Atmanirbhar Bharat
Heralds Growth in India’s Ambitious Defence Industry

Survival of Aerospace Industry: The path ahead
AEROSPACE & DEFENCE DIRECTORY
(REVISED 6TH EDITION)

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Fluid Controls has over 45 years of experience delivering high quality, high performance Make-in-India products which delight customers. We offer comprehensive solutions – from supply of high-performance connectors, valves and piping accessories to engineering and installation services.

An MSME with R&D approval by the Department of Scientific & Industrial Research, Fluid Controls has successfully supplied products for a variety of defence applications, including air storage vehicles, submarines and aerospace.
The Indian aerospace & defence industries sector as well as the airlines, and associated service provider industries sector have suffered considerably due to the worldwide coronavirus pandemic. All domestic as well as international passenger flights were cancelled in India as part of the worldwide restrictions and lockdowns. With all avenues of revenue drying up, airlines, airports and associated service providers have lost business for months and also lost jobs. Lockdown is being lifted gradually and steadily by the government. However, the domestic airlines and airports and allied industries are looking towards the government’s support to recover and revive their operations. They have requested direct cash transfers, interest-free soft loans and a two-year tax holiday, among other aid programmes. Our forward looking government is expected to consider their legitimate demands favourably considering the crucial role they play in building the national economy and providing employment to millions of people.

The domestic air travel will pick-up quickly as soon as the lockdown is lifted fully and as the nation gets back to the normal working and as industries and other organisations in all sectors get back to full operations. There will be great potential for growth of domestic air travel and the government is expected to continue its commitment to develop regional airports and regional air transport to enhance regional connectivity and growth of the nation.

The crisis has also made a tight grip on the activities of the aerospace manufacturing, MRO and service industries. They have suffered considerable loss of work, loss of production and the employees have also suffered financially, as many private industries particularly MSMEs have had problems in supporting their employees financially. SIATI along with other industries associations have taken up the matter with the central and state governments to allow the strategic sectors particularly aerospace and defense to reopen and start working. The government has already taken steps in relaxing the lockdown and allowing the strategic sector industries to resume work, following the stipulated precautions and continue the war against the virus. The government has already announced a number of revival financial packages to industries particularly for SMEs. Our government is committed to development and will go ahead with all national projects and programs for realising the ‘Make in India’ mission and proactive defense procurement policy. The commitment to national programs on aircraft, helicopter, UAVs, ships, submarines, military land vehicles and other defense equipments and platforms for indigenous development and production and in collaboration with OEM - Strategic partners will be re-energised.

SIATI and AEROMAG send our greetings and best wishes to all our estimated members in the aviation, aerospace and defense sector for revival and steady growth working together with co-operative mutually beneficial partnership and with trust and confidence in the future.
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Tejas FOC Aircraft inducted to IAF

Naval Ship Repair Yard, Kochi comes to the aid of Philippine Navy ship

Atmanirbhar Bharat

Rafale’s Game-Changing Weapons to give IAF a Big Advantage

Airbus signs contract for integration of 115 new Eurofighter ESCAN radars

WFEL receives US Defense Contract

UK MoD Boxer MIV Programme for £2.3bn awarded to WFEL

Nec and Sita Announces Partnership for Digital Identity at Airports
Over the last four and a half decades, Fluid Controls has made its footprints in the industry as a leading provider of instrumentation products and services for a wide variety of industrial applications including the defence. What are the major milestones in this journey of success?

Since its inception in 1974, the Mumbai-headquartered Fluid Controls® ethos has been of research and development offering ‘Make in India’ products and solutions. The major milestones we have achieved in our journey include approvals of our critical applications in nuclear, oil/gas, thermal power, defence and railway brake piping industries; recognition as an “In-House R&D Center” by the Department of Scientific & Industrial Research (Govt. of India); and the set-up of a state-of-the-art manufacturing facility at Chakan, Pune with an advanced R&D center and testing laboratory.

As a testimonial of our success, Fluid Controls® has been awarded CII Industrial Innovation Award for medium scale manufacturing organizations and has been recognised as one of the Top 25 Innovative Companies of the Year at the Indian R&D Ecosystem Conclave 2019. Other recognitions include the “Top 10 Urban Infra Solution Provider of Year” by Urban Transport News and the award for “Excellence in Technical Innovation” by ISA Maharashtra Section at PPA Meet 2020.

The defence manufacturing in India is thriving now more than ever and you have been focusing on defence sector with a wide-range of supplies to critical defence machinery. How strong is the company’s defence business and who are the major clients?

Since 2000, Fluid Controls® has been a supplier for many Indian defence projects including the redesign of the Akash Air Storage Vehicle (ASV) under the auspices of Research & Development Establishment (Engrs).

The Akash Weapons System employs sub systems which need high pressure compressed air up to 400 bar. Fluid Controls® re-designed the existing Air Storage Vehicle (ASV) and delivered a prototype to R&D. The system was installed on the ASV and successfully tested for 600 bar hydrostatic and 400 bar pneumatic pressure.

We have been supplying to Defence Machinery Development Establishment (DMDE) the valves for compressed air systems in submarines. Fluid Controls® has supplied Kirloskar Brothers Limited a range of specially designed Low Pressure Loss Throttle Valves and Non-Return Valves for the Water Mist System in submarines.

Fluid Controls offers customized solutions to clients based on analytical formulations, 2D and 3D...
Fluid Controls® is a premier supplier to onshore and offshore oil & gas installations, process and thermal power plants, critical applications for nuclear plants, and brake piping applications for rail and metro. We are approved by all major Indian OEMs such as ONGC, IOCL, BPCL, HPCL, NTPC, BHEL, NPCIL and railway OEMs and have a demonstrated capability for executing large project orders. With our composite expertise of manufacturing connectors, our understanding of tube and end connector performance and our decades of experience of swaging and accurate tube bending, Fluid Controls® now offers customers complete end-to-end engineered supply and installation solutions for piping – both on-site and prefabricated.

The COVID-19 has affected the industrial production largely and many players in the market are struggling for the recovery. How has the pandemic affected your company and what arrangement have you taken to function smoothly amid COVID-19?

Given the project nature of our business, we continue to receive orders as there is activity in the infrastructure segment which constitutes our business. At Fluid Controls®, we “Engineer Connections Everyday”. During the COVID-19 situation we are in today, we are committed to staying safe every day and has been ensuring business continuity as well as the health and safety of our employees, their families, our customers, and our business partners. With a systems and process focused approach, we have restructured our operations and have put in place detailed guidelines for operations and conducted extensive training of our employees.

The core of our EPRP Protocol is the “Fluid Controls Focus Five” to ensure safe working (https://fluidcontrols.com/pdf/FC-Covid-Response-Manual.pdf). We have also re-structured our facilities and offices to ensure compliance with government’s COVID-19 guidelines and have modified our manufacturing processes to ensure safe production and inward and outward material handling. In addition, all our employees are provided with individual PPE kits which are tailored for their area of operation and have been provided with adequate insurance. As a responsible citizen, Fluid Controls® has also reached out to the wider community and have extended support to NGOs such as UnLtd India, OSCAR Foundation, Masoom and Goonj who are involved with COVID Relief Work.

After Make in India, the central government is now pushing the idea of Atmanirbhar Bharat for boosting domestic production to reduce imports. What role could Fluid Controls play in this regard?

Fluid Controls® is a “Vocal for Local” MSME organization and we whole-heartedly support the Atmanirbhar Bharat initiative. Domestic manufacturers have the capability – be it in manufacturing, quality, and R&D – to cater to domestic requirements across sectors. In the past, legacy international vendors and lack of firm procurement policies constrained the effective implementation of “Make in India”. Atmanirbhar Bharat, which clearly outlines procurement policies, will go a long way to boost domestic manufacturers, especially in the MSME sector. With our manufacturing and R&D capabilities, Fluid Controls® can contribute immensely to provide high quality, high-performance products to all sectors in the move to localise supplies.

What is the roadmap ahead for Fluid Controls and what are the objectives for the next five years? Also, how competitive is the Indian market compared to that of international one?

The Indian market undoubtedly offers a competitive environment. We move towards focusing on quality, price and performance, companies who invest in people, infrastructure and our R&D have a clear competitive edge.

The roadmap for Fluid Controls® is that we will continue to enhance our manufacturing, R&D and service capabilities. Last month, we set up two new areas within our plant for tube forming and hose crimping and testing. We have also recently won big contracts for site installation of brake pipe lines for railway coaches. We are also focusing on the defence sector and on expanding our international supplies – for example we have a ToT and manufacturing agreement for Saudi Arabia.
The Indian Air Force (IAF) on Wednesday inducted Tejas Mk-1 FOC aircraft into the recently resurrected No 18 Sqn, the “Flying Bullets” at Air Force Station Sulur, marking yet another important step towards enhancing the operational capability of the Air Force. The Squadron is the first in the IAF to induct this platform. This is an important milestone in the country’s indigenous fighter aircraft program and a significant boost to the ‘Make In India’ initiative. Tejas Mk-1 FOC is a single engine, light weight, highly agile, all weather multi role fighter aircraft capable of air-to-air refueling thus making it a truly versatile platform.

The Squadron was operationalised by Chief of the Air Staff (CAS) Air Chief Marshal RKS Bhadauria. Air Officer Commanding in Chief of the Southern Air Command, Air Marshal Amit Tiwari, and the Commodore Commandant of 18 Sqn, Air Marshal TD Joseph, R Madhavan CMD HAL, Dr Girish S Deodhare, PGD (CA) and Director, Aeronautical Development Agency were present during the ceremony. Chief of the Air Staff congratulated the team and lauded the efforts put in by Southern Air Command and AF Station Sulur towards the induction of the new airborne platform. He complimented Chairman HAL, ADA, DRDO labs, DPSUs, MSMEs and all agencies involved in the production of LCA for achievement of this historic milestone. The occasion was marked by the presentation of aircraft documents of the Tejas FOC version by the HAL CMD to the CAS. The CAS further handed these over to the Commanding Officer of 18 Squadron Group Captain Manish Tolani, along with the ceremonial keys to the unit. The event commenced with a fly past comprising of a helicopter formation of the Mi 17 V5 and the ALH, An-32 transport aircraft and Tejas Mk-1 fighters.

No 18 Sqn was raised at Ambala on 15 Apr 1965 with the Folland Gnat Aircraft. Flying Officer Nirmal Jit Singh Sekhon, the only Param Vir Chakra recipient of the Indian Air Force was a part of the ceremony.
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R Madhavan CMD HAL presenting the aircraft documents of the Tejas FOC version to the Chief of the Air Staff Air Chief Marshal RKS Bhadauria during the induction ceremony held at Air Force Station Sulur.

The Squadron falls under the operational control of Southern Air Command which is responsible for integrating the Squadron into the IAF Concept of Operations.

Chief of the Air Staff Air Chief Marshal RKS Bhadauria handing over the ceremonial keys of the unit to the Commanding Officer of 18 Squadron Group Captain Manish Tolani, during the induction ceremony.

Before the induction ceremony, the Chief of the Air Staff (CAS) Air Chief Marshal RKS Bhadauria PVSM AVSM VM ADC flew a sortie in the Tejas Mk I fighter with 45 Sqn.
Naval Ship Repair Yard, Kochi comes to the aid of Philippine Navy ship

When the Philippine Navy vessel, BRP Ramon Alcaraz, was damaged in a fire off Kochi, the Indian Navy carried out a rescue mission. While the Philippine Navy ship was repaired at Indian Navy’s ship repair yard in Kochi, two personnel who were injured in the incident were evacuated in a helicopter to INHS Sanjivani, the Indian Navy’s hospital in the coastal city.

The Indian Navy’s ship repair yard in Kochi attracted media attention recently when a ship of the Philippine Navy was given urgent repairs at the facility recently. The Philippine Navy vessel, BRP Ramon Alcaraz, was damaged in a fire, which had broken out in the engine room and the incident had left two Philippine Navy personnel injured. Ramon Alcaraz, along with another ship of the Philippine Navy had visited Kochi for the repatriation of stranded Philippine nationals from India following the lockdown imposed in view of the COVID-19 pandemic and collection of materials such as masks. It was during the return trip that Ramon Alcaraz had the fire incident on board and the ship re-entered Kochi for repairs. Meanwhile, the injured Philippine Navy personnel were evacuated in a helicopter to INHS Sanjivani, the Indian Navy’s hospital in Kochi. Soon, repairs of the Philippine Navy ship were carried out free of cost at the Naval Ship Repair Yard in Kochi.
and the vessel was made seaworthy again in ten days.

The Chief of Philippine Navy Vice Admiral Giovanni Carlo J Bacordo thanked the Indian Navy for its gesture. Writing to Chief of Indian Navy Admiral Karambir Singh, he said: “Your support in this unfortunate accident is way beyond our expectations and it is a testament of your sincerity in deepening our Navy-to-Navy partnership.”

The Philippine Navy chief further said: “We hope to expand this relationship as we seek better ways to make our seas safer and more secure for everyone.”

The Naval Ship Repair Yard, Kochi, which was set up as a Base Repair Organisation in 1948, has grown in its capabilities and is sufficiently equipped to undertake repairs of all ships. It provides support to visiting ships, ships undergoing work up and all training schools and other establishments in addition to the repair of ships based at Southern Naval Command.

To meet the increasing demand, the Yard is carrying out various projects for infrastructural development. Moreover, the weapons test facilities have been upgraded. A large number of equipment have also been installed for hull fabrication shop, pipe-fitting shop, welding shop, shipwright shop and boat repair shop.

Along with the Naval Ship Repair Yard, Kochi, the Cochin Shipyards Limited (CSL) in Kochi also offers ship repairing services since 1982 and it undertakes upgrades, repairs and scheduled maintenance of all types of ships, including those of Indian Navy and Indian Coast Guard. The repair yard of CSL has also performed major overhauls for the
With an excellent track record of over 52 years as India’s fastest-growing Wire Harness (WH) manufacturer, VARSITY produces top quality ‘Make in India’ cable harnesses for reputed customers such as the DRDO, PSUs and private industries in the Defence sector. The list of prestigious customers served by VARSITY reflects their successful partnership with the company and highlights VARSITY as a zero-defect facility that delivers build-to-spec and build-to-print cable harnesses.

VARSITY owes its success to deep product knowledge, its ability to adapt to new technologies, and to its familiarity with the industry built over the past five decades.

VARSITY Cable Harness offerings

Founded in 1968, VARSITY has a proven track record of delivering cable harnesses for mission-critical programmes of DRDO for over a decade, whether they are small, medium or large wire harness & cable assemblies complying with stringent standards of Aerospace & Defence. VARSITY is AS9100D certified and has in-house capability, right from scoping of a requirement at a concept stage to designing and delivering prototypes before manufacturing custom solutions on a large scale. VARSITY has a large team of highly skilled operators with a wealth of experience and knowledge who can even manufacture environmentally-sealed cable harness as per IPC / WHMA 620-C Standard.

Build to Specification

VARSITY’s engineers work closely with customers to understand the requirements and suggest cost-effective design using software like Zuken E3, HarnWare, Solid-Edge and Auto CAD.

Build to Print

The company’s engineers, with their deep knowledge of the industry, work with the documents provided by the customer to realize the product as specified and deliver it without any flaws.

Applications

VARSITY is geared up to provide cable harnesses or integration or design services in any applications in Ground, Aerospace, Space, Military & Defence ranging from Weapon systems, Antenna, Radars, Seekers, Warheads, Avionics, Unmanned Aerial Vehicles, Aircraft wiring, Flight controls, Landing gear, Shipboard hull, Power distribution, Actuation & Motion controls and Battle Tanks.

State-of-the-art infrastructure

The company is equipped with state-of-the-art infrastructure and the facilities include a capacity of 600,000 man hours per annum along with commensurate warehousing facility. Another capability of VARSITY is automated testing. The company is equipped with MK Automated Test systems with a capacity to test 5,400 points at a time.

Moreover, VARSITY enjoys ‘Seamless Monitoring of Production’, whereby it has an online real-time viewing system for customers anywhere in the world. Yet another advanced facility is ‘Seamless Interaction’. VARSITY’s Training Centre and conference halls are equipped with Video Walls. In addition, the company has a High Speed 100MBPS dedicated Internet line to support video/voice interactions as well as 100 per cent power backup for uninterrupted production.
Validating the superiority in military might is an inevitable quality for a country to become a superpower and global leader. And attaining self-reliance in defence manufacturing is a crucial component of effective defence capability, as it will ensure strategic independence, national sovereignty, cost-effective defence equipment and decreased defence imports. India has been in pursuit of attaining these validations over the past two decades and ever since the Narendra Modi led BJP government assumed power in 2014, the idea of defence indigenisation and self-reliant defence industry has received the most tremendous push ever. Speedy clearances of long-pending modernisation demands of the tri-forces and setting up the nurturing ground for local defence production have been the hallmarks of the Modi government over these years.

On May 12, amid the country’s resilient fight against the COVID-19 pandemic, PM Modi unveiled major policy advancement in fulfilling India’s indigenisation dreams through his vision of Atmanirbhar Bharat Abhiyan (Self-Reliant India) to propel the country to self-reliance in all sectors. And on May 16, Finance Minister Nirmala Sitharaman, while elaborating further on Atmanirbhar Bharat in Defence, has made three specific announcements to make the PM’s vision getting implemented faster and promote domestic defence industry - a list of weapons/platforms for ‘ban on import’, the corporatisation of Ordnance Factory Board (OFB) and finally raising the FDI limits in defence manufacturing under the automatic route from 49% to 74%.

With the policies having publicised and promises being made for its implementations, the next three years of the NDA 2.0 will be focusing on the expansion of domestic defence industrial base, nourishment of private sector participation, defence modernisation and increased thrust on defence R&D. And the road ahead is more challenging than ever mainly for two reasons - the nation’s economy struggles not to surrender before the Coronavirus and the northern frontiers settling scores with two adversaries China and Pakistan. Here Aeromag analyses the defence policies under Atmanirbhar Bharat with focus on the challenges, steps to be taken and defence projects that need immediate push for completion.

Even though the Prime Minister Narendra Modi has announced his vision of Atmanirbhar Bharat with much importance in his address to nation during the COVID-19 pandemic, it was considered by many as a refurbished version of Make in India. But no one has any doubt about the fact that India needs to make a sincere attempt to ramp up its defence manufacturing. The hollowness of indigenous defence manufacturing was visible from the fact that the forces have to depend on foreign suppliers to shore up their fire power and operational capability when tensions have risen with China at the Line of Actual Control (LAC). So Atmanirbarta should not be another political slogan and the government will have to walk the talk overcoming many challenges. Here Aeromag analyses the defence policies under Atmanirbhar Bharat with focus on the challenges, steps to be taken and defence projects that need immediate push for completion.
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**Why Atmanirbhar Bharat is important?**

There are mainly three reasons that make Atmanirbhar Bharat important for India. Firstly, India is undergoing its most ambitious military modernisation programme ever. Secondly, the regional security environment around the country remains risky, especially the borders with China and Pakistan, and thirdly the Modi government has decided to undergird India’s international profile on economic diplomacy in which defence business plays a critical part.

