

Specific contract No 07.0307/2012/638595/D2 implementing
Framework Service Contract ENV.D.2/FRA/2012/0013

URBAN WASTE WATER TREATMENT DIRECTIVE

TOWARD A NEW INFORMATION SYSTEM

SIIF

**(Structured Implementation and Information
Framework)**

IT ASPECTS

Annex I

USE CASES

Final Version
24 October 2013



Date: 24 October 2013
Authors: Katharina Lenz, Edith Hödl-Kreuzbauer (both UBA)
Benoît Fribourg-Blanc, Sylvain Grellet (both OIEau)
Contract Manager: Edith Hödl-Kreuzbauer (UBA)

The contents of this document are subject to copyright and all rights are reserved. No part of this document may be reproduced, stored in a retrieval system or transmitted, in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of the copyright owner.

This document has been produced by Umweltbundesamt GmbH and OIEau.





Content

I.	INTRODUCTION	1
II.	USE CASES OVERVIEW	2
III.	USE CASES DESCRIPTION	3
III.1.	UC 1. ACCESS TO REPORTING REQUIREMENTS & TOOLS ON UWWTD	3
III.2.	UC 2. REALISE THE UWWTD E-REPORTING	5
III.3.	UC 3A. CONSUME THE UWWTD E-REPORTING.....	7
III.4.	UC 3B. VALIDATE THE UWWTD E-REPORTING.....	10
III.5.	UC 3C. REALISE THE COMPLIANCE ASSESSMENT	12
III.6.	UC 3D. PUBLISH VALIDATED UWWTD E-REPORTING DATASET	14
III.7.	UC 4.ACCESS REPORTED DATASETS	15
III.8.	UC 5.CROSS DIRECTIVES REPORTING LINK	17
III.9.	UC 6. ACCESS TO UWWTD PUBLIC INFORMATION	19





I. Introduction

This document presents the various use cases taken into account as a basis for the development of the UWWTD SIIF concept paper. Thus all use cases target the ideal future SIIF. They don't aim at describing the current reporting process and associated tools.

The overall target of the concept paper is the EU-level node of the SIIF and all what contributes to it.

This document contains a first set of use cases to trigger discussion. Most of them were identified in the first phase of the project and listed during the webconference held between DGEnv and the contractor (May 2013 3rd). Further documents exchange and additional webconference helped refine the document.

Activity diagrams are vectorised so they support high zoom levels on the document. Some will be easier to read above 100%.

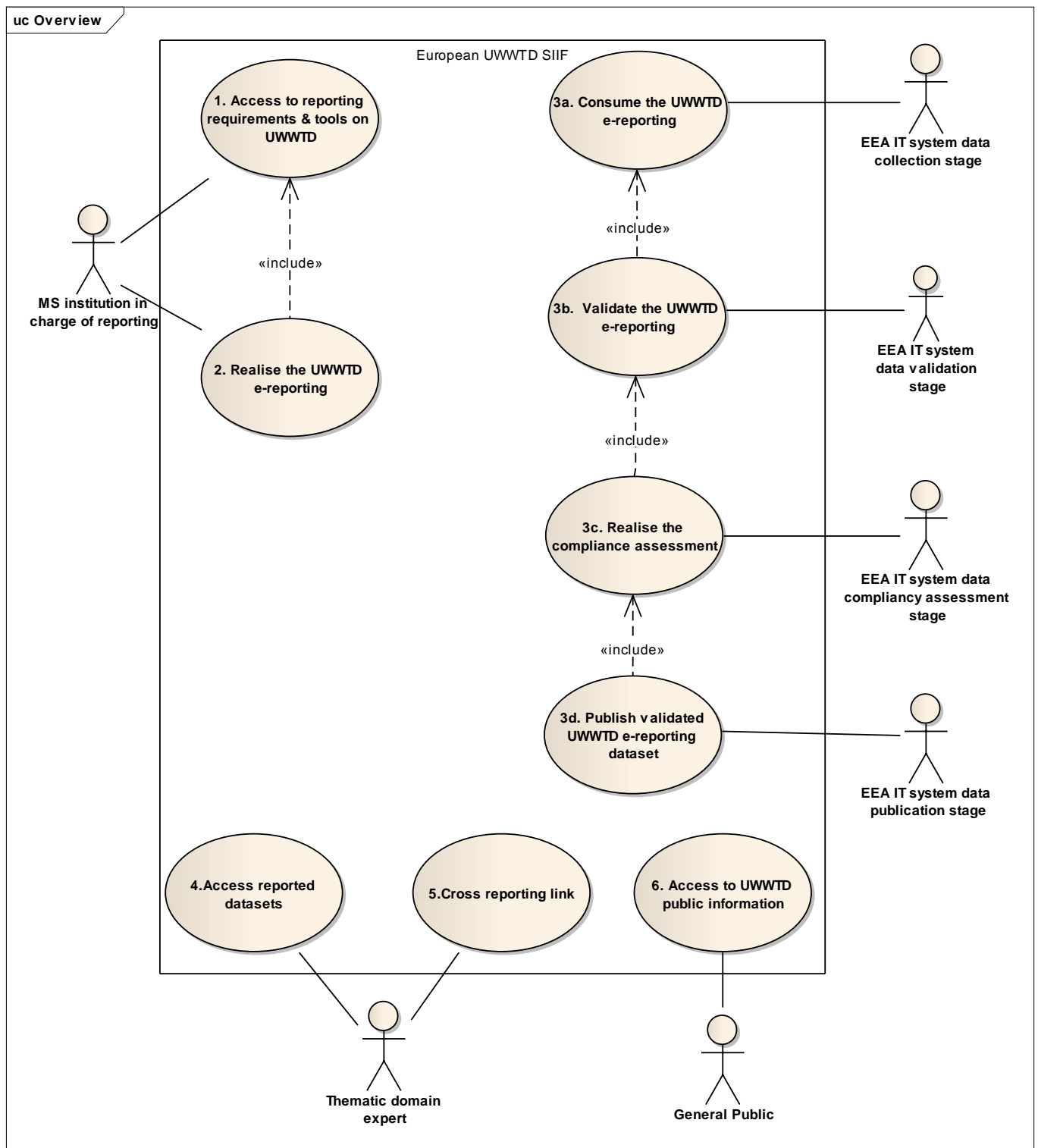
The current document considers the following primary actors:

Actor	Description
MS institution in charge of reporting	Institution in Member State that has the task to do the UWWTD reporting
EEA IT system data collection stage	Part of the EEA IT infrastructure responsible for the data collection
EEA IT system data validation stage	Part of the EEA IT infrastructure responsible for the data validation
EEA IT system data publication stage	Part of the EEA IT infrastructure responsible for the data publication
Thematic domain expert	Expert on wastewater that uses the UWWTD reporting. Could belong either to a MS or EU
NGO, local organisation	Informed public interested in society matters such as water pollution thus Treatment Plant efficiency.
Media	Information multiplier towards the public.
Economy	Companies that could access and reuse information about UWWTPs mainly for consultancy services and planning purposes.
General public	Non informed public, citizens with no or very low knowledge on UWWTD thematic domain





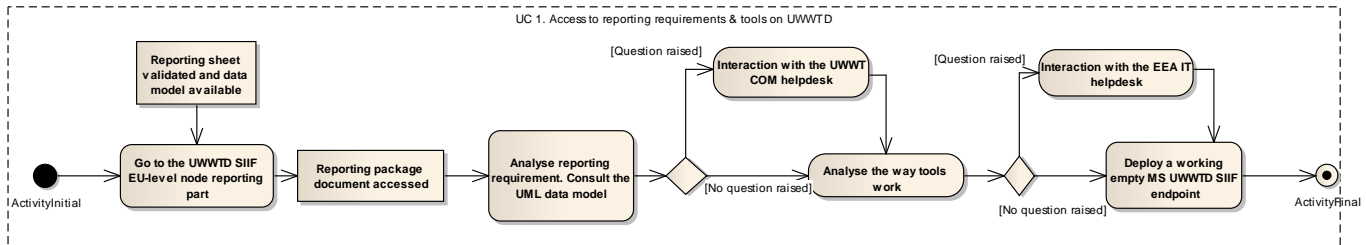
II. Use Cases overview





III. Use Cases description

III.1. UC 1. Access to reporting requirements & tools on UWWTD





Use Case Description	
Name	1. Access to reporting requirements & tools on UWWTD
Primary actor	MS institution in charge of reporting
Description	<p>The user has to carry out UWWTD reporting for his country. He needs to know what information is asked for according to reporting guidelines, where, when and how.</p> <p>The user gets reporting requirements, tools and support if needed.</p> <p>Tools are provided by the EEA in order to assist MS deploying their SIIF node. Those tools are developed to expose datasets fulfilling the reporting requirements.</p>
Pre-condition	The reporting sheet has been validated by the COM as well as the Inspire compliant reporting data model. The user is aware of the UWWTD SIIF EU-level node existence.
Post-condition	A clear and documented reporting structure to be followed.
Flow of Events – Basic Path	
Step 1	The user goes to the UWWTD SIIF EU-level node and its reporting part.
Step 2	The user downloads/accesses all at once the necessary elements to realise the e-reporting (a reporting package).
Step 3	The user analyses the reporting requirements downloaded. Clear definitions are available for each needed pieces of information in the form of an Inspire compliant UML ¹ data model.
Step 4	The user analyses the way the tool works
Step 5	The user deploys a working empty MS UWWTD SIIF endpoint and tests its communication with the EU-level node
Flow of Events – Alternative Paths	
Step 3.A	Is the information provided by the COM sufficient to have a clear understanding of what information is needed and what has to be done to carry out the reporting?
Step 3.A.1	If Yes. Continue.
Step 3.A.2	If No. The user interacts with the COM UWWTD support team.
Step 4.A	Is the information provided by the COM sufficient to have a clear

