

Environmental Noise Directive Reporting guidelines

DF1_5 Noise sources

December 2021



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Summary

The reporting guidelines are intended to support reporters that will be conducting the submission of data required under the Environmental Noise Directive. The document provides an overview to the reporting process in Reportnet 3 and it describes the quality checks that are undertaken during the submission process. In addition to this, reporting examples are also provided. A key goal of this document is to ensure a common understanding among data providers working on the implementation of the Environmental Noise Directive. This document should further be of assistance to both thematic and IT experts.

Acknowledgements

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1 Introduction

1.1 Purpose of this document

This document aims to provide detailed guidance on the practicalities and processes for reporting environmental noise data to Reportnet 3, the central hub from which all e-Reporting activities handled by the EEA with Eionet and other partners will be performed.

In this context, a user is assumed to be a representative of an EU Member State or other reporting country who is submitting relevant country-level noise data to Reportnet 3.

These reporting guidelines are intended to support reporting countries in providing high quality noise reports in an efficient manner following the new Implementing Decision on *Setting up a mandatory data repository and a mandatory digital information exchange mechanism according to Directive 2002/49/EC*.

Specifically, this document is focused on the reporting of DF1_5 Noise sources and covers :

- The legal basis of the END requirements addressed in the Implementing Decision on Setting up a mandatory data repository and a mandatory digital information exchange mechanism according to Directive 2002/49/EC
- The technical requirements for the data submission
- The structure of Reportnet 3 in relation to this dataflow
- The practicalities involved in reporting and submitting data using Reportnet 3

These reporting guidelines are intended to be a stand-alone document that contains all necessary information for reporting. However, other documents and video recordings may offer additional detail on certain aspects and are available in the webpage :

<https://www.eionet.europa.eu/reportnet/docs/noise>.

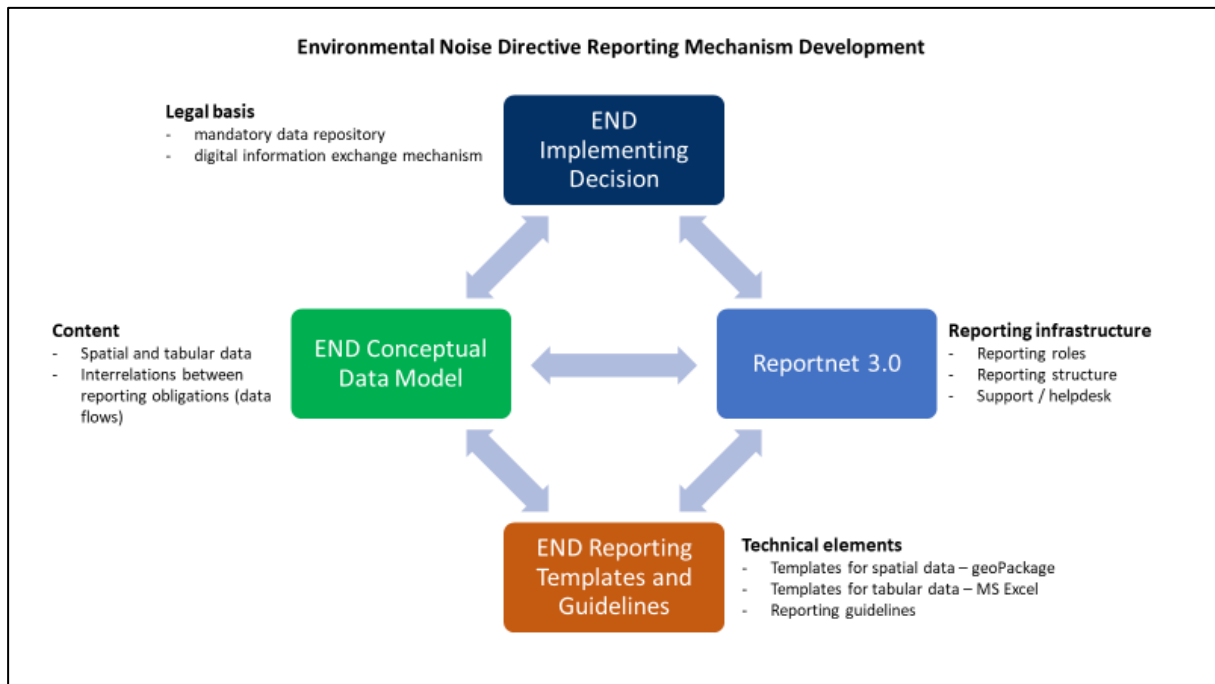
1.2 The legal basis

Reporting noise data under the Environmental Noise Directive (END) will occur in Reportnet 3 from 2022. The END reporting is defined in the Directive 2002/49/EC and the reporting requirements are further defined in the implementing decision *Setting up a mandatory data repository and a mandatory digital information exchange mechanism according to Directive 2002/49/EC*. The current reporting obligations of the Environmental Noise Directive have been adapted to also fulfil the new INSPIRE directive which is based on the harmonisation and sharing of spatial data and infrastructures based on the 2019 regulation¹ which amends different articles of the END. Firstly, the regulation obliges countries to produce *noise maps and action plans according to the Inspire Directive* and secondly, it obliges the EC and the EEA to develop a *mandatory digital information exchange mechanism* that countries have to use to report and share the data under the END directive.

Therefore, the use of the Reportnet 3 platform and the use of data that is INSPIRE compliant will be mandatory for the reporting of data under the END. In order to support countries in their reporting obligations, we developed new templates and a new Reporting system that fulfils both the END and the INSPIRE requirements.

¹ Regulation (EU) 2019/1010 of the European Parliament and of the Council of 5 June 2019 on the alignment of reporting obligations in the field of legislation related to the environment, and amending Regulations (EC) No 166/2006 and (EU) No 995/2010 of the European Parliament and of the Council, Directives 2002/49/EC, 2004/35/EC, 2007/2/EC, 2009/147/EC and 2010/63/EU of the European Parliament and of the Council, Council Regulations (EC) No 338/97 and (EC) No 2173/2005, and Council Directive 86/278/EEC (Text with EEA relevance). ELI: <http://data.europa.eu/eli/reg/2019/1010/oj>

Figure 1.1: Overview on new noise reporting mechanism



1.3 Alignment with the INSPIRE Directive

The alignment between the Environmental Noise Directive and the INSPIRE Directive has been included throughout the development process of establishing the mandatory digital information exchange mechanism.

Based on the legal basis, explained in the section above (1.2), the END conceptual data model has been developed on the basis of the INSPIRE conceptual data models for spatial data themes by combining specific END reporting requirements and INSPIRE requirements.

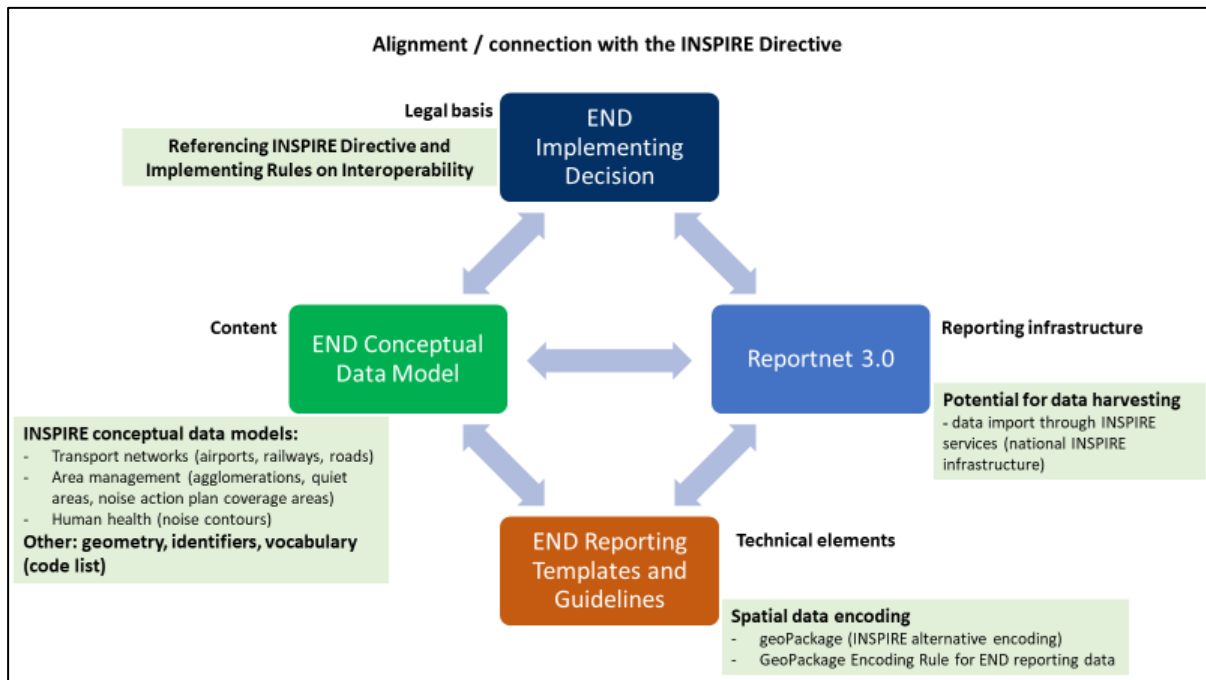
Further on, the END conceptual data model has been used to develop the encoding guidelines for the END spatial data in the GeoPackage file format. The encoding guidelines are based on the INSPIRE work on simplification and alternative encodings following the OGC standard on Geopackage². Development of the INSPIRE Good Practice for GeoPackage is supported by the INSPIRE ad-hoc Working Group on GeoPackage³ which joins interests of geospatial communities for GeoPackage implementation, and considers the END reported data in GeoPackage as one of the implementation examples.

The flexibility of the reporting infrastructure Reportnet 3 allows providing reported data into infrastructure in different ways, from importing files, programmatically by configuring the Reportnet 3 API, or in the future by harvesting INSPIRE services for spatial data.

² <https://www.geopackage.org/>

³ <https://github.com/INSPIRE-MIF/gp-geopackage-encodings>

Figure 1.2: Overview on the integration of INSPIRE directive into noise reporting obligations



2 Understanding the new END data model

The structure and details of the data model are described in the *Data model documentation* and can be accessed at <https://www.eionet.europa.eu/reportnet/docs/noise/data-model-documentation>.

In order to develop the data model for Noise Sources (DF1_5) we considered the following:

- the END requirements;
- the INSPIRE requirements for spatial data; and
- additional or optional data that links the spatial data to reference data set(s) available in the INSPIRE infrastructure.

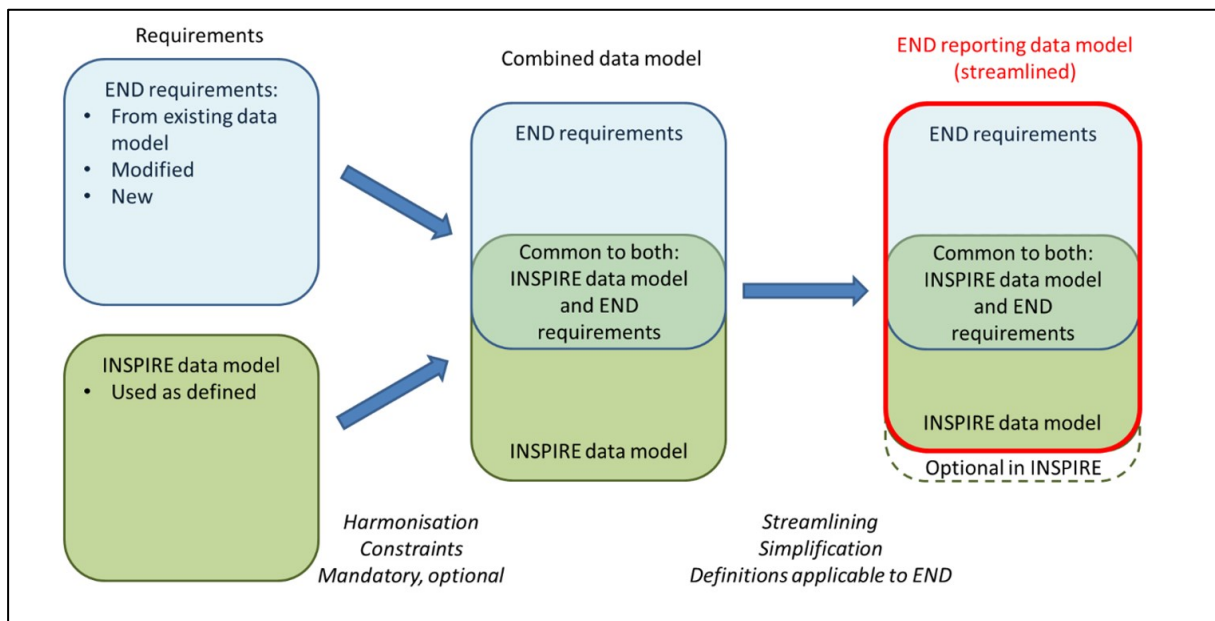
The streamlined data model combines and optimises all the input from the END and INSPIRE into one data model.

The data model described in the data model documentation is used for several interrelated purposes:

- It is used for presenting the content of the noise data that needs to be reported.
- It is used to develop the encoding templates in spatial file format GeoPackage
- It is used to design the schemas in Reportnet 3 that will be used for data reporting.

The relevant sections of the document for the reporting of dataflow DF1_5 are section 7, 8, 9 and 10.

Figure 2.1: Streamlined data model of END and the INSPIRE requirements



3 Understanding the basic principles of Reportnet 3 from a reporter point of view

The Regulation (EU) 2019/1010 on the alignment of reporting obligations in the field of legislation related to the environment and the implementing decision on setting up a mandatory data repository and a mandatory digital information exchange mechanism according to Directive 2002/49/EC, specifies that a digital information exchange mechanism should be used for reporting on all dimensions of the Environmental Noise Directive (END) by Member States.

A key element of the new reporting system, Reportnet 3 is being developed by the European Environment Agency. Reportnet 3 (<https://reportnet.europa.eu/>) is the next generation platform for reporting environmental data to the EEA and also host several reporting tasks for the European Commission. Reportnet 3 is a centralized e-Reporting platform, aiming at simplifying and streamlining the data flow steps across all environmental domains. The system acts as a one-stop-shop for all involved stakeholders.

Important links

- Reportnet 3 reporters' manual : https://www.eionet.europa.eu/reportnet/docs/prod/reporter_howto_reportnet3.0
- Training videos: <https://www.eionet.europa.eu/reportnet/docs/noise/videos>

Once the reporter is successfully logged-in in Reportnet 3, the dataflows assigned to the reporter will show up as illustrated in Figure 3.1. In Reportnet 3, the reporter is able to see the list of dataflows along with information related to the role, the delivery date, the dataflow name, the dataflow description, the associated obligation and instrument, the status of the reporting obligation.

Figure 3.1: Dataflows overview: main page and list of dataflows assigned to the reporter

The screenshot displays the 'Dataflows' overview page in Reportnet 3. At the top, there is a navigation bar with the European Union logo and the text 'Reportnet 3 > Dataflows'. A 'Capture region' button is visible in the top right. Below the navigation bar, there is a table of reporting dataflows. The table has columns for Name, Description, Legal instrument, and Obligation. A specific dataflow is highlighted in a purple box. The highlighted dataflow is 'Noise sources (DF1_5): REPORTNET TEST'. The role is 'LEAD REPORTER', the delivery date is '2023-01-01', the legal instrument is 'Environmental noise directive', and the obligation is 'Report on all major roads, railways, airports and agglomerations (DF1 and DF5)'. The delivery status is 'DRAFT' and the dataflow status is 'OPEN'.

Figure 3.2 shows the general structure of the dataflow view. Figure 3.3 shows more specifically the reporting window of the dataflow *Noise Sources (DF1_5)*.

