

# AW newsletter

Winter 2020

## NO. 1 FOR SUPPORT...**AGAIN!**

Our customers are always at the core of everything we do, and our effort and our engagement has been recognised and rewarded in the results of this latest Pro Pilot Helicopter Product Support Survey.

The 2020 results were published at the beginning of February and we have been ranked No. 1 for the second consecutive year! We were also first in 2019, up from second in 2018 and 2017.

The survey covers seven categories and we were ranked first in all of them: "Company response time", "Tech Manuals", "Speed in AOG service", "Spares availability", "Cost of parts", "Tech Reps" and "Service Satisfaction".

As the magazine says: "Leonardo keeps the crown in the turbine category for the second consecutive year. [...] Overall score earned was 8.28 compared to 7.79 in 2019, an increase of 0.49. This was the biggest overall score increase. Leonardo placed first in all categories of the survey, and had a remarkable improvement in spares availability with a score of 7.90 compared with 7.18 in 2019 [...] It also received a score of 8.30 in speed in AOG service this year compared to 7.63 in 2019."

Through our Customer Support network we provide 24/7 availability for AOG or urgent requests, thanks to an integrated team that provides timely and effective responses to all customer requirements.

Pro Pilot is a US magazine, issued monthly since 1967, that focuses on aerospace and more specifically on business aviation, including issues affecting pilots, managers and dispatchers.

**No. 1 in CUSTOMER SUPPORT**  
**PRO PILOT 2020**  
**HELICOPTER PRODUCT SUPPORT SURVEY**

**For the**  
**SECOND**  
**CONSECUTIVE**  
**YEAR**

**1<sup>ST</sup>**

**IN ALL CATEGORIES**

- RESPONSE TIME**
- TECH MANUALS**
- AOG SPEED**
- TECH REPS**
- SERVICE SATISFACTION**
- SPARES AVAILABILITY**
- COST OF PARTS**

**LEONARDO**

**PROFESSIONAL PILOT**

## TH-119 SELECTED BY U.S. NAVY AS NEW TRAINING HELICOPTER

Through AgustaWestland Philadelphia Corp., Leonardo has been awarded the U.S. Navy contract to provide aircraft, spares, initial support and training within the scope of its Advanced Helicopter Training System program.

Work on the initial contract, awarded in mid-January, for production and delivery of 32 helicopters, will be mainly performed at our Philadelphia facility and is expected to be completed in October 2021.

Leonardo CEO Alessandro Profumo said: “On the cusp of celebrating nearly 40 years of operating in Philadelphia, Leonardo is thrilled the U.S. Navy has selected our TH-119 based offer and us as a local and long term partner. We are proud to be a core contributor to the future of U.S. defence.”

Leonardo Helicopters MD Gian Piero Cutillo added: “Today’s brilliant news is a ringing endorsement for our solutions setting new industry standards for training. We are committed to working with the U.S. Navy to ensure future pilots meet all evolving service requirements.”

Leonardo Helicopters Philadelphia MD William Hunt said: “Our plan since day one has been to offer the U.S. Navy the training capabilities they asked for, without compromise. We are honoured to deliver on that promise, build the new fleet in Philadelphia and maintain it from Milton, Florida.”



The TH-119 is based on our successful AW119Kx. Last July the TH-119 received a supplemental type certification by the Federal Aviation Administration (FAA) making it the only single-engine helicopter in decades to meet Instrument Flight Rules (IFR) requirements. This allows pilots to operate the aircraft safely in low visibility and challenging weather conditions thanks to advanced avionics from Genesys Aerosystems.

Leonardo is the largest civil helicopter maker in the US in terms of revenue and is also a supplier to the U.S. Department of Defense. In 2018 the U.S. Air Force selected the Boeing-Leonardo MH-139 helicopter to protect the nation’s intercontinental ballistic missiles and provide secure transport for government officials.

## LEONARDO ACQUIRES SWISS FIRM KOPTER

On 28th January, the first day of HeliExpo in Anaheim, CA, Leonardo announced the acquisition of Swiss helicopter maker Kopter, further strengthening our worldwide leadership and prominent position in the rotorcraft sector.

Thanks to this acquisition, we will leverage the innovation capacity, new capabilities and engineering skills of Kopter, which is developing the SH09, a new single-engine helicopter in the 2.8 tonne class with a large modular cabin, and will be the first brand new generation long light single helicopter on the market for decades. It will fit perfectly in our state-of-the-art product range offering opportunities for future technological developments.

Within the Helicopter Division Kopter will act as an autonomous legal entity and competence centre working in coordination with us. The Swiss company’s competencies will implement our capacity for the development of more disruptive technologies, mission capabilities and performances, including innovative hybrid/electrical propulsion solutions.

Leonardo CEO Alessandro Profumo said: “By this deal we confirm our commitment to strengthening Leonardo’s core business and sustaining our leadership in key areas. With this acquisition we will bring on board innovative skills and technologies that will complement our own and will also contribute to keeping us at the forefront of innovation and competitiveness whilst maintaining our financial solidity.”

Leonardo Helicopters MD Gian Piero Cutillo said: “We are proud to welcome this innovative company as an integral part of our world-leading helicopter business. It complements perfectly our existing product portfolio adding a promising rotorcraft that will greatly benefit from our industrial know-how, service and training experience and commercial network.”

Primarily based in Switzerland, Kopter was established in 2007, originally designated Marenco SwissHelicopter. In 2018 it was re-branded as Kopter Group AG.



## NORWAY POLICE AW169 FLEET REACHES 1,000 FLIGHT HOURS

After little over six months since delivery of the first aircraft in June 2019, the Norwegian Police Helicopter Unit's fleet of three AW169s has reached the 1,000 flight hours milestone.

The brand new helicopters are the most advanced version of the AW169, highly customised for the Norway Police requirements and operations, and represent a new benchmark for the Law Enforcement segment.

The specific mission equipment features the latest Wescam MX-15 surveillance camera and a Trakka searchlight, both controlled by a mission console in the main cabin equipped with HD video screens and a digital mapping system developed by Leonardo based on customised maps of Norway tailored on the Police requirement. Wireless intercom, microwave downlink system, and cabin wireless capability allow streaming of mapping and video signals to on-field and on-board devices other than fitted mission equipment, such as cell-phones or tablets.

