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INSPIRE Conference 2016

INSPIRing a Sustainable Environment

INSPIRE Conference 2016
Barcelona, 26th - 30th September

INSPIRE FOR ENVIRONMENT – CLOSING THE IMPLEMENTATION GAP

INSPIRE FOR THE DIGITAL ECONOMY

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INSPIRE – Is It Living up to the Promise?

It is with great pleasure that we welcome close to a thousand participants to our annual INSPIRE conference in Barcelona, organised in conjunction with our partners and friends from the Institut Cartogràfic i Geològic de Catalunya and with the support of the Spanish government.

INSPIRE conferences are always moments where all of us take stock and reflect perhaps also on the promises we made. Did we not promise that, through implementing INSPIRE, there would be no more obstacles to the sharing of spatial data between all levels of government? That online services would become available to all, so that they could find and work with the data to protect our environment through better information? That we would be able to seamlessly combine spatial data from different sources for greater efficiency?

I personally am very much looking forward to learning how far we have come together in delivering on those promises, to finding out how realistic our promises have been and to seeing how relevant and important what we are doing still is for our citizens, our economy and, of course, our environment. The many workshops and oral presentations on this year's programme will tell us more about how INSPIRE is being put into practice, what lessons we have learned and where more progress can be made.

The three thematic plenaries of this year's conference take a special place in the programme. It is here that we will all come together for debates between experts from the Member States, from the Commission services and from thematic networks and the private sector, who will share their implementation experiences and future expectations.

This special edition of GIM International magazine focuses on these thematic sessions. It consists of a series of interviews, providing background information and more details about particular aspects of INSPIRE addressed by the experts and representatives presenting in the thematic plenaries. We invite you to take a moment to read these articles. They have been produced especially for you, for all participants at the conference and also for those who could not join us, to reflect on the questions asked and answers given from your own perspectives. They cover issues and challenges, such as how to address implementation gaps? How to build an information infrastructure which truly connects across all borders? How to address the challenges and opportunities arising from the EU's digital economy initiatives? And how important are pan-EU partnerships in tackling the implementation challenges of INSPIRE? Hopefully, this special issue will also provide you with inspiration to participate in the debates, not only in the plenaries but also during the entire conference. And perhaps also to remember the last time you made yourself a promise you didn't keep.

ROBERT KONRAD

Working for the European Commission Delegation/Representation in Bratislava between 1998 and 2010, Robert was responsible for EC communication in Slovakia. In 2010, he joined the Directorate General for Environment, initially as Head of the Communication Unit. From 2013, he is in charge of the Compliance and Better Regulation Unit, dealing also with environmental information, transparency and reporting policies.

THEMATIC PLENARY I:

INSPIRE for Environment – **Closing the Implementation Gap**

27 September 2016
13:30 – 15:00 Auditorium I
Chair: Stefan Jensen
European Environment Agency, Head of Group, Data Management

The first thematic plenary session, "INSPIRE for environment – closing the implementation gap", will focus on the effectiveness of the implementation of the INSPIRE value proposition in satisfying the needs of its customer segments in the environmental policy domain.

The first intervention in this session will set the scene by presenting an approach for the active dissemination and reporting of information related to legislation on urban waste water and the role of INSPIRE.

The second intervention by the European Commission, DG ENV, will provide an EU overview of the implementation state-of-play. It will present a number of issues, recommendations and the outlines of a forward looking strategy at the EU level for turning those in concrete actions.

Such actions require strong coordination between the EU and Member States. They will have to be tailored to the specific implementation challenges faced by different countries, across their borders and across the thematic communities who are partners, implementers as well as customers of INSPIRE.

To fuel the debate, representatives from a number of neighbouring countries will then present their plans and views on implementation.

INSPIRE FOR ENVIRONMENT – CLOSING THE IMPLEMENTATION GAP

INSPIRE Implementation: **State of Play and Outlook**

IS THE IMPLEMENTATION OF THE INSPIRE DIRECTIVE PROGRESSING ACCORDING TO PLAN AND WHAT HAS BEEN ACHIEVED?

The Commission published an Implementation Report underpinned by a detailed evaluation. It concludes that progress has been made in implementation, particularly in some Member States. However, the implementation gaps in most Member States are significant.

The findings in relation to the different implementation steps can be summed up as follows:

- All Member States have coordination structures in place, but their effectiveness is variable.
- The national data policies for sharing data are variable and heterogeneous. Many Member States reported important data policy issues that hamper the sharing of spatial data between public authorities and with the public.
- Significant progress has been made as regards the spatial data sets identified. However, for many Member States, the numbers remain low and with limited thematic coverage compared to some of the better performing countries.
- Implementation of the documentation obligations is at an advanced stage, yet variable quality remains and is a matter of concern.
- Member States made progress on the online discovery services. The availability of digital services for viewing and downloading spatial data for further use was less advanced.
- The interoperability of the spatial data sets has not advanced much, mainly because the main implementation deadlines are still in the future.

Having said all this, there are many good examples and outstanding projects that have been carried out within or between Member States. We are looking forward to seeing and hearing many more during the INSPIRE Conference 2016.

NOWADAYS, WHAT ARE THE MAIN CHALLENGES FOR THE IMPLEMENTATION OF THE DIRECTIVE?

At this half-way point in the implementation process, the main challenges have been identified as part of our fitness-for-purpose evaluation and can be summarised as follows:

- The effectiveness and efficiency of the implementation vary. The level of effectiveness can often be related to implementation efforts (and investment) by Member States. Most have not done enough in this respect, and can close their implementation gaps through, for example, more investment in skills and infrastructure, better coordination, improving the free flow of data by updating their data policies, better streamlining with national policies on eGovernment and open data.
- Efficiency cannot, at this stage, be demonstrated through a positive cost-benefit balance in quantitative terms. However, overall implementation costs appear lower than predicted and most Member States reported qualitative benefits, such as improved access to an information and evidence base.
- There are indications that some implementation efforts which are not due until 2020 may be costly and difficult to achieve, in particular in relation to data harmonisation. Moreover, the INSPIRE reporting requirements appear to have potential for streamlining.
- Harvesting EU added value is not fully realised given the different levels of implementation. This can be overcome by a better alignment of the Member States implementation plans and demonstrated through cross-border and end-user applications at EU level.

WHAT FUTURE ACTIONS ARE BEING CONSIDERED FOR CLOSING THE IMPLEMENTATION GAP?

Based on the evaluation results, it is clear that greater effort at all levels by all actors is needed in the future. To this end, the Commission proposed in its Report a number of actions for both Member States and at EU level. Member States need to step up their efforts in implementation and critically review the effectiveness of their data policies. In addition, they were recommended to give more priority to environmental spatial data sets and to improve coordination between the national INSPIRE implementation and eGovernment, open data and other relevant processes at national level. To complement national efforts, the Commission will carry out a number of actions. In particular, it will evaluate the national data policies, review, and possibly revise, the INSPIRE rules, especially those on spatial data harmonisation, to take into account the implementing risks and complexities with a view to reducing them. The Commission will step up the assistance to the Member States in applying and implementing the INSPIRE Directive, e.g. by the use of common tools. Other actions in the context of the Digital Single Market will also contribute to implementing INSPIRE (e.g. the Interoperability Solutions for Public Administrations programme, the eGovernment Action Plan and the European Interoperability Framework) as will the further inclusion of INSPIRE services and data harmonisation in relevant EU initiatives (e.g. Copernicus, Horizon 2020). We are looking forward to discussing these proposed actions at the INSPIRE Conference 2016.

WHY IS THERE A NEED TO FOCUS ON THE ENVIRONMENT?

The INSPIRE Directive is based on the environment article on the Treaty and was designed to support first and foremost environment policy. This is clearly reflected in Article 1 of the Directive: "The purpose of this Directive is […] the establishment of the Infrastructure for Spatial Information in the European Community (hereinafter referred to as Inspire), for the purposes of Community environmental policies and policies or activities which may have an impact on the environment." Our evaluation showed that this has been sometimes forgotten in the implementation and that the environment sector is not (yet) exploiting the benefits of this spatial data infrastructure as much as it could do. This requires closer engagement with the environment user communities. Hence, we chose this year's INSPIRE Conference to focus on the theme of "INSPIRing a sustainable environment". Having said this, we still realise the importance and encourage the use of INSPIRE in other policy domains such as transport, energy, health, land planning and meteorology, not least because all these domains are closely connected to environment policy. The strength of the INSPIRE Directive is integration, in other words bringing together different data and information pools and thereby creating access to all relevant "big environmental data". Hence, focusing on the environment also means working more closely together with all these other sectors. ◀

JOACHIM D'EUGENIO

As environmental engineer by training, Joachim D'Eugenio started working in the German Federal Environment Agency (UBA) in Berlin. In 1999, he moved to the European Commission where he was involved in the negotiations and the implementation of the Water Framework Directive until 2007. After a few years in the Commission's Secretariat General, he became Deputy Head of Unit in 2011 working on marine and water industry policy. Since 2015, he joined the Unit on Compliance & Better Regulation of DG Environment where he is leading the Fitness Check on Environmental Reporting and is involved in the INSPIRE implementation.

The **Iberian Peninsula** INSPIRE Implementation Outlook

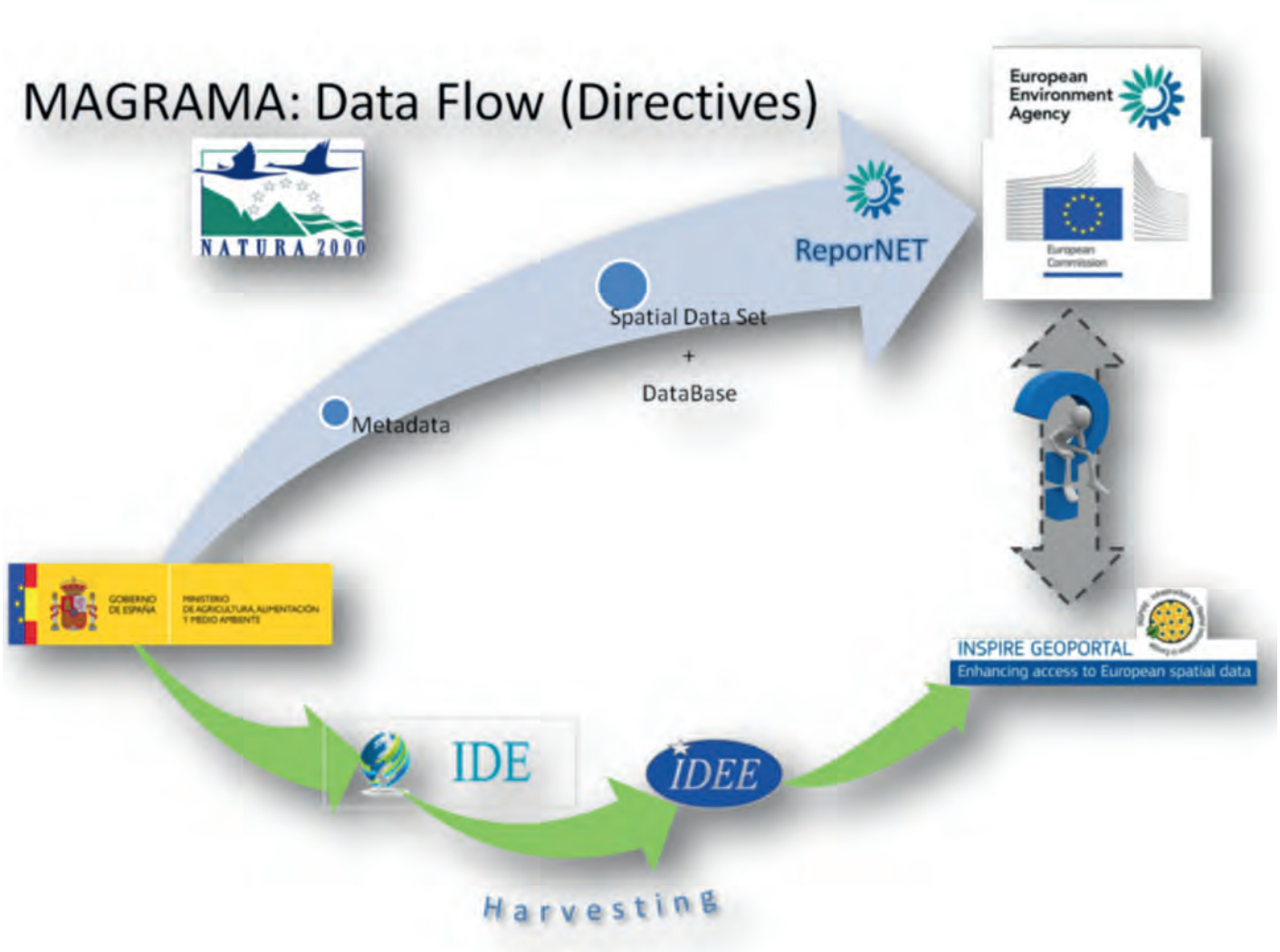
IS THE IMPLEMENTATION OF THE INSPIRE DIRECTIVE ON THE IBERIAN PENINSULA PROGRESSING ACCORDING TO PLAN AND WHAT HAS BEEN ACHIEVED?

