

Remote Sensing With Non-Terrestrial Networks



□ Skentel GROUP Limited

□ Project Overview

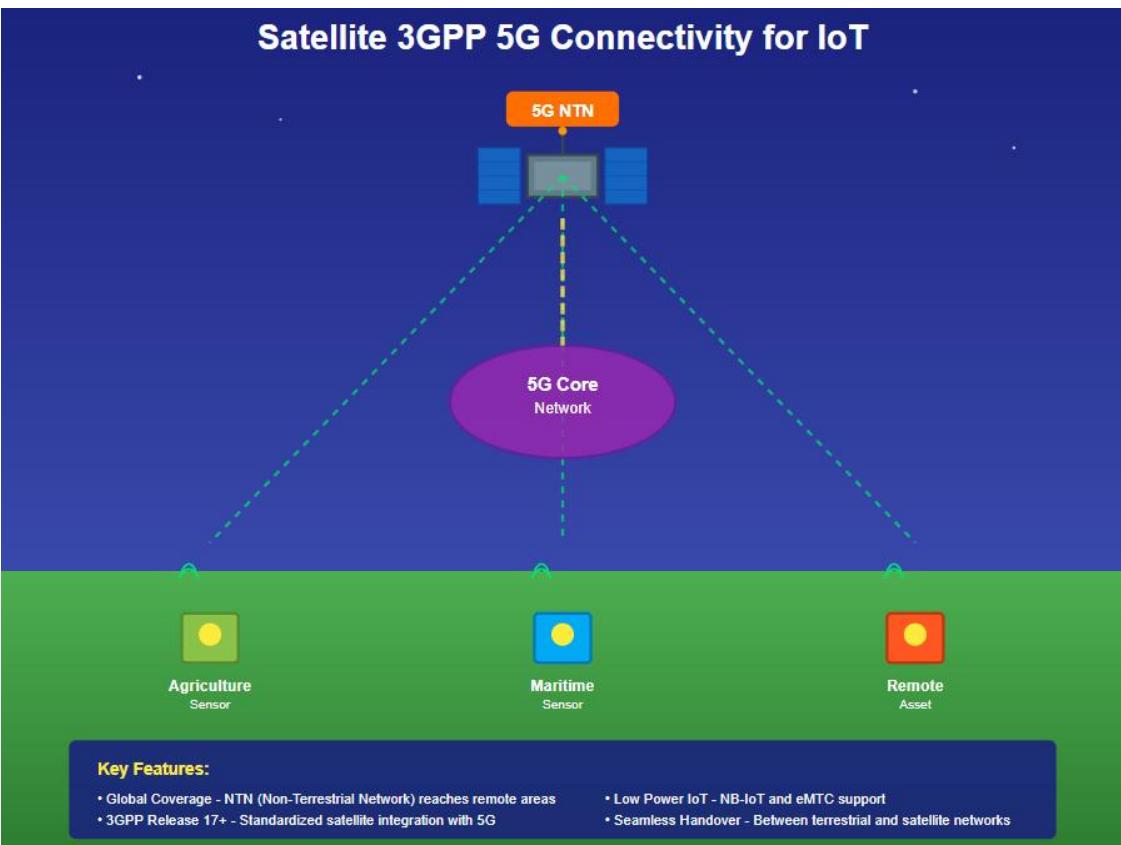
We are adding Non Terrestrial Network 3GPP 5G Connectivity for IoT to our existing terrestrial network sensor devices. This will allow us to expand our remote monitoring telemetry services across the globe.

□ Grant Awarded : £8,193.35

□ Project Duration : 4 months



CLEVER CONNECTIVITY FOR SUSTAINABLE FUTURES



EMdrone™ – Space Domain



❑ Kernow Enterprises Ltd. (ESL Group)

❑ Project Overview

EMdrone™ is a UxS-agnostic multi-mission pod and node network. It is dual-use and has widespread interest from NATO armed forces.

