



Vega C: Increasing Synergy through Partnerships to Support Developing Countries Access to Space

Interviewee:

Mr. Stefano Stefanile
Head of Institutional Relations, Avio S.p.A



Date: Interview conducted with Avio on 22 March 2023

Background:

More and more CubeSats are being launched into space and the democratization of space is accelerating. To make sure that space is truly accessible to all, including non-space-faring nations, the [United Nations Office for Outer Space Affairs \(UNOOSA\)](#) and the Italian company [Avio S.p.A.](#) are providing an opportunity for United Nations Member States utilizing the Vega C launcher. The Vega C programme is a hands-on opportunity under the Satellite Development Track of the [Access to Space for All initiative](#), which provides a cost-free 3-unit (3U) Cube Satellite (CubeSat) launch slot on the Vega C launcher. This collaboration was announced in September 2019 at the United Nations General Assembly and opened for calls in October 2020, amid the COVID-19 pandemic. Through this programme, UNOOSA and Avio aim to raise awareness of the role of small satellites for sustainable development and capacity-building for space activities and bridge the gap among countries in their accessibility to space.



The 1st round of applications was opened in October 2020, and after a competitive selection process, UNOOSA and Avio announced the consortium led by the University of Nairobi of Kenya, joined by the University of Arizona of the United States of America and a non-profit organization Space Trust as the 1st round awardee on the occasion of the 60th session of the Science and Technical Subcommittee of the Committee (STSC) of the Committee on the Peaceful Uses of Outer Space (COPUOS) in February 2023.

Announcement of Awardee Event at COPUOS STSC ©Avio

Read more:

Press Release:

- [UNOOSA and Avio united at the UN General Assembly to provide Access to Space for All](#) (24 September 2019)
- [UN Office for Outer Space Affairs and aerospace company Avio team up for opportunity to deploy satellite into orbit](#) (8 October 2020)
- [UNOOSA and Avio select team from University in Nairobi for CubeSat launch opportunity using the Vega C Launcher](#) (10 February 2023)

Awardee page:

- [University of Nairobi](#)

Interview: We spoke with Stefano Stefanile, who is the Head of Institutional Relations at Avio S.p.A.

Q: What is the objective of the Vega C cooperation with UNOOSA and why has your organization decided to work on it?

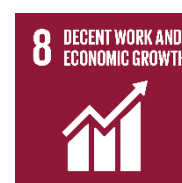
The purpose of Avio's partnership with UNOOSA is to join forces in promoting access to space for non-space-faring nations, particularly developing countries. This is being pursued by offering public institutions from those countries the opportunity to launch micro and nanosatellites, free of charge, on board the European space launcher Vega C, of which Avio is both the system integrator and the prime contractor. The establishment of this partnership goes back to 2019, when a specific Memorandum of Understanding was signed between Avio and UNOOSA. The initiative responded to the idea that international organizations - particularly the United Nations, given their universal membership - and renowned private actors in highly technological fields - such as Avio - should increase their synergy in pursuing the implementation of the 2030 Agenda for Sustainable Development.



Stefano Stefanile is a senior Italian diplomat currently serving as Head of Institutional Relations at Avio ©Avio

Q: How does the Vega C cooperation contribute to capacity-building in developing countries and the achievement of the Sustainable Development Goals?

