

# VEGA C : PILLIER POUR L'ACCES DE L'EUROPE À L'ESPACE / VEGA C: A PILLAR OF EUROPEAN ACCESS TO SPACE

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### **Résumé / Abstract :**

Vega launch vehicle successfully entered the production phase after two (partially commercial) qualification flights in 2012/2013. As per today, it is the market leader in its class, with about 35% of share already in Arianespace manifest. Market and regulatory trends confirm the worthiness of the formula, based on a very simple configuration backed by high quality standard and a short supply chain; yet emerging competitors (often operating in a milder regulatory environment) and application of LOS prompted the need for a Vega consolidation in terms of cost, performance and compliance. The development of a Vega C (consolidation) was firstly decided at European Ministerial Conference 2012, and upgraded during M.C. 2014. The European decision is implemented through ESA by ELV, which is awarded development contracts for Vega C Launcher Segment and Ground Proximity Means: the Maiden Flight is expected by the end of 2018.

Vega C maintains the same formula and the general architecture of the qualified Vega: it is a four stages workhorse, the largest (mostly) based on solid propulsion ever. Its targets are ambitious, with 50% more performance on reference trajectory (PEO @ 700km), attractive launch service price and improved multi payload capability. To get that, the lower composite (first and second stage) are brand new, respectively based on P120C and Z40, the upper stage, i.e. AVUM+ is deeply revised making use of European components for liquid propulsion and sporting 40% more propellant. A brand new small payload dispenser and, as an option, a larger payload fairing should be developed. The paper provides details on the Vega C development logic and status; it overviews as well the idea and the complexity of the P120C as unique building block for Vega family and Ariane 6.

### **Carrière en bref / Career in brief :**

Graduated in Mechanical Engineering at Genoa University in 1978, he has been Senior Vice President of Avio's Space Division since 2004. He began his career in 1979 as a design engineer in Aeritalia, the aerospace of the Finmeccanica Group, where he was technical chief of the programmes for the construction of the military aircraft Tornado, AM-X, EAP and EFA. In 1987, he joined Avio as Head of New Engineering Projects in the space sector. In 1989, he took on the management of space and helicopter propulsion programmes. In 1994, he left the space activities, taking on the responsibility for the programmes of the V2500 engine, which powers the Airbus A320 civil aircraft, the development of the PW150 turboprop engine, and the PW308 turbojet engine, as well as production of the PT6 military engine. Subsequent to this, until 1999, he was Programme Manager regarding production for some of Avio's major customers and partners: Pratt & Whitney Canada and Rolls-Royce, Eurocopter and Sirkosky. After this, until 2000, he was Manager of the Turin Industrial Plants. Finally, before becoming Senior Vice President of the Space Division, he was Head of Group Business Development and Strategy for three years, until 2004; also during this period, he was Managing Director of the SEPA S.p.A. Group Company.