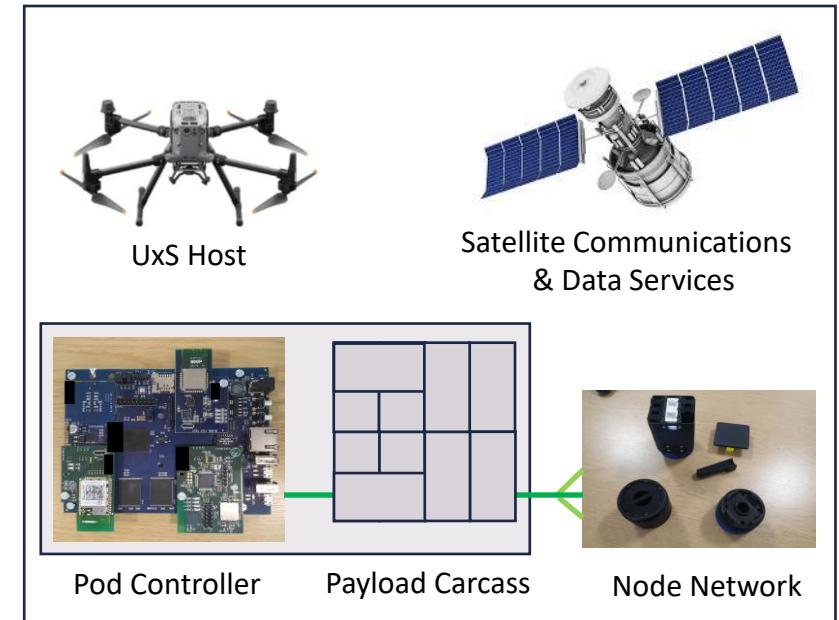
This project adds initial space domain support to the existing aerial, land and marine domains being developed by ESL Space & Defence Solutions primarily for the Royal Marines and British Army.

There are three elements to the project:

- Two satellite communications pod modules (different bands)
- Earth Observation data set ingestion to the EventMan® platform
- Outline design for the pod to be deployed on satellites

❑ **Grant Awarded :** £29,923.20

❑ **Project Duration :** 4 months



Compact 3-Way Waveguide Switch



□ Flann Microwave Ltd

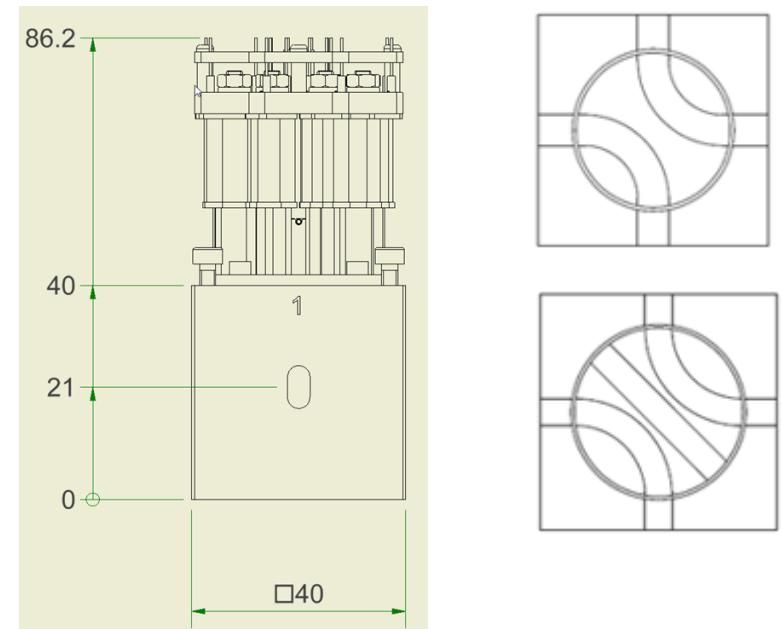
□ Project Overview

Further development of existing Flann waveguide switch technology to create a stand alone, compact, 3-way solution for use in Satellite and other Space Applications.

An approach to give 3-way switching would be to gang two 2-way switches together. This approach is less desirable due to its increased mass, reduced performance & lack of redundancy. The Flann solution will be to build on our existing 2-way design to enable 3-way switching, whilst retaining the unique features of our actuation technology.

□ Grant Awarded £30000

□ Project Duration : 3 months



Dual-Use Composite Development



□ **Piran Composites Limited**

□ **Project Overview**

Piran Composites Ltd (Newquay) is developing a digitally traceable composite manufacturing process aligned with space-grade ECSS standards. The project adapts aerospace composite methods for dual use in UAVs and small satellites. A new CNC platform will enable rapid in-house prototype manufacture. The project supports UK Space Agency priorities in In-Orbit Manufacturing and Launch.