Figure 3.2: Reportnet – Reporter view: general dataflow structure

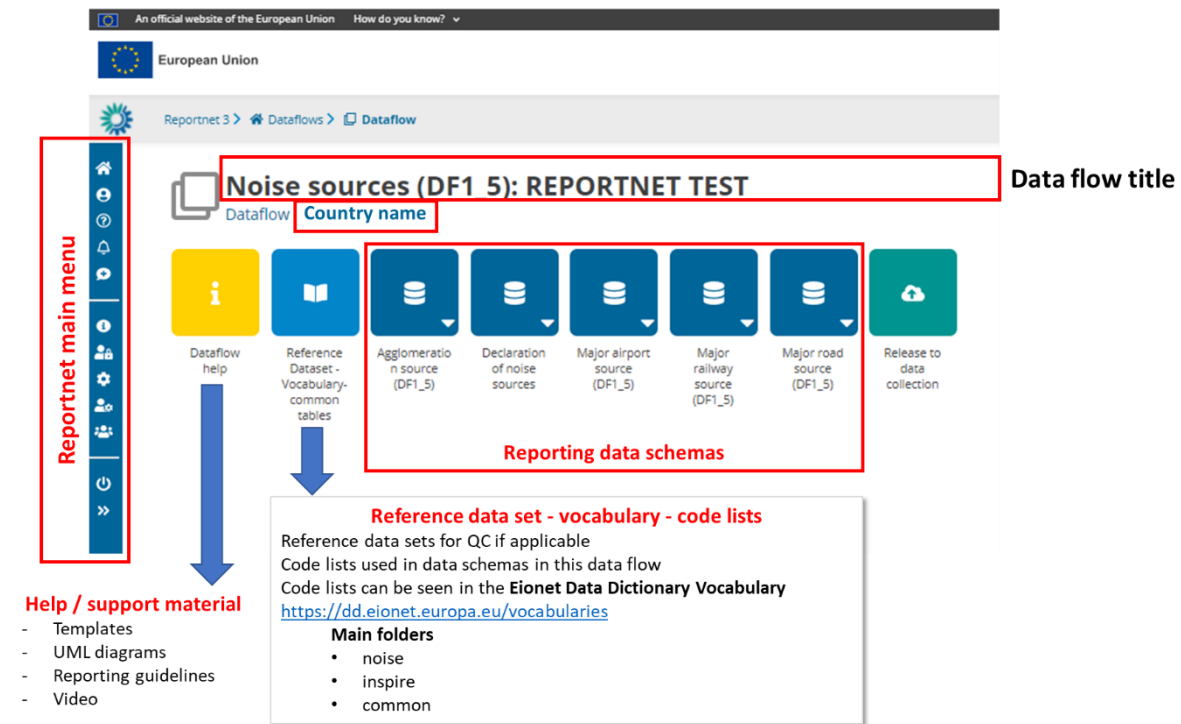
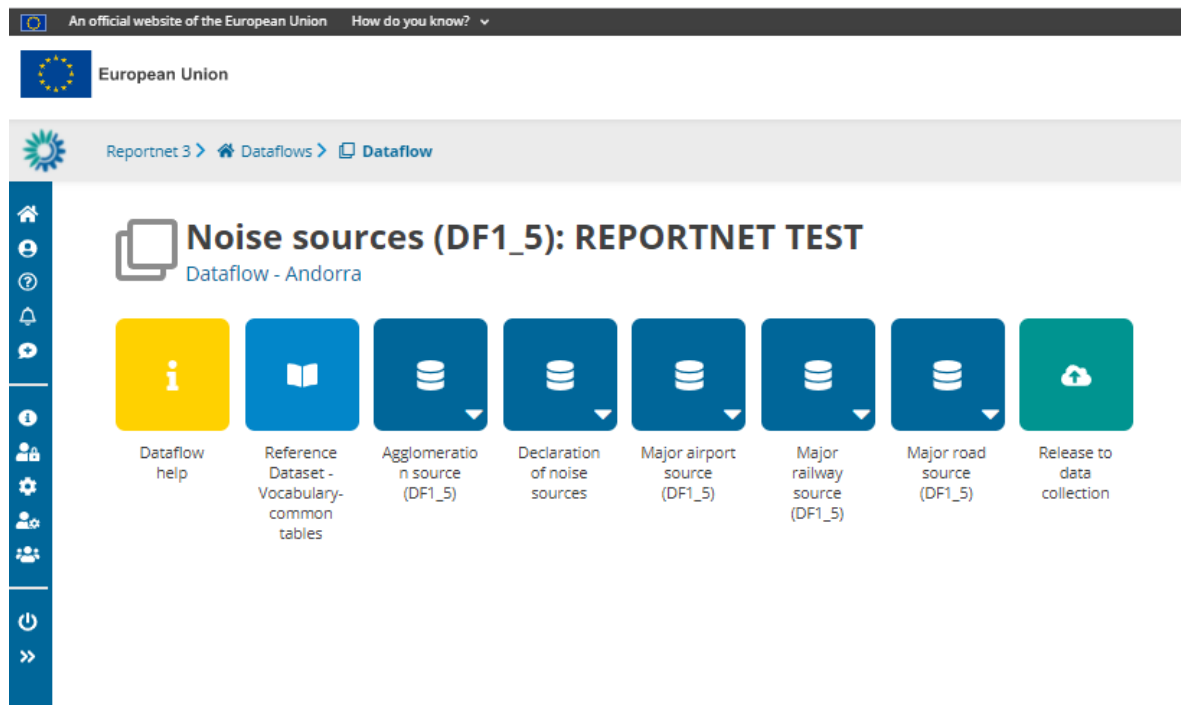


Figure 3.3: Reportnet – Reporter view: general dataflow structure for the END noise sources (DF1_5) reporting

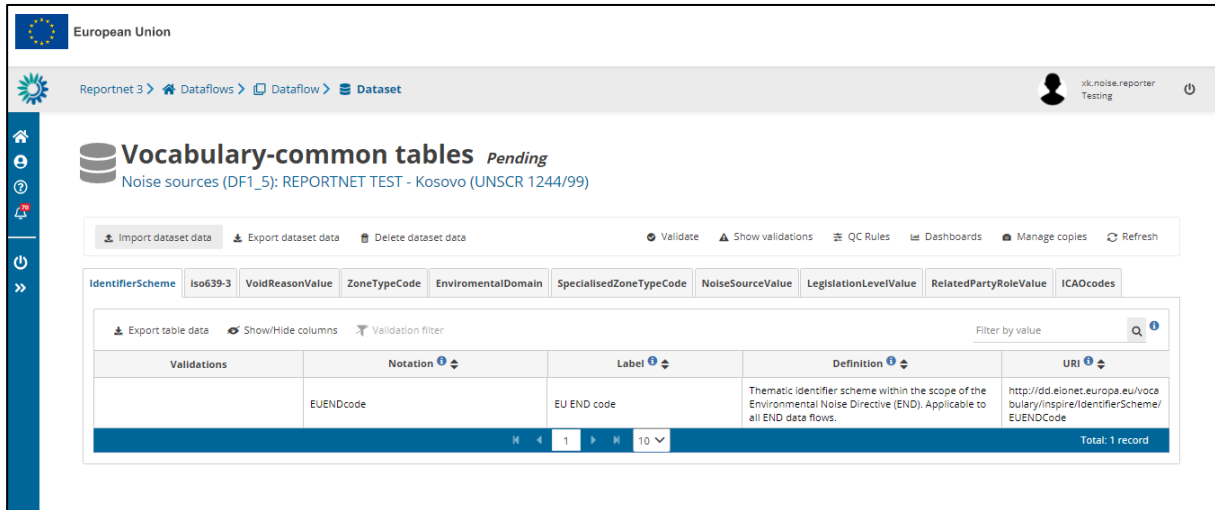


The dataflow is organised by schemas. In *Noise Sources (DF1_5)* there are four data schemas, one for each source (i.e. major roads, major railways, major airports and agglomerations). In addition,

another schema called “Declaration of noise sources”, which is a form for declaring the existing sources in the country, needs to be filled in in order to successfully upload the other schemas.

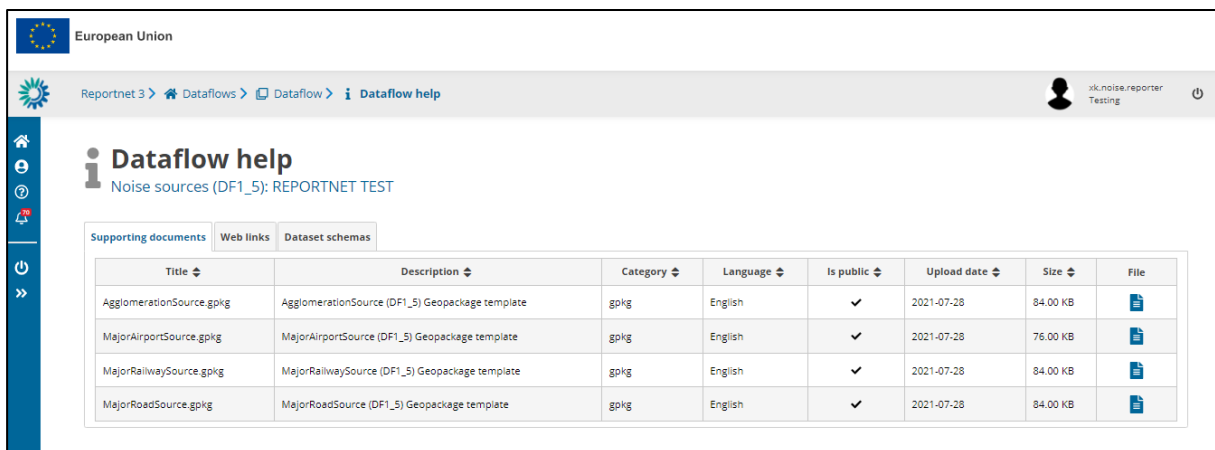
There is another data schema called *Reference dataset - Vocabulary – Common tables* . This is a read-only schema and contains the different code list that are applicable to this dataflow as well as several tables that are used for data validation (see Figure 3.4).

Figure 3.4: Reference dataset - Vocabulary – Common tables for Noise sources (DF1_5)



Finally, the *Dataflow Help* contains relevant help documents, including the GeoPackage templates, the links to all supporting materials, all the information on quality controls and validation rules, as well as the description of the different tables and attributes applicable to this dataflow (see Figure 3.5).

Figure 3.5: Dataflow help page: supporting documents tab, web links tab and dataset schemas tab



Refresh
 If the system doesn't react click refresh/reload page
 If problems with Reportnet 3 persist please contact helpdesk@reportnet.europa.eu

3.1 Validation

The following level error types have been implemented in Reportnet 3.:

- **BLOCKER:** Blocker messages indicate that the detected error will prevent data submission (data release is not possible).
- **ERROR:** Error messages indicate issues that clearly need corrective action by the data reporter.
- **WARNING:** Warning messages indicate issues that may be an error. Data reporters are expected to double-check relevant records.
- **INFO:** Informative message. Neutral or statistical feedback about the delivery, e.g. number of species reported.

The applicable validations and error types into the different data schemas of the *Noise Sources (DF1_5)* dataflow are outlined in Table 3.1.

Table 3.1: Applicable validation levels in the different schemas of Noise Sources (DF1_5) dataflow

	Declaration of noise sources	Agglomeration Source (DF1_5)	MajorAirport Source (DF1_5)	MajorRailway Source (DF1_5)	MajorRoad Source
Applicable validation level	Blocker Error	Blocker Error Warning Info	Blocker Error Warning Info	Blocker Error Warning Info	Blocker Error Warning Info

The validations (quality control - QC) are documented in the Reportnet 3 Data Flow Help schema.

Figure 3.6: Dataflow help – Details of the data schemas and applied validations

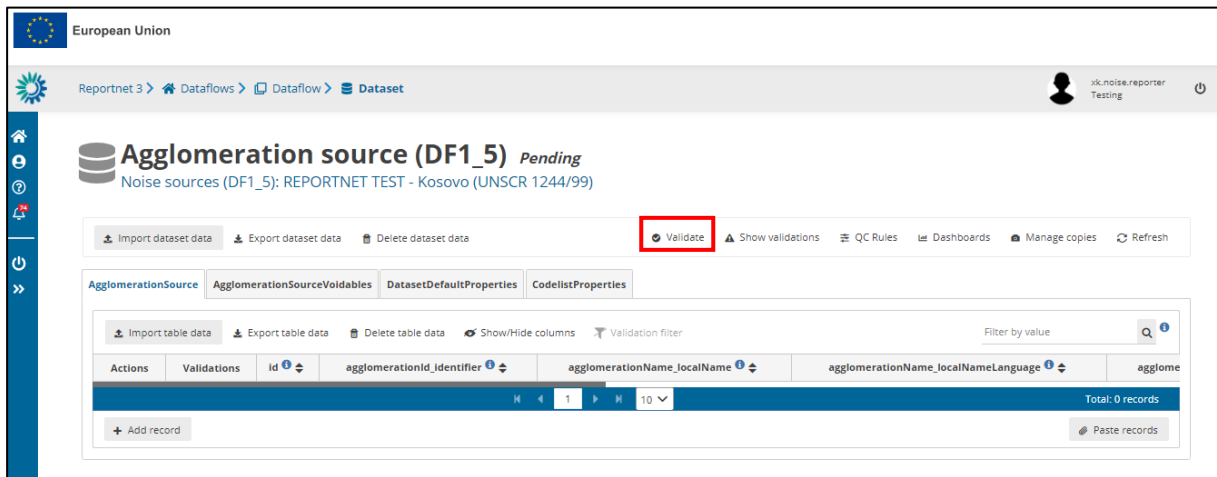
The screenshot shows the 'Dataflow help' page for 'Noise sources (DF1_5): REPORTNET TEST'. It features a navigation sidebar on the left and a main content area. The main content area includes tabs for 'Supporting documents', 'Web links', and 'Dataset schemas'. Under 'Dataset schemas', there is a list of schemas: 'Agglomeration source (DF1_5)', 'Declaration of noise sources', 'Major airport source (DF1_5)', 'Major railway source (DF1_5)', and 'Major road source (DF1_5)'. The 'Agglomeration source (DF1_5)' is selected and expanded, showing its 'Dataset description' (Part of a territory delimited by the Member State having a population in excess of 100,000 persons and a population density such that the Member State considers it to be an urbanised area.), 'Available in public' status (checked), 'Reference dataset' status (checked), and a 'Tables & Fields' section. The 'AgglomerationSource' table is expanded, showing its 'Description' (same as the dataset description), 'Read only' status (checked), 'Prefilled' status (checked), 'Fixed number of records' status (checked), and 'Mandatory table' status (checked).

Additionally, a copy of validations applicable to the Noise sources (DF1_5) dataflow is published in the Noise Eionet Portal for public consideration. Please note that the original information is always in the Reportnet 3 platform.

The detailed validations applicable to the Noise sources (DF1_5) data flow can be consulted in: <https://www.eionet.europa.eu/reportnet/docs/noise/validation-rules/>

Validations need to be run for each data schema. In each schema, data can be validated by clicking on “Validate” (Figure 3.7).

Figure 3.7: Validation of the data being loaded



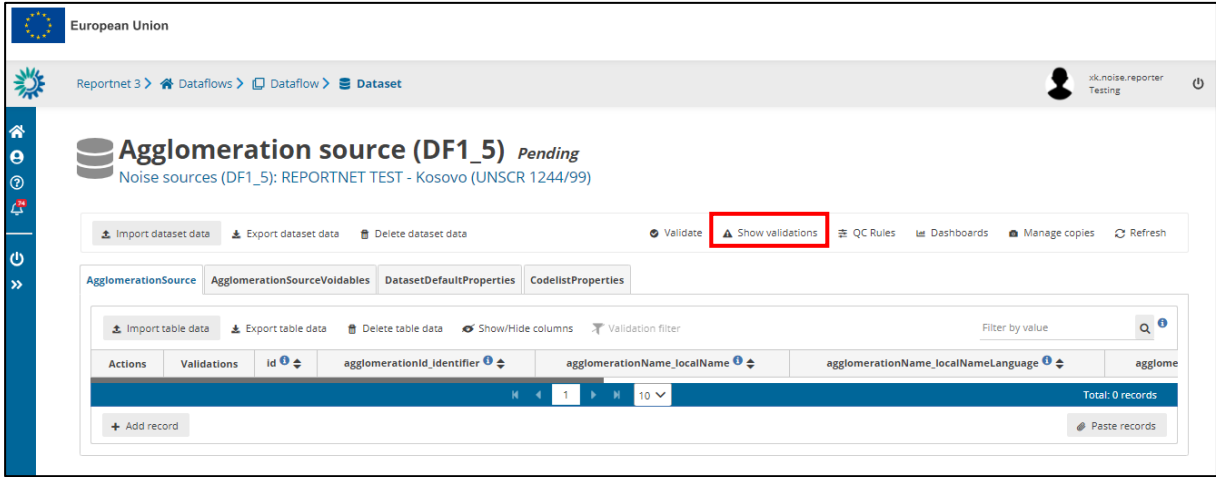
Once the validation has been performed a notification will pop up on the top-right hand of the screen. After clicking “Refresh”, errors, if any, will be displayed at four types:

- Field error
- Record error
- Table error
- Dataset error

The column “Validations” shows for each record which level of errors at field and record level can be found.

Finally, the button “Show validations” in the dataset menu (Figure 3.8) shows the list of all errors in the dataset, displayed in a summary table grouped by a particular error type (more information can be found in https://www.eionet.europa.eu/reportnet/docs/prod/reporter_howto_reportnet3.0).

Figure 3.8: Show validations function in the dataset menu



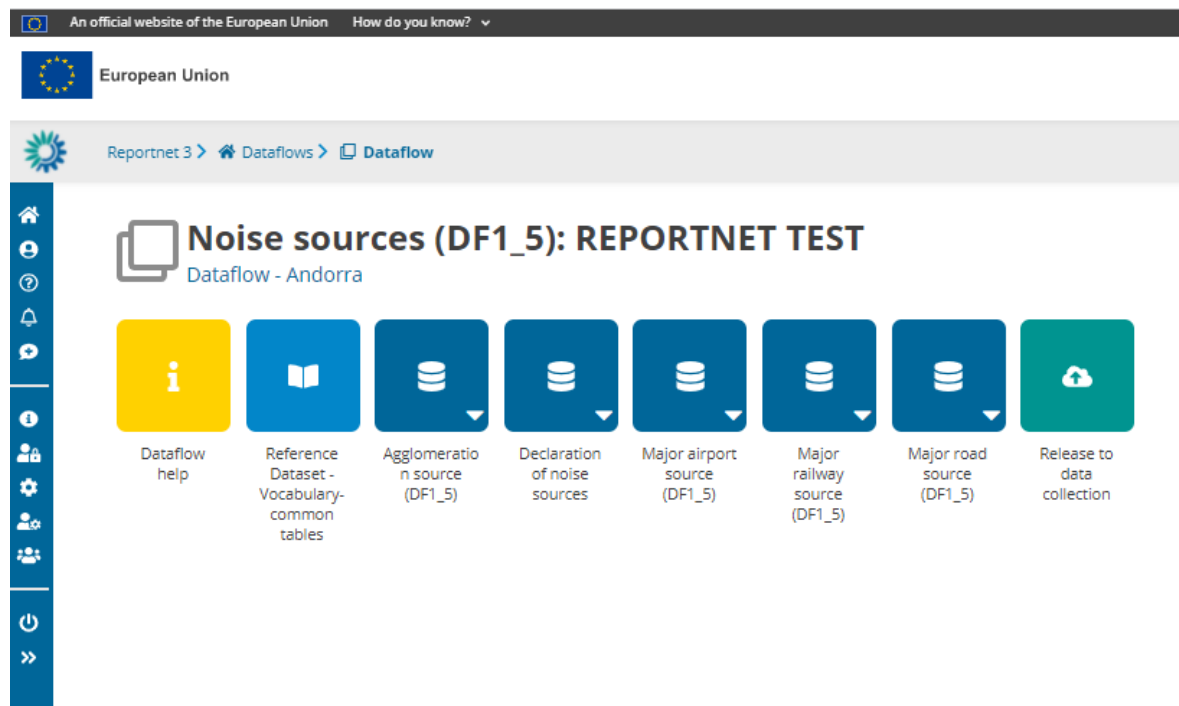
A BLOCKER in the dataflow will prevent the reporter to officially submit any data in Reportnet 3.

