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1 The national report template – objective and description

The objective of work package 4 of DAPhNE Project is to analyze the procedures that port authorities/administrations apply to vessel and terminal operators as well as to other users of port infrastructure and services, and its goal is to determine what aspects need to be simplified, modified, and eliminated to increase efficiency and reduce the red tape in connection to port administration processes.
To this end, surveys will be conducted in five countries (Austria, Bulgaria, Hungary, Croatia and Romania) and the survey results will be incorporated in five national reports, created based on the present national report template.

This report includes the results of the survey conducted in Austria.

2 Summary of national report

The goal of this report is to identify the aspects that need to be simplified, modified, and eliminated in order to increase efficiency and reduce the red tape in connection to port administration processes. The questionnaire distributed in course of the survey was elaborated by project partners and was distributed to port authorities/owners and port users in Austria. The results are summarized in this report. Two versions of the questionnaire were elaborated by project partners which vary concerning the questions included in both questionnaires. The questionnaire for the port users was translated in German in order to achieve a higher response rate since it was assumed that it would be easier for companies to answer the questionnaire in German than in English.
The target group of the survey conducted in Austria were the Ennshafen Port and the port of Vienna including potential port users, which are using these two ports. These two ports were indicated as two important ports in Austria, since they are important trimodal hubs within Austria, connecting companies situated in Eastern and Western Austria and important industrial areas as well as other European countries. Even though, the highest volume of cargo is transshipped waterside in the company port of voestalpine in Linz, the Ennshafen port and the port of Vienna were chosen as target ports of this survey. They are important trimodal hubs in Austria and are used by more port users than the company port of voestalpine. However, this can also be identified as the first limitation of this report: not all port users and port authorities from Austrian ports were included in this survey. In addition, since a quantitate survey design as chosen, no in-depth information were derived from the respondents. In fact, it was quite difficult to achieve a certain response rate since respondents were not able to identify the benefit of completing the questionnaire or were not able to answer the questions included in the questionnaire. Identified respondents were contacted a maximum of three times – two times via email and the last reminder was done via telephone. This national report is structured based on the structure of the questions included in the questionnaire and is divided into two sections: the port authority/owners (Chapter 4.1) and the port users (Chapter 4.2).

Concerning the considered port authorities/owners in this survey, both ports have almost the same infrastructural conditions. However, there are differences in terms of administrative processes performed by these two organizations (see section 4.1.7 in the national report). There are also differences in terms of services provided by the organizations. For example, the port authority of Ennshafen port does not provide any logistics services but the port authority from the port of Vienna does (see section 4.1.8 in the national report). This may be due to the different port management models – the port of Vienna is a public service port with minor landlord activities and the Ennshafen port is mainly oriented towards a landlord port. Both organizations evaluated administrative processes in connection with construction, maintaining & repairing of port infrastructure as complex. Other administrative processes were evaluated as relatively complex which indicates that there is room for improvement for the stated administrative processes in the questionnaire (see section 4.1.10 in the national report). Both organizations are part of a consortium/association in order to promote ports or represent the interests of ports in Austria such as IGÖD (Austrian Public Ports). Another possibility is that they are aware of different initiatives, which aim to promote ports as important logistics hubs in Austria such as DAPhNE, DANTE or DBS Gateway. This indicates that both organizations recognize the importance to further promote ports in Austria as important logistics hubs in the future. It is interesting that the trend of digitalization, which is currently very important and present in the field of logistics, is also recognized by both organizations. Both organizations indicated that they use electronic exchange of information with the port users and indicated that this a relevant service for the operation of a port. Both organizations indicated that only few administrative processes have improved in the past five years (e.g. documentation was facilitated, general IT support was improved). This indicated, that there is still room for improvement in this context in Austrian ports.

Concerning the port users, it can be said that the answers from the respondents in the port user category are quite similar. Port users of both considered ports indicated the same administrative processes such as “loading and unloading (including special and heavy lift cargo)” (4.2.2.) and “Storage and Warehousing” (4.2.3) with the greatest potential for improvement (e.g. the tariff system and complexity related to fiscal legislation for these two processes may be improved).
The category, which was ranked best by all respondents, are safety and security. Concerning the other categories which were evaluated in this survey no great discrepancies between the Ennshafen port and the Port of Vienna were identified. These categories are: communication with port administration; berth allocating & port acceptance process; loading & unloading; Ro-Ro services, loading and unloading of trucks, cars and other special vehicles and roll stocks to and from ships; port maneuvering process and transshipment. All findings are mostly in the medium range (2-3), therefor it can be said that there is still room for improvement in all evaluated categories.
Concerning the current administrative processes there was only one difference between the respondents, the port users from the port of Vienna (terminal operators and forwarding companies) mentioned that they do not have any paper copies of the electronic data in contrast to the port users of the Ennshafen port.

3 General information regarding the research conducted

Period of the research: 06.09.2017 -18.12.2017 (starting from identifying relevant respondents and ending with getting the last completed questionnaires)

Number of filled in questionnaires: 7
Rate of non-responses: 86%

The following problems were encountered during the research process:

- the questionnaire was translated in German for port users in order to get a higher response rate, since project partners argued that it might be difficult for certain companies to answer the questionnaire
- concerning the survey design, the problem concerning getting a certain response rate was encountered
- not all respondents were able to answer all questions of the questionnaire – thus some information might still be missing
- it was necessary to contact a few respondents more than once (e.g. reminder via email and call) to get a response

Please list the limitations of the research:

- Not all ports from Austria were included in the survey – thus not all port authorities and port users are represented in this report. However, this report may provide a first overview of the current situation in Austria.
- Since a quantitative questionnaire was used for this report, no detailed information can be provided about the main challenges in the observed ports as may be possible by applying a qualitative survey.

