CoCliCo

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Report on functional specifications of the platform

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Summary

This deliverable is part of Task 2.2.2 named ?Translating user narratives into functional requirements? based on user?s priorities (D1.2 and D1.3) as described in the DoA. It describes the functional specifications of the web-platform, including the intended capabilities, appearance, and interaction with users, following the Rich User Narratives described in D1.3. The next phase is to implement the user journeys through visual features and graphics into a first Full-Track version of the platform.

Approval

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Report on Functional Specifications of the platform

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Executive summary

This deliverable is part of Task 2.2.2 named "*Translating user narratives into functional requirements*" based on user's priorities (D1.2 and D1.3) as described in the DoA. It describes the functional specifications of the web-platform, including the intended capabilities, appearance, and interaction with users, following the Rich User Narratives described in D1.3.

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1 Introduction

1.1 The CoCliCo Web platform

The objective of CoCliCo is to develop an open-source Web platform exploring present-day and future coastal risks. Specifically, the 1st Specific Objective of the project is to develop a *web-based, distributed and interoperable* open **European coastal risk data and mapping *Web platform***, allowing user-driven exploration and visualization of *coastal risks* and their *drivers* and a range of user-defined *Integrated Scenarios*.

The concept of the Web platform is presented in Figure 1 below. On the one hand, it is fed by geospatial data layers provided by WP3-6 (WP3: climate change and sea levels, WP4: coastal hazards, WP5: vulnerability & exposure, and WP6 adaptation). On the other hand, it informs users and stakeholders concerned with the flood directive (Decision Case study DSC#1), including cities and towns (DSC#2), on coastal infrastructure adaptation (DSC#3). The *Web platform* will include a core platform, with homogeneous datasets in Europe and designed to anticipate for future data (e.g., new sea-level data, digital elevation models or adaptation scenarios) and *Exploratory Tools* supporting *Future Services* (e.g., attribution of risks, support to local planning).

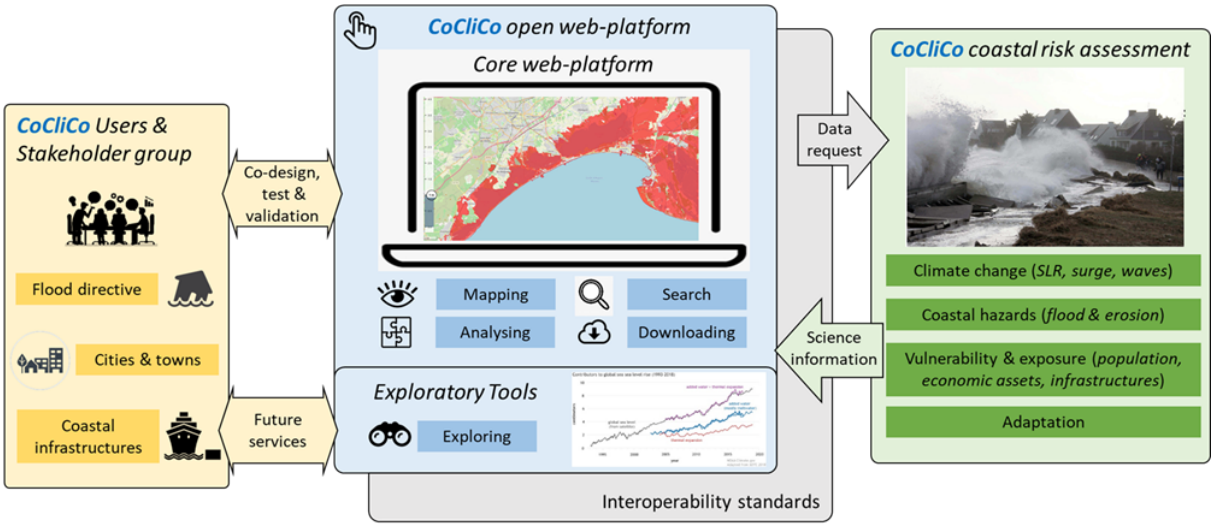

Figure 1-1: Schematic overview of the CoCliCo Open Web platform.

The Key Performance Indicator (KPI) associated to this platform is a Technology Readiness Level 6 (TRL6: Models demonstration in the relevant environment) *web-platform,* giving online access to pan-European geospatial information on present and future coastal risks and adaptation.

