, CASEBANK TECHNOLOGIES, SEABURY SOLUTIONS AND SWISS-AS
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What once might have seemed remarkable today seems mundane. What now seems remarkable is that we ever did without some technology. Why bother to tune a radio, select an album from that shelf or even look up something on the Internet, let alone in a book, when the simple words ‘Hey Google’ or ‘Alexa’ can set you off on any course you choose? Moreover, these familiar software assistants learn what we like, bringing a whole new meaning to the phrase ‘be careful what you wish for’; in case it arrives in tomorrow’s mail. Life is data driven but, in our daily lives, data is still mainly generated by us and our actions. That is not the case in aviation engineering and MRO where, to an increasing degree, data is being generated and driven by the aircraft and components to which it refers. That, combined with analytics and associated software, is a good thing inasmuch as it means greater accuracy, less involvement on the part of humans and greater information from the huge amounts of data now available. But, of course, as with any force for good, it will deliver the greatest value when properly harnessed, interpreted, organized and displayed.

In this issue, we have a case study from Vueling looking at how the carrier has achieved robotic process automation (RPA) using software robots to undertake routine maintenance administration process tasks and free the humans to direct their energies to more creative value added tasks. We’ve also got a fascinating case study from Thomas Cook Airlines on bringing all airlines in the group onto one eTechLog (ETL/ELB) platform but from different start points, with different regulators and AOCs, while, at the same time, upgrading and homogenizing MRO systems across the business.

One of the white papers in this issue, from ICF, focuses clearly on big data; what it can do, how far it has developed and how various players in the industry can leverage it to improve the productivity and marketing appeal of their business. In a similar vein, our second white paper from IFS considers not only what capabilities are available for MRO event planning but also how various players might use them and why they should.

On top of all that, there is the regular round-up of news and technology developments and a bumper crop of Vendor Job Cards from Ultramain Systems, CaseBank Technologies, Seabury Solutions and Swiss AviationSoftware. Add our regular features such as ‘MRO Software Directory’ and you have Aircraft IT MRO: about technology pointing the way to the future.

Ed Haskey
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Aircraft IT welcomes Ubisense

One of the most important components in Aircraft IT has always been our supporting software developers and Vendors. So it is with pleasure that we welcome Ubisense to the Aircraft IT Vendor panel. Digital transformation is driving a fundamental change in the Aerospace, Defence and MRO sectors, laying the foundations for greater competitiveness in a digital world.

Connecting manufacturing systems to real-world business process is fundamental to realising this vision and Ubisense's SmartSpace provides a foundation platform for users’ Industry 4.0 strategy. SmartSpace enables OEMs and MROs to create a real-time digital twin of their environment, connecting activities to manufacturing, execution and planning systems, making real-world processes involving moving assets visible and measurable.

Offering in-depth knowledge of the sectors in which it operates, Ubisense has long standing relationships with many customers across aerospace and defense, passenger and commercial vehicle manufacturing, communications and utilities. Since inception in 2002, Ubisense has built up a strong customer base including six of the top 10 Fortune 500 manufacturers, nine of the leading 10 automotive manufacturers, two of the top 3 aerospace manufacturers and five of the major telecoms network operators around the world use Ubisense solutions including three of the top 4 in North America.

Welcoming Ubisense to the Vendor Panel, Aircraft IT COO, Scott Leslie said, “With Industry 4.0 at the forefront of everybody’s mind these days and not least in the Aviation sector, we know that readers will value Ubisense’s view of the workplace and solutions designed with Industry 4.0 in mind.”

AMOS at VLM Airlines, Belgium

VLM Airlines (Antwerp, Belgium) recently received their first Airbus A321. CrossConsense assisted in setting up a brand new VLM airlines AMOS system in a very short time frame, including the Aircraft Maintenance Program, Airworthiness Directives, Rotables and Basic Tables setup. The complete setup, from signature of the LOI for the aircraft until the first commercial flight, including National Authority approval of the Maintenance Program, was done in less than six weeks.
Topjets Worldwide chooses OASES

At the end of August 2018, new Italian scheduled airline, Topjets Worldwide, announced that it has chosen OASES, the industry-leading MRO IT system from Commsoft, to support its planned operations. Currently in the process of submitting its CAME for approval by the airworthiness authorities, Topjets Worldwide has recently acquired an ex-Etihad Airbus A340-642 for use on long haul flights from Northern Italy to India and other destinations.

Offering an industry-leading technical sophistication whilst still being intuitively user-friendly, OASES is structured in a modular format to allow for maximum flexibility and scalability. Topjets Worldwide has opted for the Core, Airworthiness, Materials and Planning modules with an option to access the Line Maintenance Control module at a later date. All the modules will be implemented in Commsoft’s Private Cloud service, removing the need for the airline to invest in any additional hardware.

Nick Godwin, Commsoft’s Managing Director, commented: “We’re delighted to welcome Topjets Worldwide to the OASES family which continues to grow in numbers and geographical spread. This is the sixth new OASES contract that we’ve signed this year and Topjets Worldwide have become our fourth Italian customer. Initial implementation meetings with the airline’s team will start shortly with a view to the system going live in the autumn.”

INTERACTIVE

Click here for full product details
Seabury Solutions to deploy Alkym with Ravn Air

North American airline group joins Alkym’s fast-growing user base to support its future growth plans through upgraded it solutions

Seabury Solutions, a provider of Information Technology solutions for the aviation industry, announced in mid-September 2018 that Ravn Air Group had selected the company’s Alkym® Management and Control System for Aircraft Maintenance. Alkym is expected to streamline and increase the operating efficiency of the airline group’s growing fleet of DeHavilland, Beechcraft, Piper and Cessna aircraft, ensuring a substantial return on investment.

“We are delighted to welcome Ravn Alaska to the growing customer base of Alkym users,” said Seabury Solutions SVP, Head of Sales & Marketing, John Barry. “When we started the process almost two years ago, the functional requirement list required to meet their growth plans ensured we were competing against the other established systems on the market. It is extremely pleasing to come out on top in such cases.”

George Nichols, Ravn Air Group’s CIO, commented: “Over the past 24 months, we ran a competitive selection process to replace several existing systems used across our technical departments. We wanted to streamline the process to ensure a truly integrated outcome. Alkym was the clear leader in the market to meet all the challenges we anticipate.”

The comprehensive implementation process has already begun, which will see Seabury Solutions provide the Ravn Air team the expertise in configuration and training of the system for the three organizations under the group. The pre-implementation workshop has already been completed to ensure the most effective deployment of the solution, tailored to the airline’s requirements. On a phased basis, each of the airlines in the group will go live with Alkym.

Seabury Solutions to deploy Alkym with Ravn Air

Commssoft’s OASES MRO system offers comprehensive professional functionality together with a flexible, affordable approach that understands your business’ scalable growth needs in today’s turbulent market.

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Seabury Solutions assists DCA Mauritius to enhance operational processes through cutting-edge eAuthority solution

The Department of Civil Aviation Mauritius Utilizes the Company’s Integrated System to Oversee Organizations, Aircraft, and Aviation Professional Certification and Licensing

Seabury Solutions, announced in mid-September 2018 that the Department of Civil Aviation Mauritius (DCA Mauritius) completed the implementation of the company’s industry-leading, multi-platform integrated system, eAuthority. Moving to a complete digital process and aiming for a paperless office, eAuthority will enable the department to oversee organizations, aircraft, and aviation professional certification and licensing.

Inspired by ICAO, EASA and FAA regulations, the system is designed to increase efficiency of internal staff while giving real-time information to the management on a multi-platform dashboard.

John Barry, Seabury Solutions Senior Vice President, explained: “When DCA Mauritius began the tender process it was clear they wished to get ahead of safety risks. The tools they wanted to put in the hands of their people should give everyone in the organization access to the correct data. In this way it would be possible to improve operational processes, strive towards a paperless office but, critically important, to measure the success. eAuthority with its integrated modules would bring single source data with cutting-edge BI, BPM, and DMS.”

DCA Mauritius ran a comprehensive tender process in 2017, which resulted in the selection of eAuthority, opting to implement eight of the 13 available modules to meet their current requirement. Among the implemented modules, DCA Mauritius selected the Aircraft and Organization oversight along with the complete SSP solution. In addition, each inspector can make more productive use of time via the inspection module with its mobile applications. With the configuration of the system and onsite training completed, the ‘go-live’ took place in late August and early September.
Korean MRO selects Rusada’s Maintenance Technology

In late September 2018, Sharp Technic K, the Korean based third party MRO went live with Rusada’s ENVISION nGen maintenance information management system at its Seoul Incheon International Airport hangar facility.

Sharp Technic K — a joint venture of Sharp Aviation K, Jeju Air, Eastar Jet and T’way Air — in January 2017 opened its hangar which consists of two bays for narrow-body aircraft or one bay for wide-body aircraft. Mr JS Lee, Chief Operating Officer of Sharp Technic K said: “The deployment of Rusada’s ENVISION nGen technology will deliver a centralized, integrated maintenance information system that will deliver continued service excellence to existing customer while supporting our growth ambitions.”

At the brand-new facility, Sharp Technic K offers a range of aircraft maintenance and engineering services including; base maintenance, modification and upgrades, cabin modifications component repair and overhaul services, parts management and 24/7 ‘Aircraft on Ground’ (AOG) Services. Mr JS Lee continued: “Our strategy is to offer very cost efficient heavy maintenance services to domestic operators as well as positioning ourselves to attract heavy maintenance work to Korea from across the wider APAC region. Rusada’s technology is a critical component in our plans to execute this strategy.”

Julian Stourton, Rusada’s CEO said: “Sharp Technic have elected to utilize our Base, Resource, Inventory, Finance and Quality & Safety modules.” He concluded: “Following a deployment project that involved our own experienced Rusada consultants working closely with an in-house project team from Sharp Technic K, it will be exciting to see the positive results of the roll-out.”

Read the full story on Aircraft IT Website
Seabury Solutions’ Alkym to support Air Busan and KAEMS

Partnership with PartDB supports the company’s rapidly evolving market presence in the Republic of Korea, further strengthening the Alkym Solution’s leading position in Asia Pacific

Towards the end of September 2018, Seabury Solutions announced a recently established partnership with PartDB Co., Ltd. (PartDB), the Republic of Korea-based leading provider of Engineering IT and VR solutions, as part of continued strategy to expand its global client base. The partnership is aimed to grow the companies’ Asia Pacific customer base for Seabury Solutions’ line of software solutions that enable airline customers to digitally transform operations and enhance their ability to meet demand from the fast-expanding aviation market.

Building rapidly upon the partnership, the company unveiled two new customers in the region for its Alkym solution:

• Air Busan, South Korea’s largest low-cost carrier (LCC) and a subsidiary of Asiana Airlines, which became the region’s Alkym launch customer; and...
• Korea Aviation Engineering & Maintenance Service Ltd (KAEMS), a subsidiary of Korean Aerospace Industries (KAI), Seoul’s first aircraft maintenance, repair and overhaul (MRO) company.

“When you work with the best-in-class, as we do through our partnership with PartDB, the growth opportunities will follow in any region,” said Seabury Solutions Regional Sales Manager, APAC, Carlos Bianchi. “In collaboration with PartDB, we successfully completed the most rigorous tender processes, competing with all the tier 1 vendors in this market. We proved to both Air Busan and KAI that Alkym was the ideal solution for their operations.”

Air Busan has begun the implementation of Alkym, with the airline incorporating eleven Alkym modules to manage its aircraft technical operations. KAEMS’ Alkym implementation will form the backbone of the technology the company intends to utilize for MRO work on a local LCC due to begin operations in the fourth quarter of 2018.

“We have been working closely with Seabury Solutions’ APAC sales team over the past years to create this foundation,” commented PartDB Chief Executive Officer Jinsang Hwang. “The dedication enabled us to announce the largest LCC airline in the region, Air Busan, as Alkym’s launch customer, and establish the working environment of KAEMS. There were many global players seeking this business but our local presence coupled with the best-of-breed solution proved to be the winning formula.”
Global enterprise software specialist, Ramco Systems, announced in late September 2018 that it has won an order for Ramco Aviation Suite from multidisciplinary technology services provider Advanced Global Resources, LLC (AGR), to track and manage inventory in real-time, ensuring auditability and accountability for their asset management responsibilities to the US Army.

Ramco beat multiple vendors to win the AGR contract, enabling them to manage their IT and Supply Chain Support Services Contract with the Red River Army Depot, the US military base that provides maintenance and repair support for the tactical wheeled vehicle fleet.

Ramco Aviation Suite 5.8 was chosen for its solution breadth, modularity, flexibility, and mobile-friendly capabilities. The software offers modules for advanced procurement, invoicing, vendor and inventory management in real time. These functions are accessible via a hub-based dashboard that will enable users to effectively plan, manage and report on all assets. A native mobile app for warehouse management is also included in the suite. Ramco Aviation Suite 5.8 replaces the entirely manual, paper-based system previously used for Red River Depot, which had limited visibility on stock demand and fulfilment. Ramco will help AGR install the new software, automating the process and tracking all data changes to ensure regulatory and audit compliance.

Randy Muns, President, AGR, LLC, said, “Digitizing our legacy system will help us go paperless and reduce turnaround time. Real-time data visibility and asset centralization is essential in a large military base with disparate systems distributed across a wide area. We believe Ramco’s advanced maintenance and logistics toolset with built-in Mobility will enable us to significantly improve our daily processes for the benefit of our client.”

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About Advanced Global Resources

Read the full story on Aircraft IT Website
Alitalia is going to introduce CROSSMOS® eTLB

In late September 2018, Alitalia signed a contract with CrossConsense to implement the CROSSMOS® eTLB. The decision to implement an electronic technical logbook (eTLB) is part of the process of paperless maintenance and the reason for Alitalia to head towards paperless maintenance is not only saving paper, environmental resources, time and money but also to accelerate the provision and transmission of information. Thanks to the new agreement signed with CrossConsense, Alitalia will be able to save more than 10 tons of paper every year, with a significant reduction in the effects of the environmental impact. Furthermore, the CROSSMOS eTLB solution implemented by the airline will facilitate and accelerate analysis, transmission and share of crucial information in the maintenance processes.

The reason for deciding in favour of CROSSMOS was the fully functional bi-directional interface to the maintenance backend system of the Alitalia group as well as the open and honest negotiations during the decision process. Alitalia had a clear vision in mind when it decided to move forward with the paperless maintenance process: in order to pursue efficiency and effectiveness in every single maintenance process, eTLB was a mandatory step and the best solution to implement a real paperless maintenance. The airline also undertook some hard thinking in particular about its internal process re-engineering and, above all, at changing everyone’s mental approach in order to adapt to the new optimized business processes.
Boeing teams with Robotic Skies to provide enhanced commercial unmanned aircraft services

Boeing and its subsidiaries Jeppesen and Aviall announced at the beginning of October 2018 that they have joined with Robotic Skies, a leading commercial unmanned aircraft system (UAS) support services provider, to develop and deliver industry-leading supply chain management and optimization, analytics, and maintenance, repair, and overhaul (MRO) services for the commercial and civil UAS markets.

"Teaming with Boeing will allow both companies to elevate the commercial UAS customer experience and deliver operations solutions that would be difficult to achieve individually," said Brad Hayden, Robotic Skies, CEO. "This agreement represents a foundational step for the advancement of commercial UAS operations that will meet the requirements of today and help shape the future of unmanned flight."

Boeing and Robotic Skies will jointly pursue opportunities to best leverage their extensive combined experience and solutions in manned aviation programs and extend them into the UAS market, including providing services for commercially-focused regulatory compliance, ground support, training, MRO, parts distribution, field upgrades and vehicle retrofit capabilities.

“We continue our dedication to working with the top providers in the industry to increase our presence in the commercial UAS field, with the ultimate goal of helping customers operate more efficiently,” said William Ampofo, vice president, Business & General Aviation, Boeing Global Services. “Our relationship with Robotic Skies will bring together the best elements of both companies, as we shape our capabilities specifically to meet the unique operational requirements and challenges of commercial UAS flight.”

As their relationship continues to expand, the companies will provide unified operations services for both existing commercial UAS operators and for...
companies seeking to enter the UAS field for the first time.

Operating as one of Boeing’s three business units, Global Services is headquartered in the Dallas area. For more information, visit www.boeing.com/services.

Robotic Skies offers comprehensive turnkey field service programs designed to keep UAS flying safely, efficiently and affordably. Founded in 2014, Robotic Skies is a brokered network of over 150 certified repair stations across more than 30 countries, providing MRO and additional support services for commercial UAS. Each service center in the network possesses the aviation expertise and factory training to ensure the mission readiness of these aircraft.

**Commssoft partners with Yonder**

At the start of October 2018, Commssoft announced that it has partnered with Yonder to assist with the development of a new Compliance module for its industry-leading MRO IT system, OASES. Combining an industry-leading technical sophistication with an intuitively user-friendly interface, OASES is structured in a modular format to allow for flexibility and scalability. At the heart of the OASES system is the Core Module which provides the essential system components that enable the operation and integration of the system’s optional functional modules.

Currently, these functional modules include: Continuing Airworthiness, Planning, Production, Line Maintenance, Material Management, Commercial Management, Warranty and the Application Program Interface. Working closely with Yonder, Commssoft will shortly be adding a Compliance module combining enhanced document, quality and safety management and designed to give users the confidence that their operations are in full compliance with all regulatory requirements.

Part of the TSS (Total Specific Solutions) group, Yonder is a software solutions provider with its two primary delivery centers in Romania, a country in which Commssoft also has a local office providing support for its growing client base in South East Europe. Cristian Inceu, one of Yonder’s Business Unit Directors, commented: “We are delighted to be working with Commssoft, bringing our expertise in all the relevant technologies to the aviation industry. We’re looking forward to making the new Compliance module for OASES a real success story.”

*Read the full story on Aircraft IT Website*
IDMR’s Technical Documentation Management System, InForm, has been designed to play a central role in the long-term survival and proliferation of technical documentation. InForm, written from the ground up as an airline document management system, will allow you to author and maintain virtually any document. Technical Documentation Management is now on aviation executives agenda’s worldwide.

Technical documents are the primary source of aircraft, engine, and component reference which are constantly changing. On-going revision’s and updates by manufacturers, vendors and airline personnel add more complexity in controlling these documents. Failing to follow manufactures, vendors, and regulatory agencies approved maintenance repair and overhaul procedures can result in poor quality control or worse non-compliance fines.

Without a centralized approach to Technical Documentation Management, these important documents are usually stored in multiple places, version control is lacking and in many cases different automated tools are used to create and maintain record keeping, perpetuating a process that is extremely time consuming and in most cases inaccurate. InForm offers a Technical Document Management Solution that provides a single repository for storing electronic documents received from outside sources such as manufactures, vendors, and internal personal.

