

2 Overview

2.1 Name

INSPIRE data specification for the theme *Area Management/Restriction/Regulation Zones and Reporting Units*.

2.2 Informal description

Definition:

Areas managed, regulated or used for reporting at international, European, national, regional and local levels. Includes dumping sites, restricted areas around drinking water sources, nitrate-vulnerable zones, regulated fairways at sea or large inland waters, areas for the dumping of waste, noise restriction zones, prospecting and mining permit areas, river basin districts, relevant reporting units and coastal zone management areas. [Directive 2007/2/EC]

Description:

The AM theme is thematically broad and encompasses a wide range of zone types that are established or used for four different and sometimes overlapping concepts:

1. **Manage:** zones are established to plan, perform, monitor and control activities to achieve specific legally defined environmental objectives. Examples include: air quality management zones, river basin districts, coastal management zones.

NOTE: Goals can be continuous, e.g. the maintenance of a certain environmental state.

2. **Restrict:** zones are established to prohibit or limit certain activities, to only be performed within specific bounds and/or time periods, in order to achieve a certain purpose/goal according to legally defined responsibilities or obligations. Examples include: noise restriction zones, animal health restriction zones.

3. **Regulate:** zones are established to monitor and control certain activities (to permit, promote, prohibit, or restrict) to achieve legally defined environmental objectives. A regulated activity may require that if the environmental status is degraded then particular actions must be enacted to restore good environmental status.

NOTE 1: In specific cases, a regulative regime may define a set of acceptable limit/threshold values to protect human health or the environment.

NOTE 2: The distinction between regulation and restriction is not always clear, since restriction of activities implies that they are regulated.

4. **Report:** to evaluate the effectiveness of environmental policies and publish data and information (i.e. spatial data, observations, statistics, indicators) that can be used to assess progress towards maintaining or improving good environmental status and achievement of policy objectives.

NOTE 1: Member States shall regularly provide data and information to a responsible authority such as the Commission (i.e. reporting) that can be analysed to assess the state of the environment.

NOTE 2: Reporting data and information can be published in near-real time (e.g. observations) or published on a regular schedule (e.g. annually, 3-year intervals), as defined in the relevant legislation. Reporting data and information is often made publicly available after delivery to the relevant authority.

2.2.1 Scope and concepts

The heterogeneity of the thematic domains and concepts mentioned in the AM theme definition raised several questions about how broad should be the scope of the theme to support the aim of the INSPIRE Directive:

“the infrastructure should assist policy-making in relation to policies and activities that may have a direct or indirect impact on the environment”.

Three main issues were examined to help define the scope of the AM theme:

- How broad should be the thematic areas? Thematic areas cover a wide range of socio-economic activities, policies related to sustainable development and policies related to environmental issues and protection.
- Requirements for areas managed, regulated or used for reporting are very diverse at different levels of administration and legislation, i.e. international, European, national and sub-national (regional and local), which impacts on how the areas are defined or established. How to balance between the requirements to include all relevant INSPIRE thematic areas and the need for a deeper level of detail within individual thematic areas?

It was important that limits to the scope of the theme were identified, where possible, and that an approach for handling generic versus domain-specific requirements was achieved.

The definition of the INSPIRE spatial data theme “Area Management/Restriction/Regulation Zones and Reporting Units” (AM) reflects two basic concepts:

1. the need for spatial information on areas where specific management, regulative or restriction regimes are established, and
2. the role of spatial objects as reporting units.

2.2.2 Scope related to the Area Management, Restriction and Regulation Zones

There are few limits to the scope of the theme. Area Management, Restriction and Regulation Zones are zones that are established in accordance with specific legislative requirements to deliver specific environmental objectives related to any environmental media, for example, air, water, soil and biota (plants and animals). This includes, but is not limited to, objectives established to:

- Protect and improve environmental quality (includes reducing pollution levels),
- Protect and conserve environmental and natural resources,
- Protect and control risk from natural and man-made hazards,
- Protect plant, animal and human health,
- Control development and spatial planning.

To achieve these objectives, a competent authority is commonly defined that is responsible for delivering, regulating and monitoring specific environmental objectives that may be defined within management or action plans. Within such plans or programmes, measures may be defined that require specific activities to be controlled (permit, promote, prohibit, or restrict). Such activities may be controlled over continuous time periods or only within specific schedules. For example, noise levels from an entertainment venue may not exceed acceptable threshold values between 23:00 and 08:00 Sunday to Thursday and between 12 midnight and 08:00 Friday and Saturday.