4 Key concepts in relation to *Noise sources (DF1_5)*

4.1 Reporting data schemas structure for DF1_5

The data schemas developed in Reportnet 3 are based on the specific UML diagrams illustrated in the *END Data model documentation* (<https://www.eionet.europa.eu/reportnet/docs/noise/data-model-documentation>). The GeoPackage templates follow the same schemas and principles as the UML diagrams.

Figure 4.1: *Data schemas for Noise sources (DF1_5) delivery in Reportnet 3*



4.2 Identifiers

4.2.1 Thematic identifiers

The concept of thematic identifiers is re-used in the END reporting scope from the INSPIRE data specifications. Thematic identifiers may have been established to meet data exchange requirements within thematic domains, e.g. different reporting obligations at International, European or national levels, and/or internal data maintenance requirements. A property that is considered a thematic identifier will use data type **ThematicIdentifier** which is composed of two mandatory parts:

- **identifier** : Unique identifier used to identify the spatial object within the specified identification scheme;
- **identifierScheme** : Identifier defining the scheme used to assign the identifier.

This concept of thematic identifiers and data type **ThematicIdentifier** are re-used across the complete END data model to uniquely identify spatial objects and all other objects – entities, e.g.: major road segments, major railway segments, agglomerations, competent authorities, quiet areas, reports of limit values, noise control programmes and noise action plans. The internationally defined ICAO code for airports is also used as a thematic identifier.

Providing thematic identifiers in the END reported data

Identifier scheme EUENDCode

The unique identifier scheme with the name **EUENDCode** is defined for the END reporting scope. It is published in the Eionet Data Dictionary as <http://dd.eionet.europa.eu/vocabulary/inspire/IdentifierScheme/EUENDCode>.

It is used across the END reporting data flows and reporting data as the default value and it is stored (pre-filled) in the table DatasetDefaultProperties. This table is included in the pre-defined data templates in MS Excel (for tabular data) and GeoPackage (spatial data), and in the Reportnet 3 data schemas.

To make data preparation easier, the table DatasetDefaultProperties is pre-filled with all applicable default values in the reporting data flow, therefore it doesn't require any changes.

Object identifier

The only value required to be provided for each object is "identifier". The guidelines "Proposal on how to build the unique thematic identifiers for the new END data model" provides detailed information and coding system to create thematic identifiers.

Identifier will be provided in a specific field defined in each data flow and Reportnet 3 data schema. For example, in the END data flow DF1_5:

- The field `agglomerationId_identifier` in the data schema Agglomeration source will be used for identifier of an agglomeration;
- The field `roadId_identifier` in the data schema Major road source will be used for identifier of a road;
- The field `railId_identifier` in the data schema Major railway source will be used for identifier of a railway;
- The field `ICAOCode` in the data schema Major airport source will be used for identifier of an airport (ICAO code to be provided).

4.2.2 INSPIRE identifiers

Spatial objects in the END reporting scope that are designed on the basis of the INSPIRE data specifications include the external unique object identifiers defined as the INSPIRE data type **Identifier**, which is composed of the three attributes:

- **localId**: A local identifier, assigned by the data provider, unique within the namespace;
- **namespace**: Namespace uniquely identifying the data source of the spatial object;
- **versionId**: The identifier of the particular version of the spatial object, voidable - optional.

For the END reporting scope, the INSPIRE identifiers are provided in the Reportnet 3 data schema and in the recommended data templates with three separate fields (attributes) corresponding to the type Identifier: `localId`, `namespace` and `versionId`.

Data providers who will prepare the END reporting geospatial data can apply own rules for creating external unique object identifiers according to the INSPIRE specifications. Additional information and recommendations are provided in "Creating INSPIRE external unique object identifiers in the scope of the END reporting data".

4.3 Spatial data

4.3.1 General recommendations for spatial data sets

For the END reporting scope, the following recommendations are provided for spatial data sets:

- Use of coordinate reference system ETRS89-extended / Lambert azimuthal equal-area LAEA (EPSG:3035) (one of the coordinate reference systems defined in the INSPIRE specifications that facilitates creation of the pan-European spatial data sets);
- Use of coordinate reference system World Geodetic System 1984 (EPSG: 4326) for territories outside of the continental Europe geographical scope. The WGS84 is linked to the ITRS that is in line with the INSPIRE specifications on the datum of the International Terrestrial Reference System (ITRS) or other geodetic coordinate reference systems compliant with ITRS in areas that are outside the geographical scope of ETRS89;
- Spatial data sets should be provided accordingly to the pre-defined templates in the file format GeoPackage (INSPIRE good practice for GeoPackage is in development to become INSPIRE alternative encoding to GML);
- The predefined templates in GeoPackage include geometry (e.g. point, line, polygon) and coordinate reference system information, therefore the previous reporting of location data as a list of coordinates is not used in the new reporting mechanism;
- The predefined templates in GeoPackage ensure the highest compatibility with the Reportnet 3 data schemas, therefore those templates shall not be modified.

4.3.2 From conceptual data model (UML) to templates in GeoPackage

The templates for spatial data in file format GeoPackage have been developed from the conceptual data models in UML by using a set of model transformation rules created for the END reporting scope on the basis of outcomes of the development of INSPIRE alternative encodings. More information is available in the document "GeoPackage Encoding Rule for Environmental Noise Directive Reporting Data".

The GeoPackage templates are aligned with the Reportnet 3 data schemas (names, types, cardinality, use of code lists) to facilitate reporting in the Reportnet 3 infrastructure. This section provides generic information of the GeoPackage template structure and the next chapters provide details of the Reportnet 3 data schemas.

The GeoPackage templates combine spatial and tabular data together in a data set. The conceptual data models (presented in the UML diagram) for data flow DF1_5 are transformed into four typical tables in the GeoPackage template :

- Primary (or core)
- Voidables
- DatasetDefaultProperties
- CodelistProperties.

The **Primary (or core) table** includes the essential properties (slim primary table).

The table **Voidables** is a companion table to the primary table. It includes voidable properties which values can be assigned for individual spatial objects instead of default values. The values in the Voidables table prevail over the pre-defined default values. If default values are applicable to all

spatial objects in the data set, the Voidables table can remain empty. If the conceptual data model does not include voidable properties, the table Voidables is not created in the GeoPackage template (e.g. DF1_5 Major Airports GeoPackage template does not include voidable properties nor Voidables table).

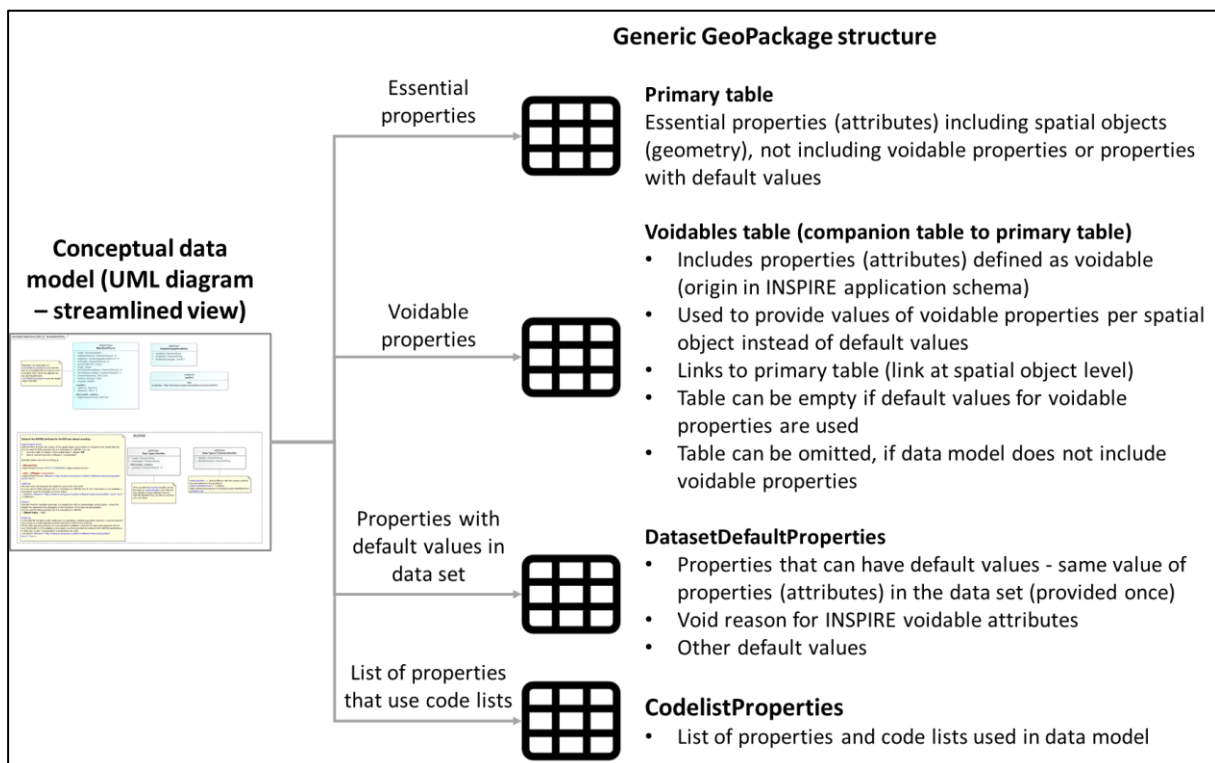
Properties that can have default values – same values in the complete data set are provided in the table **DatasetDefaultProperties**. This table can include default void reason for voidable properties, or other properties with default values. The origin of voidable properties are the underlying INSPIRE conceptual data models for spatial data. All expected properties and default values are already pre-defined and pre-filled in each GeoPackage template.

CodelistProperties table includes the list of properties that use values from agreed vocabularies – code lists. This table is already pre-filled in each GeoPackage template and helps finding the correct values for the properties from the related code lists. The code lists defined for the END reporting scope are published in two registers:

- [INSPIRE code list registry](#) for INSPIRE code lists (re-using INSPIRE code lists), and
- [Eionet Data Dictionary – Vocabularies](#) for other code lists used in the END reporting scope.

The following diagram in Figure 4.2 summaries the GeoPackage template structure.

Figure 4.2: Transformation from conceptual data model (UML) to GeoPackage structure

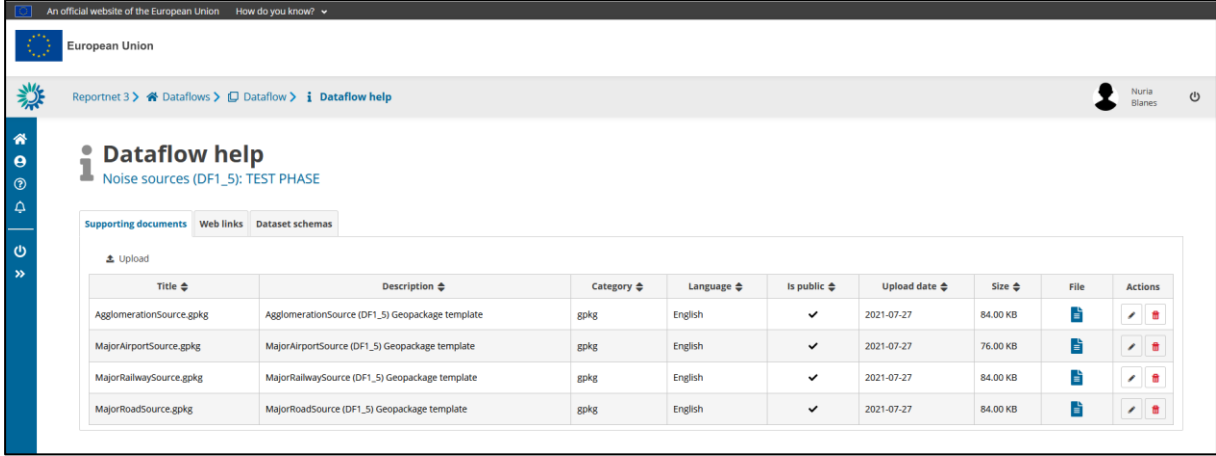


The GeoPackage templates have been already designed to facilitate data preparation in the following way:

- The pre-filled tables DatasetDefaultProperties and CodelistProperties don't need modifications;
- If the recommended and pre-filled void reasons or other values for voidable properties are applicable, the Voidables table can remain empty;
- The main table for reporting data is therefore the primary table.

The GeoPackage templates that have been created to support data reporting can be found in the Dataflow Help page in Reportnet 3.

Figure 4.3: Screenshot of the Dataflow help page where all GeoPackage templates are available for download



Geopackage templates can be downloaded from:
<https://www.eionet.europa.eu/reportnet/docs/noise>

5 Data schema: Declaration of noise sources

5.1 Description

Declaration of existing noise sources in the country/region. The schema is included in the DF1_5 data flow with aim to support the reporting process and validation of applicable existing noise sources and cross-checks between the END data flows.

The Declaration of noise sources data schema only includes one table:

- Declaration of noise sources

5.2 Table Declaration of noise sources

The table *Declaration of noise sources* includes the four noise sources specified in the END (i.e. major roads, major railways, major airports and agglomerations). In this table it should be indicated which of those sources are existing in the country/region.

Table 5.1: Declaration of noise source table overview

Mandatory/optional	Name	Reportnet 3 Type	Code list
M	declarationAgglomerationSource	Single select	
M	declarationMajorRoadSource	Single select	
M	declarationMajorRailwaySource	Single select	
M	declarationMajorAirportSource	Single select	

The following section includes detailed information of each field, i.e. description, type, format, use of code lists (where applicable), additional information of expected data or guidelines to prepare data, and data samples.

5.2.1 Field declarationAgglomerationSource

Requirement	Mandatory
Description	There is one or more agglomerations of more than 100,000 inhabitants to be declared as part of this dataflow.
Reportnet 3 type	Single select
Format	Yes No
Information	This attribute declares if the data schema AgglomerationSource need to be filled in or not.
Example	Yes
Reporting constraints	A blocker in reporting data is implemented if the noise source is declared as "Yes" and the information is not included in the corresponding data schema Agglomeration source (DF1_5). A blocker in reporting data is implemented if the noise source is declared as "No" and the information is included in the corresponding data schema. A blocker is implemented if not all the attributes are filled in in this table.

5.2.2 Field declaration MajorRoadSource

Requirement	Mandatory
Description	There is one or more major roads of more than 3,000,000 vehicle passages a year to be declared as part of this dataflow
Reportnet 3 type	Single select
Format	Yes No
Information	This attribute declares if the data schema MajorRoadSource need to be filled in or not.
Example	Yes
Reporting constraints	A blocker in reporting data is implemented if the noise source is declared as “Yes” and the information is not included in the corresponding data schema Major road source (DF1_5). A blocker in reporting data is implemented if the noise source is declared as “No” and the information is included in the corresponding data schema. A blocker is implemented if not all the attributes are filled in in this table.

5.2.3 Field declaration MajorRailwaySource

Requirement	Mandatory
Description	There is one or more major railways of more than 30,000 vehicle passages a year to be declared as part of this dataflow
Reportnet 3 type	Single select
Format	Yes No
Information	This attribute declares if the data schema MajorRailwaySource need to be filled in or not.
Example	No
Reporting constraints	A blocker in reporting data is implemented if the noise source is declared as “Yes” and the information is not included in the corresponding data schema Major railway source (DF1_5). A blocker in reporting data is implemented if the noise source is declared as “No” and the information is included in the corresponding data schema. A blocker is implemented if not all the attributes are filled in in this table.

5.2.4 Field declaration MajorAirportSource

Requirement	Mandatory
Description	There is one or more major airports of more than 50,000 movements a year to be declared as part of this dataflow
Reportnet 3 type	Single select
Format	Yes No
Information	This attribute declares if the data schema MajorAirportSource need to be filled in or not.
Example	Yes
Reporting constraints	A blocker in reporting data is implemented if the noise source is declared as “Yes” and the information is not included in the corresponding data schema Major airport source (DF1_5). A blocker in reporting data is implemented if the noise source is declared as “No” and the information is included in the corresponding data schema. A blocker is implemented if not all the attributes are filled in in this table.

5.3 Validations

The relevant information in relation to validation of this data schema is described in 3.1.

6 Data schema: Agglomeration source (DF1_5)

6.1 Description

Part of a territory delimited by the Member State having a population in excess of 100.000 persons and a population density such that the Member State considers it to be an urbanised area.

The AgglomerationSource data schema includes four tables :

- AgglomerationSource : primary content including spatial data
- AgglomerationSourceVoidables : table includes attributes defined as « voidable in the INSPIRE context »
- DatasetDefaultProperties: Information about the default values of objects in a data set or a table (read only schema, and already filled in in Reportnet 3)
- CodelistProperties (read only schema, and already filled in in Reportnet 3) : list of applicable code lists in that data schema.

6.2 Table AgglomerationSource

AgglomerationSource table includes the primary content of agglomerations, i.e. size, name of agglomeration, number of inhabitants, including also the spatial delineation in a type of polygons or multipolygon geometry.

Table 6.1: AgglomerationSource table overview

Mandatory/ optional	Name	Reportnet 3 Type	Code list
M	id	Number - Integer	
M	agglomerationId_identifier	Text	
M	agglomerationName_localName	Text	
M	agglomerationName_localNameLa nguage	Link	Error! Hyperlink reference not valid.
M	agglomerationName_nameEng	Text	
M	size	Number - Decimal	
M	numberOfInhabitants	Number - Integer	
M	applicableSource	Link	Error! Hyperlink reference not valid.
M	inspireId_localId	Text	
M	inspireId_namespace	Text	
O	inspireId_versionId	Text	
M	geometry	Multiple polygons	

The following section includes detailed information of each field, i.e. description, type, format, use of code lists (where applicable), additional information of expected data or guidelines to prepare data, and data samples.

