



# SHOW BUSINESS



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▶ Russian Helicopters' director general, Andrey Boginsky

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## RUSSIAN IN WITH A HOST OF DEALS



▶ International premier: The Mi28NE in action

As the sun set on yesterday's show, Russian Helicopters' director general, Andrey Boginsky, was busy celebrating multiple signings, including an agreement with Ras Al Khaimah police through its UAE joint venture Alpha Aviation Holdings.

The MoU is for four Ansats and one Mi-17-1V helicopter. The JV was established by Russian Helicopters and Emirati AJ Holding in

the Ajman Free Zone to promote and sell Russian Helicopters in the Middle East.

"This MoU is a preliminary result of our JV. We have a wide model range of helicopters suitable for different tasks and capable of flying in different regions, which is part of the appeal for RAK police. We now need to work on preparing and finalising the contract."

A deal has also been struck

during this year's event for two of its Mi 171A2 helicopters with a customer based in Peru. Boginsky explained: "We are now looking to develop our after-sales support, in terms of training, spare parts and services."

The show has also provided a platform for the international premiere of the Mi-28NE attack helicopter, as well as the company's modernised Ka-226T Climber.

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## ATR to re-engine turboprop fleet

ATR CEO Stefano Bortoli and Air Corsica's Marie Helene Casanova Servas



ATR is to re-engine its turboprop regional aircraft with the new Pratt & Whitney Canada PW127XT, the companies announced at the show yesterday.

Launch customer will be French regional operator, Air Corsica. The PW127XT will become the new standard engine on the Franco-Italian ATR 42 and 72 models. P&WC says that it will give a 3% reduction in fuel burn and a 20% reduction in maintenance costs.

The new powerplant will have its time on wing extended by 40% and will initially be compatible with 50% sustainable aviation fuel, with the companies working towards the 100% mark.

The new engine reduces turbine temperature for increased durability and efficiency, said P&WC president, Maria Della Posta.

"This is a concrete illustration of our belief that an incremental approach is the answer to a sustainable future, while helping airlines save costs," said ATR chief executive Stefano Bortoli.

"The engine will be retrofittable and we need to work out with individual customers who might be interested in such an option," he added.

Air Corsica, an existing ATR operator, will buy five ATR 72-600s fitted with the new engines. Initial delivery is expected in Q4 2022.

## ALC places massive order for 111 new aircraft

US lessor Air Lease Corporation (ALC) has become the launch customer for the Airbus A350 freighter, as part of a massive order for 111 aircraft across the Airbus range.

ALC signed a letter of intent (LoI) yesterday for 25 A220-300s, 55 A321neos, 20 A321XLRs, four A330neos and seven of the new A350Fs.

The order makes Los Angeles-based ALC one of Airbus' largest customers.

With this order, ALC and Airbus are launching a multi-million dollar fund initiative that will contribute towards investment into sustainable aviation development projects and which will in future be opened to multiple stakeholders.

"After lengthy and detailed consultations with several dozen of our strategic airline customers around the world, we are focusing this comprehensive order on the most desirable and in-demand aircraft types," said Steven Udvar-Hazy,

ALC's executive chairman.

"ALC was launch customer for the very popular A321LR and XLR versions. Now, we have become the launch lessor for the A350F and by far the largest lessor customer for the A220. We had the vision to be first adopters of the A321 and are convinced we have made the right choice again on the A220 and A350F."

Airbus chief commercial officer, Christian Scherer, commented: "ALC's order signals we're moving beyond the Covid doldrums."

## Historic agreement

Emirates SkyCargo has chosen Israel Aerospace Industries (IAI) for the conversion of four of the company's Boeing 777-300ER passenger aircraft into full freighters, in an historic agreement between the two countries.

Included in the contract is an option for further Boeing 777-300ER conversions at a later stage, if the surging demand from the industry continues.

The first aircraft will enter the conversion programme in early 2023, and the final conversion is expected to conclude in 2024. Each aircraft will take an estimated five months for the process.

The converted freighters will provide up to 10 additional pallet positions compared to the Boeing 777-F production freighter, allowing for transport of more low-density cargo.



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## The height of fashion

Visitors to the static may have spotted the only non-flying unit in the form of a giant bus. It is actually a Guinness world record-holder as being the largest mobile clothing store.

The bus is the brainchild of Telal, a brand name in fashion, which designs corporate solution uniforms for the aviation industry, military and police uniforms, as well as traditional fashion, kids fashion, accessories, and footwear.

"The bus was a concept during the pandemic after we thought it would be a great help to send a mobile shop to clients wherever they are so they can view garments or chat to designers," said Shaheer Ali, sales representative.

"The idea has been a success and we have increased profits, as well as increasing the number of buses to four."

The company, based in the UAE, has a large number of commercial aviation clients in the Middle East



▲ Project runway: Catch the giant Guinness world record-holding Telal 'uniform bus' at the show – Shaheer Ali is pictured right

and around the world – visitors can see a range of uniforms at its stand in the conference hall.

"We offer either branded company designs or bespoke designs with the help from our in-house designers," said Ali.

The company is also known for its traditional Kandura designs.

"We have world-class stitching units using advanced technology and machinery coupled with skilled

workers to make high-quality Kandura," said Ali.

Talal has already been doing deals at the air show including with Royal Jet, Abu Dhabi Port and Sharjah Police – which the company has a special government licence to provide for police and military.

"We have also had a number of pilots on to the bus to buy the latest captain and first officer caps and accessories," said Ali.

## Embraer closing in on two new model types

Embraer is working towards the launch decision on a new freighter based on its E190/195 models within the next six months and has "never been so close to launching" its planned new turboprop, the company said at the show yesterday.

The Brazilian manufacturer is seeking to tap into the booming cargo market with a dedicated freighter that would carry around 14 tonnes and have a maximum range of 2,000-plus nautical miles.

"That should be enough to serve the market we're seeing," said president and CEO of Embraer commercial aviation, Arjan Meijer. For the first time, cargo aircraft feature as a separate

category in the company's 20-year survey, with around 700 aircraft required in what the company describes as the 'small and crossover aircraft' category over the next 20 years.

"Competition we think will come primarily from pre-owned larger narrow-bodies," said Meijer. If the project goes ahead, time to market will be around 24 months.

Meanwhile, the manufacturer is increasingly bullish about prospects for its planned 70-90-seater turboprop. "Our expectation is to launch next year," said vice-president marketing, Rodrigo Silva e Souza.

"One thing that has changed the equation recently is demand from

the US. Initially we didn't see that, but regional operators are seeing a big opportunity to replace 50-seaters and even some jets in a very sustainable way."

The new turboprop, which will likely appear in two versions in the 70-90-seater range, will initially rely heavily on sustainable aviation fuels, said Meijer. "Beyond that, we see potentially a hydrogen [powered] application, but that's a lot further down the road."

The 70-seater would have a single-class cabin with 29in pitch seats. However, US operators are looking at an interior layout that would include first-class and premium-economy seats that would take capacity down to around 50 passengers.

