

Brief introduction to the reasons for creating a TWG

Breve introducción a las razones para crear un TWG

Federico Yanguas⁽¹⁾, Olvido Tello⁽²⁾, Susana Díez⁽³⁾, José Enrique Frieyro⁽⁴⁾,
Laura Pascual⁽⁵⁾, Begoña Vila⁽⁶⁾

REVISTA **MAPPING**
Vol. 26, 186, 12-18
noviembre-diciembre 2017
ISSN: 1131-9100

Abstract

CODIIGE (Executive Board of the Geographic Information Infrastructure of Spain) has created Thematical Working Groups (TWG) with the main objective of analyzing how apply the INSPIRE data specifications for transforming the Spatial datasets produced by Spanish public organizations and help them to be INSPIRE conformant and promote data interoperability. The mentioned TWG shall:

- To study the data specifications for their correspondant INSPIRE theme and to produce a Technical Guide to use its national implementation.

- To define the list of Spanish datasets to be considered its theme.
- To analyze the datasets reported for its theme by public Spanish administration in order to decide its INSPIRE conformance and if they shall be included or not in the yearly monitoring.

Regarding the TWG dealing with Annex III themes 15 Oceanographic Geographical Features and 16 Sea Regions, we have found some problems which are delaying the work:

- The volunteer nature of the experts' participation on the writing of the Technical Guides and the limited time available to do the work.
- The fact that the INSPIRE specifications have been written by a reduced group of experts without representation from all the sector implied and we miss, for example, some features in the codelists, some oceanographic formats not included (NetCDF) or some not considered services like THREADS.

To conclude, we can say that the work of TWG 15 and 16 is very important and useful but, due to the founded problems, it is not being developed quickly enough

Resumen

El CODIIGE con el fin de promover la interoperabilidad de los CDE ha creado GTT con el objetivo principal de analizar cómo transponer las especificaciones de datos de la Directiva INSPIRE a los CDE creados por instituciones españolas y ayudarles a lograr su cumplimiento. Estos GTT deben:

- Estudiar las especificaciones de sus temas correspondientes INSPIRE y elaborar unas Directrices Técnicas para facilitar su implementación nacional.
- Definir los CDE incluidos en sus temas.
- Analizar los CDE informados por las distintas Administraciones Públicas, para decidir su conformidad con INSPIRE y si se incluyen o no en el seguimiento anual.

En cuanto al GTT que se ocupa de los temas de 15 Rasgos Geográficos Oceanográficos y 16 Regiones Marinas del Anexo III de INSPIRE, este GTT se ha encontrado con problemas que están ralentizando su labor, como son:

- La naturaleza «voluntaria» de las personas que están trabajando en el desarrollo de las guías técnicas y el tiempo limitado asignado para realizar esta tarea.
- Que las especificaciones INSPIRE han sido producidas por un pequeño grupo de expertos voluntarios sin que estuviesen representados todos los sectores implicados, lo que complica su adaptación por falta de objetos en las listas de códigos, formatos de datos oceanográficos como NetCDF o servicios como THREDDS no contemplados, etc.

Conclusión: el trabajo realizado por el GTT 15 y 16 es necesario y útil, pero debido a los problemas encontrados, no se desarrolla con la suficiente rapidez.

Keywords: JIIDE, TWG, INSPIRE, data-specification, CODIIGE.

Palabras clave: JIIDE, TWG, INSPIRE, especificación de datos, CODIIGE.

Instituto Hidrográfico de la Marina⁽¹⁾
fyangua@fn.mde.es
Instituto Español de Oceanografía⁽²⁾
olvido.tello@ieo.es
Unidad de Tecnología Marina (CSIC)⁽³⁾
sdiez@utm.csic.es
Junta de Andalucía⁽⁴⁾
josee.frieyro@juntadeandalucia.es

TRAGSA⁽⁵⁾
lpp@tragsa.es
INTECMAR⁽⁶⁾
bvila@intecmar.gal

Recepción 07/12/2017
Aprobación 27/12/2017

1. INTRODUCTION

Directive 2007/2/CE of the European Parliament and of the Council of 14 March 2007 establishes an Infrastructure for Spatial Information in the European Community (INSPIRE) to assist policy-making in relation to policies and activities that may have a direct or indirect impact on the environment. Article 7 covers the development and adoption of Implementing Rules laying down technical arrangements for the interoperability and, where practicable, harmonization of Spatial Data Sets by data producers.