ManagementRestrictionOrRegulationZones are any zones that are established in accordance with a legislative requirement related to an environmental policy or a policy or activity that may have an impact on the environment at any level of administration (international, European, national and sub-national) shall be a.

If a zone has been established for management, restriction or regulation but is not underpinned by a legislative requirement, it can be encoded as a ManagementRestrictionOrRegulationZone but this is not required under the INSPIRE Implementing Rules.

The scope of the AM theme has been modelled to ensure it is extensible and can support types of area management, restriction and regulation zones that were not identified during the theme development phase. The identified zone types are defined in the code list ZoneTypeCode.

2.2.3 Modelling approach

Due to the broad scope of the theme, the modelling approach undertaken to develop the AM theme was to define a generic core model that encompasses the core properties required to define an area management, restriction and regulation zone and treat the concept of reporting units separately.

Management, restrictions and regulations are related to the areas where those obligations are performed and executed. A specific area can be at the same time a subject to various restrictions / regulations or management regimes which may define diverse activities within those areas. For example: the same physical areas can have restrictions, specific management actions, plus reporting requirements, such as “sand replenishment to repair beach erosion” – all mandated by different legislation or regulations at different levels - European, national and sub-national (regional and local) – and at different scales.

The boundaries of the areas do not necessarily apply to the natural borders of geographic or natural phenomena and they could be based on a decision by the responsible authorities. For example:

- a set of local administrative units or their parts might comprise an agglomeration area,
- restriction zones around the coast, lakes or rivers usually cover surrounding areas of those phenomena and are defined within the areas of responsible authorities (administrative units or other territorial organisational units), or
- river basin districts correspond to country (national) boundaries despite the natural flow of rivers through many countries.

This generic model can be used to exchange spatial data between different domains and public authorities. It is expected that this generic core model shall be extended (i.e. specialised) to define spatial objects that contain additional domain-specific properties. This detailed and domain-specific information is out of the scope of the AM theme. More detailed information and examples demonstrating how it is possible to extend the generic model into more specific and detailed thematic models are presented in Annex D and Annex E.

2.2.4 Reporting Units

The AM theme title states that the theme shall include “Reporting Units” and the definition states that the scope of the theme is:

“Areas managed, regulated or used for reporting at international, European, national, regional and local levels.”

Both the title name and definition were initially ambiguous and difficult to interpret how best to handle and model Reporting Units within the scope of the AM theme. After discussions, both within the theme and with other INSPIRE Thematic Working Group members, a definition of “Reporting Units” is here defined as:

“A ‘Reporting Unit’ is a spatial object that provides the spatial reference for any non-spatial data exchanged under environmental reporting obligations.”

The reported non-spatial data must include a property that contains a reference to the spatial object. This is typically an identifier, code or name and is a join key between the spatial and non-spatial objects enabling the data to be combined. This allows the non-spatial data to be visualised as a map or enable spatial analysis.

Examples of INSPIRE Reporting Units: AM and HY

Table 1 is an example of some annually reported air quality exceedence data for Slovakia from 2006. This reported data contains a join key (Zone code) to the Air Quality Management Zone which is a

type of AM ManagementRestrictionOrRegulationZone. When joined to the “Reporting Unit” - AM Zone, a new map is generated for visualising exceedence (Figure 1).

Table 1 – Exceedence of SO₂ limit values in Slovakia reported to EEA in 2006

- Form 8a List of zones in relation to limit value exceedences for SO ₂		
Zone code	LV for health (24hr mean)	
	>LV	<LV
SKBA01.1		y
SKBA02		y
SKBB01		y
SKKO01.1		y
SKKO02		y
SKNI01		y
SKPR01		y
SKTN01		y
SKTR01		y
SKZI01		y

