Feasibility study
of car carrier connections in the Baltic Sea
(Germany - Finland/Russia/Baltic States)
Scope

This report covers following topics:

- Overview of Baltic States new car market
- Overview of Russia and Belarus new car market
- Baltic Sea region new car transportation market overview
- An evaluation of existing and planned car handling terminal capacities
- Case study for Port of Liepaja
General information about the ports included in research:

- Port of Liepaja website [www.portofliepaja.lv](http://www.portofliepaja.lv)
- Port of Kiel website [www.port-of-kiel.de](http://www.port-of-kiel.de)
- Port of Luebeck website [www.lhg-online.de](http://www.lhg-online.de)
- Port of Rostock website [www.rostock-port.de](http://www.rostock-port.de)
- Port of Wismar website [www.hafen-wismar.de](http://www.hafen-wismar.de)
- Port of Gdansk website [www.portgdansk.pl](http://www.portgdansk.pl)
- Port of Gdynia website [www.port.gdynia.pl](http://www.port.gdynia.pl)
- Port of Szczecin/Swinoujscie website [port.szczecin.pl](http://port.szczecin.pl)
- Port of Helsinki website [www.portofhelsinki.fi](http://www.portofhelsinki.fi)
- Port of Kotka website [www.portofkotka.fi](http://www.portofkotka.fi)
- Port of Hanko website [www.portofhanko.fi](http://www.portofhanko.fi)
- Port of Hamina website [www.portofhamina.fi](http://www.portofhamina.fi)
- Port of Turku website [www.portofturku.fi](http://www.portofturku.fi)
- Port of Tallinn website [www.portoftallinn.com](http://www.portoftallinn.com)
- Port of Riga website [www.freeportofriga.lv](http://www.freeportofriga.lv)
- Port of Ventspils website [www.portofventspils.lv](http://www.portofventspils.lv)
- Port of Klaipeda website [www.portofklaipeda.lt](http://www.portofklaipeda.lt)

General information, scientific papers:

- European Automobile Manufacturer's Association figures
- Latvian Authorized Automobile Dealers Association figures
- International Organisation of Motor Vehicles Manufacturer's figures
- Worldbank figures
- NOBE, Independent Centre for Economic Studies
- Russian and Belarussian Customs and Statistical Services figures
- Paper: Design of suitable commercial terminals at two predestined greenfield areas for upgrade of the Liepaja Port
**Introduction**

A total of 15,391,511 new passenger cars were registered in Europe (EU23 + EFTA) in 2006, representing a slight improvement of 0.9% with regard to previous year. In December 2006, total new passenger car registrations in Europe (EU23 + EFTA) remained flat as compared with the previous year and reached 1,074,369 units.

New EU member states registered an upturn (+1.1%) thanks to strong growths posted by Slovakia (+8.4%), Poland (+15.6%) and Baltic countries (Lithuania +25.7%, Estonia +29.4%, Latvia +63.7%). In contrast, Hungarian (–19.6%), Czech (–7.5%) and Slovenian (–4.5%) markets saw their results decline.

Source: ACEA
After some dynamic growth in the first three months of 2006 (+6%) and a decline in the second quarter (-2%) as compared with the same period in 2005, the production of motor vehicles in Europe stagnated in the third and fourth quarter. In total, 18.6 million vehicles were produced in 2006 in Europe, 1% more than previous year. All vehicle categories positively contributed to this result: production of heavy trucks and buses and coaches showed a growth of 5% and 4% respectively while production of passenger cars went up by 1% and production of light commercial vehicles by 4%.

Source: ACEA

Economic growth of Russia and other adjacent CIS countries, busted by oil price rise and respective income growth is shifting demand from second hand and domestically produced car markets to new car market, making new car import volumes to rise significantly (+16.8% in Russia in 2006 compared to 2005).
1.1 Baltic States new car market overview

New car market in the Baltic States is growing fast. Due to significant rise of GDP in last 5 years, a private consumption, as well as corporative investments have rised respectively, shifting consumer demand from second hand car market to new car market, resulting in up to 46.5% rise of new car registration volumes in Latvia, 42.4% in Lithuania and 29.4% in Estonia in January-August of 2007 comparing to the same period of year 2006.

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>Jan-Aug 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MV</td>
<td>PC</td>
<td>MV</td>
</tr>
<tr>
<td>Lithuania</td>
<td>16 135</td>
<td>10 467</td>
<td>21 744</td>
</tr>
<tr>
<td>Latvia</td>
<td>19 635</td>
<td>16 602</td>
<td>30 443</td>
</tr>
<tr>
<td>Estonia</td>
<td>23 511</td>
<td>19 640</td>
<td>30 754</td>
</tr>
</tbody>
</table>

*Source: ACEA*
The projections of future economic growth of Baltic States are showing a slight slowing down, as a
development gap between economies considered and major EU countries will be closing.

<table>
<thead>
<tr>
<th></th>
<th>Low scenario</th>
<th></th>
<th></th>
<th></th>
<th>Base scenario</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>High scenario</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| Lithuania | -           | 3.8      | 2.2      | 6.0      | 4.8          | 3.1      | 7.4      | 5.8      | 4.0      | -            | 3.4      | 1.9      | 5.5      | 4.4      | 2.8          | 6.9      | 5.3      | 3.7      |          |}

Source: NOBE

The low case scenario means a very slow progress in the political, social and economic
development, lack of policies aimed at enhancing the domestic saving and investment, low level if
absorption of the technology and little investment in human capital. Such an unfavourable
economic and social environment slows down the process of the real convergence, which will be
additionally accompanied by unfavourable demographic trends.

The base case scenario means steady improvement in the policies aimed at accelerating the real
convergence, efficient absorption of the technology leading to the steady reduction of the
technological gap and considering more favourable demographic trends.

The high case scenario means acceleration of the process of economic, social and political
development of the region, implementing of highly effective saving and investment policies and
considering relatively good demographic trends.
1.2 New car market in Russia and Belarus.

**Russian Federation**

Russia imported 1.049 million foreign produced cars valued at more than $12 billion in 2006 that means a 16.8% increase from 898,000 cars in 2005 according to the data published by the Russian Federal Customs Service. Russia imported almost as many cars in 2006 as it produced domestically. According to the Russian Federal State Statistics Service, 1.175 million cars were produced in Russia in 2006.

The average cost of an automobile imported to Russia grew to $11,400 in 2006 from $10,300 in 2005. These figures do not take into account cars imported by private individuals. A 64% growth in car imports (1,307 million cars) is achieved in January – October of 2007 comparing to similar period of 2006. An estimate of $14 billion value in car imports is forecasted for the whole year.

Growth in imports is forecasted to continue for 2-3 years, following by decline as new assembly plants of several foreign car producers will be put in operation in Russian Federation.

**Republic of Byelorussia**

According to the Byelorussian State Customs data, import of cars in Belarus have increased by 36 per cent over 2006 in comparison with 2005 to about 90,000 units.

Import of cars by juridical entities grew almost 9 times due to a significant reduction in customs dues for juridical entities in November 2005. The growth in car import is also explained by the increase in public incomes. The another factor explaining increase of import is availability of bank loans which have became accessible to wider range of small and medium size enterprises, as well as privates.

The projections of GDP growth of CIS countries considered are shown below.

<table>
<thead>
<tr>
<th></th>
<th>Low scenario</th>
<th>Base scenario</th>
<th>High scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>-</td>
<td>2.1</td>
<td>2.0</td>
</tr>
<tr>
<td>Belarus</td>
<td>2.7</td>
<td>2.2</td>
<td>2.0</td>
</tr>
<tr>
<td>Ukraine</td>
<td>4.0</td>
<td>3.4</td>
<td>3.4</td>
</tr>
</tbody>
</table>
The low case scenario means a very slow progress or even stagnation in the political situation towards a democracy that is very important issue in the case of Byelorussia, where all major economical processes are subordinated to central governance. Such a situation will slow down all social and economical development, restricting the amount of finances available for purchase of consumer goods and production resources.

The base case scenario means a steady progress in the political situation that will lead to the steady and long lasting social and economical development. The growing economies will be accompanied by increase of finances available for development supported by own incomes or credit resources.

The high case scenario means acceleration of the process of economic, social and political development of the CIS countries that means implementing of highly effective saving and investment policies, increasing an availability of financial means available in the markets.
2. Baltic Sea region car transportation market overview.

In this chapter a survey of ports involved in car transportation to the markets observed is executed. The following ports, classified by country, are considered in present study:

- Germany: Port of Kiel, Port of Luebeck, Port of Rostock, Port of Wismar
- Poland: Port of Gdansk, Port of Gdynia, Port of Szczecin/Swinoujscie
- Finland: Port of Helsinki, Port of Kotka, Port of Hanko, Port of Hamina, Port of Turku
- Baltic States: Port of Tallinn, Port of Riga, Port of Ventspils, Port of Liepaja, Port of Klaipeda
- Russia: Port of St. Petersburg
2.1 Germany.

