



SEVESO REPORTING: eMARS Data Model

Seveso Community of Practice
Webinar, Copenhagen

17 December 2024



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The webinar is **not** being
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you wish to speak.

**We want
to hear
from you**



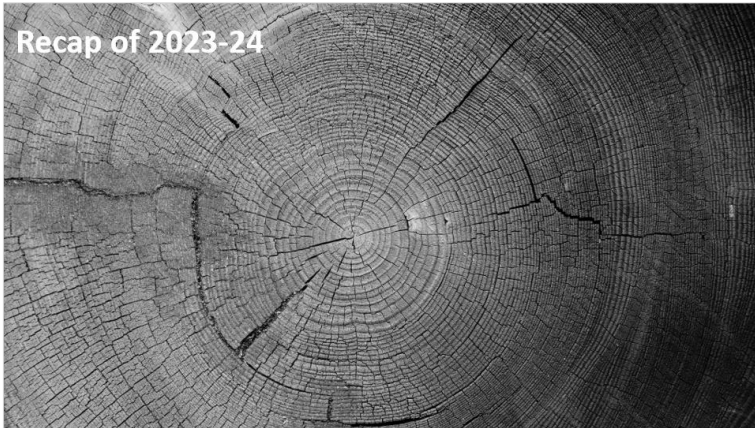
Raise your hand if you wish
to speak.
Or share your comments,
questions and insights **in the
chat**.

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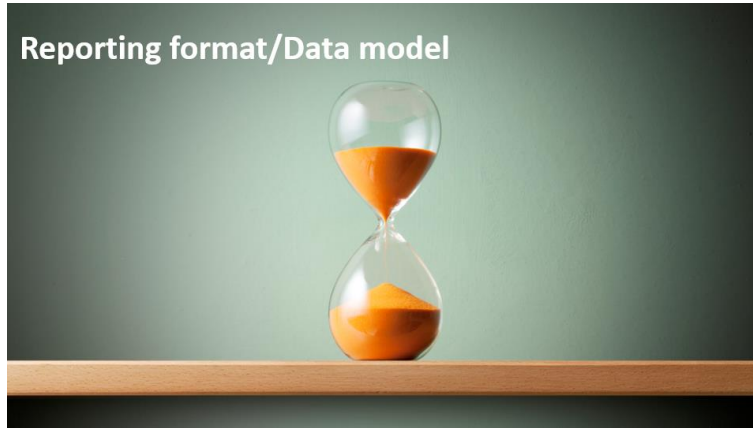


