



MultiRELOAD

EVALUATION OF FEASIBILITY OF MULTIMODAL TRANSPORTS ALONG THE RHINE-ALPINE AND RHINE-DANUBE CORRIDORS

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LIST OF ABBREVIATIONS

AC	Alternating Current
ADIF	Administrador de Infraestructuras Ferroviarias
ADN	L'Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADNR	L' Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures sur le Rhin (European Agreement on transport of dangerous goods on the Rhine)
ATO	Automatic Train Operation
ATP	Automatic Train Protection
CCNR	Central Commission for the Navigation of the Rhine
CCS	Control, Command and Signalling System
CESNI	Comité européen pour l'élaboration de standards dans le domaine de la navigation intérieure (European committee for drawing up standards in the field of inland navigation)
CEVNI	Code Européen des Voies de la Navigation Intérieure (European Code for Navigation on Inland Waterways)
CMNI	Convention de Budapest relative au contract de transport de marchandises en navigation intérieure (Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway)
DC	Direct Current
DGC	Dangerous Goods Certificate
DTLF	Digital Transport & Logistics Forum
EDI	Electronic Data Interchange
EDP	Electronic Data Processing
ENR	Etiage navigable et de régularisation (low navigation and regulation water level)
ERTMS	European Railway Traffic Management System
ETCS	European Train Control System
FEVE	Ferrocarriles de Vía Estrecha
FRMCS	Future Railway Mobile Communication System
GoA2	Grade of Automation 2
GSM-R	Global System for Mobile Communications - Railways
HNWL	Highest navigable water level
IoT	Internet of Things
ITU	Intermodal transport unit
IWT	Inland waterway transport
LCL	Less-than-container load

LTL	Less-than-truck load
RAC	Rhine-Alpine Corridor
RDC	Rhine-Danube Corridor
REFIG	Red Ferroviaria de Interés General (General Interest Railway Network)
RFC9	Rail Freight Corridor 9 (Rhine-Danube Corridor)
RIS	River Information Services
RMR	Railway Mobile Radio
TEN-T	Trans-European Transport Network
UIC	Union Internationale des Chemins de fer (International Union of Railways)
UKC	Under-keel clearance
UNECE	United Nations Economic Commission for Europe
WP	Work Package

1. EXECUTIVE SUMMARY

Within Work Package 2 (Smart Multimodal Logistics) of the [MultiRELOAD](#) project, Task 2.1 is supposed to cast light on the infrastructure to be used for innovative solutions in smart multimodal logistics along the Rhine-Alpine and Rhine-Danube Corridors. Both the technological status quo of the multimodal transport nodes and transshipment points and the available facilities and existing service portfolio of each terminal is to be collected for the subsequent analysis of integrability of the node into multimodal logistics chains. In chapter 3.1, the infrastructural overview has been created for transport nodes in inland waterway transport whereas the ones in rail transport are presented in chapter 3.2. These node-related information includes details of the geolocation, the cargo types handled, the area for various operations, the available equipment, the transport connectivity, the adjacent industries, the information technology equipment and terminal operating systems in place, in case the relevant information was publicly available and accessible.

Subsequently, an infrastructural overview of the major bottlenecks has been created indicating various obstacles on the potential routes along the Rhine-Alpine and Rhine-Danube Corridors. Chapter 4.1 presents the bottlenecks in inland waterway transport with information about their respective geolocation, the type of bottleneck, and its characteristics. The majority of bottlenecks on the waterway includes extreme-shallow-water stretches and narrow-fairway sections whereas bridges and locks belong to the rarer bottleneck cases, if at all. Similarly, chapter 4.2 presents information about twelve major bottleneck categories for the entire Rhine-Danube rail freight corridor which has been subdivided into several stretches. For each of the stretches, each bottleneck category has been scrutinized, the related information collected, and the standard parameter and the deviations presented.

In the following, the demonstration cases in Work Package 2 have been examined with respect to feasibility of both transit and transshipment. For the purpose, a gap analysis has been conducted for demonstrators A1 and A2, explaining the vision of the demonstrator and indicating the compliance with existing bottlenecks along the respective demonstration route and the boundaries along. In chapter 5.1, the results of the gap analysis of the demonstrator A1 on the route from Mannheim (DE) to Győr (HU) are presented whereas chapter 5.2 shows the results the gap analysis of the demonstrator A1 on the route from Wien (AT) to Giurgiu (RO) and Galați (RO), respectively.

In Chapter 6, the initial results of a legal analysis of multimodal transport along the Rhine-Alpine and Rhine-Danube Corridors are presented, accompanied by an example of national regulations in place from inland waterway transport in France.

2. INTRODUCTION

2.1. THEMATIC AND CONTENT CLASSIFICATION

2.1.1. THE PROJECT

MultiRELOAD enhances the collaboration between different freight nodes in Europe to jointly test innovations and create favourable market conditions for multimodal freight transport solutions. To this end, **MultiRELOAD** will demonstrate solutions in three Innovation Areas with specific aims by 2025, mirroring the measures of the EU's Smart Mobility Strategy, as follows:

- **A: Smart multimodal logistics** – facilitate a shift from road to rail & IWT of 5%
- **B: Digital & automated multimodal nodes and corridors** – increase operational efficiency by 20% raise of handling capacity
- **C: Innovative business models** – leading to an average cost reduction of freight transport by 10%

With respect to Innovation Area A (smart multimodal logistics), **MultiRELOAD** will develop innovative inter-/multimodal transport solutions linking all relevant modes, using transshipment technology with different intermodal transport units (ITU) (incl. transport of bulk cargo using multimodal containers), and concepts for an optimized, standardized global goods transport system based on the concept of the Physical Internet (WP 2).

Concerning Innovation Area B (Digital and automated multimodal nodes), **MultiRELOAD** transforms intermodal freight nodes into interconnected data platforms to connect actors, physical and digital infrastructure, assets, resources and services on three levels: terminal, node and corridor creating a truly integrated transport and logistics network - in line with the [Digital Transport & Logistics Forum's \(DTLF\) digitalization strategy](#). These innovations support the ongoing shift to multimodal service optimization, creating door-to-door transparent supply chains by enabling tracking of freight locations and better and more efficient use of resources. Communication between the equipment thereby increases the use of standardized, interoperable ITU's and Internet of Things (IoT)-related services that are digitally accessible and bookable (WP 3).

In regard to Innovation Area C (innovative business models), **MultiRELOAD** will develop innovative multimodal freight business models re-moving legal, regulatory, and contractual barriers to enable uptake of demonstrated solutions. **MultiRELOAD** has a particular focus on defining and demonstrating how the business models for the three interconnected freight nodes as part of the Corridor Management System can be expanded to entire Trans-European Transport Networks (TEN-T). As part of this work, **MultiRELOAD** will develop policy

recommendations and address the resilience and security of data and management systems, including security against malicious or accidental interventions (WP 5).

The geographical focus area of the Innovation Action project comprises the Rhine-Alpine Corridor (RAC) and the Rhine-Danube Corridor (RDC), spanning from the Benelux countries via Central Europe and the Balkans to the Black Sea region.

For a total of 36 months, the **MultiRELOAD** consortium comprising of ports, highly innovative technology, logistics and service providers, leading European research institutions and well-connected networks will cooperate intensely to facilitate significant modal shift to sustainable modes of transport, radical efficiency increase of supply chains and capacity-sharing (data, infrastructure, loading space, etc.) for all operators within the key Rhine-Alpine and Rhine-Danube TEN-T Corridors.

2.1.2. THE WORK PACKAGE

MultiRELOAD's Work Packages systematically emerge from the project methodology, building upon and being strongly interlinked with each other in order to maximise the project's impact. The two innovation areas A and B are covered within Work Packages 2 and 3, respectively, and serve to develop, demonstrate, and validate physical and digital solutions. The demonstrators will be continuously monitored including evaluation and impact assessment and deriving lessons learned in Work Package 4. Based on the testing and validation, innovative business models will be derived for each of the demonstrators, thus ensuring a wide market-uptake of solutions. The uptake will be continuously supported by engaging with external freight transport stakeholders and involving potential users/ uptakers/ buyers of the technical solutions by means of the **MultiRELOAD** User Forum and other dissemination, communication and exploitation measures as part of Work Package 5. Finally, WP6 will ensure **MultiRELOAD**'s impact beyond the project lifetime in order to sustain and facilitate transition towards multimodal freight transport nodes.

Work Package 2 is dedicated to Innovation Area A (**Smart Multimodal Logistics**) and, thus, pursues to enable a flexible, high volume, multimodal shift from road to rail and inland waterway transport (IWT) (+ 5% each along the Rhine-Alpine and Rhine-Danube Corridors and in the considered hubs along those corridors) for a green and smart multimodal freight logistics to contribute to a 50% increase in rail freight transport and 25% increase in IWT until 2030 as per the EU's Smart Mobility Strategy. Moreover, WP 2 is supposed to evaluate the feasibility of multimodal transports on the Rhine-Alpine and Rhine-Danube Corridors by combining technological, infrastructural and legal aspects of multimodal transport (task 2.1). Subsequently, the realization potential of such innovative multimodal transports is to be determined by implementing a new wagon specialized on the transportation of pallets (CBoXX) and shifting it to rail and, thereby, achieving even greater modal shift by reducing less-than-container load (LCL) and less-than-truck load (LTL) traffic on the road by (task 2.2).

Likewise, the modal shift is also to take place from road to inland waterways by (adapting and) transferring the learnings from the Rhine corridor and other relevant transport corridors for the determination of the potential increase of the low market share of multimodal transport along the Rhine-Danube corridor (task 2.3). Eventually, new business models to transport bulk goods in containers and, thereby, increase multimodality on the Danube are to be developed and examined (task 2.4). Last but not least, WP 2 is supposed to develop standardisation strategies for the ITU to be developed as part of its work stream.

Led by Fachhochschule Oberösterreich (FHOÖ) from Upper Austria, Work Package 2 lasts from project month 01 to 36 and involves a total of 14 out of 22 project partners, i. e., Duisburger Hafen AG – duisport (DUI), Hafen Wien GmbH (VIE), Schweizerische Rheinhäfen – Port of Switzerland (SRH) with its affiliated party RheinPorts GmbH (RP), Pro Danube Management GmbH (PDM), Transport Trade Services – TTS Austria (TTS), DST – Development Centre for Ship Technology and Transport Systems (DST), Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (Institut für Materialfluss und Logistik) (FRAUN), CargoBeamer AG (CAR), Hungarian National Association of Radio Distress-Signaling and Infocommunications (RSOE), Alliance for Logistics Innovation through Collaboration in Europe (ALICE), Institut du Droit International des Transports et de la Logistique (IDIT), NOSTA Holding GmbH (NOSTA), and Hungarian Federation of Danube Ports (HFIP).

2.1.3. THE TASK

Task 2.1 (**Framework for Multimodal transport on the Rhine-Alpine and Rhine-Danube-Corridor**) is dedicated to the evaluation of the feasibility of multimodal transports on the Rhine-Alpine and Rhine-Danube Corridors by combining technological, infrastructural and legal aspects of multimodal transport. The task lasts from project month 01 to 30, is led by DST, and involves FHOÖ, IDIT, FRAUN, DUI, VIE, and RP.

The main objective of task 2.1 is to analyse the Rhine-Alpine and Rhine-Danube Corridors with respect to technological and infrastructural preconditions, to assess of the feasibility of multimodal transports on them, and to develop a framework for such novel transport services. The framework is to include an overview of the technological conditions on site in the transport nodes, particularly with respect to vehicle and cargo handling, and of the infrastructural situation along the transport corridors, especially those posing a barrier to multimodal transport today. Both the technological equipment and infrastructural bottlenecks refer to all three landborne transport modes. The sub-tasks are executed by the task lead, DST, along with contributions by the residual partners involved.

Based on the overviews, a gap analysis is to be conducted for appropriate transport nodes without major multimodal cargo transfer opportunities in place. As part of the ongoing work in the [MultiRELOAD](#) project, representative transport relations from the demonstrators A1 and A2 will be used for the gap analysis. The analysis will focus on the transport nodes for the aspects

related to vehicle and cargo handling (and related administrative procedures) and on the transport corridors for operational barriers to transit. By this, the feasibility of the transports envisioned in the respective demonstrators is safeguarded as well. The sub-task is conducted by DST with the active support of the residual partners.

Eventually, a legal analysis of the Rhine-Alpine and Rhine-Danube Corridors is conducted in order to determine the major regulatory stakeholders and the main regulatory barriers to multimodal transport developing and thriving on the respective corridors. Similar to the gap analysis, the legal analysis will ensure the feasibility of the transports envisioned in the respective demonstrators A1 and A2. The sub-task is conducted by IDIT with demand-based involvement of the other partners.

After a short chapter on the data collection process, a section on the technological overview of the transport nodes along the Rhine-Alpine and Rhine-Danube Corridors is presented (Chapter 3) followed by an infrastructural overview of the corridors with respect to bottlenecks along the various stretches in terms of rail transportation and inland waterway transportation (Chapter 4). Subsequently, the results of a gap analysis are presented in chapter 5 both for the railborne use case (demo A1) and its waterborne counterpart (demo A2). Eventually, the results of the legal analysis are presented in chapter 6, consisting of a general overview and an example of national regulations to be applied in IWT.

2.2. DATA COLLECTION

Data collection was conducted based on an overview of existing sources. The initial searches already revealed a problem: whereas certain aspects are well researched and easily accessible (despite some minor problems described below), other aspects were nearly unexamined. Finding useful and reliable sources of information was a major sub-task in the work on task 2.1. In essence, the main publications of both the Rhine Commission (CCNR) and the Danube Commission as well as public information sources about the European transport corridors formed the underlying information based on which the subsequent results have been built. The multitude of (ongoing and completed) research projects and their yield formed another fertile set of sources that could be tapped for particular topics, such as ports along the Rhine-Danube corridors, bridge heights, and shallow-water and narrow-fairway sections. Next, the publications of the national waterway authorities were used for the detailed information on particular topics, e. g. certain bottlenecks with respect to (narrow) fairway width or (low) draught on extreme-shallow-water stretches on the river. Similarly, the European rail service providers maintain various information platforms that could be used for the execution of this task.

All in all, the data collection process was a cumbersome task as data is abundantly existent but cannot easily be differentiated between useful and not useful, up-to-date and obsolete, or on-topic and off-topic.

Apart from statistical and geographical information about the transport nodes and corridors, mainly from official authorities like the respective river commissions (Central Commission for the Navigation of the Rhine, Danube Commission) have been analysed and utilised. Further, publications and documents of European railway associations, the national waterway authorities, and other research projects with similar tasks as well as a series of maps and information platforms had to be screened. By doing so, the missing information, mainly datapoints related to particular (smaller) transport nodes and less prominent bottleneck spots along the corridors, could be obtained.

Whereas data has been available in sufficient quantity and quality about the Rhine-Alpine Corridor in many cases, the situation for the Rhine-Danube Corridor has been completely different. The transport nodes and transport corridor stretches under scrutiny lacked a joint database in which all relevant data is consolidated and maintained as up-to-date records. A plethora of sources found – with the common aim (of setting up a one-stop shop for data about the Rhine-Danube Corridor) but with different search and collection strategies and methods and with different purposes and matters – led to the imperative of juxtaposing many different datasets and carefully comparing them with one another – and, possibly, discarding some of them. In addition, many of those sources contained gaps due to missing data on various aspects. To close those gaps (and to verify the residual entries), many national databases had to be tapped in order to obtain the data directly. Given the information in many different languages and written in both Latin and Cyrillic characters, the time and effort of both searching and processing information was elevated. The available data happened to be incomplete, outdated, erroneous, contradictory, non-digitalized (i. e., neither legible nor processible in digital form), etc. Some information sources, such as RailNet Europe, actively claim their data provision for information purposes only and are not legally binding.

Nevertheless, the data collected was streamlined by defining major sources for the respective aspects as main datasets to refer to. In this way, a huge amount of data could be collected and taken over – while individual topics were selectively expanded and updated by means of additional (more recent or up-to-date) sources of information.

After this short chapter on the data collection process, a section on the technological overview of the transport nodes along the Rhine-Alpine and Rhine-Danube Corridors is presented (Chapter 2) followed by an infrastructural overview of the corridors with respect to bottlenecks along the various stretches in terms of rail transportation and inland waterway transportation (Chapter 3). Subsequently, the results of a gap analysis are presented both for the railborne use case (demo A1) and its waterborne counterpart (demo A2). Eventually, the

results of the legal analysis are presented, consisting of a general overview and an example of national regulations to be applied in IWT.

3. TECHNOLOGICAL OVERVIEW OF THE RHINE-ALPINE AND RHINE-DANUBE CORRIDORS

The technological overview includes the available equipment and conditions on site in the transport nodes along the Rhine-Alpine and Rhine-Danube Corridors, particularly with respect to vehicle and cargo handling. Therefore, the relevant transport nodes have been identified and their respective equipment was examined.

In total, 921 points of interest have been collected, including bottlenecks (on the waterway) including the most critical ones, bridges, depots, estuaries, locks, ports (i. e., bimodal terminals), rail terminals, shunting yards, stretch borders (of waterway stretches), and trimodal terminals. Figure 1 shows the multitude of points of interest along the Rhine-Alpine and Rhine-Danube Corridors from the perspective of rail and inland waterway transport. The totality of points of interest consists of 811 locations along the Rhine-Danube Corridor and 110 locations along the Rhine-Alpine Corridor. With 508 different locations along the considered Corridors, bridges represent the largest type of points of interest represented in the considered area.

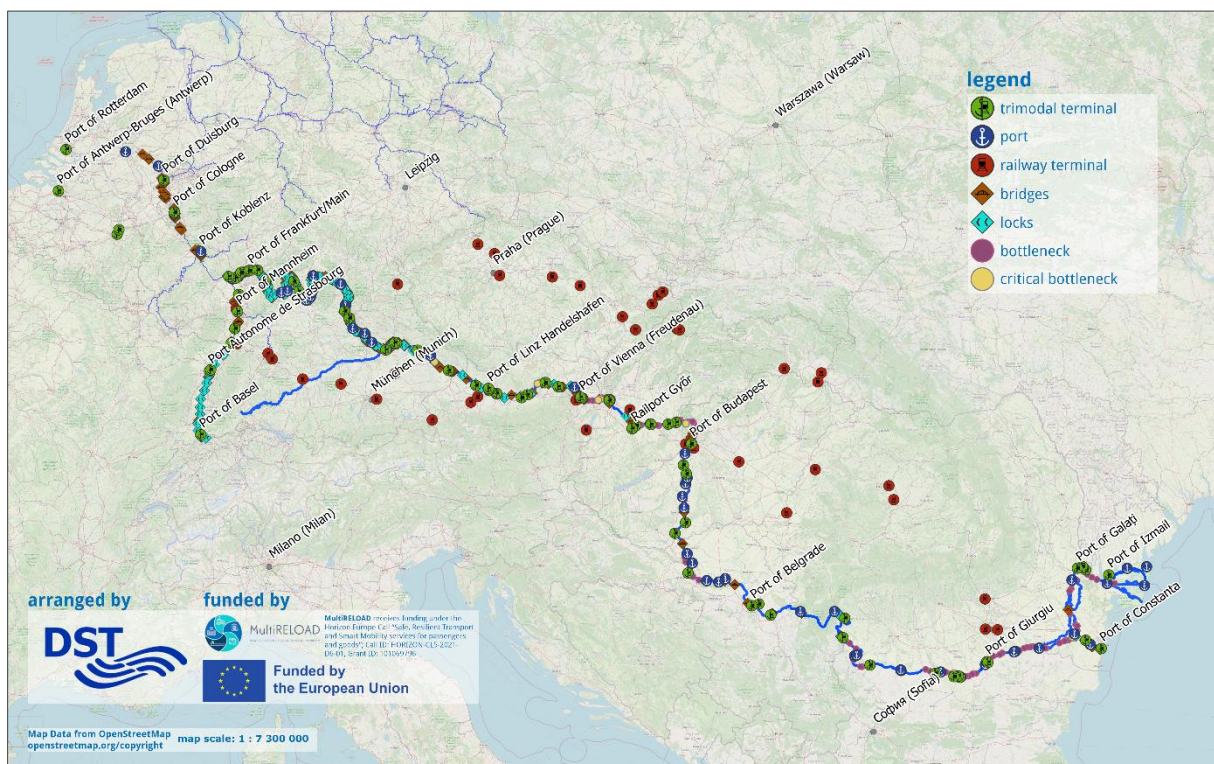


Figure 1. Points of interest in rail and inland waterway transport along the Rhine-Alpine and Rhine-Danube Corridors

A closer look at the terminals of rail transport and inland waterway transport shows a large number of nodes (more precisely, 162 terminals) ready for the use as part of transnational multimodal freight transport hubs (see Figure 2). In view of the efforts made at national and European level and with the help of both national budgets for regional development and

European cohesion funds, nearly every larger agglomeration between Frankfurt am Main (DE) and Constanța (RO) features a terminal with road and rail and/or inland waterway connection. Since the Danube rail corridor partly runs far away from the Danube, e. g., in southwestern Germany, in the Czech Republic, or in the Slovak Republic, various rail terminals appear off location but still belong to the corridor under scrutiny.

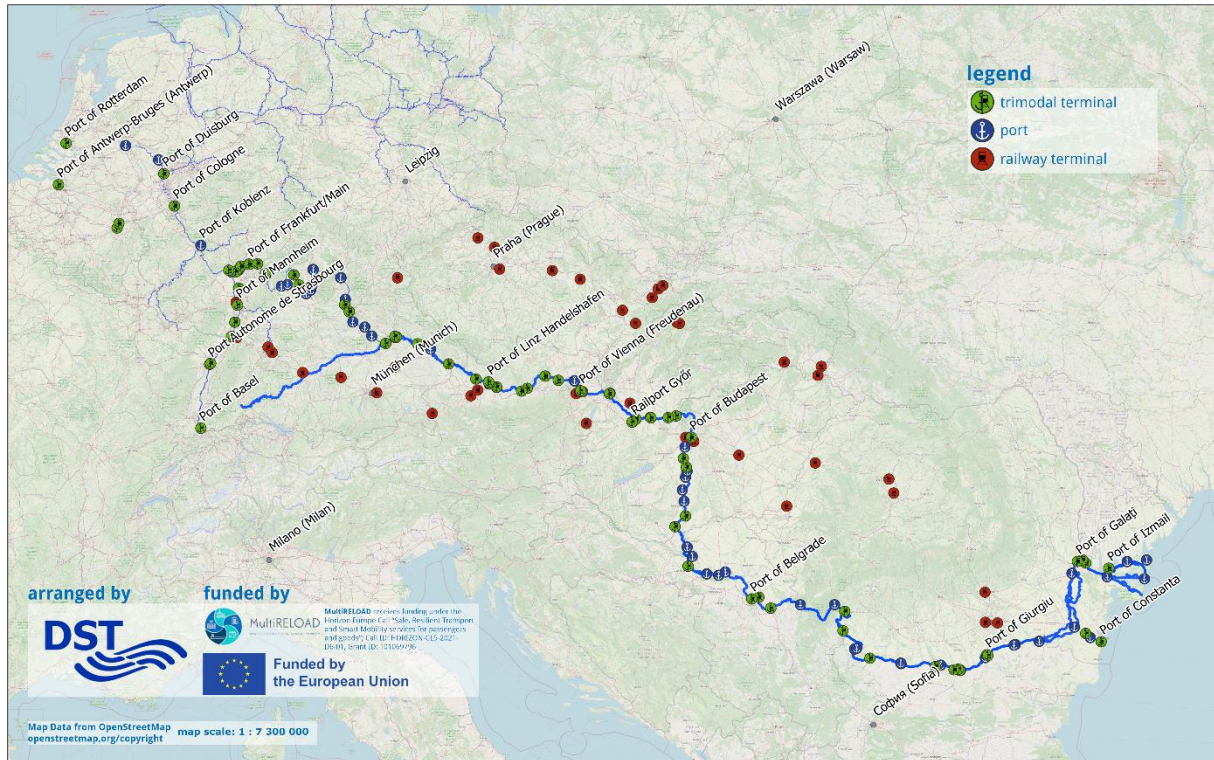


Figure 2. Bi- and trimodal terminals of rail and inland waterway transport along the Rhine-Danube Corridor

3.1. INLAND WATERWAY TRANSPORT NODES

In the following section, the profiles of the inland waterway transport nodes are used for a proper overview of existing equipment and conditions in the bi- and trimodal (rail and port) terminals. The individual profiles are included in the appendix (see A. Inland waterway transport nodes).

A focus has been laid on the Rhine-Danube Corridor since the situation is well researched for the Rhine-Alpine Corridor over many years and currently integrated in a series of research projects dedicated to modal shift from road to rail transport and inland waterway transport, respectively. For instance, the [NOVIMOVE](#) research project is dedicated to increasing the efficiency of waterborne transportation along the Corridor and raising its resilience in exceptional circumstances, such as extreme low-water periods or inland vessel congestion in the seaports.

For the Danube, however, several research and development initiatives exist, each of them addressing an individual aspect of sustainable transport along the Danube or the Rhine-Danube Corridor, respectively. Apart from a series of Horizon 2020 and Horizon Europe project, such as [IW-NET](#) addressing the low-water navigability of inland vessels on the river Danube, several other (past and ongoing) research projects in the INTERREG Danube Transnational Programme aim at improvements of rail and inland waterway transport along the Danube, such as [Danube SKILLS](#) (to promote transnational competences and skills in education and public development services in favour of inland waterway transport on the Danube), [DANTE](#) (to improve administrative procedures and processes for inland waterway transport on the Danube), [DAPhNe](#) (to develop the Danube Ports to eco-friendly, well accessible multimodal cargo hubs), [DIONYSUS](#) (to integrate the Danube region into multimodal transport chains), [GRENDel](#) (to transform the inland vessel fleet on the Danube to green and efficient operation), the CEF projects [FAIRway Danube](#) (to implement several crucial measures of the Fairway Rehabilitation and Maintenance Master Plan) and [RIS COMEX](#) (to identify, develop, and implement the systems and services crucial for an efficient RIS Corridor Management), and several others.

In the present work, information about the technological condition of the transport nodes, i. e., bi- and trimodal ports, and waterway stretches has been collected, processed, analysed, and interpreted. Figure 3 shows the precise position of the ten Danube riparian countries on the river. In the following, the situation on the Danube is presented from several focal perspectives.

With respect to accessibility of the inland waterway transport nodes by different transport modes, the totality of 113 IWT nodes are divided into 59 trimodal terminals and 54 bimodal ones (see Figure 4). Bimodal terminals feature access to the road and waterway networks and are named 'port' in Figure 4 whereas trimodal terminals are designated as such and additionally include railway access. The largest distance between any two ports, i. e., including the bi- and trimodal ones, amounts to 97 kilometres which indicates a good coverage of the region with multimodal transport and transshipment opportunities.

The main accumulations of trimodal ports along the Rhine-Danube Corridor are located in Hungary, Austria, and Germany – on the rivers Danube and Main (see Figure 5). The reason for this can be assumed in the elevated level of economic activity in these countries in direct comparison with the residual Danube riparian countries. The largest distance between two trimodal terminals is situated between the ports of Giurgiu (RO) and Galați (RO) with 339 kilometres.

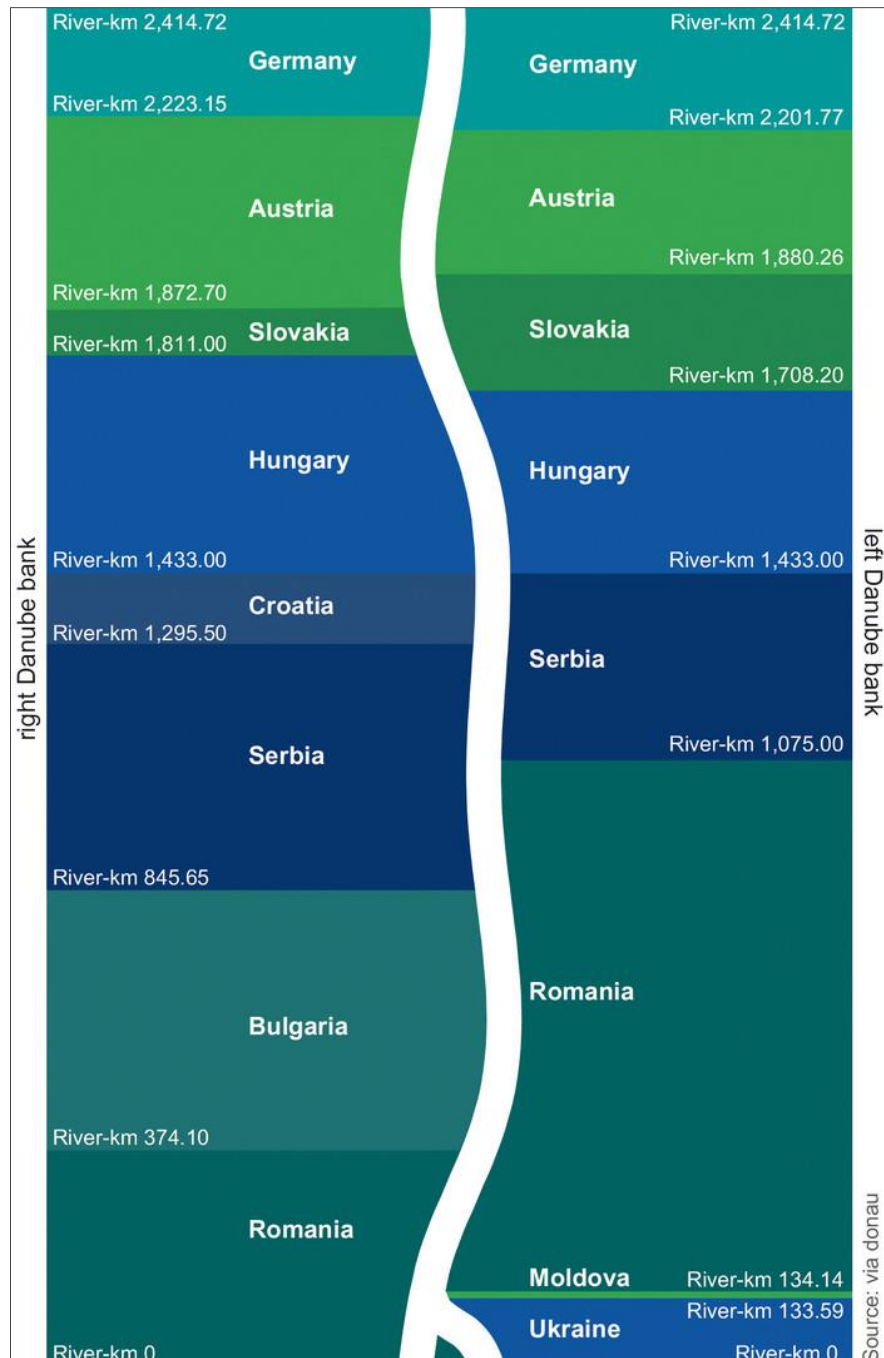


Figure 3. Danube riparian countries on the left and right bank (source: viadonau)

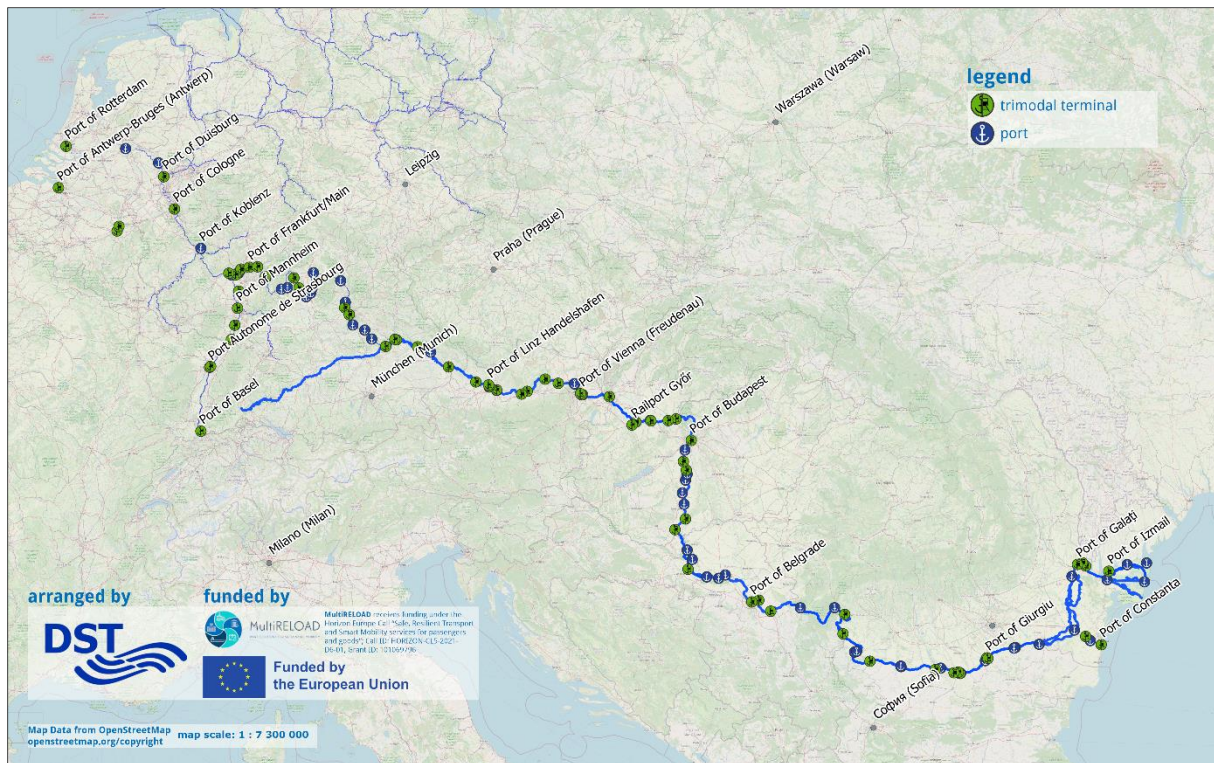


Figure 4. Bi- and trimodal terminals of inland waterway transport along the Rhine-Danube Corridor

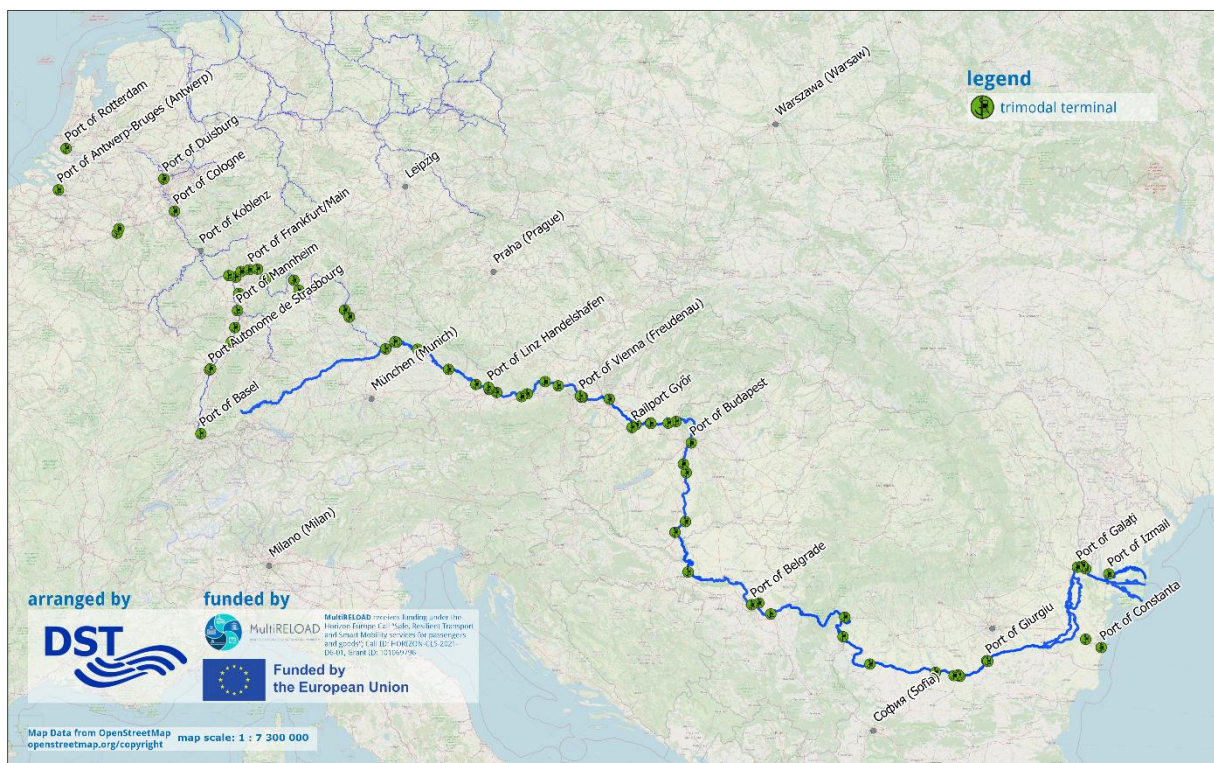


Figure 5. Trimodal terminals along the Rhine-Danube Corridor

On the contrary, the majority of bimodal ports along the Rhine-Danube Corridor are located in Germany, mainly on the Main and the Rhine-Main-Danube Canal, the region between central Hungary and northern Serbia, and Romania including both the Lower Danube, the Danube delta, the Sulina branch, and the Danube-Black Sea Canal (see Figure 6). Typically,

the bimodality is a remainder from the early times of (industrialized) use of ports in order to connect the waterborne main leg of a transport process (e. g., on the Danube) with the roadborne first or last leg, respectively. The fact that the ports in question have not continued to grow into trimodal terminals can be considered as an indicator of the lacking economic activity in the respective region or of the failure of inland waterway transport to profit from the economic upswing in a particular region. In the latter case, the lion's share of increased transport performance mostly accounts for road transport.

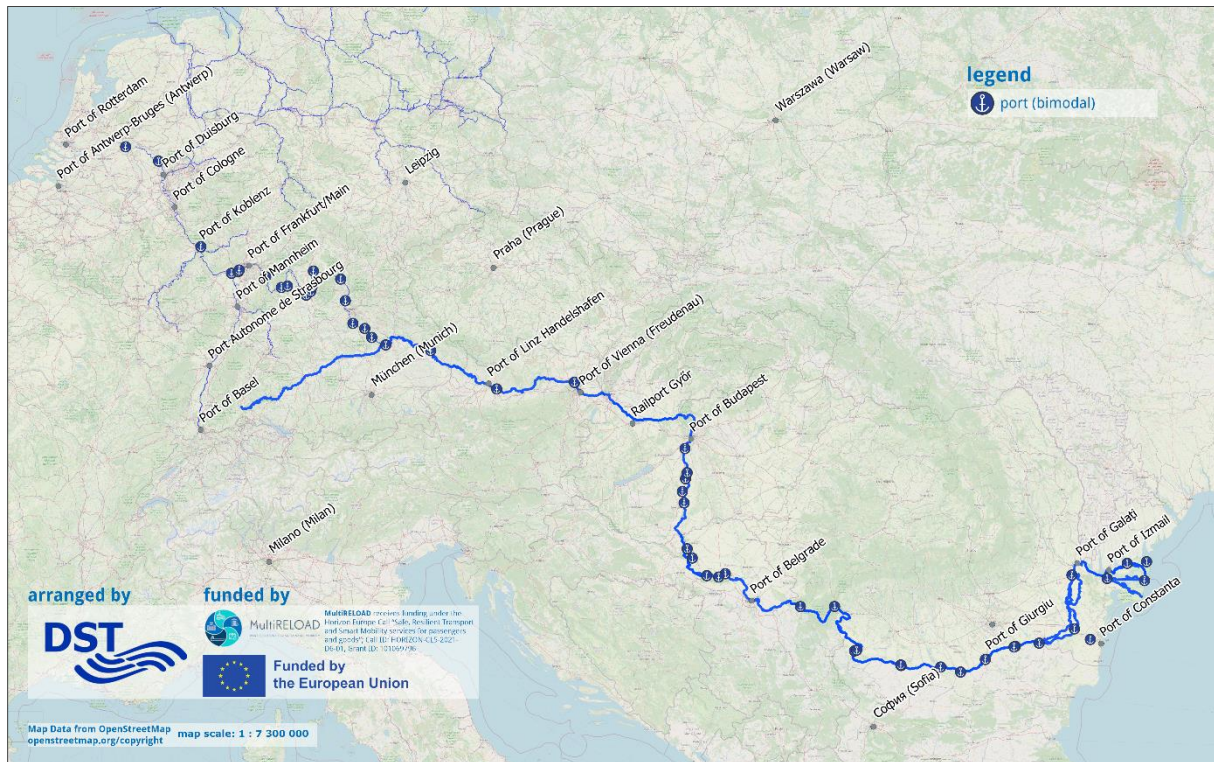


Figure 6. Bimodal terminals of inland waterway transport along the Rhine-Danube Corridor

Looking at the container transport on the Danube, its volume of approx. 35,000 TEU is merely a tiny fraction of the container volume transported on the Rhine with approx. 15 million TEU in 2021 (CCNR, 2022). Nevertheless, many ports exhibit the equipment and competencies for receiving, handling, and discharging containers in their terminals. Figure 7 shows the locations capable of handling containers along the Rhine-Danube Corridor. It is striking that the majority of the container terminals are situated in relative proximity to the seaports – either in the Benelux countries, i. e., Rotterdam, the Netherlands, and Antwerp, Belgium, or – albeit in a lower quantity – in Galați and Constanța in Romania. This can be considered as an indicator for the cautious establishment of seaport hinterland traffic on the Rhine-Danube Corridor – albeit on a considerably lower level than on the Rhine-Alpine Corridor. Consequently, the largest distance between two container terminals along the considered stretch occurs between the port of Prahovo (RS) and Belene (BG) and amounts to 294 kilometres. In fact, there are only nine container terminals between the south of Hungary and the port of Giurgiu (RO).

The situation looks noticeably better for the transshipment opportunities of breakbulk cargo along the Corridor. Figure 8 shows a more even spread of terminals between Regensburg (DE) and the Romanian ports including Galați (RO) and Constanța (RO) and the port of Izmail (UA), respectively. With 123 kilometres between the port of Cernavodă (RS) and the port of Brăila (RO) as the largest distance between two breakbulk terminals, the total of 65 breakbulk terminals along the Rhine-Danube Corridor are evenly distributed. It is striking that the typical dominance of German and Austrian locations does not apply here as many locations in Hungary, Serbia, Bulgaria, and Romania also offer transshipment opportunities for breakbulk. Typically, such breakbulk transport is destined for construction sites as concrete parts and other construction-related cargo has proven to be suitable for inland waterway transport on the Danube.

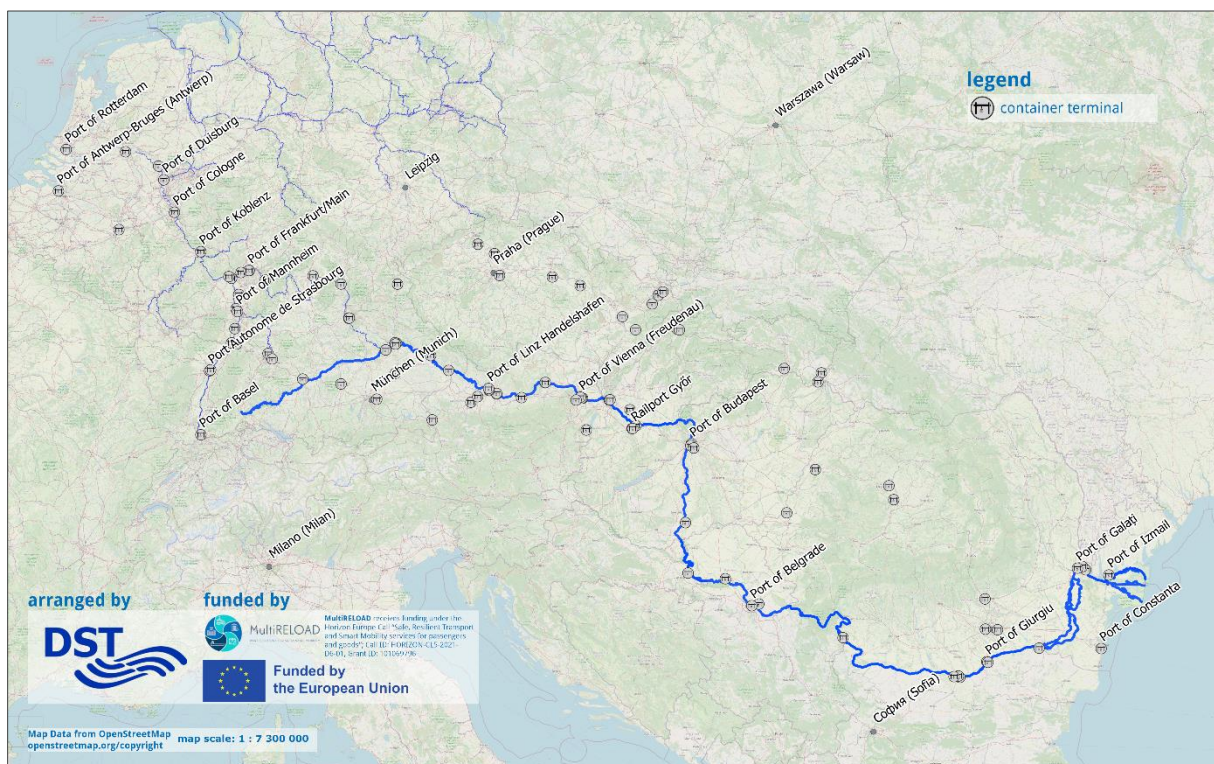


Figure 7. Container terminals along the Rhine-Danube Corridor

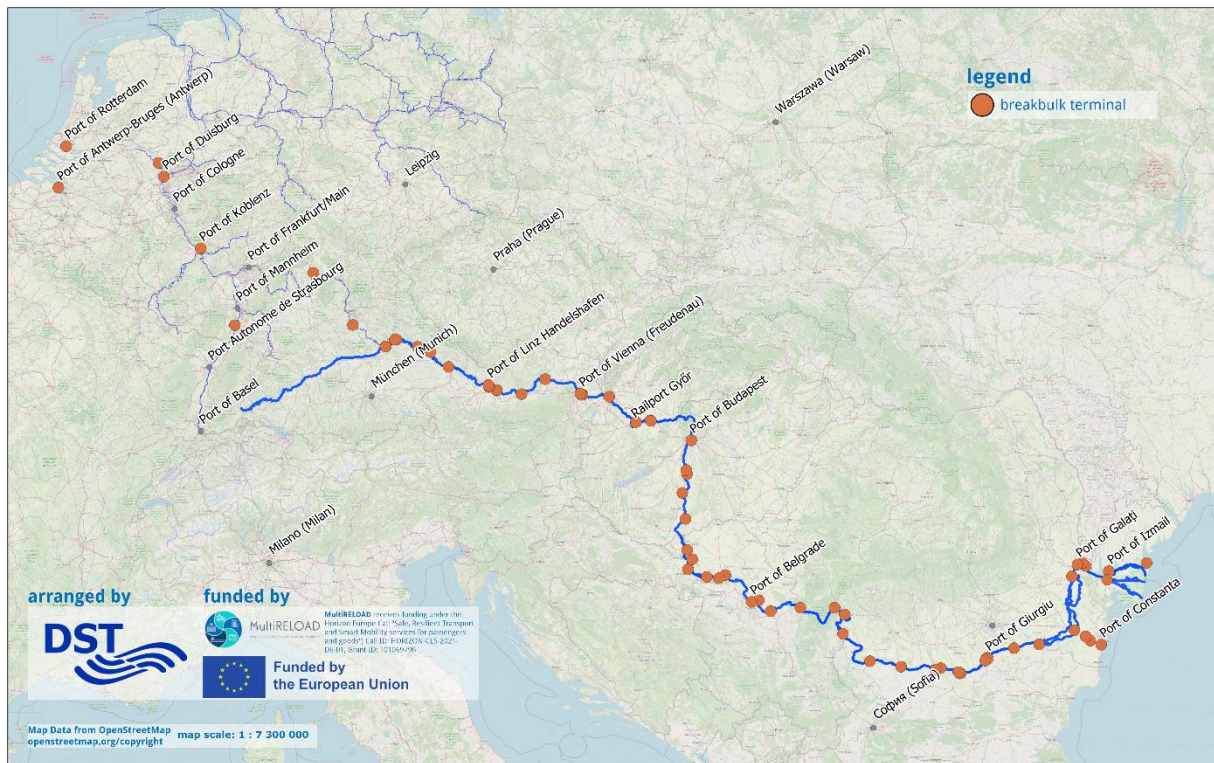


Figure 8. Breakbulk terminals along the Rhine-Danube Corridor

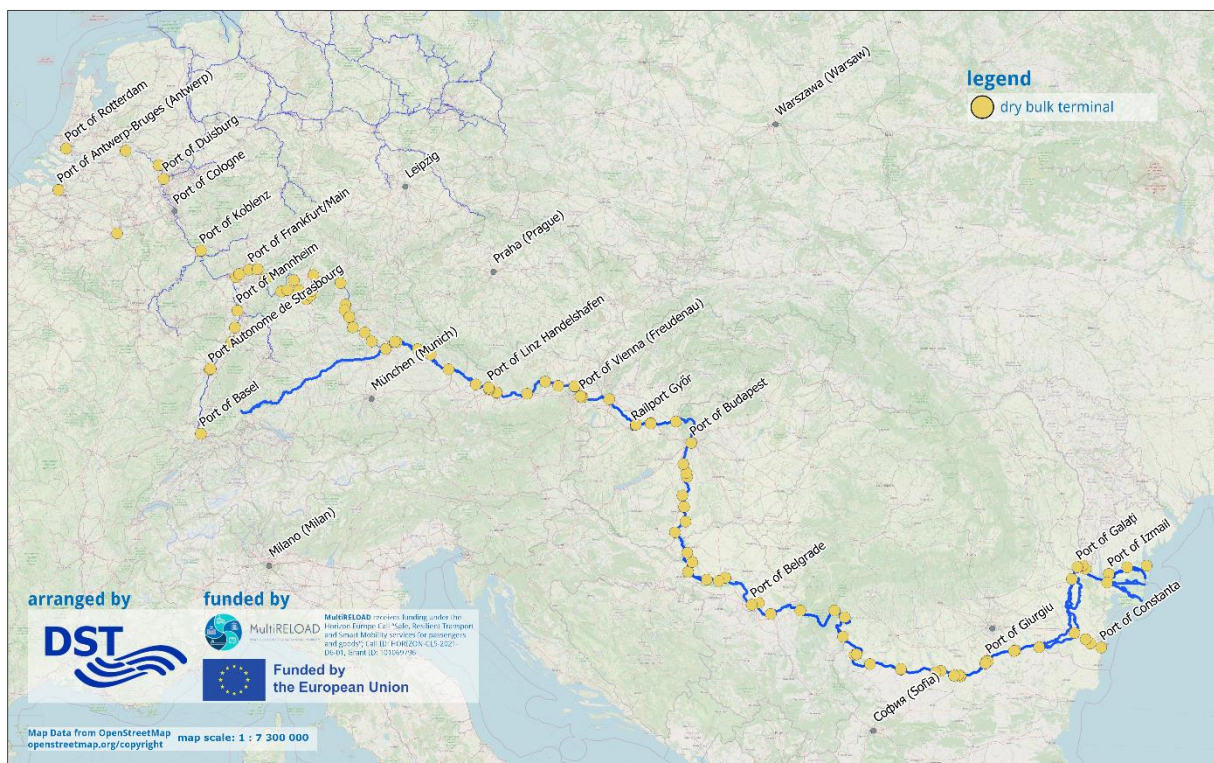


Figure 9. Dry bulk terminals along the Rhine-Danube Corridor

The map looks even more dense for dry bulk terminals as it represents the most typical cargo in inland waterway transport (see Figure 9). Consequently, nearly all ports and terminals feature the opportunity of transshipping dry bulk cargo at their terminals – and the two most distant neighbouring dry bulk terminals along the Rhine-Danube Corridor are situated in the port of

Cernavodă (RS) and the port of Brăila (RO) with 123 kilometres between the two locations. Although 98 ports and terminals offer dry bulk handling along the Corridor, there is a clear accumulation of Bavarian (German) and Austrian ports with 41 locations in total as they even nearly outnumber the large number of locations between Hungary and Romania with 57 locations in total.

