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ISRO's PSLV C-51 to carry nano-satellite
built by city students



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indigenous content: HAL



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The Aeronautical Society of India
Bangalore Branch Building
New Thippasandra Post
Bangalore 560 075
Karnataka, INDIA
Phone No : +91 80 25273851
Email: editoraesi@yahoo.com
Website: www.aerjournalindia.com

Publication Team

Dr R Balasubramaniam
Dr S Kishore Kumar
Dr P Raghothama Rao
Mrs Chandrika R Krishnan
Mr Hemanth Kumar R
Mr Kumaran A K M

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Head Quarters

The Aeronautical Society of India
13-B, Indraprastha Estate
New Delhi 110 002, India
Tel: +91 11 23370516
Fax: +91 11 23370768



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2021

AERO INDIA

The Runway to a Billion Opportunities

Glimpses of Aero Show



AERO INDIA 2021 : A BIG STEP TOWARDS AATMANIRBHAR BHARAT



Aero India 2021 three-day mega event to showcase the prowess of Aviation Industry will begin from tomorrow at Bengaluru. The Curtain Raiser Press Conference chaired by Raksha Mantri for Asia's premier air show was held on 2nd February. Aero India-2021 will be inaugurated by Hon'ble Raksha Mantri Rajnath Singh and will commence with a flying display at Yelahanka Air Force Station. Shri Rajnath Singh was felicitated by Karnataka Chief Minister B.S. Yediyurappa on the occasion. Shri Rajnath Singh commended the organization of the biennial event this year amidst such challenges. He appreciated the conducive ecosystem and climate for investors created in Karnataka through the entrepreneurial spirit of its people. He said that the award of a huge contract of Rs. 48,000 crores to HAL was because of this spirit. Speaking on the COVID-19 pandemic, he added that countries were forced to impose restrictions to protect human lives and that while organizing Aero India 2021 all COVID-19 related advisories issued by the Union Home and Health ministries and state government regarding the use of masks, social distancing, RT PCR tests would be strictly followed. Shri Rajnath Singh said that with a dedicated virtual platform Aero India 2021 promises to be the world's first hybrid aero and defence exhibition with a concurrent exhibition integrating seminars, Business to business events, product displays etc. Shri Rajnath Singh enumerated the highlights of Aero India 2021 including inauguration of India pavilion – based on the theme of Rotary wings, Conclave of Defence Ministers of Indian Ocean Region, Conclave of Chiefs of Air Staff of various countries, India – Russia Military Industrial Conference, Startup Manthan etc. He said, more than 200 MoU partnership agreements are expected to be signed at the Bandhan event on 5th February. He added that the IOR Defence Ministers' Conclave would reinforce the relevance of the region and its continued importance for stakeholders from the perspective of trade, security and freedom of navigation. He said the event would provide an opportunity to share perspectives on common values and interests in the region. Chiefs of Air staff conclave will bring senior air force officers from across the world on a single platform enhancing cooperation and understanding of common threats and challenges. Raksha Mantri said over 540 exhibitors would showcase their defence manufacturing prowess. The event would help forge paths for engagement with global defence industry for India. He added that the decision to hold Aero India during this time was not easy due to the twin challenges of COVID-19 and the security challenge thrust on India on the Northern border. Chief Minister B.S. Yediyurappa said that it was a moment of pride for the people of Karnataka in general and for the people of Bengaluru in particular that the city was hosting Aero India for yet another year. He added that it was also a moment of pride for the state that Hindustan Aeronautics Limited had obtained the business deal for Light Combat Aircraft "Tejas". This is the 25th year of Aero India and the 13th edition of the event. Industry associations also felicitated Shri Rajnath Singh at the curtain raiser event for Aero India 2021. Dr. Ashwathnarayan C.N., Hon'ble Deputy Chief Minister of Karnataka, Shri Jagdish Shettar, Hon'ble Industry Minister of Karnataka, Shri Raj Kumar, Secretary, Department of Defence Production, Dr. G Satheesh Reddy, Secretary, DRDO, Kapil Mohan, Chief Secretary, Karnataka and other senior officials of the Ministry of Defence, Government of Karnataka, Hindustan Aeronautics Limited and several industry associations were also present at the event.

Source: <https://aeroindia.gov.in/>

SILVER JUBILEE of Aero India-21, Celebrating 25 Years in service of the Nation

Aero India- Asia's premier air show, steps into its 25th glorious year earmarked by the 13th edition of this biennial event, incepted in the year 1996, the first show took place in the picturesque 'Garden City' of Bangalore and the Air Force Station, Yelahanka, Bengaluru continues to host this prestigious Show ever since. Aero India has been breaking new ground edition on edition in its stellar display of air shows and static exhibitions. Testament to the success of the spectacular show put on by Ministry of Defence, Government of India is the exponential growth of Aero India in terms of exhibition space, a fleet of 20 aircrafts has today expanded to an area of over 28,386 sq. mts. And a fleet of over 61 aircrafts. This year, building in conformance to the prevailing pandemic, the event has 523 registered exhibitors with 449 Indian exhibitors and 74 Foreign exhibitors and anticipates participants from

over 35 countries, making it one of the most sought after shows in the Aviation and Aerospace industry. The higher number of Indian exhibitors echoes that the efforts of the Government of India towards 'Make for India and Make for the World' are well received by the Indian Aerospace and Defence (A&D) manufacturers.



Source: <https://aeroindia.gov.in/>

UNITED STATES AND INDIA DEFENCE PARTNERSHIP AT AERO INDIA 2021

United States participation in Aero India 2021 is another example of the deepening defense and strategic partnership between the United States and India. Don Heflin, U.S. Chargé d'Affaires, will lead a high-level delegation of U.S. Government officials and defense industry representatives to the event. "I am pleased to head this year's U.S. delegation to Aero India to show our continued commitment to strengthening U.S.-India defense cooperation, in line with India's status as a Major Defense Partner," Heflin said. "U.S. participation in Aero India 2021 reflects our increasingly close bilateral defense ties and our shared vision of a free and open Indo-Pacific region."

Source: <https://aeroindia.gov.in/>

RUSSIA AND INDIA THE PARTNERSHIP AT AERO INDIA 2021

This is the first time that Russian Government has allowed manufacturing of their OEMs' spare parts in a foreign country, indicating the strength of India-Russia cooperation. About 1000 types of spares are expected to be manufactured in India under this agreement, for which 30 Memorandum of Understanding (MoU) have already been signed so far between Indian companies and Russian Original Equipment Manufacturers for manufacturing of these spares in India. The Indian Navy, Indian Air Force and the Ordnance factory Board have issued RFPs for about 400 spares under the IGA.

