

SOLUTIONS BEYOND THE EUROPEAN LAUNCHER CRISIS – THE USE OF SPACE



Regarding the “European launcher crisis”, the most pertinent question may be how Ariane 5 launch services could be discontinued prior to ensuring Ariane 6 in full service, how therefore Europe today cannot autonomously launch its own critical institutional missions, and how future European missions may be served, considering A6 almost fully booked until 2027, mostly by 18 launches for a commercial U.S. connectivity constellation. The actual **purpose of the launchers** for Europe may not have received the required priority, as European strategy so far focused on the **launcher itself**.

Fortunately, a new level of debate has emerged, on how to transform public procurement, increase industrial competition and stimulate private investment. Such discussions at highest level are very timely, when Europe is faced with the fundamental question of how to position itself in the global space race (ESPI Perspectives March 2023). However, again most of the debate appears to be focused on the launcher and not on its purpose. Launchers are a key element of European technical autonomy to access to space. But they are only a means to an end, to **the use of space**. The launcher sector only represents 1-2% of the global space economy (e.g. SIA/Bryce 2021: 5.7B\$ global launcher revenues/ 386B\$ global space economy). The space economy is build on and will grow with the use of space, with payloads and satellites delivering space-based services (e.g. SIA 2021: satellite broadband & TV alone 98.4B\$). As a consequence, any economically sustainable strategy on future launchers should be integral part of a strategy on the use of space, not vice versa. A European **strategy for access to and use of space** needs to consider all sectors of space, institutional (Space4Earth & Exploration), commercial, and security & defence. Globally, human space flight, commercial and military markets represent about 2/3 of the market for launch services (e.g. Eurospace, Launch Services Value 2021 6.3B\$ out of 9.8B\$). SpaceX business model is based on this, beyond launch services to the ISS providing a foundation, 56% of Falcon-9 launches carry Starlink satellites, next to revenues from 30 other commercial launches, including 10 for European operators (2019-22) and with Starshield next, all attractive to private investment.

In the ongoing debate, in almost all cases the U.S. COTS programme is identified as the main reference when transforming also the European eco-system. The COTS programme has been very successful in bringing a fundamental change of development and procurement strategy, by connecting a launcher strategy with a very strong and consistent use for the ISS (resupply, crew). But it is only the combination of the U.S. institutional strategy with the wider commercial strategy of SpaceX that enabled the true revolution in space, with Starlink at the core. Similar may happen once heavy launchers may enable yet another revolution, bringing a new scale to the use of space. Europe has to act decisively:

- to take decisive measures now, to increase the European institutional demand significantly (including and beyond Space4Earth missions only and beyond federating national demand), **including security and space exploration**,
- to enable commercial demand, **in domains that are attracting private investment**, e.g. space applications. IRIS2, beyond governmental services, needs to become an element of such wider strategy, a European catalyst for connectivity markets expected to triple by 2030, e.g. for handhelds, for airlines and autonomous driving (ESPI Executive Briefs 60 & 61).

Europe has seen unprecedented investments by Venture Capital into the launcher sector, totaling above 500M€ between 2015-2022. However, on a global scale so far this represents only about 3% (17.4B€ of global private funding, led by SpaceX and Blue Origin (ESPI Venture Database)). It also represents only a small share when compared to the total VC space investments in Europe of 1B€ in 2022 (ESPI NewSpace Europe 2022). It is uncertain, if the financial markets in the current economical situation, will be ready to scale-up the required significant investments in launchers. **Investors, also beyond VC will require sustainable business cases, understanding the customer base of the launchers and their user markets, with and beyond strong institutional anchor customers**. Also the valuation of SpaceX is predominantly based on Starlink. Space solutions in LEO, new business models in GEO, in-space transportation, Earth observation services beyond governmental use, commercial space stations and research facilities for biomedical advances, for energy and food security can attract **private investments** for the use of space - and with it for launchers.

The challenge for Europe is much wider than on launchers only. Only a dual and demand-driven strategy, including access to and use of space, attractive to investors can avoid the European launcher crisis to turn into a “Space crisis”.

Yours sincerely,



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