Outline

Recap of 2023-24

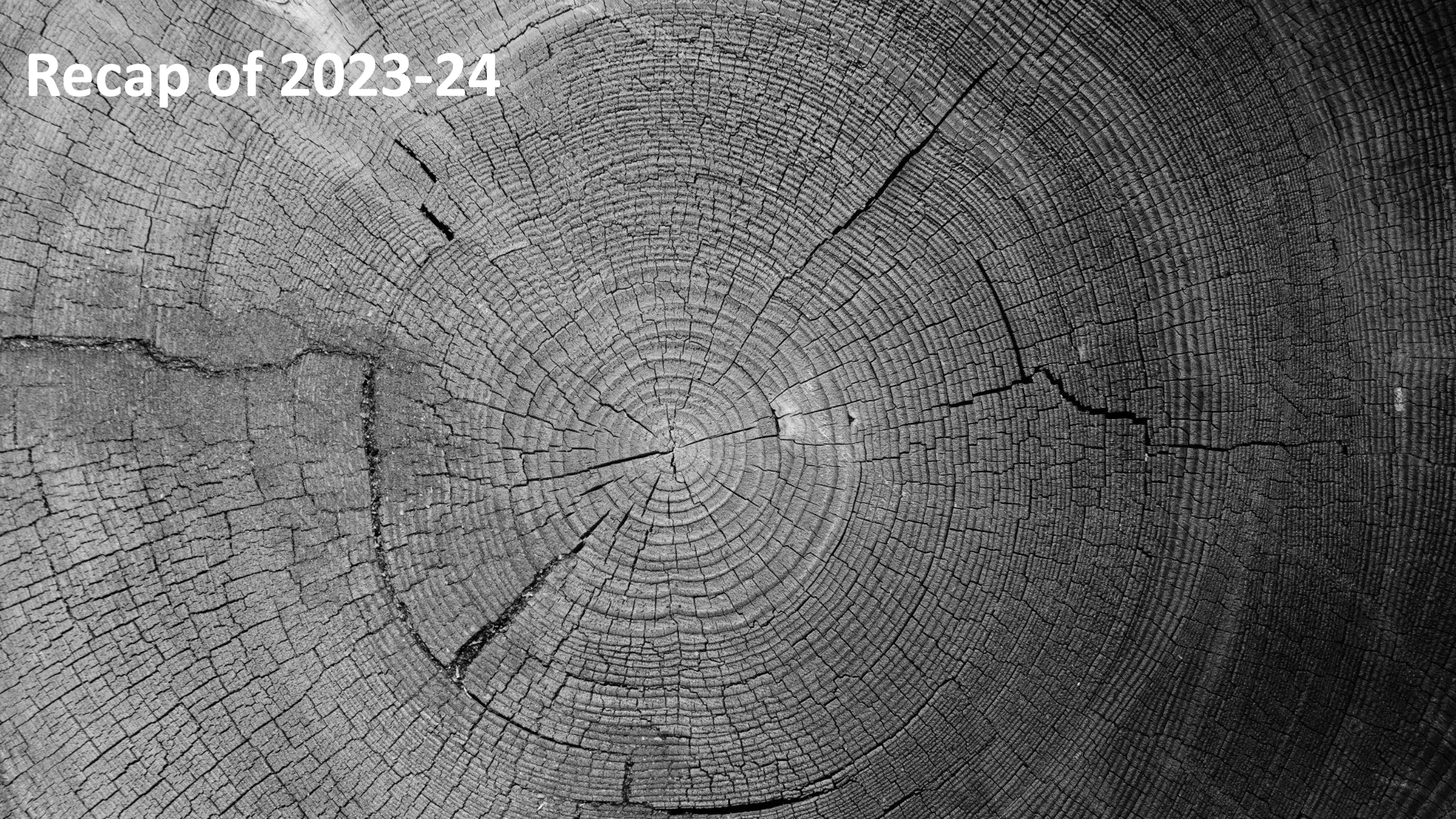


Reporting format/Data model



Next steps





Recap of 2023-24

Developments 2023-24

- › Analyse requirements
- › Analyse current systems
- › Key focus to date
 - › Reporting platform
 - › Database
 - › Documentation



EEA eReporting

- › New functionality
- › Setting up specific format

The screenshot displays the EEA eReporting website. At the top, there is a header with the European Union flag and the text "An official website of the European Union" and "How do you know?". Below this is a dark blue banner with the "Reportnet" logo and a "Login" button. The main content area features a large graphic of a network of yellow and green lines. To the left of the graphic, the text reads: "The next generation for e-Reporting environmental and climate data". Below this, it states: "Reportnet 3 is the new e-Reporting platform for reporting environmental and climate data to the European Environment Agency (EEA). The platform embraces the strategic goals of the European Commission's Green Deal and Digital Strategy and hosts reporting tasks on behalf of EEA and the Commission." To the right of the graphic, it says: "The transition of reporting obligations from Reportnet 2 to Reportnet 3 will take a number of years. Therefore, Reportnet 2 will remain operational until all data flows are migrated and will then become an archive." Below this, it mentions: "Reportnet 2 can be accessed here: <http://cdr.eionet.europa.eu/>". On the right side of the banner, there is a "Need any help?" section with the email "helpdesk@reportnet.europa.eu" and a "Supporting documents:" section with links to "Login", "Reporter", "Requester", "Webforms", and "API". At the bottom, there is a "Dataflow status" section with two buttons: "View by obligation dataflow status and download reported data" and "View by country dataflow status and download reported data".

An official website of the European Union How do you know? ▾

European Union

Reportnet Login

The next generation for e-Reporting environmental and climate data

Reportnet 3 is the new e-Reporting platform for reporting environmental and climate data to the European Environment Agency (EEA). The platform embraces the strategic goals of the European Commission's Green Deal and Digital Strategy and hosts reporting tasks on behalf of EEA and the Commission.

The transition of reporting obligations from Reportnet 2 to Reportnet 3 will take a number of years. Therefore, Reportnet 2 will remain operational until all data flows are migrated and will then become an archive.

Reportnet 2 can be accessed here: <http://cdr.eionet.europa.eu/>

Need any help?
Please contact us at helpdesk@reportnet.europa.eu

Supporting documents:

