# Call for Tenders
# for the development and hosting of the PortCREW Digital Platform

**Fit Consulting srl** | Via Merulana, 272 | 00185 Roma | (T) +39 06 7759 1430
Sede Legale: Via Primo Acciaresi, 8 - 00157 Roma (RM) Italia
Registro delle Imprese di Roma n. 05350441001| Rep. Ec. Amm.vo n.878952 |
Cod.Fisc. e P.Iva 05350441001
info@fitconsulting.it | PEC fitconsulting@legalmail.it | fitconsulting.it

## Contents




**Fit Consulting srl** | Via Merulana, 272 | 00185 Roma | (T) +39 06 7759 1430
Sede Legale: Via Primo Acciaresi, 8 - 00157 Roma (RM) Italia
Registro delle Imprese di Roma n. 05350441001| Rep. Ec. Amm.vo n.878952 |
Cod.Fisc. e P.Iva 05350441001
info@fitconsulting.it | PEC fitconsulting@legalmail.it | fitconsulting.it

## PART A. – General and procedural information

### 1. OBJECT AND CONTEXT OF THE SERVICE

This Call for Proposals is launched within the framework of the project PortCREW – Port-City Regions To Wave Med Cruise Destinations As Smart, Sustainable And Striking Eco-Tourism Systems, co-funded by the Interreg Euro-MED Programme 2021–2027, which supports transnational cooperation in the Mediterranean area with the objective of fostering a more resilient and climate-neutral society.

The PortCREW project, approved under the 4th Call for Proposals of the Interreg Euro-MED Programme[1], is implemented by a transnational partnership composed of public authorities, research institutions and private organisations from Italy, Greece, Spain, France and Slovenia, with ITL – Institute for Transport and Logistics Foundation acting as Lead Partner.

FIT Consulting S.r.l. (FIT), an Italian SME based in Rome and partner of the PortCREW project, is responsible for the implementation of activities related to the development of the project digital platform and acts, through the present procedure, as the Contracting Beneficiary.

The PortCREW project aims to promote sustainable models for cruise tourism management in Mediterranean port cities, addressing over-tourism and seasonal tourist peaks, while enhancing lesser-known inland natural and cultural destinations through innovative, transnational and digital solutions.

Within this context, the PortCREW digital platform represents one of the project's core outputs and constitutes the object of the present procurement procedure. The services to be procured fall under the category "External expertise and service costs (CC4)", in accordance with the Interreg Euro-MED Programme Manual 2021–2027, Chapter III – Financial Issues, and shall be implemented in full compliance with the Programme's eligibility, traceability, reporting and audit requirements.

The service covered by this Call consists in the provision of specialised external expertise for the design, development, testing and deployment of the PortCREW web-based digital platform, as well as for the transfer of operational knowledge, in line with the project objectives and approved outputs.

The scope of the service and the detailed description of the required activities, deliverables and milestones are provided in Part B – Subject of the Request for Proposal, which forms an integral part of the present Call.

### 2. SCOPE OF WORK

Within the framework of the PortCREW project, the selected Contractor shall provide specialised external expertise for the design, development, testing, deployment and hosting of the PortCREW web-based

[1] The overall assessment results of the 4th Call are available online at the following link: website_call04_final-assessment-results_en.pdf

digital platform, which represents one of the core outputs of the project, as well as for the transfer of operational knowledge, in accordance with the project objectives and approved outputs.

The PortCREW platform is conceived as a modular, interoperable and scalable digital solution aimed at supporting the delivery of personalised, geolocated and sustainability-oriented tourism information for cruise passengers arriving at selected Mediterranean ports. The platform shall support public authorities, port authorities, tour operators and local stakeholders in promoting sustainable eco-tourism offers and in contributing to a more balanced management of tourist flows.

The scope of work includes, but is not limited to, the following macro-activities:

- definition of a joint testing and deployment methodology applicable to all pilot sites, including the mapping of existing datasets, APIs, digital tools and local infrastructures;
- design of the functional and technical architecture of the platform, including front-end and back-end components, user interfaces and data integration mechanisms;
- development and deployment of a responsive, multilingual and accessible web application, compliant with accessibility standards and EU data protection requirements;
- implementation of interoperable APIs enabling integration with existing local platforms and physical infrastructures (e.g. e-totems, smart benches, mobile applications, tourism portals);
- support to data population, validation and user-friendly testing in cooperation with the pilot cities;
- deployment of the platform in demo and production environments, including security hardening, backup, monitoring and disaster recovery mechanisms;
- provision of secure cloud-based hosting services for the PortCREW platform for the entire duration of the project and for an additional five-year period, including routine infrastructure management, monitoring, security updates and the possibility to adjust resources within the limits of the agreed hosting plan;
- provision of technical support during pilot testing activities across the five pilot cities (Valencia, Toulon, Thessaloniki, Ravenna and Koper);
- delivery of documentation, training and knowledge transfer activities to enable FIT to autonomously manage, maintain and replicate the platform after the end of the assignment.

The solution shall be designed using interoperable architectures, ensuring scalability, replicability and future extension beyond the pilot phase. All activities shall be carried out in close coordination with FIT and the PortCREW project partners.

The detailed description of activities, deliverables, milestones, functional requirements and technical specifications is provided in Part B – Subject of the Request for Proposal, which forms an integral part of the present Call.

## 3. FINANCIAL AMOUNT

The maximum available budget for the services covered by the present Call is EUR 41.765,10, VAT excluded.

This amount represents a maximum ceiling and shall cover all costs necessary for the proper execution of the service, including, where applicable, personnel costs, development costs, hosting and infrastructure costs, travel, meetings, and any other expenses related to the delivery of the service.

Any financial offer exceeding this amount shall be excluded from the evaluation procedure.

## 4. DURATION OF THE ASSIGNMENT

The services shall be completed within the overall implementation period of the PortCREW project, unless formally extended in accordance with the Programme rules. In addition, the cloud hosting environment supporting the PortCREW platform shall remain fully operational for the entire duration of the project and for an additional five-year period after its completion, ensuring continuous availability of the digital services and preservation of all related data and functionalities.

Without prejudice to the above final deadline, the activities covered by the present assignment (excluding the hosting part) are expected to be completed earlier. In a simplified manner, the implementation is expected to include a first phase of approximately six months, from April to September 2026, dedicated to the development of the platform, followed by a testing phase from October 2026 to March 2027.

In addition, the Contractor shall remain available, for the time period required under the applicable Interreg Euro-MED Programme rules, to support any audit, control or verification activities related to the assignment, including the provision of clarifications and supporting documentation.

## 5. INVOICING

Payments shall be made on the basis of the activities carried out, upon their verification and approval by FIT. The development of the platform will account for 80% of the total contract value, while the remaining 20% will be allocated to the testing phase. Payments shall therefore be linked to the effective progress of activities, in accordance with the scope of work and the implementation schedule defined in Part B – Subject of the Request for Proposal.

Prior to the issuance of each invoice, the Contractor shall submit a progress report describing the activities performed during the relevant period. The progress report shall be reviewed and validated by FIT and shall constitute a precondition for the issuance of the corresponding invoice.

Invoices shall clearly indicate the link between the services provided and the PortCREW project, mandatorily including the project CUP (Codice Unico di Progetto), which will be communicated to the Contractor during the contracting phase.

No advance payment shall be granted.

The cumulative amount of all invoices issued under the present assignment shall not exceed the total financial amount offered by the selected Contractor in its financial offer.

