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INTERREG ITALY-CROATIA PROGRAMME 2021–2027

D.1.2.1 - Designing of multimodal transport solutions

Final, February 2025

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ISTARSKA ŽUPANIJA REGIONE ISTRIANA

CYROS

Implementation, in the Programme area, of the EUSAIR flagship and crosspillar project idea Adriatic Ionian CYcle ROute for Sustainable tourism

WP number	**Upgrading the cross-border cycling network and improving services to encourage multimodality**
Activity number	**1.2 - Improving services to encourage multimodality and for supporting sustainable mobility**
Deliverable number	**D1.2.1. - Designing of multimodal transport solutions**
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Summary

1. Introduction

Activity 1.2 as the part of CYROS project is result-oriented activity focusing on the planning and designing the multimodal transport solutions aimed at testing and promoting enhanced sustainable transport modes. The core objective is to combine different modes of transport (bike and bus, bike and train, bike and boat, and integrated public transport) into seamless travel chains, improving mobility options for both citizens and tourists.

The activity seeks to jointly develop a network of cross-border and regional multimodal services that support cyclists' journeys and strengthen the Adriatic–Ionian cycling corridor. To this end, Istrian region (PP8) develops both **ICT solutions** and **equipment**:

1. ICT solutions will provide integrated information tools on cycle routes and intermodal timetables, upgrade the Parenzana application with new notifications, categories and gamification features, and ensure real-time data collection and sharing.

2. Equipment will include cycling information points, safe storage facilities, e-bike chargers, bike racks on ferris and resting areas, counters for monitoring flows, and Adriatic–Ionian route markers.

These investments are designed not only to facilitate practical multimodal mobility but also to encourage sustainable travel choices. E-bike chargers and info points will improve accessibility along long-distance trails, while monitoring devices will provide data to stakeholders, enabling better decision-making and promoting the shift towards green mobility.

The Adriatic–Ionian route, connecting Italy, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania and Greece, is inherently transnational in character. For this reason, the project's activities hold cross-border relevance, boosting multimodality at local, regional and international levels. ICT technologies will further support digitalisation, ensuring access to information for the general public, public authorities, transport providers, SMEs and tourism operators.

Ultimately, the integration of these solutions contributes to:

1. **Cyclists and tourists** - gaining enriched, convenient and informative travel experiences.
2. **Local businesses and SMEs** - benefiting from increased tourist flows and opportunities for promotion.

3. **Communities and regions** - strengthened by better connections, enhanced facilities and sustainable mobility options.
4. **Environment** - through reduced emissions and traffic congestion, supporting climate-friendly transport.
5. **Authorities and planners** - using collected data for evidence-based urban and regional planning.

Through these measures, CYROS will deliver tangible improvements to cross-border cycling mobility, strengthening the attractiveness of the Adriatic–Ionian route while promoting eco-tourism and sustainable development in the programme area.

2. State of the art

The Region of Istria has been actively engaged in sustainable tourism and mobility development, supported through previous EU-funded projects (e.g. MOSES, ICARUS, MIMOSA). These initiatives have tested multimodal options such as bike & train pilots and promoted integration of cycling with other modes of transport.

Given that the Parenzana bike route and the Adriatic–Ionian route share common points, the region decided to focus on designing multimodal options that connect cross-border areas, bike routes, and islands. The state of the art highlights:

