10 December 2012
2010-2276

Chapter 1. Introduction

Denmark and the Federal Republic of Germany and have a common land border that divides the Cimbrian peninsula, which includes Jutland and Schleswig-Holstein, in east-west-direction. In the so-called Jutland Corridor running North-South both states are connected by roads and railway lines.

This interim report acknowledges the regional and local effort to improve cross-border mobility that was already agreed upon in the partnership declaration between the region of Syddanmark and Schleswig – Holstein signed on 6 July 2007.

The project "Cross Border Logistics - CB Log" was carried out from 1 May 2009 to 30 September 2012 as an INTERREG project with complementary financial support from Schleswig-Holstein's "Future of Business Programm" (Zukunftsprogramm Wirtschaft). It was undertaken by the Business Development Corporation Schleswig-Flensburg (WiReg), the University of Applied Science in Flensburg and the Danish partners UdviklingsRåd Sønderjylland Aabenraa and EUC Syd EUC Sønderborg. This interim report sets out to provide the Danish-German Transport Commission with a state of play.

The Danish-German Transport Commission was set up on 5 August 2011 by the Danish Minister of Transport, the Federal German Minister of Transport and the Prime Minister of Schleswig-Holstein of that time (Hans Chr. Schmidt, Peter Ramsauer and Peter Harry Carstensen respectively).

The overall objective for the Commission is – in brief - to create a closer cooperation between Denmark and Germany regarding transport planning and help achieving a better coordination of infrastructure investments. Furthermore, its objective is to analyse cross-border traffic and to develop suggestions for improving the infrastructure and the transport economy. The terms of reference is annexed to this interim report.

Since special commissions and task forces are already set up for the Fehmarn Belt fixed link, the Danish-German Transport Commission has its focus on the Jutland corridor. The Commission is consultative but focuses on all transport issues which are cross-border in nature and thereby affecting transport and traffic in the neighbouring country, i.e. infrastructure plus all transport modes (road, rail, waterways, harbours and aviation).

The Danish-German Transport Commission has 12 statutory members and additional experts have been invited depending on the demand and agenda. The chair is shared and alternating between Denmark and Germany.

From Denmark the statutory members represents the Danish Ministry of Transport, The Region of Southern Denmark, Danish Chamber of Commerce, Confederation of Danish Industry and one member appointed by the Danish Minister of Transport. From Germany the statutory members represents the Schleswig-Holstein Ministry of Transport, the Federal German Ministry of Transport, Hamburg Chamber of Commerce, Chamber of Commerce and Industry, Schleswig-Holstein and Business Development Corporation, Schleswig-Flensburg.

This interim report describes the existing transport infrastructure, the development of the different transport carriers since the year 2000 as well as the concrete plans for construction measures and cross-border projects in the Jutland Corridor.

Thus, this interim report intends to create the basis for the final report which will include a forecast regarding the development of traffic and give recommendations resulting from the work of the Transport Commission for the transport policy.

Chapter 2. Description of the cross-border infrastructure and transport structure in the Jutland Corridor

This chapter focuses on the cross-border infrastructure and transport structure for Denmark and Germany respectively.

Denmark:

2.1 Roads:

The trunk road network - or the national road network in Denmark - plays a central role when it comes to the flow of traffic. The trunk road network is the backbone of the key international transport corridors throughout Denmark and helps ensure efficient traffic flow between Scandinavia and the rest of the continent.

The backbone of the road network is made up of the so-called capital "H", i.e. roads between Frederikshavn and Danish-German border, between Køge and Esbjerg and between Elsinore and Rødby. See map 2.1.1. The capital “H” provides gateways to Denmark’s neighbours most notably Germany, Sweden, Norway and the United Kingdom

Map 2.1.1 The capital “H”

Despite the fact that the trunk road network only makes up approximately 5 per cent of the total public road network in Denmark, approximately 45 per cent of all vehicle kilometres in Denmark are driven on the trunk road network.

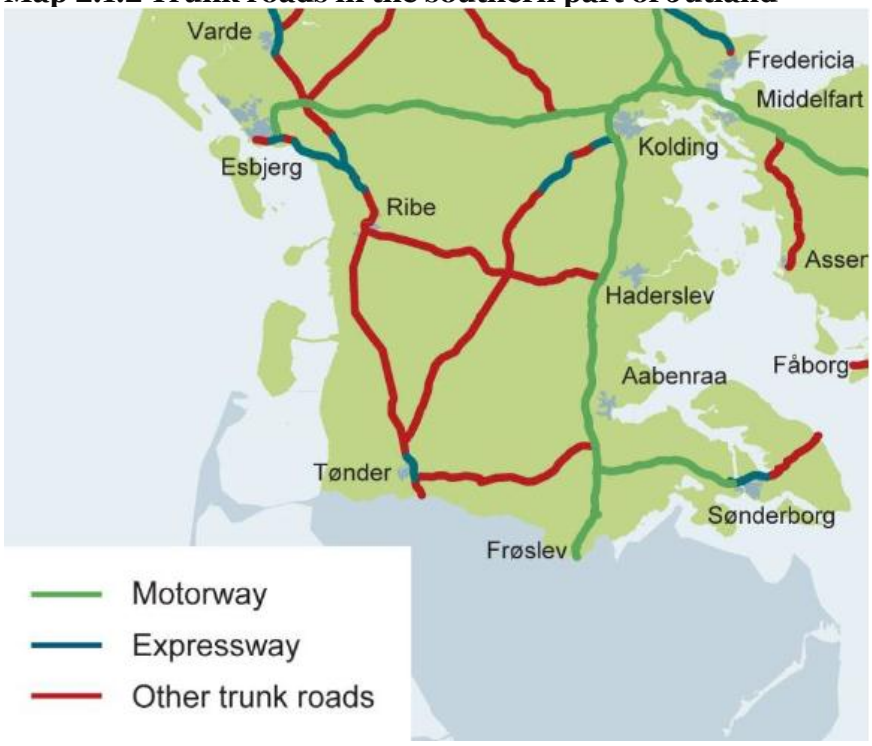
The southern part of Jutland is part of the region "Southern Denmark". In this region there are located two motorways, which are part of the capital "H", namely the East-West oriented Esbjergmotorvejen (E20) between Lillebælt and Esbjerg and the North-South Sønderjyske motorway (E45) between Kolding to the North and the Danish-German border at Frøslev to the South. South of the border to Germany E45 continues as A7.

In the western part of Jutland there is one trunk road (Route 11) between Esbjergmotorvejen to the North and the Danish-German border south of Tønder and a number of trunk roads across the region. South of the Danish-German border Route 11 continues as B5.

A new motorway – Kliplev-Sønderborg – between Sønderjyske motorway to the West and Sønderborg to the East opened in 2011. The 25 km 4 lane motorway was carried out as a Public Private Partnership (PPP). The Kliplev-Sønderborg motorway was the first Danish motorway carried out as PPP.

Map 2.1.2 shows the trunk roads in the southern part of Jutland; map 2.1.3 shows the number of vehicles on the trunk roads in the southern part of Jutland and Table 2.1.1 shows different road types on the trunk road network in the southern part of Jutland.

Map 2.1.2 Trunk roads in the southern part of Jutland



Map 2.1.3 Number of vehicles on the trunk roads in the southern part of Jutland (2011)

As seen on the map the traffic load is highest on the Sønderjyske motorway (E45) between Kolding and the Danish-German border at Frøslev.

Table 2.1.1 Different road types on the trunk road network in the southern part of Jutland

Road type	Km Road	Amount (pct.)
Motorway	216	29
Expressway	114	15
Other trunk roads	414	56
Total	744	100

Regarding trunk roads there are two border crossings between Denmark and Germany, namely the crossing at Sæd and the crossing at Frøslev. Table 2.1.2 shows the number of vehicles crossing the border stations.