## 6. TOTAL SCORE AND EVALUATION CRITERIA

Eligible offers received within the deadline will be evaluated through a comparative assessment based on technical quality and financial offer.

The maximum total score is 100 points, allocated as follows:

- Technical quality: maximum 80 points
- Financial offer: maximum 20 points

The award shall be made to the tenderer obtaining the highest total score, resulting from the sum of the technical and financial scores.

The **technical evaluation** will be based on the following criteria:

1. **Overall quality of the proposed solution (40 points):** Completeness and coherence of the system architecture; compliance with applicable standards (interoperability, accessibility, data protection); adequacy of functional and performance characteristics in line with Part B – Subject of the request for proposal; scalability and expandability of the platform; added-value features enhancing usability, sustainability or maintainability.

2. **Relevant experience in comparable assignments (15 points)**: Proven experience over the last ten (10) years in the design, development and hosting of comparable web-based digital platforms, including integration with existing IT systems and interoperable environments.

3. **Quality of integration and adaptation activities (10 points):** Completeness and feasibility of the proposed approach to integration with existing datasets, APIs and local digital tools; clarity regarding reuse or enhancement of existing infrastructures; measures ensuring full operational functionality.

4. **Quality of delivery, development and testing plans (10 points):** Adequacy of the quality assurance framework and project management approach; clarity of documentation, training and knowledge transfer activities; organisation of technical support and hosting services during and after deployment.

5. **Corporate social responsibility and inclusion commitment (5 points)**: Demonstrated adoption of recognised social responsibility standards or sustainability reporting frameworks (e.g. SA8000, ISO 26000, CSRD-aligned reporting or equivalent); implementation of policies supporting inclusion of

persons with disabilities beyond legal obligations; gender equality certification (e.g. UNI/PdR 125:2022 or equivalent EU-recognised schemes).

The **financial score** will be calculated proportionally as follows:

$$Score_a = \left( \frac{R_a}{R_{max}} \right) \times 20$$

Where:

- *Ra* is the discount offered by the bidder a;
- *Rmax* is the highest discount offered among all bidders.

In the absence of any discount, the financial score awarded shall be equal to zero.

## 7. SUBMISSION PROCEDURE

All offers must be submitted electronically to the following address: fitconsulting@legalmail.it

In case of requests for clarification or technical issues related to the submission, including difficulties in using certified electronic mail systems, tenderers are invited to contact the following address: padalino@fitconsulting.it within 5 days before the deadline.

The submission deadline is **13 March 2026 at 17:00 CET**. Offers received after this deadline shall not be considered.

Offers shall be submitted in English and shall include all documents listed in Section 8 – Documents to be submitted.

## 8. DOCUMENTS TO BE SUBMITTED

Tenderers shall submit the following documents in electronic format (PDF) in English as part of their offer:

1. **Technical Offer** drafted in English shall include the following elements and shall not exceed **30 pages in total**, respecting the maximum number of pages indicated for each section.
    a) **Description of the proposed solution** including:
        i. system architecture;
        ii. technologies to be used and compliance with relevant standards (interoperability, accessibility, data protection);
        iii. functional and performance characteristics in line with the Scope of Work;
        iv. scalability and future expandability of the platform;

v. any additional features that may improve usability, sustainability or maintainability beyond the minimum requirements.

*(max 15 pages)*

b) **Relevant experience** including a brief description of comparable assignments completed in the last ten (10) years, demonstrating experience in: i) development of web-based platforms; ii) integration with existing IT systems, datasets or APIs; iii) work in multi-stakeholder or public-sector contexts. Each reference should be accompanied by a completion certificate or equivalent document.

*(max 5 pages)*

c) **Integration and adaptation approach** describing:

i. how the platform will be integrated with existing datasets, APIs and local digital tools;
ii. how existing infrastructures will be reused or adapted;
iii. how full operational functionality will be ensured across all pilot sites.

*(max 4 pages)*

d) **Delivery, development and testing plan** including:

i. a quality assurance plan describing methods and tools;
ii. a project management plan with timeline, milestones, resources, risks and mitigation measures;
iii. a description of documentation and training activities;
iv. an outline of technical support, hosting and maintenance services.

*(max 4 pages)*

e) **Corporate social responsibility and inclusion** briefly describing the bidder's commitment to social responsibility and inclusion, including:

i. adoption of CSR standards or voluntary certifications (e.g. SA8000, ISO 26000, CSRD-aligned reporting);
ii. policies supporting the inclusion of persons with disabilities beyond legal obligations;
iii. gender equality certification (UNI/PdR 125:2022 or equivalent).

*(max 2 pages)*

2. **Financial Offer**, indicating the total price for the execution of the services, expressed in EUR and consistent with the maximum financial amount set out in Section 3.

## PART B. – Subject of the request for proposal

Within the framework of the PORTCREW project (Port Cities for Responsible Ecotourism and Equitable Welcome), co-financed by the Interreg Euro-MED Programme, FIT Consulting intends to develop and test a digital platform aimed at supporting the delivery of personalized, geolocated, and sustainability-oriented tourist information for cruise passengers arriving at selected Mediterranean ports.
The PORTCREW platform will serve as a modular and interoperable web-based solution designed to:

- Provide tailored eco-tourism recommendations based on user profiling (e.g. age, interests, accessibility needs, available time)
- Promote lesser-known cultural and natural heritage sites
- Support the rebalancing of tourist flows by suggesting off-peak visiting hours and sustainable transport modes
- Integrate with existing local tourism platforms and infrastructures (e.g. e-totems, smart benches, mobile apps, websites)
- Enable tour operators and local businesses to register and promote certified sustainable activities
- Integrate APIs of third-party applications (e.g. Smart City Pass, Cruise Friendly app, local tourism portals)

The platform will be tested in five pilot cities: Valencia (Spain), Toulon (France), Thessaloniki (Greece), Ravenna (Italy), and Koper (Slovenia), each with specific local infrastructures and digital tools to be interfaced with (see Chapter “Existing platform and local initiatives” for more information on pilot sites)
The selected Contractor will be responsible for the design, development, deployment, and maintenance of the PORTCREW platform, including front-end and back-end components, data integration mechanisms, and user interfaces for different stakeholder profiles (cruise passengers, tour operators, administrators, local authorities).
The solution must be scalable, interoperable, and compliant with EU data protection regulations (GDPR), and shall be delivered in accordance with the technical and functional requirements defined by FIT and the project partners.

### 1.1 Activity 1: Kick-off and detailed implementation plan

The objective of Activity 1 is to establish the methodological, technical, and organisational foundations required for the subsequent design, development, integration, and testing of the PortCREW platform. This activity shall be completed within the first month from contract signature and will ensure that all pilot sites, datasets, and existing city platforms are fully mapped and aligned with the project’s technical framework.
The Contractor shall develop a comprehensive and harmonised testing methodology applicable to all use cases and pilot cities, building on the preliminary requirements provided by the project partners. The methodology shall guide platform design choices, data-integration strategies, and the execution of user-friendly and end-user tests. A specific focus shall be placed on assessing the availability, quality, and

interoperability of data and services already in place in the five pilot cities, ensuring their compatibility with the PortCREW platform.
This activity includes the following sub-activities:

**A1.1 – Kick-off Workshop and Refinement of Functional Requirements**
The Contractor shall participate in a kick-off workshop, coordinated by FIT, aimed at validating and refining the functional requirements of the PortCREW platform. The workshop shall ensure a shared understanding of the use cases, data flows, integration needs, and testing approach across all project partners.

