



INSPIRE

Infrastructure for Spatial Information in Europe

INSPIRE Monitoring and Reporting Implementing Rule – Draft v3.0

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DISCLAIMER

It is important to note that this document is not a draft Implementing Rule, but a document that is a basis for the development of the legal text of the INSPIRE Implementing Rules.

The document will be publicly available as a 'non-paper', as it does not represent an official position of the Commission, and as such can not be invoked in the context of legal procedures.

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REGULATION/EC

implementing Directive 2007/2/EC of the European Parliament and of the Council as regards monitoring and reporting

THE COMMISSION OF THE EUROPEAN COMMUNITIES

Having regards to the Treaty establishing the European Community,

Having regard to 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), and in particular Article 21(4) thereof,

Whereas:

(1) Directive 2007/2/EC lays down general rules for the establishment of the Infrastructure for Spatial Information in the European Community. The wide diversity of formats and structures in which spatial data sets are organised and accessed in the Community requires an adequate monitoring and reporting of the progress made as a consequence of the implementation of Directive 2007/2/EC and the necessary common implementing rules. The implementation of this Regulation is deeply correlated to the implementation of the other regulations and needs as input the completion of the other implementing rules to be finalised. It is why this Regulation will be progressive accordingly to the other IRs.

(2) The monitoring and reporting results are necessary to get a clear overview of the progress of the national spatial data infrastructures in conformity with the INSPIRE directive and regulations, in each of the Member States and at Community level. This overview is required for preparatory work for decisions concerning the implementation of Directive 2007/2/EC and for the future evolution of it and its common implementing rules, including future changes of this regulation.

(3) The monitoring and reporting will be accomplished by mean of a set of monitoring indicators and reporting framework to be applied by Member States.

(4) The results of monitoring and reports from Member States should be public in each Member State and accessible through a specific section of infrastructures for spatial information created by the Member State. They should also be public and accessible through a specific section on monitoring and reporting in the Inspire geo-portal at Community level, as defined in Article (15)

(5) This Regulation doesn't preclude the possibility to adopt guidelines established and kept up to date by the Commission, in particular when it is necessary to ensure a common understanding of the monitoring indicators and the reporting framework. This Regulation doesn't preclude either the development of tools, in particular to facilitate the monitoring and reporting activities of Member States

(6) The measures provided in this Regulation are in accordance with the opinion of the Committee established by Article 22 of Directive 2007/2/EC,

HAS ADOPTED THIS REGULATION

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CHAPTER I - OBJECTIVE AND SCOPE

1 - Objective

1. The purpose of the implementing rules on monitoring and reporting is to lay down detailed rules on how Member States shall monitor and report the implementation of the Directive, and the use of their infrastructures for spatial information. A consistent framework for monitoring and reporting is required as input for decisions concerning the implementation of the Directive and for the future evolution of INSPIRE.
2. The implementing rules on monitoring and reporting are in accordance with the general rules laid down in the Directive, Article 21.
3. These implementing rules are addressed to the Member States.

2 - Scope

1. This Regulation set out the implementing rules for monitoring the implementation and use of the infrastructures of the Member States for spatial information, in accordance with Article 21(1) of the Directive. The following components of the infrastructures for spatial information are monitored: metadata, harmonisation and interoperability of spatial data sets, spatial data services.
2. This regulation set out the implementing rules for reporting, in accordance with Articles 21(2) and 21(3) of the Directive.
3. These implementing rules define the methodology used to define and calculate indicators, which shall be used by Member States to monitor the implementation of the Directive, as well as the data needed.
4. The monitoring and reporting done by the Member States will be used by the Commission to prepare and present to the European Parliament and to the Council a progress report on the implementation of the Directive in the European Union in accordance with Article 23 of the Directive. The Members States shall make the results of this monitoring and reporting accessible to the Commission and to the public on a permanent basis.

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CHAPTER II - DEFINITIONS AND CONCEPTS RELATED TO MONITORING AND REPORTING

3 - Definitions

The definitions of Article 3 of the Directive apply to these implementing rules.