6.2.1 *Field id*

Requirement	Mandatory
Description	Unique identifier automatically created in Geopackage file (primary key in the SQLite database). It is mandatory.
Reportnet 3 type	Number - Integer
Format	Maximum of 20 characters
Information	This attribute is primarily required by the OGC GeoPackage standard. It must be unique within a GeoPackage file.
Example	1

6.2.2 *Field agglomerationId_identifier*

Requirement	Mandatory
Description	Unique identifier assigned to each agglomeration.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	The value of this field follows the coding system to create thematic identifiers provided in the guidelines “Proposal on how to build the unique thematic identifiers for the new END data model”. It belongs to the common END identifier scheme named EUENDCode. The identifier scheme is provided as default value in the table DatasetDefaultProperties.
Example	AG_AT_00_1
Reporting constraints	agglomerationId_identifier will be re-used across the complete END data model to uniquely identify spatial objects and all other objects – entities.

6.2.3 *Agglomeration name*

Agglomeration name is based on the complex data type (SimpleGeographicalName) which is represented in the table by three interrelated fields: agglomerationName_localName, agglomerationName_localNameLanguage and agglomerationName_nameEng. Values for all three fields must be provided as agglomeration name.

Field agglomerationName_localName

Requirement	Mandatory
Description	Name of the agglomeration in the national or local language.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Example	Wien

Field agglomerationName_localNameLanguage

Requirement	Mandatory
Description	Specification about the national or local language by providing a three-letter language code from ISO 639-3.
Reportnet 3 type	Link
Code list	Code list URL: https://dd.eionet.europa.eu/vocabulary/noise/iso639-3/ Applicable code list values: bul, ces, dan, deu, ell, eng, est, fin, fra, gle, hrv, hun, ita, lav, lit, mlt, nld, pol, por, ron, slk, slv, spa, swe
Example	deu

Field agglomerationName_nameEng

Requirement	Mandatory
Description	Name of the agglomeration in English language.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	An established name of agglomeration in English language can be used, or a simple transliteration of name into English / latin alphabet (without specific language characters).
Example	Vienna

6.2.4 Field size

Requirement	Mandatory
Description	Area of coverage of the agglomeration, in km2.
Reportnet 3 type	Number – Decimal
Format	Maximum of 40 characters
Information	Decimal separator character is “.”. Number of decimal places allowed : 2
Example	100.00

6.2.5 Field numberOfInhabitants

Requirement	Mandatory
Description	Number of inhabitants living inside the boundary of the agglomeration.
Reportnet 3 type	Number - Integer
Format	Maximum of 20 characters
Information	Number is provided as integer number without 1000 separator character.
Example	1862251

6.2.6 Field applicableSource

Requirement	Mandatory
Description	Sources in the agglomeration for which strategic noise maps and action plans need to be provided.
Reportnet 3 type	Link
Format	Multiple values are allowed Value separated list with the separation character “;” (semicolon)
Code list	Code list URL: https://dd.eionet.europa.eu/vocabulary/noise/NoiseSourceValue/ Applicable code list values: <ul style="list-style-type: none"> - agglomerationAir - agglomerationIndustry - agglomerationRoad - agglomerationRailway - agglomerationMajorAirport - agglomerationMajorRoad - agglomerationMajorRailway
Information	Cities need to declare all the noise sources from which their inhabitants are exposed to. For instance cities that have roads and railways but no airports are expected to select “agglomerationRoad”, “agglomerationRailway”, “agglomerationMajorRoad”, “agglomerationMajorRailway”. However, if the city does not have roads and railways that are of more than 3 million vehicles and no railways of more than 30,000 passages a year the values “agglomerationMajorRoad”, “agglomerationMajorRailway” do not need to be selected. For the city of Berlin we expect that the values declared are: agglomerationAir agglomerationIndustry agglomerationRoad agglomerationRailway agglomerationMajorAirport agglomerationMajorRoad agglomerationMajorRailway This is because Berlin has roads, railways, airports, industries as well as major roads, major railways and major airports.
Example	agglomerationRoad; agglomerationMajorRoad; agglomerationRailway; agglomerationMajorRailway; agglomerationAir; agglomerationMajorAirport; agglomerationIndustry.
Reporting constraints	The declaration of sources will be used in subsequent dataflow reporting.

6.2.7 Spatial object identifier inspireId

Following the underlying INSPIRE conceptual data model, each agglomeration includes also the external unique object identifier published by the responsible body. The field inspireId is based on the complex data type (Identifier) which is represented in the table by three interrelated fields: inspireId_localId, inspireId_namespace and inspireId_versionId. The external unique object identifier is provided by the mandatory values in the fields inspireId_localId and inspireId_namespace. The field inspireId_versionId is optionally used when different versions of the same spatial object are provided in the data set.

Additional information and recommendations on creating INSPIRE external unique object identifiers are provided in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”.

Field inspireId_localId

Requirement	Mandatory
Description	External object identifier of the spatial object, defined in the INSPIRE Implementing Rules on Interoperability. When possible the inspireId_localId can be the same as agglomerationId_identifier, but if a Member State has already in place different rules for INSPIRE identifiers these rules could be used.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	See more information in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”
Example	AG_AT_00_1


Field inspireId_namespace


Requirement	Mandatory
Description	Part of inspireId - external object identifier of the spatial object, defined in the INSPIRE Implementing Rules on Interoperability. The attribute namespace uniquely identifies the data source or data set of the spatial object.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	See more information in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”
Example	end_agglomeration_AT

Field *inspireld_versionId*

Requirement	Optional
Description	The attribute versionId identifies a particular version of a spatial object, defined in the INSPIRE Implementing Rules on Interoperability. This attribute can be used together with life-cycle information to distinguish between the different versions of a spatial object.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	See more information in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”. It is proposed to omit spatial object versions (no value – empty field).

6.2.8 Field *geometry*

Requirement	Mandatory
Description	Spatial extent of the agglomeration, according to the definition in the INSPIRE Implementing Rules on Interoperability. Geometry of the agglomeration shall be presented as area, by using polygon geometry type. It is mandatory.
Reportnet 3 type	Multiple polygons
Information	Geometry type of polygon or multipolygon is allowed.
Example (polygon geometry)	 <p>Source: END reported data from Munich (Germany)</p>

Requirement	Mandatory
Example (multipolygon geometry)	 <p>Source: END reported data from Dublin (Ireland)</p>
Reporting constraints	Overlapping polygons are not allowed.

6.3 Table AgglomerationSourceVoidables

This table includes attributes that are defined as voidable in the data model. Only the attributes defined in the INSPIRE specifications are voidable. This table is used in case a value is assigned to a voidable attribute for an individual spatial object which is already provided in the primary (core) table AgglomerationSource. Otherwise, the default value of these attributes is used and therefore this table can be left empty.

It is recommended to use DatasetDefaultProperties as default values applicable to the complete data schema. By doing this, AgglomerationSourceVoidables can be left empty.

In case a value for a voidable property for each special object is provided, the following constraints apply to individual voidable property :

- 1) DateTime data type requires ISO DateTime format with UTC information. The required format is YYYY-MM-DDThh:mm:ssZ. It is applicable to the fields designationPeriod_beginPosition, designationPeriod_endPosition, beginLifespanVersion;
- 2) If designationPeriod_beginPosition is provided and designationPeriod_endPosition is not known it can be left empty (it is assumed it is not known);
- 3) If information about the competent authority is provided it shall be provided with at least the following information:
 - One of the fields competentAuthority_indivName (individual name), competentAuthority_orgName (organisation name) or competentAuthority_posName (position name) must be provided;
 - Field competentAuthority_role must be provided with the value “authority” from the designated code list;

- 4) If a legal instrument is provided in legalBasis, it must be provided in both fields legalBasis_link and legalBasis_level;
- 5) If any value for a voidable property of a spatial object is provided, a correct linking between both tables AgglomerationSource and AgglomerationSourceVoidables must be provided: the field AgglomerationSource_id in the table AgglomerationSourceVoidables must include the corresponding id of the spatial object from the table AgglomerationSource, see example below.

AgglomerationSource		AgglomerationSourceVoidables	
id	... other fields ...	AgglomerationSource_id	... other fields ...
10		10	

Detailed information about requirements of voidable properties in the INSPIRE application schema can be also found in the [INSPIRE Data Specification on Area Management/Restriction/Regulation Zones and Reporting Units – Technical Guidelines](#) and in the [Implementing Rules on Interoperability of spatial data sets and services](#).

Table 6.2: AgglomerationSourceVoidables table overview

Mandatory/optional	Name	Reportnet 3 Type	Code list
M	id	Number - Integer	
O	designationPeriod_beginPosition	DateTime	
O	designationPeriod_endPosition	DateTime	
O	competentAuthority_contact	Text	
O	competentAuthority_indivName	Text	
O	competentAuthority_orgName	Text	
O	competentAuthority_posName	Text	
O	competentAuthority_role	Link	https://dd.eionet.europa.eu/vocabulary/noise/CompetentAuthorityRoleValue/
O	legalBasis_link	URL	
O	legalBasis_level	Link	https://dd.eionet.europa.eu/vocabulary/inspire/LegislationLevelValue/
O	beginLifespanVersion	DateTime	
M	AgglomerationSource_id	Number - Integer	

6.4 Table DatasetDefaultProperties

This table includes all properties that can have a default value in a data set. Typically, it includes: default values or void reason for voidable attributes defined in the INSPIRE specifications, and default values of other attributes. The table is prefilled and read-only.

Table 6.3: DatasetDefaultProperties table overview

Mandatory/optional	Name	Reportnet 3 Type
M	tableName	Text
M	propertyName	Text
O	attribute	Text
M	defaultValue	Text

Table 6.4: Applicable values for the DatasetDefaultProperties

tableName	propertyName	attribute	defaultValue
AgglomerationSource	zoneType	href	http://inspire.ec.europa.eu/codelist/ZoneTypeCode/noiseRestrictionZone
AgglomerationSource	environmentalDomain	href	http://inspire.ec.europa.eu/codelist/EnvironmentalDomain/noise
AgglomerationSource	competentAuthority	nilReason	http://inspire.ec.europa.eu/codelist/VoidReasonValue/Unpopulated
AgglomerationSource	beginLifespanVersion	nilReason	http://inspire.ec.europa.eu/codelist/VoidReasonValue/Unpopulated
AgglomerationSource	agglomerationId_identifierScheme	href	http://dd.eionet.europa.eu/vocabulary/inspire/IdentifierScheme/EUENDCode
AgglomerationSource	specialisedZoneType	href	http://dd.eionet.europa.eu/vocabulary/inspire/SpecialisedZoneTypeCode/ENDAgglomeration
AgglomerationSource	designationPeriod	nilReason	http://inspire.ec.europa.eu/codelist/VoidReasonValue/Unpopulated
AgglomerationSource	legalBasis_link	href	http://data.europa.eu/eli/dir/2002/49/oj
AgglomerationSource	legalBasis_level	href	http://inspire.ec.europa.eu/codelist/LegislationLevelValue/european

6.5 Table CodelistProperties

This table includes a list of the code lists that have to be used for reporting data on the DF1_5 agglomerations data model. The complete code lists used in the END data model are also published in the Eionet Data Dictionary (<https://dd.eionet.europa.eu/vocabularies>) and are used in the Reportnet 3 data schemas.

The specific applicable code lists can also be found in the Vocabulary – common tables data schema of this dataflow.

The table is prefilled and read-only.

Table 6.5: CodelistProperties table overview

Mandatory/ optional	Name	Reportnet 3 Type
M	tableName	Text
M	propertyName	Text
M	codelist	Text

Table 6.6: Applicable values for the CodelistProperties

tableName	propertyName	codelist
AgglomerationSource	specialisedZoneType	http://dd.eionet.europa.eu/vocabulary/inspire/SpecialisedZoneTypeCode
AgglomerationSource	agglomerationName_localNameLanguage	http://dd.eionet.europa.eu/vocabulary/common/iso639-3
AgglomerationSource	applicableSource	http://dd.eionet.europa.eu/vocabulary/noise/NoiseSourceValue
AgglomerationSource	environmentalDomain	http://inspire.ec.europa.eu/codelist/EnvironmentalDomain
AgglomerationSource	zoneType	http://inspire.ec.europa.eu/codelist/ZoneTypeCode
AgglomerationSource	competentAuthority_role	http://inspire.ec.europa.eu/codelist/RelatedPartyRoleValue
AgglomerationSource	legalBasis_level	http://inspire.ec.europa.eu/codelist/LegislationLevelValue

6.6 Validation

The relevant information in relation to validation of this data schema is described in 3.1.

6.7 GeoPackage format

6.7.1 Support to data transformation into GeoPackage

GeoPackage template

The GeoPackage template AgglomerationSource.gpkg that has been created to support data reporting can be found in the:

- Dataflow Help page in Reportnet 3. (see 4.3.2), and

- <https://www.eionet.europa.eu/reportnet/docs/noise>.

Sample data

Sample data containing information as an example of reporting best practices is available at: https://www.eionet.europa.eu/reportnet/docs/noise/reporting-examples/sample-data-noise-sources-df1_5. It is important to notice that the sample data is simulated data adapted from an official reporting, including additional simulated data especially in the case of new information included in the new END data model.

Demonstration of data transformation with the ETL tool HALE Studio

A demonstration video on how to create the new GeoPackage file has been issued, using HALE Studio tool, which is accessible in: <https://www.eionet.europa.eu/reportnet/docs/noise/videos>.

The data transformation project (HALE Studio) details with test data (note: using simulated data for feasibility of data transformation, not exact data for noise reporting) can also be found in the repository https://github.com/wettransform-os/geopackage-end/tree/main/DF1_5. It shows possibilities to create a mapping between a source schema and target GeoPackage schema and transform source data into the Geopackage file format.

6.7.2 Use of GeoPackage file format in the Reportnet 3

The GeoPackage template for DF1_5 agglomerations includes the same tables as the ones that are included in Reportnet 3, see example below. The data import process in the Reportnet 3 transfers data from the GeoPackage file into the correlated tables into the Reportnet 3 data schema *Agglomeration source (DF1_5)*.

GeoPackage template AgglomerationSource.gpkg – list of tables	Reportnet 3 data schema <i>Agglomeration source (DF1_5)</i> – list of tables
AgglomerationSource	AgglomerationSource
AgglomerationSourceVoidables	AgglomerationSourceVoidables
DatasetDefaultProperties (pre-filled)	DatasetDefaultProperties (pre-filled, read-only)
CodelistProperties (pre-filled)	CodelistProperties (pre-filled, read-only)

7 Major airport source (DF1_5)

7.1 Description

Civil airport, designated by the Member State, which has more than 50.000 movements per year (a movement being a take-off or a landing), excluding those purely for training purposes on light aircraft.

The MajorAirportSource data includes three tables, as following:

- MajorAirportSource : primary content including spatial data
- DatasetDefaultProperties: Information about the default values of objects in a data set or a table (read only schema, and already filled in in Reportnet 3)
- CodelistProperties (read only schema, and already filled in in Reportnet 3) : list of applicable code lists in that data schema.

7.2 Table MajorAirportSource

MajorAirportSource table includes the primary content of major airport, i.e. name of major airport, ICAO code, annual traffic, including also the spatial location in a type of point geometry.

Table 7.1: MajorAirportSource table overview

Mandatory/ optional	Name	Reportnet 3 Type	Code list
M	id	Number - Integer	
M	ICAOCode	Text	
M	airportName_localName	Text	
M	airportName_localNameLanguage	Link	https://dd.eionet.europa.eu/vocabulary/noise/iso639-3/
M	airportName_nameEng	Text	
M	annualTrafficFlow	Number - Integer	
O	linkToReferenceDataset	Text	
O	linkToReferenceObject	Text	
M	geometry	Point	

The following section includes detailed information of each field, i.e. description, type, format, use of code lists (where applicable), additional information of expected data or guidelines to prepare data, and data samples.

7.2.1 Field id

Requirement	Mandatory
Description	Unique identifier automatically created in Geopackage file (primary key in the SQLite database). It is mandatory.
Reportnet 3 type	Number - Integer
Format	Maximum of 20 characters
Information	This attribute is primarily required by the OGC GeoPackage standard. It must be unique within a GeoPackage file.
Example	1

7.2.2 Field ICAOCode

Requirement	Mandatory
Description	Unique international code of airport defined by the International Civil Aviation Organization. It is mandatory.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Example	LOWW
Reporting constraints	ICAOCode will be re-used across the complete END data model to uniquely identify spatial objects and all other objects – entities.

7.2.3 Airport name

Airport name is based on the complex data type (SimpleGeographicalName) which is represented in the table by three interrelated fields: airportName_localName, airportName_localNameLanguage and airportName_nameEng. Values for all three fields must be provided as airport name.

Field airportName_localName

Requirement	Mandatory
Description	Name of the major airport in the national or local language.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Example	Flughafen Wien

Field *airportName_localNameLanguage*

Requirement	Mandatory
Description	Specification about the national or local language by providing a three-letter language code from ISO 639-3.
Reportnet 3 type	Link
Code list	Code list URL: https://dd.eionet.europa.eu/vocabulary/noise/iso639-3/ Applicable code list values: bul, ces, dan, deu, ell, eng, est, fin, fra, gle, hrv, hun, ita, lav, lit, mlt, nld, pol, por, ron, slk, slv, spa, swe
Example	deu

Field *airportName_nameEng*

Requirement	Mandatory
Description	Name of the major airport in English language.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	An established name of major airport in English language can be used, or a simple transliteration of name into English / latin alphabet (without specific language characters).
Example	Vienna International Airport

7.2.4 Field *annualTrafficFlow*

Requirement	Mandatory
Description	Number of movements in a year at the major airport. It is mandatory.
Reportnet 3 type	Number - Integer
Format	Maximum of 20 characters
Information	Number is provided as integer number without 1000 separator character.
Example	78650

7.2.5 Field *linkToReferenceDataset*

Requirement	Optional
Description	Information about INSPIRE reference dataset of airport network to which major airport could be linked. It is optional.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

7.2.6 Field linkToReferenceObject

Requirement	Optional
Description	Reference to airport (spatial object) in the reference dataset of airport network that is provided in the attribute linkToReferenceDataset, through matching ICAO code of a major airport. It is optional.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

7.2.7 Field geometry

Requirement	Mandatory
Description	Location of the major airport. This attribute corresponds with the INSPIRE geometry attribute. For the END reporting purpose, point geometry is required. It is mandatory
Reportnet 3 type	Point

7.3 Table DatasetDefaultProperties

This table includes all properties that can have a default value in a data set. Typically, it includes: Default values or void reason for voidable attributes defined in INSPIRE specifications, and default values of other attributes.

