BUSINESS CASE FOR THE EXTENSION OF THE INTERMODAL LOGISTICS CENTRE IN SOPRON

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Jointly for our common future
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1. Executive summary

The Sopron Logistics Service Centre (SILK) being owned by GySEV Zrt and operated by GYSEV CARGO Zrt was based primarily on the railway border services, with special regard to the combined transportation. The terminal being suitable for the contemporary handling of the escorted and unescorted traffic was among the first ones constructed in the country and starting up the related additional logistics services. The Centre as a complex logistic service centre settled on railway operates partially as a high capacity reloading centre and on the other hand as a logistic service centre supporting this function. The terminal as a reloading centre, basically executes classic railway technical handling tasks, and this task is added by collecting, grouping handling and creation of direction trains. Its trans-loading equipment (40 t frame cranes and mobile cranes) ensure the direct trans-load of the combined transportation means (containers, replacement car bodies, semi-trailers) both in railway to railway and railway to public road relations.

In the Sopron Logistics Service Centre SILK more than 60,000 m² open and 27,850 m² covered warehouse facilities are available to the clients. They include 15,000 m² traditional, covered halls and almost 13,000 m² is the area of those warehouses which are equipped with up-to-date high construction ramp compensating dock gates.

The planned development project of SILK includes the expansion of terminal storage capacity to accommodate increasing container shuttle traffic. Shuttle trains would have their terminals at Sopron where containers are transferred to the depot area before transshipped to another shuttle train. This is an efficient method to reduce the cost of running trains and offer competitive prices. A prerequisite of this system is the availability of a storage area (depot).

The upgrade of the container tracking system (software and hardware) would replace the current outdated manual administration system. The planed GPS based tracking system would speed up administrative procedures, timetable adherence and improve customer satisfaction.

It can be concluded that SILK is suitable for the central role as both from transportation geographical and transportation network aspects it has an outstanding importance, ability to develop into a continental logistics centre among the North-West, the South-East (Balkans) and the Baltic and Adriatic European areas; at the same time developing into the background country of the Adriatic and Baltic ports. Additionally it has the ability to be exploit the transit potential of the routes crossing our country in the West-Europe-Balkans, South-West Europe-CIS countries and Middle-East-Europe’s North-South directions.
by the competitive supply of an increasingly important logistics service provider and the related high added value activities.
2. Introduction

In the development activity of SETA Corridor is not only the passenger- but the freight transport infrastructure elements are important. In the specialty of the freight transportation the logistic centers - at the interchanges of the whole logistic system - bulk large in the planning of the future European transport network. On the Hungarian section of the SETA corridor are some smaller intermodal centers, but only one - the SILK in Sopron - has European wide international important. Further detailed information about all the terminals along the SETA corridor can be found in the work documentation in work package 6.1.1, called “Intermodal Transport and Terminal Evaluation in the SETA-Corridor.

3. Situation report

3.1 Presentation of the Sopron Intermodal Logistics Centre (SILK)

The location of Sopron and its agglomeration within the country is extremely special; it protrudes in the Austrian territories like a peninsula and for this reason, has significant effect on its closer attraction area in Hungary. In the concept of creating a logistic centre-network in Hungary Sopron was named as one of the proposed locations in spite of the fact that the logistics region of Győr having outstanding importance is at a distance of only 88 km.

The regional role of the Sopron logistics centre was reasoned and later justified by its development active environment. The logistical service center realized primarily under the financing by GySEV Zrt. acquired significant service market both from its surrounding and farther areas. Its outstanding traffic is encouraging and indicates that it is purposeful to expand the service activities and further develop its national network role.

The Sopron Logistics Service Centre being owned by GySEV Zrt and operated by GySEV CARGO Zrt. was based primarily on the railway border services, with special regard to the combined transportation. The terminal being suitable for the contemporary handling of the escorted and unescorted traffic was among the first ones constructed in the country and starting up the related additional logistics services. The combines terminal of Sopron was one of the country’s such terminal where - till the EU accession of 2004 - the escorted and unescorted type of combined transportation was present at the same place and in the same time (container terminal and Ro-La).

GySEV Zrt. brought about in Sopron a terminal, where such service activities were developed each of which belongs in the scope of logistic services, namely:

- warehousing on duty free area
- public bonded warehousing activity
- rental of warehouse
- domestic forwarding services
- organization of road, rail transportation
- organization, execution of rail boundary traffic
- re-expedition, transshipment, cargo management
- combined transportation (replacement superstructure, container, creation of
direction trains)

- qualification of goods

The plant conditions, its advantageous traffic connection is suitable for developing it into the logistic centre of the area and for becoming an organic part of national, regional and continental level logistics service centre network.

