



Axient’s First CubeSat: “IGOR”

Axient’s small satellite design and manufacturing laboratory, commonly known as Space Monkey, is scheduled to launch its first CubeSat in September 2024. The IGOR mission will raise TRL for Space Monkey’s CubeSat subsystems, demonstrate deorbit technology, and examine the boundaries of communication through the Iridium constellation. Axient is pleased to partner with Orbotic Systems, based out of Thousand Oaks, California. IGOR will host Orbotic Systems’ Deorbit Drag Device (D3) to further demonstrate D3’s ability to modulate spacecraft drag force while controlling orientation and orbital decay.

Mission Relevance

Deployment of D3 highlights new FCC compliance for deorbiting spacecraft flying in LEO. Starting in September 2024, all LEO spacecraft will be required to deorbit within 5 years of mission end-of-life, or sooner.

“We look forward to supplying a deorbit solution for the IGOR mission and Space Monkey team. In addition to helping IGOR stay compliant, we appreciate the opportunity to test and showcase the maneuverability aspects of D3. This joint effort is sure to be a rewarding mission and Orbotic Systems is looking forward to our next mission with Axient.”

—Erik T. Long, CEO of Orbotic Systems

Capabilities	
Payload (2U available)	3U System
Power: 4W OAP, 3.3V, 5V	Power: 7W OAP, 100Wh storage
Data: UART I ² C GPIO	Magnetic ADCS
Mass: 3kg	Mass: 5kg
3 spare connectors with data and power	Iridium TT&C
App-based Flight Software	

FLIGHT INFORMATION

Launch Provider: Firefly Aerospace
 Launch Vehicle: ELYTRA-1
 Deployer: FANTM-RiDE-1
 Orbit: 475 km circular sun synchronous orbit
 Inclination: 97.3122 deg
 Launch Integrator: Xtenti, LLC

MISSION CONCEPT

IGOR will perform a series of experiments to assess the stabilizing and pointing accuracy of magnetorquers on a 3U CubeSat. The satellite will utilize the Iridium satellite network for telemetry with transmissions beginning 60 seconds after deployment. Orbotic Systems’ D3 will accelerate the deorbiting of IGOR using deployed surface area to increase drag and effects of atmospheric friction.

ABOUT SPACE MONKEY

Space Monkey is a small, agile, and aggressive team of innovative and experienced satellite experts. We help our customer build small batch, reliable CubeSat buses. We are spacecraft integrators who specialize in maturing CubeSat capabilities, development concepts, and we help answer questions about what’s possible in space. Space Monkey team members date back to the beginning of CubeSats with more than 165 years of collective think-tank experience. Space Monkey serves the R&D community with on-time, on-cost bus development which enables the greater purpose and utility of CubeSats for technology and mission demonstrations. Whatever your mission needs, we bring the market credibility and reliability in order to explore the art of the possible.