Also, it states that Member States shall ensure that all newly collected and extensively restructured INSPIRE SDS are available in conformity with the aforementioned Implementing Rules within two years of their adoption, and other spatial data sets already defined or in production are available in conformity with the Implementing Rules within seven years of their adoption.

There is one Spanish dedicated TWG for the discussion and implementation of theme 15 (Oceanographic Geographical Features) and 16 (Sea Regions) into SDS, featuring representatives from the relevant governmental and regional organizations.

The aforementioned Technical Working Group was established during the 2nd meeting of the Marine Cartography Working Group (GTCM) of the Spanish Interministry Marine Strategy Commission (CIEM), held in Madrid on 25th November 2014, where CODIIGE reported on the technical requirement for any SDS by any organization regarding themes 15 "Oceanographic Geographical Features" and "Sea Regions" in Annex II to Spanish Law Number 14/2010 dated 5th July, on Infrastructures and Geographic Information Services in Spain (LISIGE). TWG15 & 16 reports to CODIIGE via the CIEM GTCM.

TWG GENERALITIES

TWG's are tasked with the analysis of the implementation of INSPIRE Data Specifications and Technical Guidelines by Spanish government offices, and to assist them and their organizations to achieve full



Figure 1. INSPIRE Symbols for Themes 15 & 16 in Directive INSPIRE Annex III

compliance. Directives, methodologies, classifications, terms, codes etc to assist in the standardization of the content of the Spanish Geographic Information Infrastructure will be proposed by TWG to the Directive Council and then, if appropriate, submitted to the Spanish High Geographic Council to follow the regular approval process.

Technical Working Groups can be temporary or permanent in nature, and their general tasks are as follows:

- Study specifications in Technical Guidelines to produce Technical Guides for SDSs Transformation into the INSPIRE framework.
- Define SDSs included in their themes to consider data related to the TWG provided by government organizations to check for consistency with INSPIRE and to verify their reporting to the European Commission.
- Draft proposed directives, methodologies, classifications, terms, codes etc to assist in the standardization of the content of the Spanish Geographic Information Infrastructure (IIGE).
- Analysis and proposals for action on subjects that require a detailed technical study.
- Achieve specific objectives defined in their establishment agreement.
- Any other tasks requested by CODIIGE for its proper performance.

TWG15&16 has been created as one such TWG. It is a multidisciplinary group composed by professionals from several fields in oceanography and / or geography, so that they contribute knowledge and abilities from their respective fields to compliment others. As mentioned above, this group is focused on themes 15, Oceanographic Geographical Features and 16, Sea Regions, as per INSPIRE Annex III.

TWG 15 & 16 DEVELOPMENTS

Having seen the obligation and the need to establish this TWG, this TWG15&16, has made numerous actions to achieve the goals set:

- Drafting Terms of Reference (ToR) for the TWG.
- Inviting government and regional organizations to join the working group.
- Submission of a draft timeline for CODIIGE TWG15&16 actions for agreement.
- Studying INSPIRE specifications for Themes 15&16 in Annex III, to check whether their definitions match data based in Spain, whether its implementation is feasible and/or it requires expansion.
- Drafting the Technical Guide for Transformation

of Theme 16 Sea Regions SDS into the INSPIRE framework.