Source: <https://aeroindia.gov.in/>

AERO INDIA 2021 GETS OFF TO A FLYING START

The Inaugural ceremony for Aero India 2021, Asia's largest Aerospace and Defence Exhibition was held at Air Force Station, Yelahanka, Bengaluru between February 03-05, 2021. This year Aero India 2021 has been organised in hybrid mode with a concurrent virtual exhibition to encourage maximum participation. Opening the proceedings Secretary (Defence Production) Shri Raj Kumar addressed the gathering and said that India has taken a leap in organising a completely COVID compliant Aero and Defence exhibition. He expressed his gratitude to ambassadors and delegates from more than 55 nations who were in attendance. He said that Aero India 2021 would provide a platform for exchange of ideas and forge partnerships in the aerospace and Defence sectors. He also provided a brief about the events to be organized during Aero India 2021, including the Chief of Air Staffs Conclave, the Bandhan ceremony and the India Pavilion. Later contract documents to produce Light Combat Aircraft Tejas were handed over by the Ministry of Defence to Hindustan Aeronautics Limited (HAL). Chairman and Managing Director, HAL Shri R Madhavan presented a model of the Light Combat Aircraft (LCA) Tejas to Raksha Mantri Shri Rajnath Singh. Addressing the gathering Raksha Mantri Shri Rajnath Singh expressed his happiness at the attendance of delegates from around the world at Aero India 2021. He said that the existing supply chains developed over the years by aerospace and engineering firms and an investor friendly government with simplified procedures and single window clearance mechanism makes Karnataka an attractive destination for industry. He expressed his gratitude to Chief Minister of Karnataka Shri B S Yediyurappa for extending full support in organising Aero India 2021. Shri Rajnath Singh said the exhibition would display the vast potential and the multifarious opportunities that our country offers in the field of defence and aerospace sector. He added that it promises to be the world's first ever hybrid aero & defence exhibition with a concurrent virtual exhibition making it a truly digital and global event. Shri Rajnath Singh also announced that the government plans to spend 130 billion dollars on military modernisation over the next seven years. He said that steps had been taken to strengthen the nation's security apparatus with domestic manufacturing and complex Defence platforms becoming the focus of the Aatmanirbhar Policy. He said that the government had enhanced Foreign Direct Investment in the Defence Sector up to 74 per cent through the automatic route and 100 per cent through the government route. Hailing the reforms brought in by the government since 2014 he said that they would create a conducive system for exports, foreign direct



investment and offset discharge. The Newly introduced (Buy Global-Manufacture in India) category of capital procurement in Defence Acquisition Policy 2020 allows outright purchase of equipment from foreign vendors and indigenous manufacture through an Indian subsidiary, a joint venture or an Indian agency. He said a large number of indigenous Defence equipment had been developed by Defence Research and Development Organisation to cater to the needs of the nation's defence forces. Shri Rajnath Singh said that the India pavilion at Aero India 2021 would showcase India's design and manufacturing supply chain associated with various facets of the rotary wing system. He expressed great happiness that HAL got the orders for 83 new indigenous LCA - Tejas MK1A for Indian Air Force valued at more than Rs 48,000 crore, the biggest "Make in India" defence contract till date. He said with a strong and diversified Micro, Small, Medium Enterprise sector composed of more than active 5000 units, India has the potential to become a reliable supplier of defence equipment to many of its friendly nations. Chief Minister of Karnataka Shri B S Yediyurappa said it was a matter of pride for people of Karnataka and Bengaluru for being selected to host yet another edition of Aero India. He said that the holding of Aero India this year was an expression of confidence in the ability of the state administration to tackle the COVID-19 pandemic and assured that his government has taken measures to ensure the safety of participants and delegates. The Chief Minister said that Karnataka made a significant contribution to the nation's aerospace and defence sector of India and was the first state to announce an aerospace policy with a proposed investment of close to Rs 14,700 crore and employment potential for about 10,600 people. He highlighted the role of Micro, Small and Medium scale enterprises in the growth of the country's industry. The Chief Minister said that "Laghu Udyog Bharati" and IMS foundation with the support of Government of Karnataka would be organising the MSME, Aerospace and Defence expo in Bengaluru from 27th to 29th September, 2021 to realise the potential of MSMEs and requested the support of the Ministry of Defence in this endeavor. He thanked Raksha Mantri Shri Rajnath Singh for reposing faith in the Karnataka Government for Aero India. Minister of Chemicals and Fertilizers Shri D V Sadananda Gowda, Chief of Defence Staff General Bipin Rawat, Chief of Naval Staff Admiral Karambir Singh, Chief of Air Staff Air Chief Marshal Rakesh Kumar Singh Bhadauria, Chief of Army Staff General M M Naravane, Defence Secretary Dr Ajay Kumar, Secretary, Department of Defence R&D and Chairman, DRDO Dr G Satheesh Reddy, Civil Aviation Secretary Shri Pradeep Singh Kharola and Defence Ministers, service chiefs and ambassadors of various countries were also in attendance. The event concluded with a glorious fly past as patriotic tunes played in the background, enthralling those in attendance.

Source: <https://aeroindia.gov.in/>

India to host Indian Ocean Region Defence Ministers' Conclave to strengthen vision of SAGAR

India will host Indian Ocean Region (IOR) Defence Ministers' Conclave on February 04, 2021 on the margins of Aero India 2021 Asia's largest Aero show to be held at Bengaluru from February 3-5, 2021. The broad theme of the conclave will be 'Enhanced Peace, Security and Cooperation in the Indian Ocean'. The event will commence with welcome address by Defence Secretary and addresses by Defence Ministers of different IOR Countries. Raksha Mantri Shri Rajnath Singh will give the concluding remarks. Till January 30, 2021, there is total confirmed physical participation from 18 countries including Defence Ministers of four countries (Maldives, Comoros, Iran and Madagascar), six Ambassadors/High Commissioners representing their countries (Australia, Kenya, Seychelles, Mauritius, Kuwait and Myanmar), Defence Secretary of Sudan and Service Chief of 10 countries. Also, six countries are either participating virtually or sending their recorded messages.

Source: <https://aeroindia.gov.in/>

Raksha Mantri Releases Export Compendium of DRDO

Release of DRDO Documents & Procedures by Hon'ble RM at Aero India 2021. Hon'ble Raksha Mantri released the Export Compendium of DRDO which consists of defence systems and platforms, which can be exported to friendly countries at Aero-India 2021 on the inaugural day. A major revision of Design, Development & Production of Military Airborne Stores (DDPMAS) document has also been released. DDPMAS document is followed by the aeronautics fraternity for design, development, production and certification of airborne systems. The new airworthiness framework

emphasizes on Atma Nirbhar Bharat for self-reliance, empowering the organisations and industries with liberal certification procedures. The document released by the certification agency CEMILAC would enable Defence PSUs, MSMEs and R&D Establishments to develop and deliver world class products to our Defence Services. Hon'ble Raksha Mantri also released a DRDO Monograph "Radiance in Skies – The Tejas Saga" during the function. The monograph authored by Air Marshal P Rajkumar (Retd) and Shri BR Srikanth highlights the interesting journey of DRDO's Light Combat Aircraft Tejas.