4 General presentation of Danube Ports in Austria

In Austria, there are four ports situated on the Danube (see Figure 1):

- Ennshafen port
- Port of Vienna
- Rhenus Donauhafen Krems
- Port of Linz (including the company port of voestalpine).

Figure 1- Danube ports in Austria[1]

In total, 7.5 million tons of cargo were handled waterside in 2016 in Austrian Danube ports and transshipment sites. The most cargo in Austria was transshipped waterside in the port of Linz in 2016 – including cargo transshipped in the company port of voestalpine and in the port owned by Linz AG. Most cargo was transshipped in the company port of voestalpine in Linz (about 3.3 million tons), followed by other private ports and transshipment sites in Austria with a volume of 1.4 million tons (18.6% of total volume of goods handled in 2016). The port of Vienna accounted for 14.2% of total waterside transshipment in Austria with a volume of around 1.1 million tons. The Ennshafen port accounted for 8.0% of the total volume of goods handled (about 600,000 tons of cargo) and the port of Krems accounted for 6.2% (about 470,000 tons of cargo). [2]

In the survey, the focus was on Ennshafen port and the port of Vienna. This can be derived from the fact that these two ports are important trimodal hubs in Western and Eastern Austria, which facilitate transshipment of different types of cargo. The port of Vienna can be seen as an important logistics location for Eastern Austria since it is also the largest trimodal hub in Austria. For Western Austria, the Ennshafen port can be named as an important trimodal hub and the largest connected industrial area on the Upper Danube.[3] Even though, the most cargo was transhipped in the port of Linz waterside, the Ennshafen port and the port of Vienna were evaluated as important trimodal hubs in Austria and thus as relevant for the conducted survey.

Ennshafen port is one of two TEN-T-core ports (Rhine-Danube corridor waterway) in Austria and is located on river km 2112 in the mouth of river Enns to the Danube at the

[1] Source: Austrian Public Ports (IGÖD) (2017), available under: http://www.igoed.at/en/ [18.12.2017]
[2] Source: Viadonau: Annual Report on Danube Navigation in Austria (2016), p.16f; available under http://www.viadonau.org/newsroom/publikationen/broschueren/?jumpurl=fileadmin%2Fcontent%2Fviadonau%2F01Newsroom%2FDokumente%2F2017%2FBroschueren%2FJahresbericht_2016_en.pdf&juSecure=1&mimeType=application%2Fpdf&locationData=267%3Att_content%3A288&juHash=bd4d8921cb0433ddc11be0774e666a0b9909a5a0 [15.11.2017]
[3] Source: DAPhNE Report on Port infrastructure & industrial development (2017) p.33ff (for further information please contact s.jovanovic@ic-group.org)

border between the federal states of Upper Austria and Lower Austria. The port in total is the largest connected industrial area on the Upper Danube. It is a combination of business park areas and port areas. The Ennshafen port offers optimal trimodal transportation logistics for export and connects the entire region with an international transportation network. Around 55 companies with about 2,300 employees are working in the business park of Ennshafen port. The port area is in total 352 ha thereof 110 ha are owned by the port authorities (Ennshafen OÖ GmbH und Ennshafen NÖ GmbH) and 242 ha are owned by other private companies. The cargo handling capacity at Ennshafen port is higher than 1 mio t/a (up to now no capacity limits has been reached). The port has 7 terminals, 16 berths, 2 basins and several kilometers of quay walls along the river side (Enns). The whole port area has 6 road entrances, each with double lines and two main rail entrances access the total area from two different sides. Within the area there is a wide system of internal rail network with many different users and owners (in total about 17 km rail tracks).
Concerning transshipped goods the main types of goods handled in the Ennshafen port are fertilizers, animal feed stuff, grains, agricultural products, wood, salt, ores, iron and steel, scrap metal, high and heavy pieces, waste materials, gas (LPG) and all kind of cargo in containers (content is confidential). [4]

In the non-private port sector, the port of Vienna can be named as the largest port on the Danube in Eastern Europe with a total area of 3.000.000 m^2 and 6 terminals in three cargo locations. The port of Vienna is located 2.000 km from the Black Sea and 1.500 km from the North Sea. It has the great advantage of being the largest trimodal logistics centre in Austria, bringing together road, rail and waterway. This is making it the ideal location for the transhipment of goods and for container storage, trade and management. Even though only 1 million tons of cargo were transshipped waterside in the port of Vienna, in total 6.8 million tons of cargo were transshipped in the port of Vienna in 2016. This means, that only around 10% of the total cargo transshipped at the port of Vienna was transshipped waterside, the rest belongs to land-to-land transshipment.
Wiener Hafen, GmbH & Co KG is a member of a public company Wien Holding which has 95% of ownership of Wiener Hafen, while the Vienna Economic Chamber (Wirtschaftskammer Wien) has a 5 percent share in the company. Wiener Hafen, GmbH & Co KG is the owner of the port facilities comprising real estate, buildings and wharf equipment and operates the harbours in Freudenau, Albern and Lobau, the number of berths in all three ports is up to 80.
The Port of Vienna is especially successful with the services container stuffing and stripping as well as with its car terminal.
Concerning Container Stuffing and Stripping the port of Vienna has a specialized team in this segment, which has been responsible for this area for about 10 years. 200 containers per year are stuffed in the port of Vienna. The most common goods, which are stuffed, are high quality industrial machinery, raw materials and cars.

