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FD Reporting Guidance 2018

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List of Acronyms

APSFR	Area of Potential Significant Flood Risk
CA	Competent Authorities
CA/UOM	Competent Authorities/Units of Management
CDR	Common Data Repository
COM	European Commission
DG CLIMA	Directorate General for Climate Action
DG ECHO	Directorate General Humanitarian and Civil Protection
DG ENER	Directorate General for Energy
DG ENV	Directorate General for Environment
DG GROW	Directorate General Internal Market, Industry, Entrepreneurship and Small and Medium Enterprises
DG REGIO	Directorate General Regional Policy
EEA	European Environment Agency
EFAS	European Flood Alert System
Eionet	European Environment Information and Observation Network
ERCC	Emergency Response Coordination Centre
EUSF	European Union Solidarity Fund
FD	Floods Directive
FDRDG	Floods Directive Reporting Drafting Group (under WGF)
FRMP	Flood Risk Management Plans
FHRM	Flood Hazard and Risk Maps
GML	Geography Markup Language
INSPIRE Directive	Infrastructure for Spatial Information in Europe
JRC	The DG Joint Research Centre
MS	Member State
PoM	Programme of Measures
PFRA	Preliminary Flood Risk Assessment
QA/QC	Quality Assurance/ Quality Control
RBD	River Basin District
RBMP	River Basin Management Plan
SDGs	Sustainable Development Goals
SoE	State of Environment
Sub-WGF on R	Working Group on Floods Sub-group on Reporting
UCPM	Union Civil Protection Mechanism
UML	Unified Modelling Language
UWWTD	Urban Waste Water Treatment Directive
WFD	Water Framework Directive
WGF	Common Implementation Strategy Working Group on Floods
WISE	Water Information System for Europe
XML	Extensible Mark-up Language
XSD	XML Schema Definition

1.Introduction

1.1 Purpose of this document

The purpose of this document is to provide guidance to users on the reporting requirements related to the implementation of Directive 2007/60/EC on the assessment and management of flood risks (the Floods Directive, FD). This guidance is an update to the guidance published in 2013, *Guidance Document No. 29: A compilation of reporting sheets adopted by Water Directors Common Implementation Strategy for the Water Framework Directive (2007/60/EC)*, *as foreseen on pages 16 and 49 of the 2013 guidance document* - and incorporates changes that have been made to a proportion of schema elements following lessons learned from the first round of reporting.

This guidance provides background information on the reporting requirements of the Floods Directive, supporting European Union Member States in the structured preparation of information and data to be reported to the European Commission. The guidance provides explanations on how the European Commission intends to use the data which is not just for compliance assessment but is also needed for other reasons including the drafting of reports regarding the overall implementation of the Floods Directive in EU Member States and for providing information to the public (see Section 1.3).

All of the schema elements have been reviewed and certain schemas have been updated for this second round of reporting (period 2016-21) following an iterative process with the European Commission and Member States via the Working Group on Floods Sub-group on reporting (Sub-WGF on R) drawing upon their past experience, lessons learned and their recommendations following the first cycle of reporting under the Floods Directive.

A balance has been struck in updating the schemas. The aim has not been to place additional burden on Member States but to obtain clear and reliable data and information that meets the reporting requirements of the Floods Directive. Where applicable, an “options to choose from” approach has been developed in the updated reporting schemas, and greater emphasis given to data reporting rather than text based reporting (without eliminating the opportunity to provide text based explanations and justifications where still appropriate). However, it should be pointed out from a review of the lessons learned and the feedback from Member States received, wholesale changes to the schemas were not considered necessary and a considerable number of the schema elements remain relatively unchanged. Only relatively minor changes have been necessary to be made to the Competent Authority or Unit of Management (UOM) schemas to account for any changes to Competent Authorities or to UOMs since the first reporting cycle.

1.2 Structure of this document

Section 1 provides information on the background of this document, how the information provided by Member States is likely to be used, inter-linkages with reporting under the

Water Framework Directive and provisions of the INSPIRE Directive and summarises the main changes that have been made following the first cycle of reporting.

The different reporting requirements of the Floods Directive are addressed in turn in Sections 2 to 7. These sections each comprise an introduction, tables summarising each schema with additional explanatory text and a list of products that will be developed as a result of MS reporting.

Guidance on the reporting of Spatial data has also been updated mainly in relation to incorporating elements required by the INSPIRE Directive (see Section 1.6.2) and is provided as an Annex (Annex 2) to this document.

1.3 How the European Commission will use the information provided

A key role of the Commission is to check compliance with EU legislation. The Commission uses the information provided by Member States to carry out a compliance assessment and to ensure that the Floods Directive is being applied as envisaged throughout the EU. The Commission needs to identify whether the objectives of the FD have been achieved and to assess what can be improved in the future. The information will help the Commission to determine the appropriate level of EU funding needed to support the implementation of the FD (e.g. through structural, cohesion, rural development and other funding).

In order to be able to undertake a robust compliance check, information is required that enables the European Commission to:

- Ensure data are plausible;
- Ensure data are consistent;
- Conduct cross-references and cross-checks on data (especially in International River Basins); and,
- Ensure Directives have been implemented in a comparable way.

However, the information is not simply required for compliance assessment. The Commission also seeks information on the state of the environment and trends including on flooding (usually in cooperation with EEA), and on implementation of measures and objectives set to allow it to determine whether existing policies are adequately protecting the environment and European citizens and could play a role in relation to assessment on whether funds are adequately distributed. It also requires certain information at European level to create a European-wide picture to inform the public. Article 16 of the Floods Directive specifically requires the Commission to report to the European Parliament and Council on the implementation of the Directive by 2018 and every 6 years thereafter.

To meet the Commission’s needs, data must be reported (or made available) in a clear and consistent way by all Member States. The information can be aggregated and supplied at a

higher aggregation level than may be required at, for example Member State level. However, the Commission may need access to more detailed information (e.g. by providing hyperlinks to more detailed documents or by requesting more specific information or data) in cases where comprehension (e.g. of how a result has been achieved) or compliance (e.g. with specific issues) is not clear.

Three main questions usually relate to the reported data and information:

- Are the reports complete (provision of mandatory fields) and clear (values in code lists correct and numeric/character values in correct minimum/maximum ranges)?
- Are the reports understandable (sense check)?
- Are the reports compliant
    - with regard to key issues (compliance checking) involving for some issues the use of appropriate indicators?
    - after in-depth assessment?

There are two parts to compliance checking: assessing whether appropriate methodologies have been applied and checking data and results. The schemas for each implementation step set out some specific compliance criteria.

1.4 Potential users of information provided

In addition, the following sub-section provides a non-exhaustive list of examples of other potential users of information related to the implementation of the Floods Directive (FD). Information needed for other uses may be requested, with the consent from the Member States, going beyond compliance checking purposes for the Floods Directive. The information reported will also provide a valuable resource for Member State authorities themselves, in understanding how implementation of the FD has been carried out in other MS.

1.4.1 Joint Research Centre (JRC)

DG Joint Research Centre (JRC) provides research based policy support to other Commission DG's. To carry out this support more accurately, the items provided for the Floods Directive will be highly beneficial. For floods and flood related topics, JRC assists various DGs with the following activities:

- Copernicus European Flood Awareness System (EFAS): early warning on river floods and flash floods for National Authorities and the Emergency Response Coordination Centre (DG ECHO); in addition EFAS is part of the Copernicus Emergency Management Service which is one of the services of the Copernicus program managed by DG GROW;

- Other coastal flood warning systems (DG ECHO);
- Assessment of climate change effects on floods in Europe (DG CLIMA & DG ENV);
- Assisting DG REGIO in evaluating Solidarity Funds (EUSF) applications of MS after major floods;
- Evaluating flood risk at European scale to assist DG REGIO in defining and monitoring regional planning strategies;
- Supporting the collection of disaster losses (incl. floods) for the Sendai framework for disaster risk reduction (DG ECHO);
- Enhancing the knowledge base and facilitating technology transfer for disaster risk reduction through the Disaster Risk Management Knowledge Centre DRMKC (various DGs);
- Impact of measures and nature based solutions for flood retention and general water resources (DG ENV); and,
- Water-energy-hydropower nexus interrelations to better capture the behaviour of hydropower reservoirs, including their energy production and storage potential (DG ENER).

1.4.2 European Environment Agency (EEA)

The European Environment Agency (EEA) is an agency of the European Union. Its task is to provide sound, independent information on the environment. In relation to data management activities, EEA cooperates with DG ENV in the development and maintenance of the Water Information System for Europe (WISE). WISE contains the compliance related information under the WFD and the UWWTD, as well as voluntary State of Environment (SoE) information related to these directives and the wider EEA work (stemming from the Eionet). Other directives, including the FD are currently integrated into WISE.

The EEA uses the SoE information in WISE in the context of its mandate to publish reports on state, trends and outlooks of the Environment every 5 years. For this purpose EEA regularly collects data via its network and develops indicator and wider assessments on environmental themes. This includes issues such as mapping the impacts of natural disasters and technological accidents (including the recurrence of flood events in Europe), climate change and water adaptation issues (including flooding and climate change). The Impact Report includes indicators on water quantity, river flows, floods and droughts. Aggregated information on past floods (frequency, duration, location per river basin) and an on-going record of current floods and its impacts would facilitate the state and trend analysis in this area.

1.4.3 DG Union Civil Protection Mechanism (DG ECHO)

The Union Civil Protection Mechanism (UCPM) was established in 2001 (recast in 2007 and 2013) and aims to strengthen cooperation and coordination in civil protection in order to protect people, the environment and property against natural and man-made disasters. The Mechanism can be activated to respond to emergencies both inside and outside of Europe. The coordinating tool of the EU Civil Protection Mechanism is the Emergency Response Coordination Centre (ERCC). The Mechanism covers the three main pillars of disaster management: prevention, preparedness and response.

To achieve a higher level of prevention, Member States are required to submit a summary of their national risk assessment and carry out a risk management capability assessment every three years. On the basis of the national risk assessments, the European Commission prepares an overview of risks in the EU. Floods have been identified as the main risk in Europe, on the basis of the national risk assessments.

The UCPM also supports Member States in improving their early warning system and monitors flood risk through the European Flood Awareness System. Detailed information on flood risk, such as information from flood hazard maps, flood risk maps and flood risk management plans are crucial for effective civil protection operations before and during a flood situation. They can also feed into the overall national risk assessments and contribute to risk management capability assessments.

1.4.4 DG for Regional Policy (DG REGIO)

The European Structural and Investment Funds, in particular the European Regional Development Fund and the Cohesion Fund can finance preventive investments including for flood protection and infrastructure. The European Regional Development Fund can also contribute to financing research and technological development related to risk prevention. [1]

If flood damage exceeds a certain level the European Union Solidarity Fund (EUSF) can also be mobilised to help finance essential emergency and recovery operations undertaken by the public authorities. Transparent information at the European level on the assessment and management of floods according to the Directive can be beneficial for the implementation of this instrument.

1.4.5 Global Policy

A number of major policy developments have recently taken place at global level, which reinforces the policy importance of improving our understanding of flood risk management in the EU and in MSs:

[1] http://ec.europa.eu/regional_policy/en/policy/themes/climate-change/funding-risk-prevention/

- The European Commission is contributing to the implementation of the UN Sendai Framework for Disaster Risk Reduction by providing a better understanding of disaster risks in its geographical region and contributing to a disaster risk informed approach in the EU. For the implementation of the Sendai framework set out in a 'Sendai Action Plan, the European Commission aims to build disaster risk knowledge across all EU policies;

- By reinforcing policies fostering a risk management approach, the European Commission is contributing to the implementation of other global agreements such as the Paris Agreement on climate change, the New Urban Agenda and the overarching 2030 Agenda for Sustainable Development;

- Disaster resilience and disaster risk management aspects are both underlined as critical to poverty reduction and enablers of sustainable development in the EU's strategy for implementing the UN 2030 Agenda for Sustainable Development and meeting the Sustainable Development Goals (SDGs).

1.5 Reporting requirements of the Floods Directive

Article 15 of the Floods Directive requires EU Member States to make available the preliminary flood risk assessment, the flood hazard maps, the flood risk maps and flood risk management plans referred to in Article 4 (Preliminary Flood Risk Assessment), Article 6 (Flood Hazard and Flood Risk Maps) and Article 7 (Flood Risk Management Plans) and as well as their review and, where applicable, their updates, to the European Commission within three months after the deadlines indicated in the respective Articles.

Article 16 of the Floods Directive contains the obligation for the European Commission to submit to the European Parliament and to the Council a report on the implementation of the Floods Directive by 22 December 2018, and every six years thereafter. The impact of climate change shall be taken into account in drawing up this report.

Table 1.1 highlights the deadlines for the completion of the different implementation steps and their respective reporting deadlines including the requirements under the first cycle of reporting of the FD (the reporting requirements for the second cycle are in bold text):

Table 1.1 Timetable for the implementation of the Floods Directive with particular focus on reporting, notification and information obligations.

Subject	Responsibility	To	Deadline for Completion	Deadline for Notification/ Reporting	Second Cycle Reporting/ Review	Main Reference
Transposition and notification to COM	MS	COM	26.11.2009	26.11.2009	**-**	Art 17
Competent Authorities and Units of Management if different from WFD and notification to COM	MS	COM	26.05.2010	26.05.2010	**3 months after any changes**	Art 3.2 (Annex 1 WFD)
Availability of transitional measures	MS	COM	22.12.2010	22.12.2010	**-**	Art 13
Preliminary flood risk assessment/APSFR	MS	COM	22.12.2011	22.03.2012	**22.03.19, every 6 years thereafter**	Art 4 & 5 Art 15
Flood hazard and risk maps	MS	COM	22.12.2013	22.03.2014	**22.03.20, every 6 years thereafter**	Art 6 Art 15
Flood risk management plans	MS	COM	22.12.2015	22.03.2016	**22.03.22, every 6 years thereafter**	Art 7 Art 15
Commission's first implementation report	COM	EP, C		22.12.2018	**Every 6 years**	Art 16
Commission's second implementation report	COM	EP, C		22.12.2024	**Every 6 years**	Art 16

1.5.1 Reporting schemas

Electronic reporting schemas provide all the technical specifications needed to develop the data exchange formats and provide guidance to the data provider.

More information on the reporting schemas can be obtained from the Floods Directive reporting resources webpage which includes several support files for the Floods Directive reporting, following the weblink:

http://cdr.eionet.europa.eu/help/Floods/Floods_2018/index.html

1.5.2 Supporting documents for electronic reporting under WISE

In addition to this document, several new supporting documents, tools and services to facilitate the workflow for electronic Floods Directive reporting under WISE have been developed.[2]

These tools include:

- QA/QC validation rules (see Section 1.9 and Annex 3);
- Guidance on reporting of spatial data (see Annex 2) – (covering PFRA, APSFR and FHRM and including new schemas around spatial data reporting that is INSPIRE compliant);
- Shapefile templates for the shapefiles produced by MS to be correctly translated into GMLs aligned to INSPIRE (to be included as part of the Spatial data guidance above, Annex 2);
- UML Diagrams and corresponding XSD files;
- Access database template for MS that wish to use Access instead of XMLs.

These tools will be integrated with and used to update the existing tools which have facilitated the submission of information according to the schemas to WISE:

- Access database (back-end). This complements the schemas and organises the information into database tables. The database allows for manual entry, but also bulk data import can be used, depending upon the skill and the needs of the user.
- Access database (front-end). The front-end of the Access database is a user interface that also complements the schemas and organises the information into the back-end database tables. The front-end user interface only allows for manual entry and is only developed for the reporting of the CA and UOM.
- XML Conversion tool which generates XML files from the Access database.

[2] http://icm.eionet.europa.eu/schemas/dir200760ec/resources

- QA/QC rules help ensure the information is filled out correctly. The QA/QC is run from the following:

  - ReportNet

  - Desktop validation tool

1.6 Complementarity with other reporting streams

1.6.1WFD

Article 9 of the Floods Directive requires that its implementation be closely coordinated with the Water Framework Directive. Specifically, the development of River Basin Management Plans under the WFD and of Flood Risk Management Plans under the FD are elements of integrated river basin management. The two processes should therefore use the mutual potential for common synergies and benefits, having regard to the environmental objectives of Directive 2000/60/EC.[3]

Article 9 includes the relevant provisions as regards the coordination with the WFD. Member States shall take appropriate steps to coordinate the application of the FD and WFD focusing on opportunities for improving efficiency, information exchange and for achieving common synergies and benefits.

The coordination in particular requires the:

- development of flood hazard maps and flood risk maps and their subsequent reviews to be carried out in such a way that the information they contain is consistent with relevant information presented according to the WFD, and

- development of the Flood Risk Management plans and their subsequent reviews to be carried out in coordination with, and may be integrated into, the reviews of the River Basin Management Plans, as well as the

- active involvement of all interested parties to be coordinated, as appropriate, with the active involvement of interested parties under the WFD.

The inter-linkages with reporting processes under the WFD can be summarized as follows:

- Article 3.1 of the Floods Directive indicates that Member States may make use of the administrative arrangements made under Article 3 of the WFD. However, different competent authorities and units of management may be appointed by Member States for the Floods Directive. If the same Competent Authority is used for

[3] Recital 17 of the Floods Directive.

the Floods Directive as for the WFD, but the relevant information in relation to the responsibilities for the Floods Directive was not yet notified, such information should now be notified to the European Commission.

- Article 6 of the Floods Directive states that the preparation of flood hazard maps and flood risk maps shall be coordinated with the review of the assessment carried out under article 5 (characterisation) of the Water Framework Directive 2000/60/EC. The coordination shall ensure that the information they contain is consistent, and the overall purpose of the coordination is to focus on opportunities for improving efficiency, information exchange and achieving common synergies and benefits having regard to the environmental objectives of that Directive.

- There is a need to synchronise and coordinate, or to integrate, the FRMPs with the 2nd cycle River Basin Management Plans (RBMP) according to Article 9, and a need to avoid double reporting. From this it is clear that, the reporting formats need to enable integrated and/or coordinated reporting.

- As part of WFD RBMP for submission in the second cycle plans in 2015, Member States were requested to report information on relevant and significant pressures and the establishment of a programme of measures (PoM) for each RBD or part of an international RBD. Some of those pressure types and measure types are of particular interest, and may be of importance for FRMP, also in terms of coordination and synergies between both processes. A number of WFD relevant pressures and relevant WFD measures are of particular importance from the perspective of the coordinated implementation of the FD and the WFD with a view of improving information exchange, and of achieving common synergies and benefits. Taking into account the possibility to develop an integrated FRMP and RBMP the objective should be to develop a reporting structure to avoid double reporting. The reporting structure must give MS flexibility to report both plans in an integrated form or as two single but co-ordinated plans.

1.6.2 INSPIRE

The “Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)” came into force on 15 May 2007 and will be implemented in various stages, with full implementation required by 2019.[4] The Directive creates an EU wide spatial data infrastructure. This will enable the sharing of environmental spatial information among public sector organisations and better facilitate public access to spatial information across Europe.

[4] http://inspire.jrc.ec.europa.eu/index.cfm/pageid/48

INSPIRE is based on a number of common principles:

- Data should be collected only once and kept where it can be maintained most effectively.
- It should be possible to combine seamless spatial information from different sources across Europe and share it with many users and applications.
- It should be possible for information collected at one level/scale to be shared with all levels/scales; detailed for thorough investigations, general for strategic purposes.
- Geographic information needed for good governance at all levels should be readily and transparently available.
- It should be easy to find what geographic information is available, how it can be used to meet a particular need, and under which conditions it can be acquired and used.

Relevant Thematic Working Groups (TWG) have been established aiming at drafting data specifications published as Guidelines for the spatial data themes referred to in Annex I of the INSPIRE (INSPIRE: Infrastructure for Spatial Information in the European Community (Directive 2007/2/EC). Directive; the TWG on Annex III theme “Natural Risk Zones” is particularly relevant as regards the implementation of the FD, but many other themes are relevant for floods, notably for the flood hazard and risk maps. WG F actively participated in the development of INSPIRE requirements, notably through a FDRDG member taking part in the drafting of technical specifications for the Annex II theme of Natural Risk Zones.

The Guidelines will supplement the Implementing Rule for interoperability of spatial data sets and services and allow for preparation for implementation. Together with the relevant materials (GML application schemas, UML models and registries), they will support the implementation and provide a better understanding of the requirements of the Implementing Rule.[5] INSPIRE will not create any new reporting obligations, but requires Member States to provide spatial data and maps for the Floods Directive and other environmental Directives in an INSPIRE compliant way (interoperable and via web-services).

This requires that further development of FD reporting formats and visualization for the PFRA, the Flood Risk Maps as well as Flood Hazard Maps and Flood Risk Management Plans shall furthermore be in line with relevant requirements of INSPIRE.

[5] http://inspire.jrc.ec.europa.eu/index.cfm/pageid/2

A new version of the INSPIRE Technical Guidelines for natural risk zones is available (v3.0).[6]

New INSPIRE compliant schemas form part of the Spatial Guidance (Annex 2 of this this document).

1.7 Reporting and visualisation of Floods Directive data through the Water Information System for Europe (WISE)

Floods Directive data (submission of schemas) are reported by Member States to WISE using the reporting infrastructure of EEA's ReportNet (through the ReportNet Common Data Repository (CDR); guidance on uploading to ReportNet can be found in Chapter 6 of Document No. 1: A User Guide for electronic reporting).[7]

Reportnet is Eionet's[8] infrastructure for supporting and improving data and information flows. Reportnet is based on a set of inter-related tools and processes which all build on the active use of the World Wide Web. Reportnet has been developed since 2000 and has been in operational use since 2002. The system integrates different web services and allows for distributed responsibilities. Reportnet was initially used for reporting environmental data to EEA, but is now also hosting some of DG Environment's reporting tasks.[9]

The Water Information System for Europe (WISE) is comprised of data and information collected at EU level by various institutions or bodies. WISE was developed as a joint initiative and effort by DG Environment, EEA, JRC and EUROSTAT as well as the Member States under the auspices of the Water Directors. Reporting of flood related information and data via WISE is important to ensure consistency and adequate information flows with other EU water legislation, notably the WFD, the Drinking Water Directive and the Bathing Water Directive.[10]

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6 http://inspire.ec.europa.eu/id/document/tg/nz

7 A user guide for electronic reporting: http://cdr.eionet.europa.eu/help/Floods/Floods_603_2016/resources/Floods%20reporting%20workflow%20user%20manual%20v6.0.pdf

8 Eionet is the EEA's network which consists of administrative and scientific institutions at national level in more than 32 countries See more information in EEA, Reportnet for beginners to be downloaded from the following weblink: http://www.eionet.europa.eu/reportnet/Reportnet%20for%20beginners.pdf

9 http://www.eionet.europa.eu/reportnet

10 More information about the process can be found in "Concept paper on reporting and compliance checking for the Floods Directive (2007/60/EC)", which was endorsed by Water Directors on 30 November 2009, available in CIRCABC.

Floods Directive data reported through ReportNet is visualised in the Floods Directive Viewer on WISE[11]. A new viewer is currently under development and should be available in 2017.

1.8 Summary of the main changes introduced since first cycle reporting

The following sections summarise the main changes to the reporting schemas reflecting the requirements for the second round of reporting under the FD and the lessons learned from the first cycle of reporting. In the second cycle, Article 13 relating to Transitional Measures is no longer applicable. MS are required to follow the full reporting requirements of the Directive (from PFRA, APSFR, FHRM to FRMP) for floods that have occurred from the 22nd of December 2011 with the option to fully report on floods prior to this date (or update previously reported information) if they have not already done so. Article 14 requires reviews and updates of each of the elements of the directive to be provided and specifically requests that the impact of climate change on the occurrence of floods is taken into account as part of the review process.

1.8.1 The Reference Schema

Where considered appropriate, certain of the longer summaries that were required to be reported in the first cycle, have been replaced with enumeration lists and reference schema elements. The enumeration lists help provide further clarity to the information provided by MS through giving them options to choose from, for example, in terms of the criteria used to identify and assess potential future significant floods. Reference schema allow MS to provide links to documents explaining their approaches and methodologies towards meeting the directive's requirements as well as providing the opportunity to provide a greater level of detail and further information that could not be covered within the scope of summary text with a defined length. This reporting process is therefore designed to take some of the burden off MS whilst providing greater clarity in what is reported. On the other hand, it requires a larger amount of discipline from the side of the reporter, since it will now be necessary to precisely identify within the referenced document/s the location of the information provided and, in case of providing internet links, to undertake to maintain these internet links stable over a period of six years.

With regard to the reference schema, the approach already adopted for the reporting requirements of the WFD has been applied for the FD. The figure below shows the structure of the reference schema used. The following elements are included:

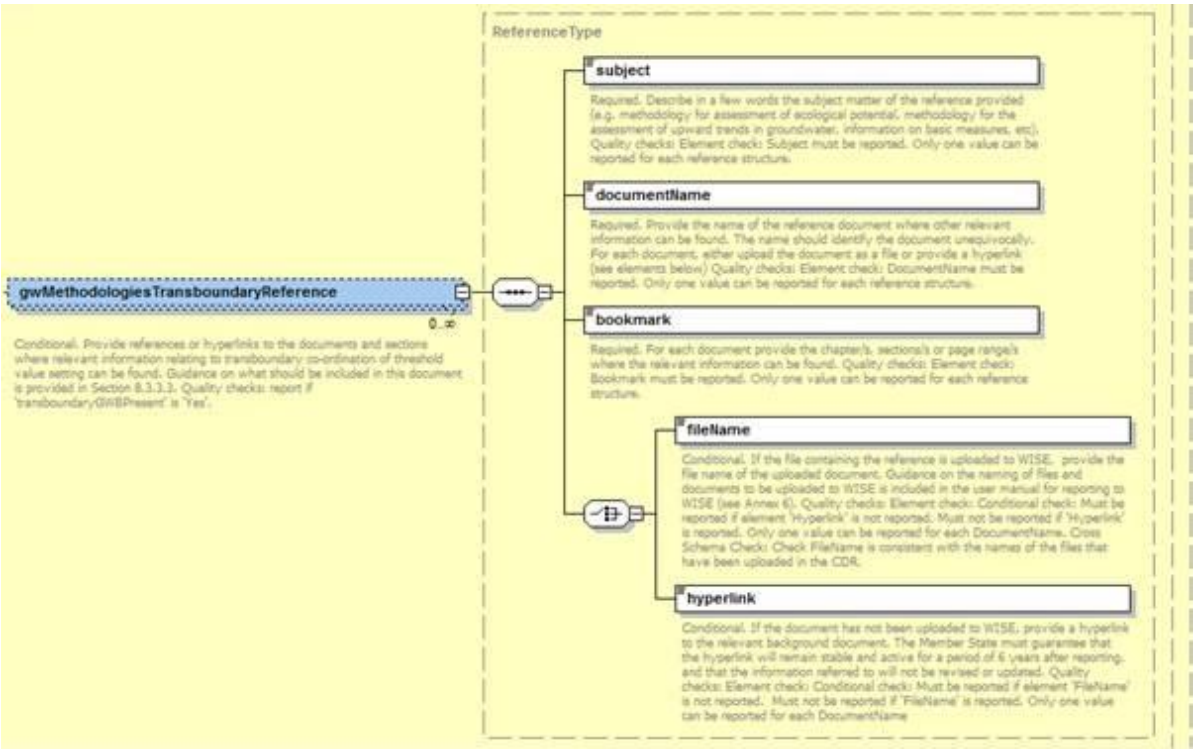
- Required - **subject** (describe in a few words the subject matter of the reference provided);
- Required - **Document name** (provide the name of the reference document, the name should identify the document unequivocally);

[11] http://www.eea.europa.eu/themes/water/interactive/floods-directive-viewer

- Required - **Bookmark** (for each document provide the chapters, sections or page ranges where the relevant information can be found);

- Conditional - If the file containing the reference is uploaded to WISE, provide the **file name** of the uploaded document;

- Conditional - If the document has not been uploaded to WISE, provide a hyperlink to the relevant background document. (The Member State must guarantee as far as possible, that the hyperlink will remain stable and active for a period of 6 years after reporting).



Whenever a reference schema appears as a schema sketch in this guidance document, it is expected that the above elements will be included (noting that there are two conditional elements). All of the information above is therefore not repeated in each reference schema elements. Further explanatory text specific to the particular schema element is provided within each reference schema.

[Please note that in the Access Database that will used by MS for entering the required data, all the reference documents across the different schemas (CA/UOM, PFRA, APSFR, FHRM and FRMP) are held within a single table whereas the UML diagrams show where each specific reference element is required within the specific Classes residing within the above UMLs]

1.8.2 CA/UOM

Only relatively minor changes have been necessary to be made to the Competent Authority or Unit of Management (UOM) schemas to take account of any changes to Competent Authorities or to UOMs since the first reporting cycle.

1.8.3 PFRA

The changes to the schemas refer specifically to the Schema elements that are derived from 'Article4Applied' and not to the schemas linked to Articles 13.1a and 13.1b as these schemas will not be required for the second cycle of reporting. However, for those MS that applied Article 13 partially or entirely in the first cycle, the provisions identified in 1.8 above apply.

Under Article 13(1), MS were given the option not to undertake a preliminary flood risk assessment referred to in Article 4 for those river basins, sub-basins or coastal areas where they have either: a) already undertaken a risk assessment to conclude, before 22 December 2010, that a potential significant flood risk exists or might be considered likely to occur leading to the identification of an area of potentially significant flood risk (APSFR, under Article 5), or; b) decided, before December 2010, to prepare flood hazard and flood risk maps and to establish flood risk management plans in accordance with the relevant provisions of the Directive. As part of the reporting for the second cycle onwards, the PFRA, or the assessment and decisions referred to in Article 13(1), are required to be reviewed and if necessary, updated by 22 December 2018 and every six years thereafter.

The core of the requirements of Article 4 is to use information on past significant floods as the basis for identifying where floods may occur in the future. To avoid increasing the administrative costs in relation to reporting, but still gathering sufficient information to enable the Commission to check compliance with the preliminary flood risk assessment, basic information and geographic location, which either identifies a spatial position (x/y coordinates, name of locality) or identifies the river basins, sub-basins, stretch of coastal area and other areas where past floods have occurred, should be provided. More detailed information should however be provided for floods that occur in the future during subsequent implementation cycles, and which will be considered as past floods for the review of those cycles. For this reason it is required that MS adhere to the requirements of Article 4 for floods occurring from December 22nd 2011 onwards. Re-reporting on previous floods under Article 4 is not required.

1.8.4 APSFR

The information provided by Member States relating to two schema elements: 'SummaryofMethodology' and 'SummaryofCoordination' varied considerably between MS in the first reporting cycle, particularly in relation to the description of the criteria used to identify potentially significant future floods where some MS did not provide any information at all on the criteria used. This is important as if criteria are not used or they are inappropriate this could potentially lead to floods being underestimated and APSFRs being assigned incorrectly. Similarly, information relating to the reasons and criteria for the

exclusion or inclusion of areas and how the consequences to human health, environment, cultural heritage and economic activity have been considered was variable and sometimes not provided. The focus of the proposed changes to the schemas is therefore on these two elements. Other Schema elements within the APSFR are, in general, clearly defined with closed questions and enumeration lists and further changes to these schema elements have been kept to a minimum.

A new standalone schema has been developed to track changes to the APSFRs over time as some may be no longer valid in the second and subsequent cycles; some APSFRs may need to increase or decrease in size and some may be amalgamated with other APSFRs. The new APSFR schema is presented in Section 5.4.

1.8.5 FHRM

The approach to mapping in the second cycle is considered in the spatial guidance presented in Annex 2 where adjustments have been specified to allow MSs to provide their medium scenario flood extent information in a format for use in a 'pan-European' map, with GIS data that is compatible with INSPIRE.

The architecture of the UML has been modified at the Unit of Management level with reference documents required for MS to provide more detailed documentation relating to their approach to the mapping process and to the modelling different flood sources. The schema elements at the flood risk map level have had minor modifications.

1.8.6 FRMP

For the FRMPs further details on the specific requirements of Article 7 and the Annex to the FD have been requested through the inclusion of reference documents relating to different levels of objectives (strategic to more specific) and the use of enumeration lists with 'Yes/No' responses to elicit more specific information.

1.8.7 General changes

Schemas and schema sketches have been amended to show more clearly whether they are 'Required', 'Conditional' or 'Optional'.

- **Required**: reporting is expected. Please note that occasionally the term 'Mandatory' has been used instead of 'Required'.

- **Conditional**: depending on the contents or the replies to some reporting elements, conditional elements may be required or not necessary.

- **Optional**: these are elements which provide further information if considered appropriate by the Member States, or the information qualified as 'if possible' or 'if available' in this Reporting Guidance.

A number of new enumeration lists have been introduced to gain further clarity on criteria used in the assessment of flood risk, methodologies and approaches, communication and stakeholder engagement. 'Yes/No' questions have also been introduced covering for example, the sharing of information between MS (or non-MS), the use of models and the inclusion of climate change.

The opportunity to provide descriptive text where appropriate has been used for MS to provide justification for 'No' responses or where 'Other' has been selected (e.g. 'Other criteria') or to explain the nature of 'Expert Judgement' where this has been selected.

Explanatory text has been included both within and around the schema sketches linked to the specific requirements of the directive, to clarify what needs to be reported and to explain why particular information is being requested.

A limited number elements that were previously optional have been made mandatory for reporting under the second cycle and for subsequent future reviews such as the consideration of climate change on the occurrence of floods and the requirement to link measures to objectives.

1.9 Quality Assurance Procedures

The relevant quality checks are presented in each schema element (schema sketch). Where elements are required to be reported, the schemas are self-validating in that a 'blocker' will alert the data provider that certain information is required if not entered. Where information is conditional on whether preceeding information has been provided (such as whether a UOM is international or whether a particular source of flooding is relevant), checks have been built into the validation process (which will appear as a 'blocker' or a 'warning' to alert the data provider) to ensure that the correct information is provided.

The detailed quality assurance procedures are provided in in Annex 3.

2. Competent Authorities and Units of Management (CA_UOM)

2.1 Introduction

Article 3.1 of the Floods Directive indicates that Member States may make use of the administrative arrangements made under Article 3 of the Water Framework Directive. The Water Framework Directive requires Member States to ensure the appropriate administrative arrangements, including the identification of the appropriate competent authority, for the application of the rules of the Directive within each river basin district lying within their territory. However, different competent authorities may be appointed by Member States for the Floods Directive. The Floods Directive also allows Member States to identify different units of management from the river basin districts used for the Water Framework Directive. Units of management may be individual river basins and/or certain coastal areas, and may be entirely within national borders or may be part of an international unit of management or international river basin district. Competent authorities will be required for each national river basin district or unit of management and for the portion of any international river basin district or unit of management lying within a Member State's territory.

According to the Directive, information on competent authorities should only be provided if different competent authorities have been appointed and/or different units of management identified from those already reported for the Water Framework Directive. Similarly, data should only be provided if other units of management have been identified for the Floods Directive or if Water Framework Directive RBDs are being used but information was missing from a Member State's submission to WISE or if any of the information has changed since reporting under the first cycle of the Floods Directive.

2.1.1 Geographic information

A digital map of each UOM will be required so that a map of UOMs (and RBDs) at the European level can be prepared by the Commission. The geographic information should be harmonised to national and coastal boundaries.[12]

2.1.2 Data

- The geographical information must be provided either as GML files or as shape files. Templates will be available specifying how this information will be provided. No spatial data needs to be reported if the UOM are the same as the WFD and are already reported under the WFD.

[12] The technical specifications of such harmonisation foreseen in the context of the development of the GIS guidance for reporting under the WFD.

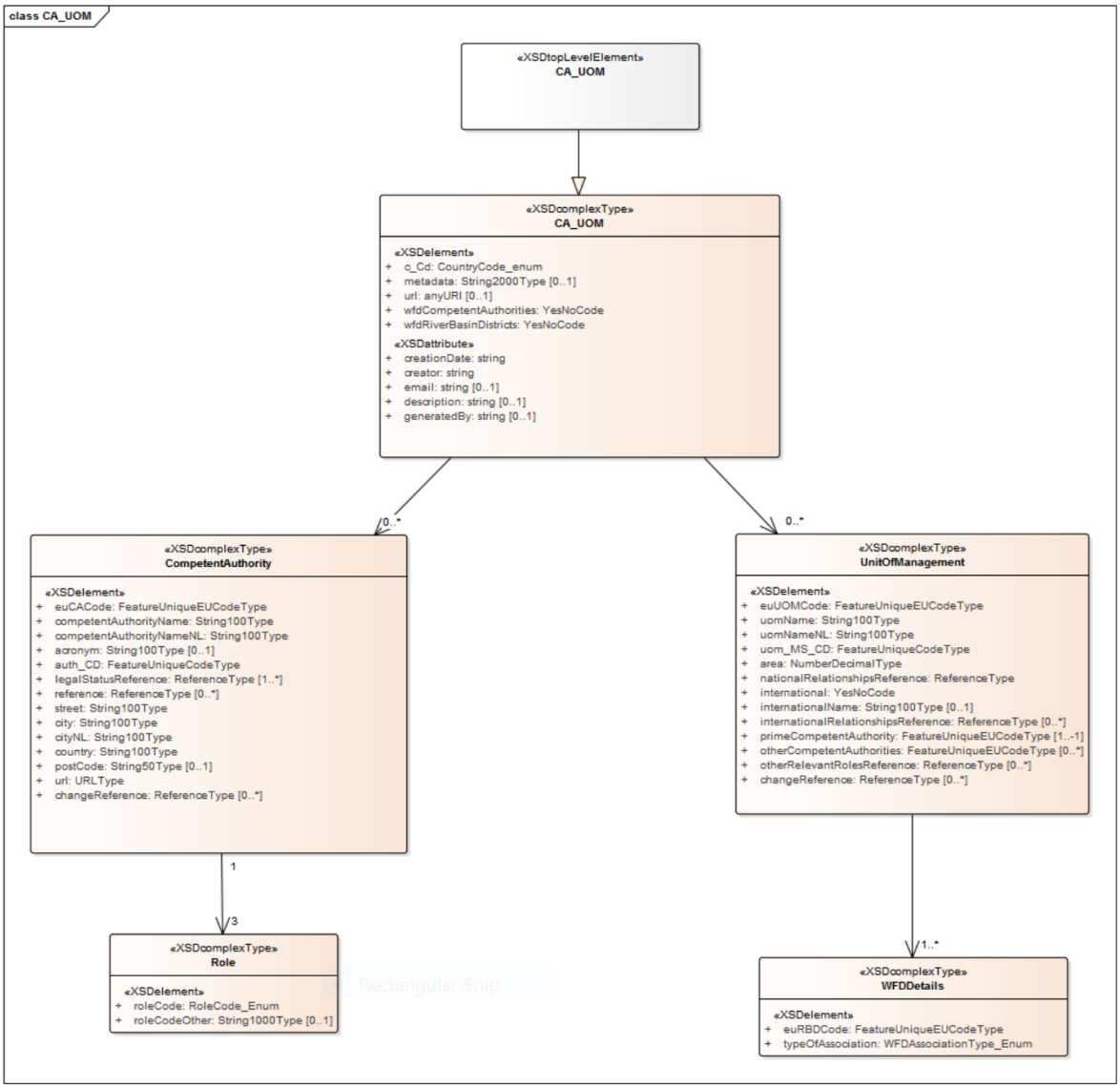
- According to the WFD “CIS Guidance Document No. 22: Updated Guidance on Implementing the Geographical Information System (GIS). Elements of the EU Water policy”, the required spatial accuracy and resolution for reported data should be better than 125 metres and 0.5 km^2, respectively at a map scale of 1:250,000. The positional and spatial accuracy should always be kept as high as possible and ideally be similar to the national operational datasets. MS may also report data at a more detailed scale.

Further information relating to the spatial elements of reporting for subsequent cyces of the Floods Directive are provided in the Spatial Guidance provided in Annex 2.

2.2UML Diagram

The UML diagram for CA_UOM is provided below (see also Annex 4).

CA_UOM UML Diagram



2.3 Schema Sketches

A competent authority may be associated with many RBDs or other units of management, and may have different addresses and contact details for each association. A general/main address and specific addresses for RBDs and other units of management should be provided if appropriate. Only relatively minor changes have been made to the Competent Authority or Unit of Management (UOM) schemas mainly to take account of any changes to Competent Authorities or to UOMs since the first reporting cycle.

Note that the Class CA_UOM shown in the UML Diagram above (the second box down in the sequence), contains a number of elements including 'wfdCompetentAuthorities' and 'wfdRiverBasinDistricts'. These provide Member States with the opportunity to state (using a Yes/No enumeration) whether the Competent Authorities and/or Units of Management are equivalent to those used in the Water Framework Directive (WFD). If this is the case, then the information which is requested within the elements (noting that some of these elements are optional or conditional) under Classes 'CompetentAuthority' and 'UnitOfManagement' do not need to be reported. These latter two Classes are given a cardinality of '0..*' with the 0 denoting that they are conditional (i.e. depending on whether the Yes or No has been selected) and the * indicating that the elements in this class can be reported more than once to cover different Competent Authorities and different Units of Management within the Member State (* can be referred to as indicating a 'one-to-many' relationship).

2.3.1 CA_UOM elements and attributes

The schema sketches below cover the fundamental information (elements and attributes) that are required to be reported for identification purposes. These follow the sequence presented in the UML diagram above.

Elements

Class Schema element	CA_UOM CA_UOM/c_Cd	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	CountryCode_enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	CA_UOM CA_UOM/metadata	
Guidance on completion of schema element	Optional. Hyperlink or reference to associated metadata statement or file. This allows up to 2000 characters to be specified or alternatively may be used to provide a hyperlink or description of an associated metadata file. This should be used to define any restrictions on use of the data and/or limitations of the data.	
Field type	String2000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	2000
Quality checks		

Class Schema element	CA_UOM CA_UOM/url	
Guidance on completion of schema element	Optional. url for integration of your own internet-based information	
Field type	anyURL	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	CA_UOM/ CA_UOM/wfdCompetentAuthorities	
Guidance on completion of schema element	Required. Are the competent authorities for the Floods Directive the same as reported under the Water Framework Directive? • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

If the Competent Authorities for the Floods Directive are the same as those reported under the Water Framework Directive, Member States are not required to report the specific information requested by the schema elements within the “CompetentAuthority” class (as presented in the UML diagram in Section 2.2 above and covered in Sections 2.3.2 and 2.3.3).

Class Schema element	CA_UOM CA_UOM/wfdRiverBasinDistricts	
Guidance on completion of schema element	Required. Select 'Yes' if the RBDs reported under the Water Framework Directive are being used (if a Member State has reported Sub-units then it is assumed these are the scale of management). • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

If the RBDs reported under the Water Framework Directive are being used, Member States are not required to report the specific information requested by the schema elements within the “UnitOfManagement” class (as presented in the UML diagram in Section 2.2 above and covered in Sections 2.3.4 and 2.3.5).

Attributes

Class Schema element	CA_UOM CA_UOM/creationDate	
Guidance on completion of schema element	Required. To be provided as year, month, date (e.g. “2012-03-20”)	
Field type	string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	CA_UOM CA_UOM/creator	
Guidance on completion of schema element	Required. Competent Authority responsible for providing the information (e.g. Ministry of Environment, Environment Protection Agency, etc.)	
Field type	string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	CA_UOM CA_UOM/email	
Guidance on completion of schema element	Optional. For example “frmplanning@environment.eu”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	CA_UOM CA_UOM/description	
Guidance on completion of schema element	Optional. Description of Competent Authority or Unit of Management	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	150
Quality checks		

Class Schema element	CA_UOM CA_UOM/generatedBy	
Guidance on completion of schema element	Optional. For example " Through consideration of hydrographic boundaries"	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	150
Quality checks		

2.3.2 Competent Authorities (Class "CompetentAuthority")

The schema elements below are presented in the order that they are given under the Class "Competent Authority" in the UML diagram presented in Section 2.2. These schema elements need to be completed (noting that some elements are required and some are optional) only if the Competent Authorities are not the same as those reported under the Water Framework Directive.

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/euCACode	
Guidance on completion of schema element	Required. Unique EU code for the Competent Authority. Add the Two-letter ISO Country code followed by the Member State unique ID.	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	42
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/competentAuthorityName	
Guidance on completion of schema element	Required. Official name of the Competent Authority in English.	
Field type	String100Type	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/competentAuthorityNameNL	
Guidance on completion of schema element	Required. Official name of the Competent Authority in the Member State's national language.	
Field type	String100Type	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/acronym	
Guidance on completion of schema element	Optional. Acronym for the Competent Authority (if it exists)	
Field type	String100Type	
Properties	minOccurs:	0
	maxOccurs:	1

Facets	minLength	1
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/auth_CD	
Guidance on completion of schema element	Required. Unique National code for the Competent Authority.	
Field type	FeatureUniqueCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	42
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/legalStatusReference	
Guidance on completion of schema element	Required. Provide a reference or references to document(s) that explain the legal status of each competent authority. This should include: - The legislation establishing the competent authority; - The legislation laying down the duties of the competent authority in relation to the Floods Directive; and - The legislation laying down other duties of the competent authority relevant (but not directly related) to the Floods Directive.	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

The optional schema element below provides Member States with the opportunity to provide references to additional or more general supporting background documents providing a greater insight into the Competent Authority (in addition to the legal information required by the schema above).

