

INFRAESTRUTURAS DE DADOS ESPACIAIS

Mestrado em Engenharia Geoespacial/Mestrado em Sistemas de
Informação Geográfica – Tecnologias e Aplicações
DEGGE / FCUL – Ano lectivo 2018/2019

Referências bibliográficas e Links

Módulo: Metadados

Metadata concepts and reference docs

Perfil MIG v. 2 - Perfil Nacional de Metadados de Informação Geográfica,
http://snig.dgterritorio.pt/portal/docs/formacao/PerfilMIG_v2_Draft8Julho2013.pdf

INSPIRE Regulation, <https://inspire.ec.europa.eu/portfolio/document-library>

Metadata production

MIG Editor, <https://sourceforge.net/projects/migeditor/>

SNIMar metadata editor, <http://www.snimar.pt/index.php?page=2&menu=3&sub=34>

GeMA, IDEA metadata editor, <http://www.ideia.azores.gov.pt/paginas/gema.aspx>

XML ConceptsRay, Eric T. (2001) “Learning XML”, O’ Reilly, Paris.

Harold, Elliotte Rusty e Means, W. Scott (2001) “XML in a Nutshell”, Paris.

Recursos online:

<http://www.w3.org/XML/>

<http://www.w3schools.com/xml/default.asp>

<http://www.w3.org/TR/xml11/>

INSPIRE Metadata

INSPIRE GEOPORTAL, <http://inspire-geoportal.ec.europa.eu/index.html>

INSPIRE in your Country: Portugal, <https://inspire.ec.europa.eu/INSPIRE-in-your-Country/PT>

Abstract Test Suites (ATS), <https://github.com/inspire-eu-validation/metadata>

INSPIRE Validator, <http://inspire-sandbox.jrc.ec.europa.eu/etf-webapp/>

Proxy Browser, http://inspire-geoportal.ec.europa.eu/proxybrowser/#q=%3A*

ATS examples, <https://github.com/inspire-eu-validation/metadata/blob/1.3/iso-19115-19119/ds-conformity.md>,

<https://github.com/inspire-eu-validation/metadata/blob/1.3/iso-19115-19119/ds-access-use.md>,

<https://github.com/inspire-eu-validation/metadata/blob/1.3/iso-19115-19119/ds-public-access.md>,

<https://github.com/inspire-eu-validation/metadata/blob/1.3/iso-19115-19119/coupled-resource.md>

INSPIRE metadata XML code examples,

<http://snig.dgterritorio.pt/geoportal/rest/document?id=%7BBE74AE16-F7D0-475F-BFB5-28B527D484D7%7D>,

<http://snig.dgterritorio.pt/geoportal/rest/document?id=%7B4721FD1C-6A6D-41D8-BA08-C280D913851D%7D>

Metadata resource identifier,

http://snig.dgterritorio.pt/Portal/docs/documentostecnicos/IdentificadorRecursoURI_v09.pdf

Metadata catalog search

SNIG Search Catalog,

http://snig.dgterritorio.pt/portal/index.php?option=com_wrapper&view=wrapper&Itemid=239&lang=pt

Metadata for search and interoperability,

http://snig.igeo.pt/Portal/docs/documentostecnicos/Metadados_pesquisa_20161125_final3.pdf

Metadata catalog REST search service Api, <https://github.com/Esri/geoportal-server/wiki/REST-API-Syntax>

Metadata catalog CSW search service requests examples,

<http://snig.dgterritorio.pt/geoportal/csw/discovery?service=csw&request=getcapabilities>,

http://snig.dgterritorio.pt/geoportal/csw/discovery?Request=GetRecords&service=CSW&resultType=results&version=2.0.2&maxRecords=20&startPosition=1&typeName=gmd:MD_Metadata&ElementSetName=full&outputSchema=http://www.isotc211.org/2005/gmd&outputFormat=application/xml&CONSTRAINTLANGUAGE=Filter&Constraint=%3CFilter%3E%3CAnd%3E%3CPropertyIsLike%3E%3CPropertyIsLike%3E%3CPropertyName%3EAnyText%3C/PropertyName%3E%3CLiteral%3EINSPIRECORE%3C/Literal%3E%3CPropertyIsLike%3E%3CPropertyIsLike%3E%3CPropertyName%3Eapiso:ConditionApplyingToAccessAndUse%3C/PropertyName%3E%3CLiteral%3E%22Sem%20restri%C3%A7%C3%B5es%22%3C/Literal%3E%3CPropertyIsLike%3E%3C/And%3E%3C/Filter%3E&constraint_language_version=1.1.0