Source: <https://aeroindia.gov.in/>

Raksha Mantri Inaugurates India Helisphere

Hon'ble Raksha Mantri Shri Rajnath Singh inaugurated the India Pavilion during Aero India 2021 on 3rd Feb 2021 at Bengaluru. Hon'ble Chief Minister of Karnataka Shri B.S. Yediyurappa was also present during the event. With the theme on Rotary Wing Platforms- Helicopters, the Pavilion is named as 'India Helisphere' and depicts the glorious journey of Helicopters in the India. Shri Rajnath Singh unveiled the Light Utility Helicopter (LUH) - Military Variant, at Indian Pavilion. LUH, a 3-ton class new generation single engine helicopter, is indigenously designed and developed by Hindustan Aeronautics Limited for deployment in diverse operating conditions to replace the ageing fleet of Cheetah / Chetak helicopters. Advanced Light Helicopter (ALH) - Civil was also unveiled to the World by Hon'ble Raksha Mantri during the event. At the pavilion, more than 30 companies of UAV ecosystem of the country are exhibiting the wide spectrum of indigenously manufactured rotary UAVs/ drones. A glimpse of future platforms like IMRH and RUAV 200 which will shape the future of Rotary Wing Platform in India, is also given in the Pavilion.

Source: <https://aeroindia.gov.in/>

HAL Bags Contract for 83 Light Combat Aircrafts

Inaugural Ceremony of Aero India 2021, in the presence of Hon'ble Raksha Mantri Shri Rajnath Singh, the Contract for 83 Light Combat Aircraft Tejas was handed over to Hindustan Aeronautics Limited (HAL). The Cabinet Committee on Security under the Chairmanship of Hon'ble Prime Minister had approved procurement of 73 LCA Tejas Mk-1A fighter aircrafts and 10 LCA Tejas Mk-1 Trainer aircrafts at a cost of Rs. 45,696 Cr along with Design & Development and Infrastructure sanctions worth Rs. 1,202 Cr on 13th January, 2021. The contract is valued at close to Rs. 48,000 crores. This is the largest ever Defence contract for indigenous manufacture till date. This significant step provides great impetus to indigenous fighter aircraft capability of the nation. A stellar display of Tejas platform was made today in Aero India 2021 in the presence of large number of international and national participants. The deliveries of all 83 aircraft shall be completed in 8 years from now. HAL will be delivering the first 3 aircraft in the 3rd year and 16 aircrafts per year for subsequent 5 years. On 2nd February Raksha Mantri Shri Rajnath Singh inaugurated the second production facility (Plant II) to augment the production capacity and ensure timely supply of aircraft to IAF. The induction of Light Combat Aircraft Tejas Mk-1A in Indian Air Force will enhance operational capabilities and improve the aircraft strength.

Source: <https://aeroindia.gov.in/>

AATMANIRBHAR IN DEFENCE AND AEROSPACE

Aligned with PM's mission of 'Atmanirbhar Bharat', Government of Gujarat along with Confederation of Indian Industry (CII) and Society for Indian Defence Manufacturers (SIDM) as Industry Partners is organized the Gujarat State Seminar on the subject 'Atmanirbhar in Aerospace & Defence' on 4th February 2021, at Aero India 2021, Bengaluru, highlighting defence & aerospace manufacturing prowess of Gujarat, one of the most progressive states of the country. This session focused on highlighting ways for boosting the defence equipment production sector at the state level, to contribute to the national goal. The session also imparted information about the upcoming manufacturing destination in the State, The Dholera Industrial City. Gujarat and its transformational model with excellent infrastructure facilities, robust industrial ecosystem, transparent & investor-friendly policies, supply chain network is set to become a key link in the Indian defence and aerospace manufacturing sector. Gujarat with a plethora of manufacturing companies is on the path of being a key player nationally and with its strong base, can also be aligned to be the Defence Hub of Asia.



2011
AERO INDIA
The Runway to a Billion Opportunities

The State endeavors to connect the industry, especially MSMEs, with the International and Indian Aviation Tier-1 and Tier-2 companies, to build the right eco-system for Atmanirbhar Bharat.

Source: <https://aeroindia.gov.in/>

Startup Manthan 2021

Startup Manthan 2021 an event dedicated to bring together startups, MSMEs and the corporate and military representatives, to identify productive ways forward is being organized as a part of Aero India on 5th February 2021, from 0930 hrs to 1200 hrs IST by the Innovations for Defence Excellence (iDEX), Defence Innovation Organisation (DIO), Ministry of Defence, Government of India.. It is being organised at IAF Convention Centre in Air Force Station, Yelahanka, Bengaluru. Aero India brings together Indian and global aerospace sector representatives, and showcases innovations and technological developments in various sectors. Specifically, startups and innovators get a pride of place in all deliberations and conversations. The Startup Manthan 2021 will provide a unique opportunity for firms associated with iDEX-DIO to showcase their capabilities, products, & service to the targeted audience of industry leaders and business decision makers. It will also involve interactive sessions with renowned speakers both from national and international defence sectors. The event is expected to be inaugurated by the Hon'ble Raksha Mantri accompanied by the top officials of India's defence establishment. Followed by a session expressing the voices and views of global key stakeholders in the defence sectors and innovation, including speakers from USA and Israel, Industry Captains, top entrepreneurs and Venture Capitalists attending in person and remotely. The event will also see felicitation of various iDEX winners by the dignitaries from DISC 4, iDEX4Fauji and Open Challenge 1.0 categories.