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/reference	
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to any additional supporting or background documents that are considered relevant to the Competent Authority As a reminder, if providing a document describe the: - **Subject** (describe in a few words the subject matter of the reference provided) - **Document name** (Provide the name of the reference document, the name should identify the document unequivocally) - **Bookmark** (For each document provide the chapters, sections and page ranges where the relevant information can be found) - If the file containing the reference is uploaded to WISE, provide the **file name** of the uploaded document. If the document has not been uploaded to WISE, provide a **hyperlink** to the relevant background document. (The Member State must guarantee that the hyperlink will remain stable and active for a period of 6 years after reporting).	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/street	
Guidance on completion of schema element	Required. Street name where Competent Authority is located in English.	
Field type	String100Type	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/city	
Guidance on completion of schema element	Required. City where Competent Authority is located in English.	
Field type	String100Type	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/cityNL	
Guidance on completion of schema element	Required. City where Competent Authority is located in the Member State's national language.	
Field type	String100Type	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/country	
Guidance on completion of schema element	Required. Country where the Competent Authority is located in English.	
Field type	String100Type	
Properties	minOccurs:	1
	maxOccurs:	1

Facets	minLength	1
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/postcode	
Guidance on completion of schema element	Optional. Postcode where Competent Authority is located (if relevant) in English.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/url	
Guidance on completion of schema element	Required. Website address of the Competent Authority.	
Field type	String100Type	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	10
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/changeReference
Guidance on completion of schema element	Optional. Provide a reference or references to document(s) if the Competent Authorities, or their roles, have changed since the first cycle of reporting under the Floods Directive. This should include information on the reasons for the changes and how the changes will support the improved implementation of the FD. Only actual Competent Authorities need to be reported, explanation can be provided if a Competent Authority is a successor of another one.
Field type	ReferenceType
Properties	minOccurs: 0
	maxOccurs: Unbounded
Quality checks	

2.3.3 Role of the Competent Authority ("CompetentAuthority/Role")

These schema elements reside within the Class "Role" and require Member States to select from an enumeration list the role (or roles) that best describe the duties discharged by the authority. Note that in the UML diagram the '1 to 3' relationship as the Competent Authority can have up to 3 roles as described in the schema sketch below.

Class Schema element	CA_UOM CA_UOM/CompetentAuthorityRole/roleCode
Guidance on completion of schema element	Required. Core Roles undertaken by the Competent Authority in the implementation of the Floods Directive. A Competent Authority is defined as being the authority with the responsibility for either the implementation of the different stages of the Floods Directive or reporting to the Commission. A Competent Authority can have a minimum of 1 and maximum of 3 roles under the Floods Directive (more than one i.e. A and/or B and/or C can be selected): • **A – Coordination, Preparation, Production** Coordination, Preparation and Production and implementation of the different stages of the Floods Directive, including: - Identification of RBDs/UOMs; - The Preliminary Flood Risk Assessment, including the identification of areas of potential significant flood risk; - Preparation of flood hazard and flood risk maps; - Coordination with competent authorities appointed for the Water Framework Directive; - Establishment of Flood Risk Management Plans in accordance with article 7 and the Annex; - Coordination of plans and measures included therein, and coordination with authorities responsible for such measures, at relevant level (e.g. RBD/UOM), including international coordination in transboundary basins; - Monitoring and evaluation of progress of the implementation of measures in FRMP; - Public consultation; and,

	- Other responsibilities to be defined. • **B - Reporting** Public information and consultation; Reporting to Commission and, Other responsibilities to be defined. • **C - Other** Any other roles not covered above.
Field type	RoleCode_Enum
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	

Class Schema element	CA_UOM CA_UOM/CompetentAuthority/Role/roleCodeOther	
Guidance on completion of schema element	Conditional. If 'Other' selected from enumeration list provide the details of the role.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'Other - Any other roles not covered above' selected from enumeration list under roleCode	Blocker

2.3.4 Units of Management (Class "UnitOfManagement")

The schema elements below are presented in the order that they are given under the Class "UnitOfManagement" in the UML diagram presented in Section 2.2. These schema elements need to be completed (noting that some elements are required and some are optional) only if the RBDs reported under the Water Framework Directive are not being used.

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/euUOMCode	
Guidance on completion of schema element	Required. Unique EU code for the Unit of Management.	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	42
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/uomName	
Guidance on completion of schema element	Required. Official name of the Unit of Management in English. If there is no specific name of the UOM in English then use the national language (uomNameNL) but always using Latin characters.	
Field type	String100Type	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/uomNameNL	
Guidance on completion of schema element	Required. Official name of the Unit of Management in National Language.	
Field type	String100Type	
Properties	minOccurs:	1
	maxOccurs:	1

Facets	minLength	1
	maxLength	100
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/uom_MS_CD	
Guidance on completion of schema element	Required. Unique National code for the Unit of Management.	
Field type	FeatureUniqueCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	42
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/area	
Guidance on completion of schema element	Required. Provide the Area of the UOM in km^2	
Field type	NumberDecimalType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	42
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/nationalRelationshipsReference	
Guidance on completion of schema element	Required. Reference or references will be required on the institutional relationships established in order to ensure co-ordination where the competent authority acts as co-coordinating body for other competent authorities, or when more than one competent authority is established. This should include a list showing the coordinating body and the authorities whose activities it is coordinating, and relationships with other bodies carrying out tasks linked to implementation of the plans including for example civil protection agencies and early warning systems.	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/international	
Guidance on completion of schema element	Required. Is the Unit of Management part of an International Unit of Management? • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/internationalName	
Guidance on completion of schema element	Conditional. If the answer to International is Yes, give the name of the International Unit of Management (in English) that this forms a part of.	
Field type	String100Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	100

Quality checks	Conditional. Report if 'Yes' selected from enumeration list under international	Blocker

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/internationalRelationshipsReference	
Guidance on completion of schema element	Conditional. If the answer to International is Yes, provide a reference to the institutional relationships established to ensure coordination where a Unit of Management covers the territory of more than one Member State or includes the territories of non-Member States. Include reference to international agreements, if they exist, and links to further information.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Report if 'Yes' selected from enumeration list under international	Blocker

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/primeCompetentAuthority	
Guidance on completion of schema element	Required. In most cases there will be only one PrimeCompetentAuthority in a UOM, which has a coordination role and the main responsibility over "Coordination, Preparation and Production of preliminary flood risk assessment, flood maps and flood risk management plans (FRMPs), including international coordination in transboundary Units of management". Other relevant competent authorities can be added as appropriate using the optional element provided. More than one entry in the element PrimeCompetentAuthority is allowed in cases in which it is not possible to define clearly a prime competent authority because the existence of more than one competent authority of the same administrative level, with the same or similar levels of competence over water, covering for instance different geographical areas within the UOM or different water categories, without a clear coordination role attributed to any of them. It is up to the Member State to judge how best to report the situation in each particular UOM using the flexibility provided in the schema.	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Facets	minLength	1
	maxLength	42

Quality checks	

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/otherCompetentAuthorities	
Guidance on completion of schema element	Optional. In most cases there will be only one PrimeCompetentAuthority in a UOM, which has a coordination role and the main responsibility over "Coordination, Preparation and Production of preliminary flood risk assessment, flood maps and flood risk management plans (FRMPs), including international coordination in transboundary Units of management". Other relevant competent authorities can be added as appropriate using this optional schema element.	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Facets	minLength	1
	maxLength	42
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/otherRelevantRolesReference	
Guidance on completion of schema element	Optional. The core responsibilities of the relevant competent authority must be specified for each river basin district or other unit of management. If other relevant roles (such as spatial planning, flood forecasting, flood warning and civil protection) are fulfilled by organisations not defined as competent authorities for the purposes of reporting, reference(s) should be provided identifying these authorities and the roles that they perform.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/changeReference	
Guidance on completion of schema element	Optional. Reference(s) should be provided to cover any changes in the UOM since the first cycle of reporting under the Floods Directive, for example covering possible changes in roles and responsibilities in the relevant Competent Authorities to changes in the area of the UOM itself. This should include information on the reasons for the changes and how the changes will support the improved implementation of the FD. Only actual UOMs need to be reported.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

2.3.5 Linkages between Floods Directive UOM and WFD RBDs (Class "UnitOfManagement/WFDDetails")

If the River Basin Districts reported under the Water Framework Directive are not being used, the link between the Floods Unit of Management and the relevant Water Framework Directive RBD(s) must be described. A Floods Directive Unit of Management can be associated with one or more than one WFD RBD(s). This means that the combination of the element below (euRBDCode) and the next element (typeOfAssociation) can occur more than once for each reported Unit of Management under the Floods Directive.

Class Schema element	CA_UOM CA_UOM/UnitOfManagement//WFDDetails/euRBDCode	
Guidance on completion of schema element	Required Where Units of Management have been defined the linkages to the relevant national River Basin Districts under the Water Framework Directive need to be described. Please provide the Unique EU code for the WFD River Basin District(s) this Unit Of Management is associated with.	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Facets	minLength	1
	maxLength	42
Quality checks		

Class Schema element	CA_UOM CA_UOM/UnitOfManagement/WFDDetails/typeOfAssociation	
Guidance on completion of schema element	Required. Describe for each River Basin District the type of association with the Unit of Management. • WFDAT_1 - Overlapping (partly within) • WFDAT_2 - Within	
Field type	WFDAssociationType_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

2.4 CA_UOM Products

The table below identifies the main products that will be developed as a result of the reporting on the Units of Management.

Table 2.1 Products from information provided

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
1	Spatial reference layer of UOMs	GIS layer	UOM	Mapping of all UOMs	GIS layer including all UOMs	Basis for WISE map viewer which is currently being updated

3.Preliminary Flood Risk Assessment (PFRA)

3.1 Introduction

Article 4 of the Floods Directive requires Member States to undertake a Preliminary Flood Risk Assessment (PFRA) for each river basin district, unit of management or the portion of an international river basin district or unit of management lying within their territory. The assessment should be based on available or readily derivable information including the requirements specified in Art. 4.2. The identification of areas of potential significant flood risk (APSFRs, Article 5) will be based on the PFRA.

Exchange of relevant information is required between the competent authorities of Member States sharing international RBDs or units of management (Article 4.3) and identification of areas identified as being at potential significant flood risk shall be coordinated between the Member States concerned (Article 5.2).

Available or readily derivable information should, where possible, include details of:

- Significant floods[13] that have occurred in the past and their location, extent, conveyance routes and adverse consequences, and other floods that occurred in the past which would have significant adverse consequences if they occurred again;

- Potential adverse consequences of future floods;

- Impacts of climate change and long-term developments on the occurrence of floods; and,

- Other available or readily derivable information, as relevant to the Member State, on issues such as topography, the position of water courses and their general hydrological and geo-morphological characteristics, including flood plains as natural retention areas, the effectiveness of existing flood defence infrastructure, and the position of populated areas and areas of economic activity.

The starting point of the assessment is to use maps of the river basin district, or Unit of Management, at the appropriate scale including the borders of the river basins, sub-basins and, where existing, coastal areas, showing topography and land use.

[13] Significant floods here refer to floods that occurred in the past and which had significant adverse impacts on human health, the environment, cultural heritage and economic activity and for which the likelihood of similar future events is still relevant (Art 4.2.(b) and significant floods which have occurred in the past, where significant adverse consequences of similar future events might be envisaged (Article 4.2(c)).

In recognition that the PFRA is based on available or readily derivable information, and that Member States have discretion over particular factors that should be included in the PFRA, some elements are of an ”optional” nature. The Commission furthermore will need to know how the assessment has been carried out (e.g. methodology, criteria applied) and what aspects and factors have been excluded in the PFRA and the reasons for their exclusion, in order to check the compliance with Articles 4 and 5.

For the second cycle of reporting, Transitional Measures under Article 13 do not apply. Under Article 13(1), MS were given the option not to undertake a preliminary flood risk assessment referred to in Article 4 for those river basins, sub-basins or coastal areas where they have either: a) already undertaken a risk assessment to conclude, before 22 December 2010, that a potential significant flood risk exists or might be considered likely to occur leading to the identification of an area of potentially significant flood risk (APSFR, under Article 5), or; b) decided, before December 2010, to prepare flood hazard and flood risk maps and to establish flood risk management plans in accordance with the relevant provisions of the Directive. As part of the reporting for the second cycle onwards, the PFRA, or the assessment and decisions referred to in Article 13(1), are required to be reviewed and if necessary, updated by 22 December 2018 (as per the provisions of the Directive) and every six years thereafter.

The core of the requirements of Article 4 is to use information on past significant floods as the basis for identifying where floods may occur in the future. To avoid increasing the administrative costs in relation to reporting, but still gathering sufficient information to enable the Commission to check compliance with the preliminary flood risk assessment, basic information and geographic location, which either identifies a spatial position (x/y coordinates, name of locality) or identifies the river basins, sub-basins, stretch of coastal area and other areas where past floods have occurred, should be provided. As already foreseen in the first reporting guidance (p. 30), more detailed information should however be provided for floods that occur in the future during subsequent implementation cycles, and which will be considered as past floods for the review of those cycles. For this reason it is required that MS adhere to the requirements of Article 4 for floods occurring after 22nd December 2011 onwards. Re-reporting on previous (colloquially referred to as "historic") floods under Article 4 is, unless the MS wishes to do so, not required.

Article 4.2 (d) of the Floods Directive requires that the impacts of climate change and long-term developments on the occurrence of floods should be considered in the Preliminary Flood Risk Assessment, depending on the specific needs of the Member States. Early consideration of climate change and long-term developments will ensure that areas identified as being at significant flood risk, and hence where flood maps and flood management plans are focused, reflects future flood risk resulting from climate change or other long-term developments.

The Floods Directive (Article 4.2) also identifies a range of specific other issues that should be taken into account in undertaking the Preliminary Flood Risk Assessment. This does not preclude the use of any further relevant available or readily derivable information by Member States.

The Preliminary Flood Risk assessment (as set out in Chapter II of the Directive) shall be made available to the public.

A summary of the process will be presented to the public through WISE, including:

- Maps showing where Articles 4 and 5 have been applied and the conclusions of these Articles in terms of identification of APSFRs or the decision made to proceed to mapping and the production of flood risk management plans,
- A map of river basin, sub-basins, coastal stretches or other areas where there has in the past been a significant flood event,
- Links to more detailed information and,
- Links to documents (reference documents) which explain overall approach and methodology.

More detailed information, such as the extent of past floods or records of such floods or their consequences, may be held and made available to the public through national systems or through specifically defined expert views only.

3.1.1 Geographic information

Data will be required from Member States to enable maps with the following content to be produced for floods post January 2011 (taking into account that visualisation in expert view or public view is to be finalised):

- Maps of the river basin district or unit of management at the appropriate scale including the borders of the river basins, sub-basins and, where existing, coastal areas, showing topography and land use (NB: Most of this information should already be available in WISE, and additional information shall be made available via WISE to complete the information);
- Location of past significant floods or where potential future significant floods could occur. Further details are provided in the spatial guidance given in Annex 2.

3.2 UML Diagram

The UML diagram for PFRA is provided in Annex 5. The UML should be used as an aid to navigate through the schemas. Extracts from this UML diagram have been reproduced at appropriate points within the sections that follow to provide further clarity and to aid the navigation process.

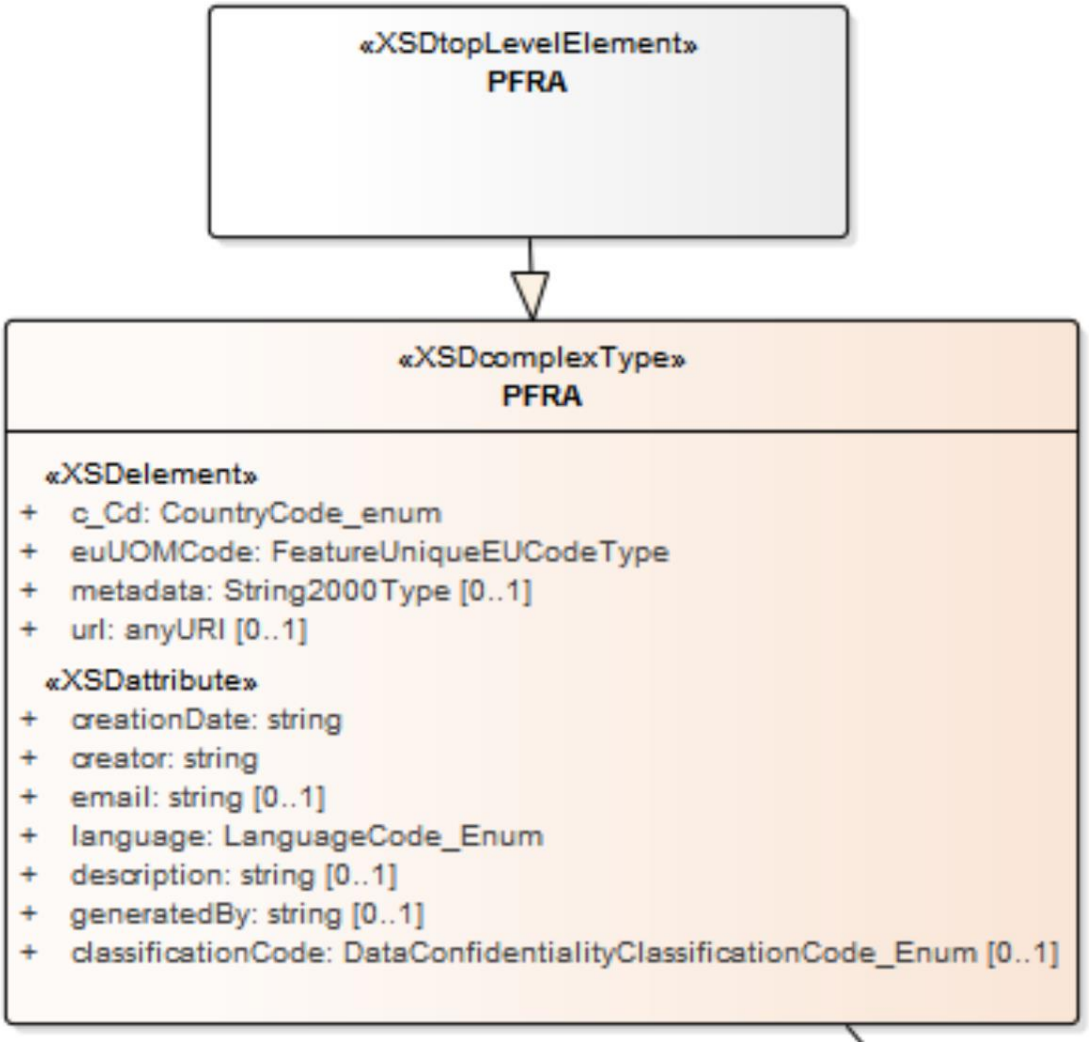
3.3 Schema Sketches

The schema sketches and accompanying explanatory text provided in the sections below should be viewed in combination with the UML diagram. The presentation of the sketches follows a logical sequence, following the hierarchy and flow of the UML diagram which in general covers the need for summary information at the UOM level through to the provision of more detailed information on specific past floods or potential future floods.

3.3.1 PFRA (Country codes, EU unit of management codes, links or references to Metadata, URL for internet based information and attributes)

The schema sketches below cover the fundamental information (elements and attributes) that is required to be reported for identification purposes.

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Elements

Class Schema element	PFRA PFRA/c_CD	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	CountryCode_enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Class Schema element	PFRA PFRA/euUOMCode	
Guidance on completion of schema element	Required. Unique EU code for the Unit of Management. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total. If unit of management is the same as the WFD RBD please use the EURBDCode as the unit of management.	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Class Schema element	PFRA PFRA/metadata	
Guidance on completion of schema element	Optional. Hyperlink or reference to associated metadata statement or file. This allows up to 2000 characters to be specified or alternatively may be used to provide a hyperlink or description of an associated metadata file. This should be used to define any restrictions on use of the data and/or limitations of the data.	
Field type	String2000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	2000
Quality checks		

Class Schema element	PFRA PFRA/url	
Guidance on completion of schema element	Optional. URL for integration of your own internet-based information	
Field type	anyURL	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Attributes

Class Schema element	PFRA PFRA/creationDate	
Guidance on completion of schema element	Required. To be provided as year, month, date (e.g. “2012-03-20”)	
Field type	string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/creator	
Guidance on completion of schema element	Required. Competent Authority responsible for providing the information (e.g. Ministry of Environment, Environment Protection Agency, etc.)	
Field type	string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/email	
Guidance on completion of schema element	Optional. For example “frmplanning@environment.eu”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/language	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	LanguageCode_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/description	
Guidance on completion of schema element	Optional. For example: “Floods Directive Provisional Flood Risk Assessment Information”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	150
Quality checks		

Class Schema element	PFRA PFRA/generatedBy	
Guidance on completion of schema element	Optional. For example “Through the use of an IT database system using Oracle scripts”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	150
Quality checks		

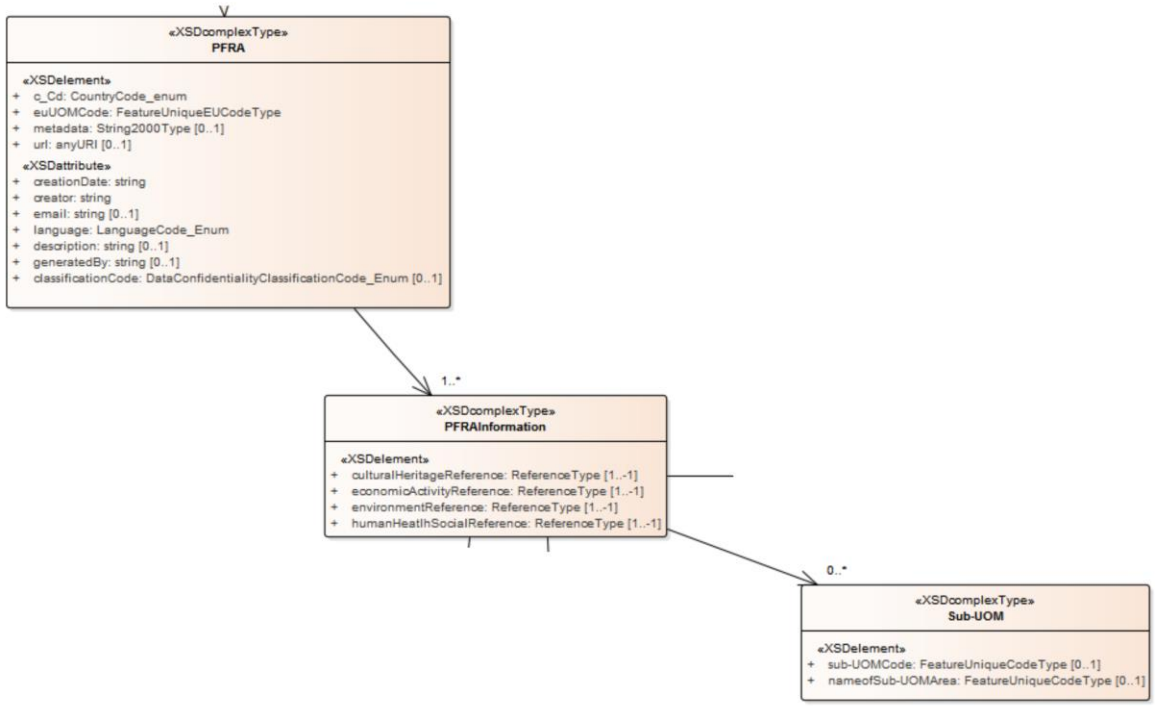
Class Schema element	PFRA PFRA/classificationCode	
Guidance on completion of schema element	Optional. Codes for data security classification: • 001 – Unclassified – available for general circulation and public • 003 – Confidential – available for EC reporting only	
Field type	DataConfidentialityClassificationCode_Enum	
Properties	minOccurs:	0
	maxOccurs:	1

Quality checks	

3.3.2 Sub-UOM (PFRA/PFRAInformation/Sub-UOM)

A circumstance may arise where several UOMs (RBDs) are shared between different jurisdictions within a MS and internationally. It will be necessary to report responses for parts of the UOM where different authorities have different approaches to flood risk management and planning in their respective areas. It would not be possible, for example, to simply reply 'Yes' or 'No', for the whole UOM or RBD in such cases. Similarly, such MS may need to show different values against the various enumeration lists in different spatial areas. Furthermore, each jurisdiction may have separate web-sites and they will need to refer to this spatial area (as sub-set to UOM for a shared RBD) within the FHRM_LinksToMS schema. Maintaining an optional Sub-UOM level specific Code provides a solution to the issues identified above. Please note that this schema element is optional and should only need to be used in exceptional cases as describe above.

In the UML Diagram the Class 'PFRAInformation' is linked to the Sub-UOM class by a '0..*' relationship which means that reporting of Sub-UOMs is optional (depicted by the '0') and that information for more than one Sub-UOM can be reported (depicted by the '*'). This is illustrated in the part of the UML given below.



Class Schema element	PFRA PFRA/Sub-UOM/sub-UOMCode	
Guidance on completion of schema element	Optional. Unique code for the sub-UOM area - up to 150 characters in total. To be used to establish link between spatial feature (polygon/line/point) and information in xml schema. Each specific area MUST be unequivocally connected to a UOM, or UOMs, if it intersects more than one.	
Field type	FeatureUniqueCodeType	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	150
Quality checks		

Class Schema element	PFRA PFRA/Sub-UOM/nameofSub-UOMArea	
Guidance on completion of schema element	Optional. Name of the sub-UOM area (e.g. of a locality, river basin and/or coastal area or other areas under a specific jurisdiction).	
Field type	FeatureUniqueCodeType	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	3
	maxLength	150
Quality checks		

3.3.3PFRA Information (PFRA/PFRAInformation)

The next set of schema elements, which should be reported at the UOM level, relate to adverse consequences of floods. Under Article 4.2 MS are required to report on floods with past adverse impacts on human health, the environment, cultural heritage and economic activity as well as (depending on the needs of the MS) carry out an assessment of the potential adverse consequences of future floods under these four categories. These consequences are assessed and reported at the event level although the methodologies for defining adverse consequences under these four categories need only to be reported at the UOM level in recognition that the methodologies will be likely to be the same across all events.

The four reference schema elements below allow for the provision of documents and/or links to documents giving details of the methodologiers used to support the above assessment. These references may include descriptions of the approaches and available data used to determine how, for example, the levels of past adverse impacts or potential adverse consequences (e.g. the number of fatalities or the total damage cost in Euros for a flood event) have been defined under each of the four categories.

Note that as shown in the extract from the UML diagram in Section 3.3.2 above, the Class 'PFRAInformation' is demoted as '1..*' meaning that it is required and can be reported multiple times (denoted by '*') for different UOMs.

Class Schema element	PFRA PFRA/PFRAInformation/culturalHeritageReference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) detailing methodologies used for assessing how the levels of past adverse impacts or potential adverse consequences on cultural heritage have been defined. References may include descriptions of approaches and available data used in the assessment. Note that generic approaches only are required (i.e. not related to specific flood events).	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/economicActivityReference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) detailing methodologies used for assessing how the levels of past adverse impacts or potential adverse consequences on economic activity have been defined. References may include descriptions of approaches and available data used in the assessment. Note that generic approaches only are required (i.e. not related to specific flood events).	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/environmentReference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) detailing methodologies used for assessing how the levels of past adverse impacts or potential adverse consequences on the environment have been defined. References may include descriptions of approaches and available data used in the assessment. Note that generic approaches only are required (i.e. not related to specific flood events).	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/humanHealthSocialReference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) detailing methodologies used for assessing how the levels of past adverse impacts or potential adverse consequences on human health have been defined. References may include descriptions of approaches and available data used in the assessment. Note that generic approaches only are required (i.e. not related to specific flood events).	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

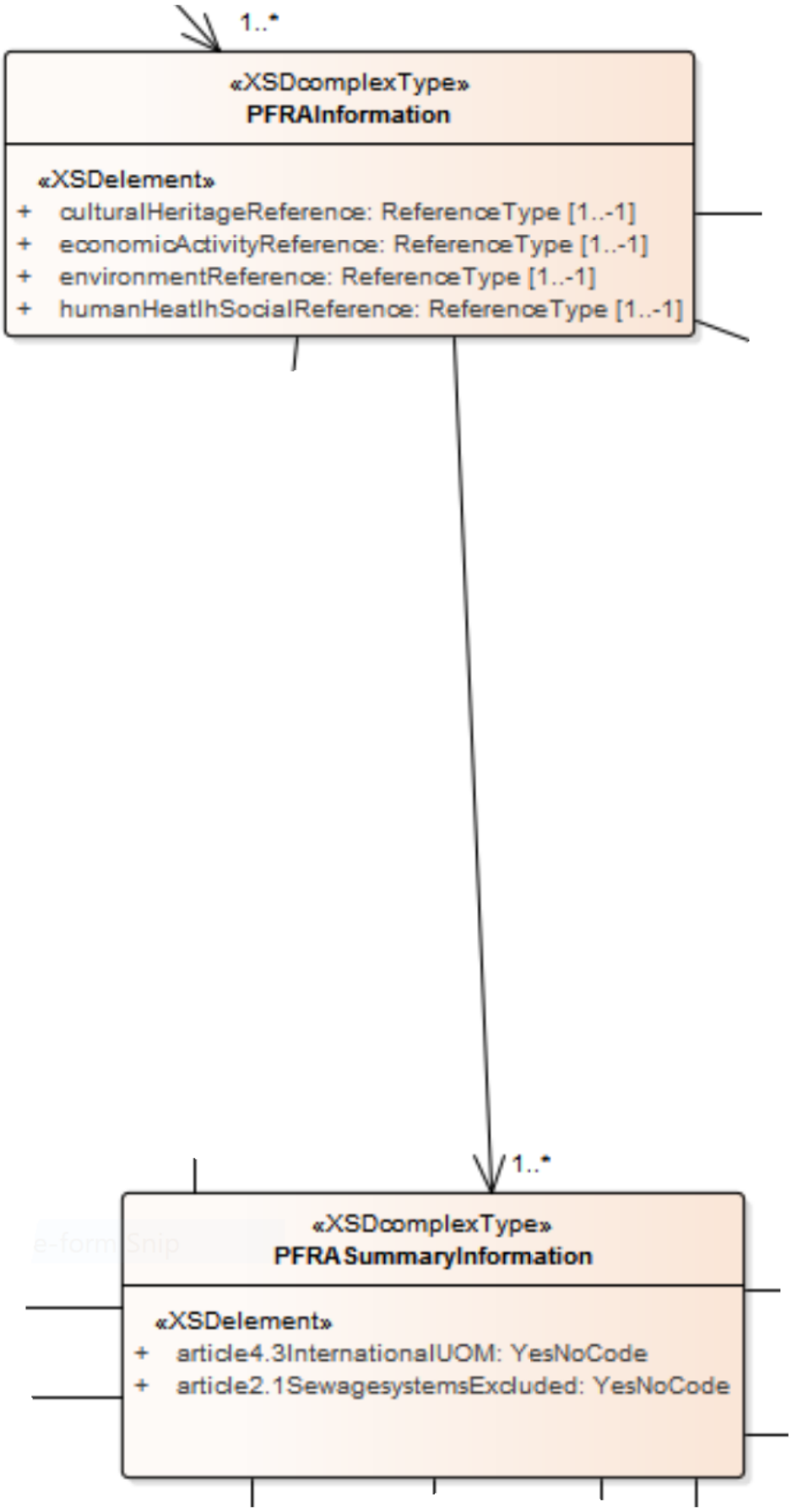
3.3.4 PFRASummaryInformation (PFRA/PFRAInformation/ PFRASummaryInformation)

The Class PFRASummaryInformation has the cardinality of '1..*' indicating that it is required ('1') and can be reported for multiple UOMs but with the information being provided at the UOM level. In the first cycle, information was requested to be provided in a summary text format. The schemas have been updated to obtain greater depth and clarity in the information provided with the use of enumeration lists and the opportunity for MS to provide more detailed information via reference document(s) or internet links to specific sources of information.

The first schema element shown within the *PFRA/SummaryInformation* element in the UML diagram (see extract from the UML diagram below) is the requirement for a simple "Yes/No" to be provided as to whether the UOM is international. For international UOMs further information should be provided under the schema elements related to *PFRASummaryInformation/Article4.3InternationalInformationExchange* (Article 4.3 states

that in the case of international river basin districts, or units of management which are shared with other MS, exchange of relevant information must be ensured between the competent authorities concerned) that are included further on in this section of the guidance.

The second schema element shown within the *PFRA/SummaryInformation* element in the UML diagram relates to Article 2.1 of the FD which states that in relation to floods, “This shall include floods from rivers, mountain torrents, Mediterranean ephemeral water courses, and floods from the sea in coastal areas, and may exclude floods from sewerage systems”. In the first cycle of reporting it was not always clear whether floods from sewage systems had been included in the assessment as this source of flooding was not mentioned explicitly. This schema element has therefore been introduced to gain more clarity on this issue.

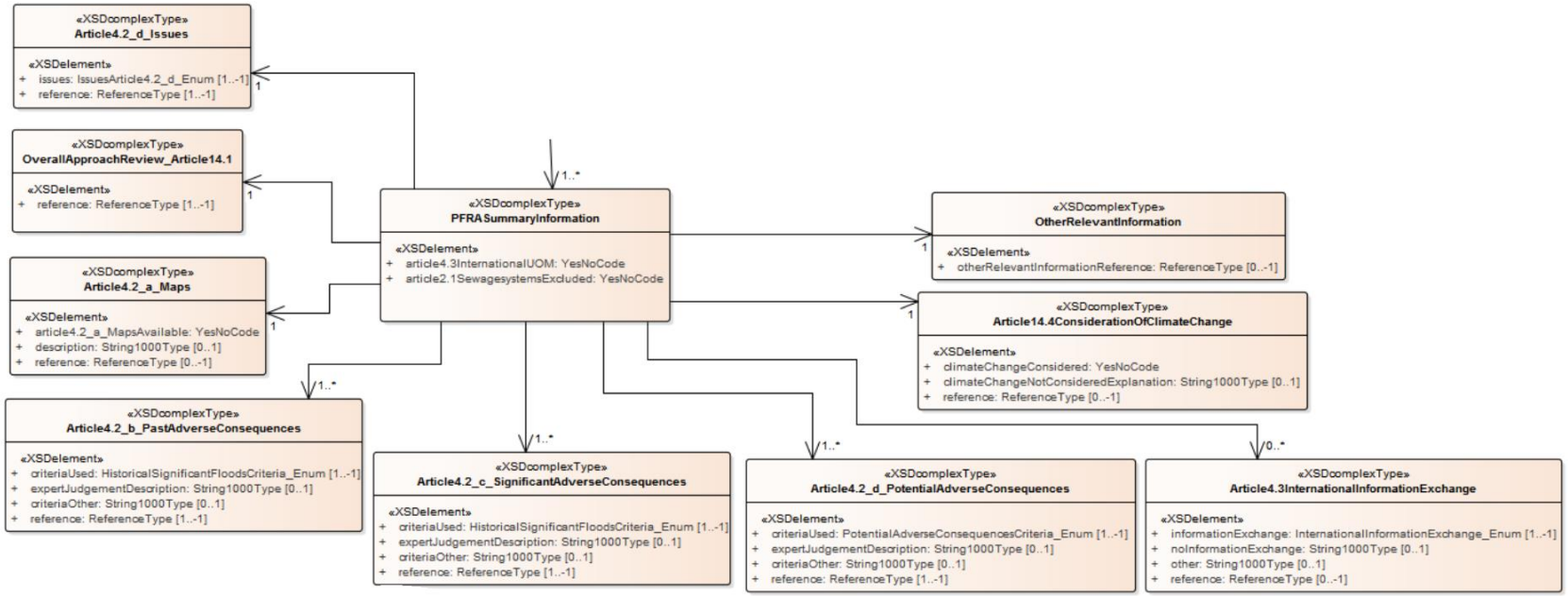

1..*
«XSDcomplexType»
PFRAInformation
«XSDelement»
+ culturalHeritageReference: ReferenceType [1..-1]
+ economicActivityReference: ReferenceType [1..-1]
+ environmentReference: ReferenceType [1..-1]
+ humanHeatlhSocialReference: ReferenceType [1..-1]
1..*
«XSDcomplexType»
PFRASummaryInformation
«XSDelement»
+ article4.3InternationalUOM: YesNoCode
+ article2.1SewagesystemsExcluded: YesNoCode

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ article4.3InternationalUOM	
Guidance on completion of schema element	Required. Is the UOM or sub-UOM international? • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ article2.1SewagesystemsExcluded	
Guidance on completion of schema element	Required. State whether floods from sewage systems have been excluded as a source of flooding • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

The next group of schema sketches are all directly linked (as daughter Classes containing elements within) to *PFRA/SummaryInformation*. Starting at *Article4.2_d_Issues* each schema element is described in the order it appears in the UML from a counterclockwise perspective. All of these daughter classes are required except for 'Article4.3InternationalInformationExchange' which is conditional (cardinality '0..*') with the '0' denoting that it is conditional upon whether a particular UOM is international.

As a reminder, the schema elements in this section cover the following parts of the UML diagram:


«XSDcomplexType»
Article4.2_d_Issues
«XSDelement»
+ issues: IssuesArticle4.2_d_Enum [1..-1]
+ reference: ReferenceType [1..-1]
«XSDcomplexType»
OverallApproachReview_Article14.1
«XSDelement»
+ reference: ReferenceType [1..-1]
«XSDcomplexType»
Article4.2_a_Maps
«XSDelement»
+ article4.2_a_MapsAvailable: YesNoCode
+ description: String1000Type [0..1]
+ reference: ReferenceType [0..-1]
«XSDcomplexType»
PFRASummaryInformation
«XSDelement»
+ article4.3InternationalUOM: YesNoCode
+ article2.1SewagesystemsExcluded: YesNoCode
«XSDcomplexType»
OtherRelevantInformation
«XSDelement»
+ otherRelevantInformationReference: ReferenceType [0..-1]
«XSDcomplexType»
Article14.4ConsiderationOfClimateChange
«XSDelement»
+ climateChangeConsidered: YesNoCode
+ climateChangeNotConsideredExplanation: String1000Type [0..1]
+ reference: ReferenceType [0..-1]
«XSDcomplexType»
Article4.2_b_PastAdverseConsequences
«XSDelement»
+ criteriaUsed: HistoricalSignificantFloodsCriteria_Enum [1..-1]
+ expertJudgementDescription: String1000Type [0..1]
+ criteriaOther: String1000Type [0..1]
+ reference: ReferenceType [1..-1]
«XSDcomplexType»
Article4.2_c_SignificantAdverseConsequences
«XSDelement»
+ criteriaUsed: HistoricalSignificantFloodsCriteria_Enum [1..-1]
+ expertJudgementDescription: String1000Type [0..1]
+ criteriaOther: String1000Type [0..1]
+ reference: ReferenceType [1..-1]
«XSDcomplexType»
Article4.2_d_PotentialAdverseConsequences
«XSDelement»
+ criteriaUsed: PotentialAdverseConsequencesCriteria_Enum [1..-1]
+ expertJudgementDescription: String1000Type [0..1]
+ criteriaOther: String1000Type [0..1]
+ reference: ReferenceType [1..-1]
«XSDcomplexType»
Article4.3InternationalInformationExchange
«XSDelement»
+ informationExchange: InternationalInformationExchange_Enum [1..-1]
+ noInformationExchange: String1000Type [0..1]
+ other: String1000Type [0..1]
+ reference: ReferenceType [0..-1]
1
1..*
0..*

Requirements of Article 4.2 (d)

Article 4.2(d), depending on the specific needs of MS, requires that the PFRA includes an assessment of the potential adverse consequences of future floods for human health, the environment, cultural heritage and economic activity, taking into account as far as possible a range of issues. These issues are listed in the enumeration list in the schema sketch below. The requirement to include “long-term developments” has been further expanded to cover development of settlements, infrastructure and rural land-use change.

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_d_Issues/issues	
Guidance on completion of schema element	Required. Issues considered to support the assessment of potential adverse consequences of future floods (more than one option can be selected): • IA42_1 - Topography • IA42_2 - Position of watercourses and their general hydrological and geomorphological characteristics, • IA42_3 - Floodplains as natural retention areas • IA42_4 - The effectiveness of existing man-made flood defence infrastructures • IA42_5 - The position of populated areas • IA42_6 - Areas of economic activity • IA42_7 - Impacts of climate change on the occurrence of floods • IA42_8 - Long-term developments; development of settlements (private, public and commercial) • IA42_9 - Long-term developments; development of infrastructure (transport, water, energy and telecoms) • IA42_10 - Long-term developments; rural land-use change • IA42_11 - The specific needs of the of the MS do not require an assessment under Article 4.2(d)	
Field type	IssuesArticle4.2_d_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_d_Issues/reference
Guidance on completion of schema element	Required. Provide document(s) or link(s) to the information relating to how each of the issues identified under Article 4.2(d) (listed in the schema sketch above) were considered to support the assessment of potential adverse consequences of future floods including information on the methodologies applied to consider those issues. If the specific needs of the MS do not require an assessment under Article 4.2(d) please provide a reason.
Field type	ReferenceType
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Overall approach

The schema sketch below (*OverallApproachReview_Article 14.1)* is a reference schema requiring MS to provide details of updates and changes to their overall approach and methodologies applied to undertake the PFRA following a review of their approach to the first cycle (as required by Article 14.1). This review should include an assessment of the decisions referred to in Article 13(1) of the FD (where MS decided not to undertake a preliminary flood risk assessment which would be in accordance to the provisions for preliminary flood risk assessments as laid out in the Floods Directive).

The focus of this schema element is therefore on reviewing and updating the first cycle methodology. If the approach and methodology has not changed during the first cycle then MS should declare this in the subject area of the reference schema (see Section 1.8.1). In this situation MS should append or provide a link to their original summary document. MS can also provide an additional document summarising their approach to the second cycle pointing out any differences in approach.

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ OverallApproachReview_Article 14.1/reference
Guidance on completion of schema element	Required. Provide a reference or references describing how the review process to the overall approach and methodology applied to undertake the PFRA has been undertaken and, where relevant, what changes have been implemented in the second cycle of reporting. An overview is required here not specific details relating to particular flood events or locations.
Field type	ReferenceType
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Requirements of Article 4.2 (a) - maps

Article 4.2 (a) requires MS, as part of the preliminary flood risk assessment, to provide map(s) of the river basin district at the appropriate scale including the borders of the river basins, sub-basins and, where existing, coastal areas, showing topography and land use. The schema below captures this requirement. MS should refer to specific documents or links where such maps are held.

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_a_Maps/article4.2_a_MapsAvailable	
Guidance on completion of schema element	Required. Map(s) according to Article 4.2(a) (to be coordinated with WFD reporting) including topography and land use. • Yes • No If YES provide a reference document or link in the *Reference* schema, if NO provide a reason/description (text) in the */Description* schema.	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_a_Maps/description	
Guidance on completion of schema element	Conditional. Provide a reason/description if *Article4.2(a)MapsAvailable* is set to 'No'.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if Article4.2(a)MapsAvailable is set to 'No'.	Blocker

The next schema element requests MS to provide links to the map or maps (which may include specific hyperlinks to maps within national portals or links to areas within specific

documents uploaded to WISE) and to documentation referring to how the maps were used in the assessment of the flood risk. The details required for the reference elements are specified in Section 1.8.1.

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_a_Maps/reference	
Guidance on completion of schema element	Conditional. Provide a reference(s) if Article4aMaps is set to 'Yes'. Provide a reference(s) to the map(s) and to how the map(s) was (were) used in the preliminary flood risk assessment	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Report if Article4.2(a)MapsAvailable is set to 'Yes'.	Blocker

The reference element above should be used to provide (in addition to links to the maps themselves or to the documents containing the maps) whatever supporting information to the maps under Article 4.2(a) that the MS considers relevant. This could include references as to how the information provided by the maps has been evaluated to inform the preliminary flood risk assessment.

Requirements of Article 4.2 (b), (c) and (d)

The next three sets of schema elements (enumeration lists, descriptions and reference schemas) are related to the requirements of Articles 4.2(b), (c) and (d) respectively. During the first cycle of reporting it became evident that further clarity was needed to define the requirements of these three sub-articles particularly with regard to the difference between the requirements of Article 4.2(b) and 4.2(c). Some further clarity is presented in the table below:

Article	Summary description	Implications
4.2(b) – Past Adverse Consequences	Description of past flood with significant adverse impacts, that may reoccur	• To filter past flood events, requires a methodology for defining what constituted a **"significant adverse impact"** at the time of the flooding • This might involve estimation of the likelihood of repetition for each past flood that had a significant adverse impact (zero likelihood = irrelevant flood) • To further filter events, requires a methodology for defining what adverse impacts are to be considered as significant now, should the past flood repeat itself at the same location(s) today, or in the future (long-term developments are relevant here)
4.2(c) – Significant Adverse Consequences	Description of significant past flood [without known significant adverse impacts] for which the likelihood of similar future events is still relevant and where significant adverse consequences might be envisaged	• To filter past flood events, requires a methodology for defining what constituted a **"significant flood"** at the time of the flooding • This might involve defining the likelihood of repetition for each significant past flood (zero likelihood = irrelevant flood) • To further filter events, requires a methodology for defining what would constitute a **"significant adverse consequence"** now, should the past flood repeat itself at the same location(s) today, or in the future (long-term developments are also relevant here)
4.2(d) – Potential Adverse Consequences	Assessment of potential adverse consequences of future floods	• Depending on the specific needs of MS, requires looking at the whole territory of the MS* (in addition to areas identified under Articles. 4.2.b and 4.2.c) to scan for locations of future floods with potential adverse consequences (NB: There is no reference to significance here) • This might involve the development of a methodology for defining what constitutes potential **"adverse consequences"** for each future flood (long-term developments are also relevant here) *hence the detailing of what should be taken into account as far as possible

The schemas covering Articles 4 (b) to (d) are designed to draw out the criteria used by MS for defining: past significant floods; past adverse impacts of significant floods: future potential adverse consequences, and:future significant adverse consequences of floods as well as for gaining further details of the approaches used in their assessment.

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/Article4.2_b_PastAdverseConsequences/criteriaUsed	
Guidance on completion of schema element	Required. Criteria used to define past floods with significant adverse impacts; with likelihood of repetition (more than one option can be selected). • HSFC_1 - Flooded area • HSFC_2 - Number of residents in flooded area • HSFC_3 - Number of buildings affected • HSFC_4 - Affected area with commercial or industrial use • HSFC_5 - Level of damage caused (e.g. high, medium, low) • HSFC_6 - Required amount of money in compensation • HSFC_7 - Return period or probability of occurrence • HSFC_8 - Infrastructure affected • HSFC_9 - Community assets affected • HSFC_10 - Duration of occurrence • HSFC_11 - Speed of onset of flood • HSFC_12 - Whether a specific flood warning level was triggered • HSFC_13 - Specific weighting systems/benchmark defined to assess significance • HSFC_14 - Expert Judgement • HSFC_15 - Other	
Field type	HistoricalSignificantFloodsCriteria_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Where “Expert Judgement” has been selected from the enumeration list, MS are required to provide a brief description as to how expert judgement has been used to define past floods with significant adverse impacts. A relatively short description only is required here, for example on the type of organisations consulted (public administration and/or private company) and what key issues were considered as part of the judgement.