In the case of liquid bulk cargo, however, the situation is entirely different. Only 31 terminals offer facilities for the transshipment of products like mineral oil, liquid chemicals, and similar sensitive products along the Rhine-Danube Corridor (see Figure 10). There are nine of them in Germany and four in Austria alone. As a result, the largest distance between two neighbouring liquid bulk terminals is 341 kilometres, i. e., between the ports of Ruse (BG) and Galați (RO). The density of such tank terminals is considerably lower than along the Rhine-Alpine Corridor or the North Sea-Baltic Corridor. The reason behind this situation presumably lies in the reduced economic activity along large parts of the considered Corridor.

Terminals for special cargo, such as heavy-lift consignments, are available throughout the entire Rhine-Danube Corridor, with five terminals in Romania, Moldova, and Ukraine, seven terminals in Hungary, Croatia, and Serbia, and even ten terminals on the Main, Rhine-Main-Danube Canal, and the Danube in Germany. In total, the Corridor holds 30 heavy-lift terminals available for cargo transshipment operations as can be seen in Figure 11. These terminals lie up to 475 kilometres distant from one another, as in the case of the ports of Pančevo (RS) and Oryahovo (BG). Typically, heavy-lift terminals are frequented by consignors producing or assembling high-value products and supplying large components for such products. Hence, a clear link between the availability of such heavy-lift terminals and elevated economic activity is observable.

With respect to RoRo terminals, the 23 terminals in total along the Rhine-Danube Corridor are spread evenly. Figure 12 shows that such ramps are available throughout the entire corridor, with maximum 490 kilometres between two neighbouring ramps (between the ports of Belgrade (RS) and Oryahovo (BG)). It is striking though that the number of RoRo terminals increases towards the estuary of the Danube into the Black Sea, albeit on a low level. It can be assumed that some are military ramps and, thus, relicts from the Cold War era. RoRo ramps are of elevated significance when it comes to transport of large and heavy cargo as many loads need to be driven horizontally onto the vessel deck which again requires an appropriate ramp.

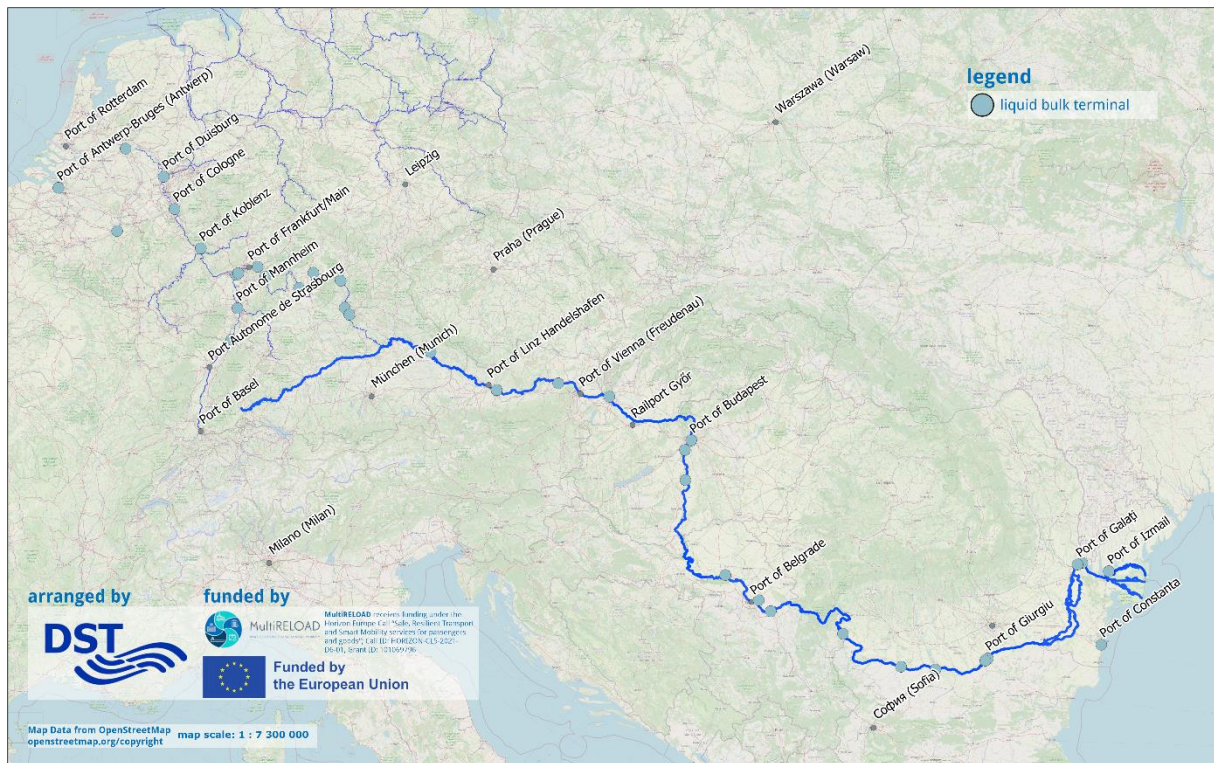


Figure 10. Liquid bulk terminals along the Rhine-Danube Corridor

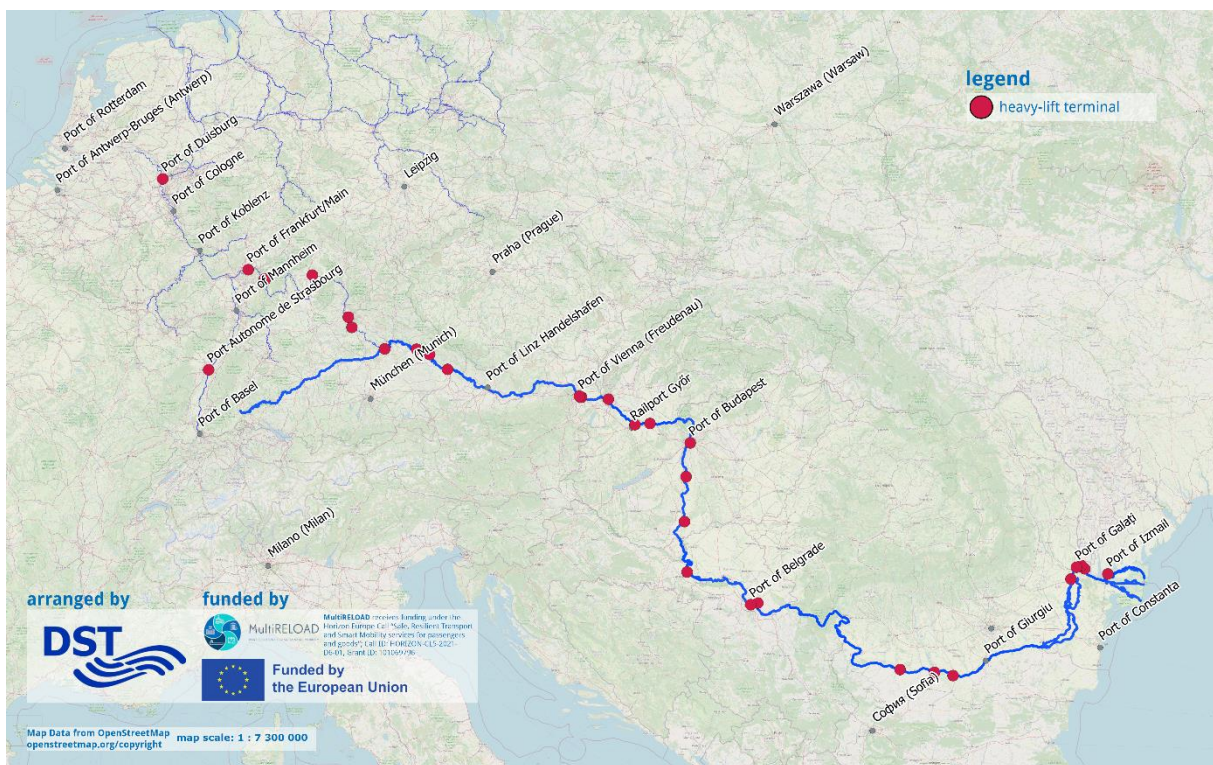


Figure 11. Heavy-lift terminals along the Rhine-Danube Corridor

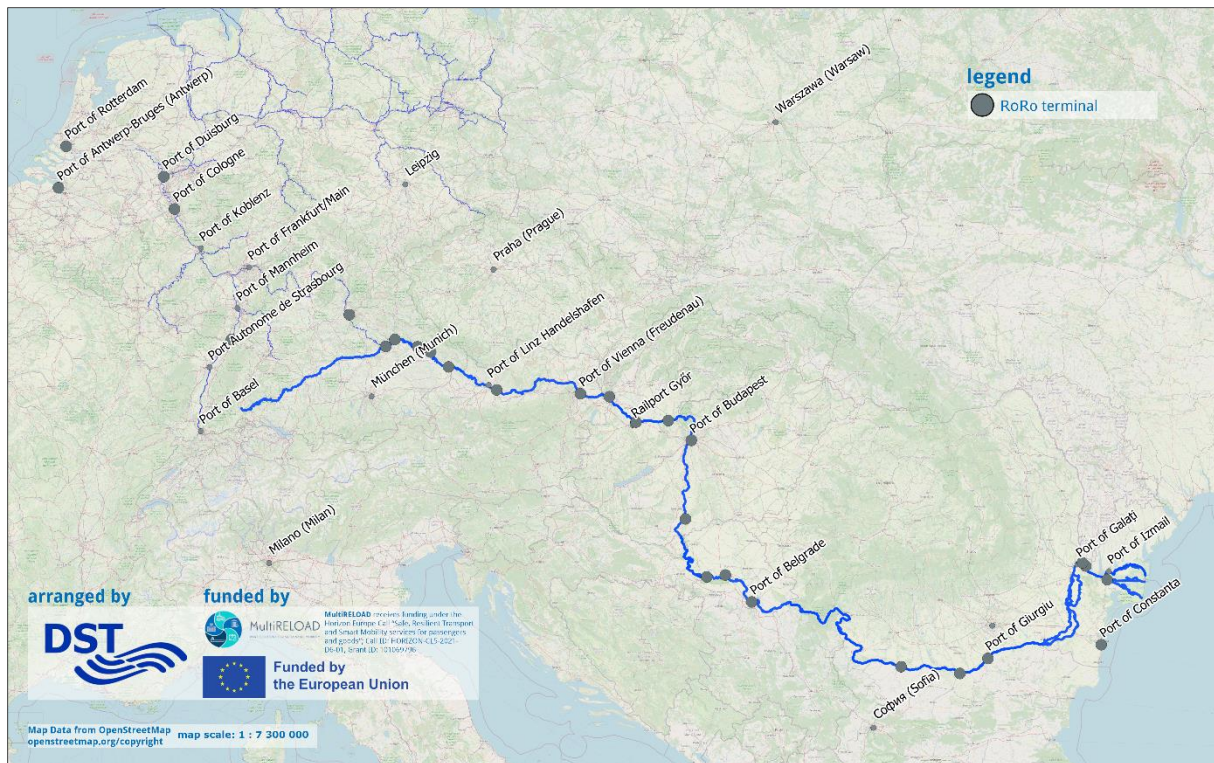


Figure 12. RoRo terminals along the Rhine-Danube Corridor

Apart from the terminals, other transport nodes have been examined as part of the task 2.1 of the MultiRELOAD project. To these nodes belong the locks on the Main, the Rhine-Main-Danube Canal, the Danube, and the Danube-Black Sea Canal as well as the bridges spanning over the respective waterway.

Locks are used to overcome differences in elevation along the river and may consist of one or more (usually two) chambers. Locks are relevant for the identification of bottlenecks on the waterway because they confine the dimensions of an inland vessel (or convoy) passing the respective location in length and beam. In chapter 4.1, the bottlenecks of the Rhine-Danube Corridor are identified and presented. The Rhine-Danube Corridor consists of a total of 70 locks – with 34 locks on the river Main, 16 locks on the Rhine-Main-Danube Canal, 18 locks on the Danube, and two on the Danube-Black Sea Canal. Fourteen of the eighteen locks on the Danube have two lock chambers, allowing simultaneous locking of upstream and downstream vessels. Figure 13 illustrates the distribution of locks along the Rhine-Danube Corridor. A section of the Danube almost 900 kilometres long can be navigated without a lock passage, more precisely between the lock in Gabčíkovo (SK) (river km 1819.15) and the one at Iron Gate I between Serbia and Romania (river km 942.90).

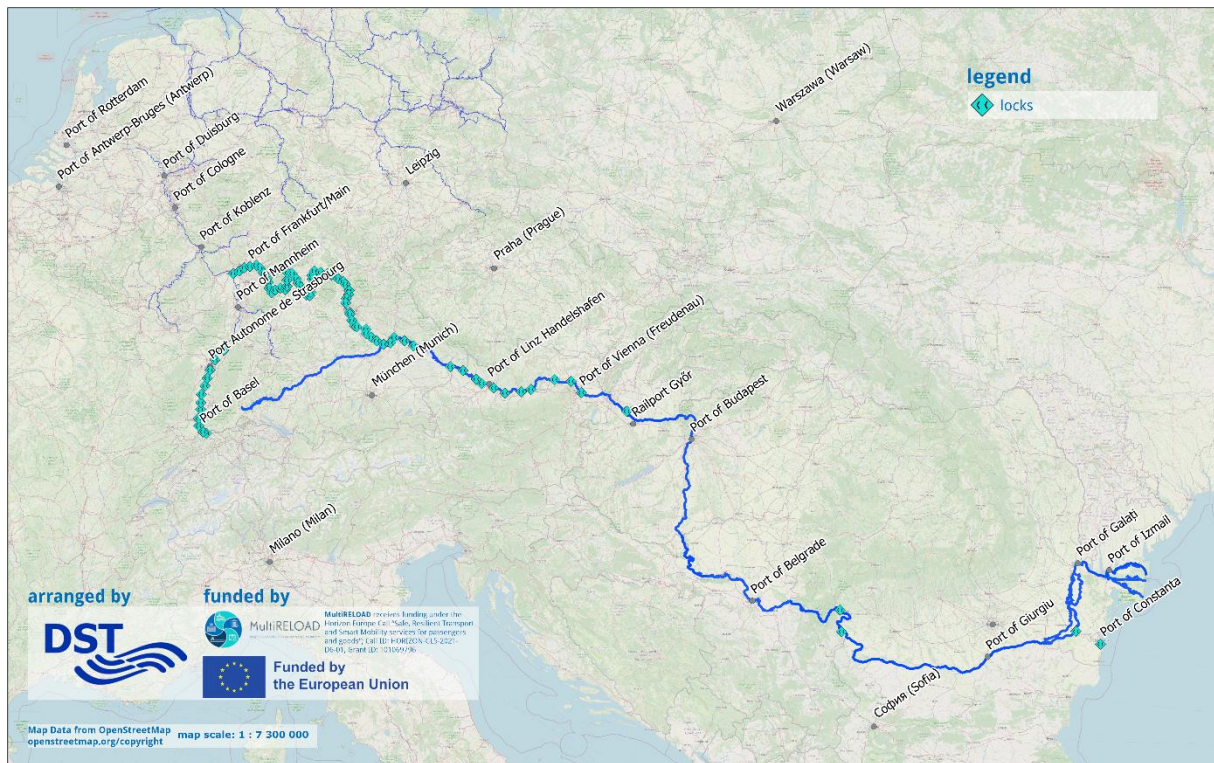


Figure 13. Locks along the Rhine-Danube Corridor

Similarly, bridges are relevant for the clearance profile of the inland vessel on the waterway underneath and, possibly, posing an obstacle for the transport of high cargo, such as multiple layers of ISO containers or large and heavy cargo. Chapter 4.1 presents the bridges with critical clearance heights which, thus, pose IWT-related bottlenecks of the Rhine-Danube Corridor. As the information about the bridge type, e. g., bascule bridge, bridge with bridge arches, fixed bridge, lift bridge, swing bridge, drawbridge, or suspension bridge, was neither consistently available nor of particular interest during the data collection process, the details about the bridge type have been omitted in the final overview. Each of the 428 bridges between the river Main and the Danube delta has been determined with respect to its geolocation, its location along the waterway, and its clearance height. Figure 14 shows the distribution of bridges between Germany and Romania. Interestingly, the density of bridges varies grossly between the various areas. Whereas the Lower Danube features an average distance between two neighbouring bridges of 125 kilometres (on the Romanian/Moldovan/Ukrainian stretch) and 235 kilometres (on the Romanian/Bulgarian stretch), respectively, the same figure measures 7.97 kilometres in Austria, 4.78 kilometres on the German stretch of the Danube, 2.56 kilometres on the Rhine-Main-Danube Canal, and merely 1.25 kilometres on the Main. The maximal distance between two neighbouring bridges along the Corridor lies at 307.4 kilometres, namely between the bridge between Vidin (BG) and Calafat (RO) and the road and rail bridge from Giurgiu (RO) to Ruse (BG).

As has been mentioned above, the bridges are relevant for the clearance profile of the inland vessel passing under the respective structure. For waterborne container transportation, typical bridge heights indicate the feasibility of container transports in multiple layers. Whereas

a single-layer container transport is virtually possible at all times as the containers in the loading bay of the inland vessel generally exhibit dimension, a bridge clearance height of at least 5.25 metres (at the highest navigable water level, HNWL) is required for a double-layer container transport. While the bridge must exhibit a clearance height of 7.10 metres HNWL for three layers, 9.10 metres HNWL of bridge clearance height allow a container transport on the waterway in four layers. Figure 15 shows the navigability of the Rhine-Danube Corridor, including the river Main, the Rhine-Main-Danube Canal, the river Danube, and the Danube-Black Sea Canal. Whereas the entire stretch from the German-Austrian border to the Black Sea allows at least three layers of containers transported on the waterway, the situation is different in Germany with only two or even one layer of containers between Passau (DE) on the Danube and Frankfurt am Main (DE) on the river Main. On the contrary, even four-layer container transport is feasible between the inland port of Smederevo (RS) and the seaport of Constanța (RO).

It has to be noted though that this illustration is based on the theoretical finding from the various sources published in printed and digital form whereas practitioners state that the data about individual locations, such as bridges, do not match the data in the sources at times. One example for such a bridge is Újpesti vasúti hid, a rail bridge in northern Budapest (HU), which is said to allow three-layer container transport according to official records from the Danube Commission or viadonau, the Austrian waterway authority whereas practitioners state that the clearance height of the bridge in the Hungarian capital allows a double-layer transport only.

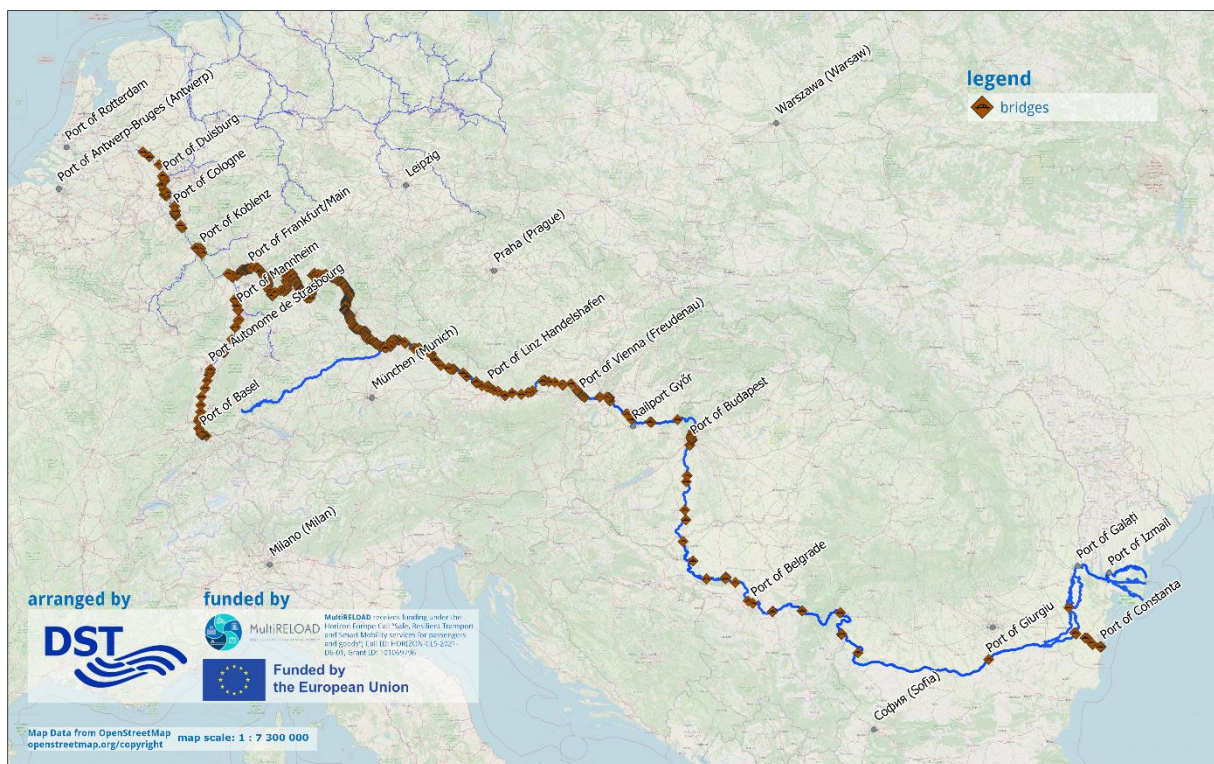


Figure 14. Bridges along the Rhine-Danube Corridor

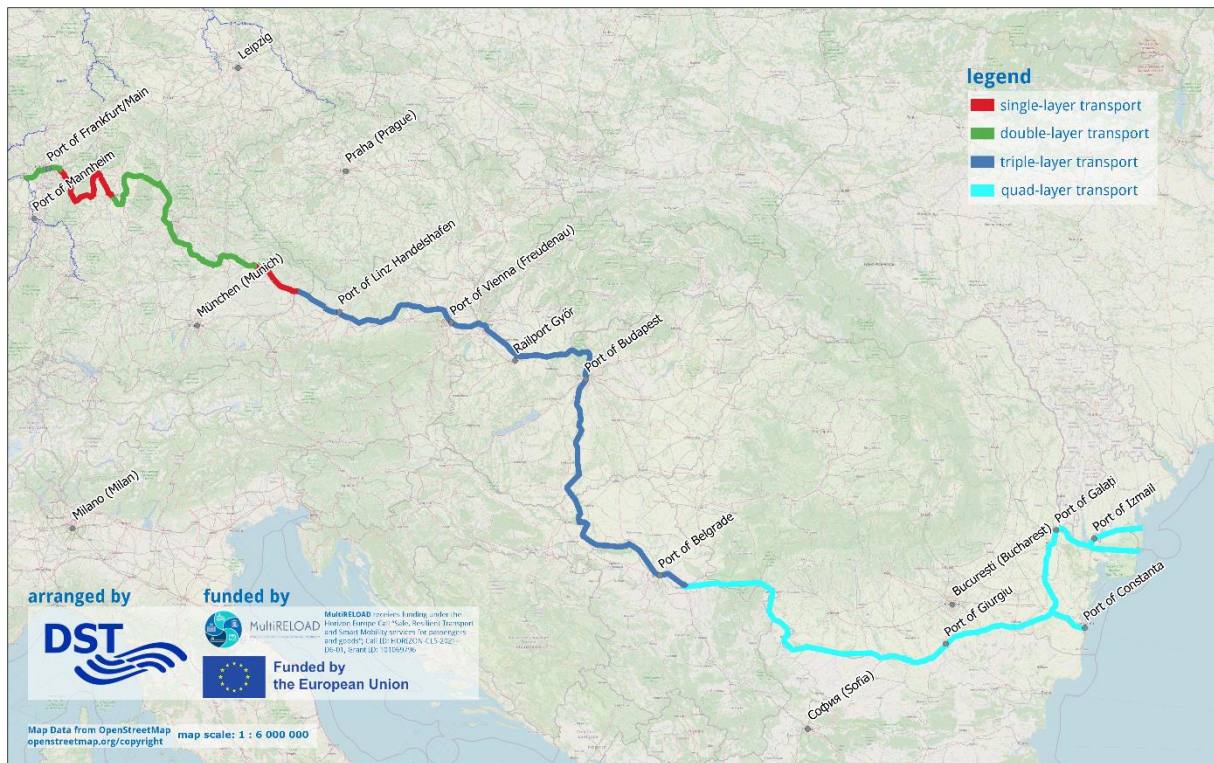


Figure 15. Navigability of the Rhine-Danube Corridor with varying numbers of container layers

3.2. RAIL TRANSPORT NODES

In comparison with the inland waterway transport network along the Rhine-Danube Corridor, the rail transport network looks different. In general, a rail network is more fine-grained than an inland waterway network with its denser network and with its “linear nodal hierarchy with nodes related to intermodal yards, train, and transit stations”¹ (see Figure 16). The mesh-like rail transport network gains performance and resilience with the help of such elevated density whereas inland waterway transport systems may feature linear nodes in a less dense network and a circuitous nodal hierarchy with inland ports as hubs or gateways.^{2,3}

Similar to the inland waterway transport nodes presented in the preceding chapter, a focus has been laid on the Rhine-Danube rail freight corridor as the information base is sufficiently rich for the Rhine-Alpine Corridor. The Rhine-Danube Corridor corresponds to Rail Freight Corridor 9 (RFC9) and connects Frankfurt am Main (DE) in the northeast of the Corridor with Constanța (RO) in the southeast. In total, RFC9 crosses seven countries and largely runs in parallel with the river Danube (see Figure 17). The individual rail transport node profiles are included in the appendix (see C. Rail transport nodes). According to the corridor management, “[t]he basis of the development of the Rhine-Danube Rail Freight Corridor is EU

¹ see <https://transport.ec.europa.eu/system/files/2016-09/2015-07-logistics-inland-ports-platform-long-position-paper.pdf>

² see <https://transport.ec.europa.eu/system/files/2016-09/2015-07-logistics-inland-ports-platform-long-position-paper.pdf>

³ see <https://porteconomicsmanagement.org/pemp/contents/part6/port-resilience/maritime-transportation-networks-vulnerabilities/>

Regulation 913/2010 aiming at creating a European rail network for competitive freight traffic. It sets out the rules for the selection, organization, management and investment planning of rail freight corridors.”⁴ In addition, RFC9 “provides the main East-West link across Continental Europe”⁵.

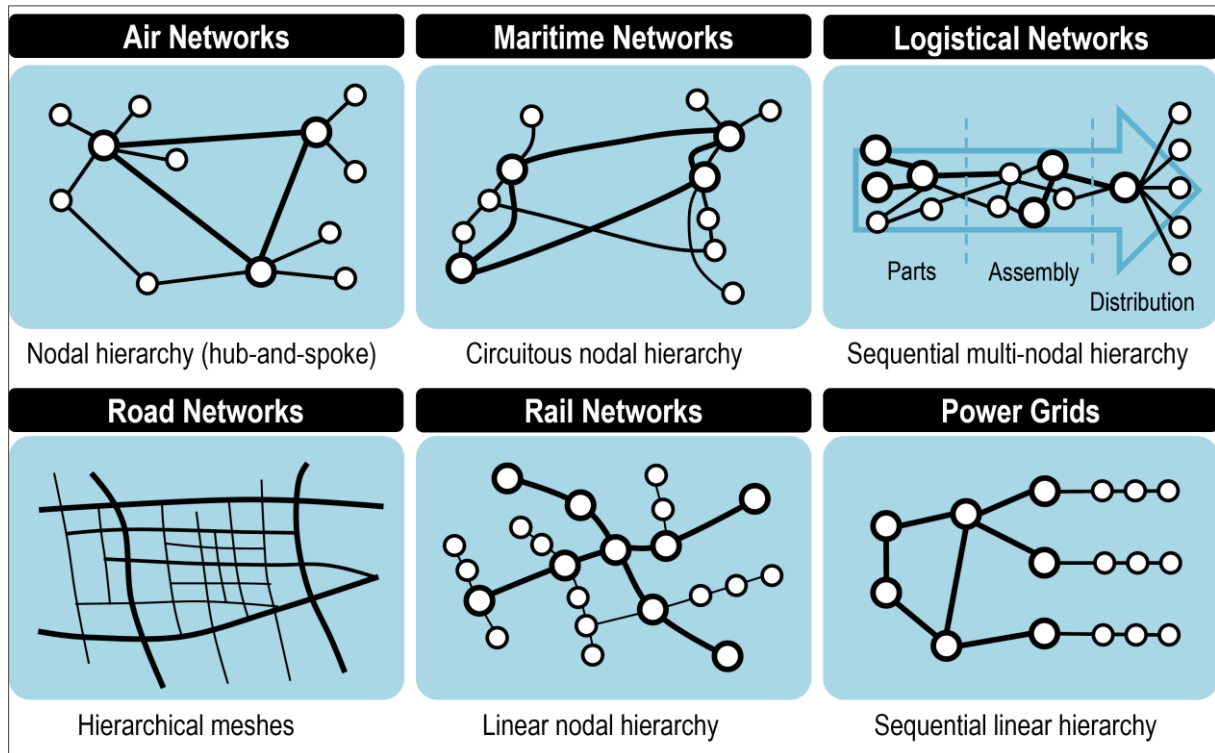


Figure 16. Types of Transportation Networks and Vulnerabilities (source: The Geography of Transport Systems⁶)

The following six stretches have been scrutinized with respect to major rail transport nodes, i. e., bimodal rail terminals and trimodal terminals on a waterway:

- Constanța (RO) - Szolnok (HU) (north route) via Brașov, Cluj-Napoca, and Oradea
- Constanța (RO) - Szolnok (HU) (south route) via București, Craiova, and Timișoara
- Szolnok (HU) - Linz (AT)
- Linz (AT) - Frankfurt (DE) (northern route) via Nürnberg
- Linz (AT) - Frankfurt (DE) (southern route) via Salzburg, München and Karlsruhe (incl. Rhine-Alpine Corridor)
- Nürnberg Hbf (DE)/ Regensburg Hbf (DE) - Terminal Matovce (near Velke Kapusany) (SK)/ Cierna nad Tisou Chop (near Pribenik) (SK)

⁴ see <https://rfc-rhine-danube.eu/who-we-are/>

⁵ see <https://rfc-rhine-danube.eu/who-we-are/>

⁶ see <https://transportgeography.org/contents/chapter9/transportation-and-disasters/transportation-networks-vulnerabilities/>

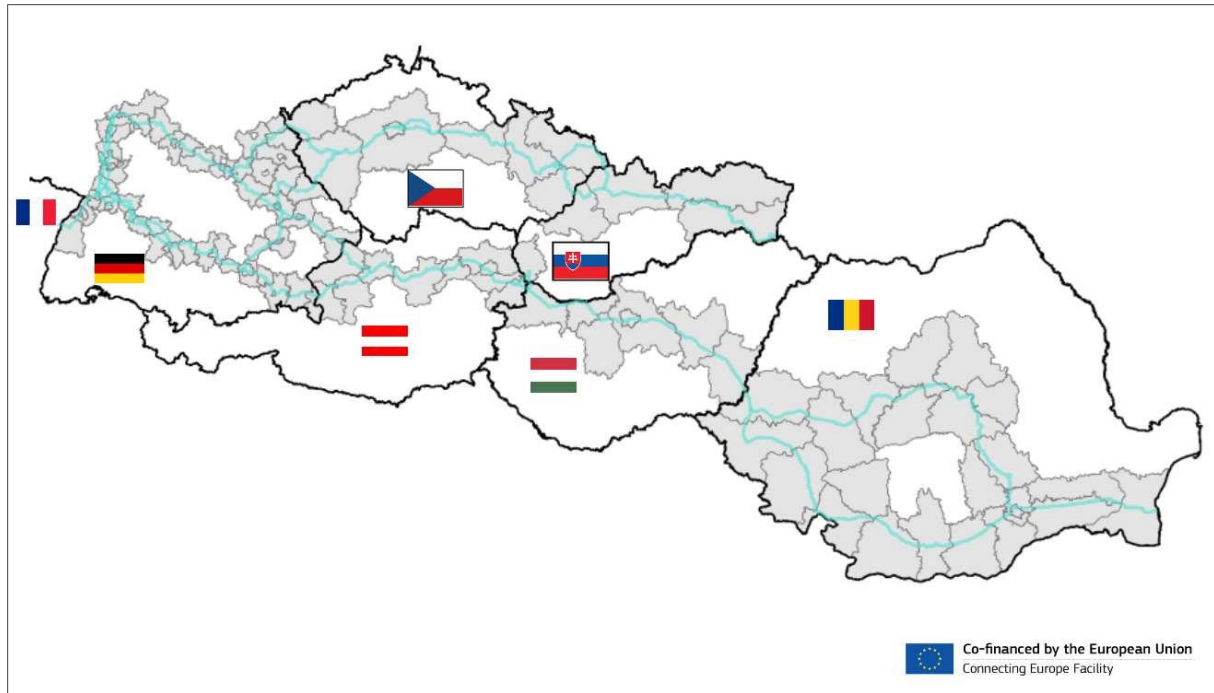


Figure 17. Countries participating in Rail Freight Corridor 9 (source: Rhine-Danube rail freight corridor)

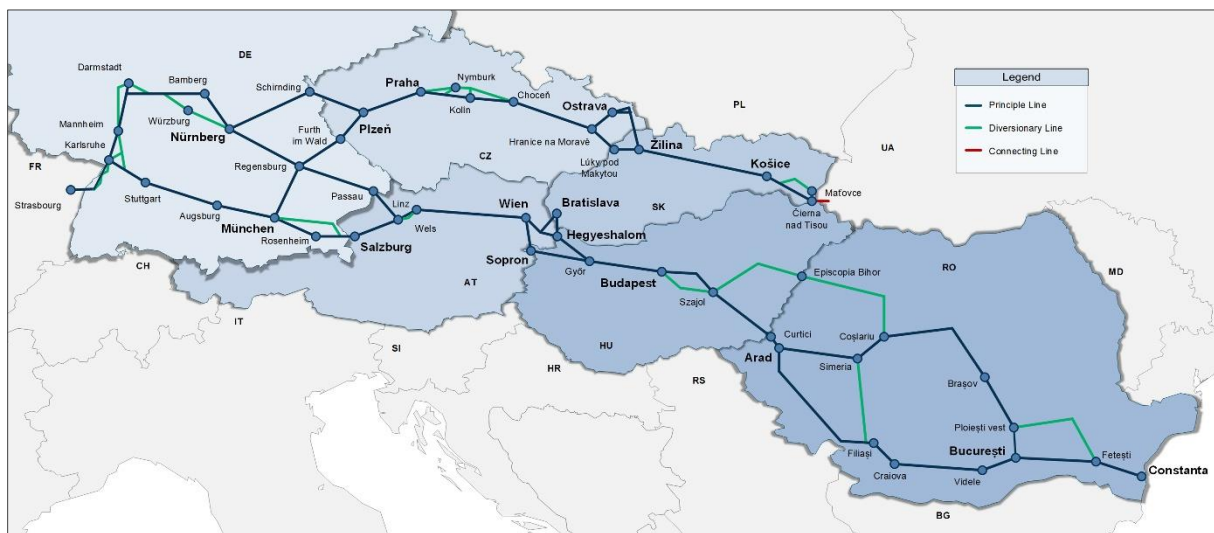


Figure 18. Route of the Rail Freight Corridor 9 (source: Rhine-Danube rail freight corridor)

So, apart from the main route following the inland waterway route, the rail freight corridor includes several route branches, such as the northern and southern route from Constanţa (RO) to Hungary, from Frankfurt am Main (DE) to Austria, and the connections from Nürnberg (DE) and München (DE)/Regensburg (DE), respectively, to the Slovak Republic (see Figure 18 and Figure 19).

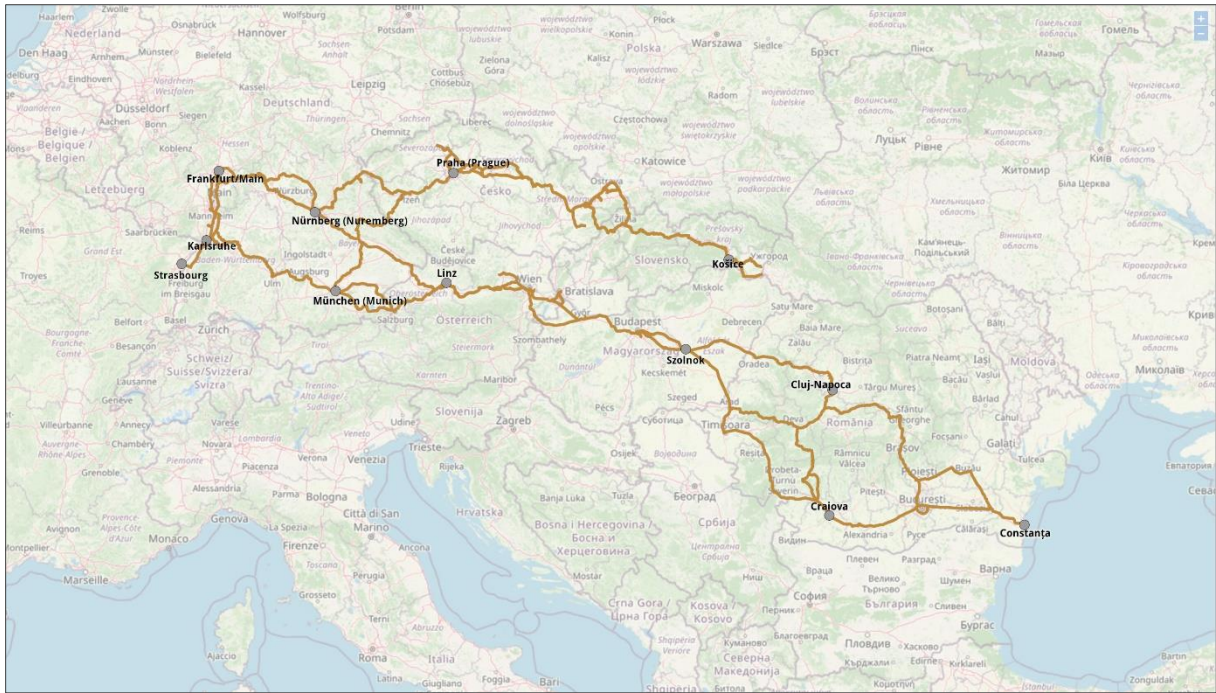


Figure 19. Route of the Rail Freight Corridor 9 along the Rhine-Danube Corridor (source: RailNet Europe – Customer Information Platform)

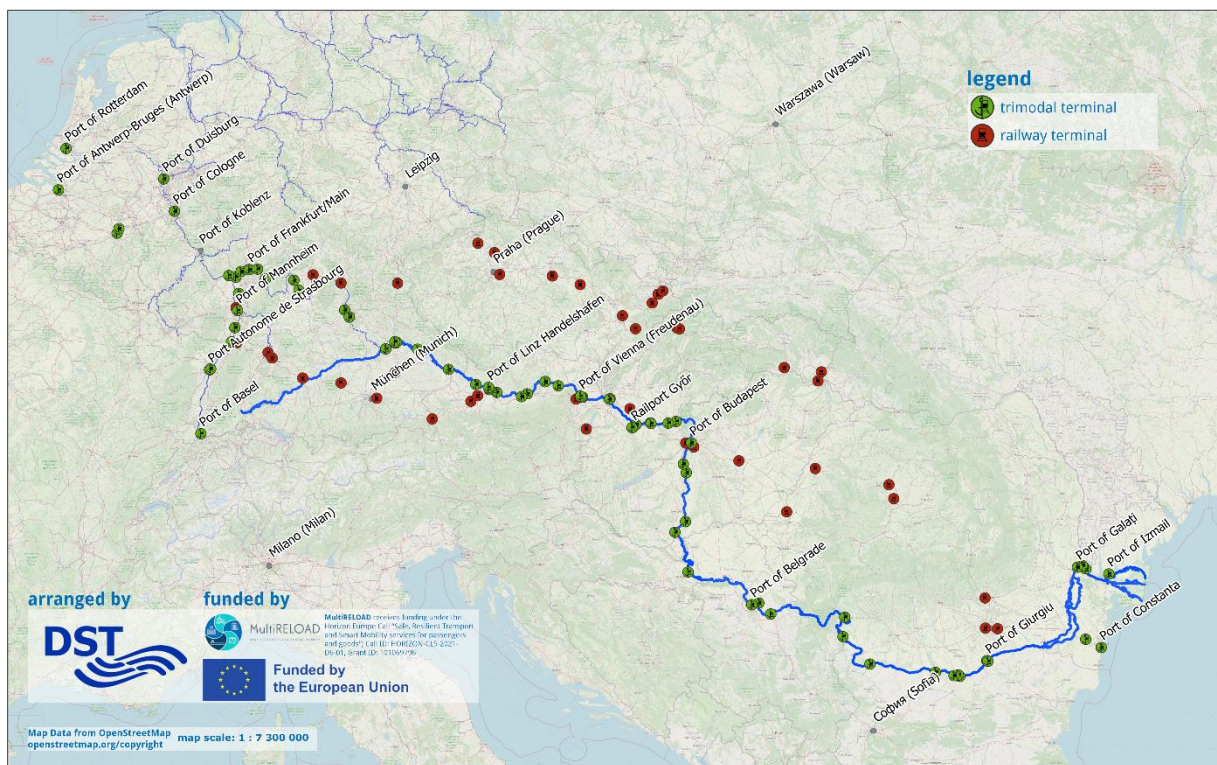


Figure 20. Rail transport terminals along Rail Freight Corridor 9 (Rhine-Danube rail freight corridor)

In total, 111 locations have been identified along the Rhine-Danube Corridor as rail terminals for potential transshipment purposes. Among these, 52 bimodal rail terminals with access to the road and rail transport network and 59 trimodal terminals with access to networks of all three landborne transport modes are represented. It is little surprising that the rail terminals along the waterway were all trimodal whereas the rail terminals without direct access to the

inland waterway were situated in the nearer or further vicinity of the waterway or even in a hinterland area with little link to the Danube or the other waterways of the Rhine-Danube Corridor. Figure 20 illustrates the geolocations of those rail terminals on a map of the concerned region. Due to the fact that the RFC9 does not fully correspond to the route of the waterways of the Corridor, some of the terminals appear off the main waterway route along Main, Rhine-Main-Danube Canal, Danube, and Danube-Black Sea Canal. In addition, the branch between southeastern Germany and the Slovak Republic adds a range of terminals which are situated far away from the Danube or the other waterways. In fact, one trimodal terminal in the Czech Republic even lies on the Elbe.

4. INFRASTRUCTURAL OVERVIEW OF THE RHINE-ALPINE AND RHINE-DANUBE CORRIDORS

The infrastructural overview of the Rhine-Alpine and Rhine-Danube Corridors mainly refers to the main bottlenecks in rail transport and inland waterway transport along the Corridors. The precise definition of a bottleneck differs between the two transport modes and are presented hereafter.

4.1. INLAND WATERWAY TRANSPORT BOTTLENECKS

Some of the inland waterway transport bottlenecks represent quasi-permanent obstacles to inland navigation whereas other occur occasionally only. In this section, the totality of bottlenecks is presented whereas only the major bottlenecks have been taken into consideration in the gap analysis.

Moreover, some bottlenecks are not geographically confined to a particular location but rather apply to a waterway stretch which is why the profiles have been prepared for each of the eight stretches.

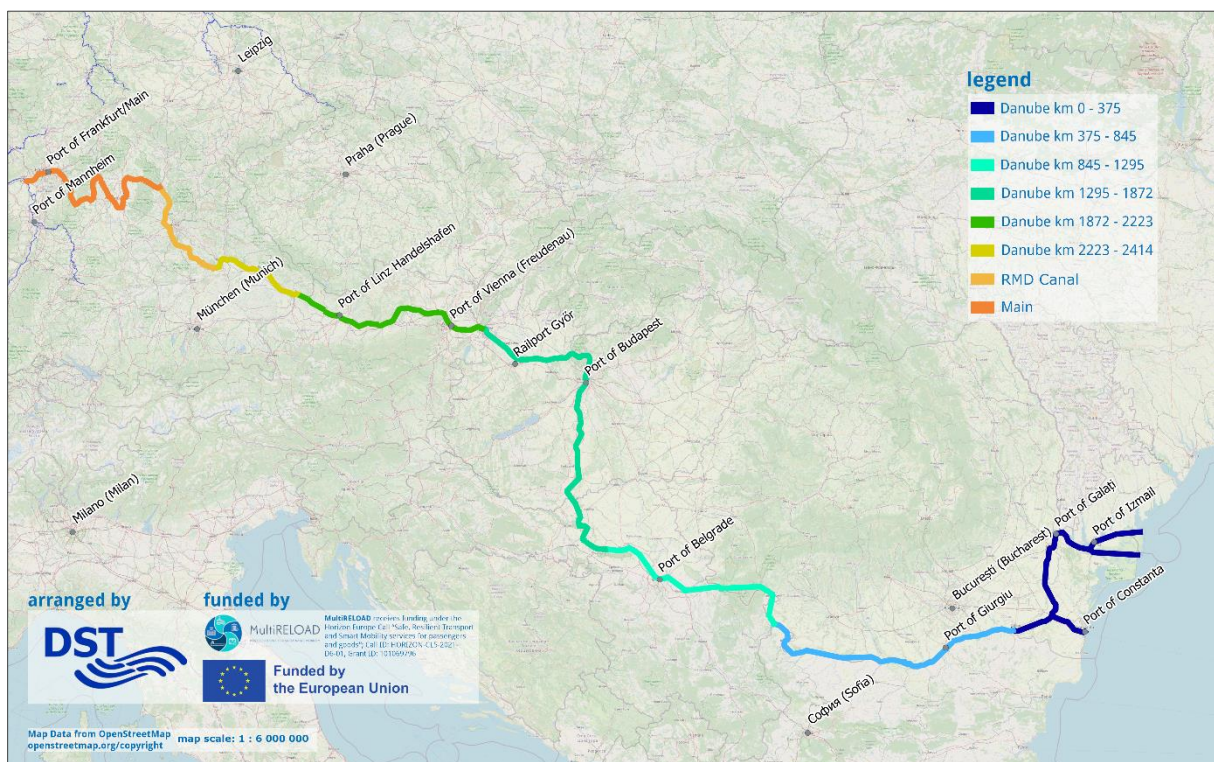


Figure 21. Waterway stretches along the Rhine-Danube Corridor

The inland waterway transport bottlenecks have been collected and aggregated per corridor stretch illustrated in Figure 21. For each of the eight waterway stretches, a profile has

been developed displaying information on the main bottleneck categories on that stretch. Each profile encompasses both stretch- and location-related bottleneck confinements of the respective waterway stretch. The individual profiles of the eight waterway stretches of the Rhine-Danube Corridor are included in the appendix (see B. Inland waterway transport bottlenecks).

The definition of a bottleneck in inland waterway transport is taken from the “[Inventory of main standards and parameters of the E waterway network](#)” published by the United Nations Economic Commission for Europe (UNECE).

According to UNECE, bottlenecks are “[t]hose sections of the European waterway network of international importance that have parameter values being substantially lower than target requirements” (UNECE, 2017, pp. 2-3). Further, UNECE differentiates between basic bottlenecks and strategic bottlenecks. Whereas basic bottlenecks are “the sections of [...] waterways whose parameters, at the present time, are not in conformity with the requirements applicable to inland waterways of international importance in accordance with the new classification of European inland waterways (class IV)” (UNECE, 2017, p. 3), strategic bottlenecks are “other sections satisfying the basic requirements of the class IV⁷ but which, nevertheless, ought to be modernized in order to improve the structure of the network or to increase the economic capacity of inland navigation traffic” (UNECE, 2017, p. 3). In essence, the differentiation factor is urgency of maintenance requirements as basic bottleneck impede current transport operation on the waterway in an economic manner, whereas strategic bottlenecks pose an obstacle to further growth of transport volume and transport performance on the waterway.

Typically, a waterway bottleneck prevents the inland vessel overcome a particular location due to a physical barrier. The barrier may refer to the clearance profile of the inland vessel, i. e., the length and beam of the inland vessel, its draught, and its clearance height. Consequently, locks, bridges, and fairway stretches are typical bottlenecks in inland waterway transport. A lock restricts the maximum length and beam of the inland vessel while a shallow-water section restricts the maximum draught of an inland vessel. Such shallow-water sections may be quasi-permanent and immovable, e. g., due to rocks, rock formations, or shipwrecks under water, but also temporary and moving in nature as in the case of sandbanks. A narrow fairway stretch does not permit overtaking or passing traffic of two inland vessels and requires one inland vessel to wait and to let the oncoming inland vessel pass or wait for a broader stretch to overtake the inland vessel in front of it. A bridge restricts the maximum height of the inland vessel including the cargo in its loading bay. Typically, this is relevant for containers transported in multiple layers and for large and heavy-load cargo.

⁷ An inland vessel of class IV, commonly designated as “Johann Welker” vessel, has a length of 85 metres, a beam of 9.50 metres, a draught of 2.50 metres, and a transport capacity of 1,350 tons.

Figure 22 shows the IWT-related bottlenecks along the Rhine-Danube Corridor. There have been 138 bottlenecks identified on the river Main, the Rhine-Main-Danube Canal, the river Danube, and the Danube-Black Sea Canal. The respective type of bottleneck, e. g., a bridge with a too low clearance height, an extreme-shallow-water section, or a narrow-fairway section, can be derived from the profiles of the individual bottlenecks in the appendix (see B. Inland waterway transport bottlenecks). It becomes evident that the majority of bottlenecks are concentrated on the German stretch of the Danube, in Austria and Hungary, and along the Romanian-Bulgarian border. As the Danube has a large section without any major obstacles to smooth navigation, skippers can navigate over up to 470.7 kilometres without any interruption of smooth operation, as in the case between Mohovo (HR), a narrow-fairway section, and Gârla Mare (RO), where an extreme-shallow-water stretch is located.

