Paper ID: 40168
oral

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Launch Services, Missions, Operations, and Facilities (2)

Author: Mr. Julio Monreal
European Space Agency (ESA), France

ARIANE 6 LAUNCH SYSTEM OPERATIONAL CONCEPT - MAIN DRIVERS

Abstract

The launchers of the European Ariane and Vega families are leaders on the launch service commercial market, with a high demonstrated reliability after long series of successful flights.

Ariane 6 is the next heavy European launch system of the Ariane family. It is being developed with the objectives to provide users with: high mass performance, mission versatility, operational flexibility, high launch rate and low launch service cost.

ESA, in its role of Launch System Architect (LSA), is in charge of ensuring the coherence between the Launcher and the Launch Base and of verifying the Launch System performance so as to reach those objectives. With this goal, the LSA (ESA), the Launcher Prime (Airbus Safran Launchers) and the Launch Base Prime (CNES) work together on building up an optimised launch operations plan.

The launch operations plan starts at the arrival to the Launch Range of the launcher elements, the spacecraft to be launched and their support ground equipment. It ends with the launch facilities revalidation and reconfiguration for the following launch.

In order to ensure that the above mentioned challenging set of objectives is met, the launch preparation and launch operations concept (here dubbed "operational concept" or CONOPS) shall be designed taken the mission cost as main driver and pursuing the same service quality and reliability than provided by Ariane 5 today; therefore, with the view on the customer needs, the CONOPS is constantly optimised to minimise wastes. The optimisation of the CONOPS is done while copping with the safety requirements imposed by the applicable law and regulations which eventually constitute a guarantee of system operational robustness.

This paper will present the drivers established to build the Ariane 6 operational concept, the related trade-offs performed and the rational for the selected choices.

Finally, the preliminary operations plan resulting from the CONOPS exercise will be presented and compared with former Ariane operations plans to show differences and highlight improvements with respect to user's expectations.