Project related image

□ **Grant Awarded :** £30,000.00

□ **Project Duration :** 4 months



TPOD Capability Expansion



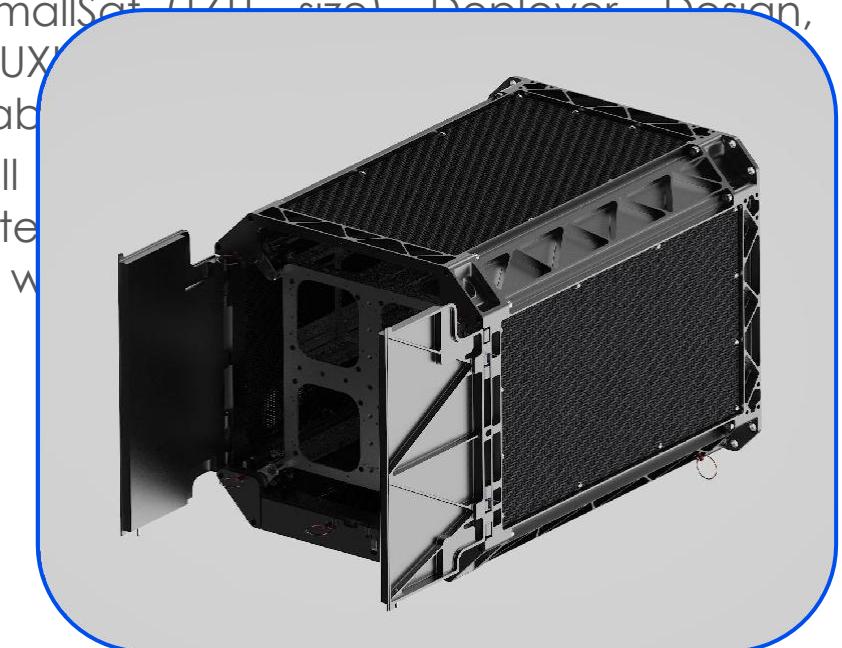
□ Third Planet Orbital Ltd

□ Project Overview

- The principle subject of the activity is the development of a SmallSat (1U size) Deployer Design, incorporating the novel methods already evident in our existing 12UX design. The design will be carried over simply into the new size to expand the targetable market.
- Additionally an entirely new 'release sequencer test kit' will be developed. This will simplify validation activity. The TPOD electrical setup and internal sequencing must be verified at on-site integration. The RSTK will facilitate this, reduce training and increase ease of performing the task.

□ Grant Awarded : £19,681

□ Project Duration : 5 months



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3D Printed Unitary Ball Nut



□ PGM Reball Ltd

□ Project Overview

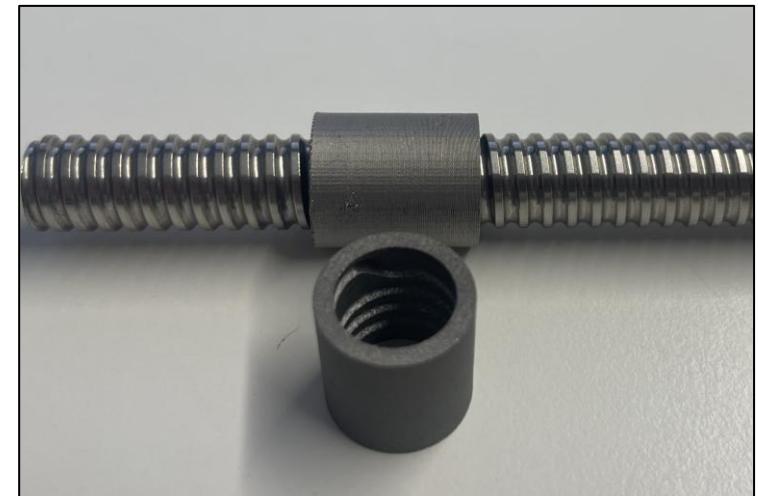
The Unitary Ball Nut enables geometry that only additive manufacturing can achieve, opening a new design space beyond traditional machining limits and represents a step change in reliability and resilience for space grade motion systems.

Novel and patent pending, the design reduces component vulnerability during launch as well as being more cost effective to manufacture by reducing the part count and making assembly much simpler.

The project aims to produce a validated prototype supported by robust test data, enabling engagement with prospective aerospace and space sector customers.