Metadata catalog REST search service requests examples,

<http://snig.dgterritorio.pt/geoportal/rest/find/document?searchText=keywords:INSPIRECORE%20AND%20DGT&start=1&max=100&rst=dataset&orderBy=title&f=html&dojo.preventCache=1471880396239&style=http://snig.dgterritorio.pt/geoportal/catalog/skins/themes/snig/main.cs>

<http://snig.dgterritorio.pt/geoportal/rest/find/document?searchText=keywords%3A%20INSPIRECORE&spatialRel=esriSpatialRelOverlaps&bbox=-31.27,36.92,-25.00,39.73&start=1&max=100&rst=dataset&orderBy=title&f=html&dojo.preventCache=1471880396239&style=http://snig.dgterritorio.pt/geoportal/catalog/skins/themes/snig/main.css>

Metadata URI example,

<http://snig.dgterritorio.pt/geoportal/csw/discovery?service=CSW&request=GetRecordById&version=2.0.2&id=%7BBE74AE16-F7D0-475F-BFB5-28B527D484D7%7D&outputFormat=text/xml&outputSchema=http://www.isotc211.org/2005/gmd>

Módulo: Serviços

– Commission Regulation (EU) No 1312/2014 of 10 December 2014 amending Regulation (EU) No 1089/2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data services - <https://eur-lex.europa.eu/legal-content/PT/TXT/PDF/?uri=CELEX:32014R1312&from=EN>

– Commission Regulation (EC) No 976/2009 of 19 October 2009 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the Network Services - <https://eur-lex.europa.eu/legal-content/PT/TXT/PDF/?uri=CELEX:32009R0976&from=EN>

– Commission Regulation amending Regulation (EC) No 976/2009 as regards download services and transformation service - <https://eur-lex.europa.eu/legal-content/PT/TXT/PDF/?uri=CELEX:02009R0976-20101228&from=EN>

– INSPIRE – an efficient way to share European spatial data! - <https://inspire.ec.europa.eu/documents/inspire-efficient-way-share-european-spatial-data>

OGC WebServices - Fundamental Concepts

<http://cite.opengeospatial.org/pub/cite/files/edu/fundamental-concepts/text/index.html>

Web Map Service

<https://www.opengeospatial.org/standards/wms>

Web Feature Service

<https://www.opengeospatial.org/standards/wfs>

– Spatial Data Services <https://inspire.ec.europa.eu/spatial-data-services/580>

– GeoServer User Manual <http://docs.geoserver.org/stable/en/user/>

– Introduction to GeoServer <http://workshops.boundlessgeo.com/geoserver-intro/>

– GeoServer Training Modules <http://geoserver.geo-solutions.it/edu/en/>

Módulo: Harmonização de dados

Glossário <http://inspire.ec.europa.eu/glossary> :

Open Geospatial Consortium <http://www.opengeospatial.org>

<https://repositorium.sdum.uminho.pt/bitstream/1822/1243/1/tese.pdf>

Enterprise Architect:

<http://www.sparxsystems.com/resources/webinar/arcgis/geodatabase-modeling-intro/design-arcgis-schemas-with-uml-and-enterprise-architect-intro.htm>

SNIG2020: <http://snig.dgterritorio.pt/Inspire/documentos/ontheroad/SNIGontheroad-CCDR-Caetano.pdf>

Diretiva INSPIRE Estado de implementação e desenvolvimentos futuros (4ª Sessão Técnica RAA, 7 e 9 de junho 2016):

<https://youtu.be/QaOUktVqBz8>

http://www.ideia.azores.gov.pt/docs/Documentos/4SessaoTecnica_SNIGontheroad-azores-Caetano.pdf

