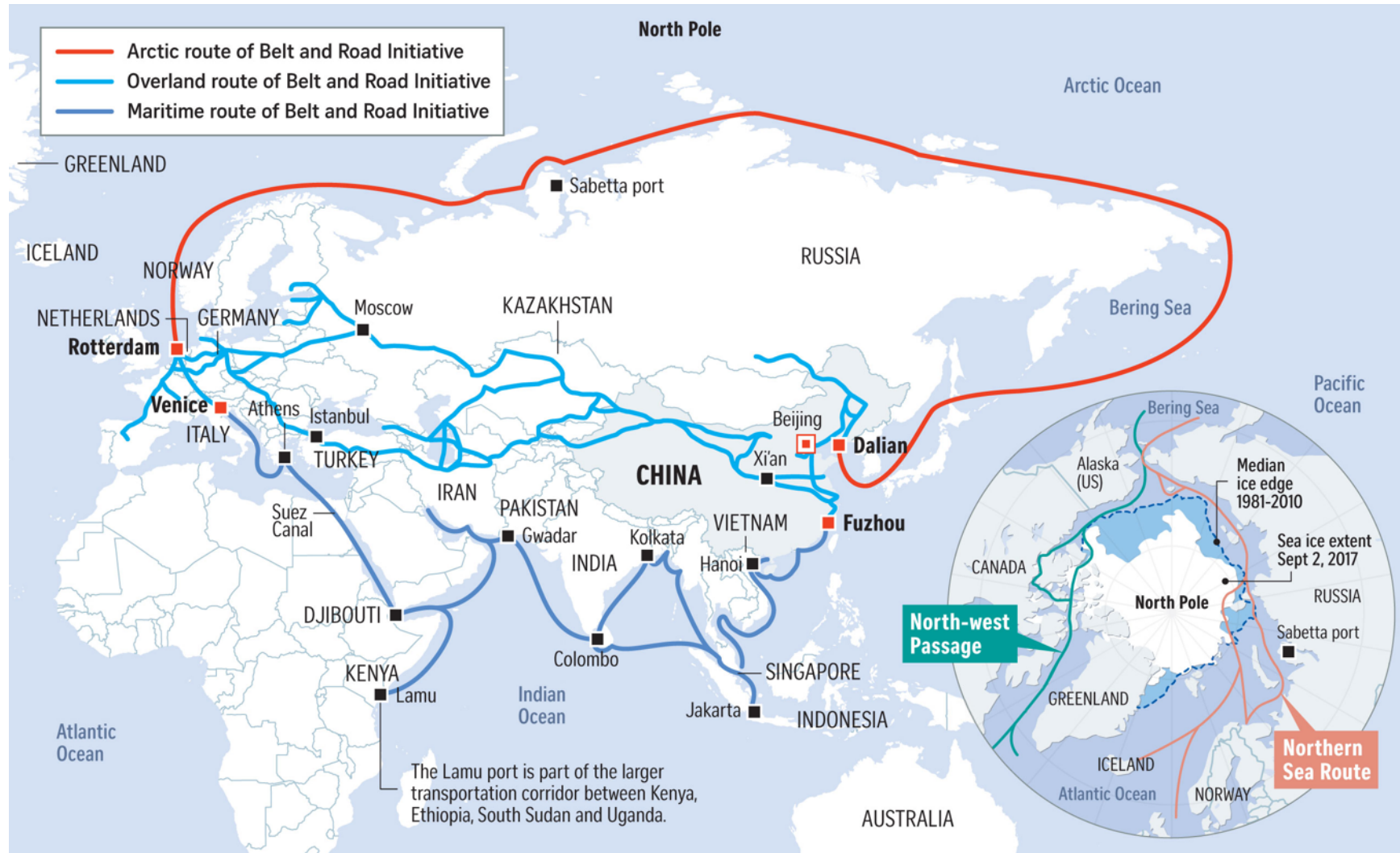


Scandinavian Borderland connected with high speed