[4] Source: EHG Ennshafen GmbH, 2017, Fact Sheet Ennshafen Port. Available under http://www.ennshafen.at/files/facts_ennshafen-aktuell-e.pdf [15.11.2017]

Regarding to the car terminal in 2016, the port of Vienna handled 72,000 vehicles. In 2017, the storage space was expended up to 10,000 parking lots. In addition, a covered storage area in the form of a parking garage is offered. [5]

In the next section of the report, the completed questionnaires by both port authorities are summarized.

4.1. Research conducted on port owners/authorities – data obtained from the ports under survey

Number of filled in questionnaires: 2
Rate of non-responses: 0 %

As mentioned above the two contacted port owners/authorities in this survey are the Ennshafen OÖ GmbH (incl. Ennshafen NÖ GmbH) and the Wiener Hafen und Lager, Ausbau- und Vermögensverwaltung GmbH & Co HG (port of Vienna).

4.1.1 The cargo types handled

In transport economics, there are several different classifications of goods. These classifications are based on sectors and branches, the processing stage of the goods or their state of aggregation.[6]
The port of Vienna handles 12 million tons of freight annually: 50 per cent by road, 35 per cent by rail, and 15 per cent by river.[7] The cargo types handled in the port of Vienna are dry bulk; container; break bulk; high and heavy cargo; petroleum products refined; RO-RO-cargo; liquid bulk; moisture, sensible, break bulk and crude oil. In 2016, 6,800,00 tons of commercial goods were transshipped in the port of Vienna. In addition, 1,100 vessels were handled. In the car terminal, 72,000 vehicles were handled and 440,000 TEU in the container terminal.[8]
In addition to the indicated types of cargo by port of Vienna, Ennshafen port also transships dangerous goods and gas -especially LPG and LNG. No liquid bulk and crude oil are handled in Ennshafen. In fact, 597,290 tons of cargo were transshipped waterside at Ennshafen port and around 306,000 TEU were handled.[9]

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[5] Source: DAPhNE Report on Port infrastructure & industrial development (2017) p.33ff (for further information please contact s.jovanovic@ic-group.org)
[6]Source: viadonau , Manual on Danube Navigation, 2013, p. 81
[7]Source: Hafen Wien, Logistics transhipment centre, available under http://webcache.googleusercontent.com/search?q=cache:gqOeNAc3pxIJ:www.hafen-wien.com/en/company/importance&num=1&hl=de&gl=at&strip=0&vwsrc=0 [15.12.2017]
[8] Source: Wiener Hafen und Lager Ausbau- und Vermögensverwaltung, GmbH & Co KG, Facts & Figures 2016 (2017), available under: http://www.hafen-wien.com/en/company/facts-figures [18.12.2017]
[9] Source: Ennshafen OÖ GmbH, Factsheet (2017), available under: http://www.ennshafen.at/files/facts_ennshafen-aktuell-e.pdf [18.12.2017]

4.1.2 Storage and warehousing facilities

In general, storage and warehousing facilities need high security and quality standards. Based on the different characteristics of the transported goods, a port may offer different types of storage facilities in order to prevent damage to cargo. Types of storage facilities are for example:

- *Open storage areas:* Place for non-sensitive goods, with low value and not affected by rain, e.g. ore.
- *Covered storage areas:* In this storage facility, goods are partly protected from adverse weather conditions and high value goods can be stored safely. [10]
- *Special storage facilities:* e.g. for dangerous cargo

The storage and warehousing facilities available in the port of Vienna - as indicated in the survey - are an open storage area and a covered storage area; both are in the property of the port authority/owner.
In fact, the covered storage area includes 70,000 square meters and is ideally located between the A23 Südosttangente city motorway and the A4 Ostautobahn motorway. In addition, the port of Vienna is located near the centre of Vienna and the Vienna International Airport in Schwechat. Furthermore, a covered crane installation enables cargo to be transferred from vessels to the warehouse. All storage areas have covered rail connections as well and area ideally equipped to handle heavy and bulky goods. The warehousing services in the port of Vienna include:

- High-rack storage
- Block storage
- Cold stores and deep freeze storage
- Cross docking
- Order picking
- Packing
- Loading / unloading of containers
- Stuffing / stripping
- Customs clearance, transports
- Other services on request[11]

In the Ennshafen port there are four types of storage and warehousing facilities available. These four types include an open storage area, a covered storage area, a storage of dangerous cargo and a fueling storage (LNG) and bunkering storage (gasoline station). All

[10]Source: viadonau , Manual on Danube Navigation, 2013, p. 88
[11]Source: Hafen Wien, Storage logistics, available under http://www.hafen-wien.com/en/logistics-storage/storage-logistics [15.12.2017]

four mentioned areas are in the property of the port operator, only the open storage is also in the property of the port authority/owner.

4.1.3 Handling facilities and devices available

There are numerous handling facilities and devices used in the considered ports.

