

DRDO accepts Army's challenge for building world class missiles

By Ajit Kumar Dubey

Looking to procure a quick reaction air defence system, the Indian Army wants the DRDO to provide missiles which are far better than what foreign vendors have offered it for the purpose of taking down enemy fighter aircraft, drones and helicopters.

The research agency has also responded positively and accepted the challenge to manufacture a world-class missile system.

The Indian Army is looking to acquire eight regiments of Quick Reaction-Surface to Air Missiles (QR-SAMs) for taking down targets at around 20 kilometres for the Army Air Defence and replace the Soviet-era OSA-AK air defence systems.

"The specifications given to the DRDO for development of the QR-SAM suggest that the Army wants the research agency to produce a better system than the ones offered by the foreign vendors," government sources told Mail Today.

As per the original plan, the foreign vendors were supposed to supply three regiments for meeting immediate operational requirements of the army, while the DRDO had to produce five regiments indigenously under the 'Make in India' programme.

"There are specifications like the speed of the missile for which the DRDO has been asked to develop a system, which can move at the speed of 700-800 metre per second, while the requirement for foreign vendors is significantly less," sources added.

Similarly, the range and capability of the radar sought by the Army from the DRDO is significantly higher than what they want from foreign vendors, they said.

The DRDO has accepted the challenge to develop a worldclass air defence system and is working hard to complete the programme within the 48-month time. The project is scheduled to come up for discussion during a high-level meeting of the Defence ministry under defence minister Nirmala Sitharaman later this month.

A QR-SAM is different from normal air defence system, as the missiles are required to be mobile during operations involving tracking and targeting enemy aircraft or drones in case of an aerial threat.

The DRDO took up the programme only recently, and it has already carried out two to three tests of the QR-SAM; and has assured the government for readying the missile system for user trials by the beginning of 2019. The foreign vendors looking to supply the QR-SAM missiles are from Israel and Russia.

The army has been insisting on going for immediate procurement from foreign vendors as it has been assured that the three regiments would be supplied within two years of signing the contract.

However, there has been a view from the DRDO that all the systems should be produced by them and its production agencies.

Mail Today had first reported that previous defence minister Arun Jaitley scrapped the Army programme of buying two short-range surface-to-air-missile regiments from foreign vendors in favour of the Aakash missiles, which helped the country save `34,000 crore worth of foreign currency from going out of the country.

In a number of other programmes, the government has been favouring indigenous equipment over foreign ones to create jobs and promote 'Make in India'.

The QRSAM is being jointly developed by the DRDO and Bharat Electronics Limited.

The missile system has the potential to engage multiple targets within a range of approximately 30 km, with the configuration of two vehicles for area air defence. The missile is being equipped for quick reaction and the system is all-weather enabled.

The missile is a truck-mounted one with 360 degree rotatable, electronic-mechanically operated, turret-based launch unit.

The air force has recently acquired the Israeli SPYDER QR-SAMS for protection against threats from Pakistan and China and started their deployment on the borders.

<https://www.indiatoday.in/mail-today/story/drdo-accepts-army-s-challenge-for-building-world-class-missiles-1190636-2018-03-16>

International Business Times

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Akash missile at DefExpo 2018: Fast facts about India's supersonic rocket

DRDO's supersonic Surface-to-Air Missile (SAM) Akash is primarily used to hit aerial targets such as fighter jets, cruise missiles, and air-to-surface missiles

By Rohit KVN

Ministry of Indian Defence is hosting the tenth edition of the biennial DefExpo in Chennai next month (April 11-14).

This year, the central government in a bid to give impetus to the ambitious 'Make in India' initiative and project the country as the new export for defence equipment, is offering more space for Public Sector Units (PSUs) including Hindustan Aeronautics Ltd (HAL), Defence Research and Development Organisation and domestic players such as Kalyani Group and Tata Advanced Systems and others, to showcase their equipments at the venue.