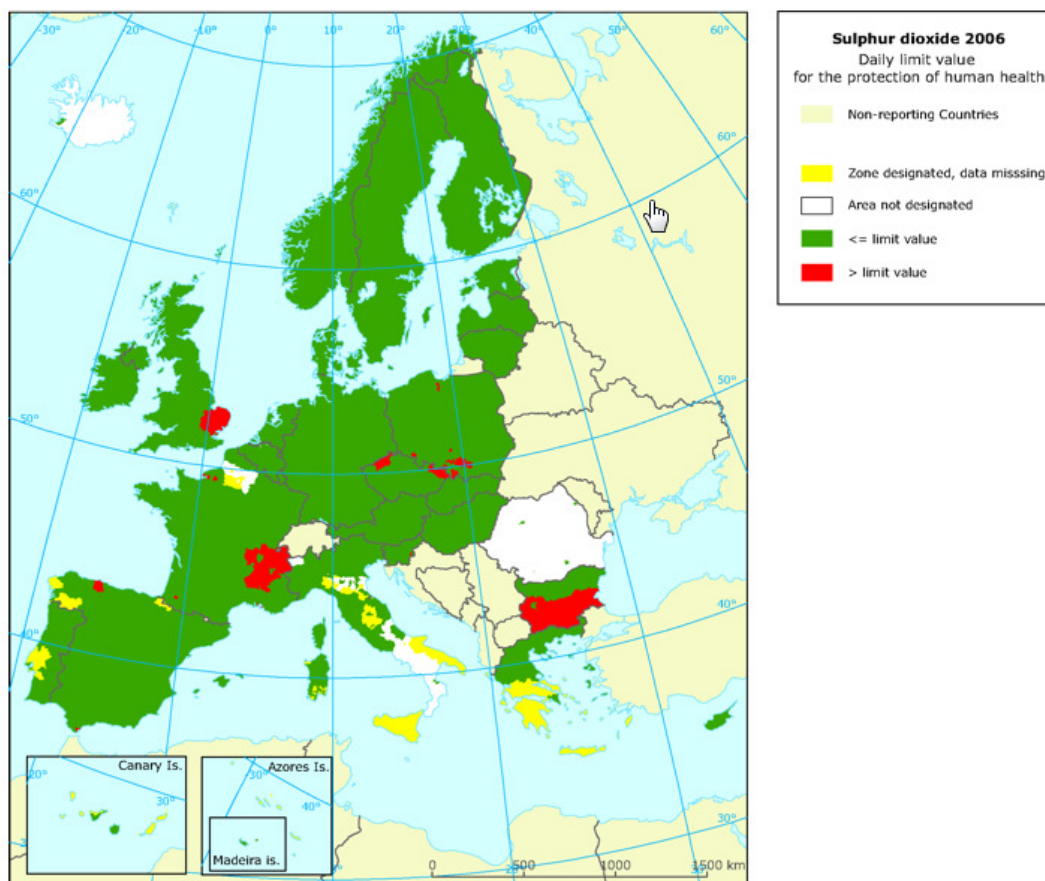


Figure 1 – Map visualising exceedence of daily limit values of SO₂ within Air Quality Management Zones in Europe

However, AM Zones are not the only type of “Reporting Unit”. Other INSPIRE spatial objects perform the role of “Reporting Unit”. For example, surface waters: rivers, lakes and canals from Annex I Hydrography – Physical Waters are “Reporting Units” for indicators of chemical and ecological status (Figure 2).

Annex F contains a summary of identified examples where INSPIRE spatial objects act as Reporting Units for data reported under key European environmental legislation.

Thus, *reporting units* cannot be modelled as a distinct spatial object type. Therefore, no specific *reporting units* application schema is included in this data specification. Instead, the obligation on how to make *reporting units* spatial data available under INSPIRE is expressed in the following requirements.