## DHL Express orders nine new freighters

Logistics specialist DHL Express has placed a firm order for nine Boeing 767-300BCFs.

Representing its largest 767-300BCF order to date, the additional freighters will help expand DHL's long-haul intercontinental fleet in response to increased global demand for cargo capacity.

The freight specialist has been steadily modernising its fleet. In the Gulf, for example, DHL Express MENA has this year acquired seven 767-300Fs, replacing older 767-200Fs and expanding capacity by 33%.

"We are confident in the quality and OEM expertise that comes with Boeing's converted freighters," said Geoff Kehr, senior vice president, Global air fleet management, DHL Express.

"The additional 767 freighters are part of our efforts to modernise DHL's long-haul intercontinental fleet in order to fly eco-friendlier and more cost-efficiently."

Issane Mounir, Boeing's senior vice-president, commercial sales and marketing, added:

"The versatility of the 767-300BCF makes it the preferred medium wide-body converted freighter for both the general and express cargo markets, ensuring DHL will have the capability, reliability and efficiency they need to capture growth opportunities and maximise their air cargo operations."

The 767-300BCF can carry up to 51.6 tonnes (113,900 pounds) up to 6,190km (3,345nm) and has more than 100 orders and commitments to date.

### ▲ NEWS IN BRIEF

#### Nigerians order six Embraer E175s

Nigeria's Overland Airways is to buy up to six Embraer E175 regional jets, the Brazilian manufacturer announced yesterday. The company, currently an ATR turboprop operator, is buying three E175s, with purchase rights for a further three. The total order, if the purchase rights are exercised, is worth \$299.4 million at list prices.



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## A fast track to reality: Vaayu Group signs historic freighter agreement

Vaayu Group has announced the signing of a definitive letter of commitment with ST Engineering to lease the world's first Airbus A320 freighter aircraft.

The aviation leasing arm of ST Engineering is to lease up to five Airbus A320 passenger-to-freighter (P2F) conversions to the company.

The world's first A320P2F aircraft by Elbe Flugzeugwerke, a joint venture of ST Engineering and Airbus, is currently in its certification phase and is expected to be ready for revenue service in the first half of 2022.

Emad AlMonayea, chairman and president, Vaayu Group, said: "The upside of the pandemic was an increase of sales in the e-commerce space. For freighters and cargo-

handlers worldwide, this was unexpected. We saw this coming. We simply fast-tracked the process from idea to a reality."

According to Cargo Facts Consulting, the domestic air freight market in the US is expected to hit two billion shipments in 2021. The increased demand for residential deliveries has covered the losses in business-to-business traffic in 2020 and 2021. This demand is expected to grow steadily by 5.1% at least.

AlMonayea added: "The Airbus A320P2F aircraft is ideal for us in terms of its fuel consumption and flexibility. Its faster loading speed made it more advantageous to us than other comparable aircraft."

Vaayu expects to take its first delivery of the aircraft in Q1 of 2022.

Prescient thinking: Vaayu Group "saw this coming". CEO Vijay Arumbakkam (right) with chairman and president Emad AlMonayea ▲



## MORE MILLION DOLLAR MOMENTS FOR EDGE COMPANIES

EDGE Group entities racked up millions of dollars of business at the show yesterday with more new agreements signed

- Halcon has won an Dhs3.2 billion (\$880 million) contract from the UAE Armed Forces for its Thunder and Desert Sting range of precision-guided munitions.

Lahab, a sister EDGE company, is charged with filling the Desert Sting warhead, which is manufactured in the Halcon production facilities at Tawazun Industrial Park in Abu Dhabi.

Halcon is also working with Embraer to explore opportunities to integrate its weapon systems on to the Embraer A-29 Super Tucano counterinsurgency aircraft.

- Earth and Lockheed Martin have signed an MoU that aims to modernise aviation capabilities for UAE Apache pilots. Under the agreement, Earth will operate repair and sustainment services for the modernised

targeting and designator sensor systems, which enable targetting and pilotage in day, night and/or adverse weather missions.

- GAL, the integrated aircraft sustainment solutions supplier, has formally agreed for Sanad, Mubadala's aerospace engineering and leasing solutions business, to provide Rolls-Royce Trent 700 engine maintenance services to support the entity's performance based logistics contract with UAE Air Force Air Defence. GAL and Sanad will provide MRO support to service the engines, reducing current turnaround time and shop visit costs by eliminating the need to ship engines outside the UAE.

- EDGE has also signed an MoU with Raytheon Emirates, to explore strategic partnership opportunities

across several critical defence programmes. Under the agreement, the companies commit to expanding their collaboration and outlining paths for in-country development of hardware and technology that will support multiple projects, including Raytheon's early warning radar system (EWRS).

- EPI, Edge's precision engineering division, will extend its machining contract with Boeing to perform in-house metallic machining of vertical fin rib assemblies on Boeing 787 Dreamliner commercial aircraft.

EPI will provide a full scope of services, including machining, surface treatment and enhancement, painting, equipping and sub-assemblies. The company has been performing this work for Boeing since 2020.

### ▲ NEWS IN BRIEF

#### Electronica celebrates 70 years

Electronica is celebrating its 70th anniversary and has enjoyed a strong relationship with the United Arab Emirates for more than 30 years.

The company is an electronic warfare specialist, proving equipment for the UAE Air Force and Navy.

Enzo Benigni, president and CEO of Electronica Spa, said: "In recent years we have contributed to the UAE's technological development and skills growth in the EW domain.

"However, as the new and complex defence challenges of the future require further efforts and strong industrial partnerships, Electronica Group is eager to boost its 30-year partnership with the UAE, consolidating its presence in the country's industry ecosystem."

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## YOU CAN VIRTUALLY FLY AN F-18 AROUND HERE!



▼ Kerim Gehrig demonstrates using the F18 Elite VR motion platform as Eduardo Schwencke, of FSTD Evaluations, looks on

Visitors to the show can experience being an F18 pilot, thanks to Elite Simulation Solutions.

The Swiss company, which provides IFR training software, flight controls, and flight training devices, came up with an 'experiment' during the pandemic to help the home user learn how to fly – whether it be aviation training companies, private pilots, retired pilots, or just your average technology geek who wanted it for home.

"With everyone having to social isolate more we thought, why not take the simulator into your own home – so just two months ago we launched the Elite VR motion platform," said

Kerim Gehrig, chief sales officer.

There are two types of software on offer and owners can download any aircraft they need to practice (or play) on, from defence jets and airlines to turboprops and helicopters.

"Our main targets are flight academies and flight schools that can lend the simulators out to practice before students go into a cockpit. This makes training more efficient."

If you fancy buying it as a Christmas present, it will set you back just \$30,000.

With that you get the VR classes, platform, the computer, and the instructor station.

## SUSTAINABILITY: IT'S AN URGENT ISSUE – AND IT'S EVERYWHERE

Every conversation with an airline chief here at the show has sustainability at its core, according to Chris Cholerton, president civil aerospace at Rolls-Royce.

When the last show was held in 2019, the decarbonisation agenda was important, but the contrast between then and now is clear.

