

# C-DER

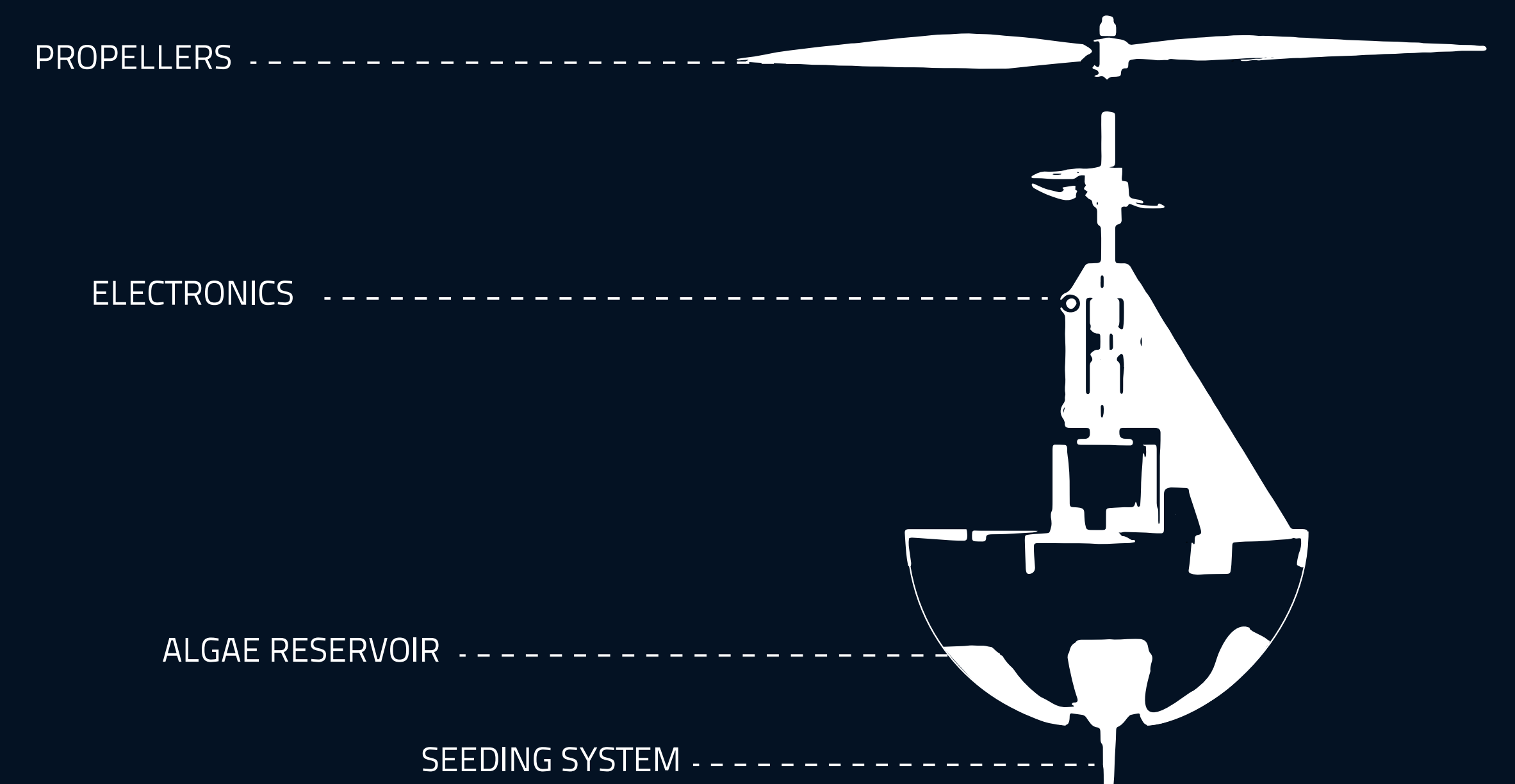
Humans are now drivers of environmental change on a scale that is unique in Earth's history. Anthropocentric landscapes are characterised by reduced biodiversity and deteriorated ecosystems. In the meantime preparations are being made for lunar and Martian habitats, requiring a tremendous advancement in the methods and instrumentation of ecosynthesis. How will scientists and engineers working with artists and designers accomplish this pivotal endeavour? The urge to explore essentially uninhabitable environments is an important stimulus towards a metabolic approach in design and materials science. Symbiotic Machines for Space Exploration - **SyMSE**, is a project that aims to create an autonomous systems for enhancing terrestrial ecosystems and facilitating atmospheric formation on other planets through artificial photosynthesis. Within this scenario, the bio-drone titled C-DER is one of SyMSE's outcomes and the continuation of the bio-machines created by Ivan Henriques. The C-DER operates as a swarm and has a dual function: A) capable of change gases with the environment through micro-algae photosynthesis and harvest its electricity from this process and B) seed the ground of endangered environments on Earth to help the atmosphere and possibly create an atmosphere in another planet via the seeding system and photosynthesis.

C-DER was developed by artist/designer Ivan Henriques, in collaboration with Raoul Frese, Sandrine D'Haene, Granit Domgioni - Biophysics department from VU Amsterdam, hardware software designer Andjela Tomic, product designer Emiel Giliamse, engineer Leydervan Xavier and Gabriel Ayres - CEFET/RJ and Agata Maria Kokodziejczyk - Space Garden.

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inspiration: mapple seeds



C-DER flying on Earth



Design to demonstrate the C-DER swarm, creating an environment over time inside a controlled system.