

PREDICTIVE AIRCRAFT MAINTENANCE 2023

IN PARTNERSHIP WITH

MRO
Management

27-28th November 2023

Ham Yard
Hotel, London

PLATINUM SPONSOR



GOLD SPONSORS



SILVER SPONSORS



BRONZE SPONSOR



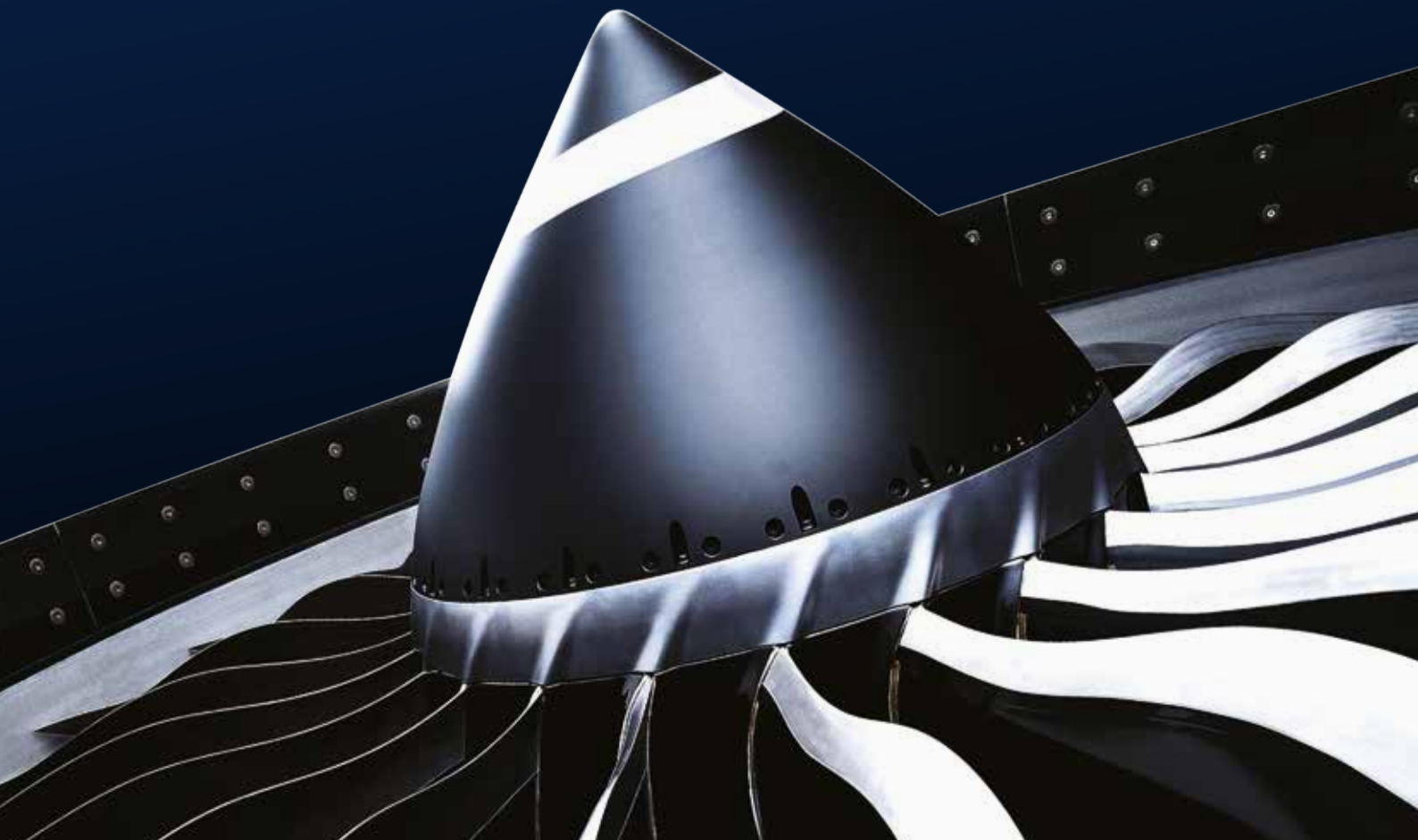
EXHIBITING





The future is our starting point

Every day, we're helping to move the world forward. Today, and for generations to come. The future of flight starts now.





Editor's welcome

On behalf of *Aviation Business News* and *MRO Management*, thank you to all delegates, speakers, sponsors, and exhibitors for supporting our annual Predictive Aircraft Maintenance (PAM) Conference.

Special thanks also go to Richard Brown, managing director of NAVEO Consultancy, for steering the event as chair.

Bringing together executives from airlines, OEMs, MRO specialists and big data experts, this event gives you a perfect platform to catch up with existing contacts, forge new

“THE PERFECT PLATFORM TO CATCH UP AND LEARN”

relationships, and of course learn about the latest PAM developments.

With a carefully crafted agenda to shine a spotlight on the most pressing issues and emerging trends for this sector, we are set to gain valuable insights from all our fantastic speakers and sponsors over the next two days.

I do hope you have both an engaging and enjoyable experience at PAM 2023.

Craig Waters

Editor

MRO Management



Chairman's welcome

It's my pleasure to welcome you to this Predictive Aircraft Maintenance (PAM) Conference; this year extended to two days, and I look forward to a full agenda of learning, discussions, and networking.

As the air transport industry reaches pre-Covid traffic, utilisation and MRO spending levels, we face several challenges in the MRO market. Covid-19 caused talent to leave OEMs, MROs and airlines, exacerbating engineering and mechanic skills shortages. Recruitment is occurring, but new workers are less productive and take time to train. There are shortages of critical parts and assemblies. Part and component repair are constraining MRO and causing frustrating longer turn times. Rising interest rates to combat inflation have made it even harder for sub-tier suppliers to obtain working capital to fund the production and MRO market ramp-up. As if this wasn't enough, we've had in-service engine reliability issues that require early removals and hospital visits, grounding aircraft, constraining engine slot capacity, and causing older aircraft to remain in service longer.

Against this backdrop, we will discuss how best to leverage the latest PAM technology tools. The goal we are striving towards is to help improve our maintenance planning capabilities to turn costly unscheduled maintenance events

into something we can better plan for and ultimately avoid in future. When this is achieved, we should be able to optimise expensive spare part inventory requirements, reduce frustrating NFF component removals, and improve aircraft dispatch reliability. The latest digital tools help our engineers to predict maintenance issues before they become troublesome and provide enhanced diagnostic capabilities.

I'm excited to hear how stakeholders are grasping this tremendous opportunity to leverage big data analytics to benefit the reliability of their operation, the financial bottom line, and, of course, leading to improved customer satisfaction. I'm particularly looking forward to learning from our speakers about their digital journey, overcoming challenges, lessons learned and what they are striving for next. I'm interested in the reality, not just the theory.

At PAM 2023, we'll learn how innovative digital predictive solutions are utilised and what's next. We'll hear about how value is being realised today and what value we are striving to create in the future. We'll cover the entire aircraft lifecycle from delivery to retirement, including considerations for the end of life. We'll also hear how digital solutions are applied to mid-life aircraft, not just the latest models.

I'm sure you will enjoy PAM 2023 - I wish you a productive, useful and successful event.

Richard Brown

Managing Director

NAVEO Consultancy

PREDICTIVE
AIRCRAFT
MAINTENANCE
2023

AGENDA

Monday 27 November

10:00-10:10

Welcome

SPEAKERS:

Lee Hayhurst, Editorial Director,
Aviation Business News

Richard Brown, Managing Director,
NAVEO Consultancy

10:10-10:30

**Beyond the magic: making AI/ML
work for predictive maintenance
in aviation**

SPEAKER:

David Harper, Fleet Support
Director, Customer and Product
Support Operations, GE Aerospace

10:30-10:55

**Attitudes and insights into the
adoption of PAM in the aviation
sector**

SPEAKER:

David Miret Mora, Technical
Director, AJW Group

10:55-11:20

Networking Break

11:20-11:40

**Towards the future of TechOps,
creating value today**

SPEAKER:

Jaime Ferrer Perez, Digital Services
Marketing Manager, Airbus

11:40-12:25

**Analytics by Liebherr and
Predictive Maintenance – The MRO
Perspective**

SPEAKERS:

Bertrand Bianco, Sales &
Partnerships - Health Management,
Liebherr-Aerospace & Transportation
SAS

José Ribeiro, Programme Manager
- Health Management, Liebherr-
Aerospace Toulouse SAS

Anton Straub, Programme Manager
Liebherr Analytics, Liebherr
Aerospace

Michael Bitzer, Managing Director,
Rheinland Air Service

Crispijn Huijts, Digital Products
& Services Manager, Air France
Industries KLM Engineering &
Maintenance

Antony Nardoza, Vice President,
Technical and Programs,
OEMServices

12:25 – 13:25

Lunch

13:25-13:45

**The Journey to Effective
Predictive Maintenance:
Leveraging data science
to enable customer success**

SPEAKER:

Steve McFeely, Managing
Director, Maintenance and
MRO Solutions, Digital Aviation
Solutions, Boeing

13:45-14:20

**Predictive Maintenance –
The OEM Perspective**

SPEAKERS:

Derek Cedillo, Director - Remote
Monitoring and Technical
Operations, GE Aerospace

Darren Macer, Senior Technical
Fellow – Predictive Maintenance and
Health Management, Boeing

Jaime Ferrer Perez, Digital
Solutions Marketing Manager, Airbus

14:20-14:45

Networking Break

14:45-15:20

**Predictive Maintenance –
The Technology Perspective**

PREDICTIVE AIRCRAFT MAINTENANCE 2023

SPEAKERS:

Dr Peter Knight, Principal Analytics Engineer, GE Aerospace

David Marty, Head of Digital Solutions Sales and Marketing, Airbus

Jason Cordoba, Chief Executive Officer, CordobaQ

15:20-15:55

Predictive Maintenance – Airline Perspective

SPEAKERS:

Amanda Bock, Senior Analytics Engineer – Propulsion Engineering, Delta Air Lines

Matias Bjerregaard, Predictive Maintenance Specialist, SAS

Craig Lynch, Predictive Maintenance Specialist, easyJet

15:55-16:00

Wrap-up

Richard Brown, Managing Director, NAVEO Consultancy

Tuesday 28 November

10:00-10:30

Completing the Aircraft Product Life Cycle

SPEAKER:

Lee Carey, Vice President Asset Management, EirTrade Aviation

10:30-11:15

Aircraft Retirement & the USM Market - the ESG benefits of Aircraft Predictive Maintenance

SPEAKERS:

Gohar Abbasi, Vice President - Technical Projects, Avolon

Karl Davies, Sales Director EMEA, CFM Materials

Christen Grant, Marketing & Business Development Manager, EirTrade Aviation

11:15-11:35

Elevating Operations with AI-Powered Engine Predictive Maintenance

SPEAKER:

Guillaume Limouzy, Airline Sales Director-EMEA, StandardAero

11:35-11:55

Adopting Prognostics – Learning by Doing

SPEAKER:

Wouter Vreeburg, Predictive Maintenance Engineer, KLM Engineering & Maintenance

11:55-12:20

Networking Coffee Break

12:20-12:45

CEO Interview

SPEAKER:

Amanullah Qureshi, Chief Operating Officer, Pakistan International Airlines

12:45-13:20

Predictive Maintenance – The regulatory perspective

SPEAKERS:

Jason Dickstein, President, Washington Aviation Group

Lucy England, Partner, Fox Williams

Mike Rhead, Associate General Counsel, ZeroAvia

Kate Staples, Director of Governance & Legal Service, Quality Care Commission (former CAA General Counsel)

13:20-13:50

Predictive Maintenance – The academic perspective: Getting ready to gain Predictive benefits

SPEAKER:

Dr Ip-Shing Fan, Senior Lecturer in Enterprise Systems, IVHM Centre, Cranfield University

13:50-14:20

Cruising the Future: Microsoft-Powered AI Advancements in Predictive Aircraft Maintenance

SPEAKER:

Daniel Williams, Chief Technology Officer – Aviation, Microsoft UK

14:20-14:30

Wrap-up

Richard Brown, Managing Director, NAVEO Consultancy



BRINGING VALUE TO YOUR AEROSPACE SUPPLY CHAIN



**Bolloré Logistics has over
50 years' experience in
aerospace logistics and
extensive industry knowledge**

We provide end-to-end supply chain solutions, including AOG coverage, Engineering Logistics Stores, and Part 145 Processes, alongside full compliance support.

bolloré-logistics.com

**For more information,
contact us on
uk.aerospace@bolloré.com**

OUR SPONSORS

PREDICTIVE
AIRCRAFT
MAINTENANCE
2023

PLATINUM SPONSOR



EIRTRADE AVIATION

EirTrade Aviation is an aviation technical asset services and trading company with operations in Dublin and Knock Airport, Ireland.

EirTrade's role is to optimise client asset value through various service offerings.

EirTrade's clients include airlines, MRO and leasing companies worldwide.

EirTrade's services include:

- Technical storage
- Consignment programmes
- Technical services – back to birth & current market asset valuations
- Engine, aircraft and parts' trading
- Aircraft storage & disassembly
- End of life programme management

EirTrade has the experience and knowledge required to meet its clients' expectations and requirements.

GOLD SPONSORS



GE AEROSPACE

GE Aerospace is a world-leading provider of jet and turboprop engines, as well as integrated systems for commercial, military, business and general aviation aircraft.



BOLLORÉ LOGISTICS

Bolloré Logistics is a global leader in international transport and logistics.

The mission of the company is to support its customers as they grow by providing customised service that allows them to be more competitive in their respective markets.

Bolloré Logistics is committed to delivering reliable, flexible innovative and value-creating solutions.

SILVER SPONSORS

AIRBUS

AIRBUS

Airbus always has been at the forefront of innovating new technologies, with a pioneering spirit that has redefined the aerospace industry.

Airbus products bring people closer together, helping them unite and progress.

Airbus strives to continually push the boundaries of what is possible to safeguard the world for future generations.



BOEING

As a leading global aerospace company, Boeing develops, manufactures and services commercial airplanes, defence products and space systems for customers in more than 150 countries.

As a top US exporter, the company leverages the talents of a global supplier base to advance economic opportunity, sustainability and community impact.

Boeing's diverse team is committed to innovating for the future, leading with sustainability, and cultivating a culture based on the company's core values of safety, quality and integrity.



AJW GROUP

AJW Group is the world-leading independent specialist in the global management of commercial and business aircraft spares, supporting airlines, MROs and OEMs with the supply, exchange, repair and lease of airframe and engine components.

The company provides the civil aerospace sector with the most efficient and progressive end-to-end supply chain solutions for the provision and repair of components, warehousing and logistical service.

AJW Group reduces costs, improves profitability and supports the brand values, goals and image of its customers.



StandardAero

STANDARD AERO

StandardAero has become one of the aerospace industry's largest independent MRO providers.

The company's success is the outgrowth of the synergistic merger of businesses with complementary specialities that have exponentially increased its capabilities and generated unprecedented customer commitment and value.

StandardAero offers extensive MRO services and custom solutions for business aviation, commercial aviation, military, and industrial power customers.

Services include OEM authorised and approved MRO capabilities for aircraft and rotorcraft engines, auxiliary power units, components; airframe services including major alterations; FAA authorised avionics capabilities; comprehensive engineering services; and custom exterior and interior design, completion, and paint.

StandardAero provides these capabilities through its network of specialised facilities and mobile service teams.

BRONZE SPONSOR



AIR FRANCE INDUSTRIES KLM ENGINEERING & MAINTENANCE

AFI KLM E&M is a world-leading multi-product MRO provider.

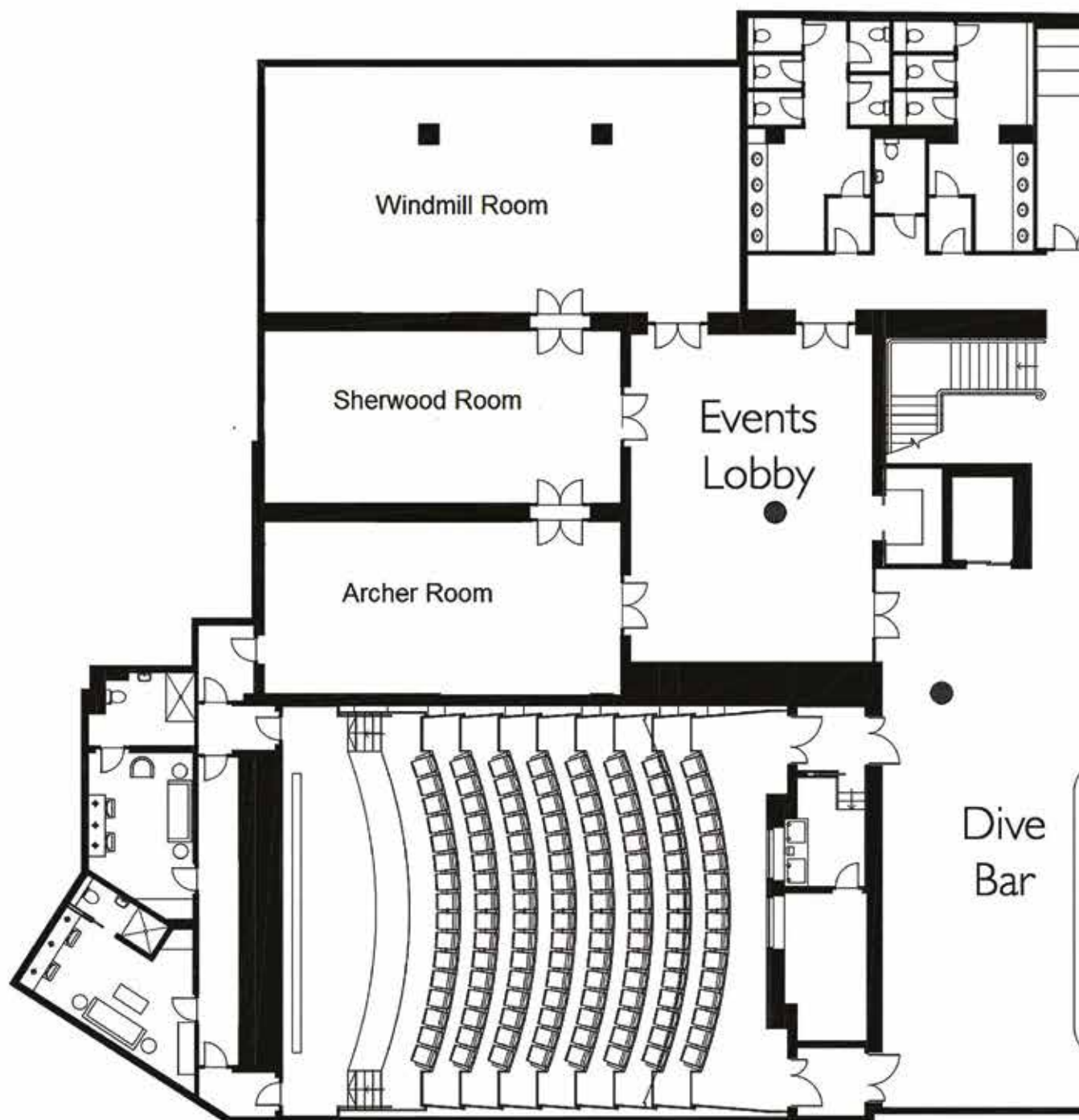
The company offers its 200 customers comprehensive technical support, including line maintenance, engine overhaul, aerostructure maintenance, and more.