Germany is a leading car producer in Europe. In first quarter of 2007 more than 1.5 million cars were produced, achieving 7.2% growth comparing to respective period of 2006. Car exports in same period reached 1.16 million units, growing by 11.4%. Data of German car export by ACEA is available in the table presented below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Europe 1</td>
<td>-3.6%</td>
<td>760,983</td>
<td>673,824</td>
<td>12.9%</td>
</tr>
<tr>
<td>Eastern Europe 2</td>
<td>25.1%</td>
<td>105,863</td>
<td>84,221</td>
<td>25.7%</td>
</tr>
<tr>
<td>NAFTA 3</td>
<td>4.4%</td>
<td>166,535</td>
<td>158,720</td>
<td>4.9%</td>
</tr>
<tr>
<td>- o/w USA</td>
<td>1.6%</td>
<td>146,655</td>
<td>139,348</td>
<td>5.2%</td>
</tr>
<tr>
<td>South and Central America 4</td>
<td>23.4%</td>
<td>6,703</td>
<td>6,349</td>
<td>5.6%</td>
</tr>
<tr>
<td>Asia 5</td>
<td>21.5%</td>
<td>90,313</td>
<td>85,488</td>
<td>5.6%</td>
</tr>
<tr>
<td>o/w Japan</td>
<td>-13.8%</td>
<td>19,725</td>
<td>23,624</td>
<td>-16.5%</td>
</tr>
<tr>
<td>Others 6</td>
<td>15.9%</td>
<td>32,158</td>
<td>34,994</td>
<td>-8.1%</td>
</tr>
</tbody>
</table>

1. Western Europe = EU+EFTA
2. Eastern Europe = Albania, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldavia, Poland, Slovakia, Slovenia, Ukraine, Serbia/Montenegro, Russia, Turkey.
3. NAFTA = US, Canada, Mexico
4. South and Central America = South America: Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Falkland Isl., French Guiana, Guyana Republic, Paraguay, Peru, Suriname, Uruguay, Venezuela, Others.
   = Central America: Costa Rica, Cuba, Guatemala, Jamaica, Panama, Puerto Rico, Caribbean Isl., Others.
5. Asia = Southeast Asia: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Taiwan, Vietnam, Others.
   = Northeast Asia: China, Japan, S+Korea, Mongolia, Macao, Others.
   = Central Asia: Armenia, Georgia, Others.
   = South Asia: India, Nepal, Others.
6. Others Australia, South Pacific, Africa

\[Source: \text{ACEA}\]

Four German Baltic ports are considered in research. All ports have capacities for new car handling, but only two are involved in business of car transportation for the time being.
2.1.1 Port of Kiel.

Kiel is the most western RO - RO and ferry Baltic Sea port of Germany. A specialty of the Kiel port is its direct connection to the North Sea through the Kiel Canal. The port of Kiel has eight sites for goods transhipments. The largest part of the goods handled in the port of Kiel is part-loads that are loaded with the RO - RO procedure. There are regular RO - RO lines to Sweden, Finland, Norway, Russia and the Baltic States operated from the port of Kiel.

Currently there are three RO – RO/ PAX terminals in the Port of Kiel:

“Schwedenkai”: RO – PAX ferry-terminal
Terminal specifications:
- Number of RO – RO piers: 3
- Length of piers: 725m
- Handling equipment: 2 cranes with up to 24 tons lifting capacity
- Storage and traffic area: 18 600 m²

“Norwegenkai”: Rail connected RO – PAX ferry-terminal
Terminal specifications:
- Number of RO – RO piers: 2
- Length of piers: 230m, 175m
- Storage and traffic area: 45 000 m²
- Additional services: Rail connection and intermodal terminal

“Ostuferhafen”: Rail connected RO – PAX ferry-terminal
Terminal specifications:
- Number of RO – RO piers: 7
- Length of piers: 1 580 m
- Handling equipment: 2 cranes with up to 45 tons lifting capacity
- Open storage area: 207 000 m²
- Covered shed space: 25 000 m²
- Extension area 43 000 m²
- Additional services: Rail connection and intermodal terminal
“Ostuferhafen”, the freight center of the Port of Kiel, was enlarged in 2006 by the acquisition of 4.3 hectares port-related area. According to development plans of the terminal the area is going to be reconstructed in 2008. The utilization of reconstructed territory is not yet resolved definitively.

Currently, cars through the “Ostuferhafen” terminal are transported by regular RO - PAX ferry service. The volumes of cars handled are shown below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cars handled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>40,77</td>
</tr>
<tr>
<td>2001</td>
<td>16,94</td>
</tr>
<tr>
<td>2002</td>
<td>14,943</td>
</tr>
<tr>
<td>2003</td>
<td>18,247</td>
</tr>
<tr>
<td>2004</td>
<td>10,965</td>
</tr>
<tr>
<td>2005</td>
<td>11,656</td>
</tr>
<tr>
<td>2006</td>
<td>9,538</td>
</tr>
</tbody>
</table>

Source: Kiel Port Authority
2.1.2 Port of Luebeck

The port of Lübeck located in Travemünde on the Luebeck bay is the most southern German Baltic Sea port. There are five terminals in Port of Luebeck, each capable of accommodating RO - RO vessels. Four of them are involved in new car transportation business.

“Skandinavienkai”

Terminal specifications:
- Total area: 650 000 m²
- Number of RO – RO piers/ berths: 9 (two for loading/discharging of railcars, three equipped with upper deck ramps, two equipped with pontoons)
- Length of piers/ berths: 2 000 m
- Handling and special equipment: Reach stacker, automated Gate-Security-System equipped with trailer scanning facility
- Water depth: over 9.5 m
- Cargo handling capacity: 17.0 million tons per year
- Main cargoes: Accompanied Lorries, trailers, containers, new and second-hand export cars, railcars, combined transport units, dangerous goods

“Konstinkai”

Terminal specifications:
- Total area: 132 000 m²
- Number of RO – RO piers/ berths: 2 (pontoon)
- Length of piers/ berths: 1 108 m
- Covered shed space: 23 500 m² (plus additional roof capacity 7 300 m²)
- Handling and special equipment: Reach stacker, quay crane with up to 45 ton lifting capacity, automated Gate-Security-System equipped with trailer scanning facility
- Water depth: over 9.5 m
- Cargo handling capacity: 1.9 million tons per year
- Main cargoes: Forest products, RO – RO transport by Lorries and trailers, combined transport, new cars and heavy goods
“Nordlandkai”
Terminal specifications:
- Total area: 446 000 m²
- Number of RO – RO piers/ berths: 5 (one with upper-deck’s ramp, three firm ones, one pontoon)
- Length of piers/ berths: 1 550 m
- Covered shed space: 140 000 m² (plus additional roof capacity 22 000 m²)
- Handling and special equipment: Reach stacker, van-carrier, 1 container-crane for heavy goods with up to 100 ton lifting capacity
- Water depth: 9.5 m
- Cargo handling capacity: 3.5 million tons per year
- Main cargoes: Paper, trucks, trailers, containers and combined transport as well as new cars and heavy goods

“Seelandkai”
Terminal specifications:
- Total area: 185 000 m²
  Number of RO – RO piers/ berths: 3 (two RO – RO, one CON – RO)
- Length of piers/ berths: n/a
- Open storage area: n/a
- Covered shed space: n/a
- Handling and special equipment: Two gantry cranes, Reach stacker, trailer checking system.
  Water depth: 9 m
- Cargo handling capacity: n/a
- Main cargoes: Trailers, containers, new vehicles

The present capacity of Port of Luebeck is claimed at level of about 300 000 cars per year. A new storage areas of about 3 000 parking slots are being developed, as well as parking shed construction projects are discussed, without corresponding decisions yet.

Cars are transported by regular RO - PAX ferry service. The volumes of cars handled are shown below.
<table>
<thead>
<tr>
<th>Year</th>
<th>Cars handled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>75,00</td>
</tr>
<tr>
<td>2001</td>
<td>85,00</td>
</tr>
<tr>
<td>2002</td>
<td>95,00</td>
</tr>
<tr>
<td>2003</td>
<td>140,00</td>
</tr>
<tr>
<td>2004</td>
<td>170,00</td>
</tr>
<tr>
<td>2005</td>
<td>190,00</td>
</tr>
<tr>
<td>2006</td>
<td>230,00</td>
</tr>
<tr>
<td>2007 est.</td>
<td>240,00</td>
</tr>
</tbody>
</table>

*Source: Luebeck Port Authority*

Port authorities are forecasting an average 5% yearly growth in volumes.
2.1.3 Port of Rostock

Rostock is deep-sea port with total area of 7.5 million m$^2$ and total berth length of 9 000m (43 berth total), able to accommodate ships of up to 100 000 DWT.

The Warnow Ferry Terminal has six berths two of which are equipped to handle railroad cars and a total area of over 200 000 m$^2$ is serving several ferry lines to Scandinavia, Finland and the Baltic Countries.

Intermodal terminal in Port of Rostock has a storage area of 70 000 m$^2$, adjacent to RO - RO pier and has rail and road connection.

Potential new car handling capacity claimed by port authorities is about 100 000 cars per year. Port of Rostock is not currently involved in new car transportation.

2.1.4 Port of Wismar.

Port of Wismar is serving mostly conventional North and Baltic Sea traffic. It has 17 berth of total length of 2 300 m. Ships up to 210m in length and 8.23m in draft can be accepted. Potential capacity claimed by port authorities is about 100 000 cars per year with expansion possibilities up to 200 000 cars per year.

Port of Wismar is not currently involved in new car transportation.
2.2 Poland.