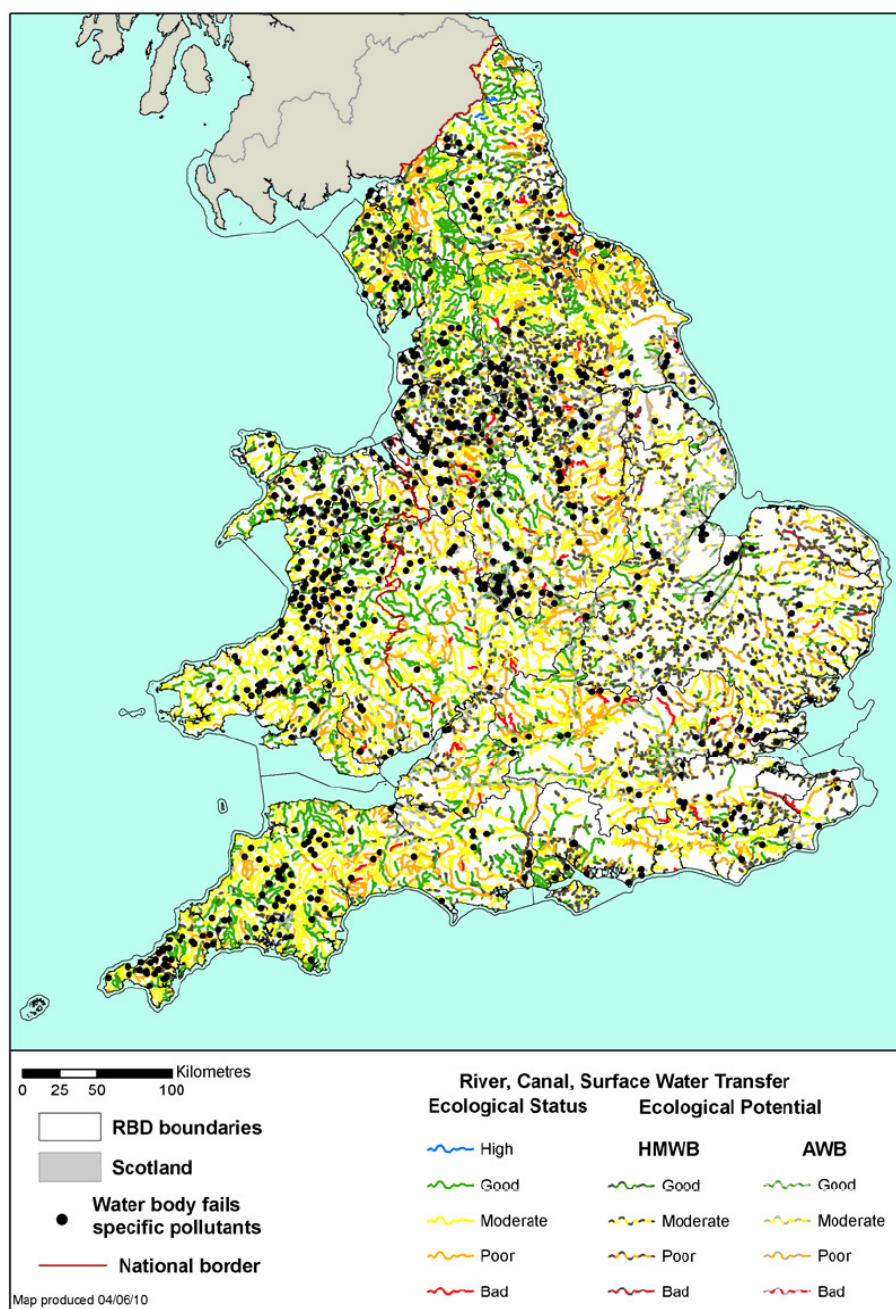
IR Requirement

Annex IV, Section 11.4.2

Theme-specific Requirements – Reporting Units

- (1) Spatial objects acting as reporting units shall be defined and made available according to the requirements of their respective INSPIRE spatial data theme(s).
- (2) Where environmental reporting data, to establish a spatial reference, refers to real-world entities that are made available as spatial objects in accordance with this Regulation, the reporting data shall include an explicit reference to those spatial objects.

Recommendation 1 Where an INSPIRE spatial object performs the role of "Reporting Unit", it is strongly recommended that it has an inspireId so that reporting data can be referenced to the spatial object.



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Figure 2 – Map visualising ecological status or potential for rivers, canals and surface waters (2009)

2.2.5 Extending the AM Data Specification

Due to the broad scope of the theme, a generic modelling approach undertaken. A generic Area Management, Restriction and Regulation Zone spatial object was defined which can be classified using the zone type and specialised zone type properties.

NOTE: The zone type and specialised zone type code list classification values are extensible allowing thematic communities and Member States to propose additional zone types that were not identified during the development phase of the AM data specification.

This generic spatial object defines a core set of properties that apply to any zone. This generic model can be used to exchange spatial data between different domains and public authorities. It is expected that this generic core model shall be extended (i.e. specialised) to define spatial objects that contain additional domain-specific properties (Figure 3).

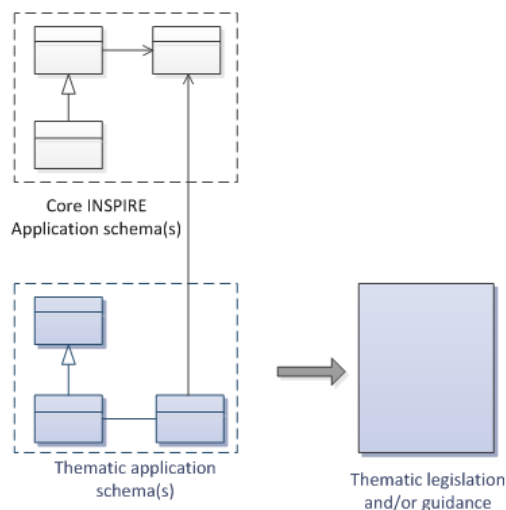


Figure 3 – Extending INSPIRE AM Application Schema to generate Thematic application schemas

