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Author: Mr. Mathieu CHAIZE
ArianeGroup SAS, France

Mr. Pier Domenico Resta
European Space Agency (ESA), France
Mr. Denis Rebuffat
European Space Agency (ESA/ESTEC), The Netherlands
Mr. Michel Bonnet
European Space Agency (ESA), Italy
Mrs. Isabelle Quinquis
Airbus Defence and Space, France
Mr. Denis Legars
Airbus Defence and Space, France
Ms. Sophie Caruel
Arianespace, France
Ms. Stéphanie JONER
ArianeGroup SAS, France

ARIANE 6'S MAIDEN FLIGHT RIDESHARE MISSION

Abstract

In October 2014, the European Space Agency (ESA) Council at Ministerial level decided to commence the Ariane 6 programme. The aim of developing Ariane 6 is to guarantee independent European access to space at the lowest overall cost. Today, Europe relies on Ariane 5, Vega, and Soyuz to lift payloads off to space. Tomorrow, the European launch vehicle fleet will be composed of Ariane 6 with two different versions – Ariane 62 and 64 – as well as Vega-C that replaces and upgrades the Vega launch system.

Ariane 6's maiden flight is planned for the second half of 2022. This first flight will contribute to Ariane 6's qualification and will in particular test the re-ignition capacity of its cryogenic upper stage with the Vinci engine. This mission will also embark experiments and deploy small satellites in Low Earth Orbit. Indeed, in October 2021, ESA issued a call for opportunity to fly on the first Ariane 6. It then processed with the support of Arianespace ArianeGroup about thirty applications from all over Europe and selected 11 candidates. This unique mission will thus embark four scientific experiments, several microsats and cubesats and two atmospheric re-entry capsules demonstrators. It will be an opportunity to show the versatility and flexibility of Ariane 6 that is perfectly adapted for complex rideshare missions with responsive mission design and integration capacities.

The aim of this paper is to present the overall mission plan for this maiden flight and highlight the qualification objectives associated to it. It is also an opportunity to introduce all the experiments and satellites that were selected to be on-board this inaugural flight. Finally, the multi-launch service (MLS) that is featured on Ariane 6 for piggy-back and rideshare missions is introduced with a first flight aimed end of 2023.