TDB-DST signs agreement with GalaxEye for ₹63.84 crore RDI support to develop next-generation multisensor satellite technology

Indigenous OptoSAR technology to combine SAR and optical imaging for high-resolution Earth observation

Posted On: 24 SEP 2026 3:54PM by PIB Delhi

Taking forward the Government of India's push to accelerate private-sector research and development in strategic and emerging technologies, the Technology Development Board (TDB), Department of Science & Technology (DST), Government of India, has signed an agreement with M/s GalaxEye Space Solutions Private Limited, Bengaluru for financial support of ₹63.84 crore under the Research Development and Innovation (RDI) Fund.

The project, with a total approved cost of ₹247.69 crore, is aimed at developing a multisensor satellite capable of high-resolution (<0.5 m) OptoSAR imaging and taking the technology from TRL-6 to TRL-9. The support will be extended through Optionally Convertible Debentures (OCD). At the heart of the GalaxEye project is OptoSAR, an approach that brings together two fundamentally different ways of observing the Earth — Synthetic Aperture Radar (SAR) and Electro-Optical (EO) imaging.

While optical imaging can provide highly detailed visual information, its effectiveness can be affected by cloud cover and illumination. SAR, on the other hand, can operate irrespective of daylight and can image through cloud cover. The proposed system seeks to bring these complementary capabilities together through fusion of SAR and EO data, enabling a richer and more continuous picture of the Earth.

The proposed satellite is designed to provide sub-0.5 metre high-resolution imaging. The technology is intended to support applications including wide-area and long-range surveillance, human and vehicle detection, and target classification, while enabling imaging across diverse weather and lighting conditions.

The project represents a significant technology-maturation programme, with the RDI support enabling GalaxEye to undertake further development, engineering, testing and validation required to progress the technology from TRL-6 to TRL-9.

Sh. Rajesh Kumar Pathak, Secretary, TDB, said, *"India's space ecosystem is entering a phase where the ability to develop and deploy sophisticated technologies within the country will be increasingly important. The RDI Fund provides an important mechanism to support such technology-intensive efforts through the critical stages between advanced development and deployment. The agreement with GalaxEye reflects TDB's focus on enabling indigenous capabilities in emerging space technologies and supporting their journey towards commercialisation."*

Promoters of GalaxEye Space Solutions Private Limited said, *"The support from the Technology Development Board under the RDI Fund will enable us to accelerate the development and validation of our OptoSAR technology. By combining SAR and optical sensing, we are working towards an Earth-observation capability that can provide high-resolution information across a wider range of weather and lighting conditions. This partnership will be important in taking the technology towards TRL-9 and its subsequent deployment."*

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