- Login
- Reporter
- Requester
- Webforms
- API

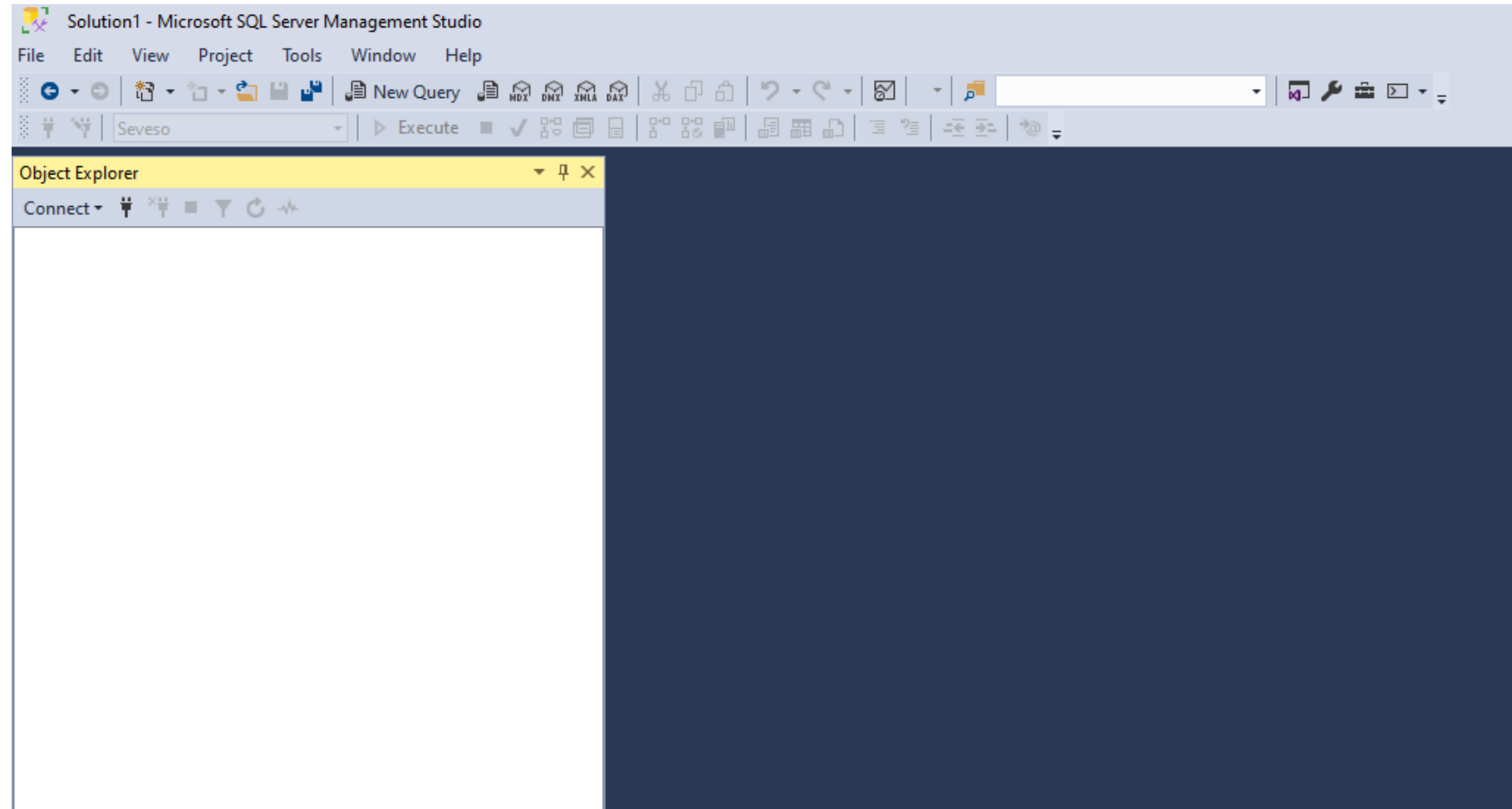
Dataflow status

View by obligation dataflow status and download reported data

View by country dataflow status and download reported data

Database development

- › SQL server
- › Data transfer test
(JRC to EEA)