"There really is a deeper recognition of urgency, about tangible delivery and a commitment to achieving objectives," said Cholerton.

And, for Rolls-Royce, a company where most of its products rely on burning fossil fuel, the mindset of seeing the drive to net zero emission as a huge opportunity, not only for environmental gains but for strong business reasons, is important. "We see ourselves at the heart of the solution," he said.

But airline leaders want solutions and results now on sustainability, which is why Rolls-Royce was

pleased to announce an agreement at the show "facilitating the development of sustainable aviation as part of Etihad's broader strategic sustainability programme".

Signed by Cholerton and Tony Douglas, group chief executive of Etihad Aviation Group, the partnership targets the application of electrification technologies and hybrid systems, together with the

**For Rolls-Royce, a company where most of its products rely on burning fossil fuel, the mindset of seeing the drive to net zero emission as a huge opportunity, not only for environmental gains but for strong business reasons, is important**

use of electric motors for commuter aircraft and the fast-emerging urban air mobility (UAMs) sector.

It has deliverables in the deal, with Rolls-Royce and Etihad working alongside partners, including Airbus, to test and apply new technology solutions and developments in sustainability to Etihad's incoming fleet of A350s, spearheaded by the 'Sustainability50' flagship aircraft.

The sustainability agreement with Etihad is the first of its type to be signed by Rolls-Royce with an airline and will be used "as a focus of innovation on many aspects", said Cholerton.

Such deals run alongside an ongoing drive to improve the fuel efficiency and operation of its engines, with developments to improve time on wing and the use of digital analytics and predictive maintenance, said Cholerton.

"There are all very relevant to sustainability," he concluded.



▲ Time to be sustainable: Chris Cholerton (left), president civil aerospace Rolls-Royce, and Etihad chief, Tony Douglas, sign a pact here at the show

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## L-15 Falcon swoops in for the first time

The Hongdu L-15 Falcon is making its Dubai debut this year, though Zambian Air Force examples have previously been displayed at the Africa Aerospace and Defence show.

The L-15 is a supersonic training and light-attack aircraft broadly comparable to the Leonardo M346 Master, though one version of the Chinese aircraft has afterburning engines. Like

the M346, the L-15 has significant DNA from the Yak-130, and both aircraft were developed with assistance from Russia's Yakovlev OKB.

The L-15 designation applies to export variants of the jet trainer, Chinese versions using the Chinese designation JL-10.

Zambia is, so far, the only export customer for the type, though Uruguay and Venezuela have reportedly

expressed an interest in the aircraft.

Both export and Chinese aircraft incorporate a number of advanced features, including a modern NVG compatible glass cockpit, HOTAS controls, and a three-axis quadruplex digital FBW flight control system. Some versions incorporate radar, holographic head up displays and even afterburning engines.

Dubai represents the first opportunity for the Chinese defence aviation sector to exhibit its products internationally since the Covid-19 pandemic, and reflects the growing importance that China attaches to the Middle East market.

## Express an interest on the static park

Perhaps the most interesting aircraft in the Dubai static park is a modified version of Bombardier's Global Express, which is also making its Dubai debut.

The aircraft is one of four Global 6000s converted to E-11A battlefield airborne communications node (BACN) configuration and used as a communications link/relay/translator/gateway.

The aircraft (pictured below) provides a link between what would otherwise be incompatible communications systems, or to overcome line-of-sight communications difficulties caused by mountainous terrain.

The BACN payload was initially developed as an urgent solution to communications problems encountered in Afghanistan, and was tested aboard a NASA WB-57, before being fitted to a Global 6000, which has a 51,000ft maximum altitude and 12-hour endurance.

Five more systems were fitted to Northrop Grumman EQ-4B

high-altitude, long-endurance unmanned air vehicles.

The four BACN aircraft were used in Afghanistan from 2010 until the US withdrawal, one being lost in an accident, after which the 430th Expeditionary Electronic Combat Squadron moved its operating base to Al Dhafra in Abu Dhabi.

In June this year, Bombardier received a contract for the conversion of another Global 6000, and up to five more may be purchased under an indefinite-delivery, indefinite-quantity contract. A full squadron of E-11As is eventually expected to be based at Robins AFB in Georgia.



## Nile Crocodile makes a snappy entrance

The original Kamov Ka-50 'Black Shark' was a single-seat attack helicopter with Kamov's distinctive coaxial rotor system, which first flew on June 17 1982. Though selected for Russian Army service, only 12 were purchased before it was realised that a second crew-member would be required to operate the optronic systems necessary for night attack missions. This resulted in the aircraft being redesigned to produce the Ka-52 Alligator, which first flew on June 25 1997, though series production didn't start until 2008. An export variant, the Ka-52 Nile Crocodile, was delivered to Egypt from 2017, allowing an increased maximum take-off weight and permitting operation from Egypt's Mistral-class carriers.



# 2022



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## OUR FRIENDS ELECTRIC

### Rolls-Royce ramping up electrical engine R&D across the board

Rolls-Royce used the show to illustrate how a rapid entry into the aerospace market for electrical power systems is a key element of its overall sustainability drive.

“Three years ago, we took the decision to accelerate our electric strategy,” said Rob Watson, director of Rolls-Royce Electrical. The focus is firmly on developing “fault-tolerant, fail-safe, flight-critical technology and efficient integration at system and platform levels.”

Watson described how Rolls-Royce is fast ramping up its R&D efforts right across the board in developing electrical engines, controls, and storage in a bid to deliver an in-house portfolio of standardised and certified hybrid and electric aircraft propulsion systems for urban air mobility (UAM), regional aircraft, and eventually larger airliners.

The company, which admits it does not have decades of experience in electric engines, is doing this with several demonstrators, including the ACCEL project aimed at becoming the world’s fastest all-electric aircraft.

In addition, it is involved in two all-electric advanced air mobility partnerships, which will lead to



▼ Rob Watson, director of Rolls-Royce Electrical (left) and Giovanni Pascale Langer, managing director of Tecnam

certifiable products, the first with Vertical Aerospace on its 5-seater VA-X4 and then with Italy’s Tecnam on the twin-engined P Volt regional aircraft.

Elsewhere, it is testing what it claims is the world’s most powerful hybrid-electric demonstration engine and, in the past week, this had reached more than 1MW in

power output, with the target being to reach 2.5MW.

In the UAM market, Vertical Aerospace is the launch customer for Rolls-Royce electric power, and it is always looking to add more platforms that will use its technology, said Watson.

When choosing a partner, such as Tecnam, there are several things

that Rolls-Royce considers. “We want to partner with people that have a blend of being established airframers, to be well-funded and well-organised start-ups,” said Watson. “We want to understand how they see the market and what their point of differentiation is, and what gives them confidence to get to a profitable solution,” he said.

## VERTICAL HAS HIGH HOPES FOR UAM

There is great potential for urban air mobility in the Middle East, with several carriers actively looking at this market, said Lawrence Blakeley, head of power supply at Vertical Aerospace, who also gave an update on the status of its VA-X4, 5-seater, all-electric urban air taxi.