ENiG2016

http://eniig.dgterritorio.pt/sites/default/files/ENiG2016_MarioCaetano_DGT.pdf

Galeria (vídeos):

http://www.dgterritorio.pt/fotos/1_encontro_nacional_de_infraestruturas_de_informacao_geografica_eniig_2016/

Diretiva Inspire na Região Autónoma dos Açores [partilha de ecrã] (3ª Sessão Técnica RAA, 18 e 24 de maio 2016):

https://youtu.be/OSOh_l38064

http://www.ideia.azores.gov.pt/docs/Documentos/3Sessao_DiretivaInspire.pdf

Data Specifications

Guias técnicos: <http://inspire.ec.europa.eu/data-specifications/2892>

Themes

<https://inspire.ec.europa.eu/Themes/Data-Specifications/2892>

INSPIRE Thematic Clusters

<https://themes.jrc.ec.europa.eu/>

Workshop sobre Harmonização de Dados Geográficos de acordo com as especificações INSPIRE - abril de 2016, DGT

<http://snig.igeo.pt/Inspire/documentos/workshop-COS/TZ-INSPIRE-COS.pdf>

Videos:

Harmonização da COS de acordo com as especificações INSPIRE - Teresa Zuna – Parte 1

<https://www.youtube.com/watch?v=61m15WdDHEQ>

Harmonização da COS de acordo com as especificações INSPIRE - Teresa Zuna – Parte 2

<https://www.youtube.com/watch?v=azcRtbgYZzA>

Recolha de informação e Conversão de dados para SIG (*1ª Sessão Técnica RAA, 13 Abril 2016, LREC*):

http://www.ideia.azores.gov.pt/docs/Documentos/1Sessao_Apresentacao_MarleneAntunes.pdf

II.2 Land Cover – Carregamento de dados da SRAA no Modelo de Dados INSPIRE RAA [partilha de ecrã] (*3ª Sessão Técnica RAA, 18 e 24 de maio 2016*):

<https://www.youtube.com/watch?v=KgFFxQn1PGQ&feature=youtu.be>

http://www.ideia.azores.gov.pt/docs/Documentos/3SessaoGPII.2Land%20Cover_CarregamentoDadosSRAAModeloDadosINSPIRERAA.pdf

Disposições de Execução (DE)

<http://inspire-regadmin.jrc.ec.europa.eu/dataspecification/>

Diagramas UML

<http://inspire.ec.europa.eu/data-model/approved/r4618-ir/html/>

- *Data models*: <http://inspire.ec.europa.eu/index.cfm/pageid/2/list/datamodels>
- *Matching tables* (XML ⇒ abrir com o Excel) : <http://inspire.ec.europa.eu/data-model/approved/r4618-ir/mapping/>
- *GML Application Schemas*: (XSD ⇒ abrir por exemplo com o HALE): <http://inspire.ec.europa.eu/schemas>

Links Importantes:

Implementing Rules EN vs PT

<http://eur-lex.europa.eu/legal-content/EN-PT/TXT/?uri=CELEX:02010R1089-20131230&from=EN>

Implementing Rules (errata)

<http://inspire.ec.europa.eu/documents/commission-regulation-eu-no-10892010-23-november-2010-implementing-directive-20072ec-0>

Catálogo (objetos, codelists, etc)

<http://inspire-regadmin.jrc.ec.europa.eu/dataspecification/CatalogueINSPIREObjects.action>

Layers (WMS)

<http://inspire.ec.europa.eu/layer>

Glossário

<http://inspire.ec.europa.eu/glossary>

General Conceptual Model

http://inspire.ec.europa.eu/documents/Data_Specifications/D2.5_v3.4rc3.pdf

Data Specifications

<http://inspire.ec.europa.eu/index.cfm/pageid/2>

Identificadores para listas de códigos e códigos

http://snig.dgterritorio.pt/Portal/docs/documentostecnicos/ListasCodigosINSPIRE_URI_v09.pdf

InspireId, Grupo de Trabalho Transversal (GTI-TR), Janeiro 2017. Padrão a utilizar em Portugal para o identificador inspireid dos objetos geográficos INSPIRE, sob a forma de um URI.

http://snig.dgterritorio.pt/Portal/docs/documentostecnicos/InspireId_v092.pdf

Anexo do documento InspireId - Grupo de Trabalho Transversal (GTI-TR), Novembro 2016.

