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DRDO scouts for R&D partners

On the lookout for collaborators in six advanced military technologies

The Defence Research and Development Organisation (DRDO) is looking for potential partners to co-develop an engine for its planned Advanced Medium Combat Aircraft (AMCA) and five other future technologies, its chairman G. Satheesh Reddy said on Monday.

It is on the lookout for collaborators to realise the other military technologies that it hopes to have in around five years — Unmanned Combat Aerial Vehicles (UCAVs) and UAVs, materials, sensors, avionics, and artificial intelligence, he said at the inauguration of a two-day international seminar connected with Aero India 2019.

“In all six areas, we are looking for partners with the capability and experience, within the country or outside. An aeroengine of the 110-kilo Newton type that we want for the AMCA is not available today. We will evaluate and involve them in research and development. Materials development is another very important area for making aircraft or missiles light and stealthy [or undetected],” he said on the sidelines of the seminar on emerging frontiers in aerospace technologies.

Dr. Reddy, who is also secretary, Department of Defence R&D, said industry would be enlisted at the beginning of a project so that it can begin production as a natural partner. At present, the focus is on consolidating ongoing R&D activities and ensuring they reach the logical end, he added.

Innovators tapped

He said indigenous technologies were being given a push. Minor innovators and startups are also being tapped for new concepts that the DRDO can try out. The new time-bound ‘Dare to Dream’ challenge has received 1,000 responses from individuals and startups

<http://www.thehindu.com/news/national/drdo-scouts-for-rd-partners/article26305726.ece>



A saga of the Indian AWACS

Following this. in the mid-eighties, India started the study project and submitted its report recommending the design of Indian AWACS.

Bengaluru: At the time when low flying to avoid radar detection was predominant, the Americans in 1973, brought in new Operational Requirements (OR) for the design and development of Airborne Warning and Control System called ‘AWACS’, but their initial Operational Clearance (IOC) version of AWACS started flying in 1978.

Following this, in the mid-eighties, India started the study project and submitted its report recommending the design of Indian AWACS. After a gap, a project known as Airborne Surveillance Platform (ASP) was sanctioned by DRDO and an organization known as Centre for Air Borne System (CABS) was established in 1991 in Bengaluru.

The project envisaged the development of a prototype AWACS mainly with an intent of developing an airborne radar fitted on the 'AVRO' or HS 748 platform inside a rotodome with the radar antenna and other subsystems such as transmitter, receiver, signal processor and the display inside the cabin. The aim was achieved and resulted in the collection of several information such as clutter performance for an airborne radar, etc.

However, in 1999, before completing all the goals set for the project, the aircraft with the ASP system crashed, bringing the efforts on Indian AWACS to a grinding halt.

After a gap of five years, in 2004, a programme known as Airborne Early Warning and Control System (AEW&C) was sanctioned by DRDO to its lab, CABS, with a condition that the radar should be an Active Electronically Scanning Array (AESA) radar with no mechanical rotation.

The Operational requirement (OR), however, could be finalized with IAF only in 2007. Accordingly, the system was developed with Embraer 145 aircraft and with the support of consortium of other DRDO labs and private industries. The same was handed over to IAF as IOC configuration in AERO India 2017 by the then defence minister Manohar Parrikar. This system, like other such systems in the world, has all and more capabilities.

<https://www.deccanchronicle.com/nation/current-affairs/190219/a-saga-of-the-indian-awacs.html>



Tue, 19 Feb 2019

B-52 bombers to be showstopper at Aero India

NEW DELHI: Having already bagged lucrative Indian defence deals worth \$17 billion just since 2007, the US is pulling out all the stops for the AeroIndia slated to kick off at Bengaluru on Wednesday.

Apart from displaying its C-17 Globemaster-III airlifters, F-16 and F/A-18 fighter jets, there will also be a fly-by by the iconic B-52 Stratofortress bombers from the Andersen USAF base at Guam during the show.

The Boeing-manufactured B-52 Stratofortress aircraft is a long-range subsonic strategic bomber, which can carry up to 32,000 kg of weapons with a combat range of 8,800 miles without aerial refueling. The B-52 bombers, which will fly over Bengaluru during the inaugural day of the airshow, are assigned to the 23rd Expeditionary Bomb Squadron at the Andersen base," said a US embassy statement.



US ambassador Ken Juster, in turn, said this would be the largest-ever American participation in Aero-India, which will include defence, state and commerce officials as well as 28 private companies. "The US and India are committed to strengthening defence cooperation, in line with India's status as a Major Defense Partner (MDP). Defence acquisitions are an important component in deepening our bilateral ties and contributing to a balanced trade relationship," he added.

In another mega deal in the pipeline, India recently issued the "letter of request" to the US government for the Rs 13,500 crore acquisition of 24 naval multi-role MH-60 'Romeo' helicopters,

armed with torpedoes and missiles for potent anti-submarine warfare capabilities, as was first reported by TOI.

The government-to-government deal for the MH-60 choppers, manufactured by Sikorsky-Lockheed Martin, under the US foreign military sales (FMS) programme is expected to be inked within a year. India has brought most of its weapon systems from the US, like the C-17 Globemaster-III strategic airlift aircraft, C-130J "Super Hercules" planes and M-777 ultralight howitzers, through the FMS programme. The US, of course, is now also aggressively hawking its F/A-18 or F-16 fighter production line for the IAF's over \$20 billion "Make in India" competition for 114 jets as well as the Navy's quest for 57 carrier-capable fighters. India and the US are also in advanced talks for 22 armed Predator-B or weaponised Sea Guardian drones.

