

Astigan: a new look at Earth

David Jones reports on how Ordnance Survey (OS) has its sights set on the next big thing in aviation and data collection

What makes Astigan so significant is that it has the potential to map the earth more accurately than satellite - and at less cost.

Currently OS uses two fixed-wing aircraft for mapping, but low-level flying can be hampered by weather and flight restrictions and it takes OS nearly three years to complete an aerial map of the nation. On the other hand, while satellite images give you a great footprint and a wide area of coverage, their costs are high and their distance from Earth makes them less accurate.

Astigan would use the sweet spot in-between. It has been designed to fly at 67,000 feet, nearly twice the cruising height of a commercial airliner, but well below orbiting satellite services. So high enough to roam free, yet close enough for detail.

With two Astigan platforms in the air, it would cover the length of Britain in six or seven months, and that includes overcoming issues caused by cloud cover.



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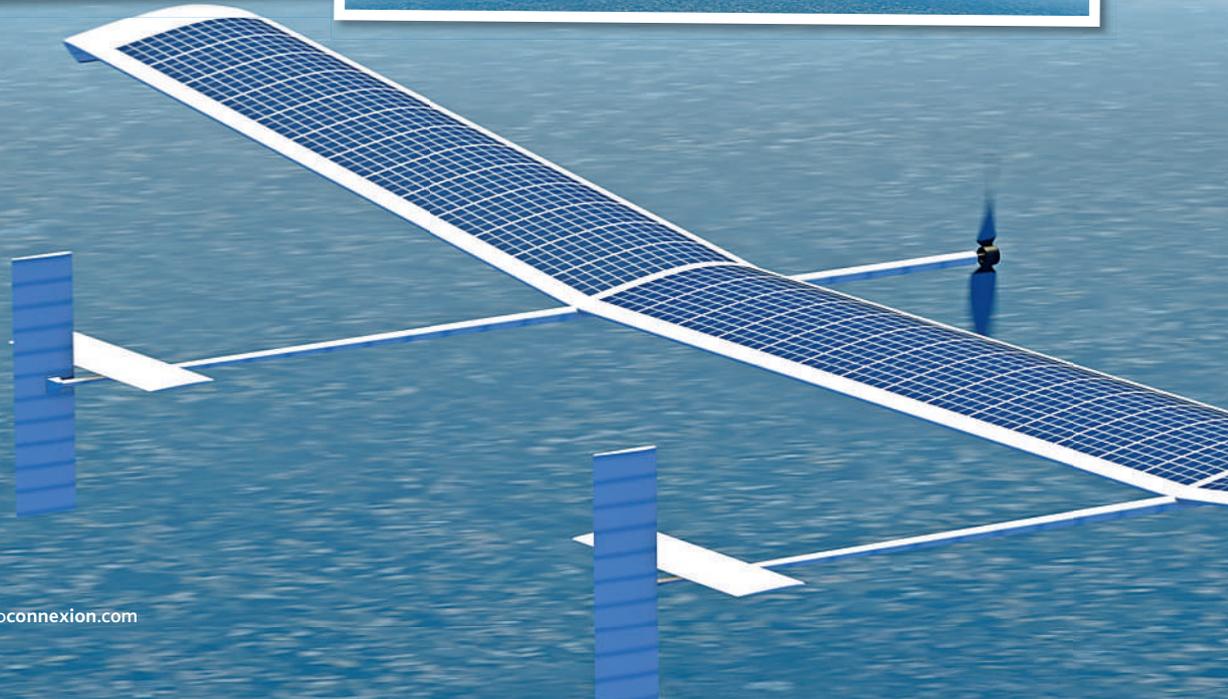
The Rt. Hon. Lord Henley, Parliamentary Under-Secretary of State at the Department for Business, Energy and Industrial Strategy

Commercial possibilities

Astigan’s commercial possibilities are not restricted to UK skies. It can help with mapping around the world. The platform can be positioned to view any part of the Earth and could completely change how mapping happens in developing countries where land masses are immense. Historically, some of these areas have never been mapped because it is too expensive. Astigan could provide a more affordable solution to which to turn.

Beyond mapping Astigan has a multitude of uses. From detailing how a part of the country is urbanising to looking at agriculture, environmental issues such as flooding, melting ice caps, forestry and forest fires, illegal logging, or poaching. These and more are all possible to manage from a HAPS (High Altitude Platform Station).

Unfolding disasters such as oil spills could also be monitored ‘live’ so that responders can obtain real-time images of





of up to four hours duration. The team hopes to reach its three-month duration flights at altitude within the next 18 months.

Brian Jones, Astigan Managing Director, said: "This remarkable aircraft has met every goal and has so far passed all milestones in its ambitious development programme. We are excited about the year ahead as we increase our flights and move towards a fully operational high-altitude test. By the end of 2019 we aim to be completing endurance flight testing, building up to 90 days non-stop, which is the operational capability for which we are striving."

Outstanding potential

Jones continues: "It's incredibly exciting that the UK has developed this kind of technology, delivering satellite capabilities, unparalleled flexibility and improved efficiency, all at a vastly reduced cost. We look forward to completing this project and seeing the aircraft deliver on its outstanding potential, which should provide a range of scientific and environmental benefits."

For 226 years, OS has invested in new technologies to improve its ability to capture up-to-date and accurate geospatial information. When you consider over 100 years ago OS was the first organisation in the world to capture aerial imagery via World War I planes, Astigan is another example of the innovation which has characterised OS through the ages.

For further information visit:
www.os.uk/astigan

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what's going on. The other major advantage of Astigan is that it can capture persistent images because it sits over a target area, whereas a satellite or plane comes and goes.

Unique British-made platform

Neil Ackroyd, a co-founding director of Astigan and Acting CEO of Ordnance Survey, said: "Astigan is another example of OS being at the forefront of geospatial technology. The platform has been designed to offer major cost and efficiency advantages over traditional methods. The company has produced a unique, British-made platform which can carry a range of interchangeable Earth Observation instruments such as high-precision cameras, atmospheric monitoring systems and multi-spectral sensors.

"Astigan supports Ordnance Survey in enhancing its capabilities to work in partnership with other nations across the globe. By aligning this capability with our world-class geospatial production and mapping expertise, we hope to support organisations and countries in tackling major societal challenges including urbanisation, land management, environmental change and mapping to support emergency response in the case of natural disasters."

Business Minister Lord Henley said: "The UK has a particularly successful track record in mapping and associated technology. This exciting new unmanned aircraft project is a brilliant example of the innovative thinking behind our modern Industrial Strategy and should lead to global business opportunities.

"As well as having the potential to support key government objectives such as upgrading the UK's infrastructure, it could benefit emerging technological areas such as smart cities and self-driving vehicles which both rely on accurate 3D mapping."

Prototype testing

Astigan Ltd is a UK company, established in 2014 by Ordnance Survey and a team of aerospace innovators, including British aviator Brian Jones, now Astigan's Managing Director. It is based in a factory in Bridgewater, Somerset, where a 20-strong team has been working on the prototypes for the aircraft.

Since 2014, Astigan has seen extensive collaboration among British SMEs, industry experts and universities, and has already safely completed eight full-scale flights. Initial flight testing has been conducted in the UK, Spain and Australia, with test flights