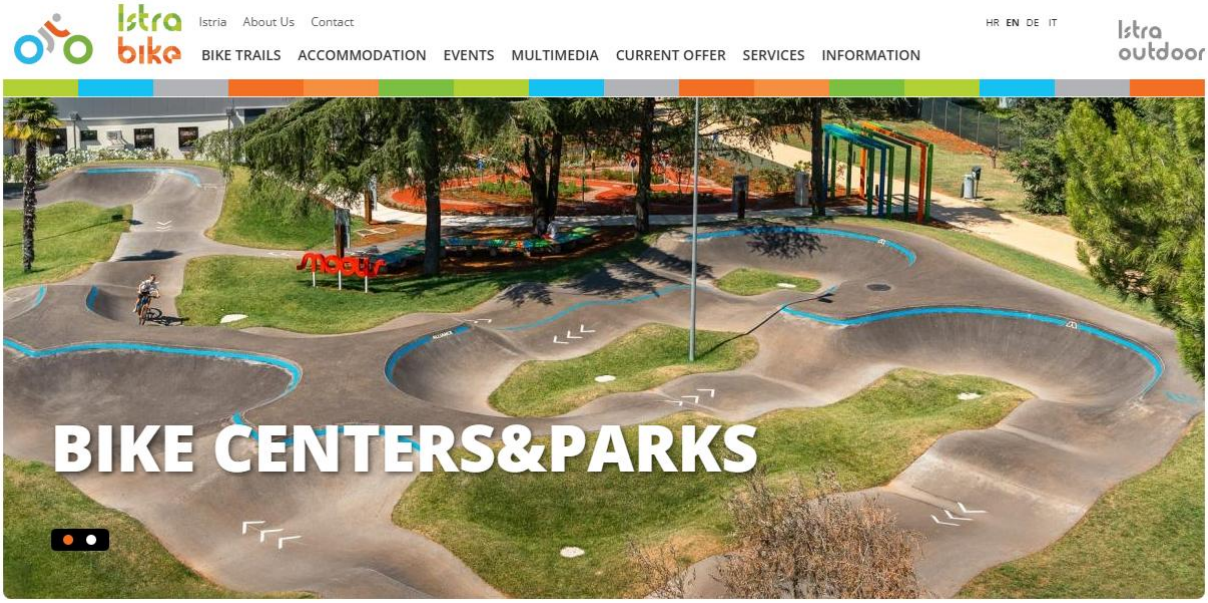
ICT solutions: existing platforms such as the Parenzana application and Istra Bike already provide digital visibility of cycling routes, but require integration and upgrades.

Equipment: pilot installations of e-bike chargers, counters, and info points have been tested and will be expanded.

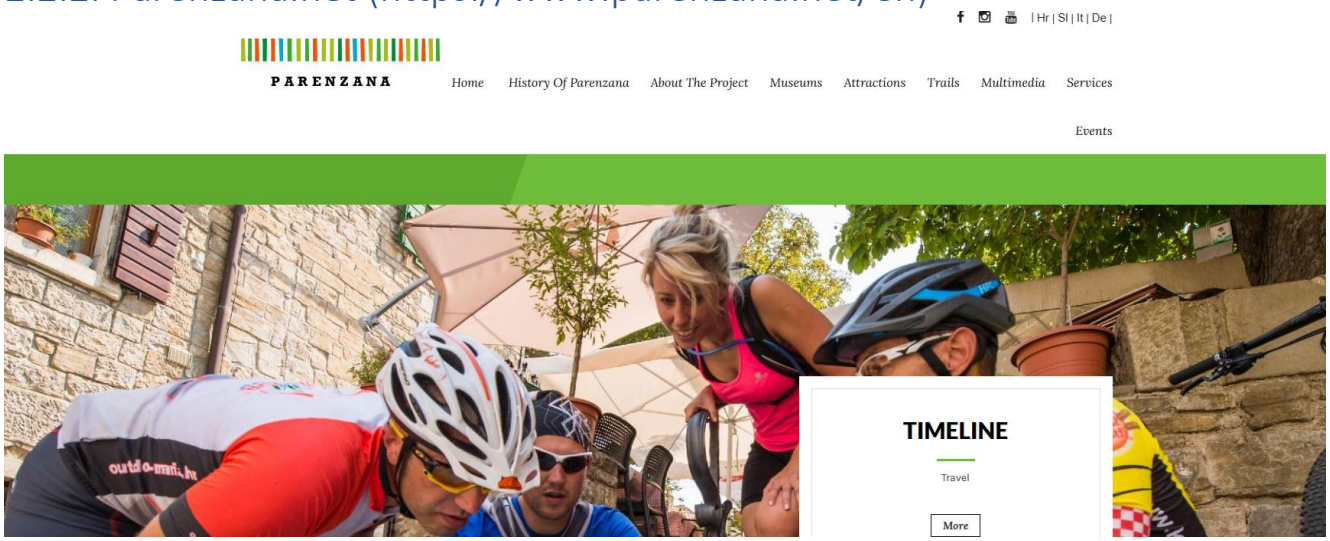
Stakeholders: in February 2025, an online meeting with tourist boards, Croatian Railways, Jadrolinija, and port authorities identified key needs, including the possibility to visit islands with bikes, currently limited to catamaran connections.