2.2.1 Port of Gdansk.

In Port of Gdansk new cars are handled in the Port Free Zone, Oliwskie Quay and at Westerplatte Ferry Terminal. A RO - RO ramp is also available at the Polish Baltic Shipping Co ferry terminal.

Situated at a short distance of the entrance to the Inner Port, the Port Free Zone offers handling and storage services of brand new cars from manufacturers from the Far East countries and Europe. Registration of goods that are supplied to and removed from the Port Free Zone is implemented by means of the IT system. The Port Free Zone boasts a direct rail connection with other regions of Poland.

“Port Free Zone”
Terminal specifications:
- Total area: 335 000 m$^2$
- Number of RO – RO piers/berths: 2
- Length of piers/berths: 866 m
- Covered shed space: 38 500 m$^2$ (capacity: 20 000 tons)
- Open storage: 87 000 m$^2$
- Handling and special equipment: cranes with lifting capacity of 6 up to 16 tons
- Max draft: over 8.4 m
- Cargo handling capacity: n/a

In 2006 a total number of 43 443 vehicles of car manufacturers such as Audi, Chevrolet, Nissan, Mazda, Opel, Subaru, Suzuki and Volkswagen were handled at the Port Free Zone

“Oliwskie Quay”
Terminal specifications:
- Total area: 335 000 m$^2$
- Number of RO – RO piers/berths: 2
- Length of piers/berths: 600 m
- Covered shed space: 17,000 m² (capacity: 15,000 tons)
- Open storage: 35,500 m³
- Handling and special equipment: cranes with lifting capacity of 5 up to 16 tons
- Max draft: 9.7 m
- Cargo handling capacity: n/a

"Westerplatte Ferry Terminal"

Terminal specifications:
- Total area: 72,000 m²
- Number of RO – RO piers/berths: 3 (two floating RO - RO ramps, with the maximum allowable carrying capacity of 80 tons each, on 35-metre long and 21-metre wide pontoons and one stationary swinging ramp with the maximum allowable carrying capacity of 40.7 tons)
- Length of piers/berths: 600 m
- Covered shed space: 8,000 m²
- Open storage: 35,500 m³
- Parking yard: 10,700 m² (the storage capacity: 375 passenger cars/125 heavy – duty – trucks, 12 buses, 20 road trains)
- Maneuvering and storage yard: 19,200 m² (the storage capacity: 500 – 1,100 passenger cars or 140 – 360 trailers)
- Handling and special equipment: cranes with lifting capacity of 5 up to 16 tons
- Max draft: over 9.4 m
- Cargo handling capacity: 180,000 – 400,000 passenger cars, 150,000 – 350,000 heavy – duty – trucks, 600,000 – 1,000,000 passengers
- Additional services: loading section for railcars with max. length of a train of 170 m

Currently, a major expansion is underway on the Westerplatte Ferry Terminal. New universal berths are under construction, fitted with floating Ro/Ro ramps, the quay is undergoing modernization,
maneuvering and parking yards and technological roads are being expanded.

The Westerplatte Ferry Terminal provides simultaneous handling of vessels at three berths – each fitted with a RO - RO ramp.

The volumes of cars handled in Port of Gdansk are shown below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cars handled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>7 747</td>
</tr>
<tr>
<td>2001</td>
<td>15 532</td>
</tr>
<tr>
<td>2002</td>
<td>18 211</td>
</tr>
<tr>
<td>2003</td>
<td>32 246</td>
</tr>
<tr>
<td>2004</td>
<td>15 246</td>
</tr>
<tr>
<td>2005</td>
<td>10 716</td>
</tr>
<tr>
<td>2006</td>
<td>78 874</td>
</tr>
<tr>
<td>2007¹</td>
<td>106 622</td>
</tr>
</tbody>
</table>

¹ 9 months of 2007

*Source: Gdansk Port Authority*

Port authorities are forecasting an up to 20% growth in volumes in next year.
2.2.2 Port of Gdynia

In Port of Gdynia new cars are handled in the container/RO-RO terminal.

Terminal specifications:

- Number of RO–RO piers/berths: 3
- Length of piers/berths: 1 360 m
- Open storage capacity: 5950 parking slots
- Max water depth: 8.7 m

The volumes of cars handled are shown below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cars handled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>44 241</td>
</tr>
<tr>
<td>2001</td>
<td>49 135</td>
</tr>
<tr>
<td>2002</td>
<td>33 803</td>
</tr>
<tr>
<td>2003</td>
<td>34 510</td>
</tr>
<tr>
<td>2004</td>
<td>16 636</td>
</tr>
<tr>
<td>2005</td>
<td>29 549</td>
</tr>
<tr>
<td>2006</td>
<td>52 109</td>
</tr>
<tr>
<td>2007¹</td>
<td>55 963</td>
</tr>
</tbody>
</table>

¹ 9 months of 2007

Source: Gdynia Port Authority

Port authorities are forecasting an increase of car transportation volumes above 70 000 units in next year. Significant reconstruction plans are considered to increase RO-RO cargo handling capacities.

2.2.3 Port complex Szczecin/Swinoujscie

Port complex of Szczecin/Swinoujscie is not currently involved in new car transportation. RO-RO terminal has 2 general purpose berths for railway ferries, rail-car ferries, passenger ferries, and RO-RO vessels; 2 berths for passenger/car ferries; 1 berth for RO-RO vessels, convertible to handle
LO - LO ships. Storage area of 15 000 m$^2$ is suitable for new car handling. Potential capacity claimed by port authorities is about 100 000 cars per year.
2.3 Finland.

Finnish ports has strong share in serving Russia and CIS transit cargo. Up to 75% of Russian car imports are delivered through ports of Helsinki, Kotka, Turku, Hanko and Hamina.

2.3.1 Port of Helsinki.

The Port of Helsinki is primarily a unitized cargo port serving Finland’s foreign trade. It is also a major passenger port.

New cars, handled in Port of Helsinki are delivered by RO - PAX ferries and at present port operates at its full capacity. The volumes of cars handled are shown below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cars handled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>43 509</td>
</tr>
<tr>
<td>2001</td>
<td>46 452</td>
</tr>
<tr>
<td>2002</td>
<td>54 653</td>
</tr>
<tr>
<td>2003</td>
<td>65 934</td>
</tr>
<tr>
<td>2004</td>
<td>44 276</td>
</tr>
<tr>
<td>2005</td>
<td>38 794</td>
</tr>
<tr>
<td>2006</td>
<td>35 451</td>
</tr>
<tr>
<td>2007¹</td>
<td>36 500</td>
</tr>
</tbody>
</table>

¹ estimated

Source: Helsinki Port Authority

Development plans include construction of new harbour Vuosaari. The harbour centre will comprise the gate area, the closed harbour area, the adjacent Harbour Business Park and the Meriportti Business Park. The project is being conducted by the Port of Helsinki in cooperation with the Finnish Maritime Administration, the Finnish Rail Administration and the Finnish Road Administration. The harbour's cornerstone was laid on 7 January 2003. Harbour will be operational by year 2009, it capacity for new car handling is not estimated yet.
2.3.2 Port of Kotka

Car transportation through the Port of Kotka started in 2003 with about 4000 cars (no exact statistics for 2003 exists). The current capacity of the Port of Kotka is approximately 600 000 cars yearly. Port is served by ocean car carriers, feeder RO - RO vessels and RO - PAX ferries. New cars are handled at specialized Ro - RO/car terminal “Hietanen”.

Terminal specifications:

- Number of RO – RO piers/berths: 6
- Length of piers/berths: 1 033 m
- Open storage: 900 000 m² (capacity: 5950 parking slots)
- Handling and special equipment: one crane of 40 ton lifting capacity
- Max draught: 10 m
- Cargo handling capacity: 600 000 cars per year
- Additional services: rail and road connections

The volumes of cars handled are shown below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cars handled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>-</td>
</tr>
<tr>
<td>2001</td>
<td>-</td>
</tr>
<tr>
<td>2002</td>
<td>-</td>
</tr>
<tr>
<td>2003</td>
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</tr>
<tr>
<td>2004</td>
<td>37 416</td>
</tr>
<tr>
<td>2005</td>
<td>76 401</td>
</tr>
<tr>
<td>2006</td>
<td>205 492</td>
</tr>
<tr>
<td>2007¹</td>
<td>310 000</td>
</tr>
</tbody>
</table>

¹ estimated

Source: Kotka Port Authority

Area expansions and construction of new quays are planned in the medium-long term development.
2.3.3 Port of Turku.

Port of Turku has a total land area of 1,045 ha, quay length of approximately 5,000 m and 13 RO-RO berths. Water depth of the main ship channel is 10m. The total cargo volume transported through the Port of Turku amounted to 4.0 million tons in 2006, an increase of over 2% on the previous year.

Almost 80% of the total cargo volume was carried on RO-RO vessels. According to the Turku port authority the cargo volume transported on RO-RO vessels was 3.2 million tons in 2006, increasing by 0.8% in comparison of 2005. The most significant growth was faced in the import of new cars, which increased by around 20 per cent in comparison of 2005. A total of 89,331 new cars were imported through the Port of Turku in 2006, which is increase 15,000 car units compared with the previous year. Cars are handled in Port Free Zone and Pansio Harbour.

According to the development plans announced by Turku port authority main development activities are focused on PDI service provision and organizational arrangements for quality improvements.
2.3.4 Port of Hamina.

