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Danube Transnational Programme DIONYSUS

**Integrating Danube Region into Smart & Sustainable
Multi-modal & Intermodal Transport Chains**

Gap analysis

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Executive summary

Activity T2.1 deals with the current status and future requirements of multimodal/intermodal facilities (infrastructure, superstructure, equipment) in selected Danube ports (TEN-T Core Network and comprehensive ports with high development potential) which either have intermodal terminals or are suitable for the location of additional intermodal terminals (SWOT Analysis/DAPhNE/O.T4.1). These terminals may be either dedicated terminals for intermodal units or multipurpose terminals equipped and capable of handling intermodal units as well.

In order to determine the future requirements for intermodal/multimodal facilities in Danube ports, the activity assesses the existing facilities, intra-port services for containers and semi-trailers and transport services (regular rail shuttles, road shuttles, IWW feeders) to/from seaports.

Since ports offer land-land intermodal services (e.g. container flows to/from inland ports from/to seaports by rail) related facilities were analyzed and used in the determination of future trends. The analytical work in this activity was focused on gap identification and assessment of Danube ports' multimodal/intermodal facilities and services, which was concluded with recommendations for the development of multi-/intermodal facilities improvements where they are needed.

The gap analysis (Summary Report) was elaborated by LP/PDR based on the Country Reports prepared for: AT, SK, HU, HR, RS, BG, RO and contains a clear differentiation between the existing facilities and those that are needed to improve the intermodal facilities in Danube ports and at the same time generate new cargo flows.

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3 Abbreviations

Abbreviation	Explanation
VPAS	Verejé prístavy, a.s. / VPAS (PP9)
SPaP	Slovenská plavba a prístavy, a.s. / dominant port operator

4 Introduction

4.1 Scope of the report

This report delivers a gap analysis for multimodal facilities along the Danube, which is based on a clear differentiation between the existing facilities and those that are needed to improve the intermodal facilities in Danube ports and at the same time generate new cargo flows.

Selected ports were analysed in details, including, *but not limited to*, the ports of:

- Enns,
- Vienna,
- Bratislava,
- Dunajvaros
- Vukovar,
- Belgrade,
- Ruse
- Galati,
- Constanta,
- Giurgiulesti.
- Izmail

This deliverable builds on two previous deliverables elaborated in Activity T2.1, namely DT2.1.1 Report on multimodal infra and suprastructure facilities and services (April 2021) and DT2.1.2 Report on multimodal/intermodal market perspectives (February 2022). These two reports provide basic inputs on the existing multimodal/intermodal infrastructure in the Danube ports and market analysis on further trends of cargo flows which support (or not) the pure transport economics reasons for new intermodal facilities that would enable ports. Current report will provide expert opinions of project partners and their views of the missing intermodal facilities that are, if provided, likely to trigger the spatial concentration of cargoes and cargo related activities in and around ports. In a nutshell, this report aims to avoid the decades old problem of “hen and egg” related to intermodal services in Danube ports and provides proactive attitude in generating intermodal cargo flows in Danube ports.

Last but not least, this report will restrict itself to providing a gap analysis for intermodal facilities, not services like regular feeder services on inland waterways or regular shuttle train services to/from large seaports acting as container hubs.

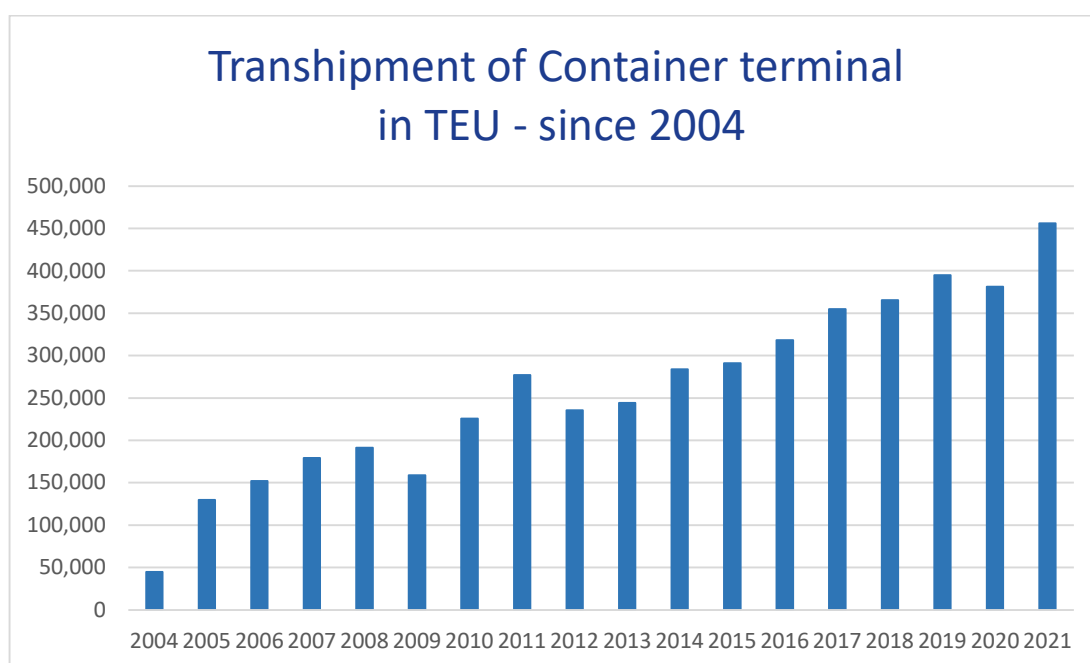
5 Gap analysis for intermodal services in Austria

5.1 Gaps in the Ennshafen Port

5.1.1 Infrastructure and facilities gaps

In the final version of Deliverable DT2.1.1 of DIONYSUS project the situation in Austria regarding intermodal terminals was summarized as follows: *“In Austria, both analysed ports, Enns and Vienna, have functional and well-equipped intermodal (container) terminals. Although located in inland ports, both terminals function mostly as bi-modal terminals (rail and road), as only a small number of empty containers are transported by IWT as spot shipments. This is mostly to the fact that they are very far away from Constanta as the entry/exit seaport for overseas trade using inland waterway transportation, and because they have very developed railway infrastructure and regular connections with Adriatic and North Sea ports.”*

The situation regarding intermodal services (i.e. container terminal business) in Ennshafen port is quite comfortable and thus no real physical gaps exist today. Even a RoRo-terminal exists and has a lot of free capacity for transport usage. In the last 7 years a lot of investments have been realized within the container terminal resulting in an enlargement of the facilities (areal, cranes, railway lines) by the factor 2-3 compared to the situation of 2013. The results of this development are expressed by the transshipment figures as follows coming to an all-time-high figure of 456 TTEU in 2021:



However, “good” is never for ever and so there are some improvement ideas for the intermodal transport in Ennshafen port, even these items are not really “gaps” but several “fields of investigation” for improvement.

Gap 1: Debottlenecking of railway system: Even the situation regarding railway transport in Ennshafen is good today, we are preparing for the future and investigate in (upcoming) or foreseeable bottlenecks which may occur if growing development will go on the next years as it was the last 5 years and considering that today’s strategies derived from European Green Deal and deploying papers will lead to cargo shift from truck to rail & IWW. Then a gap may occur in future and will give problems to the railway business if not improvements will be started in time.

Gap 2: Another field of optimization of the existing infrastructure refers to a small part of undeveloped port area (appr. 2 ha) behind the existing quay 21. This part of the port has potential to enhance multimodal business.

Gap 3: Starting Container Business on the Danube: this sector of improvement cannot be solved by the port itself but needs a multinational approach to implement regular container business in order to fulfil the targets of Green Deal and SSMS/Naides-III

5.1.2 Proposed solutions to bridge the gaps

Solution for Gap 1: Debottlenecking of railway system: The detailed investigations regarding capacity improvement of railway system are elaborated within a running CEF-1-project (study project to prepare improvement works) within the project time 2021-2024 (CEF Action N° 2020-AT-TM-0006-S, Ennshafen prepares smart & sustainable mobility investments). All the detailed tasks and plans are defined within this project as well as the milestones and responsibilities. After this project work the elaborated results give the basis for further decision about investments or other measures.

Solution for Gap 2: Quay 21-section: Within the above cited CEF-Action even this areal will be investigated for enlargement of the railway system for intermodal activities. Tasks, responsibilities and milestones are well defined within the CEF-project and lead to a basis for further investment decision.

Solution for Gap 3: Container Business on the Danube: detailed preparation for enhancement of container business on the Danube will be prepared within DIONYSUS-project (resulting in Output document)

5.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: Railway Debottlenecking	Detailed study and planning tasks for improvement	CEF-Action N° 2020 AT-TM-0006-S
Gap 2: Quay 21 section	Detailed study and planning tasks for improvement	CEF-Action N° 2020 AT-TM-0006-S
Gap 3: container business on the Danube	Fulfil the relevant activity within DIONYSUS	Depends on the outcome

Table 1: Summary of intermodal gaps for the Ennshafen port

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	04/2021 – 12/2024	EHOOE, EHNOE, CTE, OEBB-INFRA	Details defined in CEF-project	details defined in CEF-project
2	04/2021 – 12/2024	EHOOE	Details defined in CEF-project	details defined in CEF-project
3	06/2020-10/2022	DIONYSUS-PPs	Output document	Output document

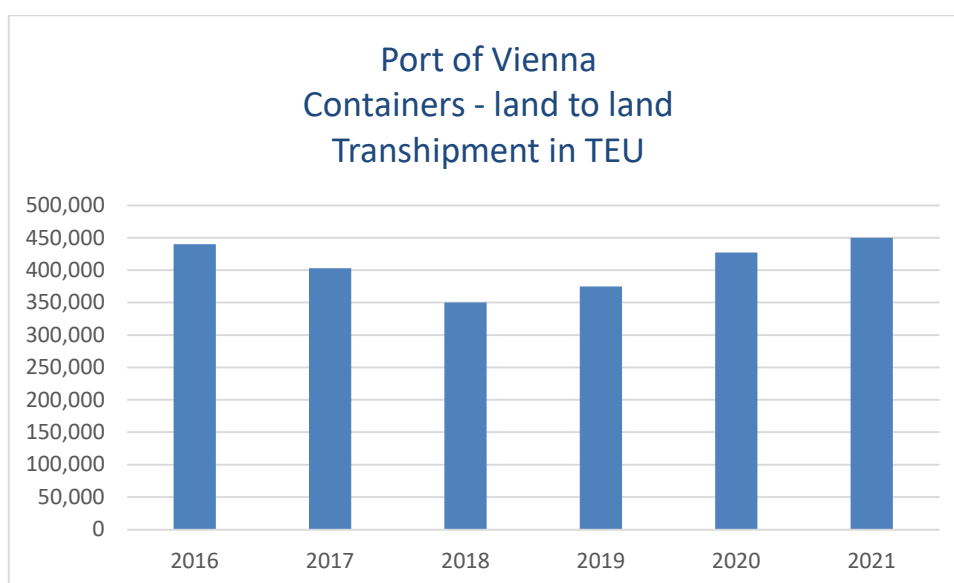
Table 2: Implementation plan for gap bridging in the Ennshafen port

5.2 Gaps in the port of Vienna

5.2.1 Infrastructure and facilities gaps

In the final version of Deliverable DT2.1.1 of DIONYSUS project the situation in Austria regarding intermodal terminals was summarized as follows: *“In Austria, both analysed ports, Enns and Vienna, have functional and well-equipped intermodal (container) terminals. Although located in inland ports, both terminals function mostly as bi-modal terminals (rail and road), as only a small number of empty containers are transported by IWT as spot shipments. This is mostly to the fact that they are very far away from Constanta as the entry/exit seaport for overseas trade using inland waterway transportation, and because they have very developed railway infrastructure and regular connections with Adriatic and North Sea ports.”*

Due to this classification no “real gaps” do exist in the port of Vienna so far. Nevertheless, further improvement investigations are work in progress for the further development of the multimodal facilities.



Gap 1: Expansion of the tri-modal inland port of Vienna by land recovery: Freight handling capacity bottleneck. Extension of the port's container handling capacities through land recovery and the construction of a new quay wall in order to optimise the areas of operation. The Global Project aims at the expansion of the container transshipment capacities at the Port through land reclamation and optimisation of operational areas to increase storage capacity and handling performance. The proposed Action includes activities to optimise the operational areas to increase the storage and transshipment capacities and improve the multimodal interconnections of the container transshipment area at the Port by reorganising the rail track system. Rough investment costs are calculated at € 17 Mio (infrastructure directly on the water-side, even road and railway connections are foreseen)

Gap 2: Starting Container Business on the Danube: this sector of improvement cannot be solved by the port itself but needs a multinational approach to implement regular container business in order to fulfil the targets of Green Deal and SSMS/Naides-III

5.2.2 Proposed solutions to bridge the gaps

Solution for Gap 1: A detailed investment project is under preparation to solve this gap. An application within the CEF-program will follow, the project is already part of the actual TEN-T-project-list.

Solution for Gap 2: Container Business on the Danube: detailed preparation for enhancement of container business on the Danube will be prepared within the DIONYSUS-project (resulting in an output document)

5.2.3 Summary of gaps bridging

The following tables contain a summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: Expansion by land recovery	Develop a project application for CEF-2	Get the award of CEF-2 and realise the planned investment
Gap 2: Container business on the Danube	Fulfil the relevant activity within DIONYSUS	Depends on the outcome

Table 3: Summary of intermodal gaps for the Port of Vienna

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	– 01/2022-12/2024	Port of Vienna	Unknown (apply for CEF-2)	award a CEF-2-project
2	06/2020-10/2022	DIONYSUS-PPs	Output document	Output document

Table 4: Implementation plan for gap bridging in the Port of Vienna

6 Gap analysis for intermodal services in Slovakia

6.1 Gaps in the port of Bratislava

6.1.1 Infrastructure and facilities gaps

Development Strategy for public port of Bratislava - Phase II (also called Masterplan II) that has been submitted in 2020, assessed current state of port infrastructure and superstructure. As concluded, it is necessary to create a new zoning of individual parts of the port area with the objective of transforming current port into modern trimodal logistic hub. It is necessary to transform the Zimný prístav into activities that are in synergy with the city's development plans. Pálenisko basin area is considered to be the main development site for cargo activities. The reason is the expected availability of land located in this part, on which it will be possible to develop port services after the settlement of current nonstandard ownership relations. The long-term intention is to operate the port of Bratislava through the Landlord model, which assumes ownership and management of infrastructure and superstructure in the competence of one entity, the so-called the port administrator, in the case of the public port of Bratislava within the competence of VPAS. Ownership and management of infrastructure and superstructure by VPAS is a necessary precondition for ensuring other tasks related to creating conditions for the development of water and combined transport.

Following gaps have been identified:

Gap 1: Unavailable supply of potable water for vessels and the connection of vessels to electricity during port stay.

This gap is partially solved by SPaP, a. s., which is also the owner of infrastructure, but this is not a standard for a public port and thus this query needs to be resolved.

Gap 2: Steep quays

Part of transshipment positions in Winter Port still has steep shore, which means the limitation for the transshipment of goods to vessel - shore and vice versa. Quays no. 2, 3 and 4 have raised quay edges which are more advantageous for the transshipment of goods. At present, edges do not correspond to required parameter from a technical point of view.

Gap 3: Outdated transshipment facilities

Most of the transshipment technologies at the port are at the end of their life cycle. In general, only minimal resources have been invested in port facilities in recent decades to maintain their operability. The port's current transshipment capacity is sufficient for the current transshipment operations whether in terms of transport infrastructure or transshipment technologies. Many technologies can be described as redundant in terms of performance. As the entire superstructure is owned by a private operator, this agenda should be provided by the operator. However, there are currently no appropriate institutional conditions in the port of Bratislava that would allow the VP, a. s. to perform the role of regulator with control over port development. This is the main reason for the current inadequate state of port technology.

More modern transshipment technologies are now available on the market. They allow much more efficient transshipment of goods and the associated lower operating costs. In order to increase the competitiveness and attractiveness of inland water transport under the conditions of the Bratislava Public Port, it is recommended to address the area of institutional relations and thus enable the modernization of transshipment technologies.

Gap 4: Outdated warehouses

Warehouses in the Zimný prístav were built before World War II, most of which were not preserved. Most of the existing warehouses were built in 1946-1949, and subsequently in the period 1960-1965 was carried out renovation, reconstruction and completion of warehouses.

Gap 5: Ro-Ro location currently has no parking capacities

Ro-Ro position located in the basin Pálenisko could be used much more, unfortunately there are no parking capacities nearby that reduces the potential of the position.

6.1.2 Proposed solutions to bridge the gaps

Solution for Gap 1

Solution description

The modernization of port services in the Port Bratislava should also include the construction of facilities for vessels by respecting legislative requirements in terms of waste management that provides services of refuelling the fuel and drinking water to vessels, waste collection (sewage pumping, drainage water, used oil collection, municipal waste collection, collection and disposal of hazardous waste and others), retreatment of waste (cleaning / processing), its disposal and discharge of purified waste water.

- Necessary steps
 - a. Identification of parameters and requirements / adoption of technical solution
 - b. Identification of location
 - c. Settlement of ownership relations
 - d. Implementation of defined technical solution
- Stakeholder's mapping
 - a. VPAS – port authority, owner of the port
 - b. SPaP – dominant operator and current owner of the infrastructure
- KPIs
 - a. Existence of facility serving for water supply and waste management

Solution for Gap 2

Solution description

By modernization of the public port of Bratislava (11.6 km coastline) is expected to achieve a condition that meets the current technical, safety and regulatory requirements of the EU. The scope of necessary modernization and necessary adjustments contains:

- Quay walls and nautical equipment in Pálenisko and the Zimný prístav basins,
- On-shore slopes with facilities (bits, stairs, utilities - water, electricity, sewerage, telecommunication services) within the entire public port of Bratislava,
- construction of mooring bits carrying the load into foundation (on onshore slopes) of entire port of Bratislava,
- stable operational depths in basins of the public port of Bratislava.

In case of dislocation of dry bulk from cargo port area Zimný prístav into cargo port area Pálenisko, it is necessary to build new reinforced surfaces and follow-up shore infrastructure. At the same time, it

is necessary to complete quay walls in Pálenisko for the purpose of loading and unloading goods. Construction of new reinforced surfaces in the Pálenisko basin will allow the transshipment of goods with the use of recent, up-to-date, technology.

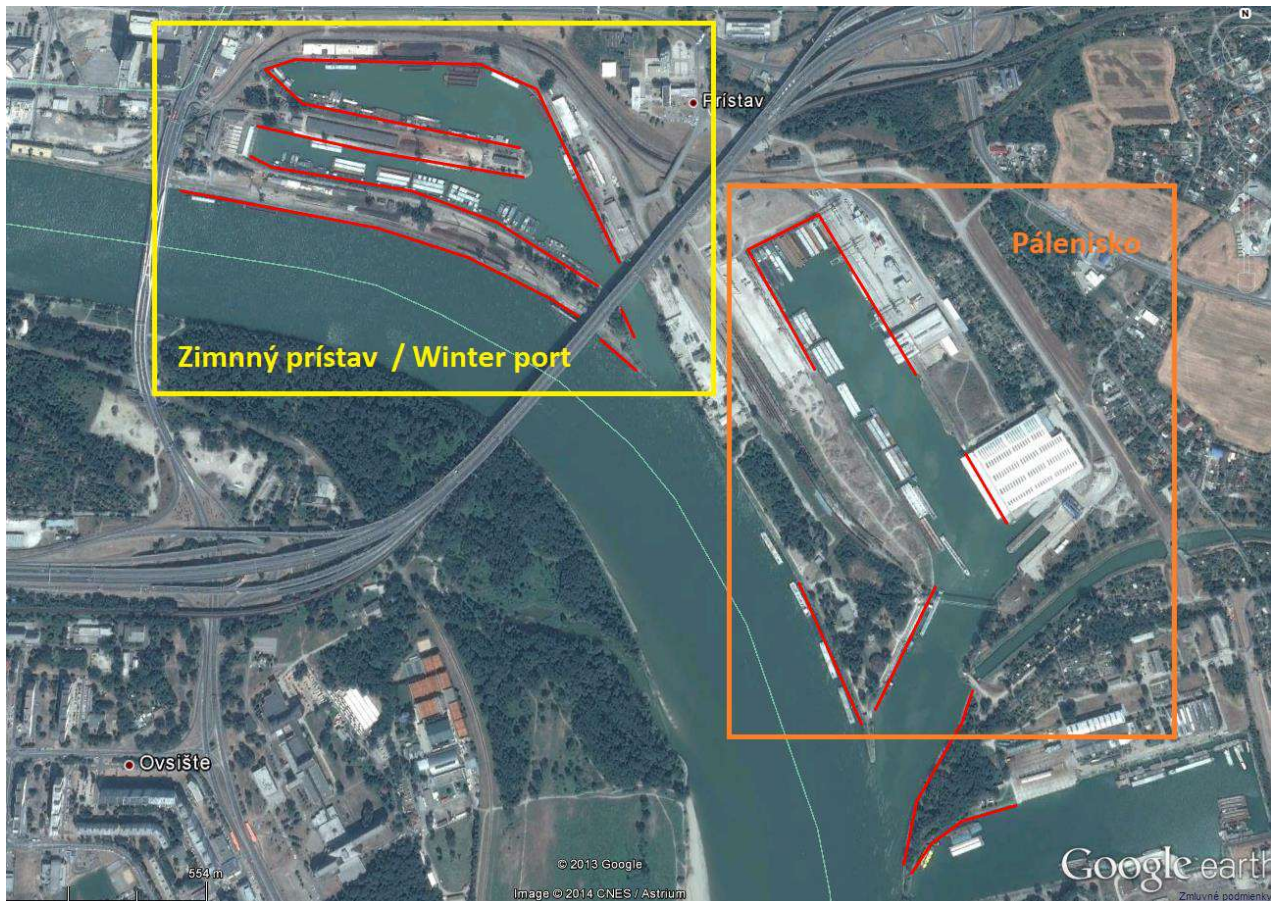


Figure 1: Cargo Port Bratislava - the length of the riverside edges to modernize the 6700 m

- Necessary steps
 - a. Settlement of ownership relations
 - b. Implementation of defined technical solution according to strategical document Masterplan II
- Stakeholder's mapping
 - a. VPAS – port authority, owner of the port
 - b. SPaP – dominant operator and current owner of the infrastructure
- KPIs
 - a. Cargo transshipment relocated from Winter port to Pálenisko basin

Solution for Gap 3

Solution description

Construction of bulk cargo terminal. The estimated transshipment capacity of this terminal (for 3 berths) should be 1,310,400 tonnes per year by using 3 cranes (one per berth) in 2 shifts and could be further increased to 1,572,490 tonnes per year by using 4 cranes in 2 shifts to fully cover the anticipated demand up to year 2050 (1,520,048 tonnes per year). Additional area will be reserved to accommodate an additional dry bulk cargo quantity of 500,000 tonnes per year.