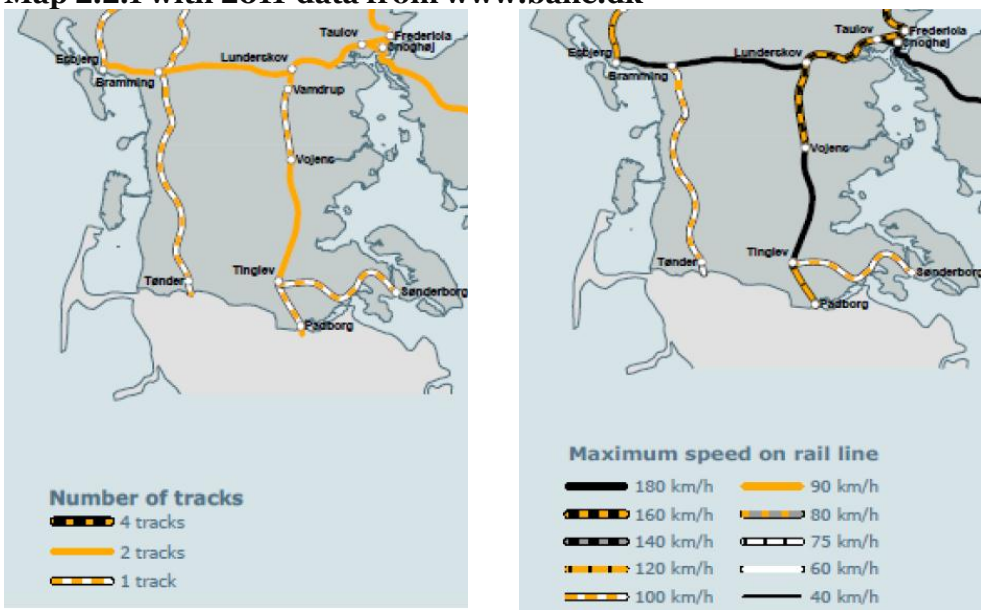
Table 2.1.2 Number of vehicles passing the Danish-German border on a trunk road (2012)

Border station	Number of vehicles
Sæd	5.800
Frøslev	17.200

2.2 Railway:

There are two railway lines crossing the Danish-German border: Niebüll-Tønder and Padborg-Fredericia. The railway line between Niebüll and Tønder is single tracked and with a speed limit of 100 km/h. Padborg-Fredericia is double-tracked except from Vamdrup to Vojens and from Padborg to Tinglev. The speed limit is 180 km/h in some parts of the railway with the lowest speed limit from Padborg to Tinglev being 120 km/h.

Map 2.2.1 with 2011-data from www.bane.dk



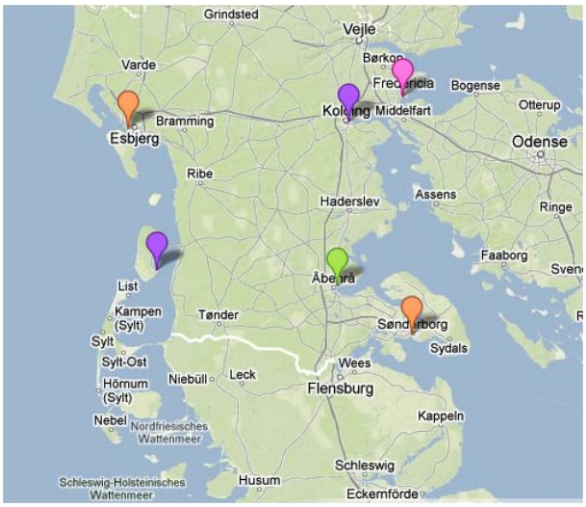
The railway between Padborg-Fredericia is part of the North-South TEN-T (Trans-European transport Network) railroad network corridor between Aarhus and Hamburg. The section is an important part of the Danish railway network, linking West, North and South Denmark with Germany. In the European Commission, the Corridor Freight Regulation 913/2010 has been commenced with the purpose of alignment of traffic management, procedures, tools, and documents of freight transport within the EU. The single track section between Vamdrup and Vojens of 20 km. will be upgraded to double track by the end of 2015. This will eliminate the bottleneck problems currently limiting the capacity of the rail line North of Tinglev. The upgrade project received EU TEN-T funding in 2012 to support the development

of the EU infrastructure. After the upgrade of the section, Tinglev-Padborg will be the last single track section left to be upgraded. There is an ambition to eliminate this bottleneck as well in the future.[1]

In 2012 it has been decided to electrify the railway between Esbjerg and Lunderskov. This is the first step towards electrification of the most important Danish rail lines. The electrification will provide a modern, cheaper, more stable and environment friendly railway.

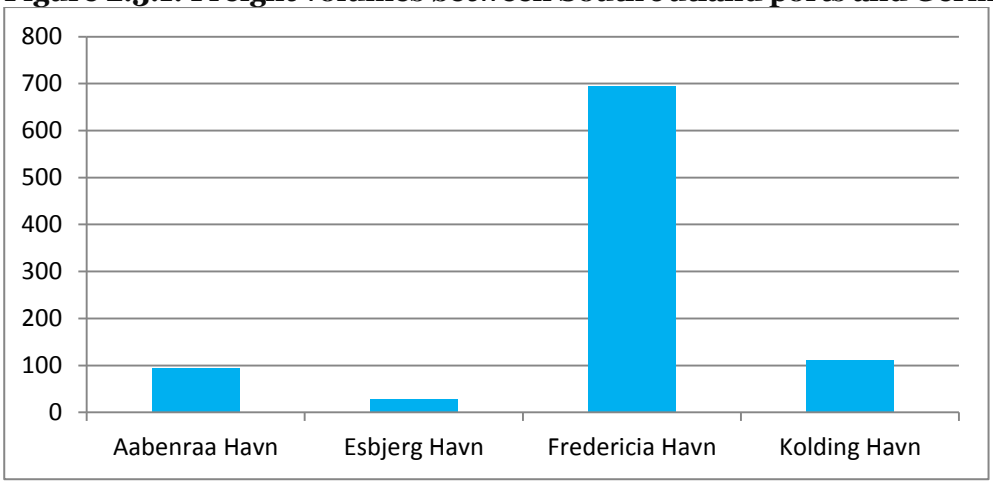
2.3 Ports:

Denmark is home to approximately 130 sea ports that function as important nodal points in the transport chain connecting the Danish economy to neighbouring markets.



In the South Jutland region Danish ports facilitate a wide array of services ranging from frequent feeder services to German ports, short sea shipping of roll-on-roll-off units and transport of oil, gas and dry bulk. In recent years ports on the West Coast of Denmark have furthermore carried out investment programmes to facilitate the growth in the wind energy sector and the off-shore wind farms in the Wadden Sea and North Sea specifically.

Figure 2.3.1: Freight volumes between South Jutland ports and Germany in 2011 (1000 t)



[1] Ministry of Transport: Aftaler om En grøn transportpolitik, 2009.

Source: Statistics Denmark

The most prominent port in the South Jutland region in terms of container freight to/from Germany is the port of Fredericia. As a feeder port to the Port of Hamburg five weekly connections operate the route. The prominence of the Port of Fredericia is visualised in fig. 2.3.1 and in 2011 approximately 700 tonnes of goods were transported between the Port of Fredericia and German ports.

The Port of Esbjerg - the second of the larger ports in the South Jutland region - has a significantly smaller exchange of goods with German ports.

In general the port of Esbjerg handled almost 2,000 tonnes of goods in 2011 and represents a major connecting point for Danish foreign trade. Even though the volume of freight between Esbjerg and German ports remains marginal, the port of Esbjerg offers an efficient supplement to the Port of Hamburg in terms of short sea shipping access to destinations in the United Kingdom and on the European continent – to the benefit for the border region at large.

