

Call For Participation

Hydramo Academic Access Programme (HAAP)

Study Climate & CubeSat Behavior from Orbit



About Hydramo

Hydramo B.V. is a Dutch startup focused on mission-critical and climate change operations, integrating in-situ and orbital data to bridge the gap between two traditionally separate worlds - ground and space in a truly untraditional way, through direct-to-satellite uplink.

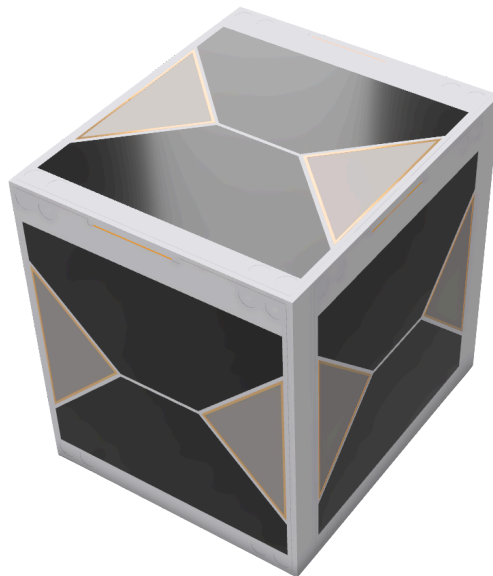
Hydramo is being designed a new class of highly-integrated mission-critical 1U CubeSats that will deliver flood early warning alerts, hydrological insights and collect orbital environmental data to study the atmosphere variations.

These dual-purpose CubeSats that will provide real-time flood alerts to vulnerable regions via direct-to-satellite messaging and collect orbital environmental data for research into atmospheric density variation, attitude dynamics and radio propagation

Overview

The Hydramo Academic Access Programme (HAAP) invites universities, students and researchers to engage directly with the behavior of CubeSats in Low Earth Orbit through a dedicated "Scientific Mode" integrated into Hydramo's new-generation satellites.

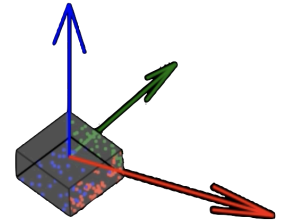
This mode will allow temporary switching from Earth Observation operations to a configuration that records attitude dynamics, environmental conditions, and system response, offering raw insight into satellite behavior in a real space environment.



Three Core Areas of Scientific Study

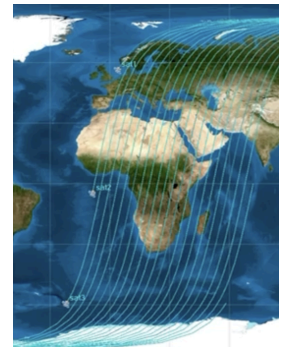
1. Attitude Dynamics in Passive Satellites

- Study real-world satellite motion in the absence of active control systems (no torquers or reaction wheels)
- Analyze natural tumbling ("thumbing"), rotation damping, and gravity-gradient effects
- Enable student-led modeling of passive orbital mechanics and spacecraft behavior in LEO



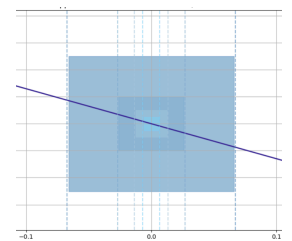
2. Climate Observation through Atmospheric Interaction

- Derive atmospheric density changes by measuring orbital decay and drag behavior across regions
- Observe space weather events and solar activity through in-situ CubeSat response
- Correlate LEO environmental variability with climate-driven thermospheric effects and ocean-atmosphere energy transfer zones



3. Radio Communication Behavior and Doppler Techniques

- Study uplink performance of ultra-low-power, Doppler-triggered ground sensors
- Analyze in-orbit radio signal behavior under passive rotation and variable alignment
- Advance GNSS-free, low-power Doppler-based wake-up systems (SkyKey), contributing to future satellite-ground EO communication methods



Mission Overview

Hydramo 1U CubeSats without attitude control will operate in two modes. Mission-Critical Mode over land for flood alerting and Scientific Mode mainly over oceans for logging sensor data for research.

On-board sensorics planned:

- 3-axis gyroscope
- Magnetometers
- Temperature and light sensors
- GNSS

Communication will be realized using integrated antennas for UHF and S-band via Hydramo ground station broadcasting scientific telemetry data using private VPN.

Mission start is planned for 1Q/2027.

How you can participate

By joining HAAP, you will:

- Contribute to the design of satellite payloads and experiments
- Prepare models or simulations
- Define the scientific questions we will answer together from orbit
- Receive priority access to real telemetry once the fleet is active
- Be credited in co-authored research or outreach efforts

Who should apply?

- Universities in EO, CubeSat and aerospace engineering teams
- MSc or PhD researchers in climate, space weather or orbital mechanics
- Professors and lecturers seeking educational missions

What you will get

- Involvement in pre-launch payload and experiment planning
- Priority access to orbital data from Hydramo's future missions
- Collaboration on open datasets and scientific publications
- Eligibility for data-driven projects, student theses and outreach content

How to apply

Please, submit a 1–2 page proposal including:

- Your team's background
- Areas of technical or scientific interest
- What kind of data or collaboration you are most excited about
- Your proposed contribution (e.g. design input, modeling, hardware design, software coding)

You can apply via email: hydramo@hydramo.eu or reach us directly for questioning:

Michal Provazek, CEO, michal.provazek@hydramo.eu

Advait Parameswaran, Aerospace Scientific Lead, advait.parameswaran@hydramo.eu

The deadline for submission is June 30, 2025 as collaborations will start September 1, 2025.

For each of the three core areas of scientific study within the HAAP, one individual or team will be selected.

We are looking forward to reading your proposals and working together to make our planet a better and more resilient place for generations to come.

Rotterdam, April 22, 2025

Michal Provazek
Director

Hydramo B.V.

Terms and Conditions page follows.

Terms and Conditions – Hydramo Academic Access Programme (HAAP)

1. Voluntary Participation

Participation in HAAP is entirely voluntary. Submission of a proposal does not establish a formal agreement or create any binding obligation between the applicant and Hydramo B.V.

2. No Guarantee of Selection

Hydramo B.V. reserves the right to evaluate, select, or decline any proposal submitted. Submission does not guarantee access to data, inclusion in future missions, or collaboration in any form.

3. Program Changes

Hydramo B.V. may modify, postpone, or cancel the HAAP program or any related missions at its sole discretion without prior notice or liability.

4. Non-Commercial Nature

HAAP is offered for research, educational, and scientific purposes only. Participation does not constitute a commercial relationship or entitle any party to financial compensation or exclusivity.

5. Confidentiality and Intellectual Property

Applicants are advised not to submit any confidential or proprietary information. All submissions may be reviewed internally or by partner organizations. Any co-developed intellectual property or results will be addressed through separate agreements if required.

6. Use of Name or Affiliation

Participants may not use the name, logo, or identity of Hydramo B.V. for promotion or publication without prior written permission. Hydramo B.V. may publicly list participating institutions or individuals as contributors, unless otherwise requested.

7. Jurisdiction

This program and its terms are governed by the laws of the Netherlands. Any disputes will be subject to the exclusive jurisdiction of the courts of the Netherlands.