

Regional space

Satellite technology can provide numerous services to local authorities and businesses, but there is often little knowledge of their availability by potential end-users. **Volker Schumacher, Professor Alan Wells** and **Paola Carrara**, explain how DORIS_Net is utilising the Global Monitoring for Environment and Security programme to better connect services at the regional level across Europe



Can you offer an insight into DORIS_Net and what it seeks to achieve?

VS: DORIS_Net is the name of the network for the 'Downstream Observatory organised by Regions active In Space'. In short, it aims to make a regional link to the services being developed under the European initiative for Global Monitoring for Environment and Security (GMES) which is delivering spatial data, images and mapping services derived from satellite, airborne and in situ sensors. Applications for this data extend over many fields, ranging from monitoring climate change trends to applications relating to land, oceans and atmosphere. Up to now, the main focus of GMES has been on projects that are at national and global scales. In contrast, DORIS_Net intends to shift the focus more on applications pertaining to regional and local levels, closer to the individual needs of European citizens.

How are you incentivising stakeholders to join DORIS_Net and improve regional participation in the GMES programme?

PC: DORIS_Net promotes the creation of Regional Contact Offices (RCO), being set up to serve as sources of expertise for regional stakeholders and end-users for the application of GMES services and as definitive sources of information on the capacities of service providers. These information services are being provided both in English and in the local language of the RCO host region in order to facilitate local involvement. The RCOs have the following main functions:

- Acting as a contact point for regional stakeholders and serving as a link between regions

- Providing a service for regions to access data and information on GMES at global, national and European levels
- Providing a forum for users to voice their needs towards service providers and thus driving the development of downstream services towards the needs of users
- Collecting user requirements for future downstream services

Through promotion, training and dissemination events, DORIS_Net encourages other regions wishing to coordinate regional GMES activities and facilitate the growth of GMES downstream services to join the network.

Could you describe the benefits of putting regional users in the driving seat?

VS: Initiatives fostering growth in European downstream services have been plentiful in the recent past, but they have been mostly initiated from the service provider side. In DORIS_Net, the regional actors themselves have undertaken to coordinate the European GMES downstream service sector at a regional level and so for the first time we have 'users in the driving seat' and a coordinating activity from the perspective of the regions and the end-users. This is an important step towards ensuring a demand-driven approach instead of technology push.

How important are the regions for ensuring growth in GMES downstream services?

AW: GMES represents a massive investment by the European Commission in applying space

technology to many areas that are central to European policies in the next 10 years. Over and above the central role of GMES for monitoring and implementing adaptation strategies for climate change, other key areas for downstream applications of GMES include: border surveillance as part of Europe's security policy; management of air and water quality, marine and coastal protection, protection for citizens against flood and fire risks, landslips, earthquakes and subsidence as well as natural resource management for agriculture, fisheries and ecosystems. In many cases, responsibility for delivering services to meet these policy directives is delegated to regional and local authorities via European directives and national government legislations. In all these areas, GMES is already demonstrating new approaches and adding value to existing services.

However, at the regional level where the knowledge of local priorities resides and where delivery is needed, stakeholders are often unaware of the potential benefits that the GMES initiative can provide in order to support their local needs. Europe's 350 or so regions represent a large reservoir of potential users of GMES data, products or services for an increasingly diverse range of applications which also need to be customised to meet individual user needs at the local and regional level.

Although set to benefit regional users, what relevance does the network have for service providers?

PC: DORIS_Net will improve the knowledge, structuring and awareness of the GMES downstream sector at the regional level which will directly benefit the service providers. The role of the RCO, in this case, is to facilitate market entry into the host region for service providers from other regions.



Connecting users

By pooling knowledge resources and organising awareness-raising activities, **DORIS_Net** seeks to create a facility that better links European regional and local authorities with service providers and GMES stakeholders

RICH IN DIVERSITY and culture, Europe is an intensively packed area of over 350 regions, all with their own needs and personalities. Able to fit into the U.S. with space left over, this comparatively small continent is however often charged with political fragmentation and division can present difficulties for European-wide initiatives and programmes, and their implementation.