3.1.1 Location

By today, as the result of Hungary’s EU accession, the Sopron logistics centre lost almost entirely its boundary traffic function. While in connection with the EU accession the boundary traffic functions disappear, at the same time a new possibility is occurring for the logistic service centre as due to the unlimited crossing possibility of the Austrian-Hungarian border it can change over to a regional role as a regional centre. Knowing the geographical location of Sopron, it can be well perceived that it protrudes in the Austrian province of Burgenland like a peninsula.

On regional level, if we look at Sopron agglomerate in both countries together, the advantageous traffic infrastructural conditions are well observable. The public road network surrounds Sopron like a ring road and in the Austrian region it has even higher quality level connections to Eisenstadt-Wien and Wiener Neustadt direction through the clearways located there. The construction of the M85 clearway was also started up and it will provide a high service level connection to the M1 motorway. Similarly to the road connection, the rail connection is also advantageous and even means a majority GySEV network. In addition to the advantageous traffic infrastructure availability, in the Sopron logistic service centre the adequate area and excellent professional background provides the possibility for playing a Euro-regional logistic role, as well.

Additionally, its location predestines it to play a continental role, as well. Though the vicinity of two neighboring countries capitals (Vienna and Bratislava) represents a competition, as well, however due to its network conditions Sopron even if not being a rival, can be a supplementary or cooperating partner in the areal logistic work sharing. It has especially favorable conditions to play the role of a “turntable” in the junction of two significant European transportation corridors (West-East and North-South).
1. Figure: regional location of SILK

2. Figure: location of SILK in the network of Hungarian logistic centers
3.1.2 Services

SILK as a complex logistic service centre settled on railway operates partially as a high capacity reloading centre and on the other hand as a logistic service centre supporting this function. The terminal as a reloading centre, basically executes classic railway technical handling tasks, and this task is added by collecting, grouping handling and creation of direction trains. Its trans-loading equipment (40 t frame cranes and mobile cranes) ensure the direct trans-load of the combined transportation means (containers, replacement car bodies, semi-trailers) both in railway to railway and railway to public road relations.

That means that the combined terminal of Sopron is the railway-public road trans-loading basis having outstanding importance in the region. At annual level about 40 thousand containers and replacement car bodies are trans-loaded at the terminal, where in addition to the traditional box containers a significant number of tank containers are also handled. The warehousing capacity of the logistic centre is also significant, covered warehouses having 28 thousand m² footing area are available, and the size of the open loading area is 150 thousand m².

<table>
<thead>
<tr>
<th></th>
<th>Terminal up</th>
<th>Terminal down</th>
<th>Other</th>
<th>Sum.</th>
<th>To &amp; from depot</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Januar</td>
<td>601</td>
<td>543</td>
<td>376</td>
<td>1552</td>
<td>1108</td>
<td>2660</td>
</tr>
<tr>
<td>Februar</td>
<td>530</td>
<td>460</td>
<td>335</td>
<td>1401</td>
<td>603</td>
<td>2004</td>
</tr>
<tr>
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<td>1612</td>
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<tr>
<td>April</td>
<td>451</td>
<td>560</td>
<td>429</td>
<td>1522</td>
<td>1048</td>
<td>2570</td>
</tr>
<tr>
<td>May</td>
<td>504</td>
<td>466</td>
<td>323</td>
<td>1322</td>
<td>1527</td>
<td>2849</td>
</tr>
<tr>
<td>June</td>
<td>510</td>
<td>500</td>
<td>374</td>
<td>1494</td>
<td>2529</td>
<td>4023</td>
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<td>July</td>
<td>575</td>
<td>523</td>
<td>463</td>
<td>1604</td>
<td>2879</td>
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<tr>
<td>August</td>
<td>359</td>
<td>317</td>
<td>339</td>
<td>1052</td>
<td>2947</td>
<td>3999</td>
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<td>Sept.</td>
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<td>418</td>
<td>407</td>
<td>1342</td>
<td>2420</td>
<td>3762</td>
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<tr>
<td>Oct.</td>
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<td>440</td>
<td>266</td>
<td>1222</td>
<td>2503</td>
<td>3725</td>
</tr>
<tr>
<td>Nov.</td>
<td>507</td>
<td>551</td>
<td>294</td>
<td>1352</td>
<td>2028</td>
<td>3380</td>
</tr>
<tr>
<td>Dec.</td>
<td>552</td>
<td>542</td>
<td>333</td>
<td>1427</td>
<td>2052</td>
<td>3479</td>
</tr>
<tr>
<td>Total</td>
<td>6112</td>
<td>5882</td>
<td>4301</td>
<td>16845</td>
<td>23256</td>
<td>40101</td>
</tr>
</tbody>
</table>

1. Table: container traffic of SILK in 2012
The terminal in Sopron is an AGTC terminal with road and rail connections. The handling capacity is 72000 ITU/year with 13000m² storage area within grasp of rail gantry cranes. The terminal has two rail gantry cranes with 40t payload and 2 reach stackers with payload of 40t each. The intermodal station has 6 tracks; its length is 270-330 meters. The capacity of the storage area and the reach of the cranes need to be extended.