In order to achieve the implementation of INSPIRE Directive for the purposes of the European environmental policies according to the objectives lay down in the directive, both Portugal and Spain have set up their own coordination structure and planning.

In Spain, the service and data policies have evolved towards more open and free and, currently, almost all services and data available in the Spanish spatial data infrastructure (SDI) can be used without strict limitations. These open policies have brought several benefits: further diffusion of the geographic information (GI) to citizens and other sectors (public and private), improving of the quality of data and services due in line with users' demands, and better knowledge about the technology applied to the GI.

Finally, it is important to note that – for some datasets such as orthoimagery, land cover and land use, digital terrain models and, more recently, in hydrography and transport networks – we have developed a national plan in order to produce and fund the capture and extraction of the GI among the different agents involved, in a collaborative way.

In Portugal, the implementation of INSPIRE is delayed. We already have metadata for all the spatial datasets and services we report, but we are significantly delayed in terms of the availability of data through view and download services. In fact, only around 10% of datasets are currently available through such services. Portugal recently presented an Action Plan to the European Commission



in which we commit to significantly increasing the number of spatial datasets available through view and download services by the end of 2016. Even though some spatial datasets are already free and open in Portugal, many others are not. We still lack effective data-sharing policies within public administration. The development of the national SDI (SNIG) will be guided by SNIG2020, a vision of the national SDI by 2020 that was built by a collaborative process in Portugal and that was approved in December 2015 by the Council for Strategic Development of SNIG.

INSPIRE has had both direct and indirect benefits. In terms of direct benefits, INSPIRE has harmonised environmental data collection and reporting, and indirectly enhanced trans-boundary data interchange. For example, the adoption of a common geographic datum facilitated geographic data exchange between Portugal and Spain. This was especially beneficial for several directives, e.g. Water Framework Directive, Air Quality Directive, Nature Directive and Seveso Directive.

In Portugal and Spain, we strongly believe that the accomplishment of Annex I and II is of the utmost importance in order to close the implementation gap for the Environmental Directives of Annex III. Without the information from the INSPIRE Spatial Data Set and Spatial Data Services of these annexes, the environmental information could not be correctly georeferenced.

NOWADAYS, WHAT ARE THE MAIN CHALLENGES IN THE IMPLEMENTATION OF THE IN-SPIRE DIRECTIVE IN PORTUGAL AND SPAIN?

The main challenges in INSPIRE implementation in Portugal and Spain are related to the implementation of data interoperability. The complexity of implementing rules on data harmonisation is also a problem. The most critical issue is to create harmonised data, and challenges include lack of financial and human resources and a reduced technical capability. In addition, it is sometimes difficult to identify the key actors for each INSPIRE theme and dataset, to obtain the data required for fulfilling INSPIRE requirements, not only at dataset level but also at attribute level, to know the services and data-quality needs and to implement useful applications based on INSPIRE services. Data-sharing policies according to INSPIRE guidelines are well implemented in Spain but this is not the case for Portugal. Some obstacles are related to the fact that the revenues of information disclosure are needed for some public administration entities. A further involvement of public administration at high level for INSPIRE implementation in Portugal is also needed.

As a further challenge, it is important to ensure a coordinated adaptation to INSPIRE of the spatial datasets needed in the environmental directives, compliant with the common data models defined in INSPIRE. Both countries agree that the adoption of the technical requirements needed to ensure the interoperability of the data must be led by the Coordination Team (DG ENV, EEA and JRC) together with the Member States. The legal provisions on reporting of each directive must include the INSPIRE requirements.

WHAT FUTURE ACTIONS ARE YOU CONSIDERING, IN PARTICULAR FOR CLOSING THE IMPLEMENTATION GAP FOR ENVIRONMENTAL POLICIES?

To close the identified gaps in implementation and steer future implementation actions towards maximising environmental benefits from the INSPIRE Directive we would need to consider several actions. Firstly, we would need to continue to ensure the good coordination between the mapping agencies and the environmental authorities. In this sense, we can profit from the work carried out by the existing European networks in both communities i.e. Eurogeographics and Eionet.

Secondly, we would need to set up a list of priority datasets required for the implementation of EU environmental law, in particular the most relevant that can benefit cross-border cooperation and information exchange and simplify the monitoring and reporting exercise.

Thirdly, INSPIRE should be used as a tool to improve data sharing across borders and organisations. As an example of successful cooperation on air quality data reporting, Portugal and Spain developed a common methodology for modelling PM10 originating from dust intrusions. This methodology was adopted later on as the European standard to calculate this pollutant. Furthermore, Portugal and Spain have enrolled in an EU e-Reporting project for sharing air quality information to modernise data reporting of air quality directives, facilitate data sharing (in compliance with INSPIRE) and reduce the administrative burden of reporting.

For transboundary protected sites (such as Natura 2000) the INSPIRE Directive would mean to adopt a common data model that would increase the accessibility, interoperability, quality and communication of biodiversity-related data at EU level (through the GEO catalogues, GEOportal, GEO services). Some examples of current cooperation on nature sites are the Douro International Nature Park and the Tejo/Tajo International Transboundary Biosphere Reserve. In terms of biodiversity and species distribution, the development and adoption of standards adapted to INSPIRE such as the Plinian Core standard regarding

▲ *Emilio López Romero.*

▲ *Joaquim Pinto da Costa.*

▲ *Mário Caetano.*

Biodiversity and Species distribution could be of high interest for the joint processing of cross-border datasets from different countries regarding biodiversity and species distribution. In terms of water, Spain and Portugal share five main river basins, three of which (Duero/Douro, Tajo/Tejo and Guadiana) are also among the largest basins on the Iberian Peninsula. The Albufeira Convention (1998) regulates the transboundary waters in the shared basins between Spain and Portugal. The Convention aims at fostering bilateral information exchange, information to the public, assessment and dialogue on transboundary impacts, pollution control and prevention, water uses, droughts and resource scarcity, assignment of rights, dispute resolution, etc. All these tasks would benefit from INSPIRE implementation. In this sense, the last conference of the parties of the Convention aimed at ensuring network connectivity through the Hydro Node used to connect different networks.

Fourthly, we would need to communicate the benefits of INSPIRE in terms of enhancing the efficiency of environmental data reporting. In order to avoid administrative burdens and several data flows related to the same data being available several times, the monitoring and reporting regime under the INSPIRE Directive needs streamlining with the reporting under environmental legislation. The reporting exercise should be simple, electronic and interoperable – in line with the SEIS principles: 'One dataset for several uses'. Achieving this objective would foster the engagement of the environmental community on the implementation of INSPIRE throughout all levels of the public administration.

▲ *Elisa Rivera Mendoza.*

Finally, we would need to ensure the engagement of the environment policy and implementation community, including the reporting experts for EU environment legislation. As an example, in Spain the Ministry of Agriculture, Food and Environment has set up a Working Group on Geographical Information Services. The group is aimed at ensuring the coordination of the actions needed for the compliance of legal requirements with the INSPIRE Directive. It promotes the exchange of information between different departments and the IT services of the Ministry so as to disseminate best practices, streamlining efforts and resources in the necessary adaptation to INSPIRE to ensure a coherent response from the environmental community. The ultimate objective is sharing all the environmental spatial information in an interoperable and harmonised format. In Portugal, there is also a similar group (i.e. INPSIRE Core Focal Points Network) that includes a total of 29 entities from more than 10 ministries. In Portugal the Environmental SDI is SNIAMB (http://sniamb.apambiente.pt/). SNIAMB has been available since 2011 to support SEIS, INSPIRE, Global Monitoring for Environment and Security (GMES), EIONET and the Aarhus Convention. ◀

MÁRIO CAETANO

Mário Caetano is a principal investigator of Directorate-General of Territorial Development (DGT) and since October 2014 he is the deputy director-general of DGT with responsibilities on geographic information, remote sensing and the national spatial data infrastructure (SNIG). In 2015, Mário Caetano launched SNIG2020: a collaborative vision for the Portuguese spatial infrastructure. He is also an associate professor at Information Management School from the New University of Lisboa (NOVA IMS). He is the author of more than 150 publications in books, journals and conference proceedings

JOAQUIM PINTO DA COSTA

Joaquim Pinto da Costa is head of the Department of Technology and Information Systems of the Portuguese Environment Agency (APA). Graduated as Msc Science in Environmental Engineering in 1989, Joaquim Pinto da Costa did a post-graduation scholarship in "Sciences and Sea Technology", participated in several Oceanographic campaigns and the analysis of the gathered data. For the last 25 years he's been working in the GIS field, teaching and applying it to environmental monitoring and hydrological modelling. Participated, published and presented technical articles in national and European meetings regarding the application of GIS in INSPIRE, Water Framework and Floods Directives.

EMILIO LÓPEZ ROMERO

Emilio López Romero is a computer engineer. He is the director of the National Centre for Geographic Information of Spain and member of the INSPIRE Committee and the Maintenance and Implementation Group. For more than 12 years he has been working in the field of SDI with main focus on governance and IT architecture both in a national and international context.

ELISA RIVERA MENDOZA

Elisa Rivera Mendoza is the Spanish National Focal Point of the European Environmental Agency, coordinator of the Spanish Copernicus Users Forum and alternate in the Political Implementation Group of INSPIRE. Before becoming civil servant in the Spanish Administration she worked in the Council of Europe where she started her international career. She works as advisor in European and International affairs for more than 15 years now and teaches courses on European environmental policy.

INSPIRE FOR ENVIRONMENT – CLOSING THE IMPLEMENTATION GAP

The Nordic INSPIRE Implementation Outlook

IS THE IMPLEMENTATION OF THE INSPIRE DIRECTIVE IN THE NORDIC COUNTRIES PROGRESSING ACCORDING TO PLAN AND WHAT HAS BEEN ACHIEVED?

The assessment of the yearly Member States monitoring reports and the status of the availability of spatial datasets and services through the EU geoportal shows that no Member State has fully implemented the INSPIRE Directive. However, the situation within the Nordic countries is rather positive; all key SDI components have been established and most of them are compliant with INSPIRE. Even though a significant majority of the required metadata for datasets and services is already available, the Nordic countries are still making further efforts to reach full compliancy of their INSPIRE metadata. We have Finland's 98.89% compliance as a bright and shinning guiding star.

All Nordic countries have a national INSPIRE-compliant discovery service that gives access to datasets and services in a 'publish – find – bind' concept. The discovery services have been developed in a joint Nordic community based on the Geonetwork open-source software. This action is one of several under the umbrella of the decade-long collaboration between the director generals of the Nordic national mapping and cadastral agencies (NMCAs). Sweden has taken things a step further on the common Geonetwork platform and has developed a very user-friendly geoportal that can be used as an entrance to the national spatial data infrastructure (NSDI).

The amount of datasets available through view and download services has increased continuously over the past years. Even though the opening up of public administration data has been an impressive trend in the Nordic countries, open access also to view and download services is a key factor for improving data accessibility, as has been the case in Denmark since 2013.

As for conformity of spatial data with INSPIRE common data models, the Nordic countries have been increasing their data harmonisation efforts and are actively preparing for the 2017/2020 Annex I, II and III data interoperability deadlines. INSPIRE is still an important driver for the continued development of the Nordic NSDIs that has been serving a wide variety of spatial data users within the national e-governments effectively for many years.

NOWADAYS, WHAT ARE THE MAIN CHALLENGES IN THE IMPLEMENTATION OF THE INSPIRE DIRECTIVE IN YOUR COUNTRIES?

We do not see any insurmountable obstacles to the implementation as such. The major concerns we have are related to harmonising data and how to keep up the motivation for doing so when there seems to be little

ULLA KRONBORG MAZZOLI

Ulla holds a Master of Science in Geography and a diploma degree in Leadership and Management. She is the National Contact Point of INSPIRE and a member of the INSPIRE MIG group and of the ISA WG on Spatial Information and Services. On a national level Ulla is involved with drafting and implementing the common public digitization strategies hereunder the Danish Basic Data Program leading to free and open Geodata in Denmark in 2013. She holds a seat on the executive board of the Danish Association for Geographic Information – "Geoforum" where focusing on the growth perspectives related to a closer collaboration between the private, research and public sector. Ulla is a part of the EU expert pool as an SDI/eGovernment adviser for EU associate countries.

CHRISTINA WASSTRÖM

National contact point, Christina Wasström, Lantmäteriet - the Swedish mapping, cadastral and land registration authority Christina Wasström has been the INSPIRE national contact point for Sweden since 2011. She support and coordinate the Swedish implementation of the INSPIRE directive on a national level, in both strategic and technical issues. Also a member in the maintenance and implementation group (MIG) that has been established by the European Commission to maintain and develop INSPIRE. Participates actively in different network at European and Nordic levels, e.g. vice chair EuroGeographics INSPIRE KEN. She has worked in the agency for several years in different capacities; among these, Head of section for data maintenance, Quality manager.