- Necessary steps
 - a. Settlement of ownership relations
 - b. Implementation of defined technical solution according to strategical document Masterplan II
- Stakeholder's mapping
 - a. VPAS – port authority, owner of the port
 - b. SPaP – dominant operator and current owner of the infrastructure
- KPIs
 - a. Cargo transshipment relocated from Winter port to Pálenisko basin

Solution for Gap 4

Solution description

Masterplan II proposes construction of new Break-Bulk terminal. This terminal is expected to contain new air-conditioned warehouses. Construction of covered terminal for the transport of piece cargo will enable the development of transport that is currently kept at marginal values.

- Necessary steps
 - a. Settlement of ownership relations
 - b. Implementation of defined technical solution according to strategical document Masterplan II
- Stakeholder's mapping
 - a. VPAS – port authority, owner of the port
 - b. SPaP – dominant operator and current owner of the infrastructure
- KPIs
 - a. Cargo transshipment relocated from Winter port to Pálenisko basin

Solution for Gap 5

Solution description

Using of nearby unused land for constructing parking capacities for cars, trucks and/or other wheeled and tracked machinery. The estimated increase in demand for car transport is also related to the need to maintain and modernize the Ro-Ro ramp in the Pálenisko basin.

- Necessary steps
 - a. Settlement of ownership relations
 - b. Implementation of defined technical solution according to strategical document Masterplan II
- Stakeholder's mapping
 - a. VPAS – port authority, owner of the port

- b. SPaP – dominant operator and current owner of the infrastructure
 - KPIs

Cargo transshipment relocated from Winter port to Pálenisko basin

6.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
<u>Gap 1:</u> Unavailable supply of potable water for vessels and the connection of vessels to electricity during port stay	<ul style="list-style-type: none"> a. Identification of parameters and requirements / adoption of technical solution b. Identification of location c. Settlement of ownership relations d. Implementation of defined technical solution 	Modernization of port services
<u>Gap 2:</u> Steep quays	<ul style="list-style-type: none"> a. Settlement of ownership relations b. Implementation of defined technical solution according to strategical document Masterplan II 	Modernization of port coastline
<u>Gap 3:</u> Outdated transshipment facilities	<ul style="list-style-type: none"> a. Settlement of ownership relations b. Implementation of defined technical solution according to strategical document Masterplan II 	Construction of bulk cargo terminal
<u>Gap 4:</u> Outdated warehouses	<ul style="list-style-type: none"> a. Settlement of ownership relations b. Implementation of defined technical solution according to strategical document Masterplan II 	Construction of new Break-Bulk terminal with air-conditioned warehouses
<u>Gap 5:</u> Ro-Ro location currently has no parking capacities	<ul style="list-style-type: none"> a. Settlement of ownership relations b. Implementation of defined technical solution according to strategical document Masterplan II 	New parking capacities

Table 5: Summary of intermodal gaps for the Port of Bratislava

7 Gap analysis for intermodal services in Hungary

7.1 Gaps in the port of Dunaújváros

7.1.1 Infrastructure and facilities gaps

The port is a public port in the administrative area of Dunaújváros, located at the right riverside of the Danube at section 1578,600 km, suitable for managing large ships. In terms of its construction, it is an inland basin port, and its operation is public. Continuous in operation, number of ship berths is 6.

The main activities of the Dunaújváros river port are loading and unloading of goods transported via waterways, storage, the maintenance and repair of port equipment, lifting machines and ships, and additional port services. Cargo handling, transportation connections:

- Handling of parcel goods, bulk goods, and fluid goods
- The port is capable of unloading bulk and parcel goods from ships to open railcars and road vehicles as well, and loading from lorries or closed and open railcars to ships.
- Industrial railway tracks: length 1100 m; serviced 24h a day during weekdays.
- Railcar arrangement: performed by Rail Cargo with a charter locomotive
- Road connection: distance to the motorway M6 is 3 km
- Truck parking lots: 30 pcs.

On the 563 m long quay shoreline of the port 6 pcs berth terminals are located, approx. 96m each. There are 5 waiting berths belong to the port along the right bank of the Danube. There are also 2 more waiting berths on the west side of the port.

The port is owned as majority by ISD Dunafer Co., and is operated by ISD PORTOLAN Co. Minority owner and operator is CENTROPORT Co. The access road „Ruhagyári road” to the port is public area owned by the Municipality of Dunaújváros.

The port is meeting domestic and international transport needs related to road, rail, river and sea transport as it has road, rail and water connections, and can handle all kind of goods arriving at the port by any means of transport. Although it has good connections, several obstacles are hindering the effectiveness of the intermodal services of the ports of Dunaújváros.

Gap 1: Shortcomings in the quality of the connecting road network

The port is connected by a public road owned by the Municipality of Dunaújváros to the highway no. 6, which is part of the national road network. The access point is north of the city at milestone „67 km” on the highway no. 6. The distance from the highway to the port is 1,5 km. Highway no. 6 is connected to the M6 motorway. The motorway has two possible access points, one 4km north, the other 4km south of the mentioned northern entrance on highway no.6. To the south it takes 12 km to the Pentele Bridge (part of the M8 motorway), which connects towards the east side of the Danube.



Figure 2.: Road and railway connections of the port

The Municipality owned „Ruhagyeri road” connecting the port area to highway no. 6. is currently 5.5-6.0 m wide. Its pavement is in tolerable condition in means of acceptable evenness. It is not deformed except for minor local depressions. However, its surface is cracked at many spots. The slope of the road is in line with the theoretical plane. However, due to the ditch and the bench condition, the dewatering toward the ditches is unsatisfactory in some cases. The bench is uneven on many parts of the road, and the vegetation has grown. Due to the fact that heavy traffic is frequent on the road, and the width is narrow, truck drivers are forced to drive to the side of the road (and the bench). The bench is run out at many places, is pitted or loose.

The frequently used roads are prone to decrease in quality which hinders road transport to the port and a therefore it is a potential risk of accident.

Gap 2: Small storage capacity

At the 6th quay of the port of Dunaújváros (Centroport Ltd.), there is a flat storage with a floor area of 1,600 m², which can be divided into four cargo spaces, where 6,300 mto of bulk goods can be stored at the same time.

The movement of goods can be from road, rail, ships to storage or backward, or direct transshipment from and to road, rail and ships. The storage technology allows the transfer of 200 mto per hour, 3,000 mto per day of goods to barges/ships. The port has one of the largest flow scales in Europe with a throughput of 300 mto / h which certifies the actual weight of the goods. The covered 18 m long hopper can accommodate road vehicles in all weather conditions.

ISD Dunafer Co. also owns storage capacity in the area, an 11,200 m² large open storage area is available on solid pavements, where bulk goods (ore, coal, coke, etc.) and piece goods can be stored and a covered warehouse with a floor area of 1,200 m².

In order to increase the intermodal transport capacity of the both ports the storage volumes should be increased. Recent weather-related events showed that increasing storage capacity is crucial for ports during critical low water levels when waterborne transport is disabled.

Gap 3: Mainly one-way loading infrastructure

An analysis of the shipment records in recent years shows that majority of the goods are loaded to barges and ships while unloading from them is negligible. Due to this state the income of the ports is related to a narrow range of goods shipped.

There is a great potential in two-way waterborne transportation when ports along the Danube are capable of transfer various goods, products from fuels to agricultural, industrial products. The loading of additional goods and products requires technological developments based on a versatile loading device.

Gap 4: Education of the workforce

Increased intermodal transportation capacities and the broaden range of transferred type of goods imposing a heavy burden on ports in connection of maintaining a well-trained and sufficient amount of workforce. Any kind of development which makes it necessary to educate the employees of the ports may lead the overuse of the workforce and significant short-term loss of profit.

Ports in Dunaújváros have difficulties in maintaining a proper trained workforce, fluctuation of employees is common. Newer port technologies make this situation even more difficult.

Gap 5: Lack of a covered loader at ISD Dunafer Co.

ISD DUNAFERR Company Group seated in Dunaújváros is one of the largest industrial producers in Hungary. The activity of the company group having a history of over seven decades is focused on manufacturing of steel products. Hot rolled, pickled, cold rolled, galvanized strips and sheets, as well as open and hollow steel sections produced by ISD DUNAFERR are used primarily for the manufacturing of engineering, automotive and construction industrial products, as well as for the production of steel structures, household appliances and other parts.

Steel products manufactured in the company, although they are sufficiently packaged, are sensitive to humid and wet weather conditions, therefore during rainy days goods are not transferred in the port.

7.1.2 Proposed solutions to bridge the gaps

Solution for Gap 1: Shortcomings in the quality of the connecting road network

Ports are important and integral part of the economy of Dunaújváros, significant part of the municipal income is related to the income generation of local waterborne transportation. In addition to local tax payments, ports are great employers which generates livelihood of hundreds of families in the region.

Maintaining a proper and well-functioning road network toward ports is a common interest which enables both the undisturbed flow of goods and road safety. After a consultation between port operators, municipal decision makers and local residents, reconstructing the road network toward ports is crucial that could meet the current and future needs of road transportation.

Solution for Gap 2: Small storage capacity

The existing storage technology in ports of Dunaújváros has shown its the significance and crucial role as a port service and puffer capacity which promotes smooth intermodal transportation.

Enlarging and developing the technology of storage capacity in ports of Dunaújváros will promote the efficiency of waterborne transportation resulting in larger quantities of intermodal transfer of goods. This effect secures the important role of ports in the Danube region even in less desirable river navigability conditions.

Solution for Gap 3: Mainly one-way loading infrastructure

Ports in the Danube region are facing new challenges from climate change, pandemic situation, changing technologies and transported types of goods. A war situation may cause changes in the Hungarian energy policy, where alternatives to the pipeline-based transportation of energy sources, fuels will have a significantly more important role. Moreover, changes in the industrial process (e.g., renewable resources, electric mobility) may increase the transportation volume of new products.

These effects may challenge ports of their infrastructure is not prepared for the future processes. One of the main elements of the port development in Dunaújváros would be the improvement of two-way loading infrastructure of goods with introducing new versatile loading devices and technologies.

Solution for Gap 4: Education of the workforce

Trained and sufficient workforce is a crucial element to every port operation creating and maintaining which is a heavy burden for every operator. Although trainings of employees are inevitable for professional operation, they are decreasing actual workhours in portal processes.

In order to meet the needs of the increasing the intermodal transportation volumes complex processes are needed run by the operator which involves software and trained workforce. Utilising the latest technology not only automatise processes but may help employees monitoring the performance of transportation and identifying any problems.

Best practices regarding the introduction of new technologies and processes in other ports should be analysed and the suitable methods should be piloted in Dunaújváros. This solution may prepare the port operators and the employees for the difficulties of the new technologies thus makes the introduction easier and smoother.

Solution for Gap 5: Lack of a covered loader at ISD Dunafer Co.

Constructing a covered loader at the port of the ISD Dunafer Co. would help to decrease the weather dependency of the transportation of goods and provide a smooth flow of processes. The investment would increase the transported volume of goods and provide better predictability in waterborne transportation.

7.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
<u>Gap 1:</u> Shortcomings in the quality of the connecting road network	<ul style="list-style-type: none"> - Consulting with municipal decision makers and local residents about the usage and development of the road; - Reconstruction of the key roads to port of Dunaújváros. 	Reconstruction of incoming road network to ports of Dunaújváros
<u>Gap 2:</u> Small storage capacity	<ul style="list-style-type: none"> - Increasing the storage capacity in the port; - Developing storage technology. 	Increase storage capacity and technology in ports of Dunaújváros
<u>Gap 3:</u> Mainly one-way loading infrastructure	<ul style="list-style-type: none"> - Introducing new versatile loading devices and technologies promoting two-way loading of ships 	Introducing new versatile loading devices and technologies promoting two-way loading of ships
<u>Gap 4:</u> Education of the workforce	<ul style="list-style-type: none"> - Identifying best practices of introducing new technological advancements in other ports; - educating existing workforce for promoting a more efficient intermodal transportation 	Using best practices for introduction of new technologies in ports of Dunaújváros.
<u>Gap 5:</u> Lack of a covered loader at ISD Dunafer Co	<ul style="list-style-type: none"> - Construction of a covered loader 	- Construction of a covered loader at port of ISD Dunafer Co.

Table 6: Summary of intermodal gaps for the Port of Dunaújváros

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	06/2022 – 12/2024	<ul style="list-style-type: none"> - Port operators; - Municipal decision makers; - Local residents; - Road transportation companies/truck drivers; - NGOs (environment protection). 	<ul style="list-style-type: none"> - End of public consultation, 12/2022 - End of road reconstruction, 12/2024 - - - 	<ul style="list-style-type: none"> - Increased road transportation volume; - Decreased number of road incidents
2	06/2022 – 12/2024	<ul style="list-style-type: none"> - Port operators; - Cargo owners; - Transportation companies. 	<ul style="list-style-type: none"> - Finished procurement of new storage equipment 06/2023; - Building of new storage area, 12/2024 	<ul style="list-style-type: none"> - Increased storage volumes; - Increased income of port operator.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
3	06/2022 – 12/2024	<ul style="list-style-type: none"> - Port operators; - Workforce of the port; - Cargo owners; - Potential clients for the new service. 	<ul style="list-style-type: none"> - Identifying the means and volumes of the potential two-way loading services 12/2022; - Finished procurement of new equipment of two-way loading technology 12/2024 	<ul style="list-style-type: none"> - Increased volume of unloaded goods, - Increased overall volume of trade of goods.
4	06/2022 – 06/2025	<ul style="list-style-type: none"> - Port operators, - Workforce of the port; - Potential technology providers. 	<ul style="list-style-type: none"> - Best practice analysis, 12/2022; - Introduction of new technologies 12/2024; - Trainings for employees, 06/2025. 	<ul style="list-style-type: none"> - Number of newly introduced technologies; - Number of trained employees.
5	06/2022 – 12/2023	<ul style="list-style-type: none"> - Port operator ISD Dunafer Co; - Cargo owners. 	<ul style="list-style-type: none"> - Finished construction of a covered loader, 12/2023 	<ul style="list-style-type: none"> - Increased volume of unloaded goods, - Increased income of port operator.

Table 7: Implementation plan for gap bridging in the Port of Dunaújváros

8 Gap analysis for intermodal services in Croatia

8.1 Gaps in the port of Vukovar

8.1.1 Infrastructure and facilities gaps

Gap 1: Lack of space for intermodal terminal

The Port area is of a very specific shape, with several natural obstacles that restrict Port activities. The Port of Vukovar extends to a total of 38.53 ha, of which the land part occupies 22.10 ha and the water part occupies 16.42 ha. Accordingly, it is evident that there is a lack of space to expand the Port.

Gap 2: Lack of storage yard surface

There is an acute shortage of space, especially regarding the manipulative space between the water side and the rails, as well as traffic areas for arrival and departure. Open storage space because of his natural obstacle is squeezed and isn't sufficient for current needs related to storage of cargo, that are mostly bulk and general cargo.

Gap 3: Lack of vertical quay for berthing

Existing bank of Danube has been set as sloped bank, equipped with harbour cranes. At the smaller part, at length of 55 m there is a vertical bank. However, bank wall is located at the part of the bed which remains outside water at low water levels. Even though Danube is navigable around the Port of Vukovar through the whole year, ships may have difficulties docking along both the vertical and the sloped bank and have to anchor at required distance, determined by their draught and available water depth.

Gap 4: Lack of rail tracks for full block trains

Due to favourably location of industrial rail tracks, closely with vertical and sloped quay there is lack of length of for handled with full block trains. The railway line from Vinkovci to Vukovar with a length of 18.71 kilometres is sections important for international traffic and connect the Port of Vukovar to the RH1 Corridor, the former X Pan-European Corridor. The railway line passes through port area closely with undevelopment quay and has direct connection with industrial railway tracks.

Gap 5: Lack of specialized equipment for intermodal transshipment

The port is equipped with equipment mostly for bulk and general cargo, except mobile crane - Gottwald HMK 170E with a capacity of 63t which could be used for multiple transshipment modes. For such purpose port operator possess equipment for transshipment of 20-foot containers, a container spreader for transshipment 20-foot containers that can be use with mobile crane.

8.1.2 Proposed solutions to bridge the gaps

Solution for Gap 1

Further development of the port requires the construction of a new multi-purpose terminal. The difference between multi-purpose terminals and general cargo terminals is very small, and comes down to the layout of the terminals and the equipment used. Most multi-purpose terminals combine conventional bulk cargo with container and RoRo cargo. Port. With the implementation of the construction project, an area of approximately 3 hectares is put into operation.

Due to fact of lack of space Pre-feasibility study for extension of port area has been done, where suitable solution for construction of new multi-purpose terminal was presented. According to Pre-Fesibility study estimated cost of investment is around 65 mil. euros. The investment consists of the purchase of land, supporting project and technical documentation required for the construction of the terminal, the costs of construction of port infrastructure and construction supervision, and the final works of equipping.

Furthermore, in accordance with Pre-feasibility study the construction of the multi-purpose terminal is identified as a long-term project with term for implementation of 18 years.

Solution for Gap 2

To reduce current lack of open storage space for existing cargo, as well as ensure possibilities for development of intermodal capacity expansion of existing port is needed. Expansion of existing port could be done on the currently unused part of port, with construction of new space storages and manipulative areas.

At this moment development of project documentation for the construction of the vertical quay is under implementation. Beside construction of vertical quay project documentation also cover construction of road, as well as manipulative and storage area.

Preparation of documentation is implementing trough CEF-programme and is expecting to be done by the end of the 2024 year with all adequate permit needed for start to construction. Furthermore, construction works are planned to finance with EU funds, while construction works are planned to be finished by the end of 2028 year.

Solution for Gap 3

To reduce difficulty related on difficulties with berthing the vessels during the low water level, as well as ensure more efficient transshipment activities of cargo extension of exist vertical is needed. Extension is possible to be done as upgrade of existing vertical quay, where new quay in the length of 300 meters could be constructed.

Construction of vertical quay is preparing through the project of Preparation of documentation of construction of vertical quay that is under implementation, while the project is financed by CEF-Programme. Furthermore, as it mentioned under the Solution for the Gap 2, the project with its implementation regard on project documentation is planned to be finished by the end of 2024 year, while construction works planned to be done by the end of 2028 year.

As a second stage of solution for the Gap 3 it could be reconstruction of the existing slopped quay and integration into previously mentioned vertical quay. For such purpose the construction of the vertical quay financed by CEF-Programme has to be done, as well as operable in that way that all port activities could be reallocated at the new constructed quay.

Solution for Gap 4

Extension of existing railway tracks is possible on the at the part of undevelopment port area where currently is located railway line Vinkovci – Vukovar. Solution for upgrade of railway tracks is in relocation of existing railway line Vinkovci – Vukovar, what is currently under implementation. Relocation of the railway line has been provided under the project for Modernization, renewal, and electrification of the railway line Vinkovci-Vukovar. Within that project a space for upgrade of railway tracks is possible in the length of 300meters, while connection of the port with international railway line is still ensured. Furthermore, railway tracks upgrade is also closely connected with project of preparation documentation for the vertical quay, that at the same time finds solution for the Gap 2, as

well as for the Gap 3. However, within the project for vertical quay a new railway tracks are being planned, as well as intention of association with current railway tracks with the new ones.

The grant contract for the project for Modernization, renewal and electrification of the Vinkovci-Vukovar railway was signed on 21st May 2018 by the Ministry of the Sea, Transport and Infrastructure, Central Financing and Contracting Agency and HŽ Infrastruktura (end user). Total investment value of the project is 90.867.746,15 EUR and eligible costs are estimated in the amount of 69.233.006,01 EUR. The project is co-financed by the European Union from the Operational Program Competitiveness and Cohesion from the Cohesion Fund at 85% of the eligible costs and at 15% by the Government of the Republic of Croatia. The estimated duration of the project implementation is 24 months.

As regard upgrade of railway tracks, their terms are the same as for the Gap 2 and Gap 3, as it above mentioned for preparation of documentation until 2024 and for construction works until 2028 year.

Solution for Gap 5

Mostly all above mentioned gaps are closely connected with construction of the vertical quay and finds solution for gaps in the same project. Furthermore, solution for Gap 5 partly finds solution in the project for vertical quay. Within the project for vertical quay all infrastructure considered berthing, roads and railways tracks are covered by state investment, while needed superstructure such as transshipment equipment is under obligation of port operator.

However, the new terminal should be constructed within project for construction of vertical quay, as well as constructed in that manner to provide installation of variety transshipment equipment which should include also specialized equipment for intermodal transshipment.

To ensure intramodality at the new terminal a port operator should possess specialized equipment, as well as provide intermodal transport at the terminal. The port operator which is going to use the new terminal, as a part of contract for concession it is necessary to incorporate obligation related on intermodal transport should be included, as well as equipment of terminal with specialize equipment for intermodal transport.

8.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
<u>Gap 1:</u> Lack of space for intermodal terminal	<ul style="list-style-type: none"> - Locate a new space for port expansion -Define with a strategic document -Establish new port area -Resolve legal status of land -Prepare technical documentation for construction 	Adopt a long-term strategy with defined space for new port area expansion.
<u>Gap 2:</u> Lack of storage yard surface	<ul style="list-style-type: none"> -Define with a strategic document -Prepare technical documentation for construction 	Adopt a mid-term strategy for putting in usage unused port area.