The ports of Rømø and Esbjerg have taken a proactive approach to accommodate the growing market for wind energy. While Esbjerg has focussed on the shipping of wind turbines components from Danish production facilities and on supplying services to Danish off shore wind farms, the port of Rømø focusses on supplying services to German off shore wind farms. Both ports are distinguished by their ability to deliver adequate port depths in the otherwise shallow waters of the Wadden Sea.

Finally, a number of small and medium sized ports also contribute to the supply of easy and efficient access to waterborne transport in the borderland region. The ports of Kolding and Aabenraa offer modern reception facilities and are important to the region for the supply of building materials, foodstuff and other forms of dry bulk.

2.4 Aviation

Civil aviation in the EU, including domestic routes, is based on an internal market with free access for all carriers in all EU/EEA member states. The companies decide which routes they will serve based on their commercial considerations.

Domestic scheduled civil aviation in Denmark is concentrated to at present six routes to and from Copenhagen Airport. Two of the routes serve Southern Jutland: Billund, 130 km from the German border, and Sønderborg, 50 km from the border.

In 2011 approximately 140.000 passengers travelled between Copenhagen Airport and Billund Airport and approximately 70.000 passengers travelled between Sønderborg Airport and Copenhagen Airport.

There are at present three routes linking Southern Jutland with Germany: between Billund and Frankfurt, Munich and Düsseldorf.

The numbers of passengers from Billund and the German destinations are shown in table 2.4.1

Table 2.4.1. Numbers of passengers from Billund Airport to German destinations.

Route	Passengers, 2011
Billund – Frankfurt	197.000
Billund – München	39.000
Billund –Düsseldorf	9.000

Of the larger airports in Southern Jutland, Esbjerg Airport (80 km. from the border) has only routes to Aberdeen and Stavanger and Vojens Airport (50 km. from the border) has no routes at all.

General aviation is a flexible and important means of transport for most of the regions greater companies. From Billund Airport there are flights to a large number of airports - especially in Europe. From both Billund Airport and Sønderborg Airport there are a considerable number of flights to Copenhagen Airport, and from Copenhagen there are a large number of routes to intra- and extra-European destinations. Esbjerg Airport is essential for especially the off-shore industry.

Domestic flight routes between Danish and international airports can help to ensure a high level of regional accessibility and will contribute to regional development, especially for remote areas where travel time to Copenhagen is considerably shorter by plane than by train and ferry. Also the airports become essential to the companies in relation to commercial interaction and connectivity and thereby a key element when securing development and economic growth in the regions.

Germany:

2.5 Roads

The most important road connection between the Scandinavian countries and Continental Europe is the A 7 motorway (European road E 45) which leads in North-South direction through all of Germany and up to Frederikshavn in the north of Denmark. In Schleswig-Holstein, the A 7 follows the route of the historical “oxen trail”.

The Schleswig-Holstein part of the motorway has a length of 146 kilometres and, in accordance with German highway standards; it has 4 lanes and a hard shoulder. The hard shoulder between the exits Hamburg-Schnelsen-Nord and Kaltenkirchen and between Neumünster-Süd and the motorway merging point Bordesholm can be used if there is much traffic. The A 7 motorway crosses Kiel Canal near Rendsburg on the Rader Bridge, a viaduct measuring 1.5 kilometres in length.

The capital of Kiel is connected to the A 7 by the A 215 motorway at the merging point “Bordesholm” and by the A 210 at the motorway junction Rendsburg. The A 7 is connected with several federal highways which mainly run in east-west direction and partly in north-south direction. In the city of Hamburg, the A 7 has mostly 6 lanes and 8 lanes in front of the Elbe Tunnel. The motorway merging point “Hamburg-Nordwest” in the city of Hamburg connects the A 7 and the A 23 coming from Heide.

As a principal thoroughfare the A 7 takes up large parts of the traffic running in north- south direction with considerable transit traffic from and to Denmark or Scandinavia. With the completion of the Store

Bælt Link in 1997, the traffic has partially shifted from the “Vogelfluglinie” (via Puttgarden and Rødby) to the A 7. There is also an increase in commuter traffic mainly in direction to and from Hamburg, meaning that the volume of traffic keeps growing close to Hamburg. The highest volume of traffic is close to the Elbe Tunnel with 150,000 vehicles per day on the average. Because of the traffic jams that occur very often, the Elbe Tunnel is getting to be more of a bottleneck than ever before.

The A 7 is especially important for the mobility of the people from Schleswig-Holstein. For many business companies in Schleswig-Holstein it is the most important transport connection to the relevant markets, which are often far away. Also for this reason it is especially important that the efficiency of the A 7 be preserved by extension projects which are needs-oriented. Concrete projects plans are described in Chapter 4.

In the West of Schleswig-Holstein the most important transport routes are the B 5 and - from Heide to Hamburg - the A 23, which connect the west coast region. The B 5 crosses the German-Danish border North of Süderlügum and as the European road E 11 (Danish Route 11) runs through Esbjerg to the North of Jutland to Aalborg. The volume of traffic towards Hamburg is increasing considerably on the B 5 and A 23, respectively, as will be shown in the following chapter. The concrete projects are described in Chapter 4.

To create a highly competitive east-west main thoroughfare - from Poland to the Netherlands - the A 20 is gradually being built from East to West. The A 20 will be connected with the A 21 motorway near Bad Segeberg, with the A 7 near Bad Bramstedt and with the A 23 near Hohenfelde. A fixed link across the river Elbe is planned near Glücksburg and a connection with the A 26 and the A 27 in Lower Saxony. This project including the fixed link across the river Elbe has been included as an urgent priority in the German Federal Transport Infrastructure Plan.

With the final extension of the A 20 it will be possible to circuit and decongest the busy traffic hub of Hamburg and to improve the connection to the less developed west coast of Schleswig-Holstein. At that point in time, the A 20 will also be an attractive transport route for the transit traffic running to Denmark.

In the coalition contract of the political parties forming the government of Schleswig-Holstein it is agreed that the A 20 will be built in this legislative period to extend it up to the A 7. The segments west of the A 7 including the fixed link across the Elbe will be planned nonetheless. It will be the decision of the following government whether these plans can and will be realised.

2.6. Railway

In Schleswig-Holstein the railway network is traditionally orientated towards the railway hub of Hamburg. The main lines are going to Sylt ("marsh railway-line "), Flensburg ("Jutland-line"), Kiel, Lübeck and Fehmarn ("Vogelfluglinie"). The railway network is complemented with cross-country routes. In the Jutland Corridor these are the following lines: Flensburg-Kiel, Husum-Jübek-Kiel, Kiel-Lübeck, Heide-Neumünster-Bad Oldesloe and Niebüll-Tønder and - with a more regional character - the lines Niebüll-Dagebüll, Husum- Bad St. Peter Ording and Heide-Büsum.

In the Hamburg Metropolitan Region the lines Hamburg-Eidelstedt, Ulzburg-Norderstedt and Elmshorn-Henstedt-Ulzburg of the AKN Eisenbahn AG as well as the suburban rail lines (S-Bahnen) to

Wedel and Aumühle play an important role in commuter traffic. Besides, there are railway lines for cargo transport in Kiel and Brunsbüttel.

In the Jutland Corridor the international passenger and cargo transport mainly runs on the line of the same name. The Jutland-line running to Hamburg via Flensburg, Schleswig, Rendsburg and Neumünster is double-tracked, electrified and constructed for a speed of 160 km/h. Near Rendsburg the railway crosses Kiel Canal on a high-level bridge which was built in 1913. At present, the bridge is undergoing thorough restoration and will be dimensioned for bigger weight charges (load for each wheel of 22,5 tons). Until completion, which is planned for the year 2014, the bridge is a bottleneck because of the speed and weight limitations. Once the bridge has been modernized, it can be crossed by 2 trains at the same time and is expected to have an additional operating life of at least 30 years.