Capable of reaching a radius of more than 250nm from base, the AW169 now allows the Norwegian Police to reach more than 80 percent of Norway's population. Furthermore, the large cabin and the 750kg available internal load enables six fully equipped 115kg troopers to be airlifted with their additional equipment and deployed on the field by fast roping. Thanks to the capability of quickly switching

## SUPPORTING SAR EXCELLENCE

The Royal Norwegian Airforce very kindly accepted an invitation from Leonardo to present at the Customer Support and Training 2019 year-end meeting in Yeovil.

The presentation recognised the nearly 50 years of support and close collaboration with the Royal Norwegian Airforce conducting Search and Rescue (SAR) duties on the Sea King, together with the intentions to 'go live' with the new AW101 in 2020. It was seen as a great opportunity to illustrate to the Yeovil workforce what had been achieved since the Sea King started SAR operations in Norway, May 1973, and the importance of the Leonardo staff to the SAR service.

The types and variety of missions together with the challenging terrain and climate were illustrated to the amazement of the Yeovil employees, some of whom worked on the Norwegian Sea Kings prior to delivery.

Col. Nils Froisland of the Norwegian Air Force highlighted the great support and service provided to date by Leonardo, explaining what this had meant in terms of capability and availability on the Sea King. This was then extended to explain his vision of the future where, as part of the Norwegian All Weather Search and Rescue Helicopter (NAWSARH) programme, Leonardo and its staff will become an integral part of the SAR service in Norway. With Leonardo as a key stakeholder the future SAR programme will flourish, he said.

How did we get to such a prestigious and trusted position with this customer? Decades of faithful support, by people who understood the operation and its needs, has fostered trust not just in the individuals of the Royal Norwegian Airforce and Norwegian Defence Materiel Agency (NDMA) but also at an organisational level, where Leonardo is intuitively recognised as a service provider of merit. This, together with a world-class product ideally suited to the mission in Norway, supported the decision to expand on this collaboration and bring Leonardo in as an integral part of the infrastructure, supporting SAR excellence.

By extending its footprint in Norway, forming an entity and bolstering its existing staff with experienced Norwegian nationals, Leonardo's commitment is clear to see and the decision to place this level of trust well deserved.



configuration from surveillance role to troop transport or vice-versa – a task that can be completed in about an hour – the Police Helicopter Unit now has considerable flexibility to adapt its fleet to different operational requirements.

Considering the orography of Norway, the extended coastline, borders with Russia, Finland and Sweden and the 24/7 operations of the Helicopter Unit, flying activity is very intense and will probably grow in the near future to more than 2,000 flight hours per year making the AW169 the best platform to perform the range of missions of the Norwegian Police all across the country.

The Norwegian Police AW169 fleet is supported by a turnkey contract with Leonardo Helicopters that partnered with Patria Helicopters AB to provide on-site maintenance support at the Helicopter Unit base at Oslo's Gardermoen Airport. Later in 2020 the new National Emergency Response Centre close to Oslo will be completed and the Unit will move to this new facility.



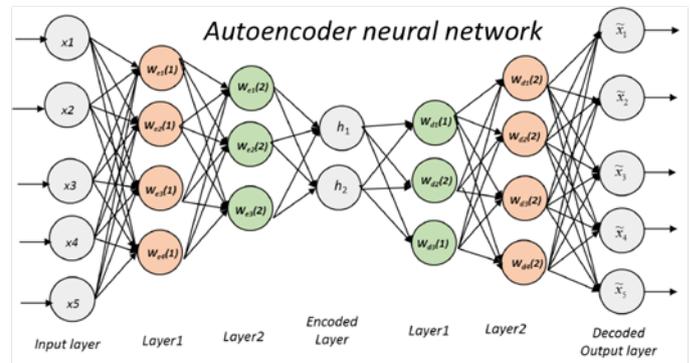
## HUMS AND THE MACHINE LEARNING REVOLUTION

The ongoing collaboration between Leonardo and the Politecnico di Milano (PoliMi) on highly innovative projects is already bearing fruit in the form of a project to enhance our Health and Usage Monitoring System (HUMS), with potential positive impacts on availability and reduced maintenance costs.

Launched in 2019 within the scope of the 2016 Innovation Hub agreement, the project's objective is to improve HUMS along two major axes: improving fault detection and providing prognostic capabilities. Three systems on the AWFamily of helicopters have been chosen as the initial focus of the initiative: the main transmission gearbox, the electrically actuated landing gear and the engine.

The current HUMS provides a first level of fault detection and analysis; however, due to the limitations of existing automatic learning capabilities, the human analyst is still very much engaged in the monitoring of health indices and alert generation following the inspection of trend curves.

Machine learning techniques, in particular deep learning, allow a real paradigm shift in data analysis, due to their inherent ability to spot features and to self-improve performance when exposed to more training examples.



As in many other engineering sectors, the vast amount of data generated today on board our helicopters lends itself very well to modern deep learning approaches, in particular the various types of neural networks.

Neural networks can adapt to change without requiring human intervention. This advantage is particularly valuable in our sector because of the variability in the behaviour between helicopters, even those of the same model. It is here that deep learning can really provide an edge because it can extract higher level representations of what it means, for example, for a main gearbox to be in “normal operating condition” and detect subtle deviations which would be otherwise undetectable – or conversely ignore signals that do not represent an anomaly but could be easily interpreted as such with legacy approaches.

It is difficult to overstate the potential benefits of data analytics for helicopter operators. However, even within the scope of the project, we can anticipate future cost reductions to our customers through improved planning of scheduled maintenance and eventually even extension of inspection intervals, towards condition-based maintenance. We also foresee increased reliability in the assessment of components' status through human error reduction, which will positively impact fleet availability and the optimisation of stock and spare parts logistics.

With this project, once again, we are harnessing the best innovation has to offer and preparing to ensure that our customers reap the benefits of the very latest that technology has to offer.

## INNOVATION IN TESTING TECHNOLOGY

The Flight Test team at our Yeovil site in the UK has designed a new device that will cut the cost and time of the qualification process for our aircraft.

The ‘forced air blower’ is used in ground tests that look at the impact of cross winds on engine start cycle. Previously this would have been a costly exercise for which the aircraft would need to be taken offsite.

The new device combines hovercraft technology into a portable forklift-mounted unit. The wind speed is increased by remote control and the engine started when the desired wind speed has been met.

The forced air blower has been used extensively also at our site in Cascina Costa with the newly installed Aneto engines on the AW189K aircraft. This new turboshaft engine will offer a high level of performance and further extend the capabilities and versatility of the AW189K, particularly in hot and high conditions.