In the case of major airports, no default properties are established, but the table has been included in alignment with the rest of data schemas, however the table is empty.

Table 7.2: DatasetDefaultProperties table overview

Mandatory/ optional	Name	Reportnet 3 Type
M	tableName	Text
M	propertyName	Text
O	attribute	Text
M	defaultValue	Text

7.4 Table CodelistProperties

This table includes a list of the code lists that have to be used for reporting data on the DF1_5 major airports data model. The complete code lists used in the END data model are also published in the Eionet Data Dictionary (<https://dd.eionet.europa.eu/vocabularies>) and are used in the Reportnet 3 data schemas.

The specific applicable code lists can also be found in the Vocabulary – common tables data schema of this dataflow.

The table is prefilled and read-only.

Table 7.3: CodelistProperties table overview

Mandatory/ optional	Name	Reportnet 3 Type
M	tableName	Text
M	propertyName	Text
M	codelist	Text

Table 7.4: Applicable values for the CodelistProperties

tableName	propertyName	codelist
MajorAirportSource	airportName_localNameLanguage	http://dd.eionet.europa.eu/vocabulary/common/iso639-3

7.5 Validation

The relevant information in relation to validation of this data schema is described in 3.1.

7.6 GeoPackage format

7.6.1 Support to data transformation into GeoPackage

GeoPackage template

The GeoPackage template MajorAirportSource.gpkg that has been created to support data reporting can be found in the:

- Dataflow Help page in Reportnet 3. (see 4.3.2), and
- https://www.eionet.europa.eu/reportnet/docs/noise/templates/df1_5.

Sample data

Sample data containing information as an example of reporting best practices is available at: https://www.eionet.europa.eu/reportnet/docs/noise/reporting-examples/sample-data-noise-sources-df1_5. It is important to notice that the sample data is simulated data adapted from an official reporting, including additional simulated information especially in the case of new information included in the new END data model.

Demonstration of data transformation with the ETL tool HALE Studio

A demonstration video on how to create the new GeoPackage file has been issued, using HALE Studio tool, which is accessible in: <https://www.eionet.europa.eu/reportnet/docs/noise/videos>.

The data transformation project (HALE Studio) details with test data (note: using simulated data for feasibility of data transformation, not exact data for noise reporting) can also be found in the repository https://github.com/wetransform-os/geopackage-end/tree/main/DF1_5. It shows

possibilities to create a mapping between a source schema and target GeoPackage schema and transform source data into the Geopackage file format.

7.6.2 Use of GeoPackage file format in the Reportnet 3

The GeoPackage template for DF1_5 major airports includes the same tables as the ones that are included in Reportnet 3, see example below. The data import process in the Reportnet 3 transfers data from the GeoPackage file into the correlated tables in the Reportnet 3 data schema Major airport source (DF1_5).

GeoPackage template MajorAirportSource.gpkg – list of tables	Reportnet 3 data schema <i>Major airport source (DF1_5)</i> – list of tables
MajorAirportSource	MajorAirportSource
DatasetDefaultProperties (empty table)	DatasetDefaultProperties (empty table, read-only)
CodelistProperties (pre-filled)	CodelistProperties (pre-filled, read-only)

8 Major railway source (DF1_5)

8.1 Description

Railway, designated by the Member State, which has more than 30.000 train passages per year.

The MajorRailwaySource data schema includes four tables, as following :

- MajorRailwaySource : primary content including spatial data
- MajorRailwaySourceVoidables : table includes attributes defined as « voidable in the INSPIRE context »
- DatasetDefaultProperties: Information about the default values of objects in a data set or a table (read only schema, and already filled in in Reportnet 3)
- CodelistProperties (read only schema, and already filled in in Reportnet 3) : list of applicable code lists in that data schema.

8.2 Table MajorRailwaySource

MajorRailwaySource table includes the primary content of major railways, i.e. length, annual traffic, including also the spatial delineation in a type of lines or multiple line geometry.

Table 8.1: MajorRailwaySource table overview

Mandatory/ optional / conditional	Name	Reportnet 3 Type	Code list
M	id	Number - Integer	
M	railId_identifier	Text	
O	railNationalCode	Text	
O	railName_localName	Text	
O	railName_localNameLanguage	Link	https://dd.eionet.europa.eu/vocabulary/noise/iso639-3/
O	railName_nameEng	Text	
M	annualTrafficFlow	Number - Integer	
M	length	Number - Integer	
O	linkToReferenceDataset	Text	
O	linkToReferenceObject	Text	
M	inspireId_localId	Text	

Mandatory/ optional / conditional	Name	Reportnet 3 Type	Code list
M	inspireId_namespace	Text	
O	inspireId_versionId	Text	
C	geometry_line	Line	
C	geometry_multiline	Multiple lines	

The following section includes detailed information of each field, i.e. description, type, format, use of code lists (where applicable), additional information of expected data or guidelines to prepare data, and data samples.

8.2.1 Field id

Requirement	Mandatory
Description	Unique identifier automatically created in Geopackage file (primary key in the SQLite database).
Reportnet 3 type	Number - Integer
Format	Maximum of 20 characters
Information	This attribute is primarily required by the OGC GeoPackage standard. It must be unique within a GeoPackage file.
Example	1

8.2.2 Field railId_identifier

Requirement	Mandatory
Description	Unique identifier assigned to each major railway segment.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	The value of this field follows the coding system to create thematic identifiers provided in the guidelines "Proposal on how to build the unique thematic identifiers for the new END data model". It belongs to the common END identifier scheme named EUENDCode. The identifier scheme is provided as default value in the table DatasetDefaultProperties.
Example	RL_AT_00_1
Reporting constraints	railId_identifier will be re-used across the complete END data model to uniquely identify spatial objects and all other objects – entities.

8.2.3 Field railNationalCode

Requirement	Optional
Description	Railway code (railway identification number) used within Member State.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

8.2.4 Rail name

Rail name is based on the complex data type (SimpleGeographicalName) which is represented in the table by three interrelated fields: railName_localName, railName_localNameLanguage and railName_nameEng. Values for all three fields must be provided as rail name.

Field railName_localName

Requirement	Optional
Description	Official rail name used within Member State in the national or local language.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

Field railName_localNameLanguage

Requirement	Optional
Description	Specification about the national or local language by providing a three-letter language code from ISO 639-3.
Reportnet 3 type	Link
Code list	Code list URL: https://dd.eionet.europa.eu/vocabulary/noise/iso639-3/ Applicable code list values: bul, ces, dan, deu, ell, eng, est, fin, fra, gle, hrv, hun, ita, lav, lit, mlt, nld, pol, por, ron, slk, slv, spa, swe
Example	deu

Field railName_nameEng

Requirement	Optional
Description	Official rail name used within Member State in English language
Reportnet 3 type	Text
Format	Maximum of 10000 characters

8.2.5 Field annualTrafficFlow

Requirement	Mandatory
Description	Number of train passages in a year on the major railway segment.
Reportnet 3 type	Number – Integer
Format	Maximum of 20 characters
Information	Number is provided as integer number without 1000 separator character.
Example	65800

8.2.6 Field length

Requirement	Mandatory
Description	Actual length of the major railway segment, in metres.
Reportnet 3 type	Number - Integer
Format	Maximum of 20 characters
Information	Number is provided as integer number without 1000 separator character.
Example	1345

8.2.7 Field linkToReferenceDataset

Requirement	Optional
Description	Information about INSPIRE reference dataset of railway network to which major railway could be linked.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

8.2.8 Field linkToReferenceObject

Requirement	Optional
Description	Reference to railway (spatial object) in the reference dataset of railway network that is provided in the attribute linkToReferenceDataset.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

8.2.9 Spatial object identifier inspireId

Following the underlying INSPIRE conceptual data model, each major railway includes also the external unique object identifier published by the responsible body. The field inspireId is based on the complex data type (Identifier) which is represented in the table by three interrelated fields: inspireId_localId, inspireId_namespace and inspireId_versionId. The external unique object identifier

is provided by the mandatory values in the fields `inspireId_localId` and `inspireId_namespace`. The field `inspireId_versionId` is optionally used when different versions of the same spatial object are provided in the data set.

Additional information and recommendations on creating INSPIRE external unique object identifiers are provided in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”.

Field inspireId_localId

Requirement	Mandatory
Description	Part of <code>inspireId</code> - external object identifier of the spatial object, defined in the INSPIRE Implementing Rules on Interoperability. The attribute <code>localId</code> is a local identifier that is unique within the namespace.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	See more information in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”
Example	RL_AT_00_1


Field inspireId_namespace

Requirement	Mandatory
Description	External object identifier of the spatial object, defined in the INSPIRE Implementing Rules on Interoperability. The attribute <code>namespace</code> uniquely identifies the data source of the spatial object.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	See more information in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”
Example	end_majorrailway_AT

Field inspireId_versionId

Requirement	Optional
Description	The attribute <code>versionId</code> identifies a particular version of a spatial object, defined in the INSPIRE Implementing Rules on Interoperability. This attribute can be used together with life-cycle information to distinguish between the different versions of a spatial object.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	See more information in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”. It is proposed to omit spatial object versions (no value – empty field).

8.2.10 Field geometry_line

Requirement	Conditional
Description	It presents geometry of major railway, according to the definition in the INSPIRE Implementing Rules on Interoperability. Geometry shall be represented as a centreline of a major railway.
Reportnet 3 type	Line
Information	This field is used to store geometry type line only, depending on if the line geometry is provided in the reported data. It is recommended.
Example	 <p>Source: END reported data from Germany</p>

8.2.11 Field geometry_multiline

Requirement	Conditional
Description	It presents geometry of major railway, according to the definition in the INSPIRE Implementing Rules on Interoperability. Geometry shall be represented as a centreline of a major railway.
Reportnet 3 type	Multiple lines
Information	This field is used to store geometry type multiple lines only, depending on if the multiple lines geometry is provided in the reported data.

8.3 Table MajorRailwaySourceVoidables

This table includes attributes that are defined as voidable in the data model. Only the attributes defined in the INSPIRE specifications are voidable. This table is used in case a value is assigned to a voidable attribute for an individual spatial object which is already provided in the primary (core) table MajorRailwaySource. Otherwise, the default value of these attributes is used and therefore this table can be left empty.

It is recommended to use DatasetDefaultProperties as default values applicable to the complete data schema. By doing this, MajorRailwaySourceVoidables can be left empty.

In case a value for a voidable property for each special object is provided, the following constraints apply to individual voidable property :

- 1) DateTime data type requires ISO DateTime format with UTC information. The required format is YYYY-MM-DDThh:mm:ssZ. It is applicable to the fields validFrom and beginLifespanVersion;
- 2) If any value for a voidable property of a spatial object is provided, a correct linking between both tables MajorRailwaySource and MajorRailwaySourceVoidables must be provided: the field MajorRailwaySource_id in the table MajorRailwaySourceVoidables must include the corresponding id of the spatial object from the table MajorRailwaySource, see example below.

MajorRailwaySource		MajorRailwaySourceVoidables	
id	... other fields ...	MajorRailwaySource_id	... other fields ...
10		10	

Detailed information about requirements of voidable properties in the INSPIRE application schema can be also found in the [INSPIRE Data Specification on Transport Networks – Technical Guidelines](https://inspire.ec.europa.eu/id/document/tg/am) <https://inspire.ec.europa.eu/id/document/tg/am> and in the [Implementing Rules on Interoperability of spatial data sets and services](#).

Table 8.2: MajorRailwaySourceVoidables table overview

Mandatory/ optional	Name	Reportnet 3 Type	Code list
M	id	Number - Integer	
O	validFrom	DateTime	
O	inNetwork	Text	
O	beginLifespanVersion	DateTime	
M	MajorRailwaySource_id	Number - Integer	

8.4 Table DatasetDefaultProperties

This table includes all properties that can have a default value in a data set. Typically, it includes: default values or void reason for voidable attributes defined in INSPIRE specifications, and default values of other attributes. The table is prefilled and read-only.

Table 8.3: DatasetDefaultProperties table overview

Mandatory/ optional	Name	Reportnet 3 Type
M	tableName	Text
M	propertyName	Text
O	attribute	Text
M	defaultValue	Text

Table 8.4: Applicable values for the DatasetDefaultProperties

tableName	propertyName	attribute	defaultValue
MajorRailwaySource	inNetwork	nilReason	http://inspire.ec.europa.eu/codelist/VoidReasonValue/Unpopulated
MajorRailwaySource	validFrom	nilReason	http://inspire.ec.europa.eu/codelist/VoidReasonValue/Unpopulated
MajorRailwaySource	beginLifespanVersion	nilReason	http://inspire.ec.europa.eu/codelist/VoidReasonValue/Unpopulated
MajorRailwaySource	fictitious		false
MajorRailwaySource	railId_identifierScheme	href	https://dd.eionet.europa.eu/vocabulary/inspire/IdentifierScheme/EUENDCode

8.5 Table CodelistProperties

This table includes a list of the code lists that have to be used for reporting data on the DF1_5 major railways data model. The complete code lists used in the END data model are also published in the Eionet Data Dictionary (<https://dd.eionet.europa.eu/vocabularies>) and are used in the Reportnet 3 data schemas.

The specific applicable code lists can also be found in the Vocabulary – common tables data schema of this dataflow.

The table is prefilled and read-only.

Table 8.5: CodelistProperties table overview

Mandatory/ optional	Name	Reportnet 3 Type
M	tableName	Text
M	propertyName	Text
M	codelist	Text

Table 8.6: Applicable values for the CodelistProperties

tableName	propertyName	codelist
MajorRailwaySource	railName_localNameLanguage	http://dd.eionet.europa.eu/vocabulary/common/iso639-3
MajorRailwaySource	railId_identifierScheme	http://dd.eionet.europa.eu/vocabulary/inspire/IdentifierScheme

8.6 Validation

The relevant information in relation to validation of this data schema is described in 3.1.

8.7 GeoPackage format

8.7.1 Support to data transformation into GeoPackage

GeoPackage template

The GeoPackage template MajorRailwaySource.gpkg that has been created to support data reporting can be found in the:

- Dataflow Help page in Reportnet 3. (see 4.3.2), and
- https://www.eionet.europa.eu/reportnet/docs/noise/templates/df1_5.

Sample data

Sample data containing information as an example of reporting best practices is available at: https://www.eionet.europa.eu/reportnet/docs/noise/reporting-examples/sample-data-noise-sources-df1_5. It is important to notice that the sample data is simulated data adapted from an official reporting, including additional simulated information especially in the case of new information included in the new END data model.

Demonstration of data transformation with the ETL tool HALE Studio

A demonstration video on how to create the new GeoPackage file has been issued, using HALE Studio tool, which is accessible in: <https://www.eionet.europa.eu/reportnet/docs/noise/videos>.

The data transformation project (HALE Studio) details with test data (note: using simulated data for feasibility of data transformation, not exact data for noise reporting) can also be found in the repository https://github.com/wetransform-os/geopackage-end/tree/main/DF1_5. It shows

possibilities to create a mapping between a source schema and target GeoPackage schema and transform source data into the Geopackage file format.

8.7.2 Use of GeoPackage file format in the Reportnet 3

The GeoPackage template for DF1_5 major railways includes the same tables as the ones that are included in Reportnet 3, see example below. The data import process in the Reportnet 3 transfers data from the GeoPackage file into the correlated tables in the Reportnet 3 data schema *Major railway source (DF1_5)*.

GeoPackage template MajorRailwaySource.gpkg – list of tables	Reportnet 3 data schema <i>Major railway source (DF1_5)</i> – list of tables
MajorRailwaySource	MajorRailwaySource
MajorRailwaySourceVoidables	MajorRailwaySourceVoidables
DatasetDefaultProperties (pre-filled)	DatasetDefaultProperties (pre-filled, read-only)
CodelistProperties (pre-filled)	CodelistProperties (pre-filled, read-only)

9 Major road source (DF1_5)

9.1 Description

Regional, national or international road, designated by the Member State, which has more than three million vehicle passages a year

The MajorRoadSource data schema includes four tables, as following :

- MajorRoadSource : primary content including spatial data
- MajorRoadSourceVoidables : table includes attributes defined as « voidable in the INSPIRE context »
- DatasetDefaultProperties: Information about the default values of objects in a data set or a table (read only schema, and already filled in in Reportnet 3)
- CodelistProperties (read only schema, and already filled in in Reportnet 3) : list of applicable code lists in that data schema.

9.2 Table MajorRoadSource

MajorRoadSource table includes the primary content of major roads, i.e. length, annual traffic, including also the spatial delineation in a type of lines or multiple line geometry.

Table 9.1: MajorRoadSource table overview

Mandatory/ optional / conditional	Name	Reportnet 3 Type	Code list
M	id	Number - Integer	
M	roadId_identifier	Text	
O	roadNationalCode	Text	
O	roadName_localName	Text	
O	roadName_localNameLanguage	Link	https://dd.eionet.europa.eu/vocabulary/noise/iso639-3/
O	roadName_nameEng	Text	
O	EURoadId	Text	
M	annualTrafficFlow	Number - Integer	
M	length	Number - Integer	
O	linkToReferenceDataset	Text	
O	linkToReferenceObject	Text	
M	inspireId_localId	Text	
M	inspireId_namespace	Text	
O	inspireId_versionId	Text	

Mandatory/ optional / conditional	Name	Reportnet 3 Type	Code list
C	geometry_line	Line	
C	geometry_multiline	Multiple lines	

The following section includes detailed information of each field, i.e. description, type, format, use of code lists (where applicable), additional information of expected data or guidelines to prepare data, and data samples.

9.2.1 Field id

Requirement	Mandatory
Description	Unique identifier automatically created in Geopackage file (primary key in the SQLite database).
Reportnet 3 type	Number - Integer
Format	Maximum of 20 characters
Information	This attribute is primarily required by the OGC GeoPackage standard. It must be unique within a GeoPackage file.
Example	1

9.2.2 Field roadId_identifier

Requirement	Mandatory
Description	Unique identifier assigned to each major road segment.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	<p>The value of this field follows the coding system to create thematic identifiers provided in the guidelines “Proposal on how to build the unique thematic identifiers for the new END data model”.</p> <p>It belongs to the common END identifier scheme named EUENDCode. The identifier scheme is provided as default value in the table DatasetDefaultProperties.</p>
Example	RD_AT_00_1
Reporting constraints	roadId_identifier will be re-used across the complete END data model to uniquely identify spatial objects and all other objects – entities.