For the purpose of these implementing rules, the following definitions shall apply.

Maximum area	Area where a Member State has and/or exercises jurisdictional rights (cfr. Art. 4, § 1, a of the INSPIRE directive)
Relevant Area	Is that part of the maximum area for which a spatial dataset needs to provide a coverage
Actual area	Is that part of the relevant area for which a spatial data set is currently providing coverage
Arrangement	A provision or plan mutually agreed between parties that could include, inter alia, a law, licence, or a framework agreement

4 - Concepts and methodology

1. A monitoring mechanism shall be set up by the Member States to collect data from all the appropriate stakeholders at various levels of public authority. The data collected shall be used to calculate indicators and detailed indicators of these implementing rules for each Member State at the national level.
2. The basis for monitoring at Member State level is a list of spatial data sets grouped per theme and by Annex as defined in the Directive, and a list of spatial data services grouped by service type as defined in Article 11(1)(a-e) of the Directive. These lists shall be established and updated annually by the Member State.
3. The indicators described in these implementing rules have been chosen in order to be clear to Member States, measurable, capable of showing progress of the main elements and goals of the Directive and of practical use, particularly to the Member States and the Commission.
4. Each indicator is described in the following way:
 - a) reference to the objective in accordance with the Articles of the Directive;
 - b) definition of the indicator and code used to refer to it in a short way;
 - c) list of supplemented detailed indicators where appropriate, with the codes used to refer to them;
 - d) data to be collected to calculate the detailed indicators and the indicator;
 - e) calculation method for the detailed indicators and the indicator.

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CHAPTER III - MONITORING THE IMPLEMENTATION OF METADATA REQUIREMENTS

5 - Monitoring the existence of metadata

1. In accordance with Article 5(1) of the Directive, Member States shall ensure that metadata are created for each of the spatial data sets corresponding to the themes listed in the Annexes of the Directive, and for all the spatial data services listed in the Directive. Metadata shall be kept up to date.

2. Member States shall monitor the existence of metadata (MDi1). This indicator measures the extent to which metadata exist for the spatial data services and for the spatial data sets corresponding to the themes listed in the Annexes of the Directive.

3. The indicator MDi1 is supplemented by the following detailed indicators:

- a) existence of metadata for the spatial data sets of the themes in Annex I of the Directive (MDi1.1);
- b) existence of metadata for the spatial data sets of the themes in Annex II of the Directive (MDi1.2);
- c) existence of metadata for the spatial data sets of the themes in Annex III of the Directive (MDi1.3);
- d) existence of metadata for the spatial data services (MDi1.4).

4. Member States shall collect the following data for the spatial data sets and services of the list as defined in section 4(2) of these implementing rules:

- a) for each spatial data set whether (value 1) or not (value 0) metadata exist;
- b) for each spatial data service whether (value 1) or not (value 0) metadata exist.

5. Member States shall calculate the detailed indicators and the indicator as follows:

Detailed indicators:

- a) count of the spatial data sets for Annex I that have metadata, divided by the number of spatial data sets for that Annex (MDi1.1);
- b) count of the spatial data sets for Annex II that have metadata, divided by the number of spatial data sets for that Annex (MDi1.2);
- c) count of the spatial data sets for Annex III that have metadata, divided by the number of spatial data sets for that Annex (MDi1.3);
- d) count of the spatial data services that have metadata, divided by the number of spatial data services (MDi1.4);

Indicator:

- e) count of all the spatial data sets and spatial data services that have metadata, divided by the number of all spatial data sets and services (MDi1).

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6 - Monitoring the conformance of metadata

1. In accordance with Articles 5(2), 5(3) and 5(4) of the Directive, Member States shall ensure that the metadata for the spatial data sets and for the spatial data services are conformant with the requirements of the implementing rules on metadata.

2. Member States shall monitor the conformance of metadata for spatial data sets and services (MDi2). This indicator measures the extent to which metadata contain the necessary information according to the specifications as defined in the implementing rules on metadata.