PANU MUHLI

Panu Muhli has been heading national INSPIRE Secretariat at the National Land Survey of Finland since 2013. The Secretariat is responsible for coordinating and supporting INSPIRE implementation and national SDI development in Finland. Muhli is also the Secretary General of the National Council for Geographic Information which supervises strategic level development of Finnish SDI. As a member of MIG-P and ISA WG on Spatial Information and Services Panu participates actively in European SDI collaboration. In his earlier duties at the National Land Survey of Finland Panu Muhli has been involved in designing and deploying the Finnish national Geoportal and a common interoperable map application platform for Finnish eGovernment services.

demand for harmonised INSPIRE data and only a few practical examples of actual use. What was discussed a few years ago is unfortunately still valid: "We have fulfilled a lot of requirements and opened up our INSPIRE shop – but still no one is buying anything".
We are looking forward to seeing concrete examples of how the EU Commission, the EEA and other EU bodies reuse our INSPIRE data and services. For instance, making it mandatory for all EU legislation with reporting obligations that cover INSPIRE themes to reuse INSPIRE data and services would be a major driver for public authorities to increase the rate of INSPIRE-compliant data and services.
The goal of INSPIRE is to build an infrastructure for spatial data in Europe, based upon national spatial data infrastructures. The Nordic NSDIs have been created with the purpose of fulfilling national needs for spatial data and are being continuously developed and integrated into national e-government according to national demands and legislation. It can at times seem challenging to balance between national needs and pan-European demands in a cost-efficient and user-beneficial way.

WHAT FUTURE ACTIONS ARE YOU CONSIDERING, IN PARTICULAR FOR CLOSING THE IMPLEMENTATION GAP FOR ENVIRONMENTAL POLICIES?

The Nordic INSPIRE network has existed since 2007 as a platform for sharing knowledge, experiences and best practices. For quite some years now we have been inviting our environmental protection and nature agency colleagues to our joint network meetings. This has proved beneficial for both parties – INSPIRE is, after all, a common task. This is, however, only the beginning of a fruitful collaboration and we – 'INSPIRE people'– need to start inviting ourselves into their networks in order to achieve better results.
Apart from taking a more active interest in the activities of the different reporting directives, we also need to promote a broader use of reporting data nationally. Reporting data could contribute to valuable information when used in combination with other data and therefore be of potential interest for many national applications. Such valuable data should not only be collected for the sole use of reporting to the EU Commission but also be disseminated in the NSDIs.
Summing up, implementation in the Nordic countries is well underway, but there are still rocks on the road ahead. If they are to become stepping stones and not stumbling blocks, then the EU Commission and the EEA must lend a hand.

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INSPIRE FOR ENVIRONMENT – CLOSING THE IMPLEMENTATION GAP

INSPIRE Implementation Outlook across **France and Germany**

IS THE IMPLEMENTATION OF THE INSPIRE DIRECTIVE IN YOUR COUNTRIES PROGRESSING ACCORDING TO PLAN AND WHAT HAS BEEN ACHIEVED?

Marc Leobet: It depends on which plan! We feel comfortable in terms of coordination, legal and free access to datasets and metadata. The download of datasets for the three annexes is not high enough but is speeding up (at 66%) and we need to complete the effort for consultation services. The last year brought some very interesting benefits in e-government (urban planning, vineyard declaration, etc.), efficiency (EUR50,000 saved in a year in one departement, and there are 101 of them in France) and even for some private companies. However, we are not very confident about our capacity to implement the data specifications. We strongly support harmonisation of datasets when we have real use cases, and we produce some national standards which are quite well implemented because of the real efficiency they provide. But some of our national standards are rarely implemented, mostly because of the lack of benefits in doing so. The example we will talk about with Martin Lenk about the Grande Région of Belgium-Luxemburg-German-French shows that cross-borders cooperation could need only small-scale interoperability as large-scale datasets are heavily connected to national uses or habits.

▲ *Martin Lenk.*

Martin Lenk: In Germany we started the process of identifying and implementing INSPIRE datasets and services around 2009. Since then we've noticed a very dynamic growth of INSPIRE datasets and services every year. In 2015 we counted more then 12,000 INSPIRE datasets and 16,000 INSPIRE services. This is not a coincidence; it is the result of a very intensive coordination process between the European and national levels, and also between the administrative bodies in Germany, including at local, regional and federal level. It also proves that the technical approach for the so-called INSPIRE Network Services based on common and standardised technology was a feasible approach. The progress would have been much slower otherwise. The main benefit of INSPIRE nine years after adopting the directive is the growth in transparency of public geoinformation. This is the result of using well-known and established standards like, for example, Catalogue or Mapping Services to improve transparency and open availability of public information. Therefore, INSPIRE provides one of the key technologies to make public information accessible via standardised services.

NOWADAYS, WHAT ARE THE MAIN CHALLENGES TO THE IMPLEMENTATION OF THE INSPIRE DIRECTIVE IN YOUR COUNTRIES?

Marc Leobet: Firstly, to achieve more than 99% of datasets being freely downloadable through web services. That will allow the provision of resources to e-administration services and open-data portals. Then, the

MARTIN LENK

Martin Lenk is working at the SDI-Coordination Office in Germany, which is the responsible institution for the nationwide coordination of INSPIRE-implementation. On behalf of the National SDI Steering Committee, he is also responsible for the tasks of the INSPIRE National Contact Point. From 2013-2015 he worked for the Federal Ministry of the Environment, where he focused on environmental INSPIRE tasks of the Federal Administration level. Prior to working for public administration he was an IT-Consultant for a private company (Accenture) and a research assistant at the Technical University of Darmstadt, where he received a doctorate in Water Engineering.

MARC LEOBET

Since 2008, Marc Leobet is in charge of INSPIRE directive at the French Ministry of environment. Head of the French delegation to the European INSPIRE Committee, he chairs the " Implementing Rules" Committee of the French National Council for Geographic Information. Previously, he worked on pollution and risks in the same ministry, in charge of dissemination of free public information on the web and of urbanization of environmental information systems. Cartographer and analyst, he was trained to IGN-FR where he was responsible for major map productions among millions other things.

challenge is to develop uses through API and apps to hide INSPIRE complexity to developers and users.

Martin Lenk: I see three challenges we have to face in the next year. Firstly, heterogeneous use conditions are a main burden for integrating information for the purpose of reuse. The challenge is to make the best of the continuously extending 'open data trend' in Europe. Secondly, the complexity of the INSPIRE data specifications are a main burden for providing usable datasets in an acknowledged European data format. The challenge is to simplify data specifications towards a minimum need for harmonisation and a maximum flexibility for reusing them for various tasks. Thirdly, the present lack of successful use cases is a problem in terms of 'marketing' INSPIRE. Public authorities are mainly implementing INSPIRE because they are legally obliged to do so. The challenge is to change the view from a provider-oriented towards a user-oriented perspective.

WHICH FUTURE ACTIONS ARE YOU CONSIDERING, IN PARTICULAR TO CLOSE THE IMPLEMENTATION GAP FOR ENVIRONMENTAL POLICIES?

Marc Leobet: We do not think we have such gap although, of course, we always have to be better in terms of citizen information. Environmental datasets have been available for free on the web for years and we now just have to adapt some web services to be fully compliant with INSPIRE regulations. One action many people asked for when we were working on the French action plan for INSPIRE was to achieve better coordination between EEA and EC to implement the 'made once, used many times' principle – and I am very pleased to read that it was listened in Brussels.

▲ *Marc Leobet.*

Martin Lenk: We need more coordination between INSPIRE and environmental communities, especially in the context of e-reporting. That was one of the main drivers for the implementation of the directive. ◀

BY **BENOÎT FRIBOURG-BLANC**, PROJECT MANAGER AT INTERNATIONAL OFFICE FOR WATER, FRANCE

INSPIRE FOR ENVIRONMENT – CLOSING THE IMPLEMENTATION GAP

Setting the Scene: INSPIRE for Reporting and Dissemination of **Urban Waste Water Information**

PLEASE TELL US ABOUT THE BACKGROUND, OBJECTIVES AND EXPECTED OUTPUT FOR THE PROJECT ON THE DISSEMINATION AND REPORTING OF URBAN WASTE WATER INFORMATION.

In 2012, the Structured Implementation and Information Framework (SIIF) was introduced for the first time in a communication called 'Improving the Delivery of Benefits from EU Environment Measures'. To demonstrate the added value of this concept before generalising its application to all directives, the communication suggested it should be applied to the Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment. Since 2012, the European Commission has been carrying out a pilot programme for the implementation of the SIIF concept to the Urban Waste-Water Treatment Directive (UWWTD). The aim is to automatically calculate the compliance with the directive and speed up the availability of information for decision-makers and the general public alike by creating an Urban Waste Water SIIF platform. For reporting to the EU, there is a harmonised data collection process including common semantic, data model and reference geographical data, and all the data in this reporting process is linked to four geographical objects.

The INSPIRE Directive was adopted in 2007 and is being implemented progressively. As it considers all relevant geographical objects in the environmental domain and encourages interoperability, i.e. common semantic and data models, it is very important for the UWWTD reporting process and – right from the beginning of the project – convergence between INSPIRE Directive requirements and UWWTD reporting has been favoured for developing the SIIF platform.

With the semantic interoperability of the UWWTD reporting already being in place, the decision was taken to develop a technical infrastructure able to be implemented at national level, and organised based on INSPIRE services as required by INSPIRE Directive article 11, to make the data available online . The platform was progressively developed, tested and improved during seven test cases in Member States. It is now fully operational and will be used in the coming

year for assessing Member States' situations with respect to UWWTD implementation. The project clearly demonstrates that the INSPIRE Directive can be implemented progressively and provide important added value, in terms of both the accessibility of data and its reuse for other purposes.

THE IMPLEMENTATION OF INSPIRE SHOULD MAKE IT MORE EFFICIENT TO DEVELOP SUCH AN INFORMATION SYSTEM. WHAT ARE THE EXPERIENCES OF THE PROJECT AS A 'USER' OF INSPIRE?

For EU-thematic reporting like UWWTD reporting, the implementation of INSPIRE services is a key step forward for the community. However, to be compliant with INSPIRE, the requirements go beyond INSPIRE services; there needs to be a specific adaptation to the data model which can be complex and require specific expertise. The data model has not yet been adapted to the INSPIRE requirements, but if the reporting is to be compliant with INSPIRE then this will have to be done. To tackle this, the project has drawn up a proposal allowing:

a) Identification of some thematic questions to be solved by the official implementation group, so as to discuss and validate the updated data model
b) Demonstration that the adaptation requires a limited set of additional information that, once implemented in the data collection system, does not require very specific expertise to be completed, and implies mainly a small adaptation to the data collection chain.

When the existing data model has been agreed on by 28 Member States it is not very easy to change it because most of them have developed their own IT systems. The INSPIRE requirements offer a way to convince all Member States to accept small adaptations and to build a new common data model. The enlargement of the use of data allowed by INSPIRE is also a way to justify the time spent on collecting the information. It was previously only requested for the EU reporting process. The development of the SIIF platform with its INSPIRE services now allows this information to be utilised by lots of different users in line with the requirements of the Public Access to Environmental Information Directive. A similar situation can probably be anticipated, at least for the other water-related reporting processes. On the other hand, when one or more elements needed for implementation of INSPIRE are effectively implemented, if not fully compliant then at least partially – metadata catalogue, web service – this is of great help. It allows the addition of thematically relevant information which provides added value for the thematic work, i.e. assessment of the situation. It is also very useful in demonstrating the added value of implementing INSPIRE to data reporters; they can immediately see what they are reporting, adjust, improve the quality, cross-check with other layers, etc.

The project also demonstrated that the absence of the relevant INSPIRE services which would allow search and identification via an appropriate indexation and cataloguing system – i.e. a 'discover' service – means that the identification and addition of a thematic layer demands significant extra effort (customise data model, implement specific web service…).

WHAT TYPES OF SPATIAL DATA ON URBAN WASTE WATER ARE USED IN THE PROJECT?

UWWTD reporting identifies four interlinked objects with a geographical component: the agglomeration, the urban waste water treatment plant, the discharge point and the sensitive area. Only the last is a polygon, the others are a simple point of location. The project has implemented dedicated web services to make them and the related datasets available online (metadata catalogue, WFS, WMS).

BEYOND DATA ON THE URBAN WASTE WATER FACILITY, WHAT OTHER TYPES OF ADMINISTRATIVE AND ENVIRONMENTAL SPATIAL DATA ARE USED IN THE INFORMATION SYSTEM?

Several types of spatial data are used in the information system (SIIF platform). Currently they are made available by European institutions (Eurostat and EEA) who produce them by gathering relevant data from Member States and are therefore also the owners. They are not obliged to implement INSPIRE, and the data is made available either via downloadable files or as web services:

- Eurostat: administrative units (downloadable at http://bit.ly/2blJNVH)
- EEA: (provided as web services for many data) bathing water data, river basin data, data on protected sites like Natura 2000 and river water quality data, (downloadable and not currently used) E-PRTR data.

It is envisaged to test the inclusion of additional national spatial data such as permits.

WAS IT POSSIBLE TO FIND THE SPATIAL DATA YOU NEEDED ONLINE AND TO OBTAIN INFORMATION ABOUT THE QUALITY, OWNERSHIP AND USE CONDITIONS?

In fact, the core geographical data is part of the official reporting. Access is therefore ensured by the reporting system, but quality, ownership and use conditions are not provided as such. Using them to produce maps revealed quality issues in the respective layers and between layers (illogical distance between agglomeration, treatment plant and discharge point) and genealogy mistakes in the use of reference layers. It is expected that the implementation of INSPIRE by Member States and the online availability of reference layers will improve the situation in the near future.