- Distributing SDS received from CODIIGE items 15&16 during the 2014, 2015, 2016 & 2017 cruises to all members of the TWG.
- Determining the list of Spatial Data Sets from all cruises in 2014, 2015, 2016 & 2017, including their implementation status according to the INSPIRE Directive:
 - Whether SDS contain metadata in compliance with the regulation for metadata
 - Whether SDS are available over the Web via a network service
- Providing CODIIGE with the analysis of 15&16 SDS resulting from “follow-up cruises” by CODIIGE in 2014, 2015, 2016 & 2017.
- Populating an inventory of all SDS resulting from responses to the questionnaire submitted to all members of TWG.
- Establish exchanges with other relevant CODIIGE working groups regarding SDS that TWG15&16 considers as belonging to two or more annexes, such as for instance the coastline.
- Establishing exchanges with other CODIIGE working groups which may share certain issues, such as TWG13&14 responsible for Themes 13, Atmos-

pheric Conditions, and 14, Meteorological Geographical Features, sharing issues such as differing data formats and services, which may not be taken into account by INSPIRE.

- Taking part in debates in INSPIRE “Marine and Atmosphere Cluster” subgroups for “Sea Regions” and “Oceanographic Features”, (<https://themes.jrc.ec.europa.eu/groups/profile/213/marine-and-atmosphere-cluster>).

2. WORK METHOD

Since the TWG was established in 2014, there have been two face-to-face meetings per year, one each semester, to report developments and issues in the working group. Also, there are periodic videoconference meetings when required, for instance when CDI (Common Data Index) reporting to IGN (Spanish National Geographic Office), or whenever there is a special requirement or issue that needs addressing.

Moreover, there are two annual technical working seminars, and they are considered as a fundamental practice to carry out major progress in TWG operations.

Finally, there were courses, seminars, INSPIRE conferences, IIIDE Iberian Workshops and CODIIGE meetings:

- UML⁽¹⁾ Seminar by IGN on April 2015.
- IGN Course on Methodology to adapt and verify Spatial Data Sets into INSPIRE Regulations on November 2015.
- V, VI & VII Iberian Workshops on Spatial Data Infrastructure (IIIDE)
- INSPIRE Conferences.

BASECAMP, an online collaborative tool for teams which provides a simple and efficient way to organize projects. Additionally, CIRCA (Communication & Information Resource Centre Adminis-

⁽¹⁾Unified Modelling Language.

