

21st IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)  
Access to Space for Small Satellite Missions (5)

Author: Dr. Chantal Cappelletti  
G.A.U.S.S. Srl, Italy, chantal.cappelletti@gmail.com

Mr. Marco Truglio  
Italy, marco.truglio@gmail.com

Mr. Giuseppe Martinotti  
Scuola di Ingegneria Aerospaziale, Italy, martinotti.giuseppe@gmail.com

Prof. Filippo Graziani  
GAUSS S.r.l., Italy, filgraziani@gmail.com

UNISAT-5: THE FIRST MICROSATELLITE PLATFORM FOR CUBESAT AND POCKETQUBESAT  
DEPLOYING.

**Abstract**

UNISAT-5 is a Microsatellite-class spacecraft having a mass of about 30kg. Its main feature, distinguishing it from other satellites of comparable size, is to be a platform for the release of smaller satellites in orbit. The possibility to integrate more pico and nano satellites in a single platform allows to the university groups to achieve the 'in orbit phase' with a reasonable price and to the launch providers to interact only with a customer that represent all the groups. For this reason GAUSS Srl, a two-years old italian company, is proposing to coordinate the universities for integrating the satellites in a unique platform UniSat ready to launch. The first mission performed by the team the 21st allowed the injection into a near-SSO orbit with an altitude of 634 km at 07:25:48 UTC the microsatellite UniSat-5. Eight small satellites having different sizes (from CubeSats, to PocketQubeSats) coming from several places in the world, from Pakistan to Perù have been integrated and deployed from the UniSat-5 bus. Two different deployer systems have been used: MRFOD (Morehead Rome Fempto Orbital Deployer)made by MSU students in collaboration with G.A.U.S.S.' engineers and PEPPOD (Planted Elementary Platform for PicoSatellite Orbital Deploying) designed by GAUSS team. The successful injection in orbit of UNISAT-5 payloads makes G.A.U.S.S. a reliable launch services provider for one of the very few companies in the world, and the first in Italy, providing launch services for for small satellites. GAUSS is also the only company in the world providing launch services for PocketQubeSat, a new satellite standard based on a shape of 5x5x5 cm and invented by Prof. R.J. Twiggs. Moreover, Unisat-5 carries on board an artwork from the Italian artist Gaetano Porcasi to honour the memory of the Carabinieri corporal Gioacchino Crisafulli, killed by Mafia in Palermo on April 27, 1983 after having blocked a freight with drug.