Gaps	Steps to bridge the gap	Proposed solutions
	-Tendering procedure for construction	
Gap 3: Lack of vertical quay for berthing	-Define with a strategic document -Prepare technical documentation for construction -Tendering procedure for construction	Adopt a mid-term strategy for putting in usage unused port area.
Gap 4: Lack of rail tracks for full block trains	-Define with a strategic document -Prepare technical documentation for construction -Tendering procedure for construction	Adopt a mid-term strategy for putting in usage unused port area.
Gap 5: Lack of specialized equipment for intermodal transhipment	-Resolve Gap 2, 3 and 4 -Tendering procedure for providing services at the intermodal transhipment	Eliminate Gap 2, 3 and 4. Give a concession for port activities at the multi-purpose terminal with purpose of providing intermodal services.

Table 8: Summary of intermodal gaps for the Port of Vukovar

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	01/2023 – 01/2041	-Government of Republic of Croatia Ministry of the Sea, Transport and infrastructure -Port Authority - -	- Define a project as a strategic - Establish the port area - Purchase of land	- Project define as strategic project at national level - Adopted regulation on establishment the port area - Started the process of purchasing land
2	12/2021 – 12/2028	-Government of Republic of Croatia -Ministry of the Sea, Transport and infrastructure -Port Authority	-Prepared technical documentation for construction - Conduct a tender for the construction works - Contract construction works	-Technical documentation successfully finished - Tendering procedure successfully finished -Signed contract for construction works
3	12/2021 – 12/2028	-Government of Republic of Croatia -Ministry of the Sea, Transport and infrastructure -Port Authority	-Prepared technical documentation for construction - Conduct a tender for the construction works - Contract construction works	-Technical documentation successfully finished - Tendering procedure successfully finished -Tigned contract for construction works

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
4	12/2021 – 12/2028	<ul style="list-style-type: none"> -Government of Republic of Croatia -Ministry of the Sea, Transport and infrastructure -Port Authority 	<ul style="list-style-type: none"> -Prepared technical documentation for construction - Conduct a tender for the construction works - Contract construction works 	<ul style="list-style-type: none"> -Technical documentation successfully finished - Tendering procedure successfully finished -Signed contract for construction works
5	12/2026 – 12/2028	<ul style="list-style-type: none"> -Government of Republic of Croatia -Ministry of the Sea, Transport and infrastructure -Port Authority 	<ul style="list-style-type: none"> -Reach all milestones under gap 2,3,4 -Conduct tendering procedure for giving concession for providing services on intermodal terminal 	<ul style="list-style-type: none"> -Signed concession contract for providing services on intermodal terminal

Table 9: Implementation plan for gap bridging in the Port of Vukovar

9 Gap analysis for intermodal services in Serbia

9.1 Gaps in the port of Belgrade

9.1.1 Infrastructure and facilities gaps

In recent years overall cargo volume in the port of Belgrade is decreasing due to the urban development around the port and traffic limitations.

Terminal covers the area of 12.000 m², excluding manipulation area and covered warehouses used to store goods from containers, and uses mostly the existing multipurpose facilities and equipment providing maximum capacity for transshipment of 12.000 TEU on a yearly basis.

Due to the expansion of the urban surrounding main gaps are lack of the access infrastructure.

Gap 1: Limited railway access infrastructure

Even though terminal is still connected to the national railway network and further to TEN-T corridor X, access to the port is enabled only through the tunnel below the city center which is not suitable for the transport of dangerous goods and HQ containers.

Gap 2: Limited road access infrastructure

Due to expansion of the urban surrounding and heavy weight truck limitations in the city center, terminal has only one link with the city ring-road and further to highways. This link is old Pančevo bridge, often overloaded and congested with traffic.

9.1.2 Proposed solutions to bridge the gaps

Considering that the city urban development has set narrow limits for the port access infrastructure and further development of port on the current location, authorities started planning activities for development and construction of the new port in Belgrade, on different location. Ministry of Construction, Traffic and Infrastructure has contracted the development of necessary technical documentation (Feasibility study with Conceptual Design, EIA Study and Construction permit design), but the final location has not been chosen yet. Additionally, spatial planning documents will need to be updated once the appropriate location is selected.

Until the new port becomes operational, Port Operator on the current port location has to maintain the same level of provision of port services.

9.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
<u>Gap 1:</u> Limited railway access infrastructure	Better coordination with railway operators.	New port will be constructed on the different location, more favourable in terms of railway access infrastructure

Gaps	Steps to bridge the gap	Proposed solutions
<u>Gap 2:</u> Limited road access infrastructure	Adjust working hours in terms of better planning of bringing goods in and out of port by road (avoiding rush hours etc.)	New port will be constructed on the different location, more favourable in terms of road access infrastructure

Table 10: Summary of intermodal gaps for the Port of Belgrade

9.2 Gaps in other port locations

Beside the port of Belgrade, there are some limited capabilities for container transshipment in ports in Novi Sad, Pancevo, Prahovo and Sremska Mitrovica.

The port of Novi Sad in previous period had several attempts for the development of container terminal, mainly using rail/road transportation and with limited waterside capacity (portal crane with maximum lifting capacity 27t). Since the Port Operator in the port of Novi Sad is DP World, company with the extensive knowledge and experience in container transport development, one of the major facilities foreseen in Port Development Plan is container terminal. Mobile portal crane has already been acquired and several vessels with containers has been loaded/unloaded in 2022. Full construction of the terminal, including reconstruction of the quay wall, storage area and purchase of the appropriate equipment will be completed in 2022/2023.

Newly established terminal within the Port in Pancevo is a 3-modal container terminal. It has two industrial tracks with a total length of 1000m, railway car for positioning wagons to / from the terminal, storage capacity of 30,000 sqm, two Reach Stackers (one of which is Intermodal, and can manipulate semi-trailers) public customs warehouse, 32 plug-ins for containers with temperature regime, complete system for automated filling of containers with bulk grain loads. However, waterside transshipment is limited with portal crane of maximum lifting capacity 27t, and engagement of mobile crane is necessary for any waterside operations other than loading/unloading of empty containers.

Similarly, container terminal has been established in Port of Sremska Mitrovica on the Sava river. Since there are no conditions for the waterside transshipment, this terminal relies dominantly on railway and road access. Still, development plans for this port are including dredging of the port basin and extension of the port, which will enable waterside operations with containers.

Port of Prahovo has limited storage capacity and no yard equipment for container manipulation. Therefore, this port currently has ability only for direct transshipment of containers from vessel to wagon/truck or vice versa, by using the existing bridge crane of 40t lifting capacity.

10 Gap analysis for intermodal services in Bulgaria

10.1 Gaps in the port of Ruse

10.1.1 Infrastructure and facilities gaps

Gap 1: Low efficiency of freight transportation in the area of Ruse due to poor intermodal connectivity in the Northeast Region

The Ruse-East terminal of the port of Ruse has all the required capacity in terms of infrastructure and facilities to perform intermodal operations. Currently, however, the volume of containerised cargo transported through the port is in reality at zero levels. The main reason for this is the insufficient economic activity in the area. In regard to the movement of goods in general, all types of freight, which are transported from the port to the end users or vice versa (depending on whether it is part of import or export activities), are carried by road in an inefficient manner, which requires trucks to travel loaded in one direction and empty on the way back.

The situation is similar in the wider area. Transport from and to the port of Varna, which is the other port facility of significant importance in the country's Northeast Region, also involves road vehicles performing a great number of empty courses (containers included). The negative impact is significantly higher on a regional scale, considering that the port of Varna accounts for a great share of international transport in Bulgaria. One of the more substantial results from inefficient transportation are higher expenses, which is a burden for operators, merchants, and the business in general. Another significant unfavourable consequence is the negative impact on the environment, caused by increased road traffic. In addition, deliveries are often delayed due to the need for companies performing export activities to wait extensively for empty containers to arrive directly from the port. These effects apply on a local level as well, since a share of international transport operations in the port of Varna are aimed at delivering goods from and to the area of Ruse.

If this gap is to be bridged through facilitation of intermodal solutions, it would generate substantial benefits for transport activities and for overall the connectivity and prosperity in the region as a whole.

Gap 2: Lack of capacity to transfer cargo from road to railroad transportation

Currently, the predominant share of freight transport operations in the area of Ruse are carried out by road. This includes the import and export cargo moved from and to the port of Ruse, and all the transnational transport of freight between Bulgaria and Romania via the Danube Bridge.

Intensive road traffic significantly increases the negative impact on the environment and the movement of cargo transporting vehicles greatly accelerates the process of depreciation of road infrastructure. Bridging this gap through potential solutions in the area of intermodality involving the transfer of cargo from road to railroad transport would reduce the carbon footprint caused by road traffic and make freight operations more efficient. The city of Ruse is especially suitable for such initiatives due to the fact that it is simultaneously located at a main Trans-European inland waterway route and at the most important border crossing point between Bulgaria and Romania and has the required railroad infrastructure connecting it with other regions of the country.

10.1.2 Proposed solutions to bridge the gaps

Solution for Gap 1:

Our research has shown that the most suitable solution for significantly improving freight transportation activities in Bulgaria's Northeast region would be the construction of an intermodal terminal in the area of Ruse, that would serve as a dry port for the port of Varna.

This facility should be located to the southeast from Ruse, in a relatively close proximity to the city, and at the railway line connecting Ruse and Varna. This way the terminal will be situated approximately 160 km from the Varna-West port terminal (located in the area of Devnya), where all the containerised cargo from import and export activities is stored and transported. Such a distance would imply that the new-built intermodal facility could be categorised as a mid-range dry port, which would make it suitable to connect with the main seaport both by road and railroad.

The intermodal terminal will allow trucks to carry import cargo from the seaport to the dry port, from where it will be transported by other vehicles to the end users. Simultaneously the goods for export will be moved by the companies to the dry port and later transported to the seaport by the same trucks that earlier arrived with import cargo. In this manner the vehicles moving between Varna and the dry port, which is the larger share of the distance from the seaport to the end user, will always travel loaded. This will significantly optimise freight traffic, with empty containers being carried only at shorter distances on a local scale between the dry port and the end receivers. Additionally, apart from main activities involving loading, unloading and storage of cargo, the terminal could provide other services such as goods packaging and overall preparation of freight.

The benefits of this of project will be significant and in several areas. The direct positive result will be the decline of expenses for cargo transportation due to the optimisation achieved through the decrease of empty courses. This will make all activities more profitable for operators and other involved entities and could potentially lower the prices for some of the goods transported. Less courses of unloaded road vehicles will also reduce carbon emissions. In addition, the terminal will also generate certain benefits of organisational manner, including less delays for the movement of empty containers, in comparison to the current model where cargo is transported directly from the seaport to the end recipients.

The construction of the terminal would not be very demanding from a financial perspective. The key steps of the process would be the acquiring of ownership rights over the required area, preparation of the terrain, and acquisition of the needed handling equipment to load and unload the containers (based on the current volumes of cargo traffic, we consider that one to several reach stackers would be sufficient).

Despite the obvious benefits of the construction of a dry port in the area of Ruse, there are some challenges that might decrease the value gained from the project. Certain potential for reduction in the optimisation process lays in the fact that different operators might use different types of containers, which would mean that they cannot be used interchangeably to avoid empty courses. This issue could be partially compensated if the dry port is to maintain an extended number of standby containers of different standards in order to use them when appropriate. The current situation at the market of operators could prove to be another risk. At the moment, a single organisation usually conducts all activities involving the transport of goods from the seaport to the end user and vice versa. If this model is preserved after the construction of the dry port, in the reality of market competition there would be no effective way to organise a process in which one company's truck would carry its own cargo from the main to the dry port and would then go the way back with a container loaded with another entity's goods. This issue could be resolved with the emergence of an organisation that would specialise in performing transport operations in service of different companies and would not engage in trade activities with its own goods. If there is no private organisation with sufficient capacity to carry out these operations, a government entity could fit into this role. Nevertheless, this concept has to be

thoroughly planned on the basis of market research, in order for the state not to interfere negatively in the dynamics in the transport ecosystem.

Further, this project could be expanded and implemented on two stages. The first one being the establishment of the dry port, and the second involving the construction of an additional railway line between the cities of Ruse and Varna, which would also be used by the dry port, complementing the existing track. This would substantially increase the potential for intermodal operations and transportation of cargo in general. On the other hand, the capacity of train compositions to carry a greater amount of cargo at once could help partially neutralise the negative effect on optimisation from the usage of different types of containers by transporting empty ones from one port to the other in order to compensate for imbalances in availability. Additional value for the quality of services could be gained through the modernisation of the existing railway track. It should be taken into account however, that the rehabilitation of the current line and the construction of an additional one would be significantly more expensive and time-consuming than the establishment of the dry port.

The project's implementation could roughly be divided into two major parts, with the main milestones being the completion of the dry port and the construction of the additional railway line. The first of these could be reached in the short term (within a year), and the second – for approximately three to five years. The terminal could be built through an initiative of a single operator or of a consortium of private organisations. The construction of the rail track would certainly require state efforts on a national level (Ministry of Transport and Communication) and a significant budget.

Solution for Gap 2:

The obvious solution to overcome the lack of capacity to transfer cargo from road to railroad transportation in the area of Ruse would be the construction of an intermodal terminal in the city that would serve to load freight from trucks on trains and vice versa. This way road transport both for import and export activities will only be used on a local scale for the so-called *last mile* of operations, whereas train transport will be used for the longer distances. The existing network of railroads allows the execution of cargo transportation from Ruse directly to Varna or to the strategic railway center at the town of Gorna Oryahovitsa, from where trains can reach the capital of Sofia and travel further to Serbia, North Macedonia, and Greece, or travel to economic centers in Southern Bulgaria such as Plovdiv, Stara Zagora, and the port city of Burgas, as well as to continue the trip to Turkey. In regard to the method used to load the freight on the train compositions, there are two main options available: loading only the cargo (the truck trailer or just the container) or loading the whole truck. The second option would be more space-consuming, but truck drivers would have the opportunity to travel together with the cargo, legally using rest time while on the train. The construction of such an intermodal terminal is already planned in the Integrated Transport Strategy for the period until 2030 and in the country's most up-to-date version of the Recovery and Resilience Plan (yet to receive approval from the European Commission).

However, we consider that a much more efficient, quick, and low-cost decision to bridge this particular gap would be to use the existing facilities in the port of Ruse, rather than the construction of a new intermodal terminal. In fact, the Ruse-East terminal has all the required infrastructure, warehouse facilities, and handling equipment to perform operations for transferring cargo from road to railroad transport and vice versa. This way, the establishment of such process would in reality only require some organisational efforts. This concept could be used for real world testing of the usefulness of the project envisioned in the Integrated Transport Strategy for the period until 2030 before actually investing in the construction of the terminal, which could be implemented if at some point the volume of the transported cargo exceeds the capacity of the port.

The reorganisation required to use the existing facilities in the Ruse-East terminal for transfers of cargo from road to railroad transport would be the responsibility of the current port operator Port Complex Ruse J.S.Co. and could be achieved well within a year. The process should also involve the engagement of a railway operator. The construction of a new intermodal terminal however, could be completed in the mid- to long-term, from two to four years, and would require significant funding and an initiative from the state on a national level.

10.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
<u>Gap 1:</u> Low efficiency of freight transportation in the area of Ruse due to poor intermodal connectivity in the Northeast region	<ul style="list-style-type: none"> - Construction of a dry port - Modernisation of the Ruse – Varna railway line - Construction of an additional railway line connecting Ruse and Varna 	Construction of an intermodal terminal in the area of Ruse, that would serve as a dry port for the seaport of Varna. Modernisation of the existing railway track connecting Ruse and Varna, and construction of an additional one.
<u>Gap 2:</u> Lack of capacity to transfer cargo from road to railroad transportation	<ul style="list-style-type: none"> - Reorganisation of activities in Ruse-East terminal - Construction of an intermodal terminal in the city of Ruse (optional) 	Reorganisation of activities in the Ruse-East terminal, so that its facilities would be used to transfer cargo from road to railroad transport and vice versa. An additional option being the construction of an intermodal terminal in the city of Ruse.

Table 6: Summary of intermodal gaps for the Port of Ruse

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	04/2022 – 04/2027	<ul style="list-style-type: none"> - Intermodal operators - Ministry of Transport and Communication 	<ul style="list-style-type: none"> - Obtaining all legal permits required to construct the dry port - Building the terrain and acquiring the equipment needed for the dry port - Elaboration of a plan for the modernisation of the existing Ruse – Varna railway line, and the construction of an additional one. - Modernisation of the Ruse – Varna railway line - Construction of an additional line connecting Ruse and Varna 	<ul style="list-style-type: none"> - Due to the significant scale of the project, the verification tools and methods could be various for the different stages of the implementation.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
2	04/2022 – 04/2023 (04/2026)	<ul style="list-style-type: none"> - Port Complex Ruse J.S.Co. - Private or public railroad operator - Ministry of Transport and Communication 	<ul style="list-style-type: none"> - Initiation of the required internal procedures by the port operator to perform activities for transferring cargo from road to railroad transport. - Engagement of a railway operator. - Implementation of the plan for the construction of an intermodal terminal in the Integrated Transport Strategy for the period until 2030 (optional) 	<ul style="list-style-type: none"> - Means of verification should be aimed at tools for the collection and analysis of data considering the volume of freight loaded from road to railroad transport and vice versa, on the basis of which the potential usefulness of an additional intermodal terminal could be assessed

Table 7: Implementation plan for gap bridging in the Port of Ruse

11 Gap analysis for intermodal services in Romania

11.1 Gaps in the port of Galati

11.1.1 Infrastructure and facilities gaps

Galati port is the largest sea-river port, respectively the second largest port in Romania, with access to the Danube maritime sector and the Black Sea through the Sulina Chanell and the Danube-Black Sea Chanell.

Currently, the port infrastructure and its facilities are in an inadequate technical state/requirements.

The road and rail connections inside and outside the port are very poor. The equipment and facilities for the operation of intermodal flows are missing. There is only port equipment for the operation of ships and cargo (eg. only four 30-50 tone car cranes, 23 forklifts, 2 self-loading trucks).

The Port of Galati is located on the left bank of the Danube, from km 77 to km 148+900, is managed by the National Company Maritime Danube Ports Administration SA Galati. The Port of Galati is a river-maritime port allowing the access for barges, river and seagoing vessels with a capacity of maximum 15,000 dwt. Galati

A main asset of the Port of Galati is the facilitation of rail interconnection between Moldova and Ukraine and the European Union by integrating two types of gauge (1435 and 1520 mm) into the terminal's operations. Recently (at the beginning of July 2022), specific works were done to the large gauge lines in the Port of Galati making them proper for the current traffic. The works were carried out by the National Company administrating railway infrastructure. Still the railway connections with the Romanian national network suffer of slow commercial speed.

An intermodal terminal is in the first stages of construction currently in the Port of Galati. In 2022 the contract for improving rail and road connections was signed and the tender for hydrotechnical works (including berth modernisation) is ongoing. The efficient combination of the modes of shipping, river, rail and road will open up new possibilities for the multimodal services.

The works on the intermodal terminal consists in: the construction of a vertical quay with a length of 868 m, road infrastructure for the access to the terminal with a length of 2.28 km, the construction of a marshalling yards with a length of over 700 meters, as well as the construction of port infrastructure, respectively roads, utility networks, platforms, buildings, port equipment and installations, located on an area of 60,000 sqm.

The identified gaps in terms of infrastructure in the Port of Galati are:

Gap 1: Finalisation of the intermodal terminal A multimodal terminal is under development in the Port of Galati

Gap 2: Rail – slow commercial speed 20 km/h.

Gap 3: Assuring the minimum drought in port basins

11.1.2 Proposed solutions to bridge the gaps

Solution for Gap 1: Finalisation of the intermodal terminal. A multimodal terminal is under development in the Port of Galati

The preparation for the realization of an intermodal terminal started in 2015. The project was submitted twice on CEF and obtained financing for the technical design and the hydrotechnical works. For the rail and road infrastructure financing was available from the Large Infrastructure Operational Programme 2014 – 2020. The project passed an assessment on the state aid carried out by DG COMP. The increase of the prices for the construction materials led to recalculation of the estimated costs and the notification of DG COMP for a second evaluation.

Finally, the construction is on path and the contract for the rail and rail and road connection infrastructure was signed in May 2022. The tender for the hydrotechnical works is ongoing. The next steps in order to finalize the intermodal terminal are:

- Carrying out the works in time, for rail and road connection infrastructure
- Contracting the hydrotechnical works and carrying out the works in time
- carrying out the superstructure works in time
- Make operational the terminal and attracting cargo.

The beneficiary of the project is the consortium made by the National Company Maritime Danube Ports Administration and two private port operators - Port Bazinul Nou Galati and SC Metaltrade In&Out Gate SRL Galati.

Solution for Gap 2: Rail – slow commercial speed 20 km/h.

In order to increase the commercial speed on the rail (desirable according to TEN-T standards: 100km/h for freight, possibility to run 740 m trains) high investments are needed in the modernization of the railway lines. The National Company for the Railway Infrastructure is responsible for implementing such a project. The hinterland of the Port of Galati goes to the North – North -West direction and currently there are not feasibility studies for sections connecting the Port of Galati. The distance between Galati – Braila – Buzau is 132 km. Travel time for passengers is 2h and 40 min (medium speed 49km/h). For freight, medium speed is slower. Buzau is the closest railway station situated on the core rail network (see the map below).



Figure 3 : Romanian railway network around Bucharest

Source: European Commission TENtec -

<https://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/map/maps.html#&ui-state=dialog>

Solution for Gap 3: Assuring the minimum depths in port basins and along the berths.

The maintenance of the depths in the port basins and along the berths is under the responsibility of the National Company Maritime Danube Ports Administration SA Galati

It is planned to implement a project in order to develop a multimodal terminal in Galati port.

The Project aims the development of a multimodal platform with a capacity of 150,000 TEU/year in the port of Bazinul Nou (from the Galati port).

Within the frame of this project the port infrastructure will be upgraded, contributing to:

(1) the increase of the efficiency of handling modern ships with higher capacities and the increase of the safety and security conditions;

(2) facilitating rail interconnection between Russia and the European Union via Ukraine by integrating two types of gauges (1435 and 1520 mm) into the terminal's operations. This is of strategic importance and can initiate new multimodal services between Europe and Russia, Ukraine and the Republic of Moldova.

In order to upgrade of the existing public road infrastructure, it is previewed the building of a highway passage and a roundabout in order to streamline road traffic on the E87.

