GRASP - Green advanced space propulsion

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Space activities and applications play an important role in strengthening the competitiveness of Europe by scientific progress in the knowledge-based society, and by providing strategic influence and security. Major successful space missions under European leadership have placed ESA and its Member States, the European science community at the forefront. To continue this path Europe must have independent and competitive access to space. With the ITAR (International Traffic in Arms Regulations) continuing to impede the acquisition of US components, Europe thus needs to develop an assured independent source of propulsion components. Today space craft propulsion relies heavily on toxic and carcinogenic hydrazines as propellants. Hydrazine itself is widely used as monopropellant and MMH and UDMH is used as bipropellant fuel.

These propellants are a threat to people and the environment, and handling these toxic propellants impedes costly safety measurers. As new ideas and new technologies emerged in the last years, and as the concerns about both the environment and the handling of carcinogenic propellants significantly increase, the so-called Green Propellants show potential improvements with respect to performance and cost. The goal of this project is thus to select the most promising green liquid propellant candidate/s and to push the propulsion technology to the level needed to prove that Green Propellant technology is feasible and competitive. Research and development on Green Propellants and adjacent propulsion technology in Europe is geographically fragmented and insufficiently funded. With the present consortium, some of the key-players in Europe will harmonize their capabilities to meet this demanding goal.

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