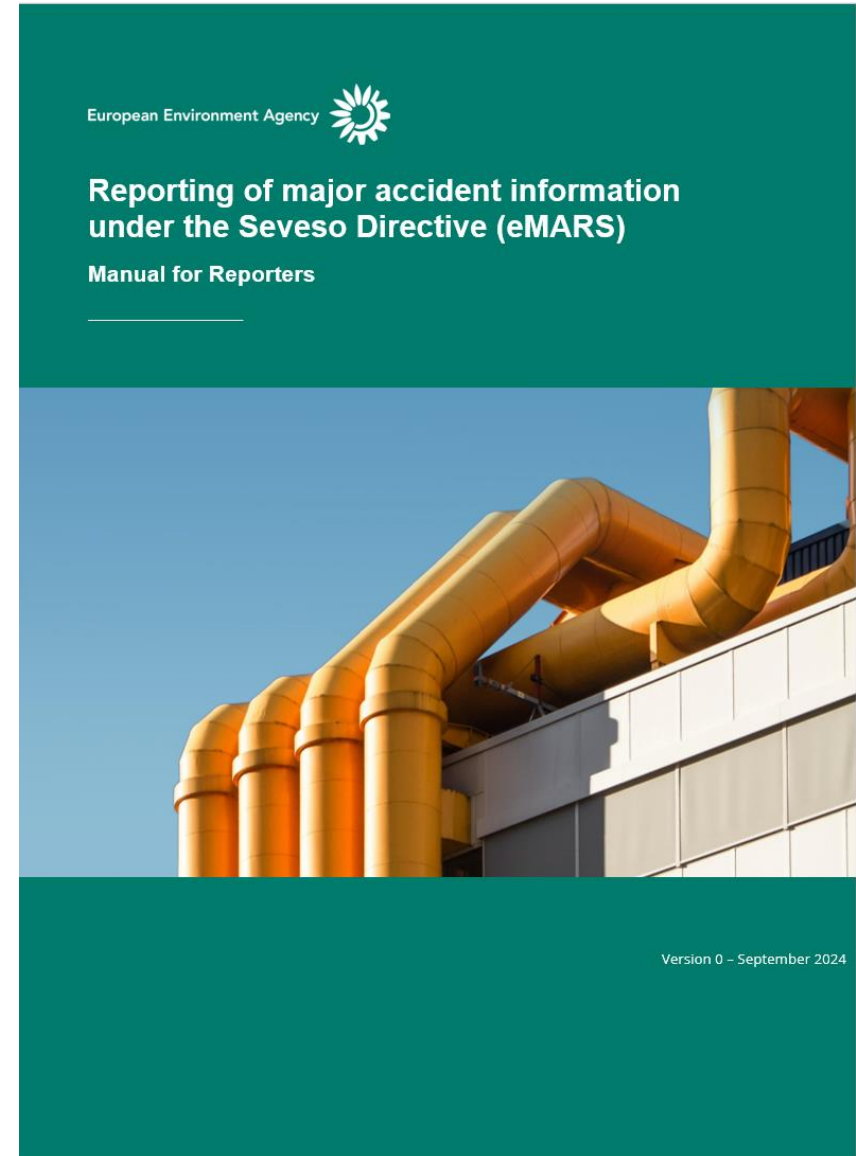


Documentation

- › Data reporting manuals for users
 - › Background
 - › Data model and historical data
 - › How to report
- › Regular updates

