European Environment Agency

Reporting of establishment information under the Seveso Directive (eSPIRS)

Data exchange format specification

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Version 0.3 – 15/05/2025

Acknowledgments

Version control

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0.1	Internal draft for discussion with the EEA	March 2025
0.2	Revised internal draft EEA	May 2025
0.3	Version for sharing with the Member State Reporters	June 2025

Contents

1 Introduction

This document outlines the data exchange format to be used for uploading data reported under the Seveso eSPIRS (e-Seveso Plant Information Retrieval System) data flow, in accordance with the Seveso-III Directive (Directive 2012/18/EU), via the EEA's data reporting platform Reportnet 3.

Given the exchange format is closely tied to the internal structuring of eSPIRS data within Reportnet 3, the first section of this document provides an overview of the data organisation in the platform. It also outlines the implementation of the eSPIRS data model, as defined in the accompanying *Data model documentation*.

While Reportnet 3 enables users to interact directly with the data through its user interface, the primary mode of data exchange with national authorities will be through file-based bulk uploads. The following sections present a detailed description of the required format, structure, and packaging requirements for these uploads.

This document provides instructions on how to compile formally valid data in accordance with the technical specifications of the Reportnet 3 platform. It is important to note that compliance with the requirements presented in this document only ensures successful upload of data to the platform. Additional instructions on how to provide data adhering to the reporting requirements of the Directive and Commission Implementing Decision 2022/1979 (CID) are given in complimentary documents that address other aspects of the data flow:

- QA/QC Manual: This document will describe the Quality Assurance / Quality Control (QA/QC) logic to be applied, supporting consistency, accuracy and completeness of the submitted data
- Data Model
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- Manual for Reporters: This practical guide will help reporters on preparing and submitting of data

- All of the documents concerning the reporting of Seveso Directive data flows can be found at: https://eionet.europa.eu/reportnet/seveso

2 eSPIRS data model implementation

The Reportnet 3 platform works with data organised in flat tables made up of rows and columns. These tables can be linked to represent more complex data structures, similar to how relational databases work. Tables are organised in collections called Datasets and structured in Dataflows containing one or more Datasets. Reference Datasets store information that is used to validate and cross reference the reported data such as controlled vocabularies, geographical boundaries or data from other Dataflows. Reference Datasets are not used to report data and cannot be modified by the users.

The design of the eSPIRS Dataflow within Reportnet 3 is based on the structure defined in the Data Model Documentation, while also reflecting necessary adaptations to simplify and reduce reporting complexity and ensure compatibility with the reporting platform.

As described, the eSPIRS Dataflow is composed of two main reporting Datasets:

- **ReportInfo**: This Dataset captures general information submitted by the *Competent Authority*. It also includes *ContextualInformation* feature types, which provide contextual metadata.
- **Establishments**: This Dataset contains the core content of the eSPIRS data submission, including the following feature types: *ProductionSite*, *SevesoEstablishment*, *EstablishmentSubstance*, *ProductionSiteConfidentiality*, and *EstablishmentConfidentiality*.

These two Datasets represent the only components of the eSPIRS Dataflow for which reporting is required. Additional reference Datasets, containing the code lists entries and reference geographic information, are not to be reported by national authorities.

In general, the number of flat tables required to represent a data model is dependent on the number of one-to-many relationships. To streamline the reporting process, several features and data elements were consolidated:

The *ProductionSite* and *SevesoEstablishment* feature types were merged into a single table named **SevesoEstablishment**.

The *GM_Point* and *AddressDetails* data types, representing geometry and address information, were extracted and directly integrated into the **SevesoEstablishment** table.

Similarly, the *ProductionSiteConfidentiality* and *SevesoEstablishmentConfidentiality* feature types, both used to capture confidentiality declarations, were consolidated into a single table named **EstablishmentConfidentiality**.

In addition to the merged tables, two additional tables, **EstablishmentSubstances** and **EstablishmentIndustryType,** are used to represent the remaining one-to-many relationships:

- Between *SevesoEstablishment* and *EstablishmentSubstance*.
- From the cardinality constraints associated with *OtherIndustryType* data type.

Figure 1 illustrates the relationship between the original eSPIRS data model feature types, their implementation as flat tables in Reportnet 3 (RN3), and their organisation within the two reporting Datasets. The diagram highlights how feature types were merged or unpacked to align with the technical structure of the platform while preserving key data relationships.