The Jutland-line and the marsh railway-line converge in Elmshorn. From Elmshorn or rather Pinneberg the route is complemented with regional railway and suburban traffic. With the introduction of the Store Bælt-Link in 1997 the total cargo transport by rail was shifted to the Jutland-line. This track section has nearly reached the end of its capacity. It is expected that the introduction of the Fehmarnbelt Fixed Link will partially shift transport activities from the Jutland-line back to the Vogelflugline via the Fehmarn Belt Fixed Link.

The Federal Transport Infrastructure Plan (“Bundesverkehrswegeplan” - BVWP) contains the three-tracked extension between Elmshorn and Pinneberg in the so-called urgent need (“Vordringlichen Bedarf”). In autumn 2010, the BMVBS evaluated the planned projects with the result that this extension is not necessary anymore, because a relief is expected with the completion of the Fehmarn Belt Fixed Link.

As an alternative to the conventional three-tracked extension the State of Schleswig-Holstein has suggested an improvement of the suburban connections. This would also free up capacity on the main track.
In general, the railway hub of Hamburg is a bottleneck, especially for the rail traffic running in southern direction.

The problem was examined by the BMVBS (especially in a report about the “Development and assessment of a concept for the railway hub Hamburg of March 2009”). The report recommends that the railway connections to the South for container-transport and for the suburban rail lines be extended.
The description of the special problems associated with the railway hub Hamburg would exceed this interim report.

The marsh railway-line leading from Hamburg to Sylt is mainly double-tracked except for a few one-tracked sections and designed for a speed of 140 km/h. The marsh railway-line is electrified from Hamburg to Itzehoe. In Niebüll it is connected via Tønder and Esbjerg with the Danish railroad network by the privately owned company Norddeutsche Eisenbahngesellschaft Niebüll GmbH (neg). The 17.7 km long single-tracked and non-electrified section between Niebüll and Tønder that had been closed down in 1980 was reactivated in 1997. A few years ago, the track was redeveloped with financial support from the State of Schleswig-Holstein.

2.7. Shipping

There are two regular ferry services between Germany and Denmark. On the one hand there is the so-called “Vogelfluglinie” between the ports of Puttgarden and Rødby, on the other, there is a ferry-connection between the ports of List on the island of Sylt and Havneby on the island of Rømø. Because this interim report is about the Jutland Corridor, only the line between List and Havneby will be described.
For individual traffic from the mainland this 16-km-long ferry connection is a popular alternative to the railway connection via the Hindenburgdamm. The ferry service is operated by Syltfahre.de, an enterprise of the FRS (Förde Reederei Seetouristik), using a double-ended ferry called SyltExpress. The crossing takes approx. 35 - 40 minutes. The ferry service has been operating since 1963 and is used by approx. 400,000 passengers yearly. The cargo transhipment amounted to about 92,600 tonnes in 2011.

This interim report does not describe the Kiel Canal (NOK). As an international waterway the NOK is very important for the transport of cargo into the whole Baltic Sea area, largely from and to the Port of Hamburg, but it does not have a special function for the cross-border transport of goods in the Jutland Corridor.

2.8. Air traffic

The airfield Flensburg-Schäferhaus is the only airfield with a crossborder function in the Schleswig-Holstein part of the Jutland Corridor. Because of its location near the border it is also used by Danish customers. The airfield was already founded in 1910. It has three runways. One runway is made of bitumen has a length of 1,580 m and a weight-bearing of maximum 30 t. Therefore, the airfield is well suited for business charter flights.

Close to the airfield there are charter enterprises which offer commercial and private flights as well as sightseeing flights. Furthermore, Germany’s largest seaplane enterprise has its seat in Flensburg. Flight schools offer lessons for flying airplanes, gliders, ultralight planes and seaplanes as well as for parachuting. Aerial advertisement and hangar places are offered.

Besides, an aviation-technical company (servicing and repair of motorized aircraft) is located on the airfield as well. The fuelling facilities offer AVGAS 100 LL for piston engines as well as jet A 1 (kerosene) for turboprop aircraft and jet engines. The water aerodrome Flensburg-Sonwik in the Flensburg fjord is close by.

Beyond the borders of Schleswig - Holstein the airport of Hamburg-Fuhlsbüttel (Hamburg Airport) is also interesting for Danish travellers. It offers a huge number of German and European destinations as well as some intercontinental connections.

Chapter 3. Development in traffic in the Jutland-corridor from 2000 to today. Figures and facts.

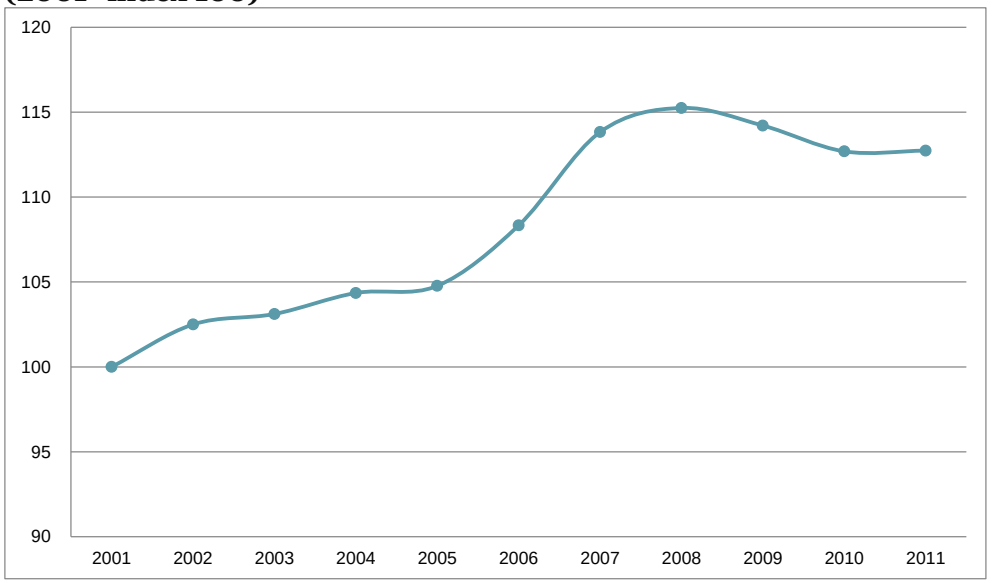
This chapter has its focus on the development in traffic in the Jutland-corridor from approximately 2000 to today. The chapter describes the development in Denmark and Germany respectively.

Denmark:

3.1 Roads:

Developments in traffic concerning roads can be analyzed by using several parameters. For example with traffic performance calculated by the mileage of the various means of transport travels during a period. The traffic performance thereby expresses to what extent the load of traffic affects the infrastructure. Figure 3.1.1 shows the trend in traffic performance (driven km) in southern Jutland. As seen on the figure the traffic has been increased with 15 percent 2001 – 2011.

Figure 3.1.1 Trends in traffic performance in the southern Jutland 2001 – 2011 (2001=index 100)



There is a fall in traffic growth in 2007 due to the financial crisis.

Map 3.1.1 indicates traffic trends based on traffic counting 2000 – 2010 at selected locations on the trunk roads in the southern part of Jutland.

Map 3.1.1 Increase in traffic (in percentage) at selected sites in the southern part of Jutland, 2000 – 2010.

There has been an increase in the number of vehicles passing the two border trunk roads between Denmark and Germany. Figure 3.1.2 shows the trend in the number of vehicles crossing the border and Figure 3.1.3 shows the development in truck traffic across the Danish-German border (northbound) from 2002 – 2011.