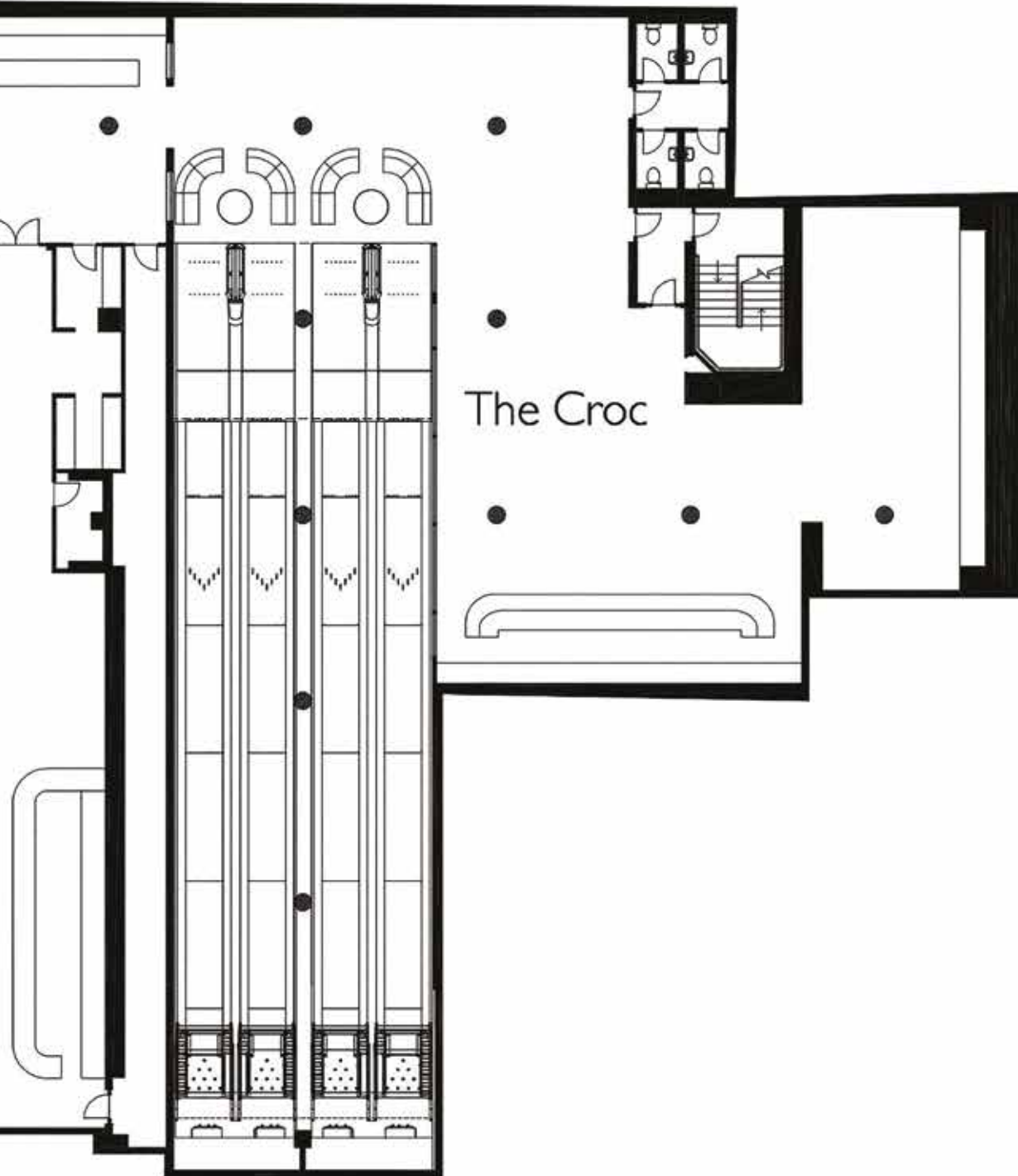
AFI KLM E&M's 12,800 employees apply their expertise on close to 3,000 aircraft around the world.

EXHIBITING AT THE EVENT



FLOORPLAN





SPEAKER BIOGRAPHIES



Richard Brown

Managing Director

NAVEO Consultancy (Chair)

Richard is the managing director of NAVEO – a focused aerospace consultancy. He has over 20 years of experience in aerospace, including 15 years consulting. Most recently he was responsible for the ICF Aerospace consulting practise and prior to that was part of the European practice at AeroStrategy.

Richard is a recognised expert in aerospace manufacturing and maintenance strategy, regularly speaking at industry events and writing in industry publications on these topics. He has managed projects for a broad global client base. His areas of special interest include OE and aftermarket forecasting, aircraft, engine and component manufacturing, repair and support, surplus parts, the PMA market, big data analytics and health monitoring.

Richard has a BSc in International History from the London School of Economics and an MSc in Air Transport Management from Cranfield University.



**I'M INTERESTED IN
THE REALITY, NOT
JUST THE THEORY**



Amanda Bock

Senior Analytics Engineer

Propulsion Engineering, Delta Air Lines

Amanda joined Delta Air Lines as the first propulsion analytics engineer in 2021. In this role Amanda leverages her expertise in mechanical engineering and data science to bridge the gap between traditional engineering principles and emerging data-driven practices. She has become a driving force in utilising data to enhance safety, efficiency, and sustainability in engine operations.

As an analytics engineer, Amanda is responsible for developing and implementing data-driven solutions that monitor and optimise engine performance. Her solutions have successfully identified opportunities for proactive preventive engine maintenance resulting in reduced engine downtime, improved engine performance, and cost savings.

Amanda holds a BS and MS in Mechanical Engineering from the Georgia Institute of Technology where she specialised in energy systems and reliability engineering.

MORE INFORMATION:

Amanda Bock will take part in the Airline Perspective Panel Discussion alongside Scandinavian Airlines' Matias Bjerregaard and easyJet's Craig Lynch, to discuss the opportunities and challenges for airlines and their need for better visibility of maintenance requirements.



Amanullah Qureshi CEO

Pakistan International Airlines

Amanullah leads all of Pakistan International Airlines' operations including airport operations, technical operations, supply chain, safety, and the integrated operations centre where the airline's daily operations are managed.

Amanullah's aviation career began at the airline in 1989. Throughout his career he has held a variety of leadership roles in materials and planning, operations control and planning, safety management systems, technical operations, airline catering, aero medical services and customer services. Most recently Amanullah has also taken charge of training and development.

After college, Amanullah began his career serving as a trainee engineer in the Engineering and maintenance department of Pakistan International Airlines. He later held numerous management positions in purchasing, inventory management, warehouse distribution, logistics, maintenance operations centre and facilities management.

Amanullah is a member of the Society of Aircraft Engineers of Pakistan and is also the executive member of the Pakistan Society of Training & Development.

Amanullah holds Bachelor's in Aerospace Engineering from the esteemed College of Aeronautical Engineering, Pakistan Air Force Academy. He also holds Master of Management in marketing and is currently pursuing his PhD in Aviation Management from UOC (Universitat Oberta de Catalunya), Barcelona, Spain.



Anton Straub Programme Manager - Analytics, Liebherr Analytics

Liebherr Aerospace

Anton Straub is a seasoned professional with a diverse background in Mechanical Engineering and International Sales Management. He earned his Masters degree in 2004 from Konstanz. Anton has been associated with Liebherr Aerospace Lindenberg since 2004, initially serving as a System-/ Test Engineer specialising in the qualification of Embraer 170/190 Landing Gear from 2004 to 2007. Following this, he took on the role of Program Manager for Research and Technology (R&T) in Landing Gear and Flight Controls, a position he held from 2007 to 2018. In 2019, Anton transitioned to the role of Program Manager for Liebherr Analytics.

