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● LAHOLM  
● LUND  
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● FALKENBERG  
● HALDEN  
● ÖXNERED  
● TROLLHÄTTAN

# THE SCANDINAVIAN 8 MILLION CITY

► FINAL REPORT 2014

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● SARPSBORG  
● LÜBECK  
● SKI  
● OSLO  
● KUNGSBACKA  
● LANDSKRONA  
● COPENHAGEN AIRPORT  
● ED  
● ØRESTAD  
● OLDENBURG  
● HELSINGBORG  
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● VARBERG  
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● VORDINGBORG  
● HALMSTAD  
● GOTHEBURG



THE SCANDINAVIAN  
**8 MILLION CITY**

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▶ **FINAL REPORT 2014**



TRONDHEIM

BERGEN

OSLO

STOCKHOLM

HELSINKI

STAVANGER

HALDEN

TROLLHÄTTAN

GOTHENBURG

BORÅS

JÖNKÖPING

LINKÖPING

NORRKÖPING

AARHUS

HALMSTAD

HELINGSBORG

COPENHAGEN

MALMÖ

HAMBURG

# THE SCANDINAVIAN 8 MILLION CITY – A MULTI-FACETED PROJECT

‘THE SCANDINAVIAN 8 million city’ is an EU project which was carried out in the framework of the Scandinavian Arena. The purpose was to make the most of the unique potential which the Oslo–Gothenburg–Copenhagen corridor offers Scandinavia. The task of the project was to evaluate the possibilities of linking together the regions along the Oslo–Gothenburg–Copenhagen route into a cohesive, functional employment market by modernising and expanding the railway infrastructure.

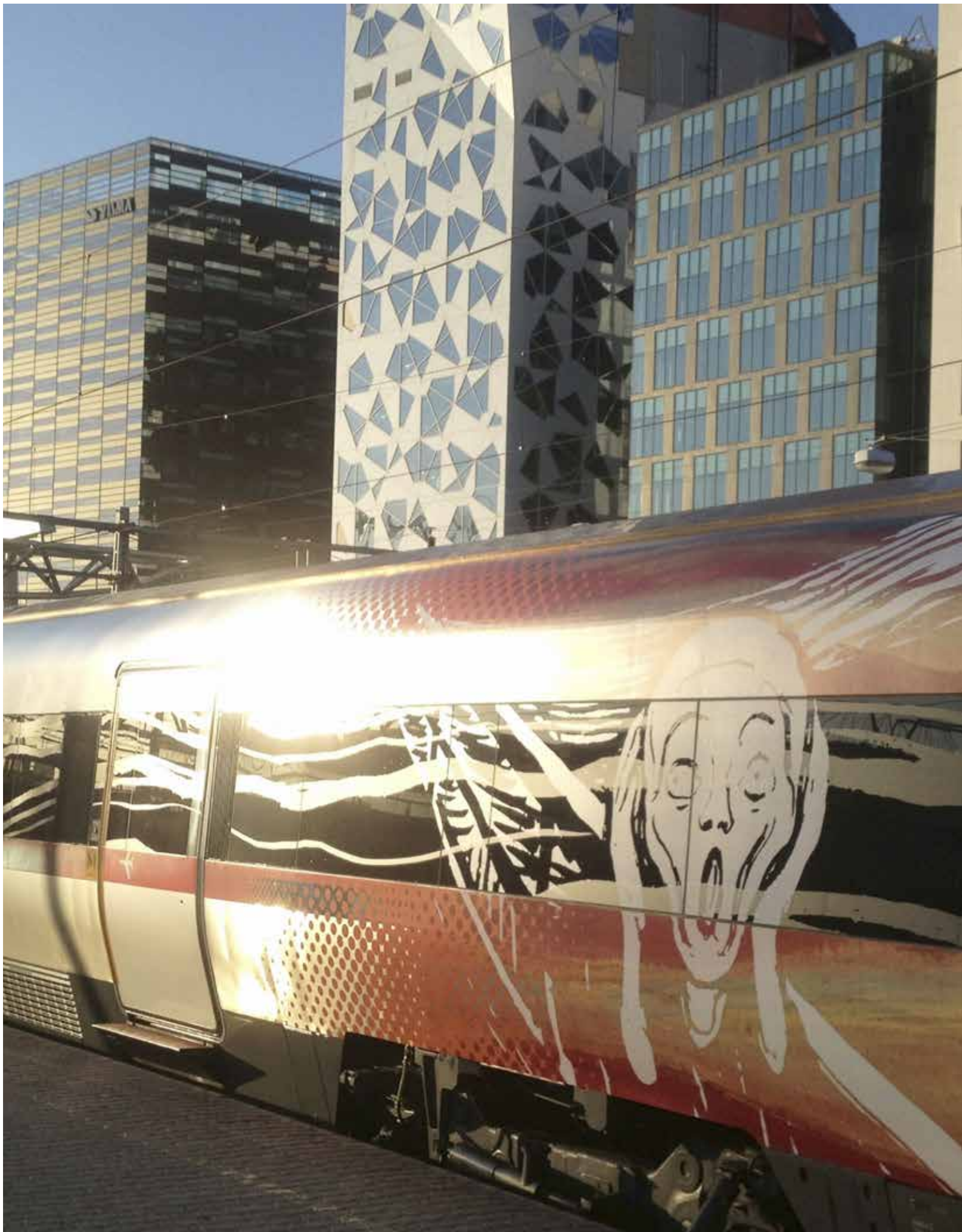
The background to this is that the Scandinavian cities and regions are each, in themselves, too small to be able to compete in the global market. Today, new jobs and economic growth are created primarily in the world’s major conurbations. Access to expertise and a qualified workforce requires a large population.