To achieve facilities for the operation of intermodal flows, such as special cargo handling cranes, cranes for handling operations of the type of those used for ship-to-shore operations (STS) and those used for transshipment of loading units between rail and road (RMG).

To allocate an area of 85,506 sqm from the platform existing at shore, out of which 25,000 sqm are deemed as „expansion area” that will be used for extra deposit spaces, specifically for semi-trailers that can be handled by cranes. The expansion of the quay inside the port basin will add a free space of 29,974.024 sqm. The platform from the quay will be equipped with storage and stacking areas that are designed in order to ensure a handling capacity of 150.000 TEU/year.

Until the end of this year it will be repaired and revised the total length of the “large” railway (the railway with the special gauge for Ukrainian/Russian trains) between the Galati port and Giurgiulesti.

It will be constructed the road links between the Galati port and the Braila crossing the Danube bridge and also the road links between this new bridge and the ports of Tulcea and Constanta.

11.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
<u>Gap 1:</u> Finalisation of the intermodal terminal A multimodal terminal is under development in the Port of Galati	- Carrying out the works in time, for rail and road connection infrastructure	- Proper management of the contracts, from both sides: company (ies) executing the works and port administration

Gaps	Steps to bridge the gap	Proposed solutions
	<ul style="list-style-type: none"> - Contracting the hydrotechnical works and carrying out the works in time - Carrying out the superstructure works in time - Make operational the terminal and attracting cargo - 	- Proper operation of the terminal in order to achieve the target of 150,000 TEU/year
<u>Gap 2:</u> Rail – slow commercial speed 20 km/h.	Carrying out feasibility studies for the improved rail connections of the port of Galați	Execution of specific maintenance works / make more use of IWT and roads until Modernization of the railway infrastructure connecting the Port of Galati with its hinterland
<u>Gap 3:</u> Assuring the minimum drought in port basins ...	Measurements and maintenance works (dredging) in the port basins and along the berths	Execution of specific maintenance works

Table 8: Summary of intermodal gaps for the Port of Galati

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	08/2016 – 12/2023	<ul style="list-style-type: none"> - CN APDM SA - SC Port Bazinul Nou SA - SC Metaltrade In&Out Gate SRL Galati 	According to the contracts signed	According to the contracts signed
2	01/2030 – 01.2032	CFR Infrastructura	Feasibility study	Elaboration of a feasibility study
3	Permanent	CN APDM SA Galati		Yearly maintenance plan execution

Table 9: Implementation plan for gap bridging in the Port of Galati

11.2 Gaps in the port of Constanta

11.2.1 Infrastructure and facilities gaps

The infrastructure gap is represented by the need for more infrastructure related to river barges. During summer, the port gets congested by the amount of river barges calling in Constanta Port.

Currently, the Barge Terminal, which a infrastructure project at stage I, is used as a “parking” facility in the river-maritime area of the port. This facility helps the navigation in this crowded region.

Port of Constanta has 3 zones; North Zone, South Zone and Midia Zone.

The main infrastructure gap is represented by the need for more infrastructure related to river barges. During summer, the port gets congested by the amount of river barges calling in Constanta Port.

Currently, the Barge Terminal, which is an infrastructure project at stage I, is used as a “parking” facility in the river-maritime area of the port. This facility helps the navigation in this crowded region.

Below is presented a detailed gap analysis

Parameter	Zone	Gaps
Port set-up	N	<p>The stevedores are very scattered as a result of private companies derived from government entities under the previous communistic regime</p> <p>Stevedores have limited (reduced) logistics space and are required to maintain and maintain the old superstructure and warehouses;</p> <p>The aprons are very small compared to today’s standards, hence limited space for modern warehouses and added-value services</p>
	S	<p>The island and the south port give room for development, although it will require a considerable investment</p>
Planning	N	<p>Unfortunately, terminals at the breakwater have been approved in the past. This has resulted in additional rail and road movements in this part of the port which could have been avoided by planning differently</p>
	-	<p>From a planning perspective, the port should plan towards the south, as there is ample room for new projects, less interference with the current city interfaces and ample depth possibilities</p>
Access	-	<p>Roads are in reasonable to poor conditions and there is a lack of parking areas</p> <p>Rail is lacking efficiency and is in poor condition</p> <p>Currently a project is performed by Baicons to rehabilitate the rail network in the port</p> <p>The barge system offers a strategic benefit for Constanta, but its potential is not fully utilized (bureaucracy, mandatory agency services, high taxes and poor river depth)</p>
Status of (surface) Infrastructure	N	<p>Many terminals face apron surface difficulties due to rail at the quay. Lack of road crossings over the railways often leads to blockages.</p> <p>Poor condition of many warehouses due to aging. Warehouses should be modernized to cater for new layouts demanded by the industry. Demolishment and newly built is often the right solution</p>

Midia Zone

Parameters	Gaps
Berth and Maritime Access	The port has insufficient designed depth to accommodate large tankers, break bulk vessels or general cargo vessels. With CD -8.5m dredged, the port is unable to attract major deepsea trades.
Status of (surface) Infrastructure	The railway station triage is a rail bottleneck The rail lines are old The existing roads are not fit for heavy traffic. There are no parking areas near the port gates.
Utilities	No electrification at the all the quay for portal cranes, a project are underway in the Feasibility Study phase to solve this problem.
Port and Hinterland Access	The existing railway infrastructure is not used at full capacity. There are approx. 200 empty wagons standing idle. The existing access roads need improvement works. The Midia IWT canal connection (Danube – Black Sea Canal) is underutilised and should be further promoted

11.2.2 Proposed solutions to bridge the gaps

For solving the above-mentioned gaps, Constanta Port Administration is analysing, within the revision of the Master Plan of Constanta Port solutions for the majority of them.

The Revision of Constanta Port Master Plan is currently ongoing and it will be finalised by the end of 2022, considering also the impact of the Ukrainian war situation.

The solutions will be identified together with the port community representatives, as they were and will be consulted during the process.

The new Master Plan will be implemented by 2040 (short term 2025 - high, medium term 2030, long term 2040).

For each proposed project in the Master Plan will be determined a time horizon and duration according to the problems priority.

The interventions preliminary proposed for the identified gaps are:

Category	Recommendations	Prioritization
----------	-----------------	----------------

Status of (surface) Infrastructure/Port set-up/Planning/Access

1	North Port. Rehabilitate the rail tracks on the apron. The rail tracks on the terminals require rehabilitation. A rehabilitation program is required at least for pier 1,2 3, 4 and 5.	HIGH
2	North Port. Rehabilitate roads on the apron. This is especially required at pier 2, 3 and 4	HIGH
3	North Port. Old warehouses should be replaced. This is especially at pier 2 and 4. The stevedore should be allowed to remove or re-invest into more adequate warehouses	MEDIUM
4	North Port. Investments are made/being made to create grain export silo's and provide storage for fertilisers. Important is to evaluate the logistical challenges occurring due to it. (number of truck, truck parking, rail wagon movements and implications to quay operations hinderance.	HIGH
5	The scattered land plots between stevedores obstructs the future space availabilities and efficiencies. A plan needs to be drafted to enable relocation or joint usage of berths in order create sustainable operational areas.	HIGH
6	Create facilities for the barge terminal (water, light, power, WIFI).Wi-Fi is one of the most requested amenities in public places, it may be a necessary feature in the barge terminal.	HIGH

Port and Hinterland Access

1	Solve port roads have bottlenecks on major routes in the port	HIGH
2	Modernise Port railways with rehabilitation to get good quality, shunting efficiencies, and modern speeds	HIGH
3	Resolve crossing of railtracks and major access roads. In this way the train operation does not blocks access roads when entering the terminal areas.	HIGH
4	Remove Idle wagons and unused tracks of the port rail system and try to obtain additional areas.	HIGH
5	Create new port road network plan for north port which is logical and has segregation and dedication to terminals. The road network planning should have multiple evacuation options. For example the new road plan should solve the single road to Gate 7, the bridge near gate 6 and the roundabout near pier 3. Hence, new roads in the port are required to have an efficient flow. Access road from gate 7 to pier 5 to be widened to 4 lanes. And connectivity to roads leading to gate 6 (flyover pipelines). North port terminal road dedicated access.	HIGH
6	Create parking areas for each terminal and equip it with sanitary	HIGH

- | | | |
|----|--|------|
| 7 | Establish good road markings. The road needs signs like: directions, clearing heights, dangerous cargo routing signs and emergency evacuation | HIGH |
| 8 | Implement a traffic guidance system | HIGH |
| 9 | Rail connection: Upgrade the railway network by creating double tracks and waiting stations outside the port. | HIGH |
| 10 | South Port. Improve rail connection by creating Y switch | HIGH |
| 11 | Road connection North Port: The “last mile” from Gate 7 to the highway needs a modern road section. The road needs to be widened to 4 lanes and proper access to highway | HIGH |
| 12 | Port road rehabilitation in South Port: the road between gate 10 and gate 10b needs improvements and cross-over the rail. Further the terminal access to D PL6 should be upgraded. Upgrade intersection/roundabout on the road gate 10 to gate 10b | HIGH |

Recommendations related to Port of Constanta – Midia area

Category	Recommendations	Prioritization
Berth and Maritime Access		
1	Propose dredging works on the entrance of the port (maintenance dredging works are carried out periodically to maintain the depths on the entrance channel. In addition, the current investment dredging plan includes works to widen this channel)	HIGH
2	Adjust and maintain the river-maritime access area in the port via the Danube-Black Sea Canal.	MEDIUM
3	Investigate the feasibility of a multipurpose terminal for RoRo with train connections	MEDIUM
Status of (surface) Infrastructure		
1	Create new options for the railway station triage.	HIGH
2	Adjust, maintain and/or replace the existing rail lines.	HIGH
3	Adjust the existing roads and design new roads fit for heavy traffic.	HIGH
4	Create parking areas near the port gates.	HIGH
Utilities		
1	Provide electric station where needed.	HIGH
2	Maintain and re-organise the existing installations for oil & gas terminals in berths 1-4 and 9A, B, C.	HIGH
3	Maintain and re-organise the existing pipelines racks and pipelines to transport crude oil and refinery products	HIGH
4	Improvement works for the roads.	HIGH
Port and Hinterland Access		
1	Adjust, maintain or replace the existing railways to the provisions for the next years.	MEDIUM
2	Create storage spaces.	HIGH

11.2.3 Summary of gaps bridging

Gaps	Steps to bridge the gap	Proposed solutions
Insufficient infrastructure dedicated to river barges (N)	Implementing Barge Terminal Phase 2 project	Revising Master Plan (on going) Identifying financing sources
Port setup – scattered stevedores (N)	Implementing projects related to development of logistics areas	Revising Master Plan (on going) Identifying financing sources or private investors
Port setup (S) – considerable investment	Identifying financing resources	Revising Master Plan (on going) Identifying financing sources
Planning (N)	Insufficient terminals; additional rail& road movements - congestion	Port Planning – Master Plan - planning towards south
Access – roads & rail & barges (N&S)	Roads projects Rail to be rehabilitated by CFR Reducing bureaucracy	Revising Master Plan (on going) Identifying financing sources
Status of infrastructure (N) Blockages at rail in terminals	Rail projects	Revising Master Plan (on going) Identifying financing sources
Status of infrastructure – surface (N) – aging warehouses	Demolishment and newly built warehouses	Private investors
Berth and maritime access (Midia Zone) – insufficient depth for large tankers, break-bulk vessels.	Dredging	Revising Master Plan (on going) Identifying financing sources
Status of infrastructure (surface) (Midia Zone) – old rail, roads, no parking	Rail&road&parking projects	Revising Master Plan (on going) Identifying financing sources Parking should become eligible under EU funds
Utilities – insufficient electric infrastructure	Feasibility Study ongoing from own resources	Identifying financing sources
Port and hinterland access – rail is not enough used – 200 empty wagons idle	Improvement of rail – rail projects	Revising Master Plan (on going) Identifying financing sources
Port and hinterland access – underused Danube Black sea connection	Create storage spaces	Identifying financing sources

Table 10: Summary of intermodal gaps for the Port of Constanta

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	- - - -	- - - -	- - - -

Table 11: Implementation plan for gap bridging in the Port of Constanta

The information related to the time frame, involved stakeholders, milestones and means of verification will be available when the revision of the Master Plan of The Port of Constanta will be finalized (by the end of 2022). The report regarding to development of alternative plans is currently ongoing.

Besides the gaps above mentioned, the Consultant will introduce new findings related to the conflict in the Ukraine which changed to economic&transport profile of the Black Sea area.



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DIONYSUS

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Executive summary – **by USPA**

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3 Abbreviations

Abbreviation	Explanation

4 Introduction

4.1 Scope of the report

This report delivers a gap analysis for multimodal facilities along the Danube, which is based on a clear differentiation between the existing facilities and those that are needed to improve the intermodal facilities in Danube ports and at the same time generate new cargo flows.

Selected ports were analysed in details, including, **but not limited to**, the ports of:

- Enns,
- Vienna,
- Bratislava,
- Vukovar,
- Belgrade,
- Ruse
- Galati,
- Constanta,
- Giurgiulesti.
- Izmail

This deliverable builds on two previous deliverables elaborated in Activity T2.1, namely DT2.1.1 Report on multimodal infra and suprastructure facilities and services (April 2021) and DT2.1.2 Report on multimodal/intermodal market perspectives (February 2022). These two reports provide basic inputs on the existing multimodal/intermodal infrastructure in the Danube ports and market analysis on further trends of cargo flows which support (or not) the pure transport economics reasons for new intermodal facilities that would enable ports. Current report will provide expert opinions of project partners and their views of the missing intermodal facilities that are, if provided, likely to trigger the spatial concentration of cargoes and cargo related activities in and around ports. In a nutshell, this report aims to avoid the decades old problem of “hen and egg” related to intermodal services in Danube ports and provides proactive attitude in generating intermodal cargo flows in Danube ports.

Last but not least, this report will restrict itself to providing a gap analysis for intermodal facilities, not services like regular feeder services on inland waterways or regular shuttle train services to/from large seaports acting as container hubs.

5 Gap analysis for intermodal services in Austria – by EHO

5.1 Gaps in the Ennshafen Port

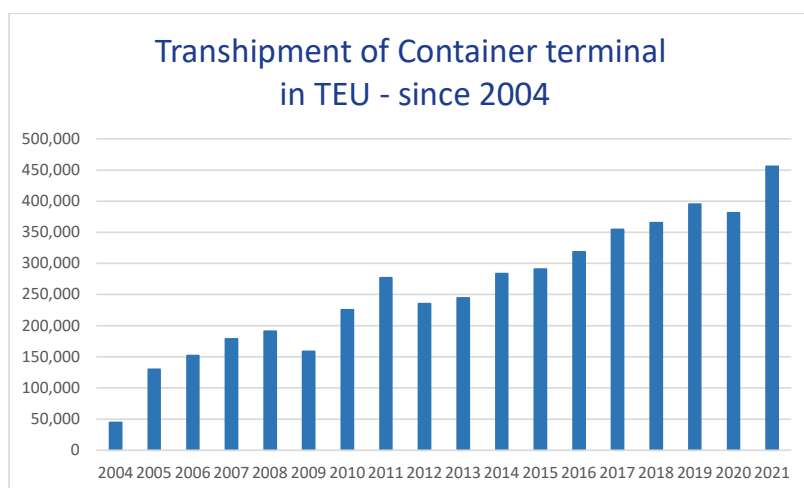
5.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not successful and go through the above paragraph again.)

Commented [S11]: A gap is everything that is missing between a current situation in something and a desired situation.

In the final version of Deliverable DT2.1.1 of DIONYSUS project the situation in Austria regarding intermodal terminals was summarized as follows: *“In Austria, both analysed ports, Enns and Vienna, have functional and well-equipped intermodal (container) terminals. Although located in inland ports, both terminals function mostly as bi-modal terminals (rail and road), as only a small number of empty containers are transported by IWT as spot shipments. This is mostly to the fact that they are very far away from Constanta as the entry/exit seaport for overseas trade using inland waterway transportation, and because they have very developed railway infrastructure and regular connections with Adriatic and North Sea ports.”*

The situation regarding intermodal services (i.e. container terminal business) in Ennshafen port is quite comfortable and thus no real physical gaps exist today. Even a RoRo-terminal exists and has a lot of free capacity for transport usage. In the last 7 years a lot of investments have been realized within the container terminal resulting in an enlargement of the facilities (areal, cranes, railway lines) by the factor 2-3 compared to the situation of 2013. The results of this development are expressed by the transshipment figures as follows coming to an all-time-high figure of 456 TTEU in 2021:



However, “good” is never for ever and so there are some improvement ideas for the intermodal transport in Ennshafen port, even these items are not really “gaps” but several “fields of investigation” for improvement.

Gap 1: Debottlenecking of railway system: Even the situation regarding railway transport in Ennshafen is good today, we are preparing for the future and investigate in (upcoming) or foreseeable bottlenecks which may occur if growing development will go on the next years as it was the last 5 years and considering that today’s strategies derived from European Green Deal and deploying papers will lead to cargo shift from truck to rail & IWW. Then a gap may occur in future and will give problems to the railway business if not improvements will be started in time.

Gap 2: Another field of optimization of the existing infrastructure refers to a small part of undeveloped port area (appr. 2 ha) behind the existing quay 21. This part of the port has potential to enhance multimodal business.

Gap n: Starting Container Business on the Danube: this sector of improvement cannot be solved by the port itself but needs a multinational approach to implement regular container business in order to fulfil the targets of Green Deal and SSMS/Naides-III

5.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,

Commented [S12]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ3]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ4]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc ...

Commented [SJ5]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1: Debottlenecking of railway system: The detailed investigations regarding capacity improvement of railway system are elaborated within a running CEF-1-project (study project to prepare improvement works) within the project time 2021-2024 (CEF Action N° 2020-AT-TM-0006-S, Ennshafen prepares smart & sustainable mobility investments). All the detailed tasks and plans are defined within this project as well as the milestones and responsibilities. After this project work the elaborated results give the basis for further decision about investments or other measures.

Solution for Gap 2: Quay 21-section: Within the above cited CEF-Action even this areal will be investigated for enlargement of the railway system for intermodal activities. Tasks, responsibilities and milestones are well defined within the CEF-project and lead to a basis for further investment decision.

Solution for Gap 3: Container Business on the Danube: detailed preparation for enhancement of container business on the Danube will be prepared within DIONYSUS-project (resulting in Output document)

5.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections:

Commented [SJ6]: Please keep this intro text.

Gap:	Steps to bridge the gap	Proposed solutions
Gap 1: Railway Debottlenecking	detailed study and planning tasks for improvement	CEF-Action N° 2020 AT-TM-0006-S
Gap 2: Quay 21 section	detailed study and planning tasks for improvement	CEF-Action N° 2020 AT-TM-0006-S
Gap3: container business on the Danube	Fulfil the relevant activity within DIONYSUS	Depends on the outcome

Commented [SJ7]: Name the gap

Commented [SJ8]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1: Summary of intermodal gaps for the Ennshafen port

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	04/2021 – 12/2024	EHOOE, EHNOE, CTE, OEBB-INFRA	details defined in CEF-project	details defined in CEF-project
2	04/2021 -12/2024	EHOOE	details defined in CEF-project	details defined in CEF-project
3	06/2020-10/2022	DIONYSUS-PPs	Output document	Output document

Table 2: Implementation plan for gap bridging in the Enns-shafen port

Commented [SJ9]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

5.2 Gaps in the port of Vienna

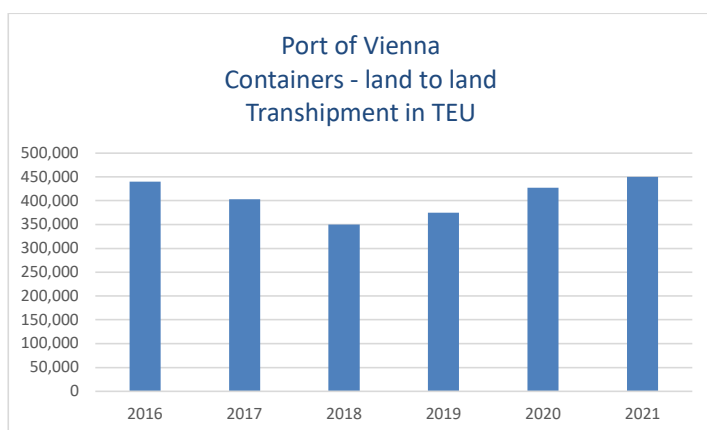
5.2.1 Infrastructure and facilities **gaps**

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ10]: A gap is everything that is missing between a current situation in something and a desired situation.

In the final version of Deliverable DT2.1.1 of DIONYSUS project the situation in Austria regarding intermodal terminals was summarized as follows: *“In Austria, both analysed ports, Enns and Vienna, have functional and well-equipped intermodal (container) terminals. Although located in inland ports, both terminals function mostly as bi-modal terminals (rail and road), as only a small number of empty containers are transported by IWT as spot shipments. This is mostly to the fact that they are very far away from Constanta as the entry/exit seaport for overseas trade using inland waterway transportation, and because they have very developed railway infrastructure and regular connections with Adriatic and North Sea ports.”*

Due to this classification no “real gaps” do exist in the port of Vienna so far. Nevertheless, further improvement investigations are work in progress for the further development of the multimodal facilities.



Gap 1: Expansion of the tri-modal inland port of Vienna by land recovery: Freight handling capacity bottleneck. Extension of the port's container handling capacities through land recovery and the construction of a new quay wall in order to optimise the areas of operation. The Global Project aims at the expansion of the container transshipment capacities at the Port through land reclamation and optimisation of operational areas to increase storage capacity and handling performance. The proposed Action includes activities to optimise the operational areas to increase the storage and transshipment capacities and improve the multimodal interconnections of the container transshipment area at the Port by reorganising the rail track system. Rough investment costs are calculated at € 17 Mio (infrastructure directly on the water-side, even road and railway connections are foreseen)

Gap 2: Starting Container Business on the Danube: this sector of improvement cannot be solved by the port itself but needs a multinational approach to implement regular container business in order to fulfil the targets of Green Deal and SSMS/Naides-III

5.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Solution for Gap 1: A detailed investment project is under preparation to solve this gap. A application in within CEF-program will follow, the project is already part of the actual TEN-T-project-list.