IDMR solutions offers airlines, manufactures and third-party maintenance providers the industry’s most technically advanced, web centric, fully customizable, easy-to-use, all encompassing, mission critical and affordable suite of Technical Documentation Management solutions.

**AUTOMATIC** Click here for full product details

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**AEGEAN and OLYMPIC go CROSSMOS®**

Aegean Airlines together with its subsidiary Olympic Air announced at the beginning of October 2018 that they had signed contract with CrossConsense to implement the CROSSMOS® eTLB. After the final implementation CROSSMOS® will then be on board about 61 aircraft operating under the flag of these two Greek airlines. By implementing CROSSMOS® AEGEAN Group is taking an important step moving towards paperless maintenance.

Mr. Vasilios Kardasis, Technical Director at AEGEAN said: “AEGEAN’s driving and achieved target for constant growth and development over the years has been accomplished by establishing advanced systems and technologies that indicate towards that same need in the future as well. CROSSMOS implementation is a decision for reducing manual data recording, provide almost real-time aircraft status at any time and substantially simplify maintenance handling for flight crews, maintenance staff and operations control. Higher data quality that eases control and monitoring processes of all aircraft fleets will be expected by aircraft data digitization and maintenance workflows optimization in order to continuously enhance efficiency, punctuality, reliability and safety of our commercial flight operations”.

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Seabury Solutions delivers Alkym to Zimbabwe Airways

The Company’s MRO IT Solution Will Support Zimbabwe’s New Start-Up Airline’s Anticipated Growth and Assist in Ensuring its Safety Standards

Seabury Solutions announced at the beginning of October 2018 the addition of the Republic of Zimbabwe’s new start-up airline, Zimbabwe Airways, to its growing customer base in Africa’s rapidly developing aviation market.

The airline will begin the certification process with aircraft, under control of Alkym® Management and Control System for Aircraft Maintenance, with the first of four new Boeing 777 aircraft already having its data loaded into Alkym.

“Working with new start-ups is key to building our customer base and something that brings great pride to see them grow with our solution at their core,” said Seabury Solutions SVP, Head of Sales & Marketing, John Barry.

Zimbabwe Airways have selected to use the full Alkym suite and will phase it into the operation as it grows and matures. With the new Mobile platform, Alkym brings its current module list to eighteen.

Captain Simba Chikore, CEO Advisor with Zimbabwe Airways, commented: “Our projected growth plans were set in motion many months ago. We sought to work with the best in the business on all aspect of the organization. No higher priority could be assigned to the safety of our operation. Working with Seabury Solutions ensured we had proven leaders in the field of Technical Operations. Alkym meets our requirements specification. However, for us it was the people we dealt with in the process that assured us we made the right decision.”
IFS named as Aerospace and Defence EAM software market leader by ARC Advisory Group, having doubled market share

IFS, the global enterprise applications company, announced in early October 2018 that it has been independently confirmed as the number one vendor of Enterprise Asset Management (EAM) software, by market share, for the global aerospace and defense (A&D) sector. This marks the tenth consecutive year major research and advisory firm ARC Advisory Group has named IFS as the global leader in EAM software for the specialized A&D market.

The ARC ‘Enterprise Asset Management Global Market 2017 — 2022’ report found IFS has nearly doubled its total A&D market share and increased its lead year over year against the next highest participants. The figures include revenue increases following the 2017 acquisition of aviation maintenance management software provider Mxi Technologies. “IFS is particularly strong in the aerospace and defense market worldwide,” Ralph Rio, Research Director for Enterprise Software, ARC Advisory Group said. “The company has further extended its lead following strong sales of IFS Maintenix and IFS Applications to organizations across the A&D sector.”

Over the past year, IFS has closed a number of high-profile deals and partnership agreements with the likes of PSA Airlines, Air Transport Services Group (ATSG), AECOM, TEST-FUCHS, Tsunami Tsolutions, G7 Aerospace and Calidus. These customers and partners join a leading user base in aerospace and defence that includes BAE Systems, Lockheed Martin, General Dynamics, SAAB, HAL, Emirates, LATAM, China Airlines, Air France-KLM and Southwest Airlines.

Scott Helmer, President, Aerospace and Defence Business Unit at IFS, added, “Over the last ten years, IFS has continued to be the leading EAM software provider to organizations of all sizes in this highly dynamic industry.”

Read the full story on Aircraft IT Website

**Report finds IFS holds the largest portion of the global A&D Enterprise Asset Management (EAM) market for the tenth year in a row**

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Scott Helmer, President, Aerospace and Defence Business Unit at IFS, added, “Over the last ten years, IFS has continued to be the leading EAM software provider to organizations of all sizes in this highly dynamic industry.”

Read the full story on Aircraft IT Website
Lufthansa Technik performed the first base maintenance layovers of a Boeing 737 MAX

**State-of-the-art connectivity modifications**

In early October 2018, Lufthansa Technik performed the first major connectivity modifications on the Boeing 737 MAX 8 aircraft of an undisclosed customer. The aircraft were modified at Lufthansa Technik Budapest.

The airline customer is currently enlarging its all-Boeing 737 fleet with the newest member of this aircraft family and was looking for a partner to equip the fleet with a state-of-the-art connectivity solution. Lufthansa Technik Budapest was the location of choice to accomplish the layovers within a short and reliable time frame. Over the recent years, the narrow body base maintenance and modification experts in Budapest have performed this modification many times on Boeing 737 NG aircraft.

During the five-day layovers, several specialized teams were in place to accomplish the modification work. A structures team reinforces the affected skin area to facilitate the installation of the Satellite Antenna Assembly (SAA) and GSM antenna as well as the covering radome. The avionics team installs the cabling, hardware and software of the related connectivity system in the aircraft cabin. Other mechanics provide the necessary access to the cockpit and passenger compartment interior and reinstall all equipment once all work has been finished. Dietmar Focke, CEO of Lufthansa Technik Budapest, said: “Recent events demonstrate our competence for modification work on the Boeing 737 MAX 8. We are currently expanding our services to full base maintenance capabilities for this aircraft type, from scheduled maintenance to aircraft modification all the way to major overhaul events.”

Maintenance capability extensions for the 737 MAX at further locations in the Lufthansa Technik network are planned. Lufthansa Technik already offers an extensive range of globally available products and services for the various Boeing 737 types. The spare parts warehouses for the Boeing 737 of the Classic and popular Next Generation versions have been expanded for the 737 MAX to support operators of this aircraft type with component services. And as one of the first MRO providers to support customers as early as in the initial phase of their LEAP engine operations, preparations for the introduction of the LEAP-1B engine are underway with the first shop visit expected in 2019.
Interflight Technical Services chooses OASES

Commsoft was delighted to announce in mid-October 2018 that its industry-leading MRO IT system, OASES, has been chosen by private charter and aircraft management company, Interflight Technical Services, based at Biggin Hill in Kent, England. Replacing the company’s existing MRO IT software, OASES will be used for the CAMO control of two Hawker 800 business jets and will be deployed to support engineering operations in its hangar.

Implementation of the OASES system is already underway.

Renowned for the combination of its technical sophistication and intuitive user interface, OASES features a modular structure to provide for both flexibility and scalability. Interflight will be using the Core, Airworthiness, Planning, Material Management, Production, Warranty and Commercial modules which will be accessed through Commsoft’s Private Cloud service.

Nick Godwin, Commsoft’s Managing Director, commented: “This is the seventh new OASES contract we have signed this year and further evidence of the success we are having in meeting the needs of a very wide range of aviation operations, from national and regional carriers to business aviation and charter operators, from cargo specialists to leasing companies to independent MROs. We’re looking forward to working closely with the Interflight team to ensure an early implementation.”

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ADSoftware partners with industry leader ATR

ADSoftware was pleased to announce, in mid-October 2018, an official partnership with aircraft manufacturer ATR, the world leader for regional aircraft up to 80 seats. The collaboration is set to commence in October 2018. A leader in the manufacturing sector, the joint partnership between Airbus and Leonardo has over 200 operators in more than 100 countries, with over 1,500 aircraft sold to date. With a turnover of almost $1.7bn, ATR aircraft are responsible for over 5,000 flights per day around the world.

Every 8 seconds, an ATR aircraft takes-off or lands somewhere around the world — ATR, April 2018.

Connectivity a ‘must-have’: ATR trusts ADSoftware

Talking about the partnership, Patrick Massicot, Head of Airframe & MRO Services, praised ADSoftware's customer management and quick response times, saying: “As our ATR Part 145 and Part M/CAMO teams work not only in our Francazal (Toulouse) maintenance base but also in very remote areas, connectivity and high availability of the MIS are a must-have. Listening skills, technical skills and agility to meet ATR specifications and demonstrate or implement new features were just some of the key reasons for ATR’s partnership with ADSoftware, deploying the full IT suite which is now ongoing”.

A complete technical partnership

ATR has chosen ADSoftware to manage its MRO and CAMO activities via ADSoftware's suite of tools which allows users to manage:

- Flight time and logbooks;
- Supply chain;
- Access key documentation;
- Maintenance team planning;
- Statistics and accounting;
- Security management;
- Full data indexation and file conversion.

In addition to MRO and CAMO management, ADSoftware will work alongside ATR to develop new processes and methods to integrate and manage key technical data, including migration to new aircraft and phase-in/phase-out processes. With these new features, aircraft data integration will be quick and easy, saving time and money.

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IFS appoints Christian Pedersen as chief product officer

**Christian Pedersen joins IFS from SAP, having previously run Microsoft's ERP business**

IFS, the global enterprise applications company, announced, in mid-October 2018, the appointment of ERP industry leader Christian Pedersen as chief product officer. In this global role, Christian will set the direction for IFS's portfolio of products that span enterprise resource planning (ERP), enterprise asset management (EAM) and field service management (FSM).

Christian and his team will work with customers, partners and the rest of the IFS organization, to envision, develop and deliver compelling solutions for IFS customers today and in the future. IFS’s investments in innovation will continue to be focused on delivering value to customers, through differentiated and effective solutions that are easy to understand and adopt by customers, prospects and partners. Under Christian’s stewardship will be the suite of IFS products and solutions that include: IFS Applications, IFS Maintenix and IFS Field Service Management. In his role, Christian will partner with Thomas Säld, IFS senior vice president of product development, to translate customer requirements into tangible products that deliver unmistakable business value.

Commenting on his appointment, Christian said: “IFS has all the ingredients to deliver value to customers like nobody else: great products, committed employees and an engaged customer base. I’m joining because I see a real opportunity for making a difference for businesses around the world and for growth within our target markets. I am confident that our products and solutions will attract even more top tier global customers in the future.”

Darren Roos, CEO of IFS, added: “Being able to attract the industry’s top talent is testament to the journey IFS is on. The strength of our management is second-to-none and having Christian join demonstrates our long-term commitment to our customers who will benefit from his innovative yet pragmatic approach, and his focus on delivering value.”

Based in Seattle, Christian will be working with customers, partners and colleagues across the world to deliver and grow IFS’s product proposition. Prior to joining IFS, Christian was the chief product officer and senior vice president of SAP S/4HANA Cloud, and general manager for Microsoft Dynamics ERP.

To read more about the IFS executive team, please visit: https://www.ifsworld.com/corp/company/governance/executive-management/
FlyBosnia joins growing international OASES community

Newly established, Sarajevo-based FlyBosnia announced in mid-August 2018 that it has selected Commsoft’s IT system, OASES, to support its planned operations. Established by the Saudi Arabian Al Shiddi Group, FlyBosnia is currently submitting its application for an AOC and intends to acquire an A320 family for operations from Bosnia to various destinations.

OASES is renowned for its technical sophistication as well as its intuitive user interface and is structured in a modular format to provide maximum flexibility and scalability, making it ideal for start-up operations. FlyBosnia has opted for the Core, Airworthiness, Materials, Planning and Line Maintenance modules which will be accessed through Commsoft’s Private Cloud service, avoiding any need for the airline to invest in new hardware.

Nick Godwin, Commsoft’s Managing Director, commented: “We’re delighted to welcome FlyBosnia to the growing, international OASES family. This is the eighth new OASES contract we’ve signed this year and FlyBosnia will be our first direct customer in Bosnia Herzegovina.”

Read the full story on Aircraft IT Website

Web Manuals doubles US customer base

In mid-October 2018, Web Manuals celebrated another record year of growth after more than doubling its American client base since NBAA 2017.

More than two-thirds of Web Manuals’ 45 US-based customers are from within the business aviation industry, taking advantage of the company’s software to instantly update pilots and crew with any regulation changes, meaning they are always compliant and ready for the next flight. This take-up also demonstrates the software’s ability to provide significant savings to business jet operators through the rapid authoring, reviewing, publishing and distribution of operations manuals, reducing administrative costs as well as the time taken to produce and update documentation.

Web Manuals’ current global client base now reaches more than 170 customers, which is a 70% increase since last NBAA and demonstrates the digital shift taking place in the wider aviation industry.

To support its international growth, Web Manuals has announced the launch of its New York office, with a Singapore office due to open in 2019, cementing the company’s position as the global leader in digital documentation.
Boeing Global Services’ Enhanced Digital Solutions focus on customer speed and operational efficiency

Enhanced capabilities enable better, faster decision-making based on real-time data, powered by Boeing AnalytX
At MRO Europe on 16 October 2018, Boeing announced service enhancements to its integrated digital solutions portfolio that enable better, faster operational decision-making for customers. The announcement comes alongside a series of agreements and orders that demonstrate the value of this portfolio.

“The amount of data coming off an airplane will double in the next twenty years,” said Mike Fleming, vice president of Commercial Services for Boeing. “We are evolving our portfolio of tools and developing new applications and analytics to help customers take action to improve their operations.”

New integrated digital solutions include:

- Boeing has acquired rights to the Crossmos software product from Frankfurt, Germany-based CrossConsense. The application will be adapted for development of a new Boeing Mobile Logbook, providing a full-fleet solution to enable flight and maintenance crews to enter and share maintenance information.

- Jeppesen’s FliteDeck Pro electronic flight bag has been enhanced with a new weather layer feature that provides increased situational awareness from enhanced data, integrated NOTAM and other flight data updates.

- An application version of Boeing subsidiary Jeppesen’s Fuel Dashboard Pilot Insight enables pilots to make informed decisions on discretionary fuel in as little as 10 seconds.

- Boeing’s new Reliability Advisor tool uses data analytics to automate and enhance the process of using logbook data to identify and address cabin maintenance and reliability issues across an airline’s fleet.

- Boeing’s new RouteSync tool streamlines the pre-flight process by instantly uploading flight plan and aircraft performance data, eliminating three to five minutes of prep time on domestic flights and up to 15 minutes on international routes.

Boeing also announced new agreements to provide customers with digital solutions, all powered by Boeing AnalytX:

- Air Europa will adopt Software Distribution Tools and Airplane Health Management (AHM) for its 737 MAX fleet.

- Swiss International Air Lines will deploy Jeppesen Crew Tracking, to improve recovery from disrupted operations by detecting, resolving and following-up on changes to originally published crew plans.

- Travel Service will deploy Software Distribution Manager for the 737 MAX and Maintenance Performance Toolbox for its Next-Generation 737 and 737 MAX fleet.

- United Airlines has renewed its use of Crew Pairing and signed an agreement to add Crew Calibration, which takes Crew Pairing to the next level by identifying systematic patterns in data in order to improve future crew planning.

Operating as one of Boeing’s three business units, Global Services is headquartered in the Dallas area.

Read the full story on Aircraft IT Website

Web Manuals, a supplier of digital documentation solutions for the aviation industry, announced the launch of its New York office in mid-October 2018, as the company continues its worldwide growth. The new office, headed up by Web Manuals’ CEO and founder, Martin Lidgard, will be the first East Coast location for the company, which already has international hub centers in San Diego, Melbourne and its headquarters in Malmo, Sweden.

Lidgard said: “As our US customer base increases month-on-month, a New York office was the next logical step for the company. This decision allows us to be even closer to our US customers, which have more than doubled since last year’s NBAA, and demonstrates another tremendous milestone for Web Manuals this year. In 2018, not only have we rolled out Hurricane, the seventh version of our software, but we have also launched our customer portal and online store, making Web Manuals more accessible and user-friendly than ever before. We’ve had a huge amount of positive feedback from our customers, new and existing, who have made the seamless transition to our revolutionary digitization and regulatory compliance software.”

With a growing client base now reaching more than 170 customers worldwide, a 70% increase since NBAA 2017, the company is rapidly expanding to offer regional hubs worldwide, in addition to its around-the-clock online support offering, available to all customers. A Singapore office is due to open in 2019, serving Asian airlines, training centers, business aviation charter operators, cargo and helicopter fleets.
Airbus Helicopters awards Rusada Elite Status as part of Maintenance Information System (MIS) software integration program

In mid-October 2018 it was announced that Airbus Helicopters has awarded Rusada elite status for the development of software connectors to connect its MRO system Envision with Airbus systems. This will include the Airbus Skywise data platform.

Rusada is the only provider to be awarded Elite status in recognition of the fact that all connectors are validated by Airbus and operational for the benefit of customers.

“Through this agreement, we’re paving a two-way digital street between Airbus Helicopters and Rusada’s maintenance data within ENVISION nGen for helicopter operators, facilitating the automatic sharing of data and avoiding human-error prone and time-consuming manual transfers. This capability takes us one step closer to creating a complete digital ecosystem, while simultaneously helping our customers along their own digitalization journeys,” said Matthieu Louvot, Executive Vice President of Customer Support & Services for Airbus Helicopters.

By partnering with Airbus to create these digital pathways, Rusada is guaranteed easier and faster access to Airbus’ rotorcraft data and technical documentation — especially when a new aircraft is put into operation — which feeds their maintenance information systems and informs a customer’s maintenance planning.

Rusada’s Airbus helicopter operator customers benefit from knowing their maintenance software always contains the most up-to-date information about their aircraft. They can also automatically transfer operational flight data to Airbus applications like Fleetkeeper and FlyScan. And they can become part of Skywise, Airbus’ open data platform, first launched with commercial aircraft in 2017, that can store and mine vast quantities of aviation industry data, turning it into actionable intelligence that improves operational performance and business results. Once maintenance data from across the industry starts entering Skywise, customers could compare their maintenance processes against similar operators and look for patterns and efficiency gains.

“Information related to helicopter components — like part numbers, hours in service, and modifications or overhaul activities performed — is an important data set that helps paint a complete picture of an aircraft or fleet’s history and experiences. As an operator, by using Skywise to benchmark maintenance activities against others, users might see that similar operators replaced a certain part every 2000 hours, whereas this user replaced the same part every 1000 hours. This indicates that maybe the user is doing something wrong, or that there’s something they could be doing differently to save time and money,” said Stephanie Bonnefoy-Fourie, head of Connected Services at Airbus Helicopters. “We in the helicopter community have so much to learn from each other, but in order to see benefits like this, we need data.”