“You only need to see the road congestion in Dubai and the fact that very few helicopters are flying here to understand that there is a good opportunity for urban air mobility,” said Blakeley.

The plan is for the VA-X4, which has gained launch orders for up to 1,350 aircraft from prestigious customers like American Airlines, Avolon, and Bris-

tow Helicopters, to enter the certification process at the end of 2024 and enter service in 2025, said Blakeley.

The UK-based firm will fly its proof-of-concept aircraft in the first quarter of 2022 with an engine supplied by automotive firm Equipmake. However, the first electric powertrain from Rolls-Royce will be delivered for testing in mid-2022, said Blakeley. Rolls-Royce will supply the production engine for the VA-X4.

The final assembly line for the VA-X4 will be in the UK, while Vertical Aerospace is in talks with an established industry player to manufacture the fuselage and wings of the aircraft, said Blakeley.



▲ Lawrence Blakeley of Vertical Aerospace sees strong potential for urban air mobility in the busy city regions of the Middle East

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## French fighting back, despite pandemic

The French aerospace industry seems likely to emerge from the pandemic in good shape, Guillaume Faury said yesterday.

There have been warnings in recent weeks that up to 40% of personnel in some areas of the European aerospace sector have left, or are considering doing so, following the contraction of the airline industry during Covid-19.

However, Airbus CEO Faury, speaking in his capacity as chairman of Gifas, the French aerospace

industry body, said that just 4% of employees of French companies had departed.

This was the result of action by the French Government, which had “stepped up very strongly with specific mechanisms” such as partial employment to cushion the impact of the pandemic on aerospace.

In early 2021, “a few extra percentage points [of personnel] left, but we see companies are hiring again”. Faury noted that no fewer than 55 French companies – 48 of

them in the Gifas pavilion – were attending the show and 30 had business in the region, most of them in Dubai.

The industry was “on the front foot again” he commented. At the height of the pandemic, 14,000 airliners were parked; that number had shrunk to 3,500 today.

“We continue to believe the recovery will take time when it comes to commercial aviation,” he said. However, the business jet market could gain some long-term

benefits as more people considered flying privately to shield themselves from the pandemic or future threats. The space sector was growing actively, and defence had also felt relatively little effect from the pandemic.

However, while demand was recovering, supply lines continued to be stretched, with raw material supplies disrupted, logistical problems and “skyrocketing price of transport”. Recovery was “not going to be a walk in the park”.

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## SAEI gets Honeywell boost

Honeywell has appointed Saudia Aerospace Engineering Industries (SAEI) to be the first authorised Honeywell service centre in the Middle East region with a global license for the 131-9 auxiliary power unit (APU) models installed on Boeing 737 Next Generation and Airbus A320 aircraft.

As part of the 10-year agreement, SAEI, from its facility in Jeddah, will provide inspection, repair, overhaul and upgrades for the 131-9 APU models.

Owners and operators of these aircraft can now repair their APUs locally in the Middle East, instead of sending them to facilities outside the region.

Mohammed Mohaisen, president and CEO Middle East, North Africa, Turkey and Central Asia, Honeywell, said: “SAEI is already an important partner for us, and the company will soon become Honeywell’s first APU licensed service centre for narrow-body APUs in the Middle East region.”



## ECFT expands training capacity in Dubai

Emirates-CAE Flight Training (ECFT), the joint venture between Emirates and CAE, is expanding its pilot training capacity in Dubai.

ECFT will deploy a second CAE 7000XR Series Boeing 737 MAX full-flight simulator (FFS) by the end of 2022 to support Flydubai’s future fleet growth.

“To meet Flydubai’s growth plans, we continue to elevate our customer offerings and expand our training

programmes,” said Nick Leontidis, CAE group president, civil aviation training solutions.

“We pride ourselves in developing high-technology training solutions and in providing customers a great experience with convenient training programmes available near them. As their training partner of choice, we look forward to continuing to support Flydubai and other customers in the region.”

### ▲ NEWS IN BRIEF

#### The Chinese connection

New Bahrain-based freight airline, MENA Cargo, has announced a new Chinese strategic partner at the show.

MENA Cargo will support Choice International Forwarding Company’s one-stop logistics services in the Middle East and Africa by offering capacity and guaranteed uplift on its Boeing 737-300F and 777-200ER.

The 777 has joined the fleet on a leasing arrangement from Portugal’s EuroAtlantic Airways. First flight under the new link-up was operated on October 30, from Hong Kong to Nigeria, via Bahrain.

The Hong Kong-Middle East, and Hong Kong-Nigeria routes will help fill a capacity shortfall in meeting surging demand for air cargo. Global demand is being driven mainly by increasing global e-commerce, with many products and components originating from China. MENA Cargo is targeting underserved markets in Africa, the Middle East, and Asia.



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## SAUDIA UPGRADES THE PASSENGER EXPERIENCE

▶ Captain Ibrahim Koshy (left), chief executive of Saudia, who is planning a major fleet order for 2022, signed a deal for advanced IFE with Panasonic Avionics Corp's chief executive, Ken Sain



Saudi Arabian Airlines signed two major deals here aimed at enhancing the passenger experience on its upcoming fleet of 35 Airbus A321neo and A321XLR aircraft.

The first is for Inmarsat's GX Aviation connectivity solution; the second is with Panasonic Avionics to provide its 4K and Bluetooth audio in-flight entertainment systems.

Captain Ibrahim Koshy, chief executive of Saudia, said: "As the national flag-carrier, Saudia is constantly innovating to support our fleet's growth plans and was recently named the world's most improved airline of 2021 by Skytrax, the second time we have been awarded this honour in recent years.

"Inmarsat's GX Aviation and OneFi solutions, together with GDC Advanced Technology's next-generation terminal, will ensure our passengers have access to world-class connectivity on all flights operated by our new A321s."

The first installation of the product is expected in late 2022.

Panasonic's NEXT IFE system will be delivered to Saudia, which, in addition to the full cabin advanced high-definition experience, will also feature Bluetooth audio streaming, allowing Saudia customers to unlock a library of premium entertainment options safely, using their own Bluetooth-enabled headphones.

Ken Sain, chief executive of Panasonic Avionics, said: "We are very excited to extend our relationship with Saudia to this new fleet of aircraft and deliver the hardware and digital services that help ensure passengers' expectations are exceeded by the best-in-class services available today and into the future."

## 2030 vision! Saudia plots major fleet order for 2022

Saudi Arabian Airlines is preparing for a major wide-body aircraft order next year as it revises its fleet plan to match traffic and product expectations with the kingdom's ambitious 'vision 2030' strategy.

Chief executive, Captain Ibrahim Koshy, said the carrier is revising its fleet plan now and expects the outcome in the first quarter of 2022.

Discussions are on-going with Airbus and Boeing on its plans, with any order placed being focused on growth rather than for replacement as the carrier already has an extremely young fleet.

"We are putting capacity on what we believe we will need to serve the market for vision 2030," said Koshy. There is a target to welcome 100 million travellers to the kingdom by 2030.