3. The indicator MDi2 is supplemented by the following detailed indicators:

- a) conformance of metadata for the spatial data sets of the themes in Annex I of the Directive (MDi2.1);
- b) conformance of metadata for the spatial data sets of the themes in Annex II of the Directive (MDi2.2);
- c) conformance of metadata for the spatial data sets of the themes in Annex III of the Directive (MDi2.3);
- d) conformance of metadata for spatial data services (MDi2.4).

4. Member States shall collect the following data for the spatial data sets and services of the list as defined in section 4(2) of these implementing rules:

- a) for each spatial data set whether (value 1) or not (value 0) metadata are conformant with the implementing rules on metadata;
- b) for each spatial data service whether (value 1) or not (value 0) metadata are conformant with the implementing rules on metadata.

5. Member States shall calculate the detailed indicators and the indicator as follows:

Detailed indicators:

- a) count of the spatial data sets for Annex I that have conformant metadata, divided by the number of spatial data sets for that Annex (MDi2.1);
- b) count of the spatial data sets for Annex II that have conformant metadata, divided by the number of spatial data sets for that Annex (MDi2.2);
- c) count of the spatial data sets for Annex III that have conformant metadata, divided by the number of spatial data sets for that Annex (MDi2.3);
- d) count of the spatial data services that have conformant metadata, divided by the number of spatial data services (MDi2.4);

Indicator:

- e) count of all the spatial data sets and services that have conformant metadata, divided by the number of all spatial data sets and services (MDi2).

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CHAPTER IV - MONITORING THE IMPLEMENTATION OF THE REQUIREMENTS FOR INTEROPERABILITY OF SPATIAL DATA SETS

7 - Monitoring the extent of spatial data sets

1. In accordance with Articles 1, 4(1) and 4(4) of the Directive, Member States shall ensure that their existing spatial data sets contribute to the European infrastructure for spatial information.

2. Member States shall monitor the extent of the spatial data sets (DSi1). This indicator measures the extent of the Member States territory covered by the existing spatial data sets.

3. The indicator (DSi1) is supplemented by the following detailed indicators:

- a) extent of the spatial data sets of the themes in Annex I of the Directive (DSi1.1);
- b) extent of the spatial data sets of the themes in Annex II of the Directive (DSi1.2);
- c) extent of the spatial data sets of the themes in Annex III of the Directive (DSi1.3).

4. Member States shall collect the following data for the spatial data sets of the list as defined in section 4(2) of these implementing rules:

- a) the actual area, expressed in km²;
- b) the relevant area, expressed in km².

5. Member States shall calculate the detailed indicators and the indicator as follows:

Detailed indicators:

- a) sum of the actual areas covered by the spatial data sets for Annex I, divided by the sum of the relevant areas of the spatial data sets for that Annex (DSi1.1);
- b) sum of the actual areas covered by spatial data sets for Annex II, divided by the sum of the relevant areas of the spatial data sets for that Annex (DSi1.2);
- c) sum of the actual areas covered by spatial data sets for Annex III, divided by the sum of the relevant areas of the spatial data sets for that Annex (DSi1.3);

Indicator:

- d) sum of the actual areas covered by all the spatial data sets, divided by the sum of the relevant areas of all the spatial data sets (DSi1).

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8 - Monitoring the conformance of spatial data sets

1. In accordance with Articles 7(1), 7(3), 7(4) and 8 of the Directive, Member States shall ensure that spatial data sets are conformant with the requirements of the implementing rules on data specifications, either through the adaptation of existing spatial data sets themselves or through the intermediary solution of transformation services according to the Directives implementing rules.

2. Member States shall monitor the conformance of spatial data sets (DSi2). This indicator measures the conformance with the implementing rules on data specifications specifically for spatial data sets having conformant metadata.

3. The indicator (DSi2) is supplemented by the following detailed indicators:

- a) conformance of the spatial data sets of the themes in Annex I (DSi2.1);
- b) conformance of the spatial data sets of the themes in Annex II (DSi2.2);
- c) conformance of the spatial data sets of the themes in Annex III (DSi2.3).