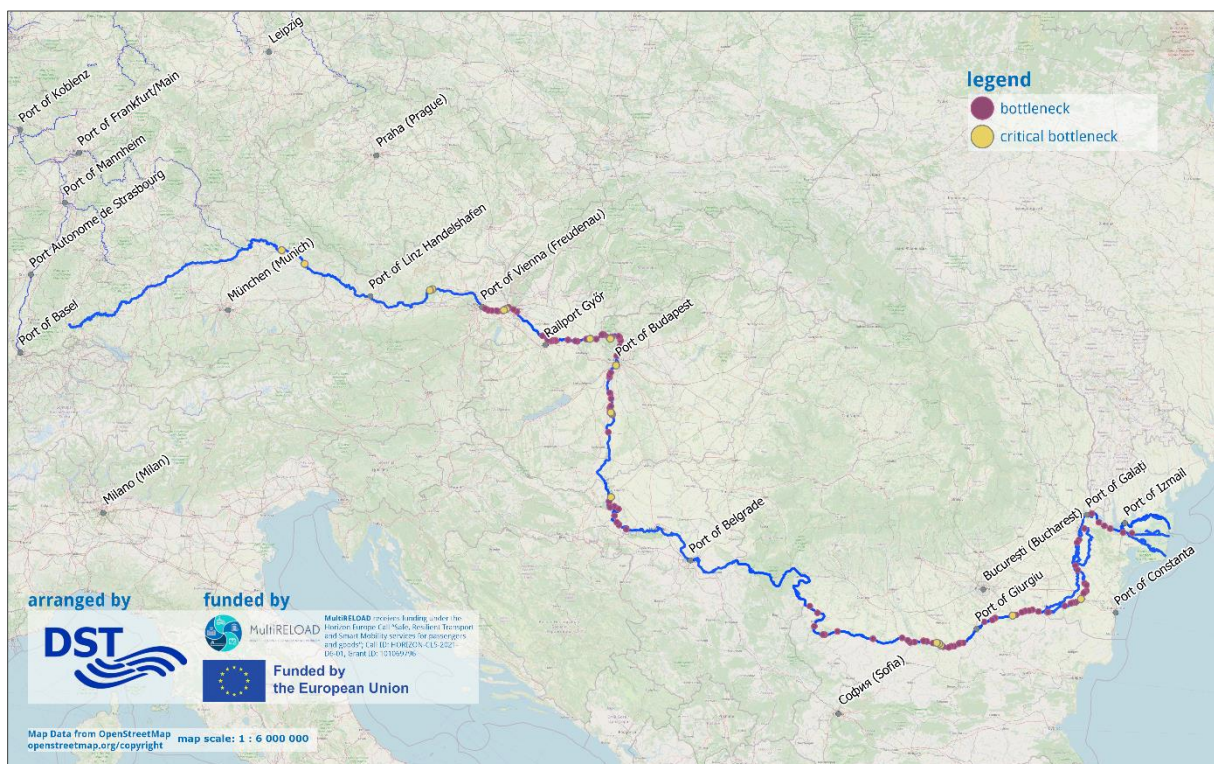


Figure 22. Bottlenecks in inland waterway transport along the Rhine-Danube Corridor

Similar to the UNECE definition of bottlenecks and strategic bottlenecks, the responsible MultiRELOAD team of researchers has decided to differentiate between all bottlenecks and the critical ones. The latter are such locations at which the operations are hampered in a considerable manner and prevent better economic performance in a (quasi-)permanent manner whereas the earlier include such locations that pose (regular) temporary obstacles as well. Eventually, 18 bottlenecks on the Corridor have been identified as critical ones (see Figure 22) all of which are extreme-shallow-water stretches on the Danube, some of them co-located with stretches with fairway widths (see Table 1). On the contrary, the list of all bottlenecks additionally includes a couple of low bridges (apart from the locks which confine the dimensions of the inland vessels navigating on the waterways). It is striking that 28 bottlenecks features both extreme-shallow-water stretches and narrow-fairway sections as they

tend to correlate with each other. Among the critical bottlenecks, merely four locations exhibit both bottleneck types at the same place which is an indicator that some bottlenecks are only temporary in nature and, thus, occur and vanish over time.

Table 1. Critical bottlenecks for IWT on the Rhine-Danube Corridor

Waterway	Waterway stretch (kilometres)	Name	Latitude	Longitude	Bottleneck type(s)	fairway depth (at ENR) (m)	fairway width (m)
Danube	309-304	Cochirleni, RO	44.296.679	27.983.897	low water stretch, narrow fairway width	1.010	114
Danube	428-425	о-в Косуй 2 (Kosui Island 2), BG	44.067.376	26.668.398	low water stretch	2.960	140
Danube	562-559	о-в Кондур (Condur Island), BG	43.657.063	25.286.213	low water stretch, narrow fairway width	2.980	200
Danube	565-563	о-в Белене (Belene Island), BG	43.679.456	25.255.740	low water stretch	2.180	120
Danube	568.2 - 567.2	Milka Island, BG	43.690.950	25.211.276	low water stretch	n/a	n/a
Danube	1403.6	Apatin, RS	45.680.923	18.948.372	low water stretch	1.400	100
Danube	1558-1557,2	Solt, HU	46.790.869	18.960.908	low water stretch, narrow fairway width	2.480	80
Danube	1559,7-1559,4	Dunaföldvár, HU	46.804.533	18.944.806	low water stretch	2.680	140
Danube	1638,6-1637,1	Budafok gázló, HU	47.420.403	19.045.358	low water stretch	2.060	60
Danube	1699,3-1697,7	Dömös alsó gázló, HU	47.765.107	18.936.371	low water stretch, narrow fairway width	1.710	120

Danube	1735,2- 1733,3	Čenkov (Nyerges), SK	47.764.674	18.544.393	narrow fairway width	1.880	60
Danube	1885 - 1883.5	Furt Hainburg, AT	48.148.707	16.935.305	low water stretch	2.120	n/a
Danube	1888.6 - 1887.6	Furt Treuschütt, AT	48.135.283	16.888.148	low water stretch	2.520	n/a
Danube	2010.2 - 2008.9	Dürnstein, AT	48.400.904	15.515.206	low water stretch	n/a	n/a
Danube	2014,6- 2013,5	Furt Weißenkirchen, AT	48.388.145	15.466.346	low water stretch	2.240	n/a
Danube	2282.5 - 2249.9	Deggendorf - Vilshofen, DE	48.723.950	13.058.163	low water stretch	n/a	n/a
Danube	2312 - 2282.5	Straubing-Sand (port) - Deggendorf, DE	48.824.421	12.809.243	low water stretch	n/a	n/a
Danube	2321.7 - 2312	Straubing (lock) - Straubing-Sand (port), DE	48.897.561	12.617.986	low water stretch	n/a	n/a

Moreover, it is striking that the critical bottlenecks are isolated locations with huge distance between one another. The maximum distance of two neighbouring critical bottlenecks is 835.5 kilometres between Apatin (RS), an extreme-shallow-water section and a narrow-fairway section, and Milka Island (BG), an extreme-shallow-water section.

4.2. RAIL TRANSPORT BOTTLENECKS

4.2.1. GENERAL

In rail transport, a bottleneck is a characteristic of the concerning railway stretch that impedes its use for cargo transport purposes. Such characteristics may refer to the tunnel profile defining the clearance profile and, thus, confining the height and width dimensions of the

freight train, the maximum load permitted and the speed limitation in force, or the maximum length of the freight train allowed.

Typically, the following 12 characteristics are considered when contemplating a railborne cargo transport in Europe:

- ETCS signalling group

The European Railway Traffic Management System (ERTMS) is the European standard for the Automatic Train Protection (ATP) and command and control systems. ERTMS consists of a European Train Control System (ETCS), Railway Mobile Radio (RMR), and Automatic Train Operation (ATO). ETCS is a train control standard based on in-cab devices capable of monitoring train movements, including stopping the train, according to the maximum speed allowed on each track section. The track description information is received by the ETCS devices installed next to the track via Eurobalises or radio (depending on the operating level) and is used to calculate and monitor the maximum speed at any moment. RMR is the European radio communications system for railway operations and is comprised of two radio systems: GSM-R and FRMCS. ATO is the third ERTMS system and automates the operation of the train up to automation level 2 (GoA2). It starts and stops the train automatically and exploits the ATP functions provided by ETCS in order to monitor train movements and speed limits on the track.

As an essential element of the Single European Railway Area, it creates a more efficient, safer, and interoperable railway system in Europe and contributes to simplifying rail operation between the Member States. The 'control, command and signalling' (CCS) system refers to the on-board and trackside structures and equipment designed to ensure the safe operation and movement of trains, directing rail traffic, and keeping trains apart from each other. This parameter includes the information whether the respective rail transport corridor stretch is equipped with an interoperable train control system (Class A), a national (legacy) system (Class B), or a combination of both systems (Class A+B). In contrast to the Class B system, the ETCS Level 2 train control system is designed for speeds above 160 km/h and enables shorter train headways and increased operational safety.

The Class A devices are the Europe-wide applicable components of the Railway Signalling directly conceived and designed in the ERTMS era (after 2000) to be able to connect the various parts of the subsystems that compose it: trackside, on-board and teleradiocommunications of the ERTMS itself. The Class B devices are the components of the CCS railway signalling designed before the ERTMS era (pre-2000) by each individual nation. Today, in order to be connected with ERTMS and to ensure homogeneity among European nations, these devices must have several interfaces with ERTMS itself and with additional systems as established by ERTMS specifications.

While some stretches are equipped with an interoperable train control system compatible with ERTMS specifications, others feature a national (legacy) system only. Still others allow the operation of both systems.

- ETCS operational level

ETCS pursues the goal of establishing a uniform standard train protection system throughout Europe and foots on both trackside equipment and on-board equipment. ETCS monitors in particular the maximum permitted speed, but also, for example, the suitability of the train for the route and compliance with special operating regulations. Instead of equipping traction units with several national safety systems in order to operate across borders, a widespread introduction of ETCS promises financial and time advantages for cross-border rail transport. Technically, ETCS is a computer-based system that controls the interaction of train operation and driver authorization in different ways depending on the functional level. In order to meet the requirements of different lines, usage profiles and railroad administrations, different ETCS levels of interaction between the line and the vehicle have been defined, ranging from level 0 to level 3. These define which trackside equipment is used, how information is sent to the vehicle and which functions are performed on the vehicle and trackside. The multitude of railway stretches across Europe feature different operational levels which again represent different forms of interaction between train driver and traffic control.

- Traction power (electrification)

This parameter presents information on the type of electric power supply to the rail transport corridor stretch. Railway electrification with alternating current (AC) at 15 kilovolts (kV) and 16.7 hertz (Hz) is used on transport railroads in many parts of Europe, including Germany, Austria, Switzerland, Sweden, and Norway. The high voltage allows for high power transfer, while the lower frequency reduces traction motor losses, which used to be a problem in former times. Railway electrification in the late 20th century typically uses systems of 25 kV, 50 Hz AC, which have become the preferred standard for new electrification, particularly in Central and Eastern Europe. On the contrary, the south of France uses direct current (DC) at 1.5 kV and Spain uses a system of 3 kV DC.

- Gauging (tunnel)

This parameter refers to the clearance gauge in which the infrastructures may offer extra space for the rolling stock and, thus, are relevant as the clearance profile of the train along the track and particularly in a tunnel. A clearance gauge (also known as structure gauge or minimum gauge) is a physical structure that defines the extent to which bridges, tunnels and other infrastructure can project into rail vehicles. It specifies the height and width of platforms, tunnels, and bridges, as well as the width of doors that allow access to a warehouse from a siding. Specifications may include the minimum distance of rail vehicles from platforms,

buildings, electrical equipment, signalling equipment, third rails, or overhead line supports. Figure 23 shows the main elements of the clearance gauge of a rail wagon.

The various gauging tracks refer to different use cases and application areas. DE3 applies to the German network including border networks whereas PTb, PTb+, and PTc represent the Portuguese network. Whereas GA, GB and GC are typical gauge reference profiles for container transport, GB1 and GB2 stand for container traffic between France and Italy. While reference profile G1 is generally used for the upper parts of interoperable international wagons in Europe except for the United Kingdom, the gauge profile G2 is generally used for wagons on certain networks in Central Europe. GHE16 and some other profiles are used by the general use railway network (REFIG) comprising the Spanish Iberian gauge railways and UIC managed by ADIF, and the metric gauge network managed by FEVE. Figure 24 shows a comparison of some of the reference profiles for tunnel gauging.

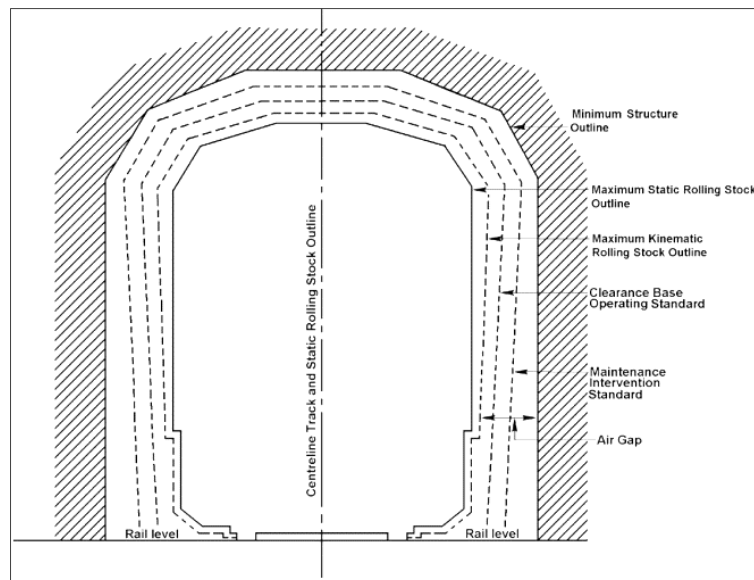


Figure 23. Structure gauge and kinematic envelope of a rail wagon (source: RailSystem.net⁸)

⁸ see <http://railsystem.net/structure-gauge-and-kinematic-envelope/>

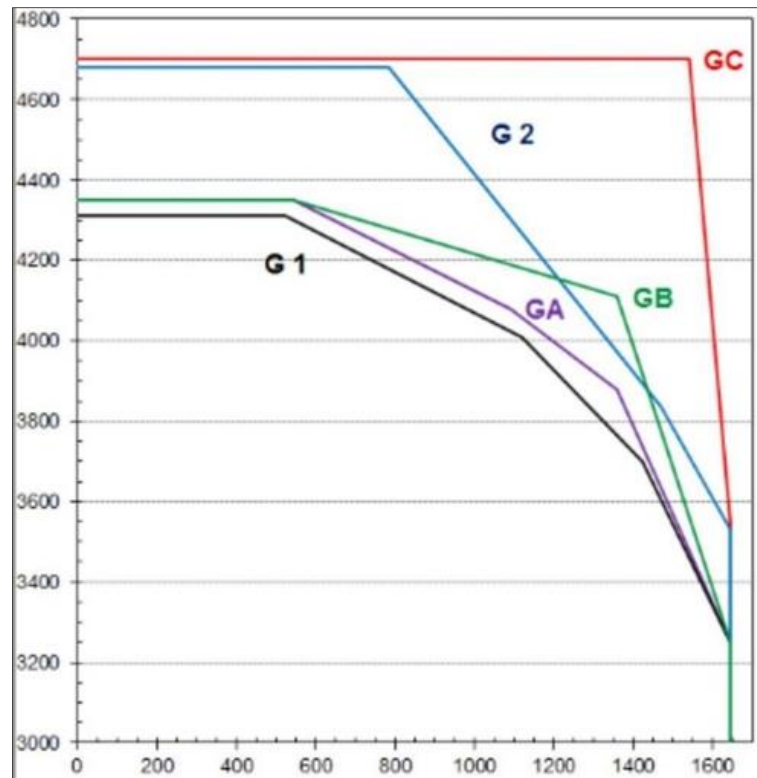


Figure 24. Representation of various reference profiles for tunnel gauging (source: DB Netze)

- Track gauge

In rail transport, track gauge is the distance between the two rails of a railway track or, more precisely, between the track-bearing elements of the track. On conventional railroads, these are the inner edges of the rail heads of a track. Sometimes the term 'gauge width' is also used, but this is not correct because the width is an outside dimension, whereas the track gauge is an inside dimension. For rail vehicles, the gauge is the track width for which the running gear is designed. The distance between the wheel flanges is called the gauge, and the required difference is called the track clearance. All vehicles on a rail network must have wheelsets that are compatible with the track gauge. Since there are many different track gauges worldwide, the differences in gauge are often an obstacle to wider operation on the rail network. However, continental Europe uses the same track gauge (of 1435 mm) apart from the Iberian Peninsula, Ireland, Finland, and a part of the Baltic States.

- Line category (axle load)

With respect to the permitted axle load on a particular rail transport corridor stretch, the information about the maximum axle load and permissible load per unit of length (e. g., metre) according to EN 15528 is referred to. The axle load and axle spacing of the vehicles defines the vertical quasi-static load input to the track. The load limits for wagons take into account their geometrical characteristics, weights per axle and weights per linear metre. They should be in accordance with the classification of lines or sections of lines, categories A, B1, B2, C2,

C3, C4, D2, D3, or D4. The maximum payload is generally not a fixed value for the distinguished wagon, but allocated on a case-by-case level by means of the intended track category (categories A, B, C, D) and the speed category (S: ≤ 100 km/h; SS: ≥ 120 km/h). These payload figures imply a homogeneous load distribution over the entire loading area.

- Maximum speed

This parameter presents the technical speed of the line applicable for freight traffic. It has to be noted though that this measure can vary for different train types and loaded cargo. The speed may vary between below 60 km/h and above 121 km/h.

- Maximum train length

This parameter shows the maximum length of a train permitted on a particular stretch. However, this may refer to a best-case scenario which may not be guaranteed under all operational conditions.

- Number of tracks

This parameter represents the number of tracks available on each stretch. The number can vary between one (single-track stretch) and three or more.

- Intermodal Freight Code

The code reveals the classification of the operability of intermodal loading units in regards of height and width. According to UIC Leaflet 596-6 and other sources, it is a code for combined transports defining the width of semi-trailers and the admissible edge heights of the loading units carried on the wagons.

In combined transport in Europe, the higher parts of most ITU violate the loading gauge when the units are loaded onto wagons. Their transportation must comply with the procedure for exceptional shipments determined in UIC Leaflet 502. In order to reliably facilitate and speed up the transport, a coding system for the various elements of combined transport ensures the safe operation of ITUs, indicates their loading dimensions, and ensures the identification of the owner. UIC Leaflet 596-6 contains the regulations for this system for ITUs, carrying wagons and lines. The system, which ensures safe operation, has been used for several decades by various companies in the combined transport chain.

- Gradient 1

This parameter reveals the maximum positive slope with reference to the direction of the corridor stretch (mostly expressed in per mille). The gradient value typically varies between 0 and 40 per mille for a rail transport stretch.

- Gradient 2

This parameter reveals the maximum positive slope with reference to the reverted direction of the corridor stretch (mostly expressed in per mille). Like Gradient 1, the value typically varies between 0 and 40 per mille for a rail transport stretch. Both gradients influence the selection of a particular locomotive which is supposed to pull the train across the different corridor stretches with possibly higher slopes.

4.2.2. THE MULTIRELOAD CASE

The following six stretches of Rhine-Danube rail freight corridor have been scrutinized with respect to the above-mentioned twelve main bottleneck categories in rail transport:

- Constanța (RO) - Szolnok (HU) (north route) via Brașov (RO), Cluj-Napoca (RO), and Oradea (RO)
- Constanța (RO) - Szolnok (HU) (south route) via București (RO), Craiova (RO), and Timișoara (RO)
- Szolnok (HU) - Linz (AT)
- Linz (AT) - Frankfurt am Main (DE) (northern route) via Nürnberg (DE)
- Linz (AT) - Frankfurt am Main (DE) (southern route) via Salzburg (AT), München (DE) and Karlsruhe (DE) (incl. Rhine-Alpine Corridor)
- Nürnberg Hbf (DE)/ Regensburg Hbf (DE) - Terminal Matovce (near Velke Kapusany) (SK)/ Cierna nad Tisou Chop (near Pribenik) (SK)

The route of the Rhine-Danube rail freight corridor is presented in Figure 19. In the following, the Rail Freight Corridor 9 (Rhine-Danube) is presented with respect to each of the twelve rail transport bottleneck categories presented earlier. The individual bottleneck profile of each corridor stretch is presented in the appendix (see D. Rail transport bottlenecks (per stretch)).

4.2.2.1. ETCS SIGNALLING GROUP

With respect to the ETCS signalling group, the dominating standard is class B (national system). However, there are several corridor stretches which allow both the interoperable class A system and the respective national system in parallel. Examples of such deviations from the standard can be found on the stretch between Bratislava (SK) and Ferencváros/Budapest (HU), Darmstadt (DE) and Mannheim (DE) as well as on several stretches between Praha (CZ) and Ostrava (CZ). There do exist a couple of stretches which allow the class A system only, such as north of Žilina (SK) and west of Wien (AT). Furthermore, there do exist short stretches without an interlocking system. Figure 25 shows the signalling groups on the multitude of rail transport corridor stretches along RFC9.

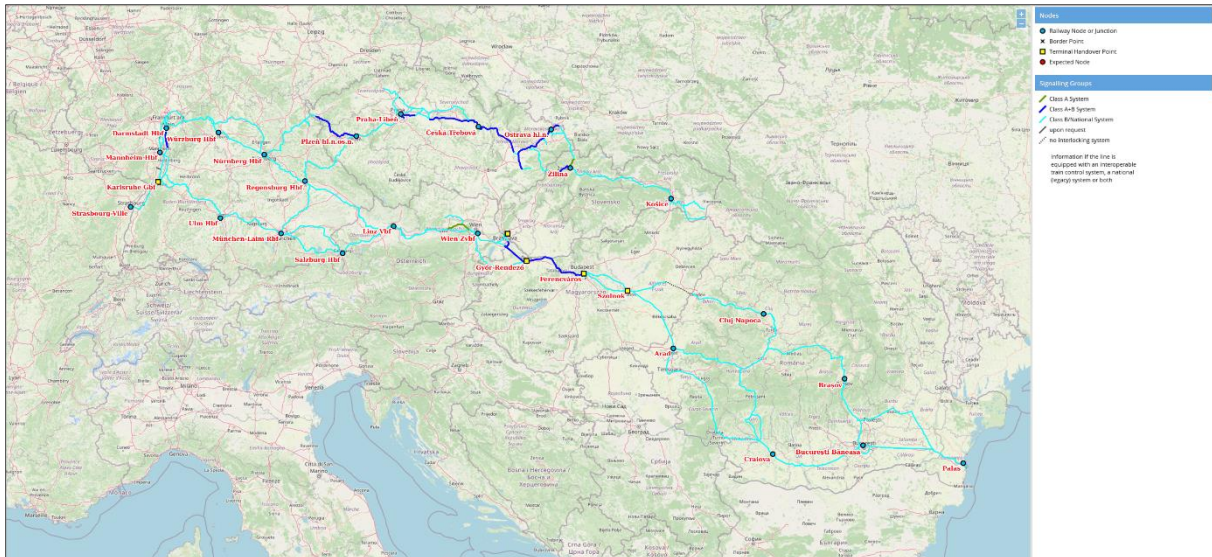


Figure 25. ETCS signalling groups (source: RailNet Europe – Customer Information Platform)

4.2.2.2. ETCS OPERATIONAL LEVEL

Information on the ETCS operational level on RFC9 is not easily available, as many sections have to be analyzed in detail and the relevant information is only available on request from the relevant authorities.

Hence, the wealth of information illustrated in Figure 26 is limited. It does show the availability of level 2 systems along the Rhine-Alpine Corridor as well as from the German-Czech border to Košice (SK). Similarly, the stretch east of Budapest (HU) to the border to Romania and from there to Arad (RO) features availability of level 2.

However, the figure also shows that there are isolated corridor stretches with level 1 availability only, e. g., a short stretch west of Wien (AT), another short stretch west of Žilina (SK), the stretches from Bratislava (SK) and the Slovakian-Hungarian border to Győr-Rendező (HU) and from there to Ferencváros/Budapest (HU), and tiny stretches on both routes across the Hungarian-Romanian border, i. e., from Szolnok (HU) to Arad (RO) and from there to Cluj-Napoca (RO).

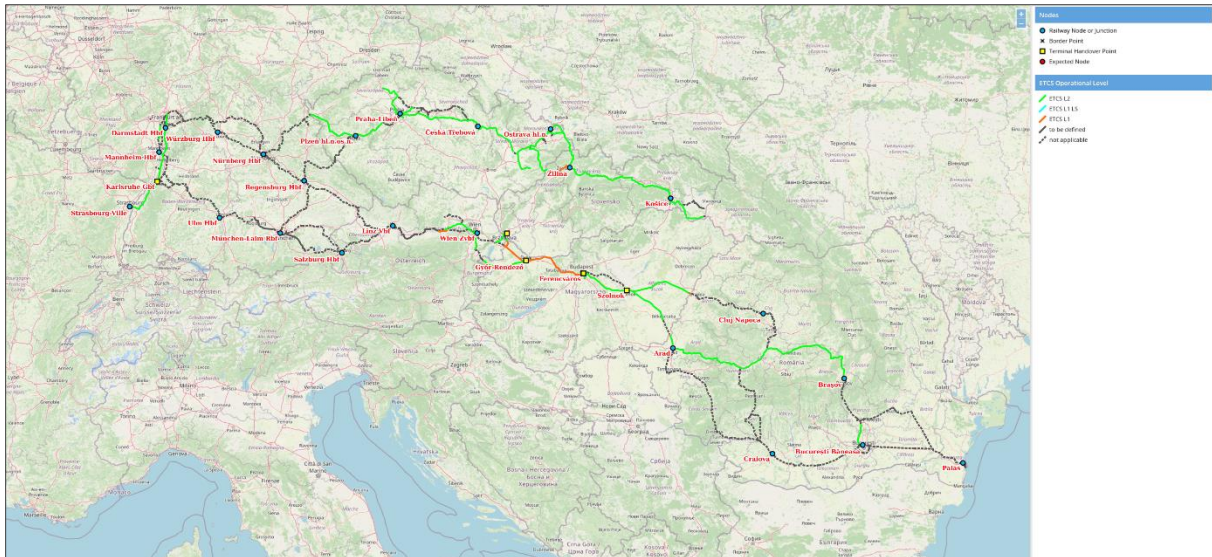


Figure 26. ETCS operational level (source: RailNet Europe – Customer Information Platform)

4.2.2.3. TRACTION POWER (ELECTRIFICATION)

With respect to electrification, RFC9 can be subdivided into three major sections. The traction power in Germany and Austria amounts to 15 kV AC whereas the traction power in Central and southeast Europe, i. e., between Hungary and Romania, is consistently 25 kV AC. In the Czech Republic and the Slovak Republic, however, the traction power lies at 3 kV DC – with isolated exceptions for a few stretches. Figure 27 illustrates the electrification along RFC9 graphically. It has to be noted that there exist stretches along the corridor which have not been electrified (yet).

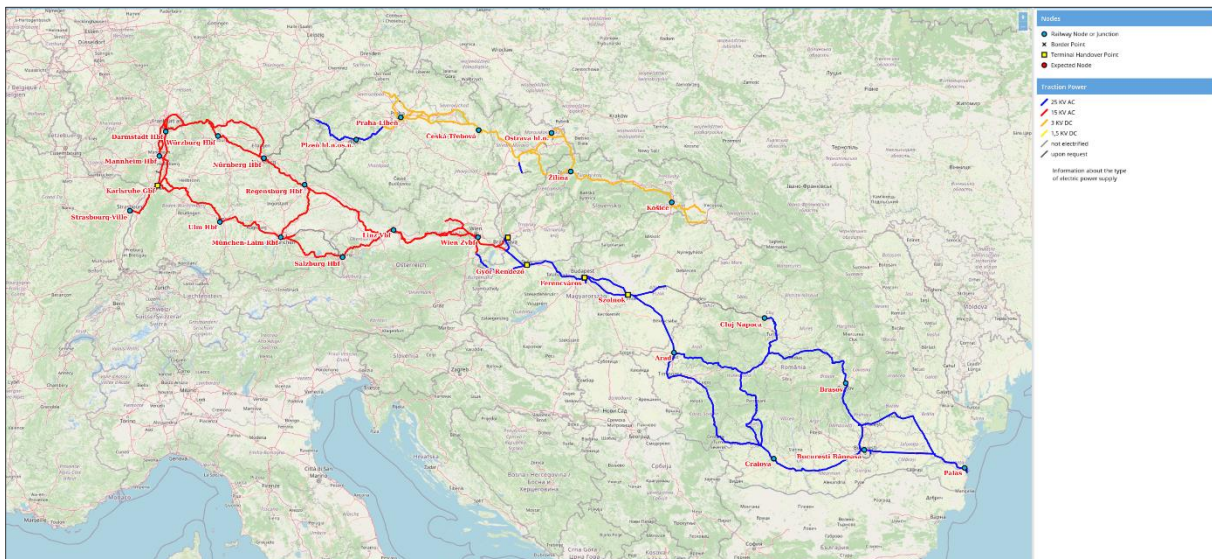


Figure 27. Electrification (traction power) (source: RailNet Europe – Customer Information Platform)

4.2.2.4. GAUGING (TUNNEL)

As to the gauging profiles, the route and the respective origin and destination have a strong impact on the applicable specifications. In Germany and Austria, the DE3 profile clearly

dominates, despite isolated stretches with G2 or GB2 profiles. Operators in the Czech Republic need to follow the GC profile specifications whereas in the Slovak Republic they need to comply with G2 and GB2 profile specifications. Austria uses DE3 on the stretch between Linz (AT) and Wien (AT) but G2 and GB2 on the stretches from the German-Austrian border crossings to Linz (AT) and from Wien (AT) to both Bratislava (SK) and to the Austrian-Hungarian border en route to Győr-Rendező (HU). Hungary and Romania have adopted the GC profile on most of their stretches. But on singular corridor stretches in western Romania, e. g., between Caransebeș (RO) and Orșova (RO) and between Șibot (RO) and Vințu de Jos (RO), the G1/GA/GB/GB1 profile specifications apply. Figure 28 gives an impression of the specifications in place on the various corridor stretches.

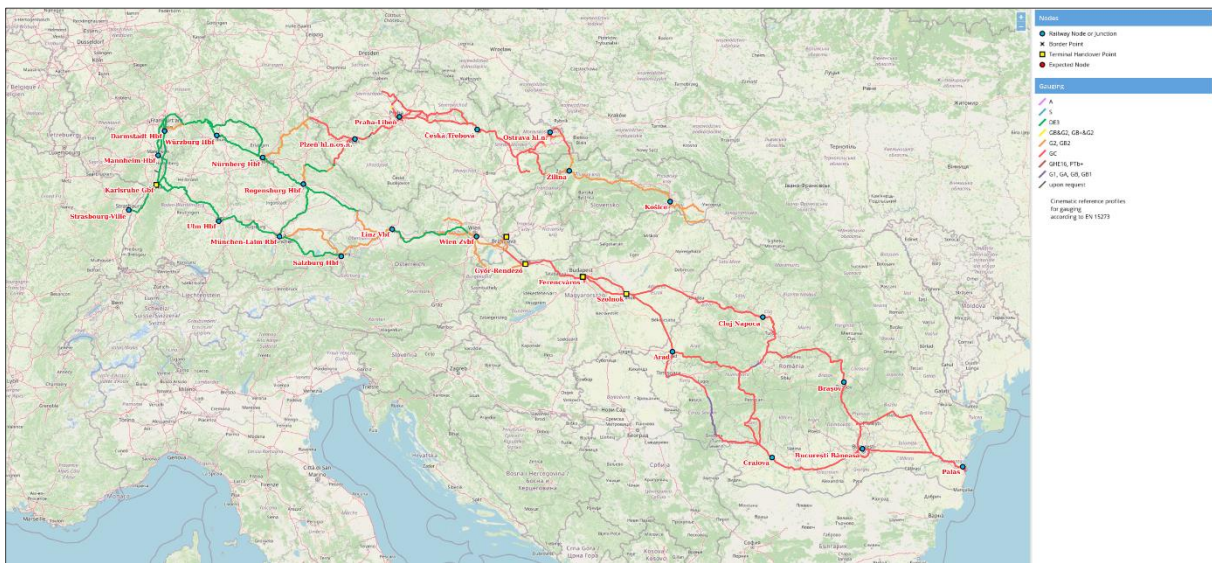


Figure 28. Tunnel gauging (source: RailNet Europe – Customer Information Platform)

4.2.2.5. TRACK GAUGE

Track gauges do not represent a bottleneck on RFC9 as the entire Corridor features 1435 mm, the standard in most of continental Europe. Accordingly, Figure 29 shows a homogeneous picture of the track gauge specification of the Corridor.

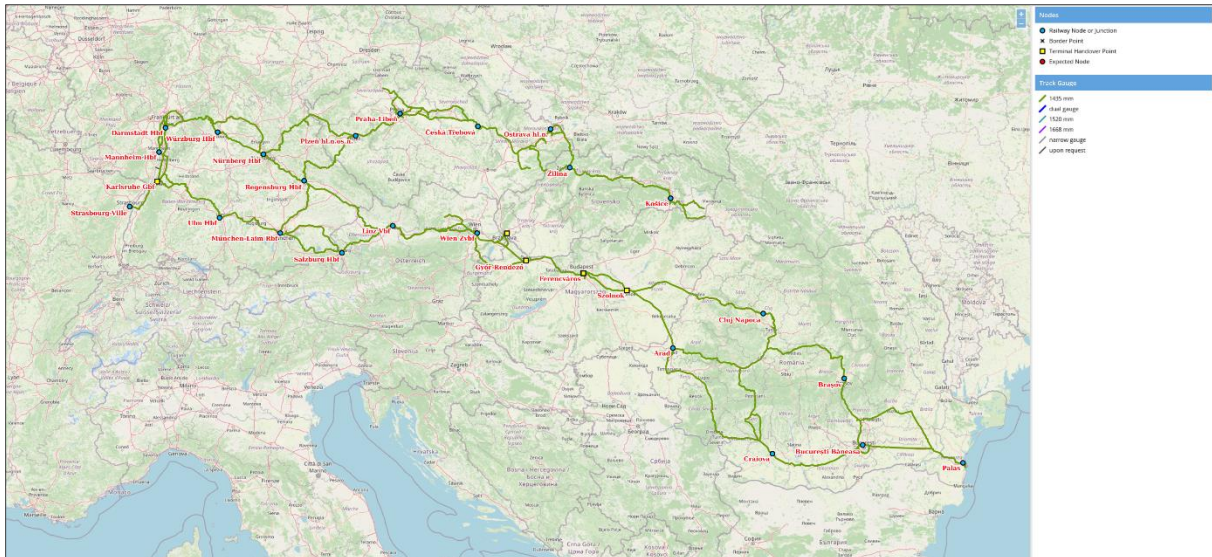
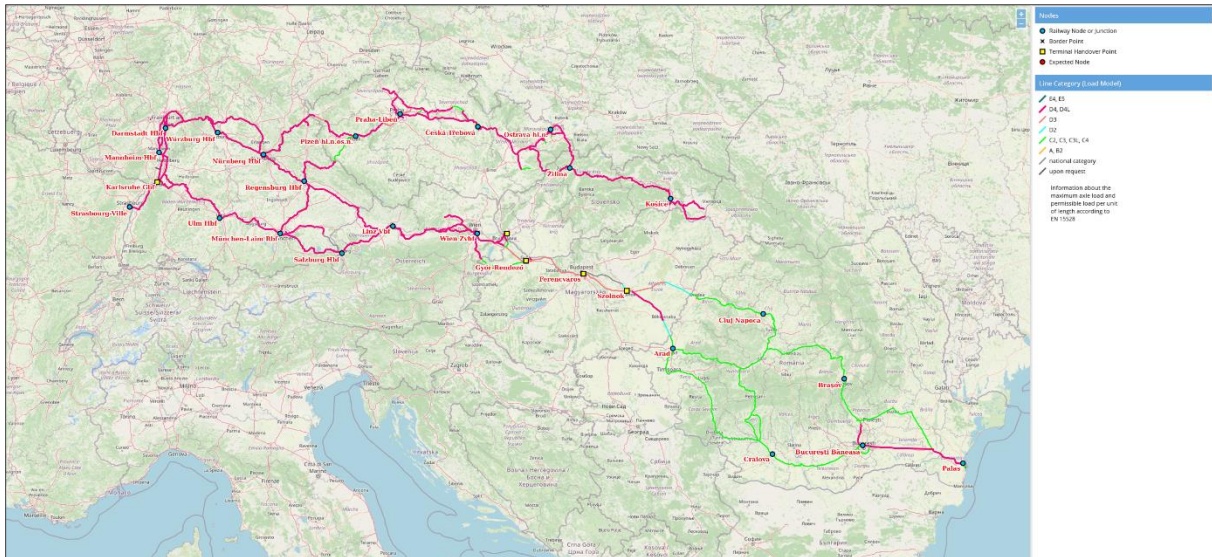


Figure 29. Track gauges on RFC9 (source: RailNet Europe – Customer Information Platform)

4.2.2.6. LINE CATEGORY (AXLE LOAD)

As can be seen in Figure 30, the vast majority of corridor stretches of RFC 9 belongs to line category D4 and D4L in terms of line category regarding axle load. The line category D4 and D4L equals 22.5 tonnes mass per axle and 8.0 tonnes per metre. This holds true for Germany, Austria, and - with singular exceptions for line category C2, C3, C3L, and C4 allowing an axle load of 20 tonnes per axle and a load of 6.4 tonnes to 8.0 tonnes per metre - in Hungary. Between Győr (HU) and Szolnok (HU) and Püspökladány (HU), respectively, the Hungarian corridor stretches belong to line category D3, representing 22.5 tonnes mass per axle and 7.2 tonnes per metre. On the two connections to the Romanian border on Hungarian territory, the stretches belong to line category D2 with 22.5 tonnes mass per axle and 6.4 tonnes per metre. On the Romanian side of the border, the stretches are continued as line category C2, C3, C3L, and C4 which is the predominant case for entire Romania except the stretch from Ploiești Vest (RO) via București (RO) to Constanța (RO) belonging to line category D4 and D4L.



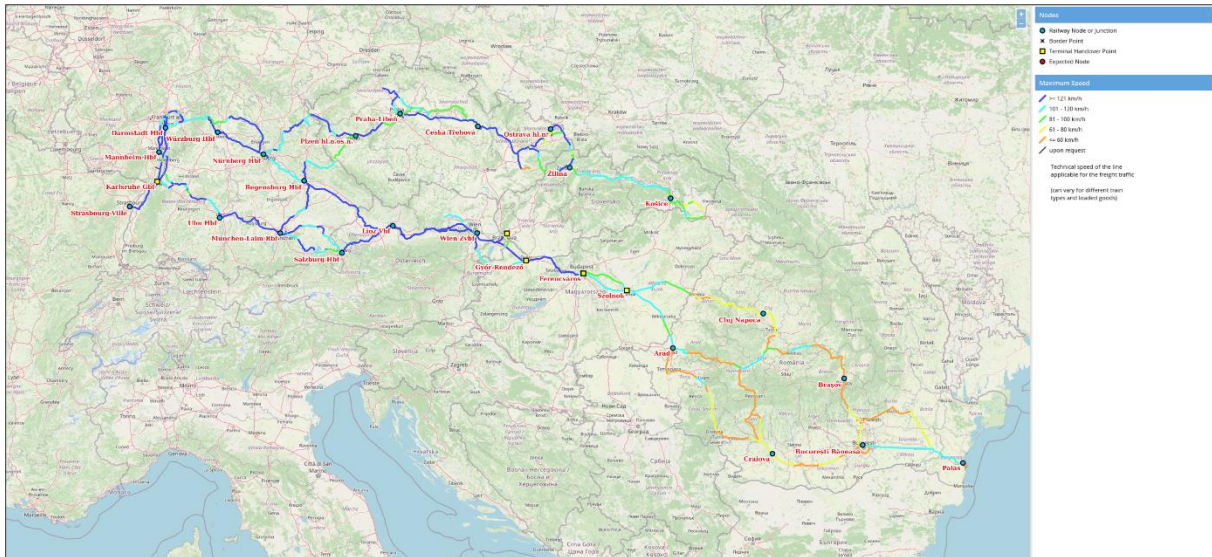


Figure 31. Maximum speed on RFC9 (source: RailNet Europe – Customer Information Platform)

4.2.2.8. MAXIMUM TRAIN LENGTH

The maximum train length allowed on RFC9 is mainly 700 to 740 or 750 metres throughout the corridor (see Figure 32). From the German-Austrian border to Constanța (RO), it is possible to transport cargo with this maximum train length. However, in Germany, the Czech Republic, and the Slovak Republic, hardly any transport relation between two metropolises or major urban agglomerations can be transited with a train length of 700 to 740 or 750 metres consistently. In Germany, several stretches feature no public information on the maximum train length allowed, whereas the maximum train length in the Czech Republic can amount to 550 to 599 metres, 600 to 649 metres, 650 to 699 metres, and maximum 700 to 740 or 750 metres as the main length category. In the Slovak Republic, the connections from the Czech-Slovak border crossings allow maximum train lengths of 600 to 649 metres and 650 to 699 metres, respectively, whereas the main corridor allows 650 to 699 metres of maximum train length. Only a few corridor stretches west of Žilina (SK) and southeast of Košice (SK) allow 700 to 740 or 750 metres of train length.

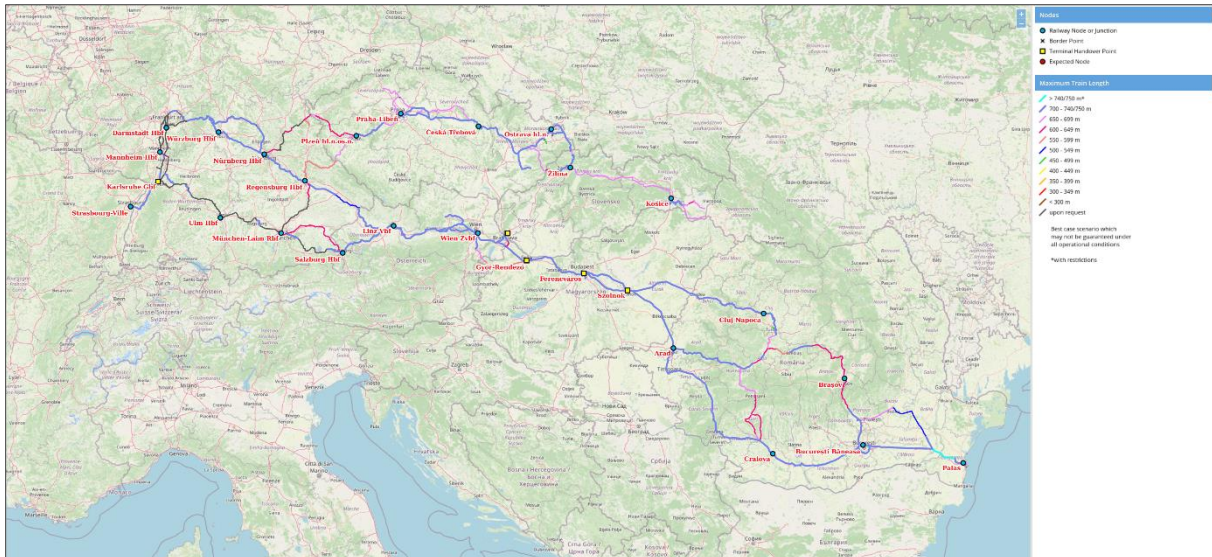


Figure 32. Maximum train length on RFC9 (source: RailNet Europe – Customer Information Platform)

4.2.2.9. NUMBER OF TRACKS

As can be seen in Figure 33, the number of tracks available on a particular corridor stretch of RFC9 does not pose a bottleneck. The largest part of the network consists of double-track stretches from Frankfurt am Main (DE) to Constanța (RO). Some shorter stretches even feature three or more tracks available. Only a couple of corridor stretches, such as the ones near Salzburg (AT), Bratislava (SK), Győr (HU), Plzeň (CZ), Arad (RO) and Cluj-Napoca (RO), are single-tracks stretches on which waiting times may occur due to occupancy of the stretch.

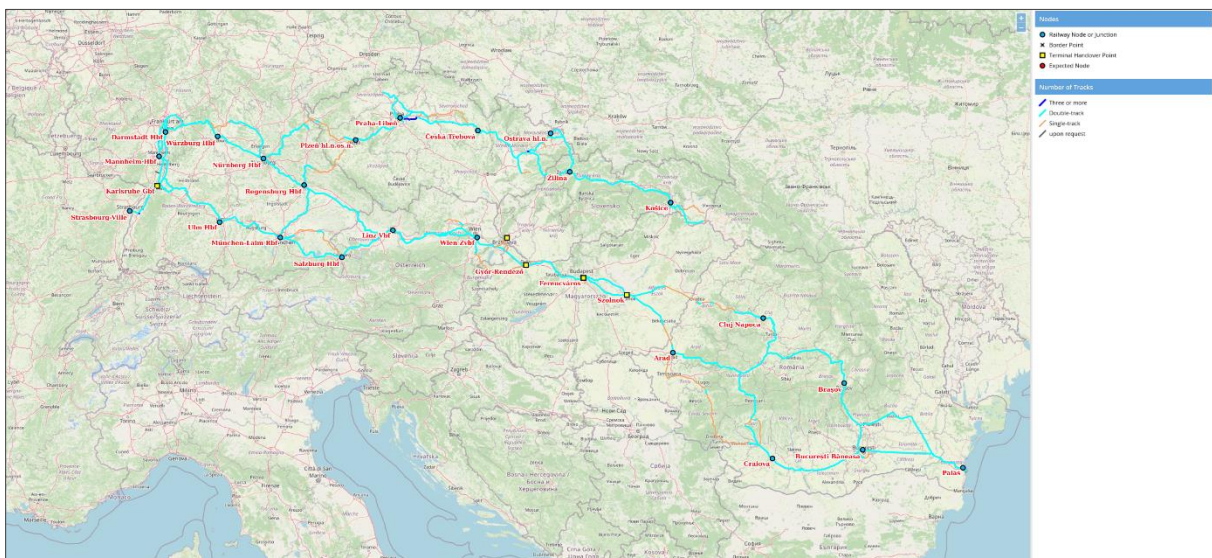


Figure 33. Number of tracks on RFC9 (source: RailNet Europe – Customer Information Platform)

4.2.2.10. INTERMODAL FREIGHT CODE

Figure 34 shows the applicability of Intermodal Freight Codes along the Rhine-Danube rail freight corridor with a clear dominance of P/C 78-80/400-410 across Germany, Austria, and the Czech Republic whereas Hungary and the Slovak Republic exhibit P/C 70-72/390-400

[illegible]

4.2.2.11. GRADIENTS 1 AND 2

est is direction of the line segment $\overrightarrow{PQ}$.

The map displays the maximum positive slope with reference to the direction of the flow segments, expressed in % across Europe. The legend indicates the following categories:

- Route type or junction
- Border line
- Terrestrial Mammals Point
- Expected Route

Gradient (D): 1

- Gradient < 5
- 5 < Gradient < 10
- 10 < Gradient < 15
- 15 < Gradient < 20
- 20 < Gradient < 25
- 25 < Gradient < 30
- 30 < Gradient < 35
- Gradient > 35
- Open region

Information about the maximum positive slope with reference to the direction of the flow segments, expressed in %

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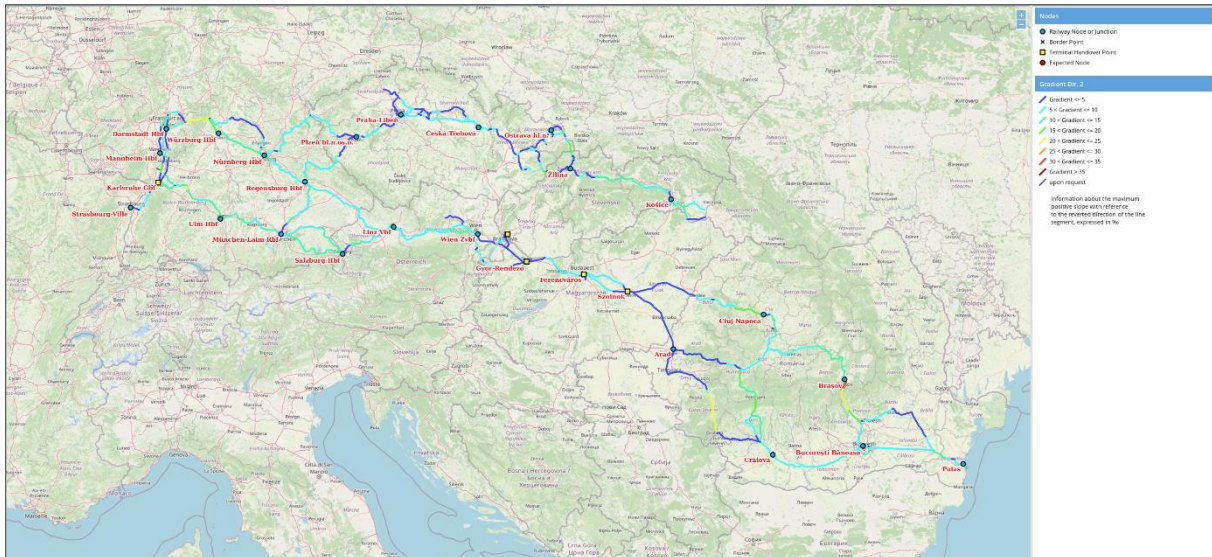


Figure 36. Slope / Gradient 2 (in reverted direction of the line segment) on RFC9 (source: RailNet Europe – Customer Information Platform)

With respect to in reverted direction of the line segment displayed in Figure 36 for each corridor stretch, the slope corresponds to the values from preceding Figure 35. Only in very isolated cases, there is a change of slope due to alternative courses. In one rare case south of Braşov (RO), the corridor stretch exhibits a slope of a gradient between 30 and 35 per mille for a short distance. However, none of the corridor stretches poses a significant challenge to conventional rail transport operation.

5. GAP ANALYSIS OF MULTIMODAL TRANSPORT ALONG THE RHINE-ALPINE AND RHINE-DANUBE CORRIDORS

The gap analysis encompasses representative transport relations from the demonstrators A1 and A2 and focuses on the transport nodes for the aspects related to vehicle and cargo handling (and related administrative procedures) and on the transport corridors for operational barriers to transit. By means of the gap analysis, the feasibility of the transports envisioned in the respective demonstrators A1 and A2 is ensured.

5.1. DEMONSTRATOR A1: MANNHEIM- GYŐR

Demonstrator A1 is entitled “Flexible, high volume, fully automated multi-modal shift from road to rail” and belongs to the Innovation Area “Smart Multimodal Logistics” within the [MultiRELOAD](#) project.

The innovation in this A1 demonstrator lies in the high-volume rail container designed for combined rail/road transportation of unitized cargo, the so-called ‘CBoXX’, as opposed to the traditional approach of LCL and LTL freight transportation via long-haul trucks and limited or virtually no use rail transport for the very same purpose.

With the help of the demonstrator A1, the prototype of the CBoXX is to be validated and tested by major LTL forwards by means of first-round trips by shifting volumes to CBoXX transport on a test basis. In addition, a profound market acceptance study involving major LCL forwarders is conducted in order to ensure successful market uptake. The study is also to reveal and assess which routes appear particularly useful and promising for the CBoXX.

The A1 demonstration encompasses the tasks of testing the feasibility and viability of the CBoXX transport on the existing CargoBeamer terminal network (encompassing routes from Domodossola (IT) to Kaldenkirchen (DE), Domodossola (IT) to Calais (FR), Duisburg (DE) to Poznan (PL), Perpignan (FR) to Calais (FR), Perpignan (FR) to Ashford (GB), and – perspective as the service is being planned to be deployed – Mannheim (DE) to Hegyeshalom (HU) near Győr (HU)) and providing evidence for the technically sound and economically viable transport of LCL and LTL by rail. As the focus of the present deliverable and the pertaining analysis has been laid on the Rhine-Danube Corridor, the responsible [MultiRELOAD](#) team of researchers has selected the route from Mannheim (DE) to Győr (HU) via Nickelsdorf (AT) and Hegyeshalom (HU) as the underlying demonstration route to analyse. Figure 37 shows the route on the map while Figure 38 shows its position within RFC9 (Rhine-Danube).

Major impacts expected from the demonstration A1 are enhanced operational efficiency (esp. efficient transshipment), the automation, digitalisation, and standardisation of ITUs, and the effective modal shift from road to rail.