For research projects there can be a dichotomy between trying to overcome fragmentation whilst addressing regional needs and this is where the challenge often lies. Although policies and projects may aim to have a Europe-wide and even global relevance, local and regional areas are often forgotten. This has proved to be true of Global Monitoring for Environment and Security (GMES)-related services in Europe. GMES services focus on six thematic areas – land monitoring, marine environment monitoring, atmosphere monitoring, emergency management, security and climate change – under which there is potential for numerous downstream services. In a move to address this, the 'Downstream Observatory organised by Regions active In Space Network', or DORIS_Net, is aiming to provide a regional link to GMES and the Earth Observation services it is developing. To focus more on the individual needs of Europe's citizens, DORIS_Net will provide a facility that connects European regional and local authorities – and other

regionally based end-users of space technology – with service providers and GMES stakeholders.

This action will bring together regional user needs with pre-existing stakeholders, users and providers at national, European and international levels.

As with many European initiatives, the GMES programme has resulted in activities spread over a wide range of projects, but with some coordination networks already in place for European-level and global programmes, DORIS_Net's project coordinator Volker Schumacher feels it has proven necessary to create a network organised by the regions themselves to make the GMES initiative more effective for services relating to regional, city or local needs: "At this scale, GMES continues to be rather unknown and underexploited," he states. "DORIS_Net is a new network to create dedicated regional centres of GMES expertise through which access to GMES data and best practices can be exchanged across and between regions."

CAPITALISING ON NEREUS

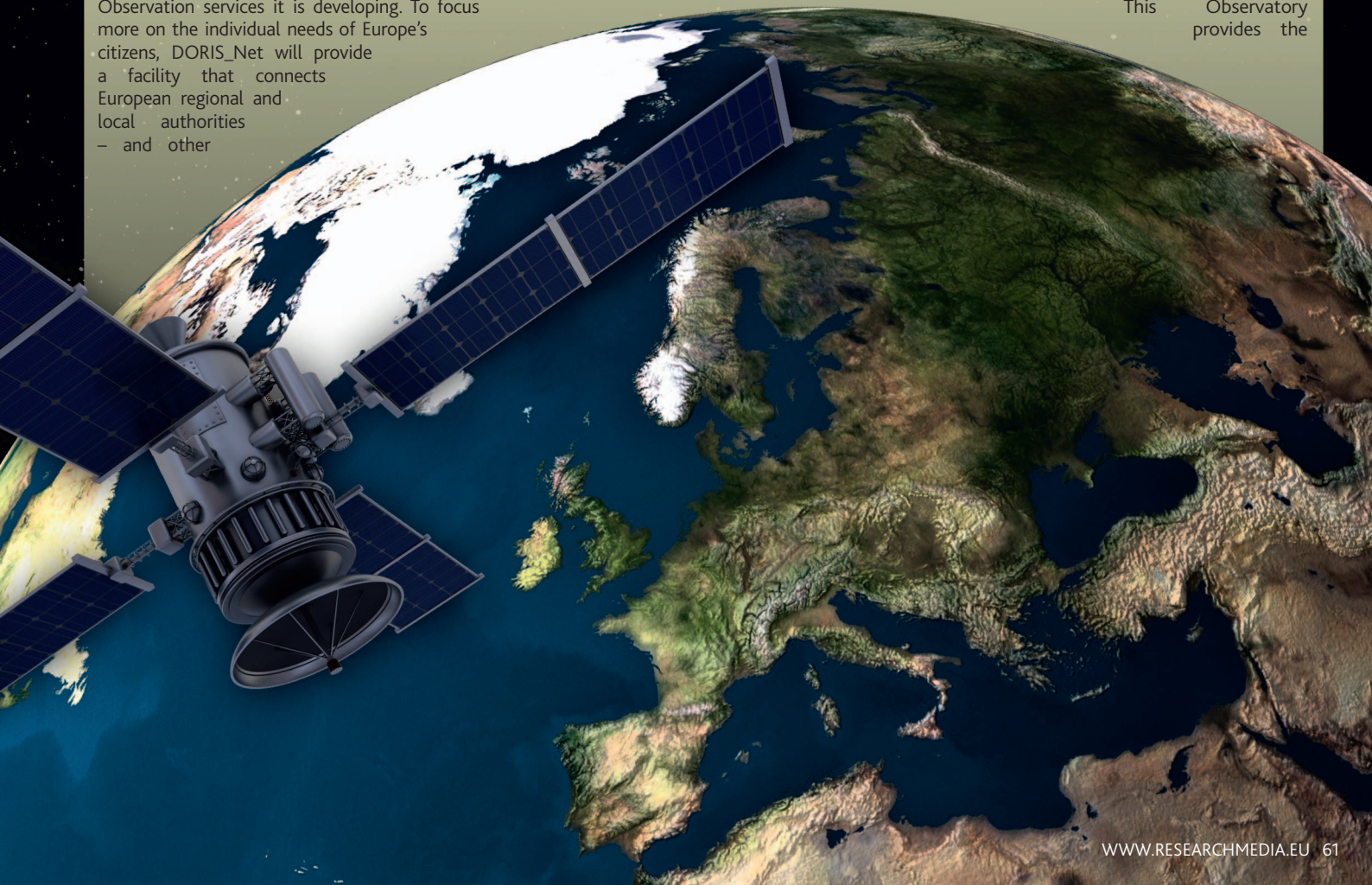
Although a new network, DORIS_Net is building fully on the existing network of European

