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ASTROSAT 100 : MICROSATELLITE SOLUTION FOR HIGH RESOLUTION REMOTE SENSING SYSTEMS

Abstract

AstroSAT 100 family, the Astrium declination of the successful Myriade platform developed by CNES in partnership with industry, has reached a new step for high performance optical Earth observation applications. With more than 41 years of cumulated lifetime in orbit without failure, Myriade AstroSAT 100 satellites have shown outstanding robustness and performances together with a very high degree of availability. Thanks to Astrium state-of-the-art technologies such as Silicon Carbide and very advanced TDI detector, Astrium has been able to develop very high performance optical Earth observation satellites within a 120 kg mass. Alsat-2A, first remote sensing application based on AstroSAT 100, has been developed for the Algerian Space Agency. Since the launch by PSLV in July 2010, Alsat-2A provides outstanding image quality pictures with a ground resolution of 2.5 m. The flexibility of this satellite together with operational capability of the system have been confirmed in-flight, setting a new standard for high resolution Earth observation with small satellites. A second AstroSAT100 remote sensing system has been developed for Chile from the same building blocks. SSOT is now ready for launch and will provide enhanced ground resolution at 1.45m GSD. A third AstroSAT100 remote sensing program is currently in development for the Vietnamese Academy of Science, confirming the actual interest of small satellites for high performance imaging systems. This paper presents briefly the Myriade and AstroSAT 100 background and describes the AstroSAT 100 family and the latest achievements in term of high resolution optical observation with microsatellites. Alsat-2A in-flight results are also discussed, bringing future perspectives for AstroSAT 100 remote sensing applications.