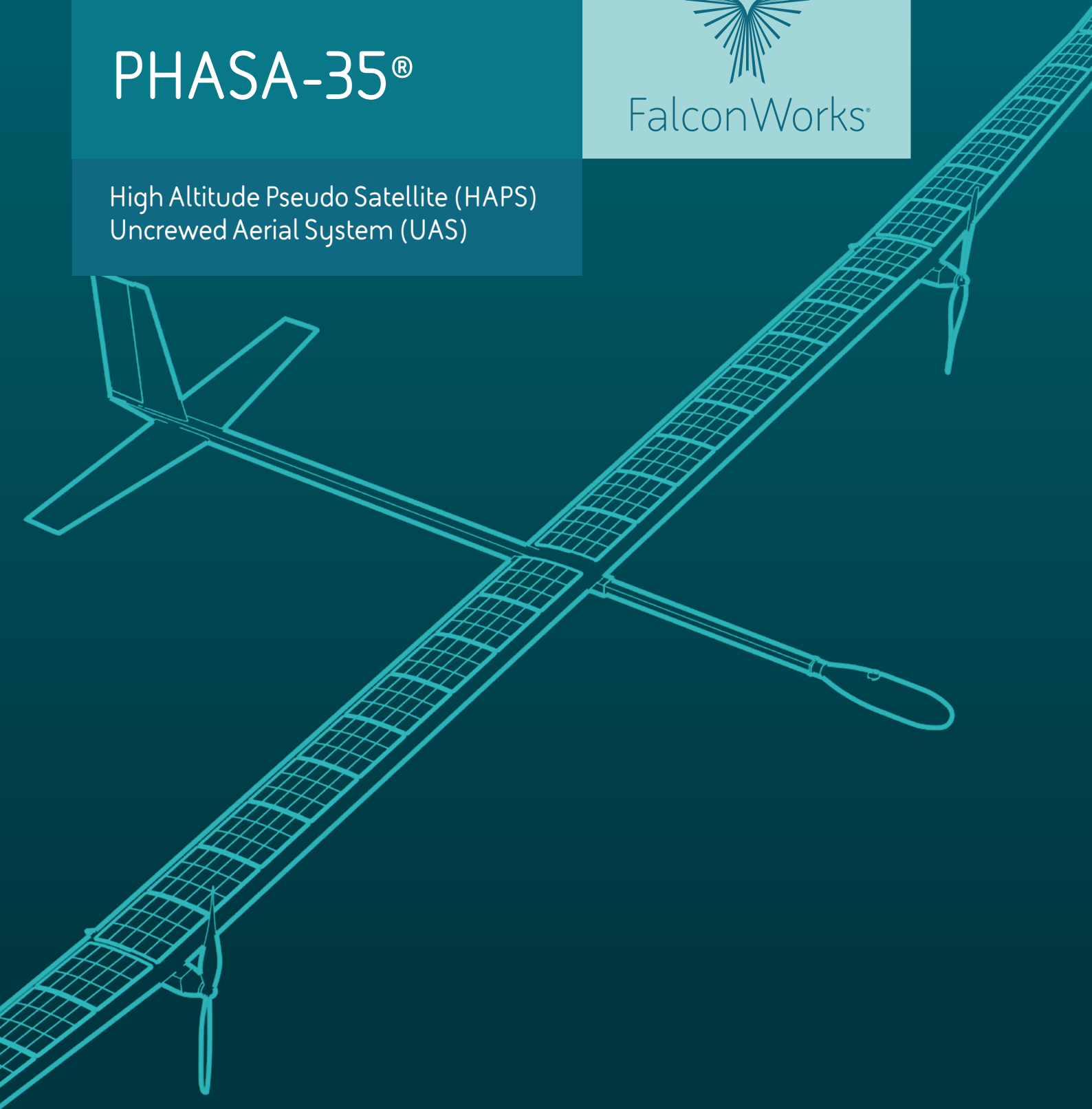


PHASA-35[®]