**A1.2 – Data Mapping and Collection**
The Contractor shall perform a structured mapping of all relevant datasets, APIs, and digital services available in each pilot city. This includes:

- defining a standardised data-collection and API template,
- specifying required formats, protocols, and interoperability constraints,
- identifying gaps, risks, and dependencies related to data availability or integration,
- providing technical support to pilot leaders to ensure alignment with the platform's integration requirements.

This task shall explicitly consider the need to interface with existing city platforms and applications.

**A1.3 – Definition of a Test and Deployment Plan (Demo Environment)**
The Contractor shall prepare a detailed Test and Deployment Plan to be executed in a controlled demo environment. The plan shall include:

- test procedures for each use case,
- integration tests with existing city platforms and services,
- a KPI evaluation framework aligned with project objectives,
- a measurement methodology agreed with FIT,
- criteria for acceptance, validation, and reporting.

**OUTPUT A1**

- **A1-O1: Detailed PortCREW Platform Design and Development Work Plan** including design phases, technical architecture assumptions, integration roadmap, testing approach, and implementation timeline.
- **A1-O2: Test and Deployment Plans in a Demo Environment i**ncluding test cases, KPI framework, data-integration specifications, and validation procedures.

### 1.2 Activity 2: Design and development of the PortCREW platform (web application)

Activity 2 covers the full design, development, deployment, and initial population of the PortCREW platform, a modular and scalable web-based application accessible from desktop and mobile devices

(Android and iOS). The platform shall support multilingual content, responsive design, and comply with accessibility standards (minimum WCAG 2.1 AA).
The solution shall include both front-end and back-end components and be developed interoperable architectures to ensure future replicability and integration with third-party systems.
The platform shall expose APIs enabling the integration of eco-tourism information into existing tourist information tools (totems, web apps, mobile apps, etc.) in each pilot site. Pilot cities will actively contribute to establishing and validating these integration links.
This activity includes the following sub-activities:

**A2.1 – Definition of the Functional Architecture**
The Contractor shall design the functional architecture of the PortCREW platform, based on the validated use cases, non-functional requirements, and the analysis of existing platforms and initiatives in the five pilot cities.
The architecture shall define:

- system modules and components,
- data flows and integration points,
- API specifications,
- user interface structure and navigation model,
- security and privacy requirements.

**A2.2 – Infrastructure Setup and Hosting**
The Contractor shall provide and configure the hosting environment (cloud or hybrid), ensuring compliance with the required service levels and scalability needs. This includes:

- provisioning of the hosting environment with SLA ≥ 99.5% and autoscaling up to 200 simultaneous users,
- configuration of environments (development, testing, demo, production),
- implementation of secure access, identity management, and role-based permissions.

The hosting environment shall remain fully operational for the entire duration of the PortCREW project and for an additional five-year period after its completion, ensuring continuity of service, data availability and secure maintenance of the deployed platform.

**A2.3 – Platform Development (Front-end and Back-end)**
The Contractor shall develop the PortCREW platform according to the approved architecture, ensuring modularity, maintainability, and interoperability.
This includes:

- development of the front-end interface (responsive, multilingual, accessible),
- development of the back-end services, business logic, and APIs,
- implementation of integration endpoints for pilot cities' existing systems,
- configuration of the content management and data-ingestion modules.

**A2.4 – Data Population and User-Friendly Testing**

The Contractor shall support pilot cities in populating the platform with eco-tourism data and services, ensuring consistency with the data templates defined in Activity 1.
This includes:

- ingestion and validation of datasets provided by pilot sites,
- verification of API connections with existing city tools,
- execution of user-friendly tests to validate usability, navigation, and content display,
- refinement of the interface and functionalities based on test results.

**A2.5 – Deployment, Security Hardening and Operational Setup**
The Contractor shall deploy the platform in the demo and production environments and ensure full operational readiness.
This includes:

- secure deployment of all components,
- implementation of security controls (encryption, access control, vulnerability mitigation),
- configuration of backup, monitoring, and disaster-recovery procedures.

**A2.6 – Backup, Monitoring and Disaster Recovery Setup**
The Contractor shall implement the operational mechanisms required to ensure platform continuity and reliability:

- daily backup policy with 30-day retention and quarterly restoration tests (RTO ≤ 4h, RPO ≤ 2h),
- setup of application and infrastructure monitoring (metrics, logs, alerts on critical thresholds),
- monthly SLA reporting.

**OUTPUT A2:**

- **A2-O1: PortCrew online platform fully developed and deployed**: A complete, operational version of the PortCREW platform, including all front-end and back-end components, APIs, integration interfaces with pilot-city systems, and the full set of functionalities defined in the approved architecture. The platform shall be deployed in the designated environments, fully accessible, secure, and ready for pilot testing.
- **A2-O2: Initial data population and user-friendly test results**: A first release of the platform populated with validated eco-tourism data provided by the pilot cities, together with the outcomes of user-friendly tests performed to verify usability, navigation, content display, and basic functional behaviour. The results shall include identified issues and the corresponding refinements applied to the platform.

**EXISTING PLATFORMS AND LOCAL INITIATIVES**
Below is a summary of the pilot-specific assets and expectations:

| Pilot City | Existing Digital Tools | Physical Infrastructure | Strategic Objectives |
|---|---|---|---|
| Valencia | None | E-totem at cruise terminal | Develop and promote a range of excursions that are |

| | | | |
|---|---|---|---|
| | | | located outside the most frequented tourist areas; Contribute to decongest the areas with the highest tourist influx |
| Toulon | Cruise Friendly app (link) | E-totem + electric charging points | Promote zero-carbon excursions; integrate merchant network; retain cruisers in city |
| Thessaloniki | Smart City Pass app (link) | Smart City Pass card | Extend digital services; guide visitors to eco-attractions; balance city-wide flows |
| Ravenna | Tourism portal (link) | Existing infototems | Valorise lesser-known natural and cultural heritage; enrich existing content with eco-tour labels |
| Koper | None | Smart benches with e-bike charging | Redirect tourists to hinterland; promote sustainable access to non-central destinations |

Each pilot site chapter provides detailed specifications for digital integration, content adaptation, and functional alignment with local initiatives.

***Valencia***

The Valencia pilot will serve as a testbed for the PortCrew platform in the context of diversifying the tourist offer and alleviating congestion at peak times. The city does not currently operate a dedicated digital platform or mobile application for cruise-related tourism services. However, under the PORTCREW project, Valencia will implement a new electronic totem at the cruise terminal to provide iInformation of interest for the cruise passengers.

The totem will offer functionalities such as:

- Directions and guidance on how to reach the city center including the needs of the different cruise passengers profiles (people with disabilities,
- Information on available transfers and trip timetables
- Details on luggage pick-up locations

The PortCrew platform shall interface with this infrastructure by:

- Promoting low-impact transport modes (e.g. walking, public transport, shared mobility)
- Supporting QR code integration and potential API-based data exchange with the totem system

The platform must be designed to accommodate future extensions and integrations with local tourism services and digital infrastructures, ensuring scalability and replicability beyond the pilot phase.