The Port of Hamina is Finland's fifth largest port, handling around five million tons of cargo annually. The port has three kilometres of quay space, seven ro-ro ramps, three container cranes, and more than forty kilometres of railway line. Total storage space amounts to over 470,000 square metres. The logistics centre operates only 35 kilometers from the Russian border. According to the Hamina port authority a total of 11 856 cars were handled in Hamina in 2006, which is increase of 48.2% compared to 8000 cars in 2005.

There are three terminals accepting RO - RO vessels with stern ramp.

“Lakulahti”
Terminal specifications:
- Number of RO – RO piers/ berths: 2
- Length of piers/ berths: 591 m
- Max draught: 7.9 m

“Hiirenkari”
Terminal specifications:
- Number of RO – RO piers/ berths: 3
- Length of piers/ berths: 210 m
- Max draught: 8.6 m

“Palokangas”
Terminal specifications:
- Number of RO – RO piers/ berths: 1
- Length of piers/ berths: 192 m
- Max draught: 10 m

A ten-hectare storage area for cars was recently constructed in the monitored “Hailikari” port area. An access control and pattern recognition system was introduced on the road leading to the area.
The extension of the storage facility for cars by additional 11 hectares has been started.

2.3.5 Port of Hanko.

The Port of Hanko is the southernmost port in Finland, offering fast connections to continental Europe, all over Finland and Russia. The Port of Hanko is specialized in paper exports and car imports.

Cars are handled at Western Harbour and Outer Harbour Freeport area.

“Western Harbour”
Terminal specifications:

- Number of RO – RO piers/berths: 5 (equipped with ramps)
- Length of piers/berths: 1 210 m
- Covered shed space: 48 500 m²
- Open storage: 128 000 m²
- Handling and special equipment: one multipurpose crane of 45 ton lifting capacity
- Max water depth: 13 m

“Outer Harbour Freeport area”
Terminal specifications:

- Number of RO – RO piers/berths: 2 (equipped with ramps)
- Length of piers/berths: 350 m
- Covered shed space: 21 000 m²
- Open storage: 600 000 m²
- Max water depth: 7.2 m
2.4 Baltic States.

All major Baltic States’ ports have capacities for car handling. Currently new cars are transported by RO - PAX regular service ferries via Klaipeda (Lithuania), Ventspils and Riga (Latvia) and Tallinn (Estonia). All ports are considering serious development projects.

2.4.1 Port of Tallinn.

There are RO - RO terminals in three of five constituent harbours of Port of Tallinn: Old City, Muuga and Paldiski South Harbour.

In Old City Harbour, there are two companies operating in this field – “HTG Invest” and “ESTEVE Stevedoring”. They provide stevedoring services for semi-trailers, MAFI trailers and means of transport without a driver, (i.e. unloading from ship to quay or customs terminal and vice versa, storage of loaded MAFI trailers), transshipment of goods onto MAFI trailers, stevedoring services for new vehicles imported into Estonia or in transit through Estonia, and storage of such vehicles.

"Muuga CT” offers services of loading and discharging of RO - RO ships, storage of cargoes in Muuga Harbour under the conditions of a free zone. There is a possibility to store 300 trailers and 500 vehicles at a time.

The multi-purpose terminal of “ESTEVE Terminal” operating in Paldiski South Harbour possesses open storage area of 209,000 m² and sheltered storage area of 11,850 m². The terminal renders various stevedoring services, storage of cargo etc. A remarkable proportion of cargo flows handled in the terminal accounts for new cars and wheeled special equipment (tractors, agricultural machinery, etc), as well as trailers and containers. Terminal storage capacity is up to 2,000 vehicles at a time.

There are special areas in Muuga Harbour (in terminals operated by “Refetra” and “Sankotrans”) and in Paldiski South Harbour (“Nurminen PDI”, “ESTEVE Terminal” and “Assistor”) for car PDI service providing. Most of the terminals also accommodate workshops, where import related control and pre-distribution inspection can be performed and accessories and additional equipment can be installed in cars.
2.4.2 Freeport of Riga.

There are four RO - RO terminals in Port of Riga. Those are terminals which berths are equipped with RO – RO ramps and in various times are being used for serving RO – RO ferries. Terminals are as following:

- “Terminal Vecmilgravis”
- “Riga Central Terminal”
- “Riga Passenger Terminal”
- “Baltic Container Terminal”

New cars are transported by RO - PAX ferries calling terminal “Vecmilgravis”. Riga Central terminal is developing a new site for car handling and PDI services. It has a RO - RO ramp and adjacent storage area of 75 000 m$^2$ equipped with video surveillance. Authorities forecast a volume of 40 000 cars to be handled in year 2008.

“Terminal Vecmilgravis”
Terminal is located near the entrance to the port and is originally built as shipyard, which in 1991 was transformed into general cargo handling terminal with vast open storage area and continuous quayside (five berths along Daugava river) equipped with five portal cranes for LO – LO operations. Terminal is equipped with RO – RO ramp, which allows serving RO - RO vessels.

Terminal specifications:
Total area: 130 000 m2

- Number of RO – RO piers/ berths: 1 (equipped with ramps)
- Length of piers/ berths: 250 m
- Covered shed space: 10 000 m$^2$ (including custom warehouse: 7 000 m$^2$)
- Open storage: 100 000 m$^2$
- Handling and special equipment: five portal crane with 35 ton lifting capacity
- Max water depth: 11.5 m
- Cargo handling capacity: 100 000 RO – RO units per year

“Riga Central Terminal”
Riga Central Terminal, LLC. (RCT) is one of the largest stevedoring companies in Latvia, which is
located in the Freeport of Riga, and has been providing terminal services since 1996.

Terminal specifications:
Total area: 677 000 m²
- Number of RO – RO piers/berths: 1 (equipped with ramps)
- Length of piers/berths: 240 m
- Covered shed space: -
- Open storage: 75 000 m² (territory for car handling, secured and equipped with video surveillance system)
- Handling and special equipment: twenty nine portal cranes with up to 40 ton lifting capacity, a hundred mobile terminal equipment with up to 45 tons lifting capacity
- Max water depth: 11.0 m
- Cargo handling capacity: n/a

“Riga Passenger Terminal”
“Riga Passenger Terminal” is built in early seventies to serve passenger cruise vessels calling the port of Riga. As the originally terminal was built exclusively for passenger operations, it is located in the city centre next to the “old town”. In the beginning of nineties terminal was accommodated for RO – RO operations building the RO – RO ramp and transforming part of the car parking-place into the truck standing area. From that time terminal has been used for serving regular passenger and RO – PAX ferry lines to Stockholm (with definite breaks in the mid and end of nineties).

Terminal specifications:
Total area: 40 000 m²
- Number of RO – RO piers/berths: 1 (equipped with ramps)
- Length of piers/berths: 350 m
- Covered shed space: 500 m²
- Open storage: 10 000 m²
- Handling and special equipment: five portal crane with 35 ton lifting capacity
- Max water depth: 8.5 m
- Cargo handling capacity: n/a
Currently terminal is used for serving passenger ferry line Riga – Stockholm operated by Estonian company “Tallink”.

According to the Riga Freeport authority there are plans of general reconstruction of the terminal into the modern cruise vessels terminal with minor passenger ferry activities.

**“Baltic Container Terminal” (BCT)**

Terminal was constructed in mid eighties to meet constantly growing demand in container traffic, to and from the main industrial centers of the ex-Soviet Union, when the port of Riga was the exclusive port in the Baltic’s designated as ideal for the development of a specialized container terminal. Although BCT is functioning as a feeder port, infrastructure available includes much more than a normal feeder port would normally require as BCT has a capacity of handling in excess of 325 000 TEU per annum in its present state.

Terminal specifications:

Total area: 220 000 m²

- Number of RO – RO piers/ berths: 1 (equipped with ramps)
- Length of piers/ berths: 350 m
- Covered shed space: 11 500 m²
- Open storage: 150 000 m²
- Handling and special equipment: three container gantry cranes with 40 ton lifting capacity
- Max water depth: 8.5 m
- Cargo handling capacity: 100 000 RO – RO units per year
2.4.3 Ventspils.

RO – RO operations in the port of Ventspils are carried out by stevedoring company “Noord Natie Ventspils Terminals”. “Noord Natie Ventspils Terminals” is a dynamic company, which began its operation in 2000, when the 1st Phase of construction of the terminal was completed. The idea of the terminal was determined by the conception of the Ventspils Free Port authority to develop new projects and attract perspective cargo flows – containers, RO – RO and unitized general cargoes. Terminal has rail and road connections and flexible car storage capacities, depending on common utilization of cargo areas.

Normally, up to 100 parking slots are available. About 2000 cars were handled in January-September of 2007 with estimate 3000 by the end of the year.

Terminal specifications:
Total area: 169 000 m² (with possibility to expand up to the 310 000 m²)
- Number of RO – RO piers/berths: 2 (equipped with ramps)
- Length of piers/berths: 454 m
- Covered shed space: 5 200 m² (to be expanded up to 7 200 m²)
- Open storage: 115 000 m²
- Handling and special equipment: rail-mounted crane with 35 ton lifting capacity, mobile crane “Gottwald” with 100 ton lifting capacity, container crane with 60 ton lifting capacity
- Max water depth: 14.2 m
- Cargo handling capacity: 100 000 RO – RO units per year

2.4.4 Liepaja.

Port of Liepaja is not currently involved in new car transportation. Case study for Port of Liepaja presented in Chapter 3.
2.4.5 Klaipeda.