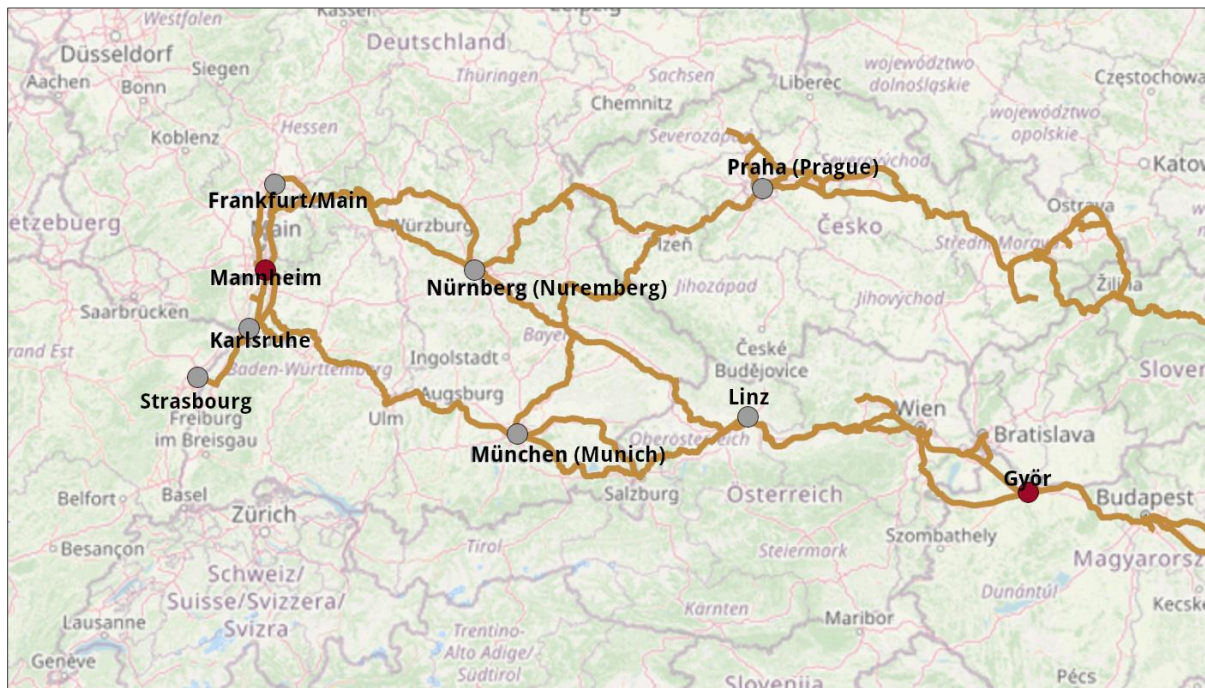


Figure 37. Demo A1 from the rail terminal of Mannheim (DE) to the rail terminal of Győr (HU) (source: RailNet Europe – Customer Information Platform)

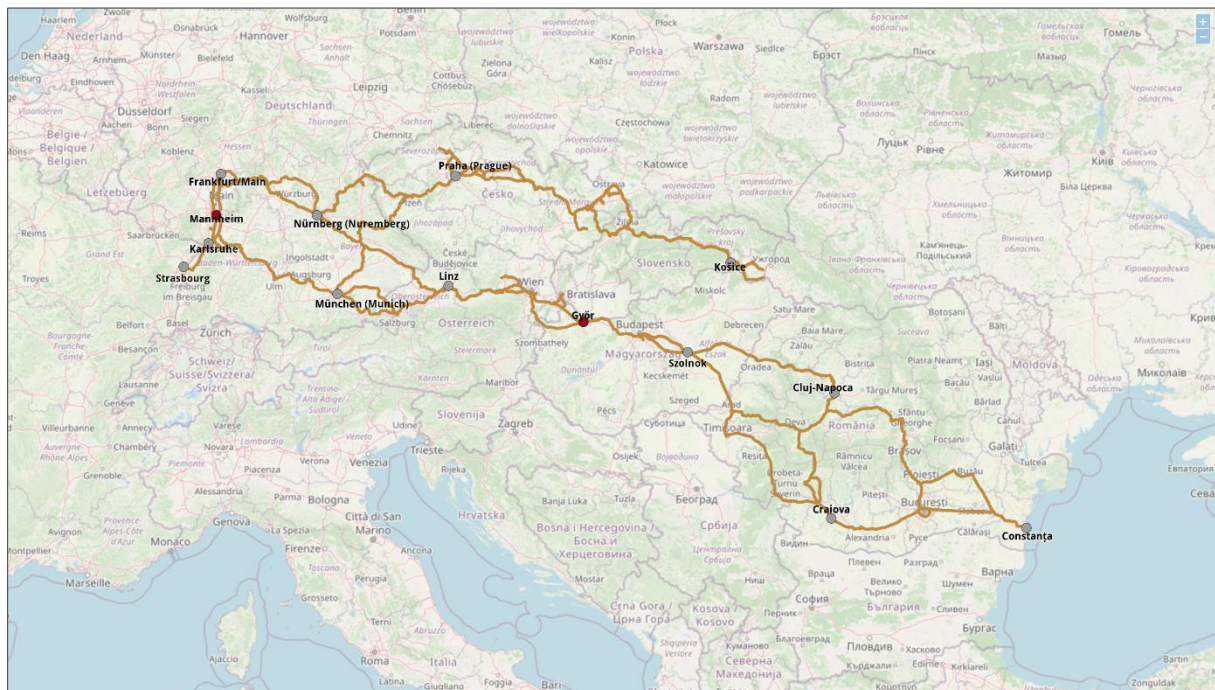


Figure 38. The route of Demo A1 in the the Rail Freight Corridor 9 (Rhine-Danube) (source: RailNet Europe – Customer Information Platform)

The route starts in Mannheim (DE) and leads to Karlsruhe (DE) as a first major waypoint. Alternatively, the route could pass Bruchsal (DE) as well but due to a minor restriction on the maximum speed, the option was omitted. From Karlsruhe (DE), the route passes Kornwestheim (DE), Ulm (DE), Augsburg (DE), and München (DE) before taking the south route via Rosenheim (DE) and Traunstein (DE) to Salzburg (AT). From Salzburg (AT), the route passes Linz (AT) en route to Wien (AT). From Wien (AT), the final stretch passes the Austrian-Hungarian border at Nickelsdorf (AT) and Hegyeshalom (HU) before finally leading to Győr-Rendező (HU).

Both at the port of Mannheim (DE) and Győr-Gönyű (HU), access to the railway network is given, and container transshipment is possible as both of them encompass trimodal terminals. Mannheim (DE) belongs to the busiest inland ports of Germany and offers plenty of rail connections to many destinations throughout Europe. The port of Győr-Gönyű (HU) can be approached via railway although there exist dedicated rail terminals in the same city. The service portfolios of the ports of Mannheim (DE) and Győr-Gönyű (HU) are displayed in Table 2 and Table 3.

Table 2. Profile of the trimodal terminal at the port of Mannheim (DE)

Port of Mannheim (DE)	
Waterway	Rhine
River km	420, right
Latitude	49.494017
Longitude	8.448720
General significance	n/a
Terminal operators	Contargo
Employment effects	n/a
Cargo types	Container, Dry bulk, Liquid bulk
Cargo transshipment volumes (t and TEU)	6,898,862 t 172,697 t (agricultural, forestry) 1,581,345 t (food, fodder) 2,099,514 t (mineral fuels) 2,248 t (fertilizers) 508,758 t (crude oil, gases) 513,058 t (ores, metal waste) 307,206 t (iron, steel, non-ferrous metals) 661,987 t (stones and earths) 771,434 t (chemical products) 653,304 t (vehicles, machinery)
Handling activities	Transshipment: Container, dry bulk, liquid bulk Container maintenance / repair Reefer connection
Port area	3,420 km ²
Storage areas	n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a

	RoRo access: true
Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: 4 Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Motorways A 6 (E 50), A 61 (E 31), A 67 (E 451), A 650, A 656, A 659
Transshipment facilities road	1x side loader for trucks 1x tilt chassis
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 4x CT Mannheim Container infrastructure: Yes Number of cranes (gantry, swing): 59 (25 gantry; 24 loading/crane bridges; 10 heavy duty) 4x container gantry (CT Mannheim) Number of reach stackers: 210 – X, 4x (CT Mannheim) Ro-Ro Ramp access available: Yes
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Upper Rhine Ports; EFIP; BÖB

Table 3. Profile of the trimodal terminal at the port of Győr-Gönyű (HU)

Port of Győr-Gönyű (HU)	
Waterway	Danube
River km	1794, right
Latitude	47.732249
Longitude	17.768720
General significance	The port is the greatest intermodal logistic centre of the West Transdanubian region
Terminal operators	Győr-Gönyű Kikötő Zrt.
Employment effects	n/a
Cargo types	Container, Break bulk, Dry bulk, Heavy lift
Cargo transshipment volumes (t and TEU)	225,420 t in 2019
Handling activities	n/a
Port area	1,100,000 m ²
Storage areas	Open storage: 68,000 m ²

	Covered storage: 6,200 m ² Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: 4 Reach stacker: n/a RoRo access: true
Waterway connection	No. port basins: 1 No. of berths: n/a Largest berth: n/a Quay length: 690 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 6.2 km Weekly rail departures: n/a
Road connection	Directly connected to European Highway E60 leading from Brest to Constanta, and to Highway System E75 Helsinki-Athens and Ystad-Rijeka
Transshipment facilities road	n/a
Transshipment facilities rail	Rail siding with length of 6.2 km
Transshipment facilities IWT	Number of anchoring places: 5 ship stands 4 mobile cranes available with max lifting capacity 45 t. Ro-Ro Ramp access available for cars and trucks with sloping of 11%, width of 25 m and load bearing of 65 t.
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Apart from the terminals representing the origin and the destination of the demonstration, the transport route involved is to be scrutinized with respect to its major bottlenecks. Therefore, the route is checked regarding the twelve bottleneck categories in rail transport in the following.

With respect to the ETCS signalling group on the described transport relation of the demonstrator A1, the entire stretch is equipped with a (national) class B system. Only from the Austrian-Hungarian border at Nickelsdorf (AT) and Hegyeshalom (HU) to Győr-Rendező (HU), the stretch allows both the interoperable class A and the national class B systems in parallel.

As to the ETCS operational level, the wealth of information is poor but the few stretches that do exhibit public information confirm availability of ETCS Level 2 from Mannheim (DE) to the Austrian-Hungarian border at Nickelsdorf (AT) and Hegyeshalom (HU). From there to Győr-Rendező (HU), however, there is only ETCS Level 1 available.

With respect to the electrification of the demonstration route, the required traction power amounts to 15 kV AC for the German and Austrian stretches and 25 kV AC for the Hungarian ones. It has to be noted that a stop at the border and a change of locomotives and staff are required which may add at least another 10 to 15 minutes to the travel time.⁹

In terms of tunnel gauging, the stretches between Mannheim (DE) and Salzburg (AT) allow the reference profile DE3, the national standard in Germany, whereas the following stretch on Austrian territory, i. e., between Salzburg (AT) and Linz (AT) foresees the reference profiles G2 and GB2. From Linz (AT) to Wien (AT), two alternative routes with either option available can be used. From Wien (AT) to Nickelsdorf (AT) and Hegyeshalom (HU) at the Austrian-Hungarian border, the profiles G2 and GB2 are to be complied with whereas the residual stretch to Győr-Rendező (HU) requires the GC reference profile. The CBoXX foresees the G1 profile and, thus, complies with the above-mentioned profiles along the demonstration route.

The entire transport route between Mannheim (DE) and Győr-Rendező (HU) foots on a universally valid track gauge of 1435 mm, which is the standard track gauge for most of continental Europe.

In terms of line category regarding axle load, the entire stretch from Mannheim (DE) to Nickelsdorf (AT) and Hegyeshalom (HU) allows the D4 and D4L category which equals 22.5 tonnes mass per axle and 8.0 tonnes per metre. From the Austrian-Hungarian border to Győr-Rendező (HU), the applicable line category is represented as a national category (without any further information publicly available in English language).

The maximum speed permitted between Mannheim (DE) and Győr-Rendező (HU) varies between the different corridor stretches. While most of them allow maximum velocities of above 121 kmph, some allow considerably less. For instance, passing the city centres of Karlsruhe (DE), München (DE), and Wien (AT) is possible at a maximum speed of below 60 kmph only. In the area near the German-Austrian border, i. e., between München (DE) and Salzburg (AT), the maximum velocities allowed are reduced to 100 kmph and 120 kmph, respectively.

The maximum train length for the demonstration route amounts to 700 to 740 or 750 metres for the most part of the route. However, information about a large part of the German stretches is available upon request only. Depending on the precise location in Mannheim (DE), from where the train is supposed to commence its journey, there exist length restrictions of maximum 600 to 649 metres. Same applies to a small stretch in the city of München (DE).

The number of tracks available on the demonstration route amounts to two throughout the entire transport relation between Mannheim (DE) and Győr-Rendező (HU). There are only single-track stretches which might lead to additional waiting times due to occupancy of the stretch, namely on a short stretch in the western part of the city of München (DE).

⁹ see <https://www.railjournal.com/policy/era-identifies-obstacles-to-better-cross-border-services/>

With respect to the Intermodal Freight Code, the standard P/C 78-80/400-410 is applicable throughout the entire demonstration route between Mannheim (DE) and Győr-Rendező (HU). Hence, the route characteristics do not pose an obstacle to the A1 demonstration as the CBoXX complies with the P/C 78-80/400-410 standard as it follows the P400 profile.

Concerning the gradient of the corridor stretches on the demonstration route, the fact that a large portion of the route is situated in the Alpine foreland and in the Alpine region itself manifests itself in the gradient values of the respective stretches. Both along the Rhine-Alpine Corridor and between Wien (AT) and Győr (HU), the slope is even below five per mille. Between Karlsruhe (DE) and Wien (AT), the slope alternates between five to ten per mille, ten to 15 per mille, and 15 to 20 per mille, respectively. However, the gradient does not exceed a slope of 20 per mille - except for a short stretch north of Kornwestheim (DE) near Stuttgart (DE) where the slope can increase to 20 to 25 per mille.

5.2. DEMONSTRATOR A2: WIEN – GIURGIU – GALAȚI

5.2.1. TECHNOLOGICAL AND INFRASTRUCTURAL CONSTRAINTS

Demonstrator A2 is entitled “Transporting bulk cargo in multimodal containers” and belongs to the Innovation Area “Smart Multimodal Logistics” within the [MultiRELOAD](#) project.

The innovation in this A2 demonstrator lies in the multimodal transport of bulk cargo on the Danube with the help of ITU as opposed to traditional bulk cargo transports in bulk carriers on the Danube without any viable business models for containerized bulk transport.

With the help of the demonstrator A2, a prototypical operation of the waterborne bulk container transport service is conducted, which includes the container stuffing at the premises of the consignor, who sends the cargo out, the first leg by truck or rail from there to the port of embarkation, the transshipment of the ITU, the journey on the Danube, the subsequent transshipment of the ITU at the port disembarkation, the final leg by truck or rail from the port to the consignee receiving the cargo, and – eventually – the unloading at the destination in order to release the ITU as soon as possible. In addition, an evaluation of the relevant market potential and the development of viable business models for IWT service for containerized bulk cargo transport on the Danube belong to the goals of the demonstrator.

The A2 demonstration encompasses the testing of the transfer of bulk cargo to multimodal containers for waterborne transportation in order to promote effective modal shift, introduce innovative transshipment services, and, thereby, unlock the untapped transport capacity and market potential of the Rhine-Danube Corridor. As part of the ongoing examinations and analyses, a promising transport relation from Wien (AT) via Budapest (HU) and Belgrade (RS) to Giurgiu (RO), and later further on to Galați (RO), has been selected by the responsible

MultiRELOAD team of researchers as the underlying demonstration route to analyse. Figure 39 shows the route on the map. Although the port of Lom (BG) has been identified as a viable alternative to Giurgiu (RO) when it comes to market demand and although having more than one potential customer appears profitable for the business case, the subsequent gap analysis has been conducted for the original route of the A2 demonstrator from Wien (AT) via Giurgiu (RO) to Galați (RO).

Major impacts expected from demonstration A2 are the expanded opportunities for multimodal transshipment services by means of new business models, improved operational efficiency as the transport of bulk cargo in containers is supposed to utilize the respective vessel capacity optimally, and the automation, digitalisation, and standardisation of ITUs.

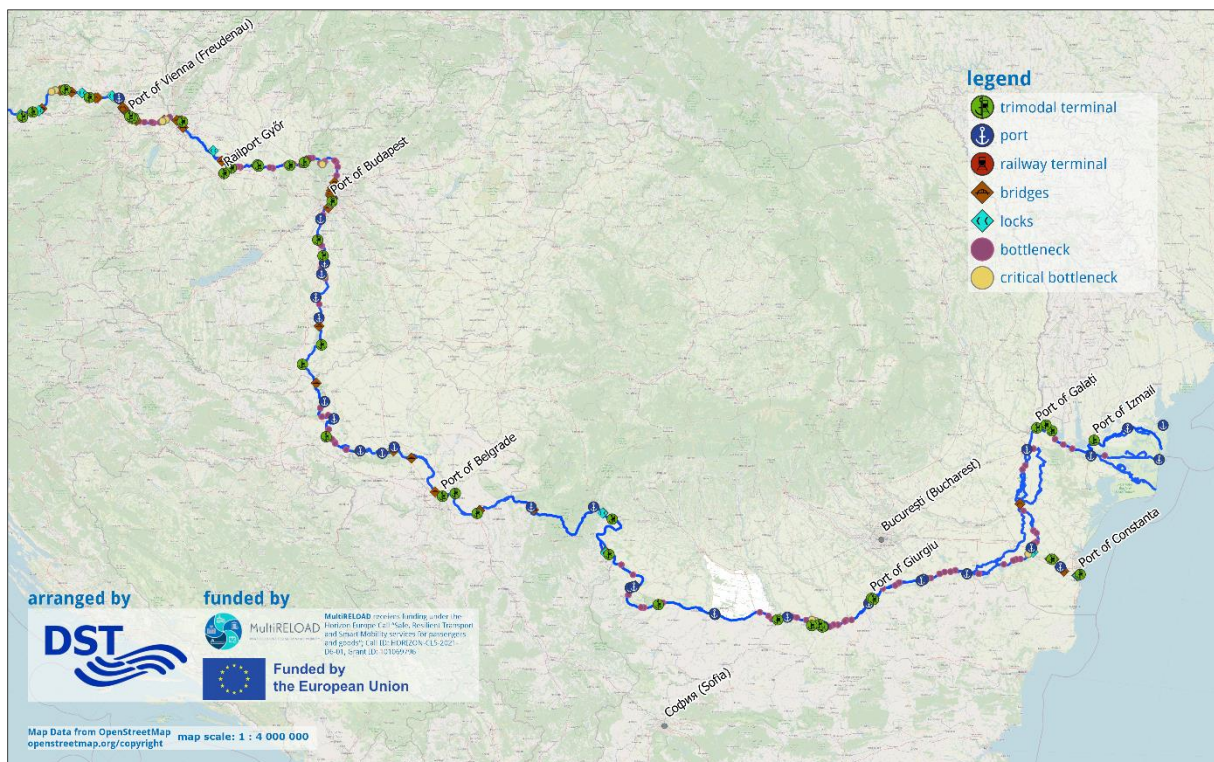


Figure 39. Demo A2 from the port of Wien (AT) to the port of Giurgiu (RO)

Currently, the transport of bulk cargo is handled by typical bulk carriers in lot sized of 1,000 tonnes with non-existing business models for containerized transport of this cargo. The aim of the demonstrator A2 is to prove containerized bulk cargo transport service as a viable business model for IWT on the Rhine-Danube-Corridor and to provide a market potential evaluation proving the economic viability. This is leading to a shift of smaller batch sizes of bulk cargo to inland waterway transport and offers innovative transshipment services. In order to assess the feasibility of the A2 demonstrator, both the availability of multimodal transshipment technologies in the nodes as well as the infrastructure along the waterway needs to be checked.

The relevant inland waterway transport nodes need to provide sufficient transshipment capacities in order to perform the handling of containerized bulk cargo. This holds true for both the ports of Wien (AT) and Giurgiu (RO) as the origin and the destination of the demonstration route. Additionally, both integrating additional stops in Budapest (HU) and Belgrade (RS) and potentially extending the route to Galați (RO) is possible since all of these ports are equipped with container handling infrastructure. Furthermore, there are 15 additional ports (excluding Giurgiu (RO)) between Galați (RO) and Wien (AT), 15 of which are already within range of the A2 demonstrator route. Besides, the transport relation between Wien (AT) and Giurgiu (RO) includes 32 additional transshipment points without container handling infrastructure to date. An additional six locations between Giurgiu (RO) and Galați (RO) lead to a total of 38 nodes without multimodal container handling between Wien (AT) and (RO) today.

The profiles of the ports in Wien-Freudenau (AT) (see Table 4), Budapest (HU) (see Table 5), Belgrade (RS) (see Table 6), Giurgiu (RO) (see Table 7), and Galați (RO) (see Table 8) reveal that access to the inland waterway network along the Rhine-Danube Corridor and container transshipment facilities are both available in all those port locations. Consequently, opening a service from Wien (AT) to Giurgiu (RO), possibly extending it to Galați (RO) and including additional stops in Budapest (HU) and Belgrade (RS)¹⁰ appears unproblematic from a technical point of view. However, the decision on whether to expand the original A2 demonstration line will depend on the results of a market potential analysis anyway.

Table 4. Profile of the terminal at the port of Wien-Freudenau (AT)

Port of Vienna (Freudenau) (AT)	
Waterway	Danube
River km	1920.1, right
Latitude	48.176851
Longitude	16.470036
General significance	n/a
Terminal operators	n/a
Employment effects	n/a
Cargo types	Container, Break bulk, Dry bulk, Heavy lift
Cargo transshipment volumes (t and TEU)	n/a
Handling activities	n/a

¹⁰ The authors are aware of the alleged inactivity of the port of Belgrade (RS) and the conversion of the area into a residential and leisure zone but are referring to the plans to build a new inland port in Belgrade (RS). Related plans have been published some years ago – and various terminal operators are reported to show interest in getting active there according to media coverage. The information on the (former) port of Belgrade (RS) has been retrieved from official sources on the internet which still state the activity of the port. The Serbian Port Governance Agency has even published container transshipment volumes for the Serbian ports for the years 2018 to 2022, including the one in Belgrade. As the authors consider the hinterland of a new inland port of Belgrade (RS) as promising, the A2 demonstration route includes the port of Belgrade (RS) – despite the unclear information situation.

Port area	3,000,000 m ²
Storage areas	Open storage: 200,000 m ² Covered storage: 70,000 m ² Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 4 Mobile cranes: 3 Reach stacker: 15 RoRo access: true
Waterway connection	No. port basins: 1 No. of berths: n/a Largest berth: n/a Quay length: 1,400 m at Albern and 2,000 m at Freudenu Weekly IWT departures: n/a
Railway connection	No. of sidings: 7 Longest siding: 686 m Weekly rail departures: n/a
Road connection	A23 ring road and the A4 east motorway
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Table 5. Profile of the terminal at the port of Budapest (HU)

Port of Budapest (HU)	
Waterway	Danube
River km	1640, left
Latitude	47.443709
Longitude	19.06074
General significance	One of the largest ports in Hungary (second largest port and logistic centre), its container terminal is the only facility in the country capable of waterside loading of containers.
Terminal operators	Budapesti Szabadkikötő Logisztikai Zrt. MAHART Gabonátárház Kft. MAHART Container Center Kft.
Employment effects	n/a
Cargo types	Container, Break bulk, Dry bulk, Liquid bulk, Heavy lift

Cargo transshipment volumes (t and TEU)	1,200,332 t in 2021 Total handling containers 411,500 TEU in 2020: 6,000 TEU waterside 405,500 TEU land to land
Handling activities	Transshipment, train loading, warehousing
Port area	62,000 m ²
Storage areas	Open storage: 23,000 m ² Covered storage 11,500 m ² Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 3 Mobile cranes: n/a Reach stacker: 10 RoRo access: true
Waterway connection	No. port basins: 3 No. of berths: n/a Largest berth: 18 Quay length: 270 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 8 Longest siding: 650 m Weekly rail departures: n/a
Road connection	Highways M1 from Austria, M7 from Croatia, Slovenia, M6 from the south, M5 from Serbia, Romania and M3 from the east, using the ring-road, M0 as well - Trucks can approach the port from the highways via either M0 – M51 – Ócsai Road/Grassalkovics Road/Helsinki Road Gubacsi bridge, or M0
Transshipment facilities road	3 road lanes at gate for truck traffic 3 road lanes for truck loading and unloading 20 parking spaces for trucks/semitrailers outside and 70 parking spaces inside
Transshipment facilities rail	Railway track with 15.47 km long track network and 20 t axle load Rail length of 280 m along the quay 5 rail sidings for loading and unloading
Transshipment facilities IWT	Number of berths: 18 Container infrastructure including 890 reefer connections, a 3,200 m ² paved area and offers container maintenance, repair, stuffing and stripping services 4 gantry cranes with max lifting capacity 32 t 6 loaded reach stackers and 4 empty reach stackers are also available Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	ArcelorMittal Distribution Hungary Kft CHIBLI Szállítványozási Kft EKOL Logistics Szolgáltató Kft MASPED Logisztika Kft
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Table 6. Profile of the terminal at the port of Belgrade (RS)

Port of Belgrade (RS)	
Waterway	Danube
River km	1168, right
Latitude	44.824229
Longitude	20.476340
General significance	A cargo and passenger port located on the Danube River in Belgrade, Serbia. The port is located in the center of Belgrade, near Pančevo Bridge. The only one intermodal terminal in Serbian ports.
Terminal operators	Luka Beograd AD
Employment effects	n/a
Cargo types	Container, Break bulk, Dry bulk, Heavy lift
Cargo transshipment volumes (t and TEU)	909,150 t in 2009 Total container handling 212 TEU in 2020: 106 TEU waterside 106 TEU land to land
Handling activities	Receipt of goods Preparation of goods Loading and storage handling between all transport modalities, including anchorage, pilotage and docking services
Port area	1,000,000 m ²
Storage areas	Open storage: 600,000 m ² Covered storage: 200,000 m ² Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 11 Mobile cranes: 2 Reach stacker: n/a RoRo access: true
Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	9,612 m of roads 80 parking places for trucks
Transshipment facilities rail	12,507 m long railway track Rail tariff point
Transshipment facilities IWT	Number of berths: 8 (winter harbour) Container infrastructure: Yes, with container terminal availability with 3,600 m ² of container storage yard 11 gantry cranes available with max lifting capacity 50 t as well as 2 mobile

	cranes with max lifting capacity 40 t. Number of reach stacker: 1 Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Ecotopia, NALED, Danube Tourist Commission, Belgrade Chamber of Commerce, American Chamber of Commerce, Serbian Chamber of Commerce

Table 7. Profile of the terminal at the port of Giurgiu (RO)

Port of Giurgiu (RO)	
Waterway	Danube
River km	489, left
Latitude	43.88791
Longitude	25.9752
General significance	The port is considered to be the port of the TEN-T central network and located at the intersection of the Danube River and Corridor IX
Terminal operators	SCAEP Giurgiu Port SC DUNAPREV SA CNF GIURGIU NAV SA
Employment effects	n/a
Cargo types	Container, Break bulk, Dry bulk
Cargo transshipment volumes (t and TEU)	Total 807,226 t in 2016
Handling activities	n/a
Port area	389,565 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 2 Mobile cranes: 1 Reach stacker: n/a RoRo access: n/a
Waterway connection	No. port basins: n/a No. of berths: 23 Largest berth: n/a Quay length: 1,190 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 800 m

	Weekly rail departures: n/a
Road connection	Access from the city's road network (made by European road E70)[1] and further links to DJ 504, DJ 507, DN 5, DN 5B, DN 5C
Transshipment facilities road	Number of parking places for trucks: 18
Transshipment facilities rail	Rail siding with length of 800 m
Transshipment facilities IWT	Number of berths: 23 Container infrastructure: Yes Number of cranes: 2 gantry cranes with max lifting capacity 16 t, 1 mobile crane with max lifting capacity 50 t. Number of reach stackers? Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Cereal Com SA (cereals terminal) TTS SA (bulk and general cargo operator) Brise Agricultura SA (cereals terminal) Mol Romania Petroleum Products SRL (oil terminal) Borealis L.A.T (fertilizers import) OMA Romania S.R.L. (metal products) Vixon Gold S.R.L. (liquefied gases storage and trade) Metalurgica Cavitorta S.R.L (welded nets production) Holleman Transport & Project Cargo S.R.L (agriculture machinery storage & trade) ATG Marina S.R.L (ships building, repairs and maintenance) IMSAT SA (containers production (10", 20" and 40")) Altius Fotovoltaic S.R.L (photovoltaic panels production) Melspring România S.R.L (chemical products production and storage) Transporter S.R.L (cereals terminal) Sea S.R.L (metal products storage and trade) Mistio Impex S.R.L (cement storage and delivery) Rhenus Logistics S.R.L (fertilizers, cereals and rolled steel import) ILR Logistica Romania S.R.L (rolled steel import) M-Food Industrie S.R.L. (storage) Shipyard ATG Marina SRL (shipbuilding, repair and maintenance) SC. Real Estate Portual SRL
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Union of Romanian Inland Ports U.P.I.R.

Table 8. Profile of the terminal at the port of Galați (RO)

Port of Galați (RO)	
Waterway	Danube
River km	150, left
Latitude	45.442785
Longitude	28.094238
General significance	The largest river and seaport on the Danube and the second largest in Romania, located at river Danube but also accessible by sea-vessels
Terminal operators	S.C. Romportment S.A. Galați S.C. Docuri S.A. Galați S.C. Bazinul Nou S.A. Galați

Employment effects	n/a
Cargo types	Container, Break bulk, Dry bulk, Liquid bulk, Heavy lift
Cargo transshipment volumes (t and TEU)	Total 1,605,177 t in 2016
Handling activities	n/a
Port area	864,131 m ²
Storage areas	Open storage: 538,320 m ² Covered storage: 7,200 m ² Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 31 Mobile cranes: 10 Reach stacker: n/a RoRo access: n/a
Waterway connection	No. port basins: 2 No. of berths: 56 Largest berth: n/a Quay length: 4,675 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 12,348 m Weekly rail departures: n/a
Road connection	- Mm 80 and Mm 79 on the right side - Seagoing vessels are waiting at anchor is downstream from Mm 79 to Mm 77
Transshipment facilities road	Number of parking places for trucks: 45 3 road lanes for truck traffic 4 road lanes for truck loading and unloading
Transshipment facilities rail	Railway connection with length 12,348 m (Ecartament European) Wide gauge railway along the operating berths
Transshipment facilities IWT	Number of berths: 56 (operational) Container infrastructure: Yes Number of cranes: 31 gantry cranes, 10 mobile cranes and 9 floating cranes Number of reach stackers? Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	S.C. Navlomar Shipping SRL Compania de Navigatie Fluviala Romana NAVROM S.A. Galati
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Union of Romanian Inland Ports U.P.I.R.

On the demonstration route, the inland vessel must pass 99 bridges and three locks to reach its destination. The lowest bridge is the “Komáromi-híd” road bridge connecting Komárom (HU) with Komárno (SK) at waterway-kilometre 1767.8. The bridge has a minimum height of

7.29 metres at the highest navigable water level providing sufficient clearance height for container transport on inland vessels of up to three layers.¹¹ Practitioners challenge the official figures and state that the bridge exhibits a clearance height of approx. 8.50 metres. The authors were incapable of verifying and resolving the matter and, thus, had to rely on the values of the publication of viadonau. Similarly, another information unclarity has appeared during the analysis and the preparation of the present document and not been removed fully: While official sources like publications from viadonau or the Danube Commission state a bridge height of 9.50 metres for the “Újpesti-híd”¹², practitioners state an actual bridge height of merely 7.66 metres. If that information proves to be right, the feasibility of three-layer container transport on that stretch of the Danube – as indicated in chapter 3.1 and illustrated in Figure 15 – will turn out to be erroneous. The authors were incapable of verifying the contradictory sources and, thus, had to rely on existing sources and their assumed reputation – which eventually resulted in the adoption of the figures published by viadonau.

Moreover, an inland vessel will need to pass the Iron Gate I and II locks at waterway-kilometres 942.95 and 863.7, respectively. The third lock is the lock Gabčíkovo (SK) which is the smallest of the three with a width of 34 metres and length of 280 metres. As a result, there are only few obstacles in terms of human-made infrastructure for container transport along the assessed route.

Table 2. Critical bottlenecks relevant for demonstrator A2¹³

Waterway-kilometre	Reference gauge	ENR at gauge	Name	Fairway depth (at ENR) (cm)	Fairway width
306.5	Cernavodă	-65	Cochirleni (RO)	1.010	114
426.5	Silistra	86	о-в Косуй 2 (Kosui Island 2) (BG)	2.960	140
560.5	Svistov	68	о-в Кондур (Condur Island) (BG)	2.980	200
564	Svistov	68	о-в Белене (Belene Island) (BG)	2.180	120
568	Svistov	68	о-в Милка (Milka Island) (BG) ¹⁴	n/a	n/a
1,403.5	Apatin	47	Apatin (RS)	1.400	100
1,557.6	Dunaföldvár	-123	Solt (HU)	2.480	80
1,559.55	Dunaföldvár	-123	Dunaföldvár (HU)	2.680	140
1,637.85	Budafok	29	Budafok gázló (HU)	2.060	60
1,698.5	Nagymaros	4	Dömös alsó gázló (HU)	1.710	120
1,734.25	Štúrovo	59	Čenkov (Nyerges) (SK)	1.880	60
1,884.25	Wildungsmauer	162	Furt Hainburg (AT)	2.120	n/a
1,888.1	Wildungsmauer	162	Furt Treuschütt (AT)	2.520	n/a

¹¹ see http://www.viadonau.org/fileadmin/content/viadonau/05Wirtschaft/Dokumente/2020/20200116_Danube_Bridges_int_eng_final.pdf

¹² The bridge “Újpesti vasúti híd” is a railroad bridge located in the northern part of Budapest (HU).

¹³ Fairway depth measured for worst case. Deeper channel might be present.

¹⁴ No sounding chart for the Milka Island bottleneck was available. The bottleneck is part of the larger extreme-low-water stretch along Belene Island with the bottlenecks of Belene Island and Condur Island.

The Danube Commission states a minimum fairway depth of 2.50 metres at ENR¹⁵, which is the depth provided along the Danube during regular low-water levels. This has one exception on a Danube stretch in Germany for which less than 2.50 metres are guaranteed. This stretch, however, is situated outside of the A2 demonstrator route. Over the length of the river, there are multiple spots at which these 2.50 metres of minimum fairway depth cannot be provided. Such waterway stretches are marked as a bottleneck, i. e., as an extreme-shallow-water stretch or a narrow-fairway section. Along the transport relation of the A2 demonstrator, 13 of these bottlenecks are also regarded as critical (see Table 2). The table shows the bottlenecks together with their respective reference gauge (and the gauge measurement for which the ENR is set for) as well as the actual water level reached for the shallowest area of the fairway at the ENR. Lastly, the table contains the minimum fairway width at the bottleneck. It is to note that some bottlenecks provide more than 2.50 metres of fairway depth through the reduction in fairway width.

5.2.2. OPERATIONAL REALIZATION

Typically, container inland vessels are mainly a phenomenon of the Rhine area whereas “[i]n the Danube region, container convoys with four pushed lighters are regarded as the best way to increase capacity”¹⁶. A typical JOWI class Rhine container vessel has a length of 135 metres, a beam of 17.0 metres, and a maximum draught of 3.70 metres, and is able to carry up to 470 TEU (until its maximum deadweight is achieved). The typical inland vessels on the Danube exhibit a draught of 2.0 to 2.4 metres. This is relatively low compared to similarly sized vessels in the Rhine area. For the convoys, there are three types of push boats are used along the Danube. Two of which have a maximum draught of 2.0 metres and one with a maximum draught of 1.7 metres.¹⁷

A container convoy with a push boat, i. e., a motorised inland vessel used for pushing, and four barges¹⁸ in a 2×2-formation exhibits a length of 185 to 195 metres, a beam of 22.80 metres, a draught of 2.50 to 4.50 metres, a minimum bridge clearance height of 7.00 metres or 9.10 metres, respectively, in relation to the highest navigable water level, and a deadweight of 6,400 to 12,000 tonnes¹⁹.

A typical barge in the Danube Region has a size of 80 metres in length and 10 metres in width.²⁰ A similarly sized ‘Europa 2’ barge with a length of 76.5 metres and a beam of 11.20 to 11.45 metres can accommodate up to 120 TEU during 4-layer transportation. This number

¹⁵ Etiage navigable et de régularisation; the Regulation Low-Water Level is the water level whose discharge was reached or exceeded on 94% of the days in the annual series. (1971/2000).

¹⁶ see https://www.viadonau.org/fileadmin/user_upload/Manual_on_Danube_Navigation.pdf, p. 117

¹⁷ see <http://www.schiffundtechnik.com/lexikon/d/donau.html>

¹⁸ Barges are non-motorised vessels built to be towed whereas lighters are non-motorised vessels built to be pushed.

¹⁹ see https://www.viadonau.org/fileadmin/user_upload/Manual_on_Danube_Navigation.pdf, p. 43

²⁰ see <http://www.schiffundtechnik.com/lexikon/d/donau.html>

can increase to 160 TEU, if the barge has been optimized for container transport.²¹ Given the slight difference in size and a maximum of three layers transported by the A2 demonstrator, it is assumed that a push convoy of 2x2 barges can handle a maximum of 360 TEU.

An overview of the push boats of the Serbian fleet shows that around 20% of the push boats have draught less than 1.00 metre (see Figure 40). However, most of these push boats are small, with power in range between 200 kW and 400 kW. Such push boats are used for packing the barges into convoys, short-distance barge movements, port operations, etc. rather than long-range pushing of convoys. In fact, almost 60 percent of push boats of the examined fleet sample have draughts greater than 1.60 metres.

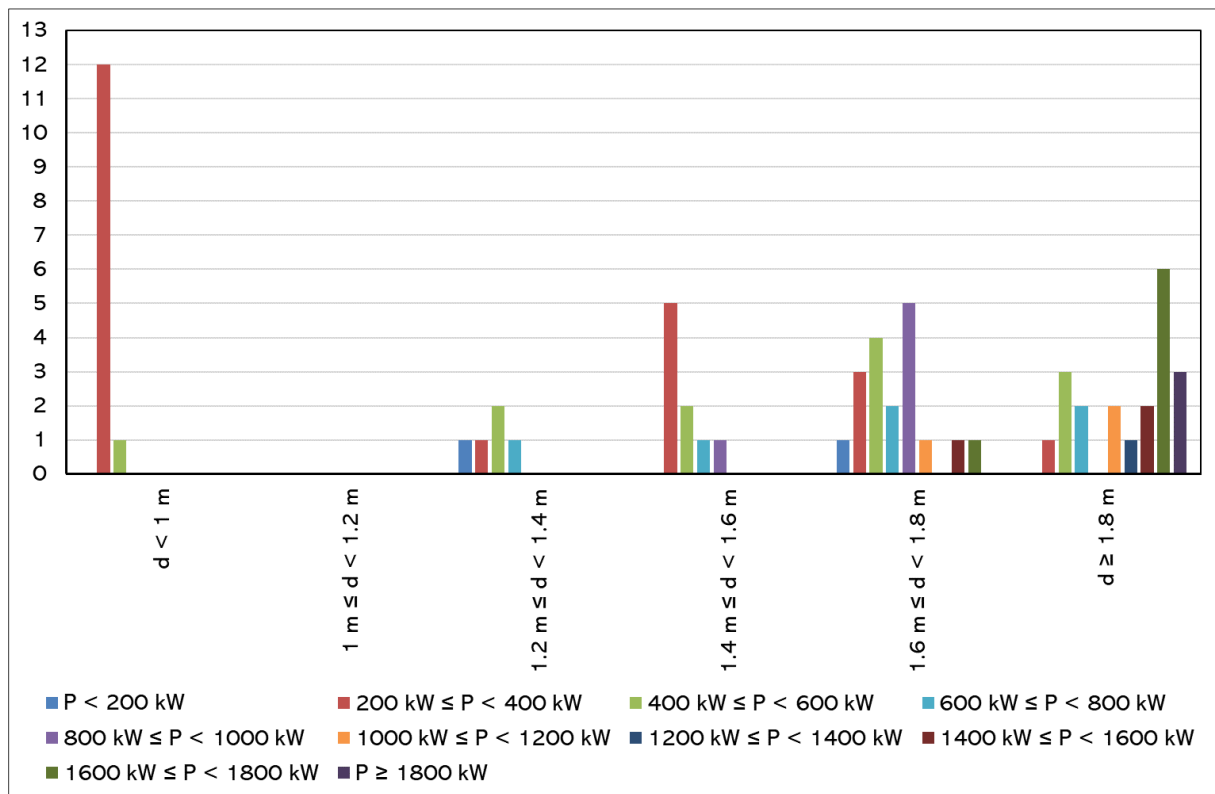


Figure 40. Distribution of the push boats (Serbian fleet) with respect to the draught and power

The A2 demonstration will take place as part of a conventional dry bulk transport with dry bulk cargo being hauled in the loading bay of the lighter and the multimodal containers being loaded to a side or a corner of the lighter. With the multimodal equipment

The A2 demonstration route from Wien (AT) via Giurgiu (RO) to Galați (RO) has been divided into three section on which different push boats will be applied.

For the first section from Wien (AT) to south of Budapest (HU), the shallow-water push boat "Mercur 101" with 23.10 metres length, 8.90 metres beam, and a draught of 1.20 metres along with the displacement of 166 cubic metres. With normal water levels Mercur 101 is able to carry two lighters in the typical formation (and up to four lighters).

²¹ see <https://www.dst-org.de/wp-content/uploads/2017/03/Overview-Vessel-Types-on-the-Danube.pdf>

On the second section from the south of Budapest (HU) to east of Belgrade (RS), a push boat capable of carrying up to six lighters is to be used. The push boat “Mercur 208” features a length of 34.66 metres, a beam of 10.10 metres, a draught of 1.90 metres and a displacement of 415 cubic metres.

The third section from the east of Belgrade (RS) to Giurgiu (RO) and further on to Galați (RO) is to be executed with a push boat capable of carrying up to nine (or even more) lighters. The push boat “Mercur 304” belongs to this category and has a length of 34.60 metres, a beam of 11.00 metres, a draught of 2.04, and a displacement of 508 cubic metres.

For the transport of the multimodal cargo, a particular lighter is going to be used: The lighter “17040 ex 5030” with a length of 76.50 metres, a beam of 11.00 metres, and an empty draft of 0.55 metres appears appropriate for the transport assignment.

In total, the push convoy is supposed to transport approximately 1,000 or 1,100 tonnes which leads to a draught of the lighters of 1.95 metres and 2.05 metres, respectively.

The maximum loaded draught of a vessel to pass a bottleneck can be calculated as follows²²: Determine the difference between the current water level (WL) at the reference gauge and the point of the ENR (P_{ENR}). Then, add the fairway depth at ENR (d_{ENR}) of the bottleneck in question to get the water depth. Now subtract the under-keel clearance (UKC) and squat (s) of the vessel to get your maximum loaded draught (D_{max}).

$$D_{max} = (WL - P_{ENR}) + d_{ENR} - (UKC + s)$$

A visual representation of these parameters can be seen in Figure 41.

²² see <https://www.viadonau.org/en/economy/online-services/calculation-of-the-draught-loaded>

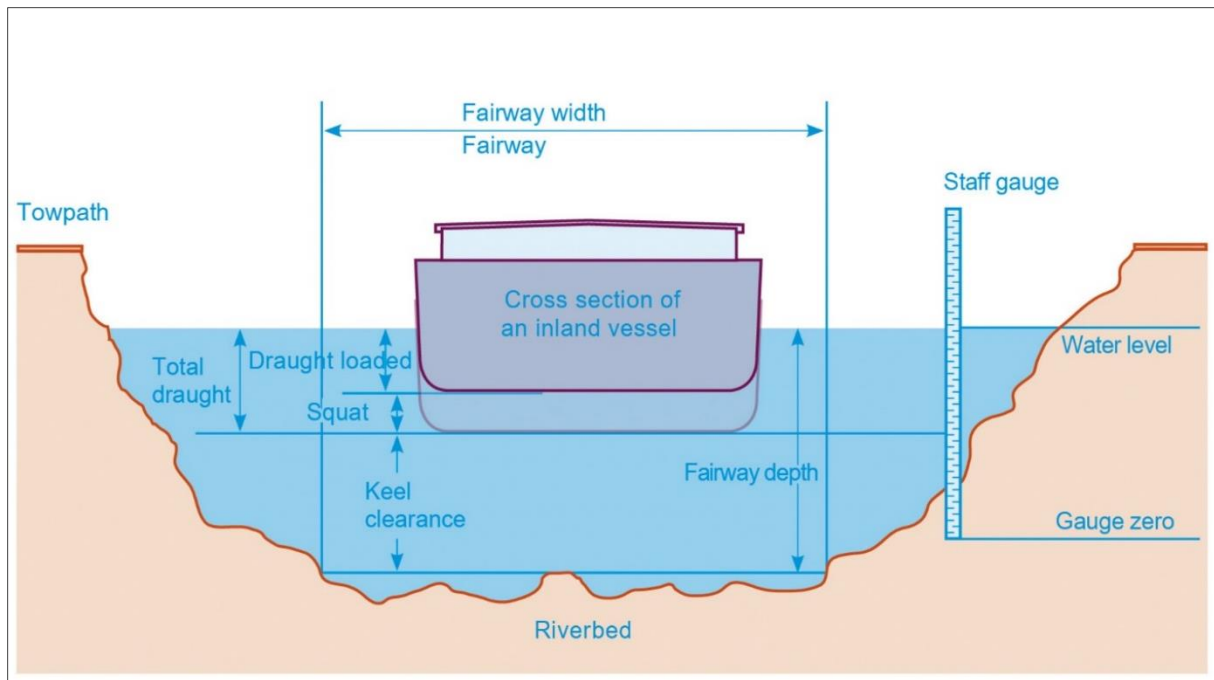


Figure 41. Fairway parameters (source: viadonau)

As an example, the maximum loaded depth in order to pass the bottleneck at Čenkov (SK)/Nyerges (HU) is calculated. The reference gauge at Štúrovo (SK) has a water level measurement of 70. The P_{ENR} at gauge Štúrovo (SK) is 59 and the d_{ENR} at the bottleneck is 188 cm. We will assume a combined under-keel clearance and squat of 50 cm.

$$D_{max} = (70 - 59) + 188 \text{ [cm]} - (50 \text{ [cm]})$$

$$D_{max} = 11 + 188 \text{ [cm]} - 50 \text{ [cm]}$$

$$D_{max} = 149 \text{ [cm]}$$

Hence, the maximum loaded depth allowed to pass the bottleneck at Čenkov (SK)/Nyerges (HU) amounts to 149 centimetres when the water level at Štúrovo (SK) is at a level of 70. Combined with the knowledge about the draught of different vessels, the bottleneck at Čenkov (SK)/Nyerges (HU) can be passed with the push boat “Mercur 101” smoothly. However, the lighters need to be empty or the cargo distributed on a sufficiently high number of lighters in order to enable navigability (as the planned cargo volume of approximately 1,000 tonnes would lead to a draught of 1.95 metres and, thus, inhibit navigability).

The situation is quite different for Cochirleni (RO), a bottleneck further to the east and nearer to Galați (RO), the final destination of our demonstration route. The reference gauge at Cernavodă (RO) has a water level measurement of 23. The P_{ENR} at gauge Cernavodă is -65 and the d_{ENR} at the bottleneck is 101 cm. We will assume a combined under-keel clearance and squat of 50 cm.

$$D_{max} = (23 - (-65)) + 101 \text{ [cm]} - (50 \text{ [cm]})$$

$$D_{\max} = 88 + 101 \text{ [cm]} - 50 \text{ [cm]}$$

$$D_{\max} = 139 \text{ [cm]}$$

Hence, the maximum loaded draught allowed to pass the bottleneck at Cochirleni (RO) amounts to 139 centimetres when the water level at Cernavodă (RO) is at a level of 23. Combined with the knowledge about the draught of different vessels the bottleneck at Cochirleni (RO) cannot be passed with a typical push boat without any barges with cargo attached blocking all push convoy traffic on the Danube.

Consequently, the route to Galați (RO) will not pass Cochirleni (RO) but circumvent the bottleneck location by taking the Borcea branch of the Danube river. Thereby, navigability is ensured on the A2 demonstration route regardless of potential extreme-low-water situations.

With respect to digitalization, it is worth mentioning that all inland vessels and convoys are obliged to carry an inland AIS transponder in most of the countries along the Rhine-Danube Corridor.

In addition, the harmonised [DAVID](#) paper forms and the new [CEERIS](#) system can be used for electronic ship reporting on the Rhine-Danube Corridor, except in Germany and Ukraine.

Since the route leads to countries outside the European Union, i. e., the Republic of Serbia and the port of Belgrade (RS), the Schengen Codex is to be applied on this route at the border checkpoint in Mohács (HU).

6. LEGAL ANALYSIS OF MULTIMODAL TRANSPORT ALONG THE RHINE-ALPINE AND RHINE-DANUBE CORRIDORS

MultiRELOAD is a study of rail and inland waterway transport on the Rhine/Danube corridors. However, due to time constraints, we have chosen to focus on inland waterway transport within the EU. Countries outside the European Union will be dealt with in the IDIT report in the *Analysis of the regulatory framework for the Rhine-Alpine and Rhine-Danube multimodal transport corridor*.

Today, the Single European Market is inseparable from the objective of economic and social cohesion. The interconnection and interoperability of national infrastructure networks have emerged as key factors in the coherent development of the Union's territory. To this end, the Union shall establish guidelines covering the objectives, priorities, definition of projects of common interest and broad lines of measures envisaged for the development of the trans-European transport network. The European Parliament and the Council adopt these guidelines after consulting the Economic and Social Committee and the Committee of the Regions. The first guidelines were adopted in 1996, then amended several times, notably in 2001 and 2004. They were recast in Decision No 661/2010/EU of the European Parliament and of the Council of 7 July 2010. This decision is now repealed and replaced by [Regulation \(EU\) No 1315/2013 of the European Parliament and of the Council of 11 December 2013](#).

This regulation applies to **the trans-European transport network**, which it describes in detail in numerous maps published in an annex. The trans-European transport network **includes transport infrastructure and telematics applications**, as well as measures to promote the efficient management and use of this infrastructure and to enable the development and management of sustainable and efficient transport services. In 2013, the EU defined a transport infrastructure development program encompassing all modes of transport on the basis of an objective planning methodology. This program is based on core network corridors. These bring together the main public and private players involved in the most important transport routes to plan and develop infrastructure in line with needs and available resources. Their main aim is to promote modal integration, interoperability and the coordinated development of infrastructure, particularly cross-border sections and bottlenecks.

Interoperability of networks is important in terms of modal shift, but it becomes an obstacle when it is not sufficiently efficient. For this reason, the committee has put forward [a proposal to amend the regulation](#), which is still under discussion.

However, inland waterway freight transport is an integral part of the single European market, and as such, all carriers must comply with a number of rules governing access to and

operation of the market (1), as well as rules governing traffic and with regard to contracts of carriage (2).²³

6.1. ACCESS TO AND OPERATION OF THE EUROPEAN INLAND WATERWAY TRANSPORT MARKET

This mode of transport now draws on mainly European sources, particularly as regards access to the profession, compliance with competition rules and technical standards.

6.1.1. INLAND WATERWAY TRANSPORT

6.1.1.1. THE CONDITIONS FOR ACCESS TO THE PROFESSION OF INLAND WATERWAY CARRIER

The conditions for access to the profession of inland waterway carrier have been harmonized at European level by [Directive 87/540/ EEC of 9 November 1987](#) relating to access to the profession of carrier of goods by inland waterway in the field of national transport and aiming at the mutual recognition of diplomas, certificates and other titles.

The activity of any natural person or company which carries out the transport of goods on behalf of others by means of an inland waterway vessel is considered to be the transport of goods by inland waterway, even if this activity is only carried out on an occasional basis.

The Directive provides for the condition of **professional competence** but leaves it to the Member States to decide on the conditions of financial standing and good repute.

Professional competence consists of possessing the necessary knowledge of the subjects referred to in the Annex to the Directive, acquired either through training, practical experience or a combination of the two. States may exempt and issue the certificate of competence to holders of certain diplomas.