THE PROJECT ANALYSES point to the need for a joint cross-border plan for railway investment in Scandinavia, and show that it is possible to create a new Scandinavian transport system for both freight and passenger traffic. What is needed is political cooperation and joint investment. It is feasible to create a cohesive labour market in the Oslo–Gothenburg–Copenhagen corridor. But this is subject to the following requirements:

- ▶ Joint cross-border planning of the rail network between Norway, Sweden and Denmark, along with harmonisation of regulations.
- ▶ The railway network should be used as far as possible for freight transport. Reliable, environment-friendly transport contributes to the global competitiveness of industry, and is necessary in order for national environmental targets to be achieved.
- ▶ A new InterCity concept, linking intermediate regions to the large labour markets. This will give everyone, regardless of where they live, access to everything the corridor has to offer in respect of jobs, higher education, culture, countryside and more besides.
- ▶ An efficient high-speed train connecting the major labour markets of Oslo, Gothenburg and Copenhagen by reducing Oslo–Copenhagen journey times to less than three hours.

THERE IS NO doubt of the need for large-scale, step-by-step expansion of both existing and new rail infrastructure in the corridor. Nor is there any doubt of the urgency of this need. When the Fehmarn Belt connection opens in 2021, the Scandinavian countries will have the possibility of a fast, direct link with railways in the rest of Europe and the prioritised TEN-T network.

A modern cross-border infrastructure plays a decisive role for growth and competitiveness, in both the short and the long term. Today, each country plans its own infrastructure, which means that rail traffic in the corridor cannot be fully exploited as a reliable, efficient and sustainable transport system. Any delay in the necessary investment will hinder growth and social development in the Scandinavian corridor.





### **A potential European metropolis**

The concept of the 'Scandinavian 8 million city' captures the potential which exists for using high-quality investments in infrastructure and the rail network to link Scandinavia together as a cohesive functional region. The Öresund region, with its population size and density – just under 4 million – is Scandinavia's largest region, but it is nevertheless small on an international scale. There is no European conurbation among the world's 20 largest; the EU's largest regions, London and Paris, occupy 24<sup>th</sup> and 26<sup>th</sup> positions.