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/Article4.2_b_ PastAdverseConsequences/expertJudgementDescription	
Guidance on completion of schema element	Conditional if ‘Expert Judgement’ has been selected from enumeration list, provide a brief description as to how expert judgement was used to define past floods with significant adverse impacts.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional. Report if ‘HSFC_14 - Expert Judgement’ has been selected from enumeration list under CriteriaUsed	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/Article4.2_b_ PastAdverseConsequences/criteriaOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected from enumeration list provide a description of what other criteria (there may be several ‘other’ criteria) have been used to define past floods with significant adverse impacts, with likelihood of repetition.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if ‘HSFC_15 - Other’ selected from enumeration list under CriteriaUsed	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_b_PastAdverseConsequences/reference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to the methodology and criteria used to identify and assess floods that occurred in the past and their past adverse consequences (including whether such consequences would be 'significant') and whether the likelihood of such floods remains relevant.	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_c_SignificantAdverseConsequences/criteriaUsed	
Guidance on completion of schema element	Required. Criteria used to define significant past floods (without known significant adverse impacts) with likelihood for significant adverse consequences in the future (more than one option can be selected). • HSFC_1 - Flooded area • HSFC_2 - Number of residents in flooded area • HSFC_3 - Number of buildings affected • HSFC_4 - Affected area with commercial or industrial use • HSFC_5 - Level of damage caused (e.g. high, medium, low) • HSFC_6 - Required amount of money in compensation • HSFC_7 - Return period or probability of occurrence • HSFC_8 - Infrastructure affected • HSFC_9 - Community assets affected • HSFC_10 - Duration of occurrence • HSFC_11 - Speed of onset of flood • HSFC_12 - Whether a specific flood warning level was triggered • HSFC_13 - Specific weighting systems/benchmark defined to assess significance • HSFC_14 - Expert Judgement • HSFC_15 - Other	
Field type	HistoricalSignificantFloodsCriteria_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_c_SignificantAdverseConsequences/expertJudgementDescription	
Guidance on completion of schema element	Conditional if 'Expert Judgement' has been selected from enumeration list, provide a brief description as to how expert judgement was used to define past floods (without known significant adverse impacts) with likelihood for significant adverse consequences in the future.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional. Report if 'HSFC_14 - Expert Judgement' has been selected from enumeration list under CriteriaUsed	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_c_SignificantAdverseConsequences/criteriaOther	
Guidance on completion of schema element	Conditional. If 'Other' selected from enumeration list. Provide a description of what other criteria (there may be several 'other' criteria) have been used to define significant past floods (without known significant adverse impacts) with likelihood for significant adverse consequences in the future.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'HSFC_15 - Other' selected from enumeration list under CriteriaUsed	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_c_SignificantAdverseConsequences/reference
Guidance on completion of schema element	Required. Provide document(s) or link(s) to the methodology and criteria used to define significant past floods (without known significant adverse impacts) with likelihood for significant adverse consequences in the future.
Field type	ReferenceType
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_d_PotentialAdverseConsequences/criteriaUsed
Guidance on completion of schema element	Required. Criteria used to identify potential adverse consequences of future floods (more than one option can be selected): • PACC_1 - Potential number of permanent residents affected by the flood extent in flood plains • PACC_2 - Potential value/area of property affected (residential area and non-residential area) • PACC_3 - Potential number of buildings affected (residential and non-residential) • PACC_4 - Potential adverse consequences to infrastructural assets • PACC_5 - Damage potential exceeds specific threshold (area) • PACC_6 - Potential economic damage • PACC_7 - Potential adverse consequences on water bodies • PACC_8 - Potential sources of pollution triggered from industrial installations • PACC_9 - Potential adverse consequences to rural land use • PACC_10 - Potential adverse consequences to economic activity (e.g. manufacturing, service and construction industries) • PACC_11 - Potential adverse impacts on cultural assets and cultural landscapes • PACC_12 - Recurrence periods or probability of exceedance • PACC_13 - Recurrence periods or probability of exceedance in combination with land use • PACC_14 - Community assets affected • PACC_15 - Water level or depth • PACC_16 - Water velocity • PACC_17 - Whether floods have occurred in the past • PACC_18 - Specific weighting systems defined to assess significance • PACC_19 - Expert Judgement • PACC_20 - Other • PACC_21 - The specific needs of the of the MS do not require an assessment under Article 4.2(d)
Field type	PotentialAdverseConsequencesCriteria_Enum
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_d_PotentialAdverseConsequences/expertJudgementDescription	
Guidance on completion of schema element	Conditional. If 'Expert Judgement' selected from enumeration list, provide a brief description as to how expert judgement was used to define potential adverse consequences of future floods.	
Field type	String1000Type	
Properties	minOccurs:	
	maxOccurs:	
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional. Report if 'PACC_19 - Expert Judgement' has been selected from enumeration list under CriteriaUsed	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_d_PotentialAdverseConsequences/criteriaOther	
Guidance on completion of schema element	Conditional. If 'Other' selected from enumeration list. Provide a description of what other criteria (there may be several 'other' criteria) have been used to define adverse consequences of future floods.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'PACC_20 - Other' selected from enumeration list under CriteriaUsed	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.2_d_PotentialAdverseConsequences/reference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to the methodology and criteria used to define adverse consequences of potential future floods.	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

International information exchange

Article 4.1 states that Member States shall, for each river basin district, or unit of management, or the portion of an international river basin district lying within their territory, undertake a PFRA. Article 4.3 states that in the case of international river basin districts, or units of management which are shared with other MS, exchange of relevant information must be ensured between the competent authorities concerned.

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.3InternationalInformationExchange/informationExchange	
Guidance on completion of schema element	Required. If UOM is international, identify mechanism(s) used for international exchange of information (more than one option can be selected): • IIE_1 - International River Commission • IIE_2 - Bilateral border water commissions • IIE_3 - International coordination and working groups • IIE_4 - Bilateral coordination and working groups • IIE_5 - Regulations in place to enable exchange of information at international level • IIE_6 - Use of pre-existing structures to ensure bilateral coordination (in place before FD implementation) • IIE_7 - Informal arrangements (groups discussions and exchange of information) • IIE_8 - Joint declaration with a neighbouring country (including non-EU MS) on cooperation on joint action • IIE_9 - No information exchange • IIE_10 - Other	
Field type	InternationalInformationExchange_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks	Conditional. Report if Article4.3InternationalUOM is 'Yes'.	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.3InternationalInformationExchange/noInformationExchange	
Guidance on completion of schema element	Conditional. If 'No information exchange' is selected from enumeration list. Provide an explanation as to why this was the case.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'IIE_9 - No information exchange' selected from enumeration List under Exchange	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.3 InternationalInformationExchange/other	
Guidance on completion of schema element	Conditional. If 'Other' selected from enumeration list. Provide a description of what other mechanisms of international information exchange have been used.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'IIE_10 - Other' selected from enumeration list under Exchange.	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article4.3 InternationalInformationExchange/reference	
Guidance on completion of schema element	Conditional. If the UOM is international, provide document(s) or link(s) to document(s) relating to the information on the institutional relationships established to ensure coordination where a flood event covers the territory of more than one Member State or includes the territory of non-Member States. Include reference to international agreements, if they exist. Minutes from meetings that are publically available could be referenced (although these are not essential) and reference to a report and/or summary would also be relevant and acceptable.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Report if theArticle4.3InternationalUOM is 'Yes'.	Blocker

Climate Change

Article 14.4, in the context of the review of previous cycles, states that the likely impact of climate change on the occurrence of floods shall be taken into account in the review of the PFRA by 22nd December 2018 and every six years thereafter. The schema element below focuses of the latter requirement.

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ Article14.4ConsiderationOfClimateChange/climateChangeConsidered	
Guidance on completion of schema element	Required. Has climate change been taken into consideration in the review of the PFRA? • Yes • No If 'Yes', provide a reference document(s) or link(s) to the relevant reports and information which explain how climate change has been taken into consideration. If 'No', please provide an explanation as to why this was not the case.	
Field type	ClimateChangeConsidered: YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/Article14.4 ConsiderationOfClimateChange/climateChangeNotConsideredExplanation	
Guidance on completion of schema element	Conditional. If 'No' selected from enumeration list. Provide an explanation as to why this was the case.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if ClimateChange is set to 'No'.	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/Article14.4ConsiderationOf ClimateChange/reference	
Guidance on completion of schema element	Conditional. If 'Yes' is selected from the enumeration list, provide document(s) or link(s) to the information relating to how climate change has been taken into consideration in the review of the PFRA?	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	unbounded
Quality checks	Conditional. Report if ClimateChange is set to 'Yes'.	Blocker

Other relevant information

The schema element below gives MS the option of providing documents or links to other information that they consider to be relevant to the preliminary flood risk assessment.

Class Schema element	PFRA PFRA/PFRAInformation/PFRASummaryInformation/ OtherRelevantInformation/reference	
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to any other relevant available or readily derivable information used in the PFRA.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

3.3.5Type of Floods (PFRA/PFRAInformation /TypeofFloodUOM)

The enumeration list for sources of flooding provided in the schema sketch below are the same categories used in the first cycle. . Note that the "no data available" option (A17) that was used in the first cycle has been included for consistency (read legacy) purposes but cannot be selected for reporting under the second cycle (for flood events post December 22nd 2011)

Class Schema element	PFRA PFRA/PFRAInformation/TypeofFloodUOM/sourceofFlooding
Guidance on completion of schema element	Required. Provide information on the specific sources of flooding to which Article 4 has been applied (one or more options can be selected). • A11 - Fluvial: Flooding of land by waters originating from part of a natural drainage system, including natural or modified drainage channels. This source could include flooding from rivers, streams, drainage channels, mountain torrents and ephemeral watercourses, lakes and floods arising from snow melt. • A12 - Pluvial: Flooding of land directly from rainfall water falling on, or flowing over, the land. This source could include urban storm water, rural overland flow or excess water, or overland floods arising from snowmelt. • A13 - Groundwater: Flooding of land by waters from underground rising to above the land surface. This source could include rising groundwater and underground flow from elevated surface waters. • A14 - Sea Water: Flooding of land by water from the sea, estuaries or coastal lakes. This source could include flooding from the sea (e.g., extreme tidal level and / or storm surges) or arising from wave action or coastal tsunamis. • A15 - Artificial Water-Bearing Infrastructure: Flooding of land by water arising from artificial, water-bearing infrastructure or failure of such infrastructure. This source could include flooding arising from sewerage systems (including storm water, combined and foul sewers), water supply and wastewater treatment systems, artificial navigation canals and impoundments (e.g., dams and reservoirs). • A16 - Other: Flooding of land by water due to other sources, can include other tsunamis. • A17 - No data available on the source of flooding
Field type	SourceofFlooding_Enum

Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks	A17 cannot be selected for floods post Dec 2011	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/TypeofFloodUOM/ **otherSourceDescription**	
Guidance on completion of schema element	Conditional. If 'A16 - Other: Flooding of land by water due to other sources, can include other tsunamis' selected from enumeration list provide a description of the other source(s)	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'A16 - Other' selected from enumeration list under SourceofFlooding	Blocker

3.3.6 Flood Data (PFRA/PFRAInformation/FloodData)

These schema elements relate to the reporting of flood events and associated supporting information and data. This class (FloodData) has a cardinality of '0..*'. The '0' is provided because no further flood events may have been identified for a particular UOM since the first cycle (MS are not obliged to re-report previous PFRA information). The '*' denotes that multiple flood events can be reported.

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/floodEventCode	
Guidance on completion of schema element	Required. Unique code for the flood event – up to 40 characters in total.	
Field type	FeatureUniqueCodeType	
Properties	minOccurs:	1
	maxOccurs:	1

Facets	minLength	3
	maxLength	40
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/categoryofFlood	
Guidance on completion of schema element	Required. can either be: • CF_1 - Past flood • CF_2 - Potential future flood	
Field type	CategoryFloods_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/ FloodData/dateofCommencement	
Guidance on completion of schema element	Conditional. If the answer to CategoryFlood is 'past flood' then give the date of commencement of the flood. Can be in the format 'yyyy' , 'yyyy-mm' and 'yyyy-mm-dd'	
Field type	DateTypeYearType	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks	Conditional. Report if the answer to CategoryFlood is 'past flood' then give the date. The date can be in the format 'yyyy' , 'yyyy-mm' and 'yyyy-mm-dd'	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/durationofFlood	
Guidance on completion of schema element	Conditional. If the answer to CategoryFlood is 'past flood' then give the number of days/part days (duration) of the flood. The exemption types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	NumberDecimalType	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks	Conditional. Report if the answer to CategoryFlood is 'past flood' then give the number of days/part days (duration) of the flood. The exemption types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	Blocker

The following two schemas relate to “recurrence” (i.e. how many years elapse between floods of a similar size) and “frequency” (e.g. the statistical prediction of years certain magnitude events). MS are required to report at least one of these elements.

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/recurrence	
Guidance on completion of schema element	Conditional. On average, how many years elapse between floods of a similar size at this location? The exemption types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String500Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	500
Quality checks	Conditional. Element must be reported if frequency is not reported.	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/frequency	
Guidance on completion of schema element	Conditional. The statistical prediction of years between certain flood magnitude events. Can also be reported as a range, as a return period (e.g. once in every 100 years) or an annual exceedance probability (the percentage chance of a flood of a certain size happening in any year). The exception types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used. Please state clearly whether reporting as a range, return period or annual exceedance probability.	
Field type	String500Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	500
Quality checks	Conditional. Element must be reported if recurrence is not reported.	Blocker

Class Schema element	PFRA PFRA/PFRAInformation FloodData/area	
Guidance on completion of schema element	Optional. Extent of land inundated. Indicate the total area in km^2.	
Field type	NumberDecimalType	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/length	
Guidance on completion of schema element	Optional. Inundated length of river stretches or length of coast affected. Indicate the total length in km.	
Field type	NumberDecimalType	
Properties	minOccurs:	0
	maxOccurs:	1

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/reference	
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to any other relevant information relating to the details of the specific flood event. This could include links to specific reports or articles and/or specific details of the particular event.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/nameofFloodEvent	
Guidance on completion of schema element	Optional. Name of the flood event.	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks		

3.3.7 Type of Floods (PFRA/PFRAInformation/FloodData/TypeofFlood)

The information requested in this section for sources of flooding is the same as that required at the UOM level as described in Section 3.3.5 (A17 – no data available, cannot be selected for flood events post December 2011).. As with the first cycle of reporting, The reporting of mechanisms and characteristics is optional as in the first cycle.

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/ TypeOfFlood/sourceofFlooding	
Guidance on completion of schema element	Required. For each flood event, identify the source of flooding. Provide information on the specific flood types to which Article 4 applies (one or more options can be selected). • A11 - Fluvial: Flooding of land by waters originating from part of a natural drainage system, including natural or modified drainage channels. This source could include flooding from rivers, streams, drainage channels, mountain torrents and ephemeral watercourses, lakes and floods arising from snow melt. • A12 - Pluvial: Flooding of land directly from rainfall water falling on, or flowing over, the land. This source could include urban storm water, rural overland flow or excess water, or overland floods arising from snowmelt. • A13 - Groundwater: Flooding of land by waters from underground rising to above the land surface. This source could include rising groundwater and underground flow from elevated surface waters. • A14 - Sea Water: Flooding of land by water from the sea, estuaries or coastal lakes. This source could include flooding from the sea (e.g., extreme tidal level and / or storm surges) or arising from wave action or coastal tsunamis. • A15 - Artificial Water-Bearing Infrastructure: Flooding of land by water arising from artificial, water-bearing infrastructure or failure of such infrastructure. This source could include flooding arising from sewerage systems (including storm water, combined and foul sewers), water supply and wastewater treatment systems, artificial navigation canals and impoundments (e.g., dams and reservoirs). • A16 - Other: Flooding of land by water due to other sources, can include other tsunamis. • A17 - No data available on the source of flooding	
Field type	SourceofFlooding_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks	A17 cannot be selected for floods post Dec 2011	

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/TypeofFlood/ otherSourceDescription	
Guidance on completion of schema element	Conditional. If ‘A16 - Other’ selected from enumeration list provide a description of the other source(s)	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000

Quality checks	Conditional. Report if ‘A16 - Other’ selected from enumeration list under SourceofFlooding	Blocker

Class Schema element	PFRA PFRA/Sub-UOMAreas/PFRAInformation/FloodData/TypeofFlood/ mechanismofFlooding	
Guidance on completion of schema element	Optional. For each flood event indicate the mechanism of flooding (one or more options can be selected). • A21 - Natural Exceedance: Flooding of land by waters exceeding the capacity of their carrying channel or the level of adjacent lands. • A22 - Defence Exceedance: Flooding of land due to floodwaters overtopping flood defences. • A23 - Defence or Infrastructural Failure: Flooding of land due to the failure of natural or artificial defences or infrastructure. This mechanism of flooding could include the breaching or collapse of a flood defence or retention structure, or the failure in operation of pumping equipment or gates. • A24 - Blockage / Restriction: Flooding of land due to a natural or artificial blockage or restriction of a conveyance channel or system. This mechanism of flooding could include the blockage of sewerage systems or due to restrictive channel structures such as bridges or culverts or arising from ice jams or landslides. • A25 - Other: Flooding of land by water due to other mechanisms, for instance wind setup floods. • A26 - No data available on the mechanism of flooding	
Field type	MechanismofFlooding_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		Conditional

Class Schema element	PFRA PFRA/Sub-UOMAreas/PFRAInformation/FloodData/TypeofFlood/ otherMechanismDescription	
Guidance on completion of schema element	Conditional. If ‘A25 - Other’ selected from enumeration list provide a description of the other mechanism(s)	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000

Quality checks	Conditional. Report if ‘A25 - Other’ selected from enumeration list under MechanismofFlooding	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/TypeofFlood/ characteristicsofFlooding	
Guidance on completion of schema element	Optional. For each flood event, define the relevant characteristics of flooding (one or more options can be selected). • A31 - Flash Flood: A flood that rises and falls quite rapidly with little or no advance warning, usually the result of intense rainfall over a relatively small area. • A32 - Snow Melt Flood: Flooding due to rapid snow melt, possibly in combination with rainfall or blockage due to ice jams. • A33 - Other rapid onset: A flood which develops quickly, other than a flash flood. • A34 - Medium onset flood: An onset of flooding that occurs at a slower rate than a flash flood. • A35 - Slow onset flood: A flood which takes a longer time to develop. • A36 - Debris Flow: A flood conveying a high degree of debris. • A37 - High Velocity Flow: A flood where the floodwaters are flowing at a high velocity. • A38 - Deep Flood: A flood where the floodwaters are of significant depth. • A39 - Other characteristics, or no special characteristics. • A40 - No data available on characteristics of flooding	
Field type	CharacteristicsofFlooding_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Element must be reported if FloodData/dateOfCommencement is after 22-12-2011	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/TypeofFlood /otherCharacteristicsDescription	
Guidance on completion of schema element	Conditional. If ‘A39 - Other’ selected from enumeration list provide a description of the other characteristics or state whether there are no special characteristics	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000

Quality checks	Conditional. Report if 'A39 - Other' selected from enumeration list under Characteristicsof Flooding	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/TypeofFlood/reference	
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to any other relevant information relating to the type of flood event.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

3.3.8 Flood Location (PFRA/PFRAInformation/FloodData/FloodLocation)

The group of schema elements within the class FloodLocation are aimed at gathering more detailed information at the level of the flood event. The Class has a cardinality of '1..*' linked to the FloodData class which means that where flood event data is reported, a corresponding flood location is required to be reported. The '*' means that multiple flood locations can be assigned to a particular flood event.

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/ euSurfaceWaterbodyCode	
Guidance on completion of schema element	Optional. Unique code for the Water Body used under the WFD. If the EUSurfaceWaterBodyCode is reported as a representation of the flood location no spatial data needs to be reported as this information is already reported under the WFD. If several Water Bodies are affected by one flood location they should be reported here (hence this element is unbounded)	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded

Facets	minLength	3
	maxLength	42
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/ floodLocationCode	
Guidance on completion of schema element	Required. Unique code for the flood location - up to 42 characters in total. Can also be used as an identifier for multiple surface water bodies designated under the WFD which the flood location is represented by. A polygon/line/point can be reported as a representation of the flood location to establish link between spatial feature (e.g. polygon) and information in xml schema. Possible to use the exemptions -9999=Unknown, -8888=Yet to be measured, - 7777=Not Applicable.	
Field type	FeatureUniqueCodeTypeEX	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/ floodLocationName	
Guidance on completion of schema element	Optional. Name of the locality, river basin, sub-basin and/or coastal area or other areas associated with the flood	
Field type	String250type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	3
	maxLength	250
Quality checks		

For flood events post December 22nd 2011, where these relate to an APSFR identified during the first cycle, MS have the option to provide a link to this original APSFR.

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/ FloodData/FloodLocation/apsfrCode	
Guidance on completion of schema element	Optional. Unique EU code for the area of potential significant flood risk. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks		

During the first cycle of reporting an issue arose with the ability to be able to report multiple flood events at the same location and also to report multiple locations which may be associated with a particular flood event. An additional level of complexity was also identified for the situation where a flood event had impacts at multiple locations but the consequences are different at some or all of these multiple locations. To address this issue, the hierarchy of the schema elements has been reversed from Flood Location - Flood Event to Flood Event – Flood Location (noting that the flood event information is included within the FloodData class, see UML diagram). In this way multiple flood locations can be reported for each event and these can subsequently be linked to different consequences if required. Under this new hierarchy, if the location has multiple events then it will be necessary to go back to event data entry point (within the class FloodData) and enter new details for each event that are then subsequently linked to the location. This information is required to be reported for floods since December 22nd 2011 although, in reality, there may not have been many events since January 2011 at the same location.

The reference schema element below allows the option for MS to provide further information describing the details of multiple flood locations and any other relevant information related to the event location.

Class Schema element	PFRA PFRA/PFRAInformation//FloodData/FloodLocation/reference	
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to any other relevant information relating to location of the flood event. This may include details of multiple flood locations covering large flood event scenarios.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

The final element with the FloodLocation Class is used to identify whether the flood location crosses a national border or into another unit of management.

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/CrossBorder/ crossBorderRelationship	
Guidance on completion of schema element	Required. Please indicate with "Y" (yes) if the flood location cross the national border or the unit of management • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

3.3.9 Cross border relationship (PFRA/PFRAInformation/FloodData/ FloodLocation/CrossBorder)

These two shema elements cover the situation where the flood occurs across national border(s) or across a unit(s) of management.

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/ FloodLocation/CrossBorder/crossBorderRelationshipDescription	
Guidance on completion of schema element	Optional. If the flood location(s) cross the national border or the unit of management provide a description of the nature of this relationship. An optional schema element has been introduced for MS to describe the nature of the cross border relationship as far as flood location is concerned. The flood location may extend into a neighbouring MS or non-MS for example and may possibly cross more than one border. MS have the option of describing the MS or Non-MS involved and the extent to which the flood has historically or has potential to extend into other MS or non-MS.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks		

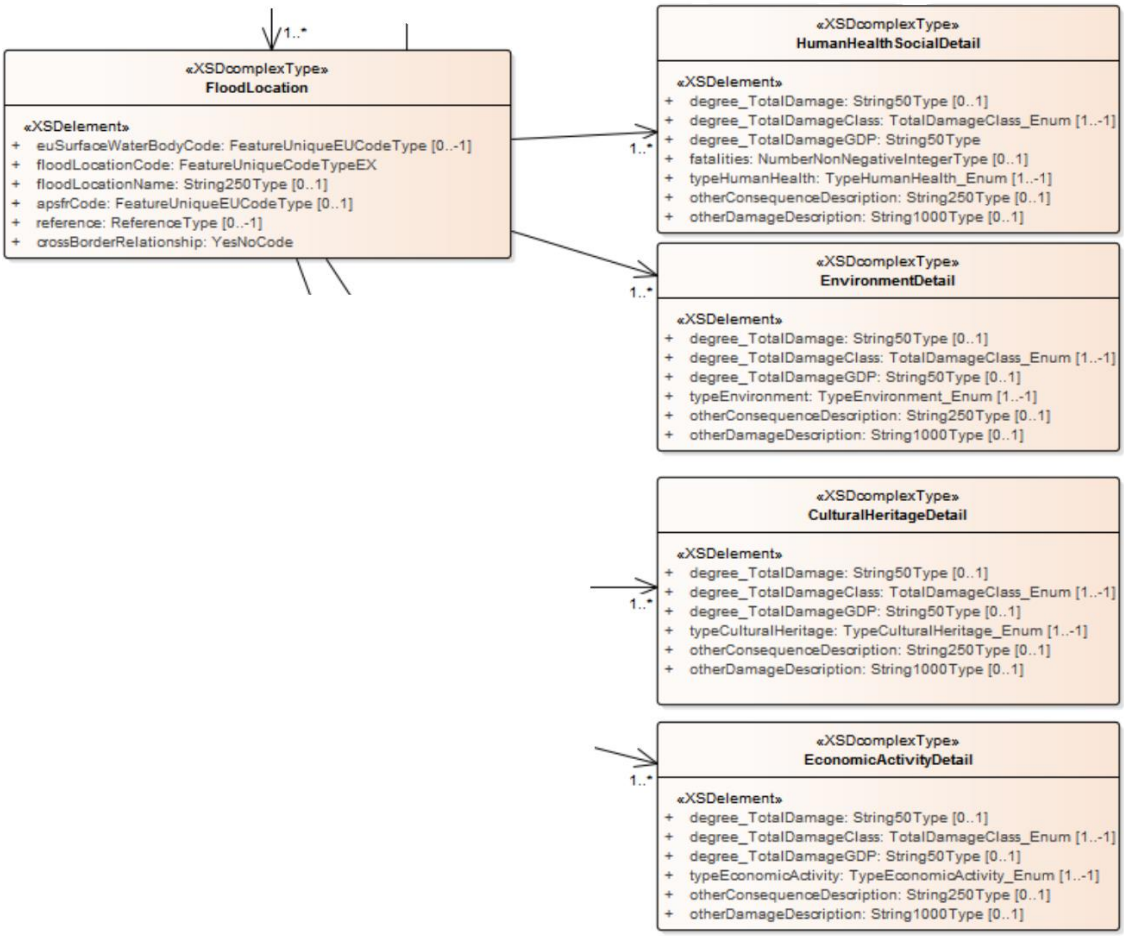
Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/CrossBorder/ crossBorderFloodLocationCode	
Guidance on completion of schema element	Conditional. If the flood location crosses the border to either a national or international unit of management please indicate the unique code for the related flood location. The exception types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	FeatureUniqueCodeType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Facets	minLength	3
	maxLength	42
Quality checks	Conditional. Report if crossBorderRelationship is set to 'Yes'.	Blocker

3.3.10 Type of Potential consequences

This information, relating to impacts of past and consequences of potential future significant floods on human health, cultural heritage, economic activity and environment should be reported, where possible, at the flood event level. These impacts/consequences can be reported at multiple locations that may be linked to a single flood event.

The schema elements in this section cover the following parts of the UML diagram.

The FloodLocation Class has been included to show the linkage. For each type of consequence relating to Human Health, Environment, Cultural Heritage and Economic Activity, the class is related to FloodLocation as '1..*' which means that certain elements within each of these four classes are required to be reported (given by the '1'). The '*' allows for the reporting of multiple consequences associated with a particular flood location.



Class Schema element	PFRA PFRA/PFRAInformation//FloodData/FloodLocation/ TypeofPotentialConsequences/HumanHealthSocialDetail/degree_TotalDamage	
Guidance on completion of schema element	Optional. The total damage cost in Euros for the flood event. Can also be reported as a range. The exemption types - 9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1

Facets	minLength	1
	maxLength	50
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/ TypeofPotentialConsequences/HumanHealthSocialDetail/degree_TotalDamage Class	
Guidance on completion of schema element	Optional. The total damage defined by the classes: • I - Insignificant • L - Low • M - Medium • H - High • VH - Very high (VH) • NA – Not Applicable • U - Unknown	
Field type	TotalDamageClass_Enum	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA//PFRAInformation/FloodData/FloodLocation/ TypeofPotentialConsequences/HumanHealthSocialDetail/degree_TotalDamage GDP	
Guidance on completion of schema element	Optional. The total damage in percentage of the total GDP for the flood event. Can also be reported as a range. The exemption types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation//FloodData/FloodLocation/ TypeofPotentialConsequences/HumanHealthSocialDetail/fatalities	
Guidance on completion of schema element	Optional. **Only for past floods.** If possible indicate number of individuals fatality affected as direct consequence of the flood.	
Field type	NumberNonNegativeIntegerType	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/ TypeofPotentialConsequences/HumanHealthSocialDetail/typeHumanHealth	
Guidance on completion of schema element	Required. Define relevant type of Consequences. The list is in line with section B in the 'List of flood types and list of consequences' document from February 2011 (version 6). One or more options can be selected. • B11 - Human Health: Adverse consequences to human health, either as immediate or consequential impacts, such as might arise from pollution or interruption of services related to water supply and treatment, and would include fatalities. • B12 - Community: Adverse consequences to the community, such as detrimental impacts on local governance and public administration, emergency response, education, health and social work facilities (such as hospitals). • B13 - Other • B14 - Not applicable • B15 - Unknown	
Field type	TypeHumanHealth_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/HumanHealthSocialDetail/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B13 - Other' selected from enumeration list under TypeHumanHealth	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/EnvironmentDetail/degree_TotalDamage	
Guidance on completion of schema element	Optional. The total damage cost in Euros for the flood event. Can also be reported as a range. The exemption types - 9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation//TypeofPotential Consequences/EnvironmentDetail/degree_TotalDamageClass
Guidance on completion of schema element	Optional. The total damage defined by the classes: • Insignificant(I) • Low(L) • Medium(M)

	• High(H) • Very high (VH)	
Field type	TotalDamageClass_Enum	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/EnvironmentDetail/degree_TotalDamageGDP	
Guidance on completion of schema element	Optional. The total damage in percentage of the total GDP for the flood event. Can also be reported as a range. The exemption types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/EnvironmentDetail/typeEnvironment
Guidance on completion of schema element	Required. Define relevant type of Consequences. The list is in line with section B in the 'List of flood types and list of consequences' document from February 2011 (version 6). One or more options can be selected. • B21 - Waterbody Status: Adverse consequences ecological or chemical status of surface water bodies or chemical status of ground water bodies affected, as of concern under the WFD. Such consequences may arise from pollution from various sources (point and diffuse) or due to hydromorphological impacts of flooding. • B22 - Protected Areas: Adverse consequences to protected areas or waterbodies such as those designated under the Birds and Habitats Directives, bathing waters or drinking water abstraction points. • B23 - Pollution Sources: Sources of potential pollution in the event of a flood, such as IPPC and Seveso installations, or point or diffuse sources. • B24 - Other potential adverse environmental impacts, such as those on soil,biodiversity, flora and fauna, etc. • B25 - Not applicable • B26 - Unknown

Field type	TypeEnvironment_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/EnvironmentDetail/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B24 – Other' selected from enumeration list under TypeEnvironment	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/CulturalHeritageDetail/degree_TotalDamage	
Guidance on completion of schema element	Optional. The total damage cost in Euros for the flood event. Can also be reported as a range. The exemption types - 9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/CulturalHeritageDetail/degree_TotalDamageClass	
Guidance on completion of schema element	Optional. The total damage defined by the classes: • Insignificant(I) • Low(L) • Medium(M) • High(H) • Very high (VH)	
Field type	TotalDamageClass_Enum	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/CulturalHeritageDetail/degree_TotalDamageGDP	
Guidance on completion of schema element	Optional. The total damage in percentage of the total GDP for the flood event. Can also be reported as a range. The exemption types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation /TypeofPotentialConsequences/CulturalHeritageDetail/typeCulturalHeritage
Guidance on completion of schema element	Required. Define relevant type of Consequences. The list is in line with section B in the 'List of flood types and list of consequences' document from February 2011 (version 6). One or more options can be selected. • B31 - Cultural Assets: Adverse consequences to cultural heritage, which could include archaeological sites / monuments, architectural sites, museums, spiritual sites and buildings. • B32 - Landscape: Adverse permanent or long-term consequences on cultural landscapes, that is cultural properties which represents the combined works of nature and man, such as relics of traditional landscapes, anchor locations or zones.

	• B33 – Other • B34 - Not applicable • B35 - Unknown
Field type	TypeCulturalHeritage_Enum
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	PFRA PFRA/PFRAInformation//FloodData/FloodLocation/TypeofPotential Consequences/CulturalHeritageDetail/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B33 - Other' selected from enumeration list under TypeCulturalHeritage	Blocker

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/EconomicActivityDetail/degree_TotalDamage	
Guidance on completion of schema element	Optional. The total damage cost in Euros for the flood event. Can also be reported as a range. The exemption types - 9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1

	maxLength	50
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/EconomicActivityDetail/degree_TotalDamageClass	
Guidance on completion of schema element	Optional. The total damage defined by the classes: • Insignificant(I) • Low(L) • Medium(M) • High(H) • Very high (VH)	
Field type	TotalDamageClass_Enum	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation/TypeofPotential Consequences/EconomicActivityDetail/degree_TotalDamageGDP	
Guidance on completion of schema element	Optional. The total damage in percentage of the total GDP for the flood event. Can also be reported as a range. The exemption types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks		

Class Schema element	PFRA PFRA//PFRAInformation//FloodData/FloodLocation/TypeofPotential Consequences/EconomicActivityDetail/typeEconomicActivity
Guidance on completion of schema element	Required. • B41 – Property (such as homes and businesses) • B42 – Infrastructure (assets such as utilities, power generation, transport, storage and communication) • B43 – Rural Land Use (such as agricultural activity, forestry, mineral extraction

	and fishing) • B44 – Economic Activity (such as manufacturing, construction, retail, services and other sources of employment) • B45 – Other • B46 – Not applicable • B47 - Unknown
Field type	TypeEconomicActivity_Enum
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	PFRA PFRA/PFRAInformation/FloodData/FloodLocation//TypeofPotential Consequences/EconomicActivityDetail/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B45 – Other' selected from enumeration list under TypeEconomicActivity	Blocker

3.4PFRA Products

The table below provides an indication of the products that can be developed as a result of the reporting on PFRAs. New products, as a result of changes made to the schemas for this current round of reporting are in **bold.**

Table 3.1 Products from information provided

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
1	Article 4.2a Maps	Map	UOM	Map according to Article 4.2(a) showing topography and land use	No Aggregation	Second cycle reporting
2	Criteria used to define past adverse consequences	Table	MS	Table of summary criteria used to define past adverse consequences	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
3	Criteria used to define significant adverse consequences	Table	MS	Table of summary criteria used to define significant adverse consequences	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
4	Criteria used to define potential adverse consequences	Table	MS	Table of summary criteria used to define potential adverse consequences	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
5	Article 4.2d	Table	MS	Definitive Table per MS on what issues listed in Article 4.2(d) have been taken into account	Aggregation on the basis of the information reported at UOM level	Second cycle reporting

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
6	**International Information Exchange**	**Table**	**MS**	**Definitive Table per MS on the degree and level of coordination within international RBDs/UOM**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**
7	**Source of Flooding**	**Table**	**MS**	**Table providing clear information for MS on which types of flood have been excluded**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**
8	**Mechanism of Flooding**	**Table**	**UOM**	**Table with information on mechanisms of past floods**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**
9	**Characteristics of Flooding**	**Table**	**UOM**	**Table with information on characteristics of past floods**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**
10	Summary of administrative arrangements	Table	MS	Table showing the administrative arrangements in each MS for the implementation of the FD and identifying where the same CAs are used for the implementation of the WFD	Aggregation on the basis of the information reported at UOM level	Cited and updated in the EU Overview report on PFRAs.

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
11	Overview of the application of the different Articles relating to the assessment of Flood Risk under the Floods Directive	Table	MS/UOM	MS; Article Applied; Units of Management; Type of Flood where a distinction is made (Source, Mechanism, Characteristic as specified by the Member State) ; Identification of instances where no specific flood types were reported and it is assumed that the relevant Article is applied to all flood types	No aggregation	Report on PFRA & APFSR
12	Sources of flooding reported at the Article level	Graph	EU	Column chart showing the number of Member States for which each source of flooding (Fluvial, Pluvial, Groundwater, Seawater, Artificial Water Bearing Infrastructure, Other, and No Data Available)	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
13	Number of reported historic flood events by Member States	Graph	MS	Bar chart showing the number of historic flood events reported by MS, and indicating the number where information on the type and consequences of flooding is available, and is not available,	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
14	Time periods of reported historic flood events	Graph	EU	Bar chart showing the number of flood events that have occurred in the EU in time periods: Before 1800; 1800s; 1900-1949; 1950-1999; 2000 onwards	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
15	Source-characteristic-mechanism of historic flood events	Graph	EU	Bar chart showing the sources, mechanisms and characteristics of historic flood events	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
16	Source-characteristic-mechanism of potential future flood events	Graph	EU	Bar chart showing the sources, mechanisms and characteristics of future flood events	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
17	Summary of the sources of floods considered in the assessment of flood risk	Table	MS	A table showing the sources of floods considered in the assessment of flood risk. It identifies for each type of flood risk whether it has been: included; it is not considered as significant; excluded; not yet included; no information/not clear. 17 sources of flood are included.	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
18	Types of flood considered but assessed as not being significant, and the reasons given for that assessment	Table	MS	Table showing for each MS which types for flood have been: assessed as being significant; assessed as not being significant; where no information / not clear; the type of flooding is not applicable for the whole MS; where the type of flooding is not yet considered (Article 13.1 (b) applied). Summary text for the reasons provided for that assessment is included.	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
19	Types of flood that were not considered at all, and why	Table	MS	Table showing for each MS which types of flood have not considered at all, have partially not been considered at all, where it is not clear whether they have not been considered at all, or where consideration is not required (Article 13.1 (b) applied). Summary text providing an explanation is included.	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
20	Adverse consequences of historic flood events	Graph	EU	A bar chart showing the adverse consequences of historic flood events	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
21	Adverse consequences of potential future flood events	Graph	EU	A bar chart showing the adverse consequences of potential future flood events	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
22	Summarising overview of the main criteria used to define an adverse consequence	Table	MS	A textual table summarising the main criteria used by each MS to define an adverse consequence. The table shows where information is not reported, where expert judgement/qualitative criteria have been used or where quantitative criteria are used. In the latter two cases a short summary of the approach used is provided.	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
23	Summarising overview of the consequences excluded and the reasons why	Table	MS	A textual table summarising by MS where: no adverse consequences are excluded, adverse consequences are excluded and the reasons for exclusion. It is also shown where no data was provided.	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
24	Summarising overview of the methods used to identify and quantify potential future adverse consequences and impacts	Table	MS	Textual table showing, by MS, whether the methods used to identify and quantify potential future adverse consequences and impacts were expert judgement/qualitative or quantitative methods and summarising these methods used. It is also shown where no methods were reported.	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
25	Summary of the long term developments considered by Member States in the assessment of flood risk	Table	MS	Table illustrating whether MS have considered climate change, development of settlements, development of infrastructure and/or socio-economic developments in the assessment of flood risk	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
26	Number of international UOMs per MS	Graph	MS	Column chart showing the number of international UOMs per MS	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
27	Mechanisms of international coordination for addressing flood risk management in international UOMs	Table	MS	Textual table showing different mechanisms of international co-ordination, the MSs that participate in each type of mechanism and the number of UOMs within that MS to which the mechanism applies.	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR

4.Areas of Potential Significant Flood Risk (APSFR)

4.1 Introduction

Article 5 requires that the PFRA shall be used as the basis for the identification of areas for which Member States conclude that potential significant flood risk (APSFR) exists or might be considered likely to occur in the future for each river basin district, unit of management or the portion of an international river basin district or unit of management lying within a Member State's territory. Coordination is required between Member States sharing APSFR areas within international RBDs or other international units of management.

It is also recognised that other approaches may be used for identifying Areas of Potential Significant Flood Risk (APSFR), such as predictive modelling. The schemas in this guidance document provide MS with the possibility to explain the different approaches and methodologies applied.

Member States may designate relatively large areas of potential significant flood risk (APSFR), compared to the areas that actually might be flooded. Flood risk management (the subject of Article 7) usually requires consideration of much larger areas than the areas that may actually be flooded.

4.1.1 Geographic information

Data will be required from Member States to enable the following maps to be produced.

- Maps of RBD/UOM indicating areas with potential significant flood risk. APSFRs can be indicated as entire river basins or stretches of river/coastal areas, areas, polygons or points.

Further details relating to the spatial reporting of APSFRs is provided in Annex 2.

4.2 UML Diagram

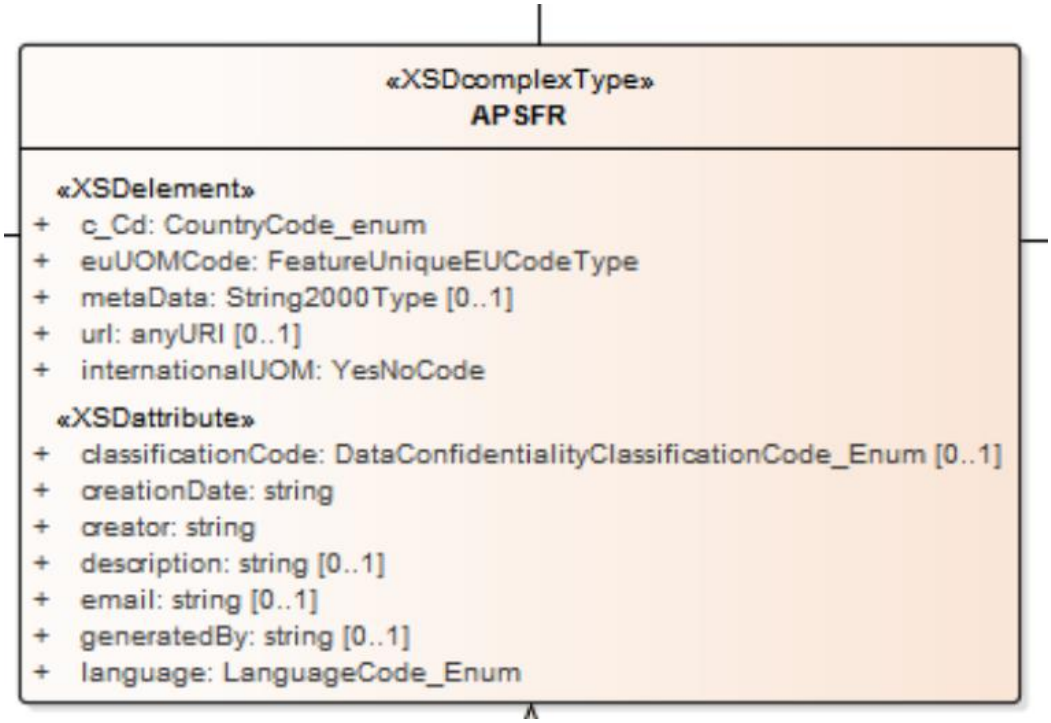
The UML diagram for APSFR is provided in Annex 6. The UML should be used as an aid to navigate through the schemas. Where appropriate, extracts of the UML diagram have been included within the sections that follow to aid with the navigation through the schema elements.

4.3 Schema Sketches

Individual schema sketches are presented for each element with further explanatory text provided as required. Extracts of the UML are presented to facilitate the navigation process.

4.3.1 APSFR (Country codes, EU unit of management codes, links or references to Metadata, URL for internet based information and attributes)

The schema sketches below cover the fundamental information (elements and attributes) that is required to be reported for identification purposes. As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Elements

Class Schema element	APSFR APSFR/c_Cd	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	CountryCode_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Class Schema element	APSFR APSFR/euUOMCode	
Guidance on completion of schema element	Required. Unique EU code for the Unit of Management. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Class Schema element	APSFR APSFR/metaData	
Guidance on completion of schema element	Optional. Hyperlink or reference to associated metadata statement or file. Metadata is data that describes other data, summarising basic information about data, which can make finding and working with particular types of data easier. In addition to document files, metadata can be used for images, spreadsheets and web pages. This allows up to 2000 characters to be specified or alternatively may be used to provide a hyperlink or description of an associated metadata file. This should be used to define any restrictions on the data.	
Field type	String2000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	2000
Quality checks		

Class Schema element	APSFR APSFR/url	
Guidance on completion of schema element	Optional. URL for integration of your own internet-based information that provides access to further relevant details on the nature and characteristics of the APSFR that will help in the interpretation of flood risk and flood risk management.	
Field type	anyURL	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	APSFR APSFR/internationalUOM	
Guidance on completion of schema element	Required. Is the UOM international? • Yes • No If 'Yes', please provide the information requested in the schema elements relating to mechanisms of coordination.	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

The schema sketch below is a reference schema requiring MS to provide details of updates and changes to their overall approach and methodologies applied to designate their APSFR following a review of their approach to the first cycle.

The focus of this schema element is therefore on reviewing and updating the first cycle methodology. As with the PFRA, if the approach and methodology has not changed during the first cycle then MS should declare this in the subject area of the schema. In this situation MS should append or provide a link to their original summary document. MS should also provide an additional document summarising their approach to the second cycle pointing out any differences in approach.