Not only does Saudi Arabian require more aircraft to deliver on this ambition, it needs more capacity to meet strong growth in the pilgrimage market.

### Changing Saudi market

"The Saudi market is changing with a lot more younger travellers and more leisure travellers, both in our domestic and our international businesses," said Koshy.

As the market changes, the

carrier is studying how its on-board product needs to adapt with upgrades and investment in in-flight entertainment equipment, seats, and interiors, he said.

The airline is looking carefully at its cabin class mix in its wide-bodies. "Customer expectations have changed," said Koshy. It is looking at the size of the first-class and business-class cabins and seriously studying the introduction of a premium-economy product, he said.

A decision will also be taken next year, with the likelihood that premium-economy will become part of the Saudi Arabian product portfolio.



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## KIAL BUYS ANOTHER BELL 429

Bell Textron has announced the sale of a Bell 429 helicopter to Kuwait International Aircraft Leasing (KIAL), marking the third 429 helicopter emergency medical services (HEMS) sale in the country.

With delivery expected in August 2022, the dual-engine light utility aircraft will be used by the ministry of health. The Bell 429's speed and agility make it ideal for emergency travel, in addition to search-and-

rescue operations. "The Bell 429's remarkable flight performance and multi-mission pedigree, make it perfectly suited to the ministry's aim of providing advanced emergency life support to all areas of Kuwait," said Sameer Rehman, MD, Middle and East and Africa.

Kuwait Air Ambulance commander, Captain Jassem Buqamber added: "We're delighted to add to our fleet of 429s."



From left: Aeroter CEO Alexander Okhonko and Davide Schillaci customer relationship manager, Savback ▲

## Aeroter lands \$248.45bn deal

Aeroter has received a letter of intent from Tawazun Economic Council to purchase 100 VRT500 helicopters at a value of Euros 216.9 million (\$248.45 billion/Dhs913 million). Delivery of the light single-engine, seven-seat helicopter, perfectly suited for emergency and security transport, is expected by the end of 2023.

The agreement also entails setting up of a helicopter service centre in Abu Dhabi, in collaboration with an Emirati company.

In addition, the Singapore-based company announced an exclusive five-year agreement with Swedish company Savback Helicopters AB to distribute and sell the VRT500.

From its headquarters in Sweden, Savback will cover sales representation of the aircraft in Norway, Denmark, and Finland.

CEO, Alexander Okhonko, is also expecting to announce two further signings over the next couple of days. He said: "We are proceeding with caution. We did not expect to see so many owners and potential customers. However, some would like the helicopter immediately, and we are still in the certification process, so we have to be careful how much we take on."

"I am not saying the order book is closed, but we already have five years of solid orders, which will take us from 2024 to 2029."

Tawazun, which is purchasing aircraft for use across government entities, will receive 20 aircraft per year over the five years.

Savback has agreed to take 10 per year over the same period.

Okhonko said: "This is a unique design, with no tail rotor, so there is much greater space available inside. It offers the widest range of configurations from passenger to public safety or emergency medical service, and even the luxury corporate market."

"We have had great interest from Saudia Arabia in the corporate configuration, as this is affordable luxury, at around \$2 million."

## AW609 TILTROTOR MAKES ITS DUBAI DEBUT

Leonardo is presenting its revolutionary AW609 tiltrotor for the first time in the region at the show. The aircraft was flown to Dubai for the opening ceremony of the helicopter terminal, built by Leonardo in partnership with Falcon Aviation Services at the Expo 2020 Dubai site.

An impressive feature of engineering, the AW609 has the ability to change the position of its two rotors in less than 60 seconds and can take-off vertically like a helicopter,

while performing in-flight like an aeroplane. Capable of carrying out a variety of missions, ranging from passenger transport and medical care to civil protection and search-and-rescue, it can fly at more than 500km/h.

Meanwhile, its range of almost 1,400km increases to more than 2,000km/h with auxiliary tanks. This year's event marks the AW609 tiltrotor's first appearance at an aerospace and defence exhibition outside Europe and the US.





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▲ Dr Mohamed Juman: "We have adapted our model to reflect shifting customer preferences"

## European partnership boosts Bahrain traffic

MENA Aerospace Enterprises is offering European choices for clients in the Middle East through a recently signed partnership with Geneva-based Sparfell, an aviation charter, sales, and management company.

The agreement sees MENA supplying aircraft and passenger-handling supervision services, aircraft hangarage, and charter services, from its Manama base. Since the cooperation began earlier this year, MENA has witnessed a 30% jump in passenger-handling for private jets at Bahrain International Airport.

Dr Mohamed Juman, MENA Aerospace Enterprise's founder and MD, said: "We have adapted our model to reflect shifting customer preferences. Previously, we acted as an air operator's certificate (AOC) holder for business jets in Bahrain, serving the local region. We have observed an emerging preference for European AOCs.

"Among the clients whose aircraft we host, there has been a dramatic decline in the number of individuals who want their AOC based in the Middle East. Sparfell will be hosting the aircraft in Austria, while we take care of every-

thing in this region."

"Meanwhile, we are pursuing an AOC that allows us to fly within Saudi Arabia, so we may move charters around that market. We have big expansion goals for our private jet business in 2022."

Sparfell MD, Bernhard Wipfler, added: "The Middle Eastern markets are increasingly significant in global private aviation terms. Our priority is to put our clients' needs first in everything we do, and through this partnership we are assured that our extremely high standards are being seamlessly met throughout our network."

## Appy days are here again: XO plans a game-changer using outside experts

XO Jets is pushing hard to expand its business outside of the US, with new executive vice president, Youssef Mouallem, building a formidable team at its Middle East headquarters in Dubai.

But, rather than aviation experience, the team members come from Lyft, Apple, Amazon and Dyson.

Mouallem said: "We are bringing experts in tech and customer focus to this business. We want to transform the experience for our clients. We want to bring our tech story, with shared seats and an easy-use operating portal, to the Middle East. This is what has changed the industry in the US and we are bringing it here."

### Members access provided

XO Jets offers members access to 180 dedicated aircraft provided by XO and VistaJet, but also access to a further 2,100 safety-vetted aircraft.

Mouallem said: "Our clients are able to go on the app, find a flight, and be instantly able to book it. There is total transparency on price, timing and what sort of aircraft is available. That is a game changer.

"On average, the price of a seat sharing flight is about 10 times

cheaper than getting on a charter flight, and that is opening up the market to a whole new client base.

"Our global business by the end of Q3 has seen a 65% growth in first time users. In EMEA there is 166% growth in first time users across XO Jets and VistaJet.

"The average industry utilisation is three passengers per private jet. Seat sharing with XO brings that up to 10 passengers, so we

are increasing utilisation by about 230%. And, through the pricing, we are democratising the industry.

"With the pandemic there has been a change of behaviour, people avoiding airports, visa checks, vaccination checks – avoiding travelling with others, and this will make that more accessible. It has been a perfect storm that has accelerated the shift that was taking place, and we were ready with that technology

to support this."

The client-facing app is supported by a powerful back-end operator portal, which allows all of the operators to plug into the XO technology, where they can input their aircraft availability, their location and their schedules. The XO pricing model then matches availability and demand, and through smart pricing gives the client the best price.



