

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

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ARIANESPACE LAUNCHER FAMILY STATUS

Abstract

The year 2012 was an exceptional year for Arianespace with 7 Ariane 5 launches (1 ES and 6 ECA) putting in orbit the ATV 3 Eduardo Amaldi and 12 out of the 22 commercial GTO satellites launched in the world, 2 Soyuz launches from CSG and the Vega maiden flight, reaching 10 launches in that same year, more than 10 tons GTO performance on Ariane after 10 years of consecutive Ariane successes. The Arianespace launcher family has become a reality. 2013 is also an ambitious year with at least 5 Ariane 5 including the ATV4 launch, 3 Soyuz from CSG and the second Vega flight.

On top of Ariane reliability and availability excellent results, a low shock fairing separation system was experienced for the ATV4 launch and performance is still going to increase through a new launch method proposal based on a controlled upper stage depletion probability.

To draw full benefit from the capabilities offered both by Soyuz and Vega launch systems, multiple payload carrying structures have been developed for identical or individual payloads delivery to different orbits during the same mission. In that purpose, a new “Arianespace Structure for Auxiliary Payloads” that increases Arianespace solutions to launch small satellites with Soyuz has been developed and has flown end of 2011. In parallel, a new carrying structure, so-called VESPA has also been developed for Vega, with a first application on the second Vega launch in 2013. For constellation missions, several large dispenser structures were successfully developed since 1999 for Ariane and Soyuz to accommodate from two to six satellites. In complement, a specific double launch structure is under final study for medium sized SSO missions on Soyuz/Fregat.

In this publication, Arianespace will present firstly a synthesis of the results of the recent Ariane 5 flights, focusing on the recent improvements, secondly the different multiple launch systems already flight proven or under development for Soyuz and Vega, and the services they offer to satellites, emphasizing the coherence between the solutions offered by both launch vehicles dedicated to the Low and Medium Earth Orbits.