Detailed information and examples demonstrating how to extend the generic AM application schema into thematic data specification models are presented in:

- Annex D: Water Framework Directive (WFD): Water Bodies
- Annex E: Air Quality Directive (AQD) draft e-Reporting specification

Error! Reference source not found.: **Water Framework Directive - Water Bodies**

The Water Framework Directive: The Water Bodies application schema is included in the Technical Guideliens (TG), as it was defined as a candidate application schema during the development of the Annex I Hydrography theme. This candidate application schema was initially included in the Implementing Rule. However, it is proposed that this should only be a TG Requirement to allow Public Authorities to provide WFD Water Bodies within INSPIRE. It is envisaged that this example application schema shall either be formally adopted by WFD or amended when the WFD reporting data specification is updated in the future.

NOTE: Minor changes were made to the candidate application schema to better integrate the proposed spatial object types with the ManagementRestrictionOrRegulationZone spatial object types and their relationships with spatial object types within the Hydrography theme and Geology theme, responsible for defining GroundwaterBodies.

Error! Reference source not found.: **Air Quality Directive (AQD) draft e-Reporting specification**

The AQD draft e-Reporting data specification has been included as an example to demonstrate how develop new reporting data specification by extending the INSPIRE applications. This draft data specification was developed by the EEA to meet the requirements of the Commission Implementing Decision 2011/850/EU defining the rules for the reciprocal exchange of information and reporting on ambient air quality for Directives 2004/107/EC and 2008/50/EC (see <http://aqportal.eionet.europa.eu/>).

2.2.6 Interrelationships with INSPIRE spatial data themes

2.2.6.1. Overlapping scope between Area Management, Restriction and Regulation Zones and other INSPIRE Themes

There is an overlap in scope between Area Management, Restriction and Regulation Zones (AM) and the following themes:

- Annex I: Protected Sites (PS)
- Annex III: Land Use (LU) – Planned Land Use application schema

Overlapping scope between AM and PS

The key difference between the two themes is that Protected Sites are established to manage, regulate and restrict activities to conserve nature, biodiversity and cultural heritage, only. Some Area Management, Restriction and Regulation Zones are established to deliver multiple environmental objectives that include nature and biodiversity conservation (e.g. River Basin Districts). Where this occurs, the spatial objects should only be published once, as Area Management, Restriction and Regulation Zones.

IR Requirement

Annex IV, Section 11.4.3

Cross-theme requirements

- (1) If an area has been established exclusively to manage, regulate and restrict activities to conserve nature, biodiversity and cultural heritage, it shall be made available as a ProtectedSite spatial object. If a zone has been established to deliver multiple objectives, including the conservation of nature, biodiversity and cultural heritage, it shall be made available as a ManagementRestrictionOrRegulationZone spatial object.

Overlapping scope between AM and LU

To control development on land and marine environments, regulation zones are established. These define specific controls to regulate particular activities such as construction of buildings above a specified height or specific type within an area. Where such zones are defined within a legally binding spatial plan they fall within scope of the Land Use theme and should be defined using the Supplementary Regulation spatial object type within the Planned Land Use application schema.

If zones are established, but are not defined within a legally binding spatial plan, they should be defined as a Management Area, Restriction and Regulation Zone.

IR Requirement

Annex IV, Section 11.4.3

Cross-theme requirements

- (2) Where a zone has been established to regulate planned land use and defined within a legally binding spatial plan, it falls within the scope of the Land Use theme and shall be made available as a SupplementaryRegulation. However, if the zone has been established by legislative requirement but not defined within a legally binding spatial plan, then it shall be made available as a ManagementRestrictionOrRegulationZone.

2.2.6.2. Interrelationships between Area Management, Restriction and Regulation Zones and other INSPIRE Themes

Because of the heterogeneity of domains covered by the AM theme, several interrelationships with other INSPIRE spatial data themes exist. The types of interrelationships include:

1. Associations or relationships between spatial objects

For example, associations have been defined between spatial object types within the following themes to represent explicit relationships between the themes.

- *Environmental Monitoring Facilities*: MonitoringFacilities are established to monitor and assess the state of the environment within ManagementRestrictionOrRegulationZones
- *Hydrography*: WFDSurfaceWaterBody are related to one or more HydroObject
- *Geology*: WFD GroundWaterBody are related to one or more GroundWaterBody and/or HydrogeologicalUnit
- *Natural Risk Zone*: a RiskZoneVector is contained within zero or more ManagementRestrictionOrRegulationZone
- *Soils*: a ContaminatedSoilSite is contained within a ManagementRestrictionOrRegulationZone

2. Management, Restriction or Regulation Zone shares the same geometry as another INSPIRE spatial object

Zones are often defined based on the extent of another related spatial object.

