

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)  
Future Space Transportation Systems (4)

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EUROPEAN PLATFORM FOR POST-ISS UTILIZATION WITH THE DREAM CHASER®  
SPACECRAFT**Abstract**

In 2017 the European Space Agency (ESA) launched an open call for innovative solutions to support European user-driven research and applications in low-Earth orbit (LEO) beyond the International Space Station. Building upon the Dream Chaser for European Utilization (DC4EU) Pilot Phase, which was selected in 2015 as part of the ESA initiative for strategic partnerships with the private sector, OHB and Sierra Nevada Corporation, supported by 4SPACE, are proposing the Dream Chaser spacecraft as a potential platform for post-ISS utilisation in Europe. It is envisaged to provide a full end-to-end mission capability using the unique attributes of the Dream Chaser, including the compatibility with the Ariane 6 launch vehicle, and the ability to land on suitable runways in Europe. Besides the features required for the NASA's Commercial Cargo Resupply missions to the International Space Station, which are planned from 2020 on, the Dream Chaser offers unique capabilities to meet scientific requests, such as a large pressurized and unpressurized volume, effective resources provided to the payloads, late cargo access and loading, responsive runway landing, very low flight profiles, and near-immediate access to cargo after landing, and responsive and flexible mission scheduling and flexible mission durations. This approach is also in line with the recent Global Exploration Roadmap, published in January 2018, where LEO represents one of the core space segments to perform research and future technology demonstration, and where it is indicated that there is a real demand coming from the private sector that will continue beyond space agencies demands. This paper aims to present the capabilities and effort involved in achieving a European platform in LEO utilizing the Dream Chaser spacecraft, able to satisfy the European user needs beyond the lifetime of ISS.