Figure 3.1.2 Trends in the number of vehicles passing the Danish-German border in Jutland 2000 - 2011 (2000 = index 100).

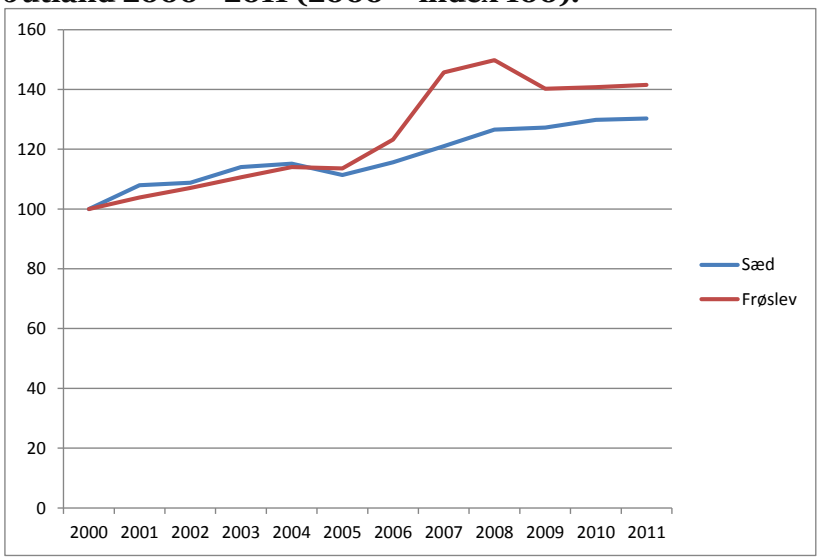


Figure 3.1.3. Development in truck traffic across the Danish-German border (northbound) 2002 - 2011 (Index 100 = 2002)

Source: International Transport Danmark and estimates made by Vejdirektoratet

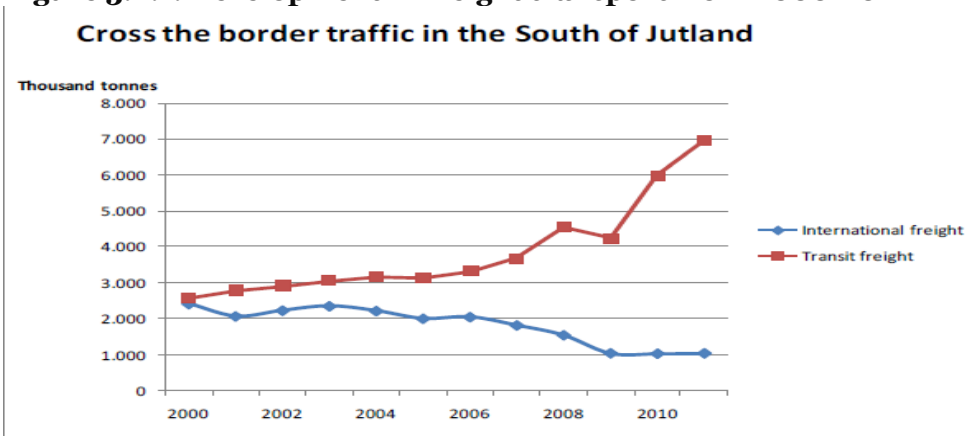
Overall the growth in traffic in southern Jutland is similar to the growth in the rest of Denmark.

3.2 Railway:

Freight transportation
There is an ambition to improve rail road freight transportation in Southern Jutland and across the border. A freight terminal will be established in Esbjerg together with a rail line to the Port of Esbjerg linking railroad freight to sea transport. Recently Vestas has chosen the railway as the preferred way of transport of wind mill wings from Lauchhammer in Germany to the Port of Esbjerg.

The chart below illustrates the development in freight transport (tonnes of cargo) in the period 2000-2011. The railroad freight transit has increased by 270 per cent. The railway freight transportation in and out of Denmark (measured in tonnes) has declined by 57 per cent in the same period.

Figure 3.2.1. Development in freight transport from 2000-2011



Data is from Statistics Denmark. The fraction crossing the border in Southern Jutland is calculated from Danish Transport Authority.

With regard to transit trains, there has been a significant larger increase in transported cargo (tonnes) compared to the increase in number of trains since 2006, which means that trains have become longer in recent years. Between 2006 and 2011 the number of transit trains has increased by 68 per cent while the number of international trains has declined by 39 per cent.

It is estimated that the railway freight transit traffic will increase by 2.4 per cent per year until 2020 and hereafter 3 per cent year until 2027. This will result in 16.2 million tonnes per year in 2030. One fifth of the 16.2 million tonnes are expected to be transported through Jutland to Germany[2].

Passenger transportation

The intercity trains operation every two hours between Copenhagen and Flensburg are the backbone of the railway traffic via Padborg. The trains – operated by DSB – have a German train control system. In Flensburg there are good connections to high speed regional trains to Hamburg, which are to be extended from two-hour traffic to one-hour traffic. In addition two international trains will be established; Århus-Hamburg (-Berlin) and a night train Copenhagen-Amsterdam/Praha/Basel. Out of the 400.000 train passengers travelling across the Padborg border each year, approximately 80 per cent travel to and from Jutland and 20 per cent to and from Funen and Zealand.

On the Tønder-Niebüll rail line, regional trains cross the border every two hours. In Niebüll there are good connections to high speed regional trains to Hamburg. The number of passengers crossing the border by train via Tønder is 80.000 per year that support operation of regional trains[3].

The map beneath depicts annual passenger trips in 1995 and 2010 and shows an increase in number of passengers crossing the border via Padborg. It is not possible to draw conclusions on passenger development on the rail line crossing the border via Tønder due to the lack of data from 1995.

[2] Danish Transport Authority: Den fremtidige omsætning af gods på bane i Danmark
[3] Danish Transport Authority: Hearing edition of the national traffic plan.

Map 3.2.1. Annual passenger trips in 1995 and 2010

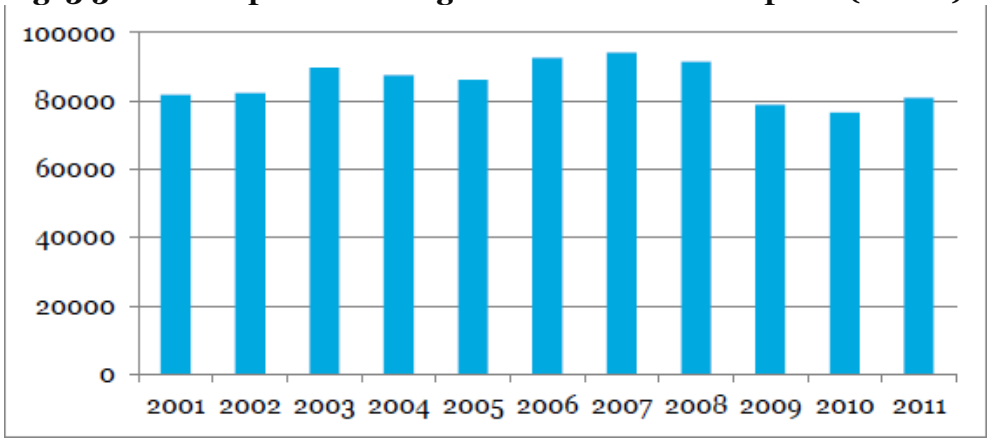
3.3 Ports:

Traffic volumes in South Jutland ports can roughly be divided into two categories; freight and passenger transport.

Freight

In general, Danish ports also felt the consequences of the global economic downturn. Activity in ports and the amount of freight volumes handled entered into a downward trend in the years 2008-2010. After three consecutive years of reduced activity, the pattern appeared to be changing in 2011 as freight volumes grew, albeit cautiously (fig. 3.3.1).