□ **Grant Awarded :** £29,074

□ **Project Duration :** 5 months



Project HESPERIA Materials Demonstrator



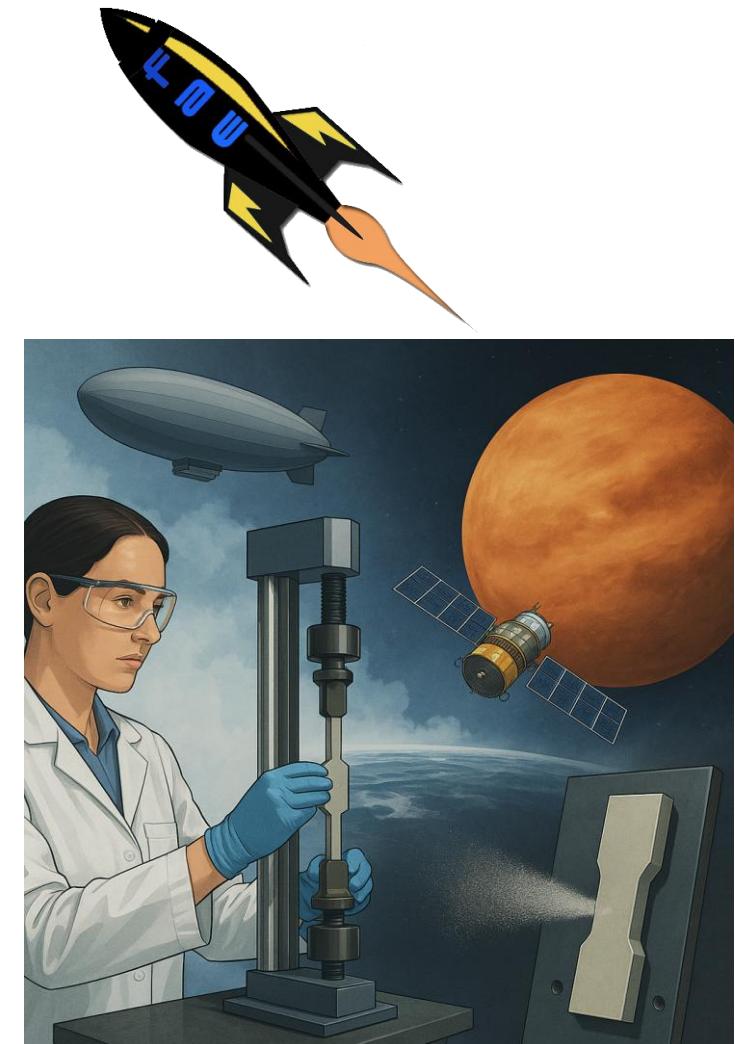
□ Future Aerospace Engineering Ltd

□ Project Overview

Future Aerospace Engineering Ltd is leading a materials research programme to identify and test fluoropolymer films and ceramic/sol-gel coatings capable of withstanding highly acidic, ultraviolet-rich, abrasive, and tensile stress conditions. These materials are being evaluated for use not only in *Project HESPERIA*—a concept for a floating habitat within Venus's upper atmosphere—but also for broader applications such as satellite surfaces, solar-array protection, and structures used in asteroid-mining and orbital-infrastructure missions. The project will generate a validated materials dataset and joining procedures to support next-generation spacecraft and habitat design.

□ Grant Awarded : £11,200

□ Project Duration : 5 months



LIFTAR - Launcher Integrated Flexible Transport and Rotation Drive System



□ NDE Clarke Pitchline Ltd

□ Project Overview

This project will design and test a ground-based mechanical driveline system and electrical control to manipulate a portable rocket launcher tower with a rocket attached, in the vertical and horizontal vectors, and lower and rotate the launch tower. This innovative, lightweight, compact, reusable system, which can be mounted on the platform of a wheeled carrier, is resilient to extreme weather conditions and temperatures and is constructed to limit vibration, deflection and sagging to aid pinpoint rocket launching accuracy.