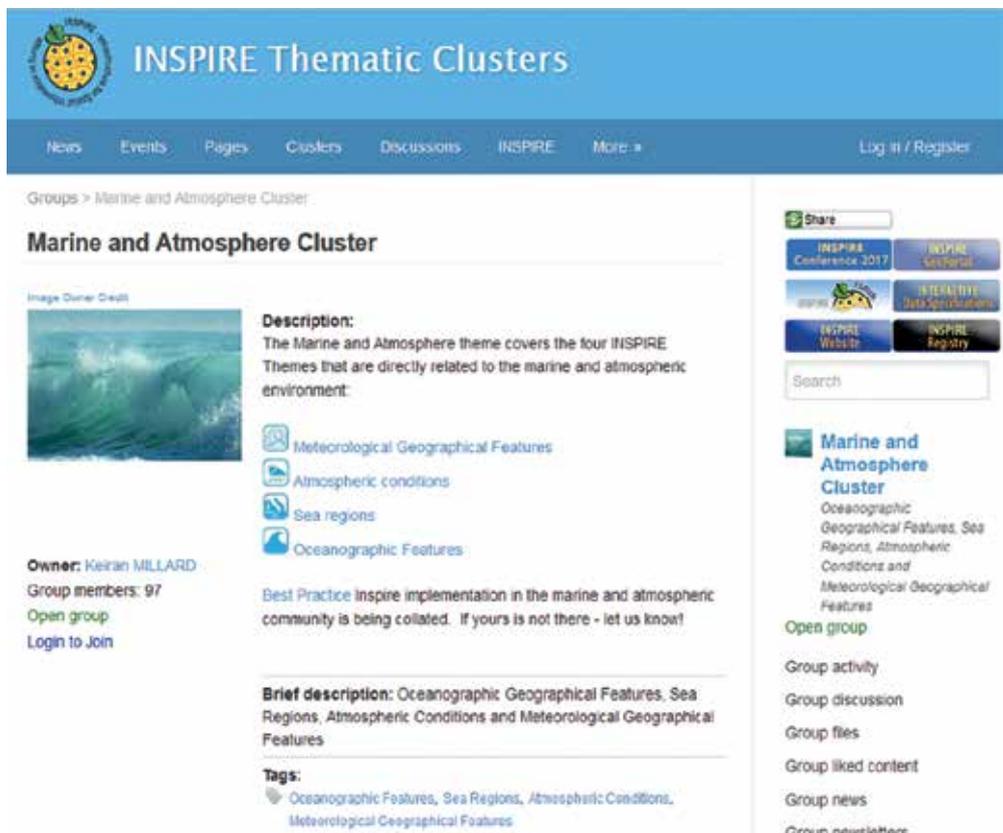


Figure 2. Marine and Atmosphere Cluster

trator) another online collaborative tool provided by MAPAMA (Ministry of Agriculture and Fisheries Food and Environment of Spain), are used to facilitate communication among TWG members. TWG members are based all over Spain, but using both methods we can open discussion threads, share documents, assign tasks etc. These tools have sped up the production of technical guides and resulted in a more fluid communication among working group participants.

Each TWG Coordinator submitted proposed operation rules for each TWG to CODIIGE, based on principles of participation, transparency, technical rigor and consensus decision making. Then CODIIGE considers the proposed operation rules and approves them as definite, thus clearing the TWG to start operations, if appropriate.

Besides, all documents produced by Working Groups will be submitted to CODIIGE for consideration and evaluation.

3. ISSUES IDENTIFIED BY TWG15 & 16

TWG15 & 16 feels that European Technical Guidelines that Spain is to adapt have been produced by a small group of experts which does not represent all sides involved in these matters. For example, codelists proposed up to date do not always match the reality of Spanish Sea Regions, which forces the TWG to decide which features are proposed for inclusion into each list.

Data specifications are complex documents which require high level interpretation because they have to balance including sufficient technical quality for a strictly limited definition of the data model (expressed in UML language), and at the same time leaving a way open to include any and all available information regarding the wide European geographical context without the risk of leaving anything out. This philosophy seems to guide these documents, and it requires a considerable effort by TWG15 & 16 to interpret them and ultimately determine which SDS should be classified into either of the themes covered by the working group ("Sea Regions" or "Oceanographic Geographical Features"). More than once, it has become necessary to even decide on SDS that initially may be classified into either theme but really should not have been considered as information relevant for this working group, such as marine phanerogam meadows which could be considered as a type of sea bottom or a homogenous area of marine