## 100,000TH CSR FOR FLEET OPERATIONS CENTRE

Our Fleet Operations Centre (FOC) in Italy marked an incredible milestone last year as it closed the 100,000th Customer Service Request (CSR) since its establishment.

The FOC opened on 1st November 2009 and operates 24/7 - it reached this amazing figure just after its 10th birthday, on 14th November. The centre's main objective is to provide total event management support to Leonardo Helicopters' in-service fleet when it experiences an Aircraft on Ground (AOG) event.

Now based in Sesto Calende the FOC was originally located at the Logistic Centre in Lonate Pozzolo. The centre is staffed by more than 25 specialists, including supervisors, logistic administrators and service engineers, who provide technical and logistic support to Leonardo Helicopters' worldwide fleet, both civil and dual use. The FOC is directly connected to the Leonardo Helicopters Network, allowing shipping of materials to the customer from the closest warehouse in the minimum transit time.

Our centre operates 24/7 to provide uninterrupted support to our customers whenever and wherever it is required. Our products are active worldwide on crucial missions such as Search and Rescue (SAR) operations,

The 24/7 FOC can be contacted by sending an e-mail to:  
[24.7fleetoperationscentre.aw@leonardocompany.com](mailto:24.7fleetoperationscentre.aw@leonardocompany.com)

or via phone:  
 +39 0331 664444

Offshore transport, Medical Evacuation (MEDEVAC), Law Enforcement and VIP transport that require a one-stop support solution for their AOG resolution, spare parts and technical or maintenance requirements.

We continue to improve the high level of service we offer our customers, as recognised in the latest Pro-Pilot Survey where we ranked first across the board - including "Speed in AOG service" - which you can read about in this issue of the AWNewsletter.

24/7 FOC Customer Service Requests (CSR) will be included in the "New Customer Portal" project that will be released in the next months that will allow the Customers to open and manage AOG requests directly through the web portal.



14<sup>th</sup> November 2019

**100,000** Customer Service Requests Closed!  
**100,000** Helicopters released to service!



24/7 Fleet Operations Centre  
 Customer Support & Services Italy

 **LEONARDO**

## TRAINING CAPABILITIES IN UAE GO FROM STRENGTH TO STRENGTH

Delivery of an AW169 simulator to Abu Dhabi, within the framework of an agreement with the Tawazun Economic Council, was announced at the Dubai Airshow in November.

The simulator will be operated by the Abu Dhabi Aviation Training Centre (ADATC), which is partnering with Leonardo to establish new and expanding training capabilities in the Middle East.

The level of service and proximity we provide to our growing regional customer base, in line with the industrial plan, will be enhanced by the introduction of this first AW169 helicopter simulator in the region and by the software upgrade of an existing AW139 simulator, also to be delivered by Leonardo to ADATC.

Abu Dhabi Aviation (ADA), the largest helicopter operator in the Middle East and North Africa, is a national joint stock company, founded in 1976, with 55 aircraft fleets, including 51 helicopters and four fixed-wing aircraft. A recipient of a world-class award in safe aviation, it has secured over a million flight hours safely.

ADA provides several services with its fleet, including shipping support to offshore oil fields and other services worldwide, particularly to oil and gas producers in the Emirate of Abu Dhabi. Furthermore it delivers air ambulance and search and rescue services, as well as VIP transportation services, crop workshops, aerial construction, earthquake support and fire fighting in the UAE and in Europe.



## ITALIAN FIRE BRIGADE AT MALAYSIAN TRAINING ACADEMY

Following the introduction of the AW139 to the Italian Fire Brigade (Vigili del Fuoco, part of the Ministry of the Interior) fleet in 2019, its pilots are now attending a AW139 type rating training programme in Malaysia.

The pilots will further improve their flying skills with advanced training courses on the AW139 Full Flight Simulator (FFS) at the Leonardo Training Academy in Kuala Lumpur. So far 16 pilots have completed their training and an additional 8 pilots are expected to do so in future.

The programme allowed some Italian Fire Brigade captains to meet their Malaysian counterparts from BOMBA, the Malaysian Fire Brigade, also undergoing training at our Academy.

The Leonardo Training Academy in Kuala Lumpur, Malaysia, offers a range of technical, logistic and training services on the AW109 Power and AW139 helicopters for the Eastern markets and expects to expand the range of courses to new platforms including the AW169 and AW189.



## NEW AW609 TRAINING DEVICE IN U.S.

Our brand new AW609 Virtual Enhanced Training Device (VETD), located at our Training Academy in Philadelphia, U.S., has been unveiled.

This advanced flight simulator consists of a real aircraft cockpit and provides the capability to train AW609 aircrews on the state-of-the-art Rockwell Collins Pro-Line Fusion avionics suite, as well as the full spectrum of normal and emergency procedures.

The AW609 VETD is available at our facility in Philadelphia, and marks a significant expansion of our training capabilities range as, along with a suite of other AW609 training aids and devices, it has been developed to support the entry into market and service of this innovative aircraft.