In the port of Vienna the following handling facilities are available as indicated in the questionnaire:

- conveyor belt
- pneumatic equipment
- Ro/Ro ramp (Roll-on Roll-off),
- gantry crane
- mobile crane
- luffing/slewing crane

There are the same handling facilities in the Ennshafen port as in the port of Vienna, in addition there is also a floating crane, a crane mounted on a barge or pontoon which can be towed or self-propelled from place to place, available. All the mentioned handling facilities available in the Ennshafen port are in the property of the port operators except the Ro/Ro ramp which is in the property of the port authority/owner.

4.1.4. Berths

Berths are part of the port infrastructure and used for the mooring of ships. At the port of Vienna, there is one berth available but in total, 80 berths are available in all three ports, which are situated at different locations in Vienna. Concerning the Ennshafen port there are 16 berths available (max. number of vessels handled at the same time).

4.1.5. Type of transport/connections available

Ports not only connect the transport modes of road, rail and waterway, they also serve as important service providers in the fields of transshipment, storage and logistics.
That means they often perform a variety of value-added logistics services to customers, such as packaging, container stuffing and stripping, sanitation and quality checks.
These value-added services strengthen the position of ports as important logistics hubs and turn them into important locations for companies which helps boosting the economy of the region. Nowadays ports act as a central interface between the various modes of transport. [12]
Ennshafen port and the port of Vienna, are important trimodal hubs in the area of Eastern and Western Europe, bringing together road, rail and water transportation and making it the ideal place for the transportation of goods and for container storage, trade and management.

[12]Source: viadonau , Manual on Danube Navigation, 2013, p. 78

4.1.6 Quality certification

The port of Vienna has gained two types of quality certification: ISO 9001 and GMP+.

- ISO 9001 is one of the standards developed by the International Organization for Standardization (ISO). The purpose is to increase customer satisfaction through the deliverance of quality products and services. [13]
- "GMP stands for Good Manufacturing Practices. In 1992 the current GMP+ Feed Certification scheme started out with this. Afterwards, it developed into a full-fledged certification scheme by integrating ISO quality management requirements, HACCP and other elements. The + stands for the integration of HACCP: 'Hazards Analysis and Critical Control Points'. The foundation of the GMP+ systematic is partly determined by continuous improvement according to the principle of the Deming circle 'Plan, Do, Check, Act': write down what I'm doing, do what I've written down and providing proof that I effectively did it."[14]

The Ennshafen port indicated that no quality certification is awarded in the port.

4.1.7 Port administrative processes conducted

During the survey, the port of Vienna indicated that the following administrative processes are performed by their organization:

- Construction, maintaining & repairing of port infrastructure
- Renting (land, port platforms, office spaces, warehouses, equipment)
- Preparation and implementation of security plans
- Ship cargo control and
- Issuing specific authorizations, licenses, certificates related to port activities

The Ennshafen port performs the same five administrative processes as the port of Vienna, additional the Ennshafen port is also responsible for:

- Monitoring ship movements and information systems
- Traffic management in general
- Traffic management for rivers
- Traffic management for road and
- Issuing specific authorizations, licenses, certificates related to port activities.

4.1.8. The services provided by organization

Concerning the services provided by the port authority/owner of the port of Vienna and the Ennshafen port, the answers indicated by respondents are summarized in Table 1. As can be seen in the table, some provided administrative processes are the same in both ports.

[13]Source: ISO, About ISO, available under https://www.iso.org/home.html [15.12.2017]
[14]Source: GMP+, What is GMP+? Available under https://www.gmpplus.org/pagina/561/what-is-gmp.aspx, [12.12.2017]

Table 1 – services provided by organization

	Ennshafen port		port of Vienna	
Type of administrative processes	**yes**	**no**	**yes**	**no**
Administrative and controlling services only	☒	☐	☐	☐
Transshipment operations	☐	☒	☒	☐
Storage of cargo	☐	☒	☒	☐
Berth allocation and port acceptance	☒	☐	☒	☐
Fresh water supply	☒	☐	☐	☒
Onshore power supply	☒	☐	☒	☐
Bunkering	☒	☐	☒	☐
Bilge water disposal	☐	☒	☐	☒
Waste disposal	☒	☐	☐	☒
Waste recycling	☐	☒	☒	☐
Fuel station (Diesel, CNG, LNG, Benzine) for vessels	☐	☒	☐	☒
Provision of logistic services	☐	☒	☒	☐

4.1.9 Participation in a consortium/association at national or international level

The port of Vienna and the Ennshafen port are both part of the consortium/association IGÖD. IGÖD is a member of the European Federation of Inland Ports (EFIP). One of the key objectives of IGÖD is to further strengthening the Danube activities. IGÖD carries out the following basic tasks:

- Furthering and lobbying for common interests in transport, waterways and seaports
- Establishing contact and working together with foreign and international associations with the same interests
- Enhancing the public's knowledge of and improving its attitude towards the use of the Danube for the transportation of goods
- Exchange of opinions and information between members[15]

In addition, the Ennshafen port is also a member of EFIP, PDA/PDI and the chamber of commerce. EFIP stands for "European Federation of Inland Ports" and highlights and promotes the role of inland ports as nodal points for intermodal transport, combining road, rail, maritime and inland waterway transport.[16]

[15]Source: IGÖD, Successful logistics Trimodal logistics available under http://www.igoed.at/en/about_us/mission_statement, [12.12.2017]
[16] Source: EFIP, Organisation available under https://www.inlandports.eu/, [12.12.2017]

The membership within this mentioned associations enables an unification of the document flow, an exchange of information on legal frame of port processes between other members and provides a general knowledge-transfer. Furthermore, the membership leads to an attraction of investments for administered ports. Both ports take serious efforts to further strengthen the position of ports as important logistics hubs in the European transport network and work together with national/international consortium/associations.