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1.2 Concept of the CoCliCo Web platform

The concept of the CoCliCo Web platform is described in the CoCliCo Grant Agreement (ID: 101003598). Firstly, the Web platform should be interoperable and scalable. Here, scalability refers to the ability to cope with data and models of various resolutions and complexity, whereas interoperability refers to the capacity of the portal and its data to be integrated with other applications. Secondly, the Web platform should implement international principles and standards for scientific data management and stewardship: FAIR (Findable, Accessible Interoperable and Reusable), the INSPIRE directive (Infrastructure for Spatial Information in Europe) and OGC (Open Geospatial Consortium) (Wilkinson et al., 2016). By applying these principles and standards, we aim to give users the possibility to explore data in the CoCliCo Web mapping application, to use the CoCliCo geospatial data together with their own local data within any OGC compatible GIS software (e.g. ArcGIS, QGIS), or to directly use it through the standardized Application Programming Interface (API). Furthermore, we aim to link the web portal to authoritative services such as Copernicus and have the ambition to become a Copernicus service after the project completion (September 2025).

1.3 Development of the CoCliCo Web platform

The development of the CoCliCo Web platform involves two main steps:

- **Fast-Track Web platform:** within the first year, the CoCliCo development team develops the *Fast-Track* W*eb platform*, using currently available information on coastal hazards and exposure, coastal flood losses and extreme sea levels. *Champion Users* will be able to use this *Fast-Track Web platform* to facilitate WP1 co-design activities.
- **Full-Track Web platform:** the core *Full-Track Web platform* upgrades the *Fast-Track* version through new scenario options (our *Integrated Scenarios*), new geospatial data layers aligned with these *Integrated Scenarios* (from WP3-6) and improved visualization and functionalities. The Full-Track Web platform should ultimately reach TRL6 (Technology demonstrated in the relevant environment of Demonstration Case Studies) through test-based validation and demonstration for each DCS.

While we develop a core *Web platform* based on pre-cooked sets of geospatial data layers following our *Integrated Scenarios*, we recognize that advanced services on attribution, high-resolution assessments and high-end projections require data that is not available across all of Europe. To inform these services, we develop *Exploratory Tools,* a workbench for future upgrades of the *Full-Track* Web platform, as datasets, tools and computation capabilities will improve over time. For these *Exploratory Tools*, we benefit from the interoperability features of the *Web platform* (its API, OCG/INSPIRE compliance) and use IT solutions such as on-the-fly computations allowing to minimize computation time and data storage on the user side.

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1.4 Connection to other deliverables

Within this document it is described what the functional specifications of the web platform looks like, and what these should be able to fulfil. It can be seen as a high-level overview of end-user needs and its connection to various platform functionalities. For this, input from previous deliverables is used. Functionalities are extended from D2.3 “Fast-Track platform and User Guidance”, where the Fast-Track platform functionality is outlined. The first three sections in this chapter are also similar to the ones described there. This document also connects to D1.3 “Rich User Narratives” and its precessor D1.2 “Co-design of climate services”, where user requirements and development priorities where determined and formed into use cases, to unravel the Full-Track specifications. D2.4 also connects to the Integrated Scenarios presented in D2.2. These scenarios span up the potential space from which the User Narratives can select its input parameters from. Finally, a connection is made to D8.2 “Data and Intellectual property management plan”, where data specifications and workflows are further detailed.

1.5 Objectives of this document

The goal of this document is to present the functional specifications of the web platform, including the intended capabilities, appearance, and interaction with users. For this, chapter 2 contains a number of sections related to various topics in a Functional Specification Document (FSD, see explanation below). Chapter 3 summarizes the FSD.

A FSD describes what the end-users want the platform to do; not how the system works. Hence, this document discusses the specifications for the following:

- Stakeholders
- Project and scope
- User and priorities
- Requirement specifications
- Solution overview
- Development cycles
- Risks and assumptions
- Issue reporting

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2 Functional Specifications Document

This FSD describes the web platform's intended capabilities, appearance, and interactions with users. The components in this FSD are related to the stakeholders, the project and scope, use cases, requirement specifications, solution overview, system configurations, risks and assumptions, non-functional specifications and issue reporting as seen in Figure 2-1.

Figure 2-1: Components in the Functional Specification Document. Figure is adjusted from: https://www.justinmind.com/blog/functional-specification-documentation-quick-guide-to-making-your-own/.

2.1 Stakeholders

In Table 2-1 below, the stakeholders and their job descriptions (in relation to the CoCliCo project) are identified. Note that these stakeholders are related to WP1 and WP2 within the CoCliCo project only, more specifically to detail the demonstration case studies and to develop the web platform.

Table 2-1: Stakeholders and roles in the CoCliCo project related to WP1 and WP2.

Stakeholder	Role
Champion Users	Co-develop, test, validate and demonstrate decision-oriented demonstration case studies that feed into the web-platform. Candidates for Champion Users are listed in deliverable D1.3 but will require confirmation.

