Aerospace Europe Conference 2023
Joint 10th EUCASS – 9th CEAS Conference

Abstract #XXX *(to be filled by the organizers)*
Preferred Topics: STRMAT / SPEXPLO / REUSYS *(3 maximum from the list of topics)*
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Type: Oral
Status of corresponding author: Regular

Title
Lunar cargo (Oversized or Parcels)

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Abstract
Landing on the Lunar surface for delivering cargo is possible without the use of fuel, when starting from Low Lunar Orbit. Two new concepts are being proposed, one for Oversized Cargo called OPLONAS (Oversized Payload Lander On Non-Atmospheric Somata), and one for small parcels called MACEDONAS (Momentum Absorption Catcher for Express Deliveries On Non-Atmospheric Somata).
OPLONAS is designed as a wheel looking spacecraft with the cylindrical payload hub in the centre of the wheel (6m D 9m H) and an outer rim at 60m diameter, held in place (connected with the hub) with radial tethers. It lands at the vast planes of Oceanus Procellarum and dissipates its kinetic energy due to roll friction. Once OPLONAS comes to rest, the payload is extracted and the hub is used as a habitat. The flexible tethers and the rim are collected to be reused for constructing a MACEDONAS.
MACEDONAS is a surface based parcel capturing system for capturing, decelerating and steering the parcels (ejected regularly by an orbiting spacecraft) at a safety net. The catcher element of MACEDONAS needs to be placed at high grounds, while the safety net at lower altitudes. MACEDONAS can be reconfigured within an hour to receive the next parcel.

References

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