Source: <https://aeroindia.gov.in/>

ATMANIRBHAR BHARAT IGNITED THE COUNTRY'S SPIRIT OF INNOVATION AND COLLABORATION

A total of 201 MoUs, product launches and technology transfers were concluded at the Bandhan ceremony, held on the last day of Aero India 2021. These included the formal handing over of the Advanced Light Helicopters MK-III to the Indian Navy and Coast Guard (CG), commencement of Performance based logistics of CG fleet, initial operational clearance of Army version of Light Utility Helicopter etc. In his address Raksha Mantri said that Bandhan exemplifies the spirit of public-private partnership in defence and aerospace sectors and have forged strategic ties that are poised to transform defence and aerospace manufacturing. 128 MoUs, 19 ToTs, 4 Handing Overs, 18 Product Launches and 32 major Announcements were made at Aero India. Raksha Mantri reiterated India's intention to bring down defence imports by at least \$ 2 billion by 2022 that to encourage defence related item manufacturing in the country. He informed that 138 proposals worth over \$37 billion for domestic manufacturing were approved between 2016 and 2019. He also applauded the order for 83 Light Combat Aircraft MK 1A given by the Government in December last year. Further, he spoke of the negative list of 101 items for import as a means of providing opportunities to domestic manufacturing sector. Highlighting the importance of the requisite eco-system for the growth of the defence industry RM said that the Government had decided to create two defence corridors with 6,800 crores pledged by both public and private industries till now. Raksha Mantri reiterated that a collaborative, cooperative and collective approach to defence production and exports is the way forward. Speaking of Foreign Direct Investment (FDI) he added that inflows had increased from \$180 million between 2001-2014 to \$290 million from 2014-2020. RM also spoke of the need for a robust domestic manufacturing base for defence export potential of the country. He mentioned that target of increasing the country's defence base from \$11 billion to \$25 billion by 2025 including an export component of \$5 billion. He highlighted the important role of the aerospace sector in reaching this target. He informed that defence exports grew from Rs 2000 crores to Rs 9000 crores from 2015-2020 with a vast majority spearheaded by the private sector. He mentioned the government's far reaching reforms in the country with great stress on indigenisation, and increasing procurement from the domestic industry. With reference to the Indian aerospace industry he said that the aero components sector is set to grow from Rs. 30,000 crores today to Rs. 60,000 crores by 2024. He enumerated the cost competitiveness of India's manpower resources, availability of abundant, specialist capabilities and geographical advantages as reasons for its emergence as a global and regional Maintenance, Repair and Overhaul hub. Hailing the agreements concluded at Aero India 2021 Raksha Mantri said they would give impetus to 'Make In India' and 'Atmanirbhar

Bharat' and assured the gathering that the Ministry of Defence would do everything possible to ensure the agreements are implemented.

Source: <https://aeroindia.gov.in/>



CAS Launches 'HAVAI' Portal

The Chief of the Air Staff, Air Chief Marshal RKS Bhadauria formally launched the operationalisation of 'HAVAI' portal in the presence of Mr R Madhavan, CMD, HAL, Director (Ops)-HAL, DCAS-IAF and AOC-in C, MC-IAF during the ongoing Aero India 2021. The E-portal is developed as part of inter-organization information sharing system (IOIS) under 'Digital India' initiative. Such an initiative has been taken up between two government organisations (IAF and HAL) for the first time. The e-portal will optimize long-term material planning and reduce the repair and overhaul cycle time. It will also reduce the time for finalization of tasking and budgetary quotation processes. Welcoming the initiative, CAS said, "The E-portal will bolster the competencies of the Indian Air Force and HAL and lead to increased serviceability of IAF weapon systems. This would facilitate secure information sharing between IAF and HAL for better coordination, improved transparency and faster decision-making." Mr Madhavan said, "The Customer-centric portal would go a long way in leveraging the benefits of information sharing in real time. It will also enable the visibility of HAL repair milestones, provide instantaneous budgetary quotations against IAF orders and give information on status of supply against Aircraft on Ground and repair tasks undertaken by HAL Divisions".

Source: <https://aeroindia.gov.in/>

CURRENT AFFAIRS

Ka-226T utility chopper has 33% indigenous content: HAL

The total indigenous content of the Ka-226T utility helicopters, to be jointly manufactured locally by India and Russia with Transfer of Technology (ToT), is between 27%-33%, said Chairman and Managing Director of Hindustan Aeronautics Limited (HAL) R. Madhavan. The final deal is held up as the Russian proposal of 62% indigenous content in assembled helicopters falls short of the tender requirement of 70%, "In Ka-226T when we talk of 70% indigenous content, it is not the same as the Light Combat Aircraft (LCA) 52%. The 70% is of the Russian content. Engine from Safran and avionics from other countries are not accounted for in this. Balance is what we are looking and from there 70% is taken. Taking the whole helicopter, the indigenous content is about 27-33%," he said in response to a question from The Hindu at Aero India. Russians were unable to offer 70% of this and they offered upto 62%; that too which will come only in Phase-4 of production, he stated. Defence Ministry is also asking for better split of indigenous production from Phase-2 onwards and increasing it to 70% by including more items, Mr. Madhavan said, adding that the items are being identified for including in the Transfer of Technology to bring the indigenous content up to 70%. The Ka-226T is meant to replace the ageing and obsolete Cheetah and Chetak fleet of the Army and Air Force and the total technical life of these will start finishing from 2023 onwards. As per the Russian proposal, the localisation plan would be spread over four phases, beginning with 3.3% indigenisation for 35 helicopters, going up to 15% for next 25 helicopters, 35% for 30 helicopters in Phase 3 and eventually to 62.4% indigenisation in Phase 4 for the last 50 helicopters. The helicopters would be manufactured by a joint venture — India Russia Helicopters Limited (IRHL) between Hindustan Aeronautics Limited (HAL) and Russian Helicopters. As reported by The Hindu last December, faced with an urgent need for utility helicopters, the Army is preparing to approach the Defence Ministry for a waiver on the indigenous content requirements to take the deal forward. In 2015, India and Russia had concluded an Inter-Governmental Agreement (IGA) for at least 200 Ka-226T twin engine utility helicopters estimated to cost over \$1 billion with 60 helicopters to be directly imported and remaining 140 manufactured locally. The first helicopter would be delivered within 36 months from the signing of the contract and order completed in eight years. There is a requirement of around 400 such helicopters and the balance requirement will be met by the indigenous Light Utility helicopter (LUH) developed by HAL, the Army variant of which received its Initial Operational Clearance (IOC) at Aero India.