regions that form Network of European Regions Using Space Technologies (NEREUS). It is the first initiative mobilised entirely on the NEREUS platform and has become a NEREUS flagship project. Through its partners, deep links exist with the NEREUS' GMES-related working groups and regions. The project is further bolstered by NEREUS' events which seek to demonstrate to the European Parliament, Council and Commission, the regional importance of space technologies, exhibiting DORIS_Net as an example of how inter-regional cooperation between member regions is seeking to develop the awareness and implementation of GMES downstream technology. While initially actualised by regional members of NEREUS, DORIS_Net now aims to promote its knowledge base as well as its combined expertise more widely across all European regions.

DOWNSTREAMING DORIS_NET

To encourage inter-regional cooperation between member regions, and to establish permanent communication, DORIS_Net has created the DORIS_Net Observatory, aimed at supporting both regional users and downstream service providers.

This Observatory provides the



INTELLIGENCE

DORIS_NET

DOWNSTREAM OBSERVATORY ORGANISED BY REGIONS ACTIVE IN SPACE – NETWORK

OBJECTIVES

A fully user-led approach for the establishment of a network linking European regional and local authorities, service providers and other GMES stakeholders on regional, national and European level.

PARTNERS

Centre for Communication, Earth Observation and Navigation Services GmbH (Coordinator), Germany • University of Leicester, UK • Centre d'Études Techniques du Sud-Ouest, France • Capital High Tech, France • Secretaria Regional da Ciência Tecnologia e Equipamentos, Portugal • Consiglio Nazionale delle Ricerche, Italy • Tecnologie per le Osservazioni della Terra e i Rischi Naturali, Italy • ADEuropa Foundation, Spain • Madrid Cluster Aerospace, Spain • Forum Luft und Raumfahrt Baden-Württemberg e.V., Germany • Pole Mere Bretagne, France • Guyane Technopole, French Guyana/ France

Currently in the process of joining:

Institute of Geodesy and Cartography, Poland

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CONTACT

Volker Schumacher
Project Coordinator

CEON GmbH
Centre for Communication, Earth Observation and Navigation Services
Robert-Hooke-Strasse 7, D-28359 Bremen
Germany

T +49 421 24420 292
E schumacher@ceon-bremen.de

www.doris-net.eu

VOLKER SCHUMACHER is Head of Business Development at Bremen's Centre for Communication, Earth Observation and Navigation Services (CEON).