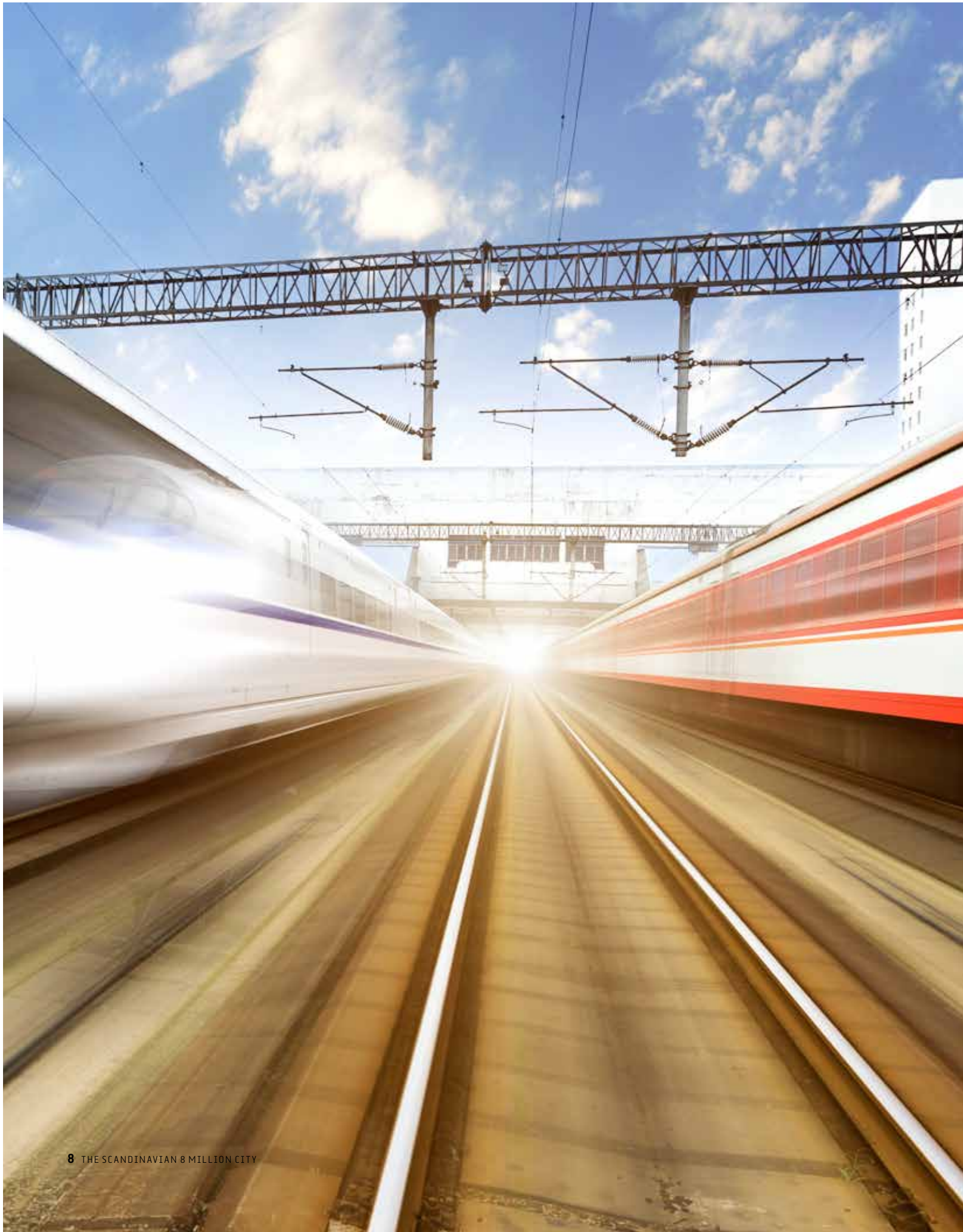
75 PER CENT of global economic growth is currently taking place in countries very distant from Scandinavia. While the new economies continue to climb in the World Economic Forum's ranking, the European countries are lagging

behind. The future, it is said, belongs to functional, creative conurbations – metropolises.