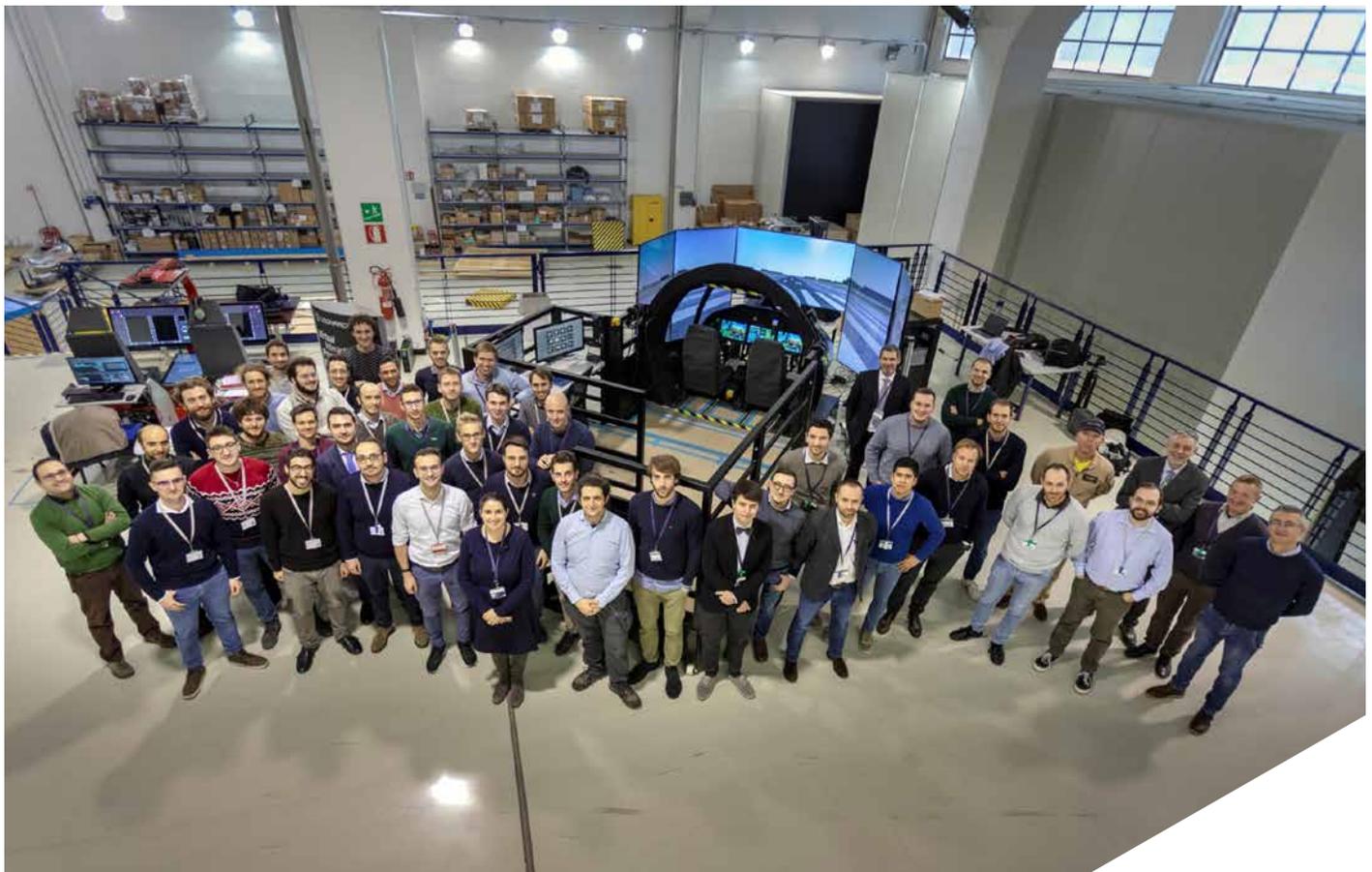


All eyes are on the sleek AW609 cockpit, made with real Pro-line Fusion Adaptive Flight Displays (AFDs), providing touchscreen monitors for aircraft interactive control and display functions. The AFDs give the aircrew the ability to interact not only with the primary flight, nacelle and navigation instrumentation, but also with the Flight Management System (FMS), aircraft synoptic, crew alert system, maps, charts and even more.

Fully designed, manufactured and assembled in-house using our internal, organic simulator development capabilities; the AW609 VETD will play a major role in optimising performance during aircrew training. This state-of-the-art device fills the gap between classroom instruction and flight training, securing aircrew procedural readiness for further training in the Full Flight Simulator (FFS) and aircraft.

The AW609 will be the world's first civil-certified tiltrotor. Capable of vertical take-off and landing, and flight at similar speed, range and altitude to a turboprop airplane, it offers the flexibility of rotary-wing and the comfort of fixed-wing flight in one aircraft.

The Leonardo Training Academy in USA already provides ground and flight training for AW119, AW109 Series and AW139 products, including synthetic training with the use of one AW139 FFS Level D.



## AWHERO UNMANNED SYSTEM PARTICIPATES IN OCEAN2020 SEA DEMO

Our Company has played a key role during the first sea demonstration of the OCEAN2020 (Open Cooperation for European mAritime awareNess) project, the largest EU-funded defence research project for maritime surveillance.

The OCEAN2020 project, led by Leonardo with a team of 42 partners from 15 European countries, saw its first exercise in the Gulf of Taranto on 20th and 21st November. Our Company provided maritime domain awareness solutions: the SW-4 Solo (operating out of Grottaglie Airport) and AWHERO (on board the Virginio Fasan frigate) remotely piloted helicopters. We were also responsible for the surveillance, defence and communication systems on board the Italian Navy's Virginio Fasan and Federico Martinengo frigates during the demonstration.

The operational scenario included the interdiction of a hostile vessel and the interception of an enemy mine-laying ship during an amphibious operation. The purpose of the exercise was to evaluate how remotely piloted aircraft can help respond to the challenges of maritime surveillance and to assess integration and interoperability capabilities.

During the demo AWHERO perfectly accomplished four planned missions equipped with a 10" Electro-Optical/Infrared (EO/IR) and automatic identification system (AIS) transceiver. AWHERO successfully detected, identified and tracked the intruder vessels, providing real-time video and data to the mothership (thanks to integration with the Combat Management System) and further disseminated the information to Maritime Operational Centres (MOCs) through satellite communication.

In the Mine Laying Vessel scenario, manned-unmanned teaming tasks have been conducted by SW-4 Solo delivering real-time payload data to a NH90 helicopter and to sea troops while boarding the intruder.

The key assets deployed during the two days totalled six naval units, nine remotely-piloted systems, five satellites, two ground communications networks, four national co-ordination centres (the MOCs) and a prototype command centre (the EU MOC) located in Brussels.

The project is funded by the EU Preparatory Action on Defence Research and implemented by the European Defence Agency (EDA). OCEAN2020's second demonstration will take place in 2020 in the Baltic Sea.



## AW159 CREW SUPPORTS £3.3M DRUGS BUST

A Royal Navy AW159 Wildcat, manufactured in Yeovil by Leonardo and based at RNAS Yeovilton in the UK, played a crucial role in a recent massive drugs bust in the Arabian Sea.

The helicopter was operating from the destroyer HMS Defender when its crew spotted what has been described as a "suspicious dhow" in the north of the sea, while sweeping the area for smugglers and traffickers.

The recognition of the vessel by the helicopter crew allowed the destroyer to approach and mount a search of the vessel, which ended in the recovery of 11 bags of crystal meth with a UK street value of £3.3m.

The AW159 is a twin-engine multi-mission military helicopter capable of autonomous detection, identification and attack of land and naval targets. The high-performance platform has state-of-the-art avionics

and mission systems for excellent crew situational awareness. It is currently in service with the UK's Royal Navy and British Army, the Republic of Korea Navy and the Philippine Navy.

