

# Tackling the environmental CHALLENGE FROM SPACE



## Terri Freemantle

is an Earth Observation Specialist with the Satellite Applications Catapult at Harwell, Didcot, Oxfordshire ([www.sa.catapult.org.uk](http://www.sa.catapult.org.uk))

**Terri Freemantle** explores a partnership project, funded by the UK Space Agency, that is working with Malaysian authorities to exploit Earth Observation data in addressing significant environmental threats

The UK Space Agency recently announced ten new projects to be funded through its International Partnership Programme (IPP). Each project uses UK space expertise to deliver solutions to real-world problems, from improving natural disaster response for Commonwealth Nations to helping identify illegal gold mining operations, improving tropical disease control and supporting coffee farmers in East Africa to improve yields.

The new projects which have been awarded £38 million in IPP grant funding, will add to the 22 already delivering benefits and provide a unique opportunity for the UK space sector to demonstrate its world-class capabilities.

### Significant threat

The Satellite Applications Catapult leads on a major IPP



YB Datuk Wira Dr Abu Bakar Bin Mohamad Diah, Malaysia's Deputy Minister of Ministry of Science, Technology & Innovation, launched EASOS at last year's Asian Space Technology Summit



Saving lives | Preserving nature | Enabling Government



Using EASOS, governments will have the ability to address major national issues through a single platform, rather than investing in a different system for every issue. The EASOS architecture allows fast and flexible development of satellite-based tools and application tailored to each new specific issue

project which is supporting the Malaysian government to tackle environmental challenges that pose a significant social and economic threat to the Malaysian people.

14 UK organisations are involved in the project including large and small companies, universities and research institutes. Together, they are developing an Earth and Sea Observation System (EASOS), a comprehensive data platform that uses satellite Earth Observation data integrated with data sets collected by government agencies to produce timely intelligence on which authorities can act. EASOS (<http://www.easos.my/>) is currently focused on delivering information and analyses to tackle three major challenges.

**Mangrove degradation.** The mangroves around the coastline of Malaysia are a natural defence to coastal flooding and home to an abundance of marine life, but they are being degraded by marine oil pollution in the Malacca Straits, the world's busiest shipping lane. Satellite-derived EASOS intelligence will help authorities identify and locate discharges, forecast pollution dispersal and identify vessels that could be responsible.

**Deforestation.** To reduce the social and environmental impact of illegal logging and increase the economic benefit from legal operations, EASOS will monitor deforestation to help identify illegal activities by providing information on the location and extent of activities for direct intervention and as evidence for prosecution. In addition, the electronic tagging of legally harvested logs as part of the project, will allow traceability through the entire supply chain.

**Flood alerts.** EASOS will also generate alerts to reduce the economic and social costs of flood events, enabling response teams to activate evacuation plans and deploy short-term flood defences. By implementing the EASOS system, the Malaysian government will have access to improved advanced warning times, better information about impacted areas, and predictions on improving or deteriorating conditions.

### Progress report

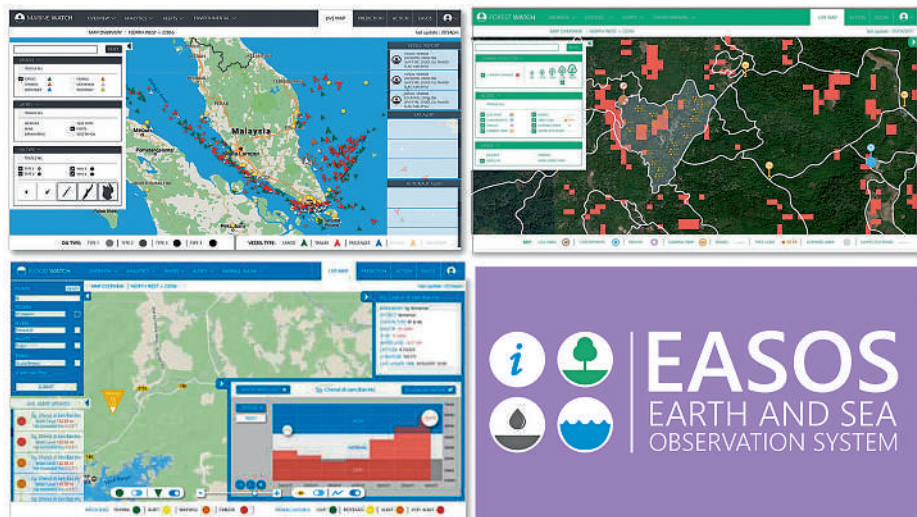
The team has just completed its first year in operation working closely with ANGKASA (the Malaysian National Space Agency), 24 government agencies and the UK Space Agency to drive the program forward. To date, the team has been able to issue