9.2.3 Field roadNationalCode

Requirement	Optional
Description	Road national code (road identification number) used within Member State.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

9.2.4 Road name

Road name is based on the complex data type (SimpleGeographicalName) which is represented in the table by three interrelated fields: roadName_localName, roadName_localNameLanguage and roadName_nameEng. Values for all three fields must be provided as rail name.

Field roadName_localName

Requirement	Optional
Description	Official road name used within Member State in the national or local language.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

Field roadName_localNameLanguage

Requirement	Optional
Description	Specification about the national or local language by providing a three-letter language code from ISO 639-3.
Reportnet 3 type	Link
Code list	Code list URL: https://dd.eionet.europa.eu/vocabulary/noise/iso639-3/ Applicable code list values: bul, ces, dan, deu, ell, eng, est, fin, fra, gle, hrv, hun, ita, lav, lit, mlt, nld, pol, por, ron, slk, slv, spa, swe
Example	deu

Field roadName_nameEng

Requirement	Optional
Description	Official road name used within Member State in English language
Reportnet 3 type	Text
Format	Maximum of 10000 characters

9.2.5 Field *EURoadId*

Requirement	Optional
Description	European road code used to reference the road.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

9.2.6 Field *annualTrafficFlow*

Requirement	Mandatory
Description	Number of vehicle passages in a year on the major road segment
Reportnet 3 type	Number – Integer
Format	Maximum of 20 characters
Information	Number is provided as integer number without 1000 separator character.
Example	4500000

9.2.7 Field *length*

Requirement	Mandatory
Description	Actual length of the major road segment, in metres.
Reportnet 3 type	Number - Integer
Format	Maximum of 20 characters
Information	Number is provided as integer number without 1000 separator character.
Example	629

9.2.8 Field *linkToReferenceDataset*

Requirement	Optional
Description	Information about INSPIRE reference dataset of road network to which major road could be linked.
Reportnet 3 type	Text
Format	Maximum of 10000 characters

9.2.9 Field *linkToReferenceObject*

Requirement	Optional
Description	Reference to road (spatial object) in the reference dataset of road network that is provided in the attribute <i>linkToReferenceDataset</i> .
Reportnet 3 type	Text
Format	Maximum of 10000 characters

9.2.10 Spatial object identifier *inspireId*

Following the underlying INSPIRE conceptual data model, each major road includes also the external unique object identifier published by the responsible body. The field *inspireId* is based on the complex data type (Identifier) which is represented in the table by three interrelated fields: *inspireId_localId*, *inspireId_namespace* and *inspireId_versionId*. The external unique object identifier is provided by the mandatory values in the fields *inspireId_localId* and *inspireId_namespace*. The field *inspireId_versionId* is optionally used when different versions of the same spatial object are provided in the data set.

Additional information and recommendations on creating INSPIRE external unique object identifiers are provided in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”.

Field inspireId_localId

Requirement	Mandatory
Description	Part of <i>inspireId</i> - external object identifier of the spatial object, defined in the INSPIRE Implementing Rules on Interoperability. The attribute <i>localId</i> is a local identifier that is unique within the namespace.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	See more information in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”
Example	RD_AT_00_1

Field inspireId_namespace

Requirement	Mandatory
Description	External object identifier of the spatial object, defined in the INSPIRE Implementing Rules on Interoperability. The attribute namespace uniquely identifies the data source of the spatial object.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	See more information in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”
Example	end_majorroad_AT

Field inspireId_versionId

Requirement	Optional
Description	The attribute versionId identifies a particular version of a spatial object, defined in the INSPIRE Implementing Rules on Interoperability. This attribute can be used together with life-cycle information to distinguish between the different versions of a spatial object.
Reportnet 3 type	Text
Format	Maximum of 10000 characters
Information	See more information in “Creating INSPIRE external unique object identifiers in the scope of the END reporting data”. It is proposed to omit spatial object versions (no value – empty field).

9.2.11 Field geometry_line

Requirement	Conditional
Description	It presents geometry of major road, according to the definition in the INSPIRE Implementing Rules on Interoperability. Geometry shall be represented as a centreline of a major road.
Reportnet 3 type	Line
Information	This field is used to store geometry type line only, depending on if the line geometry is provided in the reported data. It is recommended.

Example



Source: END reported data from Austria

9.2.12 Field geometry_multiline

Requirement	Conditional
Description	It presents geometry of major road, according to the definition in the INSPIRE Implementing Rules on Interoperability. Geometry shall be represented as a centreline of a major railway.
Reportnet 3 type	Multiple lines
Information	This field is used to store geometry type multiple lines only, depending on if the multiple lines geometry is provided in the reported data.

9.3 Table MajorRoadSourceVoidables

This table includes attributes that are defined as voidable in the data model. Only the attributes defined in the INSPIRE specifications are voidable. This table is used in case a value is assigned to a voidable attribute for an individual spatial object which is already provided in the primary (core) table MajorRoadSource. Otherwise, the default value of these attributes is used and therefore this table can be left empty.

It is recommended to use DatasetDefaultProperties as default values applicable to the complete data schema. By doing this, MajorRoadSourceVoidables can be left empty.

In case a value for a voidable property for each special object is provided, the following constraints apply to individual voidable property :

- 1) DateTime data type requires ISO DateTime format with UTC information. The required format is YYYY-MM-DDThh:mm:ssZ. It is applicable to the fields validFrom and beginLifespanVersion;
- 2) If any value for a voidable property of a spatial object is provided, a correct linking between both tables MajorRoadSource and MajorRoadSourceVoidables must be provided: the field MajorRoadSource_id in the table MajorRoadSourceVoidables must include the corresponding id of the spatial object from the table MajorRoadSource, see example below.

MajorRoadSource	
id	... other fields ...
10	

MajorRoadSourceVoidables	
MajorRoadSource_id	... other fields ...
10	

Detailed information about requirements of voidable properties in the INSPIRE application schema can be also found in the [INSPIRE Data Specification on Transport Networks – Technical Guidelines](https://inspire.ec.europa.eu/id/document/tg/am) <https://inspire.ec.europa.eu/id/document/tg/am> and in the [Implementing Rules on Interoperability of spatial data sets and services](#).

Table 9.2: MajorRoadSourceVoidables table overview

Mandatory/ optional	Name	Reportnet 3 Type	Code list
M	id	Number - Integer	
O	validFrom	DateTime	
O	inNetwork	Text	
O	beginLifespanVersion	DateTime	
M	MajorRailwaySource_id	Number - Integer	

9.4 Table DatasetDefaultProperties

This table includes all properties that can have a default value in a data set. Typically, it includes: default values or void reason for voidable attributes defined in INSPIRE specifications, and default values of other attributes. The table is prefilled and read-only.

Table 9.3: DatasetDefaultProperties table overview

Mandatory/ optional	Name	Reportnet 3 Type
M	tableName	Text
M	propertyName	Text
O	attribute	Text
M	defaultValue	Text

Table 9.4: Applicable values for the DatasetDefaultProperties

tableName	propertyName	attribute	defaultValue
MajorRoadSource	inNetwork	nilReason	http://inspire.ec.europa.eu/codelist/VoidReasonValue/Unpopulated
MajorRoadSource	validFrom	nilReason	http://inspire.ec.europa.eu/codelist/VoidReasonValue/Unpopulated
MajorRoadSource	beginLifespanVersion	nilReason	http://inspire.ec.europa.eu/codelist/VoidReasonValue/Unpopulated
MajorRoadSource	fictitious		false
MajorRoadSource	roadId_identifierScheme	href	https://dd.eionet.europa.eu/vocabulary/inspire/IdentifierScheme/EUENDCode

9.5 Table CodelistProperties

This table includes a list of the code lists that have to be used for reporting data on the DF1_5 major roads data model. The complete code lists used in the END data model are also published in the Eionet Data Dictionary (<https://dd.eionet.europa.eu/vocabularies>) and are used in the Reportnet 3 data schemas.

The specific applicable code lists can also be found in the Vocabulary – common tables data schema of this dataflow.

The table is prefilled and read-only.

Table 9.5: CodelistProperties table overview

Mandatory/optional	Name	Reportnet 3 Type
M	tableName	Text
M	propertyName	Text
M	codelist	Text

Table 9.6: Applicable values for the CodelistProperties

tableName	propertyName	codelist
MajorRoadSource	roadName_localNameLanguage	http://dd.eionet.europa.eu/vocabulary/common/iso639-3
MajorRoadSource	roadId_identifierScheme	http://dd.eionet.europa.eu/vocabulary/inspire/IdentifierScheme

9.6 Validations

The relevant information in relation to validation of this data schema is described in 3.1.

9.7 GeoPackage format

9.7.1 Support to data transformation into GeoPackage

GeoPackage template

The GeoPackage template MajorRoadSource.gpkg that has been created to support data reporting can be found in the:

- Dataflow Help page in Reportnet 3. (see 4.3.2), and
- https://www.eionet.europa.eu/reportnet/docs/noise/templates/df1_5.

Sample data

Sample data containing information as an example of reporting best practices is available at: https://www.eionet.europa.eu/reportnet/docs/noise/reporting-examples/sample-data-noise-sources-df1_5. It is important to notice that the sample data is simulated data adapted from an official reporting, including additional simulated information especially in the case of new information included in the new END data model.

Demonstration of data transformation with the ETL tool HALE Studio

A demonstration video on how to create the new GeoPackage file has been issued, using HALE Studio tool, which is accessible in: <https://www.eionet.europa.eu/reportnet/docs/noise/videos>.

The data transformation project (HALE Studio) details with test data (note: using simulated data for feasibility of data transformation, not exact data for noise reporting) can also be found in the repository https://github.com/wetransform-os/geopackage-end/tree/main/DF1_5. It shows possibilities to create a mapping between a source schema and target GeoPackage schema and transform source data into the Geopackage file format.

9.7.2 Use of GeoPackage file format in the Reportnet 3

The GeoPackage template for DF1_5 major roads includes the same tables as the ones that are included in Reportnet 3, see example below. The data import process in the Reportnet 3 transfers data from the GeoPackage file into the correlated tables in the Reportnet 3 data schema *Major road source (DF1_5)*.

GeoPackage template MajorRoadSource.gpkg – list of tables	Reportnet 3 data schema <i>Major road source (DF1_5)</i> – list of tables
MajorRoadSource	MajorRoadSource
MajorRoadSourceVoidables	MajorRoadSourceVoidables
DatasetDefaultProperties (pre-filled)	DatasetDefaultProperties (pre-filled, read-only)
CodelistProperties (pre-filled)	CodelistProperties (pre-filled, read-only)

10 Reporting process

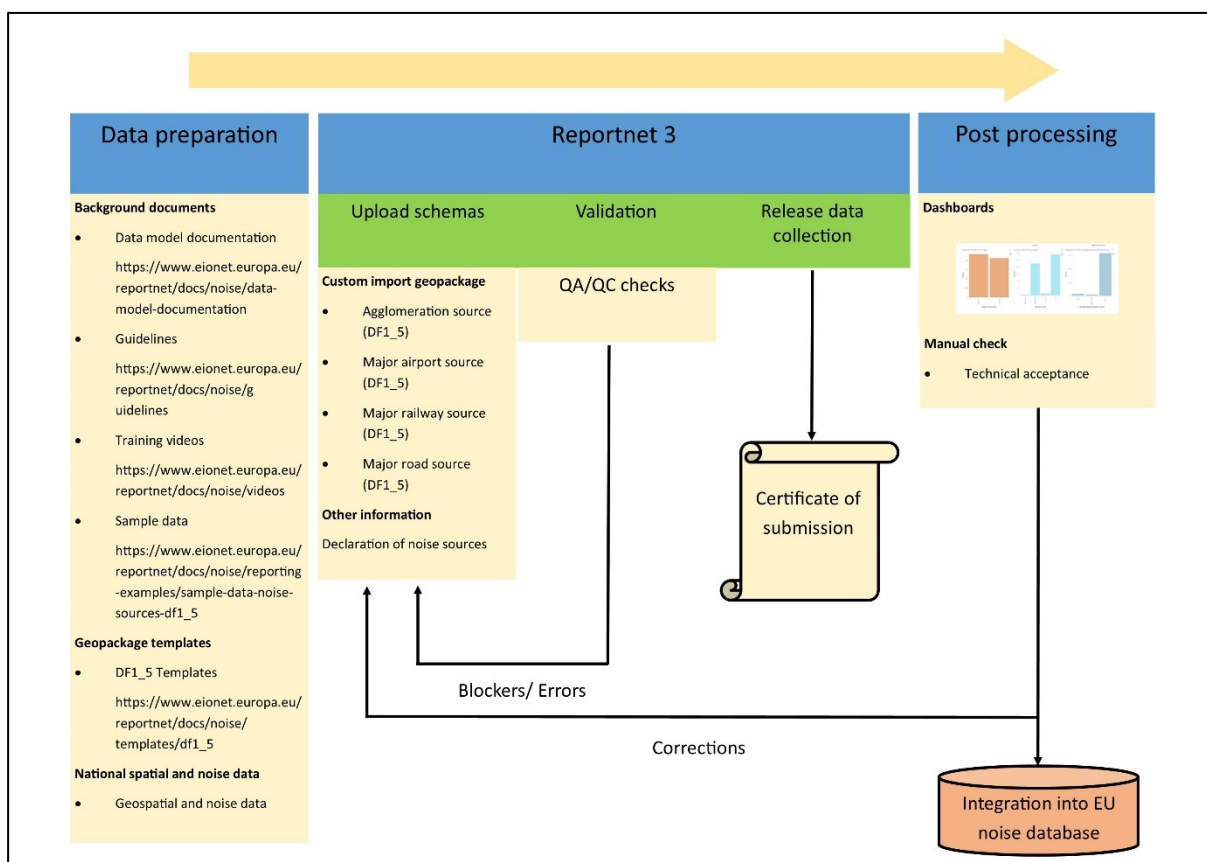
10.1 Reporting data in Reportnet 3: overall workflow

Figure 10.1 illustrates the different processes involved in the reporting of DF1_5 Noise Sources. The direct link to access to the all the available supporting material of the noise sources can be found here: <https://www.eionet.europa.eu/reportnet/docs/noise>. The preparation of the data involves using predefined templates in GeoPackage with the spatial information of the country’s major roads, major railways, major airports and agglomerations. The dataflow is organised by data schemas and a GeoPackage template is available for each noise source. Data sets for each data schema will need to be uploaded according to the existing and applicable noise sources declared in “Declaration of noise sources” data schema. Once the data files have been uploaded, they can be assessed based on the quality assurance validations that are programmed inside Reportnet 3. The description of these quality checks can be downloaded here:

https://www.eionet.europa.eu/reportnet/docs/noise/guidelines/document_qcs_df1_5.xlsx/view.

Once the data is correct, without any blocking errors in the quality checks, the delivery can be completed by releasing the data collection. In case of blocking errors in the validation, the data cannot be released and the reporter will need to correct the content, replace the files and release the data collection again. After the data has been released, a confirmation receipt will be issued and will be available in the dataflow page. The data submitted will be available in Reportnet 3 and if there are other errors, you will receive a standard notification that a correction and a resubmission is needed. All the submissions will be integrated in the EU noise database.

Figure 10.1: Reporting workflow



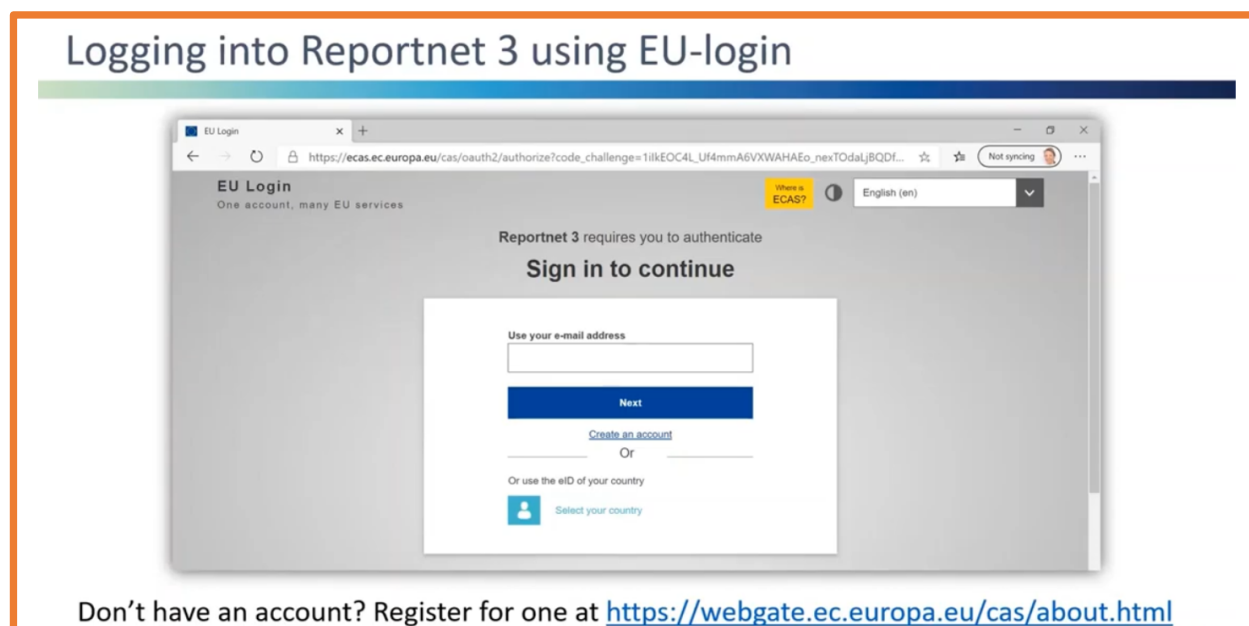
Further information on the reporting process of DF1_5

- Reportnet 3 reporters' manual :
https://www.eionet.europa.eu/reportnet/docs/prod/reporter_howto_reportnet3.0
- Training video:
https://www.eionet.europa.eu/reportnet/docs/noise/videos/df1_5_reportnet_final_v4.mp4/view

10.2 User accounts and permissions

The official reporting will be done through the following URL: <https://reportnet.europa.eu/>. The log in will be done through the EU login portal and the reporter will have to use the EU login details. Therefore, reporters will not be managing an Eionet login account but they will use an EU login account which is separately maintained and that can be more easily updated. The EU accounts can be created at <https://webgate.ec.europa.eu/cas/about.html>.