2.1. ICT solutions:

2.2.1. Istria bike (https://www.istria-bike.com/en)



2.2.2. Parenzana.net (https://www.parenzana.net/en)



Promotion of activities within CYROS project related to bike route:

PARENZANA

Home History Of Parenzana About The Project Museums Attractions Trails Multimedia Servi

Eve

BUS LINE FROM TRIESTE TO POREČ

Home / Home Page

Bus line from Trieste to Poreč

2.2.3. Parenzana application:

Welcome to Parenzana 1 / 4

Parenzana was a 123 km long narrow-gauge railway line, connecting 33 places in Istria between 1902 and 1935, from Trieste to Poreč. Besides passengers it was transporting wine, olive oil, salt, stone, lime, coal and wood.

next →

Parenzana today 2 / 4

Today, Parenzana is the most famous and most visited cycling and hiking trail in Istria. Due to rough terrain in some places, the trail is suitable for mountain bikes, but not for road and trekking bikes.

← previous

next →

This app 3 / 4

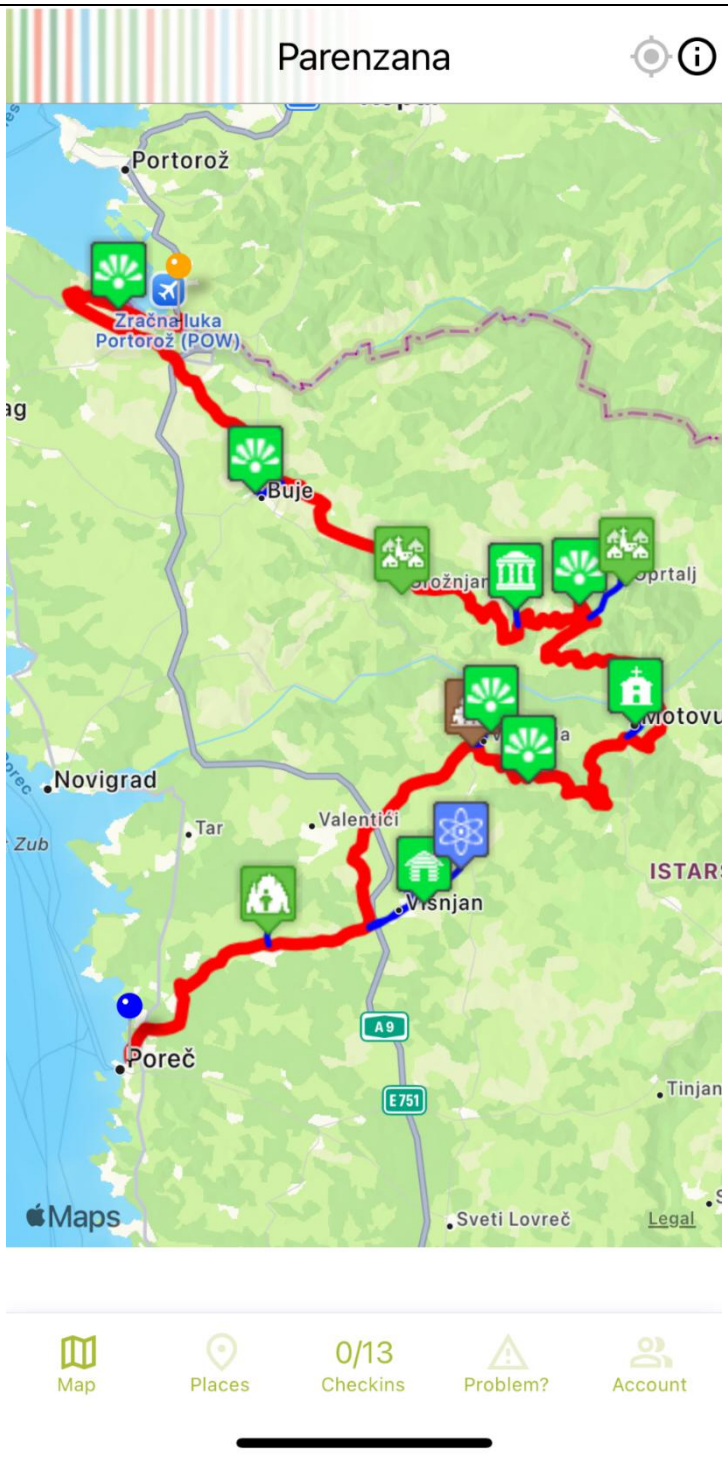
In this APP you have the task to visit all check in places along the route. When you get close to the location/attraction, the check in button will be enabled. The goal is to visit all attractions (points of interest) along the route.