A large part of the other types of EU administrative and environmental spatial data

deemed relevant for the project was available via different platforms in a (non-INSPIRE) standard format. For some datasets for which INSPIRE services are implemented, it was possible to immediately identify the necessary information via a metadata catalogue and use it as appropriate. This proved to be also very powerful in allowing constant availability of the most up-to-date data and information. For the other datasets it was necessary to identify the dataset and information and then import everything into our own catalogue for implementation. In such cases, the permanent link to the owner is weaker. In particular when an updated version is released, it is necessary to implement it manually in the project catalogue and from there on the platform.

WERE THERE INSPIRE SERVICES AVAILABLE FOR ACCESSING AND USING THE SPATIAL DATA NEEDED FOR THE INFORMATION SYSTEM?

Yes, bathing water quality, surface water quality, Natura 2000 and river basin districts and sub-units are available via the EEA platform as queryable web services with a metadata catalogue which includes INSPIRE metadata fiches. This platform has been developed to make the INSPIRE services related to the urban waste water objects available to other platforms.

WAS IT POSSIBLE TO INTEGRATE THE SPATIAL DATA FROM DIFFERENT SOURCES DIRECTLY INTO THE SYSTEM OR DID YOU FACE INTEROPERABILITY ISSUES?

We did not face interoperability issues when integrating the spatial data, but this mostly stems from the fact that we only used EU-wide spatial data that was already harmonised. It is envisaged to test the integration of national spatial data so as to identify specific adaptations needed and other interoperability issues that may occur.

THE PROJECT – THE INFORMATION SYSTEM – IS NOT ONLY A USER BUT ALSO A PRODUCER OF SPATIAL DATA AND INFORMATION. WHAT ARE THE EXPERIENCES WITH MAKING THE SPATIAL INFORMATION PRODUCED AVAILABLE ONLINE COMPLIANT WITH INSPIRE?

A validated EU-level data model which would be INSPIRE compliant does not exist for the current geographical objects of the UWWTD reporting. When this becomes the case, and as the tool can be used in any country, it should be relatively easy to implement a mapping tool able to disseminate datasets fully in line with INSPIRE and to install it on all running platforms. Currently, the project makes the spatial information produced, as well as the spatial information collected and also all other related information, available online through a wide set of formats. From the beginning, it has been conceived as a linkable node to allow integration in any information system. In fact, the project uses and transforms the national dataset to produce maps, graphs, tables, information sheets…all these are accessible online on the platform alongside the INSPIRE services: discover, view, download, invoke. Part of this is also available in the form of files, as printable pages. Moreover, the way the hyperlink of each information sheet for each object is organised (with the code of the object included directly in the hyperlink) allows other websites to be easily linked to the SIIF platform to give direct access to the detailed information about each object.

HOW WOULD YOU DESCRIBE THE 'FITNESS FOR PURPOSE' OF THE IMPLEMENTATION OF INSPIRE FOR THE PURPOSES OF REPORTING AND DISSEMINATION OF URBAN WASTE WATER INFORMATION?

The INSPIRE community and the environmental domains communities are currently separated, at least in the case of urban waste water treatment. The situation is progressively improving, but the INSPIRE requirements still need to be translated for the end users in the environmental domains. The available specification documents are made for INSPIRE experts, and the environmental domains communities therefore regard the implementation of them more as a burden than as an opportunity. Convincing them to invest in understanding the requirements better necessitates both knowledge brokering and demonstration of the added value provided. By allowing easy access for non-IT specialists to UWWTD datasets and situations, the UWWTD SIIF platform has proved this is possible and relevant. ◀

BENOÎT FRIBOURG-BLANC

Benoît Fribourg-Blanc has been working for OIEau since 2000 on projects on water, water pollution and data, assisting the European institution for the implementation of water Directives. Graduated in agriculture and advanced master on drinking water production and wastewater management by education, he was particularly active on projects at the interface between water emission and pollution, and data management and reporting to European institutions since.

Since three years Fribourg-Blanc is involved in the development of the UWWTD SIIF concept (uwwtd.oieau.fr). During this period he participated to the definition of the UWWTD SIIF concept document, to production of various assessments on country situation including as regards implementation of INSPIRE, and coordinated the team who developed the UWWTD SIIF platform.

Fribourg-Blanc was in charge in 2013-2016 of the development of the European knowledge platform on Natural Water Retention Measures (http://www.nwrm.eu/). Before, he has been involved seven years in the technical assistance to the European Commission on the definition of relevant priority substances under the Water Framework Directive. He led the development of the new information system, managed the data collection, the database (14.6 million geo localised individual chemical analyses with up to 150 information on each analysis) and the associated website (still active) and produced assessments on the datasets.

He is also an active member of the European Topic Centre on Inland, Coastal and Marine waters for the European Environment Agency since January 2014 and before from 2000 to 2006, period during which he was in charge of emission inventory. Since 2012, he is trainer on water statistics for EUROSTAT

THEMATIC PLENARY II:

INSPIRE for the **Digital Economy**

28 September 2016
11:00 – 12:30 Auditorium I
Chair: Alessandro Annoni
European Commission, Head of the Digital Economy Unit, JRC

The second thematic plenary session, INSPIRE for the Digital Economy, will look at the INSPIRE value proposition in the context of the EU's Digital Single Market, cross-cutting eGovernment and Copernicus programme.

The first presentation in this session delivers an EU perspective on the synergies between INSPIRE and actions of the Digital Single Market strategy such as the European Interoperability Framework and Strategy, the 2016-2020 eGovernment Action plan, the European Cloud and Data Centres initiative and instruments such as the Interoperability Solutions Public Administrations (ISA2 Programme).

The Copernicus Programme (the EU's strategy for space) is a major provider as well as user of spatial data, observations and thematic data included in the scope of INSPIRE. The second presentation of this session will focus on the synergies of INSPIRE and the EU Copernicus Earth observation and services programme.

The remaining three presentations will comment of the potential and challenges of INSPIRE and Copernicus for eGovernment and environment-related applications. They will show and assess through concrete applications developed in collaborations between the private and public sector the added value of INSPIRE in a digitally-sustainable economic context context.

INSPIRE FOR THE DIGITAL ECONOMY

Relevant Policy Developments in the **EU's Digital Economy Initiatives**

WHAT ARE THE RECENT MAJOR EU-LEVEL DIGITAL ECONOMY POLICY INITIATIVES?

The Digital Single Market strategy, adopted by the Commission at the beginning of May 2015, puts forward a number of essential initiatives contributing to the EU's digital economy. Actions targeting unjustified geo-blocking, the reform of the copyright regime, the Audiovisual Media Services Directive review, the review of the ePrivacy Directive, the revision of the European Interoperability Framework and Strategy (EIF/EIS), the eGovernment action plan 2016-2020, the Free Flow of Data initiative and the European Cloud, to name but a few, will all contribute to achieving the Digital Single Market (DSM).

FOR WHICH OF THESE INITIATIVES IS INSPIRE MOST RELEVANT?

Basically, location data is used in all EU policy domains. It is of particular importance for the exchange of data among different sectors and/or administrative entities; for example, when implementing end-to-end digital public services. It is essential to collect, process and exploit data from various domains. The exploitation of cross-sector data by public administrations, businesses and citizens is required for many different purposes, including prospective analysis, decision-making, increasing transparency, detecting corruption, and commercial purposes. In these cases, a common understanding of location data is needed. That is why INSPIRE, as a means of harmonising and standardising this data, should play a role in all domains. INSPIRE should be cross-cutting and not restricted to any one area. INSPIRE is a major contributor to initiatives targeting interoperability and sharing of data such as: the revision of the European Interoperability Framework and Strategy (EIF/EIS) and the Free Flow of Data initiative.

HOW CAN THE IMPLEMENTATION OF THE INSPIRE DIRECTIVE CONTRIBUTE TO THE OBJECTIVES OF THESE INITIATIVES?

INSPIRE plays an important role in improving interoperability and in sharing and reusing data. It provides core data models and a generic framework that can be extended for

specific sectoral purposes. Alignment and combination of horizontal (e.g. the ISA Core Vocabularies) and thematic (e.g. in eHealth) specifications and standards with INSPIRE can play an important role in cross-sector interoperability and sharing of data. The cross-sector perspective is where more benefits can be obtained for digital innovation and for the digital economy in Europe.

ARE THERE OPPORTUNITIES TO SUPPORT THE IMPLEMENTATION OF INSPIRE THROUGH THESE DIGITAL ECONOMY INITIATIVES?

One of the most important conditions for the implementation of INSPIRE in the various domains is to intervene at the early stages of legislative initiatives. Intervention in preparatory phases of legislation will allow the identification of cross-cutting relationships, take into account INSPIRE in any specific data requirements and specifications and plan the necessary means to support its implementation. In the assessment of the ICT implications of new and revised regulations which is included in the impact assessment process preceding any legislative decision and is part of the Better Regulation Toolbox, the inclusion of an "INSPIRE-related" screening would be considered useful in this context.

The revision of the EIF/EIS is another strong opportunity. The support of the implementation of INSPIRE is, indeed, one of the priority actions in the EIS contributing to the implementation of the EIF recommendations in the area of information interoperability and Open data and, consequently, to the interoperability between public administrations themselves and public administrations, businesses and citizens. Raising awareness is an important requirement. One of the biggest barriers for public administrations to sharing and reusing is the fact that they don't know what solutions exist or how they can be reused. Tools like the EIRA and the EUCart, developed and maintained by the ISA2 programme, can contribute in improving the visibility of INSPIRE. These tools help in finding interoperable solutions and tools, including location specifications that can be used by public administrations when implementing services or disseminating public data.

HOW DO YOU THINK INSPIRE WILL EVOLVE AS REGARDS ITS APPLICATION TO A WIDER SCOPE BEYOND THE ENVIRONMENT?

INSPIRE should be applied to a wider scope than the environment domain. It should be applied horizontally to different sectors, gaining understanding and learning lessons at the same time. It will then evolve accordingly and put in place the means to answer the needs identified.

The ISA programme has supported the cross-sector application of INSPIRE. Two actions deserve a special mention:

- The EULF (European Union Location Framework) has developed frameworks that help to improve data sharing between the public and private sector. It has also piloted the application of INSPIRE in areas like Transportation, Marine and Energy. For example, the pilot in the Transportation domain aims at improving the accuracy of road safety data in vehicle navigation systems through daily data feeds from road authorities.
- The ARE3NA (A Reusable INSPIRE Reference Platform) has focused on semantic and technical aspects, developing common components for the successful implementation of an EU spatial data infrastructure in line with the requirements of INSPIRE.

The new ISA2 programme will continue in the same direction and supports the ELISE (European Location Interoperability Solutions for eGovernment) initiative which will continue the work of these two important actions.

The recently established ISA2 Working Group on Geospatial Solutions will play an important advisory role, helping to identify requirements and priorities and to facilitate the dialogue between the e-government and European geospatial communities. Thematic groups like this one, bringing together actors from across the board with INSPIRE, will certainly contribute to this broadening of scope. ◀

▲ *Margarida Abecasis.*

MARGARIDA ABECASIS

Margarida Abecasis is an ICT engineer specialised in telecommunications, with a master's degree in electrotechnical engineering and computers. As an administrator at the European Commission since 1993, she defined the first service level agreements for data transmission services and managed IT projects supporting the modernisation of the decision-making procedures of the Commission and inter-institutional exchanges. In 2006, she was appointed Head of Unit in DG Informatics, responsible for ICT infrastructure services. She also chaired the inter-institutional sub-committee on telecommunications and networks (CII-TN). In 2011, she took over responsibility for of the unit in charge of the ISA programme. Ms Abecasis was also in charge of preparing the legal basis for the ISA² programme, the follow-up programme to ISA. The new EUR131 million programme, approved by the Council and European Parliament in autumn 2015, started on 1 January 2016 and will run until December 2020.

INSPIRE FOR THE DIGITAL ECONOMY

Synergies Between the **EU Copernicus Programme** and INSPIRE

IS THE IMPLEMENTATION OF THE INSPIRE DIRECTIVE IMPORTANT FOR THE COPERNICUS PROGRAMME AND, IF SO, WHY?

Yes, the INSPIRE directive is indeed important to the Copernicus programme. As you know, Copernicus is a user-driven operational EU programme that promotes the use and sharing of its satellite data and information products from its six constituent Services . Both the Sentinel data and the information are made available on a full, free and open basis in support of users which include institutional, public and private users at global, European, national and regional levels. The open availability of Copernicus data and information also means that businesses can capitalise on this to add further value by developing innovative applications and services to fulfil the need for better information. Obviously, the timely implementation of the INSPIRE Directive, which is essentially about the 'sharing of specific spatial data themes' by and across the Member States, is key for the Copernicus programme and consequently for its users. Indeed, the production and validation of Copernicus information products by the different thematic services relies extensively on easy and continuous access to a wide range of in-situ data provided through existing capacities operated within Member States. As such, INSPIRE directly supports the provision of accurate and reliable information by the Copernicus services.

IN WHICH APPLICATION AREAS ARE THE SYNERGIES BETWEEN INSPIRE AND COPERNICUS THE MOST IMPORTANT?

