

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

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A5 ME: STATUS OF THE "PREPARATORY ACTIVITIES"

**Abstract**

Thanks to the ESA Council decision, taken end of 2008, to launch a preparatory Programme related to an evolution of the Ariane-5 launcher, Phase-A and Phase-B activities of the A5ME launcher Programme are now on tracks.

A5ME, standing for Ariane-5 Mid-life Evolution, aims at fulfilling the future institutional and scientific needs while anticipating the evolution of the commercial market. Thus, thanks to re-ignition capabilities, A5 ME will enable versatile missions such as MEO, LEO or Escape missions interesting for institutional and scientific payloads and will offer GTO+ mission capabilities to the commercial market. In addition, this version will increase the global performance of the launcher ensuring the GTO dual launch capability essential for the competitiveness on the commercial market.

This evolution of Ariane-5 launcher features basically a new re-ignitable cryogenic upper stage powered by the Vinci expandable-cycle engine, and will rely on the present Lower Stages of the A5 ECA launcher.

The present Phase1 voted during the 2008 Ministerial Council aims at implementing the A5ME Programme, in particular by setting up the Industrial Network, and at demonstrating the technical and programmatic maturity through the preliminary definition phase of the project.

First semester of 2010 will see the first Programmatic Milestone of the A5ME Programme, the so-called System and Stage Concept Review concluding the Phase-A studies. This paper will thus provide a comprehensive overview of the status of the Preparatory Activities: conclusion of the main trade-offs driving the configuration of the A5 ME launcher, in particular at Upper Stage level, situation related to the "transfer" of the Vinci engine from the ESA-FLPP demonstration into an Ariane-5 development frame, update of the development logic in particular with respect to the sequencing of the main test campaigns, and will also present how issues such as Industrialisation, Design-to-Life-Cycle cost are addressed from the early phase of the development. This paper will also present the status of the implementation of the Programme: deployment of new processes, setting up of the Industrial Organisation...

At last, the paper will explain how the main critical points identified at the end of Phase-A studies, related to both technical and programmatic aspects, will be tackled in view of a successful Phase-B planned around mid-2011