



**Affordable Lunar Landing system
M.A.C.E.D.O.N.A.S**

The Lunar Resources that drive the demand



HELIUM-3 (at 20 M/Kg) = Aneutronic Fusion to replace **FOSSIL FUELS** of 5 Trillion annually. HOTELS, LUNAR DATA CENTERS (67% CAGR), PV POWER, PLATINUM GROUP METALS, Material For DATA CENTERS in GEO, FUELS, WATER.

M.A.C.E.D.O.N.A.S.

Momentum Absorption Catcher for Express Deliveries On Non-Atmospheric Somata

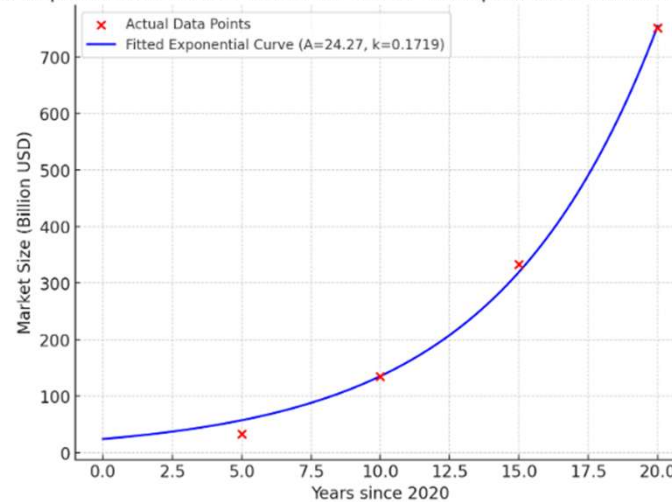


Lunar Transportation = 1.5 Trillion

we save 1 Trillion and eliminate the risk from ejecta

(volume until the expiry of our European patent 2041, estimate by PwC)

Fitted Exponential Growth Curve for Lunar Transportation Market (2020-2040)



The fitted exponential growth curve for the lunar transportation market from 2020 to 2040 has the following parameters:

- Initial Market Size (A): Approximately 24.27 billion USD
- Growth Rate (k): Approximately 17.19% per year

The innovation

- Landing cargo on the Lunar surface, **WITHOUT USING ANY FUEL**, but by exploiting mechanical principles (mass inertia & elastic deformation of material).
- We also offer ballistic transportation. (receiving end, point-to-point,).
- Wires (of the “necklace”) can be used as stock for 3d printing once get worn out.

The system elements

- **Consists of two elements**
 - **The “catcher” (made of an antiballistic textile) [the catcher needs to be placed in high grounds]**
 - **The “Necklace” (made of a memory alloy that turns its shape into spring)**
- **Needs a mothership (spacecraft) that can deliver one parcel at each orbit (111 minutes)**
- **Deployment by rovers, repositioning by a winch type of mechanism.**

Problems we solve

- Increase of efficiency by **323** %.
- Increase frequency of deliveries
 - 1 parcel every 111 min per location
 - Flexibility (Parcel re-sorting)
- **No EJECTA !!!**
- MOBILITY service (ballistic point-to-point)
- emergency supply of packets (ballistic)
- Easily repositioned (versus launch pads)

Competitive landscape

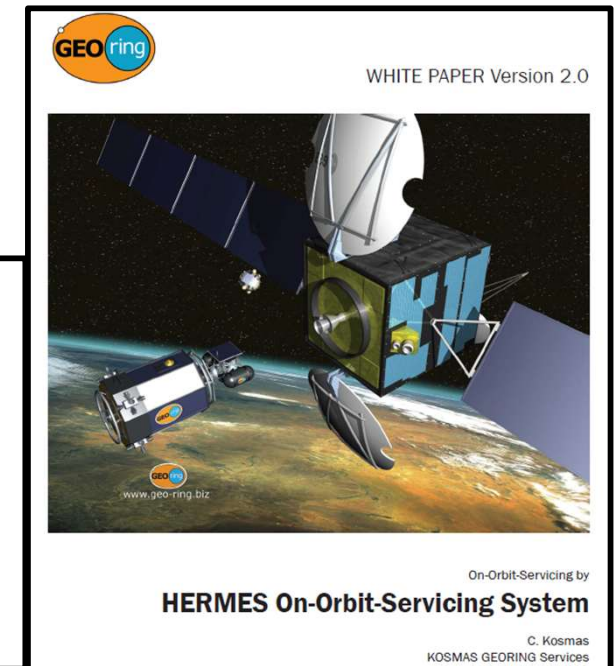
Competitors	How our solution is better
None *	Patented concept, increasing efficiency by 323 %
None	ZERO Ejecta of MACEDONAS operation
None	MACEDONAS capacity as small as 200 gr (soda can)
None	Exponential growth potential, 10x every 3 years

About Charis Kosmas (CEO)



Freelance – Entrepreneur since 1991
Project controller for MSG 2 billion
4 satellites, Ground segment, Launch,
LEOP, Commissioning

(Meteosat Second Generation)
Longest serving satellite of all times.