Class Schema element	APSFR APSFR/overallApproachReviewReference	
Guidance on completion of schema element	Required. Provide a reference or references describing how the review process to the overall approach and methodology applied to designate APSFRs has been undertaken and, where relevant, what changes have been implemented since the first cycle of reporting.	
Field type	Reference Type	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Attributes

Class Schema element	APSFR APSFR/classificationCode	
Guidance on completion of schema element	Optional. Codes for data security classification: • 001 – Unclassified – available for general circulation and public • 003 – Confidential – available for EC reporting only	
Field type	DataConfidentialityClassificationCode_Enum	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	APSFR APSFR/creationDate	
Guidance on completion of schema element	Required. To be provided as year, month, date (e.g. “2012-03-20”)	
Field type	xs:string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	APSFR APSFR/creator	
Guidance on completion of schema element	Required. Competent Authority responsible for providing the information (e.g. Ministry of Environment, Environment Protection Agency, etc.)	
Field type	string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	APSFR APSFR/description	
Guidance on completion of schema element	Optional. For example: “Floods Directive APSFR Information”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	150
Quality checks		

Class Schema element	APSFR APSFR/email	
Guidance on completion of schema element	Optional. For example “apsfr@environment.eu”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	APSFR APSFR/generatedBy	
Guidance on completion of schema element	Optional. For example “Through the use of an IT database system using Oracle scripts”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	40
Quality checks		

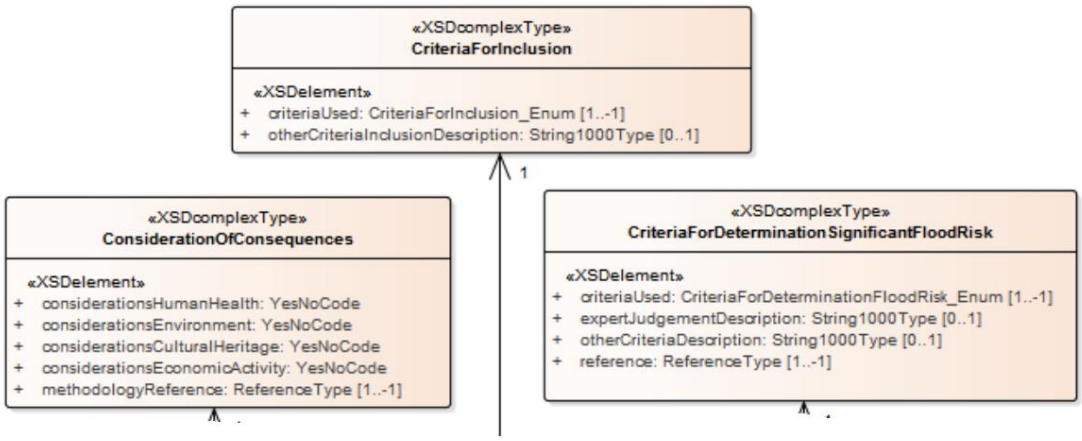
Class Schema element	APSFR APSFR/language	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	LanguageCode_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

4.3.2 Criteria associated with APSFRs

MS are required to provide information on the methodology including criteria for the determination of significant flood risk, reasons and criteria for the exclusion or inclusion of areas and how the consequences to human health, environment, cultural heritage and economic activity have been considered for the identification of potential significant flood risk areas. The next group of schema elements therefore cover.

- Criteria for determining significant flood risk
- Criteria for inclusion of floods risk areas as APSFRs, and:
- Criteria relating to how human health, environment, cultural heritage and economic activity have been considered in the identification of APSFRs

These criteria are sequential as, although they appear to be fairly similar, they each provide useful information as to the process that MS have used to define their APSFRs. As a reminder here is how they appear as three Classes in the UML.



Class Schema element	APSFR APSFR/CriteriaForDeterminationSignificantFloodRisk/ criteriaUsed
Guidance on completion of schema element	Required. Provide the criteria used for determination of significant flood risk (more than one option can be selected): • CFDFR_1 - Number of permanent residents affected by the flood extent • CFDFR_2 - Value/area of property affected (residential area and non-residential area) • CFDFR_3 - Number of buildings affected (residential and non-residential) • CFDFR_4 - Adverse consequences to infrastructural assets • CFDFR_5 - Damage exceeds specific threshold (area) • CFDFR_6 - Economic damage • CFDFR_7 - Adverse consequences on water bodies • CFDFR_8 - Sources of pollution triggered from industrial installations • CFDFR_9 - Adverse consequences to rural land use • CFDFR_10 - Adverse consequences to economic activity (e.g. manufacturing, service and construction industries) • CFDFR_11 - Adverse impacts on cultural assets and cultural landscapes • CFDFR_12 - Recurrence periods or probability of exceedance • CFDFR_13 - Recurrence periods or probability of exceedance in combination with land use • CFDFR_14 - Community assets affected • CFDFR_15 - Water level or depth • CFDFR_16 - Water velocity • CFDFR_17 - Whether floods have occurred in the past • CFDFR_18 - Specific weighting systems defined to assess significance • CFDFR_19 - Expert Judgement • CFDFR_20 – Other • CFDFR_21 - Flood extent • CFDFR_22 - Flood duration • CFDFR_23 - Number of past flood events • CFDFR_24 - Damage caused in past flood events

Field type	CriteriaForDeterminationFloodRisk_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Where “Expert Judgement” has been selected from the enumeration list, MS are required to provide a brief description as to how expert judgement has been used to determine significant flood risk. A relatively short description only is required here, for example on the type of organisations consulted (public administration and/or private company) and what key issues were considered as part of the judgement.

Class Schema element	APSFR APSFR/ CriteriaForDeterminationSignificantFloodRisk/expertJudgementDescription	
Guidance on completion of schema element	Conditional. If ‘Expert Judgement’ has been selected from enumeration list, provide a brief description as to how expert judgement was used to determine significant flood risk.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional.Report If ‘CFDFR_19’ - Expert Judgement’ has been selected from enumeration list under CriteriaUsed	Blocker

Class Schema element	APSFR APSFR/CriteriaForDeterminationSignificantFloodRisk /otherCriteriaDescription	
Guidance on completion of schema element	Conditional. If ‘Other’ selected from enumeration list. Provide a description of what other criteria have been used to determine significant flood risk.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000

Quality checks	Conditional.Report If 'CFDFR_20 - Other' has been selected from enumeration list under CriteriaUsed	Blocker

Class Schema element	APSFR APSFR/CriteriaForDeterminationSignificantFloodRisk /reference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) detailing the overall methodology used to determine significant flood risk.	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	APSFR APSFR/CriteriaForInclusion/criteriaUsed
Guidance on completion of schema element	Required. Once significant flood risk has been determined the next part of the process is to decide whether to include areas as APSFRs. Provide the criteria used for inclusion of areas as APSFRs (more than one option can be selected): • CFI_1 - Magnitude of risk to human health • CFI_2 - Magnitude of risk to economic activity • CFI_3 - Economic damage • CFI_4 - Magnitude of risk to the environment • CFI_5 - Magnitude of risk to cultural heritage • CFI_6 - Community assets • CFI_7 - Infrastructure affected • CFI_8 - Flood defences not in place or not fully implemented • CFI_9 - Possible failure of flood defences • CFI_10 - In agreement with neighboring countries • CFI_11 - Frequency or number of past events • CFI_12 - Impact of past events • CFI_13 - Local knowledge and/or public opinion • CFI_14 - Changes in land use have increased vulnerability of the area to flooding • CFI_15 - Exceeding thresholds under specific weighting systems defined to assess significance • CFI_16 - Expert judgement • CFI_17 - High level of damage expected • CFI_18 - Other
Field type	CriteriaForInclusion_Enum

Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	APSFR APSFR/CriteriaForInclusion/otherCriteriaInclusionDescription	
Guidance on completion of schema element	Conditional. If 'Other' selected from enumeration list. Provide a description of what other criteria has been used to determine inclusion of areas as APSFRs.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional.Report If 'CFI_18 - Other' has been selected from enumeration list under CriteriaForInclusion	Blocker

Class Schema element	APSFR APSFR/ConsiderationOfConsequences/ considerationsHumanHealth	
Guidance on completion of schema element	Required. Please indicate whether specific criteria relating to human health have been used in the identification of APSFRs: • Yes • No Whether Yes or No, please provide a reference in 'APSFR/SummaryInfromation/ConsiderationOfConsequences/methodologyReference' to the overall methodology.	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	APSFR APSFR/ConsiderationOfConsequences/ considerationsEnvironment
Guidance on completion of schema element	Required. Please indicate whether specific criteria relating to environment have been used in the identification of APSFRs: • Yes • No Whether Yes or No, please provide a reference in 'APSFR/SummaryInfromation/ConsiderationOfConsequences/methodologyReference' to the overall methodology.
Field type	YesNoCode
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	

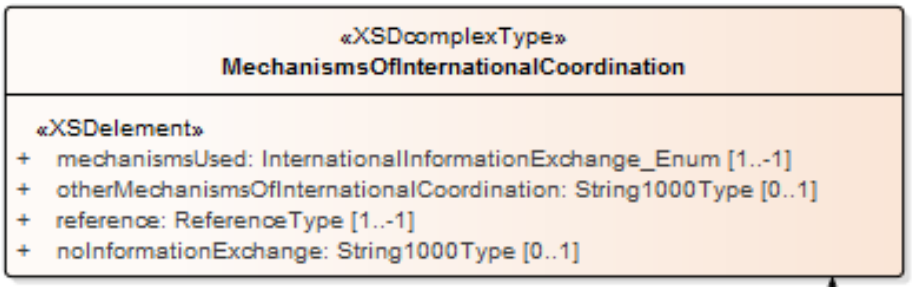
Class Schema element	APSFR APSFR/ConsiderationOfConsequences/ considerationsCulturalHeritage
Guidance on completion of schema element	Required. Please indicate whether specific criteria relating to cultural heritage have been used in the identification of APSFRs: • Yes • No Whether Yes or No, please provide a reference in 'APSFR/SummaryInfromation/ConsiderationOfConsequences/methodologyReference' to the overall methodology
Field type	YesNoCode
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	

Class Schema element	APSFR APSFR/ConsiderationOfConsequences/ considerationsEconomicActivity
Guidance on completion of schema element	Required. Please indicate whether specific criteria relating to economic activity have been used in the identification of APSFRs: • Yes • No Whether Yes or No, please provide a reference in 'APSFR/SummaryInfromation/ConsiderationOfConsequences/methodologyReference' to the overall methodology
Field type	YesNo Code
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	

Class Schema element	APSFR APSFR/ConsiderationOfConsequences/ methodologyReference
Guidance on completion of schema element	Required. If 'yes' to 'ConsiderationOfConsequences' for any of the elements above (Human Health, Environment, Cultural Heritage or Economic Activity), provide document(s) or link(s) detailing how these elements have been considered for the identification of APSFRs. If 'no', provide reasons for not including any of these elements (this can include a link to a reference document(s) or simply a link to reference in the form of a summary document.
Field type	Reference
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

The final set of schema elements at the unit of management level cover mechanisms of international coordination where an APSFR is part of an international unit of management (i.e. is an international APSFR). This information is required only at a summary level, not for each individual APSFR and where the UOM has previously been identified as international. Mechanisms of international coordination are covered by the Class of the same name which is a Class that is conditional on whether the APSFR resides within an international UOM (hence the cardinality of 0..1).

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Class Schema element	APSFR APSFR/MechanismsOfInternationalCoordination/ mechanismsUsed	
Guidance on completion of schema element	Required only for international UOMs/RBDs which have international APSFRs. What mechanisms of coordination have taken place between MS and countries within international RBDs or International units of management? (more than one option can be selected): • IIE_1 - International River Commission • IIE_2 - Bilateral border water commissions • IIE_3 - International coordination and working groups • IIE_4 - Bilateral coordination and working groups • IIE_5 - Regulations in place to enable exchange of information at international level • IIE_6 - Use of pre-existing structures to ensure bilateral coordination (in place before FD implementation) • IIE_7 - Informal arrangements (groups discussions and exchange of information) • IIE_8 - Joint declaration with a neighbouring country (including non-EU MS) on cooperation on joint action • IIE_9 - No information exchange • IIE_10 - Other	
Field type	InternationalInformationExchange _Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	APSFR APSFR/MechanismsOfInternationalCoordination/ otherMechanismsOfInternationalCoordination	
Guidance on completion of schema element	Conditional. If ‘Other’ selected from enumeration list. Provide a description of what other mechanisms have been used for coordination.	
Field type	String1000Type	
Properties	minOccurs:	0

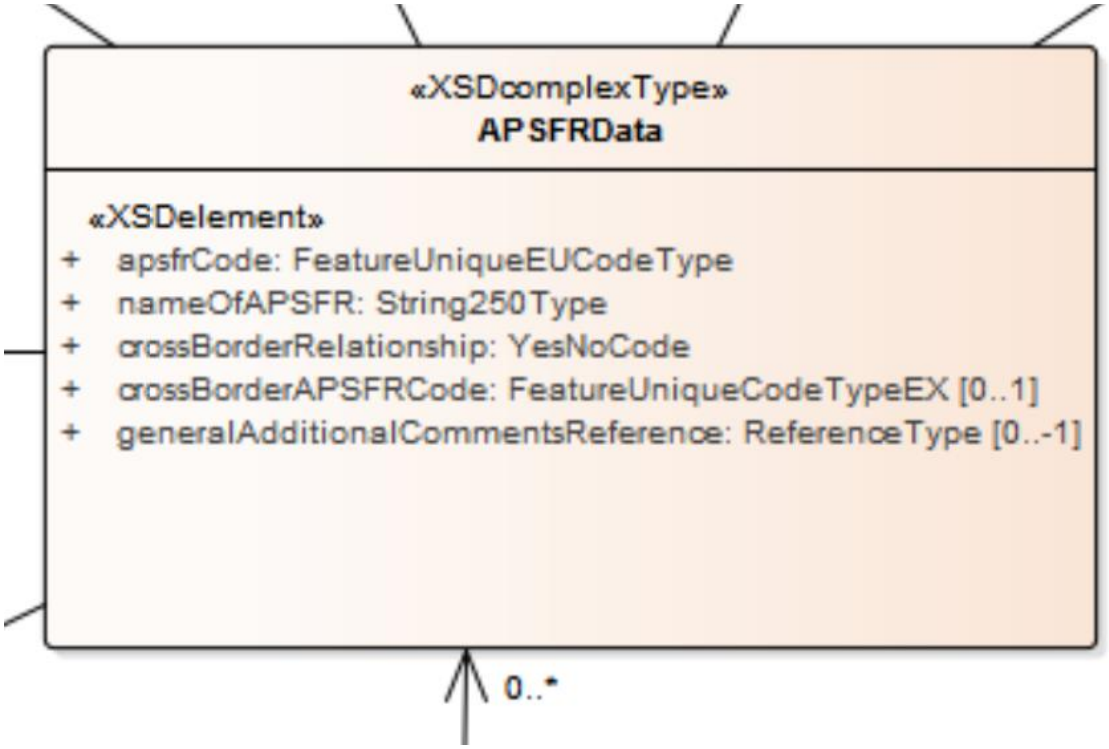
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'IIE_10 - Other' selected from enumeration list under MechanismUsed	Blocker

Class Schema element	APSFR APSFR/MechanismsOfInternationalCoordination/reference
Guidance on completion of schema element	Required, only for international UOMs/RBDs. Provide document(s) or link(s) detailing the coordination mechanisms that are in place.
Field type	ReferenceType
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	APSFR APSFR/MechanismsOfInternationalCoordination/noInformationExchange	
Guidance on completion of schema element	Conditional. If 'No information exchange' is selected from enumeration list. Provide an explanation as to why this was the case.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report If 'IIE_9 - No information exchange' has been selected from enumeration list under mechanismsUsed	Blocker

4.3.3 APSFR Data (APSFR/APSFRData)

These schema elements apply at the level of the APSFR as presented in the relevant part of the UML below. The cardinality of this Class is '0..*' as APSFRs may not have been determined as relevant for all UOMs ('0') and there may also be a number of APSFRs associated with each UOM ('*').



Class Schema element	APSFR APSFR/APSFRData/apsfrCode	
Guidance on completion of schema element	Required. Unique EU code for the area of potential significant flood risk. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Class Schema element	APSFR APSFR/APSFRData/nameofAPSFR	
Guidance on completion of schema element	Required. Provide a name for the APSFR (e.g. name of river basin sub-basin and/or coastal area or other area associated with each area of potential significant flood risk)	
Field type	String250Type	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	10
	maxLength	250
Quality checks		

Class Schema element	APSFR APSFR/APSFRData/crossBorderRelationship	
Guidance on completion of schema element	Required. Please indicate whether the APSFR crosses the national border. • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

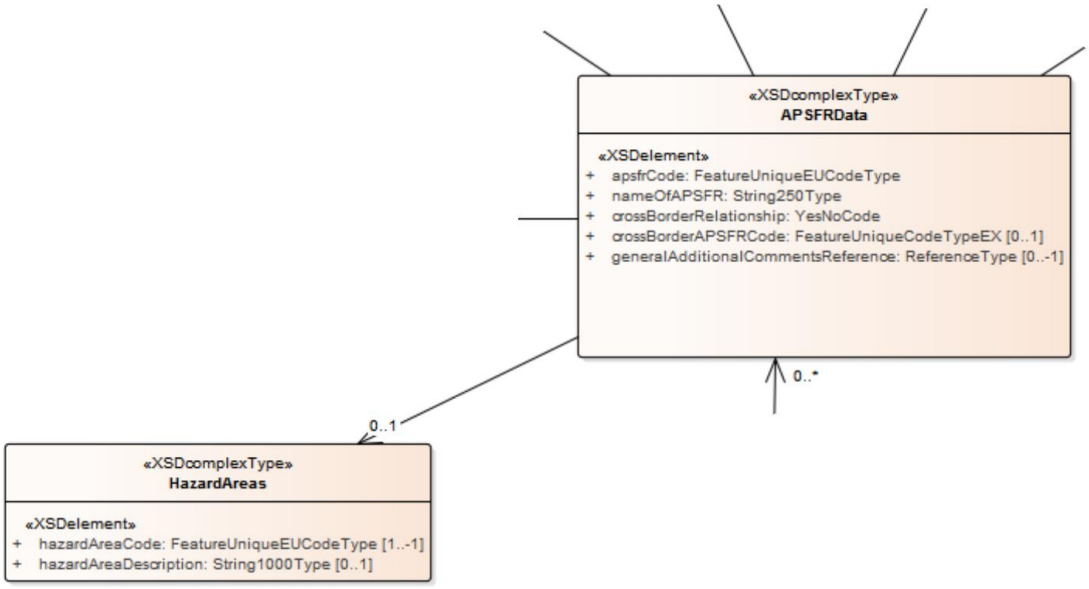
Class Schema element	APSFR APSFR/APSFRData/crossBorderAPSFRCode	
Guidance on completion of schema element	Conditional. If the APSFR cross the border to either a national or international unit of management please indicate the unique code for the related APSFR. The exception types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	FeatureUniqueCodeTypeEX	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks	Conditional: Report if Yes to crossBorderRelationship	Blocker

Class Schema element	APSFR APSFR/APSFRData/ generalAdditionalCommentsReference	
Guidance on completion of schema element	Optional. Provide a reference or references to document(s) that will be helpful to explain the data and information provided	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

4.3.4 Hazard Area(s)

The two schema elements below relates to the Hazard Area. This area may lie within an APSFR (particularly where the APSFR covers a large area) and should be linked to the APSFR. A description of this area should be provided. Reporting on hazard areas is optional and may only be required under limited circumstances.

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Class Schema element	APSFR APSFR/APSFRData/HazardAreas/hazardAreaCode	
Guidance on completion of schema element	Optional. Unique EU code for the hazard area linked to an APSFR. Add the two-letter ISO Country code to the Member State unique id to the APSFR code - up to 150 characters in total	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Facets	minLength	10
	maxLength	150
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Class Schema element	APSFR APSFR/APSFRData/HazardAreas/hazardAreaDescription	
Guidance on completion of schema element	Conditional. Provide a description of the Hazard Area and how it is related to the APSFR.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. If hazardAreaCode is reported the hazardAreaDescription must be reported.	Blocker

4.3.5 Type of flooding

The next set of schema element sketches cover the type of floods (sources, mechanisms and characteristics of flooding). They apply at the APSFR level.

The information requested in this section for sources of flooding is the same as that required at the PFRA level (see Section 3.3.7 - A17 – no data available cannot be selected for information reported as relevant to a specific APSFR post December 2011). As with the first cycle of reporting, the reporting of mechanisms and characteristics is optional.

Class Schema element	APSFR APSFR/APSFRData/TypeOfFloods/sourceOfFlooding	
Guidance on completion of schema element	Required. For each APSFR, indicate the source of floods from the enumeration list (one or more options can be selected) that are considered relevant • A11 - Fluvial: Flooding of land by waters originating from part of a natural drainage system, including natural or modified drainage channels. This source could include flooding from rivers, streams, drainage channels, mountain torrents and ephemeral watercourses, lakes and floods arising from snow melt. • A12 - Pluvial: Flooding of land directly from rainfall water falling on, or flowing over, the land. This source could include urban storm water, rural overland flow or excess water, or overland floods arising from snowmelt. • A13 - Groundwater: Flooding of land by waters from underground rising to above the land surface. This source could include rising groundwater and underground flow from elevated surface waters. • A14 - Sea Water: Flooding of land by water from the sea, estuaries or coastal lakes. This source could include flooding from the sea (e.g., extreme tidal level and / or storm surges) or arising from wave action or coastal tsunamis. • A15 - Artificial Water-Bearing Infrastructure: Flooding of land by water arising from artificial, water-bearing infrastructure or failure of such infrastructure. This source could include flooding arising from sewerage systems (including storm water, combined and foul sewers), water supply and wastewater treatment systems, artificial navigation canals and impoundments (e.g., dams and reservoirs). • A16 - Other: Flooding of land by water due to other sources, can include other tsunamis. • A17 - No data available on the source of flooding	
Field type	SourceofFlooding_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks	A17 cannot be selected	Warning

Class Schema element	APSFR APSFR/APSFRData/TypeOfFloods/otherSourceDescription	
Guidance on completion of schema element	Conditional. If ‘A16 - Other’ selected from enumeration list provide a description of the other source(s)	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1

Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'A16 - Other' selected from enumeration list under SourceofFlooding	Blocker

Class Schema element	APSFR APSFR/APSFRData/TypeOfFloods/mechanismOfFlooding	
Guidance on completion of schema element	Conditional. For each APSFR, indicate the mechanism of flooding from the enumeration list (one or more options can be selected). • A21 - Natural Exceedance: Flooding of land by waters exceeding the capacity of their carrying channel or the level of adjacent lands. • A22 - Defence Exceedance: Flooding of land due to floodwaters overtopping flood defences. • A23 - Defence or Infrastructural Failure: Flooding of land due to the failure of natural or artificial defences or infrastructure. This mechanism of flooding could include the breaching or collapse of a flood defence or retention structure, or the failure in operation of pumping equipment or gates. • A24 - Blockage / Restriction: Flooding of land due to a natural or artificial blockage or restriction of a conveyance channel or system. This mechanism of flooding could include the blockage of sewerage systems or due to restrictive channel structures such as bridges or culverts or arising from ice jams or landslides. • A25 - Other: Flooding of land by water due to other mechanisms, for instance wind setup floods. • A26 - No data available on the mechanism of flooding	
Field type	MechanismofFlooding_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Element must be reported if sourceOfFlooding and characteristicsOfFlooding are not reported.	Blocker

Class Schema element	APSFR APSFR/APSFRData/TypeOfFloods/otherMechanismDescription	
Guidance on completion of schema element	Conditional. If 'A25 - Other' selected from enumeration list provide a description of the other mechanism(s)	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'A25 - Other' selected from enumeration list under MechanismofFlooding	Blocker

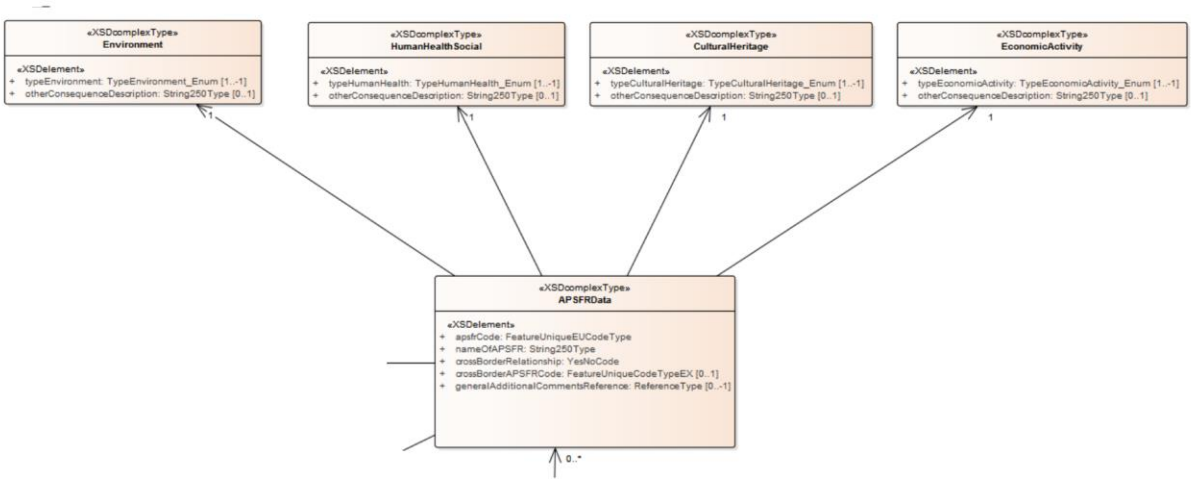
Class Schema element	APSFR APSFR/APSFRData/TypeOfFloods/characteristicsofFlooding	
Guidance on completion of schema element	Conditional. For each APSFR, define the relevant characteristics of flooding (one or more options can be selected). • A31 - Flash Flood: A flood that rises and falls quite rapidly with little or no advance warning, usually the result of intense rainfall over a relatively small area. • A32 - Snow Melt Flood: Flooding due to rapid snow melt, possibly in combination with rainfall or blockage due to ice jams. • A33 - Other rapid onset: A flood which develops quickly, other than a flash flood. • A34 - Medium onset flood: An onset of flooding that occurs at a slower rate than a flash flood. • A35 - Slow onset flood: A flood which takes a longer time to develop. • A36 - Debris Flow: A flood conveying a high degree of debris. • A37 - High Velocity Flow: A flood where the floodwaters are flowing at a high velocity. • A38 - Deep Flood: A flood where the floodwaters are of significant depth. • A39 - Other characteristics, or no special characteristics. • A40 - No data available on characteristics of flooding	
Field type	CharacteristicsofFlooding_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
	Conditional. Element must be reported if mechanismOfFlooding and sourceOfFlooding are not reported.	Blocker

Class Schema element	APSFR APSFR/APSFR/TypeOfFloods/otherCharacteristicsDescription	
Guidance on completion of schema element	Conditional. If ‘A39 - Other’ selected from enumeration list provide a description of the other characteristics or state whether there are no special characteristics	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if ‘A39 - Other’ selected from enumeration list under CharacteristicsofFlooding	Blocker

4.3.6 PotentialConsequences

These schema elements require, for each APSFR, the reporting of potential consequences of flooding on human health, the environment, cultural heritage and economic activity for each APSFR.

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Class Schema element	APSFR APSFR/APSFRData/ HumanHealthSocial/typeHumanHealth	
Guidance on completion of schema element	Required. Define relevant type of Consequences in relation to impacts on human health and the social environment. Choose from enumeration list, (one or more options can be selected): • B11 - Human Health: Adverse consequences to human health, either as immediate or consequential impacts, such as might arise from pollution or interruption of services related to water supply and treatment, and would include fatalities. • B12 - Community: Adverse consequences to the community, such as detrimental impacts on local governance and public administration, emergency response, education, health and social work facilities (such as hospitals). • B13 - Other • B14 - Not applicable • B15 - Unknown	
Field type	TypeHumanHealth_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	APSFR APSFR/APSFRData / HumanHealthSocial/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B13 - Other' selected from enumeration list under TypeHumanHealth	Blocker

Class Schema element	APSFR APSFR/APSFRData / Environment/typeEnvironment	
Guidance on completion of schema element	Required. Define relevant type of Consequences impacting on the environment. Indicate consequence from enumeration list, one or more options can be selected: • B21 - Waterbody Status: Adverse consequences ecological or chemical status of surface water bodies or chemical status of ground water bodies affected, as of concern under the WFD. Such consequences may arise from pollution from various sources (point and diffuse) or due to hydromorphological impacts of flooding. • B22 - Protected Areas: Adverse consequences to protected areas or waterbodies such as those designated under the Birds and Habitats Directives, bathing waters or drinking water abstraction points. • B23 - Pollution Sources: Sources of potential pollution in the event of a flood, such as IPPC and Seveso installations, or point or diffuse sources. • B24 - Other potential adverse environmental impacts, such as those on soil, biodiversity, flora and fauna, etc. • B25 - Not applicable • B26 - Unknown	
Field type	TypeEnvironment_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	APSFR APSFR/APSFRData/ Environment/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if ‘B24 - Other’ selected from enumeration list under TypeEnvironment	Blocker

Class Schema element	APSFR APSFR/APSFRData/ CulturalHeritage/typeCulturalHeritage	
Guidance on completion of schema element	Required. Define relevant type of Consequences on Cultural Heritage. One or more options can be selected. • B31 - Cultural Assets: Adverse consequences to cultural heritage, which could include archaeological sites / monuments, architectural sites, museums, spiritual sites and buildings. • B32 - Landscape: Adverse permanent or long-term consequences on cultural landscapes, that is cultural properties which represents the combined works of nature and man, such as relics of traditional landscapes, anchor locations or zones. • B33 - Other • B34 - Not applicable • B35 - Unknown	
Field type	TypeCulturalHeritage_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	APSFR APSFR/APSFRData/ CulturalHeritage/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B33 - Other' selected from enumeration list under TypeCulturalHeritage.	Blocker

Class Schema element	APSFR APSFR/APSFRData/ EconomicActivity/typeEconomicActivity	
Guidance on completion of schema element	Required. Define relevant type of consequences on economic activity. One or more options can be selected. • B41 – Property (including homes) • B42 – Infrastructure (assets including utilities, power generation, transport, storage and communication) • B43 – Rural Land Use (such as agricultural activity, forestry, mineral extraction and fishing) • B44 – Economic Activity (such as manufacturing, construction, retail, services and other sources of employment) • B45 – Other • B46 – Not applicable • B47 - Unknown	
Field type	TypeEconomicActivity_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	APSFR APSFR/APSFRData/ EconomicActivity/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B45 – Other' selected from enumeration list under TypeEconomicActivity	Blocker

4.4 APSFR ID Tracking schema

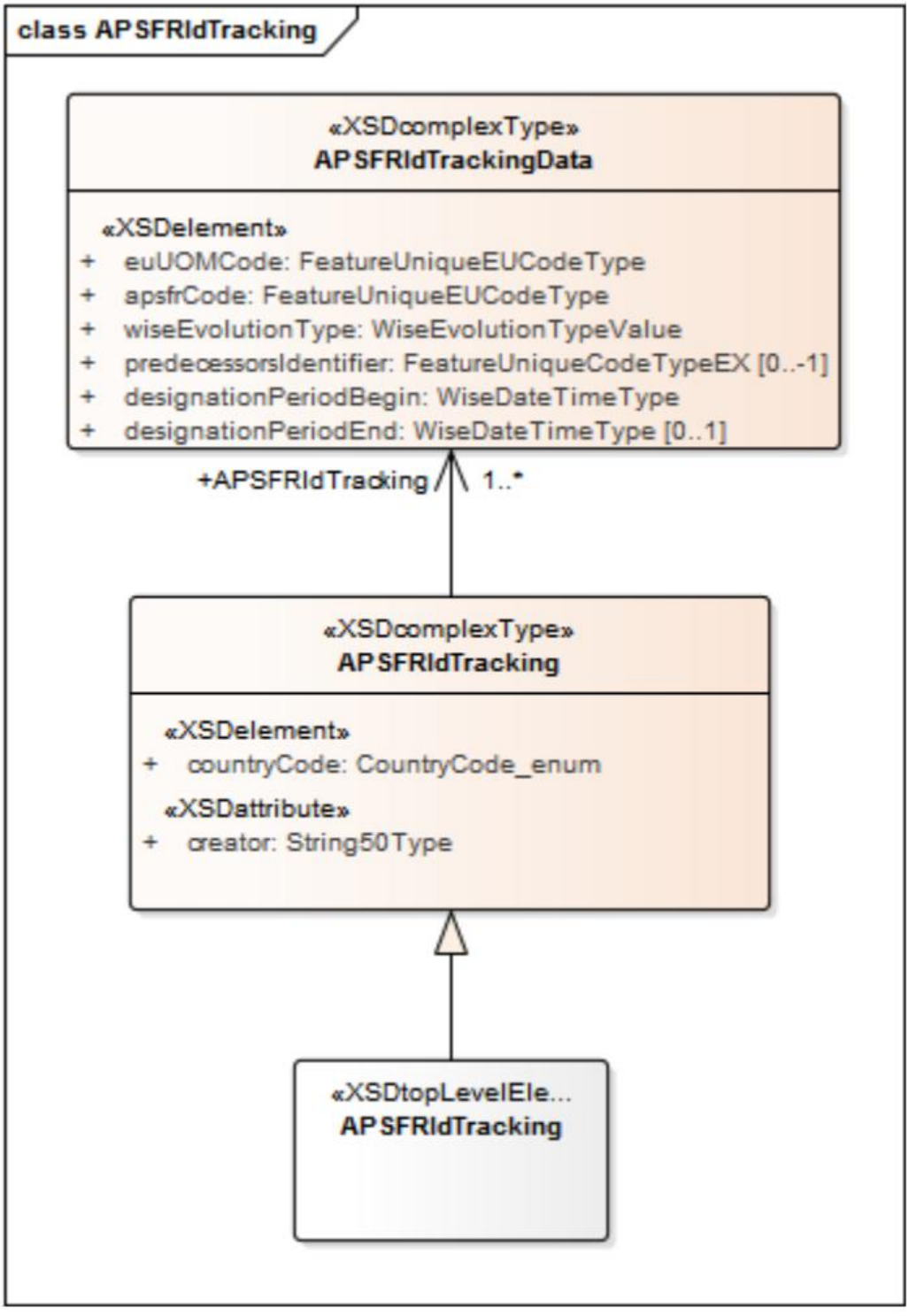
4.4.1 Introduction

This independent schema is required to allow the identification (ID) and reporting of previously reported APSFRs (all the APSFRs from the previous cycle need to be reported), their IDs, modified APSFRs for the second cycle and those where no changes have been made. Those IDs reported in the past which do not exist now will need to be reported as deleted in order that the Commission can understand the complete legacy of the APSFRs.

Tracking of APSFs is to be implemented at the national level, providing a full list of all APSFRs.

4.4.2 UML Diagram

The UML diagram for the “APSFRIDTracking” schema is presented below.


class APSFRIdTracking
«XSDcomplexType»
APSFRIdTrackingData
«XSDelement»
+ euUOMCode: FeatureUniqueEUCodeType
+ apsfrCode: FeatureUniqueEUCodeType
+ wiseEvolutionType: WiseEvolutionTypeValue
+ predecessorsIdentifier: FeatureUniqueCodeTypeEX [0..-1]
+ designationPeriodBegin: WiseDateTimeType
+ designationPeriodEnd: WiseDateTimeType [0..1]
+APSFRIdTracking
1..*
«XSDcomplexType»
APSFRIdTracking
«XSDelement»
+ countryCode: CountryCode_enum
«XSDattribute»
+ creator: String50Type
«XSDtopLevelEle...
APSFRIdTracking

4.4.3Schema Sketches: APSFRIdTracking

Class Schema element	APSFRIDTracking/ countryCode	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	CountryCode_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	APSFRIDTracking/ creator	
Guidance on completion of schema element	Required. Competent Authority responsible for providing the information	
Field type	String50Type	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	APSFRIDTracking APSFRIDTrackingData/euUOMCode	
Guidance on completion of schema element	Required. Unique EU code for the unit of management. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks		

Class Schema element	APSFRIDTracking APSFRIDTrackingData/apsfrCode	
Guidance on completion of schema element	Required. Unique EU code for the area of potential significant flood risk. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks		

Class Schema element	APSFRIDTracking APSFRIDTrackingData/wiseEvolutionType	
Guidance on completion of schema element	Required. Define relevant type of changes that occurred for the APSFRs. Type of event that produced or modified the version of the APSFR being reported (creation, change, deletion, aggregation, splitting). This attribute is required to explicitly report changes and update the current status of the APSFR in the Water Information System for Europe • aggregation • change • changeBothAggregationAndSplitting • changeCode • changeExtendedArea • changeReducedArea • creation • deletion • noChange • splitting	
Field type	wiseEvolutionTypeValue	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Note that “change” refers to a slight modification, for example a minor adjustment to the geometry or resolution of an existing APSFR that does not fit under any of the other categories. Full descriptions of each of the types of changes listed in the enumeration list above are provided in the Common Schema given in Annex 1.

Class Schema element	APSFRIDTracking APSFRIDTrackingData/predecessorsIdentifier
Guidance on completion of schema element	Conditional. This element should be reported in case an APSFR code was existing in the previous reporting and now has been substituted by a new APSFR code. Note that where previous APSFRs have been aggregated there will be more than one predecessor.
Field type	FeatureUniqueCodeTypeEx
Properties	minOccurs: 0
	maxOccurs: Unbounded
Quality checks	A predecessor code is Required if there has been a change identified Blocker

Class Schema element	APSFRIDTracking APSFRIDTrackingData/designationPeriodBegin
Guidance on completion of schema element	Required. [Beginning of the] time period defining when the APSFR was designated or became effective in the real world. Only year must be provided.
Field type	WiseDateTimeType
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	

Class Schema element	APSFRIDTracking APSFRIDTrackingData/designationPeriodEnd
Guidance on completion of schema element	Optional. [End of the] time period defining when the APSFR was legally designated according to Art. 5.1 or became effective in the real world. Only year must be provided.
Field type	WiseDateTimeType
Properties	minOccurs: 0
	maxOccurs: 1
Quality checks	

4.5 APSFR Products

The table below provides an indication of the products that can be developed as a result of the reporting on APSFRs. New products, as a result of changes made to the schemas for this current round of reporting are in **bold.**

Table 4.1 Products from information provided

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
1	Criteria for Determination of Flood Risk	Table	MS	Updated table providing a summary of the criteria used for determination of significant flood risk per Member State	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
2	Criteria for Inclusion	Table	MS	Updated table providing a summary of the criteria used for inclusion of areas (that were at evaluated at PFRA phase)	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
3	Consideration of Consequences	Table	UOM	Table summarising the criteria used to define adverse consequences	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
4	Mechanisms of International coordination	Table	MS	Updated table providing a summary of the approaches taken by Member States in coordinating their approach to designation of APSFRs.	Aggregation on the basis of the information reported at UOM level	Second cycle reporting

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
5	**APSFR Life Cycle Tracking**	**Table**	**UOM**	**Table providing tracking of APSFR Codes including all old APSFR codes and names, redundant APSFRs and any new APSFRs**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**
6	Number of reported Areas of Potential Significant Flood Risk	Graph	MS	Bar chart showing the number of reported Areas of Potential Significant Flood Risk	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
7	Source-characteristic-mechanism of floods associated with Areas of Potential Significant Flood Risk	Graph	EU	Bar chart showing the source-characteristic-mechanism of floods associated with Areas of Potential Significant Flood Risk	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
8	Potential adverse consequences of floods associated with Areas of Potential Significant Flood Risk	Graph	EU	Bar chart showing the potential adverse consequences of floods associated with Areas of Potential Significant Flood Risk	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
9	Comparison of source of historic floods reported and the flood sources associated with Areas of Potential Significant Flood Risk	Table	MS	Table showing for each MS whether the source of flood risk was: reported as a historic flood and associated with APSFR; NOT reported as a historic flood or as being associated with APSFR; reported as a historic flood but not as being associated with APSFR; or reported as being associated with APSFR but not as a historic flood	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
10	Summary of consequences that were reported as being not applicable to Areas of Potential Significant Flood Risk	Graph	MS	Bar chart showing the percentage of reported APSFRs in a MS where health, environmental, cultural and economic consequences were considered (or at least reported) to be not applicable	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR
11	Overview of the reported number of the Areas of Potential Significant Flood Risk from different types of flood	Table	MS	Textual table showing the number of APSFRs in each MS by the different sources, mechanisms and characteristics defined in the MS,	Aggregation on the basis of the information reported at UOM level	Report on PFRA & APFSR

5.Flood Hazard Risk Maps (FHRM)

5.1Introduction

Article 6 of the Floods Directive requires Member States to prepare flood hazard maps and flood risk maps. These maps must be prepared, at the river basin level and at the most appropriate scale, for the areas of potentially significant flood risk identified under Article 5. Member States will determine the most appropriate scale of flood hazard maps and flood risk maps, and different scales can be chosen depending on the location and type of map. The scale at which information is made available at European level via WISE is a different matter, and the requirements around visualisation of flood related information in WISE (at scale 1:250,000) is given in the Spatial Guidance provided in Annex 2. Member States may choose to develop several flood maps for each type of relevant flood, provided that the requirements of the Directive are complied with.

Flood hazard maps must show the geographical area which could be flooded under different scenarios (Article 6.3), whereas flood risk maps must show the potential adverse consequences of these flood scenarios (Article 6.5).

The flood maps must be prepared for the following flooding scenarios:

- floods with low probability, or extreme event scenarios;
- floods with a medium probability (likely return period ≥ 100 years);
- floods with a high probability, where appropriate.

Member States have the flexibility to assign specific flood probabilities to these scenarios. For each scenario, Member States must prepare information on flood extents and water depth or levels (Article 6.4). Where appropriate, Member States could also prepare information on flow velocities or the relevant water flow.

For each flooding scenario, the flood risk maps shall show:

- The indicative number of inhabitants potentially affected;
- Type of economic activity of the area potentially affected;
- Installations as referred to in Annex I to Council Directive 2008/1/EC (codified version of Directive 96/61/EC of 24 September 1996)[14] concerning integrated pollution prevention and control which might cause accidental pollution in case of

[14] Update: Directive 2008/1/EC replaced by Directive 2010/75/EC, OJ L334, 17.12.2010.

flooding and potentially affected WFD protected areas[15] identified in Annex IV(1)(i), (iii) and (v) to Directive 2000/60/EC.

The maps may show other information which the Member State considers useful such as the indication of areas where floods with a high content of transported sediments and debris floods can occur and information on other significant sources of pollution.

For coastal flooding where there is an adequate level of protection in place, and for groundwater flooding, Member States can decide to limit the preparation of flood hazard maps to low probability or extreme events (Article 6.6 and 6.7).

Prior exchange of information between Member States in the preparation of Flood maps is required in shared units of management (Article 6.2).

The preparation of flood hazard maps and flood risk maps shall be coordinated with the review of the assessment carried out under Article 5 of the Water Framework Directive 2000/60/EC. The coordination shall ensure that the information they contain is consistent, and the overall purpose of the coordination is to focus on opportunities for improving efficiency, information exchange and achieving common synergies and benefits having regard to the environmental objectives of that Directive.

To enable the Commission to assess the compliance of Member States flood hazard maps and flood risk maps with the requirement of Article 6, a number of summary questions in the schemas are included focusing on the methodology for preparing flood hazard maps and flood risk maps.

Flood hazard maps and flood risk maps shall also be made available to the public by the Member States.

The spatial elements of reporting under of flood hazard and flood risk maps including the requirements for alignment with the INSPIRE Directive are provided in the spatial guidance (Annex 2).

Different existing data layers in WISE and databases such as European Pollutant Release and Transfer Register (E-PRTR) may be used, along with background maps such as those provided for the PFRA (according to application of Article 4 and 5), showing topography and land-use.

Information for other uses may be asked for, with the consent from the Member States; going beyond compliance checking purposes for the Floods Directive. With a view of

[15] The term "protected areas", referring here to areas identified in WFD Annex IV(1)(i), (iii) and (v), such as Natura 2000 areas, should not be confused with areas protected against floods, e.g. by dykes.

streamlining reporting on, for instance, State of the Environment reports by the European Environment Agency with reporting for the Floods Directive, some additional optional information may be asked for.

To facilitate and structure the technical reporting formats, enumeration lists of types of floods and of types of adverse consequences are implemented in the reporting schemas. Appropriate structures such as NACE codes[16], or national correlated equivalent codes, can for instance be used for this purpose.

Coordination at the scale for the RBD (or smaller Unit of management, if relevant) is important, such as for the identification of common scenarios, for instance in the view of assessing the impacts of climate change on floods (Reference to CIS Guidance document no 24 "River Basin Management in a changing climate"), which may have an impact on flood maps.

Thus, coordination between Member States and between regions in such shared RBD/UOM in the production of flood hazard maps and flood risk maps will therefore be important.

It is also noted that certain information in relation to the implementation of this Directive, such as mapping of effects of failures of critical infrastructure, may need to be reported to the Commission for compliance checking purposes only, if such information be deemed classified in the Member State concerned.

5.1.1 Geographic information

The maps shall, according to the Directive, be prepared at the national level at the most appropriate scale, and shall be reported/made available to the Commission whilst remaining in a national repository.[17] In addition some data related to the content of flood hazard and flood risk maps as set out in Article 6, will be required from Member States to enable summary maps with the following content to be produced at the European level via the WISE viewer (or to enable compliance checking or assessments by the Commission and EEA). The exact format and content of reporting, as well as the visualisation at EU scale via the updated WISE viewer will furthermore be developed when GIS formats are developed and tested. For the first cycle, Member States were able to report either in an INSPIRE compatible format (decentralised system), or if not fully implemented in that Member State, provide hyperlinks to maps available in digital format, with geo-referenced hyperlinks which enabled access from a certain area identified within WISE.

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[16] NACE: The Statistical Classification of Economic Activities in the European Community (in French: Nomenclature statistique des activités économiques dans la Communauté européenne), commonly referred to as NACE, is a European industry standard classification system consisting of a 6 digit code.

