



Leonardo, Telespazio and Bambino Gesù Children's Hospital test the use of drones for biomedical material delivery

- Biological samples and biomedical products have been transported for more than 30 km with a remotely piloted aircraft with electric propulsion. Advantages: minor ecological and acoustic impact, reduced times, and costs
- With the T-DROMES digital platform, used within this test, Telespazio is able to provide services built on a "drone as a service" business model
- Laurent Sissmann, SVP Unmanned Systems of Leonardo: "With the skills we are developing, we want to support the country to reach a leading role in drone-based operations and services, in line with the goals of the 'Be Tomorrow - Leonardo 2030' strategic plan"
- Airspace safety is granted by D-Flight, the U-Space platform developed and managed by ENAV together with Leonardo and Telespazio

Rome, 22 October 2020 – The transportation of biomedical material with drones is the goal of the test, which has just been successfully completed, designed and undertaken by Leonardo, Telespazio (joint venture between Leonardo 67% and Thales 33%) and Bambino Gesù Children's Hospital, in collaboration with ENAC (National Civil Aviation Authority).

This is one of the first demonstrations in Italy of biological samples and biomedical products delivery, along routes not easily accessible by ordinary roads, with the aid of vertical take-off drones equipped with electric propulsion and therefore with a very low ecological and acoustic impact.

Rehearsals took place between the 19 and 22 October. The drone transported biomedical material flying near Rome, between two sites of the Bambino Gesù Children's Hospital which are more than 32 km away from each other: from the S. Marinella collection centre to the Palidoro analysis centre and vice versa, using an automatic control mode beyond the operator's visual line of sight (BVLOS).

The test involved the use of Telespazio's cloud-based T-DROMES digital platform, which allows the provision of end-to-end services: from planning to conducting the mission of a drone, up to the processing of data acquired by the on-board sensors.

*"We are pleased with this milestone, which was achieved thanks to partners of excellence such as the Bambino Gesù Children's Hospital, Telespazio and through the collaboration of ENAC. The project is part of Leonardo's path of innovation and experimentation in Advanced Air Delivery, of which another fundamental element is the D-FLIGHT platform for the management of drone air traffic, realised with ENAV", **Laurent Sissmann, SVP Unmanned Systems of Leonardo commented.** "Leonardo is committed to serving and protecting communities, contributing to their sustainable growth by leading in next generation technologies. Partnering with governments, private organisations and industries for the best security and safety capabilities is a cornerstone of Leonardo's BeTomorrow2030 Strategic Plan and the investment in autonomous systems is in line with our growth strategies. In particular, with the skills we are developing in this field, we want to support the country to reach a leading role in the development of drone-based operations and services".*

*"We are very happy to be able to collaborate with Leonardo on such an innovative project – **Mariella Enoc, President of the Bambino Gesù Children's Hospital declared** - We strongly wanted to start the experimentation in this pandemic period, which requires all health professionals to strongly accelerate the diagnostic pathways. This test will allow us to study the development of a service that can produce significant improvements in clinical and logistical processes, which will bring benefit to the entire regional and national health system in the future".*

*"Remotely piloted aircraft - **said the Director General of ENAC, Alessio Quaranta** - represent one of the driving forces of the current industrial revolution to which the scientific and industrial communities around the world are watching with interest. Being able to use them for health and social purposes makes these tools even more essential for the sustainable development of our society. The release of the authorization that allowed the test is the result of an important support activity to the development of the operational concept project and to the technical evaluation carried out by ENAC and the institutional coordination with all the actors involved, for the execution of the operations in a particularly complex context such as that of the terminal area of Rome which includes approaches and departures from the airports of Fiumicino and Ciampino. A special thanks from us to the Ministry of the Interior, the Prefecture of Rome, the Rome Police Headquarters, the Air Force, the Italian Army, the Port Authority and the Coast Guard, ENAV, the 118 Rescue Service, the Municipality of Santa Marinella, the Municipality of Fiumicino, as well as, of course, to Leonardo, Telespazio and the Bambino Gesù Children's Hospital".*