Drafted

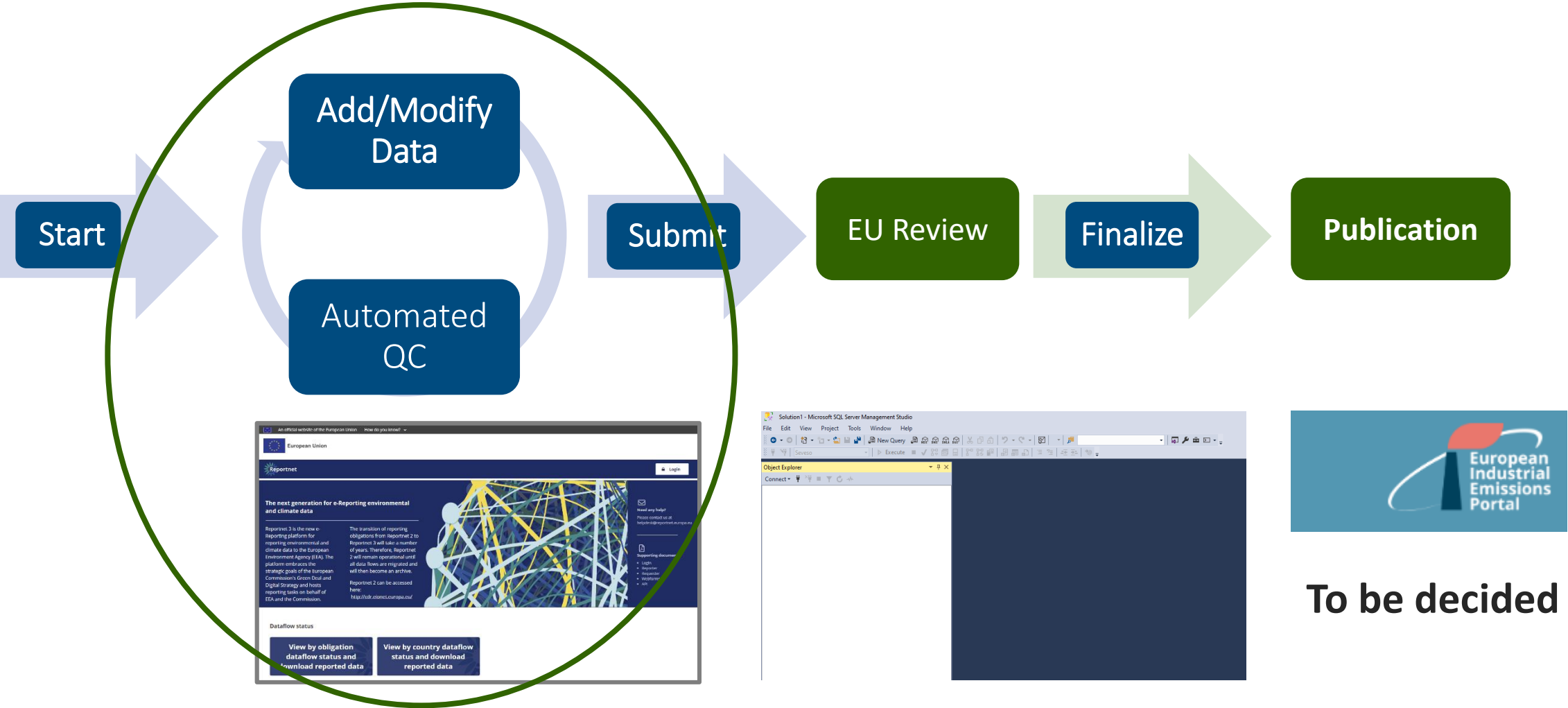
Pending

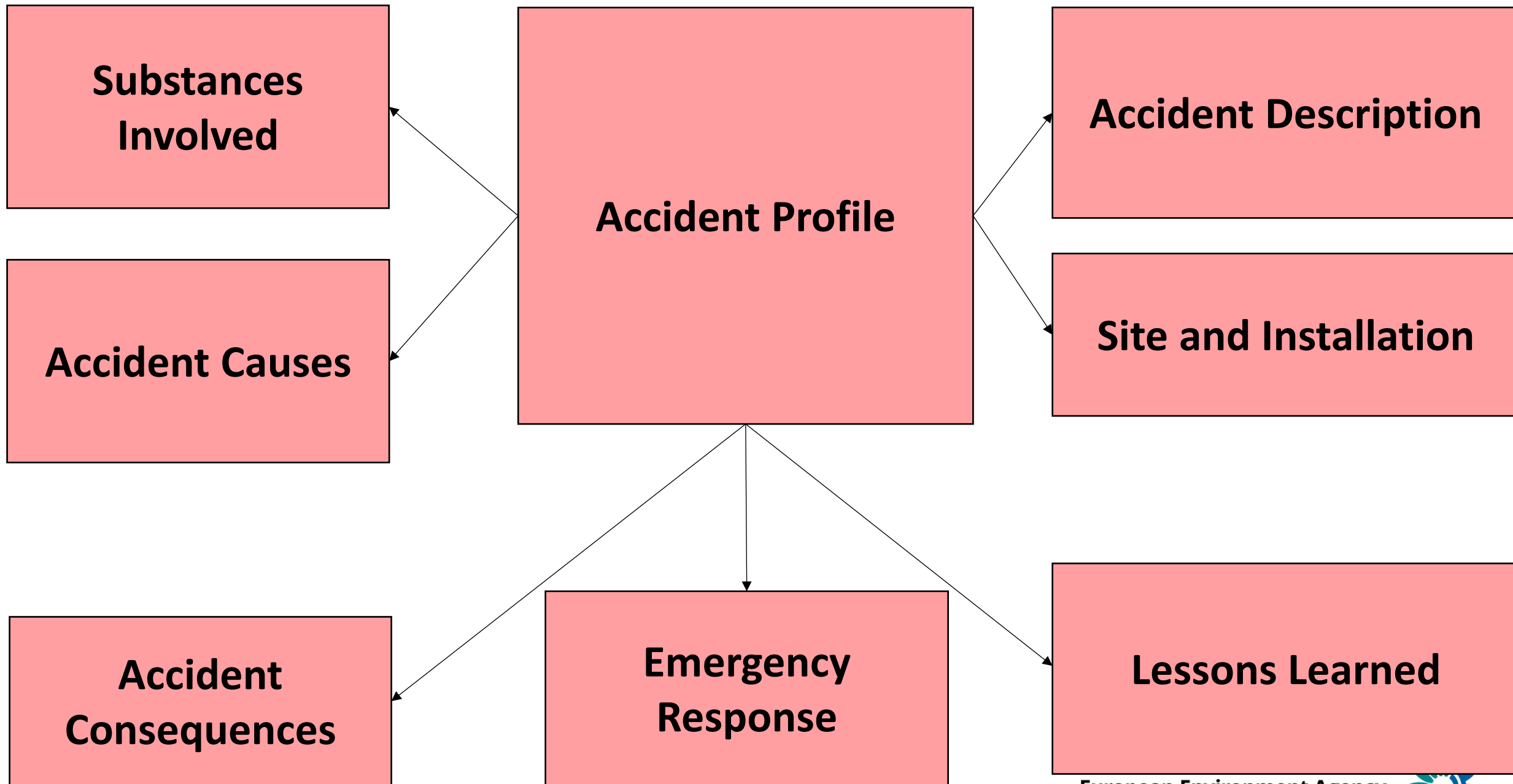


Reporting format/Data model



Accident reporting workflow





User interface: example form for a single accident

Current:

Accident Profile

Accident Description

Site and Installation

Substances Involved

Causes

Consequences

Emergency Response

Lessons Learned

Attachment Section

Reportnet:

⌵ Accident Profile

⌵ Accident Description

⌵ Site and Installation

⌵ Substances Involved

⌵ Causes

⌵ Consequences

⌵ Emergency Response

⌵ Lessons Learned

⌵ Attachment Section

For each section

- › Content requirement
- › Data structure and reporting form implementation
- › Proposed changes – your reactions now or in writing

Accident profile



Accident profile - Requirements

- › Basic information about the accident
- › Information most useful for top level filtering of accidents