### **The future is in functional regions**

For small export-driven economies such as the Scandinavian countries, this will bring great challenges in the future. With increasing international competition, in everything from access to a qualified workforce and company set-ups to expert research and innovation clusters, there is a need for a considerably larger population than Scandinavia's capital cities have today.

In many important areas, the Öresund region is already considered to have the potential to mobilise sufficient strength to function as a European conurbation. Linking the Öresund region together with the Gothenburg and Oslo regions achieves further dynamic effects, since





it entails the bonding of regions which are already, today, notably strong in terms of labour markets, education, research and industry.

### **Potential for expertise**

The region is characterised by vigorous population growth and significant economic activity. In recent decades, this has become increasingly concentrated around the cities in the corridor. It now consists of a number of broad labour markets, together employing around 3.5 million people. The labour force has, collectively, an increasing level of education, in parallel with the structural transformation which industry in the corridor is undergoing. There is a continuous and significant switch from traditional (simpler) manufacturing industry and agriculture to knowledge-intensive economic activity. Industry in the corridor is distinguished by a high degree of specialisation among service companies and advanced industry. Examples of specialisation include pharmaceutical production, the food industry, information and communication, architecture and engineering.

In this context it is, nevertheless, important to emphasise that manufacturing industry still accounts for the largest net Swedish exports. Industrial production in the corridor is extremely important. Mapping of industrial production over time also shows that this production is taking place increasingly outside the capital cities; industrial growth is taking place increasingly in the regions.