DefExpo organizers have confirmed that 42 international defense diplomats and companies are participating in the event. Besides HAL's aircraft, DRDO is also vying to sell its advanced missiles, and among them, Akash Surface-to-Air Missile (SAM) has the potential to attract foreign buyers.

Here Are Key Facts About DRDO's Made-In-India Akash Missile:

- *DRDO's Akash (meaning sky) surface-to-air missile is manufactured by Bharat Dynamics Limited (BDL) for Missile Systems and Bharat Electronics (BEL) for other radars and control centers*
- *Akash is primarily used to hit an aerial target such as fighter jets, cruise missiles, and air-to-surface missiles*
- *Akash is a medium-range missile with 30 km operating range having 18km flight ceiling (maximum altitude)*
- *Akash is a supersonic missile with a maximum speed of 2.5mach (approx. 3,087 km per hour)*
- *Akash can carry a warhead weighing up to 60 kg with command guidance system*

[Note: With Command guidance system, a missile receives signals via ground station or an aircraft via radio control (or, in a wire-guided missile, through a wire connecting the missile to the launcher) to where to steer in order to intercept the target]

DRDO's Akash is primarily used to hit an aerial target such as fighter jets, cruise missiles, and air-to-surface missiles. Akash runs on ramjet-rocket propulsion system, which not only offers thrust for the missile throughout most of its flight and also has the highest maneuver capability

- Each Akash battery comes with four self-propelled Launchers having 3 Akash SAMs a piece, a Battery Level Radar - the Rajendra, and a Command post (Battery Control Centre).
- Aakash is already under service of the Indian Army and the India Air Force
- Akash is one of the five indigenous missiles developed by the Defence Research and Development Organisation (DRDO) under the Integrated Guided Missile Development Programme (IGMDP). Other four are Agni (Intermediate-range surface-to-surface missile), Trishul (Short-range low-level surface-to-air missile), Nag (Anti-tank missile) and Prithvi (surface-to-surface missile) series

Besides Akash missile, DRDO is also showcasing nuclear-capable Dhanush short-range ballistic rocket and 155mm class howitzer Advanced Towed Artillery Gun(ATAG).

Also, HAL will also be showing off its Advanced Light Helicopter (ALH) - Dhruv, Light Combat Aircraft (LCA) – Tejas, Light Combat Helicopters (LCH).

In the run-up to the next month's DefExpo 2018, we will be pushing a series of posts on individual military equipment and aircraft with features.

<http://www.ibtimes.co.in/akash-missile-defexpo-2018-fascinating-facts-about-indias-supersonic-rocket-764029>



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Indigenous module for submarines undergoing trials

All Scorpènes will be equipped with AIP technology in due course

The indigenous Air Independent Propulsion (AIP) module, which enhances the ability of submarines to stay under water, is in an advanced stage of trials, a senior officer of the Navy said on Friday. It is being developed by the Defence Research and Development Organisation (DRDO). All Scorpène submarines will be equipped with it in due course.

“The DRDO AIP is in an advanced stage of experimental trials. Once proven on shore, it has to be tested on a marine platform,” Vice-Admiral Srikanth said, speaking at the launch of a four-part series by the Discovery channel on Indian submariners to commemorate 50 years of the Navy’s underwater arm.

Asked whether the Navy would order three additional Scorpène submarines, Vice-Admiral Srikanth said a decision would be made after the current project was completed. “Yes, there is speculation, and even demand, to have three additional submarines at Mazagon Dock Limited. Since we already have the production line, along with expertise, the option can be looked into. But first, the existing project should complete on time.”

Earlier, the Navy planned to install the AIP module on the fifth and sixth submarines. But delays in development meant it could not be done before the last two submarines were launched.

The first Scorpene submarine *Kulvari* has joined the Navy. It will go for a normal refit in 2023. The next two submarines are in various stages of sea trials. Under a revised plan, the AIP module will be installed on the submarines during upgrades. However, it is a complex and costly task.

Six Scorpene submarines are being made at Mazagon Dock Limited under technology transfer from France.