4.1.10 The complexity of the administrative port processes

The port of Vienna evaluated the complexity of the administrative port processes, referring to the correlation between volume of documents required, the number of personnel involved and time required to fulfill, with an average of 3, which means a mediocre complexity. Three of the mentioned processes in 4.1.7. are evaluated as very complex processes. These include "Construction, maintaining & repairing of port infrastructure" and "Preparation and implementation of security plans" - ranked with 4, which means that the complexity of this processes is indicated as "rather high". In contrast "Renting (land, port platforms, office spaces, warehouses, equipment)" was ranked with 1, meaning that this process is not very complex.

The Ennshafen port evaluated the complexity of the administrative processes conducted in the port (see 4.1.7) mainly as moderate. Only the processes "Preparation and implementation of security plans" were indicated as less complex (ranked with 2). In contrast, the administrative processes "Construction, maintaining & repairing of port infrastructure", "Renting (land, port platforms, office spaces, warehouses, equipment)" and "Issuing specific authorizations, licenses, certificates related to port activities" were ranked as highly complex by the respondent.

4.1.11 Initiative regarding harmonization of administrative port processes

Both ports are involved in or are aware of projects, which aim to enhance administrative processes in ports. The port of Vienna is involved in the DAPhNE and DBS Gateway region project. To increase the awareness of the harmonization of the administrative processes in ports along the Danube, the Ennshafen is involved in several initiatives initiated by viadonau or INTERREG projects (DAPhNE, DANTE).

4. 1.12 Duration of permit/certificate for operation of port and audit

Concerning the duration of the permit/certificate for the overall operations in the port, the period is defined in an agreement/contract. The audit for proper operations through the respective administration takes place once a year.
For the Ennshafen port there is no duration of the permit/ certificate for operation of the port and audits for proper operation by the administration are very seldom.

4.1.13 Port services provided by the private sector

Concerning the responses of the two interviewed port authorities, the Ennshafen port indicated that there were no improvements concerning administration processes registered concerning the provided services (public/private). The port of Vienna mentioned that the same laws, frameworks and guidelines apply whether in the private or public sector.

4.1.14 The evolution of port administrative processes during the past 5 years

From the point of view of the port of Vienna there are several administrative processes which have improved over the past 5 years in the port sector. The Port of Vienna mentioned that the harbormaster has gained more responsibility over the past 5 years, so that he is able to actively implement projects in the port area, also the documentation of traffic was facilitated and simplified over the last 5 years.
The Ennshafen port indicated that only the general IT support for all processes has increased in the past 5 years.

4.1.15 Procedure of the audit of vessels and required documents for visiting a port in Austria

Referring to the audit of vessels for their permit for sailing, neither the port of Vienna nor Ennshafen port could provide information, as the process is not performed by these two organizations. Concerning the documents which are necessary when a vessel visit a port in Austria, both organizations confirm that the number of documents is less than 5.

4.1.16 Data processing, Communication and Challenges

Both organizations - the port of Vienna as well as the Ennshafen port - use electronic exchange of information with the port users and indicate that as a relevant service for the operation of a port. The ports also obtain electronically statistical and/or other data from port users and use paper copies from the electronically received data.
Both companies mentioned that they have meetings on a regular basis with other relevant institutions to the port activity (customs, border control etc.) and with port users.

In addition, the respondents were asked to indicate the most time consuming administrative processes. The Port of Vienna indicated the following administrative processes as the most time consuming:

- Construction of Port infrastructure
- Ship cargo Control
- Customs processes
- Public procurement law

The Port of Vienna also mentioned that these listed procedures are very important for a regulated procedure in the port. In addition, they mentioned that the administrative

processes in day-to-day operations are not that time consuming and therefore there are no elimination suggestions.

To further promote and improve the administrative processes in Austrian ports and along Danube ports the Ennshafen port mentioned that the activities of the project DAPhNE (WP5 – Port Development) can generate an important input.

4.1.17 Conclusions

To sum up some facts, the Ennshafen port and the port of Vienna are two important trimodal hubs in Austria. The Ennshafen port is located at the heart of Europe and offers an ideal infrastructure for companies. It is situated on the main arteries of international transportation – on the Rhine-Main-Danube waterway and the north-south railway link from the Baltic Sea to the Adriatic Sea. The port of Vienna is the largest port on the Danube in Eastern Austria and its diverse logistical capabilities and capacities continue to be enlarged. Thus, it has the great advantage of being the largest trimodal logistics center in Austria, bringing together road, rail and water transportation.

As a result of the survey conducted, there are several similarities in the two regarded Austrian ports. In general, the handling facilities, services and devices available as well as the cargo types handled in the port areas are very similar except that Ennshafen port also transships dangerous goods and gas - especially LPG and LNG, for this, no liquid bulk and crude oil are handled in Ennshafen port. The storage and warehousing facilities available in the port of Vienna are in the property of the port authority/owner. In contrast, the facilities in the Ennshafen port are in the property of the port operator, only the open storage is as well in the property of the port authority/owner as in the property of the port operator. This results from the different port management models of these two ports.