***Toulon***

The Toulon pilot aims to test the PortCrew platform in synergy with existing local initiatives that promote sustainable tourism and cruise-related services. The city already operates a dedicated mobile application called **Cruise Friendly**, which maps local businesses and services for cruise passengers. The app is available at:
https://play.google.com/store/apps/details?id=fr.cci.cruisefriendlyapp
In addition to the app, Toulon will install:

- An **interactive electronic totem** at the cruise terminal to provide real-time tourist information
- **Electric recharging points** for tourists and mobility services

The PortCrew platform shall interface with the Cruise Friendly app and the new totem infrastructure by:

- Establishing a data link with the existing network of destinations and merchants
- Including the **Eco-tour label** for certified sustainable activities
- Indicating the most suitable **zero-impact transport modes** to reach each point of interest

- Providing information on **peak and off-peak visiting hours** to support flow management
- Promoting **existing sustainable tours** developed under other initiatives (e.g. R-Itinera project)

Unlike other pilot sites, Toulon's strategy focuses on **retaining cruise passengers within the city**, enhancing local economic impact while ensuring environmental sustainability. The PortCrew platform must therefore support localized content delivery, integration with existing digital tools, and dynamic filtering based on sustainability and user preferences.

***Thessaloniki***

The Thessaloniki pilot focuses on extending the functionalities of the existing **Smart City Pass** system to better serve cruise passengers and promote sustainable tourism practices. The city already operates a mobile application called **Thessaloniki Smart City Pass**, which provides access to cultural services, transport information, and local attractions. The app is available at:
https://play.google.com/store/apps/details?id=gr.softweb.tbccompose
The pilot does not foresee the design of new tours but aims to enhance the visitor experience through digital integration and personalized guidance. The PortCrew platform shall interface with the Smart City Pass ecosystem by:

- Delivering **tailored information** on sustainable tourism attractions and services
- Guiding cruise passengers on **how to reach eco-attractions** using low-impact transport modes
- Supporting the **integration of digital and physical tourism assets**, including geolocated content and real-time updates
- Enabling **seamless content exchange** via APIs or embedded modules

The overarching goal is to **redistribute tourist flows** across the city in a more balanced and environmentally conscious manner, while enhancing the accessibility and relevance of tourism information for cruise visitors.

***Ravenna***

The Ravenna pilot focuses on enhancing the visibility and accessibility of lesser-known eco-tourism destinations across the city and surrounding territory. The city already operates a comprehensive tourism portal that maps events, experiences, and points of interest. The official website is:
https://www.turismo.ra.it/en/
In addition, Ravenna has installed **info totems** at the cruise terminal and other strategic locations to provide real-time information to visitors. These devices will be leveraged to promote the PortCrew platform via QR codes and digital content integration.
The pilot does not foresee the creation of new tour packages but aims to:

- Assign an **Eco-tour label** to existing attractions, events, and experiences listed on the tourism portal
- Provide information on **sustainable transport modes** to reach each destination (e.g. walking, public transport, shared mobility)
- Indicate **less crowded time slots** to support balanced tourist flows
- Promote **naturalistic and cultural heritage sites** that are currently underrepresented in mainstream tourism circuits

The PortCrew platform shall interface with the existing Ravenna tourism website and info totems by:

- Integrating and enriching existing content with sustainability scoring and accessibility metadata
- Delivering personalized recommendations based on user profiling and geolocation
- Supporting dynamic filtering and itinerary generation aligned with eco-tourism principles

The solution must ensure seamless interoperability with Ravenna's digital infrastructure and support future scalability across the Emilia-Romagna region.

***Koper***

The Koper pilot focuses on promoting sustainable tourism beyond the city center by redirecting cruise passengers toward lesser-known destinations in the hinterland. Unlike other pilot sites, Koper does not currently operate a dedicated tourism app or digital platform for cruise visitors.
Under the PORTCREW project, Koper will install **smart benches** at the cruise terminal, equipped with **alternative power supply** and **electric bicycle charging capabilities**. These benches will serve as interactive physical touchpoints for cruise passengers, offering access to targeted eco-tourism information and digital services.
The PortCrew platform shall interface with this infrastructure by:

- Displaying **real-time information** on sustainable destinations outside the city center
- Displaying the **position and availability status of smart benches** and provide safe and sustainable itinerary options integrating one or more of them – as selected by the end users.
- Promoting **low-impact transport options** to reach these destinations (e.g. cycling, public transport, shared mobility)
- Supporting **QR code integration** and potential screen-based content delivery via the smart benches
- Providing **geolocated recommendations** tailored to cruiser profiles and available time

The overarching goal of the Koper pilot is to **decentralize tourist flows**, reduce pressure on the urban core, and enhance the visibility of natural and cultural assets in the surrounding region. The PortCrew platform must be designed to support this strategy through modular content delivery, dynamic itinerary suggestions, and seamless integration with future digital infrastructures.

## FUNCTIONAL ARCHITECTURE

The PortCREW platform will include the following core modules:

- **Profiling**: User preference input and segmentation (e.g. interests, accessibility needs, time availability)
- **Explorer**: Discovery of eco-touristic attractions, events, and services based on profile and sustainability filters
- **Journey Planner**: Generation of personalized itineraries using existing routing libraries and mobility data
- **Booking**: Redirection to external booking platforms for selected activities and transport services
- **Cruiser rating**: Allows end-user to evaluate experience with the platform
- **Insert Offer/Attraction**: Interface for tour operators and local providers to register and describe sustainable offers
- **Validate**: Admin-level moderation and validation of submitted content and sustainability labels
- **Local/Port Authority Dashboard**: Monitoring and coordination interface for public authorities to oversee tourist flows, sustainability scoring, and content moderation

These modules are structured according to the UML diagram below, which illustrates the relationships between system components and user roles:

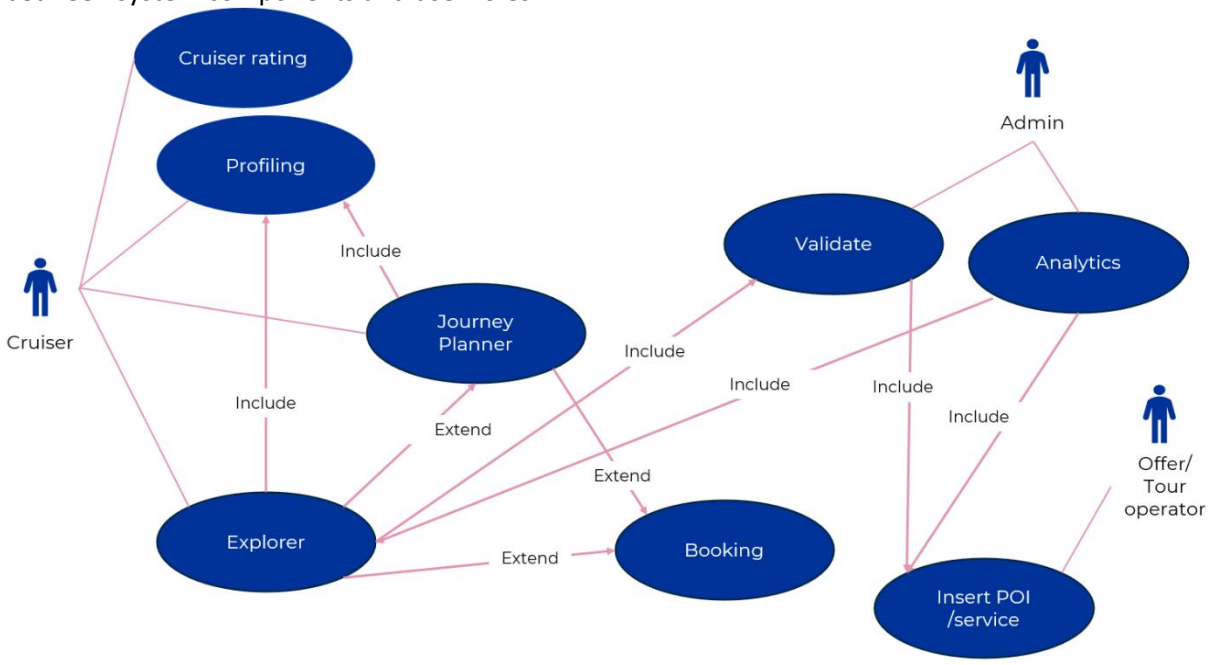


**Figure 1UML Interaction Diagram – PortCrew Platform Functional Overview**

**Actors**:

- *Cruiser*: End-user accessing the platform for personalized eco-tourism planning
- *Admin*: Platform manager responsible for content validation, moderation, and system oversight; he can also access to analytics, flow monitoring, and strategic coordination tools
- *Offer/Tour Operator*: External entity submitting sustainable activities or services

This diagram serves as the baseline for the technical architecture and will be complemented by detailed use case specifications in the following sections. The Contractor is expected to refine and extend this model during the design phase, in coordination with FIT and project partners.