ABOUT LIEB- HERR-AEROSPACE:

Liebherr has established itself as one of the world's leading system suppliers in the aerospace industry. The aerospace product segment develops and manufactures flight control and actuation systems, gearboxes and travel mechanisms, air management and cooling systems, as well as electronics. They are used on board many aircraft: in wide-bodied and commuter aircraft, regional and business jets, military aircraft, as well as helicopters – customers include almost all well-known aircraft manufacturers.



Antony Nardozza
Vice President Technical and Programs
 OEMServices

Antony Nardozza is the vice president technical and programs at OEMServices (Thales/Safran/Diehl/Liebherr JV) leading the engineering team and programs efficiency. Before his current position, Antony was vice president component services since 2020 for OEMServices. He initially joined OEMServices in 2018 as head of inventory solutions/predictive maintenance project manager. Before joining OEMServices, Antony worked at Spairliners (Lufthansa/Air France JV) since 2011 as material planning manager. Antony has pioneered an aerospace supply chain powered by probabilistic forecasts. Prior to this, Antony has taken during six years several positions within the supply chain at Airbus. He has an education background in supply chain and his degrees include a master's in industrial logistics.

ABOUT OEMSERVICES:

OEMServices is a leader in component, logistic and trading services for airlines and OEMs.

Founded by four major OEMs: Diehl Aerospace, Liebherr Aerospace, Thales Avionics and SAFRAN Aerosystems, OEMServices was created to offer airlines full support integrated services by regrouping the capabilities, assets and expertise of multiple OEMs.

Headquartered at Paris CDG OEMServices is supported by major hubs in Europe, the USA, the Middle East and Asia.



Bertrand Bianco
Sales & Partnerships - Health Management
 Liebherr-Aerospace & Transportation SAS

Bertrand joined Liebherr-Aerospace Toulouse S.A.S. in 2008. He has held various leading positions in operations, product support, programme and team management in the customer support and services organisation, but also in sales and marketing as a business developer. His experience counts numerous in-service campaigns with operators and airframers. Bertrand has been involved with health management/predictive maintenance in Liebherr since the earliest stages and now endorses the sales and partnership role since 2023. Bertrand is more especially in charge of the business growth of Liebherr-Aerospace analytic services for the Aerospace & Transportation division.

ABOUT LIEBHERR-AEROSPACE TOULOUSE SAS:

Liebherr-Aerospace Toulouse SAS has complete capability to develop, supply and service all aircraft and engine air systems: from the engine bleed air ports and engine pneumatics to the air distribution in the cabin and from the wing ice protection system to the cabin pressurisation. The systems are supplied for all kinds of platforms such as commercial aircraft, regional aircraft, business jets, helicopters, UAV's, fighters or military transport airlifters.



MONITORING YOUR ENGINES' HEALTH 24/7/365

EHM DATA ANALYSIS TO BRING
YOU PEACE OF MIND

StandardAero offers a range of Engine Health Monitoring (EHM) and Engine Condition Trend Monitoring (ECTM) services, which allow operators to minimize unplanned downtime and cost. With over 15 years' experience as an EHM/ECTM services provider, StandardAero offers monitoring services for a wide range of engines including:

**CF34 • CF6 • CFM56 • JT15D • PT6A • PT6B • PT6C • PT6T •
PW100 • PW150A • PW200 • PW300 • PW500 • PW600 • V2500**

For more details please speak with **Guillaume Limouzy** during **The Predictive Aircraft Maintenance Conference 2023**, or visit our website at <https://standardaero.com/customersolutions/enginehealthmonitoring>



StandardAero



Christen Grant
Marketing and Business
Development Manager
EirTrade Aviation

During Christen's tenure at EirTrade, she has held various positions including pricing and asset management before progressing into her current role.

During Christen's career to date, she has developed a deep understanding of the aviation industry with a specific focus on the used surplus material (USM) and aircraft disassembly market. Christen holds a Bachelor of Science in Aviation Management from Dublin City University and a Diploma in Aviation Leasing & Finance from City Colleges.

ABOUT EIRTRADE AVIATION:

EirTrade Aviation is an aviation technical asset services and trading company with operations in Dublin and Knock Airport, Ireland. EirTrade's role is to optimise client asset value through various service offerings.

EirTrade's clients include airlines, MRO and leasing companies worldwide.

EirTrade's services include:

- Technical storage
- Consignment programmes
- Technical services – back to birth and current market asset valuations
- Engine, aircraft and parts' trading
- Aircraft storage & disassembly
- End of life programme management

EirTrade has the experience and knowledge required to meet its clients' expectations and requirements.



Craig Lynch
Predictive Maintenance Specialist
easyJet

Craig is an inquisitive and creative enthusiastic aircraft health specialist with a long pedigree in aircraft maintenance, in particular avionics engineering with a track record for delivering data-driven business improvement projects.

His background has pivoted from maintaining military fighter jets to becoming a licensed engineer and he has been working at easyJet since 2005.

Craig has been building and delivering the predictive maintenance strategy at easyJet since 2015 and has been the airline's predictive maintenance specialist since 2018 where he continues to lead a path towards more intelligent decisions for aircraft health, efficient use of resource and passenger journey enhancement.

MORE INFORMATION:

Craig Lynch will take part in the Airline Perspective Panel Discussion alongside Matias Bjerregaard, Predictive Maintenance Specialist at Scandinavian Airlines, and Amanda Bock, Senior Analytics Engineer Propulsion Engineering at Delta Air Lines.

With lengthy lead-in times for hangar slots and delays in new aircraft delivery, airlines are having to keep older fleets in the air and need better visibility of maintenance requirements to operate efficiently. In this panel discussion, the airline representatives will discuss the opportunities and challenges they face.



Crispijn Huijts

Digital Products & Services Manager
Air France Industries KLM Engineering
& Maintenance

Crispijn Huijts is an accomplished Aerospace Engineer (MSc.) with extensive experience in the aviation MRO business. Having worked in various industries, he joined Air France KLM at the Engineering & Maintenance division, where he gained expertise as an engineer for engine services and as a team leader for a repair shop of component services. Currently, Crispijn is the Digital Products & Services Manager, focusing on commercialising the predictive maintenance product Prognos® for the benefit of airlines worldwide.

ABOUT AFI KLM E&M:

Air France Industries KLM Engineering & Maintenance (AFI KLM E&M) is a major multi-product MRO provider. With a workforce of over 12,800, AFI KLM E&M offers comprehensive technical support for airlines, ranging from engineering and line maintenance to engine overhaul, aero structure and fan thrust reverser support, as well as the management, repair and supply of aircraft components, structured around a powerful logistics network. AFI KLM E&M supports almost 3,000 aircraft operated by 200 major international and domestic airlines.



Daniel Williams

Chief Technology Officer
Microsoft

Daniel is a highly experienced chief technologist with extensive technical knowledge in Microsoft Azure and AWS Cloud Technologies. He has a proven track record of success in both consultancy and technical design, and excels at evaluating key business requirements for infrastructure and software integrations, as well as leading complex migration projects.

Daniel's strong presentation skills enable him to clearly communicate technical concepts to both technical and non-technical stakeholders, resulting in successful project outcomes. He has consistently demonstrated a keen ability to analyse technical and financial data to identify opportunities for optimisation and cost savings. He has a solid understanding of industry trends and emerging technologies, which allows him to stay ahead of the curve and recommend innovative solutions to business challenges.

Daniel's skills and experience include cloud technologies, technical design, business acumen, strategic planning, consultancy, project management, data analysis, cost optimisation, industry trends and emerging technologies, and presentation skills. He is passionate about leveraging technology to drive business success and thrives on collaborating with cross-functional teams to deliver impactful solutions that meet the needs of the organisation and its customers.



Darren Macer

Senior Technical Fellow Predictive Maintenance and Health Management
Boeing

Darren is a senior technical fellow specialising in predictive maintenance and health management for both commercial and military platforms. In this role he leads the research, development and implementation of capabilities utilising engineering knowledge, big data techniques and model based engineering techniques and applying them to operational and maintenance data to enable predictive maintenance and health management.

Darren also has the role of leading the enterprise effort defining the technical approach for product support digital thread/digital twin, by collaborating across the enterprise in defining the strategy, providing technical oversight and guidance to enabling capabilities that meet business and customer needs.

ABOUT BOEING:

As a leading global aerospace company, Boeing develops, manufactures and services commercial airplanes, defence products and space systems for customers in more than 150 countries. As a top US exporter, the company leverages the talents of a global supplier base to advance economic opportunity, sustainability and community impact. Boeing's diverse team is committed to innovating for the future, leading with sustainability, and cultivating a culture based on the company's core values of safety, quality and integrity.



David Harper

Fleet Support Director, Customer and Product Support Operations
GE Aerospace

David leads teams located in the US and China that deliver 24/7 product support and digital tools for airlines. These teams provide a wide array of services from managing engine data, monitoring engine operations, and predicting maintenance needs for fleets worldwide.

These services help improve engine performance and time on wing, which drives operational stability for airlines. Fleet support does this by combining jet engine technical expertise with advanced digital technologies and data analytics throughout the engine lifecycle.

As a senior engineer, David has more than 30 years of experience in the aviation and energy sectors. He has held a variety of engineering roles in the UK, France and the US for Alstom and GE, always at the forefront of new technology, connecting people and ideas to find innovative ways to satisfy customers' needs.