High Altitude Pseudo Satellite (HAPS)
Uncrewed Aerial System (UAS)



FalconWorks[®]

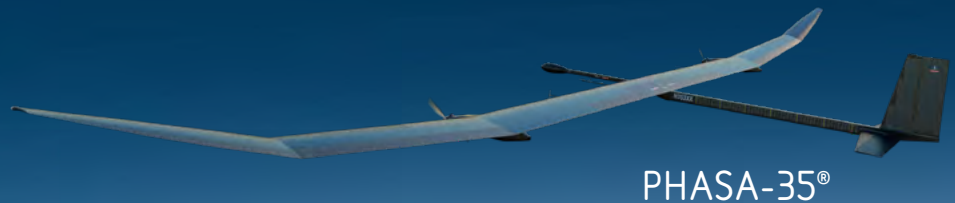


BAE SYSTEMS

BAE Systems FalconWorks®

As part of BAE Systems' Air sector, FalconWorks® is the agile, forward-leaning centre for advanced research and technology, leading the company's Uncrewed Aerial System (UAS) strategy. As one of the largest suppliers of UAS in the UK and Europe, FalconWorks offers a comprehensive and fast-evolving range of uncrewed capabilities working with SMEs (small and medium-sized enterprises) and specialist suppliers across the UK.

The FalconWorks UAS portfolio continues to evolve, benefitting from access to and application of wider BAE Systems expertise, Academic and Research and Development (R&D) partnerships. Our cutting edge UAS portfolio is deliberately constructed to provide a range of core vehicle categories that in turn offer customer choice and variability in payloads to meet desired end use case outcomes in a cost effective, agile and commodity-based way.



PHASA-35®



Callen-Lenz



Koios



T-150

Prismatic

Advancing HAPS Platforms to the Edge of Space

Prismatic has defined an innovative route to providing a long range, high altitude system that can provide significant applicability to many valuable global civil and defence markets. PHASA-35 utilises 15 years of experience of world leading High Altitude Long Endurance (HALE) UAS to provide a proven, cost effective and reliable system. PHASA-35 has an industry leading agnostic payload capacity of up to 15kg which allows for a large and varied range of sensor capabilities to be carried. With a multi-year phased development plan in place, the next generation of PHASA-35 has over two and a half times the power generation and more than two times the energy storage capacity.



Fregata

Capability Growth Path



2016
Product, Technology & Services Development



2018

2020



2021

The PHASA-35 story starts

Prismatic begin the development of the PHASA-35 with key structural tests and the construction of a quarter scale aircraft to validate vehicle aerodynamics.

PHASA-35 maiden flight

PHASA-35 successfully completed its maiden flight. The trials marked the first fully integrated flight test of the PHASA-35 system, delivering rapid proof of capability from design to flight in 2 years.

PHASA-35 construction begins

BAE Systems invests in Prismatic.

Prismatic acquisition

Building on the earlier collaboration, BAE Systems completes the acquisition of Prismatic to enable the team to take PHASA-35 into production.



2023



2024

2025
and beyond

First stratospheric flight

Achieving a peak altitude of over 66,000 feet during a 24-hour flight period, PHASA-35 powered its way into the stratosphere.

Further stratospheric success

During the first sortie at Spaceport America, the PHASA-35 repeated the feat of cruising at 66,000 feet in the stratosphere. It successfully landed in a serviceable condition, being declared ready to fly again just two days later.