← previous | next →

Let's start 4 / 4

Have fun and enjoy your ride :)

← previous | Continue


Parenzana
Portorož
Zračna luka Portorož (POW)
Buje
Novigrad
Tar
Valentići
Višnjan
Poreč
Tinjan
Sveti Lovreč
A9
E751
Maps
Legal
Map
Places
0/13
Checkins
Problem?
Account

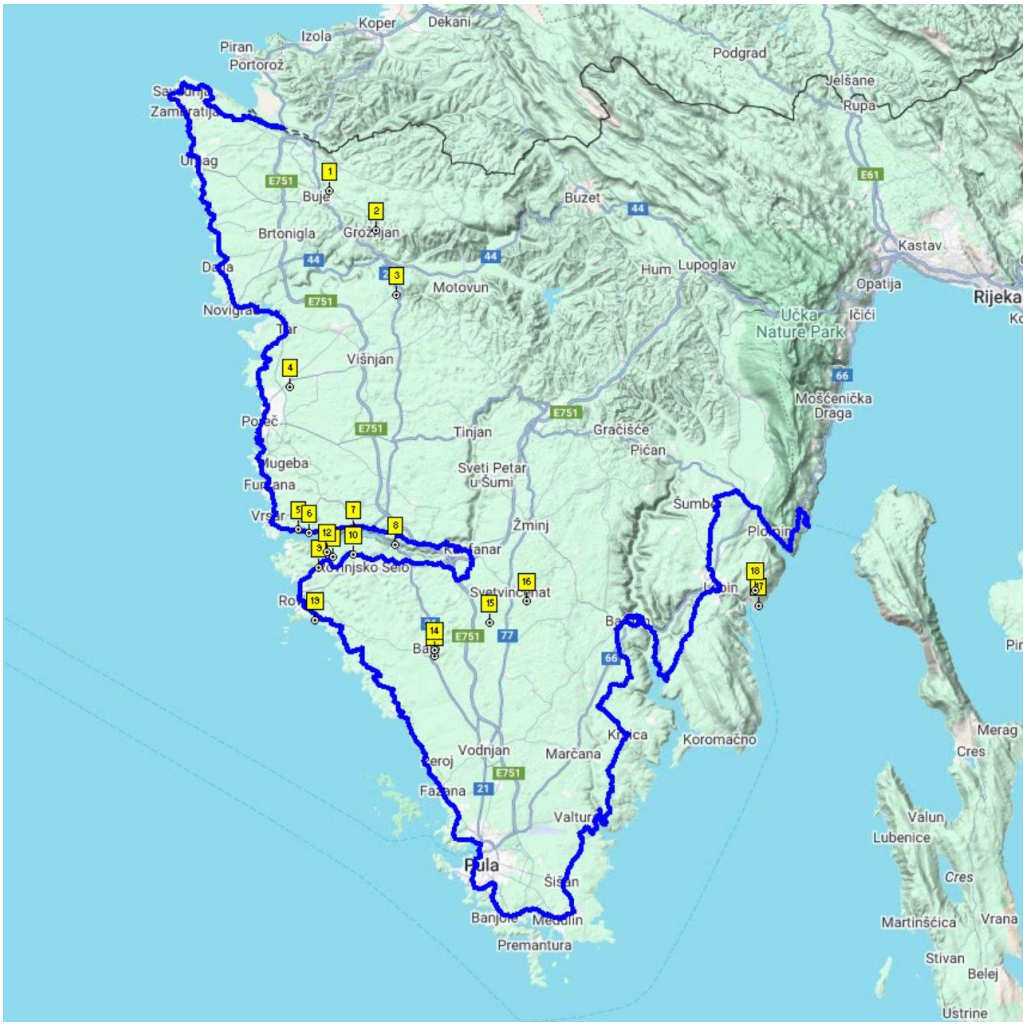
2.2. Equipment:

2.1 E bike chargers

E - bike chargers locations are listed on the following link:
Charging stations for e-bikes ECOXPERIENCE -official portal

2.2 Bike counters

The following map shows the existing bike counters and the Adriatic–Ionian route:



2.3. Stakeholders

The success of multimodal transport solutions depends on the active involvement of a broad range of stakeholders operating at local, regional, national, and cross-border levels. Within the CYROS project, stakeholders include public authorities, transport providers, tourism organisations and private businesses. Each of them plays a distinct role in ensuring the functionality, visibility, and sustainability of the proposed solutions.

Key stakeholder groups include:

1. Public authorities
- provide strategic guidance and ensure that multimodal solutions are aligned with regional and national transport and tourism policies.
- acilitate permitting, spatial planning, and integration of new infrastructure (e.g. info points, chargers, counters).
- Region of Istria, as coordinating partner, plays a central role in stakeholder engagement.

2. Transport providers
- Croatian Railways (HŽ Infrastruktura and HŽ Putnički prijevoz) and Jadrolinija (ferry operator) are crucial for enabling bike & train and bike & boat services.
- Port authorities and local shuttle bus operators are involved in ensuring adequate infrastructure, such as bike racks on vehicles and vessels.

3. Tourism Organisations
- local and regional tourist boards promote multimodal services and integrate them into destination offers.
- hey provide key information on accommodation (Istra Bike&Bed), points of interest, and events, ensuring that cycling routes are linked with broader tourism experiences.

4. Private Sector and SMEs
- bike rental shops, equipment suppliers, and cycle tourism operators benefit directly from enhanced multimodality.
- hospitality providers (restaurants, accommodation, attraction) act as collection points for rewards and provide services along the route.
- SMEs are encouraged to develop new products and services tailored to multimodal travellers.

5. Cyclists and tourists
- as primary beneficiaries, their needs and feedback are central to the design process.
- they will use ICT tools, benefit from gamification, and take advantage of integrated multimodal options.
- their usage data (via counters and app interactions) will feed into continuous improvement of services.

Stakeholder engagement process:
In February 2025, the Region of Istria organised an online stakeholder meeting with representatives from tourist boards, Croatian Railways, Jadrolinija, and port authorities. Discussions highlighted the need to improve intermodality towards the islands, as bike transport is currently only possible on catamarans. These consultations confirmed the importance of ICT tools, integrated information, and adequate equipment to support multimodal solutions.