In contrast to the Ennshafen port, the port of Vienna has gained two types of quality certification ISO 9001 and GMP. The purpose of these is to increase customer satisfaction through the deliverance of quality products and services. By contrast the Ennshafen port has in regarding to the survey, no certification but is a member of IGÖD, EFIP,PDA/PDI and chamber of commerce with the key objectives to further strengthening the Danube activities. The membership within these mentioned associations enables several advantages to strengthen the position of Danube ports in Austria. In addition, both organizations operate in initiatives to increase the awareness of the harmonization of the administrative processes in ports along the Danube (DANTE, DAPhNE, DBS Gateway region...).

There are also some differences according the administrative process in the ports and their evaluated complexity. The port of Vienna is responsible for construction, maintaining & repairing of port infrastructure; renting (land, port platforms, office spaces, warehouses, equipment); preparation and implementation of security plans; ship cargo control and issuing specific authorizations, licenses, certificates related to port activities. The Ennshafen port offers four additional administrative processes in contrast to the port of Vienna, monitoring ship movements and information systems; traffic management in general; traffic

management for rivers; traffic management for road and issuing specific authorizations, licenses, certificates related to port activities.

Looking back on the past 5 years, the port of Vienna mentioned several process in the survey, which have improved especially in the field of the harbormaster, as opposite the Ennshafen port indicated that only the general IT support has increased.

4.2. Research conducted on port users – data obtained from the ports under survey

Number of filled in questionnaires: 5
Rate of non-responses: 90 %

4.2.1. Port users categories

In Table 2 the number of respondents clustered according to the port users categories is stated. The port users were identified by a desktop research. All identified port users were contacted via email twice and called if no response was sent. Unfortunately, only five port users completed the questionnaire. Most identified port users mentioned that they are not able to provide answers, didn't want to take time to complete the questionnaire or didn't see any benefit by completing the questionnaire. Since port users were informed that the information would be anonymized, no company names are used in this report.

Table 2- port users categories

	Ennshafen port	**port of Vienna**
terminal operator	1	1
cargo shipper/owner	2[17]	-
forwarding companies	-	1
others	1[18]	

4.2.2. Loading and unloading (including special and heavy lift cargo)

Ennshafen port:
Referring to Table 3, it can be seen that the terminal operators indicated the processes in the field of safety and security; the infrastructure quality; the regulations/behaviors in the port and the cooperation with various stakeholders as well organized (ranked with 2). In contrast, the processes concerning the complexity related to fiscal legislation and the tariff system for loading and unloading were rated with 4, which means it is not very satisfying.

[17] One respondent classified the company as terminal operator and cargo shipper/ owner
[18]this port user defined his company among "others" as a resident

The last two categories in this field - administrative handling and the duration of loading & unloading - have been rated with 3. Thus, there is still room for improvement in these areas.

The cargo shippers/owners have classified the categories safety and security and infrastructure quality as rather adequate (1.5). The processes concerning administrative handling; duration, cooperation with various stakeholders and regulations/behaviors in the port were ranked in the upper middle range (2/2.5) Tariff system and complexity related to fiscal legislation received the lowest scores with 3.5.

The respondent in the category "other" ranked safety and security of loading & unloading as very good (rated with 1) - in this field it can be said that there is no need for further improvement. The duration; infrastructure quality; regulations/behaviors in the port and cooperation with various stakeholders (port operators, tariffs) received the second best score (rated with 2). The category tariff system was rated with 4, so there is room for improvement. The category fiscal legislation was ranked with 5 and can be named as the worst evaluated category for loading & unloading.

All three port user categories indicated the same areas with the greatest potential of improvement (tariff system and complexity related to fiscal legislation for loading & unloading).

Table 3- loading & unloading (including special and heavy lift cargo) (Ennshafen port)

Category	**terminal operator**	**cargo shipper/ owner**	**other**
administrative handling (e.g. required documents)	3	2	3
safety and security	2	1.5	1
duration	3	2	2
infrastructure quality	2	1.5	2
tariff system	4	3.5	4
complexity related to fiscal legislation	4	3.5	5
regulations/behaviors in the port	2	2.5	2
cooperation with various stakeholders (port operators, Tariffs)	2	2	2

Port of Vienna:

Table 4 - loading & unloading (including special and heavy lift cargo) (port of Vienna)

Category	**terminal operator**	**forwarding companies**
administrative handling (e.g. required documents)	1	2
safety and security	1	1
duration	1	3

infrastructure quality	1	2
tariff system	1	3
complexity related to fiscal legislation	1	4
regulations/behaviors in the port	1	2
cooperation with various stakeholders (port operators, Tariffs)	1	2

As can be seen in Table 4, the terminal operators which have their activities in the port of Vienna are very satisfied with all processes, and did not indicate much space for improvement. All categories mentioned for the loading & unloading including special sized and weighted goods are ranked with 1. In contrast to this, the forwarding companies see some room for improvement in connection with the loading & unloading process except for the safety and security. They also ranked the administrative handling; the infrastructure quality; the regulations/behaviors in the port and the cooperation with various stakeholders as almost adequate. The duration of the loading & unloading process and the tariff system was ranked with 3 by the forwarding companies. This means that there is room for improvement from their point of view. The category complexity related to fiscal legislation was rated with 4 from the forwarding companies, so there is potential for improvement in this area.