Figure 10.2: Log in into Reportnet 3 using EU-login



In Reportnet 3 there are two main roles for reporters, one is the lead reporter's role and the other is the supporting reporter's role. Prior, in Reportnet 2, all reporters were registered by the EEA and the lists were maintained by the agency. In the new reporting mechanism, the supporting reporters can prepare the data and can access the reporting platform. The number of supporting reporters is unlimited but those will be managed by the lead reporter. The lead reporter will be in charge to submit the final data and needs to be formally nominated.

Figure 10.3: Roles in Reportnet 3

Roles in Reportnet 3




Lead Reporter(s)

Up to two per country per reporting obligation.

Formally nominated.


Able to submit final data or reports.



Supporting Reporter(s)

Unlimited number per country per reporting obligation.

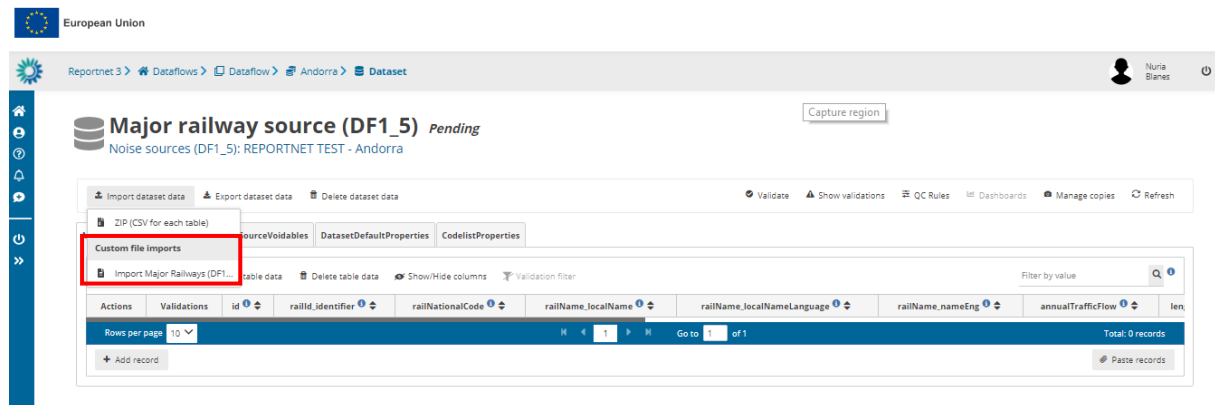
Managed by the Lead Reporter(s).

European Environment Agency 

10.3 Importing data

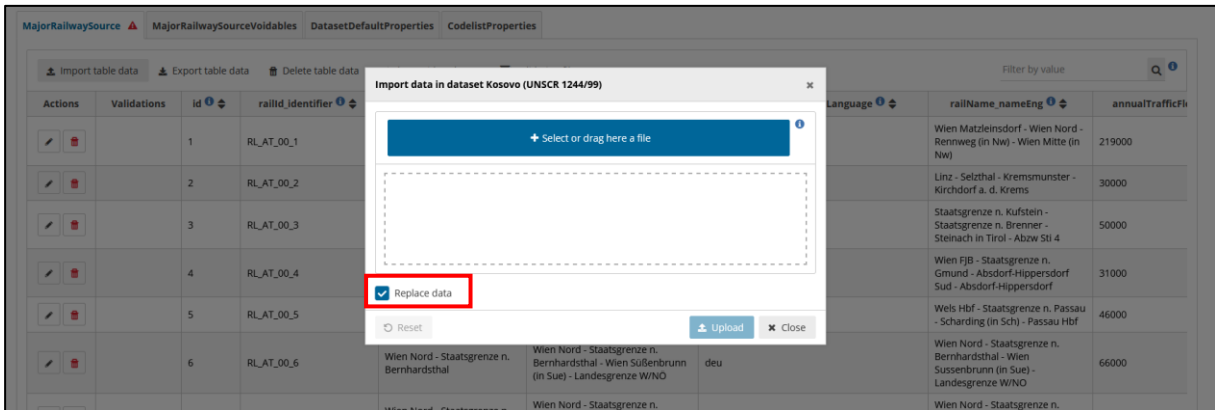
To import the GeoPackage file, the custom imports (gpkg) needs to be selected as indicated in Figure 10.4. The reporter will be asked to select a file and upload it. If the reporter is replacing the existing data, *Replace data* can be selected (see Figure 10.5). **The option *Replace data* will delete all previously imported data in all tables, which is particularly important if different reporters will import data for the same data schema.**

Figure 10.4: Import dataset data



The screenshot shows the Reportnet 3 interface for a dataset named 'Major railway source (DF1_5)'. The page includes a navigation bar with 'Reportnet 3', 'Dataflows', 'Dataflow', 'Andorra', and 'Dataset'. The main content area shows the dataset details and a table of actions. The 'Custom File imports' section is highlighted with a red box, and the option 'Import Major Railways (DF1_5)' is selected. The table below shows columns for 'id', 'railIdentifier', 'railNationalCode', 'railName_localName', 'railName_localNameLanguage', 'railName_nameEng', and 'annualTrafficFlow'.

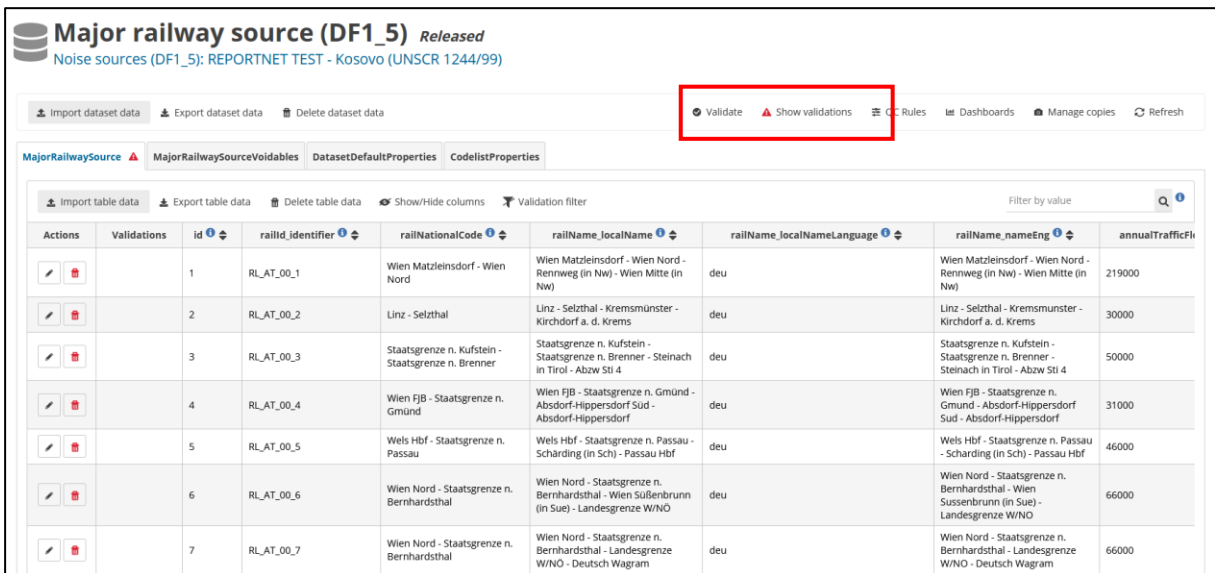
Figure 10.5: Replace data



10.4 Validations

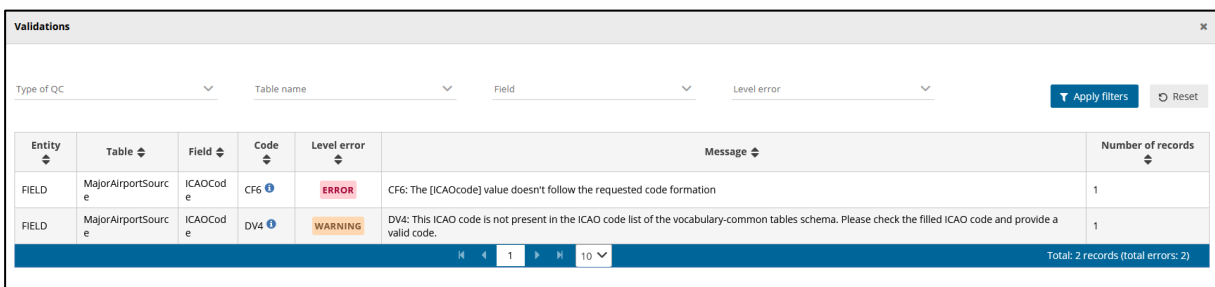
The data to be submitted can be assessed with the validation tools provided in Reportnet 3 as shown in Figure 10.6.

Figure 10.6: Show validations



The validations are run automatically when the data is uploaded and the reports can be consulted as shown in Figure 10.7. Corresponding error reports will be displayed at the schema level.

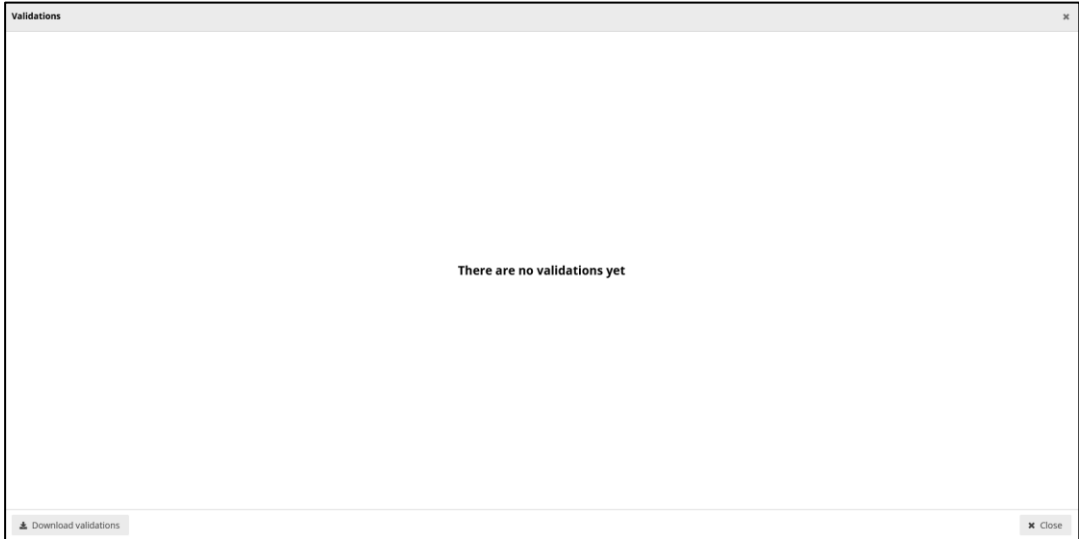
Figure 10.7: Validations report



If there are no blockers, errors, warnings, or information messages in the data uploaded, the message shown in Figure 10.8 will be given. Errors identified as “blockers” will not allow the reporter to release the data collection. Obtaining blockers in the validation process means that the data delivered has missing or erroneous elements that may corrupt the integrity of the European noise database or undermine the consistency of the reported data.

All quality control rules are described in Dataflow Help - Dataset schemas / QC rules (see chapter 3.1).

Figure 10.8: Successful validation message



10.5 Official submission of the report

The reporter will be able to submit the data by clicking on "Release to data collection" as shown in Figure 10.9. If there are blockers in any dataset schema, the release will be stopped and the reporter will receive a message indicating that releasing the data is not possible due to errors in the dataset. The reporter can make copies of the data submitted. After the submission a new icon will appear with the confirmation receipt as shown in Figure 10.10. The confirmation receipt includes a confirmation of the submission which indicates the data schemas that were submitted; and it is provided in the pdf format. If the reporter changes the data and resubmits a new copy to the data collection, then a new confirmation receipt will be available for download.

Figure 10.9: Release data collection

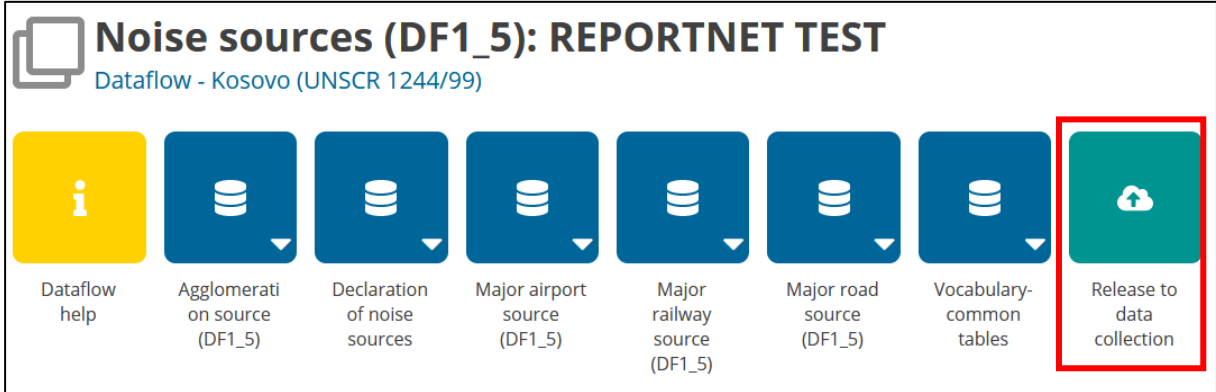
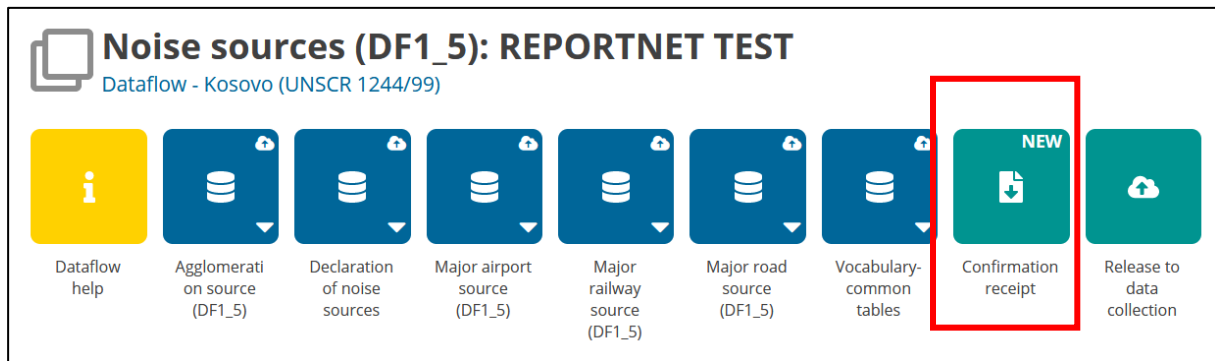


Figure 10.10: Confirmation receipt



10.6 Resubmission

The reporter will be able to replace/update the submission until the deadline. According to the Directive 2002/49/EC Article 10 (see below), if the reporter wishes to modify the submission after the deadline, an official communication to the EEA and the EC will have to be provided stating the changes from the previous submission and the reasons for the update.

Article 10 – paragraph 2: ‘Member States shall ensure that the information from strategic noise maps and summaries of the action plans as referred to in Annex VI are sent to the Commission within six months of the dates laid down in Articles 7 and 8 respectively. For that purpose, Member States shall only report the information by electronic means to a mandatory data repository to be established by the Commission by means of implementing acts. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 13(2). **In the event that a Member State wants to update information, it shall describe the differences between the updated and original information and the reasons for the update when making the updated information available to the data repository.**’

Annex 1. Recommendations for INSPIRE metadata for datasets of END noise sources

The INSPIRE Directive sets conditions for several technical infrastructure components that are further defined by the legal implementing acts and technical guidelines. The main components are:

- metadata for spatial data sets and services
- interoperability of spatial data sets and services
- network services (discovery, view, download, transformation, invoke)
- measures for the sharing of spatial data sets and services between public authorities, including to public authorities of other Member State and to the institutions and bodies of the Community, and
- monitoring and reporting of the implementation and use of national infrastructures for spatial information.

The spatial data sets in the END reporting scope are designed to be compliant with the INSPIRE Directive and requirements for spatial data sets. In the INSPIRE Directive scope, spatial data sets are only one of the infrastructure components. To fulfil the INSPIRE Directive and make spatial data sets available, all other components must be provided.

This annex describes recommendations to support creating INSPIRE metadata for the reporting data sets of END noise sources for the END data flow DF1_5. The recommendations are based on proposed GeoPackage templates for providing data sets of END noise sources.

The metadata documents that have been previously reported as part of the END reporting cycle can be easily mapped to the INSPIRE metadata elements. Thus, the recommendations in this annex are provided for a few INSPIRE metadata elements with aim to encourage a more harmonised description of END noise sources. The recommendations are provided for the following INSPIRE metadata elements.

- Identification – resource title
- Identification – resource abstract
- Keyword
- Lineage
- Conformity.

Metadata will be mostly prepared in national or local languages. The following examples are provided in English language.

1. INSPIRE metadata for spatial data sets overview

The INSPIRE Directive sets the legal basis for creating metadata for spatial data sets, series and services as part of the infrastructure for spatial information in Europe. The INSPIRE Metadata Regulation further defines the metadata requirements. Specific metadata requirements are also defined in other INSPIRE implementing rules where applicable. The implementation of the complete metadata catalogue is described in detail in the INSPIRE Metadata technical guidelines.