3. Multimodal solutions design supported through CYROS project

The design of multimodal solutions within the CYROS project combines ICT solutions, equipment installation, and user-oriented services. The overarching goal is to create seamless connections between cycling routes and other transport modes, ensuring that the Adriatic–Ionian corridor becomes a truly integrated sustainable mobility network.

3.1. ICT solutions

3.1.1 Parenzana application upgrade

The existing application will be upgraded to improve usability and provide new functionalities, including:

- in-app and push notifications for users while on the Parenzana trail
- notifications related to the Adriatic–Ionian route, offering information about events, services, and activities in the wider programme area
- new pages with useful information, such as tourist boards, police, hospitals, roadside assistance, and mountain rescue contacts
- integration of multimodal transport data (bus, train, ferry timetables and connections).
- updated categories and new pictograms for clearer navigation
- technical SDK upgrade in line with Apple and Google requirements, ensuring continued availability of the app in app stores
- automated email notifications for checkpoint visits, guiding users towards reward collection:
    - after the first checkpoint (detailed instructions and information about rewards).
    - reminder when only one or two checkpoints remain.
    - final email with instructions on how and where to collect the reward

3.1.2. Route gamification

Gamification elements will be introduced to increase user motivation and engagement, encouraging tourists and citizens to complete routes and explore additional points of interest.

3.1.3 Istra bike integration

The web GIS platform jointly developed through CYROS project will be integrated with the Istra Bike platform to unify services and provide users with harmonised information across cycling networks.

3.2. Equipment

The project foresees targeted investments and equipment and services procurement to enhance multimodality and support cycling mobility:

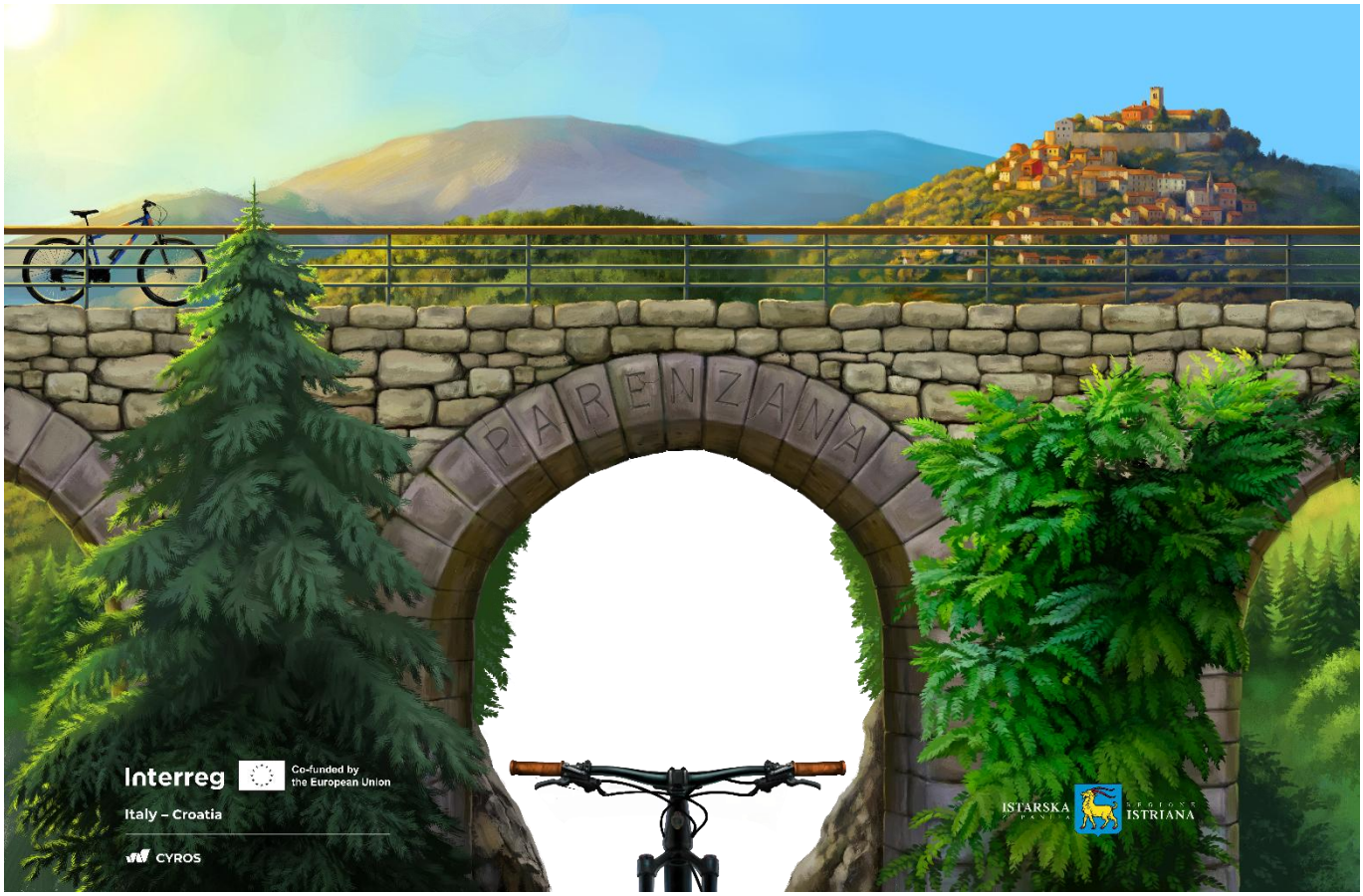
1. Ferry Port Brestova – Porozina: Installation of information tables and bike racks to support ferry-cycling intermodality.