Read the full story on Aircraft IT Website
Ramco Systems teams up with Airbus Helicopters

For seamless digital exchange of aircraft data which will reduce fleet induction time by 90%

Global enterprise cloud software specialist Ramco Systems announced in mid-October 2018 that it has teamed up with Airbus Helicopters SAS to develop an MIS Data Pack Connector — a product feature that automates Airbus’ fleet management data, with Airbus systems.

Ramco, one of only four vendors shortlisted for the initiative, will build a Management Information System (MIS) data pack connector for Airbus Helicopters, which will be bundled with Ramco’s own Aviation Software for fleet maintenance and engineering (M&E). With the MIS connector, Ramco clients who use or plan to buy Airbus Helicopters can import each aircraft’s specific configuration data and maintenance programs to their Ramco enterprise system in a matter of days, compared to more than a month required by traditional ERP systems. By automatically importing the latest available data packs directly from Airbus Helicopters, the data pack connector removes manual error and eliminates the need to collect data from disparate sources when inducting new aircraft, thereby expediting the aircraft induction process by ~90%.

“Through these agreements, we’re paving a two-way digital street between Airbus Helicopters and the companies that manage maintenance data for helicopter operators, facilitating the automatic sharing of data and avoiding human-error prone and time-consuming manual transfers,” said Matthieu Louvot, Executive Vice President of Customer Support & Services for Airbus Helicopters. “This capability takes us one step closer to creating a complete digital ecosystem, while simultaneously helping our customers along their own digitalization journeys.”

By partnering with Airbus to create these digital pathways, Ramco Systems will get easier and faster access to Airbus’ rotorcraft data and technical documentation — especially when a new aircraft is put into operation — which feeds the maintenance information systems and informs a customer’s maintenance planning.

Commenting on the association, Virender Aggarwal, CEO, Ramco Systems, said, “We are pleased to work with Airbus Helicopters to develop the MIS data pack connector, which will be a valuable addition to Ramco’s global aviation enterprise offerings. Our clients will soon be able to enjoy increased visibility of their Airbus assets, as well as productivity gains and improved airworthiness. We are confident that this exciting venture will benefit new and existing customers of both Ramco Systems and Airbus Helicopters.”

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Web Manuals signs Solairus Aviation, cementing its position as a valued digital solutions provider

Web Manuals announced in mid-October 2018 at NBAA-BACE that private aviation services company Solairus Aviation had become its latest customer. With its managed fleet of 145 aircraft and 55 base locations across North America, Solairus Aviation will become Web Manuals’ largest business aviation customer to date.

Solairus Aviation will use Hurricane V7, the latest version of Web Manuals’ software, to author, review and distribute its documents and manuals to staff. Hurricane transforms the new user experience with more than 200 guides, including step-by-step walkthroughs and 35 video demonstrations, making user adoption easier and quicker than ever.

Martin Lidgard, CEO and founder, Web Manuals, said: “We are incredibly proud to be announcing Solairus Aviation as our latest business aviation customer. We will work with them to support their operations, meaning they can remain agile and competitive and focus on other areas of the business. This is a great step for Web Manuals and further proof that we have cemented our position as one of the most valued digital solution providers in the industry, able to work with small companies right up to big operators like Solairus Aviation.”

Tom Benvenuto, senior vice president of flight operations, Solairus Aviation, added: “Seeking a digital solution to our paper manuals has long been on our radar and we are delighted to be onboarding Web Manuals to take care of this for us. The benefits are significant, chiefly the amount of time and money that will be saved and better utilized in other areas of the business. We are really looking forward to getting started with Web Manuals and seeing the benefits of their innovative solution.”

Read the full story on Aircraft IT Website
CASE STUDY: Using Flight Data to support fuel savings at Transavia
Emmanuel Cachia, Flight Operations Director, Transavia and François Chazelle, CCO, Safety Line
Transavia’s efforts to reduce its overall fuel consumption by putting to work the vast amounts of readily available flight data for each aircraft to create tail number specific machine learning performance models.

CASE STUDY: Air Iceland Connect’s EFB project
Magnus Sigurjonsson, Pilot | EFB Manager, Air Iceland Connect and Wim De Munck, CTO, AVIO
Air Iceland Connect outlines its extensive EFB project, used by flight crew throughout all phases of flight; connectivity solutions (in-flight and on-ground) plus how they achieved a paperless flight deck.

WHITE PAPER: A fuel Efficiency masterclass Part 2
Sander de Moor, Global Lead - Fuel Efficiency, Aircraft Commerce Consulting
The economic impact of fuel efficiency management is huge. Part 2 of this article continues to present practical thoughts on how fuel is burned and examples on how to lower fuel consumption and substantially improve profitability.

PLUS News, Vendor Flights Logs and The Technology
CASE STUDY: THOMAS COOK AIRLINES

Thomas Cook
eTechLog (ETL / ELB)

Rich O’Mara, ETL & Big Leap Project Leader at Thomas Cook Group Airline shares a Multi-AOC implementation
Just to set the scene before we look at the main topic, the ETL/ELB implementation, I’ll share a brief profile of Thomas Cook Group Airline, Europe’s tenth largest airline if you count the aircraft in all group fleets (Figure 1).

FIGURE 1
There are 100 aircraft across the group and 8,500 employees transporting 18.5 million customers each year to generate GBP3.2billion revenue. Thomas Cook Group Airline operates under five AOCs (Air Operator’s Certificates) and keeping all of those AOCs aligned is a major management task with the ETL/ELB being just a small part of that.

THE ELECTRONIC TECHLOG (ETL) IN THOMAS COOK GROUP AIRLINE
When talking about ETL, we often categorize the introduction processes available as the ‘Big Three’. It’s possible to introduce an ETL from a paper techlog, some move from a legacy electronic techlog to a new generation, integrated solution or it’s possible to start from scratch — set-up an AOC and run an airline with an eTechlog from day one. Thomas Cook Group Airline has done all three in the last year.

In Scandinavia we went from a paper techlog to the Panasonic Toughpad with the Danish authority. In the UK, the airline went from a legacy electronic techlog which wasn’t integrated with AMOS (Thomas Cook Group Airline’s MRO system) to the Toughpad being integrated into AMOS. Finally, in Spain, it was a new airline, Thomas Cook Airlines Balearics, launched from scratch with the new ETL. The first Spanish Airline to have an ETL approved with the Spanish authority. Each of those projects had their challenges, on top of which, we had to try to keep them all aligned. That accounts for three of the five group airlines: the remaining two, both German airlines, are next in line as we implement the ETL across the business.

“…Conduce took over the provider of the ETL/EFB which was, by then, a Panasonic Toughbook with both EFB and ETL function on it. Minimising the number of computers in the flight deck seems sensible but everybody wanted to use it at the same time…”

THE JOURNEY TO AN ETL
In this article, I want to share our journey to the ETL (Figure 2) at the time of writing. I’ll include the good and the bad things that we experienced plus the lessons that we learned from the exercise, probably the most useful bit that readers can incorporate into their own plans.

Our journey to a Group eTL

ETL History
The earliest ETL in Thomas Cook goes back as far as 2006 (Figure 3) when MyTravel Airways had the first UK ETL approved. That system was on a standard Windows laptop with an integrated EFB and ETL. MyTravel merged with Thomas Cook in 2008 and after the merger, the ETL was spread to the rest of the airline. The original intention had been to integrate the ETL with RAL, the MRO in place at the time but after the merger the decision to move all airlines onto AMOS meant that ETL integration slipped down the priority list until after the MRO system merger.
ETL history

MyTravel Airways gain first UK CAA approval of an Electronic Techlog

MyTravel & MyTravel Merger

Roll out of eTL and EFB applications to entire Thomas Cook UK fleet

Conduce takeover the service of the eTL/EFB

EFB and eTL applications decoupled

eTechLog® chosen for new Group ETL solution.

2006

2008

2009

2012

2013

2016

FIGURE 3

In 2012 Conduce took over the provider of the ETL/EFB which was, by then, a Panasonic Toughbook with both EFB and ETL function on it. Minimising the number of computers in the flight deck seems sensible but everybody wanted to use it at the same time during the hour before take-off. Pilots wanted to complete performance calculations, engineers wanted to close down defects and, even with two devices in the cockpit, it couldn’t be managed easily because there were parallel independent calculation requirements for the pilots for safety reasons. So the decision was taken to split the two functions with the pilots adopting an EFB-only solution and with the Panasonic Toughbook continuing to be used for the ETL. However, the device in use at the time was getting quite old and had to be renewed. Thomas Cook Airlines looked into the market for an ETL to replace the old solution. In light of existing good relationships with Conduce and with CrossConsense, it made for a hard decision. Both companies were really good but one had to be picked and that was Conduce.

A new ETL was needed quickly because the old ETL software was running on old hardware and on an old operating system which was becoming increasingly unreliable. Also, there were lots of areas where there was duplicate work: for example, the cabin log. In the UK airline, there was a paper cabin log but an electronic techlog. One of the cabin crew would make an entry to the cabin log; if it was an airworthiness matter, the captain would then type it into the electronic techlog which, because it wasn’t integrated, would send an electronic message to a tech clerk who would type the entry into the maintenance system. There was a lot of duplication of effort and each of those manual inputs was an opportunity to introduce error.

Conduce takes over the provider of ETL/EFB

The airline also wanted a single way of working, a prerequisite to being a large and successful airline. Introducing a group electronic techlog was a way of making sure that everybody changed to the same single way of working. As well as being efficient, this delivers better compliance oversight and improves safety, a key factor in Thomas Cook Airlines’ decisions, not only regarding the eTechlog but also in other areas of the business.
Business Benefits
These are not exclusive to this project or to the solution that Thomas Cook Airlines selected. With any such project, there will be a reduction in the amount of errors in the system; but the biggest unexpected discovery from this project was the number of data errors that were being fixed by the tech clerks at the point of data transfer from the ETL to the MRO system. We’ve already seen that the ETL was being completed by the pilots or by an engineer or both; the data was then going to the tech clerks and, as they typed it in to the MRO system, they would make corrections. Good from one point of view but, from another viewpoint, there was no oversight of that process; there was no management of the errors or any feedback to Operations or Line Engineering about the errors they were making so that they could reduce them. Also, no-one was making sure that the corrections were correct. When the first trial of a single aircraft was run, before the data was going into the live system, we could not understand the differences between what was going into the test system and the live system which, at that point, still had the tech clerks typing in the data they saw whereas the test system was getting the raw data straight from the machine. There were huge differences with incorrect flight numbers, incorrect city pairs and errors in flight times. So the project team gradually had to build in additional checks and balances to make sure that data going automatically into the system is as accurate as it can be.

Over and above that, Thomas Cook Airlines gained the benefit of real-time analysis with instant access to the entire fleet technical status as soon as the flight log data has been entered. We’ve already covered the benefit of a fully integrated system but the other thing that no business can ignore is that the efficiency this delivers means reduced turn round times, improved on-time performance and reduced costs.

The Conduce system that Thomas Cook Airlines uses does integrate with the airline’s MRO system, AMOS. It’s also important to remember that the technical implementation of this project is the easy bit; fixing technical problems as they arise is straightforward... identify the problem, determine the available solutions, select one, implement it. The difficult thing is change management outside of that: getting people to adapt to processes, getting individuals trained to the right standard and to retain the training that they’ve been given. That’s where all of the challenges encountered by this project have come from.

“...Thomas Cook Airlines gained the benefit of real-time analysis with instant access to the entire fleet technical status as soon as the flight log data has been entered.”
The eTechlog workflow
This is quite a complex picture, in Figure 4, to illustrate the workflow for the eTechlog.

The eTechlog Workflow

Aircraft flies the sector
The pilot records any defects & completes the journey log with ACARS data auto-populated
The aircraft lands and is in service under line maintenance control
Cabin services raise cabin defects on eCabinLog
Workorder references sent back to eTL

The sector record is transmitted to AMOS
Line engineering perform pre-flight checks – fix defects, perform planned maintenance tasks & flush as required

FIGURE 4
The important thing is what Thomas Cook Group Airline added to the system. The original planned workflow did not have the ACARS planned integration (top left of Figure 4), it was not part of the original scope. Compared to the start of the project the scope expanded considerably, but each expansion was for a very good reason with safety and data accuracy being key parts of that. The ACARS data now audits the time that the pilot enters onto the device. Pilot entered times are subject to a series of checks that have been incorporated into the ETL software and which look at the schedule, the ACARS messages, the city pairs, if they all match then the data can go straight into the MRO system. If there are any issues, if anything doesn’t match, that flags up to Maintrol who get an email. They can then go to a webpage and look at a queue of flights awaiting manual audit. This process uses the four-eyes principle so that, if something doesn’t look right to the system a human is tasked to go in and check and reproduce, in a controlled manner, that original tech clerk data correction facility but on a smaller scale with traceability.

The next stage of software, released recently, will auto-populate the ETL OOOI times with ACARS data thus taking away another chance for someone to mistype: so, at the moment about half of the flights going to the audit process are there because of a mistyped time by a pilot. Now, the pilot will just review the ACARS data and, if it ties in with what they are expecting, it will automatically go through into the system.

I’ve already mentioned scope creep and one of things that we found was that people really like the ETL, they like the website, they like all the data that’s there; but not all the data that is collected on the ETL goes into AMOS. So people can’t always get reports on things that they want to know about, which means that reports have had to be built from eCentral 8, the middleware, on things like anti-ice reports, fuel and EU ETS (it was much easier to get the data out of the Conduce middleware than out of AMOS) as well as the autoland reports. These were not part of the original project scope but because of the benefits of doing each one of those individual elements they’ve been added on and delivered to the business.

Prior to the techlog rolling out, the average time it would take for a paper techlog page to be input into the MRO system was between an hour and an hour and a half but could be up to 10 or 11 hours if it was the wrong end of a shift and/or somebody was off sick. Now, that data is going into the AMOS MRO system in a minute to 90 seconds. We’re really pleased with that increase in speed and almost real-time visibility of the aircraft status in AMOS. Maintrol can see whether data has gone into AMOS or not: they can see the status of all the devices on the website and that includes whether the data is in AMOS yet or not.

PROJECT TIMELINE
The project timeline (Figure 5.1) illustrates the journey that Thomas Cook Airlines has taken.

FIGURE 5.1
The UK project timeline was an area where we gained a lot of information about what could be done better in the future. The software was rolled-out, we were all
happy with the software with which we were going live; the pilots and engineers were trained and then we found a couple of bugs which were to do with the data quality issue referred to above and which had to be addressed. It was necessary to go back, produce another version, test it and roll it out. By the time we had rolled out the live version to the pilots and engineers four or five months had passed since their training. Although from a user perspective, the software hadn’t changed that much — the interface was the same, the process was the same — there had been quite a gap between the training and the device going live and that wasn’t ideal.

The other aspect was that, for the UK, because they went from an old ETL to a new ETL, we took the view that this was a small change which could be managed using computer based training (CBT) only. In hindsight, that was not the case. When the Scandinavian roll-out came, we had learnt from the UK experience so we used both CBT and ‘hands-on’ training and rolled-out within a month of the training to the whole fleet. It went really well with issues in Scandinavia amounting to only a very small fraction of the issues that we had encountered in the UK.

The Balearics went live with the ETL from day one and so it was part of the pilots’ induction training which includes ETL training; then, as soon as they’re online, they’re working with the system. There have been no issues reported from internal elements.

Third-party training is an area of challenge with Thomas Cook Airlines having much less control over third parties; so we deliver both CBT and face-to-face training. However, when somebody new joins another organization, they don’t necessarily get the same degree of training. That means there have been issues with line engineers at third-party bases not quite following the process as Thomas Cook would like.

But the good thing is that Maintrol have devices so that if an engineer calls up and doesn’t understand what is going on, Maintrol can follow through on a device in front of them. Also, there is 24/7 support from Conduce who can connect with any device that’s online...

As Figure 5.2 shows, there have been more AMOS database mergers and more AMOS upgrades which have forced the project team to take further pauses.

The next step, in April 2018, was a post-implementation review with the UK, Scandinavia and the Balearics to ask them what had or had not gone well. A list was compiled using Lean methodology to rank all the insights contributed and it was pleasing to note that there were no significant on-going issues. There were a...
couple of wrinkles to be ironed out which has been done with some software and process changes to try and make the system easier for the crews to use.

All of those lessons will be used for the Condor roll-out which is planned for late 2018. Thomas Cook Group Airline has already met with the LBA, a meeting that effectively replicated what was done with the Danish authority. There is an element of herding cats in all of this. Although everyone is working to EASA regulation, each national authority has to approve which means that interpretations of what a regulation means slightly differ. So, we have to gently try to persuade them that Thomas Cook Group Airline aims to have a single solution for all of the airlines in the group without divergence which is a challenge in this regard.

After the Condor roll-out, we’ll consider Thomas Cook Aviation, the group’s new AOC in Germany, and then will be looking at Phase 2, feature testing and roll-out. That will mean two-way communication between the ETL and AMOS. At the moment: defects are raised in the ETL; they get sent into AMOS and then the work order reference comes back. In the future, we want to be able to set defects raised in AMOS into the ETL.

All Thomas Cook Airlines UK, Thomas Cook Airlines Scandinavia and Thomas Cook Airlines Balearics’ aircraft are now live with the ETL.

LESSONS LEARNED

Get your NAA on board. It is always smart to have the authorities involved into the process early to address particular regulation for the respective market.

If you’re going for a multi-AOC roll-out, try to get the relevant CAMOs aligned to smooth the integration with all relevant stakeholders involved in the development.

Data quality; as mentioned above, we had not appreciated how much data was being incorrectly input to the system. Data must be as accurate as possible.

Training is key; it really is important to get people on board and understanding why the change is being made as well as how to do it.

Processes will need to change. Thomas Cook Group Airline found that the ETL drives process harmonization backwards through the organization and that process alignment is very important so that you’re not constantly managing differences.

As with any project, keep people informed. It’s a constant challenge in an age of communication overload; it’s not possible to just transmit all the time. Make sure that the messages delivered are short and sweet and to the point, otherwise they’ll just get swallowed up in the mass of communications that we all see.

RICH O’MARA

An experienced international programme manager within the airline industry Rich has gained experience and success in delivering multi-national business change initiatives. He is also a current Captain on the A330 and A320 with extensive Flight Operations and Maintenance Management experience.

THOMAS COOK AIRLINES

The five airlines in Thomas Cook Group Airline have 100 aircraft and 8,500 staff. Fleets include Airbus A320, A321 and A330 types as well as Boeing 757 and 767 aircraft. Fleet management is a joint enterprise across the group with further integration planned.
MISSED AN ISSUE OF MRO?
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ChronicX: how it was developed and what it does

An Engineer with a strong technical background in Software solutions and tools, Raman is passionate about solving the practical problems in the aircraft maintenance world using technology enabled solutions. He has worked in various geographies, understands the challenges being faced by large organizations operating under a regulated environment and is working on augmenting and enhancing the CaseBank suite of products.