Our Partners:

BUNDESREPUBLIK DEUTSCHLAND

URKUNDE
über die Erteilung des
Patents
Nr. 102 59 638

IPC
B64D, 1/00

Beschreibung
Beschreibung zur Ausbildung von Handlungen an einem
Ziel-Flugkörper, Wartungsgeräten und Verfahren zur Fokussierung eines
Sensordatensatzes

Patentinhaber
Inventor: Luigi Lottini, Milano, IT

Erfinder
Erfinder: Charalampos Kosmas, GR

Tag der Anmeldung
18.10.2002

München, am 05.12.2004

Der Präsident des Deutschen Patent- und Markenamtes

Dr. Heide
Dr. Heide

Å
A
C

Ångström Aerospace Corporation

ThalesAlenia
Space
A Thales / Finmeccanica Company

OHB SYSTEM
An OHB Technology AG Company

RTG

CS

oerlikon
space

beron
SPACE

CASE
Consulting &
Aerospace
Engineering

TRACTION 2023 - 2024



- Dragons Den Agreement (TV) (<https://youtu.be/CkwD9IEaOW0>).
- DARPA LunA-10 participation.
- MoU&NDA with Australian partner.
- MoU&NDA with Indian partner.
- MoU&NDA 2 US Launchers.
- MoU with Re-CAE (CH).
- MoU&NDA with Canadian company.
- Nomination for IAASS award Vladimir Syromyatnicov on “Safety by design”.
- US Patent confirmed.
- Winner of the Moon Village Association: “MOON MARKET AWARD 2024” (2-12-2024)

MOON MARKET AWARD 2024



MOON MARKET ANNUAL AWARD

Category: Special Award for Lunar Game Changers

PROUDLY PRESENTED TO

CHARALAMPOS (CHARIS) KOSMAS

Founder & CEO, Lunar Cargo P.C., Greece

Affordable Lunar Landing system M.A.C.E.D.O.N.A.S.

Lunar Markets: Transportation, Lunar Logistics Services

The company/project is recognized as a game changer with a cost-cutting lunar inbound/outbound mobility solution that doesn't generate ejecta. Strong international outreach and exponential growth potential.

A handwritten signature in white ink, appearing to read "Giuseppe Reibaldi", positioned above a horizontal line.

DR. GIUSEPPE REIBALDI
PRESIDENT
MOON VILLAGE ASSOCIATION

A handwritten signature in white ink, appearing to read "Christophe Bosquillon", positioned above a horizontal line.

CHRISTOPHE BOSQUILLON
CHAIR
MVA MOON MARKETS
WORKING GROUP

Awarded in Luxembourg on December 2, 2024

TRACTION 2025



US012286246B2

(12) **United States Patent**
Kosmas

(10) **Patent No.:** **US 12,286,246 B2**
(45) **Date of Patent:** **Apr. 29, 2025**

(54) **TWO PHASE LANDING SYSTEM FOR THE MOON AND ITS IMPLEMENTATION ELEMENTS**

(71) Applicant: **Charalampos Kosmas**, Ilioupolis (GR)

(72) Inventor: **Charalampos Kosmas**, Ilioupolis (GR)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(52) **U.S. Cl.**
CPC *B64G 1/625* (2023.08); *B64G 1/1071* (2023.08); *B64G 1/648* (2013.01)

(58) **Field of Classification Search**
CPC . B64G 1/62; B64G 1/64; B64G 1/625; B64G 1/648; B64G 1/1071
USPC 244/158.1, 158.2, 173.3
See application file for complete search history.