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Sayers & Partners LLP (SPL)	Project lead of the co-design of climate services (WP1) together with Champion Users. Responsible for DCS #2 and #3
ICLEI European Secretariat GmbH (ICLEI)	Co-lead of the co-design of climate services (WP1) together with Champion Users. Responsible for DCS #2
Federlogistica (FL)	Responsible for DCS #3, together with SPL and ENEA
Agenzia Nazionale per le Nuove tecnologie, l'Engergia e lo Sviluppo economico sostenibile (ENEA)	Responsible for DCS #3, together with SPL and FL
Bureau de Recherches Geologiques & Minières (BRGM)	Co-lead of the co-development of the core web platform (WP2) and responsible for DCS #1
Vizzuality – Simbiotica SL (VIZ)	Responsible for co-development of the core web platform (WP2) with the main focus on user profiling
Artistotelio Panepistimio Thessalonikis (AUTh)	Responsible for the co-development of the core web platform (WP2) with the main focus on data workflow
Stichting Deltares (DTS)	Project lead of the co-development of the core web platform (WP2) and responsible for DCS #1
Wider Stakeholder group	Involved in WP1 through interviews and workshops in the early design of the *web-platform* and for outreach in the end of the project

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2.2 Project and scope

A review within the CoCliCo project of the existing online climate service descriptions (D1.1) reveals that many services provide climate information. Many of these services, however, focus on the source climate hazard (such as sea level rise) or some elements of the vulnerability of the receptors that may be exposed. But a clear gap exists as no service provides information on coastal risk that is system-based (including elements of the source-pathway-receptor terms) nor provides coherent pan-European 'Integrated scenarios' (including coherent changes in the hazard, exposure and adaptation across common time horizons and climate projections). CoCliCo fills this gap with its structure as outlined in Chapter 1.

2.2.1 Risk framework

CoCliCo's risk framework has different domains that will vary over time:

- In the hazard domain, *mean sea level rise* is a main risk driver with considerable variation of future values. In addition, *extreme sea level* is governed by variations in storm climate, waves and compounding drivers, where natural variability is a major source of uncertainty;
- In the exposure domain, the *flood extent* is strongly varying with both the geographical configuration of flood plains and their occupation by infrastructure, buildings, ecosystems and other assets affected by flood and SLR. Here the major scenario driver is the socio-economic development (scaling with economic and population growth and with political choices determining urban and land use planning and ecosystem management);
- In the vulnerability domain, damage is usually quantified using *damage functions*, where uncertainty is mainly originating from the empirical processes leading to the aggregated distribution of assets and its flood-depth dependent damage functions. For indirect effects uncertainty arises from estimating economical consequences of *infrastructure disruptions*, long-term *damage* to e.g. ecosystems or agriculture, and *recovery processes*;
- For adaptation drivers are technical or economic *limits to adaptation,* political choices (leading to e.g. varying levels of *risk tolerance* or *distribution of risks* over sectors or regions) and *behavioural choices* (affecting e.g. political mandates).

These risk domains are well covered in our collection of work packages. For different locations and applications the meaningful fraction of the possible range of drivers will be different. This is particularly true for the range of time horizons (different applications have different planning and functional time scales), but also applies to other risk characteristics. Therefore, it will be not trivial to generate a scenario framework that is equally applicable for all European regions considered by CoCliCo. However, for each of the applications and user groups some selection of drivers is inevitable, as no practitioner can or wants to afford to explore an extremely large number of options. It is therefore of interest to produce a scenario framework that spans a large fraction of the plausible range of drivers for each of the relevant risk domains.

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2.2.2 Integrated scenarios

Table below summarizes the selected parameter and scenario space that spans the set of Integrated Scenarios. Hence, a total number of 96 Integrated Scenarios will be considered giving a substantial set of scenarios to select from when developing the Rich User Narratives and its associated functionalities in the platform.

Table 2-2: Parameter and scenario space taken into account within CoCliCo's Integrated Scenarios.

Parameter space	
Time horizon (4)	2010 (ref), 2030, 2050, 2100 (2150)
Return periods (3)	1:1, 1:100, 1:1000 (black swan)

Scenario space	
Climate change and linked socioeconomics (4)	SSP1-2.6 SSP2-4.5 SSP5-8.5 SSP5-8.5 and high-end SLR
Adaptation options (2)	Business as usual Cost-efficient adaptation

2.3 Users and priorities

The graph below (Figure 2-2) illustrates the information flows required to obtain the demanded output of a single Integrated Scenario. The graph highlights the primary input to the work packages as well as the interdependencies and feedback between the work packages.