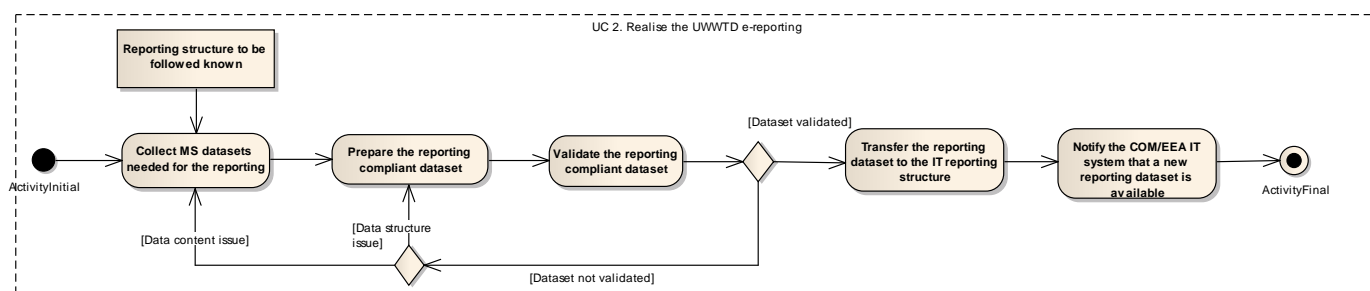
¹ Unified Modelling Language





	understanding of the way reporting tools work?
Step 4.A.1	If Yes. Continue.
Step 4.A.2	If No. The user interacts with the EEA IT support team.
Data set: Reporting Package	
Description	Relevant document for the reporting.
Type	Output
Data provider	EEA
Geographic scope	Europe
Thematic scope	UWWTD
Scale, resolution	N/A
Delivery	On(off)line
Documentation	Data model, xsd to set up the requirement.

III.2. UC 2. Realise the UWWTD e-reporting





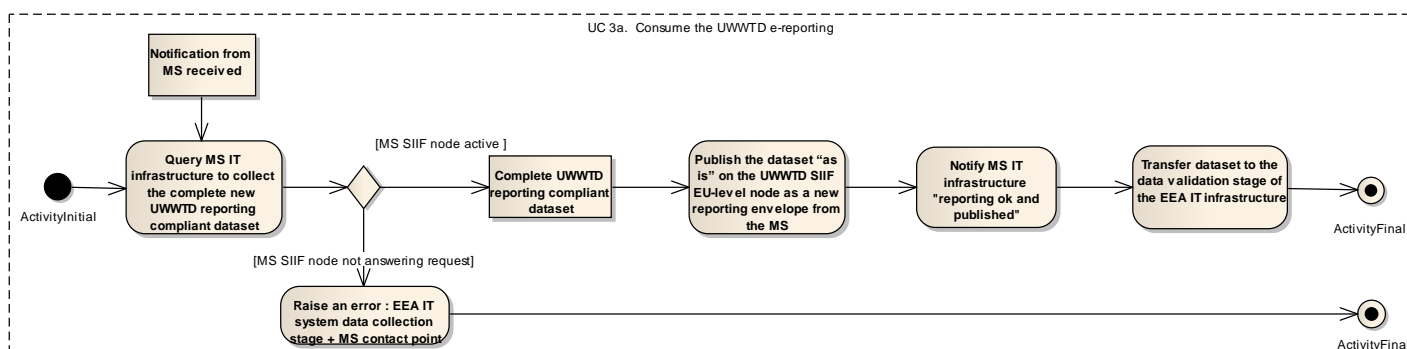
Use Case Description	
Name	2. Realise the UWWTD e-reporting
Primary actor	MS institution in charge of reporting
Description	The user has to carry out UWWTD reporting for his country. He needs to make available online datasets needed for the reporting Data validation procedure validated at EU level (COM + MS) and available at the UWWTD SIIF EU-level node.
Pre-condition	The user already knows the reporting structure to be followed (Use Case 1)
Post-condition	An active MS reporting node
Flow of Events – Basic Path	
Step 1	The user collects datasets needed for the reporting within his country
Step 2	The user prepares the reporting dataset: mapping to EU Inspire compliant data model, data conversion/generation.
Step 3	The user validates the reporting dataset and assesses its compliancy.
Step 4	The user transfers the reporting dataset to the IT reporting structure.
Step 5	The user notifies the COM/EEA IT system that a new reporting dataset is available. The notification contains the location of the new delivery endpoint at the UWWTD SIIF MS node level.
Flow of Events – Alternative Paths	
Step 3.A	Is the dataset compliant to the reporting format?
Step 3.A.1	If Yes. Continue.
Step 3.A.2	If No. The user corrects the dataset.
Data set: Dataset compliant to the reporting format	
Description	Dataset compliant to the reporting format
Type	Output
Data provider	MS
Geographic scope	MS
Thematic	UWWTD





scope	
Scale, resolution	According to UWWTD reporting requirements
Delivery	Online
Documentation	Accompanying explanatory note/metadata? On the envelope and/or per object?