### **Science for society**

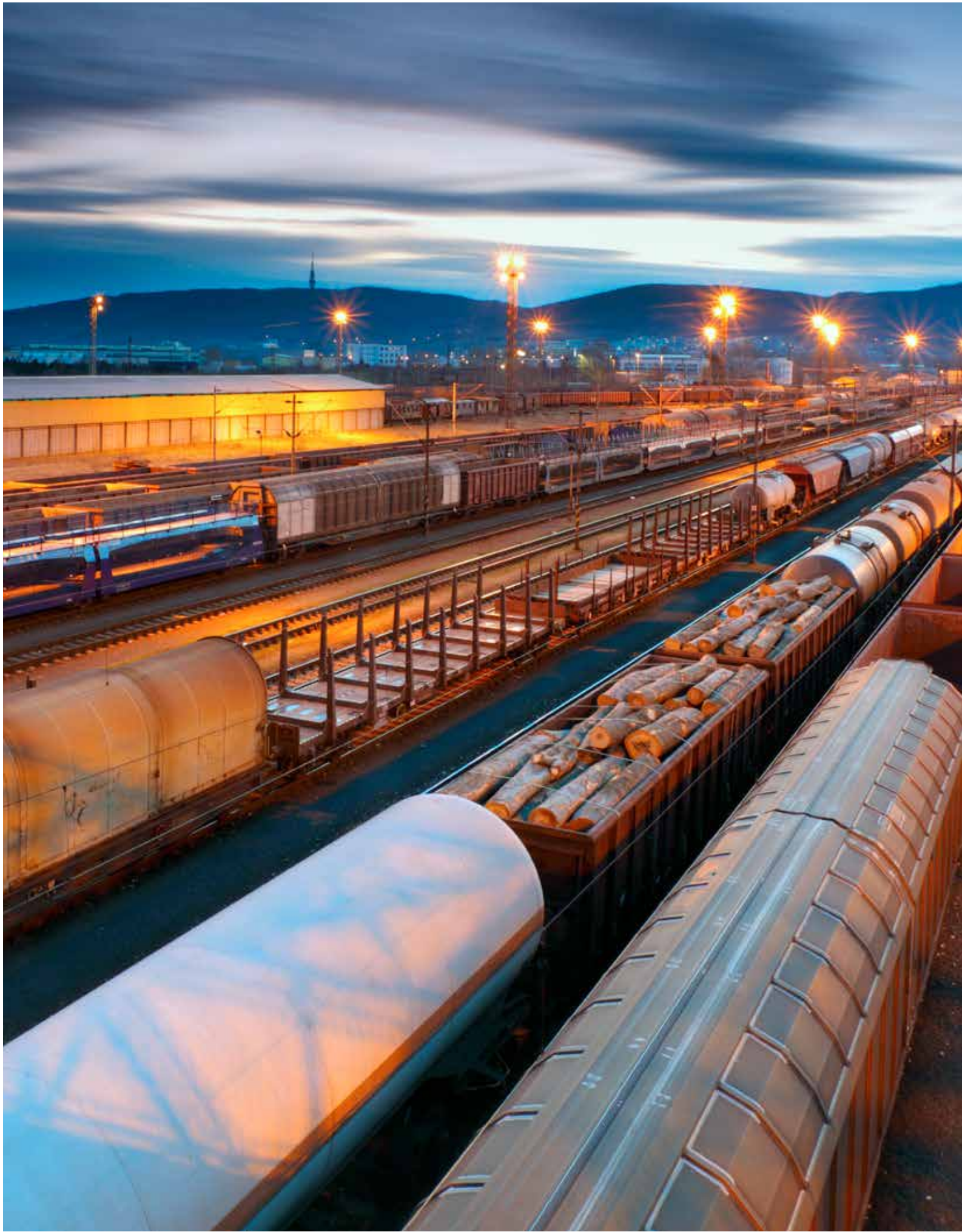
In the geographical area along the Oslo–Gothenburg–Copenhagen route there are currently 29 universities with around 260,000 students and 14,000 researchers. With its 22 research parks and incubators, the corridor already stands out as a cohesive Scandinavian

belt of knowledge and competence. This status will be further enhanced in the coming years, as the globally unique research facilities European Spallation Source (ESS) and MAX IV (Microtron Accelerator for X-rays) come into operation in Lund, Sweden, with an office for data processing in Copenhagen. These set-ups will, it is thought, have broad spin-off effects in terms of a strong climate of innovation and increased competitiveness for investments, industrial initiatives and the development of a dynamic research community.

### **A new rail traffic system – a smart way forwards**

The demand for both passenger and freight transport by rail is estimated to double between now and 2030. Joint planning of infrastructure across borders enables the achievement of results which are not possible if the three countries continue to work individually. The inter-regional EU project 'The Scandinavian 8 million city' shows how the introduction of the InterCity system can halve the current journey time between Oslo and Copenhagen, from around 8 hours to around 4 hours. By investing in a high-speed train running on its own tracks parallel to the existing railway, the end-to-end journey time can be reduced even further – to around 2.5 hours. At the same time, this frees up capacity for freight transport and regional trains. Moreover, when freight transport is transferred from road to rail, road congestion is eased, traffic safety is improved, and only then can the countries' national environmental and climate targets be achieved.

Thus, both railway systems are needed in order to enable both short journey times for passenger traffic and sufficient capacity for freight traffic.