As part of the experiment, the drone operators tested the U-Space geo-awareness and strategic deconfliction services provided by the D-FLIGHT platform, set up in 2018 by ENAV (the company that manages civil air traffic in Italy) together with Leonardo and Telespazio. Thanks to the services that will be progressively made available by D-FLIGHT, it will be possible for traditional aviation and thousands of drones to coexist in the Italian airspace as drones will be entrusted with the most diverse tasks in the future. D-FLIGHT is confirmed as one of the first operational U-Spaces in Europe.

Finishing in December 2020, the testing campaign includes several additional phases, in which various types of remotely piloted aircraft will be used. The long-term objective is to be able to extend the service in a densely populated urban environment, by connecting the headquarters of Palidoro to the other Bambino Gesù sites in Rome.

Leonardo

Leonardo, a global high-technology company, is among the top ten world players in Aerospace, Defence and Security and Italy's main industrial company. Organised into five business divisions, Leonardo has a significant industrial presence in Italy, the United Kingdom, Poland and the USA, where it also operates through subsidiaries such as Leonardo DRS (defense electronics), and joint ventures and partnerships: ATR, MBDA, Telespazio, Thales Alenia Space and Avio. Leonardo competes in the most important international markets by leveraging its areas of technological and product leadership (Helicopters, Aircraft, Aerostructures, Electronics, Cyber Security and Space). Listed on the Milan Stock Exchange (LDO), in 2019 Leonardo recorded consolidated revenues of €13.8 billion and invested €1.5 billion in Research and Development. The Group has been part of the Dow Jones Sustainability Index (DJSI) since 2010 and became Industry leader of Aerospace & Defence sector of DJSI in 2019.

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Telespazio

Telespazio, a Leonardo and Thales 67/33 joint venture, is one of the world's leading operators in satellite services. Its activities range from the design and development of space systems to the management of launch services, from in-orbit satellite control to Earth observation, from integrated communications, satellite navigation and localisation services to scientific programmes. Telespazio plays a leading role in the reference markets harnessing technological experience acquired over the years. Since its establishment, the company has participated in major European space programmes such as Galileo, EGNOS, Copernicus and COSMO-SkyMed. In 2019, Telespazio generated sales of EUR 535 million while employing approximately 2,600 people worldwide.

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Ospedale Pediatrico Bambino Gesù

The Bambino Gesù Children's Hospital was born in 1869 as the first children's hospital in Italy. In 1924, the Hospital was donated to the Holy See, and became the Hospital of the Pope. In 1985, it was certified as an "Istituto di Ricovero e Cura a Carattere Scientifico IRCCS" (Research Hospital) and in 2006 the Hospital has been accredited for the first time by Joint Commission International (JCI), a recognized leader in international healthcare accreditation. In 2014, the Hospital's new research laboratories have been inaugurated with a *Officina Farmaceutica* (Cell Factory) entirely dedicated to the large-scale production of advanced therapies. The Bambino Gesù Hospital is today the largest sub-specialty children's hospital and research center in Europe, with over 3,500 employees. The Hospital carries out its healthcare activity in 5 premises: the historical headquarters on the Gianicolo hill and the premises in Saint Paul outside the Walls, in Rome, near which the Viale Baldelli premises it has been inaugurated in 2019; and the peripheral premises along the Lazio coast, in Palidoro and Santa Marinella.

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ENAC – Italian Civil Aviation Authority

ENAC acts as the only authority for technical regulation, certification, supervision and control of the civil aviation sector in Italy in compliance with the powers deriving from the Navigation Code. The primary objectives of the institutional mandate are highlighted in its Mission: "In carrying out its institutional activity of regulation and control of the aviation sector, the Body promotes the development of civil aviation, guaranteeing to the country, in particular to users and businesses, flight safety, the protection of rights, the quality of services and fair competitiveness in respect of the environment".

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