The different Copernicus services use in-situ observation data from ground-, sea- or airborne sensors, reference and ancillary data. In particular, the Copernicus Land Monitoring and Emergency Management services rely on spatial reference data. For example, the availability of national transport networks seamlessly at European level (i.e. connected at national borders) is crucial in case of emergency events like flooding, forest fires and so on because such events do not stop at country borders. Another example is the easy access to administrative units that can be matched with detailed land cover and land use information over major EU city areas (Urban Atlas) to enrich their accuracy.

ARE COPERNICUS SERVICES ALREADY BENEFITING FROM INSPIRE OR DO THEY STILL ENCOUNTER PRACTICAL OBSTACLES WHEN THEY NEED TO USE SPATIAL DATA UNDER THE SCOPE OF INSPIRE?

Yes, the Copernicus services are progressively benefiting from INSPIRE as it begins to roll out. To ensure that this continues in the right direction, more coordination and encouragement of Member States is still needed to ensure that INSPIRE's support to Copernicus can be further strengthened.

More specifically, INSPIRE provides a way to discover and access data needed for the production and validation of Copernicus services, and a way to describe and distribute data to the widest possible range of users. An important tool for ensuring that we can reap the full benefits of INSPIRE is the Copernicus Reference Data Access portal (CORDA),which has been designed to ensure that Copernicus services can easily access the spatial data available in the Member States. CORDA has recently started searching INSPIRE geoportals for relevant data on a routine basis. This has led to significant efficiency gains and has greatly enhanced the amount of both national and regional data that can be discovered through CORDA. Nevertheless, in some Member States a major obstacle for INSPIRE remains at the level of the data policy: different pricing policies and use conditions may apply to datasets in full compliance with INSPIRE, whereas Copernicus provides full, open and free access.

ARE COPERNICUS SATELLITE DATA AND SERVICE PRODUCTS ALREADY OFFERED ONLINE FOR APPLICATION DEVELOPMENT AND MARKET UPTAKE THROUGH INSPIRE SERVICES FOR DISCOVERY, VIEW AND DOWNLOAD?

Yes. To give a specific example, the Copernicus Land Monitoring service is progressively implementing INSPIRE compliancy for metadata, service specification and data modelling. On the EU level, INSPIRE can benefit from relevant applications/use cases where joint best practices can be built by combining pan-European Copernicus data with EU reference data in support of environmental reporting. The implementation of INSPIRE specifications can thus act as an integrating element. We should also not forget that Copernicus satellite data and information should be INSPIRE compliant when falling under the scope of the INSPIRE Directive. Whilst it may not be technically feasible for Copernicus to fully implement INSPIRE in all its aspects due to the specificities of some Copernicus information (for example, meteorological information), the key principle remains that data and information should be discoverable, viewable and downloadable, and this is provided for by the Copernicus programme.

HOW CAN WE FURTHER RAISE THE SYNERGY BETWEEN COPERNICUS AND INSPIRE?

The in-situ component of Copernicus includes coordinated access to in-situ data, as needed by the Copernicus services, and this task is being carried out by the European Environment Agency (EEA). EEA is conducting analysis of Copernicus requirements for in-situ data, in close cooperation with the Copernicus services themselves, and this will provide an up-to-date and more detailed picture of the potential synergies between INSPIRE and Copernicus. It will map the relationships between the requirements and the data themes covered by INSPIRE. The assessment will provide a sound basis for further exploiting the synergy between INSPIRE and Copernicus. Europe's investment in the Copernicus programme is producing an unprecedented amount of high-quality data and information, available to all at no cost. INSPIRE should act as an enabler to ensure that any potential user can unlock the benefits of this veritable mine of information. ◀

More information: http://copernicus.eu/sites/default/files/documents/Brochure/Copernicus_Brochure_EN_WEB.pdf

MAURO FACCHINI

Mauro Facchini, Italy, has an engineering background with a PhD in Mechanical Engineering. Before joining the European Commission he has worked in Italy, UK and Switzerland, mostly in the academic and research environment.

He joined the European Commission in 2002, where he was initially involved in the management of research projects funded by the EU. Mauro Facchini participated to the definition of the European Space Policy from its early days by concluding the Framework agreement with ESA and in drafting and including article 189 (EU Space Competence) in the Lisbon Treaty.

From 2006 to 2012 he worked to the development of the European Earth Observation programme (GMES) and in Space Research matters. He is at present the head of the unit for the operation of Copernicus services.

INSPIRE FOR THE DIGITAL ECONOMY

Potential of INSPIRE and Copernicus for **e-Government and Environment**

IN WHAT TYPE OF E-GOVERNMENT APPLICATION AREAS AND PLATFORMS ARE YOU MAKING USE OF INSPIRE AND HOW?

Atos, with a pro forma annual revenue of circa EUR12 billion and 100,000 employees in 72 countries, provides Consulting & Systems Integration services, Managed Services & BPO, Cloud operations, Big Data & CyberSecurity Solutions, as well as payments and transactional services. With its deep technology expertise and industry knowledge, the Group works with clients across different business sectors: Defence, Financial Services, Health, Manufacturing, Media, Utilities, Public sector, Retail, Telecommunications, and Transportation. As a major software integrator, Atos offers advanced, reliable, high-level and evolutionary functional Open Geospatial Technologies and Services - based on European initiatives like INSPIRE and Future Internet - to all companies with geo-locatable business data. This offering leverages the INSPIRE approach and is primarily aimed at those interested in using innovative information technology to increase efficiency (more for less) and competitiveness (improving decision making) while guaranteeing the correct exchange of information in their existing legacy systems and future scalability with other systems. Atos provides reliable solutions and services in many areas, ranging from air quality control and mitigation of health risks in cities by Integrating in-situ & EO observations from environmental sensors (http://www.eo2heaven.org and http://www.envirofi.eu); protection and conservation of wildlife (http://www.eo4wildlife.eu); integration of cadastre and land parcel information services with EO and in-situ sensor observations to improve efficiency in farm activities (http://www.foodie-project.eu); service oriented spatial data infrastructure architecture for improved interoperability among risk management ▶

authorities in Europe, which enables the handling of more effective disaster risk reduction strategies and emergency management operations (http://www.eu-orchestra.org); early warning systems for providing accurate and timely information to populations threatened by natural/man-made hazards (http://www.dews-online.org) or urban mobility services, empowering citizens participation, as it allows the use of mobile devices to report information about any circumstances and incidents that occur on the cycling routes and parking lots.

WHAT HAVE BEEN THE MAJOR CHALLENGES AND BENEFITS OF USING INSPIRE FOR THESE APPLICATIONS?

It has allowed Atos to reduce the time and costs of the implementation, deployment and integration of the applications with our customers' legacy systems. Costs related to data acquisition necessary for the applications were largely reduced in most cases by integrating directly external repositories (e.g., national cadastre, transportation infrastructure, statistical information, etc.) and because we were able to access the most up-to-date information published by the data owner – thus allowing us to offer more competitive solution prices to our customers. In addition, the free access to vast amounts of open information has enabled the creation of new added-value services for citizens and private companies that would not have been possible some years ago. Nonetheless, obstacles still lie in the way of seamless and reliable access to many public data resources, where the level of service implementation achieved may vary depending on the country/region's legal regulations and time schedules (e.g. data may be available for visualization but not for download). This basically implies that specific agreements have to be made with each administration or the data has to be collected from other alternative sources and harmonized. In both cases it is time-consuming and represents an additional cost.

WHAT ARE YOUR EXPERIENCES IN USING COPERNICUS SATELLITE DATA AND/OR SERVICE PRODUCTS TOGETHER WITH INSPIRE?

Atos is currently involved in two projects, FOODIE and EO4WILDLIFE, which make intensive use of satellite data from the Copernicus program. FOODIE is focused on the use of precision farming techniques, exploiting high spatial resolution products such as SENTINEL-2. For instance, farmers are now able to make their daily farm activities more efficient by saving costs in fuel, water and fertilizers, while reducing the environmental impact. This is achieved by combining data from satellites, sensors in intelligent tractors, and geological maps and land parcel use layers available from INSPIRE compliant services offered by national/local public administrations. The EO4WILDLIFE project focuses on the creation of tools for the monitoring of wildlife migratory behaviour trends by leveraging existing big data intelligent management, processing, fusion and advanced analytics software and services.

However, in our opinion there are still issues that prevent the wider use of these satellite products, such as the availability of tools that facilitate processing SENTINEL raw data or offering already pre-processed products that remove the atmospheric influence over the measured values - that enable the creation of newly derived products depending on the specifics of each application.

HOW WOULD YOU DESCRIBE THE 'FITNESS-FOR-PURPOSE' OF THE CURRENT IMPLEMENTATION OF THE INSPIRE FRAMEWORK – FROM DATA POLICIES ON METADATA, SERVICES AND DATA SPECIFICATIONS IN RELATION TO THE TYPES OF EGOVERNMENT APPLICATIONS YOU ARE INVOLVED WITH?

Efforts made by public administrations to make their datasets available (and findable) through INSPIRE compliant services are facilitating the exchange of information between different administrations and boosting the creation of new business opportunities for the private sector. However, we believe that the data policies aspect is still one of the current weaknesses of INSPIRE, given the difficulty in accessing certain thematic layers in some countries, whilst in others access is completely free and straightforward. An additional obstacle is the complexity of INSPIRE technical specifications. These specifications make it difficult to implement the core INSPIRE services and also create difficulties for clients and software components that interoperate

with them, which need to work properly with the different data formats and service versions used by the large number of service instances already running. In contrast to this, we can find other "de facto" and less complex solutions like Google Maps, OpenStreetMap or CartoDB (just to cite some of them) that have popularized the use of geospatial data by easily enabling non-technical users to discover and integrate the data into their applications.

WHAT IN YOUR OPINION IS THE IMPORTANCE OF INSPIRE FOR ESTABLISHING A EUROPEAN INTEROPERABILITY FRAMEWORK?

INSPIRE represents a spearhead initiative in Europe in terms of data sharing, enabling the reuse of existing spatial information resources and services in which the EU and the member states have invested heavily over the past decade. It has boosted the creation of open platforms for innovation and new business opportunities, while increasing the exchange of information, transparency and trust between different stakeholder groups such as public administrations, private companies and citizens. ◀

MIGUEL ÁNGEL ESBRÍ

Miguel Ángel Esbrí is the research line expert for geospatial technologies within Atos Research & Innovation (ARI) department. He holds a master degree in Computer Sciences Engineering from the Jaume I University in Castellón, Spain since 2002. He is specialised in geospatial technology and more particularly in interoperable systems based on Open Geospatial Service standards. He joined Atos Spain in September 2006 as a consultant. Since then, he has been involved in the technical development, management and coordination of EU funded projects (mainly focused on environmental issues and natural and man-made hazards), like ORCHESTRA (Open Architecture and Spatial Data Infrastructure for Risk Management, www.eu-orchestra.org), DEWS (Distant Early Warning System, www.dews-online.org), EO2HEAVEN (Earth Observation and Environmental modelling,http://eo2heaven.org), ENVIROFI (The Environmental Observation Web and its Service Applications , http://envirofi.eu), ICARUS (Unmanned Search and Rescue, www.fp7-icarus.eu) and DRIVER (Driving Innovation in Crisis Management for European Resilience, http://driver-project.eu). He is currently the project coordinator of the FOODIE Project (Farm-Oriented Open Data in Europe, www.foodie-project.eu).

BY **STAVROS TEKES**, DRAXIS ENVIRONMENTAL TECHNOLOGIES SA

INSPIRE FOR THE DIGITAL ECONOMY

Usability and Development of **e-Government Platforms**

IN WHAT TYPE OF E-GOVERNMENT APPLICATION AREAS AND PLATFORMS ARE YOU MAKING USE OF INSPIRE AND HOW?

Draxis Environmental Technologies SA focuses on providing consulting services, solution development, implementation and management of environmental technologies, especially in the areas of enviromatics and geomatics. DRAXIS can help public authorities or private organisations in environmental management, improvement of natural resource use and effective integration of environmental policies into the decision-making process. DRAXIS has implemented several e-government applications (eEnviPer, Digital Environmental Registry, Digital Waste Registry, RECAP) that provide added value to citizens and authorities through the combination of geographic information systems (GIS), IT technologies and environmental know-how. These applications offer substantial improvements on environmental policies and activities while enabling the sharing of environmental and spatial data among public-sector organisations and wider society.

WHAT HAVE BEEN THE MAJOR CHALLENGES AND BENEFITS OF USING INSPIRE FOR THESE APPLICATIONS?

The e-government solutions have resulted in a list of flexible and personalised services and tools configured around the needs and preferences of the relevant stakeholders such as citizens, public authorities and enterprises. The impact on the users has been increasingly elevated through the use of data management infrastructures incorporated into web and mobile platforms, which enhance environmental protection and result in wider societal benefits such as better-informed citizens, transparency and governmental accountability. Nevertheless, there are many factors still to be improved in terms of full compliance with the INSPIRE framework. Our main challenge is to fully adapt the e-government applications to the INSPIRE common implementing rules (IR) ▶

in order to ensure wider interoperability and improve the data availability and quality via the specification of common data models, code lists, map layers and metadata when exchanging spatial datasets.