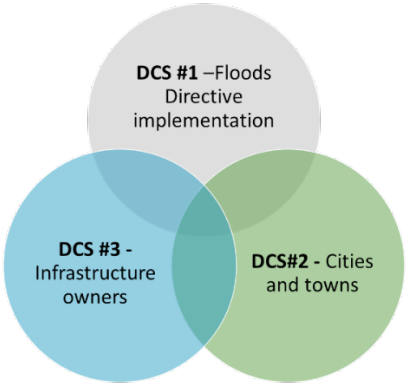

Figure 2-2: Demonstration Case Studies: Three focus sectors (from D1.3)

Following what is set out in D1.3, Champion User stakeholders are split into three groups called demonstration case studies (see Figure 2-2); flood directive (government bodies), cities & towns and coastal infrastructure (owners). These groups represent large to very local scale assessments where decisions are taken by different stakeholders that use varying types of information in a multitude of contexts. Mapping individual choices would therefore provide little

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insight into what is the most useful climate-related service to support the decision-making process. Hence, series of illustrative user profiles are constructed based on Rich User Narratives (RUNs) that are grouped following the 'matrix of need' (see Figure 2-3). This matrix reflects risk and capability, where the high risk - high capability and high risk - low capability quadrants are of most importance to CoCliCo. The list below summarizes the stakeholders, champion users with a strong to very strong maturity of engagement to CoCliCo, its day-to-day job description and a use case of relevance to CoCliCo.

*Figure 2-3: CoCliCo Coastal climate service user typologies. **Risk** refers to the significance of the present day and future coastal risk. **Capability** refers to the existing ability of a stakeholder organisation to successfully manage those. The green circle, yellow triangle and orange star represent relevant quadrants for DCS #1, #2 and #3 respectively. Source: Adjusted from ICLEI/SPL.*

The green circle, yellow triangle and orange star shown in the different quadrants within Figure 2-3 represent the use cases discussed below for DCS #1, #2 and #3 respectively. Per user typology, the priority per user is presented in italics.

<u>DCS #1 - Flood directive</u>

- High Risk – High Capability (Rijkswaterstaat, Netherlands), carry a federal responsibility for public works and water management, including flood protection infrastructure and coastal protection. Has implemented a risk-based approach.

"A high risk/high capability user of the CoCliCo platform allows a design process in which a clear prioritization of generic or specific functionalities can be carried out. While appreciating that high capability users generally have a well-established knowledge and information infrastructure to support the decision making on coastal resilience, a standing need for additional tools and information at multiple levels persists."

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- High Risk – Low Capability (France), where the ministry responsible for coastal flood risk management develops and monitors national adaptation plans and the guidance of coastal risk prevention plans. Flood risk prevention policy remains largely based on hazards assessments.

"This is a group of primary importance to CoCliCo, with significant opportunity support this type of users in underpinning the transition to a climate resilient Europe."

DCS #2 - Cities & Towns

- High Risk – High Capability (Anonymised City 1), responsible for planning and decision making related to coastal adaptation and has the motivation to develop, implement and share climate actions for sustainable development to reduce the risk from sea-level rise, storms, cloudbursts, and heatwaves.

"Our first quadrant is represented by European coastal urban areas dealing with higher associated risks to sea-level rise, in the meantime showing higher capabilities to plan for adaptation in the short and/or middle term perspectives. Capabilities to overcome risks include aspects related to institutional, financial, technical, and socio-cultural frame conditions. The cities and towns who represent this quadrant can play a crucial role in the project and in the context of increasing peer-learning. They can be the most illustrative case of advanced front-runners in the topic of coastal adaptation for other coastal cities and towns."

- High Risk – Low Capability (Anonymised City 2), committed to designing approaches in their future planning and adaptation strategies to mitigate the consequences of natural or climate related hazards.

"The second quadrant is targeting European coastal urban areas with still a higher risk exposure to coastal climate change risks but with low capability to access, interpret and analyse coastal climate services, to plan for and deliver proper adaptation solutions. Low capability is a result of the combination of different factors, mainly the ones related to institutional, financial, technical, and socio-cultural aspects. The cities representing this quadrant can follow and learn from front-runners. This would be part of a peer-learning process to be envisaged via engaging the project and connecting with other cities, eager to make use of the platform's exploratory tools."

- Low Risk – Low Capability (Anonymised City 3), designed a climate change adaptation plan with a series of steps to adapt to future scenarios of sea level rise and wave conditions. Raising social awareness is also high on its agenda.