**Aircraft IT: Your name, your job title and the name of the business?**
Raman Sharma: Raman Sharma, Senior Product Manager, CaseBank Technologies, Inc., a division of ATP

**Aircraft IT: How did ChronicX get started?**
RS: CaseBank Technologies started in 1998 with a troubleshooting technology that could capture and share the field experience of maintenance technicians so that they could increase first time fix rates. This project is known today as the SpotLight® Interactive Troubleshooting Solution. Much of that experience was mined from maintenance records using a text analysis tool that we developed. In 2008, a SpotLight customer saw the tool and suggested that it could be used to alert them to repeat defects. This idea became the ChronicX® Recurring Defect Management Solution.

**Aircraft IT: What is the attraction of aircraft-related software?**
RS: In aviation, equipment is complex and diagnosis is challenging. Our main objective is to provide solutions that improve aircraft reliability and bring down the cost of unplanned maintenance. The ChronicX solution gives reliability and maintenance control unprecedented oversight of aircraft history related to specific diagnosis and repair activities. The result is a reduction in recurring defects, which has an important and positive impact on business with increased productivity and improved flight readiness.

**Aircraft IT: What is the guiding business principle that drives ChronicX?**
RS: The guiding principle of ChronicX is ‘efficient awareness of recurring defects’. ChronicX effectively ‘reads’ the text in maintenance records to automatically find repeat defects and provides a powerful browser-based interface. With ChronicX, instead of spending time sorting through data, maintenance professionals can focus on repairing.
Aircraft IT: What has been the ChronicX solution’s greatest technical achievement to date, and why?
RS: I’d say it is the degree to which ChronicX has been able to increase the detection of recurring defects while at the same time nearly eliminating false alerts, compared to traditional approaches. Maintenance records are characterized by cryptic language rife with coding errors and inconsistent descriptions. Solutions in the market are good at finding exact matches in data fields, but none of them are able to correlate text fields. Most rely on the ATA codes, which leads these systems to miss many repeats and generate many false alerts. ChronicX solves that important problem by using natural language processing and artificial intelligence to analyze text fields and ATAs in maintenance records, then correlate them to identify and report repeating defects.

Aircraft IT: What has been the ChronicX solution’s greatest business achievement to date, and why?
RS: We are very proud of the way that ChronicX has become ‘the tool’ for repeat defects and history searches. Customers have eliminated all their outdated processes and workflows, and rely uniquely on the ChronicX results to manage recurrent defects. In two years this solution has grown from supporting 400 to over 5700 tails worldwide in both large and small airlines.

“Recently a large airline said they didn’t buy an extra aircraft, as originally planned, because they had improved their seat availability enough that they no longer need it — thanks to the ChronicX solution now also identifying recurring cabin-related defects.”

Aircraft IT: What have been disappointments of the ChronicX solution and what have you learned from them?
RS: Initially, cabin defects were not included because they often included ‘scans’ where lists of seats appeared in a single write-up. We have now cracked this problem, and it has translated into greater benefits for our customers. Recently a large airline said they didn’t buy an extra aircraft, as originally planned, because they had improved their seat availability enough that they no longer need it — thanks to the ChronicX solution now also identifying recurring cabin-related defects.

Aircraft IT: In a sentence, how would you summarize what ChronicX does for aviation customers?
RS: The ChronicX solution replaced our customers’ manual processes with an automated service that quickly and accurately finds repeat defects. Furthermore, the ChronicX database becomes a powerful repository of cleaned data that the airlines can use for history searches, reliability analysis, and automated alerting and reporting.

Aircraft IT: What is new on development horizon for the ChronicX solution?
RS: We have a long list of advanced development features, such as automated recoding and intelligent history lookup from smart phones. We work closely with our airline customers to decide which features will best improve the ChronicX solution to support their goals of improving first time fix rates and improving maintenance productivity. In line with this, on November 6-8 this year, we will host our User Conference where customers have direct input and guide our new developments.

Aircraft IT: What will be the next big thing in Aviation IT?
RS: An ecosystem with the integration of data downloads, maintenance history and mobile community knowledge for troubleshooting.

Aircraft IT: What do you want your customers to say about ChronicX?
RS: We want our customers to keep saying the sort of things they are saying now. For example, one of our airline partners said, “With ChronicX, we can do in 5 minutes what we used to do in four hours”. Another said, “It allows us to identify and act on operational threats earlier.” We work hard to provide them with a service that they say great things about.

Aircraft IT: Raman Sharma, thank you for your time.
Big Data: Racing to platform maturity

Yann Cambier, Senior Manager, ICF shares some thoughts on Big Data: where we are, what is changing and what it will mean
This article will be about what MRO players are doing with digitization and, as figure 1 illustrates, everybody is trying to have a program to leverage the technology.

**INTRODUCTION**

For the past three years, the digital race has accelerated in the MRO world across all type of players.

**THE CURRENT SITUATION**

Looking at fleets, there are currently about 29,000 aircraft in service (figure 2). The air transport fleet is set to grow to ~39,000 aircraft by 2027, with delivery of ~17,000 “new technology” aircraft over the decade.

One big question of the past three years has been that, while we talk about big data and there is more data generated so it’s possible to undertake more analysis, to what ends are we doing it? In the past twelve months there has been evidence of the results of predictive maintenance. For instance, easyjet and Skywise have just signed a five year agreement and, at the time of writing, there had already been 31 instances of Skywise correctly predicting faults before they occurred in service, allowing the carrier to intervene and remove components before they failed, thus avoiding 31 delays and/or cancellations. Cathay Pacific has tried Honeywell’s predictive maintenance trial program and has reduced its APU related delays by 51%. Delta has hired a team of data scientists to work on predictive maintenance for its fleet and has significantly reduced engine events as a result. They avoided 1,000 engine events over one year, achieved a 100% completion factor for 241 days during 2017 with a 98% reduction in maintenance related cancellations over the period 2010 to 2016. That suggests that, for airlines, one objective of predictive maintenance is to improve dispatch reliability.

In this article we’ll cover three areas of interest. We’ll review the current industry situation; then we’ll look at the latest market developments; and finally we’ll consider some hypotheses on what are the implications of this digital race for different players in the market.
the fleet, are expected to be about 50% of the fleet in 10 years’ time.

But, as we said above, the big question is that, although there will be a lot more data, what can be done with it, how can value be derived from it and, for airlines, how will that benefit their operations? For MRO suppliers it’s how can they use that data to generate more revenue or reduce costs?

Putting some of this into context (figure 3), aircraft operations can be divided into nine phases from flight planning to post-flight debrief and then maintenance.

INDUSTRY CONTEXT
ICF identifies nine primary phases within aircraft operations; accounting for ~$500B of Direct Operating Costs...

Looking where the costs are incurred, the main areas are taxi, enroute, approach and maintenance. The first three of those phases are heavily linked to fuel consumption. At the bottom of the chart, it can be seen that most of the operating costs are linked to fuel, employee costs and then maintenance. But then, if we look at these phases in terms of ‘what is the digitalization of each of these phases?’ (figure 4) we see that maintenance is one of the least digitized phases of aircraft operation.

...The level of digitization across the nine categories varies; Maintenance is the least digitised activity at this time

FIGURE 4
Most airlines already have a flight planning system in place from say Lufthansa Systems with Lido or the Jeppesen suite. A lot of airlines also have electronic flight bags (EFB). However, when it comes to maintenance, there is a lot of work going on, a lot of solutions being developed and tested but nothing much has changed over the past twenty years in terms of the way people do maintenance and how they maintain their records, etc.
Today, the big topic is predictive maintenance. As we already know, engine health monitoring has been happening for a long time, at least twenty years. Now, there is an effort to try to do the same with other aircraft systems. As figure 5 shows, there are a few players using aircraft data: the OEMs who want to make their systems more reliable; the Maintenance Control Center which has to do it from a regulatory standpoint; and then there is the Engineering and Maintenance division who have to try to keep the aircraft in the air. The more airlines can predict the serviceability of their aircraft, the easier it will be to avoid technical delays and cancellations.

### INDUSTRY CONTEXT

Within the MRO world, Aircraft Health Monitoring – The analysis of aircraft data health data – is the key initiative

### AIRCRAFT HEALTH MONITORING SCHEMATIC

Looking at the data value chain, it runs from acquisition with these new generation aircraft mentioned above, transmission which can be ACARS or a technician using a USB stick... all the way to undertaking the actual maintenance action and generating the records of that maintenance activity (figure 6).

### FIGURE 5

If we think of aircraft health monitoring, it’s very much a function of analysis and MRO action. With analysis, there are two options. First with the typical way of diagnosis: is the part serviceable, yes or no? If yes, great; if no then it will have to be removed. The other type of analysis is prognosis: is the part serviceable, yes or no, and if yes, for how much longer will that be true? It might be serviceable today but might not have much life remaining and, therefore, it could still be sensible to remove it. Coming to the association with the MRO action, if the part is serviceable the decision might be to leave it on the aircraft or might be to remove it because it can be expected to fail in a short time which has the potential to become an aircraft on ground (AOG) delay and/or an unscheduled maintenance event.

“The other type of analysis is prognosis: is the part serviceable, yes or no, and if yes, for how much longer will that be true? It might be serviceable today but might not have much life remaining and, therefore, it could still be sensible to remove it.”
THE LATEST MARKET DEVELOPMENTS

That’s the context, but what are MRO Players doing with regards to digitalization? In the last three years, there have been a lot of partnerships established across the value chain (figure 7).

OEMs & MROs are embracing partnerships to cover the MRO data value chain...

DATA VALUE CHAIN PARTNERSHIP EXAMPLES

<table>
<thead>
<tr>
<th>Acquisition &amp; Synthesis</th>
<th>Transmission</th>
<th>Storage</th>
<th>Analysis</th>
<th>MRO Planning</th>
<th>MRO Action</th>
<th>Records Keeping</th>
</tr>
</thead>
</table>

For instance, Rolls-Royce is partnering with SITAONAIR and that partnership centers around data cleaning and data transmission. Boeing is working with Microsoft from the Cloud storage standpoint. Airbus has partnered with Palantir which is more about the analytics, and then Lufthansa Technics with FLYdocs which is about record keeping. Looking at the main players in the industry (figure 8) we can see how all of them are taking slightly different approaches. Airbus has a lot of partnerships in place such as with Rockwell Collins for data acquisition, with transatel for connectivity on the ground and transmitting data over 3G and 4G, and Palantir on analytics. Whereas, looking at Air France Industries, they have decided to do a lot more in-house on the grounds that the main business is an airline, they know their aircraft and how they perform plus they have maintenance expertise making their own business the best place to develop their own solutions.

Looking at product lifecycle, the innovation stage is now passed (figure 8); people have been developing maintenance solutions for a long time. Now we are more in the early adoption phase.

LATEST DEVELOPMENTS

The MRO industry has entered the ‘expand’ phase of the digital maturity lifecycle; numerous suppliers are developing digital tools that provide a solution for a single issue.

Airbus AIRMAN GE FlightPulse™
BOEING SAFRAN SFCO2®
AHM Prognos®

Increasing numbers of airlines are adopting these processes but it’s not yet a wide majority. And, if we look at the product: previously, there were products that addressed one key issue. Airman was the innovative predictive maintenance solution that was focused very much on maintenance. Then, in recent years, there have been developments such as Safran with their SFCO2® which focuses on fuel consumption while GE FlightPulse™ focuses on flight operation. Now we are seeing the likes of Airbus with skywise and Lufthansa Techniks with AVIATAR trying to achieve most of the things that are possible but through one platform: maintenance related solutions, flight ops and some of them do training; they are trying to cast a wide net and do everything under one umbrella.

To focus on one case, Airbus with skywise, they claim to have around two thousand aircraft participating in their platform (figure 9); so there is definitely an industry interest in the program.
To expedite industry adoption, Airbus offers a free core platform in exchange for access to airline aircraft data.

**LATEST DEVELOPMENTS**

Moore's technology adoption curve

- **Innovators**
- **Early adopters**
- **Early majority**
- **Late Majority**
- **Laggards**

**Launch**

- Core platform
- User-centric portfolio of apps
- New value propositions & services

**Core platform**

- 2018
- ~2,000 Aircraft

- 2017
- ~500 Aircraft

**FIGURE 9**

It can be seen with easyJet, Air Asia (see more below) and others that there are airlines willing to participate and work with Airbus to develop solutions. However, the big issue is that, for Airbus to have a platform that is industry relevant rather than just airline relevant, they need to cover a large proportion of their fleet.

If today there are about ten thousand Airbus aircraft operating around the world, let’s assume that they need at least 50% of that fleet participating in skywise for it to be regarded as an industry-wide solution. If there are between 1,700 and 2,000 aircraft currently in skywise, from where will they get remaining three thousand aircraft to get to that industry-wide solution?

So what we did at ICF is we split the fleet into mid-size (less than 50 aircraft) and large airlines (50 or more aircraft) (figure 10) and the assumption is that, because we are still in the early adoption stage, small airlines are less likely to have enough data samples to be relevant for skywise and are less likely to be drivers behind skywise development so we put them as last in our considerations.

**M&E / MRO SYSTEM HEALTH-CHECK PROGRAM**

The Aircraft Commerce Consulting and ICF Consulting M&E / MRO System Health-Check program partners our experts to work with an airline’s or MRO’s key M&E systems team, sharing our experience and providing the additional resources and guidance to support delivery of the best possible results whilst working within the airline’s or MRO’s own unique systems framework, processes and company goals. The M&E / MRO Systems Health-Check Program is tailored to each company’s unique requirements and can include:

- **A benchmark comparison of current M&E / MRO systems and processes** against best practice industry standards.
- **An outline of how to optimize current processes and systems** to drive greater efficiency.
- **How to remove paper**, whiteboards and spreadsheets.
- **An evaluation of how new technologies** (paperless, mobile, predictive M&E, etc.) can be leveraged to improve efficiency.

“Optimizing M&E / MRO system performance is critical to successfully meeting industry challenges”
In order to succeed, Airbus will need to encourage airlines that are currently aligned with other MRO integrators. In the mid-size to large fleets, there are about five thousand aircraft but, if we look at them, half of them are not aligned with any specific maintenance providers whilst the rest are with Lufthansa Technik and Air France Industries. The conclusion is that, if Airbus wants to have an industry-wide solution, and that meant having around 50% of the fleet part of skywise, they have to convince most of the non-MRO aligned airlines to work with them on skywise or they need to convince airlines that work with Air France Industries or Lufthansa Technik on the component MRO side to work with them on the digital maintenance platform.

Whilst that might seem like a challenge, why would someone do their component PBH (Power By the Hour) with Lufthansa Technik but at the same time, work with Airbus on predictive maintenance, there are examples of people who are considering that. Air Asia has been a long-time client of Air France Industries under component PBH, has chosen to participate in skywise with Airbus and is also working with GE Aviation on FlightPulse and FOQA — Flight Ops Quality Assurance and Flight Operations performance.

So, that’s what’s happening in the market: there is a growing fleet with increasing numbers of connected aircraft joining the fleet in the next ten years. There are a lot of suppliers developing different solutions. Now we need to consider what the implications of all this activity might be.

**M&E / MRO SYSTEM HEALTH-CHECK PROGRAM**

Book your free initial 1 hour consultation with our experts to discuss your own M&E / MRO Systems, and learn how the Health-Check can be exactly tailored to your requirements or particular projects.

The M&E / MRO System Health-Check is divided into three core phases:

- **Initial Consultation** (free) Book your 1 hour free session
- **PHASE 1** – Preparation, Data Gathering and Analysis
- **PHASE 2** – M&E / MRO Systems Health-Check Visit (2-4 days)
- **PHASE 3** – M&E / MRO Systems Health-Check Results

The M&E / MRO Systems Health-Check provides the building blocks to optimize M&E / MRO system performance which is critical to successfully meeting industry challenges.
IMPLICATIONS FOR DIFFERENT PLAYERS IN THE MARKET

First, what is the benefit for the industry? We’ve tried to model what could be the benefits for airlines from a cost saving viewpoint. For an airline, digital is a unique way of generating new opportunities for passenger experience and ancillary revenues. It’s also a cost reduction tool, reducing maintenance costs and fuel costs.

The estimate is that predictive maintenance will improve technical dispatch reliability, it will drive a reduction in ‘no fault found’, and will support a reduced inventory and improve labor productivity. That could generate about $3 billion of savings for the industry. Then, on fuel costs, with tools such as live weather updates that enable pilots to avoid storms, also better speed and altitude optimization... it could all generate about $1.7 billion of savings. And finally, digital solutions can be used to improve the turnaround phase. Each delay minute has an associated cost of about $80-100, so if turnaround delays can be reduced, that will save money, according to our calculations, to the tune of about $0.8 billion across the industry.

On the maintenance side, the question is, ‘if you’re a supplier, to get more revenue from airlines, do you use digital solutions to generate cost reductions and try to sell a spend reduction of, say, $5 million through lower delays and lower maintenance costs’ or ‘do you use digital solutions to be better at maintenance, to better know your product and therefore be more aggressive with your contract and win more contracts?’

Taking that question and looking at the component PBH for a fleet of 50 or 60 narrow-body aircraft, it would have a value of $5m to $8m per annum: typically, a component PBH is a five year contract; so with a full cost of between $25m and $40m, that will vary depending on the age of the fleet, the scope of the contract and so on. On one side of the equation, digital can be used to win $25m to $40m contracts or, on the other side of the equation, going to individual airlines and telling them that predictive maintenance is going to reduce their technical delays and their technical cancellations. If you think that delays cost $80-100 per minute and a cancellation can cost between $25,000 for a narrow-body aircraft and $110,000 for a wide-body aircraft, that’s a lot of delay and cancellation costs to avoid to generate similar levels of revenues.

There are opportunities on both sides but our view at ICF is that, if you are an MRO provider, an OEM or an MRO integrator and you have limited bandwidth, then your focus should be more on using digital to be more competitive in the marketplace and therefore to bid more aggressively for component PBH programs rather than trying to sell your digital solution on the basis that, if the airline uses it they will reduce their technical delays; because the revenue opportunity is much lower.
KEY QUESTIONS TO CONSIDER

The first one sounds very basic but, do you have all of your reports in a database? We’ve had quite a lot of discussion with component OEMs, for example, and some of the feedback was really surprising: a Chief Information Officer telling us that they have functional analytics tools and they have data scientists but the shop findings reports are still on paper. That means that you could do great analyses but there is no data to analyze. So, the priority is to get your infrastructure in place so that all processes and all records are actually in a database to be exploited.