India has been one of the world’s largest arms importers (accounting for about 12% of global arms imports). But the high import-dependence in defence, mainly for weapons, spares and ammunition is a drawback and weakness in the long run, especially during military crises. And it will take a herculean task for India to shed its image of defence importer. So the political willingness to cut imports by creating a domestic defence industrial base is very positive.

**Reforms under Atmanirbhar Abhiyan**

**A) Negative List for Import**

The core point of creating a ‘negative list for import’ is critical to ensure that the domestic defence industry and its products will have buyers. But the challenge here will be determining the ‘negative list’ for ban on import as there are multiple import and domestic procurements are all being done in parallel. For example, the Indian Army is in the process of importing rifles, carbines and light machine guns through ‘fast track procedure’ for operational urgencies while ordnance factories are making rifles for Central Armed Police Forces.

While the induction of 155 mm Dhanush Artillery guns, manufactured by OFB is underway, the import procurement of 155mm towed guns with different specifications (GSQR) is in the pipeline. Similar examples are many hence consolidating the requirements in a time-bound manner and creating the list are essential to meet emergency requirements.

Besides weapon systems/platforms, the self-reliance objectives for critical components and materials should also be a priority. For example, engine of an aircraft accounts for a substantial portion of the overall cost and the government needs to make attractive business propositions for joint ventures, technology transfer and R&D by with the combined military and civil aviation requirements.

**B) Raising FDI Limits**

The decision to raise FDI limits in defence manufacturing under the automatic route from 49 per cent to 74 per cent, which was already a part of the Draft Defence Production Policy 2018, is a promising step for the growth of domestic manufacturing. FDI worth Rs.1812 crores has been reported in the defence sector over the last five year and that is a very small figure when compared to the annual average of Rs 31,000 crores worth of capital procurement being done directly ex-import. So the procurement strategy must help to drive more FDI in defence.

Above all, the industry needs to be apprised in advance about armed forces requirements, including numbers, specifications, and timeline. A “Defence Industrial Planning’ document giving the assurance that items required will be procured within the given timeframe will boost the confidence of companies to securely invest in the industry. Moreover such an initiative will help attract FDI also.

Besides these, keeping MSMEs, which are considered the backbone of Indian economy strong should be a priority of the government. There are more than 8,000 MSMEs as tiered partners of many of defence organisations - Ordnance factories, DPSUs etc. and they contribute more than 20 per cent of the total production of these organisations. Hence focus on MSMEs should be steady.

**C) Corporatisation of OFB**

The corporatization of the Ordnance Factory Board (OFB) has been a long
overdue decision. The OFB is a strategic asset with 41 factories, 13 ordnance R&D centres and 9 ordnance Institutes of Learning. But the issues of quality, reliability, timeliness etc have always been demotivating reasons of getting business. So the corporatisation of OFB will enable more professional oversight, functional and financial autonomy. It could introduce staffing structure similar to manufacturing entities instead of government departments. The manpower and output issues will get addressed easier after corporatisation.

Projects that need prime focus in Atmanirbhar

A) Naval Utility Helicopter (NUH)

The nearly $3 billion deal for Naval Utility Helicopter (NUH) will be the first challenge for the government under the Atmanirbhar Bharat in defence. Though the HAL has pushed for its inclusion in the programme, Navy and other private players have also objected it citing delay in the completion. The MoD is yet to clear the file for issuance of Request for Proposal (RFP) for selected vendors and may take a fresh look at the proposal to include HAL.

The Navy has been desperate to replace its Chetak of 1960s vintage with NUH, which could be utilised for multiple roles, including search and rescue, casualty evacuation and low-intensity maritime operations, besides torpedo drops. Hence the project needs to be finalised and manufacturing should be started. The partnership between HAL and a private player, which should entail 100 per cent transfer of technology, will be helpful to kickstart the helicopter hub in India. Pushing the project under Atmanirbhar Bharat will be an ideal motivation for domestic industry.

B) LCA Tejas

The indigenously designed and manufactured Light Combat Aircraft (LCA) is the smallest and lightest Multi-Role Supersonic Fighter Aircraft of its class. A $5.2 billion contract for around 83 light combat aircraft (LCA) Tejas Mark 1A variant is likely to be awarded to Hindustan Aeronautics Limited (HAL) by December this year. The government is also considering a proposal to manufacture 18 LCA Mark 1 FOC trainer aircraft to keep the Tejas assembly lines up and running till the deal for 83 Mark 1A variants is signed.

The fourth generation light combat aircraft (LCA) has been inducted into the number 18 squadron, “Flying Bullets” of the Indian Air Force. Tejas is expected to be the backbone of the IAF in the near future keeping in line with PM Modi’s Atma Nirbhar Bharat initiative.

Challenges ahead in Indigenisation

Even though nearly 200 defence acquisition proposals with ToT provision, valued around Rs.4 trillion were approved in the last five years, most of them yet to be processed. This delay in completion of procedures will be the real challenge. The Indian defence industry is public sector driven despite the push for private participation. PSUs like OFB, Hindustan Aeronautics Limited (HAL), Bharat Electronics Limited (BEL) and Bharat Dynamics Limited (BDL) are among the top 100 biggest arms producers of the world and they together account for the bulk of the domestic armament demand.

The privilege given to PSUs and private players need to be balanced.

The relationship between the R&D establishments, production agencies (public or private) and the end-user are extremely weak at present and this needs to be sorted out. There is an urgent need of improving India’s design capability in critical technologies and ability to manufacture major subsystems and components, which otherwise would hamper the indigenous manufacturing. Overlapping jurisdiction of the Ministry of Defence and Ministry of Industrial Promotion impair India’s capability of defence manufacturing.

Solutions

• The newly appointed Chief of Defence Staff (CDS) could examine the defence acquisitions from a triservice angle, to avoid delays and speed up the defence procurement process.
• The new Defence Procurement Procedure should formulate guidelines to promote strategic partnerships between Indian and foreign companies, with a view to achieving indigenisation over a period of time for even critical technologies and platforms.
• A transparent policy should be formulated to promote exports and it will attract investment in defence manufacturing.
• The role of DRDO needs to be revised to give private industry a level playing field for developing defence technologies.
The new Rafale fighter jets India is receiving from France are armed with game-changing weapons, including Meteor, SCALP and Mica. The jets will provide the Indian Air Force (IAF) not just with a fast and agile modern fighter but one that comes armed with a highly potent set of weapons from MBDA that are unrivalled by any of India’s neighbours.

Meanwhile, the Press Information Bureau (Defence Wing) of Government of India said the first batch of five Indian Air Force (IAF) Rafale is arriving in India by end of July 2020. The aircraft will be inducted at Air Force Station Ambala. The final induction ceremony is scheduled in second half of August 2020.

IAF aircrew and ground crew have undergone comprehensive training on the aircraft, including its highly advanced weapons systems.

**Meteor**

The most notable of the weapons on Rafale is the Meteor beyond visual range air-to-air missile, which is widely recognised as a game changer for air combat. The Meteor is powered by a unique rocket-ramjet motor that gives the missile far more engine power, for much longer than any other missile. This means it can fly faster, fly longer, and manoeuvre more than any other missile, giving Meteor the ability to chase down and destroy agile hostile fighters at even the furthest of ranges. As a result, Meteor, which weighs 190 kg and is 3.7 m long, has a no-escape zone many times greater than any other air-to-air missile.

**SCALP**

India’s Rafales will also be equipped with the SCALP deep-strike cruise missile from MBDA. This stealthy weapon has proven repeatedly in combat its unerring ability to strike hardened and protected targets deep inside hostile territory – without the need for the Rafale to enter hostile airspace. SCALP’s operational effectiveness is the result of three key factors: its high survivability thanks to its long stand-off range, low observability and sophisticated mission planning system; its pinpoint terminal accuracy through its highly accurate seeker and target recognition system; and its terminal effectiveness provide by its powerful tandem warhead and multiple detonation modes. The missile weighs 1,300 kg and has a length of 5.1 m.

**MICA**

The IAF’s Rafales will also be equipped with MICA, a missile the IAF is familiar with, as it is also part of the upgrade package for the IAF’s Mirage 2000 aircraft. MICA is the only missile in the world featuring two interoperable seekers (active radar and imaging infrared) to cover the spectrum from close-in dogfight to long beyond visual range. Its ability to fly out to BVR in passive mode before the seeker locks on in the final stages of the end game has earned it the nickname “silent killer” as the target has little time to react or to deploy effective countermeasures. The missile weighs 112 kg and is 3.1 m long.
Flying Colours continues taking on the Challengers with trio of heavy maintenance checks

Flying Colours Corp. continues to satisfy market demand for 192-month inspections as heavy maintenance checks on a trio of Bombardier Challenger-family aircraft continue at its St. Louis, MO. facility. The work highlights the North American MRO’s expertise in supporting the ongoing maintenance requirements of the international Bombardier Challenger fleet.

The latest series of heavy inspections began in April when an early model Bombardier Challenger 300 began the full gamut of heavy maintenance inspections, service bulletins and full landing gear restoration. A second early production Bombardier Challenger 300 began its 192-maintenance check in May and will subsequently have an interior upgrade and new external paint work completed by Flying Colours, before being redelivered to the customer. Joining the archetypal Challenger 300s is a Bombardier Challenger 604, which checked into the St. Louis hangars in July, and is currently undergoing the rigorous maintenance review.

The Flying Colours Corp. maintenance team are no strangers to the intensity of these heavy inspections which require full exposure of the airframe to allow for a comprehensive structural review to assess for cracks, corrosion or other potential weaknesses. A number of the aircraft components including flaps, doors and windshields are also removed for close inspection and landing gear undergoes complete restoration. With more than 100 heavy maintenance inspections on Bombardier Challenger aircraft under its belt the Flying Colours Corp. maintenance team applies all its accumulated hours of knowledge and experience to complete these critical safety inspections on time and on budget.

“The Challenger models are exceptional aircraft with the Challenger 300 being the world’s most popular super mid-size model. With more than a thousand original Challengers still in operation we have the tried and tested capabilities to complete these intense checks as they become due. With our dedicated interiors facility, external paint shops and avionics expertise we can also support customers looking to upgrade and refurbish aircraft at the same time,” says Eric Gillespie, Executive VP of Flying Colours Corp.

Flying Colours is also busy with heavy checks on other aircraft types including Hawker Beechcraft, Falcon and Bombardier Global Express models at both its St. Louis and Peterborough facilities.

First ALSIM AL42 simulator to be sold in New Zealand

Alsim announced its first sale in New Zealand. Ardmore Flying School, based in Auckland, has acquired an AL42 simulator, the exact replica of the Diamond DA42, built using genuine aircraft parts and equipped with the latest real-world Garmin G1000 avionics suite. It also comes with latest generation visual system, GFC 700 autopilot and PBN/LPV capabilities.

Ardmore Flying School and Ian Calvert, CEO are excited about introducing the Alsim AL42 FNPTII into the operation: “Alsism was chosen for their attention to detail, fantastic and open communication and the quality of the equipment. The visuals provided allow for excellent handling training as well as the IFR procedures and combined with the full IOS gives scope to challenge trainee pilots to extend their capabilities and skills. The AL42 best represents the aircraft flown and will provide an excellent platform for our student cadet training.”

“It is always a pleasure to see Alsism’s family expanding. It’s even more exciting to welcome Ardmore Flying School as they become our first customer in New Zealand. Thanks again to Stephen and Ian for their confidence” says Audrey Jeffroy, Alsism’s Marketing and Sales Director.
In 2019, airlines around the world carried 4.3 billion passengers, 58 million tonnes of freight and supported 65.5 million jobs. Though the COVID-19 pandemic changed everything, a resilient aerospace and defence industry is exploring ways for a rebound.

A few months ago, the aerospace and defence sector was upbeat. In fact, when the year 2020 began, some of the most crucial challenges faced by the industry were how to meet the demand for aviation professionals and achieve the targets set for reducing emission in order to stick to environmental norms. However, the COVID-19 pandemic changed everything and the data presents a clear picture. In 2019, airlines around the world carried 4.3 billion passengers, 58 million tonnes of freight, and supported 65.5 million jobs. The tourism sector, which is interconnected with aviation, supported another 37 million jobs. But now air travel is down 90 per cent and every day there are announcements of airlines around the world cancelling orders for new aircraft. There are also big cuts to
Aircraft delivery rates and major redundancy plans. All these have prepared the aerospace to face the largest market meltdown in its history. Early in 2020, some experts had predicted that difficult times might be ahead after years of uninterrupted growth in the aerospace industry. During the favourable times, Airbus and Boeing had doubled aircraft output to meet the needs of the world’s airlines. The revenues and productivity of aerospace companies and related industries also grew alongside.

However, some problems emerged in 2019, when Boeing experienced severe issues with the design of its new 737 MAX aircraft and was forced to suspend production. Soon, in 2020, the effects of COVID-19 began to be felt.

Now, not just the airlines and well-known aircraft and aero-engine makers are in crisis but also the aerospace supply chain which provides hundreds of thousands of jobs directly and indirectly.

In January this year, international aviation had been on a growth trajectory and traffic was projected to double in the coming 15 years. However, aviation has always been impacted by downturns in the economy. The industry reported losses in the early 1990s due to the recession; in 2001 after the 9/11 attacks; in 2003 following the SARS epidemic, and in 2008 as part of the financial crisis. Each of these downturns was followed by economic recovery.

Despite this cyclical nature, aerospace industry has maintained profitability for the past 10 years, with a profit of US Dollars 25.9 billion in 2019 despite some tragedies and challenges like the 737 Max accidents in 2018 and 2019, the Ukraine Airlines Flight 752 shot down in Iran, and the emergence of “flygskam” flight shaming air travel due to its emissions.

New challenges

However, the COVID-19 pandemic is testing the aviation sector in new ways. The entire industry is being stretched to a breaking point and without...
Government interventions, it cannot survive the crisis. According to the International Air Transport Association (IATA), the sector would suffer a loss of US Dollars 252 billion in 2020. Meanwhile, airports alone are projected to lose US Dollars 46 billion in 2020, according to Airport Council International (ACI).

This has led to several critical questions about the future of international aviation. One is regarding the impacts on society when COVID-19 subsides. Another is about the time it would take for people to have the funds and confidence to begin flying again. Yet another question is what specifically can be done to ensure the industry survives the crisis how the sector can innovate during the crisis in order to create a strong future.

The most pressing need for aviation is financial support through the pandemic. Everyone involved is optimistic that the challenge would be overcome and a better future built. Key priorities during this time should explore how to mobilize aerospace innovation and research infrastructure towards aviation challenges. Research is needed into aspects such as sustainability, cognitive science and engineering, material science, machine learning, automation, cybersecurity, and artificial intelligence among other areas.

Ironically, before the pandemic struck, industry activity was so much that there were fears that there would not be enough pilots or mechanics to handle what seemed insatiable air travel demand. But COVID-19 burst the bubble that was fuelled by air traffic, global economic growth, and business and leisure trends, triggering massive cutbacks in capacity, layoffs, and order cancellations all along the supply chain.

But now it is expected that the 900-plus carriers operating today will be closer to 600 within the next three years because of closures and consolidation.

To offset the collapse of revenue, airlines are resorting to the quickest fix to cut operating costs — they’re taking aircraft out of service. At some point in 2020, close to 18,000 planes may be parked or put in storage and many are unlikely to return.

Retirements of aircraft will also increase. While for the last five years somewhere between 550 and 750 planes have been retired annually, the number may see a surge to more than 2,600 over the next 12 months. Planes only 20 years old could be retired rather than the typical 25-year-old aircraft. Thousands of planes sitting around will have a ripple effect.
through the entire aviation industry. It could mean airlines will hesitate to order new aircraft. During pre-COVID days, 1,066 new planes were expected to be delivered in 2020. But that forecast has fallen sharply.

In turn, this is prompting a reduction in production. At present, there are in production somewhere between 100 and 200 aircraft without buyers. While those planes will be among the first to be sold off once the market begins to come back, they will inevitably be bought at discounted prices. However, aerospace players cannot completely turn off production if they are to preserve their supply chains. The production that does happen will support a different mix of aircraft models. Narrow-body aircraft with single aisles will represent an even larger percentage of production while the portion of widebody jets that predominantly serve international routes would shrink. International travel could be the last segment to recover because of ongoing governmental restrictions and hesitancy among passengers to travel far from their own countries.

Piling up of aerospace inventory will also trickle down to the spare parts and maintenance, repair, and overhaul (MRO) aftermarket, with many of the parked planes eventually picked apart for components and other reusable materials. This sort of ‘cannibalization’ could reduce demand for MRO services from the previously forecast US Dollar 91.2 billion and threaten the survival of many of the smaller, more vulnerable aftermarket suppliers.

Government support

Finally, government intervention may be the deciding factor on which enterprises will be winners and losers in the COVID-19 crisis. However, governments are likely to place conditions for the money. For instance, asking companies to maintain
certain employment levels or agree to specified reductions in carbon dioxide emissions.

As companies fight for subsidies, airlines, original equipment manufacturers (OEMs), suppliers, and MRO providers will begin to consolidate. Aerospace manufacturers may also intervene to protect their supply chain through direct and indirect aid, joint ventures, and acquisitions and by becoming much more involved in supplier operations. OEMs could reduce the complexity of their networks and number of suppliers.

Moreover, new business models are also likely to evolve following financial pressure. For instance, airlines may find it too expensive to buy aircraft and aerospace manufacturers could feel it is better to engage in leasing and asset management services.

**Recovery plans**

Meanwhile, several rescue and recovery plans have been proposed to overcome the crisis and enable recovery.

The first step relates to the people, for whom, safe and productive workplaces have to be ensured. For businesses to operate, it’s important that workplaces are safe and employees feel they have trust in their environment. The concept of a ‘workplace’ is also changing. Companies need to be creative and resourceful in order to remain productive, considering flexible working, retraining and redeploying talented people in particular. Quick learning also would a key factor.

Another aspect is finance. Cash flow is essential for the survival of aerospace suppliers. Suppliers must be paid on time for products and services that have been agreed. Some companies may also require direct financial support to see them through the downturn, possibly through long-term loans that are repayable based on sales.