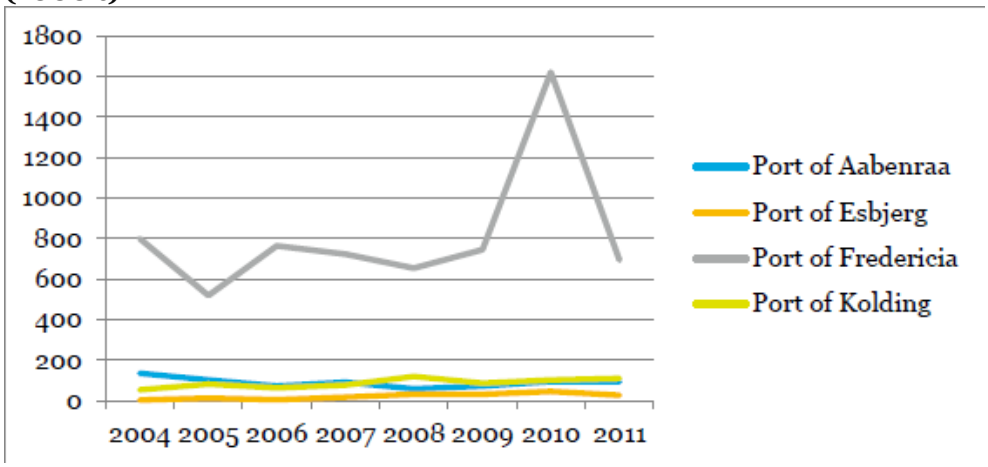
Fig. 3.3.1: Development in freight volumes in Danish ports (1000 t)



Source: Statistics Denmark

In terms of the transport of goods between South Jutland ports and Germany, the impact of the economic downturn is less apparent. Although 2008 did coincide with a slight downwards trend in goods volumes, the development in the subsequent years appears to be less of a result of the general economic climate. According to fig. 3.3.2 the transport of goods between South Jutland ports and Germany are more or less on par with the situation before the global economic downturn.

Fig. 3.3.2: Development in freight volumes between South Jutland ports and Germany (1000 t)



Source: Statistics Denmark

Passenger transport

The ferry service from the port of Esbjerg to the island of Fanø is the busiest domestic service in Denmark. In 2011 the ferry service handled almost 1.7 million passengers and more than 300.000 private cars.

South Jutland is also home to a second domestic ferry link between the island of Als (Fynshav) and Funen (Bøjden). The Fynshav-Bøjden link represents an important alternative to the fixed link across the Little Belt and provides a shortcut to Funen for the border region.

In addition to the domestic South Jutland ferry lines, an international route operates between the island of Rømø (Havneby) and Sylt (List). The 2011 traffic volumes of the Rømø-Sylt link are listed in table 3.3.1. A sizeable passenger transport and the substantial accommodation of bicycles are indicative of the importance of the ferry link to local communities and not least with regard to tourism.

Table 3.3.1: Transport volumes, Rømø-Sylt

	2011
Passengers	293.000
Cars	53.400
Busse	1.200
Lorries	8.300
Bicycles	6.500

Source: Statistics Denmark

3.4 Air traffic – The case of Sønderborg Airport

Sønderborg Airport is owned by Sønderborg Kommune (municipality). The airport was historically tied to the Danish airline Cimber (later Cimber Sterling) which had its head office at the airport and for 46 years served the route to and from Copenhagen until its bankruptcy in May 2012.

The route was immediately taken over by the Danish carrier DAT. In 2011 the airport had about 80.000 passengers whereof about 70.000 used the only scheduled route to and from Copenhagen.

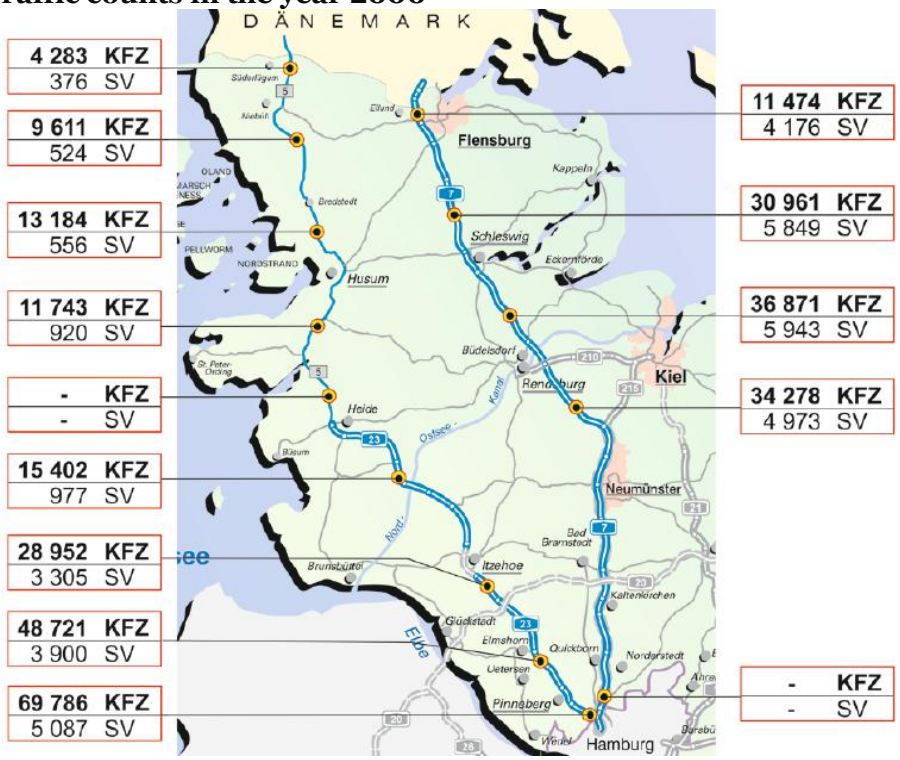
As part of its development plans, in 2010 the airport engaged a consultancy firm to report on the possibilities for changing the airport into a "binational" Danish/German airport, or for other co-operative arrangements, with the main purpose of attracting more passengers from the German side of the border to the existing route to Copenhagen and to new routes that might be created. Within 1 ½ driving hour from the airport live 1.6 million people, whereof 40 per cent in Germany. The analysis has received support from the EU's European Regional Development Fund.

Germany:

3.5. Development in road traffic

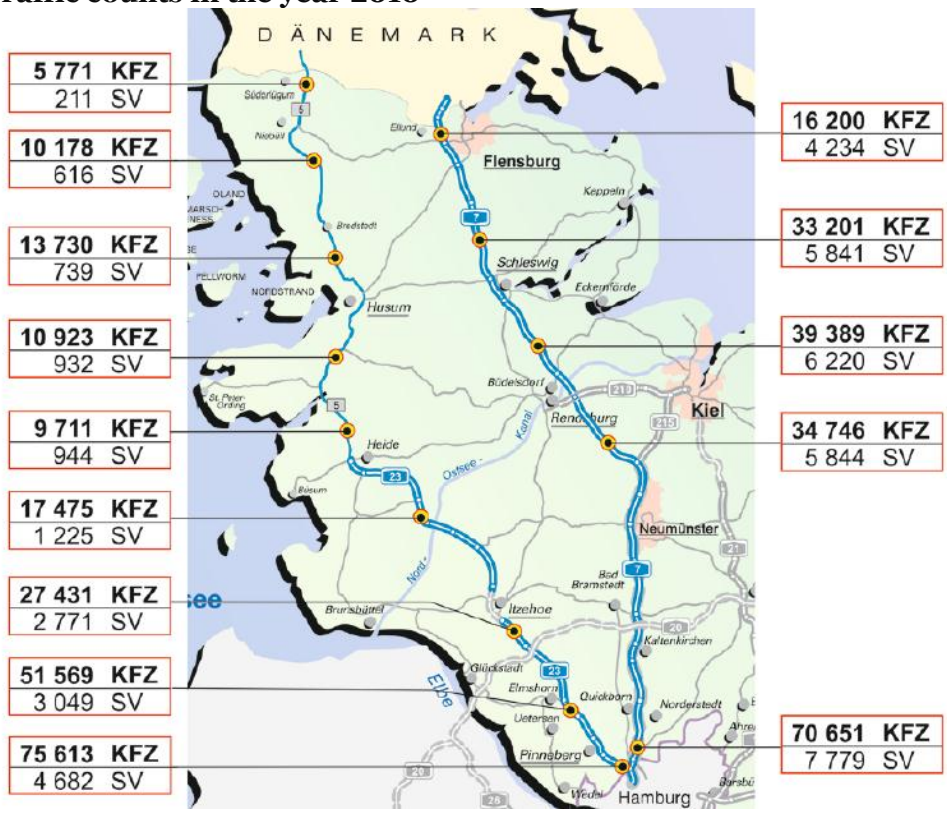
The development of traffic volume in the Jutland Corridor is shown in the following representations. The maps, which are based on Germany-wide traffic counts, present the average traffic per day (Monday to Sunday) expressed in number of vehicles per day. These counts distinguished between:
- KFZ = all types of motor vehicles and
- SV = heavy vehicle traffic (more than 12 tons of weight and busses).

Traffic counts in the year 2000



Traffic counts in the year 2005

Traffic counts in the year 2010



For the A7 it can be concluded that the volume of traffic has risen between the years 2000 and 2010. Especially in the area close to the border the increase is higher than the average. The further south the more moderate was the rise in traffic volume. But still, this trend is no indication of the efficiency of this particular road section given that the absolute congestion rate is higher than in the north.

This entails that the capacity of the A7 north of the interchange A7 / A215 can be considered to be satisfactory. Merely single road sections are critical, as for example the area of the Rader Hochbrücke, the high-level bridge near Rendsburg at certain times. South of the above-mentioned motorway interchange, traffic capacity is regularly overstretched, especially in the area around Neumünster and in the metropolitan area of Hamburg.

There is a similar development concerning the motorway A 23 and the B 5, respectively: over-proportional increases can be observed in the area close to the border; whereas towards the south the increases of traffic are more moderate. Problems on the B 5 are mainly caused by tourist and agricultural traffic in the summer months, especially in the section between Tönning and Bredstedt. South of Heide the quantity of traffic reaches a volume that warrants the profile of a motorway.

Concerning heavy vehicle traffic it can be concluded that the increase in Schleswig-Holstein is only moderate. In the area close to the border there are also over-proportional increases.

3.6. Development in rail traffic

Currently, there are two border crossings between Schleswig-Holstein and Denmark which are used by the local passenger traffic (SPNV), namely Flensburg - Padborg and Niebüll - Tønder. Via the train stations on the Danish border there are through trains from Flensburg to Kolding, Odense, Roskilde and Copenhagen as well as from Niebüll to Esbjerg.

The border crossing at Flensburg - Padborg is used by the SPNV as well as by international long-distance passenger traffic and cargo traffic. While the state is responsible for the SPNV as a so-called “Aufgabenträger”, i.e. operator, it does not have any influence on the long-distance traffic, because this is carried out by Deutsche Bahn AG (DB AG) and the Danish state rail (DSB) serving their own financial interests.

In long-distance traffic 2 pairs of trains (Hamburg-Arhus and Berlin-Arhus) are offered by DB AG und DSB. In addition, there is a night-train from Copenhagen to Basel, Amsterdam and Prague. For the “SPNV” the state Schleswig-Holstein has ordered 9 pairs of trains offering a connection every two hours. The trains are mostly from Flensburg directly to Copenhagen and are driven with a Danish IC3 motor train set. These trains have a standard that is appropriate for long-distance travel and they partly serve as a substitute in this function. The number of passengers travelling daily could be increased since the takeover of the operation by the DSB in 2011 from nearly 250 passengers per day to more than 400 passengers per day.

The border-crossing Niebüll - Tønder was put into operation during the last years for the “SPNV” again with the supply of transport being extended step by step. Currently, there are 10 pairs of trains crossing the border on workdays and 7 on weekends. The service is provided by the railway company of Arriva, a foreign daughter company of the DB AG. The service is mainly used by German pupils who are going to the Danish high school in Tønder. The number of passengers using this line is steadily rising and in

particular in summer there is a big demand by tourists. Since 2006, the demand could be increased substantially. As a model of good cross-border cooperation the Danish Transport Authority is in charge of this section.

The following table shows the development of the average everyday passenger-transport in cross-border passenger traffic, i.e. SPNV:

Railway line	2003	2006	2010	2011
Tønder - Süderlügum	57	98	131	112
Padborg - Flensburg	267	252	262	420

Altogether, the cross-border railway-traffic starting from a low level is developing very successfully. In order to support this trend, there are plans to extend both connections to run every hour in the medium- to long-term.

3.7. Development in shipping

The ferry services between List/Sylt and Havneby/Rømø has developed as follows:

	2000	2010	2011
Transshipment	53.654 t	59.994 t	92.634 t*
Passengers	415.467	421.072	389.563

*Increase in quantity because of some bigger building projects on the island of Sylt

3.8. Development of freight traffic

In the area of the A 7/border crossing Ellund the average everyday quantity of traffic (dtV) has risen from approximately 12,400 vehicles in 2005 to 16,200 in 2010. The share of trucks is approximately 25 per cent. In the area of the B 5/federal border to Denmark the dtV has raised from 4,283 motor vehicles in 2000 to 5,771 vehicles in 2010. The share of trucks is approximately 4 per cent (Source: Traffic count in 2010).

In 2008 the cross-border volume of freight traffic in the German-Danish border region amounted to 23.7 million tons by truck and 6.2 million tons by rail (Source: CB Log).

3.9 Development of air traffic

In the year 2000, there were about 16,600 flight movements counted on the airfield Flensburg-Schäferhaus (takeoffs and landings by airplanes). In 2005 this number amounted to 13,200 and in 2011 to 12,900.

At the airport of Hamburg-Fuhlsbüttel about 165,000 flight movements and some 10 million passengers were counted in 2000. In 2005, the number of flight movements had dropped to about 156,000 (with 10.7 million passengers) and in 2011, there were 158,000 aircraft movements (with 13.5 million

passengers). Nearly 40 per cent of the flights are for business purposes and 55 per cent for private reasons.

In the years 2010 and 2011 the airport of Hamburg registered about 80,000 to 100,000 Danish passengers (journey from Denmark and flight from / to Hamburg, without transfer via Copenhagen). The share of Danish passengers in both years is less than 1 per cent.

Chapter 4. Current infrastructure programmes in Denmark and Germany -Focusing on the Jutland corridor.

Denmark:

In 2009, seven out of eight parties in the Danish Parliament agreed on a number of general principles and concrete initiatives as part of a new green transport policy that applies until 2020. The rolling investment programme allows the political parties behind the agreement to meet regularly and check on the progress of on-going projects, decide new projects and set new priorities. The concept insures that infrastructure projects will be coordinated and prioritised in accordance with the resources available.

As a part of the political agreement from 2009 it has been decided to initiate a long-term planning effort to analyse further large-scale infrastructure demands in the years after 2020 and identify major strategic options for further infrastructure investments beyond 2020.

The strategic analyses focus on three central themes that have a vital impact on the long-term infrastructure planning in Denmark. The three themes are: 1) road system in Jutland, 2) the east-west connections between Jutland, Funen and Zealand, and 3) the ring roads and public transportation in the Greater Copenhagen area. As a part of the analyses a number of specific major roads and rail projects will be considered.