6.1.1.2. THE CREW

[Directive \(EU\) 2017/2397 of 12 December 2017](#) introduces a harmonized system for the **certification and recognition of the professional qualifications of boat crews** operating on inland waterways. It allows certificate holders to operate anywhere in the EU. The Rhine is included, but national inland waterways (with no link to the navigable network of another Member State) are not.

This certification system applies to all deck crew members and liquefied natural gas experts.

²³ The transpositions will be added in our final report, a table is attached to this document.

The directive stipulates that the following must hold an EU certificate of qualification: crew members, persons qualified to take action in the event of an emergency on board passenger vessels and those involved in refueling vessels operating on liquefied natural gas.

Boat masters also require special authorizations when navigating sections of inland waterways presenting specific risks; navigating inland waterways of a maritime nature; navigating by radar; operating vessels propelled by liquefied natural gas or driving large convoys.

The aim of Directive (EU) 2017/2397 of 12 December 2017 is to enable automatic recognition of the certificates of all crew members playing a role in the operation of vessels (and no longer just boat masters), including on the Rhine.

Professional qualifications certified in accordance with this directive will have to be recognized by the Member States. Consequently, holders of these qualifications will be able to practice their profession on all the Union's inland waterways.

Member States will only be able to issue certificates of qualification to persons who possess the minimum levels of competence, age, medical fitness and navigation time required to obtain a specific qualification.

To ensure mutual recognition of qualifications, the Directive specifies that qualification certificates must be based on the competences required for the operation of buildings. Member States will have to verify, by means of an appropriate assessment, that persons to whom a certificate of qualification is issued possess the minimum levels of competence required. This assessment could take the form of an administrative examination or be integrated into approved training programs carried out in accordance with common standards in order to ensure a minimum level of competence which is comparable in all Member States for different qualifications.

To ensure that it is implemented under uniform conditions, Directive (EU) 2017/2397 provides for the establishment of models for the issue of Union qualification certificates, which are set out in the Annex to [Implementing Regulation 2020/182 of 14 January 2020](#).

[Directive 2014/112/EU](#) implements the European Agreement which sets **out the rules governing working time for mobile workers on European inland waterways** throughout the EU, meaning that Directive 2003/88/EC, the EU's Working Time Directive, does not apply to this sector. These rules include the following points.

Working time corresponds to an 8-hour day. It must not exceed

- an average of 48 hours per week over a 12-month period;
- 2,304 hours over 48 weeks;
- 14 hours per 24-hour period;
- 84 hours per 7-day period;

- an average of 72 hours per week over a period of 4 months, where the duty roster provides for more days of work than days of rest;
- 31 consecutive days.

Rest periods must be sufficient to guarantee the health and safety of workers; they must not be less than 10 hours per 24-hour period, including at least 6 hours of uninterrupted rest, or less than 84 hours per 7-day period. Breaks must be granted if working time exceeds 6 hours per day.

Night work is limited to 7 hours and to a maximum of 42 hours per 7-day period.

Each employee is entitled to at least 4 weeks' paid annual leave.

Detailed records are kept of working hours and rest periods.

6.1.2. TECHNICAL REQUIREMENTS FOR INLAND WATERWAY VESSELS

In the transport sector, the rules on competition stemmed from a [regulation dated 19 July 1968](#). An instrument with a very broad scope (legal and material operations of carriers, their auxiliaries - freight forwarders, brokers or travel agents - and relations with users, customers and suppliers), this regulation was finally codified in 2009, following a growing number of substantial amendments. We now refer to the provisions of [Regulation \(EC\) No 169/2009](#) applying rules of competition to transport by rail, road and inland waterway. Establishing equal conditions of competition between boatmasters established in different Member States also meant harmonizing the technical standards that each of them imposed - for safety purposes - on boats registered under their own law.

6.1.2.1. DIRECTIVE (EU) 2016/1629

[Directive \(EU\) 2016/1629](#) establishes **the technical requirements** applicable to inland waterway vessels in order to ensure safe navigation. These requirements are listed in an annex and classified as zones 1, 2, 3 or 4, in addition to zone R (special regime of the revised Convention for the Navigation of the Rhine). They do not apply to ferries, military vessels and most seagoing vessels, including tugs and pusher craft, which may only be operated occasionally in inland waters.

Article 3 provides a list of definition for specific purpose of the directive. In this respect, it seems opportune to have a closer look above all the definition of "linked inland waterways" given that obligation or lack of the full implementation of the directive depends precisely on the existence of or lack of the link between the waterways of one Member state and the waterways of another Member state.

“Linked inland waterways” means waterways of a Member State connected, by inland waterways which can be navigated under national or international law by craft falling within the scope of this Directive, to inland waterways of another Member State. Analysing this definition, it emerges, therefore, that the presence of a connecting maritime route between the waterways of one Member state and the waterways of another is not in itself sufficient to legally qualify the waterways as "linked inland waterways" for purpose of the directive, also the link between them must necessarily be made up of an inland waterway that can be navigated under national or international law by craft falling within the scope of this directive.

“Inland waterway vessel” means a vessel intended solely or mainly for navigation on inland waterways. Precisely it is to be noted that the presence of the adverb "mainly" indicates that an inland waterway vessel can also be engaged in coastal maritime water, i. e, it can also be engaged in river-sea transport.

This special type of navigation can be framed under article 23 "altered technical requirements for certain zones" of this directive, pursuant to which Member States may, where applicable, subject to requirements of the Revised Convention for Rhine Navigation, adopt technical requirements additional to those referred to in annexes II and V for craft operating on zone 1 and 2 waterways within their territory.

Created in 2015 by the Central Commission for Navigation on the Rhine, **the European Committee for the Elaboration of Standards for Inland Navigation (CESNI)** will speed up the development of harmonized, modern and clear regulations for waterway users.

The creation of this new working body is part of the CCNR's desire, shared with the European Union, to strengthen governance at European level, particularly in the regulatory field of inland navigation.

This Committee brings together experts from the Member States of the European Union and the CCNR, as well as representatives of international organizations involved in inland navigation. Its aim is to simplify decision-making procedures in the field of inland navigation regulations, so that all institutional partners and stakeholders can benefit from the CCNR's experience.

The mission of the European Committee for the Elaboration of Standards in Inland Navigation is, in particular:

- **to adopt technical standards** in various fields, in particular with regard to vessels, information technology and crews, to which the respective regulations at European and international level, in particular those of the European Union and the CCNR, will refer with a view to their application;

- **to deliberate on the uniform interpretation and application of the standards**, on the methods of application and implementation of the related procedures, on the procedures for exchanging information and on the control mechanisms between the Member States;
- **to deliberate on derogations and equivalences to the technical requirements** for a given building;
- **to deliberate on priority issues** concerning **navigation safety, environmental protection** and **other areas of inland navigation**.

6.1.2.2. SPECIAL CASE OF DANGEROUS GOODS

The transport of dangerous goods by inland waterway presents a considerable accident risk. Measures must therefore be taken to ensure that this transport is carried out in the safest possible conditions. To this end, in 1999 the Commission recommended approximation of the ADN (European Agreement concerning the Carriage of Dangerous Goods by Inland Waterways) on the basis of the ADN applicable on the Rhine. Taking advantage of the merger of the specific "dangerous goods applicable to road and rail transport" directives, and the introduction of safety advisers, the EU has introduced into the same text the provisions relating to [the transport of dangerous goods by inland waterway](#)²⁴. We now have a single text setting out uniform rules for the transport of dangerous goods, regardless of the mode of transport used (road, rail or inland waterway).

Directive 2008/68/EC requires compliance with the Regulations annexed to the ADN, as applicable from 1 January 2019. This is the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN 2019) adopted under the aegis of the United Nations Economic Commission for Europe (UNECE) and the Central Commission for the Navigation of the Rhine (CCNR).

The ADN has replaced the ADN applicable on the Rhine for the transport of dangerous goods on the Rhine since 2011.

A transport document²⁵ for the carriage of dangerous goods is required on board.

All the information that must appear on this document can be included in the document that formalizes the river transport contract (consignment note or bill of lading).

All documents must be on board in a language that the captain is able to read and understand.

The use of electronic data processing (EDP) or electronic data interchange (EDI) techniques to supplement or replace paper documentation is authorized, provided that the processes used for the capture, storage and processing of electronic data meet the legal requirements

²⁴ Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods

²⁵ Also known as the "Dangerous Goods Certificate" (DGC)

regarding the evidential value and availability of data during carriage in a manner at least equivalent to that of a paper document (ADN, Art. 5.4.0.2).

When information relating to the carriage of dangerous goods is provided to the carrier by computer or EDI techniques, the consignor must be able to provide the information to the carrier in the form of a paper document (ADN, Art. 5.4.0.3).

This provision, which requires the shipper to be able to provide the carrier with information in paper format, is likely to encourage shippers to do so from the outset.

- Data to be included in the transport document by the principal:
 - UN number, preceded by the letters "UN" or identification number of the substance
 - Shipping name
 - Label model numbers
 - Ex: "UN 1098 ALLYL ALCOHOL, 6.1 (3), I" or "UN 1098, ALLYL ALCOHOL, 6.1, (3), PG I".
 - Where applicable, the packing group assigned to the article
 - Number and description of packages
 - Name and address of consignor
 - Name and address of consignee(s)
 - Declaration concerning any action to be taken by the carrier (ADN, Article 5.4.1.2.5.2.):
 - Additional requirements for loading, stowage, carriage, handling and unloading of the package, overpack or container;
 - Restrictions on the mode of transport or the vehicle or wagon and any necessary routing instructions;
 - Emergency arrangements appropriate to the consignment.
- The declaration must be drawn up in the languages deemed necessary by the carrier or the authorities concerned.

Additional information or statements are required depending on the type of dangerous goods and their class.

E.g.: if the transport is part of a transport chain including maritime, road, rail or air transport, the words "Transport in accordance with 1.1.4.2.1." must appear.

If **the carriage of dangerous goods in a container** precedes a sea voyage, a container packing certificate complying with section 5.4.2 of the IMDG Code shall be provided with the transport document.

The functions of the transport document required in 5.4.1 and the container packing certificate may be combined in a single document.

6.1.3. THE RULES OF NAVIGATION

Here we will concentrate on the Rhine and Danube rivers. We will complete this section in the final report.

6.1.3.1. INLAND NAVIGATION TRAFFIC REGULATIONS

- **European Union**

The **European Code for Inland Waterways (CEVNI)** contains the basic rules applicable to traffic on inland waterways in the UNECE region, such as marks and draught scales on vessels, visual marking of vessels, sound signals and radiotelephony, marking and buoyage of inland waterways, rules of the road, parking rules, the obligation to signal and announce, as well as the prevention of water pollution and the disposal of waste produced on board vessels. These rules form a legal and technical basis for the national codes for inland waterways in the UNECE member states. CEVNI is regularly updated in line with the development of navigation regulations drawn up by the river commissions in the UNECE region, ensuring that they remain harmonized.

- **The Rhine**

The rules governing navigation on the Rhine are drawn up by the Central Commission for Navigation on the Rhine (CCNR), an international organization based in Strasbourg, which was set up on 24 March 1815 by the Final Act of the Congress of Vienna to regulate and liberalize the navigation of vessels on the Rhine.

France, Switzerland, Germany, Belgium and the Netherlands are currently members of the CCNR, which draws up international regulations on technical requirements (Rhine Vessel Inspection Regulations), professional qualifications and crew composition (Rhine Navigation Personnel Regulations) and navigation police (Rhine Navigation Police Regulations).

At the end of 2015, at the request of the European Commission, the CCNR set up the Committee for the Elaboration of Standards in Inland Navigation (CESNI), which brings together all the Member States of the European Union as well as Switzerland, in order to draw up unified regulations applicable both on the Rhine and on the Union's other waterways, in the areas of technical requirements, professional qualifications and information technology.

The rules governing the policing of navigation are drawn up by the CCNR's Police Regulations Committee (PR).

The rules governing the policing of navigation regulate signs and lights for vessels and pushed convoys, rules of the road, passing, overtaking, parking of vessels, signs on the waterway, vessel dimensions and water protection. Compliance with the regulations is monitored by the navigation police and the river police services of the States bordering the Rhine.

What is missing here are the rules put in place by the Danube Commission and the various national rules.

6.1.3.2. RIVER INFORMATION SERVICES (RIS)

The legal framework for RIS is based on [Directive 2005/44/EC](#), which lays down binding data communication rules and a minimum level for river information services.

The directive provides a framework at European level for the harmonized implementation of RIS and for compatibility and interoperability between current and future information systems in Europe. It specifies, for example, on which river RIS are mandatory (cross-border corridors, etc.).

The directive and its implementing regulation describe the general principles and conditions for planning, implementing and operating river information services and associated systems. They apply to cargo, passenger and recreational vessels. Three Commission Regulations define the technical specifications of the main RIS technologies.

River Information Services (RIS) are **harmonised IT services** that support traffic and transport management on inland waterways, particularly at the interface with other modes of transport. They are designed to improve the safety and efficiency of inland waterway transport by optimising traffic and transport processes. Information is exchanged by means of rapid electronic data transfer between water and shore, according to demand, using real-time information exchange. The information is used in various systems and applications to improve the traffic and transport process. The information is shared on the basis of harmonised information and communication systems.

The aim of RIS is to streamline the exchange of information between all stakeholders involved in inland waterway transport. Since 2005, the EU Framework Directive has established minimum requirements for the implementation of RIS and agreed RIS standards to enable cross-border compatibility of national systems.

By exchanging information, transport operations (such as route planning or lock opening times) can be easily optimised, enabling better integration of inland navigation into intermodal logistics chains.

6.1.3.3. BORDER CROSSING

Council Regulation (EC) No 4060/89 of 21 December 1989 eliminated controls at the frontiers of Member States in the field of road and inland waterway transport. It was part of the completion of the Single Market. It was repealed and replaced by [Regulation \(EC\) No 1100/2008](#) of the European Parliament and of the Council of 22 October 2008.

Under this regulation, the aim of which, like its predecessor in 1989, is to ensure the smooth flow of traffic within the Union, the Member States may carry out checks on the technical characteristics, authorisations and documents to which vehicles and vessels must be subject.

These checks may not, however, be carried out as border checks, but only as normal checks applied in a non-discriminatory manner throughout the territory of a Member State.

In the case of **vehicles or vessels from third countries**, [Regulation \(EEC\) No 3912/92](#) provides that Member States may carry out any necessary checks on entry into their territory in order to ensure that these means of transport are authorised to carry out transport operations in the territory of a Member State. As with the previous regulation on the elimination of checks within the European Union, this regulation also provides that these checks are no longer carried out as border checks but as part of the checks that Member States normally carry out on their territory.

Customs procedures and control methods are set out in the [Union Customs Code](#)²⁶ (UCC), which came into force on 1st of May 2016. The CDU emphasises fully electronic communication between customs administrations and economic operators and between the customs authorities of the various Member States, in a paperless environment.

6.2. CONTRACT OF CARRIAGE BY INLAND WATERWAY (PRIVATE LAW)

The contract for the international carriage of goods by inland waterway is governed by the Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway (CMNI). This convention came into force on 1 April 2005. It is applied by all the states involved in the [MultiRELOAD](#) project.

With the exception of certain provisions relating to the Carrier's liability, which cannot be set aside, the parties may arrange their contractual relationship differently.

Each State may decide to apply the CMNI to national contracts of carriage by inland waterway (CMNI, art. 31).

Only Dutch legislation allows the parties to a national transport contract to agree to apply the provisions of the CMNI to that contract.

6.2.1. FORMATION OF THE CONTRACT

The rules governing the actual formation of the contract for the carriage of goods by inland waterway are set out in Chapter III of the CMNI.

6.2.1.1. CONTRACT OF CARRIAGE

²⁶ Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013, laying down the Union Customs Code

Consensual by nature, the contract of carriage of goods within the meaning of the CMNI refers to “any contract, by whatever name called, by which a carrier undertakes, against payment of freight, to carry goods by inland waterways” (art. 1, § 1).

- **Name**

It may be called a consignment note or - And/or Bill of Lading (only at the shipper's request) (art. 11-1). The BL is generally a paper document. It is made up of several originals and copies. The original of the BL is negotiable ($\neq$ Consignment note) and the consignee must present it to the carrier to collect the goods (art. 13) or modify the carriage (“right of disposal”, art. 14 & 15). Thus, the BL is generally in paper form. In practice, the BL is used for a complete consignment of bulk goods, and not for containers.

- **Form: Paper or electronic document**

CMNI, art. 1.8: “In writing” includes, unless otherwise agreed by the parties concerned, the transmission of information by electronic, optical or similar means of communication, including, but not limited to, telegram, telefax, telex, electronic mail or EDI, provided that the information is accessible so as to be usable for subsequent reference.

CMNI, art. 11: “The original of the transport document must be signed by the carrier, the master of the ship or a person authorised by the carrier. The carrier may require the consignor to countersign the original or a copy. The signature may be handwritten, printed in facsimile, perforated, stamped, in symbols or affixed by any other mechanical or electronic means, if this is not prohibited by the law of the State where the transport document was issued.”

6.2.1.2. CONTENT OF THE CONTRACT

First of all, the sender has **an obligation to provide information**. Before handing over the goods, he must provide the carrier in writing with a certain number of details (dimensions, number or weight of goods, stowage coefficient, identification marks, instructions relating to customs or administrative treatment of the goods, etc.). (art. 6, § 2)

- **Data to be provided by the sender before the goods are handed over:**
 - Dimensions, number or weight and stowage factor (“stowage coefficient”) of the goods (art. 6-2-a)
 - Identification marks of the goods (art. 6-2-b) i.e.: Number of the container, number/marks of the packages or other units it contains. Inadequacy or insufficiency of the marks identifying the goods is a reason for exonerating the carrier from liability (art. 18-1-f). In addition, it is important to mention the number of units in the container in order to obtain higher compensation in the event of loss of or damage to the goods (art. 20-2).
 - Instructions concerning customs or administrative regulations applicable to the goods (art. 6-2-d)
 - Nature, characteristics and properties of the goods (art. 6-2-c)

- Other necessary information that must be mentioned in the transport document (art. 6-2-e)

If the goods to be carried are dangerous or polluting, the consignor must also inform the carrier, before handing over the goods, of the danger and pollution risks inherent in them, and of the precautions to be taken (art. 7, § 1).

- **Data to be included in the transport document**

- Name, domicile, registered office or place of residence of the carrier and the consignor (art. 11-5-a)
- Consignee of the goods (art. 11-5-b)
- Name or number of the ship on which the goods have been loaded or information in the transport document indicating that the goods have been taken over by the carrier but not yet loaded on the ship (art. 11-5-c)
- Port of shipment or place where the goods are taken over (art. 11-5-d)
- Port of discharge or place of delivery (art. 11-5-d)
- Usual description of the type of goods and their packaging (art. 11-5-e)
- For dangerous or polluting goods: their name in accordance with the regulations in force or, failing this, their general name (art. 11-5-e)
- Dimensions, number and weight of goods (art. 11-5-f)
- Goods identification marks (art. 11-5-f)
- Whether goods must or may be carried on deck or on board (art. 11-5-g)
- Contractual provisions concerning freight (art. 11-5-h): freight paid in advance, freight to be collected on delivery.
- In the case of a consignment note: whether it is an original or a copy (art. 11-5-i)
- In the case of a Bill of Lading: the number of originals (art. 11-5-i)
- The place and date of issue (art. 11-5-j)
- Declaration of value (art. 20-4)
- Delivery period (art. 5)

Moreover, the following information needs to be provided:

- **Data to be added to the transport document (or transmitted by other electronic means) at the time of pick-up or delivery**

- Carrier's reservations (art. 12-1) concerning :
 - Dimensions, number or weight of goods
 - Identification marks
 - The apparent condition of the goods
- Receiver's reservation in the event of apparent loss or damage (at the time of delivery) or damage that is not apparent (within 7 consecutive days following delivery of the goods) (art. 23-3 & 23-4)

6.2.2. EXECUTION OF THE CONTRACT OF CARRIAGE

The carriage of goods by inland waterway requires a number of operations to be carried out before or after the carriage itself. If the carrier fails to fulfil its obligations, in whole or in part, it will be held liable.

Inland waterway transport requires a number of operations to be carried out before or after the goods are moved. If the carrier fails to fulfil its obligations (in whole or in part), it will incur liability.

6.2.2.1. FREIGHT TRANSPORT

Unless otherwise stipulated in the contract, **the sender** must load, stow and secure the goods - and, where the nature of the goods requires, pack and mark them.

For his part, **the carrier** must begin performance of the contract by taking charge of the goods. It is at this initial stage of transport that any reservations may be made. At the final delivery stage, identification of the consignee will be crucial, particularly in view of the claims that may be made by the consignee in the event of damage to the goods. During transit, the main issues will be changes to the transport and disposal of the goods, which are correlated.

6.2.2.2. CARRIER'S LIABILITY

Chapter V of the CMNI is entirely devoted to "carrier liability". Consisting of seven articles, this chapter is intended to govern the various aspects of this liability. Although **liability is presumed**, it is limited, and may be exonerated on various grounds.

Although presumed, the carrier's liability **is nonetheless limited**. The principle of this limit of liability is set out in article 20 of the Convention, which states that "whatever action may be brought against him, the carrier shall in no case be liable for amounts exceeding 666.67 units of account for each package or other shipping unit, or 2 units of account for each kilogram of the weight mentioned in the transport document, of the goods lost or damaged, whichever is the greater".

In general, the CMNI expressly provides that the carrier will not be liable for loss or damage to the goods (from the time they were taken over for carriage until their delivery, or resulting from exceeding the delivery period), if he proves that this loss or damage results from **"circumstances which a diligent carrier** could not have avoided and the consequences of which he could not have prevented" (CMNI, art. 16, § 1).

More specifically, the agreement also provides for various grounds for exemption, described as "special" and depending on circumstances or risks that have been restrictively identified (art. 18). Eight circumstances or risks are precisely listed, in as many *litterae*, in the first paragraph of article 18 of the Convention.

6.3. EXAMPLE: NATIONAL REGULATIONS IN IWT IN FRANCE

Cargo transport on the Inland waterway along the Rhine-Danube Corridor in France is based on **two distinct regimes**, whether for domestic or international transport.

The **international contract for the carriage** of goods by inland waterway is governed by the Budapest Convention on the Contract for the Carriage of Goods by Inland Waterway (CMNI). This governs issues of obligations, liability (for loss, damage and delay) and compensation.

A contract of carriage by inland waterway operating **on national territory** is governed by:

- the Transport Code,
- the Commercial Code (liability regime),
- where applicable, the CMNI, and
- the carrier's general conditions.

In both cases (international and national), use may be made of the services of a **freight forwarder**, a service provider who freely organises and carries out, under his own responsibility and in his own name, the movement of goods from one place to another, using the modes and means of his choice. Depending on the needs defined by the customer who holds the freight (goods intended for transport), the freight forwarder chooses the most appropriate mode or modes of transport (by sea, land or air), as well as the most suitable carriers to move the goods.

The transport commission system is governed by:

- Transport Code: Article L.1411-1. I. 1 _Qualification
- Commercial Code: Articles L. 132-3 to L. 132-9 _ Freight forwarding system
- Commercial Code: Article L.133-6_Prescription
- Commercial Code: Article L.133-8_Inexcusable misconduct

It may also be subject to the **standard "transport commission" contract**, the clauses of which apply between the parties unless they have agreed, by any means, to different provisions (French Transport Code: Article D. 1432-3).

Finally, inland waterway transport within the EU is subject to a number of internal market rules:

- **Technical requirements** : Dir. 2016/1629
 - Article D.4211-2 du Code des Transports,
 - Décret n°2018-1091 du 5 décembre 2018

- Arrêté du 5 nov. 2018 rel. aux prescriptions techniques de sécurité applicables aux bateaux et aux engins flottants en navigation intérieure ;
- **Professional qualifications of the crew and their recognition** :Dir. (EU) 2017/2397 :
 - LOI n° 2019-1428 du 24 décembre 2019 d'orientation des mobilités,
 - Ordonnance n° 2021-409 du 8 avril 2021 relative au transport fluvial et à la navigation intérieure (NOR : TRAT2102709R) JORF n°0084 du 9 avril 2021,
 - Décret n° 2022-156 du 9 février 2022 relatif aux qualifications professionnelles en navigation intérieure (NOR : TRAT2127224D) JORF n°0034 du 10 février 2022,
 - Arrêté du 27 avril 2022 relatif aux qualifications des équipages et à la conduite des bateaux de commerce en navigation intérieure (NOR : TRAT2203053A) JORF n°0112 du 14 mai 2022
 - TITRE III : QUALIFICATIONS REQUISES POUR LA NAVIGATION INTÉRIEURE (Articles R4230-1 à R4231-24)
- **Working time** : Dir. (EU) 2014/112
 - Code des transports articles Articles R4511-1 à R4512-8
- **Access to the profession** : Dir. (CEE) 87/540
 - Décret no 92-507 du 5 juin 1992, modifié par le décret no 97-1199 du 24 décembre 1997
 - Codes des transp., art. R. 4421-2 à R. 4421-8
- **Transport of dangerous goods** : Dir. 2008/68/CE
 - Arrêté du 29 mai 2009 « relatif au transport des marchandises dangereuses par voies terrestres » (appelé « Arrêté TMD »)
 - Article L. 1252-1 du code des transports
- **River Information Services & AIS** : Dir. 2005/44/CE
 - Décret 2008-168 du 22 février 2008 relatif aux services d'information fluviale (SIF) harmonisés sur les voies navigables de la Communauté, codifiée par le décret n° 2013-253 du 25 mars 2013 relatif aux dispositions de la quatrième partie du code des transports.
 - Articles D.4411-1 à 8 du code des transports

7. CONCLUSION

Starting from the original task of analysing the technological and infrastructural preconditions of enabling multimodal transport along the Rhine-Alpine and Rhine-Danube Corridors, the multitude of multimodal transport nodes and transshipment points have been analysed and information about them collected in a structured and systematic manner. Subsequently, the infrastructural constraints along the Rhine-Danube Corridor have been collected for both IWT and rail transport.

Based on the technological and infrastructural overview of Rhine-Danube Corridor, the feasibility of both demonstrators of Work Package 2 (Smart Multimodal Logistics) of the [MultiRELOAD](#) project has been scrutinized.

For the A1 demonstrator, which is named “flexible, high-volume, fully automated multi-modal shift from road to rail” and foots on the CBoXX, the potential route from Mannheim (DE) to Győr (HU) via Karlsruhe (DE), München (DE), and Salzburg (AT) has been checked for constraints along the railway stretches. The existing terminals provide container handling infrastructure for loading and unloading the CBoXX and, thus, fulfil the technological requirements for multimodal transport. Concerning the infrastructure, no bottleneck will prevent the transportation along the examined relation. The biggest bottleneck is expected at the Austrian-Hungarian border, as the conversion from 15 kV AC in Austria to 25 kV AC in Hungary meant additional time and effort for transport. Consequently, the gap analysis has revealed that the demonstrator has no major impediment expectable on its route. The results of the analysis will be taken into consideration during the residual course of action in T2.2 (Modal shift rail CargoBeamer demonstrator) of the [MultiRELOAD](#) project which eventually culminates in the A1 demonstration.

As to the A2 demonstrator, which is named “Transporting Bulk Cargo in Multimodal Containers” and based on the use of ITU for dry bulk cargo transport, the selected route leads from Wien (AT) to Giurgiu (RO). In order to address the potential extension of the service, several additional stops have been included in the gap analysis. Both the origin node and the destination node the demonstrator route are capable of transshipping ITU and handling multimodal transports. Along the route, the Danube constantly offers room for three-layer container transport and features locks large enough to fit typical inland vessels and push convoys prevalent on the Danube. The only issues arise during extreme-low-water periods when certain sections of the Danube become difficult, or in extreme cases even impossible, to navigate and pass. As a result, the gap analysis revealed that both the selected nodes and waterway stretches are apt to accommodate the demonstration. The constraints in force on the waterway stretches to be transited have been collected and will be taken into account when finalizing the planning and taking on the execution of the actual demonstration as part of T2.4 (Modal shift IWT) of the [MultiRELOAD](#) project.

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APPENDIX

A. INLAND WATERWAY TRANSPORT NODES

The profiles of all (bi- and trimodal) inland water transport nodes of the Rhine-Danube Corridor are presented in the following. Whereas the bimodal terminals among the inland water transport nodes are the nodes with inland waterway and road transport connection, their trimodal counterparts feature rail transport connection as well.

Port of Constanța, RO		
Waterway	Danube-Black Sea Canal	
River km	0, left	
Latitude	44.108890	
Longitude	28.649316	
General significance	The port is one of the main distribution centers for the Central and Eastern Europe with the status of a Free Zone, serves as both a maritime and a river port	
Terminal operators	Dubai Ports World Terminal Umex Romcargo Maritim SRL CSP North	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: true Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	75,537,687 t and 776,590 TEU in 2022	
Handling activities	n/a	
Port area	3,926,000 m ²	
Storage areas	Open storage: n/a Covered storage: n/a	

	Silo storage: n/a
	Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: true
Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	A2/A4
Transshipment facilities road	Total length of roads in the ports amount to 100 km The A2 Motorway (Sun's Motorway) linking Bucharest to city port Constanta with length of 203 km
Transshipment facilities rail	Three railway lines to container terminal, each with length of 616 m, capable of handling 3 trains at the same time with 30 wagons each Direct access to the railway system from each port terminal with total length of railways in the port amounts to 300 km
Transshipment facilities IWT	Number of berths: 156, of which 140 are operational Container infrastructure: Yes, its services including container maintenance and repair, container storage yard, stuffing and stripping Number of cranes: 1 mobile crane with capacity 208 t in tandem and 1 floating crane with capacity 1,800 t Number of reach stackers: 3 with lift capacity 45 t Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a

Port Community System/ Terminal Operating System in place	n/a
Association memberships	Chamber of Commerce, Industry, Navigation and Agriculture Constanta (CCINA) Romanian Intermodal Association – RIA INOMAR Cluster ESPO - European Sea Ports Organisation Medcruise - The Association of Mediterranean Cruise Ports IPCSA - International Port Community Systems Association

Port of Sulina, RO		
Waterway	Danube - Sulina arm	
River km	0, right	
Latitude	45.157299	
Longitude	29.662328	
General significance	Romanian port situated on the Black Sea, close to the northern border with Ukraine	
Terminal operators	Sulina City Hall	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: 3.340 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 5 Container infrastructure? Number of cranes: 3 floating cranes of 16 t and 2 floating cranes of 32 t for handling 20 and 40 feet containers Number of reach stackers? Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Ust-Dunaysk, UA		
Waterway	Danube	
River km	0.01, left	
Latitude	45.466993	
Longitude	29.711874	
General significance	Located in the southern part of the Zhebriyans'ka Bay of the Black Sea and at the mouth of the Danube Delta	
Terminal operators	Port of Ust-Dunaisk "The Cranship" Ltd	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	24,400 t in 2020	
Handling activities	n/a	
Port area	75,000 m ²	
Storage areas	Open storage:	1,415 m ²
	Covered storage:	960 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	2
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	2

	Largest berth: 267 m Quay length: 150 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Nearby Highways: Motorway M-15 Odessa – Izmail – Reni – Bucharest
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 2 8 floating cranes as well as 3 gantry cranes are available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Ginsheim-Gustavsburg, DE		
Waterway	Main	
River km	1, left	
Latitude	49.997166	
Longitude	8.308593	
General significance	An important service centre and industrial location in Germany which links the Rhine and Main waterways	
Terminal operators	Contargo Rhein-Main HCK Logistics and Intermodal	
Employment effects	n/a	
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	266,850 t in 2021	
Handling activities	Stuffing / Stripping Container maintenance / repair Reefer connection	
Port area	16,000 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 1 Mobile cranes: n/a Reach stacker: 1 RoRo access: n/a	
Waterway connection	No. port basins: n/a	

	No. of berths: n/a Largest berth: n/a Quay length: 160 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: 3 x Rotterdam 3 x Antwerpen
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	None
Transshipment facilities IWT	Number of berths: 2 Container infrastructure: Yes Number of cranes (gantry, swing): 1 Number of reach stackers: 2 Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	TransTank GmbH Frankenbach GmbH, Garant Spedition und Logistik, HTAG Häfen- und Transport AG
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Liege (Port du Monsin), n/a		
Waterway	Albertkanaal	
River km	1.5, right	
Latitude	50.655351	
Longitude	5.633112	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: 260 m
	Weekly IWT departures: n/a
Railway connection	No. of sidings: 2
	Longest siding: 600 m
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Bamberg, DE	
Waterway	MDK
River km	2.2, left
Latitude	49.909890
Longitude	10.860675
General significance	The most important hub for freight transport for the entire Upper Franconia region.
Terminal operators	baymodal Bamberg GmbH Hafenverwaltung Bamberg
Employment effects	More than 70 companies in the port 2,588 direct employment effects 1,681 indirect employment effects
Cargo types	Container: n/a Break bulk: n/a Dry bulk: true Liquid bulk: true Heavy lift: n/a
Cargo transshipment volumes (t and TEU)	289,121 t in 2021 261,111 t and 25,763 TEU for rail transshipment in 2022 185,013 t for water transshipment in 2022
Handling activities	n/a
Port area	1,000,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: 82,500 m³ Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a

Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	1,900 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	n/a	
Transshipment facilities road	n/a	
Transshipment facilities rail	Approx. 8.5 km length of rail network 5 track marshalling yard	
Transshipment facilities IWT	Number of berths: 40 Container infrastructure? Number of cranes (gantry, swing): 2 RMG cranes Number of reach stackers? Ro-Ro Ramp access unavailable	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	n/a	

Port of Hochheim / Flörsheim, DE	
Waterway	Main
River km	9.1, left
Latitude	50.000377
Longitude	8.411458
General significance	n/a
Terminal operators	Shell Deutschland Oil GmbH Dyckerhoff Beton GmbH & Co.KG
Employment effects	n/a
Cargo types	Container: n/a Break bulk: n/a Dry bulk: true Liquid bulk: true Heavy lift: n/a
Cargo transshipment volumes (t and TEU)	530,610 t in 2022
Handling activities	Handling, storage and compulsory stockpiling of liquid mineral oil products (include petrol, paraffin, extra light heating oil and diesel fuel) Shunting and loading operation Tank wagons filling Gravel handling
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a

Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	11 tracks including 2 loading tracks and 3 tracks with catenary A team of locomotive shunting driver, shunter and loader in 3-shift operation
Transshipment facilities IWT	Number of berths: 2 Container infrastructure: No Number of cranes (gantry, swing): 2 Number of reach stackers: 0 Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	RheinCargo
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Liege, n/a		
Waterway	Albertkanaal	
River km	9.6, right	
Latitude	50.722680	
Longitude	5.674727	
General significance	Largest Belgian inland port	
Terminal operators	DP World Liège EUROPORT Inland Terminals	
Employment effects	7,858 direct jobs 10,445 indirect jobs	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	19.2 mn. t 115,921 TEU	
Handling activities	n/a	
Port area	3,580,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	150,000 m ²
	Silo storage:	50,000 m ²
	Liquid storage:	226,500 m ³
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a

	Largest berth: n/a Quay length: 300 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 2 Longest siding: 900m Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: Container infrastructure: Yes Number of cranes (gantry, swing): Number of reach stackers: Ro-Ro Ramp access available: yes
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	S.A. BIOWANZE (Port de Statte) S.A. EDF Luminus/ELECTRABEL (Port de Tihange) S.A. HOLCIM (Belgique) (Port de Tihange; Port de Loen) S.P.R.L. MLD Recyclage (Port de Tihange) S.A. CARMEUSE (Port d'Ampsin; Port d'Ehein) S.A. BELGIAN SCRAP TERMINAL WALLONIE (BST Wallonie) (Port de Hermalle-sous-Huy) S.A. CARRIERES ET FOURS A CHAUX DUMONT-WAUTIER (Port de Hermalle-sous-Huy) S.A. ECODREAM (Port de Hermalle-sous-Huy) S.A. HOLCIM (Port de Hermalle-sous-Huy) S.C.S. N&B KNAUF (Port d'Ehein) S.A. ELECTRABEL (Port des Awirs) S.A. PREFER (Port de Flémalle) S.C.I.R.L. INTRADEL (Port de Semeries) S.A. SEGAL (Port de Semeries) A.S.B.L. BLEGNY MINE (Port d'Ivoz-Ramet) S.A. EDF Luminus (Port d'Ivoz-Ramet) S.A. EUROPORTS INLAND TERMINALS (E.I.T.) (Port d'Ivoz-Ramet; Port de Seraing; Port de Renory; Port de Loen) S.A. SOMEF (Port d'Ivoz-Ramet; Port de Jemeppe) S.A. FRISAYE TRANSPORT (Port de Jemeppe)

	S.A. GERDAY (Port de Jemeppe) S.A. INTERBETON (Port de Jemeppe) S.P.R.L. EXXONMOBIL PETROLEUM & CHEMICAL (Port de Sclessin) S.A. ARCELORMITTAL BELGIUM (Port d'Ougrée) S.A. LIEGE CONTAINER TERMINAL (Port de Renory) S.A. SOCIETE INDUSTRIELLE DE RENORY (Port de Renory) S.A. FLUXYS (Port des Ardennes) S.C.I.R.L. INTRADEL (Port de Herstal) S.A. SITA WALLONIE (Port de Herstal) S.P.R.L. MATEGRO (Port de Chertal; Port d'Argenteau) S.C. S.C.A.R. (Port d'Argenteau) S.A. EUROQUARTZ (Port de Hermalle-sous-Argenteau) S.A. SABLIERE DUPUIS (Port de Hermalle-sous-Argenteau) S.A. E. VICTOR MEYER (Port de Hermalle-sous-Argenteau) S.A. DP WORLD LIEGE (Liège Trilogiport) S.A. D.L. TRILOGIPORT BELGIUM (Liège Trilogiport) S.A. WDP (Liège Trilogiport) S.P.R.L. SABLE DE RECYCLAGE (SAREC) (Port de Visé) S.A. Cimenteries CBR (Port de Lixhe) S.A. LIXHE COMPOST (Port de Lixhe) S.A. SO.TRA.EX (Port de Lixhe) Port de Mosin: S.A. ANCIENS ETABLISSEMENTS COLETTE (HUBO) S.A. BETON BAQUETTE MARCEL S.A. ENVISAN INTERNATIONAL S.A. EUROPORTS INLAND TERMINALS (E.I.T.) S.P.R.L. GASCOGNE ALL WOOD S.A. GEORGE & CIE (DERICHEBOURG) S.A. GRAVAUBEL S.A. HOLCIM (BELGIQUE) S.A. HOLDING DE ACEROS ESPECIALES (AUSA) S.P.R.L. INTER DECOUPE S.A. MEUSE ET SAMBRE S.A. READY BETON S.A. RECYLIEGE S.A. REVATECH S.A. SAMETAL S.A. SILOS DE LA MEUSE S.A. SOCIETE D'OPERATIONS MARITIMES ET FLUVIALES (SOMEF) S.A. TECHNIQUE ET PROTECTION DES BOIS (T.P.B.) S.A. TERVAL S.P.R.L. TRH LIÈGE Port pétrolier de Wandre: S.A. ANTARGAZ Belgium S.A. AUTOSECURITE S.A. AXIMA FEFRIGERATION

	S.P.R.L. BABYLISS FACO S.A. CENTRE DES ABRASIFS S.A. COMPAGNIE PETROLIERE LIEGEOISE (CPL) S.A. DAUVIMMO S.A. ETS J. DEFLANDRE ET FILS S.P.R.L. DEPANNAGES BAYARDS S.A. DEPOTS PETROLIERS CONTERN S.A. D'HONDT S.A. DIMMA DESIGN S.A. GERMEAU CARRIERE S.A. GESIMAT S.A. GILOPS GROUP S.P.R.L. GLOBAL MAINTENANCE INDUSTRIES S.P.R.L. I'D S.A. IMRECA (H.L.S.) S.A. INVEST SERVICES (S.A. CE+T) S.P.R.L. LE BETON MOSAN S.P.R.L. LE PETIT BONHOMME EN PIERRE S.A. MAGETRA LOGISTICS S.P.R.L. PARMECANIQUE S.A. PETROLEUM PRODUCTS STORAGE AND TRANSPORT COMPANY S.A. PROMAS INTERNATIONAL S.A. RUS TONY INDUSTRIES S.P.R.L. S.D.M. S.A. SNEL GRAPHICS S.A. SOLIREM S.P.R.L. Toitures T.H.L. S.A. TOTAL BELGIUM S.A. UNIMMO S.C.A. MAURICE WILKIN IMMO (RETIF BELGIUM) S.C.R.I. W-STONES Port d' Eclatement: S.A. ALDI VAUX-SUR-SURE S.A. COLRUYT S.A. EUROPORTS INLAND TERMINALS (E.I.T.) ETS GARAGE MARTIN S.A. GARAGE MARIO LANA S.A. KBC VASTGOEDPORTEFEUILLE BELGIE (GAMMA) S.A. LA BOUEE N.V. LAMBEFIMMO S.A. LUKOIL BELGIUM S.A. L'UNIVERSELLE IMMO S.A. NEPTUNIA M. STANISCI (S.P.R.L. BOSE AUTOMOBILES) S.A. TRANSINDUSTRIES – INVEST

Port Community System/ Terminal Operating System in place	n/a
Association memberships	EFIP

Port of Raunheim, DE		
Waterway	Main	
River km	13.8, left	
Latitude	50.023688	
Longitude	8.467151	
General significance	The port with its attached tank farm is a transshipment point for inland shipping for fuels to supply the neighbouring Frankfurt Airport, where it meets about 50% of its Jet-A1 aviation fuel needs.	
Terminal operators	Caltex Deutschland GmbH Fraport AG	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	573,350 t in 2021	
Handling activities	Storage and retrieval of loose or packaged third-party goods as well as the ensiling of big bags, the removal of samples, order picking, repalletising and the entire shipping process.	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a

Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	None
Transshipment facilities IWT	Number of berths: 2 Container infrastructure: No Number of cranes (gantry, swing): 0 Number of reach stackers: 0 Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Shell Deutschland UNITANK Betriebs- und Verwaltungs GmbH Greven Celanese
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Hattersheim-Okriftel, DE		
Waterway	Main	
River km	16.8, right	
Latitude	50.056807	
Longitude	8.514080	
General significance	Small river port located in the town of Hattersheim am Main, near Frankfurt in Germany.	
Terminal operators	Schindling und Hessische Bewehrungsstahl	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	317,460 t in 2021	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	None
Transshipment facilities IWT	Number of berths: Container infrastructure: No Number of cranes (gantry, swing)? Number of reach stackers: 0 Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Holcim Beton und Betonwaren GmbH
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Höchst (South), DE		
Waterway	Main	
River km	22.1, left	
Latitude	50.084261	
Longitude	8.530812	
General significance	n/a	
Terminal operators	Infraserv Logistics GmbH Contargo Industriepark Frankfurt-Höchst GmbH	
Employment effects	n/a	
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 2 Mobile cranes: 2 Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: 2 No. of berths: n/a Largest berth: n/a	

	Quay length: 170 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 7 Longest siding: 400 m Weekly rail departures: 3 x Rotterdam 3 x Antwerpen
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? 2 Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	82 companies at the Industriepark
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Eggolsheim, DE		
Waterway	MDK	
River km	22.3, right	
Latitude	49.771148	
Longitude	11.025866	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Murfatlar / Basarabi, RO		
Waterway	Danube-Black Sea Canal	
River km	25, right	
Latitude	44.178032	
Longitude	28.395802	
General significance	n/a	
Terminal operators	CN ACN SA	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	200,000 m ²	
Storage areas	Open storage:	13,913 m ²
	Covered storage:	1,266 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	2
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	1
	No. of berths:	7
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 6 operating berths, 2 waiting berths and 1 passenger berth available Container infrastructure? Number of cranes: 2 mobile cranes with max lifting capacity 5 t Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Medgidia, RO		
Waterway	Danube-Black Sea Canal	
River km	37.5, right	
Latitude	44.24825	
Longitude	28.28675	
General significance	n/a	
Terminal operators	CN ACN SA	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Loading, unloading, towage, storage of goods on demand, waste disposal, energy and water supply	
Port area	413,000 m ²	
Storage areas	Open storage:	86,514 m ²
	Covered storage:	1,484 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	3
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	1
	No. of berths:	20
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 600 m Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	Rail siding with a length of 600 m
Transshipment facilities IWT	Number of berths: 5 operations berths are ready in the commercial port and also 15 operating berths and 3 waiting berth in industrial port Container infrastructure? Number of cranes: 3 mobile cranes with max lifting capacity 16 t Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Frankfurt / Main, DE		
Waterway	Main	
River km	37.6, right	
Latitude	50.111466	
Longitude	8.721320	
General significance	n/a	
Terminal operators	Contargo Rhein-Main GmbH	
Employment effects	80 direct jobs ~ 8,000 indirect jobs	
Cargo types	Container: true Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: true	
Cargo transshipment volumes (t and TEU)	2,616,091 t waterway transshipment 1,659,667 t railway transshipment 14,898 TEU waterway transshipment 55,369 TEU waterway transshipment	
Handling activities	Depot and empty container service Recycling Bulk transshipment Heavy lift transshipment Warehouse logistics Procurement and distribution logistics	
Port area	n/a	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 2	

	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Waterway connection	No. port basins:	3
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	300 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	2
	Longest siding:	270 m
	Weekly rail departures:	3 x Rotterdam 2 x Antwerpen
Road connection	n/a	
Transshipment facilities road	n/a	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	Number of berths: 2 (Container Terminal Frankfurt-East) Container infrastructure: Yes Number of cranes (gantry, swing): Number of reach stackers: Ro-Ro Ramp access available:	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	110 companies	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	n/a	

Port of Erlangen, DE	
Waterway	MDK
River km	45.5, left and right
Latitude	49.583348
Longitude	10.970883
General significance	n/a
Terminal operators	Erlanger Hafenbetriebs- GmbH, Erlangen Großkraftwerk Franken AG, Nürnberg VKS – Vereinigte Kraftwagenspedition GmbH
Employment effects	n/a
Cargo types	Container: n/a Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: n/a
Cargo transshipment volumes (t and TEU)	n/a
Handling activities	Port services Freight Transshipment land < > ship, truck < > ship, Rail < > Ship and truck < > Rail Storage Pre-carriage and on-carriage to ship by truck Complete supply chain road < > port < > ship Packing/commissioning Loading Weighing Shipping
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a

	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	n/a
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	n/a	
Transshipment facilities road	n/a	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing): 2 Number of reach stackers? Ro-Ro Ramp access available?	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	n/a	

Port of Kilija, UA		
Waterway	Danube	
River km	47, left	
Latitude	45.440109	
Longitude	29.258126	
General significance	Part of Ust'-Dunaisk Port	
Terminal operators	State Enterprise "Ust'-Dunaisk Commercial Sea Port" LTD "ZTK"	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	17,600 m ²
	Covered storage:	960 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	4
	Mobile cranes:	3
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	1
	No. of berths:	1
	Largest berth:	n/a

	Quay length: 150 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 1 4 gantry cranes (1 "Albatross" crane with a capacity of 10-20 t and 3 "Gantz" cranes with a capacity of 5-6 t) and 1 floating crane are available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Kiliya Transshipment Point Davos
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Fürth, DE		
Waterway	MDK	
River km	55, left	
Latitude	49.502047	
Longitude	10.954288	
General significance	n/a	
Terminal operators	Fürther Hafenbetriebs- GmbH (FHG), Fürth	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	1.5 km of rail network
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Wintrans Winschermann Transport GmbH Stahlhandel Peine-Salzgitter GmbH Peiner Agrar- und Brennstoffhandel GmbH Mar-Tank GmbH & Co KG
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Hanau, DE		
Waterway	Main	
River km	57, right	
Latitude	50.119852	
Longitude	8.917336	
General significance	n/a	
Terminal operators	Hanau Hafen GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	1,566,700 t in 2021	
Handling activities	Handling materials such as potash and fertiliser, sand and gravel, grain and rapeseed, recycling material and scrap, as well as mineral oil and chemical products	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a

	Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	10 km of rail tracks 20,000 wagons for loading and unloading 840 m of crane track
Transshipment facilities IWT	Number of berths? Container infrastructure: No Number of cranes (gantry, swing): 1 gantry crane Number of reach stackers? Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Rhenus Logistics
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Tulcea, RO		
Waterway	Danube	
River km	70, right	
Latitude	45.191386	
Longitude	28.788136	
General significance	One of the largest and most important Romanian river ports situated on the right bank of the Danube	
Terminal operators	SC DELTANAV SA	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	Total 2,142,437 t in 2016	
Handling activities	unloading imported raw materials such as manganese, limestone, quartzite, bauxite, chromium, iron and coke from seagoing vessels; unloading quarry ballast products from barges; loading of exported raw materials such as ferroalloys, scrap metal and alumina.	
Port area	62,833 m ²	
Storage areas	Open storage:	11,000 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	8
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	true

Waterway connection	No. port basins:	1
	No. of berths:	41
	Largest berth:	n/a
	Quay length:	330 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	320 m
	Weekly rail departures:	n/a
Road connection	Next highway 100 km	
Transshipment facilities road	Number of parking places for trucks: 25	
Transshipment facilities rail	Railway length 320 m (European gauge)	
Transshipment facilities IWT	Number of berths: 41 (operating) Container infrastructure? Number of cranes: 8 gantry cranes with max lifting capacity 16 t. Number of reach stackers? Ro-Ro Ramp access available in a river Ro-Ro terminal on the Tulcea-Reni	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	Union of Romanian Inland Ports U.P.I.R.	

Port of Nürnberg, DE		
Waterway	MDK	
River km	72, right	
Latitude	49.395788	
Longitude	11.06295	
General significance	n/a	
Terminal operators	Hafenverwaltung Nürnberg	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	207,113 t in 2021	
Handling activities	n/a	
Port area	190,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	4
	Mobile cranes:	n/a
	Reach stacker:	1
	RoRo access:	true
Waterway connection	No. port basins:	2
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: 10 Longest siding: 700 m Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing): 9 luffing/slewing cranes, 3 gantry cranes Number of reach stackers? Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Izmail, UA	
Waterway	Danube
River km	81, left
Latitude	45.331168
Longitude	28.828113
General significance	The port is the European gateway of the country which connect the countries of Central and Northern Europe with the countries of the Black and Mediterranean seas.
Terminal operators	SE "IZM MTP" (SE "Izmail Sea Commercial Port") EKO GROUP LLC LTD NEW ENERGY LLC "SP" Dunaisudservice Ville Forte Ukraine LLC TRITONSERVICES AGENCY UKRAINE CO.LTD PSC "DANUBE SHIP REPAIR" CRANESHIP LTD
Employment effects	n/a
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: true Heavy lift: true
Cargo transshipment volumes (t and TEU)	259,600 t in 2021
Handling activities	loading and unloading operations and cargo storage; fastening, tying, stacking and special cargo with the customer's materials; freight forwarding; packaging works; marking and re-marking of goods; ordering railway wagons for sending cargo from the port; ensuring safe parking of ships; bunkering of ships with water near the moorings and on the raid; cleaning of ships from oil-containing, liquid sewage and garbage; substitute team services; services for docking and removal of barges and other objects; boat delivery of commissions and agents; provision of floating crane services;

	cargo delivery on the Lower and Middle Danube by the port fleet; inter-flight repair of the non-self-propelled fleet and other types of activities.
Port area	946,980 m ²
Storage areas	Open storage: 201,100 m ² Covered storage: 19,700 m ² Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 28 Mobile cranes: n/a Reach stacker: 1 RoRo access: n/a
Waterway connection	No. port basins: n/a No. of berths: 24 Largest berth: n/a Quay length: 2,618.6 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 24 Longest siding: n/a Weekly rail departures: n/a
Road connection	Nearby Highways: Motorway M-15 Odessa – Izmail – Reni – Bucharest
Transshipment facilities road	2 road lanes for truck traffic 2 road lanes for truck loading and unloading 100 parking spaces for trucks/semitrailers
Transshipment facilities rail	Electrified rail from Odessa to Belgorod-Dniestrovsky Diesel rail from Belgorod-Dniestrovsky to Izmail 10-12 double-track, shunting locomotives 24 internal railways to all of its terminals Rail siding with length of 18,994 m
Transshipment facilities IWT	Number of berths: 24 Container infrastructure at berth no 14, equipped with STS cranes, RMG cranes and reach stacker with 816 TEU container storage capacity

	2 floating cranes as well as 28 gantry cranes are available Number of reach stackers: 1 Ro-Ro Ramp access is not available
Adjacent industries (esp. proximity to agri- food sector)	n/a
Active consignors	THREE PLUS CO. LTD
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Aschaffenburg, DE		
Waterway	Main	
River km	83, left	
Latitude	49.970206	
Longitude	9.101588	
General significance	n/a	
Terminal operators	Trimodales Containerterminal Aschaffenburg GmbH	
Employment effects	60 companies in the port	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	667,372 t in 2021	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	1
	RoRo access:	n/a
Waterway connection	No. port basins:	2
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: 2 Longest siding: 211 m Weekly rail departures: 3 x Hamburg 3 x Bremerhaven
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	24 km of rail network Block trains of up to 700 m in length
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing): 3 RMG cranes Number of reach stackers: 1 Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Roth, DE		
Waterway	MDK	
River km	90.9, right	
Latitude	49.238504	
Longitude	11.146798	
General significance	n/a	
Terminal operators	Hafen Nürnberg-Roth GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	55,247 t in 2021	
Handling activities	Handling of stones, earth and building materials, ore and metal waste, fertilisers, foodstuffs and animal feed, petroleum and mineral products	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a

	Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Deutscher Wasserstraßen- und Schifffahrtsverein Rhein-Main-Donau e.V.

