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TRENDS IN VERY HIGH RESOLUTION EARTH OBSERVATION USING OPTICAL SMALL SATELLITES

Abstract

In the age of New Space, the number of Earth observation small satellites launched is growing rapidly and it is projected up to 1,500 small satellites are to be launched by 2027. Despite the surge of SAR satellites among these, the majority is expected to be optical satellites. There seems to be two evident trends in very high resolution (VHR) optical small satellites. One is about using multiple smaller - 100 kg or less - satellites to achieve around 1-m or "good enough" ground sample distance and higher temporal resolution. The other is about using larger but still regarded as small satellites carrying larger optics to achieve even higher spatial resolution (0.30 m - 0.50 m) focusing on higher-end applications. This paper describes the two trends in VHR Earth observation, specifically, using optical small satellites. It also describes how Satrec Initiative is serving the two trends by developing SpaceEye-M for higher temporal resolution, and SpaceEye-X & SpaceEye-T with the emphasis on higher spatial resolution. The key features, development status and future plans are summarized.