III.3. UC 3a. Consume the UWWTD e-reporting



Use Case Description	
Name	3a. Consume the UWWTD e-reporting
Primary actor	EEA IT system data collection stage
Description	The user consumes the reporting information put online by a MS. Transfer it for further use/validation, publishes it "as is" on the UWWTD SIIF EU-level node. To realise the complete UWWT reporting this use case has to be done for all the Member States.
Pre-condition	The user has received a notification from the MS that new UWWTD reporting datasets are online at a given endpoint.
Post-condition	New MS UWWTD reporting dataset available for further use within the EEA IT system.
Flow of Events – Basic Path	
Step 1	The user queries the UWWTD SIIF MS node reporting webservice endpoint to collect the complete new UWWTD reporting dataset. Only the MS national node is being queried (no local node).





Step 2	The user receives the complete dataset from the MS IT infrastructure.
Step 3	The user publishes the dataset “as is” on the UWWTD SIIF EU-level node as a new reporting envelope from this MS
Step 4	The user notifies the MS IT infrastructure that the reporting was successfully done and the envelope is online.
Step 5	The user transfers the dataset to the data validation stage of the EEA IT infrastructure
Flow of Events – Alternative Paths	
Step 1.A	Is the UWWTD SIIF MS node active (=answering the request)?
Step 3.A.1	If Yes. Continue.
Step 3.A.2	If No. Raise an error to the person in charge of EEA IT system data collection stage. To the MS contact point.
Data set: MS Reporting Envelope	
Description	MS Reporting Envelope. Data set corresponding exactly to what has been transferred between MS IT infrastructure and the EU level + its metadata
Type	Output
Data provider	MS
Geographic scope	MS
Thematic scope	UWWTD
Scale, resolution	According to UWWTD reporting requirements
Delivery	Online
Documentation	N/A
Data set: Dataset compliant to the reporting format	
Description	Dataset compliant to the reporting format
Type	Output
Data provider	MS
Geographic scope	MS



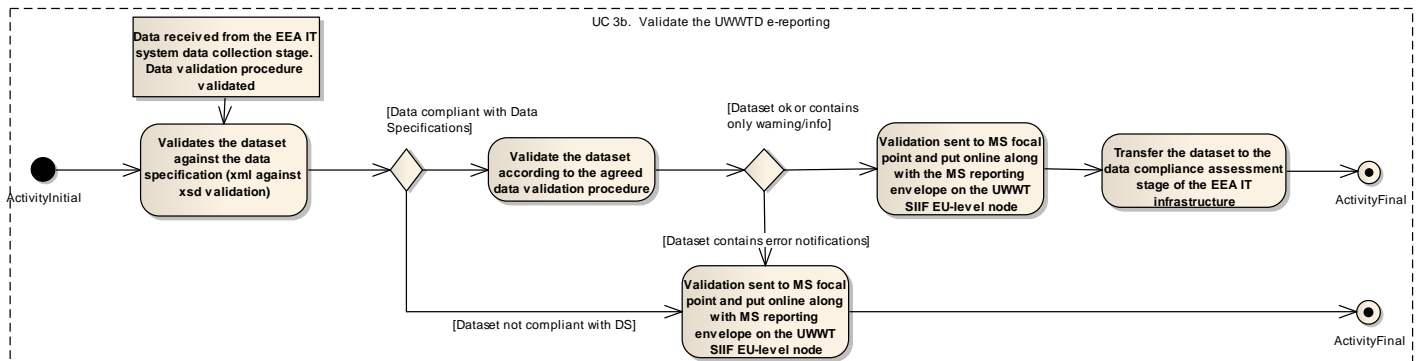


Thematic scope	UWWTD
Scale, resolution	According to UWWTD reporting requirements
Delivery	Online
Documentation	N/A





III.4. UC 3b. Validate the UWWTD e-reporting



Use Case Description	
Name	3.b Validate the UWWTD e-reporting
Primary actor	EEA IT system data validation stage
Description	<p>The user validates the reporting information put online by a MS against the reporting requirement and publishes a validation report.</p> <p>The validation stage targets structure and content:</p> <ul style="list-style-type: none">- Structure (xml/xsd validation): data model with object and attributes types, respect of the code lists, mandatory/optional elements,- Content (schematron and/or SQL in database): assumption the data validation procedure defines 3 levels of feedback (error, warning, information) and that only error is critical
Pre-condition	<p>The EEA IT system data collection stage has consumed the new UWWTD reporting datasets available from the MS side and transferred them to the validation stage.</p> <p>Data validation procedure validated at EU level (COM + MS).</p>
Post-condition	Validation report and possibly validated datasets.
Flow of Events – Basic Path	
Step 1	The user validates the dataset against the data specification (xml against xsd validation).
Step 2	The user validates the dataset according to the agreed data validation procedure.
Step 3	If dataset contains no error notifications, the user send the validation report to MS focal point and put it online along with the MS reporting envelope on the UWWT SIIF EU-level node.