The terminal provides a full range of logistics solutions:

- storage,
- handling,
- loading/unloading,
- reexpedition on road/rail,
- cleaning, repairing - of intermodal units,
- block train building,
- storage of dangerous goods,
- full range customs solutions,
- safety/security services

As a result of the last period’s development activity in addition to the terminal services the warehousing logistic services were also strengthened.

In the Sopron Logistics Service Centre more than 60,000 m² open and 27,850 m² covered warehouse facilities are available to the clients. They include 15,000 m² traditional, covered halls and almost 13,000 m² is the area of those warehouses which are equipped with up-to-date high construction ramp compensating dock gates. Both the railway and public road direct connections are provided at each warehouse, there is possibility for simultaneous loading through several gates. The warehouses are suitable for the storage of goods in framed, shelf, block and bulk system, as well. The detailed list of the warehouse logistic services is the following:

- public, consignment , paid and VAT warehousing
- collecting-distribution function
- activities related to preparation of freight
- finishing services, creating unit shipments
- renting out warehousing resources
- public road/railway, railway/public road trans-loading belonging to warehousing
- freight organization
3.1.3 Existing transportation relations

GYSEV CARGO Zrt. offers comprehensive solutions and complete service packages to its customers also in the field of combined forwarding. The scope of services includes the following activities:

- management, storage loaded/unloaded, loading/unloading, load adjustment, qualified repairs, technical revisions of multi-/intermodal transport devices
- management of tempered multi-/intermodal transport devices
- comprehensive warehouse logistics
- reception/creation of direction trains
- storage of hazardous substances
- accepting and executing complex terminal/logistics projects
- consultation

GYSEV CARGO Zrt. connects the European ports, terminals and logistics centres in the intermodal transport by direction train systems. Traditional transfer station and station services are also available in our scope of activities.

GYSEV operates closed container trains on a daily basis towards Budapest, Győr, Vienna-Wels-Lambach, Nürnberg-Mannheim-Köln-Wanne/Herne-Hamburg, Genk-Antwerpen, Balkans (Romania, Bulgaria, Macedonia, Greece, Turkey) and China, and realizes individually run (not closed direction train) operations between Austria, Italy, CIS countries and the Adriatic ports - Koper, Rijeka and Triest (see Fig. 3).

GYSEV CARGO in cooperation with its operating partners operates closed intermodal direct trains on a daily basis towards the Western direction with Vienna-Lambach-Duisburg-Nürnberg-Köln destination/departure, and through its turntable function towards the countries of the Balkans (Romania: Bukarest: Chiajna, Ploiesti, Bulgaria, Macedonia: Skopje, Greece: Thessaloniki, Athens and Turkey: Istambul-Halkali, Cerkezköy, Tekirdag, Derince), and through the Hungarian/Ukraine border crossing at Zahony towards the Soviet succession states and China. Additionally, offers and executes individually run (not closed direction train) relations in Hungary and also between Austria, Italy, CIS countries and the Adriatic ports: Koper, Rijeka and Triest and between Triest and Sopron.

GYSEV CARGO Zrt. continuously creates and dispatches direction trains with wagon loads to Eastern and South-Eastern Europe - to destinations such as Turkey, Greece, Bulgaria, Serbia, Romania and the former Soviet republics. The baseline of its high-quality service is that it creates and dispatches trains from shipments arriving from Western and Central Europe as individual cargoes or by wagon groups as requested by the customers. The significant part of the conventional traffic consists of the above-mentioned direction trains. The main traffic lines are shown on Fig. 4, where the existing connections are marked with continuous lines and the planned connections with interrupted lines.
3. Figure: existing and planned blocktrains of GYSEV CARGO in direction West-South East

4. Figure: main traffic lines of direction train with wagon loads type cargoes of GYSEV
3.1.4 Developments in Progress

A project to upgrade the existing container terminal in the Intermodal Logistics Centre in Sopron is currently being implemented.

The project includes the expansion of terminal storage capacity to accommodate increasing container shuttle traffic. Shuttle trains would have their terminals at Sopron where containers are transferred to the depot area before transshipped to another shuttle train. This is an efficient method to reduce the cost of running trains and offer competitive prices. A prerequisite of this system is the availability of a storage area (depot).