"The third quadrant clusters low risk and low capability European coastal Cities and Towns, which are those who have shown a low to moderate exposure to climate change coastal risks and manifest a low understanding of the forecasted challenges (e.g. how to address them, deliver coastal adaptation planning and decision-making, access, interpret and process the information, access and allocate the resources), and/or that are missing the favourable frame conditions for a successful implementation of the actions. The challenges addressed by these coastal urban areas are less significant than in other contexts. Nonetheless, the fact they manifested low capabilities to deliver proper adaptation turns them into moderately critical users with whom CoCliCo could engage with and explore mutual benefits. Increasing their

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current understanding on the topic could for instance be foreseen as strategic in terms of avoiding making wrong choices that position them in a more compromised situation than today."

- Low Risk – High Capability (Anonymised City 4), responsible for managing climate change risks to lower vulnerability and has examples for successful implementation of dune restoration projects to increase biodiversity and coastal erosion control.

"The last quadrant represents European coastal cities and towns that demonstrated a high capability to plan for coastal adaptation with a low risk-exposure. Challenges may include infrastructures exposure to minor coastal and pluvial flooding and/or coastal erosion. Their high capabilities to deliver proper adaptation help to bring in showcases of successful implementation of adaptation practices, to support cities that are less capable and are facing similar problems. The integration of a supportive peer-to-peer framework between less and more capable cities enhances cities' capacity-building and the outcomes from the establishment of these synergies can be disseminated via CoCliCo to gain impact and visibility."

<u>DCS #3 - Coastal infrastructure</u>

- High Risk – High Capability (Port Authority), responsible for regulating, coordinating, and managing the day-to-day activities of the port, including its infrastructure, services and facilities. Its mission is to ensure the safety, security, and efficiency of the port, while also promoting economic development and protecting the environment.

"Coastal infrastructure owners represented in this category are becoming increasingly important as the number of coastal communities and structures increases. High risk-high capability is a term used to describe the need for coastal infrastructure owners to have the capacity to manage the risks associated with their structures and services. This includes the ability to identify and mitigate risks through engineering, planning, and construction, as well as the ability to respond quickly and effectively during storm events and in the immediate aftermath. Coastal infrastructure owners must also have the resources to implement and manage their infrastructure to ensure it can withstand extreme events. The costs associated with infrastructure ownership and its management can be significant, and often infrastructure providers have significant inhouse teams focused on risk management, engineering, and construction."

- High Risk – Low Capability (Anonymised user), committed to build and maintain beach access (infrastructure) and healthy shorelines in order to protect their communities from impacts of sea level rise.

"The priority ranking reflects the importance of these providers in underpinning a climate resilient Europe. It is recognised that the critical combination of low capacity but high risk. CoCliCo offers an opportunity to accelerate the awareness of risk and the pace of adaptation amongst this typology group."

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2.4 Requirement specs

For all above-considered use cases, preferences will inevitably vary. However, within D1.3 it is found that a series of functional requirements emerged as likely to be central to the CoCliCo success. These requirements are grouped in 'must haves', 'should haves' and 'nice to haves' in order to prioritize the development of the web platform. The 'must haves' consider more generic functionality that is required, whereas the 'should and nice to haves' are related to bespoke requirements, i.e. functionality that a few may need such as highly site or user specific information.

Must haves:

1. Chart projections
2. Map projections
3. Compare/overlay projections
4. Compare/overlay scenarios
5. Select integrated scenarios
6. Access supporting narrative evidence
7. Access the data as seen on the screen
8. Access the raw datasets (at native resolution) of the underlying data used (can be through an API)

Should haves:

1. Ability to develop exploratory codes to perform bespoke analysis using the processed data
2. Develop exploratory codes to perform bespoke analysis using the raw data (and link with their own data)
3. Replace some datasets with the user's in-house data and recalculate risks (or what if scenarios)
4. Appreciate the most important contributor to the risk
5. Ability to access and process CoCliCo datasets together with local data through the workbench.
6. Narratives explaining how coastal adaptation is strategically addressed in high-capability countries and potential transportability in low-capability countries.
7. Transparent description of methods and uncertainty in future sea level and flood maps projections.

Nice to haves:

1. Ability to develop exploratory codes to perform bespoke analysis by rerunning any underlying models.
2. Access the models used (to enable further runs or bespoke modifications).
3. Ability to access and process CoCliCo datasets together with local data in a local GIS software through interoperability features.