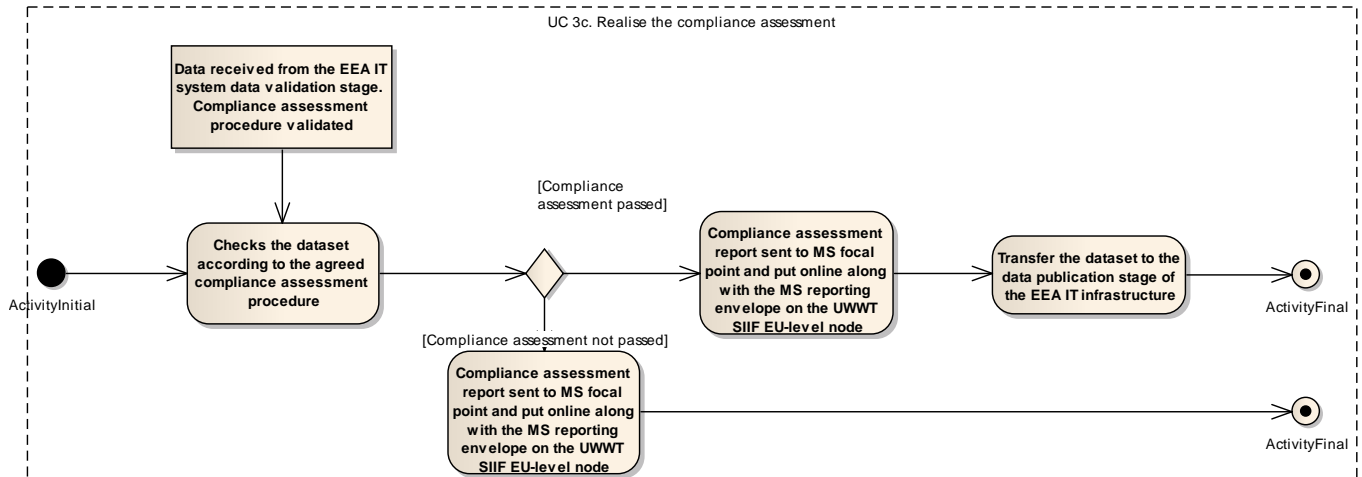




Step 4	The user transfers the dataset to the data compliance assessment stage of the EEA IT infrastructure.
Flow of Events – Alternative Paths	
Step 1.A	Is the dataset compliant with the data specification?
Step 1.A.1	If Yes. Continue
Step 1.A.2a	If No. Data set is rejected. A rejected dataset is not transferred for further reuse within the EEA IT infrastructure
Step 1.A.2b	The validation report is sent to MS focal point and put online along with MS reporting envelope on the UWWT SIIF EU-level node.
Step 2.A	Does the dataset contain error notifications?
Step 2.A.1a	If Yes. Dataset is rejected A rejected dataset is not transferred for further reuse within the EEA IT infrastructure.
Step 2.A.1b	The validation report is sent to MS focal point and put online along with the MS reporting envelope on the UWWT SIIF EU-level node.
Step 2.A.2	If No. Continue
Data set: Validation report	
Description	Validation report
Type	Output
Data provider	EU
Geographic scope	Scope of the MS concerned by the validation test
Thematic scope	UWWTD
Scale, resolution	According to UWWTD reporting requirements
Delivery	On(off)line
Documentation	Validation report



III.5. UC 3c. Realise the compliance assessment



Use Case Description	
Name	3c. Compliance assessment
Primary actor	EEA IT system data compliancy assessment stage
Description	<p>The user checks the reporting information put online by a MS against the compliance assessment procedure and publishes a compliance assessment report.</p> <p>The compliance assessment stage targets only content coherence: value thresholds, cross attribute values analysis, ...</p>
Pre-condition	<p>The user has validated the new UWWTD reporting datasets available from the MS side and transferred them to the compliance assessment stage.</p> <p>Compliance assessment procedure validated at EU level (COM + MS).</p>
Post-condition	Compliance assessment report and possibly compliant datasets.
Flow of Events – Basic Path	
Step 1	The user checks the dataset according to the agreed compliance assessment procedure.
Step 2	If dataset contains no compliance assessment error, the user sends the compliance assessment report to MS focal point and put it online along with the MS reporting envelope on the UWWT SIIF EU-level node.
Step 3	The user transfers the dataset to the data publication stage of the EEA IT