Source: The Hindu

Gaganyaan astronauts may splash off Gujarat coast after space flight

Gujarat may have the honour of welcoming back the Gaganyaan astronauts when they return after their seven-day mission in space. Nilesh Desai, director of ISRO's Ahmedabad-based Space Application Centre (SAC), said this at a presentation organized by Space Geeks Mumbai and other organisations. "As of now, the mission is expected to splashdown off Veraval in Gujarat in the Arabian Sea, and as a contingency measure even a zone in the Bay of Bengal is being considered. The exact place will be finalized soon," he said in the webinar. The crew will be recovered in 15 to 20 minutes and, thereafter, they will be placed under quarantine. "Only after they complete their quarantine period and get back to work, can we declare the mission over," he said. Veraval is known as a hub of fishing industries in India and is 6km away from the famous Somnath temple. Finance minister Nirmala Sitharaman had underscored the importance of the Gaganyaan mission for the nation in her Budget speech on February 1. The unmanned test mission of Gaganyaan is slated, provisionally, towards the end of the year, and the manned flight next year. The much-awaited lift off will be from Sriharikota. The programme suffered a slight set back because of the Covid-19 pandemic. Desai said the size of the crew module has been slightly reduced because of the weight constraints on the GSLV Mark 3 rocket. With a crew of either two or three, who underwent training in Russia, the flight will operate in the 275-400 km low-earth orbit, passing over India two times in the morning and two times in the evening. Throughout the weeklong mission, ISRO's Master Control Facility at Hassan in Karnataka and the Telemetry, Tracking and Command Network at Bengaluru will be communicating with the crew, in addition to different channels of communication through satellites. With considerable emphasis on safety of the crew, ISRO is human rating all the sub systems in the orbiter module in which the crew will

fly, as well as the launch vehicle and the launch pad. Desai also announced that the mission span of the Chandrayaan-2 orbiter has been extended to 7.5 years because of excellent fuel management. “The extended life will give an opportunity for lunar mapping and the science payloads will generate new knowledge about the moon,” he said.

Source: Times of India

Defence Minister Inaugurates HAL's Second LCA Plant, Calls LCA Pride of India

The Defence Minister, Mr. Rajnath Singh inaugurated the second plant of HAL's LCA Division here today. He lauded the efforts made by HAL to increase the production capacity of LCA which is going to be the backbone of IAF fighter fleet in years to come. “HAL's new LCA facility is example of how ‘Aatmanirbhar Bharat’ is shaping and HAL deserves the largest indigenous order of 83 LCA Mk-IA. LCA is pride of India and sends the right message to others that India can make fighters of class in-house. The fighter is superior in many ways when compared to others fighters in its category besides being cost effective. I compliment HAL for working through the COVID times and bringing out this facility. The Company has a lot of talent and more orders should come in its way in future. We cannot depend on others on security issues and therefore will make HAL stronger, whatever it takes”, he added. Mr Raj Kumar, Secretary, Defence Production said HAL has taken timely steps proactively to set up the facility well ahead of receiving the order. Mr. R. Madhavan, CMD, HAL said the Defence Minister's visit is a great moral booster to HAL. The phase -1 of the facility getting ready on 35 acres of land will enable HAL to enhance its production capacity to 16 from the current eight aircraft every year. Mr Aravind Limbavali, Minister in Karnataka Govt, Air Marshal Sandeep Singh, DCAS, Dr. Tessy Thomas, DG (Aero) and many other senior officials from defence fraternity were present on the occasion. The State of the art machines such as CNC profilers, 5 axis machining centers etc., for producing technologically challenging, High pressure fluid cell press machine, Test rigs, specialized facilities for Heat Treatment, special processes and hangars for structural assembly of aircraft are being created in New LCA Complex. Production tooling and productivity improvement initiatives have also been undertaken by adopting latest simulation software packages under capacity augmentation.

Source: <https://hal-india.co.in/>

HAL Receives RFP for Basic Trainer HTT40 from IAF

Bengaluru, February 4, 2021: HAL has received a Request for Proposal (RFP) from the Indian Air Force for their Basic Trainers requirement here today at the on-going Aero India 2021. The documents were handed over to Mr. R. Madhavan, CMD, HAL by Air Marshal Sandeep Singh, DCAS and Mr. V. L. Kantha Rao, DG (Acquisition), Ministry of Defence. The RFP is for 70 aircraft with additional clause for 38 more. The certification will be given against the PSQR. The production will take place at HAL's two manufacturing units at Bengaluru and Nashik. The RFP has come within six years from the first flight of HAL which is shortest time-line in aircraft industry. The trainer will have more than 60 percent indigenous content and is supported by agencies such as CEMILAC, RDAQA, ASTE and others.

Source: <https://hal-india.co.in/>

HAL Receives Provisional Certificate of Indigenous Engine and Flight Display Unit, (EFDU) from CEMILAC

HAL received the Provisional Certificate of Engine and Flight Display Unit, (EFDU) indigenously developed for Jaguar DARIN III fighter aircraft platform at Bandhan program during Aero India 2021 today. Mr Arup Chatterjee, Director (Engg and R&D) received the Clearance Certificate from Mr A P V S Prasad, Outstanding Scientist and Chief Executive (Airworthiness), CEMILAC. Mr R Madhavan, CMD, HAL said this development would not only lead to self-reliance but also enable HAL to develop further similar smart instrument display system and Multi-Function Display for various aircraft platforms. The EFDU developed by Mission and Combat Systems R & D Centre (MCSRDC), HAL is a flight

critical system displaying engine fuel and flight parameters required for flying the aircraft. In case of failure of primary flight display unit, EFDU provides necessary engine, fuel, hydraulics and navigation data required for get-you-home functionality on a single 4"X5" AMI LCD display. This EFDU will replace an Imported Engine and Flight Instrument System (EFIS) Unit thereby giving boost to the 'Aatmanirbhar Bharat' initiative.

Source: <https://hal-india.co.in/>

HAL's LUH (Army Variant) Receives IOC

The Light Utility Helicopter (LUH) received the Initial Operational Clearance (IOC) for the Indian Army from CEMILAC here today at the Aero India 2021 in the presence of Defence Minister, Mr. Rajnath Singh. Mr R Madhavan, CMD, HAL said the thrust is being given by HAL for indigenous R&D programmes towards self-reliance and enhancing operational effectiveness of Armed Forces. Mr Arup Chatterjee, Director (Engg. and R&D), stated that, the performance of the basic helicopter in all terrains and under all weather conditions is satisfactory. HAL is currently in the phase of integrating and flight-testing mission role equipment on LUH. HAL is fully geared up to fulfill the requirements of the customers in time bound manner. The LUH is a 3-ton class new generation single engine helicopter indigenously designed and developed by Rotary Wing Research and Design Centre of HAL with features suitable for operations in the diverse operating conditions unique to India. The LUH will replace the ageing fleet of Cheetah / Chetak helicopters operated by the Services. The LUH is powered by a single turbo shaft engine Ardiden 1U from M/s. Safran Helicopter Engine (SHE), France with adequate power margins to accomplish high altitude missions in Himalayas with ease. LUH is equipped with Smart Cockpit Display System (Glass Cockpit), state-of-the-art HUMS (Health & Usage Monitoring System) and is designed for various utility and armed roles. All certification activities like Ground testing, Ground Test Vehicle endurance runs, system testing, Flight testing including hot weather trials, cold weather trials, sea level trials and hot weather high altitude trials have been completed. Based on the flight trials carried out, all PJSQR requirements for basic helicopter certification have been complied satisfactorily.