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2.5 Solution overview

The Fast-Track platform was delivered at the first CoCliCo workshop in Orléans (September 2022), as specified in D2.3. Within this document, the Fast-Track as well as foreseen Full-Track functionalities were outlined. These foreseen functionalities were based on the initial requirements in the project proposal (map, analysis, exploratory, downloading & searching) and an inventory of current IT solution for risk mapping and can be seen as solutions to the requirements specified in Section 2.4. For consistency, the solutions are shown in Table 2-3 below. Each solution is mapped onto the required functionalities from Section 2.4 to identify development priorities and additional required solutions.

Table 2-3: Prioritized solutions based on required functionalities (must haves, should haves and nice to haves). Light green rows indicate that the these solutions were partly developed already in the Fast-Track platform.

Full-Track solutions (prioritized)	Must (M)	Should (S)	Nice (N)
1. Map CoCliCo data (FAIR, categorized) following integrated scenarios	M2, M3, M4, M5, M6	S7	
2. Full STAC catalog with various data formats	M5, M6, M7, M8	S1, S2, S5, S7	
3. Interactive dashboards (analysis, non-expert)	M1, M3, M4	S7	
4. Account (with extended functionalities)	M7, M8		
5. (API) downloading	M7, M8		
6. Uploading, drawing & downloading via shapefiles or different	M7, M8		
7. Extended landing page (tour / introduction)	M6	S7	
8. Workbench (exploratory, expert)		S1, S2, S5	
9. Full independent CoCliCo front-end style		S6	
10. Rich User Narratives (DCS; flood directives, cities & towns and coastal infrastructure)		S6	
11. Blog, search function, …		S6, S7	

As seen from Table 2-3, one solution might contribute to multiple required functionalities. Clearly, the front end and STAC (top two rows, solutions 1 and 2) of the platform contribute the most to resolving the required functionalities. Whereas we gained quite some experience with incorporating datasets into the STAC, the front-end is not yet tailored upon CoCliCo data and integrated scenarios. This poses a risk which is elaborated on in Section 2.7.

The blog & search function does not come back in any of the required functionalities in Table 2-1. Apart from the blog, we believe that a search function (for geospatial as well as STAC

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searching) is an added value to the platform as it might greatly simplify locating certain areas on the map or choosing certain datasets to show. For this reason, the search function would still be a solution that the platform development will focus on.

It also stands out that the column with 'nice to haves' remains completely empty within the currently addressed Full-Track solutions. Besides this, also 'Should haves' 3 and 4 are not mapped on proposed solution. These functionalities were not thought of before and clearly show the added value of the co-creation process with stakeholders. These topics will be touched upon by the consortium partners and if required, after which potential solutions will be proposed.

2.5.1 Visual overview

In the images below, for the architecture and the web platform, it is shown how the proposed solutions are represented.

As seen from Figure 2-4, the most important solutions (1 and 2), are related to the front-end and other cloud services as well as data and the STAC catalog. This was already visible during the development of the Fast-Track platform, which is why a lot of effort has been put into making these components easily scalable and adjustable according to Full-Track needs. Figure 2-4 also shows that most of the solutions are represented within the platform front-end (while linking to the catalog and data of course). These solutions are required to be easily understandable and fit for purpose as each will fulfil an important role in providing a or more required functionalities.

In Figure 2-4, it is visualized how the solutions are visible in the web platform's front-end. In this visualization, each or more of the items can be seen to be linked to a solution. For instance, mapping CoCliCo data (FAIR, categorized) following integrated scenarios will be achieved by having categories on the left bar and a main panel with map functionalities including a selection of datasets and parameters. Note, Figure 2-4 is a screenshot from the current Fast-Track platform excepts for the search functionality labelled 11 (which is inserted manually for indicative purposes). All other items are present in the Fast-Track, yet, not every item has a function as present. During the development of the Full-Track platform, WP2 will add the required functionalities to these items / solutions.