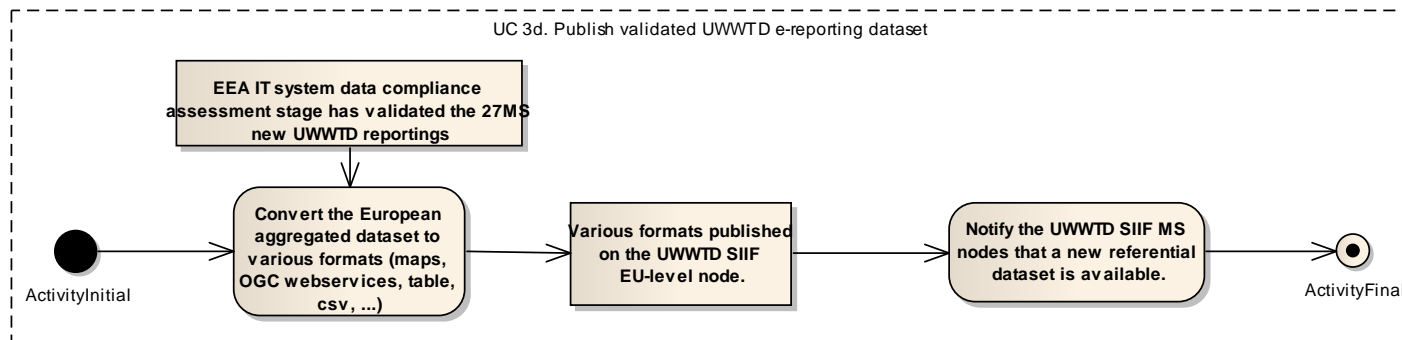


	infrastructure.
Flow of Events – Alternative Paths	
Step 1.A	Does the dataset contain compliance assessment error?
Step 1.A.1a	If Yes. Dataset is rejected A rejected dataset is not transferred for further reuse within the EEA IT infrastructure.
Step 1.A.1b	The compliance assessment report is sent to MS focal point and put online along with the MS reporting envelope on the UWWT SIIF EU-level node.
Step 1.A.2	If No. Continue
Data set: Compliance assessment report	
Description	Compliance assessment report
Type	Output
Data provider	EU
Geographic scope	Scope of the MS concerned by the compliance assessment
Thematic scope	UWWTD
Scale, resolution	According to UWWTD reporting requirements
Delivery	On(off)line
Documentation	Compliance assessment report





III.6. UC 3d. Publish validated UWWTD e-reporting dataset



Use Case Description	
Name	3d. Publish validated UWWTD e-reporting dataset
Primary actor	EEA IT system data publication stage
Description	The user publishes validated data sets in various formats
Pre-condition	<p>The EEA IT system data validation stage has validated the new UWWTD reporting datasets available from the MS side and transferred them to the validation stage.</p> <p>All MS datasets were validated. Otherwise a disclaimer is needed.</p> <p>No modification of the content sent by MS is done at COM/EEA level.</p>
Post-condition	European validated UWWTD e-reporting dataset.
Flow of Events – Basic Path	
Step 1	The user converts the European aggregated dataset to various formats (maps, OGC ² webservices, table, csv, ...)
Step 2	The various formats are published on the UWWTD SIIF EU-level node general public interface.
Step 3	The UWWTD SIIF EU-level node notifies the UWWTD SIIF MS nodes that a new referential dataset is available.
Flow of Events – Alternative Paths	
	NONE