The next question relates to the fact that 20 to 30 years ago maintenance used to be a core activity for airlines whereas nowadays most airlines outsource it and try to think as little as possible about maintenance: they just want it to cost the least possible. So will we see the same happening with other activities that airlines currently do? For instance, easyJet has outsourced all of its supply chain to AJW Group which means that they don’t do the maintenance and they now don’t do the management of the maintenance anymore. Will the same happen with, say, flight operations and the Operating Control Center (OCC)? Will we see airlines going to Boeing and to Airbus to say ‘here is our current performance through the OCC; if you can guarantee that you will perform at the same level, you can undertake that as an outsourced function.’ Airlines can then focus on their revenue opportunities and leave the cost side to sub-contractors.

The third point is about the interaction between the players. Before, the airframe OEMs made money from selling aircraft; the component OEMs made money from supplying Airbus and Boeing on very low margins and making their money on the aftermarket. But now that everyone is fighting for the aftermarket, the relationship has changed, component OEMs used to be suppliers to Boeing and Airbus but now they’re competing on the aftermarket as well, so that changes the dynamic. Then there are players like Amazon, who used to be a cloud service provider but are now a cargo carrier based on the fact that they can manage every step of the logistics very well. So can they do the same with an airline?

There is a lot of change in the marketplace so the final question is, ‘who will win, who will lose?’

THE MRO LANDSCAPE CONTINUES TO EVOLVE

Mergers and acquisitions (M&A) activity used to focus on R&O (repair and overhaul) with OEMs acquiring shops with specific repair capabilities, now the focus seems to be on acquiring digital capabilities. Where M&A is not possible, OEMs are focusing on large-scale partnerships. For instance, while Boeing cannot acquire Microsoft, they can be partners with them as Airbus has similarly done with Palantir. And then, because of the change of dynamics, people who are very good at data analytics but know very little about maintenance, are now playing in the market and competing with the likes of Lufthansa Technik and Air France Industries in that market space.

Let me close with the summary that digitalization offers airlines a potential for efficiency that is only just being understood. Suppliers need to create the right partnerships and value propositions. The time to act is now.

YANN CAMBIER

As a Senior Manager with ICF, Yann has worked both in industry and as a consultant. He was part of the executive team at Airinmar (an AAR Corp. company), where he led the digital strategy development, as well as the strategic sourcing of maintenance contracts for AAR’s PBH programs. As a consultant, Yann has worked on operational projects, strategy development projects and due diligence projects. He supports airline clients, aerospace suppliers and private equity firms.

ICF

ICF is a global consulting services company with over 5,000 specialized experts, but they are not typical consultants. At ICF, business analysts and policy specialists work together with digital strategists, data scientists and creatives. They combine unmatched industry expertise with cutting-edge engagement capabilities to help organizations solve their most complex challenges. Since 1969, public and private sector clients have worked with ICF to navigate change and shape the future.

“...predictive maintenance will improve technical dispatch reliability, it will drive a reduction in ‘no fault found’, and will support a reduced inventory and improve labor productivity. That could generate about $3 billion of savings...”
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Pre-Conference Aviation Cyber Security Training Workshop, 26th November 2018 14:00 – 17:30
Aircraft IT: Your name, job title and name of the business?

Aircraft IT: How did Ultramain get started?
JS: ULTRAMAIN® was born out of necessity in the aviation industry in an economic downturn in the late 1970s. The best description of the times was ‘stagflation’. ULTRAMAIN was created to provide systems and intelligence that could guide operators to best practices and efficient operations.

Aircraft IT: What is the attraction of aircraft-related software?
JS: While Aviation may look like other transportation markets, it has a way of operating and a vocabulary that is different from other sectors. Aircraft maintenance software is important in making sure this unique industry remains safe, efficient and reliable.

Aircraft IT: What is the guiding business principle that drives Ultramain?
JS: Our driving principle is summed up in our tag line: ‘Simple Mobile Paperless.’ To this end, we strive to develop the most capable and usable aviation maintenance software in the industry in a way that provides an operating advantage to our customers.

Aircraft IT: What has been Ultramain's greatest technical achievement to date, and why?
JS: Pertaining to our Onboard Systems division, it is the development of an intuitive paperless electronic tech log that operates on mobile devices — ULTRAMAIN ELB v2.

Pertaining to our M&E / MRO division it is the development of intuitive paperless task card software for MROs — Mobile Mechanic™. Each is at the epicenter of the industry, finally, adopting long-awaited paperless operations. We are proud to be the leader in paperless software.

Aircraft IT: What has been Ultramain’s greatest business achievement to date, and why?
JS: ULTRAMAIN has been in the aviation maintenance software business for nearly four decades. Our

John F. Stone is Vice President of Product Management at Ultramain Systems Inc. with over 30 years of aviation maintenance and software experience promoting innovation in M&E/MRO software solutions. Leading Ultramain’s Product Management, his focus is on technology and product developments that address global macro trends — including ‘Connected Aircraft’ and the ‘Paperless Revolution’. John is responsible for ensuring that industry needs and best practices are reflected within the company’s solutions, including assisting airlines and MROs in their journey to successful paperless operations.
customers are some of the most recognized brands in the world. Some of these have been with us for a long time, some have joined our family more recently. However, all our customers understand the same thing, using ULTRAMAIN provides a strategic advantage.

**Aircraft IT**: What have been Ultramain's disappointments and what have you learned from them?

**JS**: Ultramain drove into paperless before it was popular because we knew it was the right thing for the industry. It was disappointing to see how long it took for operators and maintainers to really believe it was possible. However, we kept going. From all of this we learned a valuable lesson: when you are doing the right thing, keep doing it. The industry is certain to come around.

**Aircraft IT**: In a sentence, how would you summarize what Ultramain does for aviation customers?

**JS**: We provide our customers innovative reliable industry-leading software combined with focused customized support allowing them to operate more efficiently in all areas related to aviation maintenance and logistics.

**Aircraft IT**: What is new on Ultramain's development horizon?

**JS**: Improvements in our mobile-enabled paperless platforms as well as continuing to expand the use of our built-in optimization framework.

**Aircraft IT**: What will be the next big thing in Aviation IT?

**JS**: In the near term, we see a rapid adoption of the paperless paradigms, which will, of course, rapidly expand mobile device usage. As the workforce depends more on the mobile devices, you will see more demand for collaboration functions built into the maintenance and supply apps. This expansion of user contributed information will necessitate better backend automation and artificial intelligence.

**Aircraft IT**: What do you want your customers to say about Ultramain?

**JS**: ULTRAMAIN is great software with great support.

**Aircraft IT**: John Stone, thank you for your time.

“As the workforce depends more on the mobile devices, you will see more demand for collaboration functions built into the maintenance and supply apps.”
Automating humans back into aviation

Albert Almendro from Vueling, and Sander de Bree from EXSYN explain how Robotic Process Automation is used within the CAMO department of Vueling
This article is about using robotic processes in the maintenance and engineering and CAMO environment, it uses the experience of Vueling, a Spanish low-cost airline, and their processes to illustrate the concept and its implementation. So, for context, let’s first share with you a brief profile of Vueling.

**ABOUT VUELING**

In July 2004 Vueling commenced operations with two Airbus A320’s on four routes. Today, the carrier (now part of the IAG group) serves more than 150 destinations with a fleet of 115 aircraft and 3,000 flight personnel. Vueling is a low cost airline with its home base at EL Prat airport in Barcelona. Paris Charles de Gaulle, Madrid Barajas, Sevilla, Brussels Airport and Amsterdam Airport Schiphol are also used as hubs. The airline operates direct flights from Barcelona to 155 destinations in Europe, Africa and the Middle East and carries over 16 million passengers every year. It is the largest airline in Spain by fleet size and number of destinations. The 115 aircraft in the Vueling fleet today include A319, A320, and A321 types as well as the A320 NEO — the first of 47 on order entered service in July 2018.

“In general, RPA is a technology that allows the user to create a software ‘robot’. This robot mimics the actions a human employee would do and does so in the same user interface of the system.”

**THE INITIAL SITUATION**

Vueling was facing a challenge with the printing of workpackages from AMOS frontend that need to be delivered to the MRO at the end of the day. Every single item in the maintenance forecast is one execution of the process and thus the daily creation of workpackages weighed heavy on the daily workload in what was a quite complex process (figure 1).
Current Business Process

In fact, three or four employees were engaged on these tasks with two to three hours each day spent on printing workpackages alone — there were about 120 workpackages a day to be handled. The task is necessary for daily operation, but is repetitive, monotonous and time-consuming. Additionally, the department did not have the resources to always fully cover the workload, thus increasing pressure on the engineers. It meant that the task had to be planned up to seven days ahead and, more importantly for the business, it meant that those employees involved with this task were skipping non-mandatory forecast items in order to free up the time they needed for printing workpackages. That, of course, was bad for the business.

THE SOLUTION

In order to address the issue that was facing Vueling, EXSYN recommended and Vueling agreed to a solution that introduced Robotic Process Automation (RPA) to take over routine elements in their processes, such as printing workpackages, it was also intended to introduce greater consistency and accuracy, and reduce mistakes or omissions caused by human error.

In general, RPA is a technology that allows the user to create a software ‘robot’. This robot mimics the actions a human employee would do and does so in the same user interface of the system. Think of data entry into an ERP system, archiving of files or downloading data. These automated actions can even string up to a full end-to-end business process. Robots are trained for their tasks with the same instructions that are used for human employee counterparts and every robot also has its own workstation. Instead of a physical station, it is a virtual one. In these virtual environments they ‘read’ the screen electronically.

One of the biggest strengths of RPA is the low requirement for change in an organization. Software robots literally mimic the actions that human employees perform and do so in the front-end that human employees use. Organizations can adapt RPA without the need to change their IT infrastructure too much. Additionally, RPA saves organizations from engaging in the risky and time-consuming endeavor of redesigning the existing systems or even developing a new system.

By implementing RPA, the business hires a digital workforce. The robot workforce can take care of mundane and repetitive tasks or assist employees in their day to day work. Implementing them, organizations can achieve cost-reductions of up to 40%, realize improvements in service provision, achieve ROI (return on investment) within one year and enjoy other benefits.

There are two main automation types: attended automation and unattended automation. Attended automation is automation that is initiated by the human employee and visually runs on the desktop. Unattended automation on the other hand is automation that is triggered by an electronic input and it is executed on a virtual environment.

Why Robotics

For the workpackage situation EXSYN has developed a software robot that has automated the downloading, printing and planning of workpackages. As the initial situation at Vueling illustrates, within an airline there are many tasks of a repetitive/routine-based nature. These tasks take up valuable time; they decrease workforce motivation and increase the risk for human induced errors.
Applying Robotic Process Automation (RPA) increases the efficiency of an airline, makes airlines more competitive, and it can reduce or even take away human induced errors. By exploring the possibilities to automate such tasks, airlines can relocate man hours to value creating processes that require creativity and will boost the overall motivation of the workers.

But, as well as benefits from using robots, there are also challenges which have to form part of any thinking about robots and whether to use them (figure 2).

The benefits of automation have already been alluded to with low intrusion in the process, a 24/7 ‘workforce’, the removal of boring routines from human staff (thus making them available for more creative inputs to the business) and a reduction or elimination of the inaccuracies that will be caused by human error. There’s also better workload control and a clearer insight into process performance.

As far as challenges go, it’s important that automation is applied in the appropriate cases (see ‘Scoring’ below) and that any changes required are properly managed. There will always be exceptions and there is little point in automating for automating’s sake; there must be benefits to be gained. If a process is poorly designed then automating it will simply make it poorly designed but automated: arguably worse than a poorly designed process conducted manually.

“Attended automation is automation that is initiated by the human employee and visually runs on the desktop. Unattended automation on the other hand is automation that is triggered by an electronical input and it is executed on a virtual environment.”

<table>
<thead>
<tr>
<th>BENEFITS</th>
<th>CHALLENGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low intrusion</td>
<td>Finding the correct automation cases</td>
</tr>
<tr>
<td>24/7 workforce</td>
<td>Managing changes</td>
</tr>
<tr>
<td>Workload control</td>
<td>Exceptions</td>
</tr>
<tr>
<td>Insight in process performance</td>
<td>Automating for automating</td>
</tr>
<tr>
<td>Removing the boring stuff</td>
<td>Automating poorly designed processes</td>
</tr>
<tr>
<td>Error reduction or prevention</td>
<td>Human employee resistance</td>
</tr>
</tbody>
</table>

FIGURE 2: BENEFITS VS CHALLENGES

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AVILYTICS
NextGen Aviation Analytics Software

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- AOG Risk Monitor
- Engine Health Monitoring
- M&E KPI Dashboard
THE APPROACH TO AN AUTOMATED SOLUTION

As a first step, EXSYN undertook an initial process analysis with Vueling’s planning department process expert to understand the current business process as set out in figure 1 above. This was a five step job and, at each step, there was an identified objective plus an expected output.

5 Steps to understand the challenge

The first step (figure 3.1) was to gather information which entailed mapping the different areas in the organization and their processes in order to generate a process landscape.

FIGURE 3.1

The next step (figure 3.2) and with process information gathered on volume, time investment, rule-based, exceptions, human errors, process changes, input/output, system & application and risks was to analyze that information…

FIGURE 3.2

… and establish flowchart documents (figure 3.3) in order to be able to visualize the process as flowcharts such as figure 1 above.

FIGURE 3.3

Next step was to rate the processes (figure 3.4) based on pre-defined factors to assess their suitability for the application of RPA and based on a scoring model developed by EXSYN. This resulted in a listing of process candidates for RPA.

FIGURE 3.4

The final step was to code the RPA bot, i.e. ‘educate’ it, to perform the processes that were deemed suitable for it: in other words, to create a robotized process (figure 3.5).

FIGURE 3.5

Scoring model

As part of that route to understanding, the process was scored in order to be able to clear where the real bottlenecks were and indicate whether a step in the process was suitable for an RPA to do it. In fact there were two levels of scoring. The first was a technical score (figure 4.1) to assess the feasibility of a task being transferred to RPA, while the second was a value rating (figure 4.2) to assess whether, technical score notwithstanding, a step in the process was worth the investment cost of using an RPA. In both cases, weightings were given to different aspects of a job to determine the efficacy and/or value for money of a job being assigned to RPA.

The technical rating will indicate the technical feasibility of a process. Performed by the RPA expert.

<table>
<thead>
<tr>
<th>TECHNICAL ASSESSMENT</th>
<th>WEIGHT</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearly defined rules</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Non complex process</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Predictable process</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Structured input data</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Application accessibility</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

* Weights depend on RPA technological changes

FIGURE 4.1: TECHNICAL SCORE

The technical scoring looked at aspects such as, are there clearly defined rules as to how this job is performed, how complex and predictable is the process, how structured is input data and the degree of application accessibility? Robots work best when given simple tasks with clear rules to follow and input data arriving in a predictable and consistent form.

The value rating will indicate a “ROI” for the process, or how much value is expected to be gained from automation. Done by the process expert under guidance of automation expert.

<table>
<thead>
<tr>
<th>VALUE ASSESSMENT</th>
<th>WEIGHT</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spend</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Value of the process</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Process is not going to change</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Workload distribution &amp; predictability</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Prone to human errors</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Regulated process</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

* Weights are client dependent

FIGURE 4.2: VALUE SCORE

Value scoring indicates the potential ROI for the process — how much value is expected to be gained from automation.
Added together, in the case of Vueling, the combined scores indicated that workpackage was the best candidate process for the first application of RPA (figure 4.3).

<table>
<thead>
<tr>
<th>PROCESS NAME</th>
<th>Tech. Score</th>
<th>Value Score</th>
<th>Combined Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD preparation</td>
<td>70</td>
<td>93</td>
<td>62.3</td>
</tr>
<tr>
<td>SB reporting</td>
<td>79</td>
<td>78</td>
<td>59.0</td>
</tr>
<tr>
<td>Damage mapping for fan blades</td>
<td>62</td>
<td>90</td>
<td>53.4</td>
</tr>
<tr>
<td>Workpackage creation</td>
<td>86</td>
<td>83</td>
<td>68.3</td>
</tr>
<tr>
<td>TSDF import</td>
<td>75</td>
<td>86</td>
<td>61.7</td>
</tr>
</tbody>
</table>

"The technical scoring looked at aspects such as, are there clearly defined rules as to how this job is performed, how complex and predictable is the process, how structured is input data and the degree of application accessibility."

The last stage of implementation
Following scoring, an automation skeleton was developed as the basis on which the new process, including its automated elements, could be built. The opportunity was also taken to see what improvements in business rules might be implemented as part of the transition to a new process plus some changes to enhance the process's reliability.

As with any implementation, the new process with its software robots was tested away from the day-to-day operation in a test environment to ensure that it would do all the things that Vueling had previously done but would do them better and do a few more things besides. That completed, it just remained to create new documentation appropriate for the new process.
There were, though, a couple of challenges to be overcome. During the time that this was underway, Vueling upgraded from AMOS v10.90 to v11.30 and, of course, the new process had to take account of that upgrade in the system it was designed to serve. Fortunately, EXSYN has experience in AMOS implementations and upgrades and so was able to ensure that everything worked here. Also, AMOS is not controllable through UI (user interface) objects and so allowance had to be made for that.

All that said, when the new process was implemented, AvBot Mk. 1 ‘joined’ the Vueling workforce to contribute at a key point on the new business process (figure 5) which, as can be seen, is a lot clearer and more straightforward than the old process.

It has had a big impact on the business with €4,500 worth of aviation engineer man hours saved in the first six weeks of the new process. There is also now only a need for one employee to monitor the process and automation has enabled a 15 day buffer to be built in so that it will be easier to plan around unforeseen events. Very importantly, the new process and its robot have meant that there are no more cases of human error causing items to be missed. Figure 6 shows the changes in stark numbers and they are impressive.

---

**THE BENEFITS THAT ROBOTIC PROCESS AUTOMATION CAN DELIVER**

RPA has provided the CAMO and maintenance organization at Vueling with the ability to robotize processes and, in doing that, they have achieved a number of benefits but without the need for disruptive change. The new process RPA mimics user interaction with other systems and so is not a disruptive element and, because the robot requires no sleep or breaks, it has created a 24/7 ’workforce’. RPA has significantly reduced human error in the process and has also reduced cost as the human input is just one person now as opposed to the three or four who were needed before. But, perhaps, most importantly of all, the introduction of RPA to these routine tasks has freed up the humans in the organization to undertake more creative tasks instead of the repetitive tasks that they previously had to do. This benefits the workers involved who now are able to engage with more interesting jobs but it also benefits the airline which now gets the full benefit of a motivated and creative workforce. This is truly using automation to get humans back into aviation.