http://snig.dgterritorio.pt/Portal/docs/documentostecnicos/InspireID_Anexo.pdf

Find scope

<http://inspire-regadmin.jrc.ec.europa.eu/dataspecification/FindYourScope.action>

Identificar o modelo de dados INSPIRE (*target*)

<http://inspire.ec.europa.eu/schemas/>

Transformation Tools

http://inspire.ec.europa.eu/events/conferences/inspire_2014/pdfs/20.06_2_09.00_Dorus_Kruse.pdf

ELF Geo-Tools:

http://elfproject.eu/documentation/geotool?field_tooltype_value=All

Video: <https://www.youtube.com/watch?v=wZkQ-J56n90&feature=youtu.be>

ArcGIS for INSPIRE:

<http://geospatialworldforum.org/speaker/SpeakersImages/Roberto%20Lucchi.pdf>

INSPIRE validation workshop (Junho 2016):

<https://www.youtube.com/watch?v=BMjmjJ8u0Ds&feature=youtu.be>

http://eurogeographics.org/sites/default/files/20160603AlbertoOlivares_SnowflakeSoftware.pdf

<https://www.youtube.com/watch?v=yFRyMdmXCrM&feature=youtu.be>

http://eurogeographics.org/sites/default/files/20160603ValidationFME_KenBragg.pdf

Humboldt Alignment Editor (HALE) – (Parte 1 e 2) [partilha de ecrã] (3ª Sessão Técnica RAA, 18 e 24 de maio 2016):

<https://www.youtube.com/watch?v=GeyWAjxPI8&feature=youtu.be> (Parte 1)

https://youtu.be/BI_RJ-gnXQ4 (Parte 2)

http://www.ideia.azores.gov.pt/docs/Documentos/3sessao_Humboldt%20Alignment%20Editor%20%28HALE%29.pdf (Parte 1)

Harmonização de dados de Sondagens Geotécnicas com base no Modelo de Dados INSPIRE RAA e no HALE (3ª Sessão Técnica RAA, 18 e 24 de maio 2016):

<https://youtu.be/lK9tRG1XFBg>

http://www.ideia.azores.gov.pt/docs/Documentos/3Sessao_Harmoniza%C3%A7%C3%A3o%20de%20dados%20de%20Sondagens%20Geot%C3%A9cnicas%20com%20base%20no%20Modelo%20de%20Dados%20INSPIRE%20RAA%20e%20no%20HALE.pdf

Validação:

<http://schemas.opengis.net/gml/3.2.1/SchematronConstraints.xml>

– **eENVplus**

<http://cloud.epsilon-italia.it/>

❖ https://inspire.ec.europa.eu/sites/default/files/presentations/eENVplus_VS.06_09.17_2.pdf

❖ <https://www.youtube.com/watch?v=tuS58hY9skU&t=3289s>

– **INSPIRE Validator**

<http://inspire-sandbox.jrc.ec.europa.eu/etf-webapp/>

❖ https://inspire.ec.europa.eu/sites/default/files/presentations/20170906_INSPIRE_Reference_Validator.pdf

❖ <https://www.youtube.com/watch?v=UiZL0Ju5Gr0&t=1255s>

<https://inspireptblog.wordpress.com/2017/11/07/novo-validador-inspire-etf/>

Workshop sobre experiências de harmonização de dados:

http://www.dgterritorio.pt/apresentacoes/workshop_sobre_experiencias_de_harmonizacao_de_dados/

- http://www.dgterritorio.pt/filedownload.aspx?schema=b511271f-54fe-4d21-9657-24580e9b7023&channel=5D83BE99-238C-4727-83D4-712E7C3188A0&content_id=9FD9DF8D-0396-43CA-BA5E-00DA8004389D&field=file&lang=pt&ver=1&filetype=pdf&dtestate=2017-06-26172131

<https://www.youtube.com/watch?v=cp2fsEThezg&feature=youtu.be>

Testing

<http://files.titellus.net/vbox/qgisgmlas.pdf>

INSPIRE Registry:

Padrão em estudo

1. <http://registo.igeo.pt/codelist/{NomeListaCodigos}Value>
2. <http://registo.igeo.pt/codelist/{NomeListaCodigos}Value/{ValorCodigo}>

eENVplus Validation Service

http://cloud.epsilon-italia.it/eenvplus_new

Módulo: Política de dados

ABRAMIC, A. *et al* (2017): A Spatial Data Infrastructure for Environmental Noise Data in Europe, *Int J Environ Res Public Health*. 2017 Jul; 14(7): 726. <URL>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5551164/> <URL>

ANSORGE, C. (2017): Environmental Reporting reusing INSPIRE Approaches & Examples 4 September 2017, INSPIRE Conference, 4-8 September 2017, Kehl/Starsborough. <URL>
https://inspire.ec.europa.eu/sites/default/files/presentations/3.ansorge_approaches_example_s.pdf . <URL>

CROMPVOETS *et al* (2008): A Multi-View Framework to Assess SDIs, Joep Cromptvoets, Abbas Rajabifard, Bastiaan van Loenen and Tatiana Delgado Fernández, Editors Copyright © 2008 Space for Geo-Information (RGI), Wageningen University. <URL>
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.717.9611&rep=rep1&type=pdf> <URL>

EC (2009b): *“Implementing rules for governing access and rights of use of spatial data sets and services for Community institutions and bodies - Description of the rules with accompanying*

Commentary and Guidance"; INSPIRE Data and Service Sharing Drafting Team; European Commission. <URL>
http://inspire.ec.europa.eu/reports/ImplementingRules/DataandServiceSharing/D4.9_Draft_IR_Data_and_Service_sharing_v2.0.pdf <URL>.

EC (2013a): "*Good practice in data and service sharing*"; INSPIRE Data and Service Sharing Drafting Team; European Commission. <URL>
http://inspire.ec.europa.eu/documents/Data_and_Service_Sharing/GoodPractice_%20DataServiceSharing_v3.pdf <URL> .

EC (2013b): "*Guidance on the Regulation on access to spatial data sets and services of the Member States by Community institutions and bodies under harmonized conditions*"; INSPIRE Data and Service Sharing Drafting Team; European Commission. <URL>
http://inspire.ec.europa.eu/documents/Data_and_Service_Sharing/DSSGuidanceDocument_v5.0.pdf <URL>

EC (2015): "*Creating Value through Open Data*"; European Commission; Publications Office of the European Union. <URL>
https://www.europeandataportal.eu/sites/default/files/edp_creating_value_through_open_data_0.pdf <URL>

GEO (2010): "*GEOSS Data Sharing Action Plan*"; Document 7 (Rev2), GEO-VII; Group on Earth Observations (GEO); 3-4.11.2010. <URL>
https://www.earthobservations.org/documents/geo_vii/07_GEOSS%20Data%20Sharing%20Action%20Plan%20Rev2.pdf <URL>

GEO (2014): "*GEOSS Data Sharing Principles post 2015*"; Data Sharing Working Group (DSWG) of the Group on Earth Observations (GEO); 10.03.2014. <URL>
http://www.earthobservations.org/documents/dswg/10_GEOSS%20Data%20Sharing%20Principles%20post%202015.pdf <URL>

GRUS, L., CROMPVOETS, J., BREGT, A. (2008): Theoretical introduction to the Multi-view Framework to assess SDIs, A Multi-View Framework to Assess SDIs, Joep Cromptvoets, Abbas Rajabifard, Bastiaan van Loenen and Tatiana Delgado Fernández, Editors Copyright © 2008 Space for Geo-Information (RGI), Wageningen University.