Solution for Gap 2: Container Business on the Danube: detailed preparation for enhancement of container business on the Danube will be prepared within DIONYSUS-project (resulting in Output document)

Commented [SJ11]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ12]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ13]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ14]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

5.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections:

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: Expansion by land recovery	develop a project application for CEF-2	Get the award of CEF-2 and realise the planned investment
Gap 2: Container business on the Danube	Fulfil the relevant activity within DIONYSUS	Depends on the outcome

Table 3: Summary of intermodal gaps for the Port of Vienna

Commented [SJ15]: Please keep this intro text.

Commented [SJ16]: Name the gap

Commented [SJ17]: Think of a short name for the proposed solution(s) you have proposed above.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	– 01/2022-12/2024	Port of Vienna	unknown (apply for CEF-2)	award a CEF-2-project
2	06/2020-10/2022	DIONYSUS-PPs	Output document	Output document

Table 4: Implementation plan for gap bridging in the Port of Vienna

Commented [S18]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

(If applicable, please follow the same structure as for the previous two subsections.)

6 Gap analysis for intermodal services in Slovakia – by VPAS

6.1 Gaps in the port of Bratislava

6.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ19]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ20]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

6.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ21]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ22]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ23]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ24]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

6.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ25]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ26]: Name the gap

Commented [SJ27]: Think of a short name for the proposed solution(s) you have proposed above.

Table 5: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ28]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ29]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 6: Implementation plan for gap bridging in the Port of XXXXX

Commented [SJ30]: Name the port.

6.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous subsection.)

Commented [SJ31]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

7 Gap analysis for intermodal services in Croatia – by PAV

7.1 Gaps in the port of Vukovar

7.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ32]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ33]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

7.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ34]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ35]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ36]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ37]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

7.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ38]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ39]: Name the gap

Commented [SJ40]: Think of a short name for the proposed solution(s) you have proposed above.

Table 7: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ41]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ42]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 8: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ43]: Name the port.

7.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ44]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

8 Gap analysis for intermodal services in Serbia – by PGA

8.1 Gaps in the port of Belgrade

8.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ45]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ46]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

8.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ47]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ48]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ49]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ50]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

8.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ51]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ52]: Name the gap

Commented [SJ53]: Think of a short name for the proposed solution(s) you have proposed above.

Table 9: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ54]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ55]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 10: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ56]: Name the port.

8.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ57]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection. For Serbia: perhaps Novi Sad or Sremska Mitrovica?

9 Gap analysis for intermodal services in Bulgaria – by BRCCI

9.1 Gaps in the port of Ruse

9.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ58]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ59]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

9.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ60]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ61]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ62]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ63]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

9.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ64]: Please keep this intro text.

Commented [SJ65]: Name the gap

Commented [SJ66]: Think of a short name for the proposed solution(s) you have proposed above.

Table 11: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ67]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ68]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 12: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ69]: Name the port.

9.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ70]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

10 Gap analysis for intermodal services in Romania – by **MT+MPAC+AAOPFR**

Commented [SJ71]: May we suggest that MPAC does the part from Constanta and that MT and AAOPFR do the part of Galati? If not, please feel free to agree internally on who is doing what.

10.1 Gaps in the port of Galati

10.1.1 Infrastructure and facilities **gaps**

Commented [SJ72]: A gap is everything that is missing between a current situation in something and a desired situation.

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.)

Gap 1: xxxxxxxx

Commented [SJ73]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a **solution** below:

Commented [SJ74]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

- what is a solution,
- what are the steps to reach that solution,
- what is **necessary** to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),

Commented [SJ75]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ76]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ77]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

10.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ78]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ79]: Name the gap

Commented [SJ80]: Think of a short name for the proposed solution(s) you have proposed above.

Table 13: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ81]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ82]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 14: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ83]: Name the port.

10.2 Gaps in the port of Constanta

10.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.)

Commented [SJ84]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ85]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ86]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ87]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ88]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ89]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

10.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ90]: Please keep this intro text.

Gap#	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ91]: Name the gap

Commented [SJ92]: Think of a short name for the proposed solution(s) you have proposed above.

Table 15: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ93]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	- - - -	- - - -	- - - -

Commented [SJ94]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification

Table 16: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ95]: Name the port.

10.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ96]: If applicable. Only if you wish to add any additional ports which are not pre-selected. In **Romania**, perhaps DT Severin? If not, please delete this subsection.

11 Gap analysis for intermodal services in Moldova – by UTM

11.1 Gaps in the port of Giurgiulesti

11.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ97]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ98]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

11.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ99]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ100]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ101]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ102]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

11.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ103]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ104]: Name the gap

Commented [SJ105]: Think of a short name for the proposed solution(s) you have proposed above.

Table 17: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ106]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ107]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 18: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ108]: Name the port.

12 Gap analysis for intermodal services in Ukraine – by USPA

12.1 Gaps in the port of Izmail

12.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ109]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ110]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

12.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ111]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ112]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ113]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ114]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

12.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ115]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ116]: Name the gap

Commented [SJ117]: Think of a short name for the proposed solution(s) you have proposed above.

Table 19: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ118]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ119]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 20: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ120]: Name the port.

12.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ121]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

13 Conclusions – **by USPA**

14 References – by all participating partners

Commented [SJ122]: Please list here all references (textbooks, monographs, articles, publications, etc.) that you used.



**Integrating Danube Region into Smart & Sustainable
Multi-modal & Intermodal Transport Chains**

Gap analysis

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Executive summary – by USPA

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3 Abbreviations

Abbreviation	Explanation
VPAS	<u>Verejé prístavy, a.s./VPAS (PP9)</u>
SPaP	<u>Slovenská plavba a prístavy, a.s./ dominant port operator</u>

4 Introduction

4.1 Scope of the report

This report delivers a gap analysis for multimodal facilities along the Danube, which is based on a clear differentiation between the existing facilities and those that are needed to improve the intermodal facilities in Danube ports and at the same time generate new cargo flows.

Selected ports were analysed in details, including, **but not limited to**, the ports of:

- Enns,
- Vienna,
- Bratislava,
- Vukovar,
- Belgrade,
- Ruse
- Galati,
- Constanta,
- Giurgiulesti.
- Izmail

This deliverable builds on two previous deliverables elaborated in Activity T2.1, namely DT2.1.1 Report on multimodal infra and suprastructure facilities and services (April 2021) and DT2.1.2 Report on multimodal/intermodal market perspectives (February 2022). These two reports provide basic inputs on the existing multimodal/intermodal infrastructure in the Danube ports and market analysis on further trends of cargo flows which support (or not) the pure transport economics reasons for new intermodal facilities that would enable ports. Current report will provide expert opinions of project partners and their views of the missing intermodal facilities that are, if provided, likely to trigger the spatial concentration of cargoes and cargo related activities in and around ports. In a nutshell, this report aims to avoid the decades old problem of “hen and egg” related to intermodal services in Danube ports and provides proactive attitude in generating intermodal cargo flows in Danube ports.

Last but not least, this report will restrict itself to providing a gap analysis for intermodal facilities, not services like regular feeder services on inland waterways or regular shuttle train services to/from large seaports acting as container hubs.

5 Gap analysis for intermodal services in Austria – by EHO

5.1 Gaps in the port of Enns

5.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ1]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ2]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ3]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ4]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ5]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ6]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

5.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ7]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ8]: Name the gap

Commented [SJ9]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ10]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ11]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 2: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ12]: Name the port.

5.2 Gaps in the port of Vienna

5.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport). Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ13]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ14]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ15]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ16]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ17]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ18]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

5.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ19]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	-	

Commented [SJ20]: Name the gap

Commented [SJ21]: Think of a short name for the proposed solution(s) you have proposed above.

gaps	Steps to bridge the gap	Proposed solutions
	-	
	-	
	-	
Gap 2: name		
...		

Commented [SJ20]: Name the gap

Commented [SJ21]: Think of a short name for the proposed solution(s) you have proposed above.

Table 3: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ22]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ23]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 4: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ24]: Name the port.

5.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ25]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

6 Gap analysis for intermodal services in Slovakia – by VPAS

6.1 Gaps in the port of Bratislava

6.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation), one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Development Strategy for public port of Bratislava - Phase II (also called Masterplan II) that has been submitted in 2020, assessed current state of port infrastructure and superstructure. As concluded, it is necessary to create a new zoning of individual parts of the port area with the objective of transforming current port into modern trimodal logistic hub. It is necessary to transform the Zimný prístav into activities that are in synergy with the city's development plans. Pálenisko basin area is considered to be the main development site for cargo activities. The reason is the expected availability of land located in this part, on which it will be possible to develop port services after the settlement of current nonstandard ownership relations. The long-term intention is to operate the port of Bratislava through the Landlord model, which assumes ownership and management of infrastructure and superstructure in the competence of one entity, the so-called the port administrator, in the case of the public port of Bratislava within the competence of VPAS. Ownership and management of infrastructure and superstructure by VPAS is a necessary precondition for ensuring other tasks related to creating conditions for the development of water and combined transport.

Following gaps have been identified:

Gap 1: Unavailable supply of potable water for vessels and the connection of vessels to electricity during port stay.

This gap is partially solved by SPaP, a. s., which is also the owner of infrastructure, but this is not a standard for a public port and thus this query needs to be resolved.

Commented [SJ26]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 2: Steep quays

Part of transshipment positions in Winter Port still has steep shore, which means the limitation for the transshipment of goods to vessel - shore and vice versa. Quays no. 2, 3 and 4 have raised quay edges which are more advantageous for the transshipment of goods. At present, edges do not correspond to required parameter from a technical point of view.

Gap 3: Outdated transshipment facilities

Most of the transshipment technologies at the port are at the end of their life cycle. In general, only minimal resources have been invested in port facilities in recent decades to maintain their operability. The port's current transshipment capacity is sufficient for the current transshipment operations whether in terms of transport infrastructure or transshipment technologies. Many technologies can be described as redundant in terms of performance. As the entire superstructure is owned by a private operator, this agenda should be provided by the operator. However, there are currently no appropriate institutional conditions in the port of Bratislava that would allow the VP a. s. to perform the role of regulator with control over port development. This is the main reason for the current inadequate state of port technology.

More modern transshipment technologies are now available on the market. They allow much more efficient transshipment of goods and the associated lower operating costs. In order to increase the competitiveness and attractiveness of inland water transport under the conditions of the Bratislava Public Port, it is recommended to address the area of institutional relations and thus enable the modernization of transshipment technologies.

Gap 4: Outdated warehouses

Warehouses in the Zimný prístav were built before World War II, most of which were not preserved. Most of the existing warehouses were built in 1946-1949, and subsequently in the period 1960-1965 was carried out renovation, reconstruction and completion of warehouses.

Gap 5: Ro-Ro location currently has no parking capacities

Ro-Ro position located in the basin Pálenisko could be used much more, unfortunately there are no parking capacities nearby that reduces the potential of the position.

6.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a **solution** below:

- what is a solution,
- what are the steps to reach that solution,
- what is **necessary** to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient **milestones** in that period
- how would you **measure/verify** the achievement of that solution.

Commented [SJ27]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ28]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ29]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ30]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution description

The modernization of port services in the Port Bratislava should also include the construction of facilities for vessels by respecting legislative requirements in terms of waste management that provides services of refuelling the fuel and drinking water to vessels, waste collection (sewage pumping, drainage water, used oil collection, municipal waste collection, collection and disposal of hazardous waste and others), retreatment of waste (cleaning / processing), its disposal and discharge of purified waste water.

- Necessary steps
 - a. Identification of parameters and requirements / adoption of technical solution
 - b. Identification of location
 - c. Settlement of ownership relations
 - d. Implementation of defined technical solution
- Stakeholder's mapping
 - a. VPAS – port authority, owner of the port
 - b. SPaP – dominant operator and current owner of the infrastructure
- KPIs
 - a. Existence of facility serving for water supply and waste management

Solution for Gap 2

Solution description

By modernization of the public port of Bratislava (11.6 km coastline) is expected to achieve a condition that meets the current technical, safety and regulatory requirements of the EU. The scope of necessary modernization and necessary adjustments contains:

- Quay walls and nautical equipment in Palenisko and the Zimný prístav basins,

- On-shore slopes with facilities (bits, stairs, utilities - water, electricity, sewerage, telecommunication services) within the entire public port of Bratislava,
- construction of mooring bits carrying the load into foundation (on onshore slopes) of entire port of Bratislava,
- stable operational depths in basins of the public port of Bratislava.

In case of dislocation of dry bulk from cargo port area Zimný prístav into cargo port area Pálenisko, it is necessary to build new reinforced surfaces and follow-up shore infrastructure. At the same time, it is necessary to complete quay walls in Pálenisko for the purpose of loading and unloading goods. Construction of new reinforced surfaces in the Pálenisko basin will allow the transshipment of goods with the use of recent, up-to-date, technology.

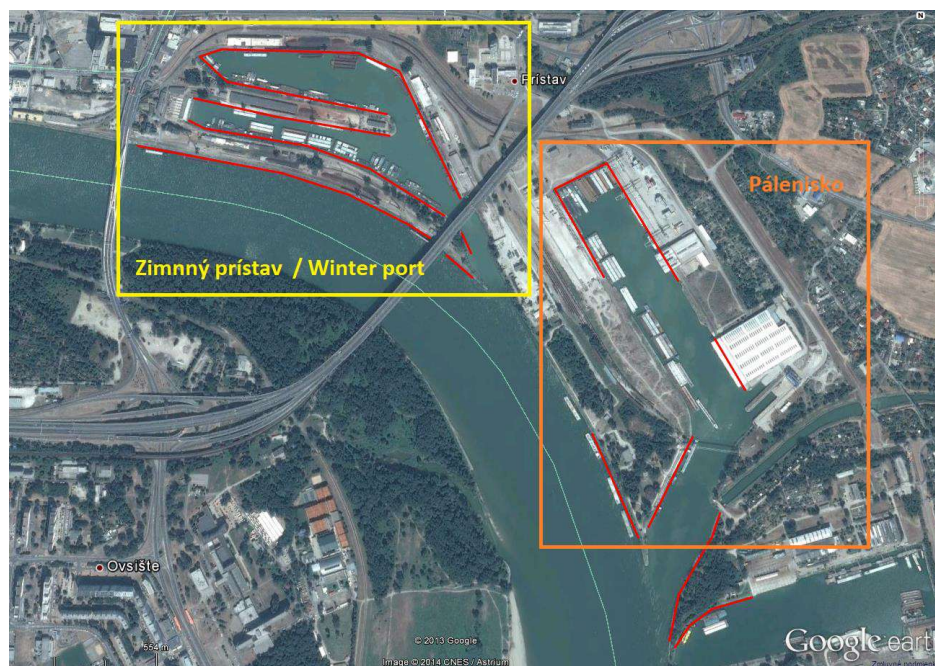


Figure 1: Cargo Port Bratislava- the length of the riverside edges to modernize the 6700 m

- Necessary steps
 - a. Settlement of ownership relations
 - b. Implementation of defined technical solution according to strategical document Masterplan II
- Stakeholder's mapping
 - a. VPAS – port authority, owner of the port

b. SPaP – dominant operator and current owner of the infrastructure

- KPIs

- a. Cargo transshipment relocated from Winter port to Pálenisko basin

Solution for Gap 3

Solution description

Construction of bulk cargo terminal. The estimated transshipment capacity of this terminal (for 3 berths) should be 1,310,400 tonnes per year by using 3 cranes (one per berth) in 2 shifts and could be further increased to 1,572,490 tonnes per year by using 4 cranes in 2 shifts to fully cover the anticipated demand up to year 2050 (1,520,048 tonnes per year). Additional area will be reserved to accommodate an additional dry bulk cargo quantity of 500,000 tonnes per year.

- Necessary steps

- a. Settlement of ownership relations

- b. Implementation of defined technical solution according to strategical document Masterplan II

- Stakeholder's mapping

- a. VPAS – port authority, owner of the port

- b. SPaP – dominant operator and current owner of the infrastructure

- KPIs

- a. Cargo transshipment relocated from Winter port to Pálenisko basin

Solution for Gap 4

Solution description

Masterplan II proposes construction of new Break-Bulk terminal. This terminal is expected to contain new air-conditioned warehouses. Construction of covered terminal for the transport of piece cargo will enable the development of transport that is currently kept at marginal values.

- Necessary steps

- a. Settlement of ownership relations

- b. Implementation of defined technical solution according to strategical document Masterplan II

- Stakeholder's mapping

- a. VPAS – port authority, owner of the port

- b. SPaP – dominant operator and current owner of the infrastructure

- KPIs

- a. Cargo transshipment relocated from Winter port to Pálenisko basin

Solution for Gap 5

Solution description

Using of nearby unused land for constructing parking capacities for cars, trucks and/or other wheeled and tracked machinery. The estimated increase in demand for car transport is also related to the need to maintain and modernize the Ro-Ro ramp in the Pálenisko basin.

- Necessary steps
 - a. Settlement of ownership relations
 - b. Implementation of defined technical solution according to strategical document Masterplan II
- Stakeholder's mapping
 - a. VPAS – port authority, owner of the port
 - b. SPaP – dominant operator and current owner of the infrastructure
- KPIs
 - a. Cargo transshipment relocated from Winter port to Pálenisko basin

6.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: <u>Unavailable supply of potable water for vessels and the connection of vessels to electricity during port stay</u>	a. <u>Identification of parameters and requirements / adoption of technical solution</u> b. <u>Identification of location</u> c. <u>Settlement of ownership relations</u> d. <u>Implementation of defined technical solution</u>	<u>modernization of port services</u>
Gap 2: <u>Steep quays</u>	a. <u>Settlement of ownership relations</u> b. <u>Implementation of defined technical solution according to strategical document Masterplan II</u>	<u>modernization of port coastline</u>
Gap 3: <u>Outdated transshipment facilities--</u>	a. <u>Settlement of ownership relations</u> b. <u>Implementation of defined technical solution according to strategical document Masterplan II</u>	<u>Construction of bulk cargo terminal</u>
Gap 4: <u>Outdated</u>	a. <u>Settlement of</u>	<u>construction of new Break-Bulk</u>

Commented [SJ31]: Please keep this intro text.

Commented [SJ32]: Name the gap

Commented [SJ33]: Think of a short name for the proposed solution(s) you have proposed above.

Gaps	Steps to bridge the gap	Proposed solutions
warehouses	ownership relations b. Implementation of defined technical solution according to strategic document Masterplan II	terminal with air-conditioned warehouses
Gap 5: Ro-Ro location currently has no parking capacities	a. Settlement of ownership relations b. Implementation of defined technical solution according to strategic document Masterplan II	new parking capacities

Commented [SJ32]: Name the gap

Commented [SJ33]: Think of a short name for the proposed solution(s) you have proposed above.

Table 5: Summary of intermodal gaps for the Port of Bratislava

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-

Commented [SJ34]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Commented [IB35]: Unfortunately, all major plans VPAS has are theoretical until ownership relations with current dominant operator are arranged. Therefore, any proposed timeframe would not be reliable in any way.

Commented [SJ36]: Name the port.

Table 6: Implementation plan for gap bridging in the Port of XXXXXX

6.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous subsection.)

Commented [S137]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

7 Gap analysis for intermodal services in Croatia – by PAV

7.1 Gaps in the port of Vukovar

7.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ38]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ39]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

7.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ40]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ41]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ42]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Commented [SJ43]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

7.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ44]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ45]: Name the gap

Commented [SJ46]: Think of a short name for the proposed solution(s) you have proposed above.

Table 7: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ47]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ48]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 8: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ49]: Name the port.

7.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ50]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

8 Gap analysis for intermodal services in Serbia – by PGA

8.1 Gaps in the port of Belgrade

8.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ51]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ52]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

8.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ53]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ54]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ55]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Commented [SJ56]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

8.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ57]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ58]: Name the gap

Commented [SJ59]: Think of a short name for the proposed solution(s) you have proposed above.

Table 9: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ60]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ61]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 10: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ62]: Name the port.

8.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ63]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection. For **Serbia**: perhaps Novi Sad or Sremska Mitrovica?

9 Gap analysis for intermodal services in Bulgaria – by BRCCI

9.1 Gaps in the port of Ruse

9.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ64]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ65]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

9.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ66]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ67]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ68]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ69]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

9.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ70]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ71]: Name the gap

Commented [SJ72]: Think of a short name for the proposed solution(s) you have proposed above.

Table 11: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ73]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ74]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 12: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ75]: Name the port.

9.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ76]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

10 Gap analysis for intermodal services in Romania – by

MT+MPAC+AAOPFR

Commented [SJ77]: May we suggest that MPAC does the part from Constanta and that MT and AAOPFR do the part of Galati? If not, please feel free to agree internally on who is doing what.

10.1 Gaps in the port of Galati

10.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ78]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ79]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),

Commented [SJ80]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ81]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ82]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ83]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

10.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ84]: Please keep this intro text.

gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ85]: Name the gap

Commented [SJ86]: Think of a short name for the proposed solution(s) you have proposed above.

Table 13: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ87]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ88]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 14: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ89]: Name the port.

10.2 Gaps in the port of Constanta

10.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ90]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ91]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ92]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ93]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ94]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ95]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

10.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ96]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	-	

Commented [SJ97]: Name the gap

Commented [SJ98]: Think of a short name for the proposed solution(s) you have proposed above.

gaps	Steps to bridge the gap	Proposed solutions
	-	
	-	
	-	
Gap 2: name		
...		

Commented [SJ97]: Name the gap

Commented [SJ98]: Think of a short name for the proposed solution(s) you have proposed above.

Table 15: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ99]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ100]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 16: Implementation plan for gap bridging in the Port of **XXXXXX**

Commented [SJ101]: Name the port.

10.3 Gaps in **other** port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ102]: If applicable. Only if you wish to add any additional ports which are not pre-selected. In **Romania**, perhaps D'T Severin? If not, please delete this subsection.

11 Gap analysis for intermodal services in Moldova – by UTM

11.1 Gaps in the port of Giurgiulesti

11.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ103]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ104]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

11.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ105]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ106]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ107]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Commented [SJ108]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

11.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ109]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ110]: Name the gap

Commented [SJ111]: Think of a short name for the proposed solution(s) you have proposed above.

Table 17: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ112]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ113]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 18: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ114]: Name the port.

12 Gap analysis for intermodal services in Ukraine – by USPA

12.1 Gaps in the port of Izmail

12.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ115]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ116]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

12.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ117]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ118]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ119]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ120]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

12.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ121]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ122]: Name the gap

Commented [SJ123]: Think of a short name for the proposed solution(s) you have proposed above.

Table 19: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ124]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ125]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 20: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ126]: Name the port.