At present there are two RO - RO terminals in Port of Klaipeda. Port is served by RO - PAX regular ferry service.

Current port capacity is claimed about 70 000 cars per year. A total 35 240 and 43 948 of new cars were handled in the years 2005 and 2006 respectively. New ferry terminal is planned to be operational by year 2009.

“Klasco ferry terminal”

Terminal was built in mid eighties as specialized RO – RO terminal to maintain traffic between Klaipeda (USSR) and Mukran (Democratic Republic of Germany). Terminal is constructed to transship both trucks and railway wagons in RO – RO mode. During last years infrastructure of the terminal is developed in accordance with the trends of the recent years, i.e. increasing flows of passengers and general cargo. Currently the terminal deals with transport of cargo in wagons, by trucks, platforms and trailers, as well as carriage of passengers on a basis of regular ferry traffic.

Terminal specifications:

- Total area: 200 000 m$^2$
- Number of RO – RO piers/ berths: 5 (equipped with ramps)
- Length of piers/ berths: 900 m
- Covered shed space: 2 050 m$^2$ (two warehouses)
- Open storage: 95 000 m$^2$
- Handling and special equipment: mobile terminal equipment
- Max draught: 9.4 m
- Cargo handling capacity: 200 000 RO – RO units per year

“Klaipeda Terminal Group RO - RO terminal”

Terminal is owned by local company „Klaipėdos Terminalo Grupė“. For last 10 years the terminal has been cooperating with the Danish transport company DFDS A/S operating a regular RO – RO ferry service. Currently RO – RO ferries call the terminal twice per week. The main cargoes are trailers, trucks, passenger vehicles, and agricultural equipment. At the same terminal KTG handles following kinds of general cargo: metal scrap, sawn timber, metals, celluloses and other break-bulk
cargo.

Terminal specifications:

- Total area: 140 000 m²
- Number of RO – RO piers/berths: 2 (equipped with ramps)
- Length of piers/berths: 330 m
- Covered shed space: 12 000 m²
- Open storage: 80 000 m²
- Max draught: 8.5 m
- Cargo handling capacity: 30 000 RO – RO units and 0.5 million tons of general cargo per year
2.5. Russia.

There are two Russian ports in Baltic’s – St. Petersburg (port complex, consisting of several ports situated in the Neva river mouth and at the shore of Gulf of Finland) and Kaliningrad, situated in an enclave bounded by Lithuania and Poland separated from general territory of Russia. Due to its geographical location, Port of Kaliningrad is not analyzed in this research.

2.5.1 Seaport of St. Petersburg.

First specialized car terminal “Onega” (with 60 000 car annual capacity) in the Port of St. Petersburg was launched on December 2006. In June 2007 the second terminal followed in Fishery port area, providing storage space for 700 cars and capacity of 75 000 cars yearly. Terminal is served by “Euro Marine Carriers” direct ferry line from England handling Nissan and Infinity cars. An estimate of up to 25 000 car turnover was claimed by company authorities for year 2007 with 700% growth in year 2008.

Lack of handling capacities for new cars forced port authorities to develop several expanding projects.

Seaport of St. Petersburg is developing specialized car terminal at the territory of the “Third Stevedoring Company” with 80 000 car handling capacity. Terminal will be put into the operation in the beginning of year 2008.

In the beginning of 2008 a multi-purpose terminal will be put in operation in Ust-Luga with yearly capacity of 360 000 cars and estimated turnover of 100,000 at the start up period.

Construction works are in progress in Port of Lomonosov, where container/ RO - RO terminal is being developed. According to the project, it will provide annual handling capacity about 1 million TEU and 300 000 car. According to the authorities estimated turnover is around 50 000 cars per year at the start up period.

The last project includes construction of car terminal in Vistina, near to Ust-Luga. According to the project newly built terminal will provide annual handling capacity of 120 000 cars after completion of phase 1 and up to 250 000, when it will be fully operational.
2.6 New car transportation market analysis. Present status and development forecasts

Constantly growing consumption markets are raising demand for new car transportation capacities in all ports involved. Port authorities are forecasting rise of car transportation volumes ranging from 5 up to 30% during next years. Capacity utilization of ports already involved in supply chains in some cases reaches 100%, pressing port authorities to consider significant development projects. On the other hand, shippers and traders are looking for solutions of optimization in order to concentrate business in hub-points, serving as dedicated logistic centers providing PDI services and speeding up supplies by means of optimizing hinterland logistics.

For the time being, the big part of the car transportation (in Baltic States ports – 100%) is serviced by regular RO – PAX ferries, calling conventional RO - RO terminals. Cars are transported on car-carrying trailers or on its own. Transportation to local markets is carried out mainly by means of road transport. Although transportation to more distant markets of Russia and Belarus by means of railway transport is technically more preferable, administrative barriers and organizational drawbacks are preventing it in most cases.

Only Finnish ports have dedicated car handling terminals for the moment, served by specialized car carrier vessels. Cargo turnover of these terminals consists mainly of Russian and CIS countries destination transit cargoes. Up to 75% of Russian car imports come through Finland. Although Finish ports provide high quality stevedoring services and good hinterland connections, inland transportation by road transport is significantly slowed down at the border crossing points. Same situation is observed in Latvian/Russian border. Road transport deliveries are delayed by 2-4 days due to border crossing points overloading.

Development of transportation by means of railway transport is facing several difficulties. Railway infrastructure of Baltic States is heavily loaded by Russia and CIS dry and liquid bulk cargoes transit, slowing down both delivery of cars and return of empty rolling stock to the ports. There is a lack of handling capacities for two-level rail carrier wagons in Russian railway terminals, as well as technical difficulties with door-to-door deliveries, that require additional reloading of cars from rail wagons to road trailers, thus rising risk of damage. Specialized car carrier wagons are not freely available at the market, raising the cost of transportation and slowing down logistics. The cost of railway transportation is a variable value, depending on availability of wagons on market and time
consumed for complete rotation cycle.

Another threat for transit in Finland and Baltic states is fast development of car handling facilities in port of St. Petersburg. About 12 000 000 000 RUB planned to be invested in five projects, creating annual handling capacity of approximately 1 million vehicles, four of these projects are to be developed in the Baltic region. Russian authorities are claiming a handling capacity of approximately 600 000 cars per year to be available in the region by the end of 2008 – beginning of 2009, and about 850 000 by year 2010, that together with terminal developments in Finland and Baltic States, and taking into account forecasted slowing down of Russian imports growth will create a significant surplus of terminal capacity in the region. In 2006, 1 049 000 new cars were imported in Russia, of which more than 500 000 were imported through Finnish ports. In January-October of 2007 a 64% growth in total car imports was achieved. The market growth is at its peak now and is forecasted to slow down by the end of 2010, when several foreign car assembling plants located in Russia will start operations at full capacity. It is forecasted, that most of foreign brand cars of value less than 40,000 USD will be assembled in Russia, only more expansive vehicles are planned to be imported. That means, only dedicated terminals served by car carriers and supported by effective hinterland logistics will stay within business, taking over most of the traffic from multifunctional/general purpose terminals and RO - PAX ferry lines.

According to the authorities new car handling in port of St. Petersburg is estimated to be 20-40% cheaper than in Finnish ports, although total cost of logistical chain may stay equal taking into account longer distance of the sea passage. It is forecasted, that capacity utilization of newly built Russian terminals will be mostly provided by import volume growth and not by re-orientation of existing traffic flows, although turnover growth in Finnish ports will slow down and volumes will settle at level of 5-20% up from present figures.

Due to positive expectations of Russian and East-European car market growth, several companies are considering development of hub-terminals, focusing on Baltic States ports as a hub-centers for car supply to Baltic States, Russia and Byelorussia markets. Most of Baltic States ports are enjoying benefits from favourable geographical location with adjacent markets of Russia, Belarus and northern Ukraine, direct connections to main transport corridors and ice-free navigation all year round, as well as areas and facilities are available for development or reconstruction in accordance with market needs.
According the market research the optimal specifications for dedicated car handling terminal focusing in serving transit cargo in the Eastern Baltic Sea region are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Minimal</th>
<th>Optimal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Navigation</strong></td>
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</tr>
<tr>
<td>Draught</td>
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<td>10m</td>
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<tr>
<td>Berth quantity</td>
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<tr>
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<tr>
<td><strong>Terminal</strong></td>
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<tr>
<td>Handling area</td>
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<td>&lt;240 km</td>
</tr>
<tr>
<td>Distance to Moscow</td>
<td>&lt;950 km</td>
<td>&lt;950 km</td>
</tr>
</tbody>
</table>

*compared to Finnish Ports

The territory of the terminal must be fenced (fence height - > 2.5 m) and secured in order to provide completely secured storage of cars. Distance between handling area and storage area must not exceed 1000m in order to meet new car pre-sale run odometer limit, with no crossings with common use roads or railways. No dust emitting facilities (such as bulk handling terminals) can be situated next to car handling terminal. At least one gate entrance should be provided to the cargo handling area next to pier, and at least two gates should be available at the storage area. Rail connection must provide at least two tracks of 700 m with loading ramp for specialized car railcars. Road connection to major state highways must not go through the city districts with crowded traffic conditions. A PDI service providing needs a closed shed area of about 600 m² minimum and area equipped with drain system for car washing.
3. Case study – focus on port of Liepaja.