WHAT ARE YOUR EXPERIENCES IN USING COPERNICUS SATELLITE DATA AND/OR SERVICE PRODUCTS TOGETHER WITH INSPIRE?

Through the implementation of EU-funded R&D projects, DRAXIS is using Copernicus Earth observation (EO) data to develop innovative services for both the public and private sectors. At the moment we are not producing geospatial data according to the INSPIRE Directive requirements but we do intend to comply in the future, mainly for the produced geospatial data from the RECAP e-platform. The RECAP e-platform is an e-government tool to support field inspections by national paying agencies on the framework of CAP cross-compliance checks. The adoption of the INSPIRE data specifications on the production of agricultural geospatial data will enable farmers, agronomists and field inspectors to exchange or analyse crop data, to evaluate the subsequent agricultural policies and to promote transparency within the framework of agricultural subsidies in general.

HOW WOULD YOU DESCRIBE THE 'FITNESS FOR PURPOSE' OF THE CURRENT IMPLEMENTATION OF THE INSPIRE FRAMEWORK – FROM DATA POLICIES TO METADATA, SERVICES AND DATA SPECIFICATIONS – IN RELATION TO THE TYPES OF E-GOVERNMENT APPLICATIONS YOU ARE INVOLVED WITH?

Our view of the INSPIRE implementation process is that the need for a higher level of standardisation and quality services based on reporting obligations, data flows and e-reporting creates a vast range of business opportunities. However, it must be recognised that major improvements have yet to materialise into action concerning the harmonisation of the existing data and the spatial data transformation into interoperable specifications. The incomplete, missing and non-compliant data and metadata constitute a significant barrier to the adoption of INSPIRE. In that sense , it must be also acknowledged that the implementation has taken place in the most difficult financial circumstances that many European countries, and their public-sector organisations, have faced for many decades.

WHAT IN YOUR OPINION IS THE IMPORTANCE OF INSPIRE FOR ESTABLISHING A EUROPEAN INTEROPERABILITY FRAMEWORK?

Our goal is to provide cutting-edge e-government applications to the public authorities responsible for the establishment, management, maintenance and distribution of spatial datasets and services. Therefore, we aspire to improve the interoperability functions of our service delivery. The European Interoperability Framework helps to adjust our technical solutions to a well-established framework that involves cross-border and cross-sectoral specifications and provides a semantic interoperability interpretation. The extent to which different information technology systems and applications can communicate and the level of the structuring and codification of the data exchange are the two main challenges to implementation of the framework. ◂

STAVROS TEKES

Stavros Tekes is a software engineer with more than fifteen years of experience in software engineering and web/mobile development. He has participated as a technical lead/coordinator in more than ten international R&D projects (FP7, H2020, FIWARE) and has coordinated technical support contracts for several international organisations. He is involved in information systems analysis, design, development and maintenance of activities. He possesses excellent knowledge of system architecture, data modelling techniques, software development environments, methodologies and technological trends. Tekes applies project management methodologies in monitoring the execution of a technical project, in recognising critical issues and risks and in taking proper proactive actions. He is able to cope with fast changing technologies used in software development and he has a strong interest in following up the trends in application development. Stavros Tekes holds an Electronic and ICT engineering degree and an MSc in Advanced Informatics.

INSPIRE FOR THE DIGITAL ECONOMY

Powering e-Government Services through INSPIRE

IN WHICH TYPE OF E-GOVERNMENT APPLICATION AREAS AND PLATFORMS ARE YOU MAKING USE OF INSPIRE, AND HOW?

The duties of Institut Cartogràfic i Geològic de Catalunya (ICGC), the National Mapping Agency of Catalonia, are related to the competences of geodesy and cartography and Catalonia's spatial data infrastructure as well as the competences of promoting and carrying out the actions related to the awareness, survey and information about the soil and subsoil. There's a direct link between ICGC and INSPIRE. As geoinformation producer included in the INSPIRE theme definitions, we publish INSPIRE geoservices that everybody can take advantage of. But there are more connections with INSPIRE supported by ICGC's Instamaps online platform (http://www.instamaps.cat). Instamaps is designed to promote the use of geoinformation by empowering non-expert users on map creation and dissemination in an easy, fast and graphical way. It provides national mapping offices, government and geoinformation companies with a user-friendly tool for boosting the use of the information they produce or manage in generic user and developer segments. Obviously, Instamaps is directly connected with INSPIRE Geoportal, allowing users to download INSPIRE datasets in just two clicks. This is simple but powerful, as they can combine INSPIRE data with their own (or third-party) data to generate web-based viewers in a graphical way. Users can focus on getting the results they need and Instamaps hides the complexity of geoinformation and GIS operations.

WHAT HAVE BEEN THE MAJOR CHALLENGES AND BENEFITS OF USING INSPIRE FOR THESE APPLICATIONS?

The most important thing for Instamaps users is to generate clear maps that communicate

their message powerfully, so we worked hard on developing a graphical and customisable tool. But there's also another requirement: data quality. By connecting with INSPIRE Geoportal, Instamaps allows users to download high-quality and official European data quickly and easily. It also solves two problems we detected previously. Firstly, not all users or developers who utilise geoinformation know where they can get the information they need. Secondly, and more problematically, they find different versions of the same data and don't know which one to use. This integration solves both of those issues. Instamaps connects with Catalonia's official datasets, INSPIRE datasets and OpenData repositories.

HOW WOULD YOU DESCRIBE THE 'FITNESS FOR PURPOSE' OF THE CURRENT IMPLEMENTATION OF THE INSPIRE FRAMEWORK – FROM DATA POLICIES TO METADATA, SERVICES AND DATA SPECIFICATIONS – IN RELATION TO THE TYPES OF E-GOVERNMENT APPLICATIONS YOU ARE INVOLVED WITH?

From my point of view, the INSPIRE framework is progressing in the right way. In spite of that, there are some issues that make the generation and use of INSPIRE datasets difficult. Regarding dataset generation, the INSPIRE theme definition usually requires that different organisations share and combine their different layers. The lack of a 1:1 relationship between theme definitions and official organisations increases the complexity of dataset generation. I believe that two different aspects must be improved to boosting the use of INSPIRE datasets. As I said before, users want to generate clear maps and that means styling the information in the right way to emphasise what they want to communicate. It's especially important when you combine information provided by different sources. Regarding INSPIRE styles, they must be at least homogeneous between different themes. The second issue I think that could improve the use of INSPIRE datasets is the generation of INSPIRE theme geoservices that aggregate all countries in a single point. This would simplify and improve the user experience of map viewer generation.

IN YOUR OPINION, HOW IMPORTANT IS INSPIRE FOR ESTABLISHING A EUROPEAN INTEROPERABILITY FRAMEWORK?

Interoperability is a must nowadays. The problems and challenges Europe faces are not constrained by national borders. Think about environmental risks: how can we manage them if we don't have homogenous information between two adjacent countries? We must not focus on data alone. The goal should be not just to have it but also to take advantage of it. Europe must work hard to ensure interoperability but even harder to promote the quick and easy use of the information generated. ◀

SERGIO ANGUITA

Sergio Anguita is a telecommunications engineer who holds a master in telematics (UPC), master in IT management (LaSalle URL) and a PMD from ESADE. He has been working at ICGC (formerly ICC) for 16 years and is currently responsible for the geotechnologies domain. This department is in charge of developing web services and applications and pushing web services innovation through the Geostart Team. Driven by his passion for entrepreneurship, Sergio was co-organiser of Startup Weekend Barcelona (2013-2016) and Lean Startup Circle Barcelona (2012-2014). With his skill for adapting and adopting entrepreneurship methodologies, Sergio was responsible for launching Instamaps, a successful web platform for empowering users with respect to geoinformation usage while promoting official datasets.

THEMATIC PLENARY III:

INSPIRE by Thematic Networks

29 September 2016
11:00 – 12:30 Auditorium I
Chair: Hugo de Groof
European Commission, Directorate-General for Environment, Compliance & Better Regulation Unit

The third thematic plenary session, INSPIRE by thematic networks, will address the alignment of the business models of a number of thematic networks with INSPIRE.

Both national and trans-national coordination plays a key role in these efforts. A number of the organisations tackled this challenge through a coordinated effort of their pan-European thematic networks.

A number of those thematic networks, which together cover a significant part of the spatial data under the scope of INSPIRE, will contribute to the debate by presenting their approach in aligning to the INSPIRE business model. They will report on challenges and achievements and share their views on the INSPIRE implementation outlook.

INSPIRE BY THEMATIC NETWORKS

INSPIRE by Mapping Agencies - The European Location Framework, ELF Experience and Outlook

A CONSIDERABLE AMOUNT OF SPATIAL DATA COVERED BY THE INSPIRE DIRECTIVE IS MANAGED BY MEMBERS OF EUROGEOGRAPHICS. WHAT IS THE ROLE OF EUROGEOGRAPHICS IN COORDINATING THE CONTRIBUTIONS TO THE IMPLEMENTATION OF INSPIRE?

EuroGeographics represents the National Mapping, Cadastral and Land Registry Authorities (NMCAs) of Europe. We have 61 members from 46 countries, covering geographical Europe. Our members fulfil a unique role by providing definitive, detailed geographic and land information for their countries. We have established a network of INSPIRE experts who follow the INSPIRE regulations closely. TIhey support EuroGeographics policy for European interoperability and share knowledge among our members to promote experience in implementing the INSPIRE Directive. This INSPIRE Knowledge Exchange Network provides a direct forum for Europe to engage with EuroGeographics' technical experts.

HOW DOES INSPIRE AFFECT THE WORK OF EUROGEOGRAPHICS AND ITS MEMBERS?

All our members have a national mandate to produce mapping, geographic and land information, which under their national implementations of the INSPIRE Directive must comply with INSPIRE standards and requirements. Many of the 34 data themes in INSPIRE are the responsibility of our member organisations in their jurisdictions. Through EuroGeographics and the European Location Framework project, we are working with our members to create a single source of definitive, detailed and quality-assured data from authoritative sources, to provide a single point of access for licensing geospatial information from different agencies and different countries for pan-European cross-border applications.

WHAT ARE THE MAJOR CHALLENGES IN MEETING THE INSPIRE REQUIREMENTS?

INSPIRE has been created by technical experts to meet pan-European environmental requirements, as defined by the European Commission. The needs of many users of national geospatial data are different and already met by national means. It remains to be clarified who, other than the Commission and its institutions, wants the level of technical detail and usability of INSPIRE-compliant data. Evidence suggests there is such a 'market', but without a practical demonstration of a pan-European INSPIRE compliant service it remains untested. Furthermore, gaining and retaining political, policy and budgetary support for implementing the technical complexity of INSPIRE remains a challenge for many members, particularly in these days of austerity, and clear priorities within the very demanding INSPIRE timetable are required.

WHAT ARE THE BENEFITS FROM IMPLEMENTING INSPIRE AND FOR WHOM ARE THEY MOST TANGIBLE?

The European Location Framework aims to be a practical implementation of INSPIRE. It is of primary interest to those who need cross-border information, or data that meets industry-recognised specifications that enable the easy transfer of applications between countries. It is important because it harmonises the technical elements of mapping, geographic and land information representation, includes a data model for representing the real world in computer systems, data specifications and quality standards. It also aims to harmonise pricing and licensing, and addresses the very real practical challenges of obtaining the data, through one, single point of access.
The EU covers more than 4 million square kilometres and 1 in 5 of its citizens live within 50 kilometres of a border. Therefore, access to cross-border maps that are harmonised and can be easily shared between Member States is very important. And confidence that the information provided is consistent and comparable, regardless of its national source, is key.

MICK CORY

Mick Cory is the Secretary General & Executive Director of EuroGeographics, the not-for-profit membership association of 60 National Mapping, Cadastral and Land Registry Authorities from 46 countries across Europe. EuroGeographics is a partner in the European Location Framework (ELF), the gateway to authoritative pan-European geospatial information, and will take ownership of the technical infrastructure and services developed by the project from November 2016. Mick has worked in Africa, the Middle East and all three Ordnance Surveys of Britain and Ireland. He was Chief Executive of Ordnance Survey of Northern Ireland until 2005, where he led the development of Northern Ireland's geographic information strategy. He chaired the UK Location User Group and as a member of the Open Data User Group, advised the UK Government on achieving the greatest economic and social return from the release of public sector open data. He was Director of Sport, Museums and Recreation in Northern Ireland's Executive Department of Culture, Arts and Leisure between 2005 and 2014, responsible amongst other things for the 2012 Olympic and Paralympic Games in Northern Ireland, including the Torch Relay in Ireland. Mick is a Fulbright Scholar, holds a Postgraduate Diploma in Company Direction and a Masters in Land and Geographic Information Systems.

ARE THERE CONCRETE EXAMPLES WHERE SPATIAL DATA IS ALREADY MADE AVAILABLE THROUGH INSPIRE SERVICES AND USED IN COMBINATION WITH OTHER SPATIAL DATA IN APPLICATIONS?

There are a number of national examples, for example the Dutch PDOK site. There are also a number of other case studies that have been developed to demonstrate the potential. The ELF project is developing practical example applications in insurance, emergency response, geo-statistics and property registration.