12.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ127]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

13 Conclusions – **by USPA**

14 References – by all participating partners

Commented [SJ128]: Please list here all references (textbooks, monographs, articles, publications, etc.) that you used.



**Integrating Danube Region into Smart & Sustainable
Multi-modal & Intermodal Transport Chains**

Gap analysis

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Executive summary – by PDR

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3 Abbreviations

Abbreviation	Explanation

4 Introduction

4.1 Scope of the report

This report delivers a gap analysis for multimodal facilities along the Danube, which is based on a clear differentiation between the existing facilities and those that are needed to improve the intermodal facilities in Danube ports and at the same time generate new cargo flows.

Selected ports were analysed in details, including, **but not limited to**, the ports of:

- Enns,
- Vienna,
- Bratislava,
- Dunajvaros
- Vukovar,
- Belgrade,
- Ruse
- Galati,
- Constanta,
- Giurgiulesti.
- Izmail

This deliverable builds on two previous deliverables elaborated in Activity T2.1, namely DT2.1.1 Report on multimodal infra and suprastructure facilities and services (April 2021) and DT2.1.2 Report on multimodal/intermodal market perspectives (February 2022). These two reports provide basic inputs on the existing multimodal/intermodal infrastructure in the Danube ports and market analysis on further trends of cargo flows which support (or not) the pure transport economics reasons for new intermodal facilities that would enable ports. Current report will provide expert opinions of project partners and their views of the missing intermodal facilities that are, if provided, likely to trigger the spatial concentration of cargoes and cargo related activities in and around ports. In a nutshell, this report aims to avoid the decades old problem of “hen and egg” related to intermodal services in Danube ports and provides proactive attitude in generating intermodal cargo flows in Danube ports.

Last but not least, this report will restrict itself to providing a gap analysis for intermodal facilities, not services like regular feeder services on inland waterways or regular shuttle train services to/from large seaports acting as container hubs.

5 Gap analysis for intermodal services in Austria – by EHO

5.1 Gaps in the port of Enns

5.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ1]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ2]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ3]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ4]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ5]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Commented [SJ6]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

5.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ7]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ8]: Name the gap

Commented [SJ9]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ10]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-

Commented [SJ11]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 2: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ12]: Name the port.

5.2 Gaps in the port of Vienna

5.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport). Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ13]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ14]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ15]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ16]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ17]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ18]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

5.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ19]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	-	

Commented [SJ20]: Name the gap

Commented [SJ21]: Think of a short name for the proposed solution(s) you have proposed above.

Gaps	Steps to bridge the gap	Proposed solutions
	-	
	-	
	-	
Gap 2: name		
...		

Commented [SJ20]: Name the gap

Commented [SJ21]: Think of a short name for the proposed solution(s) you have proposed above.

Table 3: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ22]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ23]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 4: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ24]: Name the port.

5.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ25]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

6 Gap analysis for intermodal services in Slovakia – by VPAS

6.1 Gaps in the port of Bratislava

6.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ26]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ27]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

6.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ28]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ29]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ30]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ31]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

6.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ32]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ33]: Name the gap

Commented [SJ34]: Think of a short name for the proposed solution(s) you have proposed above.

Table 5: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ35]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
i)	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ36]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 6: Implementation plan for gap bridging in the Port of XXXXX

Commented [SJ37]: Name the port.

6.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous subsection.)

Commented [SJ38]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

7 Gap analysis for intermodal services in Hungary – by HFIP

7.1 Gaps in the port of Dunaújváros

7.1.1 Infrastructure and facilities gaps

The port is a public port in the administrative area of Dunaújváros, located at the right riverside of the Danube at section 1578,600 km, suitable for managing large ships. In terms of its construction, it is an inland basin port, and its operation is public. Continuous in operation, number of ship berths is 6.

The main activities of the Dunaújváros river port are loading and unloading of goods transported via waterways, storage, the maintenance and repair of port equipment, lifting machines and ships, and additional port services. Cargo handling, transportation connections:

- Handling of parcel goods, bulk goods, and fluid goods
- The port is capable of unloading bulk and parcel goods from ships to open railcars and road vehicles as well, and loading from lorries or closed and open railcars to ships.
- Industrial railway tracks: length 1100 m; serviced 24h a day during weekdays.
- Railcar arrangement: performed by Rail Cargo with a charter locomotive
- Road connection: distance to the motorway M6 is 3 km
- Truck parking lots: 30 pcs.

On the 563 m long quay shoreline of the port 6 pcs berth terminals are located, approx. 96m each. There are 5 waiting berths belong to the port along the right bank of the Danube. There are also 2 more waiting berths on the west side of the port.

The port is owned as majority by ISD Dunafer Co., and is operated by ISD PORTOLAN Co. Minority owner and operator is CENTROPORT Co. The access road „Ruhagyári road” to the port is public area owned by the Municipality of Dunaújváros.

The port is meeting domestic and international transport needs related to road, rail, river and sea transport as it has road, rail and water connections, and can handle all kind of goods arriving at the port by any means of transport. Although it has good connections, several obstacles are hindering the effectiveness of the intermodal services of the ports of Dunaújváros.

Gap 1: Shortcomings in the quality of the connecting road network

The port is connected by a public road owned by the Municipality of Dunaújváros to the highway no. 6, which is part of the national road network. The access point is north of the city at milestone „67 km” on the highway no. 6. The distance from the highway to the port is 1,5 km. Highway no. 6 is connected to the M6 motorway. The motorway has two possible access points, one 4km north, the other 4km south of the mentioned northern entrance on highway no.6. To the south it takes 12 km to the

Commented [SJ39]: A gap is everything that is missing between a current situation in something and a desired situation.

Pentele Bridge (part of the M8 motorway), which connects towards the east side of the Danube.



Figure X.: Road and railway connections of the port

The Municipality owned „Ruhagyári road” connecting the port area to highway no. 6. is currently 5.5-6.0 m wide. Its pavement is in tolerable condition in means of acceptable evenness. It is not deformed except for minor local depressions. However, its surface is cracked at many spots. The slope of the road is in line with the theoretical plane. However, due to the ditch and the bench condition, the dewatering toward the ditches is unsatisfactory in some cases. The bench is uneven on many parts of the road, and the vegetation has grown. Due to the fact that heavy traffic is frequent on

the road, and the width is narrow, truck drivers are forced to drive to the side of the road (and the bench). The bench is run out at many places, is pitted or loose.

The frequently used roads are prone to decrease in quality which hinders road transport to the port and a therefore it is a potential risk of accident.

Gap 2: Small storage capacity

At the 6th quay of the port of Dunaújváros (Centroport Ltd.), there is a flat storage with a floor area of 1,600 m², which can be divided into four cargo spaces, where 6,300 mto of bulk goods can be stored at the same time.

The movement of goods can be from road, rail, ships to storage or backward, or direct transshipment from and to road, rail and ships. The storage technology allows the transfer of 200 mto per hour, 3,000 mto per day of goods to barges/ships. The port has one of the largest flow scales in Europe with a throughput of 300 mto / h which certifies the actual weight of the goods. The covered 18 m long hopper can accommodate road vehicles in all weather conditions.

ISD Dunafer Co. also owns storage capacity in the area, an 11,200 m² large open storage area is available on solid pavements, where bulk goods (ore, coal, coke, etc.) and piece goods can be stored and a covered warehouse with a floor area of 1,200 m².

In order to increase the intermodal transport capacity of the both ports the storage volumes should be increased. Recent weather-related events showed that increasing storage capacity is crucial for ports during critical low water levels when waterborne transport is disabled.

Gap 3: Mainly one-way loading infrastructure

An analysis of the shipment records in recent years shows that majority of the goods are loaded to barges and ships while unloading from them is negligible. Due to this state the income of the ports is related to a narrow range of goods shipped.

There is a great potential in two-way waterborne transportation when ports along the Danube are capable of transfer various goods, products from fuels to agricultural, industrial products. The loading of additional goods and products requires technological developments based on a versatile loading device.

Gap 4: Education of the workforce

Increased intermodal transportation capacities and the broaden range of transferred type of goods imposing a heavy burden on ports in connection of maintaining a well-trained and sufficient amount of workforce. Any kind of development which makes it necessary to educate the employees of the ports may lead the overuse of the workforce and significant short-term loss of profit.

Ports in Dunaújváros have difficulties in maintaining a proper trained workforce, fluctuation of employees is common. Newer port technologies make this situation even more difficult.

Gap 5: Lack of a covered loader at ISD Dunafer Co.

ISD DUNAFERR Company Group seated in Dunaújváros is one of the largest industrial producers in Hungary. The activity of the company group having a history of over seven decades is focused on manufacturing of steel products. Hot rolled, pickled, cold rolled, galvanized strips and sheets, as well as open and hollow steel sections produced by ISD DUNAFERR are used primarily for the manufacturing of engineering, automotive and construction industrial products, as well as for the production of steel structures, household appliances and other parts.

Steel products manufactured in the company, although they are sufficiently packaged, are sensitive to humid and wet weather conditions, therefore during rainy days goods are not transferred in the port.

7.1.2 Proposed solutions to bridge the gaps

Solution for Gap 1: Shortcomings in the quality of the connecting road network

Ports are important and integral part of the economy of Dunaújváros, significant part of the municipal income is related to the income generation of local waterborne transportation. In addition to local tax payments, ports are great employers which generates livelihood of hundreds of families in the region.

Maintaining a proper and well-functioning road network toward ports is a common interest which enables both the undisturbed flow of goods and road safety. After a consultation between port operators, municipal decision makers and local residents, reconstructing the road network toward ports is crucial that could meet the current and future needs of road transportation.

Solution for Gap 2: Small storage capacity

The existing storage technology in ports of Dunaújváros has shown its the significance and crucial role as a port service and puffer capacity which promotes smooth intermodal transportation.

Enlarging and developing the technology of storage capacity in ports of Dunaújváros will promote the efficiency of waterborne transportation resulting in larger quantities of intermodal transfer of goods. This effect secures the important role of ports in the Danube region even in less desirable river navigability conditions.

Solution for Gap 3: Mainly one-way loading infrastructure

Ports in the Danube region are facing new challenges from climate change, pandemic situation, changing technologies and transported types of goods. A war situation may cause changes in the Hungarian energy policy, where alternatives to the pipeline-based transportation of energy sources, fuels will have a significantly more important role. Moreover, changes in the industrial process (e.g., renewable resources, electric mobility) may increase the transportation volume of new products.

These effects may challenge ports of their infrastructure is not prepared for the future processes. One of the main elements of the port development in Dunaújváros would

be the improvement of two-way loading infrastructure of goods with introducing new versatile loading devices and technologies.

Gap 4: Education of the workforce

Trained and sufficient workforce is a crucial element to every port operation creating and maintaining which is a heavy burden for every operator. Although trainings of employees are inevitable for professional operation, they are decreasing actual workhours in port processes.

In order to meet the needs of the increasing the intermodal transportation volumes complex processes are needed run by the operator which involves software and trained workforce. Utilising the latest technology not only automatise processes but may help employees monitoring the performance of transportation and identifying any problems.

Best practices regarding the introduction of new technologies and processes in other ports should be analysed and the suitable methods should be piloted in Dunaújváros. This solution may prepare the port operators and the employees for the difficulties of the new technologies thus makes the introduction easier and smoother.

Gap 5: Lack of a covered loader at ISD Dunafer Co.

Constructing a covered loader at the port of the ISD Dunafer Co. would help to decrease the weather dependency of the transportation of goods and provide a smooth flow of processes. The investment would increase the transported volume of goods and provide better predictability in waterborne transportation.

7.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: Shortcomings in the quality of the connecting road network	<ul style="list-style-type: none"> - Consulting with municipal decision makers and local residents about the usage and development of the road; - Reconstruction of the key roads to port of Dunaújváros. 	Reconstruction of incoming road network to ports of Dunaújváros
Gap 2: Small storage capacity	<ul style="list-style-type: none"> - Increasing the storage capacity in the port; - Developing storage technology. 	Increase storage capacity and technology in ports of Dunaújváros
Gap 3: Mainly one-way loading infrastructure	<ul style="list-style-type: none"> - Introducing new versatile loading devices and technologies promoting two-way loading of ships 	Introducing new versatile loading devices and technologies promoting two-way loading of ships

Commented [SJ40]: Please keep this intro text.

Commented [SJ41]: Name the gap

Commented [SJ42]: Think of a short name for the proposed solution(s) you have proposed above.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 4: Education of the workforce	<ul style="list-style-type: none"> - Identifying best practices of introducing new technological advancements in other ports; - educating existing workforce for promoting a more efficient intermodal transportation 	Using best practices for introduction of new technologies in ports of Dunaújváros.
Gap 5: Lack of a covered loader at ISD Dunafer Co	- Construction of a covered loader	- Construction of a covered loader at port of ISD Dunafer Co.

Table 7: Summary of intermodal gaps for the Ports of Dunaújváros

Commented [SJ41]: Name the gap

Commented [SJ42]: Think of a short name for the proposed solution(s) you have proposed above.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	06/2022 – 12/2024	<ul style="list-style-type: none"> - Port operators; - Municipal decision makers; - Local residents; - Road transportation companies/truck drivers; - NGOs (environment protection). 	<ul style="list-style-type: none"> - End of public consultation, 12/2022 - End of road reconstruction, 12/2024 - - - 	<ul style="list-style-type: none"> - Increased road transportation volume; - Decreased number of road incidents
2	06/2022 – 12/2024	<ul style="list-style-type: none"> - Port operators; - Cargo owners; - Transportation companies. 	<ul style="list-style-type: none"> - Finished procurement of new storage equipment 06/2023; - Building of new storage area, 12/2024 	<ul style="list-style-type: none"> - Increased storage volumes; - Increased income of port operator.
3	06/2022 – 12/2024	<ul style="list-style-type: none"> - Port operators; - Workforce of the port; - Cargo owners; - Potential clients for the new service. 	<ul style="list-style-type: none"> - Identifying the means and volumes of the potential two-way loading services 12/2022; - Finished procurement of new equipment of two-way loading technology 12/2024 	<ul style="list-style-type: none"> - Increased volume of unloaded goods, - Increased overall volume of trade of goods.
4	06/2022 – 06/2025	<ul style="list-style-type: none"> - Port operators, - Workforce of the port; - Potential technology providers. 	<ul style="list-style-type: none"> - Best practice analysis, 12/2022; - Introduction of new technologies 12/2024; - Trainings for employees, 06/2025. 	<ul style="list-style-type: none"> - Number of newly introduced technologies; - Number of trained employees.
5	06/2022 – 12/2023	<ul style="list-style-type: none"> - Port operator ISD Dunaferri Co; - Cargo owners. 	<ul style="list-style-type: none"> - Finished construction of a covered loader, 12/2023 	<ul style="list-style-type: none"> - Increased volume of unloaded goods, - Increased income of port operator.

Commented [S143]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 8: Implementation plan for gap bridging in the Port of Dunaújváros

8 Gap analysis for intermodal services in Croatia – by PAV

8.1 Gaps in the port of Vukovar

8.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ44]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ45]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

8.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ46]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ47]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ48]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Commented [SJ49]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

8.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ50]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ51]: Name the gap

Commented [SJ52]: Think of a short name for the proposed solution(s) you have proposed above.

Table 9: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ53]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
i	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ54]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 10: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ55]: Name the port.

8.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ56]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

9 Gap analysis for intermodal services in Serbia – by PGA

9.1 Gaps in the port of Belgrade

9.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ57]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ58]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

9.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ59]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ60]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ61]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ62]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

9.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ63]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ64]: Name the gap

Commented [SJ65]: Think of a short name for the proposed solution(s) you have proposed above.

Table 11: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ66]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
i	MM/YYYY MM/YYYY	- -	- -	- -

Commented [SJ67]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 12: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ68]: Name the port.

9.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ69]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection. For **Serbia**: perhaps Novi Sad or Sremska Mitrovica?

10 Gap analysis for intermodal services in Bulgaria – by BRCCI

10.1 Gaps in the port of Ruse

10.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ70]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ71]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ72]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ73]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ74]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Commented [SJ75]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

10.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ76]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ77]: Name the gap

Commented [SJ78]: Think of a short name for the proposed solution(s) you have proposed above.

Table 13: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ79]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
i	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ80]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 14: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ81]: Name the port.

10.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ82]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

11 Gap analysis for intermodal services in Romania – by

MT+MPAC+AAOPFR

Commented [SJ83]: May we suggest that MPAC does the part from Constanta and that MT and AAOPFR do the part of Galati? If not, please feel free to agree internally on who is doing what.

11.1 Gaps in the port of Galati

11.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.)

Commented [SJ84]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ85]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

11.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),

Commented [SJ86]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ87]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ88]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ89]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

11.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ90]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ91]: Name the gap

Commented [SJ92]: Think of a short name for the proposed solution(s) you have proposed above.

Table 15: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ93]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ94]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 16: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ95]: Name the port.

11.2 Gaps in the port of Constanta

11.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ96]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ97]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

11.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a **solution** below:

- what is a solution,
- what are the steps to reach that solution,
- what is **necessary** to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient **milestones** in that period
- how would you **measure/verify** the achievement of that solution.

Commented [SJ98]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ99]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ100]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ101]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

11.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ102]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	-	

Commented [SJ103]: Name the gap

Commented [SJ104]: Think of a short name for the proposed solution(s) you have proposed above.

Gaps	Steps to bridge the gap	Proposed solutions
	-	
	-	
	-	
Gap 2: name		
...		

Commented [SJ103]: Name the gap

Commented [SJ104]: Think of a short name for the proposed solution(s) you have proposed above.

Table 17: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ105]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ106]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 18: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ107]: Name the port.

11.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ108]: If applicable. Only if you wish to add any additional ports which are not pre-selected. In **Romania**, perhaps D'T Severin? If not, please delete this subsection.

12 Gap analysis for intermodal services in Moldova – by UTM

12.1 Gaps in the port of Giurgiulesti

12.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ109]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ110]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

12.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ111]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ112]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ113]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ114]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

12.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ115]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ116]: Name the gap

Commented [SJ117]: Think of a short name for the proposed solution(s) you have proposed above.

Table 19: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ118]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
i	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ119]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 20: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ120]: Name the port.

13 Gap analysis for intermodal services in Ukraine – by USPA

13.1 Gaps in the port of Izmail

13.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ121]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ122]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

13.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ123]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ124]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ125]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ126]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

13.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ127]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ128]: Name the gap

Commented [SJ129]: Think of a short name for the proposed solution(s) you have proposed above.

Table 21: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ130]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
i	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ131]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 22: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ132]: Name the port.

13.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ133]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

14 Conclusions – **by PDR**

15 References – by all participating partners

Commented [SJ134]: Please list here all references (textbooks, monographs, articles, publications, etc.) that you used.



Danube Transnational Programme
DIONYSUS

**Integrating Danube Region into Smart & Sustainable
Multi-modal & Intermodal Transport Chains**

Gap analysis

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Executive summary – **by USPA**

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3 Abbreviations

Abbreviation	Explanation

4 Introduction

4.1 Scope of the report

This report delivers a gap analysis for multimodal facilities along the Danube, which is based on a clear differentiation between the existing facilities and those that are needed to improve the intermodal facilities in Danube ports and at the same time generate new cargo flows.

Selected ports were analysed in details, including, **but not limited to**, the ports of:

- Enns,
- Vienna,
- Bratislava,
- Vukovar,
- Belgrade,
- Ruse
- Galati,
- Constanta,
- Giurgiulesti.
- Izmail

This deliverable builds on two previous deliverables elaborated in Activity T2.1, namely DT2.1.1 Report on multimodal infra and suprastructure facilities and services (April 2021) and DT2.1.2 Report on multimodal/intermodal market perspectives (February 2022). These two reports provide basic inputs on the existing multimodal/intermodal infrastructure in the Danube ports and market analysis on further trends of cargo flows which support (or not) the pure transport economics reasons for new intermodal facilities that would enable ports. Current report will provide expert opinions of project partners and their views of the missing intermodal facilities that are, if provided, likely to trigger the spatial concentration of cargoes and cargo related activities in and around ports. In a nutshell, this report aims to avoid the decades old problem of “hen and egg” related to intermodal services in Danube ports and provides proactive attitude in generating intermodal cargo flows in Danube ports.

Last but not least, this report will restrict itself to providing a gap analysis for intermodal facilities, not services like regular feeder services on inland waterways or regular shuttle train services to/from large seaports acting as container hubs.

5 Gap analysis for intermodal services in Austria – by EHO

5.1 Gaps in the port of Enns

5.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ1]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ2]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ3]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ4]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ5]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ6]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

5.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ7]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ8]: Name the gap

Commented [SJ9]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ10]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ11]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 2: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ12]: Name the port.

5.2 Gaps in the port of Vienna

5.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.)

Commented [SJ13]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ14]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ15]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ16]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ17]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ18]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

5.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ19]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ20]: Name the gap
Commented [SJ21]: Think of a short name for the proposed solution(s) you have proposed above.

Table 3: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ22]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	- - - -	- - - -	- - - -

Commented [SJ23]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification

Table 4: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ24]: Name the port.

5.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ25]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

6 Gap analysis for intermodal services in Slovakia – by VPAS

6.1 Gaps in the port of Bratislava

6.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ26]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ27]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

6.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ28]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ29]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ30]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ31]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

6.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ32]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ33]: Name the gap

Commented [SJ34]: Think of a short name for the proposed solution(s) you have proposed above.

Table 5: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ35]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ36]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 6: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ37]: Name the port.

6.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous subsection.)

Commented [SJ38]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

7 Gap analysis for intermodal services in Croatia – by PAV

7.1 Gaps in the port of Vukovar

7.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ39]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: Lack of space for intermodal terminalxxxxxxxx

The Port area is of a very specific shape, with several natural obstacles that restrict Port activities. The Port of Vukovar extends to a total of 38.53 ha, of which the land part occupies 22.10 ha and the water part occupies 16.42 ha. Accordingly, it is evident that there is a lack of space to expand the Port.

Commented [SJ40]: Name the gap.

Gap 2: Lack of storage yard surfacexxxxxxxx

There is an acute shortage of space, especially regarding the manipulative space between the water side and the rails, as well as traffic areas for arrival and departure. Open storage space because of his natural obstacle is squeezed and isn't sufficient for current needs related to storage of cargo, that are mostly bulk and general cargo.

Gap 3: Lack of vertical quay for berthingxxxxxxxx

Existing bank of Danube has been set as sloped bank, equipped with harbour cranes. At the smaller part, at length of 55 m there is a vertical bank. However, bank wall is located at the part of the bed which remains outside water at low water levels. Even though Danube is navigable around the Port of Vukovar through the whole year, ships may have difficulties docking along both the vertical and the sloped bank and have to anchor at required distance, determined by their draught and available water depth.