---

**CASE STUDY: VUELING**

### FIGURE 6

<table>
<thead>
<tr>
<th></th>
<th>BEFORE</th>
<th>AFTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees involved</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Man-hours spend per day</td>
<td>8</td>
<td>0,5</td>
</tr>
<tr>
<td>Workpackages per day</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>Days planes ahead</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Duration of one cycle (min)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Experience of stress</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Daily overtime</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

---

**ALBERT ALMENDRO**

Albert Almendro is a graduated Aeronautical engineer specialising in Aircraft engineering. After completing his final thesis, Albert joined Ryanair as a Technical Services graduate engineer. In 2014, he joined Vueling as a Senior Airworthiness engineer and was involved in the coordination of the data-migration of the Vueling fleet from SAP into AMOS software. He is currently working as an Aircraft Structures Engineer and AMOS Administrator.

**SANDER DE BREE**

Sander de Bree is CEO and founder of EXSYN Aviation Solutions. As well as implementing strategy he oversees operational activities and company key R&D projects. Sander has guided airlines such as Iberia, Oman Air, Vueling, Norwegian and Flybe through MRO/M&E digitization projects and oversaw the development of Avilytics, EXSYN’s analytics and predictive capabilities tool. With a BSc in aeronautical engineering and a background in business administration, Sander holds an EASA certification on human factors, and IR part-m and IR part145.

**VUELING**

Vueling is a low cost airline with a fleet of 115 aircraft and 3,000 flight personnel. The airline performs direct flights from Barcelona to 155 destinations in Europe, Africa and the Middle East and carries over 16 million passengers every year. Its fleet includes A319, A320, and A321 types as well as the A320 NEO — the first of 47 on order entered service in July 2018.

**EXSYN AVIATION SOLUTIONS**

EXSYN Aviation Solutions supports and advises airlines adapting their processes to the digital world. Since inception the company has grown from consulting business to aviation IT solution and managed service provider, specializing in aircraft data, analytics and processing. EXSYN also provides user-friendly, innovative IT solutions for aircraft reliability management, predicate maintenance, data processing with managed services for data migration, aircraft data optimization, and robotic process automation. Valuing and striving for long-term relationships, EXSYN works collaboratively with customers as partners.
Aircraft IT: How did Seabury Solutions get started?
JB: Seabury Solutions is part of the Seabury Capital Group which was founded in 1996. The IT specific business unit Seabury Solutions was formed in 2002 to serve the needs of developing Aviation IT products and services. Overtime it added MRO IT via acquisition of Volartec which co-incidentally also began operations in 2002. All our IT products and services are combined into one unit to serve our global client base.

Aircraft IT: What is the attraction of aircraft-related software?
JB: I have always considered IT as central in business to ensure we are more productive doing what we need to do. In the past people spent too much time firefighting and not trying to evolve. IT can be the catalyst for change. Everyone understands that the growth trends in aviation are on an upward trajectory. At the same time skills shortage is clearly evident in the MRO side of the business. Therefore, our tools aim to digitize the process and ensure the operators / MRO providers can continue to thrive.

Aircraft IT: What is the guiding business principle that drives Seabury Solutions?
JB: We want to enable digitalization in the commercial airline industry. This is achieved by concentrating on actual applications that are business ready. We build the tools that will improve people’s working lives in the aviation sector. That influence is a powerful driving force.

Aircraft IT: What has been Seabury Solutions’ greatest technical achievement to date, and why?
JB: Working in IT the greatest innovation is the ability to constantly change. We have set our primary goal in technology to be future proofed. This year we rolled out Alkym 7, which web-enabled our MRO product. It also integrated a BI / Dashboard solution that ensures, no matter what area you work in, the right information is presented when you want it in a format of your choosing. We want to put our customers in control of their data, so they can make the right business decisions in the most beneficial manner.

Aircraft IT: What has been Seabury Solutions’ greatest business achievement to date, and why?
JB: Every day you come to work you make business decisions that may not pay off that week, that month or even that year. Each day must focus on building of a relationship that will eventually pay dividends. In answering your question let’s take the example of a partnership program we have had in place for two
years in Korea. We spent almost 18 months developing that relationship. In the past 6 months that lead to two customers selecting Alkym in Korea – Air Busan and KAI MRO division KAEMS. That was a great business decision but no more so than those that lead to the 8 other new clients we added this year, so far.

Aircraft IT: What have been Seabury Solutions’ disappointments and what have you learned from them?
JB: Every time you don’t win a deal you should be disappointed. However, in each case learning and understanding the reason so it doesn’t happen next time is the challenge. Our process is constantly evolving to meet that challenge.

Aircraft IT: In a sentence, how would you summarize what Seabury Solutions does for aviation customers?
JB: Allows good business decisions to be taken using our digital platforms while striving towards a paperless environment in aviation.

Aircraft IT: What is new on Seabury Solutions’ development horizon?
JB: Alkym 7.1 due out in the next month will deliver enhanced workflows and digital signatures while we are adding new Mobile Applications for specific job functions. The development road map should be never ending.

Aircraft IT: What will be the next big thing in Aviation IT?
JB: The standard answer everyone would give is Blockchain, Big Data and IOT. Although clearly, they are important I would say first we need to look at true integration. The market is too fragmented with customers needing too many solutions that are not interfacing seamlessly. The community needs to think togetherness for the future.

Aircraft IT: What do you want your customers to say about Seabury Solutions?
JB: We delivered what we said we would.

Aircraft IT: John Barry, thank you for your time.
Reaching new heights

Mark Martin, Director, Commercial Aviation Product Line, Aerospace & Defence Business Unit, IFS unlocks new approaches to more effective commercial aviation maintenance planning
Amidst the boom in the commercial aviation industry, maintenance remains a major cost area for all airlines. They now spend more on maintenance than they do on fuel or crew, making maintenance costs a prime target for reduction. Yet many operators are still using manual planning processes, building an executable long-range plan which often depends largely on the tribal knowledge built up in the planning organisation over many years. Here, I’d like to share some thinking on how new cloud-based solutions are enabling maintenance and operational availability to work together — making manual, time-consuming and error-prone maintenance planning a thing of the past.

Airline operators are witnessing an unabated pace of change in the commercial aviation industry. Oliver Wyman figures show 58 percent of aircraft in service will be new-generation by 2027, alongside a continued growth in air travel demand, and a maintenance, repair and overhaul (MRO) market set to grow over 25 percent in under a decade from $77.4 billion to just over $114 billion. Yet with the next-generation of technologically advanced aircraft entering service and fleet sizes growing larger than ever before, maintenance scheduling, planning and execution has not advanced at the same pace. In the highly competitive commercial aviation market — where margins are small and expenditure is high — effective maintenance planning has the potential to increase profit.

By introducing better planning capabilities, operators can make the most of the resources they have, with the end goal of being able to cost effectively service more aircraft with the same number of maintenance staff — and generate the most revenue out of each aircraft. Unfortunately, many planners are still generating their maintenance plans in spreadsheets. That might be fine for a plan created solely by calculating start and end dates, but it does nothing to make the planning process more efficient or to enable more strategic planning.

“... new cloud-based solutions are enabling maintenance and operational availability to work together — making manual, time-consuming and error-prone maintenance planning a thing of the past.”
must span all the aircraft carrying passengers across a sprawling network of routes. Any changes to the plan can have huge knock-on effects further down the line — with schedules being torn apart in minutes when an aircraft becomes unavailable at short notice, or when parts and labor availability change. This is simply a day-to-day challenge.

Looking forward, week-to-week or month-to-month, spreadsheets cannot provide accurate answers to strategic business questions such as: How many new aircraft can we support? What will it look like if we add a new aircraft type in four years? What happens if we use external MROs for this fleet?

**LONG RANGE FLEET MAINTENANCE PLANNING — WHAT YOU NEED, AND WHAT IT SHOULD DO**

Managing a fleet of next-generation aircraft requires next-generation tools. Automated solutions must come to the fore to help decision-makers choose the best plan to support their business. Any supporting solution must be able to pinpoint the most efficient maintenance plan tailored to an organization’s unique requirements. The result should be improved aircraft availability, check yield, and hangar utilization.

Whether for single-base operations or globally distributed maintenance organizations, the automation should enable faster and more efficient planning. Because even the best of fleet plans can unravel in the blink of an eye, any modern fleet planning solution should enable multiple planners to quickly and easily modify, merge, and share plan updates.

**THE DEVIL IS IN THE LINE MAINTENANCE DETAIL**

Similarly, in line maintenance planning, there are fundamental challenges that need to be addressed, but on a shorter planning horizon. Efficient line maintenance means supporting a growing number of daily flights and shorter maintenance windows.

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A GRANULAR VIEW? EASY
Line maintenance planning solutions must dynamically react to schedule changes, as the solution continuously monitors the maintenance plan for individual aircraft and identifies changes as they arise. Maintenance priorities must be contextualized against corporate goals to drive business value from maintenance processes. Planners must be able to view all relevant information in a single screen, allowing them to use the software to create executable plans quickly.

SAAS TOOLS PUT MAINTENANCE PLANNERS ON CLOUD NINE
As planners become responsible for more aircraft and more maintenance visits, there has to be a new approach. Stretched spreadsheets just can’t hack it. There are generic planning tools, developed to fit general scheduling needs of multiple industries. But the lack of industry specificity in these solutions typically leads to failure when they are deployed in a commercial aviation setting. Some vendors offer planning tools more suited to purpose but with rigid architecture and on premise hardware. This makes them unaffordable to small planning departments. And for carriers with larger fleets, it signals the start of a major IT project with all the associated cost, risk and overheads.

Fortunately, Software-as a-Service (SaaS) solutions are now emerging in commercial aviation and bring new efficiencies for both IT and business. SaaS solutions — such as two new solutions recently introduced by IFS for fleet and line planning — are helping to address the high capital expenditures airlines and MROs typically face for hardware, software and ongoing services and support. It is also becoming a vital tool in the new aviation IT landscape as a means to speed up delivery of new capabilities and eliminate the cost of purchasing and managing on premise technology.

MAINTENANCE AND OPERATIONAL AVAILABILITY GLUED TOGETHER
In a recent IFS Digital Change survey, almost 60 percent of commercial aviation respondents cited “operational availability” as a significant industry challenge. Managing operational availability and avoiding schedule delays begins in the maintenance planning process.

Legacy maintenance planning and scheduling tools can no longer offer competitive levels of availability. Automation in the planning process must now be a prerequisite in any supporting solution. SaaS delivery provides the flexibility and scalability to cover fleets as small as ten aircraft, and as large as 1,000+.

The ripple effect of effectively planned maintenance is far reaching — aircraft are turned around quickly, airworthiness is assured, and maintenance costs can be kept in check.

“Legacy maintenance planning and scheduling tools can no longer offer competitive levels of availability. Automation in the planning process must now be a prerequisite in any supporting solution.”
Aircraft IT: Your name, your job title and the name of the business?
Matthias Wagenmann: Matthias Wagenmann, VP Research & Development, Swiss AviationSoftware Ltd.

Aircraft IT: How did Swiss-AS / AMOS get started?
MW: The development of AMOS started back in 1989 within the IT department of the airline Crossair which later became Swiss International Air Lines or 'SWISS', initially for in-house usage only. Over time, other airlines showed interest in also using the software; so AMOS gradually became a product offered to other airlines.

In 2004, the company Swiss AviationSoftware was founded as a spin-off from SWISS. The newly formed company was given the ideal set-up to develop its own strengths as an MRO software provider in this highly specialized market. What started as a small IT project by a handful of people 30 years ago has evolved to a complete ecosystem. Today Swiss-AS supports more than 170 customers worldwide with a workforce of around 180 people. For 2019 Swiss-AS plans its biggest growth in history, while increasing its staff by more than 30% to 250 employees.

Aircraft IT: What is the attraction of Aircraft related IT?
MW: The attraction comes from acting in a niche market with very specific and complex needs. Despite the competition within the airline business in general, the employees of the technical and IT departments of aviation organizations tend to relate on a personal level to their peers. At our customer conference, which recently took place in Lucerne, it was a pleasure to see so people from many different airlines and MROs united in the intention to collaborate – the most often expressed goal of the attendees was ‘networking’. And we are proud to host this fast growing community.

Aircraft IT: What is the guiding business principle that drives Swiss-AS?
MW: We see our role in fulfilling the shared needs of a large community – not as the typical software vendor, but more as an integrator serving the needs of the AMOS Community. We pursue the common goal of building the best MRO IT solution together and are guided by the principles of the ‘Honorable Merchant’: acting in a fair manner, transparent,
reliable, sustainable and accountable. We believe that good long-term relations are more important than quick wins and that, in the long run, only fair deals are good deals. We combine traditional business values with progressive IT solutions. Less buzzwords, more matter.  

**Aircraft IT:** What has been Swiss-AS’ greatest IT achievement to date, and why?  
**MW:** Generally speaking, keeping the AMOS ecosystem innovative through 30 years of changing IT trends: from text-terminals to graphical UIs, from traditional desktop applications to mobile apps, from record keeping to expert system, from paper to e-signature. Today we accompany our customers on their way towards digitalization.  

We have established, with AMOScentral, a virtual cloud over all AMOS installations – allowing easy connectivity and improved collaboration within the AMOS community and beyond. With AMOSmobile in execution, AMOSdesktop in the back-office and AMOScentral as collaboration platform, we see the AMOS suite ready to support the digital transformation efforts of our customers.

**Aircraft IT:** What has been Swiss-AS’ greatest business achievement to date, and why?  
**MW:** Today Swiss-AS has 10 development teams and offers a complete suite of services around AMOS. For a sustainable growth, the internal processes need to be continuously adapted to the growing number of customers and employees and the size of the product source code. Keeping the company lean, the development agile and the product maintainable are key success factors to stay competitive for such a long time.

**Aircraft IT:** What have been Swiss-AS’ disappointments and what have you learned from them?  
**MW:** For some of the innovations we implemented, we had to accept a rather slow adoption within the community. A typical phenomenon when IT visions meet the business reality. We underestimated the required change management on the customer side. As an example: AMOS had supported electronic signatures for many years before the first customer used it productively and it took some more years until AMOS customers on a large scale initiated in-house projects to become paperless. As a consequence, we now offer dedicated consulting services for new features and technologies instead of just delivering them.

**Aircraft IT:** In a sentence, how would you summarize what Swiss-AS does for aircraft MRO customers?  
**MW:** As vendor of a community product, we follow a very customer-driven development approach. We do what the customers want while nevertheless always keeping an eye on the market to ensure the competitiveness and longevity of the product.

**Aircraft IT:** What is new on Swiss-AS’ development horizon?  
**MW:** We see in our customer base a clear trend to speed up the digital transformation process. By going paperless with AMOSmobile and electronic signature and adopting the fully integrated backend of the AMOS suite, a company’s internal processes can be fully digitalized.  

Another industry trend to which we have responded is the customers’ need to work beyond company boundaries. Airlines today rely on multiple MRO providers, outsource their line maintenance activities, set up different maintenance models for different fleets or different stations, etc. In order to bridge the digital gaps within the MRO process flows between different companies, we currently offer working on AMOScentral.  

**Aircraft IT:** What will be the next big thing in MRO Aviation IT?  
**MW:** Once all MRO processes are fully digitalized, the IT systems will have a complete and current digital representation of the real world. This will allow our customers to realize many optimizations, for example (semi-) automated planning, AI-based optimizations of ground-times or the usage of big data analytics for predictive maintenance.

**Aircraft IT:** What do you want your customers to say about Swiss-AS / AMOS?  
**MW:** We want them to state that we are listening to their requirements and do our best to fulfill them by delivering a best-in-class solution. And that we are smart, good looking fellows!

**Aircraft IT:** Matthias Wagenmann, thank you for your time.
MRO Software Directory

Key ‘at-a-glance’ information from the world’s leading MRO software providers. There are three recognized categories of MRO software solutions:

1) Pure-play MRO solutions also known as Best of Breed (BoB)
2) Enterprise Resource Planning (ERP) Solutions
3) Specialist Point Solutions

Software solutions assigned to categories 1 and 2 offer a complete end-to-end MRO solution for airlines, MROs and aircraft operators and meet most business system requirements for MRO facilities and airlines of any size seeking a new MRO software solution or looking to replace or renew an existing one.

Pure-play systems are designed specifically for the aviation MRO industry and typically offer a complete solution to fit with the highly regulated nature of the industry. ERP MRO Solutions are part of a complete end-to-end enterprise wide software package and allow for extended capability with other systems such as Finance and Human Resources.

Specialist Point solutions are MRO systems that are particularly strong in certain niche areas and usually complement the pure-play solutions.

For ease of reference the directory below is divided into two sections: Pure-play and ERP MRO Solutions; and Specialist Point Solutions.

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**2MoRO Solutions**

**W:** www.2moro.com  
**T:** +33 (0)559 013 005  
**E:** sales@2moro.com

Locations: France (HQ), Canada and Malaysia

**NAME OF PRODUCT MARKETED**
- Aero One, Aero-Webb, BFly, 2Fly

**KEY BUSINESS/SOFTWARE AREAS**
- MRO: Line, Base, Engine maintenance
- Airworthiness and Fleet Management
- Flight and Crew management
- Material Management
- ERP: Finance, Purchasing, Sales, HR

2MoRO Solutions is a software development company dedicated to the Aviation market. Our teams are located in America, Europe and Asia. We work with partners and resellers in 20 countries. Our solutions are operated in 24 countries and are available in 5 languages.

We have been providing cost-effective software to large aviation players as well as small and medium size enterprises for 12 years. We offer a panel of software to fit any types of aviation companies. Our solutions have been chosen by aircraft and engine manufacturers such as Airbus Helicopters or Safran Group but also by many aircraft operators, airlines or independent MROs. We are proud of our 95% retention rate achieved over twelve years of operation thanks to a superior customer service. 2MoRO Solutions works mainly on a fixed-price base and is ISO 9001 certified for aviation software development, maintenance and support.

Aero One® and Aero-Webb® are certified by SAP® and complement their ERP solutions for aviation and MRO needs. BFly® is our cloud solution to reduce emergency AOG, mitigate human error and facilitate continuing airworthiness management. BFly® is a new way to create customized software for aviation and enables users to design personalized screens, workflows and business processes.

**ADSoftware**

**W:** www.adsoftware.fr  
**T:** +33 (0)4.50.89.48.50  
**E:** contact@adsoftware.fr

Location: France, Thailand, South Africa, Brazil

**NAME OF PRODUCT MARKETED**
- AIRPACK

**KEY BUSINESS/SOFTWARE AREAS**
- AIRTIME — Flight management & CAMO
- AIRSTOCK — Inventory control & Logistic
- AIRDOC — Documentation management
- AIRSTAT — Reliability and statistic reports
- AIRWORK — Time Tracking Software

ADSoftware has developed an integrated fleet management system and logistic package called AIRPACK. This 6 module system answers to the needs of aircraft and helicopters operators, as well as MRO and CAMO centres. It meets all requirements in terms of functionality, traceability, performance, aviation legislation and regulations. Today, ADSoftware counts more than 54 clients worldwide. The strength of ADSoftware is the simplicity of its products; they are Microsoft Windows® ready, Web-enabled, available in various languages and a complete training program can be done in just five days. The company also provides a 24/7 online technical support and extremely competitive pricing conditions.

