

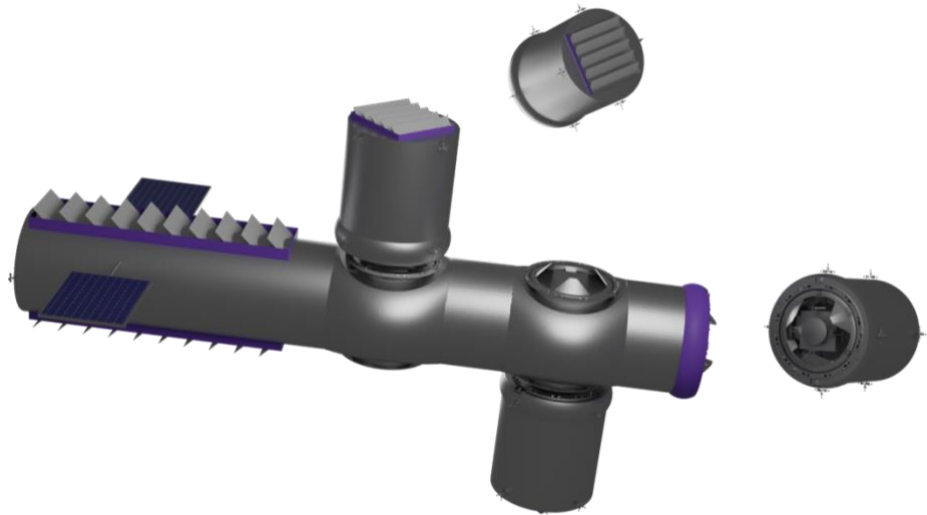
# Aeronautical Engineering Group Design Project Presentations

Joint event with the Loughborough Branch of the  
Royal Aeronautical Society

**Tuesday 13<sup>th</sup> June 2023, 6.30pm – 9.00pm, EHB002**

## Space Debris Removal System

Our Space Debris Removal Mission aims to tackle the growing problem of space debris which currently threatens our free usage of space. The design uses four removal vehicles, alongside a central hub, to create a long-term and scalable solution to remove dozens of discarded rocket bodies and derelict satellites over the next few years.



## “Argo” Supersonic Dual-Variant Aircraft



Argo is a collaborative project between Loughborough University and Virginia Tech to develop a supersonic platform with both military and civilian applications. Differing by only the cabin or payload module, Argo can deliver 25 passengers or 5000kg of payload at transpacific ranges in just under 100

minutes with a standard approach and landing speed combined with the use of sustainable aviation fuels. Argo will make commercial supersonic travel more accessible and sustainable than ever before. The military variant will fill the interdicator strike role with unparalleled response time.

## “Platypus” Amphibious Air Taxi



The AAT (Amphibious Air Taxi) Platypus is a new amphibious aircraft which will replace existing aircraft with such capabilities as well as unlock new commuting opportunities in and around urban areas. The aircraft has a passenger capacity of 32 and maximum useful range of 500km however its primary mission is that of making frequent short hops.

The design solution features innovations such as a hybrid distributed propulsion powertrain for reduced emissions and STOL capability, Hydrofoils to reduce notoriously long water take-off rolls, a large bubble canopy for excellent pilot visibility and a cabin designed with accessibility as its core philosophy.

## “FF-12 Griffin” Autonomous Air Cargo System



Vanguard Aviation present the FF-12 Griffin, an autonomous tiltrotor cargo aircraft designed and engineered to handle the unexpected. The bespoke tiltrotor powertrain blends the versatility of a helicopter with the efficiency of a fixed wing aircraft. With a military focus the folding wing mechanism enables efficient storage in confined spaces such as aircraft carriers, while its innovative payload handling system

facilitates fast tactical delivery operations of payloads up to 13.5 tonnes. Hitting the global market by 2040, the FF-12 Griffin provides new levels of cost effective, safe, and reliable cargo delivery options to customers.

## Sky Rover



Sky rover is a unique and versatile utility aircraft that is a bespoke solution for the South African general aviation community. The aircraft aims to circumvent the challenges posed by the lack of transport links in the region. To facilitate the requirements of take-off and landing from rural towns, STOL capabilities of the aircraft is paramount. Overall, fuselage is boxy in shape and interior is highly modular allowing for more flexibility in mission configurations. H-tail was incorporated into the design to have high control authority, even in high angle of attack. This aircraft can also be transported in a 40' ISO container.

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