In conclusion, it can be aid that the port users of both evaluated ports indicate that the tariff system and the complexity related to fiscal legislation in connection of loading & unloading including special sized and weighted goods have the highest level for improvement.

4.2.3. Storage and warehousing

Ennshafen port:
As can be seen from Table 5, the availability of storage and warehousing was similarly ranked by the different port user categories. The tariff system and the complexity related to fiscal legislation of storage and warehousing received the lowest scores with 4 and 5 and therefore this categories have the greatest potential for improvement in the Ennshafen port.

Table 5 - storage and warehousing (Ennshafen port)

Category	**terminal operator**	**cargo shipper/ owner**	**other**
administrative handling (e.g. required documents)	3	3	3
availability	2	2	3
infrastructure quality	2	2	2
tariff system	4	4	4
complexity related to fiscal legislation	4	4	5
regulations/behaviors in the port	2	2	3

Port of Vienna:

Table 6 - storage and warehousing (port of Vienna)

Category	terminal operator	forwarding companies
administrative handling (e.g. required documents)	1	2
availability	1	3
infrastructur quality	1	2
tariff system	1	3
complexity related to fiscal legislation	1	4
regulations/behaviors in the port	1	2

As can be seen in Table 6, the terminal operators are again very satisfied with all processes in connection with storage and warehousing. They do not see any suggestions for improvement concerning the processes connected to storage and warehousing. They mentioned as well that they are very satisfied with the high security level and the long opening hours.
The forwarding companies see potential for improvement especially in the context of complexity related to fiscal legislation (ranked with 4). Availability and the tariff system of storage and warehousing facilities was rated with 3, which can be identified as average. The categories administrative handling; infrastructure quality and regulations/behaviors in the port in connection with storage and warehousing was ranked best in this context by the forwarding companies.

4.2.4. Communication with port administration

The communication plays an important role especially in the area of logistics. The work in a port (transport and handling) is executed by various stakeholders and for this reason, it requires good communication among all involved stakeholders to deal with the different tasks and to guarantee smooth transshipment of goods.[19] The communication was evaluated by the categories intensity and complexity.

Ennshafen port:

Table 7 - communication with port administration (Ennshafen port)

Category	terminal operator	cargo shipper/ owner	other
intensity	2	2.5	1
complexity of the procedure	2	2.5	1

[19]Source: ResearchGatea, The importance of communication for the maintenance of health and safety in work operations in ports available under https://www.researchgate.net/publication/315927788_The_importance_of_communication_for_the_maintenance_of_health_and_safety_in_work_operations_in_ports (18.12.2017]

According to the table above, all respondents (terminal operator, cargo shipper, cargo owner,"other") rated the intensity as well as the complexity of communication as adequate.

Port of Vienna:

Table 8 - communication with port administration (port of Vienna)

Category	terminal operator
intensity	3
complexity of the procedure	1

This category was only ranked by the terminal operators. As can be seen in Table 8 the intensity was classified with 3 and the complexity was ranked with 1, so referring to the terminal operators there is a need for improvement concerning the intensity.

4.2.5. Berth Allocating & Port Acceptance Process

The Berth Allocation Problem (BAP) is one of the well-known tactical logistic problems in the optimization of the container terminals transport process. The challenges are finding an optimal berth assignment to vessels and to adjust vessel arrivals to preselected time windows. The objective is to maximize berth capacity and to minimize waiting time for vessels in port.[20]

Ennshafen port:

Table 9 - berth Allocating & Port Acceptance Process (Ennshafen port)

Category	terminal operator	cargo shipper/ owner
duration	2	2
complexity of the procedure	2	2

Concerning the berth allocating & port acceptance process only the terminal operators and cargo shippers, cargo owners evaluated this process. Both classified the two categories as rather adequate (rated with 2).

Port of Vienna:

Table 10 - berth Allocating & Port Acceptance Process (port of Vienna)

Category	terminal operator

[20]Source: available under https://ac.els-cdn.com/S2351978915011750/1-s2.0-S2351978915011750-main.pdf?_tid=8bb6e502-e3f4-11e7-afcf-00000aab0f6b&acdnat=1513602691_b5ebb273b54de69d32a79625aacd5e4d (14.12.2017)

duration	1
complexity of the procedure	1

Regarding to the survey only the terminal operators answered this question and ranked this category with 1, which means that the process is very satisfying.

4.2.6. Loading and unloading of vessels

Ennshafen port:

Table 11 - loading & unloading (Ennshafen port)

Category	terminal operator	cargo shipper/ owner	other
duration	2	2	1
complexity of the procedure	2	2	n.a.

As can be seen in Table 11, the terminal operators and cargo shippers/cargo owners rated both categories (duration and complexity of loading and unloading of vessels) with 2, which means that the processes are almost satisfying. The "others" evaluated the duration as adequate. In this case, there is no need for improvement from the respondents point of view.

Port of Vienna:

Table 12 - loading & unloading (port of Vienna)

Category	terminal operator
duration	1
complexity of the procedure	1

The loading and unloading process was ranked with 1, because referring to the terminal operators the process is very rapid and reliable in the port of Vienna.