The upgrade of the container tracking system (software and hardware) would replace the current outdated manual administration system. The planed GPS based tracking system would speed up administrative procedures, timetable adherence and improve customer satisfaction.

The procurement of a telescopic container lifting trolley will replace the current outdated equipment to improve the efficiency and speed of container movements.

5. Figure: Terminal Sopron (SILK) - existing situation

The project was started in August 2012 and was completed by June 2013 with an approximate cost of 1.2 million €.

Further expansion of the capacity is planned until 2014. A new overhead crane is planned to be installed, the development of the IT system will continue, the storage area will be expanded and the reach of the cranes will be extended to allow the service of longer trains.
3.2 Freight transport potential on the SETA corridor

3.2.1 Modal split

The freight flow between the northern part of Central Europe (Poland, Slovakia and Czech Republic) and Adriatic Ports as well as Northern Italy plays an important role along the Hungarian freight transport corridor. The two transport modes - rail and road compete with each other in this region. According to the information of GYSEV as infrastructure manager and data about road traffic flow along main road No. 86 (E65) the modal split is approximately 15% - 85%\(^1\) in favor of the road. This figure is calculated on the basis of the following data:

Railway freight traffic along the Hungarian section of the SETA corridor was 6.338 gross tons per day in 2012, which is equal to 4.225 net tons per day on average.

Heavy goods vehicle (>3.5 tons) traffic on No. 86 (E65) is shown in Table 2.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajka (HU-SK)</td>
<td>2 457</td>
<td>4 705</td>
<td>+91%</td>
<td>26 250</td>
</tr>
<tr>
<td>Rédics (HU-SI)</td>
<td>3 650</td>
<td>1 918</td>
<td>-48%</td>
<td>28 770</td>
</tr>
</tbody>
</table>

2. Table: Daily traffic volume on transit road E86 in Hungary

3.2.2 Road transport

The European transit route E65 enters Hungary from Slovakia southbound at Rajka and leaves the country in Rédics toward Slovenia passing through the towns of Csorna, Szombathely and Körmend. The length of this transit route in Hungary is 206 kilometers, of which only 21 km is motorway. The remaining 185 km is a normal road going through the centers of Csorna and Körmend while in Szombathely the bypass road was completed in 2002. The towns have to suffer from the high number of heavy goods vehicles passing through by day by day. The average traffic for this route is about 1 truck in every 45 seconds per direction, which is the highest in Hungary for any road which is not a motorway. A bypass road has been planned for Csorna since beginning of the 1990s to increase the quality of life and reduce to air pollution and noise, but only in 2013 did the construction start. It is expected that from 2016 Csorna will be relieved from the traffic of heavy trucks.

\(^1\) based on expert’s opinion according public data of road and rail transport
According the origin and destination countries of the commodities a survey has been done among the truck drivers that are demonstrated in figures 1 and 2\(^6\). A further data about the exact destinations and producers are not available as these are confidential. It is just supposed that most of the goods are palletized. Unfortunately with the today existing railway systems and transport times rail has a weaker performance in flexibility than road. From point of view of the transport cost it is difficult to beat the road prices provided by Eastern European road forwarders at the moment. If we consider that the cost of transhipment into closed wagons or the handling of containers already makes up of 15 - 35\% of road transport prices, it is most often unprofitable to use the railway for short and medium distances.

6. Figure: transport share per country southbound
3.2.3 Railway transport

Rail traffic between Slovakia/Czech Republic/Poland and the Adriatic Ports is organized by 3 significant operators and railway undertakings. The biggest operator is AdriaKombi / SKD Introns with a yearly volume of about 600 trains in 2011 (1 train per day per direction) between the port of Koper and Slovakia and vice versa. Another market player is Metrans that connects the port of Koper with its terminal in Dunajská Streda forwarding a volume of +/- 150 trains in 2011 with approx. 2 trains per week per direction. These two train projects are dedicated regular connections between the port and a hinterland terminal forwarding goods in containers. There are also other operators that have spot business in this region their market share is approximately 5% of the overall quantity of freight. Most of these are dedicated trains of one specified client with the estimated frequency of one train per week. The third market player, the former Hungarian incumbent railway undertaking Rail Cargo Hungaria covers nearly 30% of the total rail freight volume in import, export and transit. This quantity comes from single wagon loads in the region where the wagons are loaded directly at the factories with direct rail connection and assembled into trains at marshalling yards. Most of these single wagon volumes are bulk, steel products, construction materials, cars and car parts and different consumer goods loaded in different kinds of open and closed normal and special wagons except for containers.