## USE CASES

### *Profiling*

This use case has the objective to enable cruise passengers to define a personal profile that supports the delivery of tailored, geolocated, and sustainability-oriented tourism content and itinerary recommendations.

| | |
|---|---|
| UC ID | UC 1 |
| Name | Profiling |
| Involved Actors | *Cruiser*: The end-user who interacts with the platform to input preferences and constraints |
| Pre-conditions | None |
| Normal flow | The profiling module shall allow users to input and manage personal preferences and constraints as per the functional requirements described below |
| Post-conditions | User profiling data collected and stored in the platform |
| Functional requirements | UC1-FR1<br>The system profiling module in the front-end, to allow user to enter personal data. It shall support two modes of profiling:<br>• **Strong Profiling**: Requires user registration and enables persistent storage of preferences. Data to be acquired will be:<br>  ○ Name<br>  ○ Age group and accessibility needs (e.g. reduced mobility, family with children)<br>  ○ Interest categories (e.g. nature, culture, gastronomy, sports)<br>  ○ Preferred transport modes (e.g. walking, public transport, bike/scooter sharing)<br>  ○ Available time window for excursions (date and time range)<br>  ○ Number of travel companions<br>• **Light Profiling**: Allows temporary session-based preference input without registration, suitable for one-time or anonymous usage. Data to be acquired will be:<br>  ○ Interest categories (e.g. nature, culture, gastronomy, sports)<br>  ○ Available time window for excursions (date and time range) |
| | UC1 – FR2<br>The system profiling module shall allow users to register and create a Strong Profile through two alternative methods:<br>1. **Front-end Registration Form**<br>  ○ The system shall provide a web-based registration form where users can manually enter required personal data |

| | |
|---|---|
| | (e.g., name, email address, age group, accessibility needs, interest categories, preferred transport modes, available time window, number of companions).<br>○ The form shall include validation mechanisms (e.g., mandatory fields, format checks) to ensure data consistency.<br>○ The user shall be able to review, confirm, and edit the entered data before finalizing registration.<br>**2. Third-Party Identity Provider (Social Login)**<br>○ The system shall allow users to register by importing personal data from supported identity providers (e.g., Google, Facebook, or other social login services).<br>○ The system shall retrieve and pre-populate available fields (e.g., name, email address, profile picture) from the selected provider, subject to user consent.<br>○ The user shall be able to review, confirm, and edit the imported data before finalizing registration.<br>Both registration methods shall comply with applicable data protection regulations (e.g., GDPR), requiring explicit user authorization for data access and storage. |
| | UC1-FR3<br>The system profiling module should allow the user to modify preferences. According to modes:<br>• **Strong profiling**: every time the user will access his/her registered profile. Modifications will be persistent for future accesses. Users shall be able to delete their profile at any time; in such case, all personal data (whether manually entered or imported) must be erased from the platform.<br>• **Light profiling:** during the session only. Modifications will not be persistent after the end of the session |

***Explorer***

This use case has the objective to enable cruise passengers to discover geo-referenced eco-touristic attractions, events and services for a selected city, prioritised according to user profiling and sustainability criteria, and to expose selected items to the Journey Planner for itinerary building.

| UC ID | UC2 |
|---|---|
| Name | Explorer |
| Involved Actors | • **Cruiser**: The end-user who browses and selects POIs and offers. |
| Pre-conditions | • Content (POIs, events, offers) has been inserted via **Insert offer/attraction** and validated, ranked and published via **Validate and Rate** use case in the target city.<br>• The target city dataset (including map tiles, geocoding and base POI layer) is available in the platform.<br>• If profiling is used, a profile (Strong or Light) is present in the system. |
| Normal flow | The user selects the city to explore; he can choose to view POIs, events, and offers either on the map or in a list, with the option to open detailed sheets for each POI. Then the user selects the ones they want to include in their itinerary. |
| Post-conditions | • A curated list of user-selected POIs is forwarded to **Journey Planner** for itinerary construction.<br>• User interaction events (views, selects, filters used, city chosen) are logged and made available to the **Analytics** module for aggregated reporting (e.g., popular POIs per city, filter usage, demand patterns). |
| Functional requirements | **UC2-FR1 — City selection POI visualisation and prioritized ordering**<br>• User opens Explorer and chooses the city to explore (city selector).<br>• The platform asks whether the user agrees to grant access to their location, or alternatively to provide an address or a point on the map<br>• User chooses whether to visualise POI on a map or on a list (see UC2 FR4) – map as default<br>• The platform loads map or list of the selected city and overlays published POIs, ordered according to the following priority logic:<br>a. items matching user profile interest categories are shown first; |

| | |
|---|---|
| | b. within matching items, those with higher sustainability score are ranked higher;<br>c. distance and available time constraints are applied to further refine results. |
| | **UC2-FR2 — Filtering and sorting**<br>• The Explorer shall be able to provide additional filters for: interest categories, accessibility attributes, preferred transport modes, time availability (short/medium/long), sustainability score threshold, and crowding level.<br>• Sorting options shall include: relevance (default, per FR1), distance, sustainability score, and estimated visit duration.<br>• These filters must be available both when a profile exists and when the user explores anonymously. |
| | **UC2-FR3 — Detailed item view and selection**<br>• By clicking on each POI, the user shall be able to check on a pop-up window detailed information sheet for each POI including: full description, images, opening hours, suggested visit time, accessibility details, sustainability score rationale, contact info and transport options.<br>• Once the pop-up window with the detailed info sheet on the POI is opened, the user can:<br>i. close the sheet, or<br>ii. click on “add to my itinerary”<br>In both cases, the user returns to the POI overview (UC2 FR4). In the second case, a counter indicates that the POI has been added to the itinerary.<br>The user can now repeat the operation to view and/or add other POIs to their itinerary. |
| | **UC2-FR4 — Georeferencing and map interaction**<br>• All items must include geographic coordinates and be visualised on an interactive map of the selected city.<br>• The user can switch map/list view, centre map on current GPS position, port arrival point, or set a manual reference location.<br>• Map pins must display quick metadata (category icon, sustainability badge, distance/time). |

| | |
|---|---|
| | **UC2-FR5 — Exposure to Journey Planner and API Integration**<br>• The Explorer must expose selected items to **Journey Planner** through a documented internal API (e.g. JSON payload) including: POI id, coordinates, suggested visit duration, opening hours, and sustainability score. |
| | **UC2-FR6 — Privacy and consent**<br>• When ordering or personalising results using profile data, the Explorer must respect user consent and only use fields for which consent was granted.<br>• For anonymous (Light) sessions, temporary profiling must be session-scoped and cleared at session end. |
| | **UC2-FR7 — Analytics logging**<br>• Explorer shall emit structured analytics events for: city selected, POI view, POI select/add-to-list, filters applied, map interactions.<br>• These events shall be sent to the platform Analytics module and made available to Admin dashboards in aggregated form (no Personally Identifiable Information unless user consented and in compliance with GDPR). |