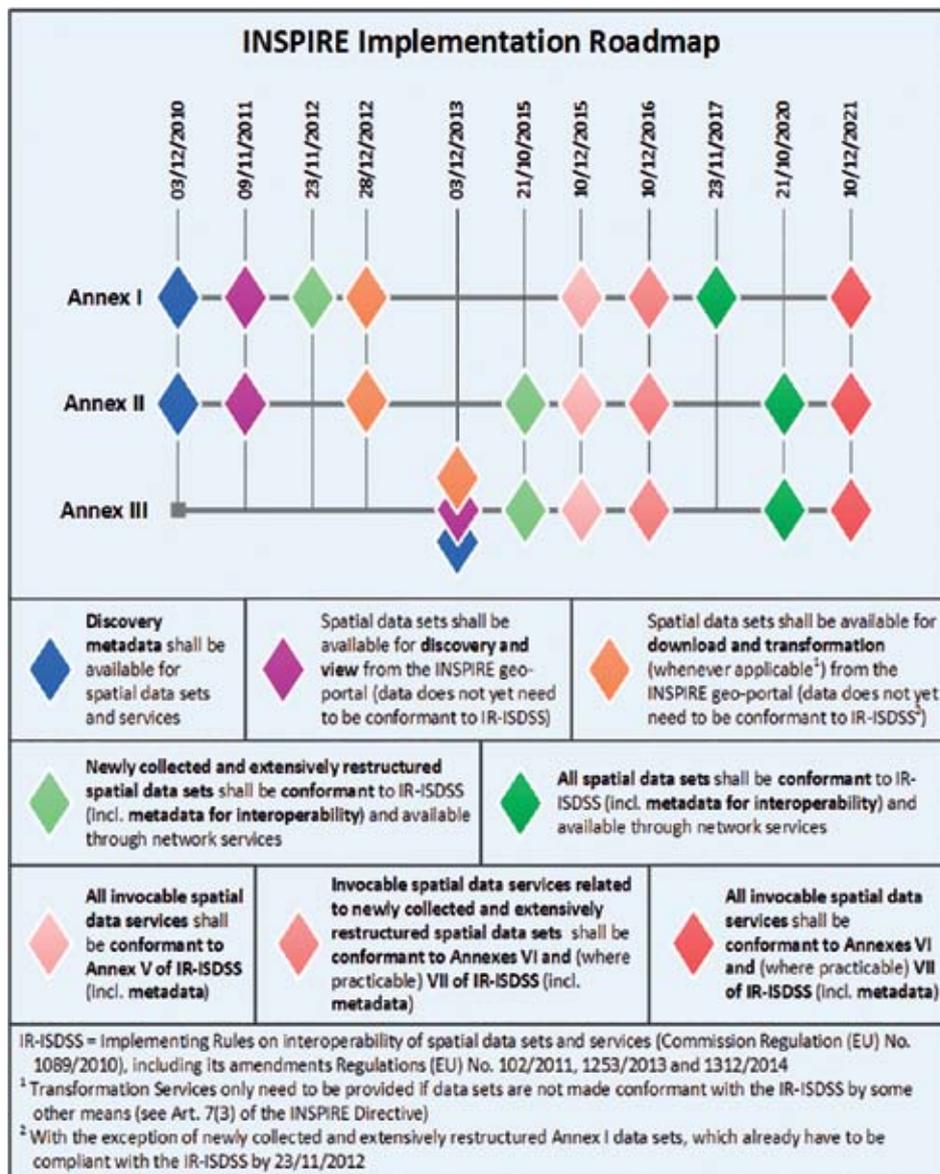


Figure 3. INSPIRE implementation schedule

environment, but should be included into the theme “Habitats and Biotopes”⁽²⁾ as the subject (vegetation) overrules geographic area (marine environment).

Consequently, TWG15&16 has found that there is no clear definition of which SDS should or should not be included, sometimes prioritizing geographical criteria and other times a thematic criteria, requiring as explained above a deep and detailed knowledge of each definition and specification for an analysis that is usually carried out on a case by case basis.

In addition, some oceanographic data formats, such as NetCDF, and access services, such as THREDDS, in wide use by the scientific community, have not been considered for adaptation into the INSPIRE Directive.

Finally, the current situation is not ideal, where people working in directive development do so in a “voluntary” basis and there is limited time designated for this task.

4. CHALLENGES FOR TWG 15 & 16

It should be noted that the need for working groups results from the challenge of adapting spatial data sets into INSPIRE regulations. This challenge, which at the same time is the main objective of the directive itself, involves all relevant organizations in its implementation, and requires overcoming the difficulty of balancing the growing variability of information, formats and geographical scopes in Europe to become one common data model.⁽³⁾

In this situation, TWG15&16 is facing major technical challenges, starting with the need to clear up at least which data sets should or should not be considered for inclusion into both relevant themes, even before considering guidelines for procedures to adapt this information into INSPIRE. So, the first challenge is the very selection of information to be supplied by each producing node, which requires a deep knowledge of “data specifications”. Up to date, TWG15&16 has made significant progress in some partial aspects of its guides, such as the proposed expansion or in some cases creation or proposed use of most of the codelists which should become dictionaries in fields related to geographic information.

Likewise, there have been developments regarding topologic definition of some data, and a proposed ba-

sic colour scheme for the INSPIRE cluster “Marine and Atmosphere” to be used as a reference when producing map services.