Attribute	Item number in the Commission Decision (Part I)
accidentID	Metadata
accidentCode	Metadata
accidentTitle	1.2
startDate	1.1
endDate	1.1
reportingAuthority	1.3, 1.4
authorityName	1.3
authorityAddress	1.3
authorityCity	1.3
reporterName	1.4
reporterTel	1.4
reporterEmail	1.4
accidentType	1.5
reportedUnder	1.6
sevesoStatus	1.7
industrialActivity	1.8
plantInformation	1.9
plantName	1.9
plantAddress	1.9
reportingReasons	1.10
affectedNeighbours	1.11

Accident profile – Structure and format

Accident Title *

0

Event type *

Major accident

Reported under *

Seveso II

Seveso status *

lower-tier

Reporting Reason(s) *

Interesting for lessons learned; Substances involved: greater than 5% of quantity in Column 3 of Annex I

Plant name *

0

Plant address *

0

Industry type *

Affected neighbour countries

Accident profile – proposed changes and points to observe

- › Accident ID and Accident Code – we propose to create only a single accident ID for each accident
- › Currently ID used in public search, Accident code in admin search
- › Reporting authority – should it be at accident level or separately?

Contacts

Reported by

Name *

Address *

City *

Country

Antarctica

Reporting contact

Name *

Phone *

Fax

Email *

Accident description



Accident description - Requirements

- › Description of the accidents
- › Details if there have been specific events: fire, release, explosion or transport related event

Attribute	Item number in the Commission Decision (Part II)
accidentDescription	1.1
accidentsInvolving	1.2
release	1.3, 1.3.1
releaseYN	1.3
releaseInit	1.3.1
releaseMajor	1.3.1
fire	1.4
fireYN	1.4
fireInit	1.4.1
fireMajor	1.4.1
explosion	1.5, 1.5.1
explosionYN	1.5
explosionInit	1.5.1
explosionMajor	1.5.1
transport	1.6, 1.6.1
transportYN	1.6
transportInit	1.6.1
transportMajor	1.6.1
other: CharacterString	1.7

Accident description – Structure and format

Accident Description *

0

Accidents Involving:

Contractors; Transboundary Effects

Did the accident involve a release?

No

Did the accident involve a fire?

No

Did the accident involve an explosion?

No

Did the accident involve transport?

Yes

Type of transport involved in a main occurrence

Air; Road

Type of transport involved in an initiating event

Rail; Road

Details if other type of accident not covered above

0

Accident description – proposed changes and points to observe

- › Saying yes or no for each type of event, then entering info
 - › To ensure no type of event is missed
 - › Ensuring at least “high level” events are added
- › Currently entered by clicking through tabs for each type of event



Comparison with current

Current:

Accident Description

Accident Description

Accident Description *

Accidents Involving

☐ Domino Effects

☐ Natech Events

☐ Transboundary Effects

☐ Contractors

☐ Release

☐ Fire

☐ Explosion

☒ Transport

☐ Other/Unknown

Major Occurrences

☐ air

☐ rail

☐ road

☐ water (sea, river, etc)

Initiating Events

☐ air

☐ rail

☐ road

☐ water (sea, river, etc)

Reportnet:

Accident Description

Accident Description *

Accidents Involving:

Domino Effects; Transboundary Effects

Did the accident involve a release?

No

Did the accident involve a fire?

No

Did the accident involve an explosion?

No

Did the accident involve transport?

Yes

Type of transport involved in a main occurrence

Air; Road

Type of transport involved in an initiating event

Rail; Road

Details if other type of accident not covered above

Site and Installation



Site and installation - Requirements

- › Description of the site and installation where the event occurred
- › Details if there have been equipment failures related to: storage, process, transfer, or transport

Attribute	Item number in the Commission Decision (Part II)
siteDescription	2.1
installationDescription	2.2
operationalPhasesInvolved	2.3, 2.4, 2.5, 2.6
storageType	2.3.1
eventCategory	2.3.1
storageEquipmentType	2.3.2
processType	2.4.1
eventCategory	2.4.1
processEquipmentType	2.4.2
transferType	2.5.1
eventCategory	2.5.1
transferEquipmentType	2.5.2
transportType	2.6.1
eventCategory	2.6.1
transportEquipmentType	2.6.2
otherEquipment	2.7

Site and installation – Structure and format

Site Description * ⓘ

Installation Description * ⓘ

Please select which areas of the site/installation were involved in the accident ⓘ

Storage x

Details if storage involved ⓘ

Type of storage involved ⓘ

Was the storage involved during an initiating event or as a major occurrence? ⓘ

Type of equipment that failed ⓘ

+ Add record

Details if other type of equipment not covered above ⓘ

Site and installation – changes and points to observe

- › Selecting specific phases before entering relevant equipment failures and other details
 - › To ensure no failure is missed
 - › Ensuring at least “high level” failures are added
 - › (Currently entered by clicking through tabs)