[17] INSPIRE compatibility will be taken into account

For the second cycle, reporting formats/schemas shall aim at being fully INSPIRE compliant**.** Further details are provided in the Spatial Guidance (Annex 2). The following maps are required:

- Overview map of the river basin district or unit of management, clearly identifying areas where more detailed flood hazard maps and flood risk maps are available through national systems, with associated information on these areas.[18] It is assumed that the reporting of areas of potential significant flood risk under Article 5 provides such an overview map; no additional reporting would be needed under this point. This allows the reporting of shape files of the geographic extent of the areas flooded under each scenario, along with associated data (see section data points 1-6) (Article 6.1).

- Flood hazard maps showing the extent of flooding associated with the medium probability scenario or for the low scenario if Articles 6.6 and/or 6.7 apply at the appropriate scale, including water depth or water level and where appropriate the flow velocity or relevant water flow[19], for the areas identified under Article 5;

- Flood risk maps showing the potential adverse consequences expressed in terms of the indicative number of inhabitants potentially affected under the flood scenarios (Article 6.5(a));

- Flood risk maps showing the potential adverse consequences expressed in terms of the type of economic activity of the area potentially affected under the flood scenario (Article 6.5(b));

- Flood risk maps showing the potential adverse consequences expressed in terms of the location of installations[20] which might cause accidental pollution in case of flooding and potentially affected areas identified in WFD Annex IV(1)(i) (iii) and (v) the flooding scenarios (Article 6.5(c));

- Maps showing coastal areas where an adequate level of protection is in place, and where Article 6.6 will be applied.

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[18] Format of this map and its visualisation in WISE to be defined, and depending on the technical developments at the time of the 1st and 2nd and later cycles. This map at the WISE scale will also be used to ensure appropriate geo-referenced links to national flood hazard maps and flood risk maps can be made. The map of areas of potential significant flood risk may be used as the basis for this purpose.

[19] Flow velocity and relevant flood flow where appropriate in accordance with article 6.4 (c).

[20] With reference to Directive 2008/1/EC (codified version of Directive 96/61/EC) concerning integrated pollution prevention and control, replaced by Directive 2010/75/EC, OJ L334, 17.12.2010.

5.1.2 Optional geographic information

- Areas vulnerable to floods with a high content of transported sediment and debris flows for each flood scenario (Article 6.5(d));

- The location of other significant sources of pollution, including the areas potentially affected where possible (Article 6.5(d));

- Maps with other information that Member States may consider useful (Article 6.5(d) (examples may be flood event maps, flood damage maps, maps or areas benefiting from protection against flooding, evacuation maps, maps relating to other potential natural or manmade hazards, etc.).

5.2UML Diagram

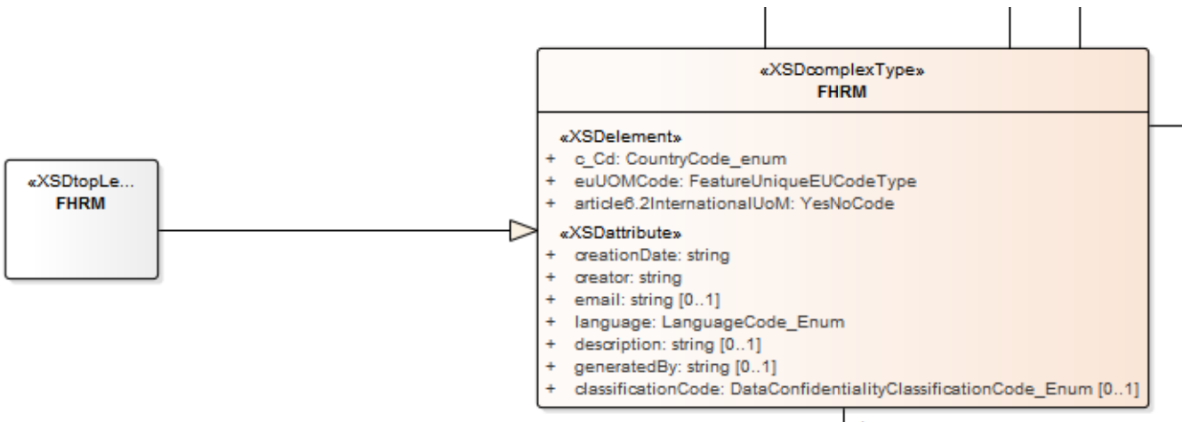
The UML diagram for FHRM is provided in Annex 7. The UML should be used as an aid to navigate through the schemas.

5.3 Schema Sketches

Individual schema sketches are presented for each element with further explanatory text provided as required. Extracts of the UML are presented to facilitate the navigation process.

5.3.1 FHRM (Country codes, EU unit of management codes and attributes)

The schema sketches below cover the fundamental information (elements and attributes) that is required to be reported for identification purposes. As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Elements

Class Schema element	FHRM FHRM/c_CD	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	CountryCode_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Class Schema element	FHRM FHRM/euUOMCode	
Guidance on completion of schema element	Unique EU code for the Unit of Management. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total. If unit of management is the same as the WFD RBD please use the EURBDCode as the unit of management.	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Article 6.2 states that the preparation of flood hazard maps and flood risk maps for APSFRs (or for defined "hazard areas" if these cover a different area from, the APSFR) which are shared with other MS shall be subject to prior exchange of information between the MS concerned. The schema element below first establishes whether the UOM as a whole is

international (details of specific APSFRs and hazard areas are not required as information on international coordination is reported at the UOM level).

Class Schema element	FHRM FHRM/article6.2InternationalUOM	
Guidance on completion of schema element	Required. Is the UOM international? • Yes • No	
Field type	YesNo Code	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Attributes

Class Schema element	FHRM FHRM/creationDate	
Guidance on completion of schema element	Required. To be provided as year, month, date (e.g. “2012-03-20”)	
Field type	string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/creator	
Guidance on completion of schema element	Required. Competent Authority responsible for providing the information (e.g. Ministry of Environment, Environment Protection Agency, etc.).	
Field type	string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/email	
Guidance on completion of schema element	Optional. For example“ fhrm@environment.eu”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/language	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	LanguageCode_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/description	
Guidance on completion of schema element	Optional. For example: “Floods Directive Flood Hazard and Flood Risk Mapping Information”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	150
Quality checks		

Class Schema element	FHRM FHRM/generatedBy	
Guidance on completion of schema element	Optional. For example “Through the use of an IT database system using Oracle scripts”	
Field type	string	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	40
Quality checks		

Class Schema element	FHRM FHRM/classificationCode	
Guidance on completion of schema element	Optional. Codes for data security classification: • 001 – Unclassified – information reported available for general circulation and public viewing • 003 – Confidential – available for EC reporting only	
Field type	DataConfidentialityClassificationCode_Enum	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

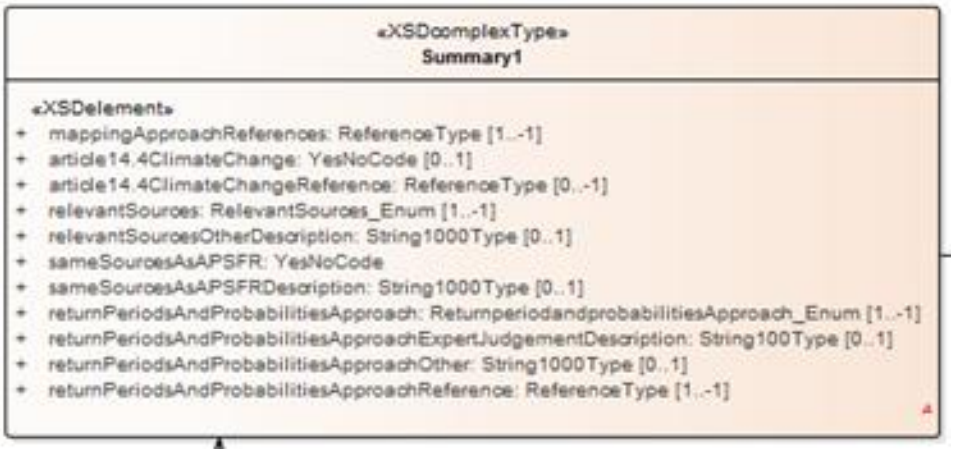
5.3.2 FHRM/Summary1

This group of schema elements relate to the provision of summary information and apply at the Unit of Management level. In order the provide further clarification to aid with the interpretation of flood hazard and flood risk maps, information is required not only on what sources have been mapped (such as fluvial or seawater floods) but it is also important to be able to understand how the maps have been derived, what modelling approaches have been used and what factors have been taken into account, such as whether flood defences have been considered in the assessment of flood hazard/risk. In relation to flood defences, MS may or may not have fully taken into consideration the presence of any existing (or potential future) flood defences in carrying out a particular modelling approach to produce the flood hazard/risk maps. Furthermore, flood defence failure scenarios (such as dam failure, structural damage to defences or lack of maintenance) may or may not have been

considered in the approach to producing the maps. Another aspect is whether existing buildings and infrastructure have been taken into account. All of the above aspects will introduce some further elements of uncertainty into the process.

The reference schema elements presented in this section address these requirements.

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Class Schema element	FHRM FHRM/Summary1/mappingApproachReferences
Guidance on completion of schema element	Required. Provide documents or links to relevant documents describing the approach used in the mapping of flood hazard and flood risk. In particular, please focus on the following areas: 1. Whether and how flood defences are considered; 2. Whether and how flood defence failure scenarios are considered; 3. Whether and how existing buildings and infrastructure are considered; 4. How uncertainty has been taken account of (what approach has been used to attempt to quantify uncertainty in the mapping of flood hazard and flood risk) As a reminder, If providing documents describe the: - Subject (describe in a few words the subject matter of the references provided in relation to 1 to 4 above) - Document name (Provide the name of each reference document, the name should identify the document unequivocally) - Bookmark (For each document provide the chapters, sections and page ranges where the relevant information can be found) - If the file containing the reference is uploaded to WISE, provide the file name of the uploaded document. - If the document has not been uploaded to WISE, provide a hyperlink to the relevant background document. (The Member State must guarantee that the hyperlink will remain stable and active for a period of 6 years after reporting).

	Please note that 1 to 4 above may be covered in a single document in which case please be careful to Bookmark the relevant chapters, sections or page ranges (for example, “1: chapter 4.3, 2: pages 25-30, 3: Chapter 4.5,..)	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Article 14.2 states that the flood hazard maps and the flood risk maps shall be reviewed, and if necessary updated, by 22 December 2019 and every six years thereafter. Article 14.4 states that the likely impact of climate change on the occurrence of floods shall be taken into account in the review referred to above.

Class Schema element	FHRM FHRM//Summary1/article14.4ClimateChange	
Guidance on completion of schema element	Optional. Has climate change been taken into account in the mapping of flood hazard/risk? • Yes • No • Yes but not for all maps • Yes but not all sources	
Field type	ClimateChange_Enum	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/Summary1/article14.4ClimateChangeReference	
Guidance on completion of schema element	Conditional. If ‘Yes’ provide document(s) or link(s) detailing how climate change has (or links to a document providing an explanation if it has not) been taken into account in the assessment of flood hazard/risk.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Report if Article14.4ClimateChange is 'Yes'.	Blocker

Not all sources of flooding will be relevant (i.e. significant) for all UOMs or RBDs. This schema element allows sources of flooding that are not relevant to be screened out at the UOM/RBD level and for information related to sources (such as approaches to modelling individual sources) to be reported at a higher summary level (see Section 4.3.3).

Class Schema element	FHRM FHRM/Summary1/relevantSources	
Guidance on completion of schema element	Required. Indicate which sources of flooding are considered to give rise to significant flood risk within this UOM or RBD (one or more options can be selected) : • A11 - Fluvial: Flooding of land by waters originating from part of a natural drainage system, including natural or modified drainage channels. This source could include flooding from rivers, streams, drainage channels, mountain torrents and ephemeral watercourses, lakes and floods arising from snow melt. • A12 - Pluvial: Flooding of land directly from rainfall water falling on, or flowing over, the land. This source could include urban storm water, rural overland flow or excess water, or overland floods arising from snowmelt. • A13 - Groundwater: Flooding of land by waters from underground rising to above the land surface. This source could include rising groundwater and underground flow from elevated surface waters. • A14 - Sea Water: Flooding of land by water from the sea, estuaries or coastal lakes. This source could include flooding from the sea (e.g., extreme tidal level and / or storm surges) or arising from wave action or coastal tsunamis. • A15 - Artificial Water-Bearing Infrastructure: Flooding of land by water arising from artificial, water-bearing infrastructure or failure of such infrastructure. This source could include flooding arising from sewerage systems (including storm water, combined and foul sewers), water supply and wastewater treatment systems, artificial navigation canals and impoundments (e.g., dams and reservoirs). • A16 - Other: Flooding of land by water due to other sources, can include other tsunamis.	
Field type	RelevantSources_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/relevantSourcesOtherDescription
Guidance on completion of schema element	Conditional. If ‘Other’ is selected from enumeration list provide a description (this may relate to one other source or several other sources)
Field type	String1000Type

Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'Other' selected from enumeration list under RelevantSources	Blocker

Class Schema element	FHRM FHRM/Summary1/ sameSourcesAsAPSFR
Guidance on completion of schema element	Required. Indicate whether the sources mapped are those deemed to be significant in the APSFR. Areas for which flood hazard/risk maps should be prepared are indicated at the APSFR stage. • Yes • No
Field type	YesNoCode
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	

Class Schema element	FHRM FHRM/Summary1/ sameSourcesAsAPSFRDescription	
Guidance on completion of schema element	Conditional. If 'No' is selected from enumeration list in sameSourcesasAPSFR, provide an explanation as to why the sources mapped are different to those considered in the APSFR.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if SameSourcesasAPSFR is 'No'.	Blocker

Class Schema element	FHRM FHRM/Summary1/ returnPeriodsandProbabilitiesApproach	
Guidance on completion of schema element	Required. Provide an indication of the approach taken to the calculation of flood return periods and probabilities (one or more options can be selected): • RPPA_1 - (Statistical analysis on) historical record/counts data • RPPA_2 - (Statistical analysis on) hydraulic modeling • RPPA_3 - (Statistical analysis on) hydrological modelling • RPPA_4 - (Statistical analysis on) observed/gauging data • RPPA_5 - (Statistical analysis on) rainfall data • RPPA_6 - Expert judgement • RPPA_7 - Other (e.g. uncertain)	
Field type	ReturnperiodsandprobabilitiesApproach_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/returnPeriodsandProbabilitiesApproach ExpertJudgementDescription	
Guidance on completion of schema element	Conditional. If 'Expert Judgement' has been selected from enumeration list, provide a brief description as to how expert judgement was used to determine flood return periods and probabilities. A relatively short description only is required here, for example on the type of organisations consulted (public administration and/or private company) and what key issues were considered as part of the judgement.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional. Report if 'RPPA_6 - Expert Judgement' selected from enumeration list under returnPeriodsandProbabilitiesApproach	Blocker

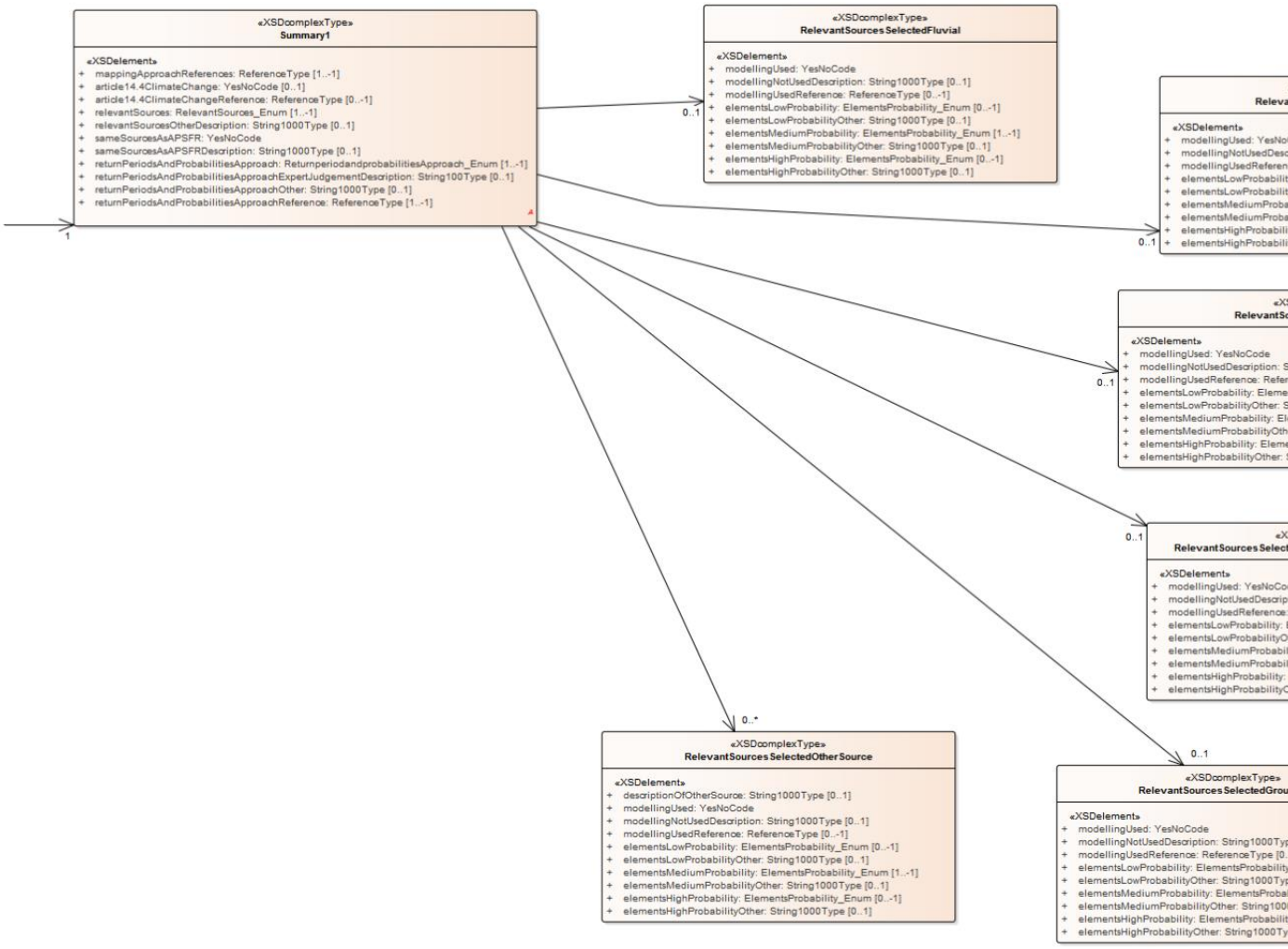
Class Schema element	FHRM FHRM/Summary1/returnPeriodsandProbabilitiesApproachOther	
Guidance on completion of schema element	Conditional. If 'Other' is selected from enumeration list provide a description as to why this is the case (it is acceptable to use 'Uncertain' but an explanation (however brief) is required)	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'RPPA_7 - Other' selected from enumeration list under returnPeriodsandProbabilitiesApproach	Blocker

Class Schema element	FHRM FHRM/Summary1/returnPeriodsandProbabilitiesApproachReference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to the information relating to the approach taken to the calculation of flood return periods and probabilities.	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

5.3.3 Relevant Sources Selected

This group of Classes and schema elements relate to the different sources of flooding considered relevant at the Unit of Management level. They require MS to identify whether a modelling approach has been used to inform the development of the flood hazard and flood risk maps and provide MS with the opportunity to give further information on any such approach used including information on the specific type of model(s), the resolution of the model(s) and the datasets used. The schema elements under this section also cover the provision of information relating to whether elements such as the flood extent, water level depths/water level and/or flow velocity or the relevant water flow have been included within the maps under different flooding probability scenarios.

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Each of the schema Classes (RelevantSourcesSelectedFluvial, RelevantSourcesSelectedPluvial, etc.) are conditional based on whether the particular source has been selected under the 'relevantSources' enumeration within the Summary1 Class and this information needs only to be provided once per source at the UOM level (hence the cardinality of '0..1'). However RelevantSourcesSelectedOtherSource has a cardinality of '0..*' to allow Member States to report more than one 'other' source.

Fluvial (to be reported if considered relevant at the UOM level)

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedFluvial/modellingUsed
Guidance on completion of schema element	Required. Indicate whether a modelling approach has been used to inform the development of the flood hazard and flood risk maps where fluvial flooding presents a risk.

	• Yes • No
Field type	YesNoCode
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	Conditional. Report if 'A11 - Fluvial' selected from enumeration list under Summary1/relevantResources — Blocker

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedFluvial/ modellingNotUsedDescription
Guidance on completion of schema element	Conditional. If 'No' is selected from enumeration list to indicate a modelling approach has not been used, provide a description as to what approach has been used.
Field type	String1000Type
Properties	minOccurs 0
	maxOccurs 1
Facets	minLength 10
	maxLength 1000
Quality checks	Conditional. Report if modellingUsed is 'No'. — Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelected Fluvial/modellingUsedReference
Guidance on completion of schema element	Conditional. If 'Yes' is selected from enumeration list, provide documents or links to relevant documents covering the following areas related to the modelling approach used for fluvial sources of flooding: - 1) the types of models used; - 2) the resolution of the models used; - 3) the key datasets used in the modelling process; As a reminder, If providing documents describe the: - **Subject** (describe in a few words the subject matter of the references provided in relation to 1 to 3 above)

	- **Document name** (Provide the name of each reference document, the name should identify the document unequivocally) - **Bookmark** (For each document provide the chapters, sections and page ranges where the relevant information can be found) - If the file containing the reference is uploaded to WISE, provide the **file name** of the uploaded document. - If the document has not been uploaded to WISE, provide a **hyperlink** to the relevant background document. (The Member State must guarantee that the hyperlink will remain stable and active for a period of 6 years after reporting). Please note that 1 to 3 above may be covered in a single document in which case please be careful to Bookmark the relevant chapters, sections or page ranges (for example, "1: chapter 4.3, 2: pages 25-30, 3: Chapter 4.5)
Quality checks	Conditional. Report if modellingUsed is 'Yes'. Blocker

Article 6.3 of the floods directive states that flood hazard maps shall cover the geographical areas which could be flooded according to the following scenarios:

- floods with a low probability, or extreme event scenarios;
- floods with a medium probability (likely return period ≥ 100 years;
- floods with a high probability, where appropriate.

For each of these scenarios the following three elements should be shown:

- the flood extent;
- the depths or water level, as appropriate;
- where appropriate, the flow velocity or the relevant water flow.

The above information is recorded using the schema elements below.

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedFluvial/ elementsLowProbability
Guidance on completion of schema element	Optional. Where Fluvial has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)
Field type	ElementsProbability_Enum

Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedFluvial/ elementsLowProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsLowProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedFluvial/ elementsMediumProbability	
Guidance on completion of schema element	Required. Where Fluvial has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema	FHRM FHRM/Summary1/RelevantSourcesSelectedFluvial/

element	elementsMediumProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsMediumProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedFluvial/ elementsHighProbability	
Guidance on completion of schema element	Optional. Where Fluvial has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedFluvial/ elementsHighProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0

	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsHighProbability	Blocker

Pluvial (to be reported if considered relevant at the UOM level)

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedPluvial/modellingUsed	
Guidance on completion of schema element	Required. Indicate whether a modelling approach has been used to inform the development of the flood hazard and flood risk maps where pluvial flooding presents a risk. • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks	Conditional. Report if 'A12 - Pluvial' selected from enumeration list under Summary1/relevantResources	Blocker

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedPluvial/ modellingNotUsedDescription	
Guidance on completion of schema element	Conditional. If 'No' is selected from enumeration list to indicate a modelling approach has not been used, provide a description as to what approach has been used.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if modellingUsed is 'No'.	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelected Pluvial/modellingUsedReference
Guidance on completion of schema element	Conditional. If 'Yes' is selected from enumeration list, provide documents or links to relevant documents covering the following areas related to the modelling approach used for pluvial sources of flooding: - 1) the types of models used; - 2) the resolution of the models used; - 3) the key datasets used in the modelling process; As a reminder, If providing documents describe the: - **Subject** (describe in a few words the subject matter of the references provided in relation to 1 to 3 above) - **Document name** (Provide the name of each reference document, the name should identify the document unequivocally) - **Bookmark** (For each document provide the chapters, sections and page ranges where the relevant information can be found) - If the file containing the reference is uploaded to WISE, provide the **file name** of the uploaded document. - If the document has not been uploaded to WISE, provide a **hyperlink** to the relevant background document. (The Member State must guarantee that the hyperlink will remain stable and active for a period of 6 years after reporting). Please note that 1 to 3 above may be covered in a single document in which case please be careful to Bookmark the relevant chapters, sections or page ranges (for example, "1: chapter 4.3, 2: pages 25-30, 3: Chapter 4.5)
Quality checks	Conditional. Report if modellingUsed is 'Yes'. Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedPluvial/ elementsLowProbability
Guidance on completion of schema element	Optional. Where Pluvial has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4- Other (e.g. conveyance routes)
Field type	ElementsProbability_Enum
Properties	minOccurs: 0
	maxOccurs: Unbounded
Quality checks	

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedPluvial/ elementsLowProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsLowProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedPluvial/ elementsMediumProbability	
Guidance on completion of schema element	Required. Where Pluvial has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedPluvial/ elementsMediumProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsMediumProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedPluvial/ elementsHighProbability	
Guidance on completion of schema element	Optional. Where Pluvial has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedPluvial/ elementsHighProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsHighProbability	Blocker

Seawater (to be reported if considered relevant at the UOM level)

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedSeawater/modellingUsed	
Guidance on completion of schema element	Required. Indicate whether a modelling approach has been used to inform the development of the flood hazard and flood risk maps where seawater flooding presents a risk. • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	101
	maxOccurs:	1
Quality checks	Conditional. Report if ‘A14 - Sea Water’ selected from enumeration list under Summary1/relevantResources	Blocker

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedSeawater/ modellingNotUsedDescription	
Guidance on completion of schema element	Conditional. If 'No' is selected from enumeration list to indicate a modelling approach has not been used, provide a description as to what approach has been used.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minOccurs	0
	maxOccurs	1
Quality checks	Conditional. Report if modellingUsed is 'No'	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelected Seawater/modellingUsedReference
Guidance on completion of schema element	Conditional. If 'Yes' is selected from enumeration list, provide documents or links to relevant documents covering the following areas related to the modelling approach used for seawater sources of flooding: - 1) the types of models used; - 2) the resolution of the models used; - 3) the key datasets used in the modelling process; As a reminder, If providing documents describe the: - **Subject** (describe in a few words the subject matter of the references provided in relation to 1 to 3 above) - **Document name** (Provide the name of each reference document, the name should identify the document unequivocally) - **Bookmark** (For each document provide the chapters, sections and page ranges where the relevant information can be found) - If the file containing the reference is uploaded to WISE, provide the **file name** of the uploaded document. - If the document has not been uploaded to WISE, provide a **hyperlink** to the relevant background document. (The Member State must guarantee that the hyperlink will remain stable and active for a period of 6 years after reporting). Please note that 1 to 3 above may be covered in a single document in which case please be careful to Bookmark the relevant chapters, sections or page ranges (for example, "1: chapter 4.3, 2: pages 25-30, 3: Chapter 4.5)

Quality Checks	Conditional. Report if modellingUsed is 'Yes'.	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedSeawater/ elementsLowProbability	
Guidance on completion of schema element	Conditional Where Seawater has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional based on whether 'EP66 - Article 6.6 applied. has been selected under high or medium (elementsHighprobability or elementsMediumprobability)	Blocker

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedSeawater/ elementsLowProbabilityOther	
Guidance on completion of schema element	Conditional. If 'Other' selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'Other' selected from enumeration list under elementsLowProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedSeawater/ elementsMediumProbability	
Guidance on completion of schema element	Required. Where Seawater has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected). According to Article 6.6, Member States may decide that for coastal areas with an adequate level of protection in place, the flood Hazard maps shall be limited to the low probability i.e. extreme event scenario • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP66 - Article 6.6 applied • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability6.6_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedSeawater/ elementsMediumProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsMediumProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedSeawater/ elementsHighProbability	
Guidance on completion of schema element	Optional. Where Seawater has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected) According to Article 6.6, Member States may decide that for coastal areas with an adequate level of protection in place, the flood Hazard maps shall be limited to the low probability i.e. extreme event scenario: • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP66 - Article 6.6 applied • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability6.6_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedSeawater/ elementsHighProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under ElementsHighProbability	Blocker

Artificial Water Bearing Infrastructure (to be reported if considered relevant at the UOM level)

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedArtificialWaterBearingInfrastructure/modellingUsed	
Guidance on completion of schema element	Required. Indicate whether a modelling approach has been used to inform the development of the flood hazard and flood risk maps where flooding from artificial water bearing infrastructure presents a risk. • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks	Conditional. Report if ‘A15 - Artificial Water Bearing Infrastructure’ selected from enumeration list under Summary1/relevantSources	Blocker

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedArtificialWaterBearingInfrastructure/modellingNotUsedDescription	
Guidance on completion of schema element	Conditional. If ‘No’ is selected from enumeration list to indicate a modelling approach has not been used, provide a description as to what approach has been used.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if modellingUsed is 'No'.	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelected ArtificialWaterBearingInfrastructure/modellingUsedReference
Guidance on completion of schema element	Conditional. If 'Yes' is selected from enumeration list, provide documents or links to relevant documents covering the following areas related to the modelling approach used for sources of flooding from artificial water bearing infrastructure : - 1) the types of models used; - 2) the resolution of the models used; - 3) the key datasets used in the modelling process; As a reminder, If providing documents describe the: - **Subject** (describe in a few words the subject matter of the references provided in relation to 1 to 3 above) - **Document name** (Provide the name of each reference document, the name should identify the document unequivocally) - **Bookmark** (For each document provide the chapters, sections and page ranges where the relevant information can be found) - If the file containing the reference is uploaded to WISE, provide the **file name** of the uploaded document. - If the document has not been uploaded to WISE, provide a **hyperlink** to the relevant background document. (The Member State must guarantee that the hyperlink will remain stable and active for a period of 6 years after reporting). Please note that 1 to 3 above may be covered in a single document in which case please be careful to Bookmark the relevant chapters, sections or page ranges (for example, "1: chapter 4.3, 2: pages 25-30, 3: Chapter 4.5)
Quality checks	Conditional. Report if ModellingUsed is 'Yes'. Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedArtificialWaterBearingInfrastructure /elementsLowProbability
Guidance on completion of schema element	Optional. Where artificial water bearing infrastructure has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)
Field type	ElementsProbability_Enum
Properties	minOccurs: 0
	maxOccurs: Unbounded
Quality checks	

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelected ArtificialWaterBearingInfrastructure/ elementsLowProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsLowProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedArtificialWaterBearingInfrastructure/ elementsMediumProbability	
Guidance on completion of schema element	Required. Where artificial water bearing infrastructure has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedArtificialWaterBearingInfrastructure/elementsMediumProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsMediumProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedArtificialWaterBearingInfrastructure/elementsHighProbability	
Guidance on completion of schema element	Optional. Where artificial water bearing infrastructure has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedArtificialWaterBearingInfrastructure/elementsHighProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	

Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under ElementsHighProbability	Blocker

Groundwater (to be reported if considered relevant at the UOM level)

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedGroundwater/modellingUsed	
Guidance on completion of schema element	Required. Indicate whether a modelling approach has been used to inform the development of the flood hazard and flood risk maps where groundwater flooding presents a risk. • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks	Conditional. Report if 'A13 - Groundwater' selected from enumeration list under Summary1/relevantResources	Blocker

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedGroundwater/ modellingNotUsedDescription	
Guidance on completion of schema element	Conditional. If 'No' is selected from enumeration list to indicate a modelling approach has not been used, provide a description as to what approach has been used.	
Field type	String1000Type	
Properties	minOccurs	0
	maxOccurs	1

Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if modellingUsed is 'No'.	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelected Groundwater/modellingUsedReference
Guidance on completion of schema element	Conditional. If 'Yes' is selected from enumeration list, provide documents or links to relevant documents covering the following areas related to the modelling approach used for groundwater sources of flooding: - 1) the types of models used; - 2) the resolution of the models used; - 3) the key datasets used in the modelling process; As a reminder, If providing documents describe the: - **Subject** (describe in a few words the subject matter of the references provided in relation to 1 to 3 above) - **Document name** (Provide the name of each reference document, the name should identify the document unequivocally) - **Bookmark** (For each document provide the chapters, sections and page ranges where the relevant information can be found) - If the file containing the reference is uploaded to WISE, provide the **file name** of the uploaded document. - If the document has not been uploaded to WISE, provide a **hyperlink** to the relevant background document. (The Member State must guarantee that the hyperlink will remain stable and active for a period of 6 years after reporting). Please note that 1 to 3 above may be covered in a single document in which case please be careful to Bookmark the relevant chapters, sections or page ranges (for example, "1: chapter 4.3, 2: pages 25-30, 3: Chapter 4.5)
Quality checks	Conditional. Report if modellingUsed is 'Yes'. Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedGroundwater/ elementsLowProbability	
Guidance on completion of schema element	Conditional. Where groundwater has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional based on whether 'EP67 – Article 6.7. Applied' has been selected under high or medium (elementsHighprobability or elementsMediumprobability)	Blocker

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedGroundwater/ elementsLowProbabilityOther	
Guidance on completion of schema element	Conditional. If 'Other' selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'Other' selected from enumeration list under elementsLowProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedGroundwater/ elementsMediumProbability	
Guidance on completion of schema element	Required. Where groundwater has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected). Article 6.7 states that Member States may decide, for areas where flooding is from groundwater sources, the preparation of flood hazard maps shall be limited to the low probability or extreme event scenario: • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP67 - Article 6.7 Applied • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability6.7_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedGroundwater/ elementsMediumProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsMediumProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedGroundwater/ elementsHighProbability	
Guidance on completion of schema element	Optional. Where groundwater has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected). Article 6.7 states that Member States may decide, for areas where flooding is from groundwater sources, the preparation of flood hazard maps shall be limited to the low probability or extreme event scenario:: • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP67 - Article 6.7 applied • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability6.7_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedGroundwater/ elementsHighProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under ElementsHighProbability	Blocker

Other Source **(to be reported if considered relevant at the UOM level)**

Please note that this Class is “one to many” meaning that the set of information set out in these schema elements can be reported separately for each “other” source of flooding.

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedOtherSource/ descriptionOfOtherSource	
Guidance on completion of schema element	Conditional. If 'OtherSource' has been selected in element FHRM/ FHRM/Summary1/RelevantSources 'OtherSource' Please provide a description of each source individually under this Schema element. The schemas that follow should be completed (as required) for each source. (The description under Summary1/relevantSourcesOtherDescription will cover all sources in general, this schema element allows the information for each source to be reported separately.)	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'A16 - Other' selected from enumeration list under Summary1/relevantResources	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedOtherSource/modellingUsed	
Guidance on completion of schema element	Required. Indicate whether a modelling approach has been used to inform the development of the flood hazard and flood risk maps where the other source of flooding presents a risk. • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks	Conditional. Report if 'A16 – Other' selected from enumeration list under Summary1/relevantResources	Blocker

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedOtherSource/ modellingNotUsedDescription	
Guidance on completion of schema element	Conditional. If 'No' is selected from enumeration list to indicate a modelling approach has not been used, provide a description as to what approach has been used.	
Field type	String1000Type	
Properties	minOccurs	0
	maxOccurs	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if modellingUsed is 'No'.	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelected OtherSource/modellingUsedReference
Guidance on completion of schema element	Conditional. If 'Yes' is selected from enumeration list, provide documents or links to relevant documents covering the following areas related to the modelling approach used for this other source of flooding: - 1) the types of models used; - 2) the resolution of the models used; - 3) the key datasets used in the modelling process; As a reminder, If providing documents describe the: - **Subject** (describe in a few words the subject matter of the references provided in relation to 1 to 3 above) - **Document name** (Provide the name of each reference document, the name should identify the document unequivocally) - **Bookmark** (For each document provide the chapters, sections and page ranges where the relevant information can be found) - If the file containing the reference is uploaded to WISE, provide the **file name** of the uploaded document. - If the document has not been uploaded to WISE, provide a **hyperlink** to the relevant background document. (The Member State must guarantee that the hyperlink will remain stable and active for a period of 6 years after reporting). Please note that 1 to 3 above may be covered in a single document in which case please be careful to Bookmark the relevant chapters, sections or page ranges (for example, "1: chapter 4.3, 2: pages 25-30, 3: Chapter 4.5)
Quality checks	Conditional. Report if modellingUsed is 'Yes'. Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedOtherSource/ elementsLowProbability	
Guidance on completion of schema element	Optional. OtherSource has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM//Summary1/RelevantSourcesSelectedOtherSource/ elementsLowProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsLowProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedOtherSource/ elementsMediumProbability	
Guidance on completion of schema element	Required. Where OtherSource has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)	
Field type	ElementsProbability_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedOtherSource/ elementsMediumProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under elementsMediumProbability	Blocker

Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedOtherSource/ elementsHighProbability
Guidance on completion of schema element	Optional. Where OtherSource has been selected as a relevant source of flooding indicate the different elements included in the hazard maps (one or more options can be selected): • EP1 - Flooding Extent • EP2 - Water depth/level • EP3 - Water flow/velocity • EP4 - Other (e.g. conveyance routes)

Field type	ElementsProbability_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

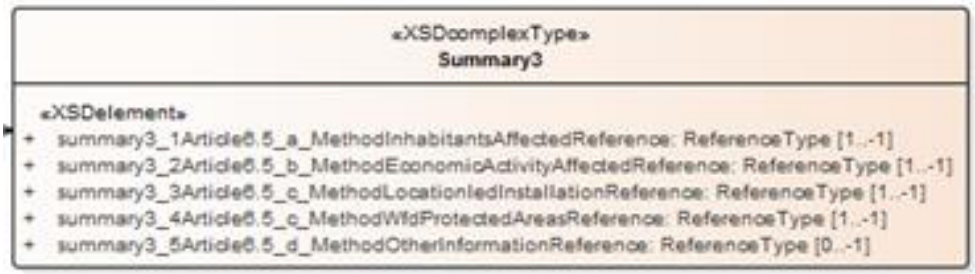
Class Schema element	FHRM FHRM/Summary1/RelevantSourcesSelectedOtherSource/ elementsHighProbabilityOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'EP4 - Other' selected from enumeration list under ElementsHighProbability	Blocker

5.3.4 FHRM/Summary3

The information required to be reported covered in these schema elements is at the Unit of Management UOM level.

[Please note that for the first cycle of reporting a ‘Summary2’ was included which covered the provision of information relating to Articles 6.6 and 6.7 relating to reporting of the low probability scenario for coastal areas (where an adequate level of protection is in place) and groundwater flooding. This information is still reported for the second cycle but has been subsumed into other classes and schema elements.]

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Class Schema element	FHRM FHRM/Summary3/summary3_1Article6.5_a_MethodInhabitantsAffected Reference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to methods (including criteria) used to determine for each flood scenario the indicative number of inhabitants affected (art 6.5.a).	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary3/summary3_2Article6.5_b_MethodEconomicActivityAffected Reference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to methods (including criteria) used to determine for each flood scenario the type of economic activity affected (art 6.5.b).	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary3/summary3_3Article6.5_c_MethodLocationIEDInstallation Reference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to methods (including criteria) used to determine for each flood scenario the location of the IED installation (art 6.5.c).	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/Summary3/summary3_4Article6.5_c_MethodWFDProtectedAreas Reference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to methods (including criteria) used to determine for each flood scenario the potential adverse consequences on WFD Protected Areas (art 6.5.c).	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

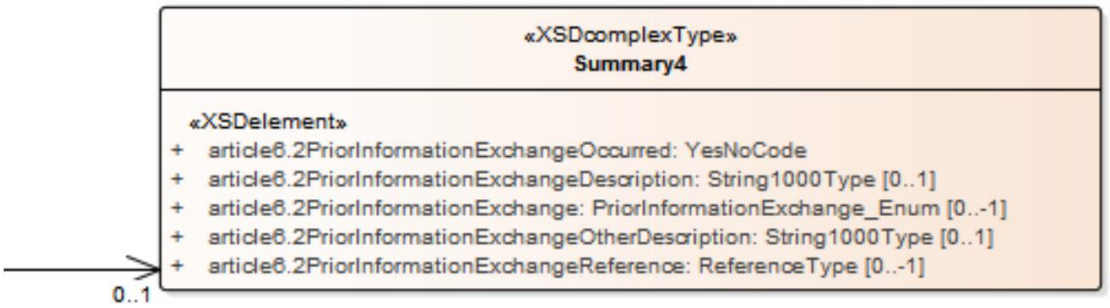
Class Schema element	FHRM FHRM/Summary3/summary3_5Article6.5_d_MethodOtherInformationReference	
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to methods (including criteria) used to determine for each flood scenario the type of other information considered relevant by Member States (art 6.5.d).	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

5.3.5 FHRM/Summary4

The information required to be reported covered in these schema elements is at the unit of managementUOM level.

Article 6.2 requires that the preparation of flood hazard maps and flood risk maps for areas identified under Article 5 (APSFRs) which are shared with other Member States (MS) shall be subject to prior exchange of information between the MS concerned.

The schema elements in this section cover the following parts of the UML diagram. The Summary4 Class is conditional (has a cardinality of '0..1') because the information only needs to be reported if the UOM is international.



Class Schema element	FHRM FHRM/Summary4/article6.2PriorInformationExchangeOccurred	
Guidance on completion of schema element	Required. For International UOMs/RBDs state whether prior exchange of information has taken place in the preparation of flood hazard/flood risk maps for APSFRs which are shared with other MS or non-MS. • Yes • No	
Field type	YesNoCode	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/Summary4/article6.2PriorInformationExchangeDescription	
Guidance on completion of schema element	Conditional. If 'No' is selected in article6.2PriorInformationExchangeOccurred, provide an explanation as to why no such exchange has occurred.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional. Report if article6.2PriorInformationExchangeOccurred is 'No'.	Blocker

Class Schema element	FHRM FHRM//Summary4/article6.2PriorInformationExchange	
Guidance on completion of schema element	Conditional. Where Article6.2PriorInformationExchangeOccured is "Yes", indicate the mechanism of prior information exchange (one or more options can be selected): • PIE_1 - International River Commission • PIE_2 - Bilateral border water commissions • PIE_3 - International coordination and working groups • PIE_4 - Bilateral coordination and working groups • PIE_5 - Regulations in place to enable exchange of information at international level • PIE_6 - Use of pre-existing structures to ensure bilateral coordination (in place before FD implementation) • PIE_7 - Informal arrangements (groups discussions and exchange of information) • PIE_8 - Joint declaration with a neighbouring country (including non-EU MS) on cooperation on joint action • PIE_9 - Other	
Field type	PriorInformationExchange_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Report if article6.2PriorInformationExchangeOccurred is 'Yes'.	Blocker

Class Schema element	FHRM FHRM/Summary4/Article6.2PriorInformationExchangeOtherDescription	
Guidance on completion of schema element	Conditional. If 'Other' is selected in article6.2PriorInformationExchange, provide an explanation	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional. Report if 'PIE_9 - Other' selected from enumeration list under Article6.2PriorInformationExchange	Blocker

Class Schema element	FHRM FHRM/Summary4/Article6.2PriorInformationExchangeReference	
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to evidence that the coordination mechanisms are in place for prior information exchange.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

5.3.6 FHRM/Summary5

The information required to be reported covered in this schema element is at the Unit of Management level.

Class Schema element	FHRM FHRM/Summary/Summary5/summary5MapExplanationReference
Guidance on completion of schema element	Required. Provide document(s) or link(s) to information that gives an explanation (to be made available to the public through WISE) on how to understand the flood maps in terms of contents, scale, purpose/use, accuracy, legends, date of publication, responsible authorities and links to further information.
Field type	ReferenceType

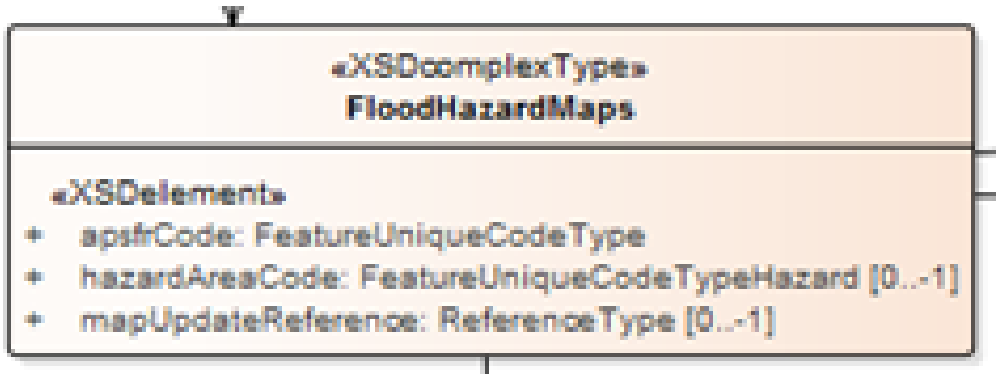
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

5.3.7 FHRM/FloodHazardMaps

The information requested from this section onwards is specific to the flood hazard maps (i.e. no longer at the summary level) and therefore needs to be provided for each map that is produced.

Article 6.1 states that Member States shall, at the level of the river basin district (RBD), or unit of management (UOM) prepare flood hazard maps and flood risk maps, at the most appropriate scale, for the APSFRs identified. If threre have been any changes in the APSFR codes (one of the elements within the Class FloodHazardMaps) you can use the APSFR tracking schema (see section 4.4.3) to report these. [Please note that where changes have occurred between reporting of PFRAs, APSFRs and FHRMs during the reporting cycle, as these are reported sequentially, it is possible that some inconsistencies may arise between the spatial data reported under the PFRA).