Transshipment Site Bick + Letzel GmbH, DE		
Waterway	Main	
River km	91, left	
Latitude	49.945081	
Longitude	9.107477	
General significance	A transshipment site in Aschaffenburg, owned and operated by welder company that filled with welders and workers in steel and tank construction.	
Terminal operators	Bick + Letzel GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Material handling of: Hydraulic steelwork Apparatus and tank construction Pipeline construction Steel construction Planning / Construction Corrosion protection	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a

	Reach stacker: n/a RoRo access: n/a
Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure: No Number of cranes (gantry, swing): 1 Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Mühlhausen, DE		
Waterway	MDK	
River km	114.2, left	
Latitude	49.160491	
Longitude	11.425002	
General significance	n/a	
Terminal operators	Güterhafen Bachhausen-Mühlhausen Raiffeisen-Handels-GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	Approx 35,000 t per year	
Handling activities	Handling and transshipping of grain, malting barley, rape, soya meal and pellets, fertiliser, agricultural/forestry products, wood, steel parts, crushed stone, special products and blast furnace slag	
Port area	n/a	
Storage areas	Open storage:	8,000 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	A36, A6
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Bayernhof GmbH Jurahafen GmbH
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Reni, UA		
Waterway	Danube	
River km	127.8, left	
Latitude	45.416400	
Longitude	28.287875	
General significance	The port is located in the southwestern part of Ukraine, at the junction of the Ukrainian, Romanian and Moldavian borders	
Terminal operators	SE "ReniLis" LLC "Reni-Line" LLC "Laguna Reni"	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	1,086,580 t in 2021	
Handling activities	n/a	
Port area	934,600 m ²	
Storage areas	Open storage:	195,000 m ²
	Covered storage:	30,000 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	32
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	4

	No. of berths: 37 Largest berth: n/a Quay length: 3,927 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 36 Longest siding: n/a Weekly rail departures: 1,400 Wagons
Road connection	Motorway M-15 Odessa – Izmail – Reni – Bucharest
Transshipment facilities road	Roads in the port with total length 6,172 m 7 weighing systems for weighing trucks
Transshipment facilities rail	36 railway tracks (5 running tracks and 31 for loading and unloading) 39 switches with a length of 13.3 km 200 wagons for daily processing capacity of the railway pints in port 5 railway weighing complexes
Transshipment facilities IWT	Number of berths: 39 There is no dedicated container terminal due to the absence of container flow but berth No. 17 and open warehouses of Ro-Ro terminal can carry out handling, storage, repair of containers as well as the other services 2 floating cranes are available as well as 36 gantry cranes and 1 mobile crane Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Ltd "Ukrchem"
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Giurgiulești, MD		
Waterway	Danube	
River km	133.8, left	
Latitude	45.468974	
Longitude	28.210349	
General significance	The port is the only direct sea/river-borne transshipment and distribution point to and from the Republic of Moldova.	
Terminal operators	ICS Danube Logistics SRL	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	Containers total handling 2,107 TEU in 2020: 1,885 TEU waterside 222 TEU land to land	
Handling activities	n/a	
Port area	552,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	1
	Reach stacker:	1
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	5

	Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: weekly container feeder service operated by Danube Logistics SRL through GIFF (Moldova) – CSCT (Romania, Constanta)
Road connection	226 km to Chisinau, 242 km to Bucharest, 290 km to Odessa, 686 km to Kiev and 776 km to Lvov
Transshipment facilities road	2 road lanes for truck traffic 1 road lane for truck loading and unloading 5 parking spaces for trucks/semitrailers
Transshipment facilities rail	Regular-gauge rail tank Broad-gauge rail tank 1 rail siding for loading and unloading with total length of 400 m
Transshipment facilities IWT	Number of berths: 5 Container infrastructure: Yes 1 mobile portal crane available Number of reach stackers: 1 Ro-Ro Ramp access is in the process of constructing (current progress 90%)
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Dietfurt, DE		
Waterway	MDK	
River km	137.5, left	
Latitude	49.022998	
Longitude	11.588339	
General significance	n/a	
Terminal operators	BayWa AG Südstärke GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	112,000 t in 2001	
Handling activities	Handling of stones, bulk goods, agricultural and forestry products, fodder and fertilisers as well as metal goods and metal waste	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a

	Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Riedenburg, n/a		
Waterway	MDK	
River km	149.7, right	
Latitude	48.984554	
Longitude	11.693779	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Galați, RO		
Waterway	Danube	
River km	150, left	
Latitude	45.442785	
Longitude	28.094238	
General significance	The largest river and sea port on the Danube and the second largest in Romania, located at river Danube but also accessible by sea-vessels	
Terminal operators	S.C. Romportment S.A. Galați S.C. Docuri S.A. Galați S.C. Bazinul Nou S.A. Galați	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: true Heavy lift: true	
Cargo transshipment volumes (t and TEU)	Total 1,605,177 t in 2016	
Handling activities	n/a	
Port area	864,131 m ²	
Storage areas	Open storage: 538,320 m ² Covered storage: 7,200 m ² Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 31 Mobile cranes: 10 Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: 2	

	No. of berths: 56 Largest berth: n/a Quay length: 4,675 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 12,348 m Weekly rail departures: n/a
Road connection	- Mm 80 and Mm 79 on the right side - Seagoing vessels are waiting at anchor is downstream from Mm 79 to Mm 77
Transshipment facilities road	Number of parking places for trucks: 45 3 road lanes for truck traffic 4 road lanes for truck loading and unloading
Transshipment facilities rail	Railway connection with length 12,348 m (Ecartament European) Wide gauge railway along the operating berths
Transshipment facilities IWT	Number of berths: 56 (operational) Container infrastructure: Yes Number of cranes: 31 gantry cranes, 10 mobile cranes and 9 floating cranes Number of reach stackers? Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	S.C. Navlomar Shipping SRL Compania de Navigatie Fluviala Romana NAVROM S.A. Galati
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Union of Romanian Inland Ports U.P.I.R.

Port of Wertheim, DE		
Waterway	Main	
River km	151.1, left	
Latitude	49.783235	
Longitude	9.475601	
General significance	The only one port on the Main in Baden-Württemberg, Germany.	
Terminal operators	ZG Raiffeisen	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	74,588 t in 2022 (35,506 waterside, 39,082 by road/landside)	
Handling activities	n/a	
Port area	55,000 m ²	
Storage areas	Open storage:	23,000 m ²
	Covered storage:	5,000 m ²
	Silo storage:	2,000 m ²
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	A3/A81, B8
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Raiffeisen-Lagerhaus eG Bauschutt-Recycling Vöth
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Deutscher Wasserstraßen- und Schifffahrtsverein Rhein-Main-Donau e.V.

Port of Basel, DE	
Waterway	Rhine
River km	169.9, right
Latitude	47.588497
Longitude	7.591061
General significance	Import location for 12 % of Swiss imports (33 % of Mineral oil; 25% of containerized goods)
Terminal operators	n/a
Employment effects	3,036 full time equivalent jobs directly 4,675 indirect jobs
Cargo types	Container: true Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: n/a
Cargo transshipment volumes (t and TEU)	6 - 7 mn. t Over 100,000 TEU
Handling activities	Transshipment: Container Agricultural bulk Steel /Metal Recycling goods trade goods dry bulk petroleum products chemical and agricultural goods Container stuffing Container maintenance / repair Reefer connection
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a

	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	n/a
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	n/a	
Transshipment facilities road	1x tilt chassis 1x side loader for trucks	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	Number of berths: Container infrastructure: Yes Number of cranes (gantry, swing): 2x Container gantry Number of reach stackers: 1 Ro-Ro Ramp access available:	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	Upper Rhine Ports EFIP CCNR CESNI	

	BÖB Central administration of social security for Rhine boatmen RheinPorts Basel-Mulhouse-Weil

Port of Lengfurt, DE		
Waterway	Main	
River km	174.8, left	
Latitude	49.805090	
Longitude	9.616743	
General significance	An operational cargo port of the Lengfurt cement plant of HeidelbergCement in Lengfurt am Main, a district of the municipality of Triefenstein.	
Terminal operators	Heidelberg Materials AG	
Employment effects	51,000 employees at Heidelberg Materials in 3,000 locations and 50 countries	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	516,532 t in 2021	
Handling activities	Unloading secondary raw materials Loading cement and other products	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Brăila, RO		
Waterway	Danube	
River km	175, left	
Latitude	45.247844	
Longitude	27.964826	
General significance	One of the largest Romanian river and seaports The port is located at river Danube but also accessible by sea-vessels	
Terminal operators	S.C. Hercules S.A. Braila S.C. Trans Europea Port S.A. Galati – Braila branch S.C. ADM LOGISTICS SRL BUCURESTI Braila branch	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	Total 2,081,621 t in 2016	
Handling activities	n/a	
Port area	398,630 m ²	
Storage areas	Open storage:	246,000 m ²
	Covered storage:	10,000 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	12
	Mobile cranes:	8
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	1

	No. of berths: 25 Largest berth: n/a Quay length: 3,298 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 1,481 m Weekly rail departures: n/a
Road connection	distance to the motorway is for 1 km
Transshipment facilities road	Number of parking places for trucks: 10
Transshipment facilities rail	Wide gauge railway along operating berths Rail charges point Length of rail siding: 1,481 m
Transshipment facilities IWT	Number of berths: 25 (operating) Container infrastructure: No Number of cranes: 12 gantry cranes, 8 mobile cranes and 2 floating cranes Number of reach stackers: 0 Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Union of Romanian Inland Ports U.P.I.R.

Port of Karlstadt, DE		
Waterway	Main	
River km	227.1, right	
Latitude	49.952969	
Longitude	9.767260	
General significance	n/a	
Terminal operators	Schwenk Zement	
Employment effects	n/a	
Cargo types	Container: n/a Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	230,009 t in 2021	
Handling activities	Raw materials unloading such as granulated blast furnace slag, natural sand and iron ores Delivery of secondary raw materials such as used tyres, which serve as fuel Cement and clinker shipping	
Port area	n/a	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: n/a	

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Würzburg, DE		
Waterway	Main	
River km	247.1, right	
Latitude	49.800617	
Longitude	9.883314	
General significance	n/a	
Terminal operators	Würzburger Hafen GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	279,408 t in 2021	
Handling activities	n/a	
Port area	860,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	13 km length of the port rail track
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Harsova, RO		
Waterway	Danube	
River km	253.6, right	
Latitude	44.683660	
Longitude	27.960945	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	14,401 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: 260 m
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Ochsenfurt, DE		
Waterway	Main	
River km	270.5, left	
Latitude	49.668006	
Longitude	10.054645	
General significance	n/a	
Terminal operators	KSO Ochsenfurt	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	159,000 t	
Handling activities	Handling commercial fertiliser, animal feed, grain, etc.	
Port area	n/a	
Storage areas	Open storage:	2,000 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	2
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Kitzingen, DE		
Waterway	Main	
River km	284.7, right	
Latitude	49.722726	
Longitude	10.158573	
General significance	n/a	
Terminal operators	Lenz-Ziegler-Reifenscheid GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	164,686 t in 2021	
Handling activities	Handling of coal, building materials (sand and gravel), agricultural and forestry products, and fertilisers	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Strasbourg, FR		
Waterway	Rhine	
River km	295.6, left	
Latitude	48.587727	
Longitude	7.795737	
General significance	2nd largest river port in France	
Terminal operators	RET (Rhine Europe Terminals)	
Employment effects	10.000+ direct and indirect jobs	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	6,371,663 t total transshipment 399,416 TEU	
Handling activities	Container Handling and storage Heavy lift handling, storage, (dis-)assembly Container maintenance and repair Reefer service Container (un-)stuffing Fumigation Handling and storage of other loading units (swap bodies; semi-trailers)	
Port area	6,500 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	2
	Mobile cranes:	n/a
	Reach stacker:	n/a

	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	140 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	2
	Longest siding:	400 m
	Weekly rail departures:	n/a
Road connection	n/a	
Transshipment facilities road	1 mobile railway crane	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	Number of berths: Container infrastructure: Yes Number of cranes (gantry, swing): 5 Gantry, 2 Heavy Lift (200t/460t) Number of reach stackers: 14 Ro-Ro Ramp access available:	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	Upper Rhine Ports EFIP	

Port of Dettelbach (Eternit), DE	
Waterway	Main
River km	296.1, right
Latitude	49.793503
Longitude	10.191730
General significance	n/a
Terminal operators	BayWa AG
Employment effects	n/a
Cargo types	Container: n/a Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: n/a
Cargo transshipment volumes (t and TEU)	n/a
Handling activities	Cereals/rape seed, maize, pamira and oil collection Delivery by truck Machine rental Harvesting services / Container collection Spreading of inputs Seed processing
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a

Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Guttruff GmbH
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Kehl, DE		
Waterway	Rhine	
River km	297.7, right	
Latitude	48.602469	
Longitude	7.820403	
General significance	8th largest inland port in DE (3rd in Baden-Württemberg) Largest rail port among ports on the Upper Rhine	
Terminal operators	n/a	
Employment effects	4,700 indirect employees (across 110 businesses)	
Cargo types	Container: true Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	2022: 3,254,211 t (2,728,029 t railway transshipment)	
Handling activities	Transshipment: Container Dry bulk Heavy Cargo	
Port area	3,200,000 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: n/a Mobile cranes: 6 Reach stacker: n/a RoRo access: true	
Waterway connection	No. port basins: n/a	

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	A5 Rhine valley motorway, the federal roads 3, 28 and 36 and the French A 4 and A 35
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Cernavodă, RO		
Waterway	Danube	
River km	298, right	
Latitude	44.33428	
Longitude	28.03393	
General significance	n/a	
Terminal operators	SC Dobroport SA SC ARGOS SA Cernavoda	
Employment effects	n/a	
Cargo types	Container: n/a Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	2,309 t in 2005	
Handling activities	n/a	
Port area	126,322 m ²	
Storage areas	Open storage: 2,000 m ² Covered storage: 20,000 m ² Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 3 Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: 1 No. of berths: 7 Largest berth: n/a	

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 2,900 m Weekly rail departures: n/a
Road connection	local network and further connections to DN 3A Cernavoda-Bucharest and DN 22C Cernavoda-Constanta, DJ Cernavoda-Harsova
Transshipment facilities road	Number of parking places for trucks: 50
Transshipment facilities rail	Rail siding with a length of 2,900 m
Transshipment facilities IWT	Number of berths: 7 Container infrastructure: No Number of cranes: 3 gantry cranes with max lifting capacity 16 t. Number of reach stackers: 0 Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Union of Romanian Inland Ports U.P.I.R.

Port of Schweinfurt, DE		
Waterway	Main	
River km	330.5, left	
Latitude	50.030626	
Longitude	10.223220	
General significance	n/a	
Terminal operators	Stadtwerke Schweinfurt GmbH Schweinfurter Hafenumschlag GmbH	
Employment effects	more than 100 companies with more than 10,000 employees have settled in the south	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	195,818 t in 2021	
Handling activities	Oil and gas handling in the northern part Bulk goods handling in the southern part including fertiliser and grain in addition to coal	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	A 70 sowie die B 286
Transshipment facilities road	n/a
Transshipment facilities rail	3 km long rail transport infrastructure
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing): 2 luffing cranes Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Deutscher Wasserstraßen- und Schifffahrtsverein Rhein-Main-Donau e.V

Port of Karlsruhe, DE		
Waterway	Rhine	
River km	359.9, right	
Latitude	49.016172	
Longitude	8.307703	
General significance	n/a	
Terminal operators	Contargo Wörth-Karlsruhe GmbH	
Employment effects	5,000 Jobs	
Cargo types	Container: true Break bulk: n/a Dry bulk: true Liquid bulk: true Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	1,724,159 t railway cargo	
Handling activities	Transshipment: Container Dry bulk Liquid bulk Vehicles/Cars Container stuffing / stripping Container maintenance / repair Reefer connection	
Port area	n/a	
Storage areas	Open storage: 650,000 m² Covered storage: 220,000 m² Silo storage: 7,000 m² Liquid storage: n/a	
Cranes and equipment	Cantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a	

	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	n/a
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	A5, A8, B10, B36	
Transshipment facilities road	1x tilt chassis 1x side loader for trucks	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	Number of berths: 2x (CT Karlsruhe) Container infrastructure: Yes Number of cranes (gantry, swing): 21 (1x CT Karlsruhe) Number of reach stackers: 1x (CT Karlsruhe) Ro-Ro Ramp access available: Yes	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	Upper Rhine Ports BÖB	

Port of Calarasi, RO		
Waterway	Danube	
River km	370, right	
Latitude	44.185846	
Longitude	27.339050	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	4
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Silistra, BG		
Waterway	Danube	
River km	381, right	
Latitude	44.115397	
Longitude	27.198151	
General significance	n/a	
Terminal operators	Port Silistra-Lesil Port Complex Ruse J.S. Co.	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Handling of bulk cargo, transshipment operations of packed and unpacked cargo, loading and handling of Bigbags Container loads, use of port technical means, warehouse activity	
Port area	73,000 m ²	
Storage areas	Open storage: 25,000 m ² Covered storage: 8,000 m ² Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 5 Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: n/a	

	No. of berths: 2 Largest berth: n/a Quay length: 540 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	Number of parking places for trucks: 900
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 2 Container infrastructure? Number of cranes: 3 portal cranes (1 with a capacity of 20 t until 3 t and the other 2 with a capacity of 10 t) Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Germersheim, DE		
Waterway	Rhine	
River km	385.4, left	
Latitude	49.234293	
Longitude	8.385216	
General significance	n/a	
Terminal operators	Freyer GmbH DP World Germersheim GmbH & Co. KG	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Transshipment: Container Dry bulk Break bulk Reefer Storage (240x) Dangerous Goods Handling Container Depot Container Maintenance and repair Container cleaning Container stuffing / stripping	
Port area	124,058 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: n/a	

	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	466 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	3
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	n/a	
Transshipment facilities road	n/a	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	n/a	

Port of Mannheim, DE		
Waterway	Rhine	
River km	420, right	
Latitude	49.494017	
Longitude	8.448720	
General significance	n/a	
Terminal operators	Contargo	
Employment effects	n/a	
Cargo types	Container: true Break bulk: n/a Dry bulk: true Liquid bulk: true Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	6,898,862 t 172,697 t (agricultural, forestry) 1,581,345 t (food, fodder) 2,099,514 t (mineral fuels) 2,248 t (fertilizers) 508,758 t (crude oil, gases) 513,058 t (ores, metal waste) 307,206 t (iron, steel, non-ferrous metals) 661,987 t (stones and earths) 771,434 t (chemical products) 653,304 t (vehicles, machinery)	
Handling activities	Transshipment: Container dry bulk liquid bulk Container maintenance / repair Reefer connection	
Port area	11,310,000 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a	

	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	4
	Quay length:	n/a
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	motorways A 6 (E 50), A 61 (E 31), A 67 (E 451), A 650, A 656 and A 659	
Transshipment facilities road	1x side loader for trucks 1x tilt chassis	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	Number of berths: 4x CT Mannheim Container infrastructure: Yes Number of cranes (gantry, swing): 59 (25 gantry; 24 loading/crane bridges; 10 heavy duty) 4x container gantry (CT Mannheim) Number of reach stackers: 210 – X 4x (CT Mannheim) Ro-Ro Ramp access available: Yes	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	

Association memberships	Upper Rhine Ports EFIP BÖB

Port of Oltenița, RO		
Waterway	Danube	
River km	429.5, left	
Latitude	44.063457	
Longitude	26.641068	
General significance	One of the largest Romanian river ports, located in the city of Oltenița on the Danube River, serves also as a winter harbour	
Terminal operators	CN APDF SA Walter Tosto WTB	
Employment effects	n/a	
Cargo types	Container: n/a Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	Approx. 450,000 t annually	
Handling activities	Bulk and general cargo handling with the main cargoes are cereals, liquid bulk and quarry products	
Port area	887,000 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 3 Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: 4	

	No. of berths: 2 Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 3 for passengers, 2 for cargoes, 1 for agabaritic parts, 6 for waiting berths Container infrastructure? Number of cranes: 3 quay cranes (5tf x 32 m) Number of reach stackers? 4 Ro-Ro Ramp accesses available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	TTS Porturi Fluviale SA Galați
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Tutrakan, BG		
Waterway	Danube	
River km	432.68, right	
Latitude	44.052035	
Longitude	26.611171	
General significance	n/a	
Terminal operators	Port Complex Ruse J.S. Co.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	4,414 m ²	
Storage areas	Open storage:	2,500 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	1
	Largest berth:	n/a

	Quay length: 110 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	highway 2 km away
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 1 Container infrastructure? Number of cranes: 1 gantry crane with max lifting capacity 5 t. Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Gernsheim, DE		
Waterway	Rhine	
River km	462.5, right	
Latitude	49.753825	
Longitude	8.477356	
General significance	n/a	
Terminal operators	GUT Gernsheimer Umschlags- und Terminalbetriebsgesellschaft mbH & Co. KG	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	2,500 TEU/ week	
Handling activities	Transshipment: Container	
Port area	54,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a

	Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: 2 Longest siding: 340 m Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Giurgiu, RO		
Waterway	Danube	
River km	489, left	
Latitude	43.88791	
Longitude	25.9752	
General significance	The port is considered to be the port of the TEN-T central network and located at the intersection of the Danube River and Corridor IX	
Terminal operators	SCAEP Giurgiu Port SC DUNAPREV SA CNF GIURGIU NAV SA	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	Total 807,226 t in 2016	
Handling activities	n/a	
Port area	389,565 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 2 Mobile cranes: 1 Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: n/a	

	No. of berths: 23 Largest berth: n/a Quay length: 1,190 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 800 m Weekly rail departures: n/a
Road connection	access from the city's road network (made by European road E70)[1] and further links to DJ 504, DJ 507, DN 5, DN 5B, DN 5C
Transshipment facilities road	Number of parking places for trucks: 18
Transshipment facilities rail	Rail siding with length of 800 m
Transshipment facilities IWT	Number of berths: 23 Container infrastructure: Yes Number of cranes: 2 gantry cranes with max lifting capacity 16 t, 1 mobile crane with max lifting capacity 50 t. Number of reach stackers? Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Cereal Com SA (cereals terminal) TTS SA (bulk and general cargo operator) Brise Agricultura SA (cereals terminal) Mol Romania Petroleum Products SRL (oil terminal) Borealis L.A.T (fertilizers import) OMA Romania S.R.L. (metal products) Vixon Gold S.R.L. (liquefied gases storage and trade) Metalurgica Cavitorta S.R.L (welded nets production) Holleman Transport & Project Cargo S.R.L (agriculture machinery storage and trade) ATG Marina S.R.L (ships building, repairs and maintenance) IMSAT S.A (containers production (10", 20" and 40")) Altius Fotovoltaic S.R.L (photovoltaic panels production) Melspring România S.R.L (chemical products production and storage) Transporter S.R.L (cereals terminal) Sea S.R.L (metal products storage and trade) Mistio Impex S.R.L (cement storage and delivery) Rhenus Logistics S.R.L (fertilizers, cereals and rolled steel import)

	ILR Logistica Romania S.R.L (rolled steel import) M-Food Industrie S.R.L. (storage) Shipyard ATC Marina SRL (shipbuilding, repair and maintenance) SC. Real Estate Portual SRL
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Union of Romanian Inland Ports U.P.I.R.

Port of Ruse, BG		
Waterway	Danube	
River km	491, right	
Latitude	43.877928	
Longitude	25.999270	
General significance	n/a	
Terminal operators	Port Complex Ruse J.S. Co. Port Bulmarket EAD	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: true Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	In 2010: 64,000 t (West) 734,000 t (East) 674,866 t in 2021 (Bulmarket)	
Handling activities	n/a	
Port area	825,533 m ²	
Storage areas	Open storage: 117,000 m ² (Zapad) and 37,645 m ² (Port Bulmarket) Covered storage: 15,800 m ² Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 17 Mobile cranes: n/a Reach stacker: 1 / 0 RoRo access: true	
Waterway connection	No. port basins: 2	

	No. of berths: 14 / 11 Largest berth: n/a Quay length: 1,618 m / 1,500 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Two European roads, E70 and E85, cross Ruse
Transshipment facilities road	Number of parking places for trucks: 20 in Ruse-West and 160 in Ruse-East
Transshipment facilities rail	11 km tracks in the industrial area of Port Bulmarket
Transshipment facilities IWT	Number of berths: 14 in Ruse-East (2 of which on the ro-ro) and 11 in Ruse-West Container infrastructure: Yes in Ruse-East Number of cranes: 17 gantry cranes with max lifting capacity 60 t, 1 floating crane with max capacity 100 t. Number of reach stackers: 1 at Ruse-East Ro-Ro Ramp access available in Ruse-East
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Ruse West, BG		
Waterway	Danube	
River km	496, right	
Latitude	43.841689	
Longitude	25.940265	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	27,600 m ²
	Covered storage:	9,696 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	12
	Largest berth:	n/a

	Quay length:	1,518 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	n/a	
Transshipment facilities road	n/a	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	n/a	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	n/a	

Port of Mainz, DE		
Waterway	Rhine	
River km	501, left	
Latitude	50.022977	
Longitude	8.244842	
General significance	n/a	
Terminal operators	Ernst Frankenbach GmbH	
Employment effects	n/a	
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Transshipment: Container Container stuffing / stripping Container maintenance / repair	
Port area	80.000 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 5 Mobile cranes: n/a Reach stacker: 1 RoRo access: n/a	
Waterway connection	No. port basins: n/a	

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: 4 Longest siding: n/a Weekly rail departures: n/a
Road connection	Anbindung an A643
Transshipment facilities road	n/a
Transshipment facilities rail	1x railway gantry crane
Transshipment facilities IWT	Number of berths: Container infrastructure: Yes Number of cranes (gantry, swing): 4x Gantry Number of reach stackers: Ro-Ro Ramp access available:
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Zimnicea, RO		
Waterway	Danube	
River km	552, left	
Latitude	43.628792	
Longitude	25.362049	
General significance	n/a	
Terminal operators	Zimnicea City Hall	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	Approx. 720,000 t annually	
Handling activities	Loading and unloading general, bulk and freight cargo Grain storage and loading onto vessels	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	3
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	1
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berth: 1 Container infrastructure? Number of cranes: 2 gantry cranes with capacity of 16 t Number of reach stackers? Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Svishtov, BG	
Waterway	Danube
River km	554, right
Latitude	43.646564
Longitude	25.308006
General significance	The southernmost port on the river destination Danube-Rhine-Main and one of the biggest Bulgarian ports on the Danube River.
Terminal operators	International Port Svishtov BPI Co.
Employment effects	n/a
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: n/a
Cargo transshipment volumes (t and TEU)	n/a
Handling activities	Pilotage, port vessels provided; Loading and offloading, trimming, separation, stowing, cargo holds cleaning before and after loading; Cargo storage operations, according customs regulations; Loading and offloading at anchorage; Forwarding services and customs clearance; Preparation of forwarding documentation/bill of landing, specifications, etc.; Loading and offloading equipment provided; Berthing operations, Tugs, Pilotage, Replacement/Relieve Crew; Floating docks; Fresh water; Electricity; Cargo preparation /packaging repairs, repacking, labeling, marking, etc. Additional services under agreement;
Port area	n/a
Storage areas	Open storage: 66,600 m ²

	Covered storage: 6,620 m ² Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 11 Mobile cranes: n/a Reach stacker: n/a RoRo access: true
Waterway connection	No. port basins: n/a No. of berths: 8 Largest berth: n/a Quay length: 902 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 4 Longest siding: 2,510 m Weekly rail departures: n/a
Road connection	Highway Hemus (45 km away)
Transshipment facilities road	11 travel lifts with 24 hours freight processing
Transshipment facilities rail	4 railways in total length of 2,510 m
Transshipment facilities IWT	Number of berths: 8 (1 of which specialized for ro-ro) Container infrastructure: Yes, such as containers depot forwarding regularly to Germany, Port Constanta and Beograd Number of cranes: 11 gantry cranes and 1 floating crane Number of reach stackers? Ro-Ro Ramp access available.
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Dredging "Istar" PLC
Port Community System/ Terminal Operating System in place	n/a

Association memberships	n/a

Port of Sviloza (Svishtov West), BG		
Waterway	Danube	
River km	558.4, right	
Latitude	43.623932	
Longitude	25.345016	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	15,882 m ²	
Storage areas	Open storage:	2,470 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	1
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Belene, BG		
Waterway	Danube	
River km	567, right	
Latitude	43.636666	
Longitude	25.208055	
General significance	n/a	
Terminal operators	"Brave Master Logistics" Ltd.	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Loading and unloading general cargo and bulk cargo as well as performing other services such as project cargo (heavy and oversized cargo up to 480 t per piece)	
Port area	28,800 m ²	
Storage areas	Open storage:	21,200 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	3
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	2
	No. of berths:	2

	Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	40 km
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 2 (winter harbour) Container infrastructure? Number of cranes: 3 gantry cranes with max lifting capacity 480 t, 2 luffing/slewing cranes with max lifting capacity 20 t. Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	National Electric Company (Bulgaria)
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Koblenz, DE		
Waterway	Rhine	
River km	596.6, left	
Latitude	50.395662	
Longitude	7.591178	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	2,500,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	2
	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Turnu Măgurele, RO		
Waterway	Danube	
River km	597, left	
Latitude	43.714323	
Longitude	24.896464	
General significance	n/a	
Terminal operators	Turnu Magurele City Hall	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	800,000 t annually	
Handling activities	Handling grain, passengers, raw materials for the chemical works, fertilisers in bulk, general cargo and wood products.	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 1 Container infrastructure? Number of cranes? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Somovit, BG		
Waterway	Danube	
River km	608, right	
Latitude	43.691158	
Longitude	24.772635	
General significance	n/a	
Terminal operators	BPICo	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	30,000 m ²	
Storage areas	Open storage:	9,700 m ²
	Covered storage:	2,175 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	5
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	3
	Largest berth:	n/a

	Quay length: 350 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 1 Longest siding: 210 m Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	Rail siding with a length of 210 m
Transshipment facilities IWT	Number of berths: 3 Container infrastructure? Number of cranes: 5 gantry cranes with max lifting capacity 5 t. Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Corabia, RO		
Waterway	Danube	
River km	627.6, left	
Latitude	43.771480	
Longitude	24.534987	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	227,357 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	15
	No. of berths:	2
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Oryahovo, BG		
Waterway	Danube	
River km	678, right	
Latitude	43.73904	
Longitude	23.96873	
General significance	The port is specialized in processing general and bulk cargo, and passengers	
Terminal operators	"Slunchev Dar" JSK	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	12,300 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	3
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	3
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	One automobile entrance with two lanes
Transshipment facilities rail	None
Transshipment facilities IWT	Number of berths: 3 Container infrastructure No Number of cranes: 3 cranes with up to 10 t capacity Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Bechet, RO		
Waterway	Danube	
River km	679, left	
Latitude	43.748721	
Longitude	23.962002	
General significance	One of the largest Romanian river ports, located in the city of Bechet (Dolj County) on the Danube River.	
Terminal operators	CN APDF SA SPET SA Craiova SC CEREALCOM Dolj	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	Cargo traffic is 50,000 tons yearly	
Handling activities	n/a	
Port area	76,286 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a

	No. of berths: 1 Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 1 grain berth, 1 general cargo berth and 1 oil terminal berth Container infrastructure? Number of cranes? Number of reach stackers? Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	CEREALCOM SA SEGARCEA
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Bechet, RO		
Waterway	Danube	
River km	679, left	
Latitude	43.748924	
Longitude	23.957338	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	76.287 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Cologne, DE		
Waterway	Rhine	
River km	695.8, either	
Latitude	50.979760	
Longitude	6.975027	
General significance	Second largest inland port in Germany	
Terminal operators	RheinCargo	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	12.8 mn. t 15.3 mn. t quayside transshipment 500,000 TEU	
Handling activities	n/a	
Port area	1.307 km ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: Container infrastructure: yes Number of cranes (gantry, swing): 5 Number of reach stackers: 9 Ro-Ro Ramp access available: yes
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	EFIP BÖB (RheinCargo)

Port of Lom, BG		
Waterway	Danube	
River km	742, right	
Latitude	43.83038	
Longitude	23.24257	
General significance	The second largest river port in Bulgaria after Port of Ruse, the port is specialized in processing general and bulk cargo, passengers, and ship supply	
Terminal operators	"Port Invest" Ltd.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	554,565 t in 2021	
Handling activities	The loading and unloading activity Warehouse and maneuvering services Passenger and pontoon services; Providing pier, electricity, water, cleaning of vessels of customers; Provision of transshipment equipment. Preparation of cargo - repair of packaging, re-wrapping, labeling, re-packing, marking and other services upon customer's request; Repair and technical services; Preparation and executing of commercial and transport documents.	
Port area	371,129 m ²	
Storage areas	Open storage:	115,769 m ²
	Covered storage:	5,245 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	19

	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	1
	No. of berths:	13
	Largest berth:	n/a
	Quay length:	1,745 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	national railway network
Road connection	Nearby Highways E79	
Transshipment facilities road	2 automobile entrances with two lanes	
Transshipment facilities rail	One railway entrance Rail tracks with length of 7,176 m	
Transshipment facilities IWT	Number of berths: 13 Container infrastructure: No Number of cranes: 19 gantry cranes with a capacity of 5 to 20 t. Number of reach stackers: 0 Ro-Ro Ramp access unavailable	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	n/a	

Port of Duisburg, DE	
Waterway	Rhine
River km	780.8, either
Latitude	51.453154
Longitude	6.723465
General significance	Largest inland port in Europe
Terminal operators	Rhein-Ruhr Terminal Gesellschaft für Container- und Güterumschlag mbH Contargo GmbH & Co. KG D3T Duisburg Trimodal Terminal GmbH (NYK Holding (Europe), CMA CGM Inland Services France, Duisburger Hafen AG) neska Schiffs- und Sped. Rhein Ruhr Terminal GmbH Hutchison Ports Duisburg Duisburg Gateway Terminal GmbH [im Bau] (Duisburger Hafen AG, Hupac Group, HTS Intermodal) Multimodal Terminal Duisburg GmbH thyssenkrupp Steel Logistics GmbH
Employment effects	51,580 direct and indirect jobs 1,600 jobs in duiport-group 300 transport and logistics companies
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: true Heavy lift: true
Cargo transshipment volumes (t and TEU)	4.3 mn. TEU 111.1 mio t
Handling activities	Transshipment: - Container - Break bulk - Dry bulk - Liquid bulk - Cars - Heavy lift Packaging logistics Contract logistics Container stuffing / stripping Container maintenance / repair

	Reefer connection
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: true
Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	1x side loader 1x tilt chassis
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 3x (Contargo) Container infrastructure: yes Number of cranes (gantry, swing): 4x container gantry (Contargo) Number of reach stackers: 7x (Contargo) Ro-Ro Ramp access available: yes (2)
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Audi

	DB Schenker DHL Hewlett Packard Johnson & Johnson Kühne & Nagel Fressnapf Siemens
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Vidin, BG		
Waterway	Danube	
River km	785, right	
Latitude	43.98612	
Longitude	22.88216	
General significance	Located in the Northwestern town Vidin and at the right bank of the Danube, the port is the first / last port on the territory of the Republic of Bulgaria and this geographical part of the EU zone.	
Terminal operators	Pristanishte-Vidin EOOD (Republic of Bulgaria - Bulgarian Ministry of Transport) SKM Port Vidin JSC	
Employment effects	n/a	
Cargo types	Container: n/a Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	IWW cargo traffic 1,144,978 t in 2011	
Handling activities	Loading and unloading general cargo and bulk cargo as well as maintaining other services such as in passenger terminal	
Port area	65,000 m ²	
Storage areas	Open storage: 15,000 m ² Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 3 Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a	

Waterway connection	No. port basins:	2
	No. of berths:	10
	Largest berth:	n/a
	Quay length:	1,440 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	n/a	
Transshipment facilities road	n/a	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	Number of berths: 10 Container infrastructure: No Number of cranes: 3 gantry cranes with max 20 t, 1 luffing-slewing crane with max 2 t Number of reach stackers: 0 Ro-Ro Ramp access available?	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	n/a	

Port of Calafat, RO		
Waterway	Danube	
River km	795, left	
Latitude	43.997304	
Longitude	22.929749	
General significance	One of the largest Romanian river ports, located in the city of Calafat (Dolj County) on the Danube River.	
Terminal operators	CN APDF SA Giurgiu	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Reception, handling and storage of goods, unloading of grain, rental of commercial premises.	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a

	Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	Rail siding with a length of 100 m
Transshipment facilities IWT	Number of berths: 1 berth for passengers, 1 berth for cargo and 1 berthing ramp for Ro-Ro ship available Container infrastructure? Number of cranes: Two 5 tons cranes at berths for cargo Number of reach stackers? Ro-Ro Ramp access available for mooring, loading and unloading cars on the ferry crossing, which connects to the port of Vidin
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	SCEP DROBETA SA Orşova
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Wesel Municipal Rhine Port, DE		
Waterway	Rhine	
River km	814.6, right	
Latitude	51.653887	
Longitude	6.601719	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	138,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	3
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	5
	Largest berth:	135m

	Quay length: 815 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 5 Longest siding: 455 m Weekly rail departures: n/a
Road connection	A3, A57, A59
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Prahovo, RS		
Waterway	Danube	
River km	861, right	
Latitude	44.29234	
Longitude	22.61081	
General significance	n/a	
Terminal operators	Elixir Prahovo DOO NIS a.d. Novi Sad	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	234,603 t in 2009	
Handling activities	n/a	
Port area	70,743 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	6
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	30 parking places for trucks
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 7 (winter harbour) Container service available for maintenance and repair as well as 850 m ² of container storage yard 6 gantry cranes with max lifting capacity 40 t are available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Nijmegen, NL		
Waterway	Waal	
River km	886.5, left	
Latitude	51.860850	
Longitude	5.831193	
General significance	n/a	
Terminal operators	BCTN	
Employment effects	1,300 jobs	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	1 mn t 80,000 TEU	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	2
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	A50 und A73
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Asfalt Productie Nijmegen Hyser-Yale Group European Metal Recycling De Leeuw Metalen Daanen Shipping & Logistics Derks GWW / Derks Transport HKS The Metal Company BCTN Duynie Group EKI VPG Scheepsservice Koole Terminals Eiho Dura Vermeer Reststoffen
Port Community System/ Terminal Operating System in place	n/a
Association memberships	EFIP

Port of Drobeta-Turnu Severin, RO		
Waterway	Danube	
River km	927, left	
Latitude	44.61626	
Longitude	22.65209	
General significance	Administrated by the National Company "Administration of Danube River Ports" Giurgiu, located near the water storage Hydroelectric and Navigation Complex Portile de Fier 2.	
Terminal operators	TRANSEUROPA PORT GALATI	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	Total 278,633 t in 2016	
Handling activities	n/a	
Port area	137,592 m ²	
Storage areas	Open storage:	13,725 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	3
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	7

	Largest berth: n/a Quay length: 300 m length of vertical quayside, 420 m length of wall quays, 365 m length of quays for winter berths, 65 m length vertical quay and 35 m length wall quay Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 3,793 m Weekly rail departures: n/a
Road connection	access to the town's road network and further links to DN6, DN 56, DN 56A and DN 67
Transshipment facilities road	n/a
Transshipment facilities rail	Rail siding with length of 3,793 m
Transshipment facilities IWT	Number of berths: 7 Container infrastructure? Number of cranes: 3 gantry cranes with max lifting capacity 16 t. Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Cargill Beo Trade Com
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Union of Romanian Inland Ports U.P.I.R.

Port of Orșova, RO		
Waterway	Danube	
River km	953, left	
Latitude	44.72784	
Longitude	22.41314	
General significance	n/a	
Terminal operators	SCEP DROBEATA SA Orsova	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	48,277 m ²	
Storage areas	Open storage:	16,000 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	4
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	7
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	access to the Orsova road network as well as to DN 6 and DN 57
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 7 Container infrastructure? Number of cranes: 4 gantry cranes with max lifting capacity 16 t. Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Union of Romanian Inland Ports U.P.I.R.

Port of Rotterdam, NL	
Waterway	Nieuwe Maas
River km	1005, left
Latitude	51.893493
Longitude	4.440102
General significance	Largest sea port in Europe direct and indirect added value of 63 bn Euro
Terminal operators	Rotterdam World Gateway APM Terminals Maasvlakte II Hutchinson Ports ECT Euromax Rotterdam Container Terminal APM Terminals Rotterdam Delta Container Services Hutchinson Ports ECT Delta Hutchinson Ports ECT Delta Barge Broekman Distriport Waalhaven Botlek Terminal CTT Rotterdam Matrans Rotterdam Terminal Rotterdam Short Sea Terminals Barge Center Waalhaven
Employment effects	565,000 direct and indirect 1,270 employees at port authority
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: n/a
Cargo transshipment volumes (t and TEU)	468.7 mn. t 15.3 mn. TEU
Handling activities	Transshipment: Container Dry bulk Liquid bulk Break bulk container depot services

Port area	100 km ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: true
Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a

Port Community System/ Terminal Operating System in place	n/a
Association memberships	EFIP

Port of Moldova Veche, RO		
Waterway	Danube	
River km	1050, left	
Latitude	44.72652	
Longitude	21.6135	
General significance	One of the largest Romanian river ports, located in the town of Moldova Nouă on the Danube River.	
Terminal operators	SCEP Drobeta SA Orsova SC Tehnosteel Vest SRL	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Mainly handling wood products, sand and gravel, bricks and fertilizers.	
Port area	31,240 m ²	
Storage areas	Open storage:	30,000 m ²
	Covered storage:	2,000 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	2
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	1

	No. of berths: 3 Largest berth: 160 m Quay length: 400 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	access to the local road network and further links to DN 57A and DJ 571
Transshipment facilities road	Number of parking places for trucks: 15
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 3 berths with a total operating frontage of 300 m long equipped with vertical quays (in past operating ore) and general cargo, 2 berths with a total front approx. 160 m long and equipped with inclined quays for the operation of timber and other general cargo traffic, and 1 berth of 100 m length and equipped with wall quays for passenger traffic. Container infrastructure: Yes, available for maintenance and repair, stuffing and stripping Number of cranes: 2 gantry cranes available with max lifting capacity 5 t. Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Union of Romanian Inland Ports U.P.I.R.

Port of Smederevo, RS		
Waterway	Danube	
River km	1111, right	
Latitude	44.66883	
Longitude	20.92106	
General significance	n/a	
Terminal operators	HBIS GROUP Serbia Iron & Steel d.o.o. Beograd Tomi Trade d.o.o. Smederevo NIS a.d. Novi Sad Mitran Oil d.o.o. Beograd	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	1,956,187 t in 2009	
Handling activities	n/a	
Port area	433.384 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	3
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	100 parking places for trucks
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 5 Container services including container maintenance and repair, container stuffing and stripping, and 1,000 m ² of container storage yard 3 gantry cranes with max capacity of 10 t, 10 mobile cranes with max lifting capacity of 150 t and 1 luffing-slewing crane with max lifting capacity of 150 t are available Number of reach stackers: 2
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Pančevo, RS		
Waterway	Danube	
River km	1153, left	
Latitude	44.85185	
Longitude	20.64074	
General significance	Port with a strong industrial background, has a single oil refinery	
Terminal operators	Port Dunav Pancevo (DM Grain) GRANEXPORT d.o.o. Pancevo NIS a.d. Novi Sad Specijalna luka Pancevo	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: true Heavy lift: true	
Cargo transshipment volumes (t and TEU)	852,422 t in 2009	
Handling activities	Handling general, bulk (grain, construction materials) and liquid cargo as well as container	
Port area	1,270,296 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 3 Mobile cranes: 3 Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: n/a	

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: 3 Longest siding: 500 m Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	Rail siding with length of 6,100 m Rail tariff point
Transshipment facilities IWT	Number of berths: 5 (winter harbour) 3 gantry cranes with max capacity of 27.5 t and 3 mobile cranes available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Belgrade, RS		
Waterway	Danube	
River km	1168, right	
Latitude	44.824229	
Longitude	20.476340	
General significance	A cargo and passenger port located on the Danube River in Belgrade, Serbia. The port is located in the center of Belgrade, near Pančevo Bridge. The only one intermodal terminal in Serbian ports.	
Terminal operators	Luka Beograd AD	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: true	
Cargo transshipment volumes (t and TEU)	909,150 t in 2009 Total container handling 212 TEU in 2020: 106 TEU waterside 106 TEU land to land	
Handling activities	Receipt of goods Preparation of goods Loading and storage handling between all transport modalities, including anchorage, pilotage and docking services	
Port area	n/a	
Storage areas	Open storage: 300,000 m² Covered storage: 140,000 m² Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 11 Mobile cranes: 2	

	Reach stacker: n/a RoRo access: true
Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	9,612 m of roads 80 parking places for trucks
Transshipment facilities rail	12,507 m long railway track Rail tariff point
Transshipment facilities IWT	Number of berths: 8 (winter harbour) Container infrastructure: Yes, with container terminal availability with 3,600 m ² of container storage yard 11 gantry cranes available with max lifting capacity 50 t as well as 2 mobile cranes with max lifting capacity 40 t. Number of reach stacker: 1 Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Ecotopia NALED Danube Tourist Commission Belgrade Chamber of Commerce, American Chamber of Commerce, Serbian Chamber of Commerce

Port of Novi Sad, RS		
Waterway	Danube	
River km	1254, left	
Latitude	45.269979	
Longitude	19.858198	
General significance	n/a	
Terminal operators	DP WORLD A.D. NOVI SAD NIS a.d. Novi Sad	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	791,023 t in 2009	
Handling activities	n/a	
Port area	24,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	4
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 4 (winter harbour) Container services including container maintenance and repair, container stuffing and stripping, and 3,000 m ² of container storage yard 4 gantry cranes available with max lifting capacity 27.5 t as well as 1 mobile crane with max lifting capacity 42 t Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Beočin, RS		
Waterway	Danube	
River km	1270, right	
Latitude	45.215488	
Longitude	19.702924	
General significance	n/a	
Terminal operators	Lafarge Beočinska fabrika cementa d.o.o. / "Lafarge" Ltd.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	30,000 m ²
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	1 gantry cranes available with max lifting capacity 10 t for single use.
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	AgroGrnja Pivnice CFND A.D. Beograd (now with Rhenus Logistics)
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Bačka Palanka, RS		
Waterway	Danube	
River km	1295, left	
Latitude	45.23801	
Longitude	19.42306	
General significance	n/a	
Terminal operators	Luka Backa Palanka d.o.o.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	Over 290,000 t in 2012	
Handling activities	Procurement and distribution of grains and oilseeds Processing of oilseeds and production of finished food products for human consumption Production and distribution of fertilizers Production of animal feed, pharmaceutical products and biological products	
Port area	640.000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	true

Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: 7 Longest siding: n/a Weekly rail departures: n/a
Road connection	vicinity of the Novi Sad-Osijek-Sombor main road, closeness of the Belgrade-Subotica highway at a distance of 45 km and the Belgrade-Zagreb highway
Transshipment facilities road	50 parking places for trucks
Transshipment facilities rail	Railroad track 5 km from the port
Transshipment facilities IWT	Number of berth: 1 (winter harbour) One gantry crane, one mobile crane and one floating crane available Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Vukovar, HR		
Waterway	Danube	
River km	1335, right	
Latitude	45.363631	
Longitude	18.986483	
General significance	The only river port in Croatia located on the right side of the Danube River. Also, it has status of an international port, has economic importance for the Republic of Croatia.	
Terminal operators	Vupik plus d.o.o. Terminal Dunav d.o.o. Luka-Vukovar d.o.o.	
Employment effects	The port employs 65 people as full-time employees and there is still a possibility of additional employment of seasonal workers if necessary. At the height of its glory, the port had an average of 8,000 to 10,000 t cargo per employee, while this indicator rose to over 11,000 t per worker in 2005 and 2006. These data classify this port as one of the most active and productive port on the Danube river.	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: true	
Cargo transshipment volumes (t and TEU)	40 mn. t	
Handling activities	Loading/unloading cargo, cargo handling, cargo storage	
Port area	35,000 m ²	
Storage areas	Open storage: 10,000 m² Covered storage: 3,000 m² Silo storage: n/a Liquid storage: n/a	

Cranes and equipment	Gantry cranes:	3
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	1,700 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	highway E-75 and with road M2 with city of Osijek and with corridor VC	
Transshipment facilities road	3 road entrances with 6 lanes Port internal road system which consists of a main road, a weather-protected terminal for the handling with materials, and an economic route for the container terminal.	
Transshipment facilities rail	Three operational railway tracks Total length of quay side railway track 800 m Total length of the railway tracks 3,000 m	
Transshipment facilities IWT	Number of berths: 4 Container infrastructure: No container terminal but some of the existing services can be applied on container cargo at the multipurpose cargo terminal such as using device for handling (spreader) 20" and 40" containers as well as gantry cranes and mobile cranes 3 gantry cranes available with max lifting capacity 6-25 t as well as a mobile crane with max lifting capacity 63 t. Ro-Ro Ramp access unavailable	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating	n/a	

System in place	
Association memberships	n/a

Port of Bogojevo, HR		
Waterway	Danube	
River km	1366, left	
Latitude	45.52677	
Longitude	19.08512	
General significance	Located on the left bank of the Danube in the immediate vicinity of the road and railway bridge on the border with Croatia.	
Terminal operators	Luka Dunav Bogojevo d.o.o.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Reloading and unloading of goods Warehousing and storage of goods Warehouse rental Packaging mineral fertilizers	
Port area	150,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a

	No. of berths: n/a Largest berth: n/a Quay length: 98 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	- Surrounded by the main road Bogojewo-Erdut on the east, regional road Bogojewo-Senta on the west and a local road on the west - Connected with the regional road Bogojewo-Apatin-Sombor-Subotica as well as the section Bogojewo-Odžaci-Sombor of the trunk road No. 3 which passes through Serbia
Transshipment facilities road	Two road receiving hoppers with total capacity of 400 t/h 30 parking places for trucks
Transshipment facilities rail	Rail siding with length of 300 m Rail receiving hopper with capacity 200 t/h
Transshipment facilities IWT	Number of berths: 2 1 gantry crane available with max lifting capacity 20 t.
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Apatin, RS		
Waterway	Danube	
River km	1401, left	
Latitude	45.67886	
Longitude	18.96543	
General significance	The port is located in RTC Apatin, as a part of the Free Zone Apatin, which consists of the RTC (Port Apatin and Shipyard) and Blok 61.	
Terminal operators	Napredak a.d.	
Employment effects	n/a	
Cargo types	Container: n/a Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	30,000 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 1 Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: n/a No. of berths: n/a	

	Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	40 parking places for trucks
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 3 (winter harbour) 1 gantry crane available with max lifting capacity 6 t.
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Mohács, HU		
Waterway	Danube	
River km	1450, right	
Latitude	46.011935	
Longitude	18.681370	
General significance	The largest port in southern border region on the right bank of the Danube.	
Terminal operators	BÓLY Zrt. ÁTI DEPO Zrt.	
Employment effects	n/a	
Cargo types	Container: n/a Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	266,819 t in 2019	
Handling activities	Storage, processing, (grain) drying, cleaning, packing, transportation and commercial activity	
Port area	32,000 m ²	
Storage areas	Open storage: 5,000 m ² Covered storage: 3,500 m ² Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: 1	

	No. of berths: 2 Largest berth: n/a Quay length: 130 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 350 m Weekly rail departures: n/a
Road connection	M6 and from highway No. 56 or highway No. 57
Transshipment facilities road	Number of parking places for trucks: 6
Transshipment facilities rail	Length of rail siding: 350 m
Transshipment facilities IWT	Number of berths: 2
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Port of Baja, HU		
Waterway	Danube	
River km	1479, left	
Latitude	46.185297	
Longitude	18.927019	
General significance	The second most important Hungarian port of the Danube-Main-Rhine waterway system	
Terminal operators	Bajai OKK Kft. Port Almas Ltd. Gemenc Ltd. Hungaria Agro Ltd. ICGRAIN Ltd. Áti Depo Ltd.	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: true	
Cargo transshipment volumes (t and TEU)	505,138 t in 2019 581,369 t of cargo and 8,000 TEUs in 2021	
Handling activities	unloading and loading of goods from the ship (all types of goods, except: dangerous goods), loading and unloading goods of special size and/or weight container handling, storage, repair	
Port area	208,795 m ²	
Storage areas	Open storage: 14,000 m² Covered storage: 19,800 m² Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 1 Mobile cranes: 1	

	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	9
	Largest berth:	n/a
	Quay length:	n/a
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	1
	Longest siding:	800 m
	Weekly rail departures:	n/a
Road connection	No. 51 or highway No. 55	
Transshipment facilities road	Number of parking places for trucks: 120	
Transshipment facilities rail	Length of rail siding: 800 m	
Transshipment facilities IWT	Number of berths: 9 Container infrastructure in the berth no. 2,3,7 which are operated by Áti Depo Zrt. 1 gantry crane and 1 mobile crane available Ro-Ro Ramp access available	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	The Hungarian Federation of Danube Ports	

Port of Bogyiszlo, HU		
Waterway	Danube	
River km	1503, right	
Latitude	46.42326	
Longitude	18.89416	
General significance	n/a	
Terminal operators	BLÓKER Zrt.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Loading of the agricultural grains	
Port area	11,837 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	1
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	M6 and M9
Transshipment facilities road	Number of parking places for trucks: 15
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 1 (winter harbour)
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Port of Foktö, HU		
Waterway	Danube	
River km	1520.945, left	
Latitude	46.541502	
Longitude	18.900086	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Transshipment site Foktő, HU		
Waterway	Danube	
River km	1521, left	
Latitude	46.541170	
Longitude	18.899498	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Paks, HU		
Waterway	Danube	
River km	1528, right	
Latitude	46.60556	
Longitude	18.85374	
General significance	n/a	
Terminal operators	SYGNUS Port Ltd.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	150,000 m ²	
Storage areas	Open storage:	20,000 m ²
	Covered storage:	15,000 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	3
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: 2 Longest siding: n/a Weekly rail departures: n/a
Road connection	Main Road No. 6, M6 Motorway
Transshipment facilities road	Number of parking places for trucks: 40
Transshipment facilities rail	Two pairs of rails which can load 16 railway cars in parallel
Transshipment facilities IWT	Number of berths: 3 1 mobile crane is available with max lifting capacity 61 t.
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Transshipment Site in Dunaföldvár, HU		
Waterway	Danube	
River km	1563, left	
Latitude	46.808285	
Longitude	18.942491	
General significance	n/a	
Terminal operators	Dunaföldvár Város Önkormányzata Cargill Magyarország Kereskedelmi Zrt. LUKOIL Magyarország Kft.	
Employment effects	n/a	
Cargo types	Container: n/a Break bulk: n/a Dry bulk: n/a Liquid bulk: true Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Grain and oilseed trading and logistics, animal feed formulation, production and distribution	
Port area	n/a	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: n/a	

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Pannonia Ethanol
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Dunavecse, HU		
Waterway	Danube	
River km	1572, left	
Latitude	46.90711	
Longitude	18.96494	
General significance	n/a	
Terminal operators	Dunavecse Kikötő Szállítmányozási Kft.	
Employment effects	The port employs 9 employees as a manpower	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	loading and unloading of bulk goods between ship and truck (e.g. grain, fertilizer) carry out equalized packaging and outdoor storage of Big-Bags unloading and loading of oversized, overweight bulk cargo	
Port area	42,300 m ²	
Storage areas	Open storage:	20,000 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	1

	No. of berths: 2 Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Direct connection between the Danube and the M6 and M8 motorways as well as the main road No. 51
Transshipment facilities road	Number of parking places for trucks: 50
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: 2 (1 large ship) 1 mobile crane available (lifting capacity max: 12 t)
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Port of Dunaújváros, HU		
Waterway	Danube	
River km	1579, right	
Latitude	46.97015	
Longitude	18.94549	
General significance	Lies in the central part of Hungary, the port mainly serves the region's steelworks and more than 10 percent of the total grain exports of Hungary pass through it.	
Terminal operators	ISD Dunafer Co. Centroport Ltd.	
Employment effects	Number of employees at Centroport is 4 people	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	1,390,978 t in 2019	
Handling activities	n/a	
Port area	52,023 m ² (Dunafer) and 3,446 m ² (Centroport)	
Storage areas	Open storage:	10,000 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	7
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	1

	No. of berths: 9 Largest berth: n/a Quay length: 170 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 1,100 m Weekly rail departures: n/a
Road connection	M6 Highway (3-4 km away) and 70 km from Budapest on the right riverbank
Transshipment facilities road	Number of parking places for trucks: 30
Transshipment facilities rail	Rail siding with length of 1,100 m
Transshipment facilities IWT	Number of berths: 9 (winter harbour) 7 gantry cranes with max lifting capacity 27 t.
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Plimsoll Zrt.
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Port of Adony, HU		
Waterway	Danube	
River km	1597, right	
Latitude	47.10894	
Longitude	18.87741	
General significance	Was built in 2006 and located almost in the middle of the country, the port and its logistic centre is Hungary's largest warehouse capacity.	
Terminal operators	Adony Logisztikai Központ Kft. Magtárház Kikötő Kft.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Storing, truck loading, vessel loading, block train loading, agricultural product trading, agricultural product drying	
Port area	n/a	
Storage areas	Open storage:	170,000 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a

	No. of berths: 3 Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 1,820 m Weekly rail departures: rail network by Adony station and Pustaszabolcs to the Helsinki Corridor V
Road connection	Main Road 6, M6 and M8 motorway
Transshipment facilities road	100 parking places for trucks
Transshipment facilities rail	1,820 m long private siding network for block trains with up to 30-32 wagons Rail-car mover Rail tariff point
Transshipment facilities IWT	Number of berths: 3 No container infrastructure yet but it is already included in the future plan Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Port of Százhalombatta, HU		
Waterway	Danube	
River km	1618, right	
Latitude	47.291218	
Longitude	18.914659	
General significance	n/a	
Terminal operators	Illés Holding Zrt MOL Nyrt. TKD Logisztika Százhalombatta	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Cement storage, road-rail transshipment Handling cargoes such as fuel, petroleum products, heating oil, diesel	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? Container infrastructure? 1 mobile crane available Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Budapest, HU		
Waterway	Danube	
River km	1640, left	
Latitude	47.443709	
Longitude	19.06074	
General significance	One of the largest ports in Hungary (second largest port and logistic centre), its container terminal is the only facility in the country capable of water-side loading of containers.	
Terminal operators	Budapesti Szabadkikötő Logisztikai Zrt. MAHART Gabonatórház Kft. MAHART Container Center Kft.	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: true Heavy lift: true	
Cargo transshipment volumes (t and TEU)	1,200,332 t in 2021 Total handling containers 411,500 TEU in 2020: 6,000 TEU waterside 405,500 TEU land to land	
Handling activities	Transshipment, train loading, warehousing	
Port area	62,000 m ²	
Storage areas	Open storage: 23,000 m² Covered storage: 11,500 m² Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Cantry cranes: 3 Mobile cranes: n/a Reach stacker: 10	

	RoRo access: true
Waterway connection	No. port basins: 3 No. of berths: n/a Largest berth: 18 Quay length: 270 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 8 Longest siding: 650 m Weekly rail departures: n/a
Road connection	highways M1 from Austria, M7 from Croatia, Slovenia, M6 from the south, M5 from Serbia, Romania and M3 from the east, using the ring-road, M0 as well - Trucks can approach the port from the highways via either M0 – M51 – Ócsai Road/Grassalkovics Road/Helsinki Road Cubacsi bridge, or M0
Transshipment facilities road	3 road lanes at gate for truck traffic 3 road lanes for truck loading and unloading 20 parking spaces for trucks/semitrailers outside and 70 parking spaces inside
Transshipment facilities rail	Railway track with 15.47 km long track network and 20 t axle load Rail length of 280 m along the quay 5 rail sidings for loading and unloading
Transshipment facilities IWT	Number of berths: 18 Container infrastructure including 890 reefer connections, a 3,200 m ² paved area and offers container maintenance, repair, stuffing and stripping services 4 gantry cranes with max lifting capacity 32 t 6 loaded reach stackers and 4 empty reach stackers are also available Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	ArcelorMittal Distribution Hungary Kft GHIBLI Szállítmányozási Kft EKOL Logistics Szolgáltató Kft MASPED Logisztika Kft

Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Port of Štúrovo, SK		
Waterway	Danube	
River km	1722, left	
Latitude	47.780807	
Longitude	18.705086	
General significance	n/a	
Terminal operators	Priemyselný park Štúrovo, a.s.	
Employment effects	The port employs 25 people	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Loading and unloading of: Bulk goods – Corn, wheat, fertilizers, coke, gravel, scrap iron, etc. from/to trucks, rail wagons, vessels Piece goods – Steel coils, piles, wood from/to trucks, rail wagons, vessels Containers – from/to trucks, rail wagons, vessels Bagged goods – from/to trucks, rail wagons, vessels; packing of goods into big-bags	
Port area	36,500 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	1
	Mobile cranes:	1
	Reach stacker:	n/a

	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	2
	Largest berth:	n/a
	Quay length:	n/a
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	The industrial park provides a fast connection on the M1 motorway to Austria	
Transshipment facilities road	n/a	
Transshipment facilities rail	Railway network from port to the industrial park, 35 km long railway siding which is connected to the international railway line IV	
Transshipment facilities IWT	Number of berths: 2 Container infrastructure: No Number of cranes: 1 x 10t portal/gantry crane, 1 x 3t mobile crane. Number of reach stackers? Ro-Ro Ramp access available?	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	PPŠ Logistic s.r.o.	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	European Federation of Inland Ports (EFIP) Hungarian Federation of Danube Ports	

Port of Nyergesújfalu, HU		
Waterway	Danube	
River km	1735, right	
Latitude	47.75587	
Longitude	18.52273	
General significance	n/a	
Terminal operators	Mahartlog Port Ltd.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Serves and operates as a floating ro-ro port	
Port area	39,501 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	2
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	1
	No. of berths:	1
	Largest berth:	n/a

	Quay length: 350 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 260 m Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	An industrial freight section of the railway station which is able to receive standard directional trains up to a length of 260 m
Transshipment facilities IWT	Number of berth: one, floating 2 mobile cranes and gantries are available Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Port of Komárno, SK		
Waterway	Danube	
River km	1760, left	
Latitude	47.759484	
Longitude	18.106008	
General significance	Second most important port in Slovakia, the port is considered the starting point of the "Vážska waterway".	
Terminal operators	Slovenská plavba a prístavy a.s. (Slovak Shipping and Ports JSC)	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	Total cargo volume 73,141 t in 2021	
Handling activities	n/a	
Port area	643,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	8
	Mobile cranes:	2
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	2
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: 5,445 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Highway M1 can be accessed from Lehárova street (9 km)
Transshipment facilities road	Three road entrances
Transshipment facilities rail	Railway siding with a total length of 14.4 km and total of 13 ladder tracks Industrial spur length 13.8 km
Transshipment facilities IWT	Number of berths? Container infrastructure: No Number of cranes: 8 gantry crane available with max lifting capacity 16 t as well as 2 mobile cranes with max lifting capacity 17 t Number of reach stacker? Ro-Ro Ramp access is not available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	NAVROM GALATI
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Komárom, HU		
Waterway	Danube	
River km	1767, right	
Latitude	47.749117	
Longitude	18.124300	
General significance	Major port in Hungary handling dry cargo and bulk goods	
Terminal operators	Water Team Ltd. MAHART PassNave Ltd.	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	262,244 t in 2019	
Handling activities	Loading and unloading of break bulk and bulk cargo from vessel to bank and vice versa.	
Port area	24,777 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	3

	Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 260 m Weekly rail departures: n/a
Road connection	Motorway E60/E75 (8 km away), Highway M1 (0.4 km away)
Transshipment facilities road	Bridge which connects Hungary and Slovakia
Transshipment facilities rail	Side track for standard trains of max 260 m length Solid pavement for loading and unloading of the trains
Transshipment facilities IWT	Number of berths: 3
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Centroport Ltd. Vandamme Hungary Ltd. Euro Bevrachting IKR Agrár Ltd. Benship Hungary Ltd. DDSG Mahart CornMill Hungary Ltd.
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Port of Győr-Gönyű, HU		
Waterway	Danube	
River km	1794, right	
Latitude	47.732249	
Longitude	17.768720	
General significance	The port is the greatest intermodal logistic centre of the West Transdanubian region	
Terminal operators	Győr-Gönyű Kikötő Zrt.	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	225,420 t in 2019	
Handling activities	n/a	
Port area	1,100,000 m ²	
Storage areas	Open storage:	68,000 m ²
	Covered storage:	6,200 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	4
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	1
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: 690 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 6.2 km Weekly rail departures: n/a
Road connection	Directly connected to European Highway E60 leading from Brest to Constanta, and to Highway System E75 Helsinki-Athens and Ystad-Rijeka
Transshipment facilities road	n/a
Transshipment facilities rail	Rail siding with length of 6.2 km
Transshipment facilities IWT	Number of anchoring places: 5 ship stands 4 mobile cranes available with max lifting capacity 45 t. Ro-Ro Ramp access available for cars and trucks with sloping of 11%, width of 25 m and load bearing of 65 t.
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	The Hungarian Federation of Danube Ports

Port of Győr / ÁTI Depo, n/a		
Waterway	Rába	
River km	1794.8, right	
Latitude	47.686521	
Longitude	17.676887	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	6,000 m ²
	Covered storage:	14,000 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	2

	Quay length:	340 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a
Road connection	n/a	
Transshipment facilities road	n/a	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	n/a	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	n/a	

Port of Bratislava, SK		
Waterway	Danube	
River km	1867, left	
Latitude	48.130556	
Longitude	17.145000	
General significance	The most strategically important public port in Slovakia on the international watercourse of the Danube	
Terminal operators	Slovenská plavba a prístavy a.s. (Slovak Shipping and Ports JSC)	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	790,573 t in 2021.	
Handling activities	In the container terminal: rail-road-river transport, warehousing, door-to-door services, checking, maintenance, repair, and dry cleaning of containers.	
Port area	1,431,586 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	19
	Mobile cranes:	2
	Reach stacker:	4
	RoRo access:	true
Waterway connection	No. port basins:	n/a

	No. of berths: n/a Largest berth: n/a Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: 4 Longest siding: 388 m Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	2 road lanes for truck traffic 2 road lanes for truck loading and unloading Parking space for trucks/semitrailers max 40 semitrailers with max 150 TEU
Transshipment facilities rail	Siding track length of 28,828.6 m including 69 turnouts Traction line length of 5,500 m
Transshipment facilities IWT	Number of berths? Container infrastructure: Yes Number of cranes: 19 gantry cranes with max lifting capacity 560 t, 2 mobile cranes with max lifting capacity 28 t. Number of reach stackers? Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Vienna (Lobau), AT		
Waterway	Danube	
River km	1916.7, left	
Latitude	48.161190	
Longitude	16.520248	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Vienna (Albern), AT		
Waterway	Danube	
River km	1918.4, right	
Latitude	48.159678	
Longitude	16.499492	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Vienna (Freudenau), AT		
Waterway	Danube	
River km	1920.1, right	
Latitude	48.176851	
Longitude	16.470036	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	3,000,000 m ²	
Storage areas	Open storage:	200,000 m ²
	Covered storage:	70,000 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	4
	Mobile cranes:	3
	Reach stacker:	15
	RoRo access:	true
Waterway connection	No. port basins:	1
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	1,400 m at Albern and 2,000 m at

	Freudenau Weekly IWT departures: n/a
Railway connection	No. of sidings: 7 Longest siding: 686 m Weekly rail departures: n/a
Road connection	A23 ring road and the A4 east motorway
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Transshipment Site in Korneuburg, AT		
Waterway	Danube	
River km	1943, left	
Latitude	48.332888	
Longitude	16.329496	
General significance	n/a	
Terminal operators	MOL Austria Handels GmbH Agrar-Speicher Betriebs GmbH	
Employment effects	n/a	
Cargo types	Container: n/a Break bulk: n/a Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	30,000 t are handled on the water side in Agrarspeicher every year with a total (by rail, road and water) of 100,000 t.	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a	
Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a	

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Nearby Highways: Donauufer Autobahn A22, E49, E59 (exit 16 Korneuburg-Ost) In Agrarspeicher – Direct connection to Vienna’s northern bypass (S1) and the Donauufer Autobahn (A22)
Transshipment facilities road	In Agrarspeicher: 800 to/d loading capacity truck 800 to/d unloading capacity truck
Transshipment facilities rail	In Agrarspeicher: 300 to/d loading capacity rail for organic goods 400 to/d loading capacity rail for conventional goods 400 to/d unloading capacity railway
Transshipment facilities IWT	Number of berths? Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Transshipment Site in Pischelsdorf, AT		
Waterway	Danube	
River km	1972, right	
Latitude	48.338385	
Longitude	15.950813	
General significance	n/a	
Terminal operators	Donau Chemie AG	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	188,000 t in 2005 500,000 t each year	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: 600 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Nearby Highways: L112
Transshipment facilities road	n/a
Transshipment facilities rail	15 km rail network 3 locomotives
Transshipment facilities IWT	Number of berths? Container infrastructure: No Number of cranes (gantry, swing): 0 Number of reach stackers: 0 Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	EVN Schildecker
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Krems, AT		
Waterway	Danube	
River km	1998, left	
Latitude	48.403678	
Longitude	15.645098	
General significance	n/a	
Terminal operators	METRANS (Danubia) Krems GmbH Rhenus Donauhafen Krems GmbH & Co. KG (port operator)	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: n/a	
Cargo transshipment volumes (t and TEU)	Total volume about 470,000 tons in 2016	
Handling activities	Weighbridge Container cleaning Container maintenance Container repair facility Container stuffing and stripping Customs office Dangerous goods handling Dangerous goods preparation facilities Quality control Tank container cleaning Unaccompanied combined transport – Maintenance facilities Unaccompanied combined transport – Transshipment	
Port area	350,000 m ²	
Storage areas	Open storage: 60,000 m² Covered storage: 30,000 m² Silo storage: n/a Liquid storage: n/a	

Cranes and equipment	Gantry cranes:	2
	Mobile cranes:	2
	Reach stacker:	4
	RoRo access:	n/a
Waterway connection	No. port basins:	2
	No. of berths:	14
	Largest berth:	n/a
	Quay length:	1,560 m
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	8,000 m
	Weekly rail departures:	3-5 in each direction
Road connection	(up to 30 km): A 22	
Transshipment facilities road	Parking area Access to high level road network S 5, S 33	
Transshipment facilities rail	Total length of railway siding 8,000 m, Max train length 680 m, 4 loading tracks available with max 2 trains treated in parallel.	
Transshipment facilities IWT	Number of berths: 14, Container infrastructure: Yes, including container storage area 10,000 TEU and empty container/depot 6,000 TEU, Number of cranes: 1 luffing/slewing crane with max lifting capacity 6.5 t, 2 gantry cranes with max lifting capacity 50 t, and 2 mobile cranes with max lifting capacity 19 t. Number of reach stackers: 4 , Ro-Ro Ramp access unavailable.	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	Rhenus Donauhafen Krems GmbH & Co. KG Rhenus Logistics Austria GmbH Rhenus ParterShip Austria GmbH Danufert Handelsgesellschaft m.b.H. Danugrain Lagerei GmbH Metrans Danubia Krems GmbH	
Port Community System/ Terminal Operating	n/a	

System in place	
Association memberships	The European Federation of Inland Ports (EFIP)

Transshipment Site in Pöchlarn, AT		
Waterway	Danube	
River km	2045, right	
Latitude	48.213862	
Longitude	15.223740	
General significance	n/a	
Terminal operators	Garant-Tiernahrung GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	1
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Nearby Highways: B209
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths? 1 (max 3 vessels abreast) Container infrastructure? Number of cranes (gantry, swing)? Number of reach stackers? Ro-Ro Ramp access available?
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	RWA Raiffeisen Ware Austria AG
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Ybbs, AT		
Waterway	Danube	
River km	2057.67, right	
Latitude	48.171065	
Longitude	15.093263	
General significance	n/a	
Terminal operators	Schaufler GmbH	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	133,000 t in 2005	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	60,000 m ²
	Covered storage:	4,000 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	n/a
	Mobile cranes:	8
	Reach stacker:	1
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	1
	Largest berth:	n/a

	Quay length: 90 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 250 m Longest siding: 250 m Weekly rail departures: n/a
Road connection	Distance to the nearest highway: 2 km
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berth: 1 Container infrastructure: Number of cranes: 8 mobile cranes with max lifting capacity 45 t. Number of reach stacker: 1 with max load 40 t. Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Enns / Ennsdorf Hafenbecken Ost, AT		
Waterway	Danube	
River km	2111.8, right	
Latitude	48.227852	
Longitude	14.510733	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	275.000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Enns / Ennsdorf Hafenbecken West, AT		
Waterway	Danube	
River km	2112, right	
Latitude	48.236433	
Longitude	14.509383	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	3,500,000 m ²	
Storage areas	Open storage:	Yes
	Covered storage:	Yes
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Cantry cranes:	6
	Mobile cranes:	11
	Reach stacker:	4
	RoRo access:	true
Waterway connection	No. port basins:	2
	No. of berths:	16
	Largest berth:	n/a
	Quay length:	13 quays with varied length from

	192 to 630 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Connected to the A1, A7, A8 and A9 motorways, as well as S10 expressway, and the B1, B3 and B309 federal highways.
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Linz Voestalpine, AT		
Waterway	Danube	
River km	2127.2, right	
Latitude	48.281585	
Longitude	14.336383	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	90,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1 (rail)
	Mobile cranes:	n/a
	Reach stacker:	8
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length:	n/a
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	4
	Longest siding:	650 m
	Weekly rail departures:	n/a
Road connection	n/a	
Transshipment facilities road	n/a	
Transshipment facilities rail	n/a	
Transshipment facilities IWT	n/a	
Adjacent industries (esp. proximity to agri-food sector)	n/a	
Active consignors	n/a	
Port Community System/ Terminal Operating System in place	n/a	
Association memberships	n/a	

Port of Linz Tankhafen, AT		
Waterway	Danube	
River km	2128.1, right	
Latitude	48.293622	
Longitude	14.332870	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	250,000 m ²
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Linz Handelshafen, AT		
Waterway	Danube	
River km	2130.7, right	
Latitude	48.313193	
Longitude	14.322063	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	1,350,000 m ²	
Storage areas	Open storage:	10,000 m ²
	Covered storage:	110,000 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	2
	Mobile cranes:	1
	Reach stacker:	8
	RoRo access:	n/a
Waterway connection	No. port basins:	6
	No. of berths:	35
	Largest berth:	n/a

	Quay length: 9,300 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	Nearby highways (up to 30 km): A7 (2 km), A1 (10 km)
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Transshipment Site in Aschach, AT		
Waterway	Danube	
River km	2160, right	
Latitude	48.360247	
Longitude	14.023273	
General significance	n/a	
Terminal operators	Garant-Tiernahrung GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	n/a
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	150,000 t
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: Indirect connection via Bahnhof Aschach Weekly rail departures: n/a
Road connection	Nearby Highways: B131
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berth: 1 (max 3 vessels abreast, no small craft) Container infrastructure: No Number of cranes: 0 Number of reach stackers: 0 Ro-Ro Ramp access unavailable
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	RWA Raiffeisen Ware Austria AG
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Passau, DE	
Waterway	Danube
River km	2232.4, left
Latitude	48.593666
Longitude	13.385414
General significance	The port is the last port on the Danube for ships coming from Southeast Europe before the undeveloped section between Vilshofen and Straubing (Germany)
Terminal operators	Bayernhafen GmbH & Co. KG Donau Star BG EOOD
Employment effects	40,800 of total employment effect with 13,000 for companies located in the area and more than 210 employees at bayernhafen
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: true
Cargo transshipment volumes (t and TEU)	Total 308,657 t and 2,938 TEU in 2021
Handling activities	Loading and unloading of many types of cargo and also transshipping mechanical and plant engineering stuff such as filter systems or entire wind blades (which are loaded onto inland waterway vessels in Passau and transported from there to destinations worldwide)
Port area	250,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: 1

	Reach stacker: n/a RoRo access: true
Waterway connection	No. port basins: n/a No. of berths: n/a Largest berth: n/a Quay length: 450 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: 3 km Weekly rail departures: n/a
Road connection	Nearby Highways connected to the A3 federal motorway
Transshipment facilities road	n/a
Transshipment facilities rail	Rail track 3 km in length Railcar loading ramp
Transshipment facilities IWT	1 mobile crane with max lifting capacity 15 t and 1 luffing/slewing crane with max lifting capacity 120 t are available Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	BOLK Transport GmbH Austria Hitzinger Daniel Transporte
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Bundesverband Öffentlicher Binnenhäfen e.V. Deutscher Wasserstraßen- und Schifffahrtsverein Rhein-Main-Donau e.V. (DWSV) The European Federation of Inland Ports (EFIP)

Port of Deggendorf, DE		
Waterway	Danube	
River km	2283, left	
Latitude	48.823133	
Longitude	12.965935	
General significance	n/a	
Terminal operators	Zweckverband Donau-Hafen Deggendorf Schweiger Handels GmbH DegHLog – Deggendorfer Hafenlogistik GmbH Donau-Hafengesellschaft Geltinger Hafenlogistik GmbH	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: true Heavy lift: true	
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	550,000 m ²	
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: n/a Mobile cranes: 2 Reach stacker: 1 RoRo access: true	
Waterway connection	No. port basins: n/a	

	No. of berths: n/a Largest berth: n/a Quay length: 1,300 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	to the Deggendorf motorway junction (BAB A3/A92) after 2 km and the Hengersberg junction (111) on the BAB A3 after 8 km
Transshipment facilities road	n/a
Transshipment facilities rail	>5 km of track network (of which >3 km can be driven over) The port's own shunting locomotives
Transshipment facilities IWT	2 RMG cranes with max lifting capacity 35 t and 2 mobile cranes with max lifting capacity 25 t are available Number of reach stackers: 1 Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Schmidbauer GmbH & Co. KG Diermeier GmbH & Cie. Mineralöl KG Friedrich Scharr KG / Sailer Mineralölhandel GmbH Spedition Neulinger GmbH BayWa AG Translast GmbH Hacker Lagerei GmbH
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Bundesverband Öffentlicher Binnenhäfen e.V. Deutscher Wasserstraßen- und Schifffahrtsverein Rhein-Main-Donau e.V. (DWSV) The European Federation of Inland Ports (EFIP)

Port of Straubing-Sand, DE		
Waterway	Danube	
River km	2313.3, right	
Latitude	48.904207	
Longitude	12.661100	
General significance	The port serves as a goods traffic centre in southern Germany as well as a technology and start-up centre.	
Terminal operators	Zweckverband Hafen Straubing-Sand Hafenlogistik Straubing GmbH	
Employment effects	n/a	
Cargo types	Container:	n/a
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Cargo transshipment volumes (t and TEU)	Total 4,252 kt in 2021	
Handling activities	n/a	
Port area	220.000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a

	Largest berth: n/a Quay length: 625 m in the south-side and 390 m in the north-side Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	A3 and A92 via the B20
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	3 luffing/slewing cranes are available with max lifting capacity 35 t Ro-Ro Ramp access available
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	Reinsch Speditions- und Kontraklogistik GmbH Andorfer Sebastian GmbH & Co. KG Universal Transport Ivanica GmbH BayWa AG ADM Spyck GmbH Bayernhof Erzeugergemeinschaften Vertriebs GmbH Mega Tiernahrung GmbH & Co. KG Raiffeisen Straubing GmbH SR-Logistik Straubinger Umschlags- und Logistik GmbH DoFu Donaufutter GmbH
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Bundesverband Öffentlicher Binnenhäfen e.V. Deutscher Wasserstraßen- und Schifffahrtsverein Rhein-Main-Donau e.V. (DWSV) The European Federation of Inland Ports (EFIP)

Port of Regensburg (Osthafen), DE		
Waterway	Danube	
River km	2373.1, right	
Latitude	49.011198	
Longitude	12.168142	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: n/a
	Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a
	Longest siding: n/a
	Weekly rail departures: n/a
Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Regensburg (Westhafen), DE		
Waterway	Danube	
River km	2376.3, left	
Latitude	49.018389	
Longitude	12.128531	
General significance	n/a	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	n/a	
Port area	1,850,000 m ²	
Storage areas	Open storage:	328,000 m ²
	Covered storage:	165,000 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	1
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a

	Quay length: 5,200 m Weekly IWT departures: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	A3 and A93 federal motorways
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	n/a
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	n/a

Port of Kelheim/Saal, DE		
Waterway	Danube	
River km	2411, right	
Latitude	48.909253	
Longitude	11.915417	
General significance	A cargo port in the district of Kelheim on the Danube	
Terminal operators	n/a	
Employment effects	n/a	
Cargo types	Container: true Break bulk: true Dry bulk: true Liquid bulk: n/a Heavy lift: true	
Cargo transshipment volumes (t and TEU)	n/a	
Handling activities	Bulk goods handling including silo plants and conveyor-loading plants for grain, animal feed, fertiliser and other bulk goods	
Port area	800.000 m ²	
Storage areas	Open storage: 480.000 m² Covered storage: 45.000 m² Silo storage: n/a Liquid storage: n/a	
Cranes and equipment	Gantry cranes: 5 Mobile cranes: 1 Reach stacker: 2 RoRo access: true	
Waterway connection	No. port basins: 1 No. of berths: n/a Largest berth: n/a	

	Quay length: 1.200 m Weekly IWT departures: n/a
Railway connection	No. of sidings: 1 Longest siding: 200 m Weekly rail departures: n/a
Road connection	A3 and A93 motorways can be easily reached via the B16
Transshipment facilities road	5 road scales
Transshipment facilities rail	2.5 km track systems
Transshipment facilities IWT	Container infrastructure including 16,000 m ² of container terminal area 5 gantry cranes available with max lifting capacity 45 t as well as 1 mobile crane with max lifting capacity 20 t Ro-Ro Ramp access available for car-ship and rail loading
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	TKB – Transport- und Kontrollbüro Osterhuber Unternehmensgruppe Fichtl BLG Auto-Terminal Kelheim GmbH & Co.KG MAV Kelheim GmbH Baywa AG
Port Community System/ Terminal Operating System in place	n/a
Association memberships	Bundesverband Öffentlicher Binnenhäfen e.V. Deutscher Wasserstraßen- und Schifffahrtsverein Rhein-Main-Donau e.V. (DWSV) The European Federation of Inland Ports (EFIP)

Port of Antwerp-Bruges, BE	
Waterway	Scheldt
River km	n/a, right
Latitude	51.291298
Longitude	4.260332
General significance	n/a
Terminal operators	Container: - DP World Antwerp Gateway - Antwerp Container Terminal - MSC PSA European Terminal (MPET) - PSA Antwerp Europa Terminal - PSA Antwerp Noordzee Terminal - ATO Antwerp CSP Zeebrugge Terminal CFS Dry bulk: - Katoen Natie Terminals - Belgian Scrap Terminak - Euroports - Antwerp Bulk Terminal - Samga - High 5 recycling 5e Havendok - Nova Natie Liquid bulk: - ADPO - Antwerp Terminal & Processing Company - ITC Rubis Termial Antwerp - LBC Antwerp - LBC CEPSA Antwerp - Noord Natie Odfjell Antwerp Terminal - Advario Stolthaven Antwerp - SEA-Tank Terminal Antwerp - Vesta Terminal Antwerp - Vopak Terminal ACS - Vopak Terminal Eurotank - Vopak Terminal Linkeroever - Pantank Terminals - Standic Antwerpen Fluxys Beglium NV Prax Terminals Belgium BV Tameco NV

	Varo Energy Tankstorage	
Employment effects	164,000 jobs created 73,700 direct jobs	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	true
	Heavy lift:	n/a
Cargo transshipment volumes (t and TEU)	290 mn. t (international maritime cargo)	
Handling activities	Transshipment: Empty Container services	
Port area	152,57 km ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	true
Waterway connection	No. port basins:	n/a
	No. of berths:	n/a
	Largest berth:	n/a
	Quay length:	n/a
	Weekly IWT departures:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures:	n/a

Road connection	n/a
Transshipment facilities road	n/a
Transshipment facilities rail	n/a
Transshipment facilities IWT	Number of berths: Container infrastructure: Yes Number of cranes (gantry, swing): Number of reach stackers: Ro-Ro Ramp access available: yes
Adjacent industries (esp. proximity to agri-food sector)	n/a
Active consignors	n/a
Port Community System/ Terminal Operating System in place	n/a
Association memberships	EFIP

B. INLAND WATERWAY TRANSPORT BOTTLENECKS

The inland waterway transport bottlenecks have been collected and aggregated per corridor stretch illustrated in Figure 21. In the following, the bottlenecks for each of the eight stretches in total are presented. It has to be noted that some of the bottlenecks represent quasi-permanent obstacles to inland navigation whereas other occur occasionally only. In this section, the totality of bottlenecks is presented whereas only the major bottlenecks have been taken into consideration in the gap analysis.

Bottleneck Epava Rostock	
Waterway	Danube
River km	56.5
Latitude	45.193712
Longitude	28.964161
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 1013 cm

Bottleneck Tulcea am	
Waterway	Danube
River km	75
Latitude	45.205552
Longitude	28.793062
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 1103 cm

Bottleneck Isaccea av	
Waterway	Danube
River km	96.35

Latitude	45.256235
Longitude	28.547457
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 1096 cm

Bottleneck Isaccea am	
Waterway	Danube
River km	105.55
Latitude	45.293254
Longitude	28.432739
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 1040 cm

Bottleneck Reni av	
Waterway	Danube
River km	115.75
Latitude	45.341787
Longitude	28.327504
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 1061 cm

Bottleneck Vukovar	
Waterway	Danube
River km	1328.5
Latitude	45.342541
Longitude	19.059059
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	average depth of 3.5 m ; width of 190 m

Bottleneck Prut am	
Waterway	Danube
River km	136.1
Latitude	45.460408
Longitude	28.192444
Type of bottleneck	fairway width
Characteristics of bottleneck	min. actual depth of 1180 cm ; min. width of 148 m

Bottleneck Galati (Siret aval)	
Waterway	Danube
River km	154.5
Latitude	45.256490
Longitude	28.050855
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 1196 cm

Bottleneck Dunarea Veche	
Waterway	Danube
River km	191
Latitude	45.104988
Longitude	27.946155
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min actual depth of 754 cm.

Bottleneck Dunarea Veche - Gropeni	
Waterway	Danube
River km	196
Latitude	45.067452
Longitude	27.909745
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min actual depth of 770 cm.

Bottleneck Giurgeni Vadu- Oii	
Waterway	Danube
River km	243.5
Latitude	44.754065
Longitude	27.876568
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min actual depth of 895 cm.

Bottleneck Harsova	
Waterway	Danube
River km	251
Latitude	44.692390
Longitude	27.921109
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min actual depth of 793 cm.

Bottleneck Albanesti	
Waterway	Danube
River km	275.5
Latitude	44.510557
Longitude	28.052169
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 833 cm.

Bottleneck Capidava	
Waterway	Danube
River km	279.5
Latitude	44.488304
Longitude	28.089600
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 833 cm.

Bottleneck Seimeni	
Waterway	Danube
River km	290
Latitude	44.407784
Longitude	28.088618
Type of bottleneck	n/a
Characteristics of bottleneck	min actual depth of 799 cm.

Bottleneck Seimeni 2	
Waterway	Danube
River km	293
Latitude	44.392391
Longitude	28.055048
Type of bottleneck	n/a
Characteristics of bottleneck	n/a

Bottleneck Cernavodă	
Waterway	Danube
River km	296
Latitude	44.343202
Longitude	28.019891
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 863 cm.

Bottleneck Cochirleni	
Waterway	Danube
River km	306
Latitude	44.188575
Longitude	27.572396
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min actual depth of 535 cm.

Bottleneck Fermecatu aval	
Waterway	Danube
River km	317.5
Latitude	44.158164
Longitude	27.511960
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min actual depth of 515 cm.

Bottleneck Fermecatu amonte	
Waterway	Danube
River km	322.5
Latitude	44.150293
Longitude	27.499310
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min actual depth of 445 cm.

Bottleneck Marleanu	
Waterway	Danube
River km	325.5
Latitude	44.140370
Longitude	27.477366
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min actual depth of 555 cm.

Bottleneck Lebada	
Waterway	Danube
River km	336.5
Latitude	44.202192
Longitude	27.670843
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min actual depth of 560 cm.

Bottleneck Caragheorghe	
Waterway	Danube
River km	343
Latitude	44.115557
Longitude	27.356044
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 580 cm.

Bottleneck Turcescu	
Waterway	Danube
River km	344.5
Latitude	44.115837
Longitude	27.347283
Type of bottleneck	fairway width
Characteristics of bottleneck	min actual depth of 480 cm.

Bottleneck о-в Чайка	
Waterway	Danube
River km	386.5
Latitude	44.124129
Longitude	27.167531
Type of bottleneck	fairway width
Characteristics of bottleneck	496 cm of min actual depth; 120 m of width

Bottleneck о-в Ветрен	
Waterway	Danube
River km	393.5
Latitude	44.146641
Longitude	27.050056
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	566 cm of min actual depth; 170 m of width

Bottleneck о-в Вереци	
Waterway	Danube
River km	399.5
Latitude	44.134713
Longitude	26.987449
Type of bottleneck	fairway width
Characteristics of bottleneck	546 cm of min actual depth; 210 m of width

Bottleneck о-в Гарван	
Waterway	Danube
River km	405.5
Latitude	44.131831
Longitude	26.911805
Type of bottleneck	fairway width
Characteristics of bottleneck	456 cm of min actual depth; 160 m of width

Bottleneck о-в Албина	
Waterway	Danube
River km	413
Latitude	44.114368
Longitude	26.847380
Type of bottleneck	fairway width
Characteristics of bottleneck	496 cm of min actual depth; 180 m of width

Bottleneck Дунавец	
Waterway	Danube
River km	422
Latitude	44.076236
Longitude	26.735966
Type of bottleneck	fairway width
Characteristics of bottleneck	466 cm of min actual depth; 120 m of width

Bottleneck о-в Косуй	
Waterway	Danube
River km	424
Latitude	44.074168
Longitude	26.689158
Type of bottleneck	fairway width
Characteristics of bottleneck	456 cm of min actual depth; 150 m of width

Bottleneck о-в Косуй 2	
Waterway	Danube
River km	426.5
Latitude	44.067376
Longitude	26.668398
Type of bottleneck	fairway width
Characteristics of bottleneck	516 cm of min actual depth; 140 m of width

Bottleneck о-в Радецки	
Waterway	Danube
River km	437.5
Latitude	44.029211
Longitude	026.319019
Type of bottleneck	fairway width
Characteristics of bottleneck	626 cm of min actual depth; 190 m of width

Bottleneck о-в Бръшлян	
Waterway	Danube
River km	456
Latitude	43.990347
Longitude	26.211064
Type of bottleneck	fairway width
Characteristics of bottleneck	454 cm of min actual depth; 200 m of width

Bottleneck о-в Мишка	
Waterway	Danube
River km	461.5
Latitude	44.007843
Longitude	26.277762
Type of bottleneck	fairway width
Characteristics of bottleneck	484 cm of min actual depth; 180 m of width

Bottleneck о-в Гостин	
Waterway	Danube
River km	474
Latitude	43.981233
Longitude	26.121912
Type of bottleneck	fairway width
Characteristics of bottleneck	454 cm of min actual depth; 200 m of width

Bottleneck Дунав мост	
Waterway	Danube
River km	488.5
Latitude	43.891686,
Longitude	26.020324
Type of bottleneck	fairway width
Characteristics of bottleneck	604 cm of min actual depth; 150 m of width

Bottleneck о-в Батин	
Waterway	Danube
River km	523.5
Latitude	43.689537
Longitude	25.720453
Type of bottleneck	fairway width
Characteristics of bottleneck	434 cm of min actual depth; 150 m of width

Bottleneck km 530-527	
Waterway	Danube
River km	528.5
Latitude	43.686145
Longitude	25.649916
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	577 cm of min actual depth; 120 m of width

Bottleneck km 533-530	
Waterway	Danube
River km	531.5
Latitude	43.675393
Longitude	25.633019
Type of bottleneck	fairway width
Characteristics of bottleneck	487 cm of min actual depth; 150 m of width

Bottleneck река Янтра	
Waterway	Danube
River km	537.5
Latitude	43.643504
Longitude	25.545182
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	557 cm of min actual depth; 180 m of width

Bottleneck о-в Гъска 2	
Waterway	Danube
River km	541.5
Latitude	43.644005
Longitude	25.488991
Type of bottleneck	fairway width
Characteristics of bottleneck	557 cm of min actual depth; 120 m of width

Bottleneck о-в Вардим	
Waterway	Danube
River km	544
Latitude	43.626650
Longitude	25.442127
Type of bottleneck	fairway width
Characteristics of bottleneck	427 cm of min actual depth; 90 m of width

Bottleneck Свищов	
Waterway	Danube
River km	555.5
Latitude	43.636887
Longitude	25.334124
Type of bottleneck	fairway width
Characteristics of bottleneck	497 cm of min actual depth; 130 m of width

Bottleneck о-в Кондур	
Waterway	Danube
River km	560.5
Latitude	43.657063
Longitude	25.286213
Type of bottleneck	fairway width
Characteristics of bottleneck	527 cm of min actual depth; 200 m of width

Bottleneck о-в Белене	
Waterway	Danube
River km	564
Latitude	43.679456
Longitude	25.255740
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	437 cm of min actual depth; 120 m of width

Bottleneck о-в Милка	
Waterway	Danube
River km	568
Latitude	n/a
Longitude	n/a
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	n/a

Bottleneck о-в Г. Бързина	
Waterway	Danube
River km	574.5
Latitude	43.687745
Longitude	25.138297
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	437 cm of min actual depth; 160 m of width

Bottleneck о-в Палец	
Waterway	Danube
River km	585
Latitude	43.710515
Longitude	25.018034
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	457 cm of min actual depth; 160 m of width

Bottleneck о-в Лакът	
Waterway	Danube
River km	590
Latitude	43.717959
Longitude	24.954373
Type of bottleneck	fairway width
Characteristics of bottleneck	507 cm of min actual depth; 150 m of width

Bottleneck Сомовит	
Waterway	Danube
River km	608
Latitude	43.699687
Longitude	24.783050
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	537 cm of min actual depth; 120 m of width

Bottleneck Calnovat	
Waterway	Danube
River km	611.5
Latitude	43.696417
Longitude	24.700058
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	n/a

Bottleneck Calnovat amonte	
Waterway	Danube
River km	615.5
Latitude	43.725579
Longitude	24.654182
Type of bottleneck	fairway width
Characteristics of bottleneck	n/a

Bottleneck Corabia	
Waterway	Danube
River km	629.5
Latitude	43.758922
Longitude	24.544856
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	draught; width

Bottleneck Papadia-Bechet	
Waterway	Danube
River km	676.5
Latitude	43.756401
Longitude	23.860170
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	draught; width

Bottleneck Linovo-Calafat	
Waterway	Danube
River km	737.5
Latitude	43.848617
Longitude	23.301798
Type of bottleneck	fairway width
Characteristics of bottleneck	n/a

Bottleneck Pietrisul	
Waterway	Danube
River km	757
Latitude	43.803395
Longitude	23.058811
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	draught; width

Bottleneck Ostrov Dobrina	
Waterway	Danube
River km	760
Latitude	43.805337
Longitude	23.021377
Type of bottleneck	fairway width
Characteristics of bottleneck	draught; width

Bottleneck Bogdan Secian	
Waterway	Danube
River km	784
Latitude	43.920959
Longitude	22.858493
Type of bottleneck	fairway width
Characteristics of bottleneck	draught; width

Bottleneck Salcia	
Waterway	Danube
River km	821.5
Latitude	44.105850
Longitude	22.917131
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	draught; width

Bottleneck Gârla Mare	
Waterway	Danube
River km	839
Latitude	44.198101
Longitude	22.769030
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	n/a

Bottleneck Mohovo	
Waterway	Danube
River km	1309.7
Latitude	45.247339
Longitude	19.242349
Type of bottleneck	fairway width
Characteristics of bottleneck	varied depth between 2.5 and 3.5 m ; width of 100 m

Bottleneck Sotin	
Waterway	Danube
River km	1322.5
Latitude	45.303281
Longitude	19.101361
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 1.5 and 3.5 m ; width of 100 m

Bottleneck Vukovar	
Waterway	Danube
River km	1328.5
Latitude	45.342541
Longitude	19.059059
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	average depth of 3.5 m ; width of 190 m

Bottleneck Borovo	
Waterway	Danube
River km	1346.5
Latitude	45.429635
Longitude	19.017078
Type of bottleneck	low water stretch
Characteristics of bottleneck	average depth of 3.5 m ; width of 200 m

Bottleneck Bogojevo	
Waterway	Danube
River km	1366
Latitude	45.521654
Longitude	19.09113
Type of bottleneck	low water stretch
Characteristics of bottleneck	average depth of 3.5 m ; width of 200 m

Bottleneck Staklar	
Waterway	Danube
River km	1375
Latitude	45.556465
Longitude	19.009988
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 3.5 m ; width of 150 m

Bottleneck Drava Confluence	
Waterway	Danube
River km	1382.5
Latitude	45.544649
Longitude	18.929069
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	average depth of 3.5 m ; width of 150 m

Bottleneck Zidovski rukavac	
Waterway	Danube
River km	1394
Latitude	45.622211
Longitude	18.910882
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	average depth of 3.5 m ; width of 140 m

Bottleneck Apatin	
Waterway	Danube
River km	1403.5
Latitude	45.680923
Longitude	18.948372
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	average depth of 3.5 m ; fairway width of 100 m

Bottleneck Baráka szűkület	
Waterway	Danube
River km	1521.4
Latitude	46.545267
Longitude	18.896573
Type of bottleneck	fairway width
Characteristics of bottleneck	varied depth between 2 and 3 m ; width of 130 m

Bottleneck Solt alsó gázló és szűkület	
Waterway	Danube
River km	1555.2
Latitude	46.772685
Longitude	18.97644
Type of bottleneck	fairway width
Characteristics of bottleneck	varied depth between 2.5 and 3 m ; width of 60 m

Bottleneck Solt	
Waterway	Danube
River km	1557.6
Latitude	46.790869
Longitude	18.960908
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	n/a

Bottleneck Dunaföldvár 1	
Waterway	Danube
River km	1559.55
Latitude	46.804533
Longitude	18.944806
Type of bottleneck	fairway width
Characteristics of bottleneck	n/a

Bottleneck Dunaföldvár 2	
Waterway	Danube
River km	1560.7
Latitude	46.811608
Longitude	18.931587
Type of bottleneck	bridge, low water stretch, fairway width
Characteristics of bottleneck	width of 2x 60 m (bridge passage)

Bottleneck Kisapostag szűkület	
Waterway	Danube
River km	1566.75
Latitude	46.866480
Longitude	18.926775
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 3 m ; fairway width of 80 m

Bottleneck Baracs szűkület	
Waterway	Danube
River km	1569.4
Latitude	46.887526
Longitude	18.943966
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 3 m ; width of 90 m

Bottleneck Dunaújváros szűkület	
Waterway	Danube
River km	1581.4
Latitude	46.987229
Longitude	18.950622
Type of bottleneck	fairway width
Characteristics of bottleneck	varied depth between 3 and 4 m ; width of 110 m

Bottleneck Kulcs gázló	
Waterway	Danube
River km	1590.3
Latitude	47.057798
Longitude	18.931382
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	average depth of 3 m ; width of 110 m

Bottleneck Kulcs felső szűkület	
Waterway	Danube
River km	1591.55
Latitude	47.063039
Longitude	18.921704
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 3 m ; width of 110 m

Bottleneck Ercsi alsó szűkület	
Waterway	Danube
River km	1615.45
Latitude	47.265031
Longitude	18.920092
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 3 m ; width of 120 m

Bottleneck Ercsi szűkület	
Waterway	Danube
River km	1616.5
Latitude	47.273987
Longitude	18.919275
Type of bottleneck	fairway width
Characteristics of bottleneck	varied depth between 4 and 5 m ; width of 110 m

Bottleneck Dunafüred szűkület	
Waterway	Danube
River km	1618.55
Latitude	47.293117
Longitude	18.920003
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 3 m ; width of 90 m

Bottleneck Százhalombatta szűkület	
Waterway	Danube
River km	1623.1
Latitude	47.327728
Longitude	18.944745
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 3 m ; width of 120 m

Bottleneck Budafok gázló	
Waterway	Danube
River km	1637.85
Latitude	47.420403
Longitude	19.045358
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.7 and 3 m ; width of 80 m

Bottleneck Budapest (Árpád-híd) gázló	
Waterway	Danube
River km	1652.15
Latitude	47.543385
Longitude	19.057802
Type of bottleneck	bridge, low water stretch, fairway width
Characteristics of bottleneck	bridge height of 8.16 m ; varied depth between 2.5 and 3 m ; width of 2x 60 m (bridge passage)

Bottleneck Göd gázló	
Waterway	Danube
River km	1667.1
Latitude	47.668868
Longitude	19.119549
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.5 and 3 m ; fairway width of 80 m

Bottleneck Sződliget szűkület	
Waterway	Danube
River km	1675.4
Latitude	47.742726
Longitude	19.133012
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 4 m ; width of 100 m

Bottleneck Vác szűkület	
Waterway	Danube
River km	1680.4
Latitude	47.785470
Longitude	19.114103
Type of bottleneck	fairway width
Characteristics of bottleneck	varied depth between 4 and 5 m ; width of 100 m

Bottleneck Vác felső szűkület	
Waterway	Danube
River km	1682.55
Latitude	47.797950
Longitude	19.094199
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 3 m ; width of 100 m

Bottleneck Visegrád gázló	
Waterway	Danube
River km	1694.65
Latitude	47.791158
Longitude	18.966339
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	average depth of 3 m ; width of 120 m