2. Ferryboat Connection (Italy–Istria–Cres): Installation of bike holders on ferryboats to facilitate cross-border multimodal travel.

3. E-bike Charger (Krnica): A charging point to meet growing demand for e-mobility.

4. Bike Counter (west coast): Device for monitoring cycling flows, providing data for planning and promotion.

5. Photo Point: Installation of promotional spots enhancing tourist experience and visibility of the route.



6. Adriatic–Ionian Route Markers: Branded signage to ensure visibility and recognition of the transnational corridor.

4. Conclusion

The CYROS project contributes to the development of an integrated, user-oriented system of multimodal transport solutions that strengthens the Adriatic–Ionian cycling corridor. By combining ICT upgrades, new equipment, and cross-border cooperation, the project delivers practical tools and infrastructure that enhance the attractiveness and usability of sustainable mobility and multimodality.

The design foreseen, including upgrades to the Parenzana application, integration with Istra Bike, installation of e-bike chargers, bike counters, route markers, and ferry-bike interconnections, provide concrete support to cyclists and tourists through multimodal experience. These solutions not only make travel more convenient but also encourage behavioural change towards eco-friendly mobility.

Multimodal design places the user at the centre, ensuring seamless transitions between cycling and other transport modes, supported by real-time digital information, safe infrastructure, and engaging experiences such as gamification and reward systems. At the same time, the solutions generate valuable data for local and regional authorities, helping them plan, monitor, and improve sustainable mobility strategies.

<u>The benefits extend across multiple levels:</u>
1. Cyclists and tourists enjoy a richer, safer, and more connected travel experience.
2. Local businesses and SMEs benefit from increased demand and opportunities to integrate into cycling and tourism supply chains.
3. Communities and regions gain improved accessibility and stronger cross-border connections.
4. The environment benefits through reduced emissions and promotion of low-carbon mobility.
5. Authorities and planners access better insights for long-term development and policy-making.