EUROGEOGRAPHICS, ITS MEMBERS AND THE EUROPEAN STATISTICAL OFFICES ARE CLOSELY INVOLVED IN THE UNITED NATIONS INITIATIVE ON 'GLOBAL GEOSPATIAL INFORMATION MANAGEMENT (UN-GGIM)'. HOW IMPORTANT IS THE CONTRIBUTION OF INSPIRE TO THIS GLOBAL INITIATIVE?

The United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) was established in July 2011 by the Economic and Social Council (ECOSOC) of the United Nations to advise on how geospatial information can assist in addressing the key regional and global challenges facing the world today, such as climate change, sustainable development, famine, pandemic diseases and increased global urbanisation. UN-GGIM promotes the use of geographic information to address these key global challenges. Recognising that Europe already has a mature and operational framework for addressing geospatial information management, the aim of UN-GGIM: Europe is to build on what is already in place, avoiding duplication of efforts and resources. UN-GGIM: Europe's role is to provide support for the further implementation and alignment of existing legislation and initiatives, to encourage the further integration of geospatial and statistical information, and to optimise the capacity for the overall management of geospatial information in Europe. In addition, UN-GGIM: Europe gives a regional focus to the recommendations of the UN-GGIM global initiatives, providing opportunities for growth, innovation and progress in geospatial topics that are of regional and global interest.

HOW WOULD YOU RATE THE 'FITNESS-FOR-PURPOSE' OF THE CURRENT IMPLEMENTATION OF THE INSPIRE FRAMEWORK – DATA POLICIES, METADATA, SERVICES AND DATA?

There is no doubt that INSPIRE is technically complex and the lack of a practical example of what it is all about makes it difficult to explain to non-technical decision-makers. Geospatial information is increasingly transient and society as a whole does not 'care' about our technical definition of geographic information, it is just 'information' they can use to get from 'a' to 'b', or identify what is at a particular location. This means we have to present our information in a way that is accessible to all in an ever changing digital world. Everyone now has access to digital maps on handheld devices. This ubiquity of mapping has significantly added to the changing perception of maps and other geospatial information. People have also become more reliant on technology that interprets data for them, instead of doing it for themselves –this potentially reduces their perceptions of the need for expert knowledge. Mapping information is now mainstream, and it poses opportunities as well as challenges to society and to our industry. With so many sources of 'information of this kind, the role of definitive and authoritative geospatial information is even more important. ◂

BY **JANUSZ DYGASZEWICZ**, PRESIDENT OF THE EUROPEAN FORUM FOR GEOGRAPHY AND STATISTICS **THEMATIC PLENARY 3**

INSPIRE BY THEMATIC NETWORKS

Benefits and Challenges of INSPIRE in the **Field of Statistics**

A LOT OF STATISTICS, FROM THE INITIAL SURVEY DATA TO THE FINAL STATISTICAL INFORMATION, REFER DIRECTLY OR INDIRECTLY TO A SPECIFIC LOCATION OR GEOGRAPHICAL AREA. AS SUCH, DEPENDING ON THE THEME COVERED, THEY COULD FALL UNDER THE SCOPE OF THE INSPIRE DIRECTIVE.
WHAT IS THE EUROPEAN FORUM FOR GEOGRAPHY AND STATISTICS AND HOW IS IT INVOLVED IN THE IMPLEMENTATION OF INSPIRE FOR STATISTICAL INFORMATION?

The EFGS is a network of experts from European National Statistical Institutes (NSIs) and National Mapping and Cadastral Authorities (NMCAs). EFGS promotes co-operation among stakeholders from NSIs and NMCAs aimed at providing spatial statistics. Today, EFGS has national contact persons from more than 40 countries who attend annual conferences and meetings. So far, EFGS activities are mainly concentrated on the development of best practice in the production of spatially – referenced statistics in Europe. EFGS works indirectly on the implementation of INSPIRE through a range of activities supporting the production of data needed: e.g. a series of GEOSTAT projects that represent 2011 population census data as grid statistics. It needs to be highlighted that during the execution of these projects, INSPIRE guidance is always taken into consideration. Our science network always supports activities relating to the collection of

data on the population within a point based spatial reference framework. Such data can easily be used to contribute to INSPIRE themes, such as population distribution – demography, which requires the geographical distribution of people aggregated by grid, region, administrative unit or other analytical unit, as data collected with a point spatial reference can easily be aggregated to any kind of spatial divisions.

HOW DOES INSPIRE AFFECT THE WORK OF THE STATISTICAL OFFICES? WHAT ARE THE MAJOR CHALLENGES OF MEETING THE INSPIRE REQUIREMENTS? WHERE, FOR WHICH APPLICATIONS – AND FOR WHOM ARE THE BENEFITS?

Georeferencing in official registers and administrative data used for statistics is one of the most sustainable ways in which to achieve a better linkage or integration of statistics and geography. Examples of official registers used for statistical purposes are address registers, person registers, farm registers, tax registers or business registers. The INSPIRE Directive, which is currently in its implementation phase, will facilitate the interoperability of the geographic information. It is easy to see that the imposition of a common framework led to the acceleration of work towards a better understanding of different administrative sources. A creative approach to INSPIRE offers benefits to those who want to know more about data related to a desired area e.g. GRID, rather than statistical data related to administrative boundaries. Moreover, thanks to the Directive, data can easily be exchanged between countries through INSPIRE-compliant services, leading to a substantial reduction in the time needed to analyse and adjust the data.

ARE THERE CONCRETE EXAMPLES WHERE STATISTICAL INFORMATION IS ALREADY MADE AVAILABLE THROUGH INSPIRE SERVICES AND USED IN COMBINATION WITH OTHER SPATIAL DATA IN APPLICATIONS?

A major achievement in the availability of geospatial information is Directive 2007/2/EC, establishing a European infrastructure for spatial information (INSPIRE). A number of INSPIRE Annex data themes are relevant for statistics such as demography, statistical units, addresses, and buildings. In each country the situation might look slightly different. For example, the Polish Central Statistical Office is the leading body for two spatial data themes from Annex III of the INSPIRE Directive: statistical units – SU, and

population distribution (demography) - PD. In some countries, NSI is responsible for three or four themes. Nowadays, there are many examples of statistical information already made available through INSPIRE services. All published data can be easily found at INSPIRE geoportal http://inspire-geoportal.ec.europa.eu/.

In accordance with EFGS good practice we, as the European geostatistical community, have prepared and are now disseminating information on population distribution based on the common 1km grid system, covering almost all territory in Europe. This grid data is suitable for spatial analysis of various phenomena, regardless of administrative boundaries and can be used very easily in combination with other spatial data applications.

It is also worth mentioning the INSPIRE Thematic Clusters collaboration platform. The platform is an evolution of the INSPIRE Forum and serves as an entry point for INSPIRE data providers, implementers and users to share experiences, best practices, raise questions and resolve issues in their thematic domains. The statistical cluster is available at: https://themes.jrc.ec.europa.eu/groups/profile/45/statistical-cluster

THE EUROPEAN STATISTICAL OFFICES AND MAPPING AGENCIES ARE CLOSELY INVOLVED IN THE UNITED NATIONS INITIATIVE ON 'GLOBAL GEOSPATIAL INFORMATION MANAGEMENT (UN-GGIM)'. HOW IMPORTANT IS THE CONTRIBUTION OF INSPIRE TO THIS GLOBAL INITIATIVE?

As EFGS, we actively support ongoing work within the UN-GGIM initiative. In October last year, we received the status of official Observer Organisation at UN-GGIM: Europe. Moreover, the UN-GGIM forum supports the Global Statistical Geospatial Framework proposed by Statistics Australia and I also proposed the '10 level model' (see abstract to my presentation) that should be the subject of intensive work in order to break down existing barriers and as a starting point to make practical progress in the methodology of combining spatial data with statistical data.

HOW WOULD YOU DESCRIBE THE 'FITNESS-FOR-PURPOSE' OF THE CURRENT IMPLEMENTATION OF THE INSPIRE FRAMEWORK – FROM DATA POLICIES ON METADATA, SERVICES AND DATA SPECIFICATIONS FOR WORKING WITH STATISTICAL INFORMATION AND DATA?

From what I can see, INSPIRE guidelines are far too complicated and should be rigorously simplified. We should focus on primary needs. Very often, unfortunately, customers (those 'in need') do not understand the data we prepare for them as the description is far too technical. It also deters general users. As the current need for accessibility and interoperability of data is widely understood and accepted, we should now strongly focus on the simplification of technical solutions which were invented and proposed at the very beginning of this initiative. ◀

JANUSZ DYGASZEWICZ

Janusz Dygaszewicz is director of programming and coordination within the Statistical Surveys Department at the Central Statistical Office of Poland. Since March 2015, he has been president of the European Forum for Geography and Statistics. He was the director of the Central Census Bureau for the 2010 and 2011 censuses in Poland and is currently the head of the UNECE task force on census technology. Furthermore, he is a member of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) and UN-GGIM:Europe, member of the EU Copernicus Programme Coordination Committee in Poland, member of the Settlement and Physiographical Objects' Names Commission, member of the UNECE HLG Modernization Committee on Production and Methods, member of the EUROSTAT Task Team for linking of statistical and spatial data, and member of the UNECE and Eurostat Task Team on Big Data. He also serves as a lecturer in computer sciences and statistics in geographic information systems at the Warsaw University of Technology. Currently, he is a candidate doctor PhD of Engineering Sciences in the Department of Cybernetics at the Military Technical Academy in Poland.

Towards an INSPIRE-Compliant European Geological Data Infrastructure: **Challenges and Opportunities**

A CONSIDERABLE AMOUNT OF SPATIAL DATA COVERED BY THE INSPIRE DIRECTIVE IS MANAGED BY MEMBERS OF EUROGEOSURVEYS. WHAT IS THE ROLE OF EUROGEOSURVEYS IN COORDINATING THE CONTRIBUTIONS TO THE IMPLEMENTATION OF INSPIRE?

Whatever the domain, EU policymakers need pan-European, fully harmonised and interoperable data sets in order to assess and understand the various situations on a continental scale and to take informed decisions. Geological Surveys holds thousands of records on the Earth's subsurface and related phenomena. They probably hold more environmentally-related data than the environmental agencies themselves. Although the full harmonisation of this huge amount of information is still far from being achieved, several data sets of topics covered by the INSPIRE Directive constitute a notable exception. Representing 37 member countries, EuroGeoSurveys is now able to offer official national data sets fully harmonised throughout the whole of Europe. An immense amount of effort and expense went into the collection of these data sets, which were further developed thanks to the expertise and skills of some of the best scientists in the world in the field of geospatial information. These data sets are now enabling European geology and the EU to compete in several social, economic and scientific domains at a higher level: a European Geological Data Infrastructure (EGDI) is coming into being.

HOW DOES INSPIRE AFFECT THE WORK OF EUROGEOSURVEYS AND ITS MEMBERS?

For over 10 years now, EuroGeoSurveys' member countries have been operating under the umbrella of the Spatial Information Expert Group (SIEG) to make the implementation of the INSPIRE Directive possible, guaranteeing that all our new data sets fully comply with the INSPIRE requirements, even for those 'geological' topics not covered by the Directive. The SIEG members have been contributing to the drafting of the Directive since the very beginning, and are currently engaged in the implementation working groups.

WHAT ARE THE BENEFITS FROM IMPLEMENTING INSPIRE AND FOR WHOM ARE THEY MOST TANGIBLE?

Indeed, the application of the Directive requires a great deal of effort, but it also has advantages for Geological Surveys. It has forced us to work together even more closely than in the past, enabling us to learn from each other and to improve more quickly. Moreover, we can now benchmark each other more easily, and understand which countries are lagging behind and offer them support. Following the huge success of OneGeology-Europe a few years ago, where the first fully harmonised digital map of Europe on a 1:1,000,000 scale was made freely available to everyone for download, we are now very proud of the setup of a European Geological Data Infrastructure (EGDI). Certainly, without INSPIRE, the EU would not have an EGDI, which strengthens both the EU itself and EuroGeoSurveys.

ARE THERE CONCRETE EXAMPLES WHERE SPATIAL DATA OF A GEOLOGICAL NATURE IS ALREADY MADE AVAILABLE THROUGH INSPIRE SERVICES AND USED IN COMBINATION WITH OTHER SPATIAL DATA IN APPLICATIONS?

Engineered as a web portal giving access to a number of pan-European geological data sets, created during previous data harmonisation projects, as well as to a very large number of national data sets from the European Geological Surveys, the EGDI will enable European Geological Surveys to serve and maintain INSPIRE-compliant, interoperable geological data and information, reflecting our understanding of the subsurface. It will become the central junction for all relevant pan-European interoperable, harmonised geological information for stakeholders involved in policymaking, industry and the general public. Subsequent extensions of the EGDI will be based on results from past, current and future EU-projects and programmes, including the coming ERA-Net on applied geology, GEOEra and the European Plate Observing System (EPOS). The aim is that the EGDI portal will give access to a very wide range of geological data in the long term, becoming the pan-European platform for geological data and the natural and obvious platform for storage and/or dissemination of harmonised data sets from the Geological Surveys of EuroGeoSurveys and other institutions.