Operational Capability

Developing Beyond Line of Sight (BLOS) flight capabilities

Continuous enhancements in solar array and battery capabilities

Expansion of launch and recovery operations and sites

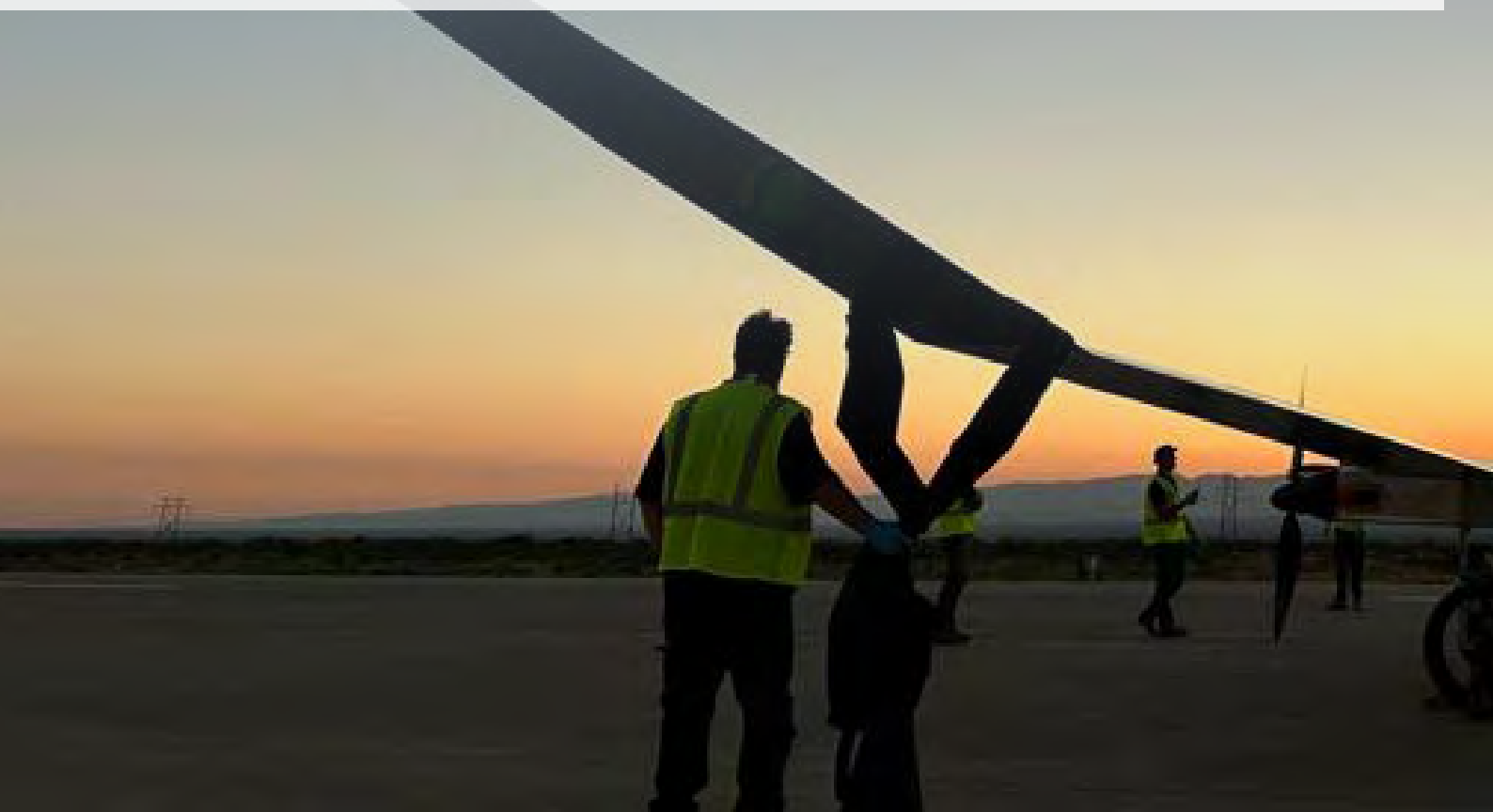
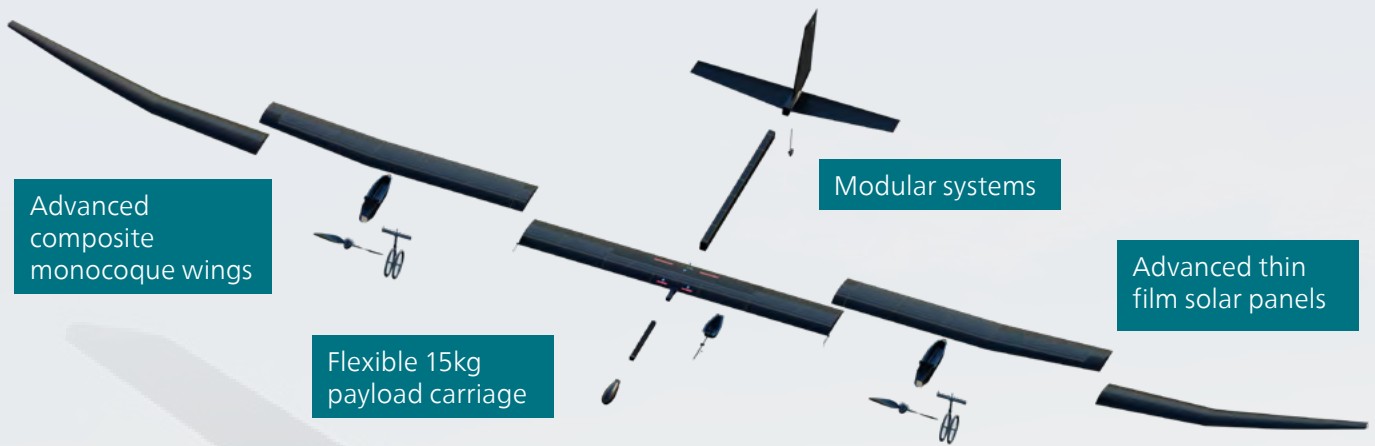
Flexible service routes established