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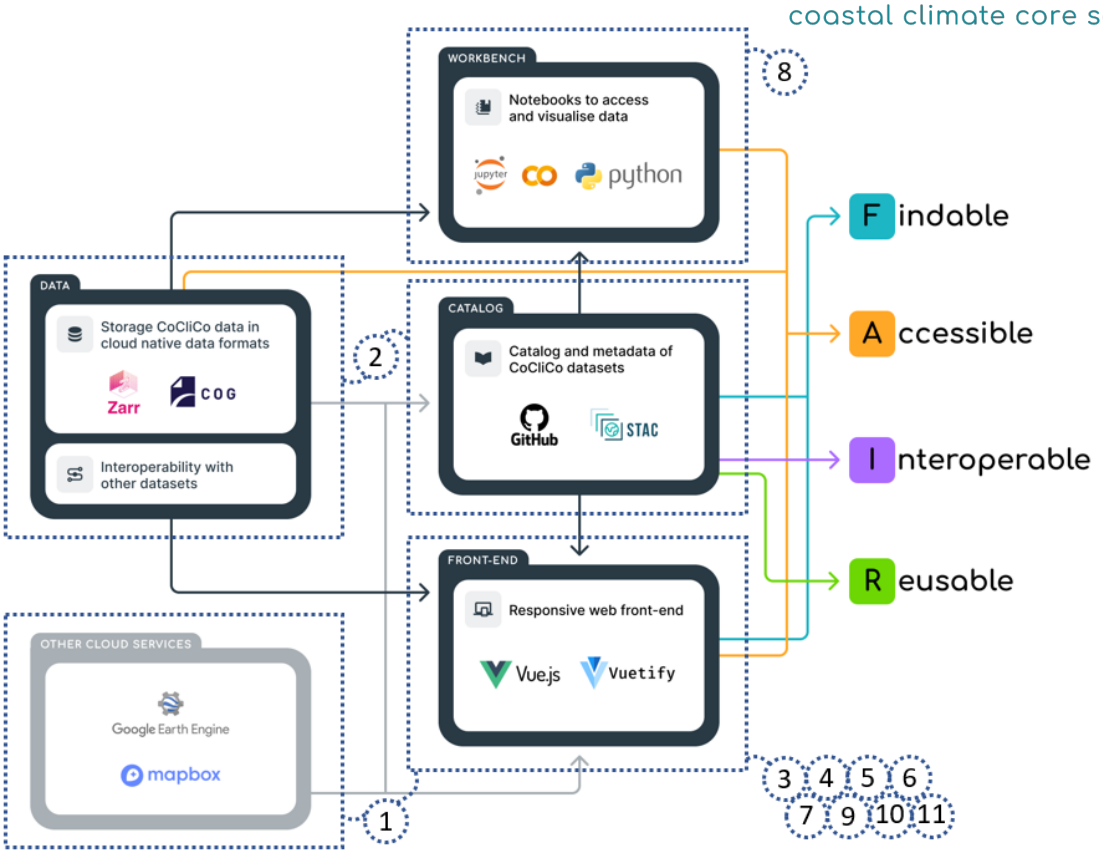

Figure 2-4: Platform architecture along with the numbered solutions linked to each of the components.

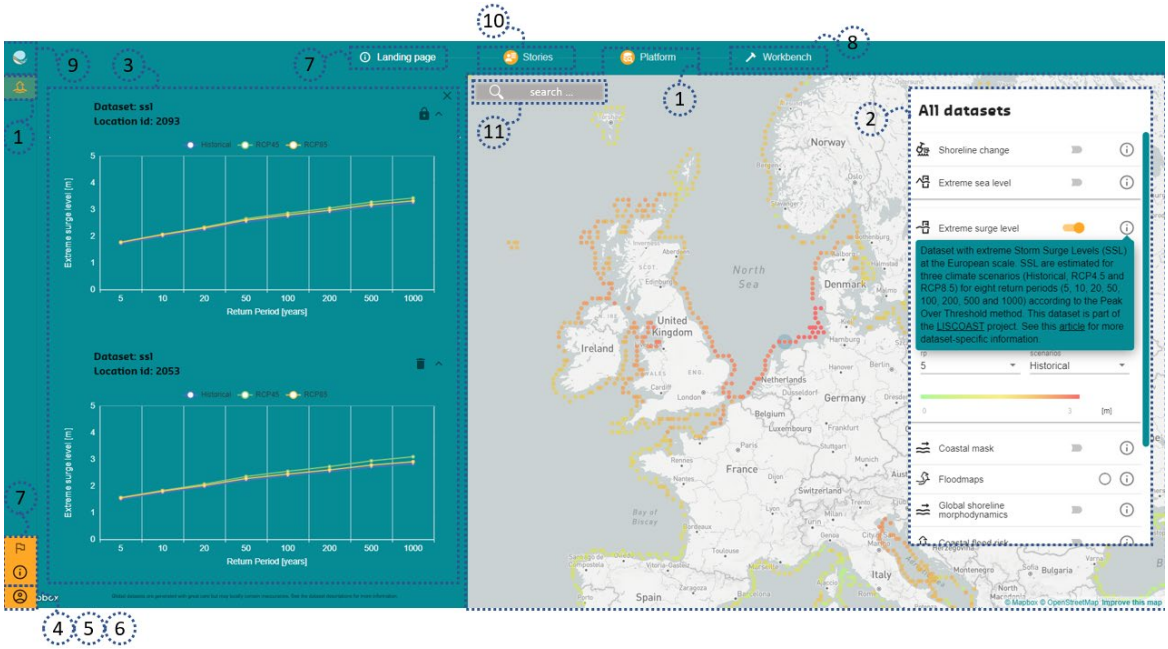

Figure 2-5: Web platform along with the numbered solutions linked to each of the components. The Fast-Track platform can be accessed through: https://coclico.netlify.app/#/data.