# TODAY'S RAIL NETWORK – A HINDRANCE TO GROWTH

In order for the 'Scandinavian 8 million city' to become a reality, various investments are required in a number of areas:

## From road to rail – a boost for both trade and the environment

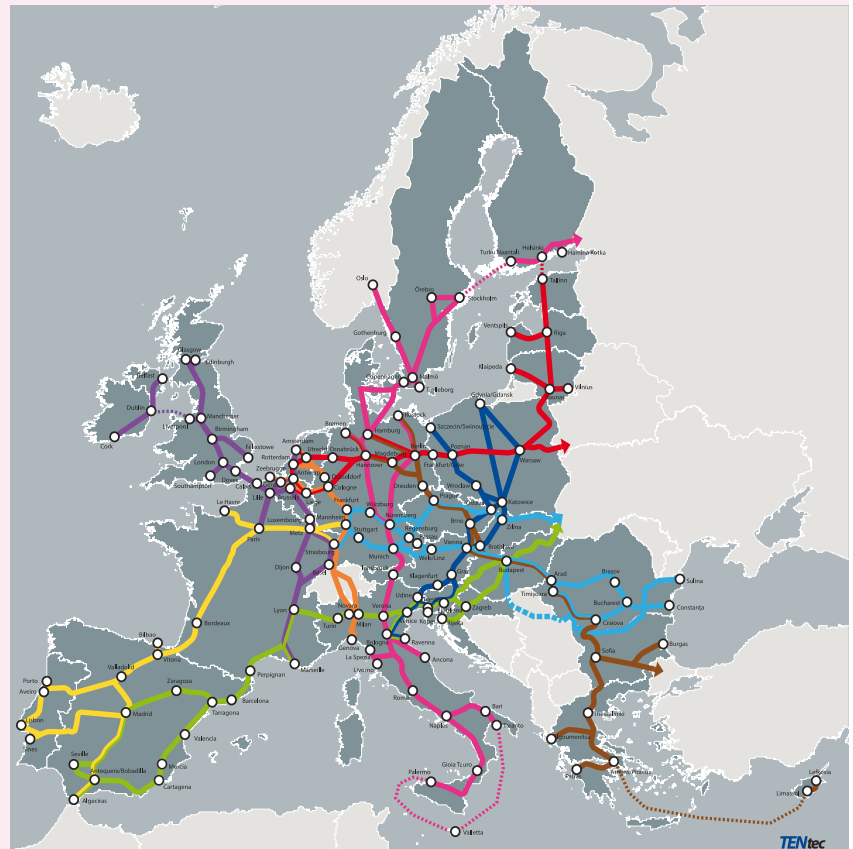
Industry needs improved capacity and greater reliability in the rail network in order to increase the proportion of transport by rail.

**BOTTLENECKS ALONG THE ROUTE**, especially on single-track sections and around the cities, must be eliminated.

**INVESTMENT IN RAIL** is needed immediately to enable more rail transport and relieve the pressure on main roads.

**REGULATIONS GOVERNING CROSS-BORDER** freight traffic by rail must be harmonised and simplified.

**RAILWAY TECHNICAL STANDARDS** must be harmonised. The weakest link puts a limit on what transport can be effected along the whole length of the route. After investments in double track, and unified rules and standards, the transportation capacity of the railway can be improved and we will gain more environment-friendly transport in the corridor.



- |   |  |   |
|---|--|---|
| <span style="color: blue;">●</span> BALTIC - ADRIATIC | <span style="color: brown;">●</span> ORIENT - EAST MED           | <span style="color: yellow;">●</span> ATLANTIC                |
| <span style="color: red;">●</span> NORTH SEA - BALTIC | <span style="color: pink;">●</span> SCANDINAVIAN - MEDITERRANEAN | <span style="color: purple;">●</span> NORTH SEA-MEDITERRANEAN |
| <span style="color: green;">●</span> MEDITERRANEAN    | <span style="color: orange;">●</span> RHINE-ALPINE               | <span style="color: cyan;">●</span> RHINE-DANUBE              |

**PRIORITY TRANSPORT CORRIDOR.** The Oslo-Gothenburg-Malmö-Copenhagen-Hamburg corridor is an important link in the TEN-T network, and a priority freight corridor.

