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BEST PRACTICES FOR THE LAUNCH MANAGEMENT OF COMMERCIAL NANOSATELLITES

Abstract

Nanosatellites are the new territories for future businesses, but several areas related to management and system engineering are still unexplored for companies that encounter for the first time the launch of a nanosatellite or even a constellation. Astrocast SA has successfully launched in December 2018 its first nanosatellite demonstrating the technical capability of its IoT-M2M telecommunication service; a second satellite has been deployed in March 2019. Challenges that concern the launch management are often underestimated resulting in delays or worst consequences. This study provides a series of methodologies, processes, management strategies and other information necessary to mitigate the risks and avoid delays when managing one or more cubesats to the launch pad and to integration. Cubesats launches are mostly piggy back launches that have to follow the schedule of the prime payload, therefore delays and last minutes issues have to be avoided. In this study we emphasis aspects that are often hidden for new comercial space-commercial sector, or for already established commercial business that are trying to face the world of the nanosatellites and their potentials. Particular focus is given to: management of resources, technical interfaces with the launcher, transportation and shipment, dangerous goods, licensing, bureaucracy (and paperwork), integration and hazardous operations at range. These processes are based on the lessons learned by the latest launch campaign of Astrocast SA and guide through a good practice to minimize delays and risks that piggy-back launches can presents.