



## PERMITTING DECISION SUMMARY

### CAPSTONE

#### Advanced Space LLC

1. Advanced Space LLC is a U.S. company whose core business is focused on supporting and improving space mission design, navigation, mission planning and operations.
2. Advanced Space LLC has developed the Cislunar Autonomous Positioning Technology, Operations and Navigation Experiment (CAPSTONE) payload for NASA. CAPSTONE is a 12U technology demonstrator that will support future Artemis program missions by being the first satellite to be placed into the unique Near Rectilinear Orbit (NRHO) about the Moon.
3. CAPSTONE will also demonstrate technologies involved in operating the Cislunar Autonomous Positioning System, a peer-to-peer navigation tool for objects in cislunar space. CAPSTONE will take ranging measurements between itself and another NASA spacecraft, the Lunar Reconnaissance Orbiter (LRO), currently orbiting the Moon.
4. CAPSTONE was launched on June 28th, 2022, on the Rocket Lab Electron rocket, which is operated by Rocket Lab USA Inc. Additionally, the mission utilised the Lunar Photon upper stage, also developed by Rocket Lab, to deliver the CAPSTONE spacecraft on its trans-lunar trajectory to the Moon.
5. Payloads are permitted in line with the [Outer Space and High-altitude Activities Act 2017](#) and the [Outer Space and High-altitude Activities \(Licences and Permits\) Regulations 2017](#).
6. Each payload has been approved by the Minister for Economic Development, on advice from officials across agencies. When approving payloads, the Minister needs to be satisfied that:
  - a. The applicant has taken and will continue to take all reasonable steps to safely manage the operation of the payload.
  - b. The proposed operation of the payload is consistent with New Zealand's international obligations; and
  - c. The applicant has an orbital debris mitigation plan that meets prescribed requirements.
  - d. Despite being satisfied of these matters, the Minister may nevertheless decline a permit if he is not satisfied that the proposed operation of the payload is in New Zealand's national interest.

Date Granted	Authorisation Number	Payload Name	Owner or Operator	Country of Origin
11 April 2022	210181-PPT	CAPSTONE	Advanced Space LLC	USA