In addition to war-fighting roles, the highly adaptable AW159 can perform a large variety of missions including: Medical Evacuation, Search and Rescue (SAR), Special Forces or Troop Insertion and Transport of Internal and Underslung Loads for Vertical Replenishment.

It has a fully integrated and comprehensive suite of mission systems operated through a Tactical Processor and is designed with high levels of survivability and crashworthiness; ballistic tolerant design, self-sealing fuel tanks and armoured protection. Its short readiness times and high availability rates ensure it is ready for operations, whatever the conditions, when others are not.



## MIAMI-DADE FIRE RESCUE ORDERS FOUR AW139S

At the end of 2019 Miami-Dade Fire Rescue (MDFR) signed a contract for four AW139 intermediate twin engine helicopters, which will be deployed for a wide range of missions.

The primary mission will be fire suppression, but they will also perform Emergency Medical Services (EMS) and Search and Rescue (SAR) missions and will be equipped with dedicated tools including a cargo hook, rescue hoist and Bambi bucket.

The contract includes a comprehensive five-year support, maintenance and training package offering the possibility of a further extension to a total of 15 years. The first helicopter is scheduled for delivery in 2020 from our Philadelphia facility.

Miami-Dade County Mayor Carlos A. Gimenez said: "The safety of our Miami-Dade Fire Rescue operations team and the well-being of the residents we serve is our greatest priority. For those reasons, the crashworthiness standards of the top-ranked Leonardo helicopters were a key factor in our County's decision to award this contract."

He added: "The purchase price, training services and support we will receive during the transition to these world-class aircraft were also strong considerations."

Miami-Dade, the most populous county in the state, is located along the southeast tip of the Florida peninsula, covering a surface of more than 2,000 square miles with one-third of the county in Everglades National Park. Given the scope of its operations, neighbouring counties often request Miami-Dade Air to provide mutual aid support.



In the U.S., the AW139 counts as customers the Los Angeles Fire Department (LAFD), New Jersey and Maryland States Police Departments, among many others, while the US Air Force (USAF) is introducing the AW139-based Boeing MH-139 to replace the UH-1N fleet.

## AW139 HELICOPTER FOR PETROLEUM AIR SERVICES IN EGYPT

The addition of a sixth AW139 intermediate twin helicopter to the Petroleum Air Services of Egypt fleet was announced at the Dubai Airshow in November. The aircraft will be used to perform offshore transport operations in Egypt.

Petroleum Air Services is a leading operator in the country and since 2009 has been operating AW139s to perform missions in support of the Oil and Gas industry. It has reached important milestones, such as over 12,900 flight hours logged and more than 95,000 passengers safely carried. The AW139 has supported the company's reaching such goals and meeting the most stringent requirements of customers in the energy sector, as it is a perfect fit for deep-water operations.

There are expansion plans for future offshore transport activities and exploration in the eastern Mediterranean, which the additional AW139 of Petroleum Air Services will support, thanks to its features of high safety standards, advanced avionics, high speed and excellent overall performance.

Petroleum Air Services is an Egyptian joint stock company providing air services transportation inside and outside Egypt for the oil and gas sector, tourism and other economic entities. It currently operates a fleet of 35 helicopters and eight fixed-wing aircraft, while it plans to expand its helicopter fleet in the near future to meet the requirements of the current and new customers who obtained new concession rights in Egypt for offshore activities either in the Red Sea or Mediterranean.

## LEONARDO SPONSORS ITALIAN PAVILION AT EXPO 2020 IN DUBAI

Innovation and sustainability are among the key themes of the forthcoming Expo 2020. At the end of 2019 Leonardo announced its sponsorship of the Italian Pavilion, where products will be on show that illustrate the implementation of such themes in the aerospace industry.

The Expo will take place in Dubai from 20th October 2020 until 10th April 2021, and we will bring to the Italian Pavilion technologies and products related to new frontiers in the aeronautical sector – from innovative aircraft, manned and unmanned, to integrated aeronautical systems.

“We are proud to participate in the Italian Pavilion of Expo 2020 Dubai and to contribute to the enhancement of the excellence of our country, which is itself a unique mix of creativity and technology,” said Leonardo CEO Alessandro Profumo, speaking at the Dubai Airshow last November. “The attitude toward the transversality of knowledge is an element that has always characterised us and that ideally links us to Leonardo da Vinci, the

versatile mind of the Renaissance who has inspired us with the choice of our name.”

The Dubai edition, under the theme “Connecting Minds, Creating the Future,” will be the first to take place in the region since the inception of the Universal Exhibition in 1851 and is expected to host a total of 25 million visitors. The Italian Pavilion will be located between the “Opportunity” and “Sustainability” thematic areas within the Expo 2020 site. Project estimates foresee over 28,000 people visiting the pavilion daily, making a total of more than 5 million.

During Expo 2020 in Dubai we will also establish an all-new rotorcraft-dedicated terminal concept from Leonardo, together with Falcon Aviation Services, close to the Expo area. This initiative combines a helipad, a showroom, and lounge areas in a single city-based heliport, where VIP and charter service users will be provided with extensive, high-quality service.

## FUTURE OF HELICOPTER TRANSPORT OPS ON SHOW IN DUBAI

We have launched an all-new rotorcraft-dedicated terminal concept at the Dubai Air Show last November. The project is aimed at the establishment of a rotorcraft terminal in Dubai, United Arab Emirates, in cooperation with Falcon Aviation Services, very close to the Expo 2020 area, to simplify helicopter transport operations to and from the site.

Dubai is the first site where the terminal will be built, but potentially this concept can become a global model for helicopter transport operations, meeting the increasing demands for sustainable and modern vertical lift mobility as well as greater access to urban areas.

Alessandro Profumo, Leonardo CEO, said: “This one-of-a-kind initiative demonstrates that Leonardo, together with its long-established leading partners, is shaping the way we will fly in the next few decades. We’re proud to have joined forces with Falcon Aviation Services on this project in Dubai which will provide unprecedented levels of quality transportation services during a world-class event like Expo 2020.”

The terminal design incorporates sustainability and flexibility thanks to a modular architecture and layout, which makes it also easy to transport to other location, making it a helicopter transport hub fit for the 21st century.

Building on our expertise and leadership in the VIP-VVIP/executive transport market worldwide, rotorcraft terminals may be established in other geographies, including Europe, North & South America, South-East Asia, delivering innovative mobility and the highest levels of service. The new concept brings together a wide range of services under one roof, including point-to-point connections to other cities, airports, and other areas in the city, as well as lounge and business areas.