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2.5.2 Data

For the Full-Track platform, mapping CoCliCo data (instead of LISCOAST data) following integrated scenarios is marked the main priority to many of the required functionalities. Before mapping the data (FAIR, categorized), data delivery and handling from various WP's within the project is an important task. Details on the specifications of the data delivery to the platform can be found in D8.2: Data delivery guideline. First version was submitted in November 2022.

2.6 Development cycles

To give focus to the development of the Full-Track versions, it is proposed to select multiple focus regions (one per DCS). For these areas, the different work packages will deliver their preliminary data with highest priority. In this way, WP2 can start working with the state-of-the-art CoCliCo data, fine-tune the data delivery within the consortium and co-develop the user journeys using this data. A preliminary list of focus regions for each DCS holds as follows (selected based on very strong champion user engagement as outlined in D1.3):

- DCS #1: North Sea area (The Netherlands)
- DCS #2: Anonymised city 2
- DCS #3: Port Authority

For each of the DCS focus regions, the development team will work in (agile) sprints where detailed tasks will be documented in an issue-tracker (JIRA) to streamline the process between different parties involved. Detailing these tasks will be done in separate sessions with Deltares, Vizzuality, AUTh, BRGM, the DCS responsible party (SPL, ICLEI, ENEA, FL) and the Champion User. Per Champion User we will organise three moments of contact in a period of 4-5 months:

1) define user specifications and visual features

2) discuss first version with Champion User and concretise feedback

3) present final version of the user journey for the Champion User

In addition, it is foreseen to share regular updates of the platform with the consortium following new functionality / extensions to inspire and retrieve general feedback. It is intended to at least share an update in September 2023 and September 2024.

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2.7 Risks and assumptions

A successful development of the platform for the selected use cases depends on multiple factors that may involve risks. Below the key risks and assumptions are listed (Table 2-4), which should receive continuous attention through the development cycles.

Table 2-4: Overview or risks and assumptions and supporting actions.

Risk / Assumption	Partner	Supporting Action	Contingency plan
Low commitment of an end user resulting in not delivering the required input to the platform development	SPL, ICLEI, ENEA, FL, DTS, BRGM	Distinct priorization of key end-users, and manage expectations of end-user	Focus energy on willing end-users and re-prioritize use case, if needed.
Suboptimal translation of user needs to wireframes	VIZ	Apply a learning-by-doing with the entire dev team	Increase number of iterations in developing the wireframes
Availability of front-end developers at preferred timing in the year	DTS	Plan ahead in time and regularly update planning, if needed.	Reschedule delivery data of a use case.
Users demand too much of the platform (e.g. detailed or bespoke functionalities)	DTS / SPL	Managing expectations through co-developing user journeys & wireframes	Move highly bespoke functionality to workbench environment to keep flexibility
Data delivery to the platform is taking too long / halted due to various reasons (i.e. too complicated, too buggy)	AUTh / WP3-6 leads	Start with focus areas in development cycles to fine-tune process	Reschedule delivery data of a use case

2.8 Issue reporting

Users will be able to send an email or fill in a form to report an idea, suggestion, issues / bugs, mistake or something else during the development phase of the CoCliCo platform. Even after finalization of the CoCliCo project, this should be supported as Copernicus services to keep the platform relevant for coastal risk data and hazard mapping. Internally, these tickets will be added to the issue-tracker (as introduced in Section 2.6) and handled during dedicated sprints.

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3 Summary

This deliverable is part of the Task 2.2.2 named "*Translating user narratives into functional requirements*" based on user's priorities (D1.2 and D1.3) as described in the DoA. It describes the functional specifications of the web-platform, including the intended capabilities, appearance, and interaction with users, following the rich user narratives described in D1.3.

This document specifically describes what the end-users want the platform to do; not how the system works. The specifications for the following items have been discussed in this document:

- Stakeholders playing a role in the development of the platform
- Project description and scope
- Users and priorities following the rich user narratives
- Requirement specifications and associated priority levels
- Overview of solutions for the required functionalities
- Development cycles indicating how the platform will be developed over time
- Main risks and supporting actions to monitor this followed by contingency plans
- Issue reporting supporting the end-user feedback

The next phase is to implement a selection of user journeys through visual features and graphics into a first Full-Track version of the platform.

4 References

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