Source: <https://hal-india.co.in/>

HAL Hands Over ALHs to the Indian Navy and Indian Coast Guard

HAL today handed over three Advanced Light Helicopter (ALH Mk III) to Indian Navy and two ALHs to Indian Coast Guard as part of its 16 ALHs contract at the ongoing Aero India 2021. The helicopters were handed over by Mr. R. Madhavan, CMD, HAL to Admiral Karambir Singh, Chief of Naval Staff and Mr. K. Natarajan, DG, Coast Guard in the presence of Defence Minister, Mr Rajnath Singh. "The remaining helicopters from the contract are under various stages of production, flight tests and we plan to deliver all the helicopters within the contract delivery schedules despite production slowdown due to COVID restrictions" said, Mr Madhavan. ALH has clogged close to 3,00,000 cumulative flight hours and has proven its mettle in versatile operations. The ALH Mk III is fitted with state-of-the-art Glass cockpit and powerful Shakti engine. The contract involves integration of 19 major systems with the existing ALH MK III that include IFF MKXII & ATC Xpdr with ADS-B Out, V/UHF Communication System, Traffic Alert and Collision Avoidance (TCAS-I), SAR Homer system, Automatic Deployable Emergency Locator Transmitter (ADELT), Loud Hailer, Radio altimeter, Rescue Basket, Medical Intensive Care Unit (MICU), IADS System, AFCS, Digital Video Recording System (SSDVR), Automatic Identification System (AIS), High Intensity Search Light (HISL), Pressure Refueling System, Control grips, EO POD Rev III, Surveillance Radar System and 12.7 mm Gun system.

Source: <https://hal-india.co.in/>

TECHNOLOGY

ISRO's PSLV C-51 to carry nano-satellite built by city students

When ISRO's PSLV C-51 rocket takes off from its launch pad in Sriharikota on February 28, one of its payload will be a nano-satellite designed right here in Nagpur. A team of 30 students and faculty from GH Raisoni College of Engineering have built one of the three satellites which will be part of the UNITYsat project destined for Lower Earth Orbit (LEO). The other two satellites have been built by Jeppiaar Institute of Technology, (Sriperumpudur) and Sri Shakthi Institute of Engineering and Technology, (Coimbatore). These three will piggyback a ride, 440 kms high, on the PSLV C-51 rocket, whose primary load is Brazil's Amazonia-1 satellite. Sachin Untawale, project mentor of GHRCE Satellite Program said the project's completion is fruition of a year-long effort. "It was in January 2020 when we first got in touch with the authorities who were spearheading this project. Our director Shreyas Raisoni and I flew down to Bengaluru for meetings with officials and soon we were on board. There is no grant or anything involved here and Raisoni College has borne the entire Rs35 lakh expenses for it," said Untawale. While the word satellite conjures up images of big bulky metal contraptions, the nano-satellite category is in a different league altogether. It resembles a regular flat tiffin box which school students carry. This square metal version of the 'tiffin box', however, weighs around half a KG and is 10 CMS wide and 3 CMS high. It's immediate purpose is to check the strength of signals being beamed back to the Earth monitoring station. "The signal strength testing can then help us ascertain its commercial usage in the future," said Untawale. To build it, Untawale got together an interesting mix of students with five each coming from electronics, electrical, computer, mechanical and artificial intelligence streams. "I also added faculty members from those streams to guide the students," said Untawale. While the project started in mid-January, soon Covid-19 struck and lockdown prevented mobility of students and faculty members. "We ensured that they all had online access to continue planning the design. The manufacturing was being done in Bengaluru while the design and technology was all from our Nagpur team," said Untawale. Pace picked up as months went by and relaxation in lockdown eased many obstacles. "Now our part is completely done and the only thing remaining is for ISRO to launch it," said Untawale. Once the rocket reaches LEO, the UNITYsat satellites will be released in space. Untawale said, "The three satellites will then remain settled just a metre apart from each other and maintain that formation. Its signals will be monitored from the Earth station located at our college campus."

Source: Times of India

HAL Signs Framework Purchase Agreement with Elbit Systems for Supply of Digital Overhead Head Up Display Systems

HAL entered into an agreement with Elbit Systems Electro Optics Elop Ltd., Israel for supply of Digital Overhead Head Up Display Systems (DOHS) during the recently concluded Aero India-2021. The Digital Overhead HUDs will be initially manufactured in existing facility of HAL's Division at Korwa. A dedicated facility will be augmented progressively in proportion of manufacturing volume. HAL and Elbit Systems have envisaged a mutual co-operation to upgrade its technological base and acquire high end technology on Digital Overhead HUD System which is primarily used in transport aircraft worldwide. The Digital Overhead HUD with modern optics provide sharp brightness, larger field of view and larger head motion box. Earlier, HAL's Korwa Division entered into licensed Transfer of Technology agreement with ELOP Electro-Optics Industries Ltd, Israel for setting up the D-level maintenance and manufacturing facilities of CRT based HUD (front) in the year 2000 and 2003, respectively. More than 500 HUDs have been supplied for various Indian platform such as Su-30MKI, Jaguar and MiG-27M upgrade.

Source: <https://hal-india.co.in/>

Workshop on Incubators/ Accelerators for a dynamic space start-up ecosystem

Confederation of Indian Industry (CII) and ISRO jointly organized a workshop on “Incubators/Accelerators for a dynamic space start-up ecosystem”, on February 4, 2021 from 1400 hours IST onwards in virtual mode. The primary objective of this workshop is to bring forth a greater synergy between the DoS and incubators/accelerators in India, showcasing intent of Department to provide support and guidance to the start-ups working in the space sector. Capacity Building Programme Office (CBPO) of ISRO took the lead in organizing this very important workshop of incubators and accelerators for the benefit of start-ups / start-up enthusiasts in the space sector. Secretary, DOS / Chairman, ISRO delivered the inaugural address and inaugurated the workshop. He informed that this workshop will provide insights to build a strong ecosystem for a long sustainability. He has advised incubators and accelerators present in the work shop to deliberate on the issues and share their views to make the space startup programme a grand success. Shri R Ramanan, Mission Director, AIM, NITI Aayog and Shri Anil Agarwal, Joint Secretary, DPIIT also addressed and emphasized the importance of building the space start-up eco system and government support programmes for encouraging the start-up incubators including seed funding. Incubators and accelerators participated and shared their experiences & views. More than 250 people participated and more than 750 people watched the workshop live streaming.