Gap 4: Lack of rail tracks for full block trains

Due to favourable location of industrial rail tracks, closely with vertical and sloped quay there is lack of length of for handled with full block trains. The railway line from Vinkovci to Vukovar with a length of 18.71 kilometres is sections important for international traffic and connect the Port of Vukovar to the RH1 Corridor, the former X Pan-European Corridor. The railway line passes through port area closely with undevelopment quay and has direct connection with industrial railway tracks.

Gap 5: Lack of specialized equipment for intermodal transshipment

The port is equipped with equipment mostly for bulk and general cargo, except mobile crane - Gottwald HMK 170E with a capacity of 63t which could be used for multiple transshipment modes. For such purpose port operator possess equipment for transshipment of 20-foot containers, a container spreader for transshipment 20-foot containers that can be use with mobile crane.

7.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a **solution** below:

- what is a solution,
- what are the steps to reach that solution,
- what is **necessary** to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient **milestones** in that period
- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Further development of the port requires the construction of a new multi-purpose terminal. The difference between multi-purpose terminals and general cargo terminals is very small, and comes down to the layout of the terminals and the equipment used. Most multi-purpose terminals combine conventional bulk cargo with container and RoRo cargo. Port. With the implementation of the construction project, an area of approximately 3 hectares is put into operation.

Due to fact of lack of space Pre-feasibility study for extension of port area has been done, where suitable solution for construction of new multi-purpose terminal was presented. According to Pre-Fesibility study estimated cost of investment is around 65 mil. euros. The investment consists of the purchase of land, supporting project and technical documentation required for the construction of the terminal, the costs of construction of port infrastructure and construction supervision, and the final works of equipping.

Commented [SJ41]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ42]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ43]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ44]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Furthermore, in accordance with Pre-feasibility study the construction of the multi-purpose terminal is identified as a long-term project with term for implementation of 18 years.

Solution for Gap 2

To reduce current lack of open storage space for existing cargo, as well as ensure possibilities for development of intermodal capacity expansion of existing port is needed. Expansion of existing port could be done on the currently unused part of port, with construction of new space storages and manipulative areas.

At this moment development of project documentation for the construction of the vertical quay is under implementation. Beside construction of vertical quay project documentation also cover construction of road, as well as manipulative and storage area.

Preparation of documentation is implementing trough CEF-programme and is expecting to be done by the end of the 2024 year with all adequate permit needed for start to construction. Furthermore, construction works are planned to finance with EU funds, while construction works are planned to be finished by the end of 2028 year.

Solution for Gap 3

To reduce difficulty related on difficulties with berthing the vessels during the low water level, as well as ensure more efficient transshipment activities of cargo extension of exist vertical is needed. Extension is possible to be done as upgrade of existing vertical quay, where new quay in the length of 300 meters could be constructed.

Construction of vertical quay is preparing through the project of Preparation of documentation of construction of vertical quay that is under implementation, while the project is financed by CEF-Programme. Furthermore, as it mentioned under the Solution for the Gap 2, the project with its implementation regard on project documentation is planned to be finished by the end of 2024 year, while construction works planned to be done by the end of 2028 year.

As a second stage of solution for the Gap 3 it could be reconstruction of the existing slopped quay and integration into previously mentioned vertical quay. For such purpose the construction of the vertical quay financed by CEF-Programme has to be done, as well as operable in that way that all port activities could be reallocated at the new constructed quay.

Solution for Gap 4

Extension of existing railway tracks is possible on the at the part of undevelopment port area where currently is located railway line Vinkovci – Vukovar. Solution for upgrade of railway tracks is in relocation of existing railway line Vinkovci – Vukovar, what is currently under implementation. Relocation of the railway line has been provided under the project for Modernization, renewal, and electrification of the railway line Vinkovci-Vukovar. Within that project a space for upgrade of railway tracks is possible in the length of 300meters, while connection of the port with international railway line is still ensured. Furthermore, railway tracks upgrade is also closely connected with project of preparation documentation for the vertical quay, that at the same time finds solution for the Gap 2, as well as for the Gap 3. However, within the project for vertical quay a new railway tracks are being planned, as well as intention of association with current railway tracks with the new ones.

The grant contract for the project for Modernization, renewal and electrification of the Vinkovci-Vukovar railway was signed on 21st May 2018 by the Ministry of the Sea, Transport and Infrastructure, Central Financing and Contracting Agency and HŽ Infrastruktura (end user). Total investment value of the project is 90.867.746,15 EUR and eligible costs are estimated in the amount of 69.233.006,01 EUR. The project is co-financed by the European Union from the Operational Program Competitiveness and Cohesion from the Cohesion Fund at 85% of the eligible costs and at 15% by the Government of the Republic of Croatia. The estimated duration of the project implementation is 24 months.

As regard upgrade of railway tracks, their terms are the same as for the Gap 2 and Gap 3, as it above mentioned for preparation of documentation until 2024 and for construction works until 2028 year.

Solution for Gap 5

Mostly all above mentioned gaps are closely connected with construction of the vertical quay and finds solution for gaps in the same project. Furthermore, solution for Gap 5 partly finds solution in the project for vertical quay. Within the project for vertical quay all infrastructure considered berthing, roads and railways tracks are covered by state investment, while needed superstructure such as transshipment equipment is under obligation of port operator.

However, the new terminal should be constructed within project for construction of vertical quay, as well as constructed in that manner to provide installation of variety transshipment equipment which should include also specialized equipment for intermodal transshipment.

To ensure intramodality at the new terminal a port operator should posses specialized equipment, as well as provide intermodal transport at the terminal. The port operator which is going to use the new terminal, as a part of contract for concession it is necessary to incorporate obligation related on intermodal transport should be included, as well as equipment of terminal with specialize equipment for intermodal transport.

7.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: <u>Lack of space for intermodal terminal</u> name	<ul style="list-style-type: none"> - <u>locate a new space for port expansion</u> - <u>define with a strategic document</u> - <u>establish new port area</u> - <u>resolve legal status of land</u> - <u>prepare technical documentation for construction</u> 	<u>Adopt a long-term strategy with defined space for new port area expansion.</u>
Gap 2: <u>Lack of storage yard</u> surfacename	<ul style="list-style-type: none"> - <u>define with a strategic document</u> - <u>prepare technical documentation for construction</u> - <u>tendering procedure for construction</u> 	<u>Adopt a mid-term strategy for putting in usage unused port area.</u>
Gap 3: <u>Lack of vertical quay for berthing</u> --	<ul style="list-style-type: none"> - <u>define with a strategic document</u> - <u>prepare technical documentation for construction</u> - <u>tendering procedure for construction</u> 	<u>Adopt a mid-term strategy for putting in usage unused port area.</u>
Gap 4: <u>Lack of rail tracks for full block trains</u>	<ul style="list-style-type: none"> - <u>define with a strategic document</u> - <u>prepare technical documentation for construction</u> - <u>tendering procedure for construction</u> 	<u>Adopt a mid-term strategy for putting in usage unused port area.</u>
Gap 5: <u>Lack of specialized equipment for intermodal transshipment</u>	<ul style="list-style-type: none"> - <u>resolve Gap 2, 3 and 4</u> - <u>tendering procedure for providing services at the intermodal transshipment</u> 	<u>Eliminate Gap 2, 3 and 4.</u> <u>Give a concession for port activities at the multi-purpose terminal with purpose of providing intermodal services.</u>

Commented [SJ45]: Please keep this intro text.

Commented [SJ46]: Name the gap

Commented [SJ47]: Think of a short name for the proposed solution(s) you have proposed above.

Gap	Steps to bridge the gap	Proposed solutions

Commented [SJ46]: Name the gap

Commented [SJ47]: Think of a short name for the proposed solution(s) you have proposed above.

Table 7: Summary of intermodal gaps for the Port of Vukovar

Commented [SJ48]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	01MM/YYY2023 – MM01/YYY2041	-Government of Republic of Croatia -Ministry of the Sea, Transport and infrastructure -Port Authority	- define a project as a strategic - establish the port area - purchase of land	- project define as strategic project at national level - adopted regulation on establishment the port area - started the process of purchasing land
2	12/2021 – 12/2028	-Government of Republic of Croatia -Ministry of the Sea, Transport and infrastructure -Port Authority	-prepared technical documentation for construction - conduct a tender for the construction works - contract construction works	-technical documentation successfully finished - tendering procedure successfully finished -signed contract for construction works
3	12/2021 – 12/2028	-Government of Republic of Croatia -Ministry of the Sea, Transport and infrastructure -Port Authority	-prepared technical documentation for construction - conduct a tender for the construction works - contract construction works	-technical documentation successfully finished - tendering procedure successfully finished -signed contract for construction works
4	12/2021 – 12/2028	-Government of Republic of Croatia	-prepared technical documentation for construction	-technical documentation successfully finished

Commented [SJ49]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

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Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
		-Ministry of the Sea, Transport and infrastructure -Port Authority	- conduct a tender for the construction works - contract construction works	- tendering procedure successfully finished -signed contract for construction works
5	12/2026 – 12/2028	-Government of Republic of Croatia -Ministry of the Sea, Transport and infrastructure -Port Authority	-reach all milestones under gap 2,3,4 -conduct tendering procedure for giving concession for providing services on intermodal terminal	-signed concession contract for providing services on intermodal terminal

Table 8: Implementation plan for gap bridging in the Port of VukovarXXXXXX

Commented [SJ50]: Name the port.

7.2 – Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ51]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

8 Gap analysis for intermodal services in Serbia – by PGA

8.1 Gaps in the port of Belgrade

8.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ52]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ53]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

8.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ54]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ55]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ56]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ57]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

8.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ58]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ59]: Name the gap

Commented [SJ60]: Think of a short name for the proposed solution(s) you have proposed above.

Table 9: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ61]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ62]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 10: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ63]: Name the port.

8.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ64]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection. For Serbia: perhaps Novi Sad or Sremska Mitrovica?

9 Gap analysis for intermodal services in Bulgaria – by BRCCI

9.1 Gaps in the port of Ruse

9.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ65]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ66]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

9.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ67]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ68]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ69]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ70]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

9.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ71]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ72]: Name the gap

Commented [SJ73]: Think of a short name for the proposed solution(s) you have proposed above.

Table 11: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ74]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ75]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 12: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ76]: Name the port.

9.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ77]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

10 Gap analysis for intermodal services in Romania – by **MT+MPAC+AAOPFR**

Commented [SJ78]: May we suggest that MPAC does the part from Constanta and that MT and AAOPFR do the part of Galati? If not, please feel free to agree internally on who is doing what.

10.1 Gaps in the port of Galati

10.1.1 Infrastructure and facilities gaps

Commented [SJ79]: A gap is everything that is missing between a current situation in something and a desired situation.

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.)

Gap 1: xxxxxxxx

Commented [SJ80]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

Commented [SJ81]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),

Commented [SJ82]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ83]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ84]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

10.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ85]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ86]: Name the gap

Commented [SJ87]: Think of a short name for the proposed solution(s) you have proposed above.

Table 13: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ88]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ89]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 14: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ90]: Name the port.

10.2 Gaps in the port of Constanta

10.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.)

Commented [SJ91]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ92]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ93]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ94]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ95]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ96]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

10.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ97]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ98]: Name the gap

Commented [SJ99]: Think of a short name for the proposed solution(s) you have proposed above.

Table 15: Summary of intermodal gaps for the Port of [XXXXXXX]

Commented [SJ100]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	- - - -	- - - -	- - - -

Commented [SJ101]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification

Table 16: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ102]: Name the port.

10.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ103]: If applicable. Only if you wish to add any additional ports which are not pre-selected. In **Romania**, perhaps DT Severin? If not, please delete this subsection.

11 Gap analysis for intermodal services in Moldova – by UTM

11.1 Gaps in the port of Giurgiulesti

11.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ104]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ105]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

11.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ106]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ107]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ108]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ109]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

11.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ110]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ111]: Name the gap

Commented [SJ112]: Think of a short name for the proposed solution(s) you have proposed above.

Table 17: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ113]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	- - - -	- - - -	- - - -

Commented [SJ114]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 18: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ115]: Name the port.

12 Gap analysis for intermodal services in Ukraine – by USPA

12.1 Gaps in the port of Izmail

12.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ116]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ117]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

12.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ118]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ119]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ120]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ121]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

12.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ122]: Please keep this intro text.

Gap	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ123]: Name the gap

Commented [SJ124]: Think of a short name for the proposed solution(s) you have proposed above.

Table 19: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ125]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
11	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ126]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 20: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ127]: Name the port.

12.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ128]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

13 Conclusions – **by USPA**

14 References – by all participating partners

Commented [SJ129]: Please list here all references (textbooks, monographs, articles, publications, etc.) that you used.



**Integrating Danube Region into Smart & Sustainable
Multi-modal & Intermodal Transport Chains**

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Executive summary – by PDR

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3 Abbreviations

Abbreviation	Explanation

4 Introduction

4.1 Scope of the report

This report delivers a gap analysis for multimodal facilities along the Danube, which is based on a clear differentiation between the existing facilities and those that are needed to improve the intermodal facilities in Danube ports and at the same time generate new cargo flows.

Selected ports were analysed in details, including, **but not limited to**, the ports of:

- Enns,
- Vienna,
- Bratislava,
- Dunajvaros
- Vukovar,
- Belgrade,
- Ruse
- Galati,
- Constanta,
- Giurgiulesti.
- Izmail

This deliverable builds on two previous deliverables elaborated in Activity T2.1, namely DT2.1.1 Report on multimodal infra and suprastructure facilities and services (April 2021) and DT2.1.2 Report on multimodal/intermodal market perspectives (February 2022). These two reports provide basic inputs on the existing multimodal/intermodal infrastructure in the Danube ports and market analysis on further trends of cargo flows which support (or not) the pure transport economics reasons for new intermodal facilities that would enable ports. Current report will provide expert opinions of project partners and their views of the missing intermodal facilities that are, if provided, likely to trigger the spatial concentration of cargoes and cargo related activities in and around ports. In a nutshell, this report aims to avoid the decades old problem of “hen and egg” related to intermodal services in Danube ports and provides proactive attitude in generating intermodal cargo flows in Danube ports.

Last but not least, this report will restrict itself to providing a gap analysis for intermodal facilities, not services like regular feeder services on inland waterways or regular shuttle train services to/from large seaports acting as container hubs.

5 Gap analysis for intermodal services in Austria – by EHO

5.1 Gaps in the port of Enns

5.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ1]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ2]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ3]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ4]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ5]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ6]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

5.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ7]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ8]: Name the gap

Commented [SJ9]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ10]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ11]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 2: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ12]: Name the port.

5.2 Gaps in the port of Vienna

5.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ13]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ14]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ15]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ16]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ17]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ18]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

5.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ19]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	-	

Commented [SJ20]: Name the gap

Commented [SJ21]: Think of a short name for the proposed solution(s) you have proposed above.

gaps	Steps to bridge the gap	Proposed solutions
	-	
	-	
	-	
Gap 2: name		
...		

Commented [SJ20]: Name the gap

Commented [SJ21]: Think of a short name for the proposed solution(s) you have proposed above.

Table 3: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ22]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ23]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 4: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ24]: Name the port.

5.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ25]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

6 Gap analysis for intermodal services in Slovakia – by VPAS

6.1 Gaps in the port of Bratislava

6.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ26]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ27]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

6.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ28]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ29]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ30]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ31]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

6.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ32]: Please keep this intro text.

Commented [SJ33]: Name the gap

Commented [SJ34]: Think of a short name for the proposed solution(s) you have proposed above.

Table 5: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ35]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ36]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 6: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ37]: Name the port.

6.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous subsection.)

Commented [SJ38]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

7 Gap analysis for intermodal services in Hungary – by HFIP

7.1 Gaps in the port of Dunajvaros

7.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ39]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ40]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

7.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ41]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ42]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ43]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Commented [SJ44]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

7.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ45]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ46]: Name the gap

Commented [SJ47]: Think of a short name for the proposed solution(s) you have proposed above.

Table 75: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ48]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ49]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 86: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ50]: Name the port.

7.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous subsection.)

Commented [SJ51]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

8 Gap analysis for intermodal services in Croatia – by PAV

8.1 Gaps in the port of Vukovar

8.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ52]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ53]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

8.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ54]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ55]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ56]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ57]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

8.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ58]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ59]: Name the gap

Commented [SJ60]: Think of a short name for the proposed solution(s) you have proposed above.

Table 97: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ61]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ62]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 108: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ63]: Name the port.

8.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ64]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

9 Gap analysis for intermodal services in Serbia – by PGA

9.1 Gaps in the port of Belgrade

9.1.1 Infrastructure and facilities gaps

~~(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners; they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.); In recent years overall cargo volume in the port of Belgrade is decreasing due to the urban development around the port and traffic limitations.~~

~~Terminal covers the area of 12.000 m2, excluding manipulation area and covered warehouses used to store goods from containers, and uses mostly the existing multipurpose facilities and equipment providing maximum capacity for transshipment of 12.000 TEU on a yearly basis. Due to the expansion of the urban surrounding main gaps are lack of the access infrastructure.~~

Gap 1: Limited railway access infrastructure

~~Even though terminal is still connected to the national railway network and further to TEN-T corridor X, access to the port is enabled only through the tunnel below the city center which is not suitable for the transport of dangerous goods and HQ containers.~~xxxxxxxx

Gap 2: Limited road access infrastructurexxxxxxxx

~~Due to expansion of the urban surrounding and heavy weight truck limitations in the city center, terminal has only one link with the city ring-road and further to highways. This link is old Pančevo bridge, often overloaded and congested with traffic.~~

Commented [SJ65]: A gap is everything that is missing between a current situation in something and a desired situation.

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Commented [SJ66]: Name the gap.

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Gap n: xxxxxxxx

9.1.2 Proposed solutions to bridge the gaps

Considering that the city urban development has set narrow limits for the port access infrastructure and further development of port on the current location, authorities started planning activities for development and construction of the new port in Belgrade, on different location. Ministry of Construction, Traffic and Infrastructure has contracted the development of necessary technical documentation (Feasibility study with Conceptual Design, EIA Study and Construction permit design), but the final location has not been chosen yet. Additionally, spatial planning documents will need to be updated once the appropriate location is selected.

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Until the new port becomes operational, Port Operator on the current port location has to maintain the same level of provision of port services.

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For each of the above identified gaps please propose a solution below:

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- what is a solution;
- what are the steps to reach that solution;
- what is necessary to implement that solution;
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix);
- time frame (think of the period of next 5-10 years);
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ67]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Solution for Gap 1

Commented [SJ68]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Solution for Gap 2

Commented [SJ69]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Solution for Gap n

Commented [SJ70]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

9.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ71]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: Limited railway access infrastructure name	Better coordination with railway operators,- - -	New port will be constructed on the different location, more favourable in terms of railway access infrastructure
Gap 2: Limited road access infrastructure name	Adjust working hours in terms of better planning of bringing goods in and out of port by road (avoiding rush hours etc.)	New port will be constructed on the different location, more favourable in terms of road access infrastructure
...		

Table 119: Summary of intermodal gaps for the Port of **Belgrade**XXXXXXXX

Commented [SJ72]: Name the gap

Commented [SJ73]: Think of a short name for the proposed solution(s) you have proposed above.

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Commented [SJ74]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ75]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification

Table 10: Implementation plan for gap bridging in the Port of XXXXX

Commented [SJ76]: Name the port.

9.2 Gaps in other port locations

Beside the port of Belgrade, there are some limited capabilities for container transshipment in ports in Novi Sad, Pancevo, Prahovo and Sremska Mitrovica.

The port of Novi Sad in previous period had several attempts for the development of container terminal, mainly using rail/road transportation and with limited waterside capacity (portal crane with maximum lifting capacity 27t). Since the Port Operator in the port of Novi Sad is DP World, company with the extensive knowledge and experience in container transport development, one of the major facilities foreseen in Port Development Plan is container terminal. Mobile portal crane has already been acquired and several vessels with containers has been loaded/unloaded in 2022. Full construction of the terminal, including reconstruction of the quay wall, storage area and purchase of the appropriate equipment will be completed in 2022/2023.

Newly established terminal within the Port in Pancevo is a 3-modal container terminal. It has two industrial tracks with a total length of 1000m, railway car for positioning wagons to / from the terminal, storage capacity of 30.000 sqm, two Reach Stackers (one of which is Intermodal, and can manipulate semi-trailers) public customs warehouse, 32 plug-ins for containers with temperature regime, complete system for automated filling of containers with bulk grain loads. However, waterside transshipment is limited with portal crane of maximum lifting capacity 27t, and engagement of mobile crane is necessary for any waterside operations other than loading/unloading of empty containers.

Similarly, container terminal has been established in Port of Sremska Mitrovica on the Sava river. Since there are no conditions for the waterside transshipment, this terminal relies dominantly on railway and road access. Still, development plans for this port are including dredging of the port basin and extension of the port, which will enable waterside operations with containers.

Port of Prahovo has limited storage capacity and no yard equipment for container manipulation. Therefore, this port currently has ability only for direct transshipment of containers from vessel to wagon/truck or vice versa, by using the existing bridge crane of 40t lifting capacity.

9.2

Commented [SJ77]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection. For **Serbia**: perhaps Novi Sad or Sremska Mitrovica?

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(If applicable, please follow the same structure as for the previous two subsections.)

10 Gap analysis for intermodal services in Bulgaria – by BRCCI

10.1 Gaps in the port of Ruse

10.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ78]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ79]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ80]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ81]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ82]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Commented [SJ83]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

10.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ84]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ85]: Name the gap

Commented [SJ86]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1211: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ87]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ88]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 1312: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ89]: Name the port.

10.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ90]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

11 Gap analysis for intermodal services in Romania – by

MT+MPAC+AAOPFR

Commented [SJ91]: May we suggest that MPAC does the part from Constanta and that MT and AAOPFR do the part of Galati? If not, please feel free to agree internally on who is doing what.

11.1 Gaps in the port of Galati

11.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ92]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ93]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

11.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),

Commented [SJ94]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ95]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ96]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ97]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

11.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ98]: Please keep this intro text.

gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ99]: Name the gap

Commented [SJ100]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1413: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ101]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ102]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 15-14: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ103]: Name the port.

11.2 Gaps in the port of Constanta

11.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ104]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ105]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

11.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ106]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ107]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ108]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ109]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

11.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ110]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	-	

Commented [SJ111]: Name the gap

Commented [SJ112]: Think of a short name for the proposed solution(s) you have proposed above.

gaps	Steps to bridge the gap	Proposed solutions
	-	
	-	
	-	
Gap 2: name		
...		