Aerospace supply chains are yet another factor. They are made up of tight networks of specialist companies and need to be more resilient than ever. To enable this, suppliers need much better visibility of future requirements so that they can forecast and plan their operations effectively. All aerospace customers need to work hand-in-hand with their suppliers to plan the careful scaling down of operations, when necessary, to leave them well prepared for ramping back up when the time comes. The best solutions are developed together and so communication must be two-way. It’s also vital that the best practice and opportunities are shared quickly across networks so that supply chain companies can support each other.

Creating new opportunities come next in line. Companies may have to look closely at diversification and unlocking opportunities in new markets. Innovation is also a crucial aspect in overcoming any crisis. Entrepreneurs need to unleash the innovative potential of companies and keep investing in technologies.
Israeli company Rafael Advanced Defense Systems Ltd. and Polish company Mesko, a PGZ company, have agreed to co-produce the shoulder-launched SPIKE SR (Short-Range) ATGM, as part of Poland’s Pustelnik Program.

Led by the Polish MOD Armament Inspectorate, the Pustelnik Program is aimed at choosing an anti-tank weapon for Poland’s Territorial Defense Forces (WOT).

The SPIKE SR is an advanced Fire & Forget missile, for ranges exceeding 2000 meters. The missile is simple-to-use and requires very short training. SPIKE SR is man-portable, weighing only (10kg), for day and night use, capable of defeating any type of armored vehicle or MBT. SPIKE SR is totally disposable, a feature that enables the soldier a higher level of mobility and maneuverability after firing.

SPIKE SR is the smallest member of the well-established, globally known and combat-proven SPIKE ATGM Family. SPIKE is in service in 34 countries, including 19 NATO nations, with over 34,000 missiles already supplied and more than 6,000 fired in tests and combat.

The SPIKE LR is the missile variant that has been in use by the Polish Defense Forces for some 15 years now, with local production of the missile parts and final assembly taking place in Poland by Mesko since 2003. This provides the infrastructure for the future Polish production of the SPIKE SR missile.

One of Rafael’s strengths lies in its ability to create partnerships, transfer production, knowledge and technology, to create local employment. Rafael also conducts a wide array of offset activities globally. Rafael has over 15 years of successful experience in production and technology transfer programs, implemented at more than 50 overseas companies located in the U.S, Europe and other countries.

The SPIKE SR missile is designed for different ground combat scenarios, for the tactical maneuvering forces, platoon-level and for special forces. The SPIKE SR has unique operational characteristics that enable a high level of operational readiness. It can be carried easily by a soldier without affecting maneuverability, enabling simple, intuitive and quick operation, with only a few seconds from “cold-start” to launch, in a variety of operational and environmental scenarios.

The missile’s lethality is achieved by a tandem HEAT warhead with a precursor charge that defeats Explosive Reactive Armor (ERA), allowing the main warhead to achieve its full penetration of Rolled Homogeneous Armor (RHA). With a high-hit probability in all scenarios and ranges, the missile can operate in severe weather conditions (from -35°C to 55°C) and in complex combat scenarios, such as engagement of fast-moving targets.

The missile’s standoff range ensures a higher degree of force survivability, as it does not rely on any means of designation (e.g. laser), enabling the force to stay hidden. Since its operation does not require special training, infrastructure, or a designated gunner, SPIKE SR enables operational flexibility. SPIKE SR is an effective, powerful munition which does not require a central command and allows to decentralize and disperse the operators to cover more terrain, a relevant concept of operation for territorial defense forces.

Gal Papier, director of marketing & business development,Precision Tactical Weapon Systems directorate at Rafael: “A future decision to equip the Polish Army with the SPIKE SR offers not only an operational advantage, exceeding the specification requirements of the Pustelnik program, but also an economic benefit to the local economy, as it further deepens industrial cooperation between Mesko and Rafael, making Mesko part of the SPIKE SR global supply chain, as components of the missile will be produced in Poland, not only for the local market, but also for export customers.”
Altair acquires WRAP Software for Wireless Communications

Altair, a global technology company providing solutions in product development, high-performance computing (HPC), and data analytics, announced the acquisition of the WRAP software business from Swedish company WRAP International AB. WRAP is a world-leading software technology for spectrum management and radio network planning for civil and defense organizations.

With 30 years of development, originally in Saab, the WRAP software covers a wide range of applications with focus on controlling radio spectrum assets for maximum utilization, including radio planning, interference, and coverage calculations, complementing Altair’s existing Feko, newFASANT, and WinProp software for wireless propagation modeling and network planning. The impressive users of WRAP include among many others major defense organizations, telecom authorities, broadcast operators, and public safety organizations.

“WRAP software will be a strategic complement to Altair’s portfolio as we fortify our solutions for areas like wireless communications including 5G, connectivity, and IoT,” said James Scapa, Altair’s chief executive officer and founder. “We continue to focus on providing the world’s best software portfolio to help our customers meet their goals.”

“The WRAP team is thrilled to become part of the Altair ecosystem,” said Olov Carlsson, technical director of WRAP. “Since our inception, we have become trusted experts in spectrum management and radio network planning for civil and defense organizations, and we know that our wide-range of customers working to provide mission-critical safety communication channels will benefit from this Altair ecosystem.”

AK Srivastava, has assumed charge as Director (Defence Business) and member of the Board of BEML Limited, Schedule ‘A’ Company, under Ministry of Defence, Govt. Earlier he was Chief General Manager, BEML Defence (Marketing). Graduated from IIT Kharagpur in Mechanical Engineering Srivastava joined BEML as an Engineer Trainee in 1987. He served in various critical functional areas of BEML, at different geographical locations including overseas.

BEML bagged order for supply of 1,512 Mine Plough for T-90 tanks

BEML LIMITED, a ‘Schedule A’ Company under the Ministry of Defence (MoD) received order for supply of 1,512 Track Width Mine Plough (TWMP) for T-90 S/5K Tanks at an approximate cost of Rs. 557 crore.

Out of 1,512 Mine plough BEML will supply, 100 nos. within 12 months, 250 numbers in subsequent years and order will be completed within 7 years.

These mine ploughs will be fitted on T-90 Tanks of Indian Armoured Corps which will facilitate individual mobility to Tanks while negotiating mine fields. Mobility of the Tank Fleet will enhance manifold, which in turn would extend the reach of Armoured Formation deep into enemy territory without becoming mine causality.

Under ‘Make in India’ policy the contract has Buy and Make (Indian) categorisation with a minimum of 50 % indigenous content in make portion of the contract. The system will be manufactured at BEML facilities with the help of M/s. Pearson Engineering, UK.

This De-mine equipment is time tested for different soil conditions in Indian desert and customized for Indian operations.

“We are proud to be associated with MoD to enhance the combat capability of the Indian Army. This is another example of BEML’s capability to meet the specific requirements of our armed forces. BEML signifies the true spirit of ‘Make in India’ and enabler for ‘Atmanirbhar Bharat’,” said Dr. Deepak Kumar Hota, CMD, BEML Limited.
Aero Vodochody Offered Pilot Training to Slovakia

Aero Vodochody AEROSPACE, with the support of the Czech Ministry of Defence, offered to Slovak side long-term cooperation in training of Slovak tactical pilots in the Czech Republic and Slovakia on the new L-39NG training aircraft, an important part of which is significant industrial cooperation.

The representatives of the Czech aircraft manufacturer presented strategic cooperation to Slovak delegation led by new MoD Jaroslav Nad and Chief of the General Staff of the Armed Forces of the Slovak Republic, General Daniel Zmek. The Czech Ministry of Defence was represented by Tomas Kopecny, Deputy MoD and Director of the Section for Industrial Cooperation.

The Slovak Republic is significantly modernizing its air force, the main part of which is a replacement of old MiG-29s aircraft by American F-16s. Such reorganization is connected with a number of following steps, including the building of a modern and effective training program for military tactical pilots. “Aero Vodochody, as a traditional partner of the Slovak Air Force, presented an offer for the supply of eight modern L-39NG training jet aircraft. The offer includes significant industrial cooperation with strong involvement of Slovak companies in the production of structural parts of the new aircraft, in further development of the L-39NG project, in logistic support, and in building a ground training system,” said Jakub Hoda, VP for Sales and Member of the Board of Directors of Aero Vodochody. The key element of the long-term cooperation between the two countries and Aero Vodochody is the preparation of a training concept for the Air Force of the Slovak Armed Forces on the L-39NG platform including comprehensive ground training system. The Czech Republic is able to offer tactical simulation training on both L-39 and F-16 in its Tactical Simulation Centre in Pardubice, where pilots of the Czech Air Force and many other countries are trained.

The strategic cooperation with Aero Vodochody and the Czech Republic will maintain flight training capabilities and ensure the building of a new, completely modern training system and training squadron for basic and advanced training provided by trained Slovak L-39NG instructors directly in Slovakia. This will significantly reduce the need of expensive pilot training in the USA. In addition to this cost savings, Slovakia would also benefit from the undeniable benefits of industrial cooperation in the form of new business for the Slovak aviation industry and generating qualified jobs.

L-39NG
The L-39NG aircraft is a modern and effective light jet capable to serve in a role of light attack and/or unified, comprehensive training system for modern air forces. The L-39NG is based on the aerodynamic concept of the current L-39 with optimized features to reduce resistance and increase efficiency and utilizes the latest technologies and equipment.

AEROSPACE
Aero Vodochody AEROSPACE a.s. focuses on the design, manufacturing maintenance, overhaul and upgrade of military and civil aircraft and is the largest aviation manufacturer in the Czech Republic and one of the oldest aerospace companies worldwide. In the field of military aircraft, Aero has been a reliable long-term partner to many of the world’s air forces and it has a strong position on the market of military training and light combat aircraft.

OMNIPOL
OMNIPOL is a Prague headquartered investment and trading group with more than eighty-five years of experience in both the domestic international markets. The company provides cutting-edge solutions for the defence and security sectors.
The Seventh of the Eight Landing Craft Utility (LCU) IN LCU L 57, built at Garden Reach Shipbuilders and Engineers Limited (GRSE), Kolkata, was commissioned at Port Blair by Lt. General PS Rajeshwar PVSM, AVSM, VSM, ADC CINCAN. The ship is the 103rd warship delivered by GRSE a Mini Ratna Category 1 and leading shipyard of the country.

GRSE’s association with the Indian Navy is long and strong as over the last six decades the shipyard has been building warships and other vessels for the country’s Navy and Coast Guard. Over last 60 years, GRSE has built and delivered over 780 platforms which include 104 warships to Indian Navy, Indian Coast Guard & Government of Mauritius which is highest number of warships built & delivered by any shipyard in the country. Incidentally, the 100th warship delivered by GRSE was also a Landing Craft Utility, IN L 56. The first ship of the Mark IV LCU Vessels IN LCU L-51 was commissioned into Indian Navy in March 2017.

From building 05 ton boats to 24600-ton Fleet Tanker, GRSE has done it all and has proved its mettle as a pioneer warship builder of the nation. GRSE built ships are varied in their range and scope. From Anti Submarine Warfare Shallow Watercraft, Frigates, Missile Corvettes, Anti-Submarine Warfare Corvettes, Fleet Tankers, Landing Ship Tank, Landing Craft Utility to Survey Vessels, Offshore Patrol Vessels and Fast Attack Crafts - the repertoire is rich and varied. GRSE has embraced infrastructure modernization over past decades towards creating an integrated shipbuilding facility enabling concurrent construction of 20 ships. GRSE has once again proved its ability to provide end-to-end solutions to their customers ranging from product conceptualization, design, system integration and project management, thereby enhancing the capability to meet customer demands.

Key areas of strength of the shipyard include a strong, multi-disciplinary design expertise, production acumen and focused project planning & execution approach. These are traits that have helped the shipyard create strong differentiators in its path of growth.

The entire design of these LCU Mark IV ships has been developed in-house by GRSE as per requirements specified by Indian Navy. The LCU Mark IV Class of ships are fitted with close to 90% indigenous content in line with the Govt. of India’s ‘Make in India’ initiative towards achieving self-reliance and indigenization. LCU MK-IV is an amphibious
ship with its primary role being transportation and deployment of Main Battle Tanks, Armored Vehicles, troops and equipment from ship to shore. The ships are equipped with Bow Ramps to enable loading/unloading of combat equipment and vehicles upon beaching. These ships based at the Andaman and Nicobar Command, can be deployed for multirole activities like beaching operations, search and rescue, disaster relief operations, supply and replenishment and evacuation from distant islands. The LCU is 63 m in length and 11 m wide and has a displacement of 830 T with a low draught of 1.7 m. It can achieve speed of 15 knots. The LCU is designed to accommodate 216 personnel and is equipped with two Indigenous CRN 91 Guns to provide artillery fire support during landing operations. The ship is fitted with state-of-the-art equipment and advanced systems like Integrated Bridge System (IBS) and Integrated Platform Management System (IPMS). Another class of Landing Ships indigenously designed and built by GRSE are the Landing Ship Tanks (LST). Amphibious warfare vessels, INS Magar and INS Shardul are active part of Operation “Samudra Setu” in which several aircraft of the Indian Air Force and vessels of the Indian Navy have been deployed to bring back stranded Indians amidst the COVID-19 pandemic. GRSE is also supporting the nation’s fight against COVID-19 through contributions to PM CARES fund and distribution of ‘Masks’, ‘Sanitisers’, ‘Soap’ and food grains to the needy amongst the community around the Company. Currently GRSE has a strong order book of over Rs. 27000 Crore equipping the shipyard with a deep pool of revenue-generating projects. 18 ships which include 08 ASWSWC, 03 P17A, 04 Nos. Survey Vessels (Large), 01 LCUs, 02 FPVs are in various stages of construction and are expected to be delivered to the Indian Navy and the Indian Coast Guard accordingly. GRSE continues to sail on a growth trajectory with increased thrust on export of warships, incorporation of latest technologies (Artificial Intelligence, Machine Learning, Data Analytics) in various areas of operations to improve internal efficiencies & profit margins.

Gulf Air Appoints Bahraini Director for Strategy and Planning

Gulf Air, the national carrier of the Kingdom of Bahrain, has appointed Sh. Ali bin Mohammed Al Khalifa as Director Strategy and Planning to manage one of the airline’s main business units that is responsible for Gulf Air’s long term strategic plans as well as its network growth in a role that is directly reporting to the Chief Executive Officer of the airline. Sh. Ali Al Khalifa has garnered a vast experience in the airline business since joining Gulf Air’s Revenue Management department in 2005 as a Route Analyst. He then progressed in his career within the department ending up as Senior Manager Revenue Management in 2013. He held that position for four years before moving on to Network Planning as Senior Manager Network Planning in February of 2017, which was his most recent post. Gulf Air is committed to invest in its Bahraini workforce and their career development, and it continues to provide opportunities for Bahraini nationals to take over higher management positions in the company. With 84% of employees that are based at the headquarters in Muharraq being Bahraini, 97% of its First Officers, 100% of its Second Officers and 97% of its male cabin crew, Gulf Air is a leader in the Bahrainisation programme in the Kingdom as it provides the opportunity for local and experienced talents to work in its various areas of the airline’s business.
The growth trajectory of the aerospace industry world over has seen unprecedented growth over the last 17 years, with a steady growth rate of 4.5%. From a global standpoint, India has been and will continue to be a strong player in the aerospace manufacturing market. The aviation industry in India has been growing at twice the GDP rate, resulting in a proportionate growth of the aerospace manufacturing sector. The commercial aerospace exports in India are inclusive of structural, engine, wings, other actuation parts, doors, and assembly.

Covid-19 and the impact on the aerospace manufacturing industry

The pandemic’s outbreak of the coronavirus has severely impacted the aerospace manufacturing sector. Since the global lockdown, there has been a reduction of flight hours by about 9 million as both long and short route flights have been grounded. This has led to a 30-40% reduction in production by OEMs compared to January 2020.

However, the Aerospace and Defence industry was the first to resume operations in a phased manner, even during the lockdown. Today, companies are working with limited capacity and adhering to the highest safety and social distancing parameters.

Present-day challenges in aerospace manufacturing impact on commercial aviation

As a response to the current circumstances, the commercial aviation sector is undergoing a series of policy changes and strict safety guidelines for domestic and international travel to prevent further spread of the virus. The lowered capacity of
flights will eventually force commercial airlines to retire several aircraft, as they will want to ensure business continuity, offset costs, and increase revenues.

**Disruptions in the supply chain and production**

With planes grounded and restricting travel, aerospace manufacturing companies have witnessed disruptions in their overall supply chain. Subsequently, this has also impacted the demand for aerospace parts and has deterred the industry’s growth plans. While there are extended challenges associated with the pandemic, the immediate challenge would be to liquidate available inventory. Companies have currently witnessed a 30-40% reduction in the overall production rate.

**Changing customer dynamics**

COVID-19 has impacted OEMs to defer or postpone orders as they navigate through this crisis. Their forecasts provide a month-on-month overview of the scenario and changes in orders. From raw materials to the finished parts, customers now prefer local sourcing leading to supply chain disruptions. OEMs also expect deliveries to reach them with shorter lead times and additional flexibility in terms of an increase in the number of credit days.

In order to combat these unprecedented challenges, organizations must improve their cost structures and maintain financial viability. The highly skilled workforce must be retained as businesses adapt to these market changes. Additionally, cost and inventory control, along with exceptional customer service, are other critical factors to navigate through this situation.

**Components of a self-sufficient ecosystem**

The pandemic has been a lesson in the need for building resilience and agility in the face of extreme uncertainty. The aerospace manufacturing industry must work towards building a more self-sufficient ecosystem in a focused manner.

**Business agility & resilience**

With the emergence of ‘new world order,’ manufacturers need to reposition themselves and continuously align business strategies with out-of-the-box thinking to meet customers’ dynamic demands. Building lean business models and cost-cutting measures will be vital in keeping businesses afloat as they maneuver this situation.

**Streamlining supply chains**

Streamlining supply chains is essential to improve supply chain visibility and see real-time material availability, inventory capacity, and other variables of the end-to-end supply chain. These must be continuously optimized to ensure efficiency in production, assembly, delivery, and meeting customer expectations.

**Digital transformation**

Today, digitalization and the adoption of groundbreaking technologies is crucial for all businesses across all industries. Manufacturers must adapt fast to the changing technologies to increasingly leverage them to break the glass ceiling in innovation and instill high efficiency throughout the manufacturing process.

**Specialized skills**

Aerospace manufacturing is one of the world’s most niche industries with a ‘zero-error’ policy, demanding highly specialized skills. Processes like machining, forging, turning and milling, surface treatment, and quality inspection comprise the most critical processes in aerospace manufacturing, all of which demand high precision and attention to detail. This can be best addressed with a greater focus on the upskilling of the workforce in the industry through in-house training centers. Today, many companies have in-house training centers that focus on consistently keeping abreast with the changes in technology and updating their workforce skillsets. This is extremely crucial for remaining relevant and globally competent. Industry-academia collaborations can go a long way in addressing this issue by offering internships, Diploma programs, and giving academic consultations.