***Journey planner***

This use case has the objective to produce personalized, multimodal itineraries for cruise passengers by integrating an existing journey-planning engine as a reusable component of the platform. The component will be configured and orchestrated by the PortCrew backend and will consume POIs, user profiling, and external mobility data to produce optimized route options that respect sustainability and accessibility preferences.

| UC ID | UC |
|---|---|
| Name | Journey Planner |
| Involved Actors | • **Cruiser**: end-user who requests, reviews and selects itineraries. |
| Pre-conditions | • One or more POIs have been selected by the user in **Explorer** and are available with coordinates, suggested visit durations and opening hours<br>• User constraints and profile (Strong or Light) are available<br>• Required external mobility data sources (public transport schedules, shared-mobility availability in API format) are accessible through the **Insert POI/Service** |
| Normal flow | 1. Explorer submits selected POIs and user preferences (time window, start location, preferred modes, accessibility flags, sustainability preference) to the Journey Planner API.<br>2. The Journey Planner component (integrated engine) receives normalized inputs and requests routing computations. Integration can be achieved by:<br>  ○ invoking an embedded open-source engine (e.g., OpenTripPlanner, Navitia) deployed as a platform service; or<br>  ○ calling a commercial routing API (e.g., Google Maps Directions API, HERE Routing API)<br>3. The Journey Planner computes one or more itinerary options optimizing for parameters (e.g., minimize travel time, maximize sustainability score). Computation includes multimodal segments, estimated travel times, transfers and sequence of POIs.<br>4. The component returns structured itinerary proposals to the backend: ordered POI sequence, segment details (mode, estimated duration, distance), expected arrival/departure times, and an aggregated sustainability metric. |

| | |
|---|---|
| | 5. Backend enriches results with POI-specific constraints (opening hours, visit durations) and presents options to the Cruiser in map and list views.<br>6. Cruiser can request alternatives (faster, greener, fewer stops), edit selections, or accept an itinerary.<br>7. Accepted itinerary is stored (if Strong Profile) and forwarded to Booking module if reservations are needed; relevant events are logged for Analytics.<br>8. A navigator windows opens and guide the cruiser throughout the journey |
| Post-conditions | • One or more validated itinerary options are presented to the user.<br>• The chosen itinerary (if any) is persisted according to profile mode.<br>• Aggregated, anonymized itinerary metrics are exported to Analytics and made available to Admin and Local/Port Authority dashboards. |
| | **UC3-FR1 — Multimodal, constraint-aware itinerary generation**<br>• The planner shall compute itineraries supporting multimodal segments (walking, public transport, bike/scooter sharing, taxi) and respect constraints: opening hours, visit duration, user mobility restrictions, time window.<br>• It shall be possible to request itineraries optimized for different objectives: fastest, greenest (prioritizing low-impact modes), or minimal transfers. |
| | **UC3-FR2 — Ranking and sustainability aggregation**<br>• Each itinerary option returned must include an aggregated sustainability metric derived from POI sustainability scores and transport mode impact; Admin-configurable weights shall govern the aggregation (see Use Case “Validate and Rate”)<br>• The planner shall return multiple ranked alternatives with clear explanation of trade-offs (e.g., +15 min but -30% CO2 equivalent). |
| | **UC3-FR3 — Interoperability with external mobility providers**<br>• The Journey Planner must be able to consume real-time or scheduled mobility data provided via the Insert POI/service use case (GTFS/GTFS-RT, NeTEx, proprietary mobility APIs).<br>• The system shall support fallback to cached schedules or simplified walking-only itineraries when real-time data is unavailable. |
| | **UC3-FR4 — User interaction and iterative refinement** |

| | |
|---|---|
| | • The user can enter or confirm the available time previously indicated during profiling.<br>• The planner shows alternative itineraries (classified as green vs fast), ordered steps (POI id, arrival/departure timestamps), segment details (mode, distance, duration, provider id if external), required transfers, estimated costs (if available), and sustainability score.<br>• If the total travel time plus the time required to visit the selected POIs exceeds the available time, the platform must display an alert<br>• The UI shall allow users to select one itinerary and remove/add POIs and re-run the planner.<br>• Re-optimization requests shall include updated inputs and reuse cached mobility data when applicable to reduce latency.<br>• User selects the final itinerary |
| | **UC3-FR5 — Navigator (optional)**<br>• The navigator guides the user along the itinerary, while a timer displays the remaining time compared to the total time available. |
| | **UC3-FR6 — Performance, caching and timeouts**<br>• Planner calls to external services must implement timeouts and circuit-breaker logic.<br>• Caching of reusable route segments and public transport schedules is required with TTL policies configurable by Admin.<br>• The platform must surface progress indicators and gracefully degrade by offering precomputed/simple itineraries if the planner cannot return results within acceptable latency. |
| | **UC3-FR7 — Error handling and fallback strategies**<br>• If external routing services fail, the planner must fallback to: a) cached multimodal alternatives; b) walking-only itinerary suggestions; c) an explanatory message to the user with partial itinerary and which segments require offline handling.<br>• All failures and fallbacks must be logged with diagnostic details for Admin review. |
| | **UC3-FR8 — Privacy, storage and consent**<br>• Itineraries tied to a Strong Profile shall be stored only with explicit consent and must be deletable on user request.<br>• For Light Profile sessions, itineraries shall not be persisted beyond session end.<br>All persisted itinerary data must comply with GDPR and platform retention policies. |

***Booking***

This use case has the objective to allow cruisers to initiate reservations for selected offers (tickets, guided tours, transport) by interfacing with external providers.

| | |
|---|---|
| UC ID | UC4 |
| Name | Booking |
| Involved Actors | • **Cruiser**: user who requests bookings |
| Pre-conditions | • The user has selected one or more bookable items via **Explorer** or has a generated itinerary from **Journey Planner** that includes bookable services.<br>• The Offer / Tour Operator has published availability and booking endpoints (API, booking URL or contact) via **Insert POI/service**. |
| Normal flow | The cruiser selects, one by one, the items he wants to book and is redirected to POI/services booking webpage |
| Post-conditions | Cruiser is redirected to Journey Planner |
| Functional requirements | **UC4-FR1 — Booking initiation and provider connectivity**<br>• The platform shows bookable items, each one with the button "book it now"<br>• The platform opens a window displaying the POI/Service Provider's external webpage, where the cruiser completes the booking.<br>• The cruiser can return to the list of bookable items and continue booking additional items. |

***Cruiser rating***

This use case has the objective to allow cruisers to rate their experience with the platform.

| | |
|---|---|
| UC ID | UC5 |
| Name | Cruiser rating |
| Involved Actors | • **Cruiser**: user who rates its experience with the platform |
| Pre-conditions | • The user initiates the exit action by closing the browser window or tab through the standard operating system controls. |
| Normal flow | Before leaving the platform, the user is asked to evaluate his/her experience with the platform |

| | |
|---|---|
| Post-conditions | User feedback is stored in the analytics module for aggregation and reporting. If the user skips, the exit is completed without feedback. |
| Functional requirements | **UC5-FR1 — Booking initiation and provider connectivity**<br>• The user initiates the exit action by closing the browser window or tab.<br>• The system intercepts the exit action and opens a rating pop-up.<br>• The pop-up presents a short Likert scale questionnaire (e.g., 1–5) with at least two questions (e.g. “the PORTCREW platform is useful?”; “the PORTCREW platform works well”)<br>• The user may select ratings and optionally provide comments.<br>• After submission (or skipping), the system records the feedback and completes the exit procedure, closing the session. |