Current work involves the analysis of several ETL (Extract, Transform and Load) tools to be applied to geographical objects, and with their developers to determine the outlook of a procedure as explicit as possible to automate or more probably semi-automate data transformation. The aim is to facilitate data transformation work, but specially to help define minimum requirements for SDS under consideration to be transformed (field format, rules, excluded values, “bridge” dictionaries, topological rules, quality control, etc.). There is still very little information regarding the procedure itself, and few real references from other working groups which started their operations earlier.

In all likelihood, this line of work will require considerable effort from the working group at least through 2018.

5. CONCLUSIONS

According to the experience of this TWG, we can conclude the following:

- Technical Working Groups are an invaluable tool to implement the INSPIRE directive, acting as intermediaries between CODIIGE and organizations managing SDS.
- The Technical Working Groups have to carry out their work with face-to-face meetings, seminars, videoconferences and always supported by management tools similar to BASECAMP, CIRCA etc.
- This intermediation involves constant technical challenges previous to the adaptation of spatial data sets into INSPIRE regulations, ranging from interpreting data specifications and the very selection of data sets belonging to each theme, to analyzing ETL tools applicable to geographical objects to facilitate the data transformation procedure.
- These challenges are compounded by questions regarding the data transformation procedure, and limitations to the time TWG members can devote to these tasks.

REFERENCES

- INSPIRE. Directive 2007/2/CE European Parliament and Council 14 march 2007. <http://eur-lex.europa.eu/legal-content/ES/TXT/?uri=CELEX%3A32007L0002>.
- INSPIRE: Regulation (UE) N° 1089/2010.<http://eur-lex.europa.eu/legal-content/ES/TXT/?uri=CELEX%3A32010R1089>.

⁽²⁾Annex II de INSPIRE

⁽³⁾As you may be aware, this data model was proposed by INSPIRE in its implementation rules and through data specifications for each theme, including a roadmap with specific deadlines (see Figure 3).

- lex.europa.eu/LexUriServ/LexUriServ.do?uri=O-J:L:2010:323:0011:0102:Es:PDF
- INSPIRE Regulation (UE) N° 102/2011, 4th February 2011, which modified Regulation (UE) N° 1089/2010. <http://eur-lex.europa.eu/legal-content/ES/TXT/?uri=CELEX-%3A52012PC0232>
- Regulation (UE) N° 1253/2013, 21th October 2013 which modified Regulation (UE) N° 1089/2010. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=O-J:L:2013:331:FULL:ES:PDF>
- CODDIGE IGN Guidelines for the Drafting of SDS Transformation Guidelines to the INSPIRE Framework.
- INSPIRE: SDS table reported to Europe by IGN to review. <http://cdr.eionet.europa.eu/es/eu/inspire/monitoring/envvvtibg/>
- INSPIRE: UML corresponding to the Data Models of the different INSPIRE themes. [http://inspire.ec.europa.eu/index.cfm/pageid/2](http://inspire.ec.europa.eu/data-model/approved/r4618-ir/html/)
- INSPIRE: Data model with object catalog. <http://inspire.ec.europa.eu/index.cfm/pageid/2>
- IDEE: Guide for the Transformation of the CDE of Sea Regions. http://www.idee.es/resources/documentos/20161202_GuiaTransformacionCODIIGE-Regiones_Marinas.pdf
- INSPIRE: Regulation D2.8.III.16 Data Specification on Sea Regions (SR) – Technical Guidelines. http://inspire.ec.europa.eu/documents/Data_Specifications/INSPIRE_DataSpecification_SR_v3.0.pdf
- INSPIRE: Regulation D2.8.III.15 Data Specification on Oceanographic geographical features – Technical Guidelines. http://inspire.ec.europa.eu/documents/Data_Specifications/INSPIRE_DataSpecification_OF_v3.0.pdf
- Multilingual Glossary of de ISO/TC211. <http://www.ign.es/ign/layoutIn/actividadesVerPanTC211.do>