**Need for policy interventions from the government**

There is a need for policy-level intervention to expand India’s manufacturing capabilities and reduce its dependency on external sources. The government can propel this growth by providing low-cost capital and strategic offset policies. Additionally, there is a need for public-private partnerships across industries such as aviation and aerospace, giving the much-needed impetus for increased innovation and new manufacturing projects.

As the world enters the post-COVID world, the focus needs to be placed on developing a self-reliant aerospace manufacturing ecosystem. This will give the industry the edge it needs to gain global competitive levels and become the next big global manufacturing hub.

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**Embraer Delivers Five Commercial and Nine Executive Jets in 1Q20**

Embraer delivered a total of 14 jets in the first quarter of 2020, of which five were commercial aircraft and nine were executive jets (five light and four large). As of March 31st, the firm order backlog totaled USD 15.9 billion. See details below:

Historically, Embraer seasonally has fewer deliveries during the first quarter of the year, and in 2020 in particular, the commercial aircraft deliveries in the first quarter were also negatively impacted by the conclusion of the separation of Embraer’s Commercial Aviation unit in January. During the first quarter, Embraer Executive Jets announced that the new Phenom 300E was granted its Type Certificate by ANAC (National Civil Aviation Agency of Brazil), EASA (European Union Aviation Safety Agency) and the FAA (Federal Aviation Administration). The new Phenom 300E is the recently enhanced version of the Phenom 300 series, which was the most delivered business jet series in the 2010s. Also in this period, Emgepron, a Brazilian state-owned company linked to the Ministry of Defense through the Brazilian Navy Command, and Águas Azuis, a company created by thyssenkrupp Marine Systems, Embraer Defense & Security and Atech, signed the contract to build four state-of-the-art Tamandaré Class Ships, with deliveries scheduled between 2025 and 2028.
Turkish Aerospace has developed a new mobile application to promote its indigenous products. As one of the top defense and aerospace company, Turkish Aerospace continues to develop digital investments to present its indigenous products.

A new app called TUSAS APP will enable users to experience its products by using Augmented Reality and Virtual Reality features. Users may see the exact model of the products such as ANKA, ATAK, MMU and HÜRKÜŞ. The President and CEO of Turkish Aerospace stated “TUSAS APP is one of the first app over the defense Industry in Turkey. Since we have entered the digital age, applications play a vital role for companies. The application designed for public use in order to expand knowledge of our company and its products. TUSAS APP will allow the users virtual tour among the products, 360 degree skimming through products via augmented reality and other features such as career opportunities."

Turkish Aerospace, ranking among the top hundred global players in aerospace and defense industry, is the center of technology in design, development, modernization, manufacturing and life cycle support of integrated aerospace systems, from fixed and rotary wing platforms to UAV systems and space systems and is one of the largest and most important defense and aerospace companies in Turkey.
Airbus has been awarded a contract for the development, supply and integration of 115 Eurofighter ESCAN Radars for the German and Spanish Eurofighter fleet. It marks the largest order for the world’s most modern electronically scanned array radar, Captor-E. The contract signature followed the approval by both governments in recent weeks.

The contract foresees the delivery and integration of 110 Captor-E radars for Germany and an initial batch of 5 radars for Spain to be delivered by 2023. The new sensor will equip Tranche 2 and Tranche 3 Eurofighters as well as new aircraft. Whereas the Airbus sites in Manching, Germany and Getafe, Spain will act as overall integration Hub, the development and building of the radar will be subcontracted to a consortium under the leadership of Hensoldt and Indra and by participation of further Eurofighter partner companies.

“The contract for the Captor-E radar is a main achievement to equip Eurofighter with sensors that ensure today’s dominance of the aircraft also in the threat scenarios of tomorrow”, said Dirk Hoke, CEO of Airbus Defence and Space. “With Eurofighter, Germany and Spain are investing in a strong backbone of European air defence and in the leading project of the European defence industry.”

Eurofighter Captor-E is the world’s most advanced electronically scanned array radar for fighter aircraft. The design of the front fuselage airframe allows Eurofighter to deliver the largest electronically scanned array for increased detection and tracking ranges, advanced Air-to-Surface capability and enhanced electronic protection measures. The large antenna surface also allows a wider field of regard than any other platform pushing the aircraft’s performance and guaranteeing its role as an asset within the Future Combat Aircraft System environment.

The signed contract will also give an additional push to the export tenders which Eurofighter is currently bidding for.
Implementing all precautionary protocols of COVID – 19, 259 trainees of Indian Naval Academy participated in the Course Completion Ceremony. The POP for any Armed Forces Academy is an occasion usually conducted with grandeur and sheen witnessed by parents, guests and dignitaries. Due to Covid -19, parents and guests of the cadets were not invited for the event.

The ceremony witnessed completion of training for the Midshipmen and cadets of the Indian Navy, Indian Coast Guard, and friendly foreign navies belonging to the 98th Indian Naval Academy Course (BTech), 98th Indian Naval Academy Course (MSc), 29th Naval Orientation Course (Extended) and 30th Naval Orientation Course (Regular). The successful trainees from friendly foreign countries comprised seven trainees; two trainees each from Sri Lanka and Myanmar, and one each from Maldives, Tanzania and Seychelles.

Vice Admiral Anil Kumar Chawla, PVSM, AVSM, NM, VSM, ADC, Flag Officer Commanding-in-Chief, Southern Naval Command inspecting the ceremonial guard.

Vice Admiral Dinesh K Tripathi, AVSM, NM, Commandant, Indian Naval Academy was the Conducting Officer. The Reviewing Officer, in his

Vice Admiral Anil Kumar Chawla, PVSM, AVSM, NM, VSM, ADC, Flag Officer Commanding-in-Chief, Southern Naval Command presenting the CNS Gold Medal to Midshipman Sushil Singh.
Vice Admiral Anil Kumar Chawla, PVSM, AVSM, NM, VSM, ADC, Flag Officer Commanding-in-Chief, Southern Naval Command presenting the ‘Zamorin Trophy’ for the best women cadet to Cadet Riya Sharma.

Vice Admiral Anil Kumar Chawla, PVSM, AVSM, NM, VSM, ADC, Flag Officer Commanding-in-Chief, Southern Naval Command addressing the passing out trainees during Course Completion Ceremony ST 20.

address, congratulated the passing out courses and advised them to imbibe the core values of Indian Navy ‘Duty, Honour and Courage’ in letter and spirit. He encouraged the cadets to keep the fighting spirit intact irrespective of the circumstances around.

The ‘President’s Gold Medal’ for the Indian Naval Academy B.Tech course was awarded to Midshipman Sushil Singh. The ‘Chief of the Naval Staff Gold Medal’ for the Naval Orientation Course (Extended) was awarded to Cadet Bhavy Gujral. The ‘Chief of the Naval Staff Gold Medal’ for the Naval Orientation (Regular) Course was awarded to Cadet Vipul Bharadwaj. The ‘Zamorin Trophy’ for the best women cadet was awarded to Cadet Riya Sharma.

On 20 November 2019, INA was bestowed with the President’s Colour for rendering 50 years of yeoman service in shaping Naval leaders for Indian Navy, Coast Guard and Friendly Foreign Countries. Ever since the establishment of present Naval Academy at Ezhimala in 2009, this is the first time that the training of a batch culminated without a ceremonial march past due to ongoing COVID – 19 pandemic situation. Training was carried out initially by online assignments, and later with dispersed seating with minimum 6 feet interspacing in class rooms and exam halls. Stringent precautionary measures instituted by the academy has helped in accomplishing the challenging goal of training more than 900 cadets and successful culmination of the Spring Term with nil COVID-19 cases at INA.
WFEL receives US Defense Contract

WFEL, leading supplier of rapidly deployable military bridging systems, has been awarded another contract by the US Department of Defense to upgrade a further tranche of DSB Dry Support Bridges already in-service with the US Army.

This contract allows 20 more DSBs to be enhanced, increasing gap-crossing capabilities from 40 metres to 46 metres. The deal follows on from a previous US Army contract for the upgrading of 60 Dry Support Bridges.

The U.S Army holds around 120 Dry Support Bridges in inventory and this upgrade package - developed with US Army Tank Automotive Command Centre (TACOM) - allows its original 40-metre DSBs to achieve the new standard capability.

Since 2013, all WFEL Dry Support Bridges supplied have been 46 metre variants. Already adopted by Australia, Switzerland and Turkey, this military bridging solution has recently been evaluated under an Assessment Phase contract as a replacement for the UK MoD’s ageing BR90 bridging systems.

WFEL’s Managing Director, Ian Anderton, said “We’re continually working with our US Army customer to ensure all their DSB bridging equipment is fulfilling its maximum potential and the simplicity of these upgrade kits allows the DSB enhancement work to be carried out at the US Army’s facilities, with minimal disruption.”

WFEL recently supplied a further four Dry Support Bridges to the US Army, as part of the USA's $4.8 billion European Deterrence Initiative to improve the USA's readiness and responsiveness of NATO forces in Europe. DSBs have been used in combat and emergency scenarios worldwide, including Afghanistan, Iraq, Europe and South Korea.

The DSB provides temporary infrastructure over land and water obstacles for both combat situations and natural disasters and can be deployed by a crew of only eight people to span a 46m gap in less than 90 minutes. Capable of carrying over 120 tonnes, the DSB includes a fatigue monitoring system which helps the user to determine the bridge’s remaining life, while the launching system’s built-in test equipment gives live system status and diagnostics.

Rosoboronexport Presents a Unique Metal Detector for Security Services

Rosoboronexport JSC, a subsidiary of the Rostec State Corporation, has launched a new metal detector and stun gun combo called the EM-411 Cerberus into the global security equipment market.

The device is intended for use by security and law enforcement personnel at all facilities that require control of the carry of prohibited items and enhanced security measures: transport hubs, infrastructure and sensitive facilities, public gathering places.

Equipped with separate hand-held metal detector and stun gun, a security officer is forced to waste time changing equipment in an emergency. During this time, a suspect may attack the officer, surrounding people or try to hide. The metal detector with built-in stun gun significantly improves security control and helps respond quickly to challenges to public security.

To switch Cerberus from metal detector to stun gun mode, you have to press one button. Even a short-term exposure is enough to cause a sensitive painful effect, while an exposure lasting 2-3 seconds will put the intruder in shock with a loss of orientation in space without causing irreversible harm to life or health. The stun gun is a non-lethal weapon and the effect of its use is temporary.

Rosoboronexport expects that Cerberus will attract close attention from law enforcement agencies of the partner countries, anti-terrorist structures, as well as security services at high-value transport and infrastructure facilities. Modern electroshock weapons are an integral part of the armament of law enforcement agencies in many countries of the world. Today, Rosoboronexport is actively promoting the products of leading Russian enterprises on the world market.
RAFAEL Advanced Defense Systems announced that it has been awarded a contract to supply 5th generation Litening and RecceLite airborne electro-optical systems for installation on a combat platform of an undisclosed air force.

Integrating with RAFAEL’s pods, the jet will now have combat-proven, stand-off capabilities using the Litening 5 multi-spectral airborne targeting pod. The Litening pod is in use by 27 air forces and carried by over 25 platforms globally, including F-16, F-15, AV8B, F-18, F-4, F-5, A-10, B-52, Jaguar, LCA, AMX, Mirage 2000, Tornado, Typhoon, MiG21, MiG27, M346, KC390, Gripen, and Sukhoi 27 & Sukhoi 30, and others. Litening 5 delivers real-time, forward-looking infrared (FLIR+SWIR) and day HD color camera imagery. Its high-resolution sensors and effective EO/IR design ensure reliable operation at significant stand-off ranges. Litening 5 allows the operation of all types of air-to-surface smart weaponry, such as laser-guided, GPS-guided and EO/IR imaging-guided munition. Litening pods have logged over 2 million flight hours, with more than two-thirds in contingency operations worldwide.

With the RecceLite ISR system, the attack aircraft will be able to perform target search, using advanced tools and other smart algorithms at the interpretation ground station, for efficient detection, tracking and sensor-to-shooter closure. Using its advanced ISR, image processing, and artificial intelligence, the system achieves optimal data-exploitation at the ground station, of intelligence data relayed in real-time and mission execution in near real-time. RecceLite has been delivered to 13 customers world-wide and integrated onto various aircraft, including the F-16, F-18, Jaguar, AMX, Tornado, Typhoon, Gripen, M-346 and others. It is used by air forces in Europe, the Far East and South America.

Guy Oren, VP, Head of RAFAEL’s Electro-optical systems directorate: “We are proud of this contract and we look forward to cooperating with our customer to provide them with a significant force-multiplier for cutting-edge mission performance. Our EO/IR systems are part of a comprehensive aerial package spanning from air-to-air missiles, to EW, air-to-surface munition, communication and more.”
Schiebel, together with partner Nordic Unmanned, is supporting the Danish Maritime Authority (DMA) and the Danish Environmental Protection Agency (DEPA) by using the CAMCOPTER® S-100 to monitor ship emissions in Danish waters. The Remotely Piloted Aircraft System (RPAS) service is offered by the European Maritime Safety Agency (EMSA).

The service providers for this Danish deployment covering the Great Belt are Nordic Unmanned, NORCE Research Institute AS and Schiebel. The Schiebel CAMCOPTER® S-100 has a flight endurance of more than six hours and operates day and night. It is equipped with an Explicit mini sniffer sensor system, an L3 Wescam Electro-Optical / Infra-Red (EO/IR) camera gimbal and an Automatic Identification System (AIS) receiver. Schiebel provides various maritime surveillance services for EMSA to several EU member states and EU bodies. Currently, the CAMCOPTER® S-100 is also operational for the Republic of Croatia as well as Finland.

Hans Georg Schiebel, Chairman of the Schiebel Group, said: “After our successful sulphur sniffing demonstration in January, we’re proud to be EMSA’s chosen UAS for these important and complex operations. It goes to show, that the maritime experience and pedigree of the CAMCOPTER® S-100 is second to none.”

Knut Roar Wiig, CEO of Nordic Unmanned AS, said: “It’s great to be back in Denmark supporting Danish authorities in the prevention of marine air pollution. We are very impressed by the performance of the CAMCOPTER® S-100 and its small and effective logistical footprint, in addition to the support from the Schiebel Group. Based on our team’s experience and track record, the BVLOS flight permit for this deployment in Denmark was secured in only a week’s time.”

Founded in 1951, the Vienna-based Schiebel Group focuses on the development, testing and production of state-of-the-art mine detection equipment and the revolutionary CAMCOPTER® S-100 UAS.
One week following the successful launch of the Ofek 16 satellite into space, the engineering teams of the Space Administration in the Directorate of Defense Research and Development (DDR&D), of the Israel Ministry of Defense (IMoD), and Israel Aerospace Industries (IAI), have operated the satellite’s observation camera for the first time. The high-quality images were received overnight, at an IAI control station in the city of Yehud (central Israel).

Since the launch on 6th July, IAI and IMoD teams have conducted a series of pre-planned tests during which all of the satellite’s systems and subsystems were activated in a gradual and controlled manner. Upon completion of the process, the satellite’s camera was also activated successfully. In the coming weeks, engineering teams will complete the rigorous tests, and prepare the satellite for operational use.

Head of the Space and Satellite Administration in the Israel Ministry of Defense, Amnon Harari: “This is the most significant milestone since the launch of the Ofek 16 satellite. The images we received from the satellite are of excellent quality. We will continue the orderly process of transferring the satellite to operational use, anticipating that over the years, the system will provide great intelligence to the defense establishment.”

IAI EVP and General Manager of the Systems, Missiles and Space Group, Boaz Levy: “This is a landmark achievement – the result of a complex technological and operational process that reflects IAI’s capabilities in the field of space, and also highlights our partnership with other defense industries. Under the leadership of the Ministry of Defense, IAI will continue to advance Israel’s space program towards further operational achievements."

The Ofek 16 satellite is an electro-optical observation satellite with advanced capabilities. It is equipped with a high-quality camera developed and manufactured by Elbit Systems. In the coming weeks, following the completion of the ‘in orbit testing’ process conducted by the DDR&D, IAI and the IDF, the Ministry of Defense will transfer responsibilities to Unit 9900 of the IDF’s Intelligence Cops, after which the satellite will be declared operational.

The Space Administration in the Israel Ministry of Defense has led the development and production of the satellite and its launcher. IAI is the prime contractor, having assigned the program to its Systems, Missiles and Space Group, together with the MLM division, which is responsible for the development of the launcher. The satellite’s payload was developed by Elbit Systems. The launch engines were developed by Rafael Advanced Systems and Tomer, a government-owned defense company. Additional companies have participated in this program, including Rokar and Cielo. Lastly, various IDF officials, primarily from the Intelligence Corps and Air Force have also been deeply involved in the satellite development process.
Rosoboronexport to roll out a state-of-the-art radar, capable of detecting hypersonic targets

JSC Rosoboronexport (part of Rostec State Corporation) has started marketing work to bring on the world market of armaments the 59N6-TE mobile three-dimensional radar, developed and produced by the JSC “Federal Research and Production Center “Nizhniy Novgorod Research Institute of Radio Engineering” (NNIIRT). “Thanks to the work of thousands of Russian researchers, designers and engineers, Rosoboronexport may offer to its foreign partners unique defence solutions, which often do not have countertypes all over the world and are in line with the newest trends in modern warfare. Today Rosoboronexport is introducing to the market a cutting edge radar, capable of detecting effectively a wide range of existing and future aerial targets, to include hypersonic targets. While developing the export version of the radar, the growing role...
of air defence assets for the provision of security of states was taken into account, as well as the needs of foreign customers in the expansion of the reconnaissance capabilities of their air defence units,” said Rosoboronexport’s Director General Alexander Mikheev.

The 59N6-TE mobile three-dimensional station is an exclusively Russian-made product, which implies present-day Russian hardware components with digital processing and signal generation. It is fully solid-state and has high potential together with enhanced jamming resistance. The 59N6-TE is a radar of medium and high altitude, having a decimeter wavelength range. Apart from hypersonic targets, it also effectively detects aerodynamic and ballistic objects.

The 59N6-TE radar provides for the measurement of the range, azimuth and altitude of aerial targets. It is capable of detecting objects, flying at a speed of up to 8 000 km/h at a range of up to 450 kilometers and at an altitude of up to 200 kilometers. After detection, it exchanges radar information with C4I complexes. It operates in conditions of jamming and carries out direction finding of active noise jammers.