There is no rolling highway (RO-LA) connection to the ports from this area. The reason is on the one hand because there are no traffic restrictions for road transit in the EU
countries like in Switzerland; and on the other hand due to the lack of RO-LA terminals and demand.

The experience and date of SETA freight demo train can find in SETA WP 6.2.3 Business cases for improves freight services.

### 3.3 Freight terminals nearby Sopron

#### 3.3.1 Vienna

The Austrian capital is the biggest city and economic centre in the East Austrian region. Therefore Vienna has some smaller-bigger intermodal logistic centers in this area.

<table>
<thead>
<tr>
<th>Operator:</th>
<th>WienCont Container Terminal Ges.m.b.H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracks:</td>
<td>6×650 m, 1×510 m, 1×400 m, 1×120 m</td>
</tr>
<tr>
<td>Portal frame:</td>
<td>Rail: 2×45 t, Barge 1×45 t.</td>
</tr>
<tr>
<td>Reach stacker:</td>
<td>8×45 t., 10×12 t.</td>
</tr>
<tr>
<td>Terminal area:</td>
<td>135 000 m²</td>
</tr>
<tr>
<td>Interim storage:</td>
<td>25 000 m²</td>
</tr>
<tr>
<td>Shipping volume:</td>
<td>478 000 TEU (capacity 600 000 TEU)</td>
</tr>
</tbody>
</table>
• The actual expansion (to 11 tracks) of the terminal Vienna Freudenau guarantees that this location is (at the moment) the largest and most efficient location in the area of Vienna.

• After completion of the expansion the terminal will be prepared for the needs of the Vienna region, with specific focus on maritime transport.

• The terminals’ strategy shall focus also on further improvement of direct train connections to the Adriatic ports, Balkans and Italy (also to strengthen the SETA corridor region)

\[b\] Wien Nordwestbahnhof

<table>
<thead>
<tr>
<th>Operator:</th>
<th>OBB-Infrastruktur AG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracks:</td>
<td>3×400 m, 1×180 m, 2×80 m</td>
</tr>
<tr>
<td>Portal frame:</td>
<td>Rail mounted Gantry Cranes, Rail: 2×35 t.</td>
</tr>
<tr>
<td>Reach stacker:</td>
<td>2×45 t.</td>
</tr>
<tr>
<td>Terminal area:</td>
<td>19 000 m²</td>
</tr>
<tr>
<td>Interim storage:</td>
<td>1760 TEU capacity</td>
</tr>
<tr>
<td>Shipping volume:</td>
<td>82 500 ITE</td>
</tr>
</tbody>
</table>
- Vienna Nordwestbahnhof is frequented on moderate volume only and could actually be seen as an intermediate solution until the terminal Vienna Inzersdorf will start business.
- Due to decreasing permanent services, spot-services and new projects can be organized very flexible and tailor-made for customers.
- Further investments are not foreseen or would not pay off in the short time until the location will be closed (scheduled for 2017/18).

c) **Wien Inzersdorf**

<table>
<thead>
<tr>
<th>Operator:</th>
<th>OBB-Infrastruktur AG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracks:</td>
<td>Four tracks Phase 1 (+4 Ph), 2× crane runway with two crane/runway (effective length of 650 m.)</td>
</tr>
<tr>
<td>Portal frame:</td>
<td>4× Rail mounted Gantry Cranes ith total 650 m length</td>
</tr>
<tr>
<td>Reach stacker:</td>
<td>n.a.</td>
</tr>
<tr>
<td>Terminal area:</td>
<td>580 000 m² (whole area)</td>
</tr>
<tr>
<td>Interim storage:</td>
<td>n.a.</td>
</tr>
<tr>
<td>Shipping volume:</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
• It is necessary that Vienna will have a gateway function on the Danube axis and on the southern railway to strengthen both corridors, where Inzersdorf seems to be ideal.
• A major advantage for the terminal will be the independency and neutrality on the market (compared to other terminals influenced by private companies)
• The ground-breaking ceremony was in summer 2013, the opening is planned for 2017/2018.

3.3.2 Bratislava

a) Bratislava Palenisko

<table>
<thead>
<tr>
<th>Operator:</th>
<th>Slovenská plavba a prístavy SpaP a.s.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracks:</td>
<td>1×150 m., 1×300 m., 1× stationary Ro-Ro ramp</td>
</tr>
<tr>
<td>Portal frame:</td>
<td>5× rail gantry cranes (2×16 t., 2×20 t., 1×36 t.)</td>
</tr>
<tr>
<td>Reach stacker:</td>
<td>2×45 t.</td>
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<tr>
<td>Terminal area:</td>
<td>21 000 m²</td>
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<tr>
<td>Interim storage:</td>
<td>11 000 m²</td>
</tr>
<tr>
<td>Shipping volume:</td>
<td>22 040 ITU (2009)</td>
</tr>
</tbody>
</table>
• For a long term strategy it has to be considered that investments in depot capacities, track and handling facilities and tracksid terminal connection are necessary.

