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ESA SPACE RIDER SYSTEM: MULTI-PURPOSE SERVICE FOR COMMERCIAL APPLICATIONS

Abstract

Humanity's half-century courtship of space has entered a compelling moment in history, with the activity in Low Earth Orbit (LEO) that brings new breakthroughs to Earth and can save our planet. That has inspired new ideas and excitement, birthed a new industry, and galvanised new thinking regarding possibilities for pharmaceutical, technological, and manufacturing firms and research institutes. Well-respected financial entities acknowledge that the space market shows great promise as a force for economic vitality.

We are now at a critical stage in the development of space where Low Earth Orbit (LEO) is ready to become a sustainable marketplace. Commercial customers have paid for in-LEO RD and Manufacturing on the ISS whose National Lab achieved over 55

The Space Rider mission Hence the introduction of Europe's premier transportation system: Space Rider System (SRS), with a flight cadence that supports scalable manufacturing, which is the primary driver of a commercialised LEO marketplace. SRS has responded to the commercialisation challenge with a new platform that offers multi-purpose service mission management, supporting a wide range of payload needs at affordable prices. SRS's flexible model makes LEO much more accessible to the non-traditional space industries, especially those needing return capability.

The first Payload Aggregate for SRS Maiden Flight is in preparation at ESA with commercial and institutional Customers. In addition to the technical development of SRS, it was critical to implement a business model able to express the potential of Space Rider as a new commercial tool. To do this, ESA has partnered with Space Commerce Matters (SCM).

Terrestrial Market opportunity for Space Rider We have analysed the many different markets for Space Rider – especially those that take us from institutional IOV/IOD operations to true terrestrial non-traditional applications.

Results of a thorough survey of these applications is reported in the paper, attractive business development models for conversion to space-based opportunities offered by microgravity and extreme conditions as vantage point are analysed, not only to launch the Space Rider commercial initiative but also to ensure its long-term viability.

Space Rider is a new tool in the commercialisation of LEO and will support sustainable manufacturing and operations in LEO. Our IAC paper will describe the potential for Space Rider to provide a new space factory that will revolutionise LEO as a new commercial marketplace.