Operational Applicability

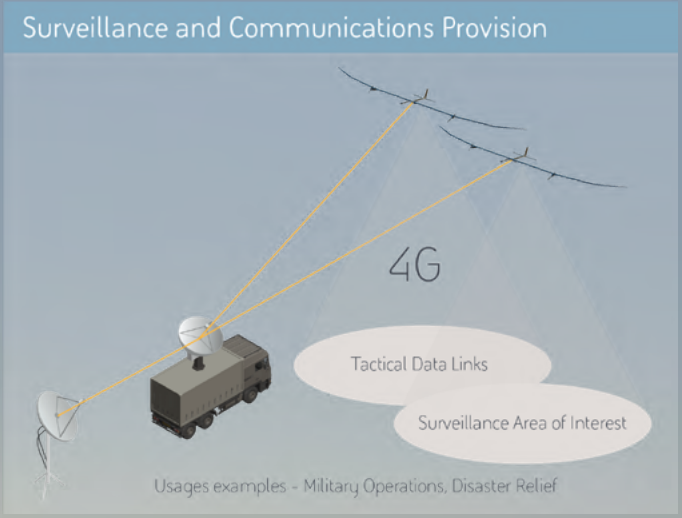
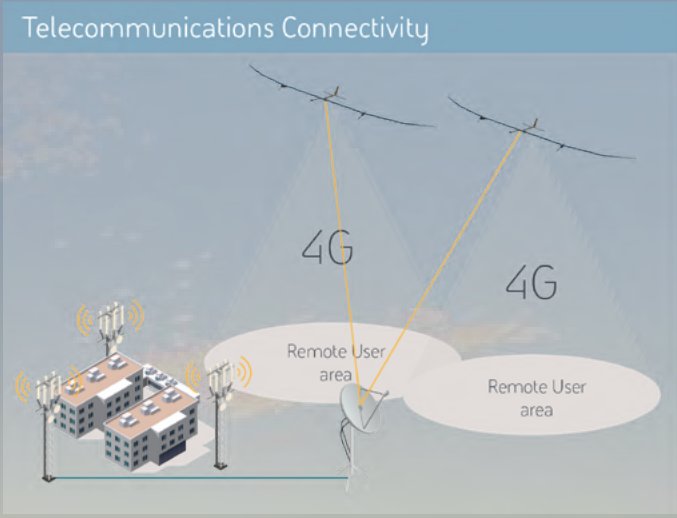
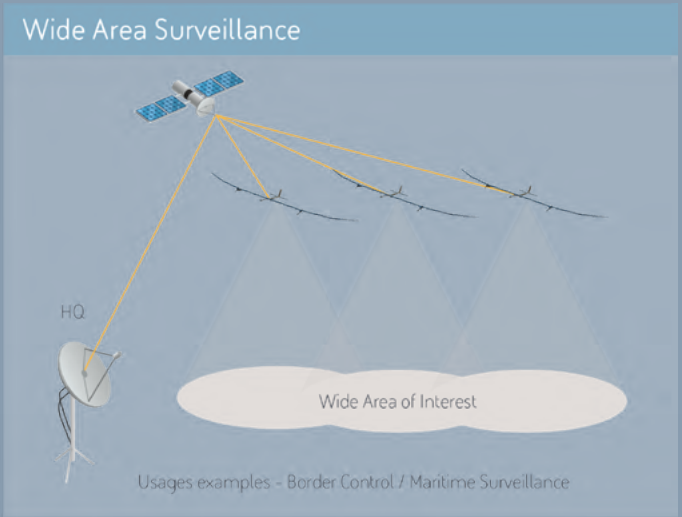
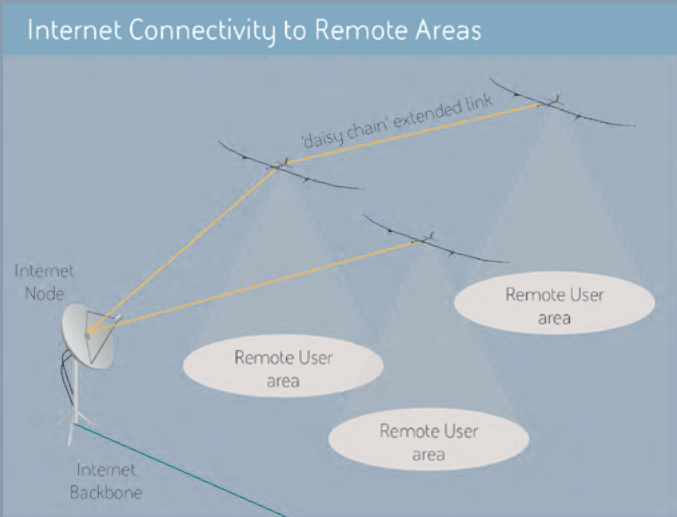
PHASA-35 can transit worldwide within 7 days with expected mission lengths of up to several months at a time.

It has a modular design, enabling efficient disassembly for shipping and storage as well as iterative upgrade opportunities.

The point loaded payload bay allows for easy integration of new payloads, weighing up to 15kg. The flexibility of payload integration provides significant applicability to many valuable global markets including lower case each.



A class-leading solar powered UAS



150kg

weight of a motor cycle

35-metre
wingspan

the same as an Boeing 737

15kg agnostic
payload

Operational in the stratosphere at 66,000ft

Operationalising the Stratosphere

PHASA-35 can be operated as a satellite, with no need for continual management or monitoring.

Operations in the stratosphere can offer a number of advantages over systems operating at other altitudes:

The persistent nature of these platforms allows for 24/7 coverage of a wide area compared to a more traditional system which would cover a smaller area

There is no need to repeatedly land or refuel, offering the ability to provide a global service

More traditional operating methods would require a greater number of more expensive platforms to deliver a similar capability

Operating at stratospheric altitudes can avoid intermittent coverage issues which are often present with low earth orbit satellite based solutions