### New train system for passenger journeys - reduced journey times

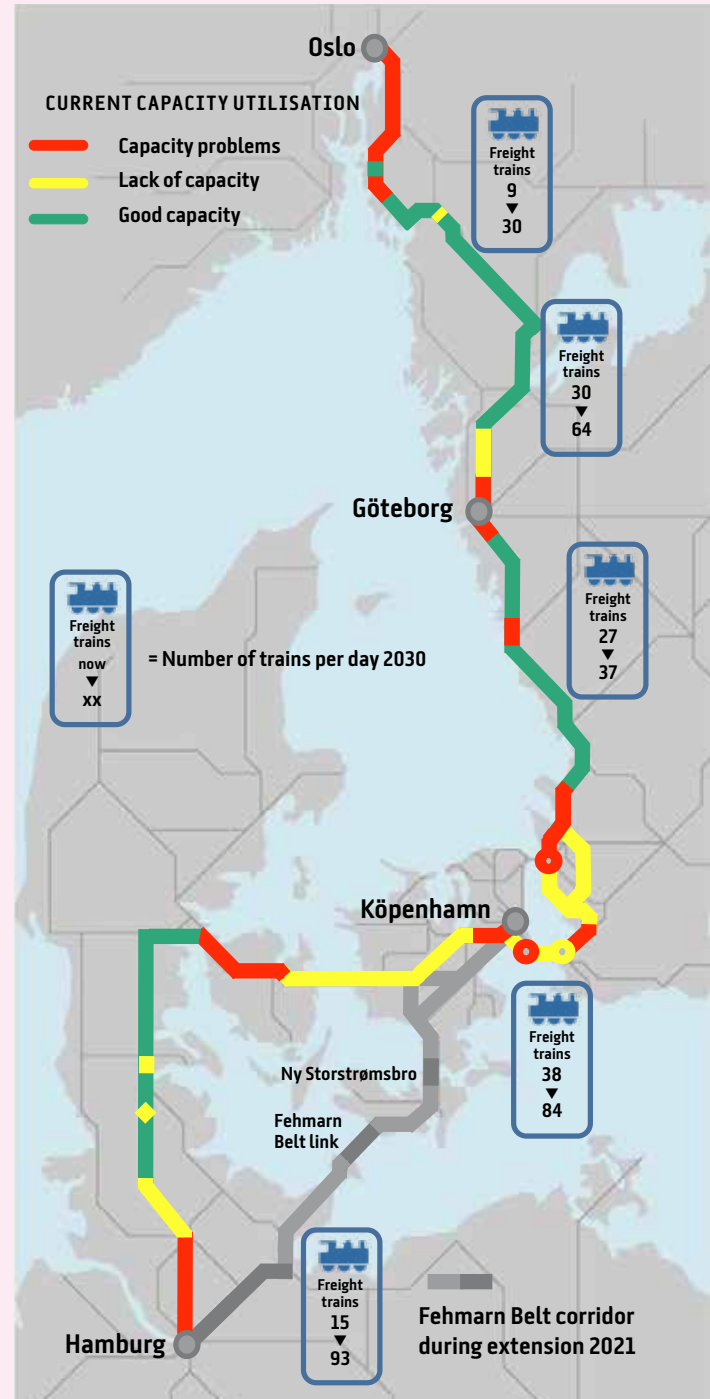
With double-tracking of the Oslo–Copenhagen line for 250 km/h, the present journey time by train can be halved by the introduction of the InterCityX system.

INTERCITYX NEEDS TO be complemented by other InterCity systems on the Oslo–Gothenburg, Gothenburg–Copenhagen and Copenhagen–Hamburg sections.

THE COST OF upgrading the entire Oslo–Hamburg route is estimated at 23 billion euro, of which 18.3 billion is included in current national plans.

TRACK CAPACITY UTILISATION will be high, especially around cities, and further capacity enhancements in the form of additional tracks should be prepared.

IT IS IMPORTANT that infrastructure expansion is coordinated between the countries, with regard to both timescale and technical standard.