- *Sea Regions*: Marine Regions may derive their spatial extent fromas Sea Regions.

Recommendation 2 When the marine region has been established for the purpose of management or as restriction or regulation zone such spatial objects shall be defined as ManagementRestrictionOrRegulationZone of the INSPIRE AM theme. When the geometry of the marine regions that fall within the scope of the INSPIRE AM theme is derived or based on the geometry of the spatial objects defined in INSPIRE SR theme, both geometries shall be aligned at least at the land-sea boundaries following the related specifications in the INSPIRE SR theme.

- *Geology*: Groundwater WFD Water Bodies may derive their extent from GE Groundwater Bodies.
- *Administrative Units*: Air quality management zones may derive their spatial extend from Administrative Units or NUTS Regions.
- *Natural Risk Zones*: Nitrate Vulnerable Zones or Flood Management Units may derive their spatial extent from RiskZone.

Definition:

Areas managed, regulated or used for reporting at international, European, national, regional and local levels. Includes dumping sites, restricted areas around drinking water sources, nitrate-vulnerable zones, regulated fairways at sea or large inland waters, areas for the dumping of waste, noise restriction zones, prospecting and mining permit areas, river basin districts, relevant reporting units and coastal zone management areas. [Directive 2007/2/EC]

Description:

The theme “*Area Management/Restriction/Regulation Zones and Reporting Units*” is thematically broad and encompasses any zones that are established in accordance with a legislative requirement related to an environmental policy or a policy or activity that may have an impact on the environment at any level of administration (international, European, national and sub-national).

The zones are typically established to deliver specific objectives related to any environmental media, for example, air, water, soil and biota (plants and animals). This includes, but is not limited to, objectives established to protect and improve environmental quality (includes reducing pollution levels), protect and conserve environmental and natural resources, protect and control risk from natural and man-made hazards, protect plant, animal and human health or control development.

The theme also addresses reporting units, which are defined as “spatial objects that provide the spatial reference for any non-spatial data exchanged under environmental reporting obligations.” The reported non-spatial data must include a property that contains a reference to the spatial object. This is typically an identifier, code or name and is a join key between the spatial and non-spatial objects enabling the data to be combined. This allows the non-spatial data to be visualised as a map or enable spatial analysis.

Different INSPIRE spatial object types can perform the role of “Reporting Unit”. For example, surface waters (rivers, lakes and canals from the Annex I theme Hydrography) are “Reporting Units” for indicators of chemical and ecological status. Thus, Reporting units cannot be modelled as a distinct spatial object type and no specific reporting units data model is defined. Instead, the theme defines obligations on how to make reporting units spatial data available under INSPIRE.

Entry in the INSPIRE registry: <http://inspire.ec.europa.eu/theme/am/>

2.3 Normative References

- [Directive 91/271/EEC] Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment
- [Directive 1991/676/EEC] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources
- [Directive 2000/60/EC] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy
- [Directive 2002/49/EC] Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise - Declaration by the Commission in the Conciliation Committee on the Directive relating to the assessment and management of environmental noise
- [Directive 2006/44/EC] Directive 2006/44/EC of the European Parliament and of the Council of 6 September 2006 on the quality of fresh waters needing protection or improvement in order to support fish life
- [Directive 2006/113/EC] Directive 2006/113/EC of the European Parliament and of the Council of 12 December 2006 on the quality required of shellfish waters [Directive 2008/50/EC] Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe
- [Directive 2007/2/EC] Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)
- [Directive 2007/60/EC] Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks
- [Directive 2008/56/EC] Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy
- [Directive 2008/98/EC] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives
- [ISO 19105] EN ISO 19105:2000, Geographic information -- Conformance and testing
- [ISO 19107] EN ISO 19107:2005, Geographic Information – Spatial Schema
- [ISO 19108] EN ISO 19108:2005, Geographic Information – Temporal Schema
- [ISO 19108-c] ISO 19108:2002/Cor 1:2006, Geographic Information – Temporal Schema, Technical Corrigendum 1
- [ISO 19111] EN ISO 19111:2007 Geographic information - Spatial referencing by coordinates (ISO 19111:2007)
- [ISO 19115] EN ISO 19115:2005, Geographic information – Metadata (ISO 19115:2003)
- [ISO 19118] EN ISO 19118:2006, Geographic information – Encoding (ISO 19118:2005)
- [ISO 19135] EN ISO 19135:2007 Geographic information – Procedures for item registration (ISO 19135:2005)

[ISO 19139] ISO/TS 19139:2007, Geographic information – Metadata – XML schema implementation

[ISO 19157] ISO/DIS 19157, Geographic information – Data quality

[OGC 06-103r4] Implementation Specification for Geographic Information - Simple feature access – Part 1: Common Architecture v1.2.1

NOTE This is an updated version of "EN ISO 19125-1:2004, Geographic information – Simple feature access – Part 1: Common architecture".