flood alerts through the monsoon season, detect oil in the Malacca straits and, over the next year, will be adding deforestation monitoring to these activities.

Each IPP project is designed and structured to enable sustained, long-term operational capability in-country ... both to deliver economic benefits and also

improve the lives of the nation's citizens.

The project team will continue to work with the authorities to build technical capacity in Malaysia, building effective partnerships that can lead to future growth opportunities for the UK space sector as well the increased use of Earth Observation data and technologies.



By providing decision-makers with the right information in a single dashboard, EASOS assists in planning, prevention and post-event response strategies, enabling them to realise long-term sustainable benefits to the Malaysian economy, environment and civil protection. EASOS currently tackles three challenges – flooding, marine pollution and Illegal logging – but this is just the beginning

### ADVERTISER INDEX

COMPANY		PAGE
Cadcorp	cdcp.io.nbd	11
Carlson	carlsonsw.com	29
EffiGis	effigis.com/ezsurv	9
Eos Positioning	eos.gnss.com	60
GeoConnexion	geoconnexion.com	33 & 22
Gexcel	gexcel.it	19
Grey Matter	greymatter.com	13
Intergeo 2018	intergeo.de	37
ITC	utwente.nl/go/se	57
KOREC Group	korecgroup.com	55
Manchester Metropolitan University	unigis.org	41
RIEGL Laser Measurement Systems GmbH	riegl.com	5
SciSys	scisys.co.uk	21
Silicon Sensing	siliconsensing.com	6
Spectra Precision	spectraprecision.com	2
Trimble	eCognition.com	51
Ulster University	ulster.ac.uk/ges	47

To advertise call: Micki: +44 (0)7801 907666 or  
Mai: +44 (0)1223 279 151

### AERIAL SURVEY SERVICES



#### TRACKAIR SERVICES LTD www.aerialsurvey.com

A large selection of pre-owned aerial survey equipment & aeroplanes available for sale.

**AEROPLANE HIRE** – survey modified aeroplanes available worldwide.

**AERIAL SURVEYS** – all types – worldwide network

**ANYTHING aerial survey please contact**  
aerialsurvey@aerialsurvey.com

**ADVERTISE HERE  
FROM ONLY £30  
PER MONTH!**

Contact:  
MickiKnight@  
geoconnexion.com

### TRAINING/GIS COURSES

DISTANCE LEARNING GIS PROGRAMMES

**UNIGIS UK**

**MSc/PgDip/PgCert  
courses in GIS by  
distance learning**

Jointly delivered by Manchester Metropolitan University and the University of Salford

**New Masters in**

- GIS
- Applied GIS
- GI Technologies

Designed to meet the needs of GIS professionals and those new to the industry.

See our website for further details:

**www.unigis.org**

+44 (0)161 247 1581

unigis@mmu.ac.uk

Educating tomorrow's GIS professionals



as-marketingservices.com





# ARROW SERIES

High Accuracy GNSS Receivers  
for Mapping on Any Device



**ARROW 200**  
1 cm RTK



**ARROW GOLD**  
1 cm RTK with SafeRTK™



**ARROW LITE**  
Submeter GPS



**ARROW 100**  
Submeter & Subfoot GNSS



**EOS POSITIONING SYSTEMS**

[info@eos-gnss.com](mailto:info@eos-gnss.com)

[WWW.EOS-GNSS.COM](http://WWW.EOS-GNSS.COM)

Made in Canada