---

**ADT: Applied Database Technology**

**W:** www.adbtech.com  
**T:** +1 (425) 466-5013  
**E:** sales@adbtech.com

Location: Bellevue, Tampa USA; Istanbul, Turkey

**NAME OF PRODUCT MARKETED**
- Wings NG

**KEY BUSINESS/SOFTWARE AREAS**
- Fleet Management
- Maintenance Engineering
- Material Management
- Production Planning
- Labor Collection, Billing

APPLIED DATABASE TECHNOLOGY (ADT) is a professional services and software development firm that provides MRO software solutions for aircraft operators as well as aircraft repair and overhaul organizations. Our commitment to this business segment is proven with our software package, WINGS, designed specifically for aerospace companies. ADT has been in the software business since 1992 and has built an excellent customer reference base. Our first priority is always customer satisfaction; thus we have obtained 100% customer satisfaction since 1992. ADT has a proven record to develop reference accounts in the Aviation industry along with other high technology companies which are considered to be leaders in their fields.
Aircraft IT - Winter 2018-2019

AeroSoft

Website: www.aerosoftsys.com
Telephone: +1 905.678.9564
Email: sales@aerosoftsys.com
Location: Ontario, Canada; Miami, FL, USA; Austria

Product: DigiMAINT, DigiDOC, WebPMI/DJM

**Key Business/Software Areas:**
- Maintenance and Engineering Management
- Digital Document Content Management
- Business Intelligence Reporting
- Business 2 Business transaction interface
- Interface to Financials / Flight Operations

**Name of Product Marketed:**
- Aerros

**Product Features:**
- Heavy/Base Maintenance Planning
- Capacity/Workload Planning
- Maintenance Schedule Optimization
- Maintenance Event Performance Tracking
- Heavy/Base Production Schedules

**Aerros** is based in Seattle, WA and offers one product called Aerros. It is one-of-a-kind program that manages an airline's or MRO's aircraft maintenance schedule. Aerros enables you to optimize the maintenance program by managing various maintenance and operational constraints, which maximizes event yield, drives costs down, and enables the organization to plan proactively, not reactively.

Aerros provides robust what-if scenario capabilities that allow users to see the effect of different variables. This aids in making sound business decisions concerning the maintenance and fleet plan. Some of these variables are maintenance programs limits, min/target/max yield, aircraft hr/cy utilization, track/requirement compatibility, and maintenance allocations. To forecast an optimal maintenance plan within your operation, Aerros also provides a Capacity Planning feature. This feature allows users to input and view vendor capacity available and labor hour demand to better manage the labor force.

Aerros also provides easy-to-navigate scenarios with drop and drag event movement and manipulation. Scenarios can be published so others (including vendors or operators) can view the plan. Aerros provides excellent system stability and reliability with standard IT practices. It is also integration-ready and designed to work as an extension of your existing information systems.

Aviation Intertec Services

Website: www.aviationinterotec.com
Telephone: +1 807-625-9260
Email: info@aviationinterotec.com
Location: Canada, Thailand, India, Greece

Product: RAAS & RAAS Express

**Key Business/Software Areas:**
- Production Planning and Management
- Inventory and Procurement
- Inspection Document Management
- Reliability and Performance Analysis
- Financial and Flight Operations

**OASES** from Commsoft covers all aspects of aircraft maintenance for airlines and third-party maintainers including: inventory control; rotatable tracking; demand handling; requirements planning; PO and RO processing; component and aircraft technical records; maintenance forecasting; aircraft check planning and documentation. Also, check accomplishment analysis; aircraft technical log recording; shop floor data collection; work in progress; time and attendance monitoring, and system and component reliability analysis, plus repetitive defects, sales order processing, full quotation management, invoice passing, advanced scheduling, line maintenance control. AD/IB evaluation and deferred defect management. The company provides electronic AMMs and IPCs linked electronically to, and accessible by, the system.

Commsoft

Website: www.commsfo.aero
Telephone: +44 (0) 1621 817 425
Email: nsg@commsoft.aero
Location: Tiptree, Derby, Norwich, Gatwick, UK; Australia; India

Product: OASES

**Key Business/Software Areas:**
- User Friendly: for all levels of expertise
- Excellent Support: full support throughout the product life cycle
- Scalability: can grow with your business
- Cost: low 'cost of ownership'
- Security: proven security

**Additional Features:**
- Security: proven security
- Cost: low 'cost of ownership'
- User Friendly: for all levels of expertise
- Excellent Support: full support throughout the product life cycle
- Scalability: can grow with your business
- Security: proven security

**OASES** offers an integrated suite of MRO software to automate and manage the entire life cycle of an aircraft. It includes comprehensive functionality to support the planning, scheduling, maintenance, and repair of aircraft. The software is designed to be easy to use and scalable to meet the needs of any size MRO or airline. It includes features for planning, scheduling, maintenance, inspection, and quality control. The system is highly customizable to meet the specific needs of each customer and can be integrated with other systems. The company provides excellent support and ongoing development to ensure the software meets the needs of its customers.

**Product Features:**
- Heavy/Base Maintenance Planning
- Maintenance Schedule Optimization
- Maintenance Event Performance Tracking
- Heavy/Base Production Schedules

**AIS** is a leading provider of aircraft information solutions, offering a range of software products for the aviation industry. AIS’s RAAS system is a best-of-breed M&E solution for the evolving operator, MRO and CAMO. Our solution is 100% browser-based and tablet friendly, compatible with all major browsers including Apple Safari, Google Chrome, Firefox, and Microsoft Internet Explorer. RAAS includes industry-leading paperless functionality such as task-step level signature, parallel inspection program management per type, digital part certification handling, iPad/Android /Windows tablet-based ELM, electronic maintenance status board, centralized document library, wireless barcode scanning, and much more. RAAS offers flexible pricing and system hosting options making it suitable for a wide range of customer types and sizes.

**Additional Features:**
- Interface to Financials / Flight Operations
- Business 2 Business transaction interface
- Business Intelligence Reporting

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EmpowerMX
W: www.empowermx.com
T: +1 866-498-3702
E: info@empowermx.com
Location: Frisco TX, USA

**NAME OF PRODUCT MARKETED**
• FleetCycle Executive Suite — MRO Manager (FCXM)

**KEY BUSINESS/SOFTWARE AREAS**
• FleetCycle Executive Suite: Production Manager (FPXM), MRO Manager (FCXM) and Line Manager (FCXL)
• Maintenance Program Manager (FCMPM), Planning Manager (FCPM), Reliability Manager (FCRM), Material Manager (FCMM), and Maintenance Intelligence (FCMI), Electronic LogBook (FCELB)
• Coming Soon: FleetCycle Executive Suite — Shop Manager (FCXS)

EmpowerMX is an aviation industry-recognized software development/consulting-services business. We are purely focused on empowering our customers with the ability to decrease the costs of making air travel safer by equipping their decision makers with reliable, real-time/globally available intelligence for minimizing maintenance turn times/OpEx while maximizing airworthiness/profits. FCXM allows MROs, airlines, and lessors to effectively control the entire maintenance lifecycle or only the portions for which they are responsible. Airlines can jointly manage their outsource and insourced avitcates like engineering reliability, QA and maintenance programs at the line, heavy and shop levels with an expected reduction in cycle times and increase in labor productivity on the magnitude of 16-30 percent. Third-party MROs can run their entire operation from bidding through contracting to invoicing.

**KEY BUSINESS/SOFTWARE AREAS**
• Fleet and Asset Management
• Maintenance, Repair and Overhaul (incl line, heavy, complex assembly, component repair)
• 3rd-party MRO bidding, quoting, invoicing, product lifecycle management, enterprise operational intelligence

IFS is a globally recognized provider of software solutions for global aviation & defense (A&D), including commercial and military operators, A&D manufacturers, in-service support and third-party MRO. IFS's solutions support project and program-centric manufacturing: a complete spectrum of maintenance management capabilities for sea, land and air assets, from heavy, complex, and component MRO, to line maintenance or at-platform/asset support; as well as all types of procurement models. IFS's innovative enterprise solutions are designed for the regulated A&D industry and markets where manufacturing, MRO, project and service functionality are business- and operationally-critical whilst also supporting global, core enterprise capabilities for managing finance, inventory and human resources. With flexible, modular and enterprise breadth, IFS solutions empower A&D organizations to quickly adapt and manage change whilst delivering bottom-line value, increasing efficiencies and cost savings, and safeguarding compliance. IFS customers include BAe Systems, Lockheed Martin, General Dynamics, SAAB, GE Aviation, Pratt & Whitney, HAL, Emirates, LATAM, Qantas, China Airlines, Air France-KLM, and Southwest Airlines.

**PRIVATE DEMO CALL**
For a private demo or any questions, please contact us today.

Lufthansa Technik
W: www.aviat.com
T: +49 40 5070 5553
E: sales@aviat.com
Location: Worldwide

**NAME OF PRODUCT MARKETED**
• AVIATAR

**KEY BUSINESS/SOFTWARE AREAS**
• Fleet Management & Metrics
• Reliability Management
• Condition & Fault Analytics
• Predictor Plugins
• Record Status by Flydocs

**KEY BUSINESS/SOFTWARE AREAS**
AVIATAR — Our innovative and holistic platform for the entire aviation industry
AVIATAR offers an extensive variety of digital products and services for airlines, MROs, OEMs and lessors by combining multiple apps in one place. While each single app provides value in its stand-alone version, it is the interplay of those apps, which creates the unique value proposition for the individual user. AVIATAR has three main characteristics:

Open: AVIATAR lives from the combination of visionaries. That is why we invite everybody — partners, clients, developers — to co-create the future of aviation with us or to join our network by connecting their app to our ecosystem. The first externally integrated app is provided by our partner Flydocs. Modular: AVIATAR offers a variety of apps. The user selects. The platform serves as a central and connecting hub for apps offering digital products and services for the aviation industry. Users can select from our variety of apps and chose the combinations they prefer.
Neutral: AVIATAR adjusts to the user’s technical requirements. AVIATAR is an independent platform that aligns to our user's specific, technical requirements. It is an OEM-spanning platform, independent of Lufthansa Technik and any MRO service contracts. We focus on the users and adjust to you.

**PRIVATE DEMO CALL**
For a private demo or any questions, please contact us today.

Ramco Systems
W: www.ramco.com/aviation-suite/
T: +91 9677156327
E: cynthia@ramco.com
Location: 21 offices worldwide

**NAME OF PRODUCT MARKETED**
• Ramco Aviation M&E Solution, Ramco Aviation MRO Solution, Ramco Anywhere Apps, Ramco flyMORE

**KEY BUSINESS/SOFTWARE AREAS**
• Maintenance & Engineering
• Maintenance, Repair & Overhaul
• Mobility Solutions

Ramco Systems offers Aviation Maintenance solutions on premise and on cloud, with multi-tenant capability and next-gen mobility for Airlines, Hel-Operators, MROs and Charter operations. Its comprehensive scope spans the spectrum of organizational needs, including Finance, HCM, Manufacturing, Planning and Optimization, in one integrated platform.

Ramco Aviation’s latest Next-Gen digital technologies include: Mobility Solutions: Ramco’s next-gen mobility solutions for maintenance operations are available through an app ecosystem wherein everybody involved can seamlessly execute critical operations on the go, from anywhere, anytime; The BIOTs Revolution: Ramco intelligent CHATBOTS deliver parts data, manage AOGs, and perform daily admin tasks for a more personalized and immersive ERP experience; Hyper-Connected Ecosystem: B2B integrations with AeroXchange, Gains, Logistics providers and OEMs bringing Suppliers, Customers and Logistics providers together on ONE platform

Ramco Series 5 reduces Turn Around Time (TAT) while increasing operational performance and compliance through user-friendly interfaces. Ramco has always been an innovator in maintenance IT — enabling clients to focus more on business-critical activities; while the solution processes transactions and decision support, based on intelligent rules. Powering 4000+ aircraft and 21,000+ end-users, Ramco is used by more than 75 operators world-wide.
Rusada

W: www.rusada.com
T: 03333 440730
E: sales@rusada.com
Location: N America, UK, Switzerland, Dubai, India, Singapore

NAME OF PRODUCT MARKETED
• Envision

KEY BUSINESS/SOFTWARE AREAS
• Maintenance & Engineering (M&E)
• Maintenance, Repair & Overhaul (MRO)
• Maintenance Planning & Scheduling
• Paperless & Mobile Solutions
• Offline Mobile Capabilities

Rusada develops Envision—an MRO / M&E software system for the aviation industry. Envision is used by a range of different types of customer including airlines, helicopter operators, VIP Fleet, MRO and line maintenance facilities. The latest version of Envision, Envision nGen, is a web-based solution that is browser, platform and device independent. The offline capabilities of Envision nGen is one of its unique selling points. We have tailor-made solutions configured for your needs from over 200 functions and 8 modules, across multiple platforms. Key elements of our new developments include: integrated user defined workflows throughout the solution; Significant use of dashboards for alerting users of key outstanding actions etc; integrated user definable templates throughout the solution; and provision of ‘off-line’ support for certain key functions. Please don’t hesitate to contact us for further information or to arrange a demo of the next generation of MRO / M&E software.

Seabury Solutions

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T: +33 61 749 0104
E: marketing@seaburymro.com
Location: Ireland; Argentina

NAME OF PRODUCT MARKETED
• Alkym, EPAS, eAuthority

KEY BUSINESS/SOFTWARE AREAS
• Technical Operations
• CAMO
• MRO
• Performance Analytics
• Regulator Applications

Seabury Solutions is a leading global aviation software development and consultancy company. It was established in 2002 and forms part of the Seabury Group. Seabury Solutions has built a reputation in that time as the vendor who delivers cost effective world class aviation management software. The integrated product range includes solutions for Airlines, MRO Organizations, Aviation Regulators. Enterprise Performance Analytics Systems (EPAS) includes models for Maintenance Analytics, Contracts and Invoicing, Flight Profitability, Budget Planning, Market Analytics and Sales / Distribution Analytics.

With our software products serving over 80 customers in 35 countries globally they are suitable for the largest to small / medium sized operations.

Alkym Management and Control System for Aircraft Maintenance is a modular solution where each organization can select which tools meet their requirements. This proven solution brings the top functionality in market leading implementation time scales. Typically, the average time to GO LIVE is between 8 and 15 weeks. With 24 / 7 professional support services to make sure your teams are getting the best from our systems Seabury Solutions should be on every short list to compare the value proposition against the market.

Sheorey Digital Systems

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E: vicky.sheorey@sds.co.in
Location: Ireland, Argentina, Netherlands, Philippines, USA

NAME OF PRODUCT MARKETED
• ARMS*: Airline Resource Management System
• InfoPrompt*: Integrated Document Management System

KEY BUSINESS/SOFTWARE AREAS
• Engineering & Maintenance Sub-System (ARMS® — EMSS)
• Logistics and Inventory Management Sub-System (ARMS® LMSS)
• InfoPrompt*: Integrated Document Management System

* Under development

Sheorey Digital Systems Ltd. (SDS) is an established, fast growing, ISO 9001:2008 Certified Software Company, focused on providing Software Solutions to the Aviation Industry. ARMS*: ‘Airline Resource Management System’ is an internet rich, current-generation, state-of-the-art Information Technology System that effectively addresses the extremely critical and cost sensitive nature of Airlines/Commercial Air Transport operations. ARMS® is one of the few cost-effective, fully integrated software solutions that seamlessly addresses Flight Operations, Maintenance and Logistics functions of an air transport operator designed and developed to control costs which is so very critical for Air Operators today. ARMS® is readily and easily ‘customizable’ to specific business and operational requirements.

Swiss Aviation Software

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T: +41 61 582 72 94
E: marketing@swiss-as.com
Location: Basel, Switzerland; Miami, FL, USA; Singapore

NAME OF PRODUCT MARKETED
• AMOS

KEY BUSINESS/SOFTWARE AREAS
• Material Management
• Engineering
• Planning
• Production
• Maintenance Control

Swiss Aviation Software unites over 25 years of IT experience with profound MRO expertise and offers its customers the functionally unsurpassed and technologically state-of-the-art maintenance system AMOS. AMOS is a comprehensive, fully-integrated software package that successfully manages the maintenance, engineering and logistics requirements of modern airlines and MRO providers by fulfilling demanding airworthiness standards. Today, over 140 customers worldwide steer their maintenance activities with AMOS, which makes AMOS one of the industry-leading MRO software systems worldwide.
## Pure-play, BoB and ERP MRO Solutions

### TRAX
- **W:** www.emro.com  
- **T:** +1 305.662.7400  
- **E:** sales@trax.aero  
- **Location:** Miami, FL, USA; West Sussex, UK; Tokyo, Japan; Riyadh, Saudi Arabia

**NAME OF PRODUCTS MARKETED**
- eMRO  
- eMobility

**KEY BUSINESS/SOFTWARE AREAS**
- Engineering & Planning  
- Production & Shop  
- Technical Records & Reliability  
- TRAXDoc Document Control  
- Supply Chain Management  
- E-enabled Aircraft Capabilities  
- Aircraft Mobility apps  
- Maintenance Mobility apps  
- Warehouse Mobility apps

TRAX is the global leader in the aviation industry for MRO ERP software, with over 170 airlines using their products. TRAX has the most advanced maintenance software solutions available for airlines and MROs worldwide with fleets consisting of all types of aircraft. TRAX eMRO is a completely integrated product, in addition, the eMobility suite offers a range of iOS apps to provide mobile accessibility. Organizational efficiency gains can be substantial when using TRAX eMRO and eMobility, and ROI is quickly realized. TRAX maintains its advantage over the competition by developing software that works for customers through modern technology, world class support and strong customer relationships.

**NAME OF PRODUCT MARKETED**
- ULTRAMAIN® M&E / MRO  
- ULTRAMAIN Mobile Mechanics™  
- ULTRAMAIN Mobile Inventory™  
- efbTechLogs™  
- eCabin™  
- ULTRAMAIN for M&E / MRO: 28 Modules  
- ULTRAMAIN Onboard Systems Software: 5 Modules

### Ultramain
- **W:** www.ultramain.com  
- **T:** +1.505.828.9000  
- **E:** sales@ultramain.com  
- **Location:** Albuquerque, New Mexico, USA

**NAME OF PRODUCT MARKETED**
- ULTRAMAIN® M&E / MRO: 28 Modules  
- ULTRAMAIN® for M&E / MRO: 5 Modules  
- eCabin™  
- ULTRAMAIN® Mobile Inventory™  
- ULTRAMAIN® Mobile Mechanics™  
- ULTRAMAIN® Onboard Systems Software: 5 Modules

**KEY BUSINESS/SOFTWARE AREAS**
- Maintenance & Engineering  
- MRO  
- Maintenance Planning & Scheduling  
- Paperless Customer Care on Tablets  
- Electronic Aircraft Logbook

Ultramain Systems, Inc. develops M&E / MRO and EFB software for the aviation industry and is the only aviation software provider with customers running full, end-to-end paperless operations from the cockpit to the ground. ULTRAMAIN® v9™, featuring Mobile Mechanic™ and Mobile Inventory™, enables real-time paperless data collection for the full maintenance and inventory process. Combine ULTRAMAIN® v9 with efbTechLogs™, the easy-to-use electronic logbook, and the entire maintenance process becomes paperless. Contact us to learn what you need to equip your organization with consumer mobile devices and see why elite aviation customers around the world are choosing ULTRAMAIN® to reduce costs and increase aircraft up time.