[Regulation 1205/2008/EC] Regulation 1205/2008/EC implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata

[Regulation 976/2009/EC] 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

[Regulation 1089/2010/EC] Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services

2.4 Terms and definitions

General terms and definitions helpful for understanding the INSPIRE data specification documents are defined in the INSPIRE Glossary¹.

Specifically, for the theme *Area Management/Restriction/Regulation Zones and Reporting Units*, the following terms are defined:

(1) manage

Plan, perform, monitor and control activities to achieve specific legally defined environmental objectives.

(2) restrict

Prohibit or limit certain activities, to only be performed within specific bounds and/or time periods, in order to achieve a certain purpose according to legally defined responsibilities or obligations.

(3) regulate

Monitor and control certain activities (to permit, promote, prohibit, or restrict) to achieve legally defined environmental objectives. A regulated activity may require that if the environmental status is degraded then particular actions must be enacted to restore good environmental status.

NOTE 1: In specific cases, a regulative regime may define a set of acceptable limit/threshold values to protect human health or the environment.

NOTE 2: The distinction between regulation and restriction is not always clear, since restriction of activities implies that they are regulated.

(4) report

¹ The INSPIRE Glossary is available from <http://inspire-registry.jrc.ec.europa.eu/registers/GLOSSARY>

Evaluate the effectiveness of environmental policies and publish data and information (i.e. spatial data, observations, statistics, indicators) that can be used to assess progress towards maintaining or improving good environmental status and achievement of policy objectives.

NOTE 1: Member States shall regularly provide data and information to a responsible authority such as the Commission (i.e. reporting) that can be analysed to assess the state of the environment.

NOTE 2: Reporting data and information can be published in near-real time (e.g. observations) or published on a regular schedule (e.g. annually, 3 year intervals), as defined in the relevant legislative instrument. Reporting data and information is often made publicly available after delivery to the relevant authority.

(5) reporting unit

Spatial object that provides the spatial reference for any non-spatial data exchanged under environmental reporting obligations.

(6) legal instrument

A document that specifies legal obligations, including, but not limited to, international conventions, laws and legal acts or implementing regulations at any administrative level.

(7) integrated coastal zone management

Integrated coastal zone management is a dynamic process for the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts.

SOURCE: Protocol on Integrated Coastal Zone Management in the Mediterranean - signed in Madrid on 20-21 January 2008.

(8) climate

The statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. These quantities are most often surface variables such as temperature, precipitation, and wind.

SOURCE Intergovernmental Panel for Climate Change – IPCC, IPCC Fourth Assessment Report, Glossary: <http://www.ipcc.ch/pdf/glossary/ar4-wg1.pdf>

NOTE 1 The classical period is 30 years, as defined by the World Meteorological Organization (WMO).

2.5 Symbols and abbreviations

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XML EXtensible Markup Language How the Technical Guidelines map to the Implementing Rules

The schematic diagram in Figure 4 gives an overview of the relationships between the INSPIRE legal acts (the INSPIRE Directive and Implementing Rules) and the INSPIRE Technical Guidelines. The INSPIRE Directive and Implementing Rules include legally binding requirements that describe, usually on an abstract level, *what* Member States must implement.

In contrast, the Technical Guidelines define *how* Member States might implement the requirements included in the INSPIRE Implementing Rules. As such, they may include non-binding technical requirements that must be satisfied if a Member State data provider chooses to conform to the Technical Guidelines. Implementing these Technical Guidelines will maximise the interoperability of INSPIRE spatial data sets.