Site and installation – proposed changes and points to observe

- › Equipment types in the CD are different for each category (process, storage...), this is not the case in the current implementation

2.4.2 Equipment type

Information about the type of equipment that failed, selected from:

- ☐ reaction vessel; non-pressurised
- ☐ reaction vessel; pressurised
- ☐ other

Equipment type

▼

- not known / not applicable -

- other -

container; non-pressurised (hopper, tank, drum, bag, etc.)

container; pressurised (bullet, sphere, cylinder, etc.)

container; non-ambient temperature (refrigerated or heated)

free placement (unconfined pile, stack, etc; if bagged or in cylinders, ...)

reaction vessel; non-pressurised

reaction vessel; pressurised

machinery/equipment (pump, filter, column separator, mixer, etc.)

heat exchanger (boiler, refrigerator, heating coils, etc.)

valves/controls/monitoring devices/drain cocks

general pipework/flanges

power source (engine, compressor, etc.)

other transfer equipment/apparatus/vehicle

Comparison with current

Current:

Site Description *

Installation Description *

☐Storage

☐Process

☐Transfer

☐Transport

☐Other/Unknown

Major Occurrences

- ☐ process-associated (stockholding, etc. on-site of manufacture)
- ☐ distribution-associated (not on-site of manufacture)
- ☐ other
- ☐ not known / not applicable

Initiating Events

- ☐ process-associated (stockholding, etc. on-site of manufacture)

Equipment type

Equipment type

Reportnet:

Site Description *

Installation Description *

Please select which areas of the site/installation were involved in the accident

Storage x

Details if storage involved

+ Add record

Type of storage involved

Was the storage involved during an initiating event or as a major occurrence?

Type of equipment that failed

Details if other type of equipment not covered above

Substances involved



Substances involved - Requirements

- › Substances involved in the accident: a description and details for all substances involved
- › The CD envisages this to be substances notifiable under the Seveso Directive

Attribute	Item number in the Commission Decision (Part II)
substancesDescription	3.1
substanceInvolved	3.2-3.5
substanceClassification	3.2
substanceName	/
numberCAS	3.3
quantityDirectlyInvolved	3.4
quantityPotentiallyInvolved	3.5

3 SUBSTANCES INVOLVED

A description of the substances involved in the accident that are either notified or notifiable for the establishment under Article 6 and classified according to Annex I to the Directive. As well as the name, the CAS number and estimates of the quantities of the most important dangerous substances involved (or potentially involved), any relevant information on their characteristics should be included, e.g. whether liquid, powder, etc., and whether they are 'raw materials', 'on-site intermediates', 'normal finished products' or 'possible abnormal products'.

Substances involved – examples of data

Formula	H ⁺ Cl ⁻	H ⁺ F ⁻
CAS number	7647-01-0	7664-39-3
Seveso III Directive	Hydrogen chloride (liquefied gas)	Not a named substance
CLP Regulation	Hydrogen chloride	Hydrogen fluoride Hydrofluoric acid ... %
ECHA substance card	Hydrogen chloride	Hydrogen fluoride
Substance names in the eMARS database	Aqueous Ammonia Solution gaseous hydrochloric acid (HCl) hydrochloric acid Hydrochloric acid (31-33%) Hydrochloric Acid, HCl hydrocloridric acid hydrogen chloride Hydrogen Chloride (liquefied gas)	Hydrogen Fluoride Hydrofluoric acid Hydrofluoric acid 72-75%, aqueous solution Hydrogen Flouride Hydrogen flouride (HF) Hydrogen fluoride Hydrogen Fluoride (HF) (Anhydrous) Hydrogen fluoride 40 % Hydrogen fluoride gas, lighter than air hydrogen-fluoride New substance

Substances involved – examples of data

- › Spelling issues with CAS numbers, e.g.
 - › Leading zeroes, “07647-01-0” (and leading blanks)
 - › Multiple numbers in the cell, e.g. “00106-97-8; 00075-28”
 - › Dots and not dashes, “74.87.3”
 - › Missing control number, or extra digits in control number
“7664-41-07”, or “7664-41”
- › Other formats: “A-C025”, “EWC 06 05 02”, “2,236”

Substances involved – proposed changes and points to observe

- › The name and CAS number are proposed to come from lists rather than being free text fields
- › To allow improved data quality
- › Bring closer to the CD requirement

Substance Involved

CAS Number

**Directly Involved
(tonnes)**

**Potential Quantity
(tonnes)**



- › It could be possible to add another field for additional substances that do not fall in the above



Substances involved – Structure and format

Substances Involved Description * ⓘ

Substances involved ✎

+ Add record

Substance category ⓘ

No substances

Substance name ⓘ

CAS Number ⓘ

-

Directly Involved (Tonnes) ⓘ

Potential Quantity (Tonnes) ⓘ

Causes



Causes - Requirements

- › Description of the causes of the accident
- › Details by type of causative factors, e.g. equipment, human, organisational, external

Attribute	Item number in the Commission Decision (Part II)
causesDescription	4.1
causativeFactorType	4.2, 4.3, 4.4, 4.5, 4.6
causesPlantEquipment	4.2.1
causesHuman	4.3.1
causesOrganisational	4.4.1
causesExternal	4.5.1
causesOtherDescription	4.6

Causes – Structure and format

Causes Description *

0

Causative factors ⓘ

External; Plant/equipment

Plant/Equipment related causative factors ⓘ

corrosion/fatigue

External factors

natural event (weather, temperature, earthquake, etc.)