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ALAN DRON REPORTS

Behind the headline-hogging defence and commercial sectors, services play an increasingly large role in aviation business portfolios

# The multi-billion dollar sector – at your service

Some idea of the service sector's scale can be gained from Boeing Global Services' estimate that there is \$200 billion in such business available in the Middle East out to 2030, split almost equally between the commercial aviation and government services sectors.

Maintenance, repair and overhaul (MRO), training, and provision of increasing levels of digitalisation, all come under the services heading.

In its latest *Services Market Outlook*, Boeing noted that air transport traffic remained below pre-Covid-19 levels. Recovery was underway but the company warned that this could be volatile as new waves of infection arise in different countries.

With the stresses of the pandemic, airlines are today flying their most efficient and right-sized aircraft to handle the necessary changes forced on their schedules.

While 2020 saw an abrupt increase in the number of grounded aircraft worldwide, many analysts anticipate an increase in the retirement of these older, less efficient aircraft when asset values return and the case for selling or scrapping them makes good business sense.

These retirements mean airline fleets will get younger. But younger fleets affect the scope of maintenance and maintenance intervals, especially for heavy checks and engine maintenance. Service providers are, therefore, investing in capabilities and infrastructure upgrades to support these newer aircraft.

In the MRO field, parts pooling programmes are increasingly popular. These can be less costly as operators don't have to maintain their own spares inventory.

Meanwhile, the underlying forces driving government services demand, vary across market, customer and geographic segments.

In 2020, many governments spent record amounts on military aftermarket services, attempting to shore up the defence-industrial base against Covid.

This expenditure is likely to flatten in the medium term as economies enter a period of slower growth

and governments try to re-balance their budgets.

In 2021, the military aviation fleets that Boeing can support consist of more than 40,000 aircraft world-wide. Growth in this market is expected through 2030. However, only 20% of the worldwide fleet of military aircraft will be replaced over the next 10 years, which will mean increased demand for overhaul and repairs to maintain ageing aircraft, extend their service life, and enhance their capability.

Today, Boeing sees signs of recovery in MRO services that suggest a return to pre-pandemic levels by 2023/2024.

Freight was the one bright spot for many airlines during the depths of the pandemic. Cargo airlines responded by boosting their flying hours, delaying freighter retirements and bringing new and parked aircraft into the fleet to fill the belly-hold shortfall resulting from the grounding of passenger aircraft.

In addition, with high air cargo yields and greatly reduced long-haul international networks, many airlines used passenger wide-body fleets for cargo-only operations to generate much-needed cash.

Growth in passenger-to-freighter conversions has, therefore, increased rapidly, because passenger aircraft that airlines had been retaining during the pre-2019 boom years suddenly became available for conversion as passenger flows evaporated.

And conversion capacity that had been short of feed-stock aircraft for freighter makeovers became available. As travel demand brings more fleets back online, the MRO industry will likely see a near-term surge in maintenance demand to catch up on deferred maintenance and bring parked fleets to service. There will also be a surge in replacing inventory, Boeing believes.

As government budgets face increased pressure, militaries may have to choose between modifying or extending their current fleets or buying new platforms. The training market, meanwhile, will remain resilient throughout the coming decade, Boeing predicts. ▲



Alan Dron



Ethrad Engineering

▲ Above: Conversions of airliners to freighters, such as this Boeing 737-800BCF, have boomed in recent times, and (right) MRO is expected to become an increasingly significant part of the aviation sector in the Gulf

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## Amazon delivering so much for the space community

Mention the word 'Amazon' to most people and it conjures up images of home-delivered goods, Prime videos, or Fire tablet computers.

But Amazon offers so much more. Amazon Web Services is exhibiting at the show for the first time and its story is one of the world's best-kept secrets.

Amazon Web Services, Inc (AWS), to give its full name, is a subsidiary of Amazon and provides on-demand cloud computing platforms and application programming interfaces (APIs) to individuals, companies, and governments.

Major General, US air force/space force (retired) Clint Crosier is the director of AWS's aerospace and satellite division. And he has a good story to tell. "AWS is the world's most comprehensive and broadly-adopted cloud computing specialist, with more than 200 fully featured services available from data centres

globally," he said.

"We have millions of customers – including the fastest-growing start-ups, largest enterprises, and leading government agencies – who are using AWS to lower their costs, increase their security, become more agile, and innovate faster."

In the UAE, AWS is the power behind the country's 'Hope' Mars space probe. Data sent from the probe is received, processed, and automatically sent out via AWS to the myriad of research organisations and scientists who analyse it.

"Hope is surveying the Martian atmosphere, giving us clues as to what happened to it over millions of years. AWS is getting the data to the right people safely, securely and quickly," Crosier said.

AWS is also a partner with the Mohammed Bin Rashid Space Centre (MBRSC) on data from its Khali-faSat Earth observation satellite.

STEVE NICHOLS REPORTS

# Astronaut Duke backs next-gen pioneers

*Sadly Al Worden departed on his 'final mission' before he could be in Dubai to support the scholarship that bears his name, but Apollo 16 astronaut, Charlie Duke was on hand to share his wisdom – and tales of some of his loonier lunar anecdotes*

Apollo 16 astronaut Charlie Duke was at the show in support of the Al Worden endeavour scholarship. Sadly, Al Worden, who was command module pilot for the Apollo 15 lunar mission in 1971, and a visitor to the 2019 Dubai Airshow, died in March last year.

Worden had been working with Kallman Worldwide, organiser of the USA partnership pavilion, for more than six years on a global goodwill mission to promote international collaboration. He was an active ambassador for US industry and an advocate for the next generation of pioneers.

"Al was a good friend of mine

and I miss him," said Duke. "But life goes on and I'm happy to continue his work as an endeavour scholarship ambassador."

The Astronaut Al Worden Endeavour Scholarship scheme was launched at the US pavilion at the Dubai show in 2019. It aims to send select students and educators from the UAE on a week-long, all-expenses paid astronaut training experience at Space Camp in Huntsville, Alabama in the United States.

"Unfortunately, due to Covid-19, we have had to delay the space camp trips, but we hope to get them back online in time," said Duke.

The next scholarship award ceremony takes place today at the USA pavilion at noon, when four students and an educator will be selected for the UAE endeavour mission team.

Duke has been busy while in the UAE. He gave a talk at the mobility pavilion at the EXPO 2020 last night. He also visited a junior school and met with the four UAE astronauts – Hazza Al Mansoori, Sultan AlNeyadi, Mohammad

AlMulla and Nora AlMatrooshi.

Al Mansoori is a star in the UAE, having flown to the International Space Station in the Autumn of 2019. So, did Duke have any advice for the intrepid four? "Yes I did. Don't do anything in space that you haven't practiced on Earth," Duke said smiling.

He was referring to his attempt at setting a lunar high jump record on his 1972 mission. "It was the time of the Munich Olympics and we thought we would join in," he said. Duke jumped about 0.81m, but overbalanced, and fell over backwards on to his primary life support system.