□ **Grant Awarded :** £15,000

□ **Project Duration :** 5 months



Deep Time:

Citizen-Powered Earth Observation



- **DigVentures**
- **Project Overview**

Deep Time is DigVentures' collaborative mapping and citizen science platform, designed to help communities, researchers and land managers explore the connections between cultural heritage, habitats and landscape change. Deep Time trains and empowers people to contribute high-quality archaeological and ecological data at scale. Our aim is to create a shared, evidence-rich picture of the landscapes we care about, strengthen environmental decision making, and open up new, inclusive ways for communities to take part in understanding and shaping their future environments. This project will add real-time QA, an open Data Explorer, and enhanced partner dashboards and UX upgrades to support EO integration into LNRS, BNG and heritage workflows.

- **Grant Awarded :** £30,000
- **Project Duration :** 4 months



Where you've seen us

We are honored to have been selected as part of the 2025 cohort for the European Union Prize for Citizen Science



Who we work with



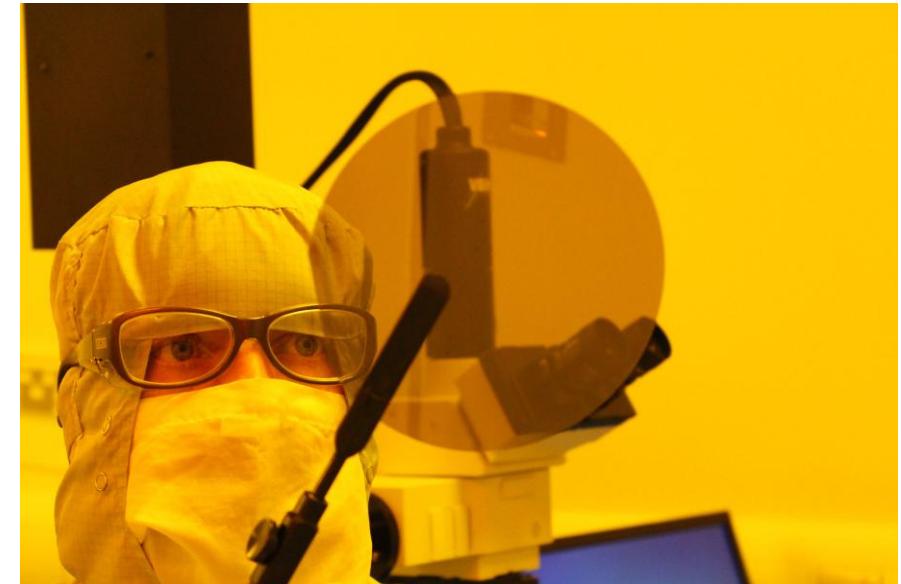
□ Nascent Semiconductor Limited

□ Project Overview

Electronic components underpin the operational functionality in every single satellite and spacecraft deployed today. These parts and the wider electronic systems that they enable must function reliably in a uniquely challenging space environment, subject to high vacuum, wide ranging temperature changes (-200 C to 150 C) and in high radiation environments, all with no opportunity for repair. These conditions drastically reduce the reliability, operational lifetime and functionality of conventional electronic components, driving up operating and launch costs through the need for redundant systems and ultimately satellite replacement. The project will demonstrate a route to a novel, scalable, manufacturable electronic technology to enable the realisation of reliable space-based systems using silicon carbide technology.

□ **Grant Awarded :** £30,000

□ **Project Duration :** 4 months



Ka-Band Amplifier for EO Telemetry



□ Viper RF Limited

□ Project Overview

Payload data transmitters in Earth Observation (EO) missions are moving from X-band to K-band based on the potential for multi-Gb/s downlink capability and recommendations from a group of Space Agencies to accelerate the deployment of 26 GHz data technology for all types of LEO satellites.

Viper RF has demonstrated a semiconductor chipset to upconvert the output from an existing X-band transmitter platform to K-band (25.5-27GHz) on a previous ESA funded research project. In particular, the output amplifier chip (P/N VRFA0127-NT), fabricated on a space-qualified GaN-on-SiC technology, has demonstrated very low distortion amplification and gained strong interest from a number of customers entering the EO Ka-band telemetry market.

This project is to perform key space readiness and productionisation activities for a state-of-art 10 Watt Ka-band GaN MMIC amplifier. Activities include development of space-grade packaging and production test capabilities ready for future qualification and flight model activities.

□ **Grant Awarded :** £12,734

□ **Project Duration :** 4 months



Project Name

- SmartIR Ltd
- Project Overview

SmartIR provides an innovative, energy-efficient approach to satellite thermal control using a flight-demonstrated Variable Emissivity Radiator, eliminating or drastically reducing the need for heaters. By dynamically modulating emissivity with minimal power, SmartIR lowers thermal loads, extends satellite lifetime, and frees significant power for payloads—all within a lightweight, CubeSat-compatible design.