• Due to the fact that the adaptation needs significant investments it seems to be necessary to develop a global master plan for the region Bratislava.

\[\text{\textit{b)}} \text{ Bratislava CSKD}\]

\begin{tabular}{|l|l|}
\hline
Operator: & Rail Cargo Operator CSKD s.r.o. \\
Tracks: & 1×290 m., 1×297 m., 1×325 m. \\
Portal frame: & 1×portal crane \\
Reach stacker: & 4×24 t. \\
Terminal area: & 34 500 m² \\
Interim storage: & 16 000 m² \\
Shipping volume: & 147 000 TEU/yr. \\
\hline
\end{tabular}

• The owner Rail Cargo Operator – CSKD s.r.o. is a sub-company of Rail Cargo Group

• Strong connected to Hamburg and Bremerhaven via Prague.

• Actually an entire redesign of the existing facility is prepared: Rail tracks shall be moved to a more efficient position in the terminal area ◀ better options for container storage and increasing of storage capacities.
• Status: engineering phase. The realization is expected for 2014 - 2015.

3.3.3 Dunajska Streda/Dunaszerdahely

<table>
<thead>
<tr>
<th>Operator:</th>
<th>METTRANS Danubia a.s.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracks:</td>
<td>5×600 m., 4×550 m.</td>
</tr>
<tr>
<td>Portal frame:</td>
<td>4×45 t.</td>
</tr>
<tr>
<td>Reach stacker:</td>
<td>6×10 t.</td>
</tr>
<tr>
<td>Terminal area:</td>
<td>280 000 m²</td>
</tr>
<tr>
<td>Interim storage:</td>
<td>15 000 TEU</td>
</tr>
<tr>
<td>Shipping volume:</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

The terminal strategically located on Slovak/Hungarian border, in the triangle between Bratislava, Budapest and Vienna is offering regular rail service to Hamburg and Bremenhaven and further interesting southbound connection to the Adriatic ports Koper, Trieste, and Rijeka.
### TERMINALAS

<table>
<thead>
<tr>
<th>TERMINAL</th>
<th>TERMINAL AREA (IN M²)</th>
<th>CRAIN CAPACITY (IN NUMBER AND IN GROSS TONS)</th>
<th>RAIL TRACS (IN METERS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-Freudenau</td>
<td>135.000</td>
<td>3 cranes up to 45 tons, 8 cranes up to 12 tons, 10 cranes up to 12 tons</td>
<td>6<em>650 meters, 1</em>510 meters, 1<em>400 meters, 1</em>120 meters</td>
</tr>
<tr>
<td>W-Nordwest Bahnhof</td>
<td>19.000</td>
<td>2 cranes up to 35 tons, 2 cranes up to 45 tons</td>
<td>3<em>400 meters, 1</em>180 meters, 2*80 meters</td>
</tr>
<tr>
<td>W-Inzersdorf</td>
<td>580.000</td>
<td>4*RMG²</td>
<td>6*650 meters</td>
</tr>
<tr>
<td>BA-Palenisko</td>
<td>21.000</td>
<td>RGC³: 2<em>16 tons, 2</em>20 tons, 1<em>36 tons + reach stacker 2</em>45 tons</td>
<td>1<em>150 meters, 1</em>300 meters, 1*Ro-Ro</td>
</tr>
<tr>
<td>BA-CSKD</td>
<td>34.500</td>
<td>1 crane up to 45 tons, 4 cranes up to 24 tons</td>
<td>1<em>290 meters, 1</em>297 meters, 1*325 meters</td>
</tr>
<tr>
<td>Dunajska Streda</td>
<td>280 000</td>
<td>4 cranes up to 45 tons, 6 cranes up to 10 tons</td>
<td>5<em>600 meters, 4</em>550 meters</td>
</tr>
<tr>
<td>Sopron</td>
<td>320.000</td>
<td>2 RMG up to 40 tons, 2 reach stacker up to 40 tons</td>
<td>4*350 meters, 28550 meters</td>
</tr>
</tbody>
</table>

³ RGC = Rail Gantry Cranes
² RMG = Rail Mounted Gantry Cranes

3. Table: comparison the main data of the competing terminals
4. Probable freight transport potential on the SETA corridor

The Chapter 3.2 contents the important transport potential data of the SETA corridors, included the possibilities of future eras.