David graduated in 1990 with an M.A. degree in engineering from Cambridge University, England, specialising in turbomachinery.



AJW®

Complex MRO vendor network?

We are your one
stop shop for repair
excellence

AJW Group is the world-leading, independent, parts, repair, lease, engine, flight hour programme and supply chain solution integrator, transforming efficiency in commercial, business and defence aviation.

With hubs and offices on every continent - including AJW Technique, a state-of-the-art component MRO facility in Montreal - nose to tail, we have you covered.

ajw-group.com

Enhancing Airline Operations with **[Skywise Fleet Performance+]**

Your ultimate Airbus digital solution in enhancing airline operations. Going beyond expectations, delivering powerful predictive maintenance solutions, leveraging in-depth aircraft health data, and enhancing fleet reliability for peak operational excellence.

Take the next leap into data-driven techOps:
Choose **S. Fleet Performance+**



AIRBUS



David Marty
Head of Digital Solutions
Sales & Marketing
Airbus

David Marty serves as Head of Digital Sales and Marketing at Airbus and is responsible for the promotion and sales of the complete portfolio of Airbus digital solutions (including the Skywise platform).

He has more than 20 years of aviation experience mainly in commercial aircraft but always focusing on customer and value creation.

David joined the Airbus Technical publication department in 2001 during the development phase of the marvellous A380 programme. After that, he held various positions in the Airbus Support engineering departments dealing with Airlines and MROs operating all types of Airbus aircraft (including ACJ).

David has spent more than 10 years in the scheduled maintenance department in charge of the development of tailored and customised solutions. David was also maintenance programme approver in the frame of the Airbus CAMO organisation. During this decade, David has managed several engineering projects and task forces such as Parking and storage during the Covid crisis.

David graduated from Institute of Aeronautical Maintenance in Bordeaux.



David Miret Mora
Technical Director
AJW Group

David leads a team of technical experts, delivering component and aircraft solutions to customers worldwide. He joined AJW Group in 2015 as a warranty engineer, having graduated in Aeronautical Engineering and Aerospace Engineering from the Polytechnic of Madrid and Leon University respectively. He specialised in airworthiness in both degrees and later consolidated this with an MSc in airworthiness from Cranfield University.

Promoted to technical service engineer within his first year, senior technical services engineer two years later, and technical manager early in 2019, David quickly rose through the ranks, securing his current role as technical director in 2022. He is responsible for the group's overall Technical, Compliance and Quality (TQC), Subcontract Management (SCM) strategies and development; setting the strategic direction and maintaining adherence, appropriate regulatory approval, industry standards, and ensuring suppliers meet their contractual performance targets.

David is a results-driven, experienced leader in technical services, quality (ISO9001/AS9120/Part145/Part M/CAMO) and the MRO of commercial aircraft components. He enjoys resolving problems, improving customer satisfaction, driving operational improvements, and inspiring his team. Consistently introducing continuous improvement systems to deliver efficient processes and standard operating procedures, he ensures an agile, lean approach using his initiative and 'can do' attitude to make things happen.



Derek Cedillo
Director of Remote Operating and Technical Operations
 GE Aerospace

In his role, Derek works with GE and CFM airline customers to ensure they get optimal use of their assets.

His primary focus is to meet the predictive maintenance needs of airline operators that utilise GE and CFM aircraft engines through a combination of engineering expertise, advanced analytics design and modern deployment platforms.

Derek has worked at GE for more than 28 years and has spent his career dedicated to solving customer problems in both commercial and military aviation.

In addition to a Bachelor of Science Degree in Mechanical Engineering from MIT, Derek also holds a Master of Science Degree in Engineering Management from the University of Dayton.

ABOUT GE AEROSPACE:

GE Aerospace is a world-leading provider of jet and turboprop engines, as well as integrated systems for commercial, military, business and general aviation aircraft.



Dr Ip-Shing Fan
Senior Lecturer in Enterprise Systems
 Cranfield University

At Cranfield University, Dr Ip-Shing Fan leads Digital MRO in DARTeC, supporting aviation transformation in operations and maintenance. He is leading the Digital MRO and Hangar laboratories in the Cranfield DARTeC Initiative. The complex is a realistic representation of airport ramp and hangar environment to study the interactions between aircraft, engineers, airport and hangar facilities, ground vehicles and drones. The digital infrastructure support aircraft digital twins work to maintain the accurate configuration in the information world of airworthiness, as the engineering health status of the aircraft structure and systems to predict and prevent failures.

MORE INFORMATION:

Predictive maintenance is gaining traction and solutions are available from multiple tech providers. Cranfield University has developed a three-stage model of predictive maintenance, explaining the different types of business benefits achievable according to the different levels of access to data and integration with operation. At PAM 2023, Dr Ip-Shing Fan's presentation will explore a predictive skills map for airlines, MRO and supply chain operators to make ready their staff to fully develop and exploit the information from the predictive systems.



Gohar Abbasi

**Vice President of Asset Solutions
and P2F**
Avolon

Gohar Abbasi heads up Avolon's consignment programme for airframes and engines at EOL. Gohar is also responsible for the project management of Avolon's P2F (Passenger to Freighter) programme.

He has been at Avolon since May 2016, joining the firm as a business analyst with responsibility for the pricing and structuring of aircraft acquisitions, aircraft sales, placement of aircraft and capital raising. He was seconded to Avolon's HK office in 2018 for one year and also spent another year in the corporate finance and investor relations team in 2019.

Prior to joining Avolon, Gohar was a senior consultant for Mazars London in the quantitative solutions and pricing team. Previous to this, he worked in the valuations and risk methods and market risk teams in DePfa Bank Dublin.

Gohar holds a BSc. in economics and finance with a first-class honours from University College Dublin and a certificate in valuation of complex financial instruments with first-class honours from the Institute of Bankers Ireland.



Guillaume Limouzy,

**Regional Sales & Service
Manager Airlines & Fleets**
StandardAero

Guillaume Limouzy serves as Airlines & Fleet Director for StandardAero with a focus on Large Turbofan sales across Europe, Middle East and Africa.

Guillaume has 29 years of leadership experience in the aerospace industry, including 22 years' experience working for OEMs.

Guillaume joined StandardAero in early 2016, having previously worked at Embraer as Senior Manager for Customer Support & Services for Middle East & Africa. Prior to this, Guillaume held positions of responsibility within Airbus's customer support team in China and the USA, and at Air Littoral.

Guillaume holds a degree in Aeronautical Engineering.

StandardAero is one of the world's largest independent providers of services including engine and airframe maintenance, repair and overhaul, engine component repair, engineering services, interior completions and paint applications.

StandardAero serves a diverse array of customers in business and general aviation, airline, military, helicopter, components, and energy markets.

StandardAero is owned by global investment firm Carlyle.



Jaime Ferrer Perez
Digital Services Marketing Manager,
Airbus

Jaime is currently leading the TechOps portfolio within the Airbus digital solutions marketing team.

His professional career in the aviation world started 14 years ago when he joined Airbus after having finished his aeronautical engineering degree.

Jaime started his journey in Airbus working in the flight test department. Specialised in aircraft performances he worked in the development, certification and delivery of the A400M as well as in other military platforms and derivatives. Having already the engineering experience, Jaime moved to Airbus customer service aiming at working closer to the customers, learning from them while helping them get the most out of Airbus products. During this period he worked with dozens of airlines, providing them support on the scheduled maintenance activities, including one of his latest missions in the parking and storage task force built to support operators during the Covid-19 crisis.

ABOUT AIRBUS:

Airbus always has been at the forefront of innovating new technologies, with a pioneering spirit that has redefined the aerospace industry. Airbus products bring people closer together, helping them unite and progress. Airbus strives to continually push the boundaries on what is possible to safeguard the world for future generations.



Jason Cordoba
CEO
CordobaQ

Jason is an aviation business architect improving everyday systems where manual effort can be replaced to achieve cost minimisation, digital efficiency and streamlined processes. CordobaQ is a consulting company for the aviation industry which helps businesses unlock their software potential to release its maximum capabilities.

Prior to setting up CordobaQ in 2020, Jason joined the AJW Group in 2014 based in the UK as commercial development officer. His responsibilities included helping the business derive the maximum benefits of Quantum ERP by streamlining manual process flows into automation, he also implemented aftermarket 'best practice' to fulfil business strategies and foster success.

He attended PennState University before he started his career in 2004 at Component Control, an aviation ERP software company where he gained knowledge in tech software development, professional services training and developed the aviation industry's first mobile app for aircraft parts after launching StockMarket.aero, a 'Google' like search engine for aircraft parts.

Jason's passion for people, product development and industry knowledge stand as a hallmark to his continued success in providing management teams all over the world with the tools they need to understand process flow deficiencies to provide recommendations for business growth.

Active in the aviation community serving as a board member on various committees, Jason contributes to industry publications, he is a respected speaker at aviation conferences and winner of industry awards such as the 'All Star' Award by the QUEGroup User Conference.



Innovating together

Optimize your operations with platform agnostic lifecycle support and sustainment solutions that keep the world's fleet flying safely, efficiently and sustainably.

Parts &
Distribution
Services

Digital
Aviation
Solutions

Engineering &
Modifications
Services

Training
Solutions

Cabin &
Interiors
Products

For more information on our full-fleet solutions visit services.boeing.com.