Source: <https://www.ISRO.gov.in/>

PES varsity students to launch second microsatellite on Feb 28

Students at PES University are preparing to launch their second microsatellite (RSAT) on February 28 with support from the Defence Research and Development Organisation (DRDO). The students launched their first satellite in 2016. Around eight students and seven faculty members were involved in designing the RSAT. The programme was headed by senior faculty member Dr Sambashiva Rao. Configured and developed at PES University, the RSAT would carry the satellite-based automatic identification system (SB-AIS) to monitor ships on high seas and provide vital information about ship movement. Students and faculty involved in the RSAT programme said it would be launched into about 500 km polar sun-synchronous orbit. RSAT is a 3-axis stabilised agile microsatellite weighing about 15 kg and measuring 300mmx300mmx300mm in size with deployable solar panels, they added. The satellite payload receives AIS signals transmitted by ships in VHF band, which it stores onboard, processes and transmits the ship's information to the ground station in X-band through a high gain phased array antenna during ground station visibility period, they added. PES University Chancellor Prof M R Doreswamy told a press conference: “Based on the successful completion of the project carried out for the NRB, PES University proposes to develop SB-AIS technology to create opportunity for students to gain practical experience in space technology and help the country to be on a par with other nations in SB-AIS applications.” A team of research associates at the varsity is developing a Kannada search engine. PES University has provided Rs 10 lakh for the project to develop a search engine that would understand the context of the Kannada text. “We also intend to develop a huge data set of Kannada text which can help all other natural language processing related to projects,” the team said. Rs 52L salary offer Six students at PES University have received a package of Rs 52 lakh per annum from a US-based company during the campus placement, the highest in the varsity's history.

Source: <https://www.deccanherald.com>

BUSINESS

Boeing announces tie-up for P-8I patrol, IAF VIP aircraft

Aircraft manufacturer Boeing announced strategic collaboration agreements with Air Works of India for the Maintenance, Repair and Overhaul (MRO) of the Navy's P-8I long range maritime patrol aircraft and the VIP transport fleet of the IAF. "This strategic agreement with Air Works positions us to generate significant value for our defence customers locally by delivering faster turnaround, exceptional operational capability and mission readiness on Boeing aircraft," said Surendra Ahuja, Managing Director, Boeing Defence India in a statement at Aero India. The Navy operates nine P-8I and will receive another aircraft by year end. A proposal for six more P-8Is is also under negotiation. Air Works undertakes base maintenance for ATR 42/72, A320 and B737 fleet of aircraft from its facilities in Mumbai, Delhi, Hosur and Kochi. It also undertakes modification and assembly of rotary-wing aircraft and is an Authorized Service Centre (ASC) for Bell and Leonardo helicopters. The Boeing India said the collaboration is an important first step under its recently launched initiative, the Boeing India Repair Development and Sustainment (BIRDS) hub, which is an in-country network and alliance of suppliers led by Boeing that envisions a competitive MRO ecosystem for engineering, maintenance, skilling, repair and sustainment services of defence and commercial aircraft. The hub aims at growing capabilities in heavy maintenance, component repairs, training and skilling of IAF and Navy maintainers, it said. An important aspect of the hub is training programmes to increase skilled manpower by developing sub-tier suppliers and medium, small and micro enterprises (MSMEs) to build high-quality MRO capabilities in India, it said.

Source: The Hindu

HAL, MIDHANI Sign MoU for Collaboration for Development and Production of Composites Raw Materials

Bengaluru, February 4, 2021: HAL and MIDHANI signed a Memorandum of Understanding (MoU) at the ongoing Aero India 2021 today for development and production of composite raw materials. This is the first time that such an MoU has been signed for composite raw materials. The MoU was signed by Mr R. Madhavan, CMD (HAL) and Dr S K Jha, CMD (MIDHANI) in the presence of other Senior officials. Mr R Madhavan said composites are one area where HAL will collaborate. Composites raw materials, mainly in the form of Prepregs used in platforms like LCA, ALH, LCH and LUH are currently imported. Mr S K Jha, CMD, MIDHANI said that this is the major step forward in the area of composite materials. HAL is not only taking care of frontline aircraft production but also raw materials. There is no equivalent proven Indian approved/qualified supplier for various types of Prepregs (Carbon, Aramid, Glass types etc.) for the Aircraft applications. This creates dependency on foreign OEMs, which is likely to continue in future indigenous programs. Aligned with "Atmanirbhar Bharat" initiative, efforts need to be made to develop and manufacture such Prepregs in India through collaboration. The usage of composites in the Aerospace is going to exist and increase, particularly for fighter Aircrafts/Helicopter because of its inherent advantages over metallic raw materials. In addition, similar requirement exists for other Aerospace and Defense programs including those of Indian Space Research Organization (ISRO), Defence Research Development Organization (DRDO), and National Aerospace Laboratories (NAL).

Source: <https://hal-india.co.in/>

HAL, GE Aviation Sign Contract for Supply of Forgings

Hindustan Aeronautics Ltd today signed a contract with GE Aviation for development and supply of ring forgings for GE Aviation military and commercial engine programs. The five-year contract valued over INR 100 crores (USD 15 M), involves supplying both steel and nickel alloy forgings for shrouds, cases, rings and seals. Mr Chandrashekhar

Yavarna, Senior Director, Global Sourcing Strategy, GE Aviation handed over the contract document to Mr M S Venkatesh, Executive Director, Foundry Forge Division. With this contract award, GE Aviation has initiated the development of a raw material supply chain in India as part of its “Make in India” and “AatmaNirbhar Bharat” strategy. The award of contract followed HAL’s successful bidding in GE’s Global request for quotes (RFQ). The ring forgings will be manufactured at HAL’s newly established, state-of-the-art ring rolling facility at the Company’s Foundry and Forge Division in Bengaluru. The division has, after a rigorous audit process, obtained GE Aviation approvals for its quality system and special processes. Foundry & Forge Division of HAL, Bangalore Complex is supplying Ring forgings for Defense & Civil Aerospace requirements for the last 3 decades. Current contact from GE Aviation for their Global Aero engine requirements is a reaffirmation of HAL’s capabilities in the field of Ring Forging manufacturing and is a significant step forward in country’s efforts in becoming a major player in global Original Equipment Manufacturers (OEM) supply chain.” Said Mr. Amitabh Bhatt, Chief Executive Officer (CEO), Bangalore Complex. We are pleased to enter this agreement with Hindustan Aeronautics Limited for these critical forgings. HAL’s investment in developing this capability and their new facility positions them as a world-class supplier, and we look forward to continuing strong partnership and joint success with HAL,” said Vince Kinman, Executive Forging Sourcing for GE Aviation. HAL’s Foundry & Forge Division in Bangalore specializes in manufacturing of seamless rolled rings in aluminum, nickel & titanium alloys and various grades of steel for civil and military aero-engines and space applications.