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Class Schema element	FHRM FHRM/FloodHazardMaps/apsfrCode
Guidance on completion of schema element	Required. The Unique EU code for the area of potential significant flood risk. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total.
Field type	FeatureUniqueCodeType
Properties	minOccurs: 1

	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

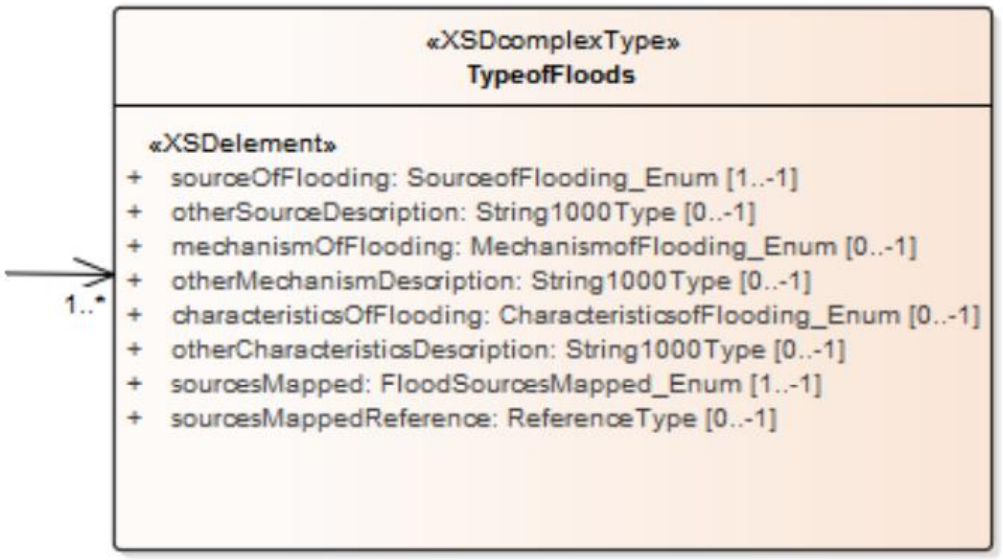
Class Schema element	FHRM FHRM/FloodHazardMaps/hazardAreaCode	
Guidance on completion of schema element	Optional. This element relates back to the Hazard Area elements reported under the APSFR schemas. Unique EU code for the hazard area (or areas if more than one Hazard Area) linked to an APSFR. For each related Hazard Area, add the two-letter ISO Country code to the Member State unique id to the APSFR Hazard area code - up to 150 characters in total	
Field type	FeatureUniqueCodeType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Facets	minLength	10
	maxLength	150
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps/mapUpdateReference	
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to information that give an update on any changes to the maps or to the process used to develop the maps since the last reporting cycle. This element is focused on updates or changes to the maps or approaches specifically.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

5.3.8FHRM/FloodHazardMaps/TypeofFloods

Information is required at the APSFR level on the sources of flooding mapped. As with the first cycle of reporting, the reporting of mechanisms and characteristics is optional.

The schema elements in this section cover the following parts of the UML diagram. Note that the '*' for the cardinality of this Class means that the type of floods can be reported for multiple scenarios for example including situations where different numbers of inhabitants are affected by different types of floods.



Class Schema element	FHRM FHRM/FloodHazardMaps/TypeofFloods/sourceOfFlooding
Guidance on completion of schema element	Required. Define relevant source of flooding that has been addressed in the FHRMs. Indicate source of floods from enumeration list, one or more options can be selected: • A11 - Fluvial: Flooding of land by waters originating from part of a natural drainage system, including natural or modified drainage channels. This source could include flooding from rivers, streams, drainage channels, mountain torrents and ephemeral watercourses, lakes and floods arising from snow melt. • A12 - Pluvial: Flooding of land directly from rainfall water falling on, or flowing over, the land. This source could include urban storm water, rural overland flow or excess water, or overland floods arising from snowmelt. • A13 - Groundwater: Flooding of land by waters from underground rising to above

	the land surface. This source could include rising groundwater and underground flow from elevated surface waters. • A14 - Sea Water: Flooding of land by water from the sea, estuaries or coastal lakes. This source could include flooding from the sea (e.g., extreme tidal level and / or storm surges) or arising from wave action or coastal tsunamis. • A15 - Artificial Water-Bearing Infrastructure: Flooding of land by water arising from artificial, water-bearing infrastructure or failure of such infrastructure. This source could include flooding arising from sewerage systems (including storm water, combined and foul sewers), water supply and wastewater treatment systems, artificial navigation canals and impoundments (e.g., dams and reservoirs). • A16 - Other: Flooding of land by water due to other sources, can include other tsunamis. • A17 - No data available on the source of flooding.
Field type	SourceofFlooding_Enum
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	A17 cannot be selected

Class Schema element	FHRM FHRM/FloodHazardMaps/TypeofFloods/otherSourceDescription	
Guidance on completion of schema element	Conditional. Provide a description if type is set to 'Other' (A16) under Source in the enumeration list	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional. Report if 'A16 - Other' selected from enumeration list under sourceofFlooding	Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps/TypeofFloods/mechanismOfFlooding
Guidance on completion of schema	Optional. Indicate the mechanism of flooding that has been included in the FHRMs from the enumeration list. One or more options can be selected:

element	• A21 - Natural Exceedance: Flooding of land by waters exceeding the capacity of their carrying channel or the level of adjacent lands. • A22 - Defence Exceedance: Flooding of land due to floodwaters overtopping flood defences. • A23 - Defence or Infrastructural Failure: Flooding of land due to the failure of natural or artificial defences or infrastructure. This mechanism of flooding could include the breaching or collapse of a flood defence or retention structure, or the failure in operation of pumping equipment or gates. • A24 - Blockage / Restriction: Flooding of land due to a natural or artificial blockage or restriction of a conveyance channel or system. This mechanism of flooding could include the blockage of sewerage systems or due to restrictive channel structures such as bridges or culverts or arising from ice jams or landslides. • A25 - Other: Flooding of land by water due to other mechanisms, for instance wind setup floods. • A26 - No data available on the mechanism of flooding	
Field type	MechanismofFlooding_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps/TypeofFloods/OtherMechanismDescription	
Guidance on completion of schema element	Conditional. Provide a description if type is set to 'Other' (A25) under Mechanism in the enumeration list	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional. Report if 'A25 - Other' selected from enumeration list under mechanismofFlooding	Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps/TypeofFloods/characteristicsOfFlooding	
Guidance on completion of	Optional. Define relevant characteristics of flooding included in the FHRMs. One or more options can be selected.	

schema element	• A31 - Flash Flood: A flood that rises and falls quite rapidly with little or no advance warning, usually the result of intense rainfall over a relatively small area. • A32 - Snow Melt Flood: Flooding due to rapid snow melt, possibly in combination with rainfall or blockage due to ice jams. • A33 - Other rapid onset: A flood which develops quickly, other than a flash flood. • A34 - Medium onset flood: An onset of flooding that occurs at a slower rate than a flash flood. • A35 - Slow onset flood: A flood which takes a longer time to develop. • A36 - Debris Flow: A flood conveying a high degree of debris. • A37 - High Velocity Flow: A flood where the floodwaters are flowing at a high velocity. • A38 - Deep Flood: A flood where the floodwaters are of significant depth. • A39 - Other characteristics, or no special characteristics. • A40 - No data available on the characteristics of flooding.	
Field type	CharacteristicsofFlooding_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps/TypeofFloods/ otherCharacteristicsDescription	
Guidance on completion of schema element	Conditional. Provide a description if type is set to 'Other' (A39) under Characteristics in the enumeration list	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Facets	minLength	1
	maxLength	1000
Quality checks	Conditional. Report if 'A39 - Other' selected from enumeration list under characteristicsofFlooding	Blocker

The maps should clearly illustrate what sources are flooding are being presented at the APSFR level. Maps may be for a single source (e.g. fluvial flooding) or show combined sources that have been produced by overlapping the maps from single sources. The maps may also show the extent of flooding as a result of modelling the combined effects of several flood sources.

Class Schema element	FHRM FHRM/FloodHazardMaps/TypeofFloods/sourcesMapped	
Guidance on completion of schema element	Required. Provide clarification of the sources presented on the map at the APSFR level. The flood sources which are included in the map should be clearly indicated on the map. • FSM_1 - Map shows flood extents for a single source • FSM_2 - Map shows flood extent for multiple (i.e. combined) sources by overlapping individual flood sources • FSM_3 - Map shows flood extent for multiple sources resulting from combined modelling of flood sources (e.g. that occurred concurrently)	
Field type	FloodSourcesMapped_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/TypeofFloods/sourcesMappedReference	
Guidance on completion of schema element	Conditional. Where multiple approaches have been selected in sourcesMapped explain which sources have been combined in the maps and how these sources were modelled i.e. modelling individually and overlain or modelled in combination.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. If more than one option is selected for SourcesMapped then, this element must be reported.	Blocker

5.3.9 FHRM/FloodHazardMaps/MediumProbability

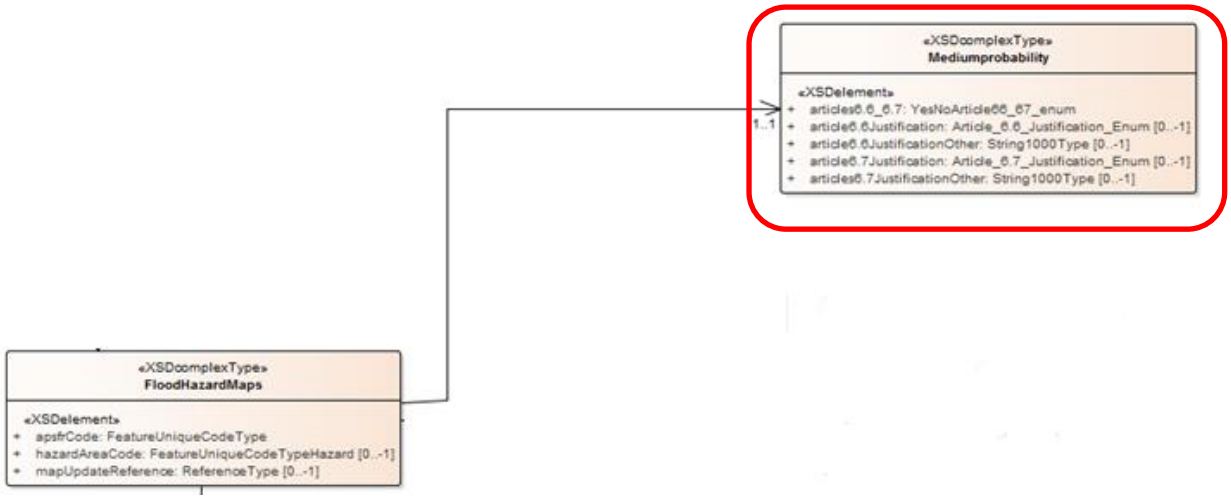
Only the medium probability scenario information is required to be reported for the Flood Hazard Maps, unless Article 6.6 and/or 6.7 have been applied, in which case only the low probability (i.e. extreme event) is required to be reported. Reporting of high probability information also remains optional for the second cycle.

These schema elements cover the requirement of Articles 6.6 and 6.7 and the justification provided by Member States for using these articles. As a reminder:

- Article 6.6 – Member States may decide that, for coastal areas where an adequate level of protection is in place, the preparation of flood hazard maps shall be limited to the floods with a low probability or extreme event scenarios

- Article 6.7 – Member States may decide that, for areas where flooding is from groundwater sources, the preparation of flood hazard maps shall be limited to the floods with a low probability or extreme event scenarios

The schema elements in this section cover the following parts of the UML diagram (FloodHazardMaps has been included to show the link with the class Mediumprobability). This information is required to be reported once for each Flood Hazard map (hence has a cardinality of 1..1).



Class Schema element	FHRM FHRM/FloodHazardMaps/MediumProbability/articles6.6_6.7	
Guidance on completion of schema element	Required. Have Article 6(6) and/or Article 6(7) have been applied. • Yes, 6.6 • Yes, 6.7 • Yes, both 6.6 and 6.7 • No	
Field type	YesNoArticle66_67_enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/MediumProbability/ article6.6Justification	
Guidance on completion of schema element	Conditional. For medium probability floods indicate the justification for applying Article 6.6 from the enumeration list (one or more options can be selected): • A66J_1 - Risk of failure of existing defences assessed • A66J_2 - Risk of overtopping of existing flood defences assessed • A66J_3 - Prevention of damage and damage potential through legal regulations for use (e.g. for the embankment foreland) • A66J_4 - Other justification	
Field type	Article_6.6_Justification_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Report if 'Yes, 6.6' and/or 'Yes, both 6.6 and 6.7'	Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps/MediumProbability/ article6.6JustificationOther	
Guidance on completion of schema element	Conditional. If Other justification is selected in Article6.6Justification, provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	unbounded
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'A66J_4 - Other justification' selected from enumeration list under article6.6Justification	Blocker

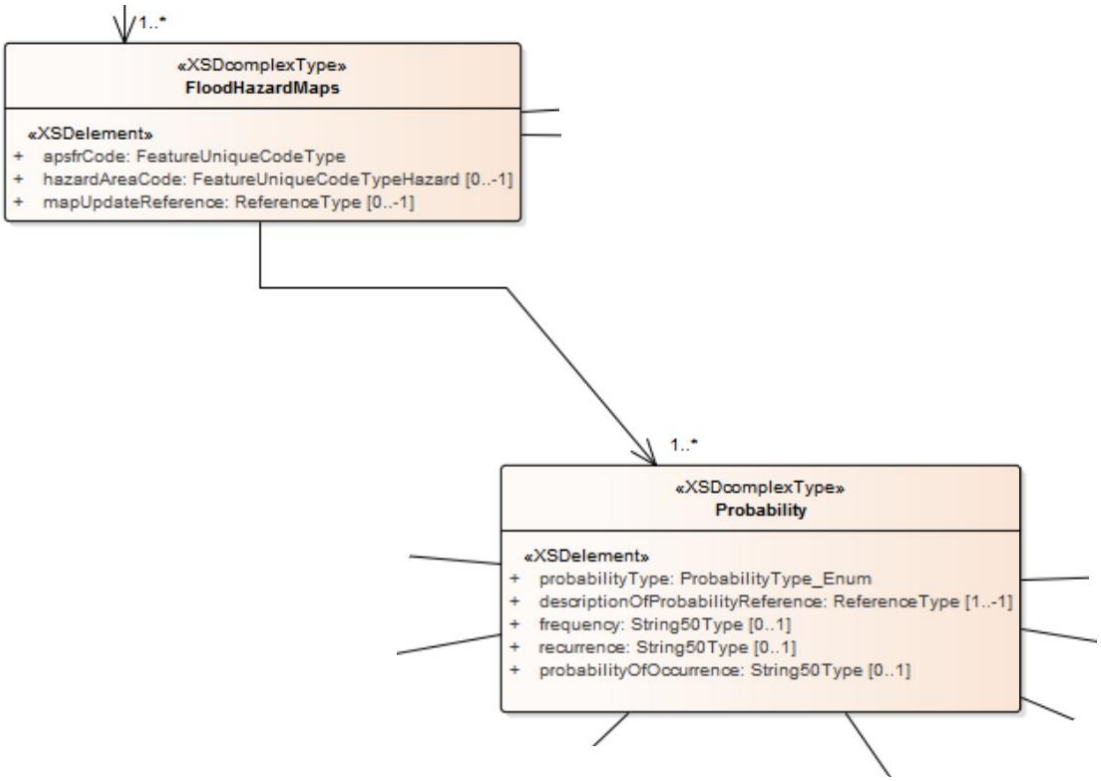
Class Schema element	FHRM FHRM/FloodHazardMaps/MediumProbability/ article6.7Justification
Guidance on completion of schema	Conditional. For medium probability floods indicate the justification for applying Article 6.7 from the enumeration list (one or more options can be selected):

element	• A67J_1 - Groundwater is considered as a contributing source rather than a main source of flooding • A67J_2 - It is difficult to distinguish the impact of groundwater flooding from other sources of flooding • A67J_3 - Only low probability groundwater flooding is assessed to be a hazardous risk • A67J_4 - There is limited information or historical records on groundwater flooding • A67J_5 - Other justification
Field type	Article_6.7_Justification_Enum
Properties	minOccurs: 0
	maxOccurs: Unbounded
Quality checks	Conditional. Report if 'Yes, 6.7' and/or 'Yes, both 6.6 and 6.7' Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps/MediumProbability/ article6.7JustificationOther	
Guidance on completion of schema element	Conditional. If 'Other justification' is selected. Provide in Article6.7Justification, provide a description	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	unbounded
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'A67J_5 - Other justification' selected from enumeration list under article6.7Justification	Blocker

5.3.10 FHRM/FloodHazardMaps/Probability

The schema elements in this section cover the following parts of the UML diagram (FloodHazardMaps has been included to show the link with the class Probability).



The class Probabilty is one-to-many (1..*) as up to three probability scenarios can be reported.

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/probabilityType	
Guidance on completion of schema element	Required. Select the probability type from the enumeration list below. • PT_1 - floods with low probability, or extreme event scenarios • PT_2 - floods with a medium probability (likely return period ≥ 100 years); • PT_3 - floods with a high probability, where appropriate	
Field type	ProbabilityType_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/ descriptionofProbabilityReference	
Guidance on completion of schema element	Required. Provide a reference describing the probability type and how it is derived (for example what level of probability is considered to be medium, for example ≥ 100 year return period and why)	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

At least one of the three elements below (frequency, recurrence, probability of occurrence) should be reported.

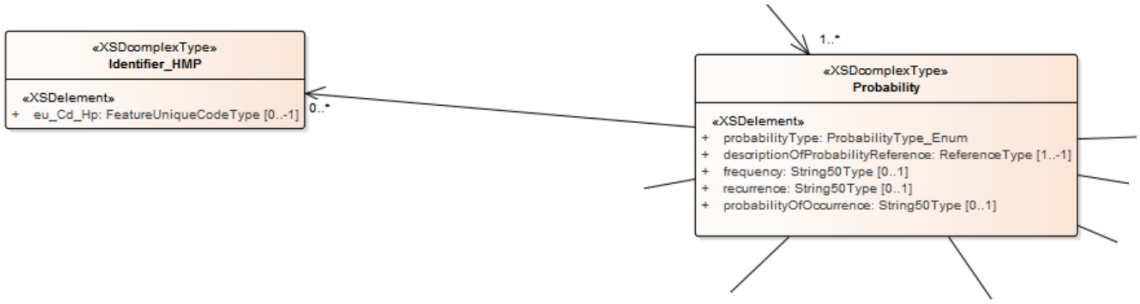
Class Schema element	FHRM FHRM/FloodHazardMaps /Probability/frequency	
Guidance on completion of schema element	Conditional. The statistical prediction of years between certain flood magnitude events. Can also be reported as a range. The exception types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks	Conditional. Element must be reported if recurrence and probabilityofOccurence are not reported.	Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps / Probability/recurrence	
Guidance on completion of schema element	Conditional. The average number of years between floods of a certain size. Can also be reported as a range. The exception types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks	Conditional. Element must be reported if frequency and probabilityofOccurence are not reported.	Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps/ Probability/probabilityofOccurence	
Guidance on completion of schema element	Conditional. ProbabilityofExceedance or ProbabilityofOccurence expressed as a percentage, of a flood event of a given magnitude occurring or being exceeded during any given year. The exception types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	String50Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	50
Quality checks	Conditional. Element must be reported if recurrence and frequency are not reported.	Blocker

5.3.11 FHRM/FloodHazardMaps/Probability/Identifier_HMP

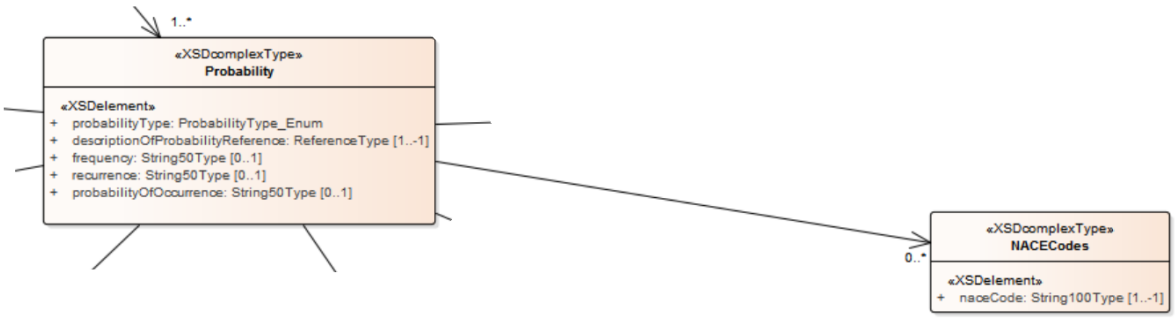
The schema element in this section covers the following parts of the UML diagram (Probability has been included to show the link with the class Identifier_HMP).



Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/Identifier_HMP/EU_CD_HMP	
Guidance on completion of schema element	Optional. If the medium probability hazard area exists of more than one feature (area) - a Unique EU code of all the features within the high/medium/low probability hazard area must be provided. Multipolygons can be reported.	
Field type	FeatureUniqueCodeType	
Properties	minOccurs:	0
	maxOccurs:	unbounded
Facets	minLength	1
	maxLength	40
Quality checks		

5.3.12 FHRM/FloodHazardMaps/Probability/NACECodes

The schema element in this section covers the following parts of the UML diagram (Probability has been included to show the link with the class NACECodes).



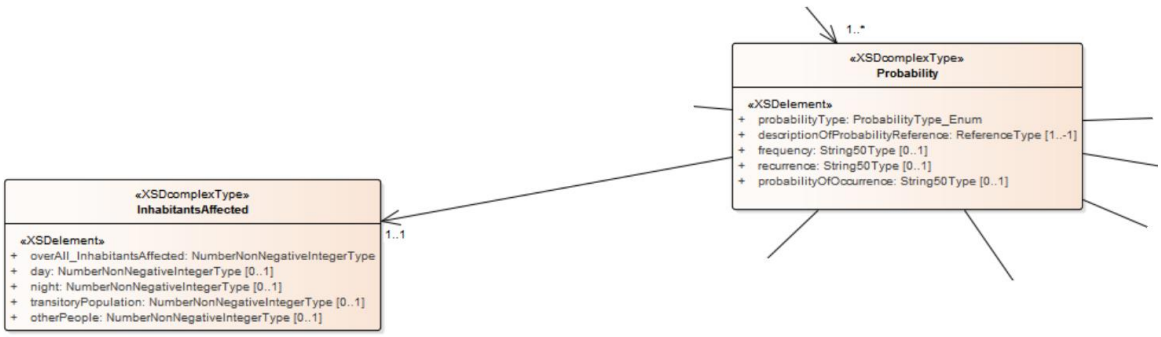
Class Schema	FHRM FHRM/FloodHazardMaps/Probability/ NACECodes/

element	naceCode	
Guidance on completion of schema element	Optional. Provice NACE code. NACE (Nomenclature of Economic Activities) is the European statistical classification of economic activities. NACE groups organizations according to their business activities. Statistics produced on the basis of NACE are comparable at European level and, in general, at world level in line with the United Nations' International Standard Industrial Classification (ISIC).	
Field type	String100Type	
Properties	minOccurs:	0
	maxOccurs:	unbounded
Facets	minLength	1
	maxLength	100
Quality checks		

5.3.13 FHRM/FloodHazardMaps/ /InhabitantsAffected

Article 6.5(a) states that flood risk maps should show the potential adverse consequences associated with the flood scenarios (low, medium and where appropriate, high) expressed in terms of the indicative number of inhabitants potentially affected.

The schema elements in this section cover the following parts of the UML diagram (Probability has been included to show the link with the class Inhabitants affected).



Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/InhabitantsAffected/overall_InhabitantsAffected
Guidance on completion of schema element	Required. The overall indicative number of people in the area potentially affected. The exception types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.
Field type	NumberNonNegativeIntegerType
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/InhabitantsAffected/day
Guidance on completion of schema element	Optional. Indicative number of people potentially affected during daytime
Field type	NumberNonNegativeIntegerType
Properties	minOccurs: 0
	maxOccurs: 1
Quality checks	

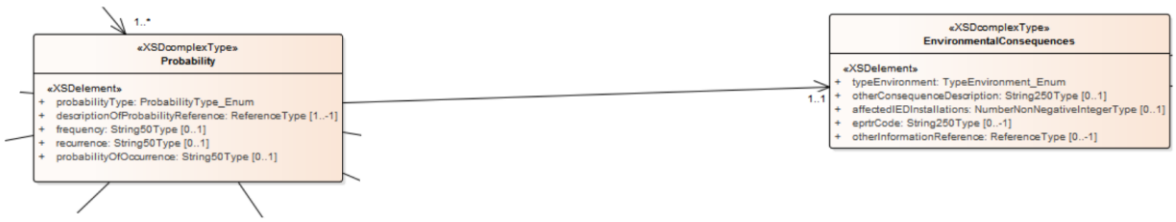
Class Schema element	FHRM FHRM/FloodHazardMaps/Probability /InhabitantsAffected/night
Guidance on completion of schema element	Optional. Indicative number of people potentially affected during night time
Field type	NumberNonNegativeIntegerType
Properties	minOccurs: 0
	maxOccurs: 1
Quality checks	

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/InhabitantsAffected/transitoryPopulation	
Guidance on completion of schema element	Optional. Indicative number of transitory people potentially affected. E.g. tourists likely to be in the location, visitors at camping sites, etc.	
Field type	NumberNonNegativeIntegerType	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/InhabitantsAffected/otherPeople	
Guidance on completion of schema element	Optional. Indicative number of other people potentially affected. This may be other individuals who are indirectly affected such as business owners or investors or people connected with inhabitants and/or the transient population in some way.	
Field type	NumberNonNegativeIntegerType	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

5.3.14 FHRM/FloodHazardMaps/Probability/ EnvironmentalConsequences

The schema elements in this section cover the following parts of the UML diagram (Probability has been included to show the link with the class EnvironmentalConsequences).



Article 6.5(c) states that flood risk maps should show the potential adverse consequences associated with the flood scenarios (low, medium and where appropriate, high) expressed in terms installations as referred to in Annex I to Council Directive 96/61/EC concerning

integrated pollution prevention and control which might cause accidental pollution in the case of flooding.

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/EnvironmentalConsequences/ /typeEnvironment	
Guidance on completion of schema element	Required. Indicate consequence from enumeration list • B21 - Waterbody Status: Adverse consequences ecological or chemical status of surface water bodies or chemical status of ground water bodies affected, as of concern under the WFD. Such consequences may arise from pollution from various sources (point and diffuse) or due to hydromorphological impacts of flooding. • B22 - Protected Areas: Adverse consequences to protected areas or waterbodies such as those designated under the Birds and Habitats Directives, bathing waters or drinking water abstraction points. • B23 - Pollution Sources: Sources of potential pollution in the event of a flood, such as IPPC and Seveso installations, or point or diffuse sources. • B24 - Other potential adverse environmental impacts, such as those on soil, biodiversity, flora and fauna, etc. • B25 - Not applicable • B26 - Unknown	
Field type	TypeEnvironment_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/EnvironmentalConsequences/ otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B24 - Other' selected from enumeration list under typeEnvironment	Blocker

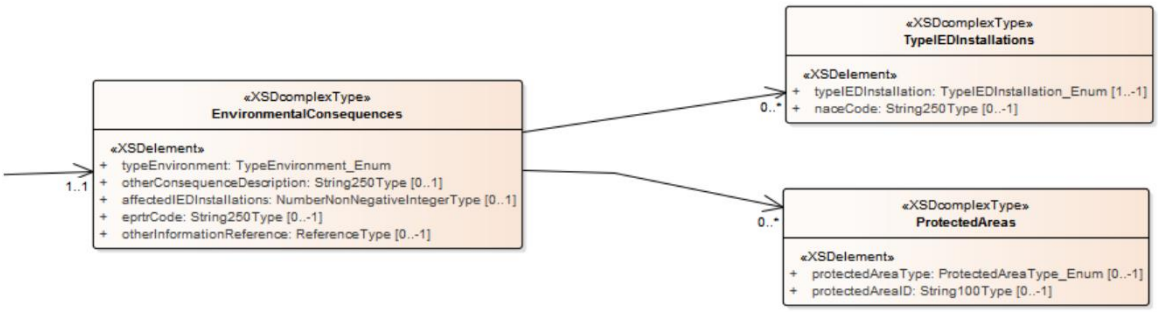
Class Schema element	FHRM FHRM/FloodHazardMaps/Probability EnvironmentalConsequences/affectedIEDInstallations	
Guidance on completion of schema element	Required. Number of IED installations potentially affected. The exception types -9999=Unknown, -8888=Yet to be measured, -7777=Not Applicable can be used.	
Field type	NumberNonNegativeIntegerType	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/EnvironmentalConsequences/ eprtrCode	
Guidance on completion of schema element	Optional. National ID number of the Facility as reported in EPRTR (FacilityID).	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Facets	minLength	1
	maxLength	250
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/EnvironmentalConsequences/otherInformationReferenc	
Guidance on completion of schema element	Optional. Reference(s) to information relevant for the reported information on IED installations and/or protected areas	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

5.3.15 Type of IED installations and protected areas

The schema elements in this section cover the following parts of the UML diagram which are linked to the EnvironmentalConsequences Class.



Article 6.5(c) states that flood risk maps should show the potential adverse consequences associated with the flood scenarios (low, medium and where appropriate, high) expressed in terms potentially affected protected areas identified according to the Water Framework Directive (2000/60/EC).

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/EnvironmentalConsequences/ProtectedAreas/ protectedAreaType
Guidance on completion of schema element	Optional. Potentially affected protected areas identified in Annex IV(1)(i), (iii) and (v) to Directive 2000/60/EC. Choose from the enumeration list: • PAT_1 – Bathing Water Directive 2006/7/EC • PAT_2 – Birds Directive 2009/147/EC • PAT_3 – Habitats Directive 92/43/EEC • PAT_4 – Nitrates Directive Report (91/676/EEC) • PAT_5 – UWWT - Urban Waste Water Treatment Directive 91/271/EEC • PAT_6 - Article 7 Abstraction for drinking water - Water Framework Directive 2000/60/EC - Register of Protected Areas article 7 abstraction for drinking water • PAT_7 - WFD_WaterBodies - Water Framework Directive 2000/60/EC - waterbodies • PAT_8 – European Other legislation • PAT_9 – National legislation • PAT_10 – Local legislation

Field type	ProtectedAreaType_Enum	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/EnvironmentalConsequences/ProtectedAreas/ protectedAreaID	
Guidance on completion of schema element	Optional. The ProtectedAreaID (uniqueID) as this has been reported under relevant directives	
Field type	String100Type	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Facets	minLength	1
	maxLength	100
Quality checks	Optional. Report if ProtectedAreaType exist.	Blocker

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/EnvironmentalConsequences/TypeIEDInstallations/typeIEDInstallation
Guidance on completion of schema element	Optional. Identify type (more than one can be selected) List of activities from Annex I, DIRECTIVE 2010/75/EC of 24 November 2010 (Date of publishing: 17.12.2010): • 1 - Energy industries • 1.1 - Combustion of fuels in installations with a total rated thermal input of 50 MW or more • 1.2 - Refining of mineral oil and gas • 1.3 - Production of coke • 1.4.a - Gasification or liquefaction of coal • 1.4.b - Gasification or liquefaction of other fuels in installations with a total rated thermal input of 20 MW or more • 2 - Production and processing of metals • 2.1 - Metal ore (including sulphide ore) roasting or sintering • 2.2 - Production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2,5 tonnes per hour

	• 2.3.a - Processing of ferrous metals: operation of hot-rolling mills with a capacity exceeding 20 tonnes of crude steel per hour • 2.3.b - Processing of ferrous metals: operation of smitheries with hammers the energy of which exceeds 50 kilojoule per hammer, where the calorific power used exceeds 20 MW • 2.3.c - Processing of ferrous metals application of protective fused metal coats with an input exceeding 2 tonnes of crude steel per hour • 2.4 - Operation of ferrous metal foundries with a production capacity exceeding 20 tonnes per day • 2.5.a - Processing of non-ferrous metals: production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes • 2.5.b - Processing of non-ferrous metals: melting, including the alloyage, of non-ferrous metals, including recovered products and operation of non- ferrous metal foundries, with a melting capacity exceeding 4 tonnes per day for lead and cadmium or 20 tonnes per day for all other metals • 2.6 - Surface treatment of metals or plastic materials using an electrolytic or chemical process where the volume of the treatment vats exceeds 30 m^3 • 3 - Mineral industry • 3.1.a - Production of cement clinker in rotary kilns with a production capacity exceeding 500 tonnes per day or in other kilns with a production capacity exceeding 50 tonnes per day • 3.1.b - Production of lime in kilns with a production capacity exceeding 50 tonnes per day • 3.1.c - Production of magnesium oxide in kilns with a production capacity exceeding 50 tonnes per day • 3.2 - Production of asbestos or the manufacture of asbestos-based products • 3.3 - Manufacture of glass including glass fibre with a melting capacity exceeding 20 tonnes per day • 3.4 - Melting mineral substances including the production of mineral fibres with a melting capacity exceeding 20 tonnes per day • 3.5 - Manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain with a production capacity exceeding 75 tonnes per day and/or with a kiln capacity exceeding 4 m^3 and with a setting density per kiln exceeding 300 kg/m^3 • 4 - Chemical industry For the purpose of this section, production within the meaning of the categories of activities contained in this section means the production on an industrial scale by chemical or biological processing of substances or groups of substances listed in points 4.1 to 4.6 • Production of organic chemicals, such as: • 4.1.a - simple hydrocarbons (linear or cyclic, saturated or unsaturated, aliphatic or aromatic) • 4.1.b - oxygen-containing hydrocarbons such as alcohols, aldehydes, ketones, carboxylic acids, esters and mixtures of esters, acetates, ethers, peroxides and epoxy resins • 4.1.c - sulphurous hydrocarbons • 4.1.d - nitrogenous hydrocarbons such as amines, amides, nitrous compounds,

	nitro compounds or nitrate compounds, nitriles, cyanates, isocyanates • 4.1.e - phosphorus-containing hydrocarbons • 4.1.f - halogenic hydrocarbons • 4.1.g - organometallic compounds • 4.1.h - plastic materials (polymers, synthetic fibres and cellulose-based fibres) • 4.1.i - synthetic rubbers • 4.1.j - dyes and pigments • 4.1.k - surface-active agents and surfactants • 4.2 Production of inorganic chemicals, such as: • 4.2.a - gases, such as ammonia, chlorine or hydrogen chloride, fluorine or hydrogen fluoride, carbon oxides, sulphur compounds, nitrogen oxides, hydrogen, sulphur dioxide, carbonyl chloride • 4.2.b - acids, such as chromic acid, hydrofluoric acid, phosphoric acid, nitric acid, hydrochloric acid, sulphuric acid, oleum, sulphurous acids • 4.2.c - bases, such as ammonium hydroxide, potassium hydroxide, sodium hydroxide • 4.2.d - salts, such as ammonium chloride, potassium chlorate, potassium carbonate, sodium carbonate, perborate, silver nitrate • 4.2.e - non-metals, metal oxides or other inorganic compounds such as calcium carbide, silicon, silicon carbide • 4.3 - Production of phosphorous-, nitrogen- or potassium-based fertilisers (simple or compound fertilisers) • 4.4 - Production of plant protection products or of biocides • 4.5 - Production of pharmaceutical products including intermediates • 4.6 - Production of explosives • 5 - Waste management • 5.1 Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities: • 5.1.a - biological treatment • 5.1.b - physico-chemical treatment • 5.1.c - blending or mixing prior to submission to any of the other activities listed in points 5.1 and 5.2 • 5.1.d - repackaging prior to submission to any of the other activities listed in points 5.1 and 5.2 • 5.1.e - solvent reclamation/regeneration • 5.1.f - recycling/reclamation of inorganic materials other than metals or metal compounds • 5.1.g - regeneration of acids or bases • 5.1.h - recovery of components used for pollution abatement • 5.1.i - recovery of components from catalysts • 5.1.j - oil re-refining or other reuses of oil • 5.1.k - surface impoundment • 5.2.a - Disposal or recovery of waste in waste incineration plants or in waste co-incineration plants for non-hazardous waste with a capacity exceeding 3 tonnes per hour; • 5.2.b - Disposal or recovery of waste in waste incineration plants or in waste co-incineration plants for hazardous waste with a capacity exceeding 10 tonnes per day • 5.3.a - Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per

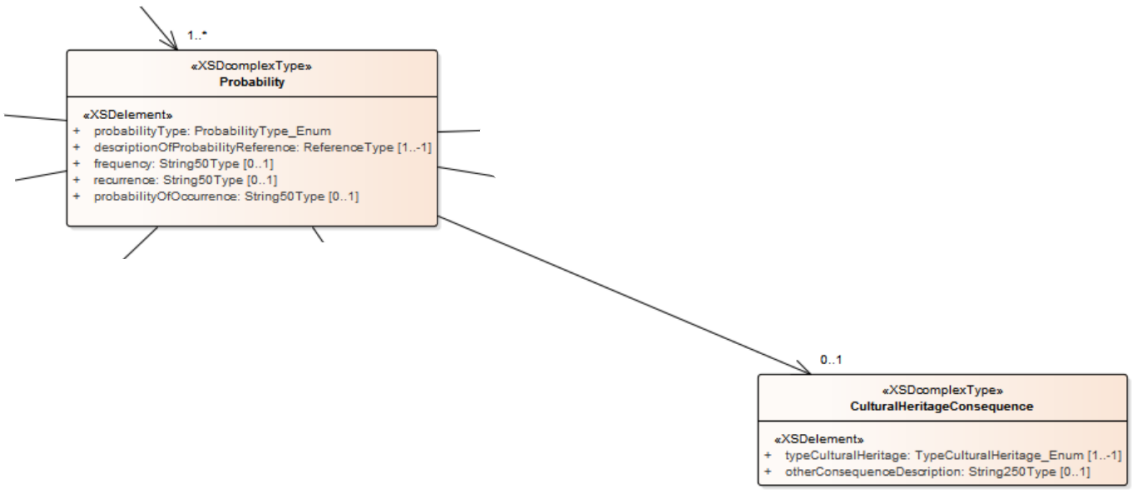
	day involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment (OJ L 135, 30.5.1991, p. 40.): • 5.3.a.i - biological treatment • 5.3.a.ii - physico-chemical treatment • 5.3.a.iii - pre-treatment of waste for incineration or co-incineration • 5.3.a.iv - treatment of slags and ashes • 5.3.a.v - treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components • 5.3.b - Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, and excluding activities covered by Directive 91/271/EEC: • 5.3.b.i - biological treatment • 5.3.b.ii - pre-treatment of waste for incineration or co-incineration • 5.3.b.iii - treatment of slags and ashes • 5.3.b.iv - treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components. When the only waste treatment activity carried out is anaerobic digestion, the capacity threshold for this activity shall be 100 tonnes per day. • 5.4 - Landfills, as defined in Article 2(g) of Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1.), receiving more than 10 tonnes of waste per day or with a total capacity exceeding 25 000 tonnes, excluding landfills of inert waste • 5.5 - Temporary storage of hazardous waste not covered under point 5.4 pending any of the activities listed in points 5.1, 5.2, 5.4 and 5.6 with a total capacity exceeding 50 tonnes, excluding temporary storage, pending collection, on the site where the waste is generated • 5.6 - Underground storage of hazardous waste with a total capacity exceeding 50 tonnes • 6 - Other activities • 6.1 - Production in industrial installations of • 6.1.a - pulp from timber or other fibrous materials • 6.1.b - paper or card board with a production capacity exceeding 20 tonnes per day • 6.1.c - one or more of the following wood-based panels: oriented strand board, particleboard or fibreboard with a production capacity exceeding 600 m^3 per day • 6.2 - Pre-treatment (operations such as washing, bleaching, mercerisation) or dyeing of textile fibres or textiles where the treatment capacity exceeds 10 tonnes per day • 6.3 - Tanning of hides and skins where the treatment capacity exceeds 12 tonnes of finished products per day • 6.4.a - Operating slaughterhouses with a carcass production capacity greater than 50 tonnes per day • 6.4b - Treatment and processing, other than exclusively packaging, of the following raw materials, whether previously processed or unprocessed, intended for the production of food or feed from: • 6.4.b.i - only animal raw materials (other than exclusively milk) with a finished product production capacity greater than 75 tonnes per day;

	• 6.4.b.ii - only vegetable raw materials with a finished product production capacity greater than 300 tonnes per day or 600 tonnes per day where the installation operates for a period of no more than 90 consecutive days in any year; • 6.4.b.iii - animal and vegetable raw materials, both in combined and separate products, with a finished product production capacity in tonnes per day greater than: - 75 if A is equal to 10 or more; or, - [300- (22,5 × A)] in any other case, where 'A' is the portion of animal material (in percent of weight) of the finished product production capacity. Packaging shall not be included in the final weight of the product. This subsection shall not apply where the raw material is milk only • 6.4.c - Treatment and processing of milk only, the quantity of milk received being greater than 200 tonnes per day (average value on an annual basis). • 6.5 - Disposal or recycling of animal carcasses or animal waste with a treatment capacity exceeding 10 tonnes per day • 6.6.a - Intensive rearing of poultry or pigs with more than 40 000 places for poultry; • 6.6.b - Intensive rearing of poultry or pigs with more than 2 000 places for production pigs (over 30 kg), or • 6.6.c - Intensive rearing of poultry or pigs with more than 750 places for sows • 6.7 - Surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating, with an organic solvent consumption capacity of more than 150 kg per hour or more than 200 tonnes per year • 6.8 - Production of carbon (hard-burnt coal) or electrographite by means of incineration or graphitisation • 6.9 - Capture of CO2 streams from installations covered by this Directive for the purposes of geological storage pursuant to Directive 2009/31/EC • 6.10 - Preservation of wood and wood products with chemicals with a production capacity exceeding 75 m3 per day other than exclusively treating against sapstain • 6.11 - Independently operated treatment of waste water not covered by Directive 91/271/EEC and discharged by an installation covered by Chapter II
Field type	TypeIEDInstallation_Enum
Properties	minOccurs: 0
	maxOccurs: Unbounded
Quality checks	

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/EnvironmentalConsequences/TypeIEDInstallations/ naceCode	
Guidance on completion of schema element	Optional. Provice NACE code. NACE (Nomenclature of Economic Activities) is the European statistical classification of economic activities. NACE groups organizations according to their business activities. Statistics produced on the basis of NACE are comparable at European level and, in general, at world level in line with the United Nations' International Standard Industrial Classification (ISIC).	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1Unbounded
Facets	minLength	1
	maxLength	250
Quality checks		

5.3.16 FHRM/FloodHazardMaps/Probability/CulturalHeritageConsequence

The schema elements in this section cover the following parts of the UML diagram which are linked to the Probability class.

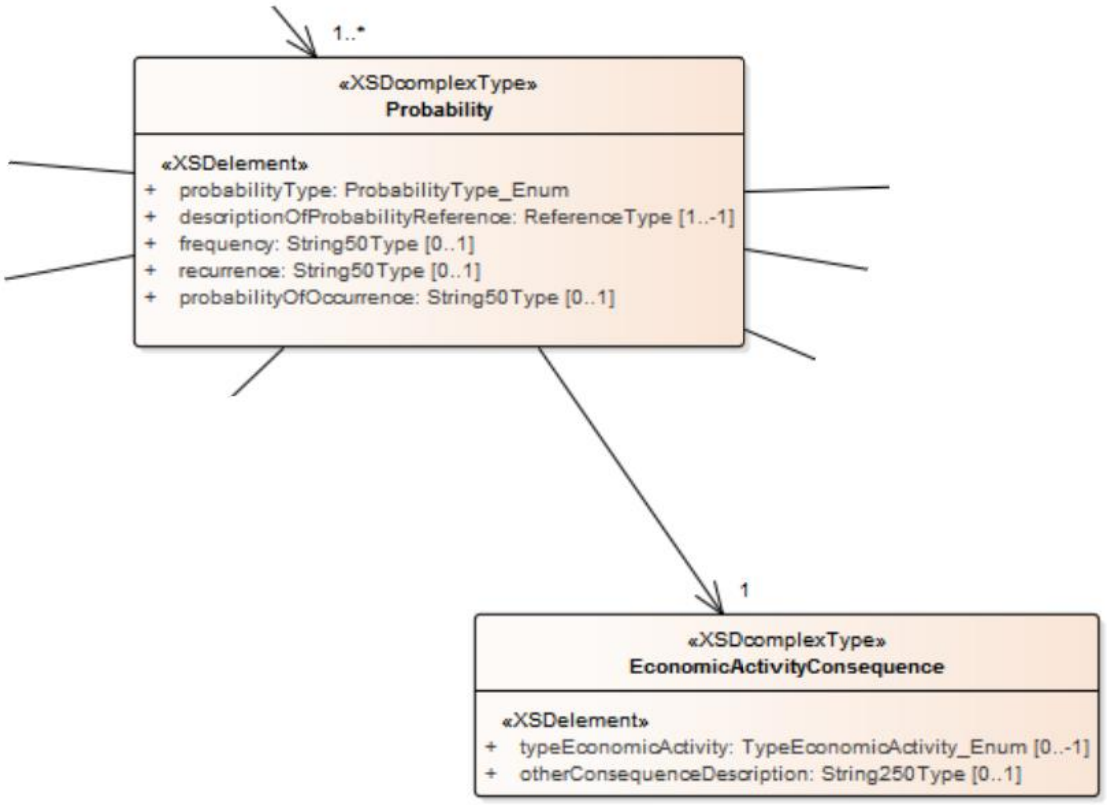


Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/CulturalHeritageConsequence/ typeCulturalHeritage	
Guidance on completion of schema element	Optional. Indicate consequence from enumeration list: • B31 - Cultural Assets: Adverse consequences to cultural heritage, which could include archaeological sites / monuments, architectural sites, museums, spiritual sites and buildings. • B32 - Landscape: Adverse permanent or long-term consequences on cultural landscapes, that is cultural properties which represents the combined works of nature and man, such as relics of traditional landscapes, anchor locations or zones. • B33 - Other • B34 - Not applicable • B35 - Unknown	
Field type	TypeCulturalHeritage_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability /CulturalHeritageConsequence/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B33 - Other' selected from enumeration list under typeCulturalHeritage	Blocker

5.3.17 FHRM/FloodHazardMaps/Probability/EconomicActivityConsequence

The schema elements in this section cover the following parts of the UML diagram which are linked to the Probability class.



