Sphere

Environment Systems Newsletter

Autumn 2015

Welcome

Earth Observation (EO) is very much the focus of this issue of Sphere. First up there is news of the launch of the Aberystwyth Centre for Space and Earth Monitoring (ACSEM). Following that we discuss the future role of EO in the evolution of the Common Agricultural Policy. There's news too of new starters and improved Environmental Management within the company. editor@envsys.co.uk

SPACE FUTURES

ACSEM

The ACSEM launch from left to right: John Whalley (Aerospace Wales Forum) Colin Baldwin (UK Space Agency), Steve Keyworth (Environment Systems), Pete Bunting (Aberystwyth University), Marie Hardy (Aberystwyth University) Rhian Hayward (Aberystwyth University)

In the last few months 'space' has become a regular news item. Planet Labs for example with a mission to image the entire Earth every day, has recently acquired Blackbridge including its RapidEye constellation of earth observation satellites. In Europe the first of the European Space Agency's Sentinel satellites are now in place and delivering data, which we are already evaluating. We are entering an age of data proliferation and the space sector is at the forefront of this trend.

Recently the UK Government launched its Space Strategy. The global space sector is forecast to be a £400bn industry by 2030. The UK government has set out to achieve 10% (£40bn) of that revenue from the UK, with a fivefold increase in revenue from downstream activities, such as Earth Observation, Navigation and Communications from £8bn to £37bn and a threefold increase in upstream activities, primarily building and launching satellites, from £1bn to £3bn.
On the back of this the Welsh Government launched its own Space Strategy positioning Wales as a strategic asset supporting growth within the UK space sector to generate 5% of UK industry turnover by 2030 - £2bn per annum.

To coincide with the launch of the of the Welsh Space Strategy at the UK Space Conference held in Liverpool in July, Environment Systems together with Aberystwyth University announced the formation of the Aberystwyth Centre for Space and Earth Monitoring (ACSEM). ACSEM is a research facility fully aligned with Welsh and UK Government Space Strategy, which aims to be recognised as an international centre of excellence fostering research and collaboration across industry and government.

"ACSEM is a great example of academia and industry coming together in response to a wider government strategy," said Steve Keyworth. "It will extend our already close relationship with Aberystwyth University that we have built up over the last 12 years and open up new opportunities to build a world class centre for research in Space and Earth observation. ACSEM will promote further industry and government collaboration to generate downstream activity in the space sector supporting entrepreneurship and start-ups and creating jobs. ACSEM will also deliver new undergraduate and postgraduate teaching and training for the next generation of scientists and technologists."

BS 8555 Environment Management

RHEOLAETH AMGYLCHEDDOL
PHASE 2
SEREN SCHEME
BS 8555
ENVIRONMENTAL MANAGEMENT

As befits an environmental consultancy Environment Systems operates an Environment Management System (EMS) which is accredited to BS8555:2003 Phase 2. An EMS serves as a tool to improve our environmental performance and provides a framework for how we monitor that performance. Over the last year Environment Systems has achieved a 15.9% reduction in general waste per person, consumed 5.7% less gas per person and 15.2% less electricity per person. We have also reduced the amount of recycling waste by 12.1% per person.

Less is more!

New Starters

Ceinwen Goodwin

Ceinwen has joined Environment Systems as an Analyst and will be coordinating proposal writing across the company. Previously she worked for the Welsh Government in their cartographic department focused on land inspection mapping.

Suzana Barreto

With an MSc in Intelligent Autonomous Systems, Suzana is in the final stage of finishing her PhD in Computer Science which is focused on computer vision and robotics. She has joined Environment Systems as a Software Analyst to support our growing work in software development and testing.

CAP – Future Directions and the role of EO

Simulated example of orthophoto interpretation and land parcel identification

The Common Agricultural Policy (CAP) continues to consume a major portion of the EU budget. In 2013 it amounted to over €50bn, around 40% of the total EU budget. The bulk of CAP expenditure provides financial support to individual farmers. Control of that expenditure is vital, to ensure that farmers get legitimate financial support for the crops they actually grow on the land that they actually farm. The setting up and implementation of control measures is a huge industry in its own right, one in which Environment Systems is becoming more involved. Control measures are set up by individual Member States (MS) and monitored by EU auditors and the penalties of non-compliance are considerable – between 1999 and 2007 financial penalties for MS for non-compliance amounted to over €1bn across the EU (with €269m in the UK alone).

The primary building block of CAP controls is the Land Parcel Identification System (LPIS), a database that records the location and size of all agricultural land that farmers use and claim for. Each MS has an LPIS, updated annually to reflect changes in field boundaries and cropping patterns. Turkey, an accession country, is currently producing an LPIS, with help from Environment Systems in providing key expertise on orthophoto interpretation and quality control.

Control measures include administrative checks, cross-checks against other schemes and (for a sample of farms each year) on-the-spot checks. The latter has always traditionally been a field inspection, checking on-the-ground farmers' subsidy claims. In each MS a further sample of farms is subject to Control with Remote Sensing (CwRS) checks, using specially procured satellite imagery, which Environment Systems, working with Italian company Abaco, currently carries out in Wales for the Welsh Government.

The last CAP reform, in 2013, introduced 'greening' provisions into the CAP, with new environmental requirements for crop diversification and the maintenance of both ecological focus areas and permanent pasture on farms. This has introduced new and more challenging control requirements. The use of EO data is likely to assume a key role in monitoring these features in future and controlling subsequent financial support at farm level. Environment Systems is ready to rise to the challenge.

Environment SYSTEMS evidence and insight

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