Causes – proposed changes and points to observe

- › Selecting types of causative factors before entering relevant details
 - › Ensuring at least “high level” causes are entered
 - › (Currently entered by clicking through tabs)
- › Drop-downs for causative factors: without “not known / not applicable” and “not identified”

Causative Factor

- ☐ operator error
- ☐ operator health (includes ailments, intoxication, death, etc.)
- ☐ wilful disobedience/failure to carry out duties
- ☐ malicious intervention
- ☐ other
- ☐ not known / not applicable
- ☐ not identified

Causes – changes and points to observe

› “Type” in the current system not envisaged in the new system

Causative Factor

- ☐ operator error
- ☐ operator health (includes ailments, intoxication, death, etc.)
- ☐ wilful disobedience/failure to carry out duties
- ☐ malicious intervention
- ☐ other

Type

none

inadequate

inappropriate

unclear

Consequences



Consequences - Requirements

- › Description of the consequences of the accident
- › Details by type of consequences (human, environmental, material, disruption)

Attribute	Item number in the Commission Decision (Part II)
consequenceDescription	5.1
consequencesType	5.2, 5.3, 5.4, 5.5
humanEffectsLocation	5.2.1
typeHumanEffect	5.2.2
humanEffectsQuantity	5.2.3
humanEffectsDesc	5.2.3
envEffectsLocation	5.3.1
typeEnvironmentalEffect	5.3.2
envEffectsQuantity	5.3.3
envEffectsDesc	5.3.3
costEffectsLocation	5.4.1
typeCostEffect	5.4.2
costEffectsQuantity	5.4.3
costEffectsDesc	5.4.3
disruptionEffectsDesc	5.5.1
effectsLocation	5.5.2
typeDisruptionEffect	5.5.3
disruptionEffectsQuantity	5.5.3

Consequences – Structure and format

Consequences Description ⓘ

Did the accident involve the following types of consequences? ⓘ

Human x

Details on Human Consequences ✎

+ Add record

Information where the effects were: off-site or on-site? ⓘ

on-site

Type of harm to humans ⓘ

Fatalities

Quantity (integer) ⓘ

1

Other qualitative information on the effects of the harm to humans ⓘ

none

Consequences – proposed changes and points to observe

- › Selecting types of consequences before entering relevant details
 - › Ensuring at least “high level” consequences are entered
 - › (Currently entered by clicking through tabs)
- › MAHB converted all “quantity” fields to quantitative values (from free text) in 2024, this will be this way in the new system
- › Discussion to remove “on-site” effects from environmental consequences options



Emergency response



Emergency response – Requirements


- › Description of emergency and remedial measure
- › Details by type of emergency response (evacuation, sheltering, etc.)
- › Details of remedial measures taken (e.g., decontamination)

Attribute	Item number in the Commission Decision (Part II)
emergencyResponseDescription	6.1
emergencyResponseMeasure	6.2.1-6.2.2
responseMeasureType	6.2.1
ERquantity	6.2.2
ERquantityEffect	6.2.2
remedialMeasure	6.3.1-6.3.2
remedialMeasureType	6.3.1
RMquantity	6.3.2
RMquantityEffect	6.3.2





Emergency response – Structure and format


Emergency response description * 

Information about emergency response 

+ Add record

Type of emergency response 


Quantity 

Description of effects 


evacuation


10


10 workers evacuated

Information about remedial measures 

+ Add record

Remedial measure type 

Quantity 

Description of effects 

other

first aid provided

Emergency response – proposed changes and points to observe

- › Layout change, no significant update

Lessons learned



Lessons learned – Requirements and format

- › Lessons learned description and themes
- › No significant change

Attribute	Item number in the Commission Decision (Part II)
lessonsLearnedThemes	7.1
lessonsLearnedDescription	7.2

A description of any practical, organisational or other lessons learned on the prevention of accidents

Select the theme(s) of Lessons Learned *

Causes - External; Causes - Organisational; Emergency Response

▼

Lessons Learned Description *

Next steps



Key next steps

- › Development of data output
 - › Hosted at EEA
 - › Content (download data, dashboards)
 - › User inputs will be key!
- › Import and verify data (test phase)
 - › JRC MAHB -> EEA backend -> EEA frontend -> user verification

-> Completed

-> Pending

Questions? Comments? WRITE TO US:



Seveso.Helpdesk@eea.europa.eu

European Environment Agency