It’s clear the conformation of the future freight transport potency related to the advancement of transport services - so the general transport development has a good possibility to lift of freight transport volume first of all with abstraction from other transport flows. Work package 4.3.1 - SETA Transport Model includes detailed information about general transport flows based on the TRANSTOOLS model.

In the region level chapter 6.2.4 of SETA Project (Freight demonstration train) demonstrates detailed the works of region and its traffic connection to Adriatic ports.

5. Presentation of Development Variants

5.1 Development of Logistics Centre Services

Till Hungary’s EU accession SILK performed primarily cross-border traffic functions, then in the years after EU accession a transformation has been started up within which the regional service functions gained an increased emphasize. Among the objectives defined in the development concept the intermodal character of the terminal is put in the focus and in connection with that the radius of the terminal type traffic exceeds even the hundred km distance. The logistics functions are also primarily related to the railway and combined transports. The own service activity has a majority in the area. The size of the area makes possible the expansion of the logistics services scope that is the settlement of external logistics companies. For the strategy of GySEV Zrt. the reception of external logistics service providers is already accepted. Under a good organization activity the facility already can become the Euro-regional logistics service centre of its area. The intermodal character of the facility makes it outstanding among the other logistics centers, but it is necessary to expand the scope of the logistics services and to develop the national logistics information relation system with each areal centre.

The transit traffic role of the warehousing and other goods preparation basis is extremely significant from the aspect of the country’s and the belonging to it transport corridor’s (in our case the SETA corridor) economy, namely, the activities carried out in the centers increase the value of the goods, that is instead of simply passing the goods it will have an added value increase result. This objective is achievable only in case the following can be provided:

- establishment of the Hungarian sub-network of the complex European logistics network by the development of national centers;
- performance of distribution-collection centre functions by the in good time development of the Hungarian centre of European logistics network producing significant business result in the direction of South- and East-Europe;
- increase of the transit goods traffic and making it serve the production of national revenue due to the collecting and distribution role of the logistics service centers,
- direction of the long distance road transportation to the railway and reduction of the environment contamination caused by traffic;
- receiving basis (incubator house) of small and medium size enterprises providing advanced technologies.
It can be concluded that SILK is suitable for the central role as both from transportation geographical and transportation network aspects it has an outstanding importance, ability to develop into a continental logistics centre among the North-West, the South-East (Balkans) and the Baltic and Adriatic European areas; at the same time developing into the background country of the Adriatic and Baltic ports. Additionally it has the ability to be exploit the transit potential of the routes crossing our country in the West-Europe-Balkans, South-West Europe-CIS countries and Middle-East-Europe’s North-South directions by the competitive supply of an increasingly important logistics service provider and the related high added value activities.

5.1.1 The Development’s Elements

A logistics centre is essentially a service provider centre where the demands of the persons taking the logistics services (the clients) must be met at the level required by them. During the development of a certain centre that should be taken in consideration as a basis. The demands are complex, and the extent of meeting them should be always determined by the careful judgment of the demands and possibilities.

The most important services requiring continuous development and being reasonable in case of SILK are the following:

i. Combined terminal service and industrial railway service

ii. Customs clearance

iii. Financial services

iv. Safety services

v. Fuel supply within the logistics parks

vi. Rental, sale of logistics tools

vii. Maintenance of logistics facilities

viii. IT systems

ix. Trade related development possibilities

x. Quality Assurance

xi. Catering services, event organization

SILK already today provides most of the above services; however it is necessary to further develop these services according to the occurring demands.

The main objective is to develop the container terminal including the expansion of the storage area of the container terminal, the development of container tracking system (software and hardware development) and the purchasing of a container lifting truck with telescopic beam. These developments make possible to increase the amount of the intermodal transfer and provision of competitive logistics services.

At the same time the development also serves the upgrading of the complex intermodal type delivery and logistics system within the following partial tasks, as well.
a) Handling, storage, loading/unloading, re-expedition by rail/road, repair, cleaning/washing of intermodal transportation means

b) Creating direction trains;

c) Road/railway pre-transportation;

d) Storage of dangerous materials;

e) Customs logistics;

f) Assets protection and safety services

g) Warehouse logistics

The logistics tasks listed under above a) - g) points can be supported by several development elements, but the present and within the near future expectable demands require primarily the development of elements related to container handling. After thorough examinations and analysis GySEV Zrt. arrived at the conclusion that during the first stage of the future development such a development program including three partial tasks should be started up, which can improve significantly not only the terminal related activity forming the basic task of SILK, but also supports its complex logistics tasks.

The first stage of the development program determined three main projects being the following:

1. **Expansion of storage area of container terminal**
   
   The purpose of the investment is to increase the area of the existing container trans-loading area. The size of the area to be concreted is 4 338 m². Taking into consideration the traffic area required for the safe movement of the mobile crane, during the development a 2 948.4 m² storage area can be constructed. The number of the container which can be stored on this area is 468 pcs 20’ containers.