Concerning the road system in Jutland it is clear that the motorway E45 in Eastern Jutland has produced a high level of mobility and economic development in Jutland, as the road connects Jutland from north to south.

Today the overall motorway system serves several types of traffic – which are all growing in volume. This goes for commuter traffic, traffic within and between regions and international traffic flow towards Germany and Europe.

In the long term the traffic growth, however, will engender a need for additional capacity on the E45 from Northern Jutland to the German border. As part of the strategic analyses, two main development strategies for north/southbound road capacity in Jutland have been identified:

- Further development of the motorway capacity in the E45 corridor
- Different models for establishment of a new motorway corridor in Central Jutland.

The strategic analyses are due to be fully completed in late 2013 after which the parties will discuss the results as part of the continuous planning in the transport sector.

In recent years there has also been invested heavily in upgrading the existing rail infrastructure in Denmark. The political accord states that the train must be a viable alternative to the car, and most of the traffic growth in the future must be absorbed by public transport.

Investments have also been made in the European Rail Traffic Management System (ERTMS) that will harmonize the European signal systems and make all Danish rail transport more efficient. Installation will start on early deployment lines in 2017 and 2018 for total testing in commercial service before the main roll-out of the new signalling system. The main roll-out is planned for a period of four years from

2018 through 2021 with an overlap between lines, prioritised according to the traffic level, with roll-out taking place fist on the most heavily used lines.

Cf. paragraph 2.2 it has been decided to upgrade the single track section between Vamdrup and Vojens of 20 km. to double tracks. The upgrade will be finalised ultimo 2015 and will eliminate the bottleneck problems currently limiting the capacity of the rail line North of Tinglev. It has also been decided to electrify the railway between Esbjerg and Lunderskov. This is the first step towards electrification of the most important Danish rail lines. The electrification will provide a modern, cheaper, more stable and environment friendly railway.

Furthermore investments will be made in a program focussing on repairing and replacing rail tracks and bridges in order to improve the reliability.

Finally ports play a key role in terms of Danish international trade. The main share in terms of volume of all imports and exports is transported by ship. This makes ports a central node for freight transport also providing intermodal transport.

Germany:

In Germany the federal transport routes are basically planned and financed by the federal state (Bund). The main strategic planning instrument covering all transport carriers is the Federal Transport Infrastructure Plan (BVWP). The projects are categorised in an “urgent priority” (Vordringlicher Bedarf) and in an “additional need” (Weiterer Bedarf). However, the BVWP is not a finance plan. This means that even the projects anchored in the urgent need do not get their financing "automatically". The existing BVWP from 2003 is underfinanced because of the open gap between the need and the actual finance situation of the federal transport budget since years.

The BVWP is decided by the Federal Government and can be characterized as merely being a recommendation. However, the plan was taken up by German Parliament (Bundestag) for the federal railways and the federal major roads in the so-called "needs plan" (Bedarfsplan), which is an annex to both the Federal Railway Extension Act (Bundesschienenwegeausbaugesetz - BSchwAG) and the Federal Trunk Road Extension Act (Fernstraßenausbaugesetz - FStrAbG). These two laws provide that 5-year plans be drawn up for the concrete realisation of the needs plan. For this purpose the BMVBS compiles so-called “investment framework plans” (Investitionsrahmenplan - IRP) for a period of 5 years. The current IRP is valid for the period 2011 - 2015.

At present the Federal Ministry of Transport, Building and Urban Development (BMVBS) is working on the update of the BVWP which shall be applicable from 2015 and is based especially on a traffic forecast that will be updated for the forecast period up to the year 2030.

State roads (Landesstraßen) are basically financed by the state budget and municipal roads and lanes by the municipalities and counties. For municipal building projects the federal state and the state of Schleswig-Holstein give subsidies under certain conditions according to the German Community Transport Financing Act (Gemeindeverkehrsfinanzierungsgesetz (GVFG).

In the following the most important extension projects are shown.

Roads
Because of the growing traffic volume the A 7 will be developed between the motorway junction Bordesholm and the Elbtunnel in Hamburg from four to six or eight lanes, respectively.

In Schleswig-Holstein the extension is planned on a length of 65 kilometres. The project costs about 290 million €. It is included in the "urgent need" category (Vordringlicher Bedarf) in the BVWP as well as in the IRP 2011-2015. It will be executed in a public-private partnership as a so-called availability model (Verfügbarkeitsmodell), meaning that besides the extension, the private company also takes over the maintenance and the operation service over a period of 30 years. For this a monthly remuneration is paid. Furthermore, bonus-penalty regulations are planned. The project also contains a basic renewal of the existing lanes. To avoid delays as far as possible, 2 lanes per direction can be used by the traffic during the construction period. Therefore, the extension work will be only on one side, while the traffic runs on the other side.

The plan approval decisions of the Schleswig-Holstein sections will be given by the beginning of 2013. The invitation for tenders for the concession for the ÖPP-model is carried out in parallel. The start of construction work is planned for 2014 and the completion for 2018.

In the city of Hamburg 3 sections are planned for the extension to 6 or 8 lanes, partly with coverings. The start of the construction work in Hamburg-Schnelsen is planned for 2014; the last section in Hamburg-Othmarschen will be finished in 2025.

To provide relief for the Hamburg Elbtunnel along the A 7, a northwest bypass of Hamburg including a new link across the river Elbe will be realised with the A 20 in different sections. The A 20 - coming from Mecklenburg-Vorpommern - is already used by traffic to the east of Bad Segeberg. The plan approval decision for the following sections between Weede and Wittenborn (south of Bad Segeberg with the connection to the A 21) has to be decided by the courts so that the realization is in delay. The plan approval decisions for the remaining sections are planned for 2013/14. The A 20 with all sections - albeit in different realization categories – is part of the IRP 2011-2015.

There a several extension projects planned for the A 23 and B 5. The new bridge across the river Stör was finished in June 2010. The demolition work of the old bridge has been carried out since October 2011. The extension between Itzehoe-South and Itzehoe-North (a four lane-extension of the B 5 to the A 23) has been started. The completion of the entire segment including a newly built second bridge across the river Stör is planned for 2015.

In the area of the B 5 between Tönning and Husum the planning of a three-lane-traffic management system has begun. The objective is to raise road safety and to be able to manage additional seasonal traffic. At present, the detailed construction plans are being drawn up, with the beginning of the plan approval procedure being prepared for the first section. The following three sections will be carried out in such a way that a continuous and acceptable construction progress is possible. The project is financed outside the IRP.

To strengthen the competitiveness of the west coast area, the BVWP-project "B 5 bypass Hattstedt – Bredstedt" will additionally be realised. The plan approval procedure was decided on 30 March 2012, but is pending at court. The result of the legal proceedings needs to be awaited. The project is contained in the IRP.

The state government is of the opinion that the current and the medium-term expected traffic volume on the B 5 north of Heide to the Danish border does not warrant an extension similar to a four-lane motorway like it is demanded by the region.

Railway
The following extension projects are planned for the Jutland line:

- Extension and modernisation of the railway station Elmshorn with the construction of a fourth platform line
- Improvement of the suburban railroad connection from Hamburg to Elmshorn.

The projects are incorporated in the BVWP but not financed as yet.
For the marsh railway line the State of Schleswig-Holstein has the following objectives:

- Complete double-track extension and electrification between Itzehoe and Westerland.

The project is not contained in the BVWP and is not financed.

For the track Niebüll-Tønder there are no extension plans.

Shipping
To the best of the State Government's knowledge no extension projects are planned for the cross-border traffic.

Air traffic
To the best of the State Government's knowledge no extension projects are planned for the airfield Flensburg-Schäferhaus.