Sobre los autores

Federico Yanguas Guerrero

Oficial de la Armada por la Escuela Naval Militar. Capitán de Fragata, Especialista en Hidrografía por la Escuela de Hidrografía de la Armada. Hidrógrafo nivel A por la Organización Hidrográfica Internacional (OHI). Ha sido Comandante de los Buques Hidrográficos «Castor» y «Tofiño». Diplomado como Ingeniero Hidrógrafo por el Instituto Hidrográfico de la Marina cursando un año de estudios en la facultad de Ciencias del Mar de la Universidad de Cádiz. Actualmente ejerce como Jefe del Área de Cartografía del Instituto Hidrográfico de la Marina. Es Coordinador del GT de Cartografía Marina GTCM de la Comisión Interministerial de Estrategia Marinas de la CIEM. Pertenece al Nautical Cartography Working Group (NCWG) de la OHI. Ha sido profesor de número de la Escuela de Hidrografía durante 2 años en los que impartió las asignaturas de Geodesia y Topografía, Fotogrametría aérea. Actualmente es profesor de número de la Escuela de Hidrografía desde el año 2015 en los que ha impartido la asignatura de Cartografía. Participante en el Grupo de Trabajo Técnico 15 y 16 (GTT1516) encargado de ayudar a las administraciones públicas a implementar INSPIRE en los temas 15 y 16 (Rasgos geográficos Oceanográficos y Regiones Marinas) del Anexo III de la Directiva INSPIRE.

Olvido Tello Antón

Geóloga, especialista en Sistemas de Información

Geográfica, Infraestructuras de Datos Espaciales y Cartografía Marina. Desde 1998 trabaja en el Instituto Español de Oceanografía (IEO) en la actualidad como Investigadora A2, participando en proyectos nacionales e internacionales relacionados con la exploración del medio marino, cartografía y conservación de los recursos marinos. Experiencia en diseño de modelos de datos, gestión de bases de datos SIG, análisis espaciales, elaboración de cartografía y elaboración de metadatos según los estándares ISO 19115 e INSPIRE. Participación en 30 campañas oceanográficas. Coautora en un total de 40 publicaciones (Ponencias, Posters, y Artículos). Asistencia a más de 30 congresos nacionales e internacionales. Participación en diversos grupos de trabajo y foros internacionales relacionados con la oceanografía, SIG, IDE, INSPIRE, TWG INSPIRE, TG-DATA, etc. Desde 2015 es representante del IEO en el Grupo de Trabajo de Cartografía Marina (GTCM) perteneciente a la Comisión Interministerial de Estrategias Marinas (CIEM), y secretaria en el Grupo de Trabajo Técnico 15 y 16 (GTT1516) encargado de asesorar en la implementación de las normativas INSPIRE en datos espaciales de los temas 15 y 16 (Rasgos geográficos Oceanográficos y Regiones Marinas) tal como se definen en el Anexo III de la Directiva INSPIRE.

Susana Diez Tagarro

Licenciada en Ciencias Físicas por la Universidad de Barcelona (UB). Desde el año 2000 trabaja en la Unidad de Tecnología Marina (UTM) del Consejo Superior

de Investigaciones Científicas (CSIC) donde participa en la adquisición, calibración, control de calidad y procesamiento de datos acústicos submarinos. Asimismo, brinda asistencia técnica y formación a investigadores sobre el procesamiento de datos acústicos y visualización y análisis de datos oceanográficos utilizando herramientas GIS. Actualmente también es responsable de la generación de metadatos en el marco de proyectos internacionales y en el Servicio de Datos de la UTM. Ha participado en 8 proyectos de investigación en el ámbito de la geología y la geofísica marinas, en 17 campañas oceanográficas a bordo de diferentes buques de investigación nacionales y extranjeros y es autora o coautora de 22 publicaciones.

Desde 2015 es representante del CSIC en el Grupo de Trabajo de Cartografía Marina (GTCM) perteneciente a la Comisión Interministerial de Estrategias Marinas (CIEM) y en el Grupo de Trabajo Técnico 15 y 16 (GTT1516) encargado de ayudar a las administraciones públicas a implementar INSPIRE en los temas 15 y 16 (Rasgos geográficos Oceanográficos y Regiones Marinas) tal como se definen en el Anexo III de la Directiva INSPIRE.