Jason Dickstein

President

Washington Aviation Group

Jason has practiced aviation law in the Washington, DC area for over 30 years. In his private practice, he advises aviation industry companies on compliance issues, represents them in transactions, and defends them against enforcement actions and other lawsuits.

His clients include repair stations, air carriers, aircraft parts distributors, and aircraft parts manufacturers. He has represented and advised clients from Africa, the Americas, Asia, and Europe.

In his law practice, Jason's focal areas include: aerospace transactions, aviation safety regulations, competition, export and import, dangerous goods, and intellectual property.

Jason also represents several aviation trade associations, including the Aircraft Fleet Recycling Association (AFRA). He helped incorporate AFRA in 2007 and has served as AFRA's Washington Counsel. In that role has helped AFRA draft and develop standards for disassembly and recycling of aircraft and engines. On behalf of AFRA, he works closely with government bodies in several jurisdictions (including China, the EU and the UK) to develop regulations to maintain safety and improve global trade.

Jason has spent much of his career encouraging trade in aviation parts and developing tools that can help provide assurances of quality and airworthiness in those transactions.



José Ribeiro

Programme Manager -

Health Management

Liebherr-Aerospace Toulouse SAS

José joined Liebherr-Aerospace Toulouse SAS in 2000. He has held various positions in, RAMS & Integrated air system development as a project manager. José started the health management activities project in 2016 and moved to being programme manager in 2018.

As a programme manager, José is leading both the development and R&D of the predictive maintenance for the bleed and environmental control system fitted on the various programmes supported by Liebherr Aerospace Toulouse (A220, A320, A330, A380, B747-8, etc).

ABOUT LIEBHERR-AEROSPACE TOULOUSE SAS:

Liebherr-Aerospace Toulouse SAS has complete capability to develop, supply and service all aircraft and engine air systems: from the engine bleed air ports and engine pneumatics to the air distribution in the cabin and from the wing ice protection system to the cabin pressurisation. The systems are supplied for all kinds of platforms such as commercial aircraft, regional aircraft, business jets, helicopters, UAV's, fighters or military transport airlifters.

Moreover, the company is also active in the field of fuel cell technology and thermal management systems for space applications.



AN AMAC AEROSPACE COMPANY



Designed by engineers for engineers

ROAM is an advanced aircraft technical records archiving solution and provides operators and asset owners alike, a cost-effective solution to store, audit and share records with various stakeholders.

Built-in search and filtering features facilitate record keeping and data management, providing manpower effectiveness, enhanced quality, and reduced risk. Stay on top of the management of day-to-day fleet maintenance, get in an instant the compliance status of your projects and save time of end of lease projects.

Contact us to explore how we can ease your operations.

+44 (0)1279 818 800
enquiries-gamit@amacaerospace.com
www.gamit.co.uk





Karl Davies
Sales Director for
the EMEA Region
CFM Materials

Karl joined CFM Materials in 2019 and maintains the position of sales director for the EMEA region.

CFM Materials is a 50/50 joint venture between GE & Safran and prides itself as the largest provider of USM for the CFM56 and most recently the next generation of LEAP engine product types.

Karl has the responsibility of implementing and maintaining a suite of complex OEM USM programmes that are tailored to each of the customer's needs; driving down cost, maximising efficiency and reducing turnaround times. Furthermore, Karl is also responsible for coordinating the overall strategic direction of the USM strategy we have in region.

Karl has over 10 years' experience within the commercial aviation industry and has previously held positions at other leading aviation companies focused on developing and marketing aviation technical services solutions.

ABOUT CFM MATERIALS:

Based near DFW Airport, Texas, the CFM Materials, LP joint venture of GE and Safran Aircraft Engines is the world's largest provider of used serviceable components for CFM International engines – which power such aircraft as the Airbus A320 and Boeing 737 commercial jetliners, as well as the Boeing KC-135R aerial tanker operated by the US Air Force.



Kate Staples
Director of Governance
and Legal Services
Care Quality Commission

Kate was the general counsel and secretary to the CAA until December 2021, holding the role for over 11 years. Kate was also a trustee of the Air Travel Trust, of the CAA's pension scheme, and company secretary to the CAA's two subsidiaries: ASSI Ltd and CAA International Ltd. In February 2023 she took up the role of director of governance and legal services at the Care Quality Commission.

Before joining the CAA, Kate worked at the Department for Transport, primarily advising on aviation matters, with a short stint in one of the railways teams. Kate did not start off as a public lawyer; in her early career she specialised in high-value construction and engineering disputes at a leading city practice.

Kate enjoys the arts, travel, developing her photography skills and following the fluctuating fortunes of Liverpool FC.

MORE INFORMATION:

Kate Staples will take part in the Regulatory Perspective Panel Discussion in which participants will debate the latest legal issues relevant to MRO and predictive maintenance and how firms can ensure they are conforming to regulator's expectations.



Lee Carey
Vice President of
Asset Management
EirTrade Aviation

In the past, Lee has held various different positions within EirTrade's technical, sales and asset management departments before progressing into his current role.

Lee has developed an extensive knowledge of engine and airframe product knowledge and has overseen the acquisition of over 80 commercial aircraft and engines. Lee holds a master's in aviation finance from Michael Smurfit Graduate Business School and a Bachelor of Science in aviation management from Dublin City University.

MORE INFORMATION:

Lee Carey will deliver PAM platinum sponsor EirTrade Aviation's presentation in which he will set the scene for Day Two's morning sessions which will look at the full lifecycle of an aircraft from design and development to teardown, recycle and re-use.

Being able to predict the value of the asset at end of life by monitoring it throughout its operational life is vital for the economics of the aviation sector and for owners, operators and lessors.

Lee Carey will explain how considerations related to aircraft end-of-life are relevant to the discussion about predictive aircraft maintenance and should be central to how the aviation sector manages its valuable physical assets.



Lucy England
Commercial and Regulatory
Aviation Lawyer
Fox Williams

Lucy is a commercial and regulatory aviation lawyer at London-based law firm, Fox Williams. She has worked for over a decade with airlines, OEMs, MROs, ground handlers, and aerospace and defence businesses, and the technology businesses that supply to them. She has an active interest in how technology and data is driving growth and changing the sector.

Lucy is recognised as a 'Next Generation Partner' for both travel and aviation in the Legal 500 2020 and is a member of the Women in Aviation and Aerospace Committee at the Royal Aeronautical Society.

MORE INFORMATION:

Lucy Williams will take part in the Regulatory Perspective Panel Discussion in which participants will debate the latest legal issues relevant to MRO and predictive maintenance and how firms can ensure they are conforming to regulator's expectations.



Michael Bitzer

Managing Director

Rheinland Air Service GmbH

Rheinland Air Service GmbH is a 400-staff strong MRO in Germany. The company provides heavy maintenance and engineering services for business and regional airline aircraft.

Michael joined the company in 2021 to transform the operation into a more competitive data-driven service provider. Prior to that, Michael lead Lumics, a specialist maintenance consulting joint-venture formed by McKinsey and Lufthansa Technik, and also spent 13 years in Australia managing a special mission air operation with in-house maintenance capabilities.

Michael received a Fulbright Scholarship and graduated with a master's degree in aerospace from the Georgia Institute of Technology in Atlanta.

ABOUT RHEINLAND AIR SERVICE:

Rheinland Air Service (RAS) provides comprehensive FAA and EASA Part 145-approved aircraft MRO for the ATR family and numerous business aircraft. The company's enormous parts warehouse stocks component parts and exchanges, hundreds of leading edges and flight controls, hard to find replacement items, plus overhauled and recertified spare parts.



Mike Rhead

Associate General Counsel

ZeroAvia

Mike is a commercial lawyer with over 15 years of experience working in the aviation industry. Having worked for engine OEMs (including Rolls-Royce and in his current position at ZeroAvia), airlines, leasing companies and MRO facilities, Mike has extensive experience across the sector.

Predictive maintenance and its advancements over recent years is a topic Mike has followed closely, especially given its links and future impact on the engine aftermarket.

MORE INFORMATION:

Mike Rhead will take part in the Regulatory Perspective Panel Discussion in which participants will debate the latest legal issues relevant to MRO and predictive maintenance and how firms can ensure they are conforming to regulator's expectations.

MEET *Prognos*®

PREDICTIVE MAINTENANCE



BEST4YOU



100%
Innovation



100%
Global Network



100%
Airline MRO



100%
Adaptiveness

AFI KLM E&M delivers services guaranteed to match your requirements 100%, buttressed by know-how rooted in the experience of an MRO backed by a group of world-class airlines. Our Global Network delivers those solutions on your doorstep, giving you the benefit of our wealth of innovations, so that our services are always the **Best4You**.



@afiklmem

AIRFRANCE /
INDUSTRIES

KLM
Engineering &
Maintenance

A D A P T I V E N E S S ®



Matias Bjerregaard
Predictive Maintenance Specialist
 Scandinavian Airlines

Matias is a certified B1/B2 technician and has 24 years of experience in airplane maintenance, 23 of them in SAS, covering a number of different roles.

His current task is to introduce predictive maintenance in SAS, and lead the company in going from unscheduled maintenance to more planned maintenance.