Bottleneck Nagymaros gázló	
Waterway	Danube
River km	1695.6
Latitude	47.778438
Longitude	18.958686
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.5 and 3 m ; width of 120 m

Bottleneck Dömös alsó gázló	
Waterway	Danube
River km	1698.5
Latitude	47.765107
Longitude	18.936371
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.5 and 6 m ; fairway width of 120 m

Bottleneck Dömös felső gázló	
Waterway	Danube
River km	1700.85
Latitude	47.774852
Longitude	18.910495
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.5 and 3 m ; width of 80 m

Bottleneck Chl'aba (Helemba) / Helemba gázló	
Waterway	Danube
River km	1711.1
Latitude	47.819608
Longitude	18.809765
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.2 and 5 m ; width of 100 m

Bottleneck Hron sútok (Garam-torkolat)	
Waterway	Danube
River km	1714.15
Latitude	47.819622
Longitude	18.772211
Type of bottleneck	fairway width
Characteristics of bottleneck	varied depth between 3 and 6 m ; width of 120 m

Bottleneck Obid (Ebed)	
Waterway	Danube
River km	1725.2
Latitude	47.761254
Longitude	18.664359
Type of bottleneck	fairway width
Characteristics of bottleneck	depth of 3 m ; width of 130 m

Bottleneck Mužla (Muzsla) / Muzsla gázló	
Waterway	Danube
River km	1732.4
Latitude	47.766986
Longitude	18.568001
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.3 and 4 m

Bottleneck Čenkov (Nyerges) / Nyerges gázló	
Waterway	Danube
River km	1734.25
Latitude	47.764674
Longitude	18.544393
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.7 and 7 m; fairway width of 60 m

Bottleneck Kravany (Karva)	
Waterway	Danube
River km	1740
Latitude	47.761551
Longitude	18.472842
Type of bottleneck	fairway width
Characteristics of bottleneck	min. actual depth of 492 cm

Bottleneck Patince (Pat) 1	
Waterway	Danube
River km	1754.2
Latitude	47.732424
Longitude	18.303082
Type of bottleneck	fairway width
Characteristics of bottleneck	n/a

Bottleneck Patince (Pat) 2	
Waterway	Danube
River km	1756.9
Latitude	47.737891
Longitude	18.261585
Type of bottleneck	fairway width
Characteristics of bottleneck	n/a

Bottleneck Komárno (Komárom)	
Waterway	Danube
River km	1764.15
Latitude	47.751340
Longitude	18.121112
Type of bottleneck	fairway width
Characteristics of bottleneck	depth of 4 m ; width of 150 m

Bottleneck Vel'ké Kosihy (Nagykeszi) 1	
Waterway	Danube
River km	1786.3
Latitude	47.740243
Longitude	17.889671
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.5 and 3 m on both side; width of 120 m

Bottleneck Vel'ké Kosihy (Nagykeszi) 2	
Waterway	Danube
River km	1788.75
Latitude	47.744472
Longitude	17.856025
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	varied depth between 2.5 and 3 m on both side; width of 120 m

Bottleneck Gönyű	
Waterway	Danube
River km	1791.25
Latitude	47.742659
Longitude	17.804719
Type of bottleneck	fairway width
Characteristics of bottleneck	average depth of 4 m; width of 100 m

Bottleneck Kližska Nemá (Koložsnéma)	
Waterway	Danube
River km	1791.85
Latitude	47.742666
Longitude	17.816984
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	draught; varied depth between 2.3 and 8 m (Kližska Nemá 2) and between 2.5 to 3 m (Kližska Nemá 1); width of 80 m (Kližska Nemá 2) and 100 m (Kližska Nemá 1);

Bottleneck Kližska Nemá 2 (Koložsnéma 2)	
Waterway	Danube
River km	1793.6
Latitude	47.741522
Longitude	17.795946
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	n/a

Bottleneck Vének 3	
Waterway	Danube
River km	1795.35
Latitude	47.743063
Longitude	17.772894
Type of bottleneck	fairway width
Characteristics of bottleneck	n/a

Bottleneck Vének 2	
Waterway	Danube
River km	1795.9
Latitude	48.353039
Longitude	15.895735
Type of bottleneck	fairway width
Characteristics of bottleneck	n/a

Bottleneck Vének 1	
Waterway	Danube
River km	1797
Latitude	47.743465
Longitude	17.772498
Type of bottleneck	fairway width
Characteristics of bottleneck	n/a

Bottleneck Čičov (Csicsó) / Csicsó gázló	
Waterway	Danube
River km	1798.85
Latitude	47.752599
Longitude	17.733488
Type of bottleneck	fairway width
Characteristics of bottleneck	

Bottleneck Medved'ov (Medve)	
Waterway	Danube
River km	1807.85
Latitude	47.804947
Longitude	17.629724
Type of bottleneck	low water stretch, fairway width
Characteristics of bottleneck	min. actual depth of 520 cm ; width of 120 m

Bottleneck Vlčie Hrdlo	
Waterway	Danube
River km	1864.05
Latitude	48.115079
Longitude	17.141352
Type of bottleneck	fairway width
Characteristics of bottleneck	min. actual depth of 452 cm ; width of 150 m

Bottleneck Lafranconi	
Waterway	Danube
River km	1870.85
Latitude	48.142391
Longitude	17.074727
Type of bottleneck	fairway width
Characteristics of bottleneck	min. actual depth of 432 cm ; width of 110 m

Bottleneck Furt Wendepplatz Theben	
Waterway	Danube
River km	1879.4
Latitude	48.170275
Longitude	16.979478
Type of bottleneck	low water stretch
Characteristics of bottleneck	min depth marked fairway of 382 cm, min fairway depth deep channel of 402 cm

Bottleneck Hainburg	
Waterway	Danube
River km	1884.25
Latitude	48.148707
Longitude	16.935305
Type of bottleneck	low water stretch
Characteristics of bottleneck	n/a

Bottleneck Treuschütt	
Waterway	Danube
River km	1888.1
Latitude	48.135283
Longitude	16.888148
Type of bottleneck	low water stretch
Characteristics of bottleneck	n/a

Bottleneck Haufenrand Schwalbeninsel	
Waterway	Danube
River km	1889.35
Latitude	48.126228
Longitude	16.858704
Type of bottleneck	low water stretch
Characteristics of bottleneck	min depth marked fairway of 348 cm, min fairway depth deep channel of 428 cm

Bottleneck Furt Petronell-Witzelsdorf	
Waterway	Danube
River km	1892.55
Latitude	48.125727
Longitude	16.853348
Type of bottleneck	low water stretch
Characteristics of bottleneck	min depth marked fairway of 358 cm, min fairway depth deep channel of 408 cm

Bottleneck Furt Rote Werd	
Waterway	Danube
River km	1896.55
Latitude	48.120946
Longitude	16.772760
Type of bottleneck	low water stretch
Characteristics of bottleneck	min depth marked fairway of 358 cm, min fairway depth deep channel of 418 cm

Bottleneck Furt Regelsbrunn	
Waterway	Danube
River km	1898.4
Latitude	48.127228
Longitude	16.746928
Type of bottleneck	low water stretch
Characteristics of bottleneck	min depth marked fairway of 348 cm, min fairway depth deep channel of 378 cm

Bottleneck Furt Fischamündung	
Waterway	Danube
River km	1905.6
Latitude	48.126980
Longitude	16.656375
Type of bottleneck	low water stretch
Characteristics of bottleneck	min depth marked fairway of 348 cm, min fairway depth deep channel of 398 cm

Bottleneck Furt Buchenau	
Waterway	Danube
River km	1912.05
Latitude	48.133463
Longitude	16.584622
Type of bottleneck	low water stretch
Characteristics of bottleneck	min depth marked fairway of 358 cm, min fairway depth deep channel of 378 cm

Bottleneck Furt Lobau	
Waterway	Danube
River km	1916.8
Latitude	48.154279
Longitude	16.529082
Type of bottleneck	low water stretch
Characteristics of bottleneck	min depth marked fairway of 358 cm, min fairway depth deep channel of 388 cm

Bottleneck Dürnstein	
Waterway	Danube
River km	2009.55
Latitude	48.400904
Longitude	15.515206
Type of bottleneck	n/a
Characteristics of bottleneck	n/a

Bottleneck Furt Weißenkirchen	
Waterway	Danube
River km	2014.05
Latitude	48.388145
Longitude	15.466346
Type of bottleneck	low water stretch
Characteristics of bottleneck	min depth marked fairway of 367 cm, min fairway depth deep channel of 377 cm

Bottleneck Deggendorf -Vlshofen	
Waterway	Danube
River km	2266.25
Latitude	48.723950
Longitude	13.058163
Type of bottleneck	low water stretch
Characteristics of bottleneck	n/a

Bottleneck Straubing-Sand (port) - Deggendorf	
Waterway	Danube
River km	2297.15
Latitude	48.824421
Longitude	12.809243
Type of bottleneck	low water stretch
Characteristics of bottleneck	n/a

Bottleneck Straubing (lock) - Straubing-Sand (port)	
Waterway	Danube
River km	2316.75
Latitude	48.897561
Longitude	12.617986
Type of bottleneck	low water stretch
Characteristics of bottleneck	n/a

C. RAIL TRANSPORT NODES

The profiles of all (bimodal) rail transport nodes of Rail Freight Corridor 9 are presented in the following. The trimodal terminals including railway connection have been included in the collection of inland waterway transport nodes.

Allianso Terminal (rail terminal)		
Latitude	44.935534	
Longitude	25.932754	
Terminal operator	Alinso	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Railway connection	No. of sidings:	3
	Longest siding:	600 m
	Weekly rail departures:	n/a
Road connection	n/a	

baymodal Bamberg (rail terminal)	
Latitude	49.910997
Longitude	10.869807
Terminal operator	baymodal Bamberg GmbH
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: 2 RoRo access: n/a
Railway connection	No. of sidings: 2 Longest siding: 360m Weekly rail departures: 3x Hamburg und Bremerhaven, 2x Wilhelmshaven
Road connection	A73, A70

BI-KA Logistics Center (rail terminal)	
Latitude	47.160647
Longitude	20.175947
Terminal operator	n/a
Cargo types	Container: n/a Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a

Container Terminal Salzburg (rail terminal)	
Latitude	47.821739
Longitude	13.003047
Terminal operator	Kaindl
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	100.000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 2 Mobile cranes: n/a Reach stacker: 15 RoRo access: n/a
Railway connection	No. of sidings: 5 Longest siding: 530 m Weekly rail departures: n/a
Road connection	A1 connection

Contargo Wiesau (rail terminal)	
Latitude	49.909803
Longitude	12.191674
Terminal operator	CONTARGO
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: 4 Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: 5 Longest siding: n/a Weekly rail departures: 7 x p. week Hamburg / Bremerhaven
Road connection	n/a

Contargo-Terminal Plzeň (rail terminal)	
Latitude	49.743808
Longitude	13.386816
Terminal operator	METRANS
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	50.000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 2 Mobile cranes: 2 Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: 3 Longest siding: 400 m Weekly rail departures: n/a
Road connection	n/a

DUSS Augsburg-Oberhausen (rail terminal)	
Latitude	48.383675
Longitude	10.870356
Terminal operator	DUSS DB
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	100.000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: 1 RoRo access: n/a
Railway connection	No. of sidings: 5 Longest siding: 240 m Weekly rail departures: n/a
Road connection	n/a

DUSS Karlsruhe (rail terminal)		
Latitude	48.998864	
Longitude	8.424247	
Terminal operator	DUSS DB	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	2
	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Railway connection	No. of sidings:	4
	Longest siding:	500 m
	Weekly rail departures: n/a	
Road connection	connected to the A5/A8 freeways via Wolfartsweiererstrasse and to the supra-regional road network via the B10/A65 freeway	

DUSS Landshut (rail terminal)		
Latitude	48.548264	
Longitude	12.141501	
Terminal operator	DUSS DB	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	2
	Reach stacker:	n/a
	RoRo access:	n/a
Railway connection	No. of sidings:	4
	Longest siding:	225 m
	Weekly rail departures:	n/a
Road connection	A 92 München	

DUSS Terminal Frankfurt/Main-Ost (rail terminal)		
Latitude	50.114706	
Longitude	8.716349	
Terminal operator	Deutsche Umschlaggesellschaft Schiene-Straße (DUSS) mbH	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	2
	Mobile cranes:	n/a
	Reach stacker:	3
	RoRo access:	n/a
Railway connection	No. of sidings:	4
	Longest siding:	660m
	Weekly rail departures: n/a	
Road connection	300 meters away A661 freeway connected to the national road network	

DUSS-Terminal Kornwestheim (rail terminal)	
Latitude	48.854096
Longitude	9.161472
Terminal operator	DUSS DB
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 4 Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: 8 Longest siding: 650 m Weekly rail departures: n/a
Road connection	n/a

DUSS-Terminal München-Riem (rail terminal)	
Latitude	48.145669
Longitude	11.705167
Terminal operator	DUSS DB
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 3 Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: 14 Longest siding: 700 m Weekly rail departures: n/a
Road connection	A94 München-Passau und dem Autobahnkreuz München-Ost A99

DUSS-Terminal Regensburg-Ost (rail terminal)	
Latitude	48.998519
Longitude	12.145662
Terminal operator	Deutsche Umschlaggesellschaft Schiene-Straße (DUSS) mbH
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 2 Mobile cranes: n/a Reach stacker: 3 RoRo access: n/a
Railway connection	No. of sidings: 5 Longest siding: 490 m Weekly rail departures: n/a
Road connection	Direkte Verbindung zur A3 Regensburg-Ost

DUSS-Terminal Stuttgart Hafen (rail terminal)	
Latitude	48.769233
Longitude	9.260230
Terminal operator	DUSS DB
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 2 Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: 3 Longest siding: n/a Weekly rail departures: n/a
Road connection	Über die B10 wird die A8 in der Nähe des Stuttgarter Kreuzes erreicht

DUSS-Terminal Ulm (rail terminal)	
Latitude	48.459226
Longitude	9.974203
Terminal operator	DUSS DB
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: 4 Longest siding: 700 m Weekly rail departures: n/a
Road connection	A8 Stuttgart-München und Anschluss B10

HUB Dunajská Streda (rail terminal)		
Latitude	47.982167	
Longitude	17.627379	
Terminal operator	METRANS	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	280.000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	4
	Mobile cranes:	n/a
	Reach stacker:	18
	RoRo access:	n/a
Railway connection	No. of sidings:	9
	Longest siding:	650 m
	Weekly rail departures:	n/a
Road connection	n/a	

Intermodal Terminal Lovosice (rail terminal)	
Latitude	50.505959
Longitude	14.070573
Terminal operator	DUSS Terminál a. s. (Lovosice)
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	24,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: 2 RoRo access: n/a
Railway connection	No. of sidings: 5 Longest siding: 350 m Weekly rail departures: n/a
Road connection	n/a

Ludwigshafen KTL (rail terminal)		
Latitude	49.538074	
Longitude	8.412787	
Terminal operator	KLT	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	300.000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	7
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Railway connection	No. of sidings:	13
	Longest siding:	620m
	Weekly rail departures: n/a	
Road connection	n/a	

METRANS Terminal Budapest (rail terminal)	
Latitude	47.417314
Longitude	19.050970
Terminal operator	METRANS
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	143.500 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 4 Mobile cranes: n/a Reach stacker: 10 RoRo access: n/a
Railway connection	No. of sidings: 8 Longest siding: 650 m Weekly rail departures: n/a
Road connection	n/a

Port of Mělník (rail terminal)		
Latitude	50.366265	
Longitude	14.459630	
Terminal operator	n/a	
Cargo types	Container:	true
	Break bulk:	true
	Dry bulk:	true
	Liquid bulk:	n/a
	Heavy lift:	true
Port area	420.000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	9,490m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	2
	Reach stacker:	n/a
	RoRo access:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures: n/a	
Road connection	Autobahn D8	

Rail Cargo Operator CSKD s.r.o (rail terminal)		
Latitude	49.230590	
Longitude	18.725813	
Terminal operator	Rail Cargo Group	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	25,000 m ²	
Storage areas	Open storage:	20,000 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures: n/a	
Road connection	n/a	

Rail Cargo Operator CSKD s.r.o (rail terminal)		
Latitude	49.230590	
Longitude	18.725813	
Terminal operator	Rail Cargo Group	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	25,000 m ²	
Storage areas	Open storage:	20,000 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures: n/a	
Road connection	n/a	

Rail Cargo Terminal BLK Budapest (rail terminal)	
Latitude	47.379299
Longitude	19.120368
Terminal operator	Rail Cargo Group
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	223,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 2 Mobile cranes: n/a Reach stacker: 9 RoRo access: n/a
Railway connection	No. of sidings: 9 Longest siding: 750 m Weekly rail departures: n/a
Road connection	n/a

RAIL HUB - Terminál ČESKÁ TŘEBOVÁ (rail terminal)		
Latitude	49.887068	
Longitude	16.463377	
Terminal operator	METRANS	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	138,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	4
	Mobile cranes:	n/a
	Reach stacker:	3
	RoRo access:	n/a
Railway connection	No. of sidings:	6
	Longest siding:	740 m
	Weekly rail departures:	n/a
Road connection	n/a	

Railport Arad (rail terminal)		
Latitude	46.343575	
Longitude	21.293491	
Terminal operator	RAILPORT ARAD	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	103,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	4
	Mobile cranes:	n/a
	Reach stacker:	3
	RoRo access:	n/a
Railway connection	No. of sidings:	5
	Longest siding:	600 m
	Weekly rail departures:	n/a
Road connection	n/a	

Railport Győr (rail terminal)		
Latitude	47.686784	
Longitude	17.690756	
Terminal operator	n/a	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	30,000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures: n/a	
Road connection	n/a	

Schweinfurt TRANSLOG Railport (rail terminal)		
Latitude	50.034223	
Longitude	10.214216	
Terminal operator	TRANSLOG Transport + Logistik GmbH	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	n/a	
Storage areas	Open storage:	32,500 m ²
	Covered storage:	3,700 m ²
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Railway connection	No. of sidings:	3
	Longest siding:	400m
	Weekly rail departures:	n/a
Road connection	n/a	

Szolnok Indust. Park and Logistics Service Center (rail terminal)	
Latitude	47.184881
Longitude	20.168396
Terminal operator	n/a
Cargo types	Container: n/a Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	15 Autominuten vom Stadtzentrum entfernt

Terminal București Sud (rail terminal)	
Latitude	44.424205
Longitude	26.225635
Terminal operator	Rocombi SA
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	20,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 1 Mobile cranes: n/a Reach stacker: 2 RoRo access: n/a
Railway connection	No. of sidings: 3 Longest siding: 303 m Weekly rail departures: n/a
Road connection	n/a

Terminal Cluj Napoca (rail terminal)	
Latitude	46.779594
Longitude	23.683841
Terminal operator	Rocombi
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 1 Mobile cranes: n/a Reach stacker: 1 RoRo access: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a

Terminal GYSEV Sopron (rail terminal)		
Latitude	47.663193	
Longitude	16.606569	
Terminal operator	GYSEV CARGO Zrt. (Sopron)	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	40,500 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Railway connection	No. of sidings:	6
	Longest siding:	350 m
	Weekly rail departures:	n/a
Road connection	n/a	

Terminál Kopřivnice (rail terminal)	
Latitude	49.610924
Longitude	18.148074
Terminal operator	ARGO BOHEMIA s.r.o.
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 1 Mobile cranes: n/a Reach stacker: 1 RoRo access: n/a
Railway connection	No. of sidings: 2 Longest siding: 150 m Weekly rail departures: n/a
Road connection	n/a

Terminál Košice (rail terminal)	
Latitude	48.621883
Longitude	21.235813
Terminal operator	METRANS
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	46,500 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: 6 RoRo access: n/a
Railway connection	No. of sidings: 2 Longest siding: 550 m Weekly rail departures: n/a
Road connection	n/a

Terminal Krems an der Donau (rail terminal)		
Latitude	48.406007	
Longitude	15.647939	
Terminal operator	n/a	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	35.000 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	3
	RoRo access:	n/a
Railway connection	No. of sidings:	8
	Longest siding:	800 m
	Weekly rail departures:	n/a
Road connection	n/a	

Terminal Lambach (rail terminal)	
Latitude	48.098107
Longitude	13.906257
Terminal operator	Gartner KG_Lambach
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	180.000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: 3 RoRo access: n/a
Railway connection	No. of sidings: 5 Longest siding: 325 m Weekly rail departures: n/a
Road connection	n/a

Terminál Lisková (rail terminal)	
Latitude	49.082165
Longitude	19.336644
Terminal operator	n/a
Cargo types	Container: n/a Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a

Terminál Maťovce (rail terminal)		
Latitude	48.555224	
Longitude	22.104644	
Terminal operator	PREMAKOS a.s.	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	14.527 m ²	
Storage areas	Open storage:	1,700 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	3
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Railway connection	No. of sidings:	6
	Longest siding:	863 m
	Weekly rail departures:	n/a
Road connection	n/a	

Terminal Oradea (rail terminal)	
Latitude	47.036815
Longitude	21.962332
Terminal operator	transmec group
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: 3 RoRo access: n/a
Railway connection	No. of sidings: 2 Longest siding: 300 m Weekly rail departures: 3x Oradea – Zeebrügge 2x Oradea – Lodz 2x Oradea – Piacenza 5x Oradea – Stuttgart
Road connection	n/a

Terminál Ostrava - Paskov (rail terminal)	
Latitude	49.741602
Longitude	18.287344
Terminal operator	PLPCARGO International
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	31,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: 3 Longest siding: 270 m Weekly rail departures: n/a
Road connection	n/a

Terminál Ostrava - Šenov (rail terminal)	
Latitude	49.791915
Longitude	18.398248
Terminal operator	METRANS
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	100.000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 1 Mobile cranes: n/a Reach stacker: 6 RoRo access: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a

Terminál Pardubice (rail terminal)		
Latitude	50.017171	
Longitude	15.812009	
Terminal operator	n/a	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	n/a
	RoRo access:	n/a
Railway connection	No. of sidings:	n/a
	Longest siding:	n/a
	Weekly rail departures: n/a	
Road connection	n/a	

Terminál Plzeň - Nýřany (rail terminal)	
Latitude	49724722
Longitude	13216728
Terminal operator	METRANS
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	50,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 2 Mobile cranes: n/a Reach stacker: 2 RoRo access: n/a
Railway connection	No. of sidings: 3 Longest siding: 400 m Weekly rail departures: n/a
Road connection	n/a

Terminál Praha - Uhřetěves (rail terminal)	
Latitude	50.039758
Longitude	14.578356
Terminal operator	METRANS
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	420,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 6 Mobile cranes: n/a Reach stacker: 13 RoRo access: n/a
Railway connection	No. of sidings: 15 Longest siding: 600 m Weekly rail departures: n/a
Road connection	n/a

Terminál Přerov - Horní Moštěnice (rail terminal)		
Latitude	49.416877	
Longitude	17.452854	
Terminal operator	Rail Cargo Operator - CSKD s.r.o. (Přerov)	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	n/a	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	1
	RoRo access:	n/a
Railway connection	No. of sidings:	1
	Longest siding:	215 m
	Weekly rail departures:	n/a
Road connection	n/a	

Terminal Turda (rail terminal)		
Latitude	46.555446	
Longitude	23.797915	
Terminal operator	Rofersped S.A. (Turda)	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	1,225 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	1
	Mobile cranes:	n/a
	Reach stacker:	1
	RoRo access:	n/a
Railway connection	No. of sidings:	2
	Longest siding:	115 m
	Weekly rail departures:	n/a
Road connection	n/a	

Terminal Wels (CCT) & (ROLA) (rail terminal)	
Latitude	48.186186
Longitude	14.067000
Terminal operator	TSA Terminal Service Austria (Wels)
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	120,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 1 Mobile cranes: n/a Reach stacker: 3 RoRo access: n/a
Railway connection	No. of sidings: 6 Longest siding: 650 m Weekly rail departures: n/a
Road connection	n/a

Terminal Wien Süd (CCT) (rail terminal)	
Latitude	48.133476
Longitude	16.368364
Terminal operator	TSA Terminal Service Austria (Wien Süd)
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 1 Mobile cranes: n/a Reach stacker: 1 RoRo access: n/a
Railway connection	No. of sidings: 4 Longest siding: 700 m Weekly rail departures: n/a
Road connection	n/a

Terminál ZLÍN - Želechovice/Lípa (rail terminal)		
Latitude	49.217568	
Longitude	17.759851	
Terminal operator	METRANS	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	68.600 m ²	
Storage areas	Open storage:	n/a
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	6
	RoRo access:	n/a
Railway connection	No. of sidings:	8
	Longest siding:	550 m
	Weekly rail departures:	n/a
Road connection	n/a	

Tibbett Logistics (rail terminal)	
Latitude	44.433750
Longitude	25.941651
Terminal operator	n/a
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	n/a
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: n/a RoRo access: n/a
Railway connection	No. of sidings: n/a Longest siding: n/a Weekly rail departures: n/a
Road connection	n/a

TKD Dobrá (rail terminal)	
Latitude	48.415685
Longitude	22.024233
Terminal operator	Bulk Transshipment Slovakia a.s.
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	180.750 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: 1 Mobile cranes: n/a Reach stacker: 1 RoRo access: n/a
Railway connection	No. of sidings: 8 Longest siding: Weekly rail departures: n/a
Road connection	n/a

Törökbálint DEPO ipv. (rail terminal)	
Latitude	47.443103
Longitude	18.932081
Terminal operator	Törökbálint Container Terminal Kft.
Cargo types	Container: n/a Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	35,000 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: 3 RoRo access: n/a
Railway connection	No. of sidings: 3 Longest siding: 200 m Weekly rail departures: n/a
Road connection	n/a

TRANSLOG Schweinfurt (rail terminal)		
Latitude	50.034383	
Longitude	10.213040	
Terminal operator	translog-gmbh	
Cargo types	Container:	true
	Break bulk:	n/a
	Dry bulk:	n/a
	Liquid bulk:	n/a
	Heavy lift:	n/a
Port area	36.000 m ²	
Storage areas	Open storage:	17,500 m ²
	Covered storage:	n/a
	Silo storage:	n/a
	Liquid storage:	n/a
Cranes and equipment	Gantry cranes:	n/a
	Mobile cranes:	n/a
	Reach stacker:	2
	RoRo access:	n/a
Railway connection	No. of sidings:	1
	Longest siding:	700 m
	Weekly rail departures:	n/a
Road connection	n/a	

Žilina-Teplička TIP (rail terminal)	
Latitude	49.216130
Longitude	18.784892
Terminal operator	TIP ŽILINA s.r.o.
Cargo types	Container: true Break bulk: n/a Dry bulk: n/a Liquid bulk: n/a Heavy lift: n/a
Port area	151.800 m ²
Storage areas	Open storage: n/a Covered storage: n/a Silo storage: n/a Liquid storage: n/a
Cranes and equipment	Gantry cranes: n/a Mobile cranes: n/a Reach stacker: 1 RoRo access: n/a
Railway connection	No. of sidings: 2 Longest siding: 750 m Weekly rail departures: n/a
Road connection	n/a

D. RAIL TRANSPORT BOTTLENECKS (PER STRETCH)

The profiles of all six stretches of Rail Freight Corridor 9 are presented in the following. Due to the complexity of the matter (as bottlenecks are not geographically confined to a particular location but rather apply to a stretch) and the multitude of stretches with one or more bottlenecks, the following profiles have been prepared for entire stretches instead of individual nodes.



Figure 42. Map of the RFC9 stretch between Frankfurt am Main (DE) and Linz (AT) via Nürnberg (DE) (source: RailNet Europe – Customer Information Platform)

Linz - Frankfurt (north) via Nürnberg (rail stretch)		
Start of stretch	Latitude:	48.290216
	Longitude:	14.292322
End of stretch	Latitude:	49.872632
	Longitude:	8.629902
Electrification	<u>standard:</u>	15 KV AC
	<u>deviations:</u>	

Intermodal Freight Code	<u>standard:</u> P/C 78-80/400-410 <u>deviations:</u> München Moosach - München Feldmoching (P/C 82-99/410-429)
ETCS signalling groups	<u>standard:</u> class B / national system <u>deviations:</u> n/a
ETCS operational level	<u>standard:</u> not applicable <u>deviations:</u> n/a
Tunnel gauging	<u>standard:</u> DE3 <u>deviations:</u> Linz Vbf - Wels Vbf - Passau/Wernstein (G2 GB2) Nürnberg Rbf - Nürnberg Eibach - TriCoContainer-Terminal (G2 GB2) Mainaschaff Steinerst - Darmstadt Hbf (G2 GB2) Aschaffenburg Hbf - Aschaffenburg Hbf Ausfahrt (G2 GB2)
Axle loads	<u>standard:</u> D4 D4L <u>deviations:</u> n/a
Track gauge	1435 mm
Number of tracks	double track <u>Route stretches with less or more than two tracks (from/to):</u> Schweinfurt Hbf - Wernfeld (single track) München Laim Rbf - München Moosach (single track)
Maximum train length	<u>standard:</u>

	700 - 740/750m <u>deviations:</u> 600 - 649m 500 - 549m upon request
Maximum speed	<u>standard:</u> >= 120 km/h <u>deviations:</u> <= 60 km/h 81 - 100 km/h 101 - 120 km/h



Figure 43. Map of the RFC9 stretch between Frankfurt am Main (DE) and Linz (AT) via Salzburg (AT), München (DE), and Karlsruhe (DE) (source: RailNet Europe – Customer Information Platform)

Linz - Frankfurt (south) via Salzburg, München and Karlsruhe (incl. Rhine-Alpine Corridor) (rail stretch)	
Start of stretch	Latitude: 48.290216
	Longitude: 14.292322
End of stretch	Latitude: 49.872632 / 50.100787
	Longitude: 8.629902 / 8.648032
Electrification	<u>standard:</u> 15 KV AC <u>deviations:</u> Lambach - Terminal Lambach (upon Request) Freilassing - - Mühldorf am Inn - Markt Schwaben (not electrified) München Johanneskirchen - Container Depot München (upon Request) Augsburg Oberhausen - DUSS Augsburg Oberhausen (not electrified) Strasbourg Kehl - Hausberg Triage Sortie V2BIS (25 KV AC) Hausberg Triage Sortie V2BIS - Hausberg Triage Yard (upon Request) Strasbourg Port du Rhin - Port Autonome de Strasbourg (not

	electrified) Kehl - Kehl Klump Müller (upon Request) Karlsruhe - DUSK Karlsruhe (not electrified) Philippsburg Molzau - DP World Gernersheim (upon Request) Mannheim Hgbf - DUSK Terminal Mannheim Handelshafen (not electrified)
Intermodal Freight Code	<u>standard:</u> P/C 78-80/400-410 <u>deviations:</u> Strasbourg/Kehl - Strasbourg Port du Rhin (upon request) Port of Autonome de Strasbourg - Strasbourg Port du Rhin - HausbergenTriage Sortle V2BIS (P/C 55-57/381-185) Mannheim HgBF - DP World Mannheim (upon request) Dreieich Buchschlag - Neu Isenburg (P/C 82-99/410-429) München Riem West - München Ost Rbf (P/C 82-99/410-429) München Johanneskirchen - Container Depot München (upon request)
ETCS signalling groups	<u>standard:</u> class B / national system <u>deviations:</u> Weinheim (Bergstraße) Hbf - Darmstadt Eberstadt (class A+B System)
ETCS operational level	<u>standard:</u> not applicable <u>deviations:</u> Rosenheim - München Johanneskirchen (to be defined) München Riem Pbf - München Pasing (to be defined) Olching - DUSK Augsburg Hbf (to be defined) Kehl - Rastatt - Karlsruhe Brunnstück - Karlsruhe Hagsfeld - Bensheim - Frankfurt (Main) Süd (ETCS L2) Biblis - Groß Gerau Dornberg (ETCS L2) Mannheim Ziehbrunnen - Ludwigshafen Überleitung Süd (ETCS L2) Karlsruhe Hbf - Abzw Bashaide (ETCS L2)
Tunnel gauging	<u>standard:</u> DE3 <u>deviations:</u> Linz hbf - Salzburg hbf (G2 GB2) Freilassing - Ampfing - München Ost Pbf /G2 GB2) München Ost Pbf - München Daglfing (G2 GB2)

	Karlsruhe Hagsfeld - Karlsruhe Dammerstock (G2 GB2) Karlsruhe Hagsfeld - Karlsruhe Brunnenstück (G2 GB2) Appenweiler Nord - Appenweiler Kurve (G2 GB2) Mannheim- Mannheim Hgbf (G2 GB2) München Friedenheimer Brücke - München Landsberger Straße (GC) Strasbourg/Kehl - Hausbergen Triage Sortie V2BIS (G1 GA GB GB1)
Axle loads	<u>standard:</u> D4 D4L <u>deviations:</u> Freilassing - Garching (national category)
Track gauge	1435 mm
Number of tracks	double track <u>Route stretches with less or more than two tracks (from/to):</u> Salzburg hbf - Freilassing/Salzburg (three or more) Appenweiler Nord - Appenweiler Kurve (three or more) Freilassing - Tüßling (single track) Ampfing - Markt Schwaben (single track) München Landsberger Straße - München Pasing (single track) Mannheim Rbf - Mannheim Waldhof (single track)
Maximum train length	<u>standard:</u> 700 - 740/750m <u>deviations:</u> 600 - 649m 300 - 349m upon request
Maximum speed	<u>standard:</u> ≥ 120 km/h <u>deviations:</u> ≤ 60 km/h 61 - 80 km/h 81 - 100 km/h 101 - 120 km/h

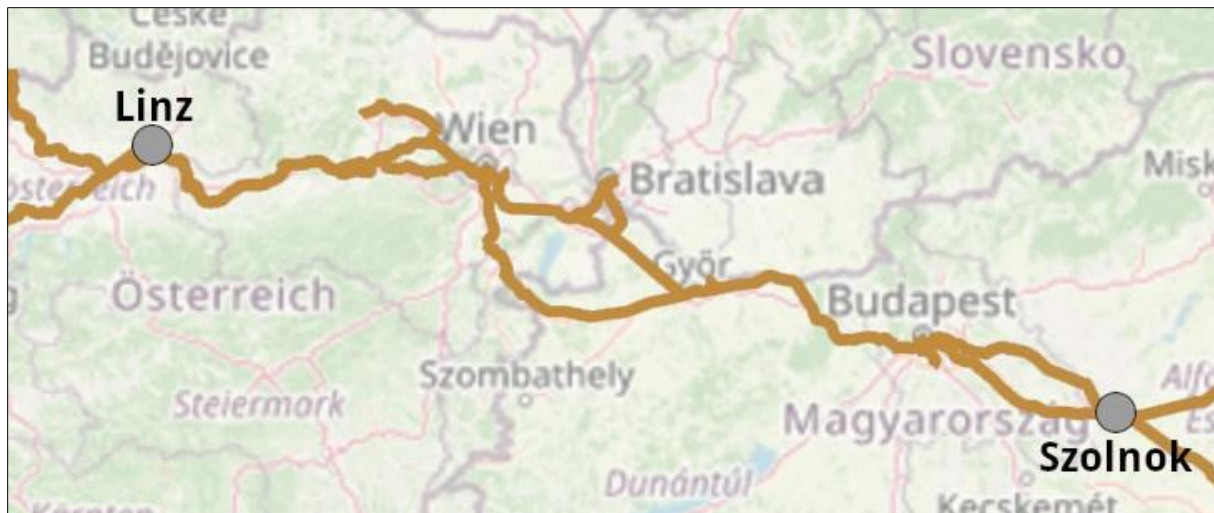


Figure 44. Map of the RFC9 stretch between Linz (AT) and Szolnok (HU) (source: RailNet Europe – Customer Information Platform)

Szolnok - Linz (rail stretch)	
Start of stretch	Latitude: 47.179731
	Longitude: 20.175313
End of stretch	Latitude: 48.290216
	Longitude: 14.292322
Electrification	<u>standard:</u> 25 KV AC <u>deviations:</u> Sorksári út rendező - Csepel Elosztó (not electrified) Györszentivan - Győr Gönyü Kikötő (not electrified) Győr Rendező - Győr ATI Depo/Railport Győr (on Request) Csepel Elosztó - Metrans Terminal Budapest (on Request) Budaörs - Törökbálint DEPO ipv. (not electrified) Enns - Container Terminal Enns (upon request) Linz Vbf Stadthafen - Container Terminal LINZ AG (upon request) Bratislava Petržalka/Hegyeshalom/Ebenfurth - Linz hbf (15 KV AC)
Intermodal Freight Code	<u>standard:</u> P/C 78-80/400-410 <u>deviations:</u> Ujszasz elagazas - Ujszasz (P/C 70-72/390-400) Szolnok/Rakos - Ferencvaros (P/C 70-72/390-400) Ferencvaros - Soroksar Terminal / Csepel Eloszto (P/C 70-72/390-400) Ferencvaros - Győr - Ebenfurth (P/C 70-72/390-400)

	Hegyeshalom - Bratislava Petržalka - Bratislava US (P/C 70-72/390-400)
ETCS signalling groups	<u>standard:</u> class B / national system <u>deviations:</u> Rákos - Köbánya felső (class A+B system) Soroksár - Soroksár Terminal (no interlocking system) Soroksári út -Csepel Elosztó (no interlocking system) Csepel Elosztó - Metrans Terminal Budapest (on request) Budapest Kelenföld - Nickelsdorf(Hegyeshalom)/Rusovce(Rajka) (class A+B system) Györszentivan - Győr Gönyu Kikötő (no interlocking system) Soroksár- Soroksár Terminal (no interlocking system) Abzw Knoten Hadersdorf - Tullnerfeld - Knoten Wagram (class A system) Knoten Wagram - Knoten Rohr (no interlocking system) Enns - Container Terminal Enns (upon request) Linz Vbf Stadthafen - Container Terminal LINZ AG (upon request)
ETCS operational level	<u>standard:</u> not applicable <u>deviations:</u> Szolnok - Budapest/Kelenföld (ETCS L2) Rákos - Ferencváros (ETCS L2) Soroksári út - Soroksár Terminal (ETCS L2) Budapest Kelenföld - Nickelsdorf/Hegyeshalom (ETCS L1) Budapest Kelenföld - Rusovce (ETCS L1) Rusovce - Bratislava Petržalka (to be defined)
Tunnel gauging	<u>standard:</u> GC G2 GB2 <u>deviations:</u> Wie Meidling - Maxing - Tullnerfeld - Knoten Wagram - -Knoten Rohr - Sbl Roh 2 - Pöchlarn - Ybbs a.d. Donau - St. Valentin - Abzw Ast 1 (DE3)
Axle loads	<u>standard:</u> D4 D4L <u>deviations:</u> Szolnok - Újszász (D2) Újszász - Rákos (national category)

	Szolnok - Cegléd - Rákos (D3) Rákos - Soroksár Terminal (D3) Soroksári út - Csepel Elosztó (C2 C3 C3L C4) Ferencváros - Győr (D3) Győr - Hegyeshalom (national category) Hegyeshalom - Rusovce/Rajka (C2 C3 C3L C4) Hegyeshalom - Nickelsdorf/Hegyeshalom (D3) Győr GySEV nyugati elágazás - Baumgarten/Sopron (C2 C3 C3L C4)
Track gauge	1435 mm
Number of tracks	double track <u>Route stretches with less or more than two tracks (from/to):</u> Györszentivan - Gönyu (single track) Győr Rendezo - Ebenfurth (single track) Hegyeshalom - Bratislava Petržalka - Parndorf (single track) Tullnerfeld Ost / Tullnerfeld - Tulln Donaubrücke (single track) Absdorf Hippersdorf - Krems a.d. Donau Nord (single track) Enns - Container Terminal Enns (single track) Linz Vbf - Linz Stadthafen (single track)
Maximum train length	<u>standard:</u> 700 - 740/750m <u>deviations:</u> 650 - 699m 600 - 649m 550 - 599m 500 - 549m 300 - 349m
Maximum speed	<u>standard:</u> >= 120 km/h <u>deviations:</u> <= 60 km/h 61 - 80 km/h 81 - 100 km/h 101 - 120 km/h



Figure 45. Map of the RFC9 stretch between Szolnok (HU) and Constanța (RO) via Oradea (RO), Cluj-Napoca (RO), and Brașov (RO) (source: RailNet Europe – Customer Information Platform)

Constanța - Szolnok (north) via Brașov, Cluj-Napoca, and Oradea (rail stretch)	
Start of stretch	Latitude: 44.085533
	Longitude: 28.645467
End of stretch	Latitude: 47.179731
	Longitude: 20.175313
Electrification	<u>standard:</u> 25 KV AC
	<u>deviations:</u> Bucuresti Sud - Jilava - Chiaiina (not electrified)
Intermodal Freight Code	<u>standard:</u> P/C 45/351-375
	<u>deviations:</u> Biharkeresztes/Oradea - Szolnok (P/C 70-72/390-400)
ETCS signalling groups	<u>standard:</u> class B / national system
	<u>deviations:</u>

	Biharkeresztes/Oradea - Püspökladany (no interlocking System)
ETCS operational level	<u>standard:</u> not applicable <u>deviations:</u> Chitila - Brazi (ETCS L2) Brasov - Coslariu - Simeria (ETCS L2) Biharkeresztes/Oradea -Biharkeresztes (ETCS L1) Biharkeresztes - Szolnok (ETCS L2)
Tunnel gauging	<u>standard:</u> CC <u>deviations:</u> Vintu de Jos - Sibot (G1 GA GB GB1),
Axle loads	<u>standard:</u> C2 C3 C3L C4 <u>deviations:</u> Palas - Fetesti (D4 D4L) Biharkeresztes/Oradea -Püspökladany (D2) Püspökladany - Szajol (D4 D4L) Szajol - Szolnok (D3)
Track gauge	1435 mm
Number of tracks	double track <u>Route stretches with less or more than two tracks (from/to):</u> Poieni - Alesd (single track) Telechiu - Osorhei (single track) Oradea - Püspökladany (single track)
Maximum train length	<u>standard:</u> 700 - 740/750m <u>deviations:</u> > 740/750m 650 - 699m 600 - 649m 550 - 599m 500 - 549m
Maximum speed	<u>standard:</u>

	<= 80 km/h <u>deviations:</u> 81 - 100 km/h 101 - 120 km/h



Figure 46. Map of the RFC9 stretch between Szolnok (HU) and Constanța (RO) via Timișoara (RO), Craiova (RO), and București (RO) (source: RailNet Europe – Customer Information Platform)

Constanța - Szolnok (south) via București, Craiova, and Timișoara (rail stretch)	
Start of stretch	Latitude: 44.085533
	Longitude: 28.645467
End of stretch	Latitude: 47.179731
	Longitude: 20.175313
Electrification	<u>standard:</u> 25 KV AC
	<u>deviations:</u> Baciu Triaj - Oradea Est - Püspökladany (not electrified)
Intermodal Freight Code	<u>standard:</u> P/C 45/351-375
	<u>deviations:</u> Lököshaza / Curtici - Szyjol (P/C 78-80/400-410) Szyjol - Szolnok (P/C 70-72/390-400)
ETCS signalling groups	<u>standard:</u>
	class B / national system

	<u>deviations:</u> n/a
ETCS operational level	<u>standard:</u> not applicable <u>deviations:</u> Simeria - Radna - Arad -Lököshaza/Curtici (ETCS L2) Lököshaza/Curtici - Lököshaza (ETCS L1) Bekescsaba - Szajol (ETCS L2)
Tunnel gauging	<u>standard:</u> GC <u>deviations:</u> Orsova - Caransebes (G1 GA GB GB1)
Axle loads	<u>standard:</u> C2 C3 C3L C4 <u>deviations:</u> Palas - Bucuresti Baneasa (D4 D4L) Lököshaza/Curtici - Bekescsaba (D2) Bekescsaba - Szajol (D4 D4L) Szajol - Szolnok (D3)
Track gauge	1435 mm
Number of tracks	double track <u>Route stretches with less or more than two tracks (from/to):</u> Pantelimo - Jilava (single track) Ram. Pajura - Chiajna (single track) Ram. Pajura - Chitila (single track) R1 Tucceni - Ram. Filiasi - Gura Motruiui (single track) Strehaia - Zagujeni (single track) Filiat - Copaciovasa (single track) Rogojaiu - Lunca Budieni / Targu Jiu(single track) Cavaran - Ram. Glogovat - Glogovat (single track) Curtici - Bekescsaba (single track)
Maximum train length	<u>standard:</u> 700 - 740/750m <u>deviations:</u> > 740/750m

	650 - 699m 600 - 649m 550 - 599m 500 - 549m
Maximum speed	<u>standard:</u> <= 80 km/h <u>deviations:</u> 81 - 100 km/h 101 - 120 km/h

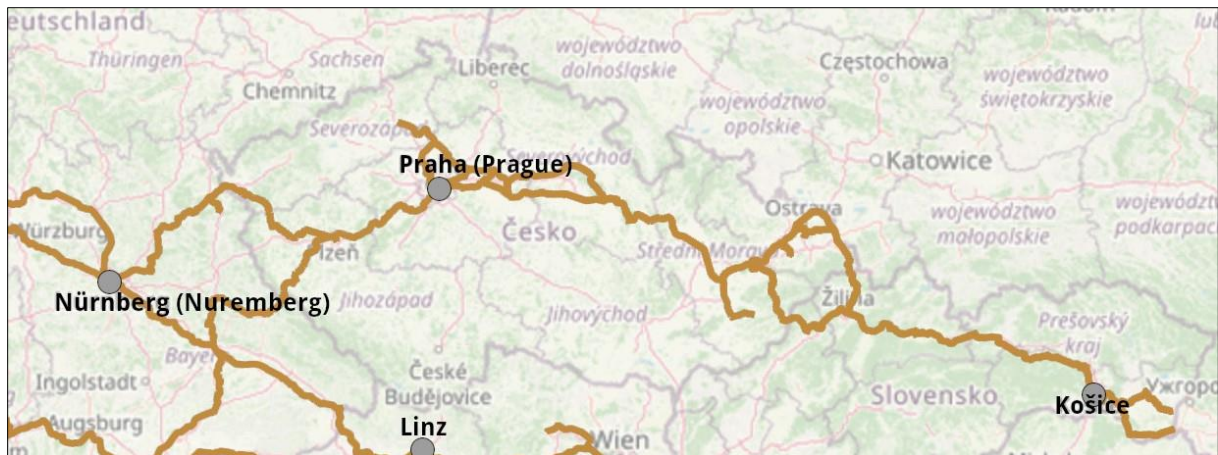


Figure 47. Map of the RFC9 stretch between Nürnberg Hbf (DE) / Regensburg Hbf (DE) and Terminal Matovce (near Velke Kapusany) (SK) / Cierna nad Tisou Chop (near Pribenik) (SK) (source: RailNet Europe – Customer Information Platform)

Nürnberg Hbf / Regensburg Hbf - Terminal Matovce (near Velke Kapusany) / Cierna nad Tisou Chop (near Pribenik) (rail stretch)	
Start of stretch	Latitude: 49.445301 / 49.011683 Longitude: 11.082134 / 12.099691
End of stretch	Latitude: 48.431910 / 48.557113 Longitude: 22.136039 / 22.125899
Electrification	<u>standard:</u> 3 KV DC <u>deviations:</u> Nürnberg hbf / Nürnberg Dutzendteich - Marktredwitz - Cheb (not electrified) Regensburg hbf - Regensburg Hafenbrücke - Schwandorf - Plzen Jizni Predm. (not electrified) Cheb - Plzen hl.n.os.n. - Beroun ser.n. (25 KV AC) Rikovice - Otrokovice (25 KV AC) Otrokovice - Lipa nad Drevnici (not electrified)
Intermodal Freight Code	<u>standard:</u> P/C 78-80/400-410 <u>deviations:</u> Regensburg hbf - Maxhütte Haidorf (P/C 55-57/381-385)

	Hersbruck - Marktredwitz (P/C 38/357) Kralupy nad Vltavou - Nelahozec (P/C 47/360) Kolin ser.n. - Pardubice hl.n. (P/C 70-72/390-400) Pardubice hl.n. - Terminal Pardubice (upon request) Hranice na Morave - Horni Lidec Luky pod Makytou (P/C 67/389-391) Horní Lidec Luky pod Makytou - Terminal Matowce/Cierna nad Tisou Chop (P/C 70-72/390-400) Mosty u Jablunkova Cadca - Zlina (P/C 70-72/390-400) Barca St.1 - Haniska pri Kosiciach (P/C 70-72/390-400)
ETCS signalling groups	<u>standard:</u> class B / national system <u>deviations:</u> Cheb - Plzen Jizni Predm (class A+B system) Praha Malesic - Praha Hostivar - Praha Uhrineves (class A+B system) Praha Liben - Praha Bechovice - Cesky Brod (class A+B system) Kolin - Pradubice hl. n.- Ceska Trebova (class A+B system) C. Trebova vjez.sk. - Brodek u Prerova (class A+B system) Otrokovice - Prerov os.n. - Hranice na Morave - Ostrava hl. n. - Detmarovice (class A+B system) Punchov - Zilina (class A+B system) Zilina - Krasno nad Kysucou (class A system)
ETCS operational level	<u>standard:</u> ETCS L2 <u>deviations:</u> Regensburg Ost - Plzeň hl.n.os.n. (not applicable) Nürnberg Hbf - Schirnding/Cheb (not applicable) Beroun os n. - Praha Hostivař (not applicable) Beroun os n. - Praha Běchovice (not applicable) Mělník - Příčany (not applicable) Mělník - Kolin Hradištko (not applicable) Mělník - Choceň (not applicable) Odb Parník - Č.Třebovan vjezd.sk (not applicable) Odb Parník - Třebovice v Čechách (not applicable) Brodek u Prerova - Výh Dluhonice (not applicable) Hranice na Moravě - Hranice na M. město (not applicable) Studénka - Kopřivnice nákl. n. (not applicable) Ostrava Kunčice - Vratimov (not applicable) Výh. Slivník - Velké Kapušany (not applicable) Čierna nad Tisou - Čierna nad Tisou/Chop (not applicable) Púchov - Žilina zriadovacia stanica (ETCS L1)
Tunnel gauging	<u>standard:</u>

	GC <u>deviations:</u> Regensburg Hbf - Schwandorf (G2 GB2) Nürnberg Hbf - Schirnding/Cheb (G2 GB2) Schwandorf - Cham Schwedenschanz (DE3) Furth im Wald - Furth im Wald/Česká Kubice (DE3) Holoubkov - Odb Zbiroh (upon request) Kralupy nad Vltavou - Nelahozeves (GB&G2 GB+&G2)
Axle loads	<u>standard:</u> D4 D4L <u>deviations:</u> Furth im Wald/Česká Kubice - Plzeň Jižní Předm (C2 C3 C3L C4) Cheb - Lázně Kynžvart (D3) Plzeň Křimice - Plzeň Jižní Předm (D3) Plzeň hl.n.os.n. - Plzeň Koterov (D3) Beroun os.n. - Praha Radotín (D3) Poříčany - Nymburk st.3 (C2 C3 C3L C4)
Track gauge	1435 mm
Number of tracks	double track <u>Route stretches with less or more than two tracks (from/to):</u> Bodenwöhr Nord - Plzeň hl.n.N:Hospoda (single track) Marktreutitz - Cheb (single track) Lipova u Chebu - Pňovany (single track) Praha Radotín - Odb Tunel (three or more) Odb Tunel - Praha Zahradní Město (single track) Praha Malešice - Praha Vysočany (single track) Praha Libeň - Poříčany (three or more) Poříčany - Nymburk st.3 (single track) Velký Osek - Choceň (single track) Otrokovice - Lipa nad Dřevnicí (single track)
Maximum train length	<u>standard:</u> 700 - 740/750m <u>deviations:</u> 650 - 699m 600 - 649m 550 - 599m 450 - 499m 300 - 349m upon request

Maximum speed	<u>standard:</u> ≥ 120 km/h <u>deviations:</u> ≤ 60 km/h 61 - 80 km/h 81 - 100 km/h 101 - 120 km/h