Goal of the case study is to find out whether there are the possibilities to develop car transportation traffic through the port of Liepaja.

3.1 General information.

Liepaja is a former naval base city with a population of about 100 000, it has traditionally been an industrial, commercial and transit centre with strategic importance for export from Russia to western countries. Today Liepaja is a multifunctional port of intra European importance, which is serving the regional and international traffic mainly on short sea shipping routes with Baltic and North Sea regions’ ports. During the last decade port of Liepaja has reached one of the fastest increases of cargo turnover in the Europe - from 100 thousand tons, starting operation as a commercial port, in year 1992 to more than 4.5 million tons of cargo handled in year 2005. Today the port of Liepaja is one of the few region ports which utilize more than 50% of its cargo handling capacity.

3.2. Location

The city of Liepaja is located in the west of Latvia, closer to the west coast of the Baltic Sea than any other city in the Baltic States. As closest port to the Scandinavia and Western Europe, Liepaja provides a solid base for logistics connections with the rest of Europe. At the same time port is well connected with the system of state railway and motor roads, which ensures speedy and effective cargo exchange with Russian and other markets of the CIS countries. Liepaja is one of the few ice free ports on the East coast of the Baltic Sea that ensures maintaining regular traffic in almost any weather conditions. Port is located directly on the sea coast that means minimum time required for entering the port and mooring at the berth. Being the third largest port in Latvia, Liepaja is truly multifunctional, as port service providers dealing with virtually any type of cargo have found a way to do business here.
3.3. Facilities

The port is located directly on the sea coast and is protected from sea by breakwaters and jetties with three 200 m wide entrances between them. Port land area is 370 ha, harbour area - 810 ha. There are 80 quays of total length of approximately 10 000 m with draft 4.5 – 10.5 m (See “Map of Liepaja port”).

Port infrastructure includes:

- open storage areas - 440 000 m²
- covered storage - 70 000 m²
- silos - 28 200 m³
- freezer sheds - 25 200 m³
- liquid cargo storage - 75 000 m³

There are 16 stevedoring companies in Port of Liepaja, providing full range services for handling
cargo of all types.

3.4. Special Economic Zone

In order to make Liepaja even more attractive to business, a Special Economic Zone has been established, guaranteeing one of the most favorable tax environments in the Baltic Sea region for a minimum of 20 years. Thereof Liepaja Special Economic Zone is one of the few zones around the Baltic Sea providing favourable tax environment both for international transport and manufacturing industries.

The port of Liepaja is managed by Special Economic Zone Authority and is one of the most active parts of the Liepaja Special Economic Zone. Special Economic Zone consists of the Port, international Airport of Liepaja, city industrial areas and former naval base Karosta territories. Special Economic Zone occupies virtually all the non-residential territory of the city, comprising 3979 ha or about 65% of the total territory (See “Map of the Liepaja Special Economic Zone”).

Status of Special Economic Zone Company provides considerable tax benefits and preferences for port related enterprises working with the cargo transportation to and from non European Union countries.

The enterprises, which are investing in development and have acquired the status of a Liepaja SEZ enterprise, enjoy the right to direct tax reductions as follows:

- 5% Corporate Tax (as opposed to 15%), also applicable to dividends, management fees and intellectual property,
- 80% -100% rebate on the Real Estate Tax.

Liepaja SEZ enterprises enjoy direct tax rebates for the initial investments until the accrued sum of relief reaches 50% of the accrued sum of investments.

The enterprises, which are providing transportation and logistic services and have acquired the status of a Free Zone enterprise, enjoy the right to indirect tax reductions as follows:

- 0% VAT rate on deliveries of goods and services in the special economic zone and free zone,
- Exemption of customs duties and excise tax on oil products in the Free Zone.

For time being, there are 36 companies possessing Special Economic Zone company status, which
performance indicators are as following:

- Number of enterprises (2007): 36
- Investments (2006): 12.7 million EUR
- Turnover (2006): 118.1 million EUR
  - including export: 58.5 million EUR
- Employees: 2221

3.5. Transportation

Latvia is the only Baltic country with the direct access both to the Russian and Belarusian markets (in comparison Estonia and Finland has access only to Russia, while Lithuania only to the Belarusian market). The port of Liepaja forms a part of the international transport network TEN – T. The port is well connected with the system of state railway and motor roads, which ensures speedy and effective cargo exchange with Russian and other markets of the CIS countries.

3.5.1. Road transport

Motor roads connect Liepaja with the road networks of Estonia, the Russian Federation, Belarus and Lithuania, securing speedy and effective cargo exchange with the political and industrial centres of neighbouring countries.

Technical characteristics

- Permitted load-carrying capacity – 40t, with special permits – up to 52 tons
- Permitted load on axis – 11 tons
- Permitted speed of freight transport (on trunk roads) – up to 90 km/h

The major CIS and Baltic countries’ political and industrial centers are within 1 – 2 days driving distance from Liepaja:

- Moscow – 1055 km
- St. Petersburg – 948 km
- Kiev – 1621 km
- Minsk – 727 km
- Smolensk – 856 km
- Vilnius – 523 km
- Tallinn – 664 km
Driving the Liepaja – Riga main road, passing the Riga by ring road there is direct access to Russian Border (A6/ E22 to the Moscow direction, A2/ E77 to the St. Petersburg direction) and Belarusian Border (A6 to the Minsk and Kiev direction). Moscow is within 36 hours and Kiev within 48 hours driving distance from Liepaja. The exact time is a matter of time spent on Latvian/ Russian and Latvian/ Belarusian borders.

3.5.2. Railway transport
Over 2/3 of the cargos transhipped in the port are freighted by railway. The state public railway network has direct links with the railway networks of Estonia, Russian Federation, Belarus and Lithuania, thus ensuring access to the markets of the Ukraine, Kazakhstan and other CIS countries.

Technical characteristics
- Width of the railway track- 1520 mm
- Permitted load per axis – 23.5 t
- Permitted speed of freight trains – 80 km/h

Similar to the road transport, all the major CIS countries political and industrial centers are accessible within 24 – 48 hours.

3.5.3. Sea transport
Technical characteristics of the port ensures handling of any dry bulk, liquid bulk and general cargoes by servicing ships with deadweight up to 40 thousand tons.

Most of the major European ports are within 2 – 3 days sailing distance:
- Stockholm – 216 n.m.
- Copenhagen – 325 n.m.
- Hamburg – 493 n.m.
- Antwerp – 1024 n.m.
- London – 1025 n.m.
- Rotterdam – 1173 n.m.
- Le Havre – 1231 n.m.
3.6. Performance

There are 16 stevedoring companies in Port of Liepaja, providing full range services for handling cargo of all types.

### Liepaja port cargo turnover (thousand tons)

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>3260.4</td>
<td>4318.1</td>
<td>4857.6</td>
<td>4474</td>
<td>4508.5</td>
<td>4000.9</td>
<td>4038.8</td>
</tr>
<tr>
<td><strong>Loaded</strong></td>
<td>2762</td>
<td>3710.2</td>
<td>4223</td>
<td>3792.3</td>
<td>3766.2</td>
<td>3376.7</td>
<td>3288.5</td>
</tr>
<tr>
<td><strong>Discharged</strong></td>
<td>498.4</td>
<td>607.9</td>
<td>634.6</td>
<td>681.7</td>
<td>742.3</td>
<td>624.2</td>
<td>750.3</td>
</tr>
<tr>
<td><strong>Dry bulk cargoes</strong></td>
<td>512</td>
<td>799.9</td>
<td>1063</td>
<td>1129.3</td>
<td>1651.4</td>
<td>1652.4</td>
<td>1880.7</td>
</tr>
<tr>
<td><strong>Grain and cereal products</strong></td>
<td>103.6</td>
<td>422.1</td>
<td>535.2</td>
<td>492.2</td>
<td>1011.9</td>
<td>951.1</td>
<td>1226.3</td>
</tr>
<tr>
<td><strong>Peat</strong></td>
<td>36.7</td>
<td>96.2</td>
<td>189.3</td>
<td>201.6</td>
<td>135.1</td>
<td>105.3</td>
<td>41.5</td>
</tr>
<tr>
<td><strong>Wooden chips</strong></td>
<td>220.5</td>
<td>208.0</td>
<td>267.2</td>
<td>286.9</td>
<td>228.8</td>
<td>168.1</td>
<td>160.1</td>
</tr>
<tr>
<td><strong>Liquid bulk cargoes</strong></td>
<td>587.1</td>
<td>887.6</td>
<td>1077</td>
<td>863.4</td>
<td>667.9</td>
<td>956.8</td>
<td>965.8</td>
</tr>
<tr>
<td><strong>Oil and oil products</strong></td>
<td>530</td>
<td>722.6</td>
<td>703</td>
<td>595.7</td>
<td>636.1</td>
<td>945.2</td>
<td>713.2</td>
</tr>
<tr>
<td><strong>General cargoes</strong></td>
<td>2161.3</td>
<td>2630.7</td>
<td>2717.6</td>
<td>2481.2</td>
<td>2189.2</td>
<td>1383</td>
<td>1334.5</td>
</tr>
<tr>
<td><strong>Metals</strong></td>
<td>590.2</td>
<td>940.8</td>
<td>784.2</td>
<td>832.2</td>
<td>871</td>
<td>855</td>
<td>856</td>
</tr>
<tr>
<td><strong>Wood products</strong></td>
<td>710.5</td>
<td>774.8</td>
<td>895.1</td>
<td>783.8</td>
<td>735</td>
<td>574.4</td>
<td>514</td>
</tr>
<tr>
<td><strong>RO – RO cargoes</strong></td>
<td>537.1</td>
<td>654.9</td>
<td>801</td>
<td>696.3</td>
<td>504.3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Source: Liepaja SEZ authority*