4.2.7. Ro-Ro services (loading and unloading of trucks, cars and other special vehicles and roll stocks to and from ships) – if applicable

Both ports, which were the focus of this survey, have a Ro-Ro ramp. Using Ro-Ro services loading and unloading take little time, because the cargo is simply driven on and off board. The most important types of goods transported in this way include passenger cars, construction and agricultural machinery, articulated vehicles and semi-trailers ("floating road") as well as heavy cargo and oversized goods.[21]

[21]viadonau, types of vessels available under http://www.viadonau.org/en/economy/the-danube-transport-axis/types-of-vessels/

The Ro-Ro services were evaluated by respondents in terms of duration of the process and the complexity.

Ennshafen port:

Table 13 - ro-ro services (Ennshafen port)

Category	terminal operator	cargo shipper/ owner
duration	3	3
complexity of the procedure	3	3

Regarding to the table listed above, only the terminal operators and cargo shippers/cargo owners evaluated this process. Both of them ranked the two categories with 3, which indicates that there is room for improvement concerning the Ro-Ro Services.

Port of Vienna:
There was no response to this question by port users in the port of Vienna.

4.2.8. Port maneuvering process

A ship needs to manoeuvre while arriving or departing a port. This process was rated by the respondents in this question with the categories duration and complexity of the procedure.

Ennshafen port:

Table 14 - port maneuvering process (Ennshafen port)

Category	terminal operator	cargo shipper/ owner
duration	2	2
complexity of the procedure	2	2

Concerning the port maneuvering process only the terminal operators and cargo shippers/ cargo owners evaluated this process. Both classified the two categories as rather adequate (rated with 2).

Port of Vienna:
There was no response to this question by port users in the port of Vienna.

4.2.9. ship-to-ship Transshipment - if applicable

The respondents of the survey could not provide information on this point which may indicate that the respondents included in this survey do not perform ship-to-ship transshipment.

4.2.10. Audit

Ennshafen port:
Regarding the frequency of the vessel audit by the corresponding administration in the ports included in the survey, only the terminal operators and cargo shippers/cargo owners responded. The respondent indicated that this the process takes place once in a year.

Port of Vienna:
There was no response to this question by port users in the port of Vienna.

4.2.11. Documents

Ennshafen port:
Concerning the documents which are necessary when a vessel visit a port in Austria the general response was that the number is less than 5. This is in accordance with the answer by the port authority.

Port of Vienna:
There was no response to this question by port users in the port of Vienna.

4.2.12 Complexity of procedure

There was no response to this question by port users in the port of Vienna and the Ennshafen port.

4.2.13. Electronic exchange of information

Some respondents from both ports indicated that they use electronic exchange of information with other stakeholders in the port. In the Ennshafen port, terminal operators, cargo shipper/cargo owner and others use electronic exchange of information with other stakeholders. In the port of Vienna, forwarding companies indicated that they don't use electronic exchange of information with other stakeholders. In contrast, terminal operators indicated that they use electronic exchange of information.

4.2.14. Statistical and other data

Concerning this question, all respondents of the survey (terminal operators, cargo shipper/cargo owner and "others") deliver electronically statistical and/or other data to port authority.

4.2.15. Paper copies of the electronic data

The port users in the Ennshafen port noted that they use paper copies from the electronically send data.
In contrast, the port users from the port of Vienne (terminal operators and forwarding companies) mentioned that they don't have any paper copies of the electronic data.

4.2.16. Meetings with relevant institutions

All of the respondents pointed out that they have meetings on a regular basis with other relevant stakeholders (customs, border control etc.).
This meetings takes place quarterly, except in the case if problems appear, they take place immediately. It can be concluded that all port users indicated that it is very important to have continuous contact with other stakeholders and to exchange all relevant information.

4.2.17. Information considered useless

There was no response to this question by port users in the port of Vienna and the Ennshafen port.

4.2.18. Time consuming administrative procedures

There was no response to this question by port users in the port of Vienna and the Ennshafen port.

4.2.19. Administrative procedures that should be eliminated

Only one respondent (Ennshafen port) answered this question. The administrative procedures the port users considered to be eliminated in the ports are administrative process in connection with fees.

4.2.20 Suggestions /proposals/ comments

The suggestions received from the port users in the Ennshafen port are in the field of infrastructure – not in the field of administration. Low-water zones have not been improved or corrected in the future. This is an important political issue which is hushed up from the respondents point of view.

There was no response to this question by port users in the port of Vienna.

4.2.21 Conclusions

All in all, it can be said that the answers from the respondents in the port users category are quite similar. Port users of both evaluated ports indicate the same administrative processes such as "loading and unloading (including special and heavy lift cargo)" (4.2.2.) and "Storage

and Warehousing" (4.2.3) with the greatest potential for improvement (e.g. the tariff system and complexity related to fiscal legislation for these two processes may be improved).
The category, which are ranked best by all respondents, are safety and security. Concerning the other categories which were evaluated in this survey (communication with port administration; berth allocating & port acceptance process; loading & unloading; Ro-Ro services, loading and unloading of trucks, cars and other special vehicles and roll stocks to and from ships; port maneuvering process and transshipment) no great discrepancies between the Ennshafen port and the Port of Vienna were identified. All findings are mostly in the medium range (2-3), therefor it can be said that there is still room for improvement in all evaluated categories.
Concerning the current administrative processes there was only one difference between the respondents, the port users from the port of Vienna (terminal operators and forwarding companies) mentioned that they don't have any paper copies of the electronic data in contrast to the port users of the Ennshafen port.