The station has an automatic and a semi-automatic mode of aerial targets’ acquisition and tracking. In a real time mode it may simultaneously track no less than 1 000 objects and recognize 8 classes of targets, which includes selection of anti-radar missiles and warning its own combat crew of the danger of elimination, inter alia, by high precision munitions and homing missiles. The 59N6-TE radar also includes equipment for the recognition of detected aerial targets in international radar recognition systems Mk-XA and ATC RBS.

The 59N6-TE radar set
Aerospace and Defense Industry

**BIRD Aerosystems delivered its Anti-Missile Protection System to an African customer**

BIRD Aerosystems, the leading developer of Airborne Missile Protection Systems (AMPS) and Airborne Surveillance, Information, and Observation (ASIO) solutions, has completed the delivery of its AMPS system, including the AeroShield POD and MACS sensor, to a VIP customer in Africa. The system will protect the presidential Boeing 737 aircraft during its international flights around the world.

The AeroShield POD is an all-in-one integrated solution that supports the installation of BIRD’s Airborne Missile Protection Systems (AMPS) on VIP wide-body aircraft. Integrating the AMPS system which includes Missile Launch Detection Sensors (MILDS), Missile Approach Confirmation Sensor (MACS), Flare Dispensers and an inertial measurement unit (IMU), BIRD’s AeroShield POD is easily installed, provides Optimum platform protection with minimal interference to the aircraft, and can be easily transferred between different aircraft.

The AeroShield POD that has been delivered under the current contract includes BIRD’s patented Missile Approach Confirmation Sensor (MACS) sensor, which performs a unique function of suspected incoming missile threats detected by the main electro-optical passive sensors, and practically eliminates any False Alarms. Upon receiving a pre-alarm warning from the indicator post if connected via glass fiber links, and up to 15 kilometers in case of using a radio link.

“IN am confident that in present-day conditions and with obvious prospects of hypersonic technologies, the 59N6-TE radar will take top positions in its market segment and will become an important asset for countries, which are building their own air defence systems with the account of the world trends of air attack weapons development. We rely on high demand for the new station in the countries of the Asia-Pacific region, the Middle East and North Africa,” added Alexander Mikheev.
Indra has successfully completed the first test flights with its Optionally Piloted Vehicle (OPV) Targus and achieved one of the decisive milestones of the Civil UAVs Initiative, promoted by the Government of Galicia to make the region a leader in this industry.

Indra has carried out these ground-breaking experimental flights in non-segregated airspace with a drone that weighs 1.25 tons and has an 11-meter wingspan. No other newly developed UAV has been granted permission to carry out such flights before. This is a landmark for Spanish aviation and a step forward for development in this sector.

The first flight took place on June 24 and was the start of a series of tests that have been conducted over for two weeks. All those flights comply with the Approval of Flight Conditions issued by the European Union Aviation Safety Agency (EASA) and with the Flight Approval by the Aviation Safety and Security Agency (AESA in its Spanish initials) of Spain, which authorizes their testing.

A special communication protocol was also established with the air traffic control of Santiago de Compostela Airport.

Aboard the Targus, the test pilot carried out the take-off maneuver and, once the aircraft is airborne, hands over control to the ground control center.

From that moment on, the work of Indra and Gaerum’s engineers begins: their job is to verify that all sensors and flight control systems are working properly.

With this major accomplishment, Indra has achieved within the deadline one of the most complex and demanding key milestones of the Civil UAVs Initiative, putting Galicia at the forefront in the development of drones in Europe.

To have obtained the approval of Flight Conditions for an OPV from the European Aviation Safety Agency (EASA) to fly it is a success of great importance in itself since it is a process that has never been carried out before and it provides experience and a competitive advantage for the future.

Indra’s strategy to develop a drone that can carry a pilot in the cockpit to take control if necessary or hand it over to the ground station, as appropriate, has allowed this project to progress at a very fast pace. It also offers a great operational advantage for future users, who will be able to fly over urban areas or land at airports without restrictions when manned, and fly without a pilot when it arrives at the operation area. This dual use significantly enhances the commercial appeal and capabilities of Targus.

The project now enters its final stage to finish the development of the OPV this year. The Targus will then become the most advanced and efficient aircraft for conducting missions such as air-sea rescue, fishery zone surveillance, environmental protection, detection of discharges in the sea, monitoring land use and historical heritage sites and providing support to fire-fighting.

Led by the Government of Galicia, the Civil UAV Initiative has raised €165 million distributed in four major programs. The first focuses on the creation and improvement of aeronautical infrastructure and Rozas aerodrome to facilitate the development of the sector in the region; the second is an R&D program with an investment of €115 million to work on the development of new products, technologies and solutions; the third pillar hinges on eleven pre-commercial tenders for solutions based on the use of UAVs aimed at improving land and rural environment management, maritime surveillance and air traffic control; and the last one is the business incubation and acceleration program, which recently launched the Business Factory Aero, launched to attract and support projects from companies and startups from anywhere in the world.
Boeing has completed delivery of all new AH-64E Apache and CH-47F(I) Chinook military helicopters to the Indian Air Force (IAF). The final five of the 22 Apache attack helicopters were handed over to the IAF at Air Force Station, Hindan. Earlier in March, Boeing handed over the last five of 15 CH-47F(I) Chinook heavy-lift helicopters to the IAF.

"Customer centricity, commitment to the modernization and mission-readiness of India’s defence forces are key values to our partnership with India," said Surendra Ahuja, Managing Director, Boeing Defence India. “With this delivery of military helicopters, we continue to nurture this partnership and are fully committed to working closely with India’s defence forces to deliver the right value and capabilities to meet their operational needs,” Ahuja added.

India is one of 17 nations to select the Apache and has the most advanced variant, the AH-64E Apache that is also flown by the U.S. and many other countries. The AH-64E Apache is designed and equipped with an open systems architecture including the latest communications, navigation, sensor and weapon systems. It has an improved Modernized Target Acquisition Designation System that provides day, night and all-weather target information, as well as night vision navigation capability. In addition to classifying air and ground targets, the Fire Control Radar has been updated to operate in the maritime environment. It is uniquely suited to meet a commander’s needs, including reconnaissance, security, peacekeeping operations, and lethal attack, across myriad environments - without reconfiguration.

Twenty defence forces around the world either have Chinooks in service, or are on contract to receive them. The iconic tandem-rotor helicopter has been the world’s most reliable and efficient heavy-lift helicopter for more than 50 years, allowing customers to operate in climatic (hot), altitude (high), and crosswind conditions that typically keep other helicopters from flying. The CH-47F(I) Chinook contains a modern machined airframe, a common avionics architecture system (CAAS) cockpit, and a digital automatic flight control system (DAFCS). Those innovations and technologies will help the Indian Air Force meet evolving mission demands, maximize interoperability, and reduce lifecycle costs.

The Indian Ministry of Defence finalized its order with Boeing for the production, training and support of 22 AH-64E Apache and 15 CH-47F(I) Chinook helicopters in September 2015. Earlier this year, India and the U.S. signed a contract for the acquisition of six Apaches for the Indian Army during U.S. President Donald Trump’s visit to New Delhi.

Boeing’s joint venture in Hyderabad, Tata Boeing Aerospace Limited (TBAL) has been producing aero-structures for the AH-64 Apache helicopter for both US Army and international customers. TBAL marks a major step towards the co-development of integrated systems in aerospace and defense in India. Boeing’s suppliers in India are manufacturing critical systems and components for the Chinooks, including the crown and tailcone assembly by Tata Advanced Systems and the ramp and aft pylon by Dynamatic Technologies. Boeing today works with over 200 suppliers and partners in the country in support of “Make in India” and “Skill India.”

Boeing Defence India provides holistic lifecycle solutions for government and defence customers in the country. Boeing delivers services that ensure high availability and mission-readiness of platforms to its defence customers at competitive costs through its investments in services infrastructure and building local capabilities and partnerships. With the induction of the Apaches and Chinooks, Boeing anticipates additional opportunities in rotorcraft training and sustainment.
Attended by 30 air force chiefs and 200+ officials from around the world, MAPS is where you position your organization before a select gathering of defense leaders to maximize visibility and make the most of high-level networking and engagement opportunities with key decision-makers in a focused air power environment.

**Sponsorship Opportunities**
MAPS 2020 offers a range of sponsorship opportunities for companies to position themselves before key international customers and making a high-impact with decision-makers. For further information on sponsorship packages contact Rasha Kayyal by telephone +971 4 399 8355 or email [rasha@segma.co](mailto:rasha@segma.co).

For more information and latest updates: [www.segma.co/maps2020](http://www.segma.co/maps2020)
UVision’s Hero-30 Passes NATO Navy Trial

UVision Air Ltd, Israel - a global leader in Loitering Munitions Systems of all sizes for a variety of missions - proves its Hero-30 compatibility to naval missions and demonstrates its outstanding capabilities. The high-precision, light-weight portable Hero-30 loitering munition system was evaluated by a naval force of a major NATO member and proved its remarkable capabilities. The systems demonstrated remarkable abilities of high-precision strikes, tracking and lock-on on a moving target in various operational naval scenarios and mission-abort capabilities. The trial demonstrated the Hero-30 versatility and adoptability to various missions in a maritime environment.

“Proving our system’s remarkable capabilities for naval applications to a strategic NATO member is an additional step in UVision’s expansion of its customer base”, says Major General (Ret.) Avi Mizrachi, CEO of UVision. “We are proud, time and again, to present our systems’ incorporated high precision attack level and abort capabilities, with operation simplicity, allowing for front-line NAVAL forces to quickly respond while eliminating any immediate threat that arises.”

The Hero-30 portable tactical combat proven system is deployable within minutes, is capable of speeds of up to 100 knots and is ideal for missions that require no collateral damage assurance. Weighing only 3 Kg, it carries a 0.5 Kg warhead and reaches a range of up to 40 Km. With an electrical silent and stealth engine and a canister that allows launching from a variety of existing platforms, it provides extreme mission flexibility for the troops.

The climax of the sea trials was a strike on a moving target. The simulated threat of a suicide speedboat laden with explosives was executed with extreme precision and the moving target (speed of 20 knots) was struck with the inert training round amidships. Everything was performed in a completely GPS denied environment.

The HERO series is comprised of seven loitering munitions systems (Hero-30, Hero-70, Hero-120, Hero-250, Hero-400EC, Hero-900, Hero-1250), designed for different missions at various ranges using warheads of various types. The HERO systems enable forces in the front-line to independently locate time sensitive targets, track and attack with pin-point precision to handle different missions ranging from light-weight static or moving targets (such as light-duty vehicles and human targets) to larger fortified or heavily armored targets such as MBT (Main Battle Tank) and other strategic objectives.

UVision designs and manufactures innovative, cost-effective, unmanned loitering munition systems for customers worldwide. With cutting-edge technology and 30 years of extensive field experience by a professional management team, UVision delivers highly unique aerodynamic platform configurations. The Hero series is comprised of advanced loitering munitions systems designed for different missions at various ranges using warheads of various types. The company’s solutions are tailored for unique fight qualities, precision attack munitions, advanced airborne guidance and navigation systems integrated with C4I stations.
Singapore Technologies Engineering Ltd (ST Engineering) announced that its land systems arm has signed an agreement with Israel Aerospace Industries Ltd (IAI) to set up a joint venture company (JV) in Singapore. ST Engineering and IAI shall each hold a 50% share of the JV.

The JV, named Proteus Advanced Systems Pte Ltd, will leverage the strengths and track record of its parent companies to market and sell advanced naval missile systems, including a next generation anti-ship missile system.

The setup of this JV is expected to have any material impact on the consolidated net tangible assets per share and earnings per share of ST Engineering for the current financial year.

ST Engineering is a global technology, defence and engineering group specialising in the aerospace, electronics, land systems and marine sectors. The Group employs about 22,000 people across offices in Asia, the Americas, Europe and the Middle East, serving customers in the defence, government and commercial segments in more than 100 countries. With more than 500 smart city projects across 70 cities in its track record, the Group continues to help transform cities through its suite of Smart Mobility, Smart Security and Smart Environment solutions.

Israel Aerospace Industries is Israel’s largest aerospace and defense company and a globally recognized technology and innovation leader, specializing in developing and manufacturing advanced, state-of-the-art systems for air, space, sea, land, cyber and homeland security. Since 1953, the company has provided advanced technology solutions to government and commercial customers worldwide including: satellites, missiles, weapon systems and munitions, unmanned and robotic systems, radars, C4ISR and more. IAI also designs and manufactures business jets and aerostructures, performs overhaul and maintenance on commercial aircraft and converts passenger aircraft to refueling and cargo configurations.

As the world and economy at large continues to navigate through the impact of COVID-19, the emphasis on maintaining a steady path of learning and development for its Allstars has been a priority for AirAsia India. In a landmark decision, the Directorate General of Civil Aviation has approved distance learning for regulatory recurrent training for pilots, cabin crew, dispatchers and engineers. This new regulation permits Indian carriers to conduct all regulatory recurrent training covered in the respective DGCA circulars through distance learning remotely once in a period of two years provided the crew has undergone previous recurrent training through contact classes.

AirAsia is the first airline in India to attain DGCA approval to conduct Regulatory Training for Pilots through “Distance Learning Training Program”. The purpose of the recurrent training is to refresh and keep the pilots stimulated and improve their skills with effective training programs on Technical systems, Procedures, Special Operations, Aircraft Performance, Safety Management System, Crew Resource Management and Safety Procedures. Earlier, these flight crew trainings were conducted by contact classroom sessions. Distance learning will have the benefit of ensuring social distancing, meeting regulatory requirements and cost savings.

Commenting on the new training modules and medium, Capt. Arun Nair, Chief Pilot Training and Standards, AirAsia India said, “With this milestone approval, AirAsia India would be starting the Annual Recurrent Trainings for Pilots through Virtual Classrooms, starting this week. While there is a restriction on travel and movement, that hasn’t stopped us from continuing our learning & development process. It is our responsibility to provide safe travel to our guests, and this remarkable decision by DGCA to allow regulatory training to continue virtually will ensure that our flight crew are refreshed, well trained and ready to fly when operations begin.”

AirAsia India Receives DGCA Approval for Regulatory Trainings

ST Engineering and IAI Setup JV for Naval Missile Systems
Indian multinational company Bharat Forge Limited (BFL), in collaboration with AI start-up Blackstraw, has launched HRMS – an AI based solution that enables companies and institutions to comply with MHA provided guidelines for safe reopening. HRMS stands for Health Risk Monitoring System, an Intelligent Video Analytics solution, which has been developed to empower workplaces with worker safety for holistic growth, and is aligned with the future dependability of enterprises on technology and AI to monitor compliance of laid MHA policies, by employees.

HRMS is ideal for deploying in high-footfall areas like educational campuses, hospitals, gated communities, retail stores, railway stations, airports and transit points to monitor individual and societal health. Presently, HRMS is being deployed at The Kalyani School, Pune and all critical facilities of BFL pan-India. BFL has partially resumed operations at its manufacturing facilities by taking several safety measures, and has added HRMS as a crucial tool to help prevent the spread of COVID19 infection, thereby creating a safe environment for its thousands of employees entering and exiting the facility. The company also intends to make HRMS available widely across sectors from educational institutes to enterprises, and help the community to be back on track during re-opening of services.

Atul Arya, CEO at Blackstraw, said, “The partnership with Bharat Forge has led to development of a range of video analytic products over the last year. HRMS has been a quick and timely assembly of technological components developed over time for an immediate need. We strongly believe that this platform which will not only safeguard companies and their employees but will also help reinstate confidence and normality.”

Bharat Forge, safety has always been a priority. Now with this pandemic, safety norms have become more stringent, and correctly so. We have inducted Artificial Intelligence and technological intervention to further safeguard people’s health by creating an environment that is anxiety-free and fosters growth. We have developed HRMS to reduce manual interference and keep an effective check on safety norms. This technological approach has ensured maximum safety for employees.”

Rajinder Singh Bhatia, President & CEO, Bharat Forge Ltd (Defence & Aerospace), said, “HRMS has been born from our investment in AI Incubation Centre which commenced last year. In partnership with Blackstraw, we are creating several real-world applications of AI software both on civilian and military fronts. Health Risk Monitoring System is an example of our investment being utilized in critical times to help the society at large. We intend to make this system available widely across sectors from educational institutes to enterprises, and help the community to be back on track during re-opening of services.”

Bharat Forge Limited (BFL), the Pune based Indian multinational, is a technology driven global leader in metal forming having transcontinental presence across ten manufacturing locations, serving several sectors including automotive, power, oil and gas, construction & mining, rail, marine, defence and aerospace.

For enquiries and more information on AI based HRMS, please contact Cmde Ajay Sharma at AjayR.Sharma@bharatforge.com
BEML Limited, a company under the Ministry of Defence and premier manufacturer of Metro Cars in India, has, flagged off the last trainset for Kolkata Metro (East - West) project from its Metro coach factory at Bangalore Complex.

Deepak Kumar Hota, Chairman & Managing Director BEML has flagged off the metro train set in the presence of Company Directors and other senior officials of BEML & KMRCL.

BEML secured the contract for 14 train sets (6 cars each), valued at approx. 900 crores from Kolkata Metro Rail Corporation.

BEML independently completed the design, manufacturing activities and the delivery of the prototype train set was done during March 2018, which was subjected to extensive testing and trials on KMRC mainline including statutory testing by RDSO & CRS and cleared all the tests. Subsequently, BEML built KMRC trainsets were put to revenue operation since February 2020 and are operating satisfactorily. Further, 6 train sets are ready for deployment in revenue operation.

The revenue service was inaugurated by Hon’ble Minister of Railways & Commerce, Shri Piyush Goyal in presence of Shri Babul Supriyo, Union Minister of State for Environment, Forest & Climate change on 13th Feb 2020 at Kolkata. While taking a ride in the metro car the Hon’ble Minister lauded BEML for introducing a world class metro car to the ‘City of joy’!

Some of the key features of the train sets include:
- Stainless Steel car body furnished with world class interiors and customized air conditioning suiting local requirements.
- Bogie for 750V DC Third Rail application is designed & developed by BEML for the first time.
- IGBT based microprocessor controlled 3 phase asynchronous drive with VVVF (Variable Voltage Variable Frequency) control and regenerative braking for energy saving.
- Train sets operate with ATP / ATO and is interfaced with CBTC signalling system (which is one of the best and latest technologies in the world) to reduce headway, ensure train stopping accuracy and passenger safety.
- Passenger capacity of 2068 persons per train set
- Energy efficient LED lights
- Automatic audio-visual announcement and display system for passengers

Speaking on the occasion Deepak Kumar Hota, CMD BEML said, “We are on track, as we despatched the last of the 14 trainsets for Kolkata Metro (East - West) project for KMRC. We have proved our capabilities and expertise in supply of Metro coaches. An epitome of successful ‘Make in India’ initiative in the rolling stock industry.”