***Insert POI/service***

This use case has the objective to allow authorised providers and project partners to create, update and submit POIs, events and bookable offers for publication in the PortCrew platform, providing complete metadata (including sustainability attributes) required by Explorer, Journey Planner and Booking modules. Inserted records enter a validation workflow managed by the Validate use case before being published.

| | |
|---|---|
| UC ID | UC6 |
| Name | Insert POI/service |
| Involved Actors | • **Offer / Tour Operator**: content provider; submits POIs (single entries or bulk) and transport services via API-based synchronization and data normalization from external sources |
| Pre-conditions | • Provider (Offer/Tour Operator or Local Authority) is registered in the platform or has a validated onboarding method.<br>• Content schema and taxonomy (categories, sustainability labels, accessibility attributes) have been configured by Admin. |
| Normal flow | 1. Provider selects "Create Offer/Attraction" in the provider dashboard (or pushes data via API/bulk import).<br>2. Provider supplies required metadata via form or structured payload: title, description, category, geocoordinates, images, opening hours, suggested visit duration, accessibility attributes, sustainability certifications, price/availability rules, booking endpoint (API/URL/contact), provider contact info, tags and language localizations. |

| | |
|---|---|
| | 3. The platform performs syntactic validation (mandatory fields, coordinate validity, image formats) and returns immediate feedback for correction.<br>4. Provider submits the record for moderation.<br>5. Submitted record is routed to the Validate use case |
| Post-conditions | • New or updated content is stored in the platform repository with publishing status (draft / pending validation / published / rejected).<br>• Published items are available to Explorer and Journey Planner and surfaced in the city map<br>• Rejected or change-requested items remain available in provider dashboard with reviewer comments.<br>• Content creation and modification events are included in Analytics (counts per provider, publication time, rejection rate). |
| Functional requirements | **UC6-FR1 — Content schema and mandatory metadata**<br>• The Insert interface and API must enforce a content schema including (minimum): title (localized), short and long description (localized), category, geocoordinates (lat/long), address, images (min resolution rules), opening hours, suggested visit duration, accessibility attributes, sustainability score/labels (or reference to certification), booking specification: booking URL, phone/email contact, or note for manual reservation, price information or price rules, provider id/contact, tags, language, and city/port association. |
| | **UC6-FR2 — Multiple input channels**<br>• The platform must support three submission channels:<br>  ○ Provider web UI (single entry and guided form);<br>  ○ Bulk import (CSV/JSON upload) with validation report;<br>  ○ API-based synchronization<br>• Bulk and API imports must support dataset staging and produce detailed import logs highlighting missing or inconsistent records. |
| | **UC6-FR3 — Versioning, audit trail and rollback (Optional)**<br>• All create/update/delete operations must be versioned. The platform must retain previous versions for audit and allow Admin to rollback to a prior state when necessary.<br>• Audit records must include actor id, timestamp, and change summary |
| | **UC6-FR4 — Localization and multilingual content**<br>• Providers must be able to submit localized content; the UI must support entry of multiple language variants. |

| | |
|---|---|
| | • If localization is missing, the system must show a fallback language and allow Admin to request translations |
| | **UC6-FR5 — Publishing controls and scheduling**<br>• Providers must be able to schedule publication windows for time-limited events and set embargo/publish dates<br>System must automatically unpublish items past their end date unless extended |

***Validate and Rate***

This use case describes the platform process for reviewing submitted offers, verifying required metadata and evidence, and assigning a city-specific sustainability score using a configurable Multicriteria Analysis (MCA). It covers reviewer notifications, the editorial/technical validation steps, the automated MCA execution with per-city weights, controlled manual adjustments supported by evidence, audit logging, and publication of the final score and breakdown so that Explorer, Journey Planner and Booking can consume trusted sustainability information.

| UC ID | UC7 |
|---|---|
| Name | Validate and Rate |
| Involved Actors | • **Admin**: defines validation rules, configures MCA criteria weights per city and approves or requests changes. |
| Pre-conditions | • The POI/service has been created via UC5 – Insert POI/service and is in status “pending validation”.<br>• A baseline validation schema and MCA criteria are configured by Admin; city-specific weightings for MCA exist (can be shared across cities or customized). |
| Normal flow | 1. The platform notifies assigned reviewers (Admin and/or Local/Port Authority) about a new submission.<br>2. Reviewer performs technical/editorial validation: checks mandatory fields, coordinates, images, opening hours and contact data.<br>3. If corrections are needed, reviewer marks “change requested” with comments; provider receives notification and updates the record |

| | |
|---|---|
| | 4. When technically valid, the reviewer triggers the rating step: the system executes the Multicriteria Analysis (MCA)[2] applying the criteria and the city-specific weights.<br>5. The system produces an overall sustainability score and a per-criterion breakdown. The reviewer can: a) accept the computed score; b) adjust specific values manually.<br>6. After final approval the item status becomes "published"; the score and breakdown are stored and exposed in the public item sheet and become available to Explorer/Journey Planner/Booking. |
| Post-conditions | • The offer is published with a recorded sustainability score and per-criterion breakdown.<br>• Aggregated validation metrics (publication rate, average validation time, mean scores per city) are fed to the Analytics module. |
| Functional requirements | **UC7-FR1 — Validation workflow**<br>• The system shall implement the lifecycle states: pending → change requested → pending → validated/published → rejected, with automated notifications to assigned reviewers and visibility of reviewer comments to the submitting provider. |
| | **UC7-FR2 — Configurable Multicriteria Analysis (MCA) per city**<br>• The system shall execute an automatic MCA (whose logic will be provided by the Procuring Entity) for each technically valid item, computing a normalized overall sustainability score from a structured set of criteria. Criterion weights shall be configurable per city (or city group) via the Admin UI and versioned. |
| | **UC7-FR3 — Score transparency and publication**<br>• The system shall store and publish the computed overall score and per-criterion breakdown on the public item page. |

[2] MCA methodology/algorithm will be provided by FIT Consulting; A Multi-Criteria Analysis (MCA) is a structured evaluation method used to generate a single composite score starting from multiple heterogeneous criteria. Each criterion is assigned a weight that reflects its relative importance, and the system normalizes and aggregates the scored criteria to produce a comparable ranking across items. Implementing an MCA requires defining the criteria set, configuring the weighting scheme (typically city-specific), establishing normalization rules, and ensuring that the scoring pipeline can compute and store both the overall score and the per-criterion breakdown.

| | |
|---|---|
| | **UC7-FR4 — Auditability and traceability**<br>• The system shall log all validation and rating actions (MCA executions, manual edits, evidence uploads, notifications, escalation steps) with actor id, timestamp, action type and reason, and shall allow retrieval of the full audit trail for each content item. |

***Analytics***

This use case defines the Analytics capability for the platform: collection, aggregation and presentation of operational and business metrics needed by Admin for monitoring adoption, performance, impact and for planning. Analytics ingests events from core modules (Explorer, Journey Planner, Cruiser rating, Insert, Validate and others), produces dashboards and exports, and enforces privacy-preserving rules for sharing aggregated insights.