Powered
by the Sun

Cost effective
alternative to low
earth orbit based
capability

Potential Applications

Environmental
surveillance



Disaster
relief



Border
protection

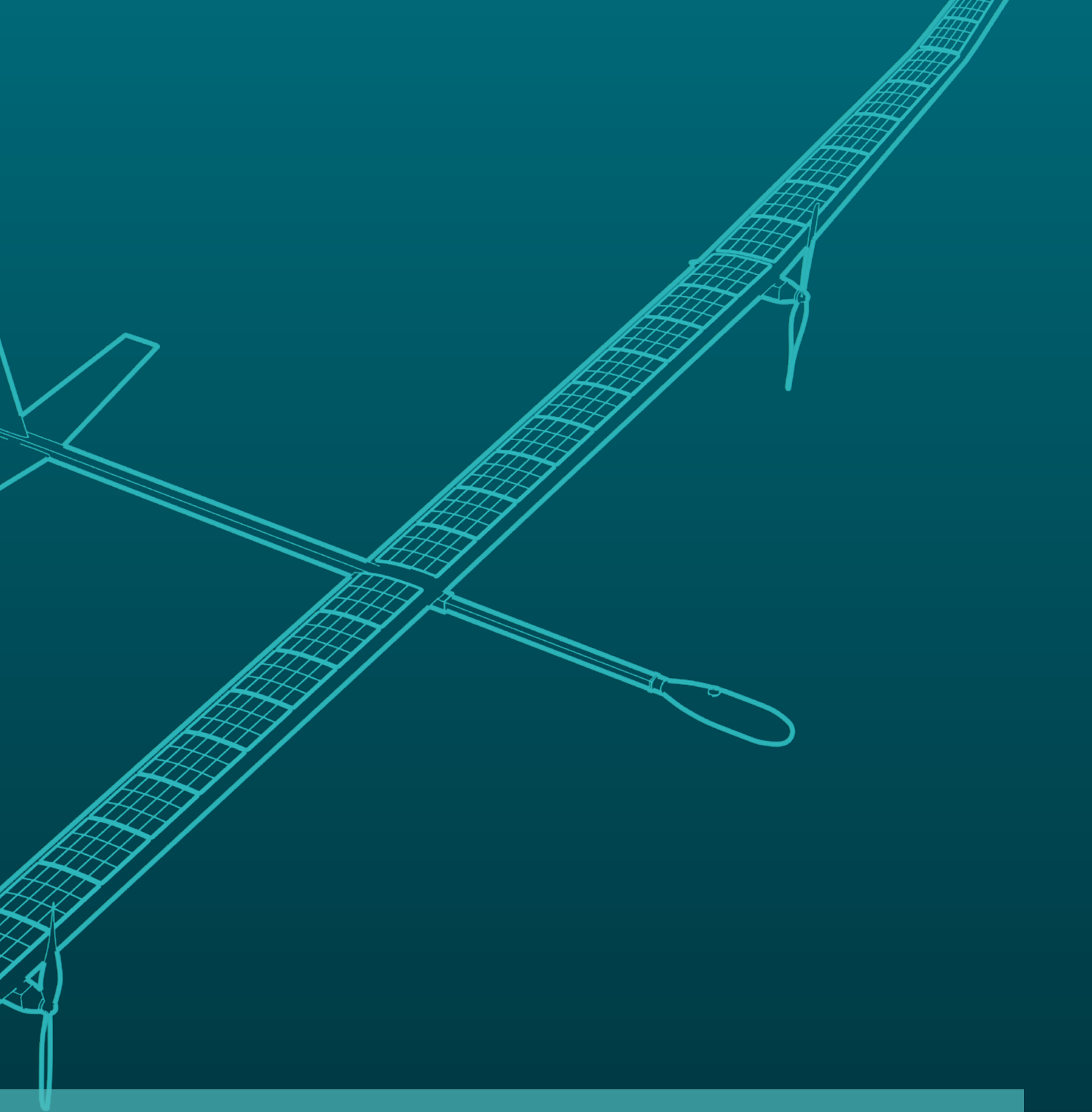


Maritime and
defence surveillance
and communications



Mobile and internet
communications to
remote areas





Prepared by: BAE Systems (Operations) Limited acting through its Air business
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