José Enrique Frieyro de Lara

Licenciado en Geografía e Historia con especialidad en Geografía Física por la Universidad de Sevilla, año 1992. Técnico especialista en Sistemas de información Geográfica en la Agencia de Medio Ambiente y Agua (Junta de Andalucía) donde es responsable técnico del subsistema del litoral y el medio marino de la Red de Información Ambiental de Andalucía (REDIAM). Ha participado en diversos proyectos de investigación relacionados con los SIG, la teledetección y la caracterización fisiográfica del litoral así como otros proyectos relacionados con la protección ambiental y la declaración de espacios protegidos. En la actualidad compagina el mantenimiento de dicho subsistema con el desarrollo de la infraestructura de datos espaciales de Andalucía a través de la REDIAM, incidiendo en la normalización de datos, metadatos y desarrollo de servicios web y su puesta en uso público mediante visores y otras herramientas. Así mismo representa a la Agencia y la Consejería de Medio Ambiente y Ordenación del Territorio de la JA en el grupo de trabajo GTT15-16 del Consejo Directivo de la Infraestructura de Información Geográfica de España (CODIIGE), cuyo objeto es la implementación de la directiva INSPIRE en los datos espaciales relativos al medio costero y marino.

Begoña Vila Taboada

Ingeniera de Telecomunicación por la Universidad de Vigo. Desde 2009 trabaja en el Instituto para el Control del Medio Marino de Galicia (Intecmar) perteneciente a la Xunta de Galicia, donde se encarga de desarrollos GIS, la elaboración de la IDE marina gallega, el mantenimiento de los radares HF del Intecmar y el desarrollo de herramientas de respuesta para el control de la calidad de las aguas costeras y la lucha contra la contaminación marina accidental dentro del plan CAMGAL. Ha estado involucrada en la creación del Observatorio Oceánico RAIA (NW Ibérico). Ha participado en proyectos europeos relacionados con la oceanografía operacional y con la contaminación marina accidental. Desde 2015 forma parte del GTT15y16, que es el grupo de trabajo encargado de la elaboración de guías técnicas para los temas 15 y 16 del Anexo III de INSPIRE. Participante en el Grupo de Trabajo Técnico 15 y 16 (GTT1516) encargado de ayudar a las administraciones públicas a implementar las normativas INSPIRE en datos espaciales de los temas 15 y 16 (Rasgos geográficos Oceanográficos y Regiones Marinas) del Anexo III de la Directiva INSPIRE.

Laura Pascual Pariente

Licenciada en Ciencias del Mar por la Universidad de Las Palmas de Gran Canaria y Master en gestión y auditorías ambientales en ciencias y tecnología marina. Coordinadora de actuaciones y proyectos en Tecnologías y Servicios Agrarios, S.A., S.M.E., M.P., (Tragsatec), Sociedad que tiene la consideración de medio propio instrumental y servicio técnico de la Administración General del Estado. Es responsable del Equipo Multidisciplinar de Cartografiado Marino, que desde 1999 desarrolla estudios del fondo marino en proyectos nacionales e internacionales, para la Secretaría general de Pesca del Ministerio de Agricultura, Alimentación y Medio Ambiente. Coordina los equipos de Acuicultura y Estadísticas Pesqueras y tiene amplia experiencia en proyectos de I+D+i en el ámbito pesquero y acuícola. Ha participado en comités (SIMPAM y CAQ) de la Organización de las Naciones Unidas para la Alimentación y la Agricultura (FAO) y es coautora de 25 publicaciones científicas. Ha participado en tres Proyectos de I+D+i en el ámbito del cartografiado marino, financiados en convocatorias competitivas de Administraciones. Representa a la Secretaría General de Pesca en el grupo de trabajo GTT15-16 del Consejo Directivo de la Infraestructura de Información Geográfica de España (CODIIGE).