### The Boeing Company
- **W:** www.boeing.com/supportandservices  
- **T:** +1 206-655-2121  
- **E:** BoeingSupportandServices@Boeing.com  
- **Location:** Over 65 locations around the world

**NAME OF PRODUCT MARKETED**
- Airplane Health Management  
- Business Consulting  
- Maintenance Performance Toolbox  
- Optimized Maintenance Program

**KEY BUSINESS/SOFTWARE AREAS**
- Business Consulting  
- Airplane Health Management  
- Maintenance & Engineering  
- MRO  
- Vehicle Health Management  
- Aircraft Troubleshooting  
- Reliability Tools  
- Maintenance Optimization Consulting

Boeing is the world's largest aerospace company and leading manufacturer of commercial jetliners and defense, space and security systems. Boeing Support and Services combines airplane design and manufacturing expertise with unique access to fleet-wide operational data to offer optimization solutions.

With these offerings, Boeing addresses the evolving need for integration and optimization of data and information across the aviation ecosystem to empower smart decision-making. The portfolio includes services and solutions for flight operations, maintenance & engineering and procurement organizations to optimize the operational efficiency of airplanes and operations.

Boeing has more than 250 customers for its optimization solutions. The portfolio draws on solutions from a family of Boeing companies: AerData, Inventory Locator Services and the entire maintenance process becomes paperless. Contact us to learn what you need to equip your organization with consumer mobile devices and see why elite aviation customers around the world are choosing ULTRAMAIN® to reduce costs and increase aircraft up time.

### CaseBank Technologies
- **W:** www.casebank.com  
- **T:** +1 (905) 364-3604  
- **E:** slightstone@casebank.com  
- **Location:** Brisbane, California; Toronto, Canada; Austin, Texas; Brussels, Belgium

**NAME OF PRODUCT MARKETED**
- ChronicX, Spotlight  
- ATP Maintenance  
- ATP Operation Manuals  
- ATP Libraries

**KEY BUSINESS/SOFTWARE AREAS**
- Maintenance Operations Solutions  
- Reliability Tools  
- Aircraft Troubleshooting  
- Business Intelligence for Aircraft  
- Recurring Defect Analysis

CaseBank Technologies Inc., a Division of ATP provides troubleshooting, reliability and defect trend analysis, so engineering and service teams can accelerate equipment repair, increase uptime, reduce warranty costs and enhance product support and performance.

ATP is focused on maximizing the value of aircraft and aviation operations by providing tools, information and insight that optimize aircraft availability and operational compliance. Over 40+ years in the aviation industry ATP has developed expertise in managing and analyzing content for maintenance, operations, and compliance. ATP adds value through smarter reference content and historical documentation, integrated into decision support, productivity and advisory services to deliver efficient operations.

The ChronicX® innovative solution for detecting and managing recurring aircraft defects, identifies, consolidates, and ranks recurring/chronic defects to uncover hidden trends. It employs advanced NLP and fuzzy logic to analyze PRIRePS and MAREPS and generate ‘clusters’ of potential recurring defects to help prioritize costly and critical problems.

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**CLICK HERE** for Product Details  
**CLICK HERE** to Request Private Demo
After all, your aircraft operate in the clouds, so why not use the latest cloud based technology.

All CloudCARDS Ltd. products are securely built and project manage the technical review, aircraft maintenance reserves, alerts, forecasting, invoicing and the day to day management of the asset including utilization, AMS — Asset Management System is designed to manage physical & records audit.

Conduce specializes in producing mobile applications for the aviation industry, writing native Win8/10 and IOS tablet “Touch” solutions and integrating these with responsive modern connected websites. The current flagship product eTechLog8 enables an airline to eliminate the traditional paper based tech log/cabin log and deferred defect books and is currently in differing stages of contract, trial & acceptance with various airlines. Several NAA’s are also now involved with respect to monitoring these projects, enabling the necessary approval for the eventual roll out of paperless tech log systems with multiple EASA approved airline fleets.

Conduce

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T: +44 333 888 4044
E: info@conduce.net
Location: Nuneaton, Warwickshire

NAME OF PRODUCT MARKETED
• eCentral8
• eTraining8
• eCabinLog8
• eTechLog8

KEY BUSINESS/SOFTWARE AREAS
• Electronic Tech Log
• Cabin Log
• Document Viewer

Conduce’s portfolio stretches from AMOS Support, BI-Management, Data Migration and Hosting to the products CROSSMOS® (electronic tech log) and ACSIS (tool for predictive maintenance).

CROSSMOS® is an electronic technical logbook (eTL) developed with state-of-the-art methods and technologies. The CROSSMOS® ELB consists of a service oriented architecture with modular and exchangeable components, exchangeable interfaces and separately updateable software modules. CROSSMOS® includes a pilot client, a cabin client and a maintenance client. CrossConsense is already working with several international customers, gathering operational and legal requirements from all sources CrossConsense also has a long tradition in providing support for AMOS. You have one single point of contact (no separated responsibilities for hardware, database or application support) for 1st and 2nd level.

CrossConsense

W: www.crossconsense.com
T: +49 69 4035 7600
E: contact@crossconsense.de
Location: Frankfurt Germany;
Heusenstamm Germany

NAME OF PRODUCT MARKETED
• CROSSMOS

KEY BUSINESS/SOFTWARE AREAS
• Electronic Tech Development
• Support
• Consulting
• Business Intelligence solutions
• App and dashboard development

“Since being established in 2002, we basically think from the perspective of the user. We are not pure IT geeks and it is exactly that which characterizes our services and products. Thus we distinguish ourselves from most of the specialists for the implementation of solutions. We can’t do otherwise, because in the DNA of CrossConsense are many years of experience in Airlines, in the area of procurement, engineering and maintenance. We know your job as if it were ours. And THAT you will feel immediately!”

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### EXSYN Aviation Solutions

**W:** www.exsyn.com  
**T:** 0031-20-760 8200  
**E:** hello@exsyn.com  
**Location:** Amsterdam

**NAME OF PRODUCT MARKETED**
- Avilytics, TITAN

**KEY BUSINESS/SOFTWARE AREAS**
- Aviation Analytics solution
- Aircraft Reliability Management solution
- Predictive Maintenance solution
- Robotic Process Automation
- Data Migration
- Consulting Service

EXSYN Aviation Solutions is specialized in the field of aircraft data, analytics & processing and provides user-friendly and innovative aviation IT solutions for aircraft reliability management and predictive maintenance. Also offered are data processing and managed services for data migration, interface design and software implementation management. They also build customized solutions and software tools if off-the-shelf products do not meet a customer’s needs.

Avilytics is EXSYN’S Predictive Maintenance, Aircraft Reliability, and Engineering & Maintenance KPI Solution, reducing AOG’s through informed decision making to prevent delays, cancellations and save costs.

TITAN is a source independent data processing solution for data migration purposes during an MRO software implementation and for aircraft phase-in & phase-out. Because of its unique technological framework TITAN eliminates most human intervention during migration of aircraft airworthiness & maintenance data and allows repetitive usage to directly migrate fleets between MRO software systems.

### Flatirons Jouve

**W:** www.flatironsjouve.com  
**T:** +1.303.627.6535  
**E:** patrick.dawson@flatironsjouve.com  
**Locations:** Europe, Asia, and the United States

**NAME OF PRODUCT MARKETED**
- CORENA Suite

**KEY BUSINESS/SOFTWARE AREAS**
- Content Management System (CMS)
- Interactive Electronic Technical Publisher (IETP)
- Maintenance & Engineering
- Flight Operations
- Tablet Solutions & Mobility

Flatirons provides consulting, technology, and outsourcing for content lifecycle management (CLM). For more than 20 years, we have served global Fortune 1000 customers in aerospace, automotive, electronics, financial services, government, healthcare, and publishing. Our customer engagements help organizations efficiently deliver the right information, at the right time, to the right people by leveraging structured content and digital media — Turning Content into Knowledge®. The CORENA Suite by Flatirons is the leading content lifecycle management (CLM) solution developed specifically for organizations that rely on mission-critical data to design, manufacture, operate, or maintain complex assets over their product and service lifecycles as well as across multi-echelon business networks. For more than 25 years, the world’s leading airlines, aerospace manufacturers, OEMs, and defense organizations have relied on the CORENA product suite to create, manage, and deliver large volumes of technical information throughout its lifecycle. Today, CORENA customers rely on the CORENA suite to modernize their IT infrastructures, improve customer satisfaction, and maintain their competitive advantage.

### Honeywell

**W:** http://bit.ly/Honeywell-MRO  
**T:** +44 1344 656000  
**E:** John.Bradshaw@Honeywell.com  
**Location:** Germany, UK, USA

**NAME OF PRODUCT MARKETED**
- Vocollect

**KEY BUSINESS/SOFTWARE AREAS**
- Voice Solutions for MRO
- Hands-Free, Eyes-Free MRO

Vocollect solutions deliver a new level of documentation and compliance in your maintenance and inspection operations. The use of voice in a Hands-Free, Eyes-Free manner enhances the documentation of standard operating procedures and provides the continuity you need to provide better consistency across your various locations.

### IDMR Solutions

**W:** www.IDMR-Solutions.com  
**T:** +1-347-565-4367  
**E:** sales@IDMR-Solutions.com  
**Location:** New York/Tel Aviv

**NAME OF PRODUCT MARKETED**
- InForm

**KEY BUSINESS/SOFTWARE AREAS**
- Technical Publication
- Engineering Orders
- Task Cards
- Planning
- Maintenance Programs

IDMR is a global provider of easy to use and all encompassing Technical Documentation Management Solutions which have been designed exclusively for Fleet operators, MRO providers and OEM organizations. IDMR’s Technical Documentation Management Solutions have proven success in increasing operational performance and decreasing operational cost while ensuring airworthiness, safety and regulatory compliance.
NVable

W: www.nvable.com
T: +44 141 280 0050
E: contact@nvable.com
Location: Glasgow, UK

NAME OF PRODUCT MARKETED
• ConNVerge for Aviation

KEY BUSINESS/SOFTWARE AREAS
Electronically Forms (Assessments) Document Management Operational Analysis Station Operational Compliance

The concept behind our ConNVerge platform is simple. We believe that businesses should have the flexibility to easily innovate and add new applications to their toolbox, without being stifled by legacy technology or a single technology brand.

ConNVerge is all about minimising risk, fuss and capital costs and maximising efficiency. Provided as a service, it combines a hosted environment and web portal with mobile applications and data interfaces to virtually any system. The platform is easily integrated into your existing business systems and brings together the best tools to handle data acquisition and analysis data — all on scalable infrastructure. Best of all, we even take the day-to-day management off your hands.

Our ConNVerge platform is blazing a trail in the aviation sector. In a hi-tech industry, where the stakes are even higher, long-standing clients such as British Airways Cityflyer know they can rely on NVable and our custom-designed software to make things simple, safer, more secure and streamlined. We provide airlines with technology solutions that reduce effort, improve processes and produce useful information, with one simple goal — to change things for the better.

Bring everything together and do IT better when you bring on board ConNVerge and NVable.

Power Werks

W: www.power-works.com
T: +1-630-762-3761
E: info@power-works.com
Location: Chicagoland area, IL, USA

NAME OF PRODUCT MARKETED
• Power Werks, Trace Tree™, TraceSearch, Engine Manager

KEY BUSINESS/SOFTWARE AREAS
Engine Management Digital Documentation Management Traceability - Technical Records

Power Werks, Inc. is a digital solutions company that equips our global aviation clients with thoughtfully developed tools to link parts, paper and people. We combine our industry experience and the power of intuitive user interface to enable users to work differently. We’re engine people always striving to help other engine people improve their daily life.

Power Werks, a web-based platform, delivers real-time market data, collaboration and tracking solutions that streamline aviation supply chain tasks and communication without requiring any IT investment. Our platforms use Market Touch Technology (MTT) to provide unmatched connectivity to the aviation marketplace.

Rolls-Royce Controls and Data Services

W: www.controlsdata.com
T: +44 (0) 1322 777 100
E: info@controlsdata.com
Location: Germany, UK, USA, India, New Zealand

NAME OF PRODUCT MARKETED
• VisiumDIAGNOSTIC, VisiumFUEL, VisiumAQD

KEY BUSINESS/SOFTWARE AREAS
Equipment Health Management Fuel Efficiency Management Emissions Monitoring Fleet Reporting Safety, Quality and Risk Management MRO Business and Parts Management

Today, in the aerospace sector only, over 1,300 customers are benefiting from Rolls-Royce digital services globally. Through our EHM services, we monitor around 10,000 engines, 24 hours a day, 7 days a week, 365 days a year, analysing billions of data points on-board per flight, and millions every day on the ground. Our digital services complement the Group’s TotalCare® Service Solutions of Maintenance, Availability, Efficiency and Asset Value, allowing our customers to increase availability of their critical assets, minimising risk and operational disruption to ultimately improve their operational efficiency.
Safran Aircraft Engines

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T: +33 (0) 69 87 09 00
E: contact.engineLife.sae@safrangroup.com
Location: 35 production plants, design offices and sales offices throughout the world

NAME OF PRODUCT MARKETED
• LEAP, CFM56, SaM146, Silvercrest

KEY BUSINESS/SOFTWARE AREAS
• Commercial engines
• Large turbofan engines
• Business engines
• Military engines
• Support services

Safran Aircraft Engines designs, develops, produces and sells engines for commercial and military aircraft. We also offer a complete range of support services to airlines, armed forces and other operators.

Safran Aircraft Engines provides all CFM56® users with a wide range of support services, under the EngineLife® brand. These world-class services cover the entire life cycle of the engine.

We are a world leading provider of MRO services for the CFM56. Our overriding goal is to reduce engine removals and maintenance costs. Safran Aircraft Engines deploys the skills needed, through our network of shops and OEM expertise, to provide all customers—whether airlines, operators or leasing firms—with the same top-flight service anywhere in the world.

Safran Aircraft Engines also provides full customer support for CFM56 engines, which means that we are in permanent contact with our customers and their requirements. Building on 40 years of customer experience, we deploy a team of permanent reps, a 24/7 call center, a dedicated Customer Web Center, and a training center offering more than 90 different programs. We are also developing innovative services based on the advanced analysis of flight data, and a slate of expert, value-added consulting services from our seasoned staff.

Saviscnon

W: www.saviscnon.com
T: +49 40 80 90 81 44 6
E: info@saviscnon.com
Location: Germany

NAME OF PRODUCT MARKETED
• WARPweb; WARBridge; WARServices

KEY BUSINESS/SOFTWARE AREAS
• Scan, automated recognition and data entry services
• Collaboration and data exchange software in the cloud
• EAI data integration and migration engine and services in the cloud
• Target-oriented consulting and project change management
• IT-integration, project and change management

WARPweb enables owners, operators and MRO companies to establish easy and efficient processes to manage aircraft records and lifecycle documentation. It integrates seamlessly into given MRO software using our WARBridge integration engine and provides a safe data exchange and collaboration platform for all stakeholders of your aircraft. Our WARS services are the perfect supplements to WARPweb. Scanning, automated document and data recognition as well as data entry and data quality checks will help you keeping your records in optimal condition, thus creating the fundament for smooth transition projects. IT-integration, project management and experienced aviation consulting complete the package for successful accomplishment of your projects.

Skypaq

W: www.skypaq.com
T: +533 (0) 449 350 360
E: info@skypaq.com
Location: Germany

NAME OF PRODUCT MARKETED
• eLog; Integrated eLog; eCabinLog; Device Management; API Management

KEY BUSINESS/SOFTWARE AREAS
• Electronic Technical Logs
• Aircraft Data Harvester
• eCabinLog
• Device Management
• API Management

Skypaq are the world leaders in providing electronic logbook (eTechLog) solutions. Since 2006 our product has been in use with varied airlines from regional to OneWorld operators, with over a million flights recorded. With FInova, we are very proud to have worked with the airline since 2008 culminating in the deployment last year of our product on the new Airbus A350 aircraft. Our company has partnership arrangements with organizations such as IBM, Accenture, SITA and Swiss Aviation Software (AMS) enabling us to provide airlines with integrated solutions from the flight deck to the hangar on any aircraft type. Key Business software areas covered include: Electronic Technical Log (Seamless and secure communication between flight crew and technicians); Aircraft Data Harvester (connect Flight Data + Technical Services Data through existing data sources and display latest aircraft data to both pilots and technicians); eCabinLog (Allow cabin crew the ability to write and review cabin related fault reports); Device Management (Provide both Windows and iOS products plus we a full remote management solution for these devices); and API Management (We provide a mobile device platform for existing data sources with the airline).

Ubisense

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E: GLOBALenquiries@ubisense.net
Location: Cambridge, UK; Denver, USA, Düsseldorf, Germany; Paris, France; Tokyo, Japan; Vancouver, Canada

NAME OF PRODUCT MARKETED
• SmartSpace, enterprise location intelligence platform

KEY BUSINESS/SOFTWARE AREAS
• SmartSpace Production Logistics Monitor
• SmartSpace Asset Monitor
• SmartSpace Audit & Compliance
• SmartSpace Compliance Monitor

Ubisense's SmartSpace provides a foundation platform for our customers’ Industry 4.0 strategy. SmartSpace enables OEMs and MROs to create a real-time digital twin of their environment, connecting activities to manufacturing, execution and planning systems, making real-world processes involving moving assets visible and measurable.

Offering in-depth knowledge of the sectors in which it operates, Ubisense has long standing relationships with many customers across target markets including aerospace and defence, passenger and commercial vehicle manufacturing, communications and utilities. Since inception in 2002, we have built up a strong customer base including 6 of the top 10 Fortune 500 manufacturers, 9 of the leading 10 automotive manufacturers, 2 of the top 3 aerospace manufacturers and 5 of the major telecoms network operators around the world use our solutions including 3 of the top 4 in North America.

DIRECTORY

Specialist Point Solutions

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CLICK HERE for Product Details
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AIRCRAFT IT MRO