4. Member States shall collect the following data for the spatial data sets of the list as defined in section 4(2) of these implementing rules:

- a) for each data set, whether (value 1) or not (value 0) data have conformant metadata and are conformant with the implementing rules on data specifications.

5. Member States shall calculate the detailed indicators and the indicator as follows:

Detailed indicators:

- a) count of the spatial data sets for Annex I that have conformant metadata and are conformant, divided by the number of spatial data sets for that Annex (DSi2.1);
- b) count of the spatial data sets for Annex II that have conformant metadata and are conformant , divided by the number of spatial data sets for that Annex (DSi2.2);
- c) count of the spatial data sets for Annex III that have conformant metadata and are conformant , divided by the number of spatial data sets for that Annex (DSi2.3);

Indicator:

- d) count of all the spatial data sets that have conformant metadata and are conformant , divided by the number of all spatial data sets (DSi2).

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CHAPTER V - MONITORING THE IMPLEMENTATION OF SPATIAL DATA SERVICES REQUIREMENTS

9 - Monitoring the accessibility of metadata

1. In accordance with Article 11(1)(a) and 11(2) of the Directive, Member States shall establish and operate discovery services making it possible to search for spatial data sets and services on the basis of the content of the corresponding metadata, and to display its content.

2. Member States shall monitor the accessibility of metadata (NSi1). This indicator measures the extent to which it is possible to search for spatial data sets and services based on their corresponding metadata.

3. The indicator NSi1 is supplemented by the following detailed indicators:

- a) accessibility of metadata about spatial data sets (NSi1.1);
- b) accessibility of metadata about spatial data services (NSi1.2).

4. Member States shall collect the following data for the spatial data sets and services of the list as defined in section 4(2) of these implementing rules:

- a) for each spatial data set, a discovery service exists (value 1) or doesn't (value 0);
- b) for each spatial data service, a discovery service exists (value 1) or doesn't (value 0)

5. Member States shall calculate the detailed indicators and the indicator as follows:

Detailed indicators:

- a) count of spatial data sets for which a discovery service exists, divided by the number of spatial data sets (NSi1.1);
- b) count of spatial data services for which a discovery service exists, divided by the number of spatial data services (NSi1.2);

Indicator:

- c) count of all the spatial data sets and services for which a discovery service exists, divided by the number of all spatial data sets and services (NSi1).

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10 - Monitoring the accessibility of spatial data sets

1. In accordance with Articles 7(1), 11(1)(b) and 11(1)(c) of the Directive, Member States shall establish and operate a network of view and download services.

2. Member States shall monitor the accessibility of spatial data sets through view and download services. This indicator measures to which extent, it is possible to view and/or download spatial data sets (NSi2).

3. The indicator (NSi2) is supplemented by the following detailed indicators:

- a) accessibility through view services (NSi2.1);
- b) accessibility through download services (NSi2.2).

4. Member States shall collect the following data for the spatial data sets of the list as defined in section 4(2) of these implementing rules:

- a) for each data set, a view service exists (value 1) or doesn't (value 0);
- b) for each data set, a download service exists (value 1) or doesn't (value 0);
- c) for each data set, both download and view services exist (value 1) or do not (value 0).

5. Member States shall calculate the detailed indicators and the indicator as follows:

Detailed indicators:

- a) count of spatial data sets for which a view service exists, divided by the number of spatial data sets (NSi2.1);
- b) count of spatial data sets for which a download service exists, divided by the number of spatial data sets (NSi2.2).

Indicator:

- c) count of spatial data sets for which both view and download services exist, divided by the number of spatial data sets (NSi2).

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11 - Monitoring the use of spatial data services

1. In accordance with Articles 21(1) and 21(2.c) of the Directive, Member States shall collect information on the use of the infrastructure.

2. Member States shall monitor the use of spatial data services (NSi3). This indicator measures the use of the different types of services that have been implemented by the Member States.

3. The indicator (NSi3) is supplemented by the following detailed indicators:

- a) use of discovery services (NSi3.1);
- b) use of view services (NSi3.2);
- c) use of download services (NSi3.3);
- d) use of transformation services (NSi3.4);
- e) use of invoke services (NSi3.5).