Figure 1: Relationship between eSPIRS data model feature types, RN3 tables and Datasets
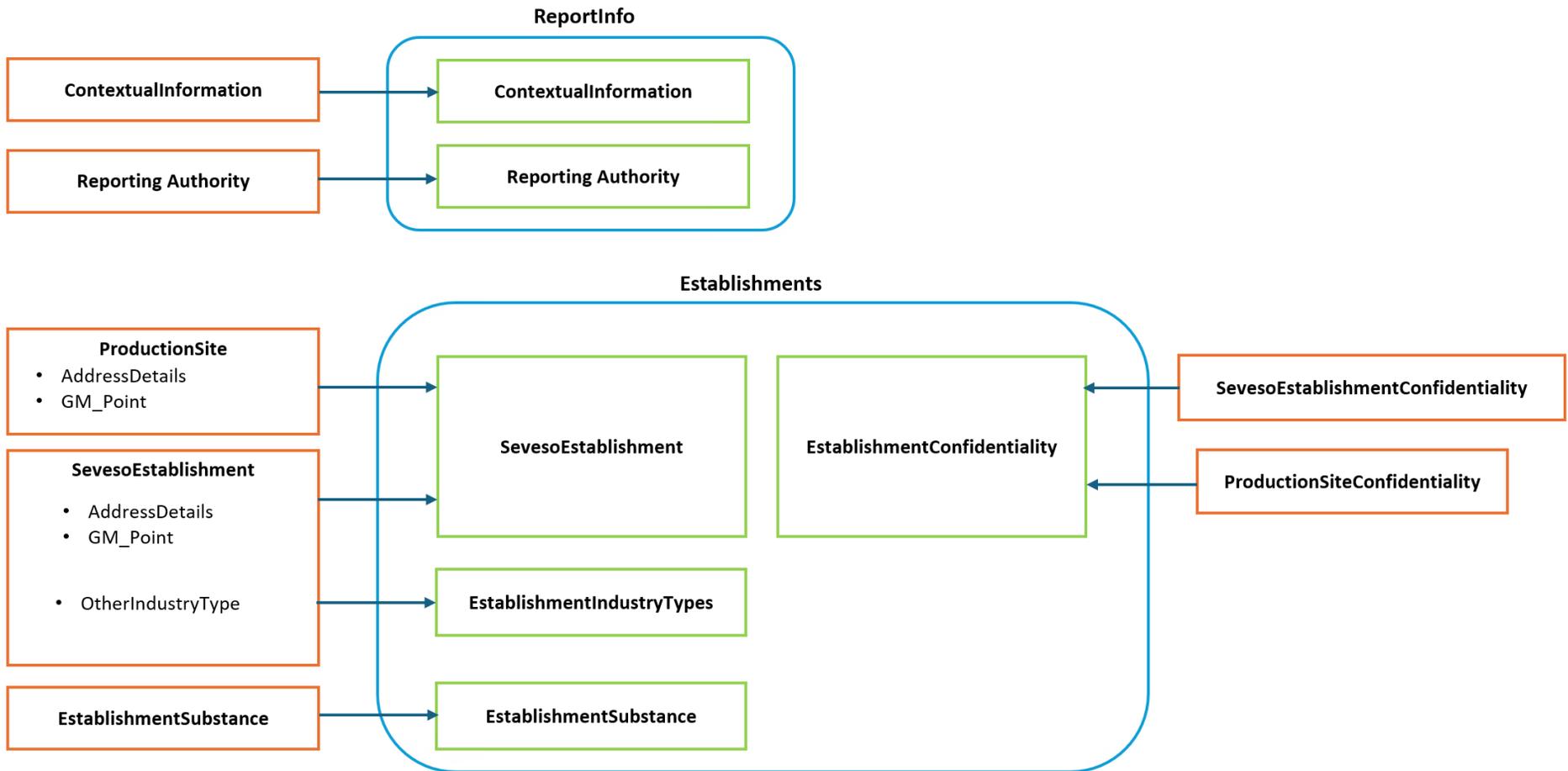
The eSPIRS data model allows multiple *SevesoEstablishment* to be associated with the same *ProductionSite*. As a result, information related to the same *ProductionSite* and *ProductionSiteConfidentiality* may be repeated across multiple rows in the **SevesoEstablishment** and **EstablishmentConfidentiality** tables. This potential redundancy is a result of denormalization and is managed through specific quality checks that ensure data consistency by preventing reporting of conflicting entries for the same *ProductionSite.* **Table 1** and **Figure 2** illustrate how different *ProductionSite–Establishment* configurations, such as multiple establishments at a single site or standalone establishments, are represented within the consolidated **SevesoEstablishment** table structure.