### Ship calls and passengers

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ships</strong></td>
<td>1326</td>
<td>1573</td>
<td>1788</td>
<td>1715</td>
<td>1602</td>
<td>1506</td>
<td>1508</td>
</tr>
<tr>
<td><strong>Passengers</strong></td>
<td>12356</td>
<td>14786</td>
<td>14786</td>
<td>15088</td>
<td>13812</td>
<td>159</td>
<td>116</td>
</tr>
<tr>
<td><strong>Arrived</strong></td>
<td>6427</td>
<td>7517</td>
<td>6972</td>
<td>8269</td>
<td>7048</td>
<td>103</td>
<td>61</td>
</tr>
<tr>
<td><strong>Departed</strong></td>
<td>5929</td>
<td>7269</td>
<td>6524</td>
<td>6819</td>
<td>6764</td>
<td>56</td>
<td>55</td>
</tr>
</tbody>
</table>

*Source: Liepaja SEZ authority*

3.7. Strategic vision

One of the main strategic objectives determined by the Liepaja port development plan is qualitative development of the port by means of developing new cargo handling capacities and attracting flows of high value added and unitized cargoes.

Such the future vision is based on availability of two Greenfield territories for development of
.qualitatively and quantitatively new port facilities. Furthermore, Liepaja is one of the few ports in the Eastern Baltic’s that is able to provide most effective traffic conditions for the cargo liner services to Scandinavian and Central European Countries. That is mainly based on the favorable geographical location, as Liepaja being one of the very few ice – free ports in the region is located right on the Baltic Sea coast, closer to Western European markets than any other port of Eastern Baltic’s.

3.8. Development

In order to enhance the qualitative development of the port, port and municipal authorities have launched realization of several infrastructure development projects with the aim to create sufficient base for development of new cargo handling capacities.

Currently, there are following two top priority infrastructure development projects:

- Development of the port hinterland transport infrastructure,
- Deepening of the port of Liepaja.

3.8.1. Development of the port hinterland transport infrastructure

Background of the project

As a result of fast development and growing cargo turnover, there is an insufficient hinterland cargo handling capacity in the port of Liepaja. To a certain extent this is one of the main reasons why cargo turnover for the last three years is slowly decreasing in comparison with the maximum reached in 2003 and is stabilized within 4 – 4.5 million tons per year.

Project

Port hinterland infrastructure development activities are merged under joint project “Liepaja port entrance roads”, which consists of three components. Two of them - development of the port railway infrastructure and construction of port entrance road are directly connected to the upgrading of port cargo handling capacity.

Development of the port railway infrastructure

In order to couple with increasing cargo volume, which is transported to and from the port by
railway, Liepaja Special Economic Zone authority is realizing complex development of the port’s railway infrastructure. Project envisages building of new railway main road and marshalling yard that will provide full utilization of railway’s capacity and ground for further development activities. After the completion of the project in 2008, port railway cargo handling capacity will double and reach 8 million tons per annum.

Construction of port entrance road

The port entrance road is a part of Liepaja city transport infrastructure and is used by public transport. Although the access to the port is made as effective as possible with minimum impact to public transport, there is still a negative impact of heavy vehicle transport arriving or departing from the port. Thereof Liepaja Special Economic Zone authority has started realization of the project “Construction of the 2nd phase of the port entrance road”, in order to transfer heavy transport directly to the main road Liepaja – Riga without utilizing transport infrastructure within city’s boundaries.

Time schedule

According to the project’s time schedule, realization of the project will be completed at the second half of 2009.

3.8.2. Deepening of the port of Liepaja

Background of the project

Currently the port of Liepaja development opportunities are limited to the water depth of 10.5 meters at the ports deep – water berths. Although Liepaja possesses a strategic geographical location by being one of the few ice – free ports in the region, that is insufficient to compete equally with other ports, which benefit from serving larger tonnage vessels than in the port of Liepaja. Thereof Liepaja Special Economic Zone authority has defined the deepening of the port as the main development priority.

Project

According to the Liepaja port development plan, project envisages deepening of the port’s fairway,
Freeport basin and part of the Avantport basin, which is adjacent to the Greenfield territories located south and north of the Karosta Canal entrance.

As there is no clear vision about time of possible development mentioned Greenfield territories, project is divided to the three phases.

1st phase
It is envisaged to deepen port fairway to the water depth of 12.5 m and Freeport basin to the water depth of 12 m. (See attached Map “Deepening of the port of Liepaja, Phase No.1”)

2nd phase
It is envisaged to deepen the Avantport basin located south from the Karosta Canal entrance to the water depth of 12.5 m. According to the initial sketch design made by company “Liepajas osta LM”, which have acquired a long term lease rights for the Greenfield territory located south to the Karosta Canal entrance, it is planned to enlarge the Greenfield territory by land reclamation in the port basin. Thus the exact dimensions of basin to be deepened will be determined by technical project for development of the mentioned territory. (See attached Map “Deepening of the port of Liepaja, Phase No.2”)

3rd phase
It is envisaged to deepen the Avantport basin located north from the Karosta Canal entrance to the water depth of 12.5 m. Similar to the case of 2nd phase, exact range of dredging works to be done will be determined by technical project for development of the Greenfield territory. (See attached Map “Deepening of the port of Liepaja, Phase No.3”)

Status of the project
At the current stage there has been completed elaboration of the technical project for the realization of the 1st phase of the project.

Time schedule
According to the plans dredging activities can be started at the 2nd quarter of 2008 and be completed until the end of the year.
Realization of the 2nd and 3rd phases of the project is depending on the starting time of activities for developing of before mentioned Greenfield territories.

3.4 Possibilities for new car handling and new terminals development projects in Port of Liepaja

According to the initial research and interviews with port authorities and enterprises, there are several possibilities for car transportation through the port of Liepaja. These possibilities include both conversion and accommodation of already used port facilities and construction of brand new dedicated or general purpose terminal facilities. Following the initial research there are feasible the following activities:

- Utilization of existing Ro-Ro terminal at Quay No. 46
- Development of terminal located at Quays No. 49,50
- Development of port Greenfield territories

3.4.1 Existing Ro-Ro terminal

Currently RO – RO handling facilities are not used for the RO – RO operations due to the lack of regular ferry traffic calling the port of Liepaja. In order to utilize the terminal facilities, they are used for handling container cargoes serving the regular container line operated by container operator “Containerships” Ltd.

Terminal specifications:

- Owner: “Terrabalt” LSEZ Ltd.
- Total area: 50 000 m²
- Number of RO – RO piers/ berths: 2 (equipped with ramps)
- Length of piers/ berths: 400 m
- Open cargo storage area: 35 000 m²
- Covered shade space: 2 500 m²
- Max. water depth: 10.5 m
- Road transport: direct access
- Railway: direct access
Necessary improvements:
Fence and security surveillance system needed to provide secure storage of new cars.

New car handling can be started within 6 months, when necessary infrastructure improvements are made.

3.4.2 Development of terminal located at Quays No. 49, 50

Territory located at Quays No. 49 and 50 is only territory, which is not used for regular cargo handling operations for the moment and is appropriate for servicing car transportation flows. Currently the terminal territory is used for handling and storing pulp wood cargoes on a temporary basis, while quays are used for irregular cargo operations and accommodation of vessels during their lay - times in the port.

Terminal specifications:
- Terminal specifications:
- Total area: 50 000 m²
• Open cargo storage area: 48 000 m²
• Max. water depth: 9.5 m
• Length of the berth: 200 m
• Pier: can accommodate two vessels with length up to 180 m
• Road transport: direct access
• Railway: not available, can be constructed direct access

Territory
Total territory of terminal is 50 000 m². Both handling and storage areas necessary for processing car transportation can be located within one single terminal territory without using for transportation in between them any public infrastructure. Territory is fenced, but it is only partly paved with reinforced concrete plates, while largest part of the terminal’s territory (~ 38 000 m²) is without any pavement. There is also lack of sufficient lightning equipment that would allow performing cargo handling activities during the night time (See map “Layout of the RO – RO terminal and terminal located at Quays No. 49, 50”).

Berths
Terminal is accommodated with berth (No. 50) and pier (No.49). Berth can be used both for LO – LO and RO – RO operations. In order to be used for RO – RO operations berth can be accommodated both with stern and quarter ramps. Pier is made of metal constructions and can be used for simultaneous accommodating of two RO – RO vessels with stern ramps.

Hinterland connections
Terminal has the direct access to the port’s entrance road connecting port with the Liepaja – Riga main road (A9). Although the port entrance road is a part of Liepaja transport infrastructure and is used by public transport, the access to the port is made as effective as possible with minimum impact of public transport and burdens as street crossings and traffic lights.