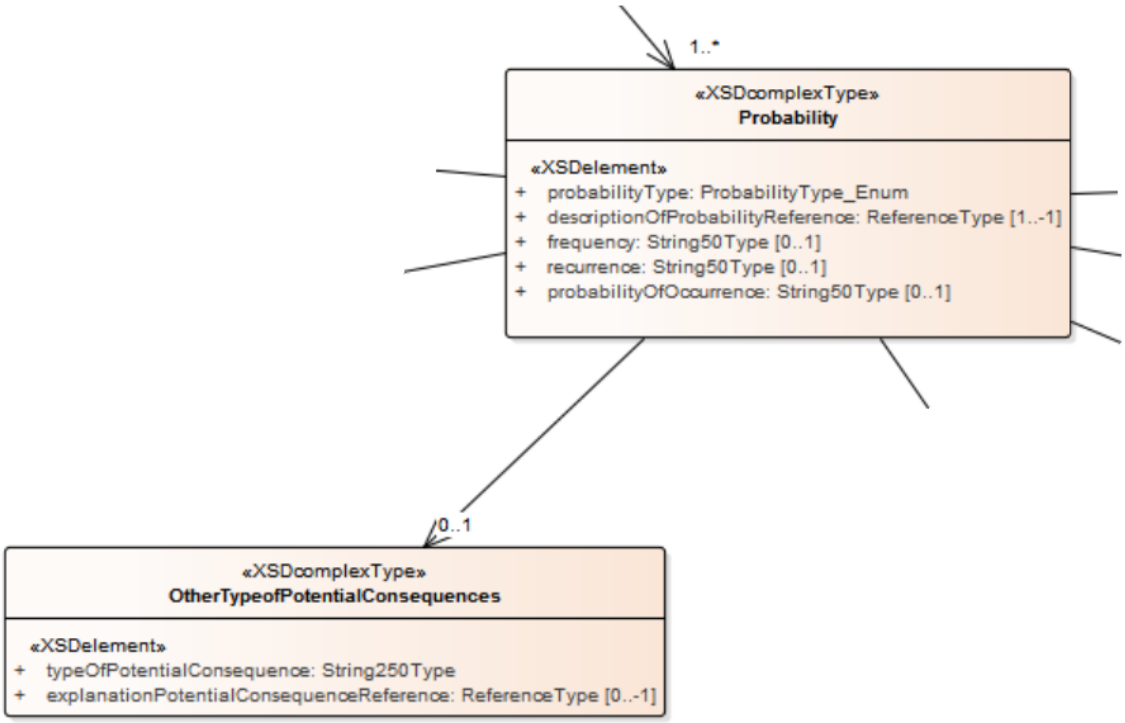
Article 6.5(b) states that flood risk maps should show the potential adverse consequences associated with the flood scenarios (low, medium and where appropriate, high) expressed in terms of the type of economic activity of the area potentially affected.

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/EconomicActivityConsequence/ typeEconomicActivity	
Guidance on completion of schema element	Required. Indicate consequence from enumeration list (more than one can be selected) • B41 – Property • B42 – Infrastructure • B43 – Rural Land Use • B44 – Economic Activity • B45 – Other • B46 – Not applicable • B47 - Unknown	
Field type	TypeEconomicActivity_Enu m	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability / EconomicActivityConsequence/otherConsequenceDescription	
Guidance on completion of schema element	Conditional. Only to be used if the type is set to 'Other' in the enumeration list	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	Conditional. Report if 'B45 - Other' selected from enumeration list under typeEconomicActivity	Blocker

5.3.18 FHRM/FloodHazardMaps/Probability/OtherType ofPotentialConsequence

The schema elements in this section cover the following parts of the UML diagram which are linked to the Probability class.



Class Schema element	FHRM FHRM/FloodHazardMaps/Probability /OtherTypeofPotentialConsequences/typeofPotentialConsequence	
Guidance on completion of schema element	Optional. Type in a potential consequence if not part of provided under enumeration lists for InhabitantsAffected, EconomicActivity, Environment or OtherInformation.	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks		

Class Schema element	FHRM FHRM/FloodHazardMaps/Probability/OtherTypeofPotentialConsequences/explanationPotentialConsequenceReference	
Guidance on completion of schema element	Optional. Please provide a reference to any newly defined potential consequence	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

5.4FHRM Products

The table below provides an indication of the products that can be developed as a result of the reporting on FHRMs. New products, as a result of changes made to the schemas for this current round of reporting are in **bold.**

Table 5.1 Products from information provided

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
1	Hazard elements included in FHRMs	Table	MS	Definitive table showing the number of MS including the different elements in their Hazard Maps for Fluvial Flooding for Low, Medium and High probability scenarios	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
2	Calculation of return periods and probabilities for fluvial floods	Table	MS	Table showing comparisons between MS of approaches used in calculation of return periods and probabilities	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
3	Models used, datasets used and how uncertainty has been taken into account	Table	MS	Table summarising modelling approaches used across MS and associated levels of uncertainty	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
4	Determination of scale	Table	MS	Table summarising the basis of the selection of scales for mapping floods across MS	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
5	Resolution of models	Table	MS	Summary table of resolution of models used for flood mapping across MS and comparison with best practice	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
6	Existing flood defences	Table	MS	Definitive Table clarifying whether and how existing flood defences have been taken into account in the flood mapping process	Aggregation on the basis of the information reported at UOM level	Second cycle reporting

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
7	Flood defence failure	Table	MS	Definitive Table clarifying whether flood defence failure has been considered in the flood mapping process	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
8	Existing infrastructure and buildings taken into account	Table	MS	Definitive Table clarifying whether and how existing infrastructure and buildings have been taken into account in the flood mapping process	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
9	Climate change	Table	MS	Definitive Table stating whether Climate Change has been taken into consideration across MS.	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
10	Information Exchange	Table	MS	Summary table showing level of compliance across MS with the requirement for prior exchange of information. Mechanisms of information exchange identified.	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
11	Justification for applying Article 6.6	Table	APSFR	Definitive Table clarifying how MS have justified the application of Article 6.6.	Aggregation on the basis of the information reported at APSFR level	Second cycle reporting
12	Justification for applying Article 6.7	Table	APSFR	Definitive Table clarifying how MS have justified the application of Article 6.7.	Aggregation on the basis of the information reported at APSFR level	Second cycle reporting

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
13	Comparison of the APSFR codes reported in the APSFR schema, LinksToMS schema and the FHRM schema	Table	MS	Comparison of the APSFR reported under Article 5 and associated with the application of Articles 4 and 13.1.a (APSFR schema), in the links to national maps schema (LinkToMS schema) and the Flood Hazard Risk Maps schema (FHRM schema)	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
14	Summary of sources of flooding for which flood maps have been prepared by Member States	Table	MS	Table showing for each source of flooding whether it has been shown on a FHRM for each UOM, a Specific map or a Combined map	• Data reported to WISE in the FHRM schema at UOM level on the sources of floods included in flood hazard and flood risk maps; • Sources described in the methodological summary information reported in the FHRM schema at UOM level; and, • Flood sources found on the checked examples of maps on national servers accessed via links reported in the LinkToMS schema.	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
15	Summary of scenarios mapped for fluvial flooding with associated expressions of probabilities	Table	MS	Summarises the numeric values of the probabilities used by Member States for each of the scenarios mapped for fluvial flooding. Allows for variation in the UOMs.	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
16	Number of Member States applying different expression of probabilities (return periods in years and percentage probability of occurrence) for the different probability scenarios for fluvial flooding	Graph	EU	Bar chart showing number of Member States applying different expression of probabilities (return periods in years and percentage probability of occurrence) for the different probability scenarios for fluvial flooding	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
17	Elements included in the hazard maps of fluvial flooding	Table	MS	Table showing the scenarios specified in Art 6(4) of the Floods Directive, and which MSs have included them in flood risk maps, or not	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
18	Number of Member States including the different elements in their hazard maps for fluvial flooding	Graph	EU	Bar chart showing the scenarios specified in Art 6(4) of the Floods Directive, and the number of MSs that have included them in flood risk maps.	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
19	Summary of approaches used in the calculation of return periods and probabilities for fluvial floods	Table	MS	Summary table identifying which MSs have used Expert judgement, Historical data, Statistical analysis, Modelling, Hydrological rainfall-runoff models and Hydrological studies in the calculation of return periods and probabilities for fluvial floods. It also shows which MSs provided no information.	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
20	Main approaches and considerations for determination of the scale of maps	Table	MS	Summary table identifying the approach MSs have used to determine the scale of maps created. The approaches detailed in the table are: maps zoom-able from national to street level; to raise public awareness; for overview of flooding; for spatial planning; minimal accuracy specified in Regulations. The table also shows where no information on this aspect reported to WISE, not reported and fluvial floods are not mapped	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
21	Summary of the scales of flood maps prepared by Member States	Table	MS	Summary of the scales of flood maps prepared by Member States	Derived from examples of national maps accessed by the links provided by Member States in the LinkToMS schema	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
22	Summary of resolution of models used for the preparation of hazard maps from fluvial floods	Table	MS	Summarises the horizontal and vertical resolution of the maps and DEMs reported by Member States as being used in preparing their hazard maps for fluvial flooding	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
23	Summary of Member States where existing flood defences were taken into account	Table	MS	Summarises the reported information on if, and how, flood defences have been taken into account by Member States in preparing flood hazard and flood risk maps	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
24	Summary of Member States where existing infrastructure or buildings were taken into account in the mapping of fluvial floods	Table	MS	Summarises the reported information on whether such infrastructure and buildings have been taken into account in the preparation of hazard maps for fluvial flooding.	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
25	Summary of scenarios mapped for pluvial flooding with associated expressions of probabilities	Table	MS	Summarises the probabilities used by Member States (note that there may be differences between UOMs within the Member State) for each of the scenarios mapped for pluvial flooding	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
26	Number of Member States applying different expressions of probabilities for the three probability scenarios for pluvial flooding	Graph	EU	Bar chart showing the number of Member States applying different expressions of probabilities for the three probability scenarios for pluvial flooding	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
27	Elements included in the hazard maps of pluvial flooding	Table	MS	Summarises by MS the hazard elements for each of the mapped flooding scenarios for pluvial flooding.	Reported methodological information at UOM level and also from a qualitative check of a sub-sample of the Member States' maps	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
28	Number of Member States including the different elements in their hazard maps for pluvial flooding	Graph	EU	Bar chart summarising the Number of Member States including the different elements in their hazard maps for pluvial flooding	Reported methodological information at UOM level and also from a qualitative check of a sub-sample of the Member States' maps	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
29	Summary of scenarios mapped for sea water flooding with associated expressions of probabilities	Table	MS	Summarises the probabilities used by Member States for each of the scenarios mapped for sea water flooding	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
30	Number of Member States applying different expressions of probabilities for the three different probability scenarios for sea water flooding	Graph	EU	Bar chart showing the number of Member States applying different expressions of probabilities for the three different probability scenarios for sea water flooding	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
31	Elements included in the hazard maps of sea water flooding	Table	MS	Summarises by Member State the hazard elements for each of the mapped scenarios for sea water flooding (either specifically or in combination with other sources).	Reported methodological information at UOM level and also from a qualitative check of a sub-sample of the Member States' maps	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
32	Number of Member States including the different elements in their hazard maps for sea water flooding	Graph	EU	Bar chart showing the number of Member States including the different elements in their hazard maps for sea water flooding	Reported methodological information at UOM level and also from a qualitative check of a sub-sample of the Member States' maps	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
33	Summary of resolution of models used for the preparation of hazard maps for sea water floods	Table	MS	Summarises the horizontal and vertical resolution of the maps and DEMs reported by MSs as being used in preparing their hazard maps for sea water flooding	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
34	Summary of scenarios mapped for groundwater flooding with associated expressions of probabilities	Table	MS	Summarises the probabilities used by Member States for each of the scenarios mapped for groundwater flooding	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
35	Approaches used in mapping floods from artificial water bearing infrastructure	Table	MS	Summarises the approaches used in mapping floods from artificial water bearing infrastructure. Identifies whether the following is included: Source; Flood Extent; Water Depth/Level and Water Flow Velocities	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
36	Overview of elements used in mapping the hazards from different sources of flooding	Graph	EU	Summarises the hazard elements used in hazard maps for different sources of flooding	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
37	Number of inhabitants potentially affected by medium probability fluvial floods at Member State level	Graph	MS	Bar chart showing the number of inhabitants potentially affected by medium probability fluvial floods at Member State level	Calculated from the values provided by Member States (in the FHRM schema uploaded to WISE) at UOM level with the maps that are to be visualised on a European scale flood map.	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
38	Minimum, average and maximum number of potentially affected inhabitants across the APSFR or Units of Management in Member States from medium probability fluvial floods	Table	MS	Data table showing the minimum, average and maximum number of potentially affected inhabitants across the APSFR or Units of Management in Member States from medium probability fluvial floods	Calculated from the values provided by Member States (in the FHRM schema uploaded to WISE) at UOM level with the maps that are to be visualised on a European scale flood map.	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
39	Number of units of management within a Member State where the potential adverse consequences on economic activity have been included in mapping the risk from medium probability floods (all sources considered).	Table	MS	Data table showing the Number of units of management within a Member State where the potential adverse consequences on economic activity have been included in mapping the risk from medium probability floods. Categories are: Property, Infrastructure, Rural Land Use, Economic Activity, Other economic	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
40	Number of IED installations reported by Member States to be affected by low and medium probability fluvial floods	Table	MS	Summarises the number of IED/IPPC installations reported by Member States to represent a potential source of pollution from medium and low probability floods	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
41	Number of units of management within Member States where the potential adverse consequences on the environment have been included in the mapping of the risk from medium probability floods (all sources considered)	Table	MS	Number of units of management within Member States where the potential adverse consequences on the environment (Water Body Status, Protected Areas, Pollution Sources, Other environment) have been included in the mapping of the risk from medium probability floods	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
42	Number of units of management within Member States where the potential adverse consequences on the environment have been included in the mapping of the risk from low probability floods (all sources considered)	Table	MS	Number of units of management within Member States where the potential adverse consequences on the environment (Water Body Status, Protected Areas, Pollution Sources, Other environment) have been included in the mapping of the risk from low probability floods	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
43	Number of units of management within Member States where there are reported potential adverse consequences on the different types of Protected Areas from medium probability fluvial floods	Table	MS	Number of units of management within Member States where there are reported potential adverse consequences on the different types of Protected Areas (Article 7 Abstraction for drinking water, Bathing, Birds, Habitats, Nitrates, UWWT, European Other, WFD Water Body status, National, Local) from medium probability fluvial floods	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
44	Number of units of management within a Member States where the potential adverse consequences on cultural heritage have been reported with medium probability flood maps	Table	MS	Number of units of management within a Member States where the potential adverse consequences on cultural heritage (Cultural Heritage (generic); Cultural Assets; Landscape; Other cultural heritage) have been reported with medium probability flood maps	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
45	Summary of justifications reported by Member States for the use of Article 6.6	Table	MS	Table summarising the justifications reported by Member States for the use of Article 6.6 by justification	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
46	Summary of justifications reported by Member States for the use of Article 6.7	Table	MS	Table summarising the justifications reported by Member States for the use of Article 6.7 by justification	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
47	Summary of the prior exchange of information on the preparation of flood maps between Member States sharing flood risk areas	Table	MS	Table showing the number of national river basins shared with another Member State and the number where information was exchanged	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
48	Summary of Member States who took climate change into account in their preparation of flood hazard and flood risk maps	Table	MS	Table showing how the MSs took climate change into account in the preparation of flood risk maps. Includes: climate change has been taken into account in preparing maps; Climate change trend scenarios have been obtained from international research programmes; Climate change trend scenarios have been obtained from the national research programmes; Flood hazard scenarios are based on modelling of changes in flood hazard in relation to climate change; Flood hazard scenarios included trend analysis of historical data of hydrological and meteorological observations; Flood hazard scenarios included a statistical assessment of historical climate data	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
49	Overview of the types of flood associated with Areas of Potential Significant Flood Risk identified under Article 5 of the Floods Directive	Table	MS	Table showing the number of UOMs within the Member States where the type of flood has been associated with APSFR identified under Article 5	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
50	Summary of methodologies used to assess the potential adverse consequences to human health	Table	MS	Textual table giving a summary of the methodologies used to assess the potential adverse consequences to human health	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
51	Summary of methodologies and economic aspects used to assess the potential adverse consequences to economic activity	Table	MS	Textual table giving a summary of methodologies and economic aspects used to assess the potential adverse consequences to economic activity	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
52	Summary of methodologies used to assess the potential adverse consequences on industrial installations	Table	MS	Textual table giving a summary of methodologies used to assess the potential adverse consequences on industrial installations	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps
53	Summary of methodologies and approaches used to assess the potential adverse consequences on Protected Areas	Table	MS	Textual table giving a summary of methodologies and approaches used to assess the potential adverse consequences on Protected Areas	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
54	Summary of methodologies used to assess the potential adverse consequences on cultural heritage and other potential receptors	Table	MS	Textual table giving a summary of methodologies used to assess the potential adverse consequences on cultural heritage and other potential receptors	Aggregation on the basis of the information reported at UOM level	Report on methodologies used in preparation of Flood Hazard and Flood Risk Maps

6.Flood Risk Management Plans (FRMP)

6.1 Introduction

Article 7 of the Floods Directive requires Member States to prepare Flood Risk Management Plans (FRMPs) for all areas identified as being at potentially significant flood risk (APSFR) under Article 5 on the basis of the maps prepared under Article 6.

The plans must be coordinated at the level of the River Basin District (RBD) or other Unit of Management (UOM) as defined under Article 3.2(b) (Articles 7.1 and 4, Article 8).

The Flood Risk Management Plans (FRMP) must set out appropriate objectives for the management of flood risk within the areas covered by the plan. The objectives must focus on reducing the adverse consequences of flooding for human health, the environment, cultural heritage and economic activity. Where appropriate, the FRMPs should focus on reducing the likelihood of flooding and/or on using non-structural measures, including flood forecasting and raising awareness of flooding (Article 7.2). The flood risk management plans shall include measures for achieving identified objectives (Article 7.3).

Flood risk management plans shall include the components as detailed in the annex (Part 1) of the Directive:

- Conclusions of the preliminary flood risk assessment (PFRA) as required in Chapter II in the form of a summary map of the RBD/UOM delineating the areas of potential significant flood risk (APSFR) (Annex part A.I.1).[21]

- Flood Hazard maps and Flood Risk maps (Annex part A.I.2).[22]

- Description of the objectives (Annex part A.I.3);

- Summary of measures and their prioritisation, including those taken under other Community acts (such as EIA, SEA, SEVESO, WFD[23]), aiming to achieve the objectives (Annex part A.I.4);

[21] This information needs to be included in the FRMP, but does not however need to be reported electronically again to the Commission if the information has already been reported in accordance with Article 15.

[22] This information needs to be included in the FRMP, but does not however need to be reported electronically again to the Commission if the information has already been reported in accordance with Article 15.

[23] For full references see the annex of Directive 2007/60/EC.

- Description of the cost-benefit methodology, when available, used in transnational context (Annex part A.I.5);

- Description of how implementation progress will be monitored (Annex part A.II.1);

- Summary of public information and consultation (Annex part A.II.2);

- List of competent authorities (Annex part A.II.3);

- Description of the co-ordination process in international RBD/other UOM (Annex part A.II.3);

- Description of the coordination process with the WFD (Directive 2000/60/EC) (Annex part A.II.3).

The review of the Flood Risk Management Plans (FRMP) shall include the following components (Annex Part B):

- Information on any changes or updates since the publication of the previous version of the FRMP, including a summary of the reviews carried out in compliance with Article 14 (Annex Part B.1);

- An assessment of the progress made towards achieving the objectives referred to in Article 7.2; a description of, and explanation for, any measures foreseen in the earlier version of the FRMP which were planned to be undertaken and have not been taken forward (Annex Part B.3);

- A description of any additional measures since the publication of the previous version of the FRMPs (Annex Part B.4).

For the reviews of the Flood Risk Management Plans, it is expected that Member States shall report on the same issues as for the initial plan, but focus on the progress and changes as outlined in the Directive.

Where complete reports have already been submitted according to earlier stages (Competent Authorities (CA), Units of Management, Preliminary Flood Risk Assessment, Flood Hazard maps and Flood Risk maps), it is not expected that Member States report these again to WISE, unless the Member State in question wishes to submit updated information.

The FRMP shall address all aspects of flood risk management, focusing on prevention, protection and preparedness, and taking into account the characteristics of the particular river basin or sub-basin, including flood forecasting and early warning systems.

The FRMP may include:

- Promotion of sustainable land-use practices;
- Improvements in water retention;
- Controlled flooding of certain areas;
- Structural and non-structural approaches to reducing the likelihood and consequences of flooding;
- Other actions in relation to preventing, protecting, or preparing against the adverse consequences of flooding.

FRMP plans shall take into account relevant aspects such as (Article 7):

- Costs and benefits;
- Flood extent and conveyance routes;
- Areas which have the potential to retain flood waters, such as natural flood plains;
- The environmental objectives of the WFD;
- Soil and water management, as well as nature conservation;
- Spatial planning and land use;
- Navigation and port infrastructure;
- The likely impact of climate change on the occurrence of floods, required at the latest from the first review of the FRMP onwards (Article 14.4).

The FRMP shall be subject to public consultation and the active encouragement of the involvement of interested parties in coordination with Article 14 of the WFD (Articles 9.3 and 10.2).

The complete FRMP shall also be made available to the public (Article 10.1).

Due to the need to coordinate and synchronise the FRMPs with the 2nd cycle River Basin Management Plans (RBMP), and the need to avoid double reporting, the reporting formats will be coordinated.

As part of WFD RBMP Member States are required to report information on relevant and significant pressures and the establishment of a programme of measures (PoM) for each

RBD or part of an international RBD. Some of those pressure types and measure types are of particular interest, and may be of importance for FRMP, also in terms of coordination and synergies between both processes.

A number of WFD relevant pressures and relevant WFD measures are of particular importance from the perspective of the co-ordinated implementation of Directives 2000/60/EC and 2007/60/EC with a view of improving information exchange, and of achieving common synergies and benefits.

6.2UML Diagram

The UML diagram for FRMP is provided in Annex 8. The UML should be used as an aid to navigate through the schemas.

6.3Schema Sketches

Individual schema sketches are presented for each element with further explanatory text provided as required. Extracts of the UML are presented to facilitate the navigation process.

6.3.1FRMP (Country codes, EU unit of management codes, links or references to Metadata, URL for internet based information and attributes)

The schema sketches below cover the fundamental information (elements and attributes) that is required to be reported for identification purposes.

Elements

Class Schema element	FRMP FRMP/c_CD	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	CountryCode_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Class Schema element	FRMP FRMP/euUOMCode	
Guidance on completion of schema element	Required. Unique EU code for the Unit of Management. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total	
Field type	FeatureUniqueEUCodeType	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	3
	maxLength	42
Quality checks	Element check: First 2 characters must be the Member State's 2-alpha character ISO country code.	Blocker

Attributes

Class Schema element	FRMP Attribute FRMP/email	
Guidance on completion of schema element	Optional. For example "frmplanning@environment.eu"	
Field type	xs:string	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	FRMP Attribute FRMP/languageCode	
Guidance on completion of schema element	Required. Two-letter ISO Country code. Select relevant code from enumeration list provided.	
Field type	LanguageCode_Enum	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FRMP Attribute FRMP/creationDate	
Guidance on completion of schema element	Required. To be provided as year, month, date (e.g. “2012-03-20”)	
Field type	xs:string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FRMP Attribute FRMP/description	
Guidance on completion of schema element	Optional. For example: “Floods Directive Flood Risk Management Plan Information”	
Field type	xs:string	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	3
	maxLength	150
Quality checks		

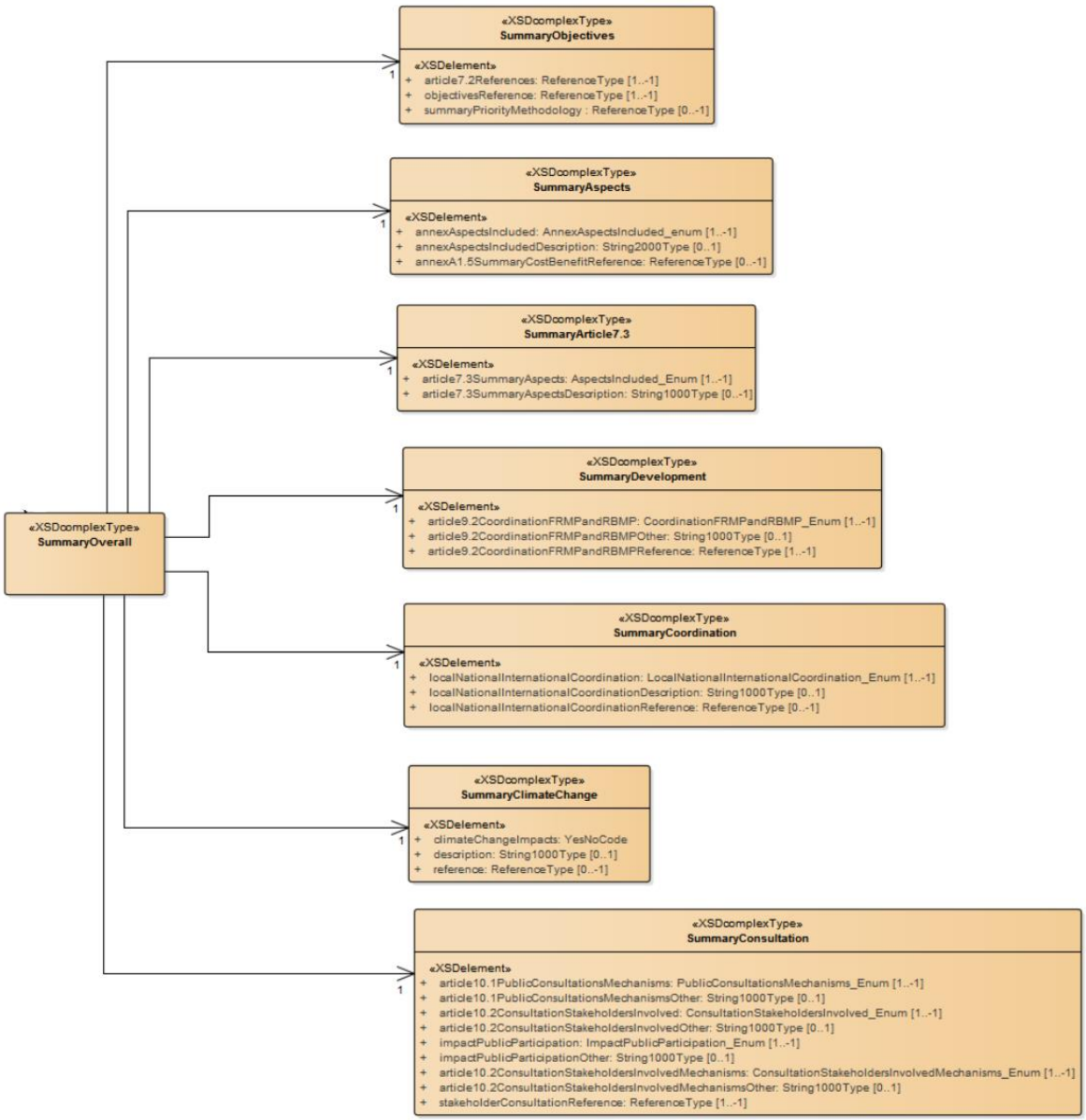
Class Schema element	FRMP Attribute FRMP/creator	
Guidance on completion of schema element	Required. Competent Authority responsible for providing the information (e.g. Ministry of Environment, Environment Protection Agency, etc.)	
Field type	xs:string	
Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FRMP Attribute FRMP/generatedBy	
Guidance on completion of schema element	Optional. For example “Through the use of an IT database process using Oracle scripts”	
Field type	xs:string	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

Class Schema element	FRMP FRMP/classificationCode	
Guidance on completion of schema element	Optional. Codes for data security classification: • 001 – Unclassified – available for general circulation and public • 003 – Confidential – available for EC reporting only	
Field type	DataConfidentialityClassificationCode_Enum	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

6.3.2 FRMP/SummaryOverall

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



6.3.3 FRMP/SummaryOverall/SummaryObjectives

This set of schema elements relate to the provision of summary information and apply at the UOM level. This information is required to be reported only once for each UOM (the cardinality is 1..1 for SummaryOverall). Please note that the SummaryOverall Class has been retained in the UML diagram to retain the structural integrity of the UML but that it is

not included within the accompanying Access Database where the information is entered (since it is an empty class).

Article 7.2 states that Member States shall establish appropriate objectives for the management of flood risks for the areas identified under Article 5(1) (APSFRs), focusing on the reduction of potential adverse consequences of flooding for human health, the environment, cultural heritage and economic activity, and, if considered appropriate, on non-structural initiatives and/or on the reduction of the likelihood of flooding.

Objectives may be set at a high level (i.e. strategic, such as increasing levels of protection) or may be more focused and MS will be likely to use a combination of these objectives with actions on the ground (measures) identified to achieve them. In providing their objectives, MS are requested to include references to documents that describe: how the objectives relate to impacts on human health, the environment, cultural heritage and economic activity and how the objectives were developed. The reporting of these documents is covered in the reference schema element below.

The second schema element in this section provides the opportunity for MS to explain (in a reference document or documents) broadly how the measures implemented align with the objectives and the final schema reference element covers the process for prioritising the measures for achieving the stated objectives.

Class Schema element	FRMP FRMP/SummaryOverall/ SummaryObjectives/article7.2References
Guidance on completion of schema element	Required. Provide documents or links to relevant documents covering the following areas related to objectives: 1. details of the objectives set and how they meet the requirements of Article 7.2 of the FD; 2. how the objectives relate to impacts on human health, the environment, cultural heritage and economic activity in terms of making them measureable (e.g. number of residential properties at risk). 3. The processes for both developing the objectives and selecting and prioritising measures to achieve the stated objectives As a reminder, If providing documents describe the: - **Subject** (describe in a few words the subject matter of the references provided in relation to 1 to 3 above) - **Document name** (Provide the name of each reference document, the name should identify the document unequivocally) - **Bookmark** (For each document provide the chapters, sections or page ranges where the relevant information can be found) - If the file containing the reference is uploaded to WISE, provide the **file name** of the uploaded document. - If the document has not been uploaded to WISE, provide a **hyperlink** to the

	relevant background document. (The Member State must guarantee that the hyperlink will remain stable and active for a period of 6 years after reporting). Please note that 1 to 3 above may be covered in a single document in which case please be careful to individually bookmark the relevant sections and/or page ranges. For example 1) Section 5.3, pages 21-25: 2) Page 58-65 (human health), 66-70 (environment): 3) Section 2.3.1
Field type	ReferenceType
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	FRMP FRMP/SummaryOverall/SummaryObjectives/objectivesReference
Guidance on completion of schema element	Required. Provide a reference to explain how measures contribute to achieving the objectives within the FRMP
Field type	ReferenceType
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	FRMP FRMP/SummaryOverall/SummaryObjectives/ summaryPriorityMethodologyReference
Guidance on completion of schema element	Optional. Provide a reference(s) to explain how measures have been prioritised.
Field type	ReferenceType
Properties	minOccurs: 0
	maxOccurs: Unbounded
Quality checks	

6.3.4 FRMP/SummaryOverall/SummaryAspects

This schema element relates to the Annex of the FD which specifies the components required to be included in the flood risk management plans (FRMPs). The schema allows for a check of the components required to be included in the first FRMPs as well as components of the subsequent update of the FRMPs. Many of the aspects listed in the schema sketch below are covered in separate schema elements that follow hence this schema element functions as an initial check list. Where a particular item in the enumeration list below is not selected, it is assumed that this aspect is not included within the flood risk management plan and MS are required to provide an explanation.

The first item in the enumeration list in the schema element below refers to provision of the conclusions of the PFRA in the form of a summary map. This is a direct reference to Annex A1.1 in the Directive which states in relation to components of the (first) flood risk management plans, these should include: “the conclusions of the preliminary flood risk assessment as required in Chapter II in the form of a summary map of the river basin district, or the unit of management referred to in Article 3(2)(b), delineating the areas identified under Article 5(1) [*i.e. APSFRs*] which are the subject of this flood management plan”.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryAspects/annexAspectsIncluded
Guidance on completion of schema element	Required. Please indicate whether your flood risk management plans take into account the following aspects. If items are not selected an explanation will be required. • AAI_1 - Conclusions drawn from the flood hazard and flood risk maps • AAI_2 - Conclusions of PFRA in the form of a summary map • AAI_3 - A description of the appropriate objectives of flood risk management • AAI_4 - A summary of the measures and their prioritisation to achieve the appropriate objectives • AAI_5 - For shared river basins a description of the cost-benefit analysis used to assess measures with transnational effects • AAI_6 - Description of the way in which progress in implementing the plan is monitored • AAI_7 - Summary of the public information and consultation • AAI_8 - A list of competent authorities • AAI_9 - A description of the coordination process within any IRBD • AAI_10 - A description of the coordination process with the WFD • AAI_11 - A summary of reviews and updates of the plans • AAI_12 - An assessment of progress made towards achieving the objectives • AAI_13 - A description and explanation of any measures previously identified but not taken forward • AAI_14 - A description of additional measures since the publication of prior plans
Field type	AnnexAspectsIncluded_Enum
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	FRMP FRMP/SummaryOverall/SummaryAspects/annexAspectsIncludedDescription	
Guidance on completion of schema element	Conditional. If any item has not been selected from the enumeration list above please provide a reason for this.	
Field type	String2000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	2000
Quality checks	Conditional. To be reported if any item from AnnexAspectsIncluded_Enum has not been selected	Blocker

Annex A1.5 requests that when available, for shared river basins or sub-basins, a description of the methodology, defined by the Member States concerned, of cost-benefit analysis used to assess measures with transnational effects should be included as a component within the flood risk management plan.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryAspects/annexA1.5SummaryCostBenefitReference	
Guidance on completion of schema element	Conditional. If the following aspect has been selected from the enumeration list (AnnexAspectsIncluded_Enum) “For shared river basins a description of the cost-benefit analysis used to assess measures with transnational effects”, provide document(s) or link(s) to relevant documents including a description of the methodology of cost-benefit analysis used to assess measures with transnational effects.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Report if “AAI_5 - For shared river basins a description of the cost-benefit analysis used to assess measures with transnational effects” selected.	Blocker

6.3.5 FRMP/SummaryOverall/SummaryArticle7.3

Article 7.3 requires flood risk management plans to take account of relevant aspects such as costs and benefits, flood extent and flood conveyance routes and areas which have the potential to retain flood water, such as natural floodplains, the environmental objectives of the Water Framework Directive (2000/60/EC), soil and water management, spatial planning, land use, nature conservation, navigation and port infrastructure. Furthermore, flood risk management plans are required to address all aspects of flood risk management focusing on prevention, protection, preparedness, including flood forecasts and early warning systems and taking into account the characteristics of the particular river basin or sub-basin. Finally, Article 7.3 states that FRMPs may also include the promotion of sustainable land use practices, improvement of water retention as well as the controlled flooding of certain areas in the case of a flood event.

The requirements of Article 7.3 are covered in the following two schema elements.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryArticle7.3/article7.3SummaryAspects
Guidance on completion of schema element	Required. Do your flood risk management plans take into account the following aspects? Please note that if items are not selected an explanation will be required. • AI_1 - Costs and benefits (of measures) • AI_2 - Flood extent • AI_3 - Flood conveyance routes • AI_4 - Areas which have potential to retain flood water, such as natural floodplains • AI_5 - The environmental objectives of Article 4 of the WFD • AI_6 - Soil and water management • AI_7 - Spatial planning • AI_8 - Land use • AI_9 - Nature conservation • AI_10 - Navigation and port infrastructure • AI_11 - Promotion of sustainable land use practices • AI_12 - Improvement of water retention • AI_13 - Controlled flooding of certain areas in case of a flood event • AI_14 - The use of flood forecasting and early warning systems
Field type	AspectsIncluded_Enum
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	FRMP FRMP/SummaryOverall/SummaryArticle7.3/ article7.3SummaryAspectsDescription	
Guidance on completion of schema element	Conditional. If any item has not been selected from the enumeration list please provide a reason for this.	
Field type	String2000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	2000
Quality checks	Conditional. To be reported if any item from AspectsIncluded_Enum has not been selected	Blocker

6.3.6 FRMP/SummaryOverall/SummaryDevelopment

Article 9.2 of the FD states that the development of the first flood risk management plans and their subsequent reviews shall be carried out in coordination with, and may be integrated into, the reviews of the river basin management plans provided under the requirements of the Water Framework Directive. The following schema elements address this requirement.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryDevelopment/article9.2CoordinationFRMPandRBMP
Guidance on completion of schema element	Required. Indicate how the development of the FRMPs have been coordinated with the development of the River Basin Management Plans for the WFD (more than one option can be selected): • CFRMP_1 - Integration of FRMP and RBMP into a single document • CFRMP_2 - Joint consultation of draft FRMP and RBMP • CFRMP_3 - Coordination between authorities responsible for developing FRMP and RBMP • CFRMP_4 - The objectives of the FD have been considered in the WFD RBMPs and PoMs • CFRMP_5 - Coordination with the environmental objectives in Art.4 of the WFD • CFRMP_6 - Planning of win-win and no regret measures in FRMP and RBMP have included drought management measures • CFRMP_7 - Planning of win-win and no regret measures in FRMP and RBMP have included natural water retention and green infrastructure measures • CFRMP_8 - Permitting or consenting of flood risk activities (e.g. dredging, flood defence management) requires prior consideration of WFD objectives and RBMPs • CFRMP_9 - Consistent and compliant application of Article 7 and designation of HMWBs with measures taken under the FD e.g. flood defence infrastructure

	• CFRMP_10 - The design of new and existing structural measures such as flood defences, storage dams and tidal barriers have been adapted to take into account WFD Environmental Objectives • CFRMP_11 - The use of sustainable drainage systems, such as the construction of wetlands and porous pavements, have been considered to reduce urban flooding and also to contribute to the achievement of WFD objectives • CFRMP_12 - Other
Field type	CoordinationFRMPandRBMP_Enum
Properties	minOccurs: 1
	maxOccurs: Unbounded
Quality checks	

Class Schema element	FRMP FRMP/SummaryOverall/SummaryDevelopment/ article9.2CoordinationFRMPandRBMPOther	
Guidance on completion of schema element	Conditional. If 'Other' selected from enumeration list. Provide a description of the other ways development of the FRMPs have been coordinated with the development of the River Basin Management Plans for the WFD.	
Field type	String1000FieldType	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'CFRMP_12 - Other' selected from enumeration list under article9.2CoordinationFRMPandRBMP	Blocker

Class Schema element	FRMP FRMP/SummaryOverall/SummaryDevelopment/ article9.2CoordinationFRMPandRBMPReference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to relevant documents referring to how the development of the FRMPs has been coordinated with the development of the River Basin Management Plans.	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

6.3.7 FRMP/SummaryOverall/SummaryCoordination

Flood risk management planning requires local, national and (for international river basin districts or UOMs), international coordination. The need for coordination is referred to in several places within the FD, notably in Article 8 with regard to international coordination.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryCoordination/ localNationalInternationalCoordination	
Guidance on completion of schema element	Required. Provide an indication of the level of local and or national or international coordination (more than one option can be selected): • LNIC_1 - Coordination of FRMPs has taken place at a local level within the MS (i.e. within the UOM or at sub-basin/catchment level) • LNIC_2 - Coordination of FRMPs has taken place at the UOM/RBD level within the Member State • LNIC_3 - Coordination of FRMPs has taken place at the international UOM/RBD level between Member States/neighbouring countries • LNIC_4 - There was a need to refer to the solidarity principle* • LNIC_5 - UOM/RBD not international • LNIC_6 - No Coordination has taken place If co-ordination with other UOMs has taken place, provide a reference document or link in the *LocalNationalInternationalCoordinationReference* schema. If No coordination has taken pace' provide a reason/description (text) in the *LocalNationalInternationalCoordination/Description* schema	
Field type	LocalNationalInternationalCoordination_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

**the solidarity principle (Art 7.4) states that flood risk management plans established in one Member State shall not include measures which, by their extent and impact, significantly increase flood risks upstream or downstream of other countries in the same river basin or sub-basin, unless these measures have been coordinated and an agreed solution has been found among the Member States concerned*

Class Schema element	FRMP FRMP/SummaryOverall/SummaryCoordination/ localNationalInternationalCoordinationDescription	
Guidance on completion of schema element	Conditional. Provide a reason/description if LocalNationalInternationalCoordination is set to 'No Coordination has taken place'	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1

Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if ' LNIC_6 - No Coordination has taken place' selected from enumeration list under LocalNationalInternationalCoordination.	Blocker

Class Schema element	FRMP FRMP/SummaryOverall/SummaryCoordination/ localNationalInternationalCoordination Reference	
Guidance on completion of schema element	Conditional. If any item other than 'No Coordination has taken place' has been selected provide document(s) or link(s) to relevant documents describing the coordination process and approach.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. If any other item other than ' LNIC_6 - No Coordination has taken place' selected from enumeration list under LocalNationalInternationalCoordination this Element must be reported..	Blocker

6.3.8FRMP/SummaryOverall/SummaryClimateChange

Article14.4 requires that the likely impact of climate change on the occurrence of floods should be taken into account as part of the periodic reviews and updates of the flood risk management plans.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryClimateChange/climateChangeImpacts
Guidance on completion of schema element	Required. Has the impact of climate change on the occurrence of floods been taken into consideration within the FRMP? • Yes • No If 'Yes' provide a reference document or link in the *SummaryClimateChange/Reference* schema to relevant documentation for example on measures taken to mitigate the expected effects of climate change on the likelihood and potential adverse effects of flooding. If 'No', provide a reason/description (text) in the *SummaryClimateChange/Description* schema
Field type	YesNoCode

Properties	minOccurs:	1
	maxOccurs:	1
Quality checks		

Class Schema element	FRMP FRMP/SummaryOverall/SummaryClimateChange/description	
Guidance on completion of schema element	Conditional. Provide a reason/description if *SummaryClimateChange/ClimateChangeImpacts* is set to 'No'.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if ClimateChangeImpacts is 'No'.	Blocker

Class Schema element	FRMP FRMP/SummaryOverall/SummaryClimateChange/reference	
Guidance on completion of schema element	Conditional. If *SummaryClimateChange/ClimateChangeImpacts* is set to 'Yes' provide document(s) or link(s) to relevant documents describing how the impact of climate change on the occurrence of floods been taken into consideration within the FRMP.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	Conditional. Report if ClimateChangeImpacts is 'Yes'.	Blocker

6.3.9 FRMP/SummaryOverall/SummaryConsultation

Article 10.1 of the FD states that, in accordance with applicable Community legislation, Member States shall make available to the public the PFRA, the flood hazard and flood risk maps and the flood risk management plans. MS may choose to use a variety of mechanisms for informing the public and interested parties about the consultation process, as long as the public and interested parties are actually informed.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryConsultation/ article10.1PublicConsultationsMechanisms	
Guidance on completion of schema element	Required. Select the mechanism(s) that have been used for informing public and interested parties about the consultation process (more than one option can be selected): • PCM_1 - Media (papers, TV, radio) • PCM_2 - Internet • PCM_3 - Social networking sites • PCM_4 - Printed material • PCM_5 - Direct mailing • PCM_6 - Invitations to stakeholders • PCM_7 - Local Authorities • PCM_8 - Meetings with local population • PCM_9 - Public consultation days • PCM_10 - Written consultation • PCM_11 - Other	
Field type	PublicConsultationsMechanisms_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FRMP FRMP/SummaryOverall/SummaryConsultation/ article10.1PublicConsultationsMechanismsOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected from enumeration list. Provide a description of the other mechanisms used for informing the public and other interested parties about the consultation process.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'PCM_11 - Other' selected from enumeration list under article10.1PublicConsultationsMechanisms.	Blocker

The next schema element requests MS to provide information on the stakeholders consulted. Article 10.2 states that Member States shall encourage the active involvement of interested parties in the production, review and updating of the flood risk management plans.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryConsultation/ article10.2ConsultationStakeholdersInvolved	
Guidance on completion of schema element	Required. Select the groups of stakeholders who have been actively involved in the development of the flood risk management plans (more than one can be selected): • CSI_1 - Civil Protection Authorities • CSI_2 - Flood Warning/ Defence Authorities • CSI_3 - Drainage Authorities • CSI_4 - Emergency services • CSI_5 - Water supply and sanitation • CSI_6 - Community groups • CSI_7 - Agriculture/farmers • CSI_8 - Energy/hydropower • CSI_9 - Navigation/ports • CSI_10 - Fisheries/aquaculture • CSI_11 - Industry • CSI_12 - NGO's /nature protection • CSI_13 - Consumer Groups • CSI_14 - Local/Regional authorities • CSI_15 - Academia/Research Institutions • CSI_16 - Other	
Field type	ConsultationStakeholdersInvolved_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FRMP FRMP/SummaryOverall/SummaryConsultation/ article10.2ConsultationStakeholdersInvolvedOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected from enumeration list. Provide a description of the other groups of stakeholders actively involved in the development of the flood risk management plans.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'CSI_16 - Other' selected from enumeration list under article10.2ConsultationStakeholdersInvolved.	Blocker

Member States are requested to provide an indication of the impact of public participation on the final outcome of the plans.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryConsultation/impactPublicParticipation	
Guidance on completion of schema element	Required. Select the changes made as a result of public participation to the final outcome of the plans (more than one option can be selected); • IPP_1 - Changes to selection of measures • IPP_2 - Adjustment to specific measures • IPP_3 - Addition of new information • IPP_4 - Changes to the methodology used • IPP_5 - Commitment to further research • IPP_6 - Commitment to action in the next FRMP cycle • IPP_7 - Other outcome	
Field type	ImpactPublicParticipation_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FRMP FRMP/SummaryOverall/SummaryConsultation/ impactPublicParticipationOther	
Guidance on completion of schema element	Conditional. If 'Other' selected from enumeration list. Provide a description of the other outcome(s) that stakeholder engagement had on the plans groups of stakeholders actively involved in the development of the flood risk management plans.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'IPP_7 - Other outcome' selected from enumeration list under ImpactPublicParticipation.	Blocker

As stated above, Article 10.2 requires Member States to encourage **'active involvement'** of interested parties in the production, review and updating of the FRMPs.