"It could have been a fatal accident had my suit ruptured or PLSS broken," he said. As fellow astronaut John Young said at the time: "That ain't very smart!"

Duke said he was impressed by the cooperation between the UAE and US businesses at the show. "It reminds of my early days at NASA," Duke said. "We had 400,000 people working together. It just shows what cooperation can achieve," he concluded. ▲



Interstellar high jinks: He might be sharing his wisdom now, but in his younger days, Duke also attempted to set a lunar high jump record on his 1972 mission ▲

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## Flagship Al Tariq munition makes a huge impact

One of the centrepieces of the massive EDGE stand at Dubai is the Al Tariq glide-bomb (pictured). It's the flagship product for the company's missiles & weapons cluster – one of five groupings, the rest of which also cover platforms & systems, electronic warfare & intelligence, mission support, and cyber defence.

The Al Tariq is a modular IN/GPS-guided glide bomb kit, originally derived from the South African Denel Umbani precision-guided bomb kit, produced under a joint venture between Denel Dynamics (49%) and Tawazun (51%).

Tawazun Dynamics became Barij Dynamics in 2018 and, in November 2019, Barij became Al Tariq, when it was consolidated under the EDGE group along with 25 other UAE defence companies.

The Al Tariq guidance and wing kit is designed to fit the 250lb (120kg) Mk 81, 500lb (250kg) Mk 82 and 1,000lb (450kg) Mk 83 bombs, with moving control surfaces and optional pop-out wings.

The weapon is offered with a GNSS/INS seeker, to which can be added semi-active laser, imaging infra-red or millimetre wave radar options. It can be integrated



▲ Al Tariq CEO Theunis Botha told *Show Business* that he expects the company to belatedly announce last year's sale to Egypt

using MIL STD 1760 databus connections, but can also be wirelessly programmed from the cockpit, allowing it to use a standard dumb bomb pylon.

In service with the UAE Air Force Mirage 2000-9 and F-16E/F for some years (and in considerable numbers), the weapon has now won export orders.

Though EDGE is coy about detailing its export customers, videos released by the Egyptian Air Force earlier this year showed the weapon being carried on Egypt's Mirage 2000s and F-16C

Fighting Falcons (pictured inset). Egyptian Mirage 2000s were first seen carrying Al Tariq weapons during the Qader 2021 exercise at the beginning of July, while the weapon was shown on the F-16 in a video released to mark air force day celebrations on October 14.

The standard Al Tariq has a range of up to 45km (with a release height of 40,000 ft), but the optional wing kit extends this to more than 120km. It is unclear as to whether bolt-on propulsion options boosting range to 200km are still being offered. ▲

## THE 'CLIMBER' GOING UP IN THE WORLD

Russian Helicopters (part of Rostec State Corporation) is celebrating the international debut of its modernised Ka-226T light helicopter at the show. It is the first Russian rotorcraft with fully digital design documentation and has been nicknamed the 'Climber', thanks to its high rate of climb.

"We are confident that it will arouse genuine interest among foreign customers due to its excellent flight performance, allowing it to operate at altitudes up to 6.5km," said Rostec's aviation cluster spokesperson.

The aircraft's airframe features significantly improved aerodynamics, which distinguishes it from previous models of the Ka-226 family.

In addition to modern lightweight materials, it also has a new rotor head, blades, and main gearbox, as well as a shockproof emergency-resistant fuel system and a new complex of pilot navigation and radio communication



▲ Social climbing at the show: the Ka-226T light helicopter is making its international debut

equipment. Serial production of the upgraded Ka-226T is due to begin in 2022 at the Ulan-Ude Aviation plant.

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## Space-as-a-Service

Tuesday, November 16 at 13:05  
Aerospace 2050 Conference Area

Join Andy Stephenson, VP of International Business Development & Sales, for fresh perspective during the much-anticipated Parallel Industry Session: Space-as-a-Service.

Please visit stand #1746 in the U.S. Pavilion for a demonstration and to meet our geospatial intelligence solutions experts.

## WELCOME TO DUBAI AIRSHOW

Day 3 brings us to the half way point of our action packed week, it's been an incredible start with many deals being done and thousands of global aerospace community members enjoying the numerous networking opportunities live in person once again.

## DAY 3 ACTIVITIES

There is still so much for you to do at this years Dubai Airshow. Today we have three thought provoking conferences touching on Artificial Intelligence, Space and Air Cargo. Make sure you download the app and view the full schedule. Our line-up of international aircraft will take to the skies once again at 14:00 and wow the crowds with their amazing flying skills! Finally make sure you head over to our VISTA start-up area and check-out all the new companies pushing boundaries from flying cars to delivery drones.

## FISH TANK TALKS

A rare opportunity to become a fly on the wall, this aquarium like live broadcast space creates an opportunity for engaging content to be delivered in a unique way. Important talks and discussions take place within a glass meeting room as visitors can listen in through headphones and capture the discussions as they unfold live.

### Tuesday 16th November - Fish Tank Talks Schedule

**Time:** 15.30-16.00

**Topic:** Growing the Cargo industry in the Middle East

**Speakers:**

Dennis Lister, VP UAE and Global Product Development, Emirates Sky Cargo

**Interviewed by:**

Amandeep Bhangu, International Presenter-Reporter, ex BBC



### HUB STAGE – CARGO CONNECT

With increasing cargo demand, safety and speed concerns are getting louder and companies around the world are discovering new technologies to ease capacity fluctuations. Today, leading experts will gather once again, this time for a two-day conference to explore the way forward in the air cargo industry.

12.15	<b>PANEL: SUSTAINABILITY IN AIR CARGO LOGISTICS</b>
	<ul style="list-style-type: none"> <li>Jörg Oppermann, Vice President, Operations Division, Etihad</li> <li>Philippe van Meir, Market Director Middle East &amp; Southern Asia, Air France KLM</li> <li>Fedor Novikov, Marketing Director of Volga-Dnepr Group, Volga-Dnepr Group</li> <li>Frank Beilner, VP Middle East &amp; Africa, Lufthansa Cargo AG</li> <li>Moderator: Kai Bauer, Principal Advisor Environment &amp; Sustainability, EASA - European Aviation Safety Agency</li> </ul>

### AEROSPACE 2050 – SPACE FORUM

This year the Space Forum creates an opportunity for attendees to learn more about new data services revolutionizing passenger experiences, how satellite connectivity will change everything from entertainment to maintenance and how low cost access to space is going to enable your business to truly use space tech

10.15	<b>WELCOME ADDRESS</b>
	<ul style="list-style-type: none"> <li>Salem Alqubaisi, Director General, UAESA</li> </ul>
10.20	<b>UAESA ADDRESS</b>
	<ul style="list-style-type: none"> <li>Ibrahim Al Qasim, Deputy Director General, UAESA</li> </ul>
10.25	<b>PROTECTING OUR PALE BLUE DOT – SPACE IS KEY</b>
	<ul style="list-style-type: none"> <li>Jean Marc Nasr, Head of Space Systems, Airbus</li> </ul>