Matias enjoys his position as it allows him to be on the cutting edge of this new technology.

MORE INFORMATION:

Matias Bjerregaard will take part in the Airline Perspective panel discussion alongside Craig Lynch, Predictive Maintenance Specialist at easyJet, and Amanda Bock, Senior Analytics Engineer, Propulsion Engineering at Delta Air Lines.

With lengthy lead-in times for hangar slots and delays in new aircraft delivery, airlines are having to keep older fleets in the air and need better visibility of maintenance requirements to operate efficiently. In this panel discussion, the airline representatives will discuss the opportunities and challenges they face.



Peter Knight
Principal Analytics Engineer
 GE Aerospace

Peter has an aerospace engineering background with a first class master's degree and PhD from Southampton University.

He has more than 15 years' experience of developing algorithms and systems for analysing aircraft data to detect faults. This has included developing skills in python, R, spark, MATLAB, c++, Excel (& VB macros), Batch, FORTRAN, databases and SQL etc.

Peter has four years' experience in project management (including the use of Microsoft Project), delivering >\$1M projects on time, within budget and exceeding customer expectations, and has managed local and global teams.

ABOUT GE AEROSPACE:

GE Aerospace is a world-leading provider of jet and turboprop engines, as well as integrated systems for commercial, military, business and general aviation aircraft.



Steve McFeely
Managing Director,
Maintenance and MRO Solutions,
Digital Aviation Solutions
Boeing

Steve has responsibility for the P&L, portfolio management, technical execution and oversight and portfolio integration of a broad portfolio of products and services around aviation engineering and maintenance and logistics.

Steve has held several leadership positions throughout the value stream, from manufacturing and production operations to engineering, product strategy and development, business development and test and evaluation.



Wouter Vreeburg
Predictive Maintenance Engineer
KLM Engineering & Maintenance

Wouter holds an Bsc. in aerospace engineering and an Msc. in mechanical engineering from Delft University of Technology, specialising in transportation and logistics.

In mid-2019 he started his professional career at KLM Engineering & Maintenance in their big data team. Combining aircraft system knowledge with data science, he is continuously expanding the growth of Prognos for Aircraft, Airfrance-KLM's solution for predictive maintenance and health monitoring on components.

Revima

APU PREDICTIVE CARE

Achieve highest APU reliability through combination of the most advanced real-time predictive maintenance software along with advisories from our APU experts.

ADVISORY
FROM OUR EXPERTS

AUTOMATIC
PREDICTIVE ALERTS

ANTICIPATE
UPCOMING FAILURES

REDUCE
TROUBLESHOOTING TIME

ENHANCE
TIME-ON-WING

LIMIT
AUTO-SHUTDOWNS



CONTACT US : CONTACT-APU@REVIMA.COM

PREDICTIVE AIRCRAFT MAINTENANCE SURVEY RESULTS

Ahead of the Predictive Aircraft Maintenance Conference 2023, *Aviation Business News* and *MRO Management* gathered insights and opinions from aviation professionals regarding predictive aircraft maintenance (PAM) technology and its adoption in the sector. Here we look at some of the interesting findings from the survey.

Who took part?

Survey participants included key stakeholders such as airlines (46%), predictive maintenance tech providers (12%), and Approved Maintenance Organisations (AMOs) from both non-OEM (10%) and OEM (12%) sectors. Additionally, 6% were from Supplier/Distributor roles, and the remaining 15% represent various other stakeholders such as consultants, industry associations, and universities.

Participants included engineers (29%), supervisors, middle managers, and senior managers (39%), directors (19%), and executives and company presidents (6%).

Additionally, 8% have other roles such as researchers, data analysts, and students, providing a well-rounded perspective to capture insights from various roles and functions.

Participants were globally located, with 58% from Europe, 27% from North America, 6% from the Asia-Pacific region, and smaller representations from the Middle East, Africa, and South America.

Understanding predictive maintenance

We started by asking participants how much they agree or disagree with the idea that different actors

such as airlines, OEMs and regulators understand predictive maintenance in different ways. The responses (figure 1) showed that most people (88%) strongly agree or agree slightly, which highlights widespread acknowledgment of disparities in understanding. Only 11% slightly disagree. The results suggest that the industry should work together more and communicate better to make sure everyone has a common understanding of predictive maintenance. Doing this could make operations more efficient, safe, and cost-effective for the whole industry.

Reviewing regulations

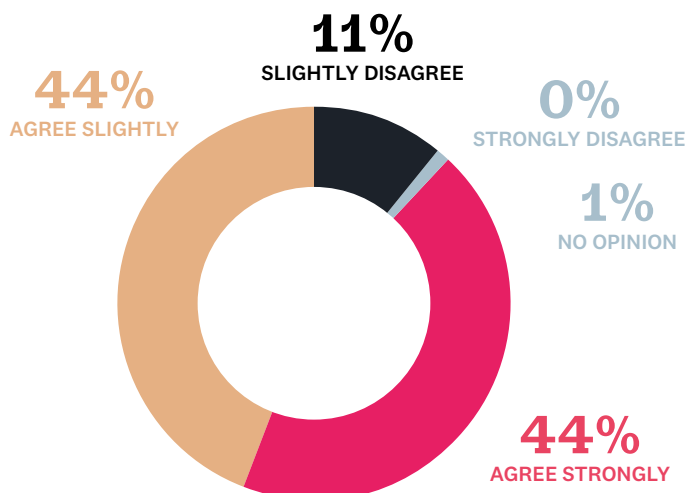
Over 60% of participants (figure 2) agree that current regulations in the aviation industry need to be revisited to accommodate the evolving landscape of predictive maintenance. However, 21% believe no regulatory review is needed, suggesting some find the existing regulations sufficient. The 11% who responded “I don’t know” indicate some uncertainty, presenting an opportunity to improve communications on regulatory requirements. Overall, the view here is that regulations should adapt to technological advancements, emphasising the importance of collaborative efforts between stakeholders and regulators.

Barriers to adoption

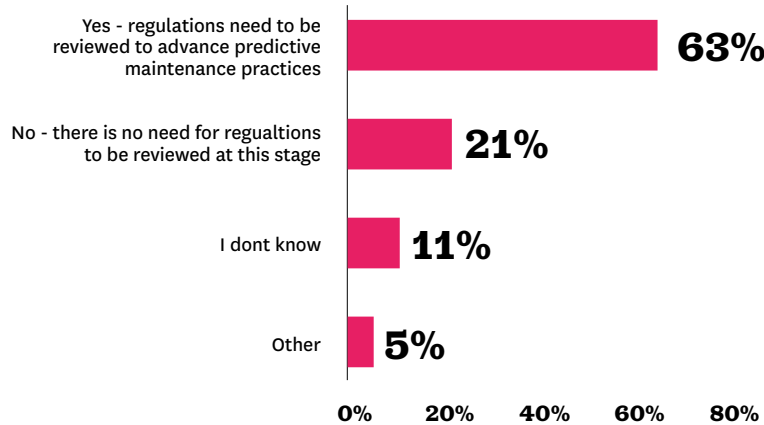
Fifty-seven per cent of participants (figure 3) express concern about “lack of trust in algorithms” and “inability to quantify benefits,” highlighting some scepticism and perhaps the need for more

1

TO WHAT EXTENT DO YOU AGREE THAT ‘PREDICTIVE MAINTENANCE IS UNDERSTOOD IN DIFFERENT WAYS BY DIFFERENT ACTORS’



WHETHER CURRENT REGULATIONS NEED TO BE REVIEWED BY REGULATORS TO ENABLE PREDICTIVE MAINTENANCE PRACTICES TO BE ADOPTED



“63% OF PARTICIPANTS AGREE THAT CURRENT REGULATIONS NEED TO BE REVIEWED”

transparency and education. The option of “high implementation and operational costs” (25%) underscores the need for more cost-effective solutions, whilst 11% selected “lack of governance” pointing to the need for more regulations. The “Other” category (7%) suggests there are some wider concerns, indicating that a more collective effort across the aviation industry is needed to overcome challenges to successfully integrate predictive maintenance practices and technologies.

Categorising predictive maintenance

If a component is removed due to a predictive maintenance alert, how should that removal be categorised? Thirty per cent of respondents favoured categorising such removals as “US PdM”, 23% selected “SD PdM”, 19% chose “Unscheduled OC”, 23% chose “Scheduled SD”, and the remaining 5% chose “Other”. These varying results indicate a need for ongoing dialogue and standardisation efforts to establish clear terminology and categorisation for maintenance activities. The industry may benefit from guidelines or best practices to navigate the evolving technological landscape and ensure a harmonised approach.

Ultimately, achieving consensus on how to categorise these removals will contribute to streamlined communication, improved reporting, and a more cohesive integration of predictive maintenance practices.

Accuracy of algorithms to eliminate NFF

Forty-eight per cent (figure 4) either agree strongly (19%) or agree slightly (29%) that highly accurate algorithms have the potential to eliminate ‘no fault found’ (NFF) occurrences, resulting in improved efficiencies and effectiveness of maintenance operations. In contrast, 50% are cautious, which could suggest they have concerns related to the complexity of aircraft systems or the potential for false positives or negatives in predictive algorithms. While there is notable optimism about the potential, there is an equally substantial level of caution. These differences in opinions emphasise the importance of continued research, development, and validation efforts to refine predictive algorithms and enhance their reliability in real-world aviation contexts.

