

समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा
A daily Current Awareness Service

Vol. 43 No. 148 10 July 2018



रक्षा विज्ञान पुस्तकालय
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DRDO looks to engage firms for border surveillance system

By Vijay Mohan

The Defence Research and Development Organisation (DRDO) is looking towards the industry for the commercial production and marketing of a border surveillance system (BOSS) developed by it. Two prototypes of the system, developed by DRDO's Dehradun-based Instruments Research and Development Establishment, were deployed in Ladakh for trials for over a year, sources said.

Following requisite modifications and upgrading, the DRDO now wants it operationalised. "Since DRDO is not a production agency, we are looking at transferring the technology to interested parties, both in private and public sector that can manufacture the system," a senior DRDO scientist said. "We are willing to engage up to three firms for the project," he added.

BOSS can be deployed at unmanned observation posts for remote controlled all-weather day-and-night monitoring of designated areas. It consists of a battle field surveillance radar along with electro-optical sensors like camera, infrared, thermal imager, laser ranger and GPS mounted on a pan-tilt unit.

It can detect a light vehicle at a distance of 10-12 km and a group of persons at 8-10 km while operating in temperatures from minus 30 to 55°C. Real time data and video can be transmitted over a distance of 20 km to a command post through wireless optic fiber link for up to 14 days.

The Army as well as border-guarding forces like the Border Security Force and the Indo-Tibetan Border Police Force could have a requirement for hundreds of such systems that can be deployed at vulnerable areas along the border in different types of terrain. Besides being a force multiplier and mitigating human stress in harsh terrain and inclement weather, the multitude of technologies involved in the system like radars, optics, hybrid power sources, electronics and communication, mechanical sub-systems and image processing also has spin-offs for the local industry.

The BOSS

The border surveillance system (BOSS) consists of a battlefield surveillance radar along with electro-optical sensors such as:

- camera , infrared sensors, thermal imager, laser ranger, Global Positioning System
- **10-12 km** is the distance up to which it can detect a light vehicle
- **8-10 km** is the distance up to which it can detect group of people

China launches two satellites for Pakistan

China launched two satellites for Pakistan on a Long March-2C rocket on Monday. The PRSS-1 is China's first optical remote sensing satellite sold to Pakistan and the 17th satellite developed by the China Academy of Space Technology (CAST) for an overseas buyer, reports Xinhua news agency.

A scientific experiment satellite, PakTES-1A, developed by Pakistan, was sent into orbit via the same rocket from the Jiuquan Satellite Launch Centre at 11.56 am. This is second time space cooperation between China and Pakistan since the launch of PAKSAT-1R, a communication satellite, in August 2011. The PRSS-1 will be used for land and resources surveying, monitoring of natural disasters, agriculture research, urban construction and providing remote sensing information for the Belt and Road region. Monday's launch is the 279th mission of the Long March rocket series.



Tue, 10 July 2018

Elon musk is testing tiny submarine to help boys

(MAE SAI, Thailand) — Elon Musk's Space X rocket company is testing a "kid-sized submarine" that could be sent to help boys trapped in a flooded Thailand cave. Musk posted videos on Twitter of the aluminium sub being tested at a swimming pool Sunday mid afternoon California time. If the tests are successful, the sub would be placed on a 17-hour flight to Thailand. Four of the boys were rescued on Sunday, and authorities are now working to replenish air tanks along the cave's treacherous exit route. They say rescuing the eight remaining boys and their soccer coach could take up to four days. A spokesman for Musk's Boring Co. tunnelling unit, which has four engineers at the cave, has said Thai officials requested the device, which could potentially help the children through narrow, flooded cave passageways.



Tue, 10 July 2018

Europa's ocean ascending to surface, say NASA scientists

Deformation in the surface of Jupiter's moon Europa could transport subsurface ocean water to the icy body's surface, a study by NASA scientists has found. Scientists at NASA's Jet Propulsion Laboratory (JPL) in the US focused on linear features called "bands" and "groove lanes" found on Jupiter's moons Europa and Ganymede. They have used the same numerical model to solve mysteries about motion in Earth's crust. The scientists created an animation - a two-dimensional simulation of a possible cross-section of a band running through Europa's ice shell. Bands on Europa and Ganymede are typically tens of miles wide and hundreds of miles long.

As the animation runs forward, the ice shell is deformed by gravitational interactions with Jupiter. The cold, brittle ice at the surface gets pulled apart. At the same time, faults in the upper ice form, heal, and re-form, NASA said.

The churning material that quickly fills the bottom half of the view is a collection of tiny white dots representing bits of Europa's ocean that have been frozen into the bottom of Europa's ice shell. The scientists describe it as "fossil" ocean material because the bits of ocean trapped in Europa's ice shell spend many hundreds of thousands, if not millions, of years being carried to the surface.

"In other words, by the time the ocean material reaches Europa's surface where it can be analysed by a passing spacecraft, it no longer serves as a sample of Europa's ocean as it is in the present, " NASA. said in a statement "Instead, the spacecraft would actually be studying Europa's ocean as it was a million or more years ago. Hence, it is fossil ocean material," it said. NASA's Europa Clipper spacecraft is intended to launch in the early 2020s. The spacecraft will then orbit Jupiter and become the first spacecraft to study Europa exclusively, including the composition of the moon's surface material.