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IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Launch Vehicles in Service or in Development (1)

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ARIANE 5 END OF EXPLOITATION

Abstract

Beginning 2019, Ariane 5 has completed 103 launches and started its End of Exploitation with 14 launchers which remain to be launched until end 2022. Although Ariane 5 has a long record of successes, the reliability and the performance of Ariane 5 has to be maintained and even reinforced in view of coming challenges, such as launch of James Webb Space Telescope (JWST); very large satellites requiring high performance and enlarged volume under the fairing. This increased performance will be possible through the stretching of the upper stage tanks, the lightening of some structure and the enlarged volume through the introduction of a raising cylinder below the fairing.

The quality and reliability of the Ariane 5 launch system have to be maintained in spite of the occurrence of some complementary risks inherent to the production ramp-down. Based on the experience of Ariane 4 to Ariane 5 transition, these risks on the exploitation launch system have been identified and mitigation actions have been implemented, mostly at industry level, both at production and organisational level, in synergy with Ariane 6 ramp-up whenever possible. For instance, a dedicated, spare parts policy has been deployed to secure critical items for the last launches, taking into account production lead times and possible commonality with Ariane 6 production..

This paper will address the optimizations of the Ariane 5 launch system with overview on the gains in performance and payload accommodation capability through its life cycle and on the upcoming challenges with JWST launch and with flights requesting high performance and enlarged volume. Then, the paper will focus on the policy and the actions undertaken by Ariane in order to ensure a smooth End of Exploitation of Ariane 5 while maintaining high quality and reliability standards.