4. Member States shall collect the following data for the spatial data services of the list as defined in article 4(2) of these implementing rules:

- a) for each discovery service, the annual number of service requests;
- b) for each view service, the annual number of service requests;
- c) for each download service, the annual number of service requests;
- d) for each transformation service, the annual number of service requests;
- e) for each invoke service, the annual number of service requests.

5. Member States shall calculate the detailed indicators and the indicator as follows:

Detailed indicators:

- a) the sum of the annual number of service requests for all the discovery services, divided by the number of discovery services (NSi3.1);
- b) the sum of the annual number of service requests for all the view services, divided by the number of view services (NSi3.2).
- c) the sum of the annual number of service requests for all the download services, divided by the number of download services (NSi3.3);
- d) the sum of the annual number of service requests for all the transformation services, divided by the number of transformation services (NSi3.4);
- e) the sum of the annual number of service requests for all the invoke services, divided by the number of invoke services (NSi3.5).

Indicator:

- f) the sum of the annual number of service requests for all the services, divided by the number of services (NSi3).

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12 - Monitoring the conformance of spatial data services

1. In accordance with Articles 11(1), 11(2), 11(3) and 16(a) of the Directive, Member States shall ensure that spatial data services are conformant with the requirements of the implementing rules on services.

2. Member States shall monitor the conformance of spatial data services (NSi4). This indicator measures the conformance with the implementing rules on services, specifically for spatial data services having conformant metadata.

3. The indicator (NSi4) is supplemented by the following detailed indicators.

- a) conformance of discovery services (NSi4.1);
- b) conformance of view services (NSi4.2);
- c) conformance of download services (NSi4.3);
- d) conformance of transformation services (NSi4.4);
- e) conformance of invoke services (NSi4.5).

4. Member States shall collect the following data for the spatial data services of the list as defined in section 4(2) of these implementing rules:

For each spatial data service, whether (value 1) or not (value 0) the service has conformant metadata and is conformant with the implementing rules on services.

5. Member States shall calculate the detailed indicators and the indicator as follows:

Detailed indicators:

- a) count of the discovery services that have conformant metadata and are conformant, divided by the number of all the discovery services (NSi4.1);
- b) count of the view services that have conformant metadata and are conformant, divided by the number of all the view services (NSi4.2);
- c) count of the download services that have conformant metadata and are conformant, divided by the number of all the download services (NSi4.3);
- d) count of the transformation services that have conformant metadata and are conformant, divided by the number of all the transformation services (NSi4.4);
- e) count of the invoke services that have conformant metadata and are conformant, divided by the number of all the transformation services (NSi4.5).

Indicator:

- f) count of all the spatial data services that have conformant metadata and are conformant, divided by the number of all spatial data services (NSi4).

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CHAPTER VI - REPORTING

13 - Organisation, coordination and quality assurance

1. In accordance with Article 21(2)(a) of the Directive, Member States shall report the network and coordination of stakeholders involved in the implementation of the Directive.

The report shall comprise:

- a) the name, contact information, role and responsibilities of the national contact point;
- b) the name, contact information, role and responsibilities, organisation chart of the coordinating structure supporting the national contact point;
- c) a description of the relationship with third parties;
- d) an overview of the working practices and procedures of the coordinating body.

2. Member States shall report on the organisation of the quality assurance processes within their infrastructures for spatial information.

The report shall comprise:

- a) a description of the quality assurance procedures including the maintenance of the infrastructure for spatial information;
 - b) an analysis of the quality assurance problems related to development of the infrastructure for spatial information based, inter alia, on the results of the monitoring indicators;
 - c) measures taken to improve the quality assurance of the infrastructure;
 - d) if available, a description of the setup of a certification mechanism.
3. Member States shall provide comments on the monitoring and reporting process including circumstances peculiar to their country.