- Grant Awarded: £66,000
- Project Duration: 7 months

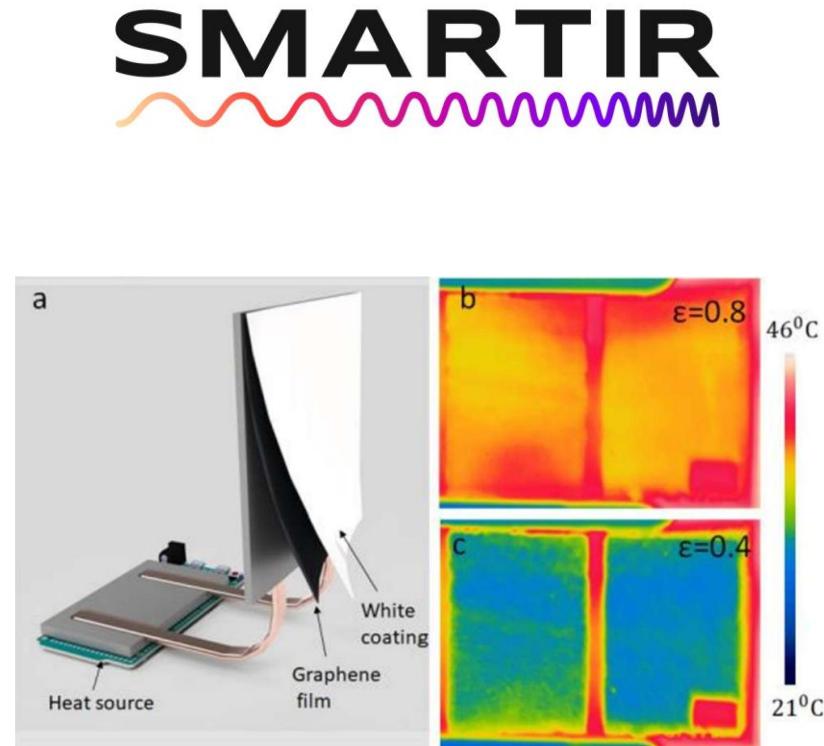


Figure 1: (a) Design of the SmartIR thermal control system showing laminated layers of solar reflective coating and active Variable emissivity radiator layers. (b,c) Infrared thermogram of the radiator recorded at on and off states.

AM Powder Optimiser AI



□ THINKITTECH LTD

□ Project Overview

The project aims to develop and validate a prototype capable of predicting and optimising the use of metal powder for 3D printing in the space sector, where performance, safety and traceability are critical.

By applying artificial intelligence and machine learning to historical production data, the system identifies optimal powder blends, minimises waste and enhances part quality before manufacturing even begins.

Pivoting from aerospace and advanced manufacturing applications, the technology supports In-Orbit Service, Assembly and Manufacturing (ISAM) by enabling more reliable, efficient and sustainable production for future space missions.

