

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Upper Stages, Space Transfer, Entry & Landing Systems (3)

Author: Mr. Markus Jaeger
The Exploration Company GmbH, Germany, m.jaeger.70@web.de

READY FOR INAUGURAL MISSION LATE 2026 - NYX EARTH PROPULSION SYSTEM USING
GREEN STORABLE PROPELLANTS**Abstract**

In parallel to the development and verification of two demonstrator capsules ('Mission Bikini' late 2023, 'Mission Possible' late 2024), The Exploration Company is currently developing its next spacecraft 'Nyx Earth', which will be launched in late 2026 towards a 2 month ride into Low Earth Orbit, the so-called 'Mission Odysee'. Nyx-Earth is a 4m wide capsule for resupplying current and future space stations and also for performance of microgravity experiments. The Nyx Earth spacecraft will consist of 2 elements: the service module for the power subsystem and for the un-pressurized payload compartment and the re-entry capsule for the pressurized payload compartment, the propulsion subsystem, the avionics subsystem and the docking interface. The propulsion system will be based on a bi-propellant propulsion system using H₂O₂ as Oxidizer. The system will consist of several thruster with a thrust level about 200 N needed for pulse mode firing sequences and de-orbiting firings. This paper describes the status of the propulsion subsystem development activities within the Nyx Earth program of The Exploration Company and its objectives as demonstrator for the future mission of the company. After Mission Odysee with the Nyx Earth spacecraft, The Exploration Company will focus on their next program Nyx-Moon which is an evolution of the Nyx Earth spacecraft with a cryogenic propulsion system allowing the landing on the Moon surface in 2028.