Figure 2: Example of ProductionSite-Establishment relationships. Case A, two Establishments in the same ProductionSite. Case B, individual Establishment.

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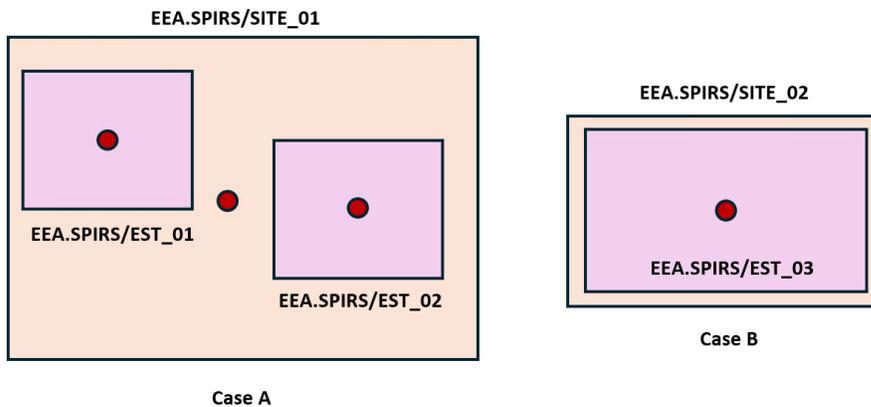
Table 1: Data representation of the different configurations in the SevesoEstablishment table.

SevesoEstablishment Table

inspireId	siteInspireId	latitude	longitude	siteLatitude	siteLongitude
EEA.SPIRS/EST_01	EEA.SPIRS/SITE_01	55.68161	12.58694	55.68926	12.58526
EEA.SPIRS/EST_02	EEA.SPIRS/SITE_01	55.68597	12.57752	55.68926	12.58526
EEA.SPIRS/EST_03	EEA.SPIRS/SITE_02	55.71957	9.135175	55.71957	9.135175

In Reportnet 3, links between tables are enforced using a **single column** by merging the two components of an *InspireId* (i.e. namespace and localId), by concatenating the namespace and localId with a forward slash (/) as a separator, to store the full *InspireId*. The separating forward slash should not be used if the namespace already terminates with a forward slash.

Secondary industry types for an establishment may be reported using NACE, SPIRS or both industry types. When both types of are used, the number of entries in the **EstablishmentIndustryType** table must correspond to greatest number of entries of the two classification types. **Figure 3** illustrates this scenario

for establishment EST_01, which has three secondary NACE classifications and one SPIRS secondary classification, resulting in threes total entries.

Figure 3: Example of handling of multiple secondary industry types using SPIRS and NACE classifications.

EstablishmentIndustryType Table

estabishmentId	otherIndustryTypeNACE	otherIndustryTypeSPIRS
EEA.SPIRS/EST_01	24.43	WASTE_STORAGE
EEA.SPIRS/EST_01	38.31	
EEA.SPIRS/EST_01	38.31	

To ensure consistency and operability In Reportnet 3, table definitions must include a specified data type for each column. The platform supports various data types, including text, dates, integers, floating-point numbers, and URLs. Defining data types enables automatic validation of the submitted data, ensuring the values provided conform to the expected format.

When a column is intended to reference a code list or a record within the dataset structure, it must be defined using the link data type. Link data types referencing code lists establish a relationship with the entries maintained in reference datasets.

To compile valid data files, values for link-type columns referencing code lists must be taken from the EIONET Data Dictionary, available at: https://dd.eionet.europa.eu/vocabularies. Each valid entry is identified by an Id field, which corresponds to the final segment of the its URI. For example, the Id **lowerTier** corresponds to the URI:

https://dd.eionet.europa.eu/vocabularyconcept/seveso/sevesoTier/lowerTier

In general, the Ids used in the eSPIRS code lists are aligned with those used in the JRC reporting system. When a new Id is introduced, the previously used JRC Id is documented in the *sevesoFormerIdentifier* field within the vocabulary entry.