□ **Grant Awarded :** £18,000

□ **Project Duration :** 4 months



MORED

□ Cerberus Nuclear

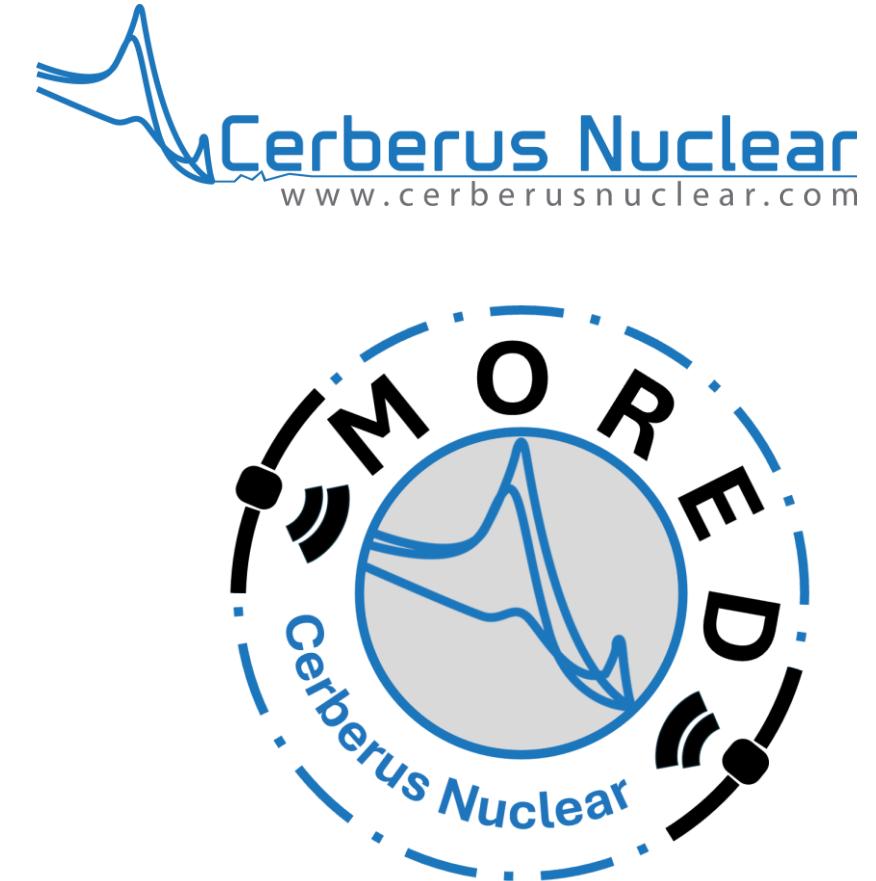
□ Project Overview

Cerberus Nuclear is developing a Materials in Orbital Radiation Environments Database tool (MORED) for use in the design and development stage of space-based system.

Utilising its experience and expertise in the Nuclear Industry, Cerberus Nuclear is looking to provide a tool that will support users through the early stages of space sector projects. Radiation exposure varies across different orbital altitudes and types, and the material/shielding properties of materials can be dependent on the spectra that they are exposed to. Combining a variety of radiation dependent properties in one tool, users can quickly scope out potential challenges posed by radiation and what shielding may be required.

□ **Grant Awarded :** £14,200

□ **Project Duration :** 3 months



ECLIPSE – Enabling Cosmic Labs In-Orbit Platform Servicing and Experiments



Lúnasa

Project Overview

This project focuses on maturing the design and development of Cosmic Labs, an advanced orbital testbed capable of hosting and validating advanced payloads and providing satellite inspection opportunities.

Grant Awarded : £30,000

Project Duration : 3.5 months

LÚNASA



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ECLIPSE: AI-Driven On-Orbit SDA Payload



□ Lodestar Space Ltd.

□ Project Overview

Lodestar is developing Mithril - an AI-first, hardware-enabled software suite designed to identify any unknown satellite, assess its capabilities, and predict its intent.

As part of **Project ECLIPSE**, we are integrating advanced LiDAR technology into Mithril's multimodal sensor suite to enhance situational awareness and sensing accuracy in space. This integration will enable Mithril to perceive its environment with greater precision and reliability, supporting safer docking, servicing, and responsive space domain awareness.

Together, these advancements strengthen the UK's leadership in sovereign space capabilities and contribute to a more secure and sustainable orbital future for dual-use missions.

□ **Grant Awarded :** £30,000

□ **Project Duration :** 3 Months

LODESTAR



Satcom Dual-band Feed System



□ Satraka Ltd

□ Project Overview

A dual Ka/Ku frequency band, world's most compact feed system will be developed, manufactured, and verified through testing in this project.

The dual-band feed system is a pivotal component in the Satcom network, enabling multi-orbit and multi-frequency operations, and providing much more resilient and reliable broadband connectivity than current Satcom systems.

Existing feed systems on the market operate in separate Ku or Ka frequency bands. Integrating the two bands into a single system presents significant technical challenges and requires advanced engineering solutions. This challenge is further exacerbated in relatively small user terminals, where low SWaP (size, weight, and power) is required.

□ **Grant Awarded :** £15,000

□ **Project Duration :** 4 months



LoRa as an alternative to GNSS/GPS



- SpaceAM Autonomous Machines**
- Project Overview**

The objective is to prove the use of LoRa as an alternative to GNSS (Global Navigation Satellite System) and GPS (Global Positioning System) for positioning in a cluster of 30 nodes/probes for a future Venus mission and Earth-based positioning applications.



- Grant Awarded :** £28,000
- Project Duration :** 3 months