# NEW AW189 AVIONICS BOOST SAFETY IN OFFSHORE OPERATIONS

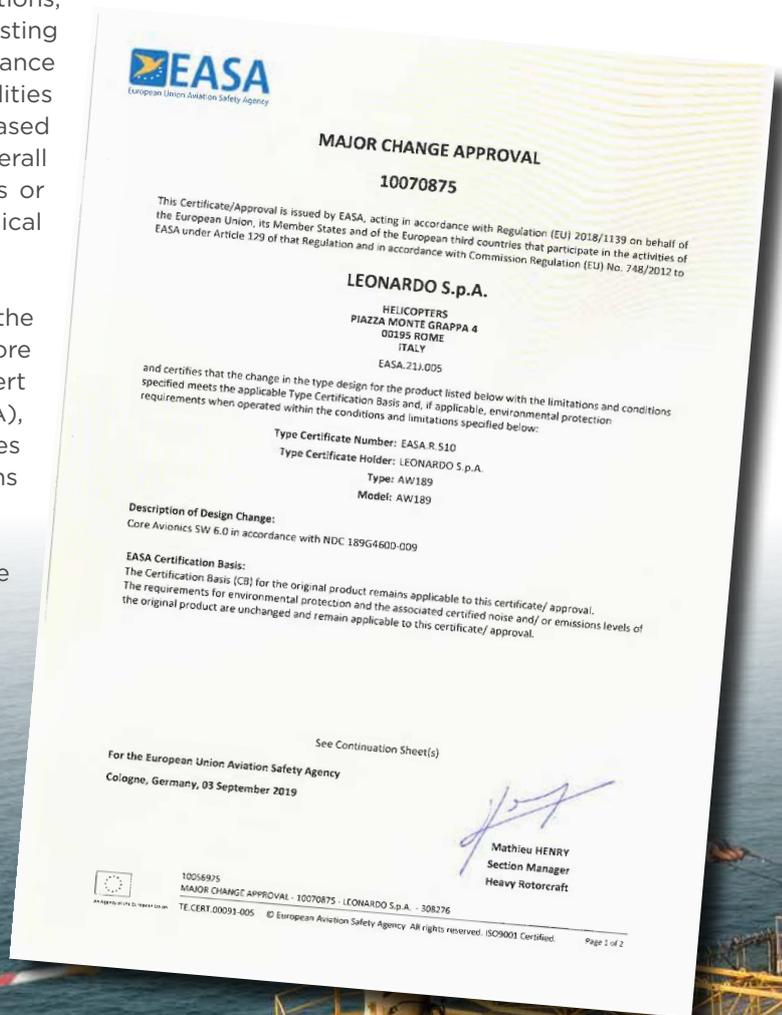
The AW189 has become the world's first helicopter to be equipped with and certified for new capabilities in crew safety and precision approaches, tailored to the exacting demands of offshore operations.

The helicopter now benefits from the latest avionic software release (Phase 6), which has been certified by the European Aviation Safety Agency (EASA). The Leonardo-designed software introduces Ground Based Augmentation System (GBAS) approach capabilities and a Helicopter Terrain Awareness and Warning Systems (HTAWS) OFFSHORE mode.

The GBAS plays a significant role in helicopter operations, allowing precision approaches worldwide where existing Instrument Landing System (ILS) or Localizer Performance with Vertical guidance (LPV) approach capabilities are limited or in areas not covered by Satellite Based Augmentation System (SBAS). The GBAS improves overall crew safety enabling precision approaches to runways or helipads and heliports in challenging visual meteorological conditions (VMC) or adverse weather conditions.

The HTAWS OFFSHORE mode, in accordance with the recommendations from CAP1519 (covering Offshore Helicopter Terrain Awareness Warning System Alert Envelopes) from the UK Civil Aviation Authority (CAA), allows the implementation of specific alert envelopes aimed to improve warning times for offshore operations without incurring an undue number of nuisance alerts.

These new advances in the AW189's avionics further secure its position as a market leader in the oil and gas sector.



## ABU DHABI AVIATION EXPANDS HELICOPTER FLEET

AW169

Together with Abu Dhabi Aviation (ADA), the largest commercial helicopter operator in the Middle East and North Africa (MENA), we announced at the Dubai Airshow in November the signing of contracts for five helicopters.



The deal is for three intermediate AW139s and two light-intermediate AW169s, due for delivery in 2020. Thanks to this agreement the AW169 will be part of ADA's fleet which includes 16 intermediate AW139 helicopters, primarily engaged in missions for the oil and gas sector. These latest orders are part of an agreement for 15 helicopters, announced at the end of 2015, including the AW139/AW169/AW189 types and will allow ADA to join the group of worldwide customers who are benefiting from the unique advantages of the AWFAMILY of new generation helicopter models.

AgustaWestland Aviation Services LLC, an ADA and Leonardo joint venture delivering thorough support and maintenance services in the region, will be supporting also the AW169s newly added to the fleet when they commence operations.

Alessandro Profumo, Leonardo CEO, said: "We're honoured our long-established leading partner Abu Dhabi Aviation has now decided to add the AW169 to their fleet, confirming their trust in our technology to provide a major contribution to their future success."

His Excellency Nader Ahmed Al Hammadi, ADA Chairman, added: "This agreement has come to support the oil and gas industry inside and outside the UAE and to satisfy the transport, air-ambulance and other needs. It is in line with the Company's strategy to expand its fleet of new generation aircraft in order to meet its customers' needs, in light of the expected high demand in 2020."

## 300TH U.S. MADE AW139 DELIVERY

Production at our Philadelphia facility in the U.S. continues apace, not least thanks to the achievements of our most successful helicopter programme of the last 15 years: the AW139, which is manufactured both at Vergiate, Italy and in the U.S.

As well as seeing its 1,000th delivery towards the end of 2019, the AW139 programme passed another milestone on 24th January with the delivery of the 300th U.S. assembled helicopter. The aircraft is a Boeing MH-139A “Grey Wolf” assigned to the U.S. Air Force.

Our Philadelphia facility also manufactures the AW119 helicopter, a variant of which was selected by the U.S. Navy for its Advanced Helicopter Training System programme earlier in January, and the AW609, the world’s first commercial tiltrotor.

