The Ariane-5 Post-ECA Programme preparatory phase aims to continue activities for future Ariane-5 design evolutions by bringing the development of the Vinci cryogenic upper stage engine and of a new cryogenic upper stage to a level that will allow a decision by end-2011 on the development phase, with the objective of flying the improved Ariane-5 version around 2016. The next version is currently known as the Ariane-5 Midlife Evolution (ME).

Mission versatility and increased performance are needed for Ariane-5 to better respond to future institutional needs and to maintain competitiveness in the commercial market with a high-mass, dual-launch capability. In particular, the operator has expressed a short-term need for an increase in payload mass to geostationary transfer orbit of 1.3 tonnes, and a medium-term need for orbit flexibility to allow launches into supersynchronous or high-perigee transfer orbits (GTO+), medium Earth orbits (MEO), and geostationary Earth orbits (GEO).

Ariane-5 is the workhorse launcher currently providing Europe with reliable, independent and guaranteed access to space. This launcher is also a commercial success, assuring an important share of the geostationary transfer orbit (GTO) satellite market, which in turn helps guarantee the sustainability of this European access. The success of Ariane has been based on its capacity to adapt to evolving market demands while keeping high standards of quality and worldwide competitiveness.

Today’s estimates for the evolution of this market in the long-term indicate an increase of mass for commercial and institutional payloads together with a need to perform versatile missions.
In order to manage the development risks, it is proposed to undertake a preparatory phase before deciding upon the full development of the ME baseline.

The preparatory phase will cover preliminary development activities for system, stages and propulsion elements, allowing maturation of the proposed design. A technical key point on the engine, stage and launcher design maturity will enable confirmation of the Ariane-5 ME baseline configuration and a decision on the development phase.

At the end of the preparatory phase, the launcher system and all its subsystems will be ready to undergo their critical design reviews, to allow hardware manufacturing for test models and commencement of the test and verification phases.

The full development phase will be based on the results of the preparatory phase, the consolidated market needs for the period 2015–2020, and on firm industrial quotes for completion of the development programme and for the exploitation costs of the Ariane-5 ME launcher.

Ariane-5 is fundamental to guaranteeing independent European access to space. Extending its capabilities in terms of payload mass and attainable orbits will enhance Europe’s access to space and allow Europe to remain competitive in the global commercial launch market.

The proposed activities will strengthen the technological capabilities of European industry, allowing it to remain at the forefront of space transportation.