Data ownership

Results about data ownership of predictive maintenance in health

monitoring systems reveal that 71% of respondents believe airlines or the operator should own the data. This aligns with the idea that the entity operating the aircraft should have primary ownership due to operational control and accountability. Another perspective, supported by 17%, suggests the data should be “free to all”, fostering collaboration and industry-wide improvements but requiring careful consideration of privacy and security concerns. Ten per cent advocate for joint ownership, recognising the collaborative nature of the aviation ecosystem. The results underscore the need for clear frameworks on data ownership, addressing potential conflicts, and ensuring privacy. Collaborative efforts to develop standardised approaches are essential for balancing stakeholders’ interests while promoting innovation and safety in predictive maintenance practices.

Reducing repair costs

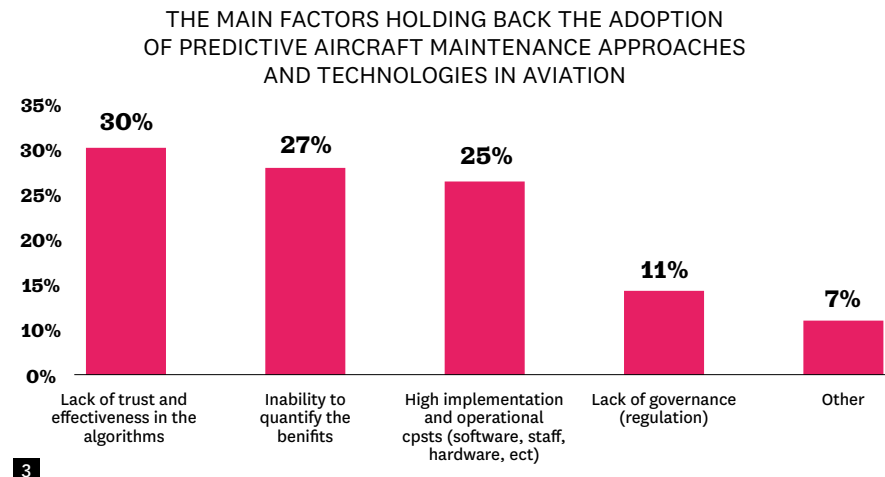
The survey results on the impact of predictive maintenance on repair costs during shop visits reflects a positive industry outlook, with 50% strongly agreeing and 31% agreeing slightly. This widespread belief perhaps stems from the expectation that predicting and addressing issues in advance can lead to more efficient and cost-effective maintenance interventions. A minority (13% disagree slightly and 6% disagree strongly) voices scepticism or uncertainty about predictive maintenance’s potential cost reductions, possibly due to concerns about technology complexity or implementation challenges. While the positive response aligns with the trend of embracing predictive maintenance, the minority disagreement underscores the importance of ongoing research and collaboration to address challenges and uncertainties in technology deployment. Balancing optimism with evidence-based approaches is crucial as the aviation industry integrates these technologies.

Annual cost expectations

The survey results on the expected annual investment for indirect costs to support a fleet of 50 aircraft in the context of predictive maintenance show that 42% of respondents indicate an annual investment in the range of US\$201-500k, 26% selected the US\$100-200k range, 22% estimated more than US\$500k, and 10% are more optimistic selecting less than US\$100k. These results underscore the importance of financial planning and resource allocation and that there is no one-size-fits-all approach, and the financial commitment will depend on factors such as the scale of operations, the sophistication of predictive maintenance systems, and the specific needs of each airline.

Increased aircraft availability and reduced AOG costs

We asked participants how much they agreed or disagreed with the statement: 'Predictive maintenance has proved to increase aircraft availability and reduce AOG cost for airlines by offsetting an increase of off-wing repair costs'. Results reveal a positive consensus with a combined 92% who either agree strongly (48%) or agree slightly (44%). This suggests that, in large, the participants



“THE RESULTS UNDERSCORE THE IMPORTANCE OF FINANCIAL PLANNING AND RESOURCE ALLOCATION”

view predictive maintenance as a valuable tool for mitigating unexpected failures, improving overall reliability, and minimising disruptions to flight schedules. The overwhelmingly positive response aligns with the broader narrative that predictive maintenance is seen as a transformative approach to aircraft

maintenance. The perceived ability to increase aircraft availability and reduce AOG costs is crucial for enhancing operational efficiency.

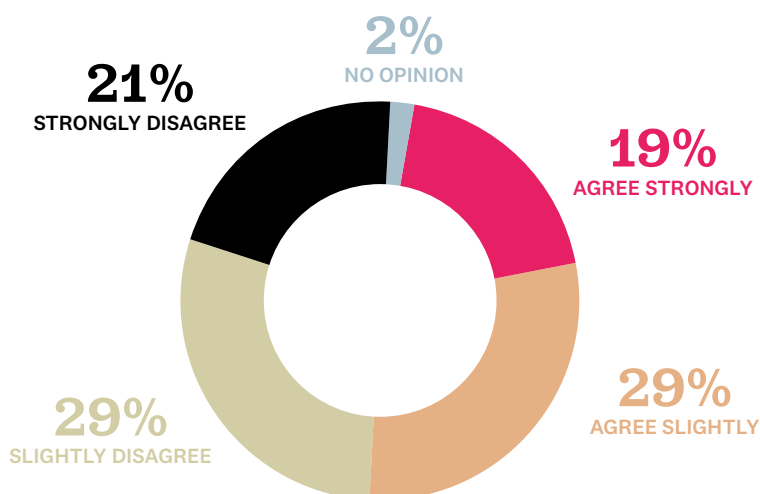
Timeline for universal adoption

Fifty-eight per cent of respondents believe that predictive aircraft maintenance technology will be universally adopted as a maintenance strategy by all aviation key players “In the next 6-10 years”. This was the most popular response and may reflect the growing commitment within the industry to embrace innovative approaches to aircraft maintenance.

The 27% who anticipate universal adoption “In the next 2-5 years” represent a portion of participants who expect a more accelerated timeline perhaps acknowledging that there are proactive efforts within the industry to expedite adoption.

The 13% who project “In the next 11-15 years” suggest a more conservative estimate, perhaps influenced by considerations such as the pace of technological development, regulatory frameworks, and the time required for industry-wide acceptance and implementation.

4 EXTENT TO WHICH AGREE ‘ACCURACY OF ALGORITHMS CAN BE EXTREMELY HIGH, ALMOST 100%, THEREFORE PREDICTIVE TECHNOLOGY WILL ELIMINATE ANY ‘NO FAULT FOUND’ (NFF)’



“THE TIMELINE FOR REGULATORY ACTION WILL LIKELY DEPEND ON A RANGE OF FACTORS”

The 2% who foresee “In the next 16+ years” represent a minority perspective, with viewpoints perhaps influenced by factors such as potential barriers to adoption, challenges in standardisation, or a cautious approach within the industry.

While there is a general expectation that adoption will occur, the diversity in projected timelines underscores the need for ongoing collaboration, research, and industry-wide initiatives to address challenges and accelerate the integration of predictive technologies.

NAA involvement

We asked participants when they think National Aviation Authorities will address the adoption of predictive aircraft maintenance within the scheduled maintenance practices (MSG-3 Logic. Fifty-one per cent indicated “In the next 6-10 years”, 35% chose “In the next 2-5 years”, 10% believe “In the next

11-15 years”, and 4% foresee “In the next 16+ years”. The varied responses suggest that the timeline for regulatory action will likely depend on a range of factors, perhaps including technological maturity, industry-wide adoption, and the proactive engagement of regulatory bodies. As technology evolves and the benefits of predictive maintenance become more apparent, aviation authorities will need to play a crucial role in providing guidance, standards, and frameworks to ensure the safe and effective integration of these technologies.

In summary

The survey’s key findings have highlighted optimism that predictive maintenance can positively impact the industry, but there is a strong need for more robust collaboration and regulatory action, plus an increase in ongoing research before universal adoption can be achieved.

Our survey closely mirrored a project that David Miret Mora, Technical Director at AJW Group carried out for his MSc thesis on PAM which he authored when he was studying at Cranfield University in 2020 and 2021.

Analytics solutions for Health Management

Take your maintenance to the next level!

www.liebherr.com/aerospace

LIEBHERR

Aerospace



Visualizers: Troubleshooting is made easier, faster and more accurate thanks to our convenient viewers.



Trend Monitors: Track key trends at fleet level and take actions to anticipate your maintenance needs thanks to our Health Management dashboards



Predictors: Our algorithms accurately predict component failures, triggering alerts and removal recommendations.



AN ACORN GROWTH COMPANY

exceptional partners for lessors,
airlines and operators worldwide



FREE PARKING NOW

for lessors and commercial airlines
at Ireland West Airport, Knock

Part 145 - line maintenance for A320 & B737 types

Parking & preservation for multiple aircraft

Engine removal & preservation

Runway capability for all aircraft models

Airframe disassembly – **SLOTS AVAILABLE**

CFM56 engine disassembly in Dublin

Ireland | USA | UK | Spain | Greece | Türkiye | Lithuania | China



eirtradeaviation.com

