

CUBESAT DEVELOPERS WORKSHOP - APRIL 2020

InOrbit NOW Launch Services for precise CubeSat and microsatellite deployment



A service provided by



Our Path

InOrbit NOW



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D-Orbit Today





75+ PEOPLE

Aerospace company providing:

- Satellite platforms
- Satellite hardware (e.g. ADCS suite, OBC)
- Innovative launch services solutions InOrbit NOW ٠ Launch services
- Operations for nano to microsatellites
- Satellite and on ground software solutions
- End of life strategies

InOrbit NOW Launch Service - DPOD



DPOD and DCUBE are designed to be integrated:

- Directly on the launch vehicle
- On our interface plate
- On other interfaces with launch vehicles developed by D-Orbit or third party providers
- On our ION Satellite Carrier



Integration of DPOD-3U XL on ION Satellite Carrier



DPOD-3

Form Factors				
DPOD-3	For 3U/3U+ (or combination of 1U and 2U)			
DPOD-8	For 8U/8U+ (or any combination of smaller CubeSat formats)			
DCUBE-12	For 12U/12U+ (or any combination of smaller CubeSat formats)			
DCUBE-16	For 16U/16U+ (or any combination of smaller CubeSat formats)			

InOrbit NOW: New market need





Increasing of number of CubeSat constellations
Increasing of need to be placed in a precise orbit

Development of a Free Flying Satellite Carrier able to transport your satellites to space and release them into precise, independent orbital slots

ION: Launch & Deployment Re-invented



ION Satellite Carrier is a **free-flying satellite with chemical green bipropellant propulsion** that can serve multiple orbital planes with a single launch

- Multi form-factor support:
 - o from 1U to 16U CubeSat
 - Microsatellites
- Precision deployment
 - ground controlled by D-Orbit through Aurora
 - o independent in-orbit release of individual satellites
- Fast Dispersion and True Anomaly phasing: up to 85% faster deployment time
- RAAN shift: down to 1h RAAN shift in 1 month
- Orbit altitude change
- Correction of inclination
- Guaranteed deployment : triple fault-tolerant mechanism



InOrbit NOW IOD/IOV

InOrbit NOW

A plug-and-play platform for in-orbit demonstration and validation that leverages ION Satellite Carrier.

- Standard, well defined interfaces: Plug-and-play CubeSat mechanical interface, Standard 3.3/5/12/28V electrical interface
- Access to host resources: Uplink, downlink, memory, and more
- Wide coverage: A network of ground stations provides multiple daily access opportunities
- Attitude control: Ability to point the platform to perform your tasks with optimal exposure
- Launch flexibility: Multiple launch options in LEO every year
- Multi-orbit: Repeat your experiment at different altitude and planes

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Flexible pricing: Pay what you use

PERFORM YOUR EXPERIMENTS IN OPTIMAL OPERATIONAL CONDITIONS

ION Satellite Carrier - maiden flight



- First ION mission named ORIGIN
- Maiden flight scheduled in March 2020 on VEGA SSMS POC
 - Launch delayed because of COVID-19 outbreak
 - Waiting for the reopening of the launch base and the new launch date
- Mission outline
 - VEGA releases ION Satellite Carrier
 - ION performs fast dispersion of the 12 CubeSats from Planet on the injection orbit of the launch vehicle
 - o In orbit demonstration of the on-board propulsion module



Integration of ION on VEGA SSMS in the launch base in French Guiana

ION Satellite Carrier – second flight



- Second flight scheduled to launch in December 2020
- On going activities to manufacture and test the second ION Satellite Carrier with enhanced capabilities compared to the maiden flight.
- Bigger propulsion system available to customers to perform
 - True anomaly phasing,
 - RAAN shift,
 - Correction of inclination
 - Altitude change
- Other 4 ION rideshare launches scheduled in 2021





Part of the second ION main structure in D-Orbit clean room

Avionics of the second ION in D-Orbit clean room



Adjustable according to the launch and customer needs

Kick off meeting	T-9/12 MONTHS	T-9 MONTHS	Discussion of Interface Requirement Documents (IRD)
IRD Signature	T-7 MONTHS	T-2/3 MONTHS	Cubesats acceptance @ D-Orbit facility
Launch Campaign Readiness Review and CubeSats integration @ D-Orbit's facility	T-2 MONTHS	T-1.5 MONTHS	Transportation
Launch campaign and CubeSats integration at the launch site	T-1 MONTH	т-о	LAUNCH!

Using AURORA on a tablet

InOrbit NOW

Our state-of-the-art Mission Control Room:

AURORA

- Leverages our cloud base control software AURORA
- Cloud based is available everywhere and no need of hardware investments
- Collaboration with ground station providers such as Leaf Space and Amazon Ground Station
- Is designed to operate on multiple missions at the same time
- Grants full control of operations, sub-systems status, and energy and power budget
- Allows to have recording of all command, telemetry, and photographic data always at hand



D-Orbit Mission Control Room in Italy







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