PROFESSOR ALAN WELLS is Emeritus Professor for Space Technology at the University of Leicester. He is a Vice President of NEREUS and chairs its Earth Observation/ GMES working group.

PAOLA CARRARA is based at CNR-IREA in Milan. Her scientific activity focuses on designing and managing information systems for remotely sensed and geographic information.

medium for communication between European stakeholders involved at governance and policy levels and local and regional actors. This service platform links the Regional Contact Offices (RCOs) and provides the main information point for the project. Currently with five RCOs established across Europe – Bremen (Germany), The Azores (Portugal), Lombardia (Italy), East Midlands (UK) and a joint RCO in Midi-Pyrenees and Aquitaine (France) – DORIS_Net hopes to integrate new regions into the network as it develops. This function also allows the regions to share demand and capabilities, as Schumacher summarises: "The Observatory serves regional users by identifying and classifying the space-related services and service providers within the member regions, and assisting potential users to identify where capacity exists to respond to their specific needs, firstly within their own region, and then more widely from within the DORIS_Net network of partners". A close relationship between RCOs and key EU players will facilitate a comprehensive and improved dissemination of European strategic orientations.

By means of the RCOs, and through training activities and feedback, DORIS_Net is ensuring that it will be well positioned to improve expertise in remote sensing and identify strengths and respective weaknesses in the GMES downstream sector.

Serving as a forum for regional service providers to present GMES-related services to regional organisations, the Observatory allows the downstream service industry to gain a better understanding of the market. This also paves the way for possible cross-regional partnerships and helps to identify areas of the market that are appropriate for investment. These capabilities will, Schumacher believes, significantly improve the structure, knowledge and awareness of the downstream sector at a regional level, especially from a local and regional users' perspective, where demand for downstream services is fragmented. This leads to very well tailored services, which are difficult to transfer or repeat since they only meet local user needs.

INVESTMENT

For the most part however, it is a challenge for local industry to secure funding due to lack of GMES awareness. DORIS_Net hopes to build awareness at a regional level by demonstrating the benefits of developing and providing operational services to regional users. Regional

funding could also create another option and bestow the regions with further motivation to better promote GMES services. The challenge as Paola Carrara – based at CNR-IREA, Milan – sees it, is how to give demonstrable proof of the benefits associated with the GMES service and its promotion: "We need to improve regional and local demand for GMES downstream services and, at the same time, encourage industrial capabilities and investments in the sector," she stresses.

ENGAGING POTENTIAL USERS

To increase GMES awareness, networking events are vital. Bringing together potential GMES end-users and service providers serves to widen awareness across the regions, however there is still a clear need to raise education at an introductory level about the possible benefits that GMES can bestow on existing services used by regional and local authorities as well as the private sector. In a bid to address this issue, DORIS_Net is embarking on a variety of activities, as Professor Alan Wells reveals: "We are engaged in promotional programmes and sponsored face-to-face business forum events, and at a more practical level, joint pilot projects to demonstrate applicability of GMES technology to an existing or emerging user need. These actions are proving very effective".

Testament to the efficacy of these operations is G-STEP – an academic business partnership co-funded with EU and university structural funding – developing and delivering tailored GMES training workshops and programmes. Offering graduate placements, G-STEP is giving possible users of GMES the opportunity to gain awareness of the requirements involved. This partnership is serving to create a rewarding knowledge-exchange between various stakeholders.

Looking to the future, DORIS_Net seems set for success but there are many challenges that have to be addressed: language and cultural barriers for instance. Through the use of independent language tools and technologies in combination with geographical visualisation approaches (ie. semantic services, web mapping), DORIS_Net will aim to reduce these barriers, attracting a wider userbase.

Schumacher is confident about the network's prospects: "It is our hope and aim that in the future, the achievements of DORIS_Net shall move towards a long-term basis establishing a wider network of Regional Centres as part of an operational GMES architecture," he forecasts.