Class Schema element	FRMP FRMP/SummaryOverall/SummaryConsultation/ article10.2ConsultationStakeholdersInvolvedMechanisms	
Guidance on completion of schema element	Required. Select the mechanisms used to encourage the active involvement of stakeholders (more than one option can be selected). • CSIM_1 - Provision of information at relevant public exhibitions or providing notices on public sites • CSIM_2 - Establishment of advisory or working groups • CSIM_3 - Stakeholder involvement in drafting • CSIM_4 - Formation of alliances • CSIM_5 - Other outreach activities with opportunities for discussion and dialogue • CSIM_6 - Other	
Field type	ConsultationStakeholdersInvolvedMechanisms_Enum	
Properties	minOccurs:	1
	maxOccurs:	maxOccurs:
Quality checks		

Class Schema element	FRMP FRMP/SummaryOverall/SummaryConsultation/ article10.2ConsultationStakeholdersInvolvedMechanismsOther	
Guidance on completion of schema element	Conditional. If ‘Other’ selected from enumeration list. Provide a description of the other mechanisms used to encourage the active involvement of stakeholders.	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	10
	maxLength	1000
Quality checks	Conditional. Report if 'CSIM_6 - Other' selected from enumeration list under article10.2ConsultationStakeholdersInvolvedMechanisms	Blocker

Class Schema element	FRMP FRMP/SummaryOverall/SummaryConsultation/stakeholderConsultation Reference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to relevant documentation on public information and consultation and on stakeholder engagement.	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

6.3.10 FRMP/SummaryReview

Class Schema element	FRMP FRMP/SummaryReview/changesReference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to relevant documentation describing any changes or updates since the publication of the previous version of the FRMP in accordance with Article 14(3) which includes the requirement for a review and update of the FRMPs in December 2021 and every six years after.	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FRMP FRMP/SummaryReview/frmpProgressReference	
Guidance on completion of schema element	Required. Provide document(s) or link(s) to relevant documentation of progress made toward achievement of the objectives referred to in Article 7.2 - a description of, and explanation for, any measures foreseen in the earlier version of the FRMP which were planned to be undertaken and have not been taken forward (Annex, part B.2 and 3).	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FRMP FRMP/SummaryReview/additionalMeasuresReference	
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to relevant documentation on any additional measures put in place since publication of the previous version of the FRMP (Annex, part B.4). If the information requested by this schema element is not provided it will be presumed that no additional measures have been adopted since the publication of the first FRMPs.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FRMP FRMP/SummaryReview/progressReviewDescriptionReference	
Guidance on completion of schema element	Optional. Provide reference(s) to the progress made with implementation of measures and include a timetable for completion where possible	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

6.3.11 FRMP/SupportingInformation

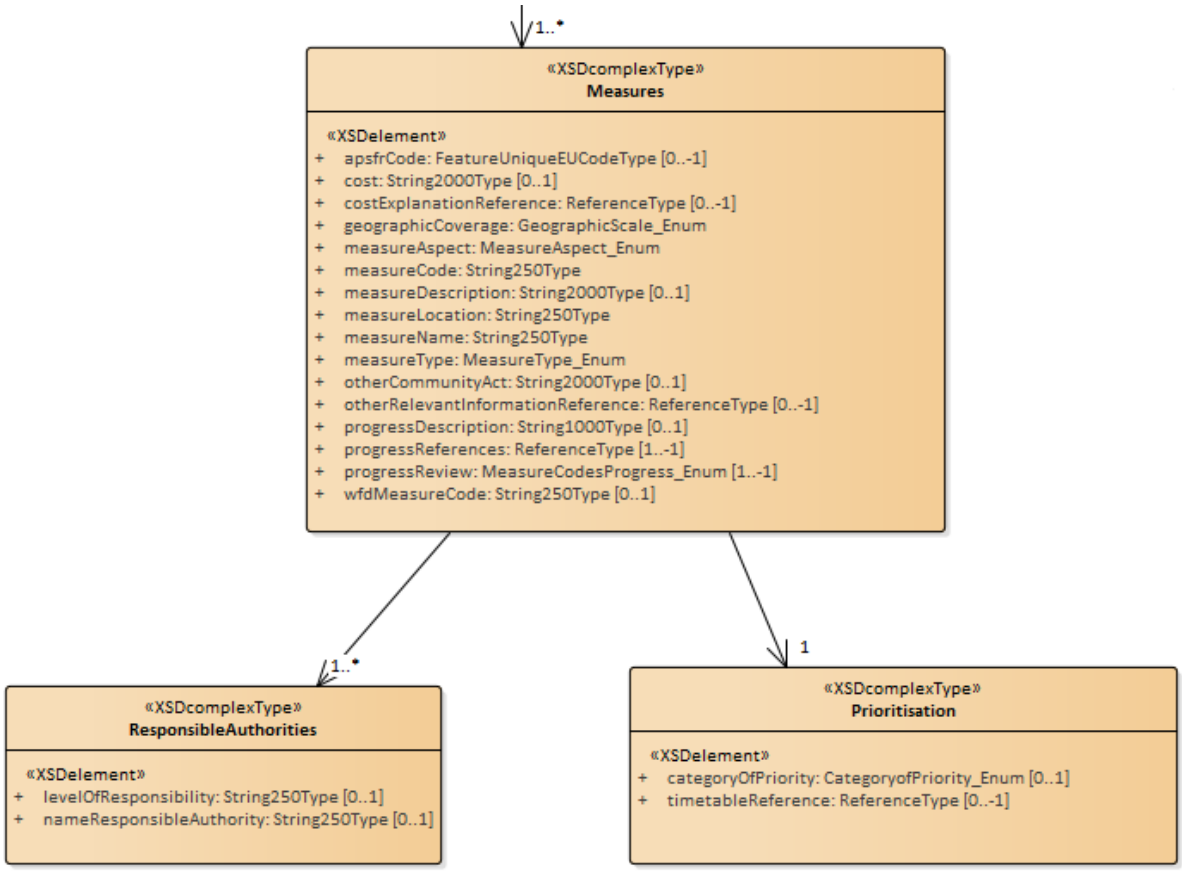
Class Schema element	FRMP FRMP/SupportingInformation/reference	
Guidance on completion of schema element	Required. Please provide reference(s) to more detailed supporting documents (e.g. full FRMP, methodology documents and external sources of information) or other relevant information not already covered in the preceding reference schemas. These documents should be uploaded to the EIONET.	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks		

6.3.12 FRMP/Measures

Where floods related measures are reported for the WFD River Basin Management Plan (RBMP), Member States should report the same code under the FD. Information on other measures should still be reported under the FD as the reporting under the WFD requirements for floods will not provide the level of detail needed on measures for the FD.

Measures can be reported as individual measures (as recommended for major projects) or as aggregated measures. Measures can be applied at different levels and MS are required to report the measure location that is most applicable such as RBD/UOM(code), APSFR/s (code), name of location, river basin(code), sub-basin(code) or water body(code), or other (see Section 6.3.13 below).

As a reminder, the schema elements in this section cover the following parts of the UML diagram.



Class Schema element	FRMP FRMP/Measures/wfdMeasureCode	
Guidance on completion of schema element	Optional. Unique code for the latest version of the WFD Measure Code if relevant.	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks		

Class Schema element	FRMP FRMP/Measures/measureCode	
Guidance on completion of schema element	Required. Unique code for the measure	
Field type	String250Type	
Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks		

Class Schema element	FRMP FRMP/Measures/measureName	
Guidance on completion of schema element	Required. Short descriptive name for the measure	
Field type	String250Type	

Properties	minOccurs:	1
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks		

Class Schema element	FRMP FRMP/Measures/measureAspect
Guidance on completion of schema element	Required. Choose whether this measure is: • Aggregated • Individual
Field type	MeasureAspect_Enum
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	

Class Schema element	FRMP FRMP/Measures/measureLocation
Guidance on completion of schema element	Optional. This is the location where the measure is implemented. RBD/UOM(), name of location, river basin(code), sub-basin(code) or water body(code), or other; (the most relevant location description shall be chosen from amongst these options)
Field type	String250Type
Properties	minOccurs: 0
	maxOccurs: 1
Facets	minLength 1
	maxLength 250
Quality checks	

Class Schema element	FRMP FRMP/Measures/geographicCoverage	
Guidance on completion of schema element	Required. Indicate the geographic coverage of expected effect of the measure(s): • GS_1 - International • GS_2 - National • GS_3 - RBD • GS_4 - UOM specific • GS_5 - APSFR • GS_6 - River basin • GS_7 - sub-basin • GS_8 - coastal area • GS_9 - Water body • GS_10 - Other (if different from measure location e.g. urban area, infrastructural asset)	
Field type	GeographicScale_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FRMP FRMP/Measures/apsfrCode	
Guidance on completion of schema element	Conditional. If APSFR is selected under geographicCoverage above, provide the Unique EU code for the area (or areas) of potential significant flood risk. Add the two-letter ISO Country code to the Member State unique id - up to 42 characters in total (article 6.1). If more than one APSFR is involved it will be necessary to create additional entries for the same measureCode.	
Field type	FeatureUniqueCodeType	
Properties	minOccurs:	0
	maxOccurs:	unbounded
Facets	minLength	3
	maxLength	42
Quality checks	Conditional If APSFR selected under geographicCoverage	Blocker

Class Schema element	FRMP FRMP/Measures/measureType
Guidance on completion of schema element	Required. Choose from the enumeration list • M11 - No Action, No measure is proposed to reduce the flood risk in the APSFR • or other defined area , • M21 - Prevention, Avoidance, Measure to prevent the location of new or additional receptors in flood prone areas, such as land use planning policies or regulation • M22 - Prevention, Removal or relocation, Measure to remove receptors from flood prone areas, or to relocate receptors to areas of lower probability of flooding and/or of lower hazard • M23 - Prevention, Reduction, Measure to adapt receptors to reduce the adverse consequences in the event of flood actions on buildings, public networks, etc... • M24 - Prevention, Other prevention, Other measure to enhance flood risk prevention (may include, flood risk modelling and assessment, flood vulnerability assessment, maintenance programmes or policies etc...) • M31 - Protection Natural flood management / runoff and catchment management, Measures to reduce the flow into natural or artificial drainage systems, such as overland flow interceptors and / or storage, enhancement of infiltration, etc. and including in-channel , floodplain works and the reforestation of banks, that restore natural systems to help slow flow and store water. • M32 - Protection, Water flow regulation, Measures involving physical interventions to regulate flows, such as the construction, modification or removal of water retaining structures (e.g., dams or other on-line storage areas or development of existing flow regulation rules), and which have a significant impact on the hydrological regime. • M33 - Protection, Channel, Coastal and Floodplain Works, Measures involving physical interventions in freshwater channels, mountain streams, estuaries, coastal waters and flood- prone areas of land, such as the construction, modification or removal of structures or the alteration of channels, sediment dynamics management, dykes, etc. • M34 - Protection, Surface Water Management, Measures involving physical interventions to reduce surface water flooding, typically, but not exclusively, in an urban environment, such as enhancing artificial drainage capacities or though sustainable drainage systems (SuDS). • M35 - Protection, Other Protection, Other measure to enhance protection against flooding, which may include flood defence asset maintenance programmes or policies • M41 - Preparedness, Flood Forecasting and Warning, Measure to establish or enhance a flood forecasting or warning system • M42 - Preparedness, Emergency Event Response Planning / Contingency planning, Measure to establish or enhance flood event institutional emergency response planning • M43 - Preparedness, Public Awareness and Preparedness, Measure to establish or enhance the public awareness or preparedness for flood events • M44 - Preparedness, Other preparedness, Other measure to establish or enhance preparedness for flood events to reduce adverse consequences • M51 - Recovery and Review (Planning for the recovery and review phase is in principle part of preparedness), Individual and societal recovery, Clean-up and restoration activities (buildings, infrastructure, etc.) o Health and mental health supporting actions, incl. managing stress o Disaster financial assistance (grants, tax), incl. disaster legal assistance, disaster unemployment assistance Temporary or permanent relocation o Other • M52 - Recovery and Review, Environmental recovery, Clean-up and restoration activities (with several sub-topics as mound protection, well-water safety and

	securing hazardous materials containers) • M53 - Recovery and Review, Other, Other recovery and review Lessons • learnt from flood events Insurance policies • M61 - Other
Field type	MeasureType_Enum
Properties	minOccurs: 1
	maxOccurs: 1
Quality checks	

Class Schema element	FRMP FRMP/Measures/cost
Guidance on completion of schema element	Optional. Cost and benefits of the measure(s) (expressed in monetary terms(in €/national currency), quantitative and/or qualitative terms)
Field type	String2000Type
Properties	minOccurs: 0
	maxOccurs: 1
Facets	minLength 1
	maxLength 2000
Quality checks	

Class Schema element	FRMP FRMP/Measures/costExplanationReference
Guidance on completion of schema element	Optional. Provide document(s) or link(s) to relevant documentation explaining what is included in the cost calculation and/or for providing further details (e.g. whether figures refer to budget allocated or to expenditure to date).
Field type	ReferenceType
Properties	minOccurs: 0
	maxOccurs: Unbounded
Quality checks	

Class Schema element	FRMP FRMP/Measures/otherCommunityAct	
Guidance on completion of schema element	Optional. Other Community Act under which the measure has been implemented (where relevant) (AnnexA.I.4) (less than 2000 characters)	
Field type	String2000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	2000
Quality checks		

Class Schema element	FRMP FRMP/Measures/measureDescription	
Guidance on completion of schema element	Optional. Provide a description of the measure.	
Field type	String2000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	2000
Quality checks		

Class Schema element	FRMP FRMP/Measures/otherRelevant InformationReference	
Guidance on completion of schema element	Optional. Reference providing additional useful information of clarification related to the measure	
Field type	ReferenceType	
Properties	minOccurs:	0

	maxOccurs:	Unbounded
Quality checks		

Class Schema element	FRMP FRMP/Measures/progressReferences	
Guidance on completion of schema element	Required. Provide references/links to relevant documentation (clearly pointing to the precise location of the information, e.g. chapter and page range) explaining progress with implementation of measures towards achievement of objectives	
Field type	ReferenceType	
Properties	minOccurs:	1
	maxOccurs:	Unbounded
Quality checks		

MS are required to review progress made with the implementation of their measures. It is recognised that at the time of reporting, measures (such as the construction of new flood defences, hard or soft) may be on-going. These measures will fall onto the category of 'one-off on-going' measures as listed in the schema element below. Where flood defences require more active maintenance during their lifetime (such as earth embankments or non-structural defences) the 'on-going recurrent' category would be more appropriate to select. MS have the option to clarify their responses in the description schema element which follows this enumeration list. It is also recognised that, particularly if measures are aggregated, they may operate over a long time frame and it therefore may not be not be easy to measure progress over one or two cycles. In this situation, one of the ongoing categories should be selected and further explanation provided in the description.

Class Schema element	FRMP FRMP/Measures/progressReview	
Guidance on completion of schema element	Required. Please indicate progress made with implementation of measures (more than one option can be selected): • NS - Not started • POG - In preparation (e.g. planning) • OGM - On-going (recurrent e.g. maintenance works) • OGC - On-going (one-off e.g. construction works) • COM – Completed • AB – Abandoned/interrupted	
Field type	MeasureCodesProgress_Enum	
Properties	minOccurs:	1
	maxOccurs:	Unbounded

Quality checks	

Class Schema element	FRMP FRMP/Measures/progressDescription	
Guidance on completion of schema element	Optional. This field will be reported when in progressReview field we select: AB – Abandoned/interrupted	
Field type	String1000Type	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks		

6.3.13FRMP/Measures/Prioritisation

At least one of the following two schema elements should be completed.

Class Schema element	FRMP FRMP/Measures/Prioritisation/timetableReference	
Guidance on completion of schema element	Conditional. Timetable for implementation (Annex Part A.II.1 and A.I.4)	
Field type	ReferenceType	
Properties	minOccurs:	0
	maxOccurs:	Unbounded
Quality checks	To be reported if ‘categoryofPriority’ not reported.	Blocker

Class Schema element	FRMP FRMP/Measures/Prioritisation/categoryofPriority
Guidance on completion of schema element	Conditional. Choose from list: • Very High • High • Critical • Moderate

	• Low	
Field type	CategoryofPriority_Enum	
Properties	minOccurs:	0
	maxOccurs:	1
Quality checks	To be reported if 'timetable reference' not reported.	Blocker

6.3.14 Measures/ResponsibleAuthorities

These two elements provide MS with the opportunity to provided details on the Authority responsible for implementing the measures. At least one of these two elements should be completed.

Class Schema element	FRMP FRMP/Measures/ResponsibleAuthorities/nameResponsible Authority	
Guidance on completion of schema element	Conditional. Provide the international name of responsible authority for implementing the measure(s).	
Field type	String250Type	
Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	To be reported if 'levelOfRepsonsibility' not reported.	Blocker

Class Schema element	FRMP FRMP/Measures/ResponsibleAuthorities/levelOfResponsibility
Guidance on completion of schema element	Conditional. Authority responsible - level of responsibility (e.g.; national authority, RBD/UOM authority, regional authorities, municipalities, other) or name of authority
Field type	String250Type

Properties	minOccurs:	0
	maxOccurs:	1
Facets	minLength	1
	maxLength	250
Quality checks	To be reported if ‘nameResponsibe’ not reported.	Blocker

6.4FRMP Products

The table below provides an indication of the products that can be developed as a result of the reporting on FRMPs. New products, as a result of changes made to the schemas for this current round of reporting are in **bold.**

Table 6.1 Products from information provided

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
1	Overall Objectives	Table	MS	Table summarising key strategic objectives across MS.	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
2	Minimise Adverse Consequences	Table	MS	Table summarising across MS, the specific focus of objectives set to reduce the effects of adverse consequences from floods	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
3	Objectives Considerations	Table	MS	Table summarising key aspects of coordination across MS including consideration of climate change	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
4	Aspects Included	Table	MS	Definitive table summarising whether all key aspects have been included across MS	Aggregation on the basis of the information reported at UOM level	Second cycle reporting

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
5	Summary Aspects	Table	MS	Definitive table summarising whether aspects of flood extent have been included across MS	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
6	Coordination FRMP and RBMP	Table	MS	Table showing how the FRMPs have been coordinated with the WFD RBMPs across MS	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
7	Local National International Coordination	Table	MS	Table showing whether coordination at the appropriate level has taken place across MS	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
8	Climate Change Impacts	Table	MS	Definitive table summarising across MS whether the impact of climate change on the occurrence of floods has been considered	Aggregation on the basis of the information reported at UOM level	Second cycle reporting
9	Cost Benefit Transnational Measures	Table	MS	Definitive table summarising across MS whether cost-benefit analysis has been used to assess measures with transnational effects	Aggregation on the basis of the information reported at UOM level	Second cycle reporting

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
10	**Public Consultations Mechanisms**	**Table**	**MS**	**Table summarising the key mechanisms used for consultation across MS**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**
11	**Consultation Stakeholders Involved**	**Table**	**MS**	**Table summarising across MS, the groups of stakeholders who have been actively involved in the development of the FRMPs**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**
12	**Impact Public Participation**	**Table**	**MS**	**Table summarising across MS, the impact of public participation on the final outcome of FRMPs**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**
13	**Consultation Stakeholders Involved Mechanisms**	**Table**	**MS**	**Table summarising across MS, the mechanisms used to ensure active involvement of stakeholders in the development of the FRMPs**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**
14	**Progress**	**Table**	**MS**	**Table summarising across MS, the progress made with implementation of measures**	**Aggregation on the basis of the information reported at UOM level**	**Second cycle reporting**

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
15	Total Number of measures	Table	MS	Table summarising across MS, the number and type of measures		Dashboard on Floods, 'Measures overview' tab
16	Number of aggregated measures per measure type and UOM	Table	UOM	Table summarising across UOMs, the number of measures per type.		Dashboard on Floods, 'Measures overview' tab
17	Number of individual measures per measure type and UOM	Table	UOM	Table summarising across UOMs, the number of individual measures per type.		Dashboard on Floods, 'Measures overview' tab
18	Total number of measures (aggregated and individual)	Table	UOM	Table summarising the number of individual and aggregated measures per measure type and UOM		Dashboard on Floods, 'Measures overview' tab
19	Share of total measures (aggregated and individual) by measure type.	Graph	UOM	Graph showing either the share of total measures (aggregated and individual) by measure type or the balance of the types and aspects of measures (average for all UOMs)		Dashboard on Floods, 'Measures overview' tab
20	Number of measures for each aspect for all UOMs	Graph	UOM	Graph showing the number of measures for each aspect (preparedness, prevention, protection and recovery) for all UOMs		Dashboard on Floods, 'Measures overview' tab
21	Geographic location of implementation of the measures	Table	Variable (UOM, APSFR, water body etc.)	Table showing the geographic location of implementation of measures. This table may not be available for all MS, depending on information reported.		Dashboard on Floods, 'Measure details: name & location' tab

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
22	Balance of the location of measures	Graph	Variable (UOM, APSFR, water body etc.)	Graph showing the location of measures.		Dashboard on Floods, 'Measure details: name & location' tab
23	Balance of priorities of the measures	Graph	MS	Graph showing priority setting for the MS		Dashboard on Floods, 'Measure details: objectives' tab
24	Level of responsibility for the reported measures	Table	Variable (from national to local)	Table summarising the level of responsibility for the reported measures		Dashboard on Floods, 'Measure details: authorities' tab
25	Level of responsibility for the reported measures	Graph	Variable (from national to local)	Graph summarising the level of responsibility for the reported measures		Dashboard on Floods, 'Measure details: authorities' tab
26	Types of responsibility for the reported measures	Table	MS	Table summarising the types of responsibility for the reported measures, as reported in the field 'name of responsible authority'		Dashboard on Floods, 'Measure details: authorities' tab
27	Breakdown of "National" authorities responsible for the reported measures	Table	MS	Table summarising the breakdown of "National" authorities responsible for the reported measures		Dashboard on Floods, 'Measure details: authorities' tab

No.	Name of Product	Type of Product	Scale of information	Detail of information displayed	Aggregation rule	Source of information
28	Progress of reported measures	Table	MS	Table summarising the progress of reported measures (Completed, Not started, On-going construction, Progress on-going).		Dashboard on Floods, ‘Measure details: progress’ tab
29	Balance of the progress of implementation of measures	Graph	MS	Graph summarising the balance of the progress of implementation of measures (Completed, Not started, On-going construction, Progress on-going).		Dashboard on Floods, ‘Measure details: progress’ tab

7.Annex 1 – Common Schema

```
"CountryCode_enum"
      "AT - Austria"
      "AD - Andorra"
      "AL - Albania"
      "AM - Armenia"
      "AZ - Azerbaijan"
      "BA - Bosnia and Herzegovina"
      "BE - Belgium"
      "BG - Bulgaria"
      "BY - Belarus"
      "CH - Switzerland"
      "CY - Cyprus"
      "CZ - Czech Republic"
      "DE - Germany"
      "DK - Denmark"
      "EE - Estonia"
      "ES - Spain"
      "FI - Finland"
      "FR - France"
      "GE - Georgia"
      "GI - Gibraltar"
      "GR - Greece"
      "HR - Croatia"
      "HU - Hungary"
      "IE - Ireland"
      "IS - Iceland"
      "IT - Italy"
      "KG - Kyrgyzstan"
      "KZ - Kazakhstan"
      "LI - Liechtenstein"
      "LT - Lithuania"
      "LU - Luxembourg"
      "LV - Latvia"
      "MC - Monaco"
      "MD - Moldova"
      "ME - Montenegro"
      "MK - FYR of Macedonia"
      "MT - Malta"
      "NL - Netherlands"
      "NO - Norway"
      "PL - Poland"
      "PT - Portugal"
      "RO - Romania"
      "RS - Serbia"
      "RU - Russian Federation"
      "SE - Sweden"
      "SI - Slovenia"
      "SK - Slovakia"
      "TJ - Tajikistan"
      "TM - Turkmenistan"
      "TR - Turkey"
      "UA - Ukraine"
      "UK - United Kingdom"
      "UZ - Uzbekistan"
      "XK - Kosovo"
```

```
"DataConfidentialityClassificationCode_Enum"
      "001 - Unclassified"
      "003 - Confidential"

"LanguageCode_Enum"
      "az - Azerbaijani"
      "be - Belarusian"
      "bg - Bulgarian"
      "bs - Bosnian"
      "ca - Catalan"
      "cs - Czech"
      "da - Danish"
      "de - German"
      "el - Greek"
      "en - English"
      "es - Spanish"
      "et - Estonian"
      "fi - Finnish"
      "fr - French"
      "ga - Irish"
      "hr - Croatian"
      "hu - Hungarian"
      "hy - Armenian"
      "is - Icelandic"
      "it - Italian"
      "ka - Georgian"
      "kk - Kazakh"
      "ky - Kyrgyz"
      "lb - Luxembourgish"
      "lt - Lithuanian"
      "lv - Latvian"
      "me - Montenegrin"
      "mk - Macedonian"
      "mt - Maltese"
      "nl - Dutch"
      "no - Norwegian"
      "pl - Polish"
      "pt - Portuguese"
      "rm - Rhaeto-Romance"
      "ro - Romanian"
      "ru - Russian"
      "sk - Slovak"
      "sl - Slovenian"
      "sq - Albanian"
      "sr - Serbian"
      "sv - Swedish"
      "tg - Tajik"
      "tk - Turkmen"
      "tr - Turkish"
      "uk - Ukrainian"

"GeographicScale_Enum"
      "GS_1 - International"
      "GS_2 - National"
      "GS_3 - RBD"
      "GS_4 - UoM"
      "GS_5 - APSFR"
      "GS_6 - River basin"
      "GS_7 - Sub basin"
      "GS_8 - Coastal area"
      "GS_9 - Water body"
```

```
      "GS_10 - Other"

"WiseEvolutionTypeValue"
      "aggregation - aggregation"
      "change - change"
      "changeBothAggregationAndSplitting -
    changeBothAggregationAndSplitting"
      "changeCode - changeCode"
      "changeExtendedArea - changeExtendedArea"
      "changeReducedArea - changeReducedArea"
      "creation - creation"
      "deletion - deletion"
      "noChange - noChange"
      "splitting - splitting"

"WiseLanguageCode_Enum"
      "alb"
      "arm"
      "baq"
      "bel"
      "bul"
      "cat"
      "cze"
      "dan"
      "dut"
      "eng"
      "est"
      "fao"
      "fin"
      "fre"
      "geo"
      "ger"
      "gle"
      "glg"
      "gre"
      "hrv"
      "hun"
      "ice"
      "ita"
      "lav"
      "lit"
      "ltz"
      "mac"
      "mis"
      "mlt"
      "nor"
      "pol"
      "por"
      "roh"
      "rum"
      "rus"
      "slo"
      "slv"
      "spa"
      "srp"
      "swe"
      "tur"
      "ukr"

"CharacteristicsofFlooding_Enum"
      "A31 - Flash Flood"
```

```
      "A32 - Snow Melt Flood"
      "A33 - Other rapid onset"
      "A34 - Medium onset flood"
      "A35 - Slow onset flood"
      "A36 - Debris Flow"
      "A37 - High Velocity Flow"
      "A38 - Deep Flood"
      "A39 - Other characteristics"
      "A40 - No data"

"MechanismofFlooding_Enum"
      "A21 - Natural exceedance"
      "A22 - Defence exceedance"
      "A23 - Defence failure"
      "A24 - Blockage"
      "A25 - Other"
      "A26 - No data"

"SourceofFlooding_Enum"
      "A11 - Fluvial"
      "A12 - Pluvial"
      "A13 - Groundwater"
      "A14 - Sea Water"
      "A15 - Artificial Water Bearing Infrastructure"
      "A16 - Other"
      "A17 - No data"

"YesNoCode"
      "Y"
      "N"
      ""

"HistoricalSignificantFloodsCriteria_Enum"
      "HSFC_1 - Flooded area"
      "HSFC_2 - Residents affected"
      "HSFC_3 - Buildings affected"
      "HSFC_4 - Commercial area"
      "HSFC_5 - Level of damage"
      "HSFC_6 - Amount compensation"
      "HSFC_7 - Return period"
      "HSFC_8 - Infrastructure affected"
      "HSFC_9 - Community assets"
      "HSFC_10 - Duration"
      "HSFC_11 - Speed of onset"
      "HSFC_12 - Triggered warning level"
      "HSFC_13 - Weighting systems"
      "HSFC_14 - Expert Judgement"
      "HSFC_15 - Other"

"PotentialAdverseConsequencesCriteria_Enum"
      "PACC_1 - Residents affected"
      "PACC_2 - Value property"
      "PACC_3 - Buildings affected"
      "PACC_4 - Infrastructural assets"
      "PACC_5 - Exceedance threshold"
      "PACC_6 - Economic damage"
      "PACC_7 - Waterbodies"
      "PACC_8 - Pollution from industry"
      "PACC_9 - Rural land use"
      "PACC_10 - Economic activity"
      "PACC_11 - Cultural assets"
```

```
      "PACC_12 - Recurrence periods"
      "PACC_13 - Recurrence periods with land use"
      "PACC_14 - Community assets"
      "PACC_15 - Water level"
      "PACC_16 - Water velocity"
      "PACC_17 - Past occurrence"
      "PACC_18 - Weighting systems"
      "PACC_19 - Expert judgement"
      "PACC_20 - Other"
      "PACC_21 - No assessment required"

"CategoryFloods_Enum"
      "CF_1 - Past"
      "CF_2 - Future"

"IssuesArticle4.2_d_Enum"
      "IA42_1 - Topography"
      "IA42_2 - Watercourses"
      "IA42_3 - Retention"
      "IA42_4 - Defence infrastructures"
      "IA42_5 - Position populated areas"
      "IA42_6 - Areas economic activity"
      "IA42_7 - Climate change"
      "IA42_8 - Long term development settlements"
      "IA42_9 - Long term development infrastructure"
      "IA42_10 - Long term development rural"
      "IA42_11 - No assessment required"

"TotalDamageClass_Enum"
      "H - High"
      "I - Insignificant"
      "L - Low"
      "M - Medium"
      "NA - Not Applicable"
      "U - Unknown"
      "VH - Very high"

"TypeEnvironment_Enum"
      "B21 - Waterbody"
      "B22 - Protected area"
      "B23 - Pollution sources"
      "B24 - Other"
      "B25 - Not applicable"
      "B26 - unknown"

"TypeCulturalHeritage_Enum"
      "B31 - Cultural Assets"
      "B32 - Landscape"
      "B33 - Other"
      "B34 - Not applicable"
      "B35 - unknown"

"TypeEconomicActivity_Enum"
      "B41 - Property"
      "B42 - Infrastructure"
      "B43 - Rural land use"
      "B44 - Economic activity"
      "B45 - Other"
      "B46 - Not applicable"
      "B47 - unknown"
```

```
"TypeHumanHealth_Enum"
      "B11 - Human Health"
      "B12 - Community"
      "B13 - Other"
      "B14 - Not applicable"

      "B15 - unknown"

"LocalNationalInternationalCoordination_Enum"
      "LNIC_1 - At local level"
      "LNIC_2 - At UoM/RBD level"
      "LNIC_3 - At international level"
      "LNIC_4 - No need"
      "LNIC_5 - Not international"
      "LNIC_6 - No coordination"

"CoordinationFRMPandRBMP_Enum"
      "CFRMP_1 - Single document"
      "CFRMP_2 - Joint consultation"
      "CFRMP_3 - Coordination between authorities"
      "CFRMP_4 - FD objectives considered in RBMP/PoM"
      "CFRMP_5 - Coordination with art4 WFD"
      "CFRMP_6 - Drought management included"
      "CFRMP_7 - Natural water retention and green infrastructure included"
      "CFRMP_8 - Consideration WFD objectives required"
      "CFRMP_9 - Consistent application WFD art7 and HMWBs"
      "CFRMP_10 - WFD objectives taken into account for structural
    measures"
      "CFRMP_11 - Sustainable drainage systems considered"
      "CFRMP_12 - Other"

"CategoryofPriority_Enum"
      "Very high - Very high"
      "High - High"
      "Critical - Critical"
      "Moderate - Moderate"
      "Low - Low"

"MeasureAspect_Enum"
      "Aggregated - Aggregated"
      "Individual - Individual"

"MeasureCodesProgress_Enum"
      "NS - Not started"
      "POG - In preparation"
      "OGM - On-going maintenance"
      "OGC - On-going construction"
      "COM - Completed"
      "AB – Abandoned/interrupted"

"MeasureType_Enum"
      "M11 - No action"
      "M21 - Prevention, Avoidance"
      "M22 - Prevention, Removal or relocation"
      "M23 - Prevention, Reduction"
      "M24 - Prevention, other"
      "M31 - Protection, Natural flood management"
      "M32 - Protection, Water flow regulation"
      "M33 - Protection, Channel, Coastal and Floodplain Works"
      "M34 - Protection, Surface Water Management"
      "M35 - Protection, other"
```

```
      "M41 - Preparedness, Flood Forecasting and Warning"
      "M42 - Preparedness, Emergency Event Response Planning"
      "M43 - Preparedness, Public Awareness and Preparedness"
      "M44 - Preparedness, other"
      "M51 - Recovery and Review, Individual and Societal"
      "M52 - Recovery and Review, Environmental"
      "M53 - Recovery and Review, other"
      "M61 - Other"

"ConsultationStakeholdersInvolvedMechanisms_Enum"
      "CSIM_1 - Public exhibitions or sites"
      "CSIM_2 - Working groups"
      "CSIM_3 - Involvement in drafting"
      "CSIM_4 - Formation alliances"
      "CSIM_5 - Other activities with discussion"
      "CSIM_6 - Other"

"ConsultationStakeholdersInvolved_Enum"
      "CSI_1 - Civil Protection Authorities"
      "CSI_2 - Flood Warning Defence Authorities"
      "CSI_3 - Drainage Authorities"
      "CSI_4 - Emergency services"
      "CSI_5 - Water supply and sanitation"
      "CSI_6 - Community groups"
      "CSI_7 - Agriculture/farmers"
      "CSI_8 - Energy"
      "CSI_9 - Navigation"
      "CSI_10 - Fisheries/aquaculture"
      "CSI_11 - Industry"
      "CSI_12 - NGO's/nature protection"
      "CSI_13 - Consumer groups"
      "CSI_14 - Local/Regional authorities"
      "CSI_15 - Academia/Research Institutions"
      "CSI_16 - Other"

"ImpactPublicParticipation_Enum"
      "IPP_1 - Changes selection measures"
      "IPP_7 - Other outcome"
      "IPP_2 - Adjustment specific measures"
      "IPP_3 - Addition new information"
      "IPP_4 - Changes methodology used"
      "IPP_5 - Commitment further research"
      "IPP_6 - Commitment to action in the next FRMP cycle"

"PublicConsultationsMechanisms_Enum"
     "PCM_1 - Media (papers, TV, radio)"
     "PCM_2 - Internet"
     "PCM_3 - Social networking sites"
     "PCM_4 - Printed material"
     "PCM_5 - Direct mailing"
     "PCM_6 - Invitations to stakeholders"
     "PCM_7 - Local Authorities"
     "PCM_8 - Meetings with local population"
     "PCM_9 - Public consultation days"
     "PCM_10 - Written consultation"
     "PCM_11 - Other"

"InternationalInformationExchange_Enum"
     "IIE_1 - River Commission"
     "IIE_2 - Bilateral water commission"
     "IIE_3 - International working groups"
```

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      "IIE_4 - Bilateral working groups"
      "IIE_5 - Regulations"
      "IIE_6 - Pre-existing structures"
      "IIE_7 - Informal arrangements"
      "IIE_8 - Joint declaration"
      "IIE_9 - No information"
      "IIE_10 - Other"

"CriteriaForDeterminationFloodRisk_Enum"
      "CFDFR_1 - Residents affected"
      "CFDFR_2 - Value property"
      "CFDFR_3 - Buildings affected"
      "CFDFR_4 - Infrastructural assets"
      "CFDFR_5 - Exceedance threshold"
      "CFDFR_6 - Economic damage"
      "CFDFR_7 - Waterbodies"
      "CFDFR_8 - Pollution from industry"
      "CFDFR_9 - Rural land use"
      "CFDFR_10 - Economic activity"
      "CFDFR_11 - Cultural assets"
      "CFDFR_12 - Recurrence periods"
      "CFDFR_13 - Recurrence periods with land use"
      "CFDFR_14 - Community assets"
      "CFDFR_15 - Water level"
      "CFDFR_16 - Water velocity"
      "CFDFR_17 - Past occurrence"
      "CFDFR_18 - Weighting systems"
      "CFDFR_19 - Expert judgement"
      "CFDFR_20 - Other"
      "CFDFR_21 - Flood extent"
      "CFDFR_22 - Flood duration"
      "CFDFR_23 - Number past floods"
      "CFDFR_24 - Damage past floods"

"CriteriaForInclusion_Enum"
      "CFI_1 - Risk human Health"
      "CFI_2 - Risk economic activity"
      "CFI_3 - Economic damage"
      "CFI_4 - Risk environment"
      "CFI_5 - Risk cultural heritage"
      "CFI_6 - Community assets"
      "CFI_7 - Infrastructure"
      "CFI_8 - Lack flood defence"
      "CFI_9 - Failure flood defence"
      "CFI_10 - Agreement neighbour"
      "CFI_11 - Occurrence past events"
      "CFI_12 - Impact past events"
      "CFI_13 - Local knowledge"
      "CFI_14 - Increased vulnerability"
      "CFI_15 - Exceedance threshold"
      "CFI_16 - Expert judgement"
      "CFI_17 - High level damage"
      "CFI_18 - Other"

"ProbabilityType_Enum"
      "PT_1 - floods with low probability, or extreme event scenarios"
      "PT_2 - floods with a medium probability (likely return period = 100
     years)"
      "PT_3 - floods with a high probability, where appropriate"
```

```
"FloodSourcesMapped_Enum"
     "FSM_1 - Map shows flood extents for a single source"
     "FSM_2 - Map shows flood extent for multiple (i.e. combined) sources
    by overlapping individual flood sources"
     "FSM_3 - Map shows flood extent for multiple sources resulting from
    combined modelling of flood sources (e.g. that occurred concurrently)"

"Article_6.6_Justification_Enum"
     "A66J_1 - Failure flood defence"
     "A66J_2 - Overtopping flood defence"
     "A66J_3 - Legal regulations for use"
     "A66J_4 - Other justification"

"Article_6.7_Justification_Enum"
     "A67J_1 - Contributing source"
     "A67J_2 - Difficulty distinguish impact"
     "A67J_3 - Only low probability"
     "A67J_4 - Limited information"
     "A67J_5 - Other justification"

"YesCode"
      "Y"
      ""

"ClimateChange_Enum"
     "N - No"
     "Y - Yes"
     "Y, not all maps - Yes not all maps"
     "Y, not all sources - Yes not all sources"
"RelevantSources_Enum"
     "A11 - Fluvial"
     "A12 - Pluvial"
     "A13 - Groundwater"
     "A14 - Sea Water"
     "A15 - Artificial Water Bearing Infrastructure"
     "A16 - Other"

"ReturnperiodandprobabilitiesApproach_Enum"
     "RPPA_1 - Historical countsdata"
     "RPPA_2 - Hydraulic modelling"
     "RPPA_3 - Hydrological modelling"
     "RPPA_4 - Observed data"
     "RPPA_5 - Rainfall data"
     "RPPA_6 - Expert judgement"
     "RPPA_7 - Other"

"ProtectedAreaType_Enum"
     "PAT_1 - Bathing"
     "PAT_2 - Birds"
     "PAT_3 - Habitats"
     "PAT_4 - Nitrates"
     "PAT_5 - UWWT"
     "PAT_6 - Article 7 Abstraction for drinking water"
     "PAT_7 - WFD_WaterBodies"
     "PAT_8 - EuropeanOther"
     "PAT_9 - National"
     "PAT_10 - Local"

"RoleCode_Enum"
     "A - Coordination, Preparation, Production"
     "B - Reporting"
```

```
     "C - Other"

"YesNoArticle66_67_enum"
     "6.6 and 6.7 - both 6.6 and 6.7"
     "6.7 - 6.7"
     "N - No"

"ElementsProbability6.6_Enum"
     "EP1 - Flooding extent"
     "EP66 - Article 6.6 applied"
     "EP2 - Water depth level"
     "EP3 - Water flow velocity"
     "EP4 - Other"

"AspectsIncluded_Enum"
     "AI_1 - Cost and benefits"
     "AI_2 - Flood extent"
     "AI_3 - Flood conveyance routes"
     "AI_4 - Potential water retention"
     "AI_5 - Art4 objectives WFD"
     "AI_6 - Soil and water management"
     "AI_7 - Spatial planning"
     "AI_8 - Land use"
     "AI_9 - Nature conservation"
     "AI_10 - Navigation and port infrastructure"
     "AI_11 - Promotion of sustainable land use"
     "AI_12 - Improvement of water retention"
     "AI_13 - Controlled flooding"
     "AI_14 - Forecasting and early warning systems"

"ElementsProbability_Enum"
     "EP1 - Flooding extent"
     "EP2 - Water depth level"
     "EP3 - Water flow velocity"
     "EP4 - Other"

"ElementsProbability6.7_Enum"
     "EP1 - Flooding extent"
     "EP67 - Article 6.7 applied"
     "EP2 - Water depth level"
     "EP3 - Water flow velocity"
     "EP4 - Other"

"WFDAssociationType_Enum"
     "WFDAT_1 - Overlapping (partly within)"
     "WFDAT_2 - Within"

"PriorInformationExchange_Enum"
     "PIE_1 - River Commission"
     "PIE_2 - Bilateral water commission"
     "PIE_3 - International working groups"
     "PIE_4 - Bilateral working groups"
     "PIE_5 - Regulations"
     "PIE_6 - Pre-existing structures"
     "PIE_7 - Informal arrangements"
     "PIE_8 - Joint declaration"
     "PIE_9 - Other"

"TypeIEDInstallation_Enum"
     "1 - Energy industry"
     "1.1 -"
```

```
"1.2 -"
"1.3 -"
"1.4(a) -"
"1.4(b) -"
"2 - Metal industry"
"2.1 -"
"2.2 -"
"2.3(a) -"
"2.3(b) -"
"2.3(c) -"
"2.4 -"
"2.5(a) -"
"2.5(b) -"
"2.6 -"
"3 - Mineral industry"
"3.1(a) -"
"3.1(b) -"
"3.1(c) -"
"3.2 -"
"3.3 -"
"3.4 -"
"3.5 -"
"4 - Chemical industry"
"4.1(a) -"
"4.1(b) -"
"4.1(c) -"
"4.1(d) -"
"4.1(e) -"
"4.1(f) -"
"4.1(g) -"
"4.1(h) -"
"4.1(i) -"
"4.1(j) -"
"4.1(k) -"
"4.2 - Production of inorganic chemicals, such as:"
"4.2(a) -"
"4.2(b) -"
"4.2(c) -"
"4.2(d) -"
"4.2(e) -"
"4.3 -"
"4.4 -"
"4.5 -"
"4.6 -"
"5 - Waste management"
"5.1(a) -"
"5.1(b) -"
"5.1(c) -"
"5.1(d) -"
"5.1(e) -"
"5.1(f) -"
"5.1(g) -"
"5.1(h) -"
"5.1(i) -"
"5.1(j) -"
"5.1(k) -"
"5.2(a) -"
"5.2(b) -"
"5.3(a)(i) -"
"5.3(a)(ii) -"
"5.3(a)(iii) -"
```

```
    "5.3(a)(iv) -"
    "5.3(a)(v) -"
    "5.3(b)(i) -"
    "5.3(b)(ii) -"
    "5.3(b)(iii) -"
    "5.3(b)(iv) -"
    "5.4 -"
    "5.5 -"
    "5.6 -"
    "6 - Other activities"
    "6.1(a) -"
    "6.1(b) -"
    "6.1(c) -"
    "6.2 -"
    "6.3 -"
    "6.4(a) -"
    "6.4(b)(i) -"
    "6.4(b)(ii) -"
    "6.4(b)(iii) -"
    "6.4(c) -"
    "6.5 -"
    "6.6(a) -"
    "6.6(b) -"
    "6.6(c) -"
    "6.7 -"
    "6.8 -"
    "6.9 -"
    "6.10 -"
    "6.11 -"

"AnnexAspectsIncluded_enum"
     "AAI_1 - Conclusions from FHRM"
     "AAI_2 - Conclusions of PFRA"
     "AAI_3 - Appropriate objectives FRM"
     "AAI_4 - Measures with prioritisation"
     "AAI_5 - Cost-benefit analysis transnational measures"
     "AAI_6 - Monitoring progress"
     "AAI_7 - Public information"
     "AAI_8 - Competent authorities"
     "AAI_9 - Coordination with IRBD"
     "AAI_10 - Coordination with WFD"
     "AAI_11 - Reviews and updates plans"
     "AAI_12 - Progress toward objectives"
     "AAI_13 - Measures not taken forward"
     "AAI_14 - Additional measures since prior plans"
```

8.Annex 2 – Spatial Guidance

9. Annex 3 - Quality Assurance and Quality Control Procedures

10.Annex 4 – UML Diagram Competent Authorities and Units of Management

11.Annex 5 – UML Diagram PFRA

12.Annex 6 – UML Diagram APSFR

13.Annex 7 – UML Diagram FHRM

14.Annex 8 – UML Diagram FRMP