The overview of the INSPIRE instruments and documents related to metadata is provided below:

- The INSPIRE Directive⁴ defines that Member States shall ensure that metadata are created for the spatial data sets and services corresponding to the themes listed in the Directive Annexes I, II and III, and that those metadata are kept up to date;
- The INSPIRE Implementing Rules for Metadata (Metadata Regulation) and its amendments⁵ define requirements for the creation and maintenance of metadata for spatial data sets, spatial data set series and spatial data services;
- The INSPIRE Implementing Rules on interoperability of spatial data sets and services⁶ define metadata requirements supporting the interoperability and specific thematic requirements;
- The new INSPIRE Monitoring and Reporting Decision⁷ defines indicators for monitoring of implementation and use of national infrastructures for spatial information. The indicators are calculated using the metadata of the spatial data sets and the spatial data services. The Decision defines new indicators for monitoring of the availability of spatial data and services:
 - indicator which measures the number of spatial data sets that are already used by the Member State for reporting to the Commission under the environmental legislation (INSPIRE priority list of data sets for e-Reporting)
 - indicator which measures the number of the spatial data sets that respectively cover regional or national territory.
- The INSPIRE priority list of datasets for e-Reporting⁸ is primarily focused on the data sets in the scope of the reporting obligations of the environmental legislation. Relevant data sets must be properly documented through specific keywords in metadata for spatial data sets. The keywords are provided from the INSPIRE priority data set code list⁹;
- The INSPIRE Metadata technical guidelines¹⁰ provide technical details for providing metadata for INSPIRE data sets and services in ISO/TS 19139 based XML format in compliance with the INSPIRE Implementing Rules.

[The INSPIRE Metadata technical guidelines](#) provide detailed description of metadata elements and their encoding in XML according to the ISO/TS 19139 Geographic information - Metadata - XML schema implementation standard. The complete INSPIRE metadata element catalogue is described in the Annex C, including legal basis, metadata element name, requirements (e.g. multiplicity and INSPIRE obligation) and details for implementation.

The INSPIRE Metadata for spatial data sets shall be validated with the [INSPIRE Reference Validator](#) to obtain clear information about the metadata conformance to the INSPIRE requirements. The recent validation of metadata for data sets and data set series shall be configured to use Technical Guidelines Version 2.0 and all conformance classes for metadata, as shown on the next figure.

⁴ <http://data.europa.eu/eli/dir/2007/2/2019-06-26>

⁵ <https://inspire.ec.europa.eu/Legislation/Metadata/6541>

⁶ <https://inspire.ec.europa.eu/Legislation/Data-Specifications/2892>

⁷ http://data.europa.eu/eli/dec_impl/2019/1372/oj

⁸ <https://github.com/INSPIRE-MIF/need-driven-data-prioritisation/tree/main/documents>

⁹ <https://inspire.ec.europa.eu/metadata-codelist/PriorityDataset>

¹⁰ <https://inspire.ec.europa.eu/Technical-Guidelines2/Metadata/6541> and <https://inspire.ec.europa.eu/id/document/tg/metadata-iso19139>

Figure A1: INSPIRE Reference Validator for metadata for spatial data sets

European Commission | English | Search

European Commission > INSPIRE > Validator > Test selection

INSPIRE Reference Validator - Test selection

Home Test selection Test reports Get support More on the INSPIRE Reference Validator

Configure your test

Select the INSPIRE resource you would like to test

- Metadata
- View Service
- Download Service
- Discovery Service
- Data set

Select the Technical Guidelines version

- Version 1.3 - DEPRECATED
- Version 2.0

Select the type of metadata record(s) to be tested

- Data sets and data set series
- Network Service
- Spatial Data Service

Advanced options ^

Select the conformance classes to be assessed

- Common Requirements for ISO/TC 19139:2007 based INSPIRE metadata records ([source](#))
- Conformance Class 1: 'Baseline metadata for data sets and data set series' ([source](#))
- Conformance Class 2: 'INSPIRE data sets and data set series interoperability metadata' ([source](#))
- Conformance Class 2b: 'INSPIRE data sets and data set series metadata for Monitoring' ([source](#))

Antispam:
Move the slider to the number which is highest: one or 6.

Your selected answer is: 0

Verify

Start test >

The following sections provide recommendations for some of the INSPIRE metadata elements from the point of view of data sets of END noise sources, a reporting data flow END DF1_5.

2. Identification – resource title

A resource title is a characteristic, and often unique, name by which the resource is known.

The detailed description of providing resource title is in the INSPIRE Metadata technical guidelines, C.2.1 Resource title.

Recommendation for describing the reporting data sets of END noise sources:

The title could refer to the END noise source, key thematic data in a data set (e.g. population in agglomerations, annual traffic flow for major airports, major railways or major roads) and a reporting year for which the reporting data set was created, in accordance with the content of the data set.

For example:

- Agglomerations in the Environmental Noise Directive scope and population data, 2020
- Noise source – major airports and annual traffic flow data, 2020
- Noise source – major railways and annual traffic flow data, 2020
- Noise source - major roads and annual traffic flow data, 2020.

3. Identification – resource abstract

A resource abstract is a brief narrative summary of the content of the resource.

The detailed description of providing resource abstract is in the INSPIRE Metadata technical guidelines, C.2.2 Resource abstract.

Recommendation for describing the reporting data sets of END noise sources:

In addition to other summary information, it is recommended to include also information about the reporting obligation and the reporting year or reporting cycle for which this resource – reporting data set was created. The reporting information would include also the reference to the [Reporting Obligations Database \(ROD\)](#).

For example:

This resource is created for the Environmental Noise Directive (END) reporting obligation of DF1_5 noise sources, ROD: <https://rod.eionet.europa.eu/obligations/367>.

The reporting year is 2020.

4. Keyword

Keywords describe spatial data sets. They are provided as the keyword value and the originating controlled vocabulary, if the keyword is described in such vocabulary. In case the vocabulary exists, the citation of the originating controlled vocabulary shall be provided with a title and a reference date (date of publication, date of last revision or of creation).

The detailed description of providing a keyword is in the INSPIRE Metadata technical guidelines, C.2.10 Keyword value and C.2.11 Originating controlled vocabulary.

The next sections describe three types of keywords for describing the data sets of END noise sources:

- Keyword for INSPIRE spatial data theme, mandatory
- Keywords for INSPIRE priority data sets, conditional: mandatory if data set is included in the INSPIRE priority list of data sets for e-Reporting, therefore mandatory for END noise sources
- Keywords for thematic domain of noise, recommended.

1. Keyword – INSPIRE spatial data theme

For each spatial data set in the INSPIRE scope, a metadata must include at least the keyword for the INSPIRE spatial data theme. Noise sources for the END reporting purpose are related to the following INSPIRE spatial data themes:

- Agglomerations are related to the INSPIRE Area management / restriction / regulation zones and reporting units, and

- Major airports, major railways and major roads are related to the INSPIRE Transport networks spatial data theme.

Recommendation for describing the reporting data sets of END noise sources:

The spatial data sets of END noise sources are based on the INSPIRE data models of the following INSPIRE spatial data themes:

- Agglomerations are related to the INSPIRE Area management / restriction / regulation zones and reporting units, and
- Major airports, major railways and major roads are related to the INSPIRE Transport networks spatial data theme.

The recommended keywords for the INSPIRE spatial data themes are:

- “Area management/restriction/regulation zones and reporting units” for agglomerations, and
- “Transport networks” for major airports, major railways or major roads.

The keywords are from the [GEMET](#) vocabulary.

The keywords and vocabulary are provided for each END source below.

END noise source	Keyword	Originating vocabulary		
		Title and URL	Date	Date type
Agglomerations	Area management/restriction/regulation zones and reporting units http://inspire.ec.europa.eu/theme/am	GEMET - INSPIRE themes, version 1.0 http://www.eionet.europa.eu/gemet/inspire_themes	01.06.2018	Publication
Major airports	Transport networks http://inspire.ec.europa.eu/theme/tn			
Major railways	Transport networks http://inspire.ec.europa.eu/theme/tn			
Major roads	Transport networks http://inspire.ec.europa.eu/theme/tn			

II. Keyword – INSPIRE priority data sets

The spatial data sets of END noise sources are also included in the INSPIRE priority list of data sets for e-Reporting. **Therefore, metadata for data sets of END noise sources shall include also corresponding keywords for INSPIRE priority data sets.** The keywords are provided in the vocabulary [INSPIRE priority data set](#) code list, and details for implementation are provided in the INSPIRE priority data set implementation guidelines¹¹.

This information will be also used to calculate the INSPIRE monitoring indicator to measure the number of spatial data sets that are already used by the Member State for reporting to the Commission under the environmental legislation.

¹¹ <https://github.com/INSPIRE-MIF/priority-datasets/blob/main/documents/Implementation-PDS-Tagging.pdf>

The INSPIRE priority data set code list is organised into a hierarchical structure from an originating legal act (e.g. directive or regulation) to a more detailed description of each data set. The keywords for describing the END noise sources are organised into three hierarchical levels, as shown in the following table.

Table A1: Keywords – INSPIRE priority data sets and END noise sources

Keyword – level 1	Keyword – level 2	Keyword – level 3
Directive 2002/49/EC	Agglomerations (Noise Directive)	Agglomerations - population (Noise Directive)
	Major roads, railways and air transport network (Noise Directive)	Major air transport (Noise Directive)
		Major railways (Noise Directive)
		Major roads (Noise Directive)

Recommendation for describing the reporting data sets of END noise sources:

Metadata for data sets of END noise sources should include also corresponding keywords for INSPIRE priority data sets. The vocabulary for the keywords is the [INSPIRE priority data set](#). The keywords from all levels can be included in metadata. Although the requirement is fulfilled by providing one keyword from any level, it is recommended to provide at least the following:

- the keyword referencing the legal instrument (level 1), and
- the keyword that describes a spatial data set in most details (level 3).

The recommended keywords for the INSPIRE priority data sets for the END noise sources and information about the originating controlled vocabulary are provided below.

DF1_5 Agglomerations

The selected keywords shall describe the content of the data set of END agglomerations including indication that population data are included in the data set. The recommended keywords are from levels 1 and 3 of the INSPIRE priority data set code list.

Keyword	Originating vocabulary		
	Title and URL	Date	Date type
Directive 2002/49/EC	INSPIRE priority data set	04.04.2018	Publication
Agglomerations - population (Noise Directive)	http://inspire.ec.europa.eu/metadata-codelist/PriorityDataset		

DF1_5 Major airports

The selected keywords shall describe the content of the spatial data set of END major airports. The recommended keywords are from levels 1 and 3 of the INSPIRE priority data set code list.

Keyword	Originating vocabulary		
	Title and URL	Date	Date type
Directive 2002/49/EC	INSPIRE priority data set	04.04.2018	Publication
Major air transport (Noise Directive)	http://inspire.ec.europa.eu/metadata-codelist/PriorityDataset		

DF1_5 Major railways

The selected keywords shall describe the content of the spatial data set of END major railways. The recommended keywords are from levels 1 and 3 of the INSPIRE priority data set code list.

Keyword	Originating vocabulary		
	Title and URL	Date	Date type
Directive 2002/49/EC	INSPIRE priority data set	04.04.2018	Publication
Major railways (Noise Directive)	http://inspire.ec.europa.eu/metadata-codelist/PriorityDataset		

DF1_5 Major roads

The selected keywords shall describe the content of the spatial data set of END major roads. The recommended keywords are from levels 1 and 3 of the INSPIRE priority data set code list.

Keyword	Originating vocabulary		
	Title and URL	Date	Date type
Directive 2002/49/EC	INSPIRE priority data set	04.04.2018	Publication
Major roads (Noise Directive)	http://inspire.ec.europa.eu/metadata-codelist/PriorityDataset		

III. Keyword – additional thematic keywords

In addition to the keywords for INSPIRE spatial data theme and INSPIRE priority data sets, other thematic keywords can be included to describe the content of a data set. If the controlled vocabulary exists, it is recommended to select keywords from that vocabulary. In other cases, a keyword can be provided as a free text.

Recommendation for describing the reporting data sets of END noise sources:

It is recommended to include the following thematic keywords into metadata for data sets of END noise sources, e.g. that are provided according to the pre-defined GeoPackage templates. The proposed keywords can be included as free text.

- **Population:** number of inhabitants in the END agglomeration; free text
- **Annual traffic flow:** annual traffic flow related to major airports or major railways or major roads; free text.

5. Lineage

Lineage is a statement on process history and/or overall quality of the spatial data set. Where appropriate it may include a statement whether the data set has been validated or quality assured, whether it is the official version (if multiple versions exist), and whether it has legal validity.

For the END reporting purpose, information that has been reported as metadata documents in previous END reporting cycles can be included in the metadata element lineage.

Recommendation for describing the reporting data sets of END noise sources:

The data sets of END noise sources prepared on the basis of pre-defined GeoPackage templates will typically include spatial information (geometry) and END specific thematic data (e.g. number of inhabitants in agglomeration, annual traffic flow for major airport, railways or roads, identifiers, and other.). Among other relevant information, the lineage could include the following information for noise sources, such as:

- Source and methodology – including version of specification on which the compilation is based
- Constraints of the data being provided
- Temporal references of data used for creating noise sources and related data:
 - Census year when the population has been calculated
 - Year when the traffic flow has been determined.

6. Conformity

According to the INSPIRE Metadata Regulation, a conformity of a spatial data set to the INSPIRE Implementing rules must be provided in metadata. Additionally, it is also possible to declare conformity to other specifications.

A conformity is described by providing specifications or user requirements against which data is being evaluated and by providing [a degree of conformity](#) as conformant, not conformant or not evaluated.

The detailed description of providing conformity is in the INSPIRE Metadata technical guidelines, C.2.19 Specification and C.2.20 Degree.

I. Conformity – to the INSPIRE Implementing rules on interoperability

According to the INSPIRE Metadata Regulation, it is **mandatory** to state the conformity of data to the 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.

The implementation details are provided in the INSPIRE Metadata technical guidelines C.2.19 Specification and C.2.20 Degree.

This information shall be included in the INSPIRE metadata for END noise sources.

The technical validation of spatial data sets to the INSPIRE Regulation on interoperability (1089/2010) can be done with the [INSPIRE Reference Validator](#). Validation of spatial data sets is available for the file format GML. In case, the END reporting authority would want to perform this validation, the European Environment Agency can help by providing the END application schemas in XML/GML that can be used to develop the spatial data in GML and test it with this validator.

II. Conformity – to the END Implementing decision and END data model

The [END conceptual data model](#) corresponds to the Commission Implementing Decision (EU) 2021/1967 of 11 November 2021 setting up a mandatory data repository and a mandatory digital

information exchange mechanism in accordance with Directive 2002/49/EC of the European Parliament and of the Council (Text with EEA relevance)¹².

Based on the END conceptual data model, the data templates in GeoPackage are developed according to the [END encoding guidelines for GeoPackage](#) ensuring also the compatibility with the INSPIRE default encoding in GML. This establishes the line of compatibility among the END Implementing Decision, the END conceptual data model and the encoding format GeoPackage.

Recommendation for describing the reporting data sets of END noise sources:

The data set of END noise sources prepared on the basis of pre-defined Geopackage templates should include information on conformity to two specifications:

- the END Implementing Decision 2021/1967, and
- the END data model documentation.

The conformity criteria and rules could be further developed in cooperation with the countries, however without increasing any additional burden for preparation of data. The validation of the reporting data sets is performed during the reporting process in the Reportnet platform with aim to validate data against the END reporting requirements. The degree of conformity to the END Implementing Decision 2021/1967 and the END data model documentation should be related to the validation status of reporting data. It is recommended to provide data according to the latest END data model documentation.

The conformity information can be provided as following:

Commission Implementing Decision (EU) 2021/1967

- **Specification – citation:**
 - Title: Commission Implementing Decision (EU) 2021/1967 of 11 November 2021 setting up a mandatory data repository and a mandatory digital information exchange mechanism in accordance with Directive 2002/49/EC of the European Parliament and of the Council
 - Reference date: 12.11.2021
 - Date type: publication
- **Degree of conformity:**
 - true if conformant
 - false if not conformant
 - null (with nilReason = “unknown”) if not evaluated.

END data model documentation

- **Specification – citation:**
 - Title: Environmental Noise Directive Data model documentation version 4.1, June 2021
 - Reference date: 30.06.2021
 - Date type: publication
- **Degree of conformity:**
 - true if conformant
 - false if not conformant
 - null (with nilReason = “unknown”) if not evaluated.

¹² http://data.europa.eu/eli/dec_impl/2021/1967/oj

7. Good practices

I. *INSPIRE Geoportal*

The [INSPIRE Geoportal](#) is the central European access point to the data provided by EU Member States and several EFTA countries under the INSPIRE Directive. It harvests national metadata catalogues and provides different search mechanisms.

The [metadata describing spatial data sets under the Environmental Noise Directive](#) are already available in the INSPIRE Geoportal.

After the establishment of the new END mandatory digital information exchange mechanism, it is expected that data sets and metadata will be prepared according to the END reporting guidelines and available in the INSPIRE infrastructure. Thus, the metadata for the END noise sources will be included in the national metadata catalogues and also discoverable through the INSPIRE Geoportal.

II. *EEA Spatial Data Infrastructure Metadata Catalogue*

Another example that can serve as a guidance and motivation to prepare INSPIRE metadata for the data sets of END noise sources is the [European Environment Agency Spatial Data Infrastructure \(EEA SDI\) Metadata Catalogue](#). For example: It includes INSPIRE compliant metadata for spatial data sets of European wide geographic area, e.g. [Noise exposure data reported under Environmental Noise Directive \(END\) 2017, version 2019, Oct. 2019](#)¹³.

In addition to metadata description, the EEA-SDI metadata guidance are available at https://taskman.eionet.europa.eu/projects/public-docs/wiki/Cataloguemetadata_guidelines. It includes references to the INSPIRE Metadata technical guidelines, XML encoding examples, additional information and the EEA SDI specific requirements.

¹³ The data used cover noise sources specified in the END, such as major roads with more than 3 000 000 vehicle passages a year, major railways with more than 30 000 train passages per year and airports with more than 50 000 movements per year, as well as all roads, railways, airports and industries in urban agglomerations of more than 100 000 inhabitants.

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Environment Agency.