Tables in **Annex 1** list the columns, data types, CID reference and the applicable vocabulary to be for populating link-type columns in the **ReportInfo** and **Establishment** datasets.

3 CSV Data exchange format specification

Reportnet 3 uses Comma Separated Values (CSV) files as the standard format for data exchange. A CSV file is a plain text file that represents tabular data, where:

- Each line corresponds to a row in the table.
- Values within each line are separated by a comma delimiter
- The first line typically contains the column names and serves as the *header row*.

CSV files are especially useful for uploading large amounts of data from national reporting systems into Reportnet 3. However, all files must strictly follow the structure and content requirements outlined in this document. These requirements are based on the internal table schemas defined in Reportnet 3, as outlined in the previous section.

All tables in a Dataset, including those without data, must be uploaded together as a single compressed ZIP archive containing the corresponding CSV files. Files must be placed at the root level of the archive, folders within the ZIP archive are not permitted.

If a table contains no data, its CSV file should still be included in the ZIP archive, containing only the header row (the line with column names).

Each CSV file must be named exactly after the corresponding table in Reportnet 3. The file name must match the table name precisely, including correct use of upper and lower case.

The structure of each CSV file must strictly follow the format the following rules:

- The column order and names must match the Reportnet 3 specification.
- Each data row must contain the same number of columns as defined in the header row.

Special attention is required when handling text values that contain commas:

- Commas inside text fields may be misinterpreted as column separators.
- To prevent this, text entries should always be enclosed in double quotes (").
  - Example: "Copenhagen, Denmark" will be treated as a single value, not two columns.

Reportnet 3 supports a wide range of characters sets, including non-Latin alphabets (e.g., Greek, Cyrillic) through to the use of UTF-8 encoding. Reporters must ensure that all CSV files saved using UTF-8 encoding to ensure proper handling of all characters.

Annex 1: Table schema specifications

Annex 1.1 ContextualInformation Table

Field name	Field description with CID reference	Field type
countryCode	1.1 Country indentifier	TEXT
reportingYear	1.2 Calendar year to which the reporting refers	NUMBER_INTEGER

Code lists used in LINK fields:

- countryCode: https://dd.eionet.europa.eu/vocabulary/common/countries/

Annex 1.2 CompetentAuthority Table

Field name	Field description with CID reference	Field type
authorityName	2.1 Reporting Competent Authority name	TEXT
streetName	2.2a Competent Authority address street name	TEXT
buildingNumber	2.2b Competent Authority address building number	TEXT
postCode	2.2c Competent Authority address post code	TEXT
city	2.2d Competent Authority address city	TEXT
authorityPhone	2.4 Competent Authority phone number	PHONE
authorityEmail	2.3 Competent Authority email	EMAIL
comments	2.5 Comments on the Competent Authority	TEXT

Annex 1.3 SevesoEstablishment Table

Field name	Field description with CID reference	Field type
inspireId	4.1 Establishment InspireId unique identifier	TEXT
identifierScheme	4.2 (a) Thematic identifier scheme	TEXT
identifier	4.2 (b) Thematic identifier	TEXT
sevesoEstablishmentTier	4.3 Seveso Tier classification according to Annex I of 2012/18/EU	LINK
status	4.4 Operational Status of the Establishment	LINK
establishmentName	4.5 Name of the Establishment	TEXT
parentCompany	4.6 Name of the Parent Company	TEXT
streetName	4.7 (a) Establishment address street name	TEXT
buildingNumber	4.7 (b) Establishment address building number	TEXT
city	4.7 (c) Establishment address city	TEXT
postCode	4.7 (d) Establishment address postcode	TEXT

longitude	4.8 (a) Longitude of the Establishment inEPSG:4258 ref. system	NUMBER_DECIMAL
latitude	4.8 (b) Latitude of the Establishment in EPSG:4258 ref. system	NUMBER_DECIMAL
mainIndustryTypeNACE	4.9 Primary Industry Activity four digits NACE code	LINK
mainIndustryTypeSPIRS	4.10 Primary Industry Activity SPIRS code	LINK
publicInformationURL	4.11 Link to the website with information to the population	URL
generalURL	4.12 Link to generic website	URL
lastInspectionDate	4.13 Date of last inspection	DATE
lastInspectionURL	4.14 Link to the last inspection conclusions	URL
comments	4.15 Comments on the establishment	TEXT
siteInspireId	3.1 Production Site InspireId unique identifier	TEXT
siteIdentifierScheme	3.2 (a) Production Site Thematic Identifier Scheme	TEXT
siteIdentifier	3.2 (b) Production Site Thematic Identifier	TEXT
siteName	3.3 Name of the Production Site	TEXT
siteLongitude	3.4 (a) Longitude of the ProductionSite in EPSG:4258 ref. system	NUMBER_DECIMAL
siteLatitude	3.4 (b) Latitudeof the Production Site in EPSG:4258 ref. system	NUMBER_DECIMAL