The delivery of the last train set to Kolkata metro has added one more feather in its already decorated cap, as it re-dedicates itself to the cause of self-reliance, as part of the Aatma Nirbhar Bharat Abhiyan, which is recently announced by the Hon’ble Prime Minister contributing to Nation’s pride.
As part of the mobilization of state-owned companies in cooperation with Administration for the Development of Weapons and Technological Infrastructure (MAFAT) and the State Companies Authority to address the COVID-19 pandemic, Israel Aerospace Industries (IAI), Microsoft, and Soroka Medical Center have collaborated to develop a supervision system that makes it possible to collect data on ventilated COVID-19 patients in a single location while providing updated, comprehensive information on patients’ status while minimizing the exposure of medical teams to infection. The system integrates data from all systems and sensors and performs data cutting and extraction to monitor measures, identify trends, and generate early warnings using artificial intelligence measures. The system makes it possible to streamline processes, learn, and produce data. The data collected is made available for various needs to the medical staff in the control room, a kind of “cockpit” from which remote doctors’ rounds, regular patient management, task management in the ICU, and device management can be carried out.

The system was developed on Microsoft’s Azure platform with the support of Microsoft in Israel, using Azure Data Explorer for real-time data ingestion and data analytics services to analyze and display patient data and video streaming services to visually display patients. The development makes it possible to supervise a large number of patients simultaneously, as millions of events can be transferred and displayed in the system per second.

Yoav Turgeman, Executive Vice President, IAI and CEO of Elta commented, “The IAI has joined the fight against the coronavirus, and in addition to its ongoing business operations, in recent weeks has developed numerous technologies that assist medical teams and patients in hospitals. Elta brings to Soroka Medical Center knowledge and experience from the worlds of intelligence, cyber, radar, and artificial intelligence, the Aviation Division of the IAI brings its knowledge of supervision and control systems and data collection from the world of aviation, and together with Microsoft, we combine technologies for the monitoring of patient measures, department management, and device control, all without the need for human intervention. We will continue to support the national effort to find effective and innovative solutions. And together we will win.”

Frequentis will provide Spanish Air Navigation Service Provider (ANSP), ENAIRE, with a contingency voice communication system (VCS) for air traffic control towers at nine country-wide locations across Spain. The country-wide contingency VCS infrastructure will enable business continuity in the event of an air traffic control (ATC) disruption, allowing airspace operations to continue. The solution is based on the Frequentis voice over IP (VoIP) product, VCS 3020X, which is in operational use in Europe and worldwide, proving its capability and reliability.

During potential network outages or service disruptions, an ANSP could experience loss of revenue due to compensation or penalty claims by airline customers. With an improved ATC infrastructure to allow contingency operations, voice communication services from various locations can continue. “Frequentis is pleased to be providing ENAIRE with a turnkey fallback voice communication system for control centers, supporting ENAIRE in its goal to be at the forefront of safe, efficient, quality, and sustainable provision of air navigation services. In order to maintain the level of service required of a busy network, and stay prepared for potential disruptions, it is important to have a reliable and resilient back-up solution in place. The Spanish market is an important part of Frequentis' strategy and we look forward to a successful and long-term business relationship with ENAIRE.” says Hannu Juurakko, Frequentis Vice President ATM Civil.

Frequentis and ENAIRE had previously worked together on the modernisation of its air navigation data network (REDAN). Frequentis was tasked with providing communication gateways and the integration of legacy voice communication services. The current project will begin with the delivery and implementation of seven of the nine systems during 2020.
Indian Navy has laid the Foundation Stone for a Missile Park “AGNEEPRASTHA” at INS Kalinga by Cmde Rajesh Debnath, Commanding Officer, in the presence of Vice Admiral Atul Kumar Jain, PVSM, AVSM, VSM, FOC-in-C (East).

The Missile Park ‘AGNEEPRASTHA’ once completed will be dedicated to all the Officers, Sailors and Support Staff of INS Kalinga, who have served in this premier op-support Base of the ENC since its establishment in 1981. The Park also commemorates the award of the prestigious Unit Citation to INS Kalinga for the year 2018-19.

‘AGNEEPRASTHA’ aims to capture glimpses of Missile History of INS Kalinga since 1981 till date. The Missile Park has been set up with a replica of missiles and Ground Support Equipment (GSE) that showcase the evolution of missiles handled by the unit. The exhibits have been created from scrap / obsolete inventory which have been reconditioned in-house. The main attraction is P-70 ‘Ametist’, an underwater launched anti-ship missile from the arsenal of the old ‘Chakra’ (Charlie-1 submarine) which was in service with IN during 1988-91.

‘AGNEEPRASTHA’ will also provide a one-stop arena for motivation and stimulation of inquisitive minds regarding the missiles and related technologies, from school children to Naval personnel and their families. It is also intended to encourage a feeling of ownership and pride in the role of the Unit, and highlight the necessity of contribution of all personnel irrespective of rank/trade towards the overarching objective of ordnance availability, reliability and delivery on target, each and every time.

MC-21-300 Aircraft Engine Water Protection Tests Have Been Started

Irkut Corporation (as part of UAC of Rostec State Corporation) started tests of MC-21-300 to confirm the possibility of operating the aircraft in the presence of water on runway.

To conduct tests at the airfield “Ulyanovsk-Vostochny” a "pool" was mounted more than 70 m long and more than 20 m wide. Parameters of the "pool" provide a normalized water depth in accordance with Russian and international requirements, which are established for these types of tests.

Within a few days, MC-21-300 aircraft will run on water in a wide range of speeds and different modes of main engines, including the use of thrust reverser. During the tests it is necessary to confirm that during aircraft movement the water does not disrupt the work of its main and auxiliary power units, and does not damage structure elements, systems and equipment of the aircraft.

The course of the tests is recorded by a complex of onboard measurement equipment, cameras of video surveillance system installed on the ground and on the plane, as well as by representatives of certification centers and specialists of Irkut Corporation. The tests are conducted as part of the MC-21-300 aircraft certification program, in accordance with Russian and European airworthiness standards.

The United Aircraft Corporation (UAC) was established in 2006 to consolidate Russia’s main assets in aircraft design and production. The Corporation companies produce the aircraft of world famous brands “Su”, “MiG”, “Il”, “Tu”, “Yak”, “Beriev”, as well as the new ones - Superjet 100 and MC-21. UAC enterprises perform a full cycle of work from design to after-sales service and utilization of aircraft. Mr. Yury Slyusar is UAC’s General Director.
The first official sub-contract for a UK company involved in the production of the MoD’s new Boxer Mechanised Infantry Vehicles programme, has been awarded by a member of the ARTEC consortium to WFEL, a nominated Tier One supplier in the project.

The contract covers the transfer of manufacturing technology from Germany to the UK for the Drive Modules for the Boxer Infantry Carrier, Special Carrier and Ambulance variants and marks a significant milestone after many months of planning, preparation and consultation following the signing late in 2019 of the £2.3bn contract between the UK Ministry of Defence and the ARTEC consortium, for the delivery of over 500 Boxer vehicles to the British Army.

Boxer is a state-of-the-art wheeled armoured vehicle that offers outstanding mobility and protection. Boxer will form an integral part of the British Army’s new Strike Brigade capabilities and shall have a service life of over 30 years. Battle-proven, it is in service across NATO and was recently selected by Australia.

WFEL will play a significant role in delivering the completed Boxer vehicles to the British Army and is undergoing substantial investment in an advanced manufacturing facility at its North West base, to ensure compliance with the stringent manufacturing requirements of these vehicles.

WFEL’s Managing Director, Ian Anderton, commented, “Our teams have been liaising closely with members of the ARTEC consortium, particularly KMW personnel, culminating in the awarding of this contract, which we are delighted to receive. We can now move further forward with developing our own supply chain partnerships around the UK, creating and sustaining high levels of employment and we’re looking forward to eventually seeing these superb vehicles in use with the British Army.”

The UK MoD is already a long-standing customer of WFEL, having been a user of its rapidly deployable MGB Medium Girder Bridge systems for many years.

In November 2019, ARTEC, a joint venture between two German companies – Krauss-Maffei Wegmann and Rheinmetall – signed the £2.3bn contract to deliver 500+ Boxer vehicles to the British Army.

The vehicles will be manufactured in the UK, with production sub-contracted equally between WFEL and Rheinmetall BAE Systems Land (RBSL). The companies will undertake the fabrication of the armoured vehicle structures together with the assembly, integration and test of the complete vehicles at their respective facilities in Stockport and Telford.

The MIV contract will sustain jobs at WFEL and RBSL sites across the UK, as well as a vibrant national supply chain. The plan is to source more than 60%, by value, of the vehicle content from within the UK, protecting the UK’s sovereign engineering and manufacturing skills and ensuring that the vehicles remain supported through their 30-year operational life.
Safran to support German & Norwegian NH90 engines

Safran Helicopter Engines has signed a support contract with the NATO Helicopter Management Agency (NAHEMA), to support 276 NH90 engines owned by BAAINBw (Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support) in Germany and the Norwegian Defence Materiel Agency (NDMA). The RTM322 engines will be covered by Safran’s Global Support Package (GSP) under NAHEMA management.

This NH90 helicopters fleet is operated by the German Army (Deutsches Heer) and Navy (Deutsche Marine), and the Royal Norwegian Air Force (Luftforsvaret). Within this agreement, their engines will be supported under a framework agreement with NAHEMA.

Giorgio Gomma, General Manager of NAHEMA, said: “the Global Support Package and its philosophy as a Service by the Hour Contract based on an availability commitment for the supported engines represents a further step in the direction of unifying In Service Support of NH90 community”.

Olivier Le Merrer, Safran Helicopter Engines EVP Support and Services, said, “this new contract is founded on the excellent service experience we have developed with the German and Norwegian armed forces. It also marks a major milestone in our partnership with NAHEMA and European NH90 users. We are extremely proud of their commitment to a GSP supporting RTM322-powered rotorcraft. We are committed to offering world-class support to all European armed forces”.

In 2017, Safran Helicopter Engines and NAHEMA agreed a support program protecting RTM322 engines installed on NH90s operated by France’s armed forces, the Belgian Army and Navy and the armed forces of the Netherlands.

Under a GSP, the customer receives a commitment to engine availability. Other benefits include budget stability, a fixed price per engine flying hour and a technical partnership with the OEM. GSP is part of EngineLife® Services, Safran’s range of solutions for helicopter engine operators.
In what can be termed as a landmark event, Airports Authority of India (AAI) entered into a MoU with Bharat Electronics Limited (BEL) that will provide a platform for collaborative development and support for both the organizations to address the emerging airport business globally, including that of Asia Pacific region.

In furtherance of such cooperation, AAI, in the role of development partner, will render assistance to BEL in its domain of expertise to enable execution of the prestigious MEA projects outside India by BEL. Both the organisations will work in close cooperation with each other in the field of civil aviation in present and in future projects being handled by BEL.

The MoU was signed by Sanjai Kumar Singhal, General Manager (Business Development), AAI, and Manoj Kumar, Executive Director (National Marketing), Regional Office-Delhi. It was signed between BEL and AAI, in the presence of Arvind Singh, Chairman, AAI, M V Gowtama, CMD, BEL, and Anandi Ramalingam, Director (Marketing), BEL.

Sanjai Kumar Singhal, General Manager (Business Development), AAI, and Manoj Kumar, Executive Director (National Marketing), Regional Office-Delhi, display the MoU signed between BEL and AAI, in the presence of Arvind Singh, Chairman, AAI, M V Gowtama, CMD, BEL, and Anandi Ramalingam, Director (Marketing), BEL.

Chairman AAI, addressing the experts from both sides exuded optimism that the partnership between the two organizations will be a game-changer in Indian aviation sector in the years to come. He also said that the manufacturing of Communication, Navigation & Surveillance (CNS) Equipment in India will reduce the cost substantially and will save foreign exchange outflow, making India Self-Reliant.

CMD, BEL affirmed that the MoU would provide for synergy of capabilities of both the organizations in their respective domains leading to mutually beneficial and lasting solutions in the ever-growing field of aviation. He also said that with the skills and expertise of AAI, BEL would enter in the domestic civil aviation market as well as in South-East Asian, African, and Latin American civil aviation market.

Signing of this MoU is a huge step forward for both the organizations to embark on cooperation and support in the field of civil aviation.
Airbus has won the new satellite communications framework contract for military and civil missions of the European Union and its member states. This four-year contract was awarded by the European Defence Agency (EDA) and is estimated to be worth tens of millions of euros.

“With this satellite communications programme, Airbus contributes to the construction of joint capabilities for European defence and to its missions to preserve civil and military peacekeeping”, said Dirk Hoke, Chief Executive Officer of Airbus Defence and Space.

The contract named ‘EU SatCom Market’ will allow EU member states to centralise their satellite communications requirements and obtain coordinated, more economical, and effective access to these services. Some 32 contributing members, including 20 European defence ministries, can now swiftly and efficiently get access to satellite solutions and services through EDA, which has been supplying the members of the ‘EU SatCom Market’ project with satellite communications capabilities since 2012.

These satellite communications solutions can be deployed worldwide. They play an essential role in European civil and military peacekeeping and security missions, as well as in technical and economic development and cooperation missions. This is already the case in several EU civilian and military missions and operations where EU SatCom Market services have been successfully implemented for several years. The armed forces of EU member states also use these solutions.

The ‘EU SatCom Market’ contract covers the provision of satellite communications (in C, Ku, Ka and L frequency bands), the sale and rental of terminals, as well as the provision of ‘turnkey solutions’, particularly in theatres of operations outside the EU. For this contract, Airbus has teamed up with Marlink, which will supply some of these terminals and specific L- and Ku-band services.

A forerunner in telecommunications solutions for military and governmental users, Airbus has unique experience in supplying satellite communications on a global scale and in all commercial and military frequency bands (L, C, Ku, Ka, X and UHF). These services can also benefit European operators of essential services.

AEROC Vodochody begins to write a new chapter with new owners

After thirteen years, AEROC Vodochody AEROSPACE (Plc.) changes owner. The group of companies into which AEROC Vodochody belongs, has been bought from the Penta Group by AEROC Investment Partners Zrt, a company registered in Hungary. This is a joint venture between a Czech company AEROC International, part of the OMNIPOLO group and a renowned businessman from Hungary. The OMNIPOLO group will be responsible for management of the new company.”

The signing of the contract on June 11, 2020 confirms the transfer of 100% of the shares of the holding owning Czech company AEROC Vodochody to AEROC Investment Partners Zrt. The majority of 51% of the shares of AEROC Investment Partners Zrt. is owned by Hungarian businessman András Tombor with the remaining 49% of the shares being owned by the Czech company AEROC International s.r.o.

The minority owner, AEROC International s.r.o., is in the hands of Richard Háva and his family, which owns the OMNIPOLO Group. The OMNIPOLO Group will be responsible for the day to day management of the new company.

The company Airport Vodochody a.s., is not part of this transaction and will remain in the possession of the current owner Penta Investments. AEROC’s right to use the airport for its development stems from a contractual obligation agreed between the parties.

The OMNIPOLO Group has a very long history with AEROC, over the past decades it has been responsible for exporting almost all of the aircraft from its production lines. Since 2015, OMNIPOLO has also been the strategic partner in the project for the next generation of L-39 aircraft: L-39NG. As a 50% shareholder of these projects, the group has already worked very closely with AEROC over the past five years.

AEROC Vodochody AEROSPACE a.s. focuses on the development, production, market for military training and light combat aircraft. With 11,000 aircraft produced in 100 years of existence, hundreds of L-39 Albatros aircraft still in use serving dozens military operators and in a number of demo teams, and especially with its new L-39NG, Aero is profiled as the leader in the world market for jet training aircraft.

In the field of civil aviation AEROC cooperates with the largest aviation manufacturers on a wide range of projects and is a partner in several risk-sharing programs.
Naval Dockyard (Mumbai) has manufactured a UV sanitization bay to meet the requirements of sanitation facility for worker’s coveralls, tools, personal gadgets and masks after lifting of the lockdown due to Covid 19. This is mainly for large production organisations like Dockyards and other naval establishments, where a sizeable number of workers will resume work post lifting of lockdown and these numbers are expected to gradually increase.

The UV bay will be utilised for decontamination of tools, clothes and other miscellaneous items, to control spread of the coronavirus. The challenging task required ingenuity to convert a large common room into a UV bay by fabrication of aluminum sheets electrical arrangements for UV-C lighting. The facility utilises UV-C light source for Germicidal Irradiation towards sterilizing items. Studies by reputed research agencies have proven the effect of UV-C on respiratory pathogens like SARS, Influenza etc. It has been observed that microbial pathogens become significantly less viable when exposed to UV-C of intensity 1 J/cm² for 1 min or more, indicating effective sterilisation.

A similar facility has also been set up at Naval Station (Karanja), where in addition to UV-C steriliser, an industrial oven has also been placed, which heats smaller sized belongings to 60°C, a temperature known to kill most microbes.

The facility is placed at the entry/exit points where it will help in mitigating Covid-19 transmission.

Western Naval Command develops Ultraviolet disinfection facilities

GKN Aerospace Continues Jet Engine Biofuel Testing

FMV (Swedish Defence Materiel Administration) has contracted GKN Aerospace Sweden to continue biofuel testing of the RM12 engine. The biofuel for this test is an ATJ (alcohol to jet)-SKA developed and manufactured by Swedish Biofuels AB. The test is part of a bilateral Biojet-project collaboration between FMV and USAF/NAVAIR, which started in October 2013 and will be completed in the fall of 2020.

GKN Aerospace Sweden is Type Certificate holder for the RM12 engine and has reviewed fuel specifications and material compatibility for all fuel-wetted components in the engine in order to ensure safe engine operation during this test. Performing this test in a test cell will give more in-depth information to see potential differences in engine data compared to earlier flight test results with this 50/50 mix.

In March 2017 a Gripen C/D with an RM12 engine completed a successful flight demonstration powered by 100% renewable Biofuel, showing excellent performance both in-flight and on the ground. The biofuel used in 2017 (CHCJ-5) was developed by the US company ARA on a USN/NAVAIR contract, and was fully interchangeable with normal jet fuel and approved for a limited flight test. No engine changes or modifications were required for this demonstration.

The 2020 test will demonstrate the capability in the engine test cells, flexibility in measurement systems, designing and feeding fuel to the engine. Both FMV and GKN Aerospace are strongly committed to renewable fuel and reduction of the environmental impact of aerospace. GKN Aerospace is also involved in the Clean Sky programme which is the largest European research programme developing innovative, cutting-edge technology aimed at reducing CO2, gas emissions and noise levels produced by aircraft.
RAFAEL Australia has announced a $1.3 million strategic industrial partnership with Australian company Naeco Pty Ltd, a Brisbane-based precision engineering small business specializing in thermal management.