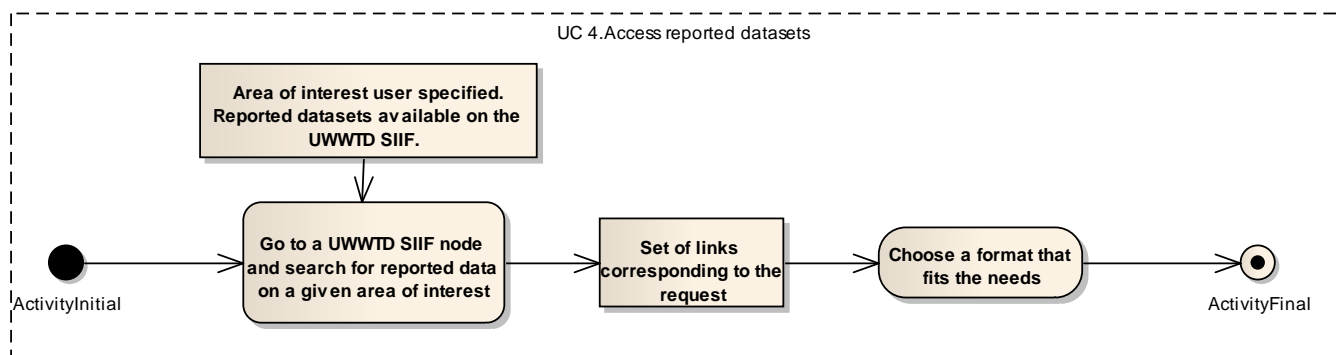
² Open Geospatial Consortium





Data set: European UWWTD Treatment Plants Layer	
Description	European UWWTD Treatment Plants Layer updated on the basis of the information sent by MSs for the reporting.
Type	Output
Data provider	EU
Geographic scope	EU
Thematic scope	UWWTD
Scale, resolution	According to UWWTD reporting requirements
Delivery	On(off)line
Documentation	Link to all the concerned validation and compliance assessment reports.
Other Data set : Sensitive areas, Agglomerations, ...	

III.7. UC 4.Access reported datasets



Use Case Description	
Name	4. Access reported datasets
Primary actor	Thematic domain expert
Description	<p>The user has domain related work to carry out. He needs to access to the reported datasets.</p> <p>The underlying approach is based on search / find / bind notions where the user connects to a “metadata catalogue” and searches using normal language. He receives a handful of links to possible resources and elects the one(s) suiting his needs.</p>



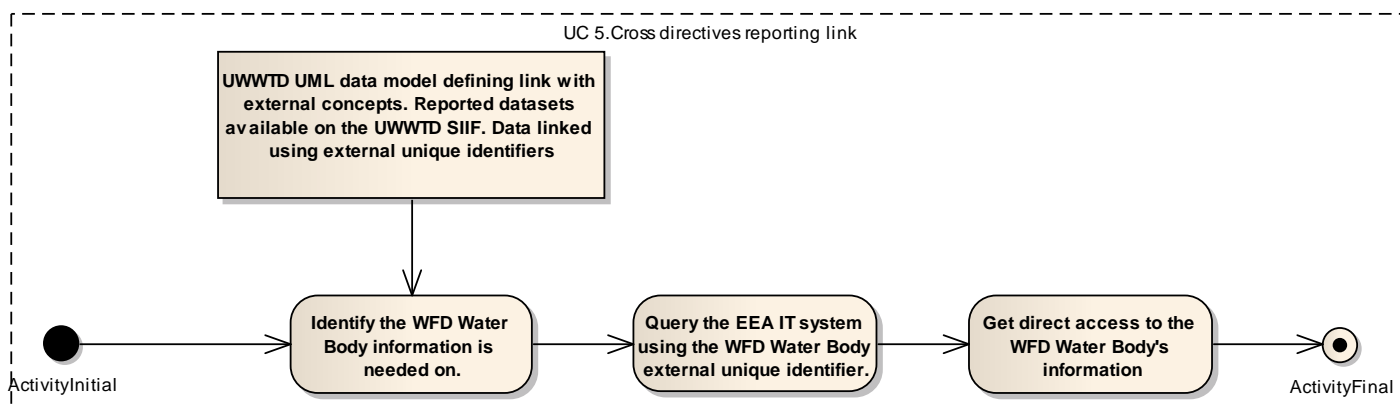


	The use case should/could not only aim at sharing datasets but also reports....
Pre-condition	Area of interest specified by the user. Reported datasets available on the UWWTD SIIF. Which node? MS, COM?
Post-condition	A structured set of reported data.
Flow of Events – Basic Path	
Step 1	The user goes to a UWWTD SIIF node and search for reported data on given area and period of interest
Step 2	The user receives various links corresponding to his request. Links pointing either to the node he is connected to or to other nodes in the UWWTD SIIF. The links content concern valid deliveries sorted in inverse chronological order.
Step 3	The user chooses between the content detail (raw, raw + enriched, simplified data) and format(s) that fit his needs.
Step 4	The user gets direct access to the relevant dataset.
Flow of Events – Alternative Paths	
	NONE
Data set: Content relevant to the user's search	
Description	Content relevant to the user's search
Type	Output
Data provider	EU/MS
Geographic scope	User's area of interest
Thematic scope	UWWTD
Scale, resolution	According to UWWTD reporting requirements
Delivery	On(off)line
Documentation	Link to associated documentation.