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### TECH XPLORE – ARTIFICIAL INTELLIGENCE

The pandemic has set the stage for AI and Machine learning which have been considered as the solution to many challenges faced by the aviation industry. Join us at the AI and Machine Learning Conference at the Dubai Airshow where we will discuss some of the most innovative and practical use cases of AI in the Aviation industry

10.30	<b>OPENING KEYNOTE INTERVIEW</b>
	<ul style="list-style-type: none"> <li>H.E Omar Al Olama, Minister of State for Artificial Intelligence, Digital Economy and Remote Work Applications</li> </ul>
10.50	<b>KEYNOTE REMARKS BY HUAWEI</b>
	<ul style="list-style-type: none"> <li>Andy Bien, Chief Digital Officer of Global Aviation, Huawei Technologies</li> </ul>

### VISTA – STARTUP STAGE

#### STARTUP PITCH DAY

Get ready to pitch your startup to the aerospace ecosystem, tech leaders and investors. 18 startups across 3 categories will compete to be named the most innovative startup of 2021

**Starburst Selection Committee**

Starburst will showcase the industry's most promising international startups at Vista. Participating companies will compete for a spot in the Starburst Accelerator program.

11.15	<b>Starburst Panel:</b>
	<p>A conversation exploring the state-of-the-art in quantum sensing &amp; computing capabilities and its future impact on the aerospace industry.</p> <ul style="list-style-type: none"> <li>Dr. Nissan Maskil, PM, Israel Aerospace Industries (IAI), ELTA Division</li> <li>Nir Minerbi, Co-Founder &amp; CEO, Classiq</li> <li>Karel Dumon, Co-Founder &amp; Head of Quantum, Miraex</li> <li>Moderator: Noemie Alliel, Director of Tel Aviv Office, Starburst Aerospace</li> </ul>

# KEY INFORMATION



## OPENING HOURS

Sunday 14 - Thursday 18 November: 10:00-17:30



**Shuttle Buses:** A daily shuttle bus service will run between the Dubai Airshow Site, the Ibn Battuta Metro Station and the Expo Metro Station.



**Taxis:** Demand for taxis in Dubai can be high especially at peak times. We strongly recommend the shuttle bus service as the quickest way to and from the Airshow site.



**First Aid:** Outside the exhibition hall, next to the Air Traffic Control Tower.

## FLYING DISPLAY

Daily from 14:00 – 17:00



**Mandatory Mask:** Keeping in line with the latest COVID-19 regulations the wearing of masks is mandatory at Dubai Airshow 2021.



**Cafés:** At the front of the exhibition hall and near the exits to the static display.



**Toilets:** In each corner of the exhibition hall.

## SHARE YOUR SHOW EXPERIENCE!

Share your favorite moment from Day 2 with the tag **#DubaiAirshow** and get featured in tomorrow's edition.

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# FLYING DISPLAY - DAY 3 TUESDAY

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14:00	Saudi Hawks	Saudi Air Force
14:30	Rafale	French Air Force
14:41	AW609	Italy (Leonardo)
14:51	Boeing 777-X	Boeing
14:59	F16 US	UAE AFAD
15:14	C2 Kawasaki	Japanese Air Force
15:27	L15	China CATIC
15:36	Sarang	Indian Air Force
15:54	Mirage 2000	UAE AFAD
16:03	MV 22	US Marines
16:10	F16 UAE	UAE AFAD
16:19	A350	Airbus
16:29	MI-28	JSC Russian Helicopters
16:34	Al Fursan	UAE AFAD

## COMMENTATORS

First Lt. Hazza Fahad Al Nuami, UAE Air Force  
Joe McGrath

## FLYING CONTROL COMMITTEE (FCC)

Brig. Gen. Staff. Pilot Abdulsalam R.Al Mehairbi, Chairman - FCC  
Ibrahim Ahli, Deputy Chairman - FCC, Deputy CEO, Dubai Air Navigation Services

## PROGRAMME SUBJECT TO CHANGE

Dubai may only be the second-largest emirate (after Abu Dhabi), making up just 5% of the landmass of the UAE, but that doesn't stop it being highly exciting. Here are some ideas for you to try out...

# Dive into the Dubai experience

## 1 UP THE CREEK

For a taste of the past, head to Dubai Creek – the historic trading heart of the emirate. For centuries, dhows have docked there to load and unload their goods.

The Creek also separates two of the oldest districts of Dubai – Bur Dubai and Deira. Deira is packed with souks, including the spice souq, displaying giant barrels of various spices.

East of Bur Dubai is the picturesque heritage site of Bastakia Quarter. You can explore its narrow lanes and traditional old wind-tower houses, which were constructed in the late 19th century by wealthy pearl and textile merchants, who came from Bastak in southern Iran, drawn in by Dubai's free trade.

The most interesting way to get to Deira, or Bur Dubai, is by crossing the creek using an abra water-taxi.



Abra-cadabra: Traditional travel magic on the Creek



Brunch with a view at the Madinat

## 2 GO MAD IN JUMEIRAH

Madinat Jumeirah Resort is a huge facility that has more than 50 restaurants and bars, a 1,000-seat amphitheatre, and a dedicated entertainment centre. All the facilities are interconnected by three kilometres of waterways, which you can explore on an abra. If you're around for one of Dubai's infamous Friday brunches,

Jumeirah Al Qasr is excellent (AED 577 per person with wine). The resort is also home to Souk Madinat Jumeirah, a traditional Middle Eastern selection of stalls selling everything from spices and slippers to handwoven carpets.

## 3 FOOD AND FOUNTAINS

Dubai Mall is home to more than 1,300 retail

outlets, 200 food and beverage outlets, and the Dubai Aquarium and Underwater Zoo. Some of the best eateries are located in front of the famous dancing fountains at the foot of the Burj Khalifa. If you don't want to spend too much, grab some fast food from the mall and sit on the steps.

## 4 ZIP ZIP HOORAY

Adrenaline junkies shouldn't miss the world's longest zipline, based at Ras Al Khaimah's Jebel Jais – the highest mountain in the UAE. Certified by Guinness World Records, thrill-seekers will travel at 120-150kph at a height of 1,680 metres above sea level. The longest flight takes two to three minutes.

## 5 GET YOUR JUST DESERTS

For a real taste of Arabia, book a desert safari, which involves dune-bashing in a 4x4 vehicle, a buffet dinner, and Arabesque entertainment at a purpose-built Arabian village in the dunes. You can also sand surf down the dunes. Equipment and instructions provided.

## 6 WATER LOTTA FUN

For water park fun – head to Atlantis or Wild Wadi for a splashing time. ▲

## SCUBA DUBAI DO...

If you're into diving, don't miss out on Deep Dive Dubai, a world-record breaking facility. The 60-metre pool is filled with 14 million litres of freshwater, the equivalent of six Olympic-sized swimming pools. Underwater attractions are themed to resemble an abandoned sunken city. The pool is equipped with 56 cameras to ensure diver safety. State-of-the-art lighting and sound systems create a variety of underwater moods.



Deep Dive Dubai

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