14 - Contribution to the functioning and coordination of the infrastructure

In accordance with Article 21 (2)(b) of the Directive, Member States shall report on the contribution of the stakeholders involved in the implementation of the Directive. The report shall comprise:

- a) an overview of the various stakeholders actively contributing to the implementation of the infrastructure for spatial information according to the following typology: users, data producers, service providers, coordinating bodies;
- b) a description of their role in the development and maintenance of the infrastructure for spatial information (inter alia, in the coordination, data and metadata provision, management, development and hosting of services);
- c) a general description of the main measures taken to facilitate the sharing of spatial data sets and services between public authorities and a description (with examples) of how sharing has improved as a result;
- d) a description of how the stakeholders cooperate including the existence of any written framework for action, regulations, timetables and distribution of tasks;
- e) a description of the access to the services through the Inspire geo-portal, as referred to in Article 15 (2).

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15 - Usage of the infrastructure for spatial information

In accordance with Article 21 (2)(c) of the Directive, Member States shall report on the usage of the infrastructure for spatial information. This part of the report shall comprise comments on:

- a) the use of the spatial data services of the infrastructure for spatial information based, inter alia, on the results of the monitoring indicators;
- b) the use of spatial data sets of the three Annexes by public authorities, including what and how, with particular attention to good examples in the field of environmental policy;
- c) if available, evidence to indicate usage of the infrastructure for spatial information by the general public;
- d) examples of cross-border usage and efforts made to improve cross-border consistency;
- e) how transformation services are used to achieve data interoperability.

16 - Data sharing arrangements

In accordance with Article 17 and 21 (2)(d) of the Directive, Member States shall report on the establishment of data sharing arrangements between public authorities, at the same level and between levels (i.e. national, regional and local), and with the institutions and bodies of the Community. The report shall include:

- a) an overview of data sharing arrangements that have been, or are being, created between public authorities, inter alia, framework type agreements, creative commons type agreements, one to one type agreements. If types of agreements are defined in the implementing rules on Data and Service Sharing, they shall be followed;
- b) an overview of data sharing arrangements that have been, or are being, created between public authorities and institutions of the Community, through examples of who is participating in data sharing arrangements for a particular spatial data set;
- c) a list of known barriers that inhibit the sharing of spatial data and services between public authorities, and between public authorities and the institutions of the Community; Member States shall describe the actions being taken to overcome these barriers.

17 - Cost and benefit aspects

In accordance with Article 21 (2)(e) of the Directive, Member States shall report on costs and benefits for the establishment and maintenance of the infrastructure for spatial information related directly to the implementation of the Directive. The report shall comprise:

- a) an estimate of costs caused by the implementation of the Directive;
- b) examples of benefits observed, inter alia, examples of the positive effects on policy preparation, implementation, evaluation within an administration, examples of improved service to the citizen as well as examples of cross-border-cooperation.

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CHAPTER VII - PHASED IMPLEMENTATION

18 - General provisions

Member States shall rely on a coordination structure referred to in Article 19(2) of Directive 2007/2/EC to collect data for monitoring and reporting. National Contact Points of Member States shall provide the monitoring and reporting information to the Commission.

The monitoring information and reports submitted to the Commission shall be made available to the public. All results of monitoring and reports shall at least be made available via the Internet or any other appropriate means of telecommunication internally to each Member State.

19 - Implementation of monitoring

Member States shall provide information on monitoring as defined in articles 5 to 12 of these implementing rules.

Member States shall provide the Commission with the following information:

- a) all the values of indicators and detailed indicators, presented in a percentage format;
- b) all the numerators and denominators of all detailed indicators and indicators;
- c) all the collected data referred to in the fourth paragraph of articles 5 to 12.

Monitoring is covering a calendar year, and shall be published by the 15th of May of the following year. Thereafter the results shall be updated at least every year. The first year of monitoring shall cover the period starting from the entry into force of this regulation.

20 - Implementation of reporting

Member States shall provide the Commission with information on reporting as defined in articles 13 to 18 of these implementing rules.

Member States shall provide the first report no later than the 15th of May 2010 and there after updated information every three years.

Reports shall cover three calendar years. The first report shall cover the period starting from the entry into force of this regulation to the end of the year.

CHAPTER VIII - FINAL PROVISIONS

21 - Final provisions

This Regulation shall enter into force on the day of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at ...