In order to handle railway cargoes, direct access road can be constructed to the port’s Western marshalling yard. The marshaling operations can be performed both in Western, new building Northern port railway marshaling yards or Liepaja railway station

Necessary improvements:
• Paving of the whole terminal’s territory,
• Proper fencing,
• Installing sufficient lightning equipment,
• Construction of facilities for controlling and administrative needs,
• In order to transport cars by railway, construction of railway access road to the Western marshalling yard is necessary.

“Layout of the RO – RO terminal (No.10.) and terminal located at Quays No. 49, 50 (No. 1.)”
3.4.3 Development of combined general cargo/container terminal.

Currently there are two Greenfield territories dedicated for construction of cargo handling facilities in the port of Liepaja. One of the two Greenfield territories is more appropriate for construction of the container terminal and is leased out to the local stevedoring company “Liepajas osta LM” on a basis of long term lease agreement (See attached Map “Location of specialized container handling terminal”). Territory is located at the waterfront in the inner port with total territory of 17 ha and coastline of 700 m. Initial plans envisages recovering of additional territory by land reclamation in the port basin. Total planned territory of the terminal is 28 ha. According to the sketch design elaborated by the company, there will be built three berths, which are accommodated for both LO-LO and RO-RO operations with the total length of 750 m and water depth of 13.0 m.

“Location of specialized container handling terminal, present status”
It is planned to develop following infrastructure objects:

- Mooring pier equipped with RO – RO ramp, with adjacent cargo operations area for container and RO-RO cargo handling. Length of the pier: 210 m, width: 125 m;
- Two quays parallel to existing shoreline of total length 530 m, moving cordon line 110 m far from present shoreline layout;
• Cargo storage areas and warehouses;
• Administrative and operational buildings.

Terminal specifications:
• Total territory: 28.0 ha
• Number of berths: 3
• Draft (berths and fairway): 11.3 m
• Length of the berths: 750 m
• Road: direct access to terminal
• Railway: direct access; access road shall be built according specification
• Planned cargo turnover: 175 000 TEU and 100 000 RO – RO units per annum

Terminal originally is planned as multipurpose cargo handling facilities for serving both containers and RO – RO cargo units. Thereby there is possible combination of handling container cargoes and cars in one terminal. On the other hand, there is necessary separation of container and car handling operations, in order to secure cars form possible damages caused by container operations and provide most qualitative service for car handling.

Status of the project
“Liepajas osta LM” in co-operation with Liepaja Special Economic Zone authority is investigating possibilities to attract strategic partner for realization of the project of such a scale. At the current stage of the project “Liepajas osta LM” has completed elaboration of initial sketch design and started obtaining of all the necessary permits and documents for designing and construction works of the terminal. Consequently the Liepaja city Building Board has issued Architectural planning task, in order to “Liepajas osta LM” could initiate process of Environmental Impact Assessment for the building of container terminal in the port of Liepaja.
3.4.4 Multimodal terminal development.

Construction of the terminal is planned on Greenfield area of Port of Liepaja north from Karosta Channel entry. A reservation agreement was signed between Port Authority and “Kurzemes Degviela” Jsc. regarding 250 000 m$^2$ site with approximately 1000 m coastline, in order to make preparations for project development possible for investor. It is planned, that site will be used for necessary infrastructure development to accommodate cargo handling facilities, as well as several industrial facilities.

It is planned to extend existing territory up to 500 000 m$^2$ recovering an additional area by land reclamation in the port basin. Separate rail connection to the terminal will be built.

**Terminal**

Terminal capacity is planned up to 2.6 million tons. Terminal will handle following types of cargo:

- Biological fuel and seed oils;
- LPG;
- General and bulk cargo;
- Containers;
- RO – RO cargoes;
- Chemical cargoes.

Terminal specifications:

- Total territory: 50.0 ha
- Number of berths: 3
- Draft (berths and fairway): 11.3 m
- Length of the berths: 1 000 m
- Road: direct access to terminal
- Railway: direct access; access road shall be built according specification
- Planned cargo turnover: 2.6 million tons per year

According to the initial design terminal construction works are divided in two phases:

- Phase 1 – handling facilities for biological fuel and seed oils;
Phase 2 – facilities for LPG, general and bulk cargo, containers, RO - RO, chemical cargo.

Status of the project
According to preliminary project study, project cost will reach 80.0 million EUR (cost estimation made by considering similar object construction in 2005 prices). Time schedule is proposed by the project developer is as following:

- Beginning of year 2007 till end of second quarter of 2008 – preparing of landsite long-term lease agreement;
- From third quarter of year 2008 till end of 2010 – construction of Phase 1;
- From end of year 2010 till end of year 2013 – construction of Phase 2.

“Location of Multimodal terminal”
“Proposed development of Multimodal terminal”
3.5. Conclusions on the case study

As a result of the case study there are the following conclusions:

The port of Liepaja possesses one of the most favourable geographical locations towards the Russian and other CIS countries markets. One of the main aspects determining the competitiveness of Liepaja is fact that port of Liepaja is one of the very few ice – free – ports in the region that allows providing of regular vessel traffic in almost all weather conditions. Being westernmost located port of the Baltic States and one of the very few ports located directly on the sea coast, the port of Liepaja provides shortest sea voyage distance from car producers or logistics centers located in the Western European to Russian and other CIS countries markets. Port is well connected to the states motor roads and railway networks. Latvian railway network uses the same dimensions railway gauge as CIS countries, so that means possibility of most effective railway transportation from the port of Liepaja to CIS countries markets. Although Liepaja possesses very favourable location, it can not compete with Finish ports regarding distances to major Russian political centers and consumption markets – Moscow and St. Petersburg.

The existing port facilities, which could be accommodated for handling of cars is to small to process big enough and regular cargo flows. Although terminal which is located at Quays No. 49, 50 has better potential for processing car cargoes in comparison with RO – RO terminal, regarding the available space for handling and storing activities, this terminal borders to dry bulk cargo handling terminal that is condition, which can not be accepted for handling of new car cargoes.

Theoretically, car traffic can be handled in new terminals, which are planned to be built in the port development territories. Although these terminals are designed as multipurpose facilities for serving also RO – RO traffic, there are serious concomitants, which eliminate a car handling possibilities in these terminals. In a case of combined general cargo/ container terminal territory of the new building terminal borders with the dry bulk cargo handling facilities,
which specializes in handling of dusty and dispersive materials as animal feed stuff products. In a case of Multimodal terminal there is planned to build dry bulk cargo handling facilities right within terminal territory, processing simultaneously both dry bulk and RO – RO cargo operations.

4. Conclusions

According to the market research the main consumer of new cars and car transportation services in the Baltic Sea region is Russian Federation, followed by Finland, Byelorussia and Baltic States. In general there will be positive dynamic of increase of car transportation volumes over the Baltic Sea region, which will be determined mainly by increase of Russian Federation and Byelorussian imports. In respect of increase of car import volumes Finland accounts for more or less constant consumption level. While Baltic States, which are facing most considerable increase of new cars consumption among Eastern European countries, are to be slowing down their economical development rates that will reflect also into the volumes of car imports during the next coming years.

According to the market research there are several aspects that will influence car transportation over the Baltic Sea region. Being a dominating consumption market of new cars in the region, Russian growth of import will decrease by the end of 2010, when several foreign car assembling plants located in Russia will start operations at full capacity. Moreover it is forecasted, that most of foreign brand cars will be assembled in Russia, while only more expensive vehicles are planned to be imported, meaning decrease of volume of imported cars. Simultaneously with development of car manufacturing Russian Federation are implementing massive port development policy with the aim to redirect Russian origin or destination cargoes through Russian Federation ports meaning that at least volumes of increased import will be transported through Russian ports.

For export-focused terminals in Germany and Poland new car handling volumes will continue to grow at a rate of 5 to 20% at least till year 2010, when Russian policy aimed at traffic re-direction will show its full effect.

Import-focused ports will face rapidly growing competition, as new handling capacities in Finland and Russia will be put in operation. Taking into account all aspects, long-term market development
demonstrates that only dedicated terminals served by car carriers and supported by effective hinterland logistics and providing additional services will stay within business, taking over most of the traffic from multifunctional/general purpose terminals and RO - PAX ferry lines. PDI service providing may appear a strong advantage of Russian ports, as very short inland transportation will be required for significant part of cargo, destinating regions closest to St.Petersburg. Perspectives of development of these terminals, as well as car assembling industry development are not predictable with due accuracy as there is not enough information available. At present, several port facilities claimed by authorities as operational or starting operations in nearest future are still not provided with inland logistical support, so re-orientation of significant volumes of existing cargo flows to these terminals is not expected to take place in short-term. Local markets of Baltic states, aduscent to the ports, will be served by regular RO-PAX ferry lines as in present, thus allowing ports to maintain their share at present level and meaning that no significant rise of capacities is necessary.

Although the location of port of Liepaja for car transportation to Central Russia, Byelorussia and northern Ukraine, neither facilities already available nor proposed cargo handling terminals are fully appropriate for handling significant volumes of new cars, especially in case of surplus of capacities in the region.
5. Annex

Map of Liepaja Special Economic Zone
Development of car handling facilities in Port of Liepaja
Deepening of the port of Liepaja, Phase No.1
Deepening of the port of Liepaja, Phase No.2
Deepening of the port of Liepaja, Phase No.3