The benefits of this cooperation are very clear. We are providing a concrete and feasible way for developing countries to realize their satellite-related national programmes by offering a free-of-charge launch slot. Space transportation is still one of the costliest aspects of access to space and from this point of view, we thought that this was a strong need and an effective way to support developing countries. The experience that the selected team gains from developing their CubeSats and from working with the integration and launch service provider will help build capacity and develop technological and scientific expertise at the national level. Furthermore, satellites, once placed in orbit, can contribute to accelerating innovation and economic growth, with a positive impact on employment and welfare. All these outcomes have links to the different aspects of SDG 4: Quality Education, SDG 8: Decent Work and Economic Growth, and SDG 9: Industry, Innovation, and Infrastructure. At the same time, it is unanimously recognized that the benefits of expanding access to space can go even beyond these goals, as boosting the use of space technology and applications can be a catalyzer for many of the other SDGs. In light of these combined effects, the Vega C cooperation with UNOOSA can be seen as a positive example of constructive public-private partnerships in the achievement of SDG 17: Partnerships for the Goals. Moreover, besides the specific advantages for the beneficiary country, there is a general added value of making space a global common good, accessible for a greater number of countries, in addition to those which have autonomous capabilities, in line with the objective and spirit of the Space 2030 Agenda. Being a company that is committed to the values of international cooperation and the implementation of the SDGs, there was no hesitation on our side in forging this alliance with UNOOSA and working together on this front.



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Q: What are the current status and future prospects of the Vega C cooperation?

Avio is committed to offering three separate satellite launch slots on the Vega C launcher through cooperation with UNOOSA. The Announcement of Opportunity attracted wide interest, resulting in a large number of applicants from all over the world. As publicly announced in Vienna in February 2023 on the occasion of COPUOS STSC, the first awardee of the programme is a consortium led by the University of Nairobi in Kenya. We were very pleased to see the ideal combination of a university in a developed country supporting another from a developing country and interacting with a non-profit organization. This project has also received support from the Kenya Space Agency. Seeing these different stakeholders complement each other to achieve a common goal is a partnership in which we see a lot of value.



The selected team will develop a 3U-sized CubeSat which will be launched on board one of the next Vega C flights, likely in 2025. The CubeSat has the primary mission “Zero-G Peace Mission 2030” which aims to transmit peace messages and demonstrate communication technologies. The secondary mission is a camera to demonstrate and serve diverse local earth imagery needs. Avio, our contractors, UNOOSA, and the awardee team have conducted the kick-off meeting to start the development. The next step will be to initiate, together with UNOOSA, new processes to select the awardees for the subsequent two Vega C launches.

NaSPUoN CubeSat to be developed through the Vega C programme ©University of Nairobi

Q: What are the main features and capabilities of the Vega C launcher?



Lift-off of the Vega C launcher in July 2022 ©Avio

Since 2003, Avio has developed, under a programme of the European Space Agency, the Vega Launch System. Since 2012, we have realized, with Arianespace acting as launch operator and launch service provider, 23 commercial and institutional Vega flights from the Guiana Space Center. Vega C (the capital C stands for “Consolidation”), whose maiden flight took place in July 2022, is a better-performing and more flexible version of the Vega launcher. With an improved first stage - which is also to be used as a booster for the new heavy European launcher Ariane 6 - and a bigger second stage, Vega C features a transportation capacity of 2.3 tons at sun-synchronous orbit (about 700 km in altitude), which is 60% more than Vega at the same

reference orbit, thus making the launch cheaper on a per-kilogram basis. Furthermore, with an increased payload fairing and an improved liquid engine-based and upper stage that can be reignited, Vega C is perfectly suited to address both the 1 to 2 tons satellite segment (to be carried in single or dual launch) and the small satellite market for rideshare missions to Low Earth Orbit. Its flexibility and versatility allow for a great variety of manoeuvres, also in the framework of the same mission, thus matching any customer-specific requirements.

Q: How has Access to Space for All and the cooperation with UNOOSA helped your organization?

Working together with UNOOSA on this programme allowed Avio to provide a concrete contribution to the global efforts towards the achievement of the SDGs. This is fully consistent with Avio’s corporate policy, reflected in the company’s sustainability plan, which aims to increasingly align industrial activities with the main objectives of the Sustainable Development Agenda. Another positive impact for Avio is the opportunity to gain an understanding of working with a global multilateral organization such as the United Nations and getting in touch with its universal and highly diversified Member States. We look forward to further developing our partnership with UNOOSA, and more generally with the United Nations System, even beyond the scope and envisaged duration of the Vega C programme.