The first version of EGDI was launched in June this year and already gives access to data from 13 previous pan-European data harmonisation projects and more than 600 data layers through a user- friendly web portal. In addition to this, a related INSPIRE-compliant metadatabase contains information about thousands of national geological data sets. ◀

LUCA DEMICHELI

Since April 2009 Luca Demicheli has been secretary general of EuroGeoSurveys, the Brussels based organisation representing the Geological Surveys of Europe – the national institutions responsible for the geological inventory, monitoring, knowledge and research for the security, health and prosperity of the society. He also currently covers the position of vice-president of the European Technology Platform on Sustainable Mineral Resources (ETP SMR) and of acting executive director of the Minerals4EU Foundation. Following a Decree of the Italian Minister of the Environment, Luca has previously covered the position of secretary general of the Italian Committee for the International Year of Planet Earth, a UNESCO initiative to promote earth sciences among decision-makers and public at large. Formerly responsible for the coordination of the international activities of the Geological Survey of Italy, he also served for several years within the European Commission where launched and coordinated the environmental strategy of several major international scientific projects. A geologist specialised in environmental engineering and environmental management and planning, performed his post-graduate studies at the Swiss Federal Institute of Technology, at the National Technical University of Athens, and at the Imperial College London. He is member of several both national and international task forces, committees and management boards.

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The **European Marine Observations and Data Network** (EMODnet) and INSPIRE

A CONSIDERABLE AMOUNT OF SPATIAL DATA COVERED BY THE INSPIRE DIRECTIVE IS MANAGED BY THE MARINE COMMUNITY. WHAT IS EMODNET AND HOW DOES IT BENEFIT AND CONTRIBUTE TO THE IMPLEMENTATION OF INSPIRE?

The European Marine Observation and Data Network (EMODnet) is a network of organisations which assemble and makes available interoperable geographic data on the marine environment. The project is funded by the EU Commission and currently includes seven thematic portals, each covering a specific theme: bathymetry, chemistry, geology, seabed habitats, biology, physics and human activities. EMODnet does not collect new data; it makes the most of what is already available, by processing and harmonising existing data – sourced from multiple providers across the EU – and developing new data products. There are clear synergies between the work of EMODnet and that of INSPIRE. EMODnet undoubtedly benefits from increased standardisation; at the same time, it can contribute to extending INSPIRE coverage to themes that are specific to the marine environment.

Moreover, limitedly to the data themes and datasets that are in scope of the project, EMODnet can also contribute to increasing INSPIRE compliance of primary sources at national level. EMODnet has frequent exchanges with data sources and, in many cases, data sources are part of EMODnet. If we align EMODnet's and INSPIRE's data specifications, then we should be able to ensure perfect compliance with INSPIRE when it comes to marine spatial data.

HOW DOES INSPIRE AFFECT THE WORK OF EMODNET?

We're in charge of EMODnet Human Activities, so we can't speak for the EMODnet community as a whole. In our case, however, a few months ago we started working on increasing the compliance of our datasets with INSPIRE requirements. We're at a very early development stage and there's still a lot of work to do. At the same time, we believe that in doing so we're laying the groundwork for future users and data providers who will benefit from increased coordination between EMODnet and INSPIRE.

WHAT ARE THE MAJOR CHALLENGES IN MEETING THE INSPIRE REQUIREMENTS?

EMODnet Human Activities is working on a list of marine datasets decided by the EU Commission and/or suggested by our users. Generally speaking, there is not perfect compliance between our data models and INSPIRE's data specifications. We believe this is because, having to work only with the marine environment, we obviously tend to be more specific than INSPIRE, which itself has to keep a certain degree of flexibility. Sometimes, one of our datasets can fit with more than one INSPIRE data theme and it's no easy task to decide which is the most appropriate one.

WHAT ARE THE BENEFITS OF IMPLEMENTING INSPIRE AND FOR WHOM ARE THEY MOST TANGIBLE?

In a 'perfectly INSPIRE-compliant world', EMODnet would enormously benefit from common standards and specifications for spatial data. Our work of assembling data sourced from multiple providers would be reduced considerably, and we could focus all our efforts on developing data products, rather than on harmonising data. Data managers, scientists and researchers working with geographic data related to the sea are obviously among the users who can benefit the most, but INSPIRE is also a boon for industry and for the entire marine community. Everybody that uses marine

ALESSANDRO PITITTO

Alessandro Pititto is the coordinator of EMODnet Human Activities. He is a Project Manager at Cogea, where he works in the fields of fisheries and maritime policy. Over the last few years, Alessandro has worked on data management for several projects funded by DG MARE, with an aim to collate and harmonise data from different sources from across the EU. He is involved in many European and regional studies and initiatives on maritime activities including the design, development and management of the European Observatory for Fisheries and Aquaculture products (EUMOFA), the first EU wide market intelligence observatory that provides data on price and volume of fish and fish products throughout the EU supply chain.

LUIGI FALCO

Luigi Falco is a geographer with over 10 years of experience in GIS and spatial analysis. He holds a PhD in spatial planning, and is currently the GIS coordinator of EMODnet Human Activities, a project financed by the EU Commission which aims to map the spatial extent and intensity of human activities at sea. Luigi also works as a GIS consultant for the United Nations Global Service Centre, where he extracts and harmonises geographic data from SPOT 5 and 6 satellite images, in the framework of the multinational geospatial co-production programme (MGCP) mapping project UNSOA (Somalia). Over the course of his career, Luigi has worked with a number of Italian research institutes and universities and he has contributed to several evaluations of the EU Common Agricultural Policy.

data would directly or indirectly benefit from an infrastructure that creates common standards.

ARE THERE CONCRETE EXAMPLES OF WHERE SPATIAL DATA IS ALREADY BEING MADE AVAILABLE THROUGH INSPIRE SERVICES AND USED IN COMBINATION WITH OTHER SPATIAL DATA IN APPLICATIONS?

Not at the moment. We're finding it difficult to obtain INSPIRE-compliant data from our sources, so we're now working the other way around: we find the data we need, we harmonise it, we create a common data model and then we work on making it INSPIRE-compliant.

HOW WOULD YOU RATE THE 'FITNESS FOR PURPOSE' OF THE CURRENT IMPLEMENTATION OF THE INSPIRE FRAMEWORK IN TERMS OF DATA POLICIES, METADATA, SERVICES AND DATA?

INSPIRE has improved considerably over the last few years. There is plenty of documentation online and the platform of thematic clusters offers an invaluable tool to share ideas and learn new approaches. The work done on metadata is perfect and, on the EMODnet Human Activities portal, we've been offering INSPIRE-compliant metadata (generated through the online editor) since the beginning. We're not using data and services much, but that's mainly because on the geoportal we don't find many datasets that are useful for our purposes. But that's not a problem that lies with INSPIRE per se; we believe that in time more data will be made available via the geoportal by sources. At the same time, we find INSPIRE's specifications very complicated. We fully support the INSPIRE concept but, as of today, it takes an incredible amount of effort to get a good grasp of it. Standards should be conceived to make people's lives easier; it somewhat defeats the object if it becomes too difficult to adopt them. We recommend that INSPIRE should pay greater attention to simplifying documentation and procedures in the coming months. ◀

▲ *Alessandro Pititto.*

▲ *Luigi Falco.*

INSPIRE BY THEMATIC NETWORKS

The **European Meteorological Services** and INSPIRE

A CONSIDERABLE AMOUNT OF SPATIAL DATA COVERED BY THE INSPIRE DIRECTIVE IS MANAGED BY THE METEOROLOGICAL COMMUNITY. WHAT IS THE ROLE OF EUMETNET AND ECOMET IN COORDINATING THE CONTRIBUTIONS TO THE IMPLEMENTATION OF INSPIRE?

EUMETNET, as the grouping of 31 National Meteorological Services (NMSs), has created an INSPIRE coordination group that meets once a year. Members share information on INSPIRE implementation progress. The effective implementation is a national process and therefore EUMETNET can only encourage members to move forward when dealing with their national networks. But EUMETNET also operates common in-situ observing networks (as opposed to national networks) on behalf of all its members, and INSPIRE compliance is required by 2020 for all of these. Two of them are sea-based (E SURFMAR for sea-surface parameters and E ASAP for ship-based upper air soundings) and cover the Atlantic, Arctic and Mediterranean. E AMDAR is our aircraft-based observations programme, the others are ground-based (wind profiles, integrated ▶

▲ *Eric Petermann.*

▲ *William McCairns.*

humidity profiles, weather radars) and cover all of Europe. Meanwhile, ECOMET ensures that members are compliant with the Public Sector Information (PSI) Directive and makes sure that licensing practices are homogenous, ensuring a level playing field. ECOMET is also involved in special licensing for EU bodies and Copernicus. Furthermore, it has a role in acting as a liaison point between National Meteorological Organisations and private-sector meteorological companies.

HOW DOES INSPIRE AFFECT THE WORK OF THE METEOROLOGICAL COMMUNITY?

The national meteorological community is routinely transmitting many terabytes of data in the form of hourly and sub-hourly observations, rainfall radar data and numerical model forecast data. All of this data is transmitted in real time, in accordance with standards put in place by the Word Meteorological Organization (WMO). In addition to transmission, the data is archived, leading to many more terabytes of data stored in a variety of different systems. Implementing new data models, web services and associated interoperability standards has an obvious impact on the downstream ICT processing chains of these observing systems. INSPIRE will ensure that all data, whether archived or real time, is provided in easily readable formats and is interoperable with other user communities along with the correct metadata associated with them.

WHAT ARE THE MAJOR CHALLENGES IN MEETING THE INSPIRE REQUIREMENTS?

The current priorities of NMSs are to make sure observation data goes to Numerical Weather Prediction centres and to their various forecasting services – none of which actually require INSPIRE to deliver. But we know that the various constituents of Earth sciences communities need to work together more closely and they all require access to their respective data; interoperability is paramount to a better understanding of our environment.

ERIC PETERMANN

Involved for many years in various ICT activities at Météo France and in the private sector, Mr Petermann moved to management positions within Météo France as deputy regional director in Strasburg in 2001 and director of the Meteorological Service of New Caledonia in 2007. He then joined the International Affairs department at Météo France headquarters in 2011 as senior advisor before being appointed in 2015 as executive director of EUMETNET– the Grouping of 31 National Meteorological Services in Europe.

WILLIAM MCCAIRNS

William McCairns has been ECOMET chief executive since 2012. ECOMET is an Economic Interest Grouping based in Brussels, set up for the purpose of ensuring availability of meteorological data and products in accordance with European legislation (PSI, INSPIRE) and international standards. ECOMET currently has 26 Members: National meteorological services mainly based in the EU. The ECOMET Secretariat monitors the implementation of the European PSI and INSPIRE directives in the countries of its members. Before his appointment as chief executive, McCairns worked for the UK Met Office as deputy head of the Public Weather Service programme. His responsibilities included monitoring performance of Programme including performance indicators related to collection, processing and transmission of observational in-situ data. Prior to that he undertook several rolls within the Met Office including corporate risk manager, quality manager, programme manager of an ISO90001 and process re-engineering programme and several account management positions.

Much of the meteorological data that is processed and archived is stored in legacy systems, so implementing INSPIRE requires significant changes to software infrastructure and databases. Reaching the necessary levels of control and proficiency will be the important challenge for many; at the same time, national meteorological services are under financial pressures. Moreover, the meteorological community is used to working with gridded datasets which are not very easily adaptable to INSPIRE formats/standards.
As INSPIRE is a European directive, most member states are adopting a countrywide implementation across all of their government departments. In some cases, this may lead to different solutions in different Member States. This could potentially cause problems for the meteorological community if Member States' demands differ from WMO standards, potentially leading to duplications.

WHAT ARE THE BENEFITS OF IMPLEMENTING INSPIRE AND FOR WHOM ARE THEY MOST TANGIBLE?

The most concrete benefit is that an increasing number of NMSs are now feeding into national 'geoportals' and/or are operating compliant web services. This clearly increases our visibility. Implementing INSPIRE throughout the meteorological industry in Europe will mean that all geospatial data – no matter which country it originates from – will have standardised accessibility, thus immensely facilitating the combination of meteorological data with other geospatial data.

Are there concrete examples of where spatial data is already being made available through INSPIRE services and used in combination with other spatial data in applications?
We will provide some examples during the conference. In the near future, EUMETNET will be working with Copernicus service operators and the European Environment Agency as in-situ coordinator to ensure that meteorological data required for the Operators will be made available, and INSPIRE compliancy will greatly facilitate this.

HOW WOULD YOU RATE THE 'FITNESS FOR PURPOSE' OF THE CURRENT IMPLEMENTATION OF THE INSPIRE FRAMEWORK IN TERMS OF DATA POLICIES, METADATA, SERVICES AND DATA?

Availability and provision of meteorological data and products is governed by several European directives, most notably the PSI Directive. This directive makes provision for when Member States task their departments to make a reasonable return from commercial licensing of state-funded data and products to recover the huge costs of infrastructure funding. This is particularly widespread in the meteorological community due to the high cost of maintaining meteorological observing infrastructure. As a result, not all data can be provided free of charge everywhere in the EU. Finding the right balance that accommodates both free accessibility and sustainability of network data is a difficult task. As for the standards themselves, we will have a better picture of their fitness for purpose once our workgroup has met again.

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