“When our AW139 assembly line opened in 2008, it marked the beginning of a wonderful period of growth,” said William Hunt, MD of Leonardo Helicopters Philadelphia. “We are delighted to feel that current of expansion again, with a new training academy opening this year and welcoming new customers within the U.S. Department of Defense that will keep us busy for years to come.



“A foundationally transformative success for Leonardo, I’m proud to celebrate the hard work of my colleagues who build, maintain, and sell AW139s. Their dedication and professionalism has made the helicopter the world famous model that it is today.”



## NEW AW139 SERVICE PROVISION IN CANADA

The service provision in Canada for our market-leading AW139 has been further expanded thanks to our partnership with Heli-One.

At its Delta, British Columbia, facility near Vancouver, helicopter maintenance, repair and overhaul (MRO) provider Heli-One is working with us to establish service and repair capability for intermediate and tail gearboxes.

The authorised component repair centre already performs avionics and rescue equipment maintenance for our AW139 operators in Canada, including custom modifications and repairs. This provision will be further enhanced by dynamic component MRO capabilities for the AW139.



## HAI HELI-EXPO 2020

The 2020 edition of HAI Heli-Expo, the largest commercial helicopter exhibition in the world, took place in Anaheim, CA, at the end of January, when it brought together manufacturers, industry professionals and service companies supporting the rotary-wing sector.

Our booth at the event featured three helicopters on static display – the AW139, AW169 and AW189, the AWFFamily – along with our new Helicopter Advanced Services (HAS) programme, launched to demonstrate how digital services will be increasingly instrumental in our Customer Support and Training strategy. We also offered demo flights in the unrivalled AW139 and in the TH-119 recently selected by the U.S. Navy for its Advanced Helicopter Training System programme.



The biggest news of the event came on the first day, with the announcement of our acquisition of Swiss company Kopter; the company is developing the SH09, an innovative 2.8 ton single-engine helicopter with a large, modular cabin, and is also investing in cutting-edge technology and in the use of high-tech materials. **For more details see the article in this issue of AWNewsletter.**

Further good news came when the launch customer for the AW189K was revealed: Gulf Helicopters from Qatar, already a major operator of the AW189. **You can read more about this in the following pages.**

Throughout the exhibition, a number of ceremonies were held at our stand.

We celebrated the sale of the first AW139 full flight simulator to Japan, purchased by Suzuyo & Company. **This is covered in more detail in a separate article this issue.** Another ceremony saw our distributors Sloane Helicopters in the UK, Mitsui Bussan in Japan and Rotortrade – a company operating in the second-hand market – being presented with commemorative plaques in recognition of our long-standing collaborations.

Within the Service Centre network, the partnership agreement with Arrow Aviation in the United States has been renewed, and the latter also received an upgrade to Excellent Service Centre; the partnership agreement with Uniflight, also based in the United States, has also been extended; the Gulf of Mexico Support Centre in Louisiana hit its target of 100 repaired blades in 2019, and this was marked with a plaque to commemorate the achievement.

Elsewhere in the field of customer support, the agreement with the new Serviavia Service Centre, which will operate in Guatemala, was also celebrated.

We also continued our commitment to ensuring our customers remain at the heart of our activities at all times, enabling us to listen to their requirements and exchange feedback as well as providing them with our latest news. To this end, we organised several events that allowed us to be in direct contact with them in a private yet informal environment.

The day before the start of the exhibition we held our Customer Advisory Boards, sharing the latest updates on Customer Support and Training activities, along with technical updates for each platform. The morning session was focused on the AW169 and AW109/AW119 models, while the afternoon was dedicated to the AW139 and the AW189.

A breakfast conference was the customer event on the morning of the first day of HAI Heli-Expo. Our CEO Alessandro Profumo and Helicopters Division MD Gian Piero Cutillo addressed the many guests on the importance of the AW139 for Leonardo and its impact on the services and training we offer customers. They also explained how the best practices established within the programme formed the foundation for development of the AWFfamily, which includes the AW169 and AW189 models. Furthermore Mr. Profumo gave an overview of Leonardo's global presence, focusing on the U.S. and explained the relationship between Leonardo and the Division.



Last but not least, we organized an event exclusively for pilots next to our AW139 and TH-119 at the Angels Stadium from where the demo flights were performed. This was an excellent networking opportunity but also offered participants the chance to see first-hand the features of the AW139 and the TH-119.



We thank those customers that joined us in Anaheim this year, and look forward to the opportunity to meeting with you all at the next Heli-Expo: New Orleans, Louisiana 23rd-25th March 2021!

