**Indian Remote Sensing Satellites: In Orbit and Planned Satellites**

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**ABSTRACT**

**Key words:** IRS Satellites, Indian, Land and Water, Cartographic, Ocean and Atmosphere

The Indian Remote Sensing (IRS) Satellite system is one of the largest constellations of Remote Sensing satellites in operation in the world today. With currently 11 operational satellites in orbit to support the applications in three thematic areas like Land and Water (Resourcesat-1, Resourcesat-2, RISAT-1), Cartographic ( Cartosat-1 and Cartosat-2) and Ocean & Atmosphere (Kalpana-1, INSAT- 3A, Oceansat-2, Megha-Tropiques, INSAT-3D and SARAL) – these satellites provide data in a variety of spatial, spectral and temporal resolutions. Resourecesat-1 and 2 has three specific cameras namely LISS IV Mx (5.8 m resolution and 70 km swath), LISS III (23.5m Resolution and 141 km Swath) and AWiFS (56 m Resolution and 740 km swath). When AWiFS provide 5 days repetitivity, LISS III provides 24 days repetitivity and LISS IV has the capacity to revisit in 5 days with tilting of 260. Cartosat-1 carries two panchromatic cameras with 2.5 m resolution with a swath of 30km. The cameras are mounted with a tilt of +260 and -50 along the track with respect to nadir so as to provide along track stereo images. Cartosat-2 is an advanced version of Cartosat-1 with 1m spatial resolution and a swath of 10 km. The satellite has high agility with capability of steering along and across the track up to +450. RISAT-1 is a space borne SAR in C-band at 5.35 GHz providing single/dual/quad polarisation images with 3-50 m Resolution & 10-240 km swath. Altika/SARAL mission belongs to the global altimetry system for the precise and accurate observations of ocean topography, circulation and sea surface monitoring.

With these satellites and the planned thematic series of satellites in the coming years such as Cartosat-2E, Cartosat-3, Geo-Imaging Satellite (GISAT-1), Resourcesat-2A, Oceansat-3, INSAT-3DR and NISAR the Indian EO System is expected to continue to provide operational products and services enabling a variety of applications. The paper will highlight the improved imaging capability of IRS satellites and the advancements planned in the future satellites.