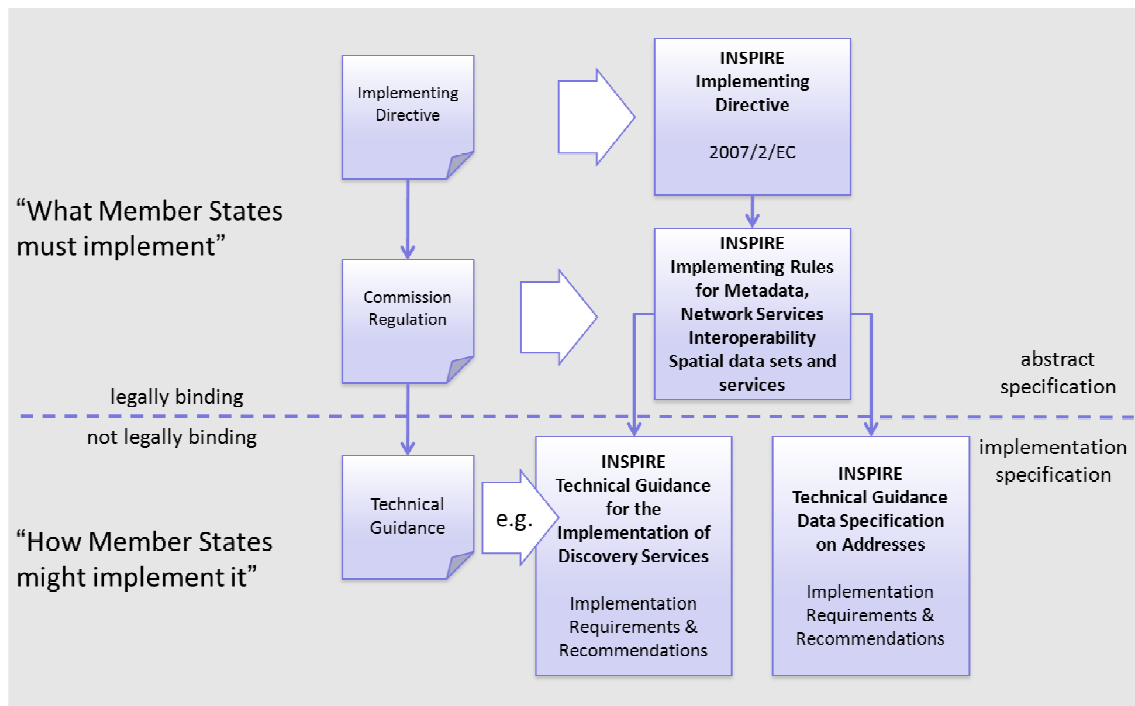


Figure 4 - Relationship between INSPIRE Implementing Rules and Technical Guidelines

2.5.1 Requirements

The purpose of these Technical Guidelines (Data specifications on *Area Management/Restriction/Regulation Zones and Reporting Units*) is to provide practical guidance for implementation that is guided by, and satisfies, the (legally binding) requirements included for the spatial data theme *Area Management/Restriction/Regulation Zones and Reporting Units in the Regulation (Implementing Rules) on interoperability of spatial data sets and services*. These requirements are highlighted in this document as follows:

IR Requirement
Article / Annex / Section no.
Title / **Heading**

This style is used for requirements contained in the Implementing Rules on interoperability of spatial data sets and services (Commission Regulation (EU) No 1089/2010).

For each of these IR requirements, these Technical Guidelines contain additional explanations and examples.

NOTE The Abstract Test Suite (ATS) in Annex A contains conformance tests that directly check conformance with these IR requirements.

Furthermore, these Technical Guidelines may propose a specific technical implementation for satisfying an IR requirement. In such cases, these Technical Guidelines may contain additional technical requirements that need to be met in order to be conformant with the corresponding IR requirement *when using this proposed implementation*. These technical requirements are highlighted as follows:

TG Requirement XThis style is used for requirements for a specific technical solution proposed in these Technical Guidelines for an IR requirement.

NOTE 1 Conformance of a data set with the TG requirement(s) included in the ATS implies conformance with the corresponding IR requirement(s).

NOTE 2 In addition to the requirements included in the Implementing Rules on interoperability of spatial data sets and services, the INSPIRE Directive includes further legally binding obligations that put additional requirements on data providers. For example, Art. 10(2) *requires that Member States shall*, where appropriate, decide by mutual consent on the depiction and position of geographical features whose location spans the frontier between two or more Member States. General guidance for how to meet these obligations is provided in the INSPIRE framework documents.

Recommendations

In addition to IR and TG requirements, these Technical Guidelines may also include a number of recommendations for facilitating implementation or for **further** and coherent development of an interoperable infrastructure.

Recommendation X Recommendations are shown using this style.

NOTE The implementation of recommendations is not mandatory. Compliance with these Technical Guidelines or the legal obligation does not depend on the fulfilment of the recommendations.

Conformance

Annex A includes the abstract test suite for checking conformance with the requirements included in these Technical Guidelines and the corresponding parts of the Implementing Rules (Commission Regulation (EU) No 1089/2010).