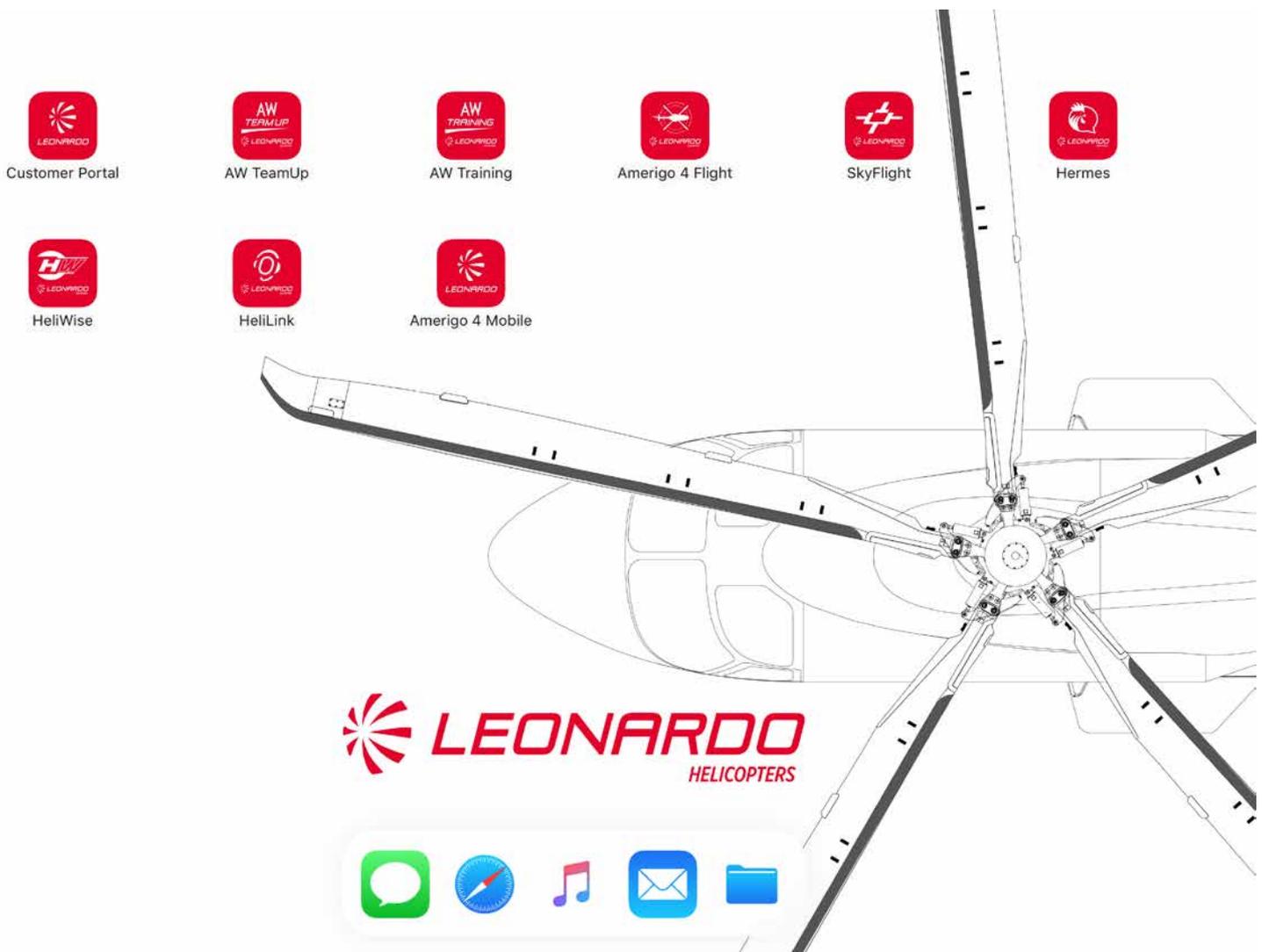
# HELICOPTER SERVICES FOR THE 21ST CENTURY

Our Customer Support and Training offering continues to evolve, taking advantage of the latest technological developments to deliver leading-edge services to our customers. The latest step in this is our Helicopter Advanced Services (HAS) programme, launched at Heli-Expo 2020 in Anaheim, CA.

The HAS demo kit prepared for Heli-Expo showcased the main key features of our digital products, allowing customers to learn more about our new approach to CS&T. We offer the widest set of developed Digital Toolsets on the market, accessed via a single portal, delivering a new and effective user experience, and enhancing communication. HAS aligns and unifies the online experience for our digital products, allowing customers to access the entire Leonardo post-sale customer support world with a single account.

The new programme contributes to our Division's Digital Transformation Strategy, exploring how digital services can contribute to the success of our CS&T strategy. This strategy is organised into the following work-streams:

- › **Toolset review:** To optimise use of data and current processes in systems/services on-board and on-ground, ensuring connectivity and cyber resilience across our full products offering.
- › **Data Analytics:** To utilise data and artificial intelligence to uncover or predict issues much earlier, leveraging on autonomous/smart systems to enhance our offering.
- › **Digital Foundation:** To obtain a secure, scalable, flexible, and always-on “evergreen infrastructure”, with 24/7 support.
- › **PMO & Change Management:** To target “Mind-set changing” and business process improvement/re-engineering.



## FIRST AW139 FFS FOR JAPAN

We have delivered a first for the Japanese market, further extending training capabilities for our products thanks to the purchase of an AW139 Level D Full Flight Simulator (FFS) by Suzuyo & Co.

This latest development, announced at Heli-Expo in January, underlines our commitment to the continued enhancement of safety standards as a fundamental value and key aspect of mission effectiveness and safety – for pilots, crew members and technicians.

Installation of the AW139 FFS, manufactured by Leonardo in collaboration with CAE, will be at the Suzuyo & Co facilities at Mt. Fuji Shizuoka Airport, where it will be operated by Suzuyo subsidiary Shizuoka Air Commuter



Corporation (SACC). This contract will be a leap forward in safety and operation training effectiveness for Japanese operators, representing the first ever AW139 FFS in the country.

In addition to the simulator, Suzuyo will also benefit from Leonardo’s briefing and debriefing capabilities and additional training aids such as e-Learning to support ground training delivery. In addition they will also be able to use the Enhanced Training Device (ETD) Lite-5 advanced procedural trainer, which is reconfigurable to support both AW139 and AW109 GrandNew helicopters.

There are around 60 AW139s in service in Japan today, performing roles including law enforcement, Search and Rescue (SAR) over land and sea, fire-fighting and electronic newsgathering. Existing and future operators of the AW139, the most successful helicopter in its category, will all benefit from these in-country pilot training services, which combine a FFS and other training tools and distance learning capabilities at SACC. Our Industrial Plan envisions delivery of a greater range of services closer to our customers, and this development is testament to that commitment.

Our global network of Helicopter Training Academies and Authorised Training Centres train over 10,000 students and clock up more than 41,000 helicopter simulator flight hours every year. We continue to expand the reach of our global support network to maximise our Operators’ mission effectiveness and safety.

## GULF HELICOPTERS BECOMES AW189K LAUNCH CUSTOMER

During Heli-Expo in Anaheim, CA, we announced that Gulf Helicopters of Qatar will be the launch customer for the AW189K, the new variant of the type, equipped with Safran Helicopter Engines Aneto-1K, further strengthening our leading position in the super medium helicopter market.

The AW189K brings further choice to the market, thanks to its high-level performance, particularly in hot and high conditions, which is typical in the Middle East, therefore guaranteeing efficient long-range, high-endurance and large-capacity operations with lower operating costs compared to larger, heavier types. This is particularly true for offshore, SAR, parapublic and fire-fighting, and VIP transport missions.

Gulf Helicopters is a subsidiary of Gulf International Services, Q.S.C., and has provided helicopter services since 1970 operating with companies throughout the Middle East, India, North Africa and Europe. Our relationship dates back to 2007, when it ordered its first AW139 for offshore transport missions as part of its fleet renewal and expansion plans, and has evolved over time.

Gulf Helicopter is also an Authorised Service Centre for AW139s, AW189s and AW109s and is one of the first helicopter companies to have its own AW139 and AW189 Full Flight Simulator (FFS) to support its operations and for third-party use. It has also been an Authorised Training Centre since September 2013. Today Gulf Helicopters operates 20 AW139s and five AW189s and is therefore benefitting from the unique advantage of the AWFamily of new generation helicopters.



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