Paper ID: 23266
oral

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

Author: Mrs. Catherine Poincheval
Airbus Defense & Space, France

Mr. Emmanuel Vivet
Airbus Defense & Space, France
Mr. Frank Strobel
Airbus Defense & Space, Germany
Mr. Ruedeger Albat
European Space Agency (ESA), France
Mr. Pier Domenico Resta
European Space Agency (ESA), France
Mr. Olivier Bugnet
CNES, France

ARIANE-5MEA BEFORE THE MINISTERIAL COUNCIL 2014

Abstract

The next ESA Council at Ministerial level is scheduled in Luxembourg in December 2014. One of the important topics of this Council is the decision on the continuation up to completion of the Ariane-5 MEa development.

The Ariane-5 MEa configuration features a new cryogenic re-ignitable upper stage, a stretched Upper Part offering increased payload volumes, upgraded avionic systems and relies on the common Lower Composite of the today's operational Ariane-5 ECA and Ariane-5 ES launcher versions.

With its re-ignition capabilities, A5-MEa shall enable many different versatile missions of interest to institutional and scientific payloads. For commercial markets, A5MEa shall offer GTO+ mission capabilities, including new mission opportunities for electric propulsion spacecraft. It shall also provide de-orbitation capability of the new upper stage to preserve the space environment. Ariane-5 MEa will increase the global performance of the launcher ensuring GTO dual launch capability which remains essential for competitiveness on the commercial market and its versatility shall provide flexibility for a mix of payloads' accommodation. This new modernised version of Ariane-5 will replace within the decade both Ariane-5 ECA and Ariane-5 ES versions. The A5 ME project is now in the middle of phase-C and all suppliers will perform critical design reviews in 2014. Ariane-5 ME will then be ready to enter in 2015 in phases D and E in view of a maiden launch in mid 2018.

A Verification Key Point was hold in December 2013 and confirmed the technical and programmatic assumptions of the Ariane 5 ME development required to prepare the decisions of the December 2014 ESA Council at Ministerial level.

This paper presents the programme elements and targets set in 2013 and 2014. An overview is given on the most significant achievements of the on-going development activities, its expected missions and performance capabilities. Finally, the paper provides a comprehensive overview of the A5MEa launcher configuration: the new cryogenic re-ignitable upper stage powered by the Vinci expander cycle engine, the new technologies considered for the stage attitude control and propellant settling system, cryogenic tanks designs, test-benches upgrades, etc.