



InOrbit Demonstration
Validation
An EU research and innovation initiative
funded under EU's Horizon 2020 programme



UPMSat-2. Image credit:
Polytechnic University of Madrid

The In-Orbit Demonstration and Validation initiative (IOD/IOV) is a series of launches which will allow academia, research organisations, SMEs and larger industrial companies to effectively test new technologies in orbit, reducing the time it would otherwise take to bring them to market.

IOD/IOV is a new initiative of the European Commission funded under the Horizon 2020 programme. It will positively impact the competitiveness of European space research, the space industry and further demonstrate the capability of European organisations. These missions will contribute to maintaining Europe's place as a global space leader, while shaping solutions for the future.

The initial Call for Expressions of Interest attracted 57 applications; of these, 26 from 10 different countries were selected, with SMEs, large companies, universities and research organisations all represented in the selection.

#EUSPACE
#IOD_IOV
#H2020



In-Orbit
Demonstration
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TYPES OF IOD/IOV PROJECTS



Technology



Earth Observation



Telecom



Space Science



Navigation



Space Environment



Space Situational Awareness



Education



Electronic Radiation Sensors

ORIGIN OF IOD/IOV PROJECTS



SME



University



Research organisation



Large industry

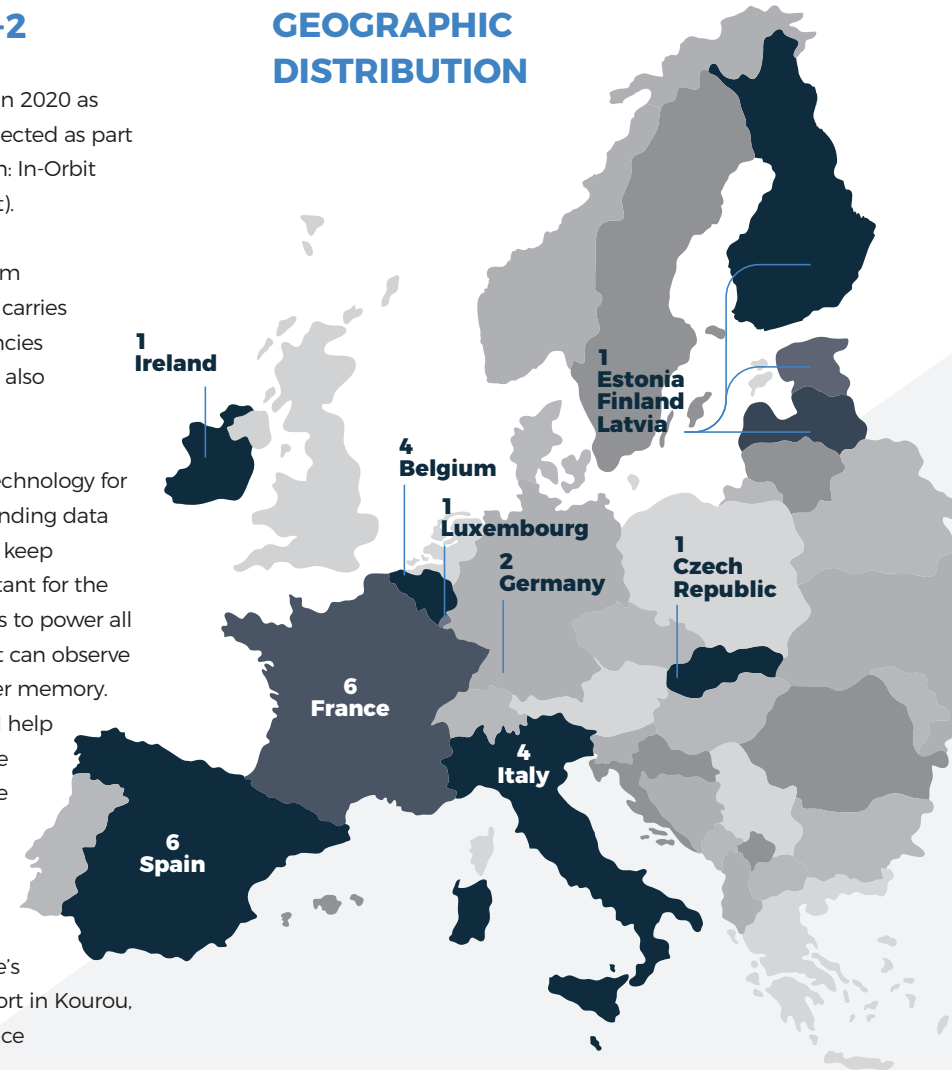
VV16 SPECIFICS - UPMSAT-2

The UPMSat-2 microsatellite will be launched in 2020 as the first of 26 experiments which have been selected as part of a new initiative of the European Commission: In-Orbit Demonstration and Validation (IOD/IOV in short).

UPMSat-2 – designed and built by students from the Universidad Politecnica de Madrid (UPM) – carries six payloads developed by industry, space agencies and research centres, with one of the payloads also designed and built by UPM.

Experiments to be sent to orbit include new technology for positioning satellite antennas, important for sending data back to Earth; thermal microswitches that can keep components at specified temperatures, important for the longevity of equipment; simplified solar sensors to power all the tech up there, and; radiation monitors, that can observe how space radiation affects on-board computer memory. Improving knowledge in all these domains will help scientists and engineers design and build more efficient, robust satellites and may even provide solutions to problems facing us here on Earth. The mission also exposes students and European engineers to hands-on experience in real-world space programmes. The UPMSat-2 will be launched by ArianeSpace's Vega VV16 vehicle from the European Spaceport in Kourou, French Guiana – also known as the Guiana Space Centre – the world's most modern launch base.

GEOGRAPHIC DISTRIBUTION



Call for Expression of Interest for IOD/IOV experiments
April – May 2018

Analysis of applications and feasibility study
June 2018 – February 2019

EU-ESA Contribution Agreement
16 April 2019

Implementation
April 2019 – End 2022

Launch of 1st IOD/IOV experiment
2020

Other launches
2020–2022