## Increased capacity

### - increased competitiveness:

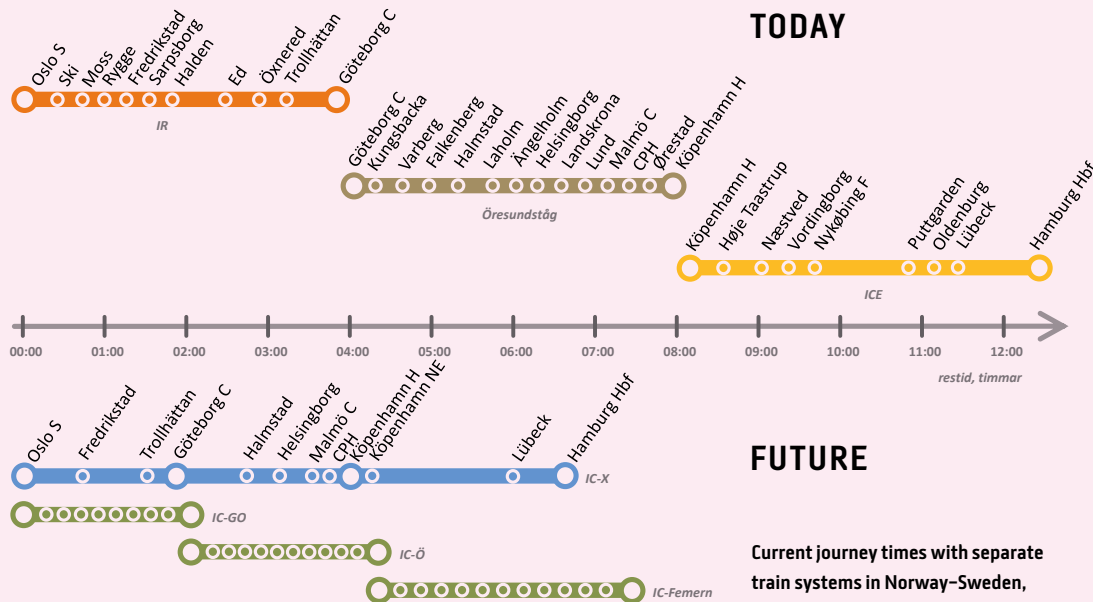
A high-speed railway between Oslo and Copenhagen can reduce journey times by train to around 2.5 hours. This will create a cohesive region, with 8 million inhabitants, which can be competitive in the global market.

AS REDUCED JOURNEY times bring the various parts of the region closer together, the labour markets around the three major conurbations are extended, and most areas in the corridor gain access to two major labour markets.

THIS INCREASED ACCESS creates the conditions for regional growth, as it becomes attractive for companies to set up here and for people to settle here.

WITH A HIGH-SPEED railway on either the whole route or parts of it, complementing the conventional railway, the rail network gains increased capacity for freight traffic and regional passenger traffic. At the same time, long-distance train traffic benefits from shorter journey times and thereby becomes competitive with other types of traffic in the corridor.

A HIGHER PROPORTION of journeys and freight transport by rail contributes to a better environment through reduced emissions and safer road traffic. Freight can move from road to rail, and passenger journeys from car and plane to train.



## TODAY

## FUTURE

Current journey times with separate train systems in Norway-Sweden, Sweden-Denmark and Denmark-Germany, compared with a cohesive Intercity X system with feeder lines (all stations shown in table).



**Published by**

The Scandinavian 8 Million City

**Website [www.8millioncity.com](http://www.8millioncity.com)**

This is a short version of the final report of the EU project 'The Scandinavian 8 Million City', which is, in its turn, an overall summary of the results and conclusions of a large number of analyses and investigations carried out within the framework of the project between 2012 and 2014. More detailed information can be found in these reports, which can be accessed at [www.8millioncity.com](http://www.8millioncity.com).



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# THE SCANDINAVIAN 8 MILLION CITY

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