III.8. UC 5.Cross directives reporting link



Use Case Description	
Name	5.Cross directives reporting link
Primary actor	Thematic domain expert
Description	The user working with reported UWWTD datasets needs information on associated information available under another reporting (ex : link to a WFD water body)
Pre-condition	UWWTD UML data model defining such a link with the external concept (ex: the UWWTD data model links a WWTP to a WFD water body) Or external data model pointing to UWWTD's (ex: e-PRTR for WWTP above 100 000 pe) Reported datasets available on the UWWTD SIIF and the other directives. Data linked using external unique identifiers (example : inspireId)
Post-condition	Structured information coming from another reporting.
Flow of Events – Basic Path (on the WFD example)	
Step 1	The user identifies the WFD Water Body he needs information on.
Step 2	The user queries the EEA IT system using the WFD Water Body external unique identifier.
Step 3	The user gets direct access to the WFD Water Body's information
Flow of Events – Alternative Paths	
	NONE



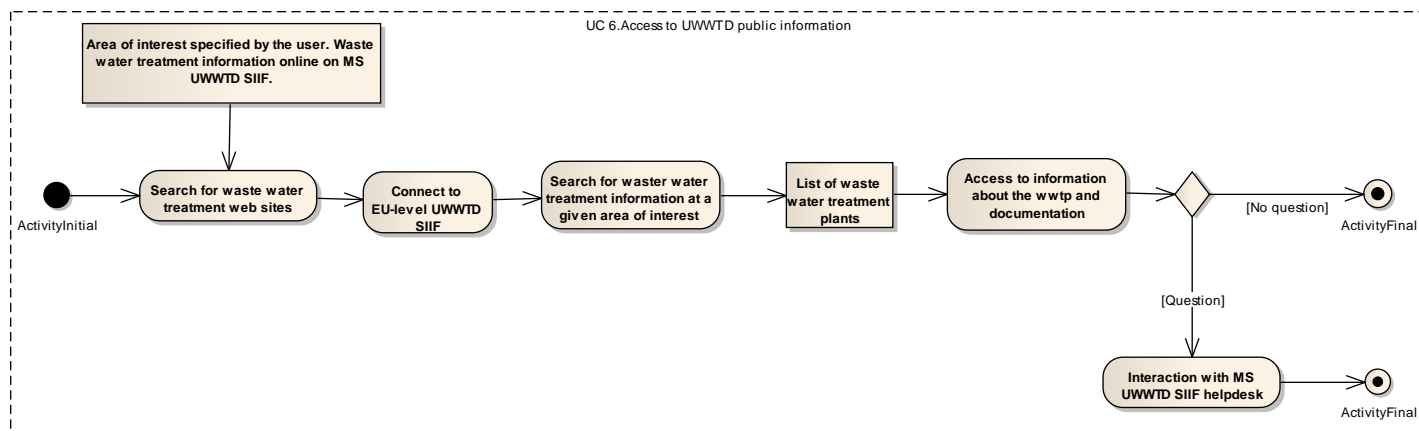


Data set: Relevant WFD Water Body	
Description	Relevant WFD Water Body
Type	Output
Data provider	EU
Geographic scope	User's area of interest
Thematic scope	WFD
Scale, resolution	According to WFD reporting requirements
Delivery	On(off)line
Documentation	Link to associated documentation, WFD data structure in the form of a data UML





III.9. UC 6. Access to UWWTD public information



Use Case Description	
Name	6. Access to UWWTD public information
Primary actor	NGO, local organisation, media, economy, general public
Description	<p>The user wants to have information on the quality of the water in his whereabouts.</p> <p>This could concern all elements of the UWWTD on alpha-numerical or geographic attributes (ex: SA, waste water treatment plant discharge point, sludge...).</p> <p>It is considered here that the user is from a given MS and interested in information next to him. This is a national use case. Thus information has to be displayed according to the use mother tongue.</p> <p>It is also considered that the entry point of the interface should be 'general public' oriented as expert will then be able to access further information (raw data, ...).</p>
Pre-condition	<p>Area of interest specified by the user.</p> <p>Waste water treatment information online on UWWTD SIIF MS node.</p>
Post-condition	Structured / understandable information about waste water treatment at a given location.
Flow of Events – Basic Path (on the WFD example)	
Step 1	The user searches for waste water treatment web sites.
Step 2	The user connects to the UWWTD SIIF MS node.
Step 3	The user searches for waste water treatment information at a given area





	of interest (geographic search and/or by city name).
Step 4	The user receives a list on UWWTD elements corresponding to his search and elects one.
Step 5	The user gets access to information (geographic and tabular) about the UWWTD element choosen. With the possibility to access to underlying documentation on the information structure and semantic. He has the possibility to download/print content for further reuse.
Flow of Events – Alternative Paths	
Step 5.A	Does the user want to raise a question either on the data structure/semantic or on a specific content information?
Step 5.A.1	If Yes. The user interacts with the UWWTD SIIF MS node helpdesk.
Step 5.A.2	If No. Continue.
Data set: Content relevant to the user's search	
Description	Content relevant to the user's search
Type	Output
Data provider	EU/MS
Geographic scope	User's area of interest
Thematic scope	UWWTD
Scale, resolution	According to UWWTD reporting requirements and or national requirements (ex: EU: primary-secondary vs national: activated sludge).
Delivery	On(off)line
Documentation	Link to associated documentation.