Space for Resilience, UK capabilities and support services

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CNI Structural Risk Management – Geomatic Ventures

Project Summary
This project aims to provide the basis for regular remote assessment of structural condition for Critical National Infrastructure (CNI) assets such as power stations, railways, roads, flood defences etc. It will provide early warning indicators of potential engineering failures through absolute motion vector mapping using a combination of satellite based radar with satellite navigation.

Project Type
Demonstrator (completing November 2018)

Stakeholders
Delivery Partners: Telespazio Vega UK, e-GEOS
Primary End User: Environment Agency
Others: C2HM, Thames Estuary Management, TEAM 2100, CNI asset managers, Nuclear Decommissioning Authority

Technologies Utilised
Satellite InSAR
I-SBAS and PSP-IFSAR processing algorithms
Hi-res CosmoSkyMed SAR
GIS
PNT

Web: www.spaceforsmartergovernment.uk
Led by the UK Space Agency
Delivered in Collaboration with the Satellite Applications Catapult
Pluvial Flood Forecasting – Ambiental Risk Analytics

Project Summary
This project aims to address the current lack of reliable and high-precision pluvial flood forecasting by developing a ‘Smart’ mapping application. This will be developed for Greater London and will combine three proved technologies: FloodWatch; Social Media AI; and Green Space Analyser, as well as data from existing methods.

Project Type
Demonstrator (completing November 2018)

Stakeholders
Delivery Partners: Dundee University, Hexagon Geospatial
Primary End User: TfL (LUL), Greater London Authority
Other End Users: EA; DEFRA; LLFAs; NHS; London Bus Services; Police/Fire/Ambulance. Insurers, and (water) utilities

Technologies Utilised
High Resolution Optical and SAR-based satellite imagery
Local data sets including social media, AI, PNT

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EASOS: PROGRAMME AIMS

To assist Malaysia in improving the social and economic prospects of the country by making it more environmentally resilient.

To provide informed and coordinated decision making capability to 23 Government Agencies in Malaysia through an integrated user-centred dashboard and a scalable platform.

To deliver information and analysis on three environmental challenges.

- Reduce the degradation to the mangrove coastline in Malaysia by reducing marine pollution in the Malacca Straits.
- Reduce the social and environmental impact of illegal logging and increase the economic benefit from legal logging for Malaysia.
- Reduce the economic and social cost of flood events.
EASOS: Earth And Sea Observation System

**Flood Watch**

- Reduce human and economic cost from flood disaster
- Achieve over 90% accuracy for flood alerts with a 12 hour lead time
- Enable better handling of flood events
- Enable proper action to be taken prior to a disaster event
- Enable Malaysian Disaster Management committee to coordinate all agencies, and preventative measures using the same source information

**Forest Watch**

- Lead to a 10% decrease of illegal logging activities and enforce forestry legislation and management practices
- Help protect the endangered species such as Orangutans, Pygmy Elephants and Sumatran Rhino, threatened by their diminishing habitat
- Support the Malaysian’s tourist industry who come to see the wildlife and forests
- Help identify legally sourced logs and trace how they get into the supply chain
EASOS: Earth And Sea Observation System

Marine Watch

- Reduce the financial impact of marine pollution by at least 10% across regions covered by the project
- Improve the detection rate of marine pollution events
- Help identify vessels that are likely to be responsible
- Forecast pollution dispersal
- Help Coastguard assess and track where oil slicks derive from and predict end points to intercept offenders
- Help relieve loss of habitat, coastal erosion, species extinction and depletion of fish stocks by deterring ships from pumping their bilges in the Malacca Straits
Kenya is prone to a wide range of disasters, with an estimated 3 to 4 million people being affected annually by flood, drought, famine, flashfire, landslides, conflict or accident.

SatDRR is supporting Kenya’s push for an enhanced Disaster Resilience capability based on enhanced use of both satellite communications and EO.

The project will provide

- secure fixed and mobile satellite communications via Avanti’s high throughput HYLAS 2 satellite, providing both a national resilient infrastructure and emergency post disaster communications

- a flexible web-based dashboard offering a variety of tailored EO information services for users to access information on floods and droughts from a variety of satellites

- an underpinning capacity building and knowledge transfer programme delivered by in country staff
SAFE-D
Linked data application to support disaster management

Enabling rapid data acquisition, analysis and dissemination using Web 3.0 technologies.
Thank You.