2. **Development of container tracking system**
   
   The upgraded system makes possible to track the movement of the containers being at the terminal, recording the loading activities of each container into a database, to determine the position of the containers by GPS, to query the works completed relating to a container in integrated manner, recording of logistics activities, handling, filing of the partner agreement and query of partners’ own data by remote access.

3. **Purchasing of container lifting truck with telescopic beam**
   
   According to the development demands of the machine park it is necessary to purchase such a container lifting truck with telescopic beam, which can fit the containers together for the better utilization of railway cars area.
5.1.2 Expectable Costs

The project plan targeted a total cost of HUF 353.8 Million, from which 30% is financed through the Hungarian Government and 70% is self-finance of GYSEV CARGO Zrt. The costs can be diversified in the 3 main different levels plus execution costs as follows:

- Expansion of container terminal’s storage area: Million HUF 190.5
- Development of container tracking system: Million HUF 30.3
- Purchase of container lifting truck with telescopic beam: Million HUF 131.5
- Execution: Million HUF 1.5
- Total: Million HUF 353.8

5.1.3 Expectable Benefits

The above listed developments make possible for SILK by adapting to the market demands to offer competitive, optimal, comprehensive logistics services and by that to perform the function of a real turntable in the region.

As the result of the project the logistics service produced at the container terminal of SILK according to the clients’ demands makes possible the high quality servicing of the shuttle type transportation method becoming more and more general in Europe and becoming a decisive method of container transportation in the future. The developments planned in the frame of the project make possible to attract newer, strategically important clients, and the introduction of a European level service quality.

5.1.4 Further Developments

SILK is located at the South-Eastern part of Sopron, by road can be accessed directly from the main road No. 85, by train the service of the terminal is carried out from the Sopron-Rendező (Sopron Transfer) station. The railway connections of Sopron Transfer Station are the following: Győr - Budapest - Ukraine, Romania and Serbia and behind, Szombathely - Szentgotthárd - Austria, Szombathely - Zalaszentiván - Slovenia, Croatia, Ebenfurth - towards Austria and behind.

The terminal’s connection of the railway network is single sided and dead end type, its future development is required.

The development project of GySEV Zrt. aimed at making partially provided with double rail track on the No. 8 Sopron-Győr line makes that possible. This project also proposes to make a new connection line between the lines no. 6 and 15 avoiding Kopháza from the South (Figure 8), and the existence of it will make reasonable and possible to connect the terminal’s South-Eastern, presently dead end tracks in the direction of Harka (Figure 9).
By this development on one hand the terminal will get direct connection towards Szombathely and Györ, on the other hand the train movement and formation of trains would become smoother.

The development plan is not finished yet to demonstrate to the decision making authorities but the preparation goes on and decision about project approval is expected by mid of 2014. By approval reconstruction work period is expected between 2016 and 2019.

8. Figure: new rail connection between Harka and Sopron
9. Figure: planned new track connection of SILK
6. Conclusions

Sopron has always been an important role given in the West-East freight transports. Additional services like warehousing activities started in year 1972 and further developments took place in 1979 with expanding to a logistics center offering wide range of added-value services. Container terminal area was expanded in the beginning of the ‘90s. Since this time processes in the logistics changed basically by establishing new methods, technologies and connections. Therefore it’s evident that a hub offering freight related services has to meet the requirements of the ever changing market. As GYSEV has been known in the market of its flexibility, the company realized the necessity of the developments in several stages. In year 2000 GYSEV established the own railway related IT System. In 2005 and 2010 the company built 2 new warehouses with a surface of 6.400 m² each.

Next step of the development stages was the terminal development plan stage I enlarging storage capacity by 50 %, purchasing a new reach stacker and implementing of a GPS based fully automated container positioning system within the terminal which communicates directly with the own railway IT System. As a next step GYSEV plans in development stage II double track lines from Sopron to south- and eastbound as well direct connection of the main line to the container terminal enabling 600 meter long trains arriving and leaving directly without any extra wagon shunting activities. Upon approval project is expected to start in 2016 and is to be finished in 2019.

These implemented developments and plans contribute with very high importance for a quality of added value services and enables for GYSEV company group to set a framework for market expansion. The modernizations became since 2011 higher importance when GYSEV took over additional lines analyzed in the SETA project. Now from infrastructural point of view the role of Sopron terminal became more attractive and important based on the developments to build up a connection between the Adriatic Ports and the Western Hungarian region. Work package 6.2.4 of the SETA project delivers detailed information about the possibility of the mentioned freight connection.