| UC ID | UC8 |
|---|---|
| Name | Analytics |
| Involved Actors | • **Admin**: accesses aggregated indicators; requests exports<br>• **Local/Port Authority**: views city/port-level aggregated indicators; requests exports. |
| Pre-conditions | • Event producers (Explorer, Journey Planner, Booking, Insert, Validate) emit structured events with agreed schemas.<br>• Analytics configuration (KPI definitions, retention windows, aggregation rules, authorized viewers) has been set up.<br>• Data privacy and sharing policies are defined and applicable masking/aggregation rules are in place. |
| Normal flow | 1. Core modules emit events (e.g., view_item, plan_created, booking_requested, offer_submitted, validation_result).<br>2. Analytics ingest pipeline validates, normalizes and timestamps incoming events and stores raw/processed streams.<br>3. Aggregation jobs compute KPIs (e.g., daily active users, average sustainability score per city).<br>4. Authorized actors might download raw data (e.g. csv format). |
| Post-conditions | • Dashboards reflect up-to-date KPIs within the configured latency window.<br>• Aggregated, privacy-compliant metrics are available to authorized stakeholders. |

| | |
|---|---|
| | • Raw and aggregated event logs are stored for the configured retention period and are retrievable for audits and reconciliation. |
| Functional requirements | **UC8-FR1 — Event schema and ingestion**<br>• The system shall accept structured event messages from core modules using a documented event schema (event type, timestamp, actor role, city/port, item id, relevant attributes). The ingestion layer shall validate and normalize incoming events and provide backpressure handling for bursts. |
| | **UC8-FR2 — Configurable KPI definitions and aggregation and download**<br>• The system shall support configurable KPI definitions (aggregation function, time window, grouping keys, filters) via an Admin UI; KPIs must be versioned. The analytics engine shall compute KPIs at scheduled intervals and on demand.<br>• The user should be able to download data in CSV exports; All exports must comply with privacy and scoping rules. |
| | **UC8-FR3 (optional) — Role-scoped dashboards and access control**<br>• The system shall present dashboards and reports scoped by role and entity (global Admin, per-city Local Authority). Access shall enforce the platform's authorization rules; exported data must respect scoping constraints |
| | **UC8-FR4 — Privacy-preserving disclosure**<br>• The system shall apply privacy rules before any data exposure: enforce minimum aggregation thresholds (e.g., k-anonymity or minimum cell counts), pseudonymize identifiers when needed and redact PII from analytics outputs. Privacy rules are configurable and enforced automatically. |

**NON-FUNCTIONAL REQUIREMENTS**

- The profiling interface must be responsive and accessible across devices (mobile, tablet, desk-top).
- Data must be stored and processed in compliance with GDPR and privacy-by-design principles.
- Profiling data shall be exposed to other modules via internal APIs using structured formats (e.g. JSON).
- The module must support multilingual input and interface localization.

### 1.3 Activity 3: Joint test of PortCrew platform and new ecotourism packages launch

Activity 3 covers the coordinated **end-user testing and validation** of the PortCREW platform across the five pilot cities—Valencia (Spain), Toulon (France), Thessaloniki (Greece), Ravenna (Italy), and Koper (Slovenia).
During this phase, the platform will be used directly by all identified actor groups:

- Cruisers (final users of the eco-tourism itineraries),
- Offer/Tour Operators (providers of bookable services and experiences),
- Admin users (the Contractor during the contract period, and FIT thereafter).

The objective is to validate the platform under real operational conditions, ensuring proper functioning of all features, integrations with local tools, and the delivery of personalised, geolocated eco-tourism content.
The Contractor shall provide continuous technical support throughout the pilot phase, resolve issues, and ensure stable operation across all sites. At the end of the activity, the Contractor shall transfer full operational knowledge to FIT, enabling autonomous management of the platform, including the creation of new instances for additional cities.
This activity includes the following sub-activities:

**A3.1 – End-User Testing Across Pilot Sites**
Execution of structured end-user tests involving Cruisers, Offer/Tour Operators, and Admin users.
The Contractor shall support pilot cities in validating:

- platform functionalities and user journeys,
- booking flows and content delivery,
- integrations with local systems and data sources,
- usability and accessibility in real-life conditions.

Feedback shall be collected, consolidated, and used to refine the platform.

**A3.2 – Technical Support and Issue Resolution**
Provision of technical assistance during the entire pilot phase, including:

- troubleshooting and resolution of functional, integration, or performance issues,
- monitoring of platform stability and data flows,
- incremental improvements based on end-user feedback,

- support to pilot leaders in managing content and configurations.

**3.3 – Knowledge Transfer to FIT**

Delivery of structured training and documentation enabling FIT to autonomously manage the platform after project completion. This includes:

- operational procedures for platform administration,
- maintenance and update guidelines,
- instructions for creating new platform instances for additional cities,
- handover of configuration templates, API documentation, and deployment procedures.

**OUTPUT A3**

- **A3-O1: User manuals and guides for the use, maintenance, and management of the platform -** Comprehensive documentation covering platform operation, administration, maintenance routines, integration procedures, and instructions for creating new city instances. Manuals shall be suitable for both technical and non-technical staff.
- **A3-O2: Final report and closure of support activities -** A consolidated report summarising end-user testing activities, issues encountered and resolved, lessons learned, and recommendations for future deployments. The report shall confirm the completion of support activities and the successful transfer of operational knowledge to FIT.

## 1.4 Implementation schedule

The following section presents the indicative implementation timeline for the activities and outputs included in the service. Any adjustments required due to project or Programme needs will be promptly communicated to the Contractor.

| TIME PLAN | | 2026 | | | | | | | | | | 2027 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | P3 | | | | | | P4 | | | | | |
| | | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR |
| Activity | Title | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| **Activity 1** | **Kick off and detailed implementation plan** | | | | | | | | | | | | | |
| A1.1 | Kick-off Workshop and Refinement of Functional Requirements | | | | | | | | | | | | | |
| A1.2 | Data Mapping and Collection | A1-O1 | | | | | | | | | | | | |
| A1.3 | Definition of a Test and Deployment Plan (Demo Environment) | A1- O2 | | | | | | | | | | | | |
| **Activity 2** | **Development of the PortCrew platform** | | | | | | | | | | | | | |
| A2.1 | Definition of the Functional Architecture | | | | | | | | | | | | | |
| A2.2 | Infrastructure Setup and Hosting | | | | | | | | | | | | | |
| A2.3 | Platform Development (Front end and Back end) | | | | | | | | | | | | | |
| A2.4 | Data Population and User Friendly Testing | | | | | | | | | | | | | |
| A2.5 | Deployment, Security Hardening and Operational Setup | | | | | | | A2-O2 | | | | | | |
| A2.6 | Backup, Monitoring and Disaster Recovery Setup | | | | | | | A2-O1 | | | | | | |
| **Activity 3** | **Joint test of PortCrew platform and new ecotourism packages launch** | | | | | | | | | | | | | |
| A3.1 | End User Testing Across Pilot Sites | | | | | | | | | | | | | |
| A3.2 | Technical Support and Issue Resolution | | | | | | | | | | | | | A3-O2 |
| A3.3 | Knowledge Transfer to FIT | | | | | | | | | | | | | A3-O1 |

FIT Consulting S.r.l.
Sede Leg.: Via Primo Acciaresi, 8 - 00157 Roma
Sede Oper.va: Via Merulana, 272 - 00185 Roma
P. Iva e C.F. 05350441001

Firmato digitalmente
da: PAOLA COSSU
Data: 27/02/2026
09:03:06