<https://timesofindia.indiatimes.com/india/b-52-bombers-to-be-showstopper-at-aero-india/articleshowprint/68055583.cms>



Tue, 19 Feb 2019

Defence among 10 accords inked between India and Argentina

STATESMAN NEWS SERVICE
NEW DELHI, 18 FEBRUARY

India and Argentina on Monday signed ten accords, including one on defence cooperation, and issued a joint declaration expressing their determination to combat terrorism in all its forms and manifestations in the wake of the Pulwama attack.

The two countries also decided to upgrade their multi-faceted cooperation to a strategic partnership after talks between Prime Minister Narendra Modi and visiting Argentina President Mauricio Macri.

Argentina became the 72nd country to sign the

framework agreement for joining the International Solar Alliance (ISA).

The agreement for defence cooperation was signed by Minister of State for Information and Broadcasting (Independent Charge) Rajyavardhan Singh Rathore on the Indian side and Argentina Foreign Minister Jorge Fourie.

The other accords were in areas like tourism, broadcasting, pharmaceuticals, agriculture and civil nuclear energy.

The defence cooperation agreement is significant since Argentina proposes to undertake joint ventures with India in this area and also participate in 'Make in India' pro-

gramme. A team of defence officials from India is expected to visit Argentina in March to find ways to step up defence ties.

In the special declaration related to terrorism, Prime Minister Narendra Modi and the Argentina President stressed that terrorism was a global scourge that must be fought and terrorist safe havens rooted out in every part of the world.

They resolved that India and Argentina would fight together against this grave challenge to humanity. They committed to strengthen cooperation against terrorist threats from groups listed in relevant UN Security Council resolutions.

बेंगलुरु में एयरो इंडिया शो में दिखेगी अमेरिकी झलक

बेंगलुरु, (भाषा) कर्नाटक के बेंगलुरु में 20 से 24 फरवरी के बीच आयोजित हो रहे एयरो इंडिया शो में एफ/ए-18 सुपर हरनोट समेत अमेरिकी नौसेना के विभिन्न साजोसामान की एक खेप को प्रदर्शित किया जाएगा। इसका मकसद भारत और अमेरिका के बीच रक्षा सहयोग को मजबूत करना है। इसके अलावा, अमेरिकी रक्षा मंत्रालय के 100 से ज्यादा कर्मी कार्यक्रम में अमेरिकी शिफ्टमंडल में शामिल रहेंगे।

भारत में अमेरिकी राजदूत केनेथ आई जस्टर ने कहा कि अमेरिका और भारत रक्षा सहयोग को मजबूत करने के लिए प्रतिबद्ध हैं। वह एयरो इंडिया शो में शिफ्टमंडल की अगुवाई करेंगे। उन्होंने कहा, " मैं यहां एयरो इंडिया में सबसे बड़ी अमेरिकी भागीदारी के लिए यहां आकर प्रसन्न हूं।" उन्होंने यहां एक बयान में कहा कि हमारे द्विपक्षीय संबंधों को गहरा करने में रक्षा खरीद एक अहम घटक है और यह संतुलित व्यापार रिश्तों में योगदान देता है।

इसके अलावा अमेरिका के वाणिज्य मंत्रालय एवं विदेश मंत्रालय के अधिकारी भी कार्यक्रम में हिस्सा लेंगे। उन्होंने कहा, 'हमारी दोनों सेनाएं आसमान में और समुद्र में नौवहन की स्वतंत्रता की रक्षा करने और आतंकवाद तथा हिंसक चरमपंथ से निपटने के लिए मिलकर काम करती हैं।'



बेंगलुरु में सोमवार को एरो इंडिया 2019 से पूर्व अभ्यास के दौरान उड़ान भरते फाइटर विमान सुखोई-30 और सारंग। (छाया : प्रे.द्र.)

Aradar to predict ‘guerilla rains’ in Tokyo

Ahead of the Olympics, Japan wants an accurate system to predict weather in place

With an eye on the Tokyo 2020 Olympics, Japanese researchers are developing a new system to accurately forecast torrential downpours — known in Japan as ‘guerilla rainstorms’ — 30 minutes before they strike.

Scientists have created a high-tech radar capable of producing a three-dimensional map of a rain cloud in 30 to 60 seconds. They say this is a significant improvement on existing systems that measure only parts of a cloud in up to five minutes.

Along with the radar, installed last year at Saitama University, just north of Tokyo, the team is also using radio waves to estimate the amount of water vapour in the air to improve their forecasts.

The waves slow down depending on the volume of vapour in the air, making for a more accurate forecast, said Katsuhiko Nakagawa, director of the Remote Sensing Laboratory at the National Institute of Information and Communications Technology (NICT).

Japan is one of the most seismically active regions in the world and routinely experiences severe natural disasters, including earthquakes, floods and landslides that kill dozens of people every year.

Because of that, the nation has created sophisticated early-warning technology and disaster mitigation systems, and regularly holds emergency drills in schools.

Sudden, localised torrential rains can cause killer flash floods, submerge roads in low-lying areas, or overflow drainage systems.

Organisers of the Tokyo 2020 Olympics and the Rugby World Cup this year have voiced concern that extreme weather phenomena could throw events into chaos.

“The summer Olympic/Paralympic Games are coming up. Particularly during summer, we see lots of guerilla downpours,” said Nakagawa.

“We believe our technology will be able to provide useful data so that people hosting outdoor events can hold them safely,” he told *AFP*.

In the future, the technology may assist organisers of other outdoor events, like fireworks festivals and sporting competitions, or may result in precise, localised weather services released only in affected towns. Nakagawa said that with more research, he was hoping to offer an extended warning “lead time” before a severe downpour arrives.

<https://www.thehindu.com/news/international/a-radar-to-predict-guerilla-rains-in-tokyo/article26305547.ece>