Source: <https://hal-india.co.in/>

HAL and Rolls-Royce Expand Partnership with MRO and Supply Chain MoUs for Adour and Trent Engines

Hindustan Aeronautics Limited (HAL) and Rolls-Royce have agreed to expand their partnership in India for collaboration in two significant areas – expanding the supply chain for both Civil and Defence Aerospace and establishing an authorized maintenance centre for Adour Mk871 engines to support Rolls-Royce’s global customers. Through these new collaborations, the two companies will build on their rich partnership of over 60 years, wherein Rolls-Royce engines have been ‘Made in India’ and supported by HAL under license from Rolls-Royce. Mr. R Madhavan, CMD, HAL, said, “We are looking at new areas of cooperation and exports to countries which Rolls-Royce and HAL together contribute to in aerospace application.” Kishore Jayaraman, President, Rolls-Royce India and South Asia said, “We value our long-standing partnership with HAL and are proud to have been serving the Indian Armed Forces together for several decades now. Our journey with HAL is the original ‘Make in India’ story that started in 1956 when our Orpheus engines were first manufactured in India. We are delighted to take this partnership to the next level through collaborations for sourcing as well as to set up servicing and maintenance support for our Adour engines. We share strong synergies with HAL and as we look at future programmes, we believe there is immense potential to further build on our shared capabilities.” Alex Zino, Executive Vice President – Business Development and Future Programmes (Defence), Rolls-Royce said, “We are proud of our long and rich history of partnering in India and providing the power to protect through many decades. We have been making in India for more than 60 years and we believe that now is the time to move from ‘Make in India’ to ‘Create in India’. We are committed to co-develop future Defence Technology with India, in India, for India and the global market. In partnership we will work to deliver economic benefit and achieve India’s vision of self-reliance in the Defence sector. Today, we are delighted to further expand our valued partnership with HAL as we continue co-building capabilities in the Indian ecosystem to support global markets, in addition to further serving the needs of a future-ready defence force in India.” Rolls-Royce and HAL have signed a Memorandum of Understanding (MoU) to establish an Authorized Maintenance Centre for Adour Mk871 at HAL to support international military customers and operators. HAL already has the capabilities and capacity to support a larger customer base, with over 30 years’ experience in MRO of the Adour engines in India, under license from Rolls-Royce. The two companies have also signed a ‘Letter of Intent’ (LoI) to work towards making Adour Mk871 engine parts in India for several international customers. In addition, HAL has recently been awarded new business with Rolls-Royce to supply forgings including shrouds, cases and seals for Rolls-Royce’s Trent family of engines and for the Pearl 15 engines. These parts would be manufactured at HAL’s Foundry and Forge Division at its state-of-the-art facility in Bengaluru. Mr R Madhavan said the

new business award by Rolls Royce for their flagship civil aero engine program, as an outcome of their global RFQ is a reiteration of the customer's confidence in HAL's Foundry and Forge Division's proven track record of excellent quality and delivery performance besides cost competitiveness. These partnerships will further strengthen Rolls-Royce's regional service footprint and also help catapult India as a global hub for defence sourcing, assembly, and MRO services. Attendees at the announcement included Louise Donaghey, Sr. Vice President (Defence), Rolls-Royce (joining virtually), Abhishek Singh, Vice President (Defence), Rolls-Royce and B Krishna Kumar General Manager, HAL Engine Division.

Source: <https://hal-india.co.in/>

HAL, Safran Sign MoU for Collaboration in the Development, Manufacture, Maintenance, Training and Upgrade of High-thrust Aero-Engines

HAL and Safran Aircraft Engines, France signed an MoU today at Aero India 2021 to explore opportunities for strategic business cooperation that leverage the complementary talents and capabilities of the both parties and support development of a robust ecosystem for aero-engines in India, consistent with the goals of the Government of India's Make in India initiative. The MoU was signed by Mr. D. Maiti, Executive Director (Corporate Planning) and Mr. Pierre Dickeli, CEO (Safran India) in presence of other senior officers during "Bandhan" event in Aero India 2021. The MoU's scope encompasses a wide spectrum including transfer of key manufacturing technologies, manufacturing & MRO of M88 (Rafale) and other engines, development and production of high thrust aero-engines related to cooperation.

Safran Helicopter Engines is HAL's key partner in engines for HAL's helicopters like Chetak, Cheetal, Light Utility Helicopter, Light Combat Helicopter and Advanced Light Helicopter. HAL and Safran Helicopter Engines have successfully co-developed 'Shakti' Engine for Advanced Light Helicopters and Light Combat Helicopter. HAL has manufactured more than 450 Shakti engines in India at HAL Engine Division in Bengaluru.

Source: <https://hal-india.co.in/>

Dr. K. Sivan, Chairman, ISRO/Secretary, DOS had a meeting with the new Head of Australian Space Agency and signed an amendment to the existing India – Australia MoU for space cooperation

Dr. K. Sivan, Chairman, ISRO/ Secretary, Department of Space had a virtual meeting with Mr. Enrico Palermo, Head, Australian Space Agency on February 17, 2021. Both leaders signed an Amendment of the '2012 India – Australia Inter-Governmental MoU for cooperation in Civil Space Science, Technology and Education' in the presence of Indian High Commissioner to Australia and Australian High Commissioner to India. This Amendment makes Department of Space and Australian Space Agency as the Executive Organisations and provides scope for other related entities to conclude implementing arrangements for specific cooperation activities. Both leaders have also reviewed the status of on-going cooperation activities in earth observation, satellite navigation, space situational awareness and establishment of transportable terminal in Australia to support India's GAGANYAAN programme.

Source: <https://www.ISRO.gov.in/>

MoU signed with M/s CE Info Systems Pvt Ltd. (MapmyIndia)

Department of Space has today (11th Feb 2021) entered into an MoU with M/s CE Info Systems Pvt Ltd., a Indian Geospatial Technology company in New Delhi developing location based Software Service and AI based solutions. Through the MoU, the combined geospatial expertise of the Department and CE Info Systems will be leveraged through their respective Geoportals. This Collaboration will enable both the teams to jointly identify & build holistic geospatial solutions utilizing the Earth Observation Datasets, NavIC, Web Services & APIs available in MapmyIndia, Bhuvan, VEDAS and MOSDAC Geoportals. Shri R Umamaheswaran, Scientific Secretary, ISRO, signed the MoU on behalf of DOS and Mr Rakesh Verma, CMD, M/s CE Info Systems Pvt Ltd signed from the company side.

Source: <https://www.ISRO.gov.in/>

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