Naeco has pioneered a world-first liquid cooling system for airborne radar, communication systems and electronic warfare (EW) equipment. RAFAEL is a world leader in the development and manufacture of airborne systems, including the BNet communication system and EW technologies, which are currently employed by numerous leading air forces around the world.

This industrial cooperation between RAFAEL and Naeco will see the two firms come together to export these advanced cooling systems, as part of RAFAEL’s global supply chain, to provide its customers with state-of-the-art defence solutions. In an environment of unprecedented disruption, this agreement will provide new export opportunities for products designed, developed and manufactured in Australia, creating local jobs in the process.

“RAFAEL was very impressed with the performance of Naeco and its technology during testing,” said Ido Spitzer, RAFAEL Australia’s General Manager. “Following the establishment of VRA in Australia as a joint venture between RAFAEL and the Varley Group, we are delighted to enter into partnership with another Australian SME that shares our culture of innovation and collaboration. This partnership will lead to additional work packages for an Australian business at a time of significant uncertainty for local industry. We are particularly excited by Naeco’s comprehensive manufacturing and engineering expertise specifically in the high-end aerospace sector.”

Naeco’s Managing Director, Nathan Andrews, said the agreement was a significant step for the company. “We are extremely proud of our new partnership with RAFAEL, an internationally recognized leader in defense industry. RAFAEL’s focus on partnering with innovative small businesses like Naeco makes this new venture both a natural fit and an enormous opportunity for our company to continue developing our world-leading capabilities. “With RAFAEL’s support, Naeco will expand global exports of Australian defense technology like our liquid cooling system despite challenging global conditions. This partnership will allow us to keep factories open, employ more Australian workers and keep exports flowing in this time of economic hardship.”

Saab has signed a contract and received an order for the Airborne Early Warning and Control solution Saab 2000 Erieye AEW&C. The order value is 1.553 billion SEK. Deliveries will be made between 2020 and 2023. The industry’s nature is such that due to circumstances concerning the product and customer, further information about the customer will not be announced.

Saab 2000 Erieye AEW&C is a complete AEW&C system with multi-role and multi-mission capabilities for both military and civil needs. It is based on the Saab 2000 aircraft equipped with Saab’s airborne radar Erieye and a range of other sensors. The solution gives the user detailed situational awareness and can be used for tasks including border surveillance and search-and-rescue operations.
Indra leads the European CROWN R&D project for fighters and aircraft

Indra will lead the European CROWN R&D project that will equip European fighters and aircraft with capabilities which combine radar, communications and electronic defence to dominate radioelectric space and operate at an advantage over the enemy.

The company will coordinate the work of a consortium formed by Thales, Office National D’Etudes et de Recherches Aerospatiales (ONERA), Hensoldt, Fraunhofer-Gesellschaft, SAAB, Totalforsvarets Forskningsinstitut (FOI), Netherlands Organisation for Applied Scientific Research (TNO), Leonardo, Elettronica, and Baltijos Pazangiu Technologiju Institutas (BPTI).

The project has been selected to form part of the Preparatory Action for Defence Research of the European Commission managed by the European Defence Agency and the grant agreement is now being prepared.

This group of companies and research centers from seven countries will design the first element capable of integrating radar, electronic defence and communications equipment into a single compact and lightweight item of equipment that can be installed in the aircraft nose cone, camouflaged in the fuselage, or in an under-wing pod, on multiple platforms (even in UAVs). It will be a system based on active electronically scanned array (AESA) and sophisticated algorithms that will enable multi-purpose use for different capacities and in an optimized way.

Since no other country yet possesses this capability, it will bring a major advantage to whoever acquires it first. This integration will enable the aircraft's radar to intelligently select the least congested area of the spectrum to operate effectively and extend its range, even in environments where the adversary tries to interfere with its operation.

At the same time, coordination of the radar with the systems that monitor the radio spectrum and those that generate countermeasures (ES/EA) will significantly improve the performance of these systems and of aircraft weapons systems in general. As for communications, they will gain range and bandwidth to exchange a greater volume of data with other platforms at higher speeds.

The goal is to equip the aircraft of the future with a compact solution, smaller in size, with a lower weight and cost, and more power to provide a decisive advantage.

On this will depend the ability to detect the enemy, select and fix targets and exchange data with other platforms on land, sea, or air to prevail in combat or protect themselves from attack.

Electronic defence has been placed at the center of military strategy in recent years as some countries resort to controlling radioelectric space as a way to counter the superiority of European and allied aircraft.

The CROWN project could subsequently address the adaptation of this system for use by ground units and all types of land vehicles and ships.

Leadership of the European defence sector

The Spanish Government has appointed Indra as the national industrial coordinator in the European Defence Program FCAS (Future Combat Air System), the largest joint European Defence program to date and the most ambitious in terms of technological development. Indra will carry out this work together with the industrial leaders appointed in turn by France and Germany, Dassault and Airbus, respectively.

The company also participates in the proposals for 9 EDIDP consortiums (European Defence Industrial Development Program) that are being evaluated and acts as coordinator in 3 out of 5 consortiums led by Spain, among others, the PESCO program for Strategic Command and Control, probably the most important of them all, in which Spain, Italy, Germany, France, Luxembourg and Portugal participate.

Besides this, Indra has been participating for decades in international programs such as the Eurofighter, A400M, NH90, Meteor and ESSOR, as well as non-European projects and in the NATO environment such as ESSM, FLEPS, ACCS and many others.

Indra is one of the leading global technology and consulting companies and the technological partner for core business operations of its customers world-wide. It is a world-leader in providing proprietary solutions in specific segments in Transport and Defence markets, and the leading firm in Digital Transformation Consultancy and Information Technologies in Spain and Latin America, through its affiliate Minisait. Its business model is based on a comprehensive range of proprietary products, with an end-to-end focus and a high innovation component. In the 2019 financial year, Indra achieved revenue of €3.204 billion, with more than 49,000 employees, a local presence in 46 countries and business operations in over 140 countries.
HAL Establishes COVID-19 Care Centre in 16 Days, Hands it over to State Administration

Sensing the urgency to control rapidly spreading Pandemic, Hindustan Aeronautics Limited, has converted its Ghatage Convention Centre located on Old Airport Road, Bangalore into a Covid-19 Care Center (CCC) and handed it over to Bruhat Bengaluru Mahanagara Palike (BBMP). The facility having 160 beds with other supporting infrastructure like toilets, bath rooms etc. was created in 16 days, says R. Madhavan, CMD, HAL. Initially, the facility would be utilized for treatment of asymptomatic COVID-19 positive patients, says Mr. Alok Verma, Director HR.

A MoU was signed between HAL, represented by Venkateswara Rao, GM (CSR) and BBMP, represented by R Venkatachalapathy, Joint Commissioner, Mahadevapura Zone in the presence of senior Government and HAL officials.

Arrangements for doctors and paramedical staff and running of the facility would be taken care by BBMP. As part of its fight against COVID-19 pandemic, HAL has already contributed Rs 26.25 crores to the PM-CARES Fund (Rs. 20 crores under CSR head with employees contributing another 6.25 crores). HAL produced 300 aerosol boxes have been handed over to various state governments like Karnataka, Telangana, Kerala, Tamil Nadu, Uttar Pradesh, Rajasthan, Maharashtra and Gujarat. These boxes are used in hospitals. The company has also distributed personal protective equipment, thousands of masks besides supporting migrant labour by providing them food and shelter. HAL has identified over 600 beds to be utilized as a quarantine facility at its seven locations - Lucknow, Kanpur, Korwa, Hyderabad, Nasik, Koraput and Bengaluru.

Cobham Aerospace Connectivity has announced that a major customer, Adams Aviation Supply (New Addington, UK), has placed an initial stocking order for the Titan Digital Audio Management System. Adams will engage their marketing and distribution network in Europe to represent the new airborne audio line to OEM’s and aircraft integrators, and at various industry trade events.

Titan is a suite of audio controllers and audio management units designed for light-to-medium rotary and fixed-wing aircraft. With capabilities such as Spatially-Separated Audio, Relay & Simulcast, and Bluetooth Interface, Titan will enable agencies like Police, Fire, and Helicopter Emergency Medical Services (HEMS) to perform tactical missions using smaller aircraft, while enjoying the robust audio capabilities typically found in larger aircraft. Titan also delivers features specifically designed for the light business jet and turboprop markets, such as Clearance Recorder, High-Fidelity Music, and Stereo Headset Support.

Robin Walsh, Sales and Business development Manager for Adams noted, “We are extremely proud to partner with CAC in yet another industry-defining product range which will, as has been proven many times in the past, significantly improve performance in MCS air-to-ground communication, whilst providing operators a future-proof path to continued enhancements and fleet interoperability.”

Mickeal Daw, Cobham’s Product Line Manager, Audio, commented: “The European market is of prime importance to Cobham, and we’re proud to partner with Adams for the rollout of this high-functional density audio product line. Adams is uniquely positioned to represent Titan across the breadth and depth of fixed wing and rotorcraft OEMs and operators throughout the continent.”
In-line with its vision to ensure safe and hassle-free travel, IndiGo, has launched 6E double seat bookings, which will allow customers to book two seats for a single passenger. Customers will be able to opt for 6E double seat only at the time of booking creation on IndiGo’s website, which will be available for both passengers as well as the travel agents. The 6E double seat option will not be available through travel portals, IndiGo call centre, airport counters or after making the original single seat booking. The 6E double Seat Scheme will not attract any airports charges like PSF, UDF and will only be an airline component and GST, hence will be priced at a lower rate than the total fare paid for original booking. The charges for extra seat will be effectively up to 25% of the original booking cost. This offer is effective travel starting July 24, 2020.

Sanjay Kumar, Chief Strategy & Revenue Officer, IndiGo said, “Even though air travel is the safest mode of travel at this point, we understand the customers’ emotional need for safety. We had been receiving such requests and are happy to introduce the option to book two seats for a single passenger to ensure additional safety. 6E double seat will provide a stress-free flying experience to our customers. We are constantly working towards measures and services to strengthen air travel as the safest choice for travellers. We are confident that this option will enhance the passenger comfort and trust, augmenting the overall demand for air travel”.

The seat selection charges under the 6E double seat scheme will be applicable for both seats and it will be a mandatory selection requirement at the time of booking. Regular change & cancellation charges based on the type of fare purchased will be applicable on extra seat(s). The extra seat booking will not be entitled for additional baggage allowance for customers. The extra seat can also be used by passengers travelling with a large musical instrument or a child’s car seat or for special seating needs due to personal comfort, size or disability.

Meprolight – a member of the SK Group and a leading manufacturer of electro-optical systems, thermal, night vision equipment, and self-illuminated sights for military, law enforcement and civilian applications –introduces the Mepro FT Bullseye optical pistol sight to law-enforcement and HLS forces. FT Bullseye was originally developed for the civilian market. Its qualities, being the smallest optic sight and— fast target acquisition is unprecedented among other pistol-sights. That makes it particularly advantageous for law-enforcement professionals, for whom intuitive, accurate shooting in all lighting conditions with no batteries needed. It is easily installed on an existing pistol dovetail and is activated from the moment the sight is installed on the pistol.

According to Ilan Abramovich, V.P. Sales & Marketing – Defense, “The Mepro FT Bullseye sight is an innovative addition to our ever-growing aiming solutions for pistols. Meprolight offers over 180 types of aiming pistol sights for daytime and night-time operations based on various illumination sources - tritium, fiber and reliable LED illumination sources. The Bullseye’s enhanced capabilities meet law-enforcement forces’ needs”. Corporate VP Marketing & Sales, SK Group Ronen Hamudot noted that “Our advanced technologies serve all markets – civil, law enforcement, HLS and defense. We are proud of our flexibility to apply solutions to developing needs and keep loyal to our vision – always staying ahead, providing customers with the perfect answer to their new challenges”.

Meprolight Introduces its MEPRO FT Bullseye illuminated Pistol Sight
Airbus Defence and Space has signed a contract with the UK Ministry of Defence (MOD) to extend and enhance the Skynet fleet. This will involve the development, manufacture, cyber protection, assembly, integration, test and launch, of a military communications satellite, Skynet 6A, planned for launch in 2025. The contract also covers technology development programmes, new secure telemetry, tracking and command systems, launch, in-orbit testing and ground segment updates to the current Skynet 5 system. The value of the contract is more than £500 million.

Richard Franklin, Airbus Defence and Space UK Managing Director said: “Airbus is extremely proud to be awarded this critical UK defence contract continuing our long tradition as the UK national milsatcom end-to-end services provider. Satellite manufacturing, linked to support services, is a critical component of the Government-industry UK space strategy and this contract underpins the UK MOD’s and industry’s lead position in this sector. Building this military satellite will, like Skynet 5, lead to significant export opportunities in the years ahead, growing high value manufacturing jobs and supporting a diverse supply chain in this increasingly important sector.

“This contract for 6A demonstrates the strong working partnership we have with UK MOD, built on the success we have jointly achieved on the Skynet 5 system since 2003. Airbus is fully committed to delivering world-class military communications services to our Armed Forces across the globe, and look forward to delivering this step change in capability to the MOD,” he continued.

Defence Secretary Ben Wallace said: “A new, more advanced satellite capability will provide continued communications support to the UK deployed forces for many years. British defence must continue to innovate and transform, particularly in cyber and space. Investment in first-class equipment like this new Skynet satellite will keep us safe from the threats we face both now and in the future.”

The Skynet 5 programme, managed by Airbus, has provided the UK MOD with a suite of highly robust, reliable and secure military communications services, supporting global operations since 2003. Airbus has been involved in all Skynet phases since 1974 and this phase builds on a strong UK commitment to space manufacturing in the UK. The recent programme commenced by using the legacy Skynet 4 satellites and then augmenting them with a fully refurbished ground network before launching the Skynet 5A, 5B, 5C and 5D satellites between 2007 and 2012.

The Skynet 5 programme has reduced or removed many of the technical and service risks for the MOD, whilst ensuring unrivalled secure satcoms and innovation to UK forces. Through the many years of delivering an exceptionally reliable Skynet service the Airbus teams have managed to significantly extend the lifespan of the Skynet satellites many years beyond their design life, offering significant additional value for money and capability to the UK.

The Skynet 6A satellite will be based on Airbus’ Eurostar Neo telecommunications satellite platform. It will utilise more of the radio frequency spectrum available for satellite communications and the latest digital processing to provide both more capacity and greater versatility than Skynet 5 satellites. The satellite will feature electric orbit raising propulsion as well as electric station keeping systems for maximum cost effectiveness. Complete satellite integration will take place at Airbus facilities in the UK followed by testing using RAL Space testing facilities at Harwell in Oxfordshire supporting the UK Space Agency initiative for sovereign UK end-to-end satellite production and support.

Science Minister Amanda Solloway said: “Space technology plays an important role in supporting our military and keeping us safe, while also boosting the UK’s economy and enabling world-leading science and research. “With this major investment in Skynet 6A, the development of the National Satellite Test Facility and the launch of a dedicated innovation programme, we are setting a bold new ambition for the UK in space.”

The satellite is due for launch in 2025, and will have a minimum design lifetime of 15 years. Its orbital position will be announced closer to the launch date.
Helvetic Airways has signed a commitment with Embraer to convert four of their remaining firm orders to the larger E195-E2 aircraft. The original order, for 12 E190-E2s with purchase rights for a further 12, and conversion rights to E195-E2, was announced in September 2018. Embraer has so far delivered five E190-E2s to Helvetic Airways, and all deliveries of the remaining seven aircraft, including the four E195-E2s, will be completed before the end of 2021, with the majority in the first half of 2021.

The remaining firm order for the seven aircraft to be delivered has a value of USD 480 million, based on current list prices. With all the purchase rights being exercised, the deal has a list price of USD 1.25 billion.

In a move to diversify fleet capacity, Helvetic Airways will configure the E195-E2 with 134 seats in a single class layout, while their E190-E2s have 110 seats. This gives Helvetic Airways the ability to alter their offering for airlines and other customers and to meet the actual passenger demand for each mission; very useful in the current environment where demand is seeing significant fluctuations. This ability, to dynamically ‘rightsize’ to meet their customers’ demand, is operationally possible due to the common E2 cockpit allowing flight crews to operate across all E2 variants.

Helvetic Airways CEO Tobias Pogorevc, said “The Embraer E195-E2 strikes a good balance between seating capacity, range, fuel consumption and environmentally friendly operation. With between 120 and 150 seats, it has virtually no competition in the regional aircraft segment. Operating a single fleet – in terms of cockpit – with varying seating capacities will enable us to expand our organisation’s operational flexibility and autonomy.”

CAE GmbH awarded subcontract for German Eurofighter

CAE GmbH has been awarded a subcontract from Airbus Defence and Space to support the development of new and upgraded training capabilities for Germany’s Eurofighter program.

Airbus, acting as the prime contractor for the Eurofighter Pilot Synthetic Training System (PSTS) consortium in Germany, awarded the subcontract to CAE GmbH to support the development of two new Eurofighter full-mission simulators and an upgrade of two existing simulators at the main operating base in Laage. Specifically, CAE will have responsibility for providing the CAE Medallion-6000 visual system and synthetic environment solution for the Eurofighter simulators.

“We are pleased to collaborate with Airbus to continue our longstanding support of the German Air Force Eurofighter training program,” said Niels Kröning, General Manager, CAE GmbH. “The new Eurofighter simulators in Laage will expand the distributed mission training capabilities for the German Air Force and enable more advanced training to be conducted in the simulators.”

The Eurofighter Pilot Synthetic Training System consortium is the result of a collaboration between the German and Spanish Ministries of Defence. Airbus Defence and Space acts as the prime contractor with CAE and Indra included as industry partners.

CAE GmbH also provides on-site maintenance and in-service support services at Laage, Neuburg, Wittmund, and Noervenich, which are the four Eurofighter main operating bases in Germany.

Kazan Helicopters has certified the Ansat simulator

Kazan Helicopters of the Russian Helicopters holding company (part of Rostec State Corporation) has received positive qualification of Ansat helicopter training simulator’s compatibility to international standards. The evaluation was carried out by the Central Aerohydrodynamic Institute named after N.E. Zhukovsky (TsAGI).

The comprehensive Ansat simulator was tested for its compliance with the requirements of the International Civil Aviation Organization (ICAO). Evaluated characteristics included the layout and design of the cockpit, simulation of flight and engine dynamics, controlling on ground, helicopter systems, acoustic, visual and vibration effects and navigation. The assessment result was positive.