<http://www.thehindu.com/news/national/indigenous-module-for-submarines-undergoing-trials/article23274795.ece>

Indian Air Force Commits To Purchase 324 LCA Tejas

The Indian Air force has committed to buy 324 indigenously-built Tejas Light Combat aircraft (LCA), which also includes 201 upgraded versions of the aircraft, to make up for the fast-depleting number of fighter squadrons.

According to a report by Times of India, IAF has “firmly committed” to 123 Tejas jets at present, which will come at a cost of over INR 75,000 crore (US\$ 11.5 billion) if both developmental and production costs are taken into account.

But it wants the next 201 Tejas Mark-II jets to be “entirely new fighters” with much better avionics and radars, enhanced fuel and weapons carrying capacity, and more powerful engines, top sources were quoted as saying in the report.

“The Tejas Mark-II is still on the drawing board. But if DRDO, Aeronautical Development Agency and Hindustan Aeronautics Ltd deliver the required Mark-II fighter, IAF has agreed to have a total of 18 Tejas squadrons,” said a source.

Earlier this month, defence minister Nirmala Sitharaman announced that the government is “not ditching” the home-grown Tejas and “putting all its energies” into ensuring the fighter is delivered at a much faster pace.

Tejas is a single-seat, single-jet engine, a multirole light fighter designed by the Aeronautical Development Agency (ADA) and Hindustan Aeronautics Limited (HAL). The cost of operating a single-engine fighter is lesser than that of a double-engine fighter.

The contract for 83 Tejas Mark-1A fighters, which will cost around 50,000 crores, is in the process of being finalized now. These jets will have 43 “improvements” to improve maintainability, AESA (active electronically scanned array) radar to replace existing mechanically-steered radar, mid-air refuelling capability, long-range BVR (beyond visual range) missiles and advanced electronic warfare to jam enemy radars and missiles.

The delivery of these 83 jets is slated to begin in 2023.

[http://www.defenseworld.net/news/22167/Indian Air Force Commits To Purchase 324 LCA Tejas](http://www.defenseworld.net/news/22167/Indian-Air-Force-Commits-To-Purchase-324-LCA-Tejas)



India needs to acquire new Quick-Reaction air defense missile system

According to the India Today newspaper website, Indian army looks to acquire a new air defense systems offering better performances than foreign products. The DRDO (Defence Research and Development Organization) of India has accepted to develop a new type of air defense missile system.

The Indian army would like to acquire new missile systems to equip eight regiments of Quick Reaction-Surface to Air Missiles. According to the needs of the army, the new missile should have the ability to destroy

aerial target at a maximum range of 20 km. The goal of the Indian Army is to replace the old Soviet-made SA-8 OSA-AK which was developed 40 years ago.

The **SA-8** is a Soviet-made mobile air defense using a 6x6 truck chassis designated BAZ-5937. SA-8 Gecko is armed with 6 missiles ready to fire, mounted on the roof of the vehicle. Missile is tracked by radio-command guiding system. Engagement range for the SA-8 Gecko missile is approximately 2–9 km and engagement altitudes of between 50–5000 m. The 9M33M2 "Osa-A" missile extends the ranges out to 1,500 - 10,000m and engagement altitudes to 25 – 5,000 m.

According to the specifications provide by the Indian army to the DRDO for the development of the new air defense missile system, the Army asked the research agency to produce a better system than the products offered by the foreign manufacturers.

In the previous plan, India has requested the supply of three regiments for urgent operational requirements for the Indian Land Forces, but DRDO has offered to produce equipment for five regiments under the "Make in India" program.

DRDO has confirmed its capacity to develop a new missile able to flight at a speed of 700 to 800m/sec. The radar developed for the new air defense missile system will have more capabilities and an extended range than the foreign proposal.

https://www.armyrecognition.com/march_2018_global_defense_security_army_news_industry/india_needs_to_acquire_new_quick-reaction_air_defense_missile_system.html