Commented [SJ111]: Name the gap
Commented [SJ112]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1615: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ113]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ114]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 1716: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ115]: Name the port.

11.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ116]: If applicable. Only if you wish to add any additional ports which are not pre-selected. In Romania, perhaps DT Severin? If not, please delete this subsection.

12 Gap analysis for intermodal services in Moldova – by UTM

12.1 Gaps in the port of Giurgiulesti

12.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ117]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ118]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

12.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ119]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ120]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ121]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc...

- how would you **measure/verify** the achievement of that solution.

Commented [SJ122]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

12.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ123]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ124]: Name the gap

Commented [SJ125]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1817: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ126]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
11	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ127]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 1918: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ128]: Name the port.

13 Gap analysis for intermodal services in Ukraine – by USPA

13.1 Gaps in the port of Izmail

13.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ129]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ130]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

13.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ131]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ132]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ133]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

Commented [SJ134]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

13.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ135]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ136]: Name the gap

Commented [SJ137]: Think of a short name for the proposed solution(s) you have proposed above.

Table 2019: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ138]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
-------	------------	-----------------------	------------	-----------------------

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ139]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 2120: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ140]: Name the port.

13.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ141]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

14 Conclusions – **by PDR**

15 References – by all participating partners

Commented [SJ142]: Please list here all references (textbooks, monographs, articles, publications, etc.) that you used.



Danube Transnational Programme
DIONYSUS

**Integrating Danube Region into Smart & Sustainable
Multi-modal & Intermodal Transport Chains**

Gap analysis

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Executive summary – **by USPA**

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3 Abbreviations

Abbreviation	Explanation

4 Introduction

4.1 Scope of the report

This report delivers a gap analysis for multimodal facilities along the Danube, which is based on a clear differentiation between the existing facilities and those that are needed to improve the intermodal facilities in Danube ports and at the same time generate new cargo flows.

Selected ports were analysed in details, including, **but not limited to**, the ports of:

- Enns,
- Vienna,
- Bratislava,
- Vukovar,
- Belgrade,
- Ruse
- Galati,
- Constanta,
- Giurgiulesti.
- Izmail

This deliverable builds on two previous deliverables elaborated in Activity T2.1, namely DT2.1.1 Report on multimodal infra and suprastructure facilities and services (April 2021) and DT2.1.2 Report on multimodal/intermodal market perspectives (February 2022). These two reports provide basic inputs on the existing multimodal/intermodal infrastructure in the Danube ports and market analysis on further trends of cargo flows which support (or not) the pure transport economics reasons for new intermodal facilities that would enable ports. Current report will provide expert opinions of project partners and their views of the missing intermodal facilities that are, if provided, likely to trigger the spatial concentration of cargoes and cargo related activities in and around ports. In a nutshell, this report aims to avoid the decades old problem of “hen and egg” related to intermodal services in Danube ports and provides proactive attitude in generating intermodal cargo flows in Danube ports.

Last but not least, this report will restrict itself to providing a gap analysis for intermodal facilities, not services like regular feeder services on inland waterways or regular shuttle train services to/from large seaports acting as container hubs.

5 Gap analysis for intermodal services in Austria – by EHO

5.1 Gaps in the port of Enns

5.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ1]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ2]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ3]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ4]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ5]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ6]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

5.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ7]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ8]: Name the gap

Commented [SJ9]: Think of a short name for the proposed solution(s) you have proposed above.

Table 1: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ10]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ11]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 2: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ12]: Name the port.

5.2 Gaps in the port of Vienna

5.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.)

Commented [SJ13]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ14]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

5.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ15]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ16]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ17]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ18]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

5.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ19]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ20]: Name the gap
Commented [SJ21]: Think of a short name for the proposed solution(s) you have proposed above.

Table 3: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ22]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	- - - -	- - - -	- - - -

Commented [SJ23]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification

Table 4: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ24]: Name the port.

5.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ25]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

6 Gap analysis for intermodal services in Slovakia – by VPAS

6.1 Gaps in the port of Bratislava

6.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ26]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ27]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

6.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ28]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ29]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ30]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ31]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

6.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ32]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ33]: Name the gap

Commented [SJ34]: Think of a short name for the proposed solution(s) you have proposed above.

Table 5: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ35]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ36]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 6: Implementation plan for gap bridging in the Port of XXXXX

Commented [SJ37]: Name the port.

6.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous subsection.)

Commented [SJ38]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

7 Gap analysis for intermodal services in Croatia – by PAV

7.1 Gaps in the port of Vukovar

7.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ39]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ40]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

7.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ41]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ42]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ43]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ44]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

7.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ45]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ46]: Name the gap

Commented [SJ47]: Think of a short name for the proposed solution(s) you have proposed above.

Table 7: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ48]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ49]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 8: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ50]: Name the port.

7.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ51]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

8 Gap analysis for intermodal services in Serbia – by PGA

8.1 Gaps in the port of Belgrade

8.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ52]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ53]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

8.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ54]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ55]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ56]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ57]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

8.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ58]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ59]: Name the gap

Commented [SJ60]: Think of a short name for the proposed solution(s) you have proposed above.

Table 9: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ61]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ62]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 10: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ63]: Name the port.

8.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ64]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection. For Serbia: perhaps Novi Sad or Sremska Mitrovica?

9 Gap analysis for intermodal services in Bulgaria – **by BRCCI**

9.1 Gaps in the port of Ruse

9.1.1 Infrastructure and facilities gaps

Gap 1: Low efficiency of freight transportation in the area of Ruse due to poor intermodal connectivity in the Northeast Region

The Ruse-East terminal of the port of Ruse has all the required capacity in terms of infrastructure and facilities to perform intermodal operations. Currently, however, the volume of containerised cargo transported through the port is in reality at zero levels. The main reason for this is the insufficient economic activity in the area. In regard to the movement of goods in general, all types of freight, which are transported from the port to the end users or vice versa (depending on whether it is part of import or export activities), are carried by road in an inefficient manner, which requires trucks to travel loaded in one direction and empty on the way back.

The situation is similar in the wider area. Transport from and to the port of Varna, which is the other port facility of significant importance in the country's Northeast Region, also involves road vehicles performing a great number of empty courses (containers included). The negative impact is significantly higher on a regional scale, considering that the port of Varna accounts for a great share of international transport in Bulgaria. One of the more substantial results from inefficient transportation are higher expenses, which is a burden for operators, merchants, and the business in general. Another significant unfavourable consequence is the negative impact on the environment, caused by increased road traffic. In addition, deliveries are often delayed due to the need for companies performing export activities to wait extensively for empty containers to arrive directly from the port. These effects apply on a local level as well, since a share of international transport operations in the port of Varna are aimed at delivering goods from and to the area of Ruse.

If this gap is to be bridged through facilitation of intermodal solutions, it would generate substantial benefits for transport activities and for overall the connectivity and prosperity in the region as a whole.

Gap 2: Lack of capacity to transfer cargo from road to railroad transportation

Currently, the predominant share of freight transport operations in the area of Ruse are carried out by road. This includes the import and export cargo moved from and to the port of Ruse, and all the transnational transport of freight between Bulgaria and Romania via the Danube Bridge.

Intensive road traffic significantly increases the negative impact on the environment and the movement of cargo transporting vehicles greatly accelerates the process of depreciation of road infrastructure. Bridging this gap through potential solutions in the area of intermodality involving the transfer of cargo from road to railroad transport would reduce the carbon footprint caused by road traffic and make freight operations more efficient. The city of Ruse is especially suitable for such initiatives due to the fact that it is simultaneously located at a main Trans-European inland waterway route and at the most important border crossing point between Bulgaria and Romania and has the required railroad infrastructure connecting it with other regions of the country.

9.1.2 Proposed solutions to bridge the gaps

Solution for Gap 1:

Our research has shown that the most suitable solution for significantly improving freight transportation activities in Bulgaria's Northeast region would be the construction of an intermodal terminal in the area of Ruse, that would serve as a dry port for the port of Varna.

This facility should be located to the southeast from Ruse, in a relatively close proximity to the city, and at the railway line connecting Ruse and Varna. This way the terminal will be situated approximately 160 km from the Varna-West port terminal (located in the area of Devnya), where all the containerised cargo from import and export activities is stored and transported. Such a distance would imply that the new-built intermodal facility could be categorised as a mid-range dry port, which would make it suitable to connect with the main seaport both by road and railroad.

The intermodal terminal will allow trucks to carry import cargo from the seaport to the dry port, from where it will be transported by other vehicles to the end users. Simultaneously the goods for export will be moved by the companies to the dry port and later transported to the seaport by the same trucks that earlier arrived with import cargo. In this manner the vehicles moving between Varna and the dry port, which is the larger share of the distance from the seaport to the end user, will always travel loaded. This will significantly optimise freight traffic, with empty containers being carried only at shorter distances on a local scale between the dry port and the end receivers. Additionally, apart from main activities involving loading, unloading and

storage of cargo, the terminal could provide other services such as goods packaging and overall preparation of freight.

The benefits of this of project will be significant and in several areas. The direct positive result will be the decline of expenses for cargo transportation due to the optimisation achieved through the decrease of empty courses. This will make all activities more profitable for operators and other involved entities and could potentially lower the prices for some of the goods transported. Less courses of unloaded road vehicles will also reduce carbon emissions. In addition, the terminal will also generate certain benefits of organisational manner, including less delays for the movement of empty containers, in comparison to the current model where cargo is transported directly from the seaport to the end recipients.

The construction of the terminal would not be very demanding from a financial perspective. The key steps of the process would be the acquiring of ownership rights over the required area, preparation of the terrain, and acquisition of the needed handling equipment to load and unload the containers (based on the current volumes of cargo traffic, we consider that one to several reach stackers would be sufficient).

Despite the obvious benefits of the construction of a dry port in the area of Ruse, there are some challenges that might decrease the value gained from the project. Certain potential for reduction in the optimisation process lays in the fact that different operators might use different types of containers, which would mean that they cannot be used interchangeably to avoid empty courses. This issue could be partially compensated if the dry port is to maintain an extended number of standby containers of different standards in order to use them when appropriate. The current situation at the market of operators could prove to be another risk. At the moment, a single organisation usually conducts all activities involving the transport of goods from the seaport to the end user and vice versa. If this model is preserved after the construction of the dry port, in the reality of market competition there would be no effective way to organise a process in which one company's truck would carry its own cargo from the main to the dry port and would then go the way back with a container loaded with another entity's goods. This issue could be resolved with the emergence of an organisation that would specialise in performing transport operations in service of different companies and would not engage in trade activities with its own goods. If there is no private organisation with sufficient capacity to carry out these operations, a government entity could fit into this role. Nevertheless, this concept has to be thoroughly planned on the basis of market research, in order for the state not to interfere negatively in the dynamics in the transport ecosystem.

Further, this project could be expanded and implemented on two stages. The first one being the establishment of the dry port, and the second involving the construction of an additional railway line between the cities of Ruse and Varna, which would also be

used by the dry port, complementing the existing track. This would substantially increase the potential for intermodal operations and transportation of cargo in general. On the other hand, the capacity of train compositions to carry a greater amount of cargo at once could help partially neutralise the negative effect on optimisation from the usage of different types of containers by transporting empty ones from one port to the other in order to compensate for imbalances in availability. Additional value for the quality of services could be gained through the modernisation of the existing railway track. It should be taken into account however, that the rehabilitation of the current line and the construction of an additional one would be significantly more expensive and time-consuming than the establishment of the dry port.

The project's implementation could roughly be divided into two major parts, with the main milestones being the completion of the dry port and the construction of the additional railway line. The first of these could be reached in the short term (within a year), and the second – for approximately three to five years. The terminal could be built through an initiative of a single operator or of a consortium of private organisations. The construction of the rail track would certainly require state efforts on a national level (Ministry of Transport and Communication) and a significant budget.

Solution for Gap 2:

The obvious solution to overcome the lack of capacity to transfer cargo from road to railroad transportation in the area of Ruse would be the construction of an intermodal terminal in the city that would serve to load freight from trucks on trains and vice versa. This way road transport both for import and export activities will only be used on a local scale for the so-called *last mile* of operations, whereas train transport will be used for the longer distances. The existing network of railroads allows the execution of cargo transportation from Ruse directly to Varna or to the strategic railway center at the town of Gorna Oryahovitsa, from where trains can reach the capital of Sofia and travel further to Serbia, North Macedonia, and Greece, or travel to economic centers in Southern Bulgaria such as Plovdiv, Stara Zagora, and the port city of Burgas, as well as to continue the trip to Turkey. In regard to the method used to load the freight on the train compositions, there are two main options available: loading only the cargo (the truck trailer or just the container) or loading the whole truck. The second option would be more space-consuming, but truck drivers would have the opportunity to travel together with the cargo, legally using rest time while on the train. The construction of such an intermodal terminal is already planned in the Integrated Transport Strategy for the period until 2030 and in the country's most up-to-date version of the Recovery and Resilience Plan (yet to receive approval from the European Commission).

However, we consider that a much more efficient, quick, and low-cost decision to bridge this particular gap would be to use the existing facilities in the port of Ruse, rather than the construction of a new intermodal terminal. In fact, the Ruse-East

terminal has all the required infrastructure, warehouse facilities, and handling equipment to perform operations for transferring cargo from road to railroad transport and vice versa. This way, the establishment of such process would in reality only require some organisational efforts. This concept could be used for real world testing of the usefulness of the project envisioned in the Integrated Transport Strategy for the period until 2030 before actually investing in the construction of the terminal, which could be implemented if at some point the volume of the transported cargo exceeds the capacity of the port.

The reorganisation required to use the existing facilities in the Ruse-East terminal for transfers of cargo from road to railroad transport would be the responsibility of the current port operator Port Complex Ruse J.S.Co. and could be achieved well within a year. The process should also involve the engagement of a railway operator. The construction of a new intermodal terminal however, could be completed in the mid- to long-term, from two to four years, and would require significant funding and an initiative from the state on a national level.

9.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: Low efficiency of freight transportation in the area of Ruse due to poor intermodal connectivity in the Northeast region	<ul style="list-style-type: none"> - Construction of a dry port - Modernisation of the Ruse – Varna railway line - Construction of an additional railway line connecting Ruse and Varna 	Construction of an intermodal terminal in the area of Ruse, that would serve as a dry port for the seaport of Varna. Modernisation of the existing railway track connecting Ruse and Varna, and construction of an additional one.
Gap 2: Lack of capacity to transfer cargo from road to railroad transportation	<ul style="list-style-type: none"> - Reorganisation of activities in Ruse-East terminal - Construction of an intermodal terminal in the city of Ruse (optional) 	Reorganisation of activities in the Ruse-East terminal, so that its facilities would be used to transfer cargo from road to railroad transport and vice versa. An additional option being the construction of an intermodal terminal in the city of Ruse.

Table 11: Summary of intermodal gaps for the Port of Ruse

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
Gap 1	04/2022 – 04/2027	<ul style="list-style-type: none"> - Intermodal operators - Ministry of Transport and Communication 	<ul style="list-style-type: none"> - Obtaining all legal permits required to construct the dry port - Building the terrain and acquiring the equipment needed for the dry port - Elaboration of a plan for the modernisation of the existing Ruse – Varna railway line, and the construction of an additional one. - Modernisation of the Ruse – Varna railway line - Construction of an additional line connecting Ruse and Varna 	<ul style="list-style-type: none"> - Due to the significant scale of the project, the verification tools and methods could be various for the different stages of the implementation.
Gap 2	04/2022 – 04/2023 (04/2026)	<ul style="list-style-type: none"> - Port Complex Ruse J.S.Co. - Private or public railroad operator - Ministry of Transport and Communication 	<ul style="list-style-type: none"> - Initiation of the required internal procedures by the port operator to perform activities for transferring cargo from road to railroad transport. - Engagement of a railway operator. - Implementation of the plan for the construction of an intermodal terminal in the Integrated Transport Strategy for the period until 2030 (optional) 	<ul style="list-style-type: none"> - Means of verification should be aimed at tools for the collection and analysis of data considering the volume of freight loaded from road to railroad transport and vice versa, on the basis of which the potential usefulness of an additional intermodal terminal could be assessed

Table 12: Implementation plan for gap bridging in the Port of Ruse

10 Gap analysis for intermodal services in Romania – by **MT+MPAC+AAOPFR**

Commented [SJ65]: May we suggest that MPAC does the part from Constanta and that MT and AAOPFR do the part of Galati? If not, please feel free to agree internally on who is doing what.

10.1 Gaps in the port of Galati

10.1.1 Infrastructure and facilities gaps

Commented [SJ66]: A gap is everything that is missing between a current situation in something and a desired situation.

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Gap 1: xxxxxxxx

Commented [SJ67]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),

Commented [SJ68]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ69]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ70]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ71]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

10.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ72]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ73]: Name the gap

Commented [SJ74]: Think of a short name for the proposed solution(s) you have proposed above.

Table 13: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ75]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ76]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 14: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ77]: Name the port.

10.2 Gaps in the port of Constanta

10.2.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.)

Commented [SJ78]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ79]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

10.2.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period
- how would you measure/verify the achievement of that solution.

Commented [SJ80]: Think like you are preparing a strategy and an action plan to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ81]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ82]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

Commented [SJ83]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

10.2.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ84]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ85]: Name the gap

Commented [SJ86]: Think of a short name for the proposed solution(s) you have proposed above.

Table 15: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ87]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
1	MM/YYYY – MM/YYYY	- - - -	- - - -	- - - -

Commented [SJ88]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification

Table 16: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ89]: Name the port.

10.3 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ90]: If applicable. Only if you wish to add any additional ports which are not pre-selected. In **Romania**, perhaps DT Severin? If not, please delete this subsection.

11 Gap analysis for intermodal services in Moldova – by UTM

11.1 Gaps in the port of Giurgiulesti

11.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ91]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ92]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

11.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ93]: Think like you are preparing a [strategy and an action plan](#) to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ94]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ95]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ96]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

11.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ97]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ98]: Name the gap

Commented [SJ99]: Think of a short name for the proposed solution(s) you have proposed above.

Table 17: Summary of intermodal gaps for the Port of XXXXXXX

Commented [SJ100]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ101]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 18: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ102]: Name the port.

12 Gap analysis for intermodal services in Ukraine – by USPA

12.1 Gaps in the port of Izmail

12.1.1 Infrastructure and facilities gaps

(In this section, please list and explain everything that you see as physical gaps in a port that prevents smooth operations of intermodal transport and further generation of intermodal cargo (containers and if applicable trailers for Ro-Ro transport. Explain all identified gaps (differences between the current situation and desired situation, one by one: what is a gap, why it is a gap, what consequences will it have if it is not solved, and what would be the benefits of bridging (solving) those gaps. Please restrict your text only to the gaps related to intermodal facilities – for example: berth length, terminal surface, storage yard surface, lack of rail tracks for full block trains, lack of specialized equipment, etc. Please use your own knowledge of the local situation when identifying gaps, but also consult your operators and cargo owners, they should be very well aware of what is missing in your port to improve their intermodal supply chains or what could trigger their creation if they do not exist yet. If you do not have any gaps – good for you, congratulations, you must be having hundreds of thousands of TEUs handled yearly and no improvement is possible in your case. In that case, imagine that you are not as successful and go through the above paragraph again.).

Commented [SJ103]: A gap is everything that is missing between a current situation in something and a desired situation.

Gap 1: xxxxxxxx

Commented [SJ104]: Name the gap.

Gap 2: xxxxxxxx

Gap n: xxxxxxxx

12.1.2 Proposed solutions to bridge the gaps

For each of the above identified gaps please propose a solution below:

- what is a solution,
- what are the steps to reach that solution,
- what is necessary to implement that solution,
- who should do what in order to implement that solution (roles of every involved party/stakeholder/responsible entity, responsibility matrix),
- time frame (think of the period of next 5-10 years),
- identify convenient milestones in that period

Commented [SJ105]: Think like you are preparing a *strategy and an action plan* to open a container terminal in your country/port, or a strategy on how to improve not just the existing intermodal/container terminal in your port, but the entire intermodal transport in your area/country. Please be openminded, don't think narrow (from a position of your port only). Try to view the situation from a position of someone who can do anything that it takes (hands free) to develop intermodal transport in your country's ports and in the wider region as well. Imagine that you are told that you can have everything that you need to do such development but you just need to list it and make a good plan on how to achieve it.

Commented [SJ106]: Money, change of laws, change of governance processes, resources, actions plans, arrival of extra-terrestrials, you name it – but name it, please.

Commented [SJ107]: For example: strategy ordered, strategy drafted, strategy accepted, action plan placed in force, etc....

- how would you **measure/verify** the achievement of that solution.

Commented [SJ108]: Means of verification, for example: decision from (any governing body in charge of public strategies) to launch a strategy, tender process for the strategy published, strategy contract with the service provided, strategy draft report, public consultations launch, legal act accepting the strategy, etc.)

Solution for Gap 1

Solution for Gap 2

Solution for Gap n

12.1.3 Summary of gaps bridging

The following tables contain summary of the gap analyses elaborated in previous sections.

Commented [SJ109]: Please keep this intro text.

Gaps	Steps to bridge the gap	Proposed solutions
Gap 1: name	- - - -	
Gap 2: name		
...		

Commented [SJ110]: Name the gap

Commented [SJ111]: Think of a short name for the proposed solution(s) you have proposed above.

Table 19: Summary of intermodal gaps for the Port of XXXXXXXX

Commented [SJ112]: Name the port.

Gap #	Time frame	Involved stakeholders	Milestones	Means of verification
h	MM/YYYY – MM/YYYY	-	-	-
		-	-	-
		-	-	-
		-	-	-

Commented [SJ113]: Instead of a gap name, write just the gap number, at the same order as in the previous table. Think of this table as a continuation of the previous one.

Table 20: Implementation plan for gap bridging in the Port of XXXXXX

Commented [SJ114]: Name the port.

12.2 Gaps in other port locations

(If applicable, please follow the same structure as for the previous two subsections.)

Commented [SJ115]: If applicable. Only if you wish to add any additional ports which are not pre-selected. If not, please delete this subsection.

13 Conclusions – **by USPA**

14 References – by all participating partners

Commented [SJ116]: Please list here all references (textbooks, monographs, articles, publications, etc.) that you used.

By BRCCI:

1. Interview with Mr Boril Ivanov – manager of [DONAU TRANSIT Ltd.](#)
2. BRCCI Database.