“We consider the certification of the Ansat helicopter simulator according to ICAO standards as one of the important achievements of our company. Our Aviation Training Center is now waiting for the first intake of students to pass the simulator training in August 2020. The training will be organized to foreign customers: pilot training is included in the price of the helicopter in all export orders”, pointed out Managing Director of Kazan Helicopters, Yuri Pustovgarov.

The simulator model was developed based on helicopter flight test data provided by the design bureau of the Kazan Helicopters. The cockpit and interior of the simulator are completely authentic. Instrumentation is replaced with simulator devices, but their appearance and functionality fully correspond to the originals.

The Ansat simulator is equipped with a visualization system that provides full visibility from the pilot’s seat. It can be used to reproduce two distinct areas: the city of Kazan along with the Kazan Helicopters flight test center, as well as the city of Sochi. A vibrating platform and audio
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system help to simulate the vibrational and acoustic effects of flight. Using the simulator, trained pilots will be able to maneuver the helicopter model in various conditions, including in dangerous and emergency situations.

The comprehensive Ansat simulator was designed and produced as part of the investment project “Development Concept for the Aviation Training Center of the Kazan Helicopter Plant of Russian Helicopters Holding Company”.

The KHP Aviation Training Center also has a comprehensive simulator for Mi-8MTV helicopter. The cabin of the simulator has been adapted to simulate training of pilots at night with night vision goggles. Besides, the simulator has a vibroacoustic unit which imitates vibration and sounds of a helicopter depending on the flight mode and conditions.

RAF to enhance capabilities through Collins Aerospace FasTAK™ Gateway

The Royal Air Force (RAF) has selected the Collins Aerospace Systems FasTAK™ Gateway to advance its tactical data link capabilities on the ground as part of the RAF’s Air Support Operations Squadron Digital Command and Control experimentation program. The FasTAK Gateway makes it possible to share a tactical view to all connected air, ground, and maritime units. Collins Aerospace is a unit of Raytheon Technologies Corporation.

“The FasTAK Gateway provides an affordable, complete Link 16 data link picture to tactical ground users and its modular design and software-driven integration approach enables Collins to reconfigure the system to add new data links in the future,” said Heather Robertson, vice president and general manager, Integrated Solutions for Collins Aerospace.

The FasTAK Gateway features the Collins Aerospace TacNet™ Tactical Radio Link 16 terminal along with data link processor software, running on mainstream laptop hardware that manages the data links, radio frequencies and data forwarding for the equipment in a lightweight, transportable container. The ruggedized system transitions from transport to operational in 20 minutes. It delivers certified Link 16, Variable Message Format (VMF), Situational Awareness Data-Link (SADL) and Cursor on Target (CoT) communications with growth to integrate with a future all-domain operational environment.

For more than 20 years, Collins Aerospace has provided data link and integrated system solutions for the U.S., NATO and coalition forces that have improved communication and speed for successful tactical operations.

Collins Aerospace Systems is a leader in technologically advanced and intelligent solutions for the global aerospace and defense industry. Collins Aerospace has the capabilities, comprehensive portfolio and expertise to solve customers’ toughest challenges and to meet the demands of a rapidly evolving global market. With 2019 net sales of approximately $26 billion, the business has 78,000 employees across more than 300 locations globally. It is one of the four businesses that form Raytheon Technologies.

Raytheon Technologies Corporation is an aerospace and defense company that provides advanced systems and services for commercial, military and government customers worldwide. With 195,000 employees and four industry-leading businesses — Collins Aerospace Systems, Pratt & Whitney, Raytheon Intelligence & Space and Raytheon Missiles & Defense — the company delivers solutions that push the boundaries in avionics, cybersecurity, directed energy, electric propulsion, hypersonics, and quantum physics. The company, formed in 2020 through the combination of Raytheon Company and the United Technologies Corporation aerospace businesses, is headquartered in Waltham, Massachusetts.

Embeyaer completes first Praetor 500 conversion

Embraer Services & Support has completed the conversion of a Legacy 450 to a Praetor 500 for the first time for an undisclosed customer. The conversion was performed at the Embraer Executive Jets Service Center at Bradley International Airport in Windsor Locks, Connecticut. The full process to convert a Legacy 450 (2,900 nautical miles range) into a Praetor 500 (3,340 nautical miles range) can be performed at the Bradley Service Center, as well as at Embraer-owned Service Centers in Fort Lauderdale, Florida, Sorocaba, Brazil, and Le Bourget in Paris, France.

“Embraer-owned Service Centers are well prepared with parts kits and skilled labor and are ready to bring the most disruptive and technologically advanced midsize business jet ever made, the Praetor 500, to our existing Legacy 450 customers, with the company’s primary vision of delivering the ultimate customer experience,” said Johann Bordais, President & CEO, Embraer Service & Support. “This conversion makes a great airplane even more industry leading.”

In order to generate the impressive range improvements synonymous with the Praetor 500, the level-sensing wiring in the fuel tanks were replaced, the over-wing gravity fueling ports were moved, the fuel-measurement system was relocated, and the wing ribs were reinforced to hold additional weight. These adjustments entailed updates to the flight control systems, including a new avionics load for the acclaimed Collins Aerospace Pro Line Fusion flight deck. Most noticeably, the iconic swept winglets of the Praetor were installed, and the placards and logos were replaced to officially convert the Legacy 450 into a Praetor 500. The conversion was made possible by the expertise of structures and avionics specialists, A&P mechanics, logistics teams, and engineers from Embraer operations around the globe.

MOD delegates capital procurement powers to Armed Forces

Considering the security environment due to prevailing situation along the Northern Borders and the need to strengthen the Armed Forces for the Defence of our borders, a Special Meeting of the Defence Acquisition Council was convened on 15th July 2020 under the Chairmanship of Defence Minister Rajnath Singh. and delegated the powers for progressing urgent Capital Acquisition Cases upto Rs 300 crores to the Armed Forces to meet their emergent operational requirements. This will shrink the procurement timelines and ensure placement of orders within six months and commencement of deliveries within one year.
Vision Systems Group Assembles its Forces

Following a reorganization project initiated at the end of 2019, the Vision Systems group announces the merger-absorption of its Smart Lite division by its Vision Systems Aeronautics division to form only one legal entity, Vision Systems. Its third business unit, Safety Tech, specializing in Advanced Driver-Assistance Systems for coaches, buses, motorhomes and urban trucks, and in driver protection doors for buses, remains under the aegis of the holding company now called Vision Systems Corporate.

The former Smart Lite division, dedicated to the design, production and marketing of dimmable shading systems and smart glass, particularly for the yacht, rail and special vehicle markets, will share its expertise with Vision Systems Aeronautics whose offer includes these solutions. The newly merged company Vision Systems will thus benefit from a synergy of resources and skills that will enable it to consolidate its position as a world leader in this field in all of its key markets.

Vision Systems will also continue to offer its range of high-end shades, cabin comfort management systems, as well as its innovative composite solutions for the aeronautic and marine industries.

The new entity will rely on its innovation skills to pursue the development of complete and tailor-made systems, allowing the company to meet the specific needs of its customers, at an international level, including through licensing and patent filing.

“Imped by the need to consolidate its position as a world leader in this area, the Vision Systems group benefits from sustained efforts to sustain our existing fleets and optimise the operational exploitation of new inductions in order to make IAF a formidable combat force.”

The SASOs’ Conference, which is held bi-annually, will be conducted on 02 & 03 Jul 20, wherein pointed discussions would take place towards operational capability enhancements, focused training to tackle contemporary challenges with available assets and automation efforts in the IAF.

IAF SASO’s Conference Discusses Operational Capabilities

IAF Senior Air Staff Officers’ Conference discussed operational capabilities as well as innovative composite solutions for the aeronautic and marine industries.

The former Smart Lite division was dedicated to the design, production and marketing of dimmable shading systems and smart glass, particularly for the yacht, rail and special vehicle markets. It will now form part of the newly merged Vision Systems, which will benefit from the synergy of resources and skills that will enable it to consolidate its position as a world leader in this field.

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The SASOs’ Conference, which is held bi-annually, was inaugurated by Chief of the Air Staff, Air Chief Marshal RKS Bhadauria and Vice Chief of the Air Staff, Air Marshal HS Arora. It will be conducted through video conferencing, in a first of its kind effort in the backdrop of the prevailing security environment and COVID-19 pandemic.

The CAS appreciated the operational readiness of IAF Commands and subordinate formations. He commended the effort put in towards integrated training of air warriors of all streams to meet the present and future operational requirements. The CAS emphasised the need for further enhancing our operational capabilities as well as improving serviceability of mission critical systems. He highlighted the need for sustained efforts to sustain our existing fleets and optimise the operational exploitation of new inductions in order to make IAF a formidable combat force.

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The new entity will rely on its innovation skills to pursue the development of complete and tailor-made systems, allowing the company to meet the specific needs of its customers, at an international level, including through licensing and patent filing.

“The reengineering of management processes as well as the new implementation of the teams linked to this merger will lead to a definite gain in operational efficiency. This will help support Vision Systems in its innovation and prospecting approach in order to gain new market shares.”

Jérôme Monvaillier, Managing Director of Vision Systems.

Headquartered near Lyon, France, with a production and sales unit in Florida, USA, and trade offices in Singapore, Dubai and Montreal, the Vision Systems group is a tier-one system supplier that designs, produces and markets complete bespoke solutions for the aeronautic, land transport and marine industries.

Vision Systems’ genuine expertise in shading systems including dimmable solutions places it today as the world leader in this area. Furthermore, the company is a major player in the Cabin Management Systems and composite solutions markets.

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EDGE, the Abu Dhabi-based advanced technology group for defence and beyond, announced that it has entered into a conditional agreement to acquire the remaining 40 per cent stake currently held by Lockheed Martin Corporation and Sikorsky, a Lockheed Martin Company, in Advanced Military Maintenance Repair and Overhaul Center (“AMMROC”).

AMMROC is the leading provider of military Maintenance, Repair, and Overhaul (MRO) services in the Middle East region. Both Lockheed Martin and Sikorsky have been shareholders in AMMROC since its inception in 2010, helping to develop military operation skills and capabilities within the country. AMMROC will continue to have a number of commercial agreements with Lockheed Martin and Sikorsky moving forward, maturing the parties’ relationship in new ways.

Upon completion of this transaction, AMMROC will become wholly owned by EDGE. AMMROC will continue to pursue the aircraft aftermarket business, enabling the UAE and other regional air forces to maintain operational readiness, airworthiness, and technical ownership of various rotary- and fixed-wing aircraft and platforms.

Speaking on the acquisition, His Excellency Faisal Al Bannai, CEO & Managing Director of EDGE Group, said: “Lockheed Martin and Sikorsky have played a pivotal role in developing the UAE’s MRO capabilities. As EDGE assumes full ownership of AMMROC and continues to pursue the military and civil MRO market with specialist skills, we recognise that such achievements are the outcome of our international partnerships. Going forward, we will continue to explore emerging business opportunities with Lockheed Martin and Sikorsky to further strengthen our relationship.”

In his comments, Robert (Bob) S. Harward, Lockheed Martin’s Chief Executive for the Middle East, said: “At Lockheed Martin, we are committed to building partnerships that strengthen the region’s security through defense, advanced technology and knowledge transfer programs. We are proud of our long-standing relationship with the UAE, that spans over four decades, and will continue to support and engage with EDGE across multiple platforms.”

AMMROC is the region’s only authorised Lockheed Martin C-130 Service Centre. It also provides MRO services for F-16 and is the depot MRO hub for comprehensive BLACK HAWK® components. The facility is equipped with a dynamic whirl stand to support rotary blades and transmission testing, making it a first in the region. It also has the region’s largest military MRO hangar capacities that comprises over 30 back-shops and a dedicated state-of-the-art paint facility.
IWI Expands its Offerings with Riot-Control Solution

Israel Weapon Industries, an SK Group Member and a leader in the production of combat-proven small arms for military forces, police units, law enforcement agencies, and governmental entities around the world – announces the expanding of its portfolio with a comprehensive riot-control solution. The newly offered solution uses versatile methods to maintain the public order and safety with minimum force application. These qualities make it – as intended – perfectly suitable for the operational use of Law Enforcement Agencies, Military Personnel, Police Units, Prison Services, and riot-control Special Forces.

IWI's riot-control solution, tailored to client's needs, includes conceptual and operative methodology, defensive products such as tactical anti-stab uniforms, anti-stab and bulletproof vests, tactical helmets, shield, multipurpose grenades and more, offensive tools such as multi-shot 12 gauge shotguns, 37-38mm launcher, 40mm launcher, ammunition, drones, and tactical courses for all levels.

"Civil disorder, characterized by extremists violently demonstrating, or even a legal and peaceful demonstration which escalated into an uncontrollable riot, can result in property damage and human casualties. There is a great importance to handle the situation with minimum use of force and lethal equipment to keep the public safe and retrieve order", says Ronen Hamudot, VP Marketing and Sales at SK Group.

"Only a well-structured methodology of proper use of law enforcement techniques, procedures, and tools will ensure the order and reestablish the confidence to the citizens". Hamudot explains that IWI's vast experience with proven track record as a solutions provider, for military forces and law enforcement agencies enabled the company to create a holistic solution that gives the authorities the right means to control a riot while minimizing the use of force and avoiding unnecessary casualties. "As the pandemic continues to spread around the world, and with its effect on different aspects of our lives, there is a greater need for such a solution to keep the civilians safe", he says.

IWI - Israel Weapon Industries, located in the center of Israel, is a world leader in small arms for over 85 years. IWI is a member of SK Group, which comprises companies that develop and manufacture a wide array of defense products for governmental entities, military units, police, and law enforcement agencies worldwide. IWI's best-known products include the TAVOR and the new TAVOR 7 in 7.62X51mm caliber, X95 (Micro TAVOR) and GALIL ACE Assault Rifles, the new ARAD and CARMEL 5.56X45mm caliber Assault Rifles, the GALIL SNIPER S.A. Rifle, the DAN.338 Bolt Action Sniper Rifle, the NEGEV Light Machine Gun 5.56 & 7.62mm, the legendary UZI SMG in its latest evolution – UZI PRO, the JERICHO pistols, and the new MASADA striker-fired pistols. The company’s firearms are developed in close collaboration with the Israel Defense Forces (IDF): IWI and the IDF join forces in developing these weapons, whose final configurations are the product of ongoing interaction, field tests, and modifications, resulting from combat requirements and experience. All IWI weapon systems comply with the most stringent military standards (MIL-STD) and ISO 9001 standards.
NEC Corporation and SITA announced a global partnership to develop market-leading solutions that enable a secure walk-through travel experience at airports, leveraging NEC’s I:Delight identity management platform together with SITA Smart Path and SITA Flex.

The partnership comes as airports and airlines increasingly look to low-touch and automated passenger processing in order to comply with new hygiene requirements following the global COVID-19 pandemic, in line with recommendations from Airports Council International and IATA.

Through the partnership SITA and NEC will further unlock the potential of seamless next-generation passenger processing solutions, making mobile enabled and touchless airport processes a reality. This will allow passengers to use their digital identity on their mobile phone whenever they travel at each step in the journey. Passengers will use their biometric identity to check-in, make payments, drop their bag, as well as pass through security, immigration and boarding by simply scanning their face at each step. Key touchpoints will automatically recognize you as a passenger, making steps such as bag drop and boarding effortless.

The two companies will collaborate to develop this ground-breaking solution by utilizing both companies’ global presence in the market and the combination of technology for Common Use Platforms and Artificial Intelligence (AI) solutions.

With cutting-edge identification technologies and AI solutions including the most accurate face recognition algorithm (*), NEC’s I:Delight platform (**) allows passengers who have opted to use the service to be identified quickly and with a high-degree of accuracy, even when passengers are on the move. SITA Smart Path and SITA Flex solutions are able to integrate mobile and NEC’s biometric technologies with existing common-use infrastructure and airline applications while delivering a smoother airport journey.

Masakazu Yamashina, Executive Vice President, NEC, said: “NEC is pleased to collaborate with SITA to provide ‘NEC I:Delight,’ which utilizes NEC’s cutting-edge digital identity solutions that capitalize on biometrics technologies to deliver a unified customer experience across a wide range of services.”

Raffie Beroukhim, Chief Experience Officer, NEC Corporation of America, and head of NEC Global Aviation Center of Excellence said: “We look forward to this partnership with SITA and the opportunity to develop and implement the most advanced platforms at airports throughout the world, thereby contributing to the digitization of the airline industry and making travel safer and more enjoyable.”

Barbara Dalibard, CEO of SITA, said: “In NEC we have another strong partner where together we are able to deliver to our airline and airport customers a more seamless, automated journey through the airport. We know that passengers value the benefit of a truly self-service experience. Leveraging SITA’s common-use footprint in more than 460 airports globally and NEC’s award-winning identity management technology, we are well placed to help our customers deliver a truly unique and efficient experience in the airport, particularly during these challenging times where there is increased focus on the health and safety of passengers.”

SITA is the IT provider for the air transport industry, delivering solutions for airlines, airports, aircraft and governments. Our technology powers more seamless, safe and sustainable air travel. Today, SITA’s solutions drive operational efficiencies at more than 1,000 airports while delivering the promise of the connected aircraft to more than 400 customers on 18,000 aircraft globally.

NEC Corporation has established itself as a leader in the integration of IT and network technologies while promoting the brand statement of “Orchestrating a brighter world.”
NAVDEX 2021

NAVAL DEFENCE EXHIBITION & CONFERENCE

ABU DHABI, UAE

DEFENCE TECHNOLOGY FOR THE FUTURE

The leading naval defence and coastline security exhibition in the Middle East and North Africa region returns to Abu Dhabi in February 2021.

NAVDEX 2021 will continue to attract influential VIPs, naval decision makers and investment companies from around the world to do business with international manufacturers and suppliers. Attracting more than 1,250 exhibitors and 108,000 local, regional and international trade visitors and officials from governments, industry and armed forces.

For detailed plans about NAVDEX 2021, please visit www.navdex.ae

To book an exhibition stand or a berth, please email shahla.karim@adnec.ae
IDEX 2021
INTERNATIONAL DEFENCE EXHIBITION & CONFERENCE
ABU DHABI, UAE

DEFENCE TECHNOLOGY FOR THE FUTURE

The Middle East and North Africa’s largest defence and security exhibition returns to Abu Dhabi in February 2021.

The global defence industry will continue to meet influential VIPs, decision makers, military personnel and key investors at IDEX 2021.

Attracting more than 1,250 exhibitors and 108,000 local, regional and international trade visitors and officials from government industry and armed forces.

For detailed information about IDEX 2021, please visit www.idexuae.com

To book an exhibition stand or outdoor space, please email shanila.karim@adnec.ae

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