(56) **References Cited**
U.S. PATENT DOCUMENTS

<https://aiaa.org/2025/06/13/greek-entrepreneur-hopes-to-build-giant-net-to-catch-incoming-cargo-on-the-moon/>

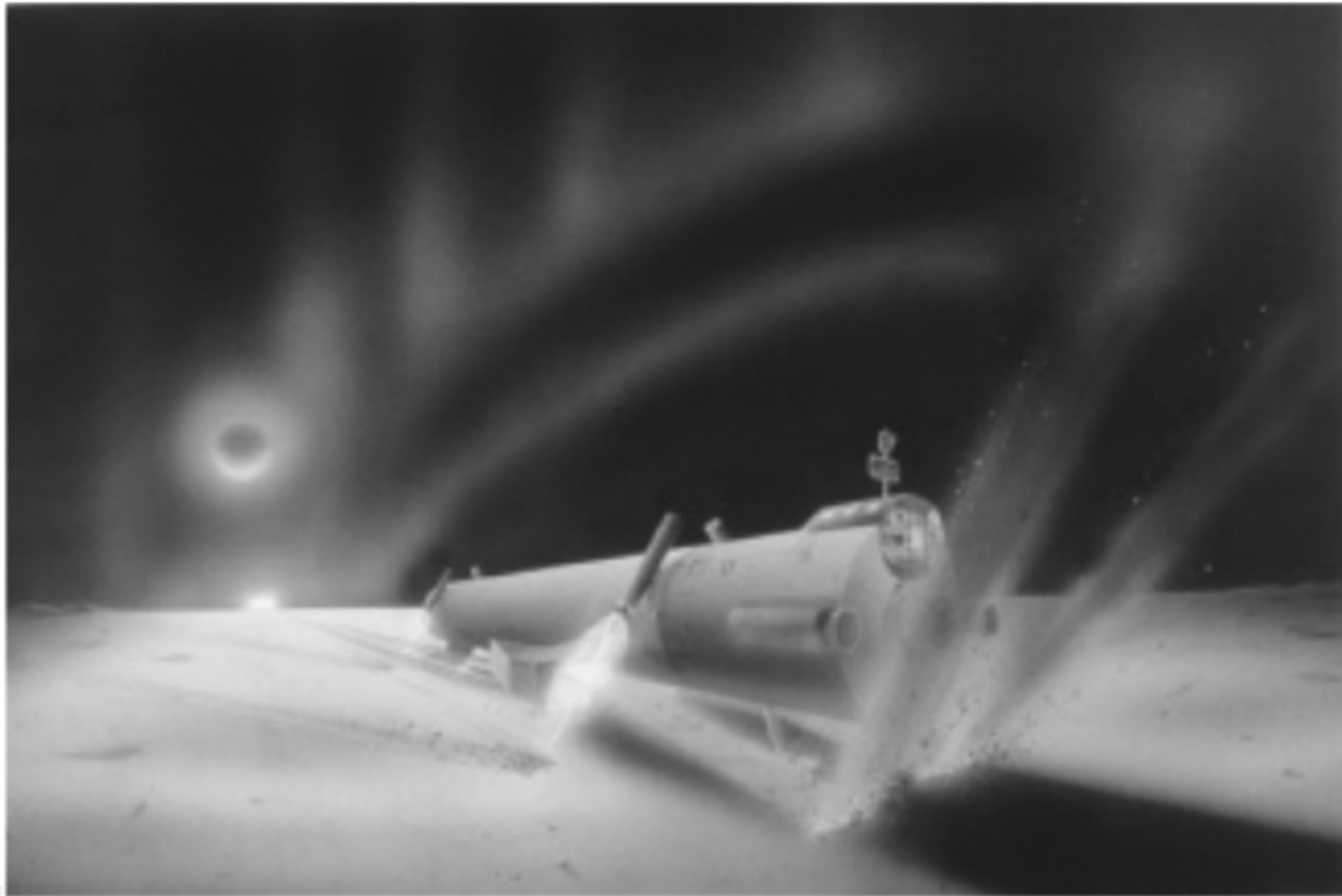
<https://youtu.be/Zs3XhrMGrGs/>

This video on YouTube is independent "third party" compilation.