GSDI (2009): "*Spatial Data Infrastructure Cookbook 2009*"; Global Spatial Data Infrastructure Association (GSDI). <URL>
http://gsdiassociation.org/images/publications/cookbooks/SDI_Cookbook_from_Wiki_2009.pdf <URL>

ICO (2011): "*Data sharing code of practice*"; ICO – Information Commissioner's Office; UK. <URL> https://ico.org.uk/media/for-organisations/documents/1068/data_sharing_code_of_practice.pdf <URL>

JNASSEN, K. (2008): "*A legal approach to assessing Spatial Data Infrastructures*"; in: CROMPVOETS, J.; RAJABIFARD, A.; LOENEN, B. V. & FERNÁNDEZ, T. D. (eds): "*A Multi-View Framework to Assess SDIs*"; pp. 255-272; Space for Geo-Information (RGI); Wageningen

University. <URL>

http://www.csdila.unimelb.edu.au/publication/books/mvfasdi/Parts/Chapter_13.pdf <URL>

JENSEN, S. (2017): "The future of eReporting and the link to INSPIRE", INSPIRE conference, 4-5 September 2017, Kehl. <URL>

https://inspire.ec.europa.eu/sites/default/files/presentations/2.jensen_e-reporting_concept-paper.pdf. <URL>

JÄRVENPÄÄ, E. *et al*, (2017): "Environmental reporting obligations and INSPIRE. A practical concept to support the identifying process", INSPIRE Conference, 4-8 September 2017, Kehl/Starsborough. <URL>

https://inspire.ec.europa.eu/sites/default/files/presentations/Inspire2017_Jarvenpaelise_08092017.pdf <URL>

LIHTENEGGER, D. (2017): Examples of best practice from EEA INSPIRE pilots and prototypes, EEA, SLO INSPIRE Day 2015, 21 September 2015, Ljubljana. <URL> http://www.gurs-egp.si/files/editor/10c89d0e_05_20150921-EEA-INSPIRE-pilots-practice-DLI-fnal.pdf <URL>

MARTIN, S.; FOULONNEAU, M.; TURKI, S.; IHADJADENE, M. (2013): "*Risk Analysis to Overcome Barriers to Open Data*"; Electronic Journal of e-Government.

MASSER, I. & CROMPVOETS, J. (2015): "*Building European Spatial Data Infrastructures*"; 3rd edition; Redlands; ESRI California: ESRI Press; 99 p.

RAJABIFARD, A., WILLIAMSON, P. (2001): "*Spatial data infrastructures: concept, sdi hierarchy and future directions*", in Proceedings of GEOMATICS'80 Conference, Tehran, Iran.

UN-GGIM (2013): "*Future trends in geospatial information management: the five to ten year vision*"; Draft for Second High-Level Forum on GGIM (United Nations Initiative on Global Geospatial Information Management); Qatar; Feb 2013; 37p. <URL>

<http://ggim.un.org/docs/Future-trends.pdf> <URL>

UN-ECONOMIC AND SOCIAL COUNCIL-PC-IDEA (2013) "*Spatial Data Infrastructure (SDI) Manual for the Americas*", Report of the Permanent Committee for Geospatial Data Infrastructure of the Americas, Tenth United Nations Regional Cartographic Conference for the Americas, New York, 19-23, August 2013. <URL>

https://unstats.un.org/unsd/geoinfo/RCC/docs/rcca10/E_Conf_103_14_PCIDEA_SDI%20Manual_ING_Final.pdf <URL>

Links

INSPIRE Knowledge-base

<https://inspire.ec.europa.eu/document-tags/data-and-service-sharing>

INSPIRE Policy Background

<https://inspire.ec.europa.eu/inspire-policy-background/27902>

Directive 2007/2/EC Article 17

<https://inspire.ec.europa.eu/legislation-details/directive-20072ec-article-17>

Study on how the sharing of geospatial data between public authorities and with the public could be improved across the EU

<https://inspire.ec.europa.eu/news/deadline-extended-survey-inspire-data-sharing>

MIWP action 2016.5 "Priority list of datasets for e-Reporting

<https://ies-svn.jrc.ec.europa.eu/projects/2016-5/wiki>

INSPIRE Country Reports

<https://inspire.ec.europa.eu/portfolio/inspire-your-country>

INSPIRE Monitoring and reporting: Portugal

<https://inspire.ec.europa.eu/INSPIRE-in-your-Country/PT>

INSPIRE in your country Map

https://inspire.ec.europa.eu/moinitoring_geo_coleaf

INSPIRE Dashboard

<https://inspire-dashboard.eea.europa.eu/>

Summary Report on Status of implementation of the INSPIRE Directive in EU

<https://inspire.ec.europa.eu/documents/summary-report-status-implementation-inspire-directive-eu>