Code lists used in LINK fields:

- sevesoEstablishmentTier: https://dd.eionet.europa.eu/vocabulary/seveso/sevesoTier/
- status: https://dd.eionet.europa.eu/vocabulary/seveso/operationalStatus/
- mainIndustryTypeNACE: https://dd.eionet.europa.eu/vocabulary/euregistryonindustrialsites/NACEValue/
- mainIndustryTypeSPIRS: https://dd.eionet.europa.eu/vocabulary/seveso/SPIRS/

Annex 1.3 EstablishmentSubstance Table

Field name	Field description with CID reference	Field type
establishmentId	Reference to the Establishment InspireId	LINK
substance	5.1, 5.2 common name of hazard classification of the substance. CAS Number is included in the reference data.	LINK
quantityTNE	5.3 Amount of hazardous substance in Tonnes	NUMBER_DECIMAL
physicalProperties	5.4 Storage conditions under which the substance is maintained, such as state (solid, liquid, gas), granularity (powder, pellets, etc.), pressure, temperature, etc.	TEXT
substanceComments	5.5 Comments to the substance	TEXT
substanceConfidentiality	Motivation for making substance information confidential including quantityTNE	LINK

Code lists used in LINK fields:

- substance: https://dd.eionet.europa.eu/vocabulary/seveso/substance/
- substanceConfidentiality: https://dd.eionet.europa.eu/vocabulary/seveso/reasonValue/

Annex 1.4 EstablishmentIndustryType Table

Field name	Field description with CID reference	Field type
establishmentId	Reference to the Establishment InspireId	LINK
otherIndustryTypeNACE	4.9 Additional NACE code	LINK
otherIndustryTypeSPIRS	4.10 Additional SPIRS code	LINK

Code lists used in LINK fields:

- otherIndustryTypeNACE:
  https://dd.eionet.europa.eu/vocabulary/euregistryonindustrialsites/NACEValue
- otherIndustryTypeSPIRS: https://dd.eionet.europa.eu/vocabulary/seveso/SPIRS

Annex 1.5 EstablishmentConfidentiality Table

Field name	Field description with CID reference	Field type
establishmentId	Reference to the Establishment InspireId	LINK
establishmentTierConfidentiality	Motivation for making Establishment tier declaration confidential	LINK
statusConfidentiality	Motivation for making Establishment status declaration confidential	LINK
establishmentNameConfidentiality	Motivation for making Establishment name confidential	LINK
parentCompanyConfidentiality	Motivation for making Establishment parent company name confidential	LINK
addressConfidentiality	Motivation for making Establishment address confidential	LINK
locationConfidentiality	Motivation for making Establishment Longitude and Latitude confidential	LINK
industryTypeConfidentiality	Motivation for making Establishment primary and secondary SPIRS and NACE industry type declarations confidential	LINK
lastInspectionConfidentiality	Motivation for making Establishment last Inspection date confidential	LINK
commentsConfidentiality	Motivation for making Establishment comments confidential	LINK

Code lists used in LINK fields:

- establishmentTierConfidentiality: https://dd.eionet.europa.eu/vocabulary/seveso/reasonValue
- statusConfidentiality: https://dd.eionet.europa.eu/vocabulary/seveso/reasonValue
- establishmentNameConfidentiality: https://dd.eionet.europa.eu/vocabulary/seveso/reasonValue
- addressConfidentiality: https://dd.eionet.europa.eu/vocabulary/seveso/reasonValue
- locationConfidentiality: https://dd.eionet.europa.eu/vocabulary/seveso/reasonValue
- industryTypeConfidentiality: https://dd.eionet.europa.eu/vocabulary/seveso/reasonValue
- lastInspectionConfidentiality: https://dd.eionet.europa.eu/vocabulary/seveso/reasonValue
- commentsConfidentiality: https://dd.eionet.europa.eu/vocabulary/seveso/reasonValue