Team

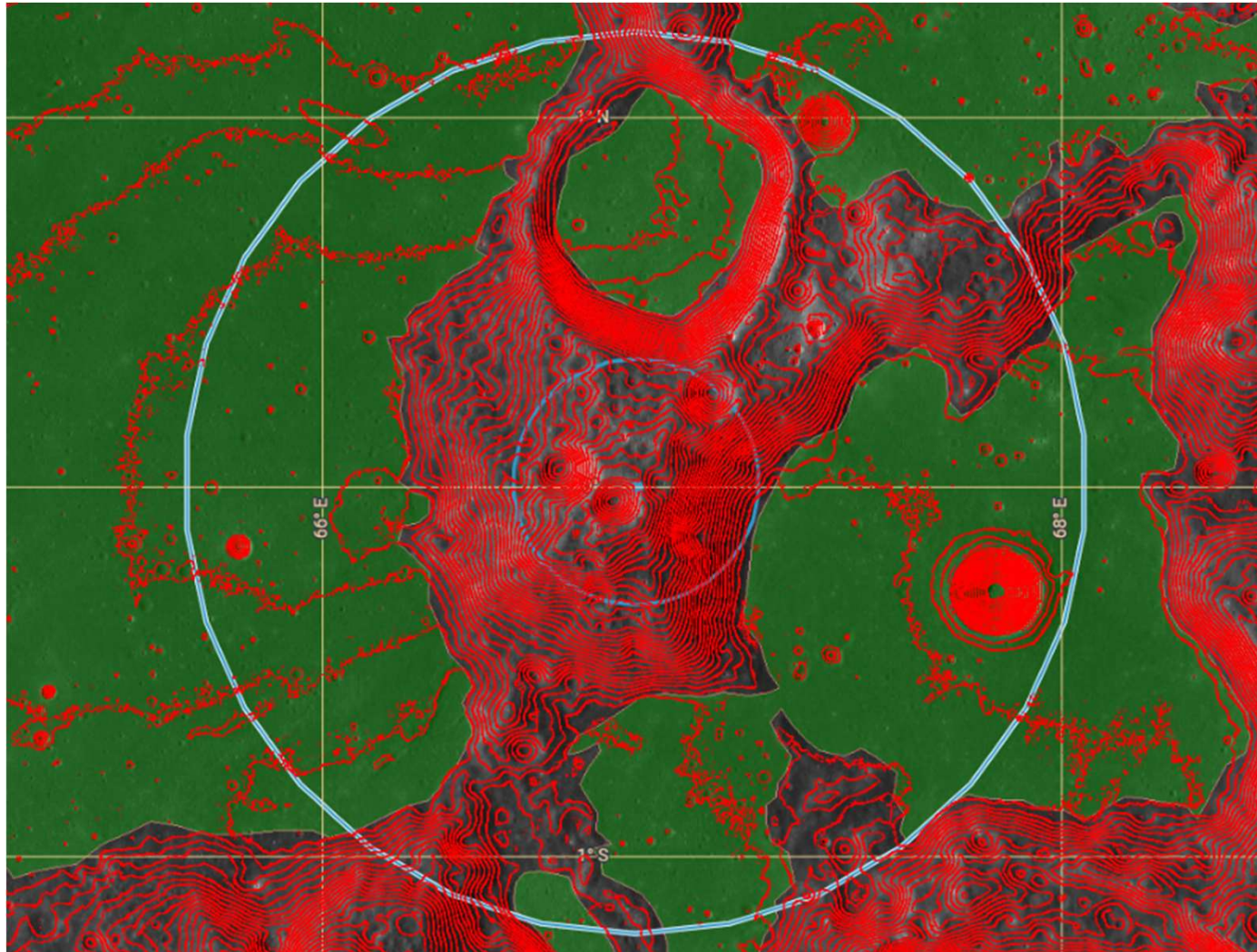
- **Charis Kosmas : Founder & CEO, HR**
- **Ray Stott : (HR Outsourcing)**
- **Ray Sperber : (System engineering Advisor)**
- **Sean Burns : (Space Operations Advisor)**
- **Dr. Massimo Bandecchi : (Technical Advisor)**
- **Tommaso Sgobba : (President IAASS Safety Adv.)**
- **Prof Petros Dellaportas : (Statistics for Geomatics)**
- **Stefano Bagli: (Lunar Geomatics)**
- **Spyros Aleiferis (3He demand expert for fusion)**
- **Weicheng HUANG (multi-body dynamics)**
- **Vasilis TSIAFAKIS (Lunar Navigation Advisor)**
- **Anastasis PETROPOULOS (Flight Dynamics Expert)**
- **4 applicants for internship.**

1950-1982 Lunar Slide Lander (LSL) **(foundational idea of friction based lander) By** **Ehrlicke Kraftt, co-author to Wernher Von Brown.**



Site 1: 0°N, 66.852°E

elevation 850 m. Radius 4g (37 km)



- Zero Propellant
- Zero Ejecta
- Frequency 1/111 min
- Organic exponential growth
- Spring steel A228
- 100 gr SF3 7.1 kg
- 1 kg SF3 71 kg
- 100 kg SF3 7,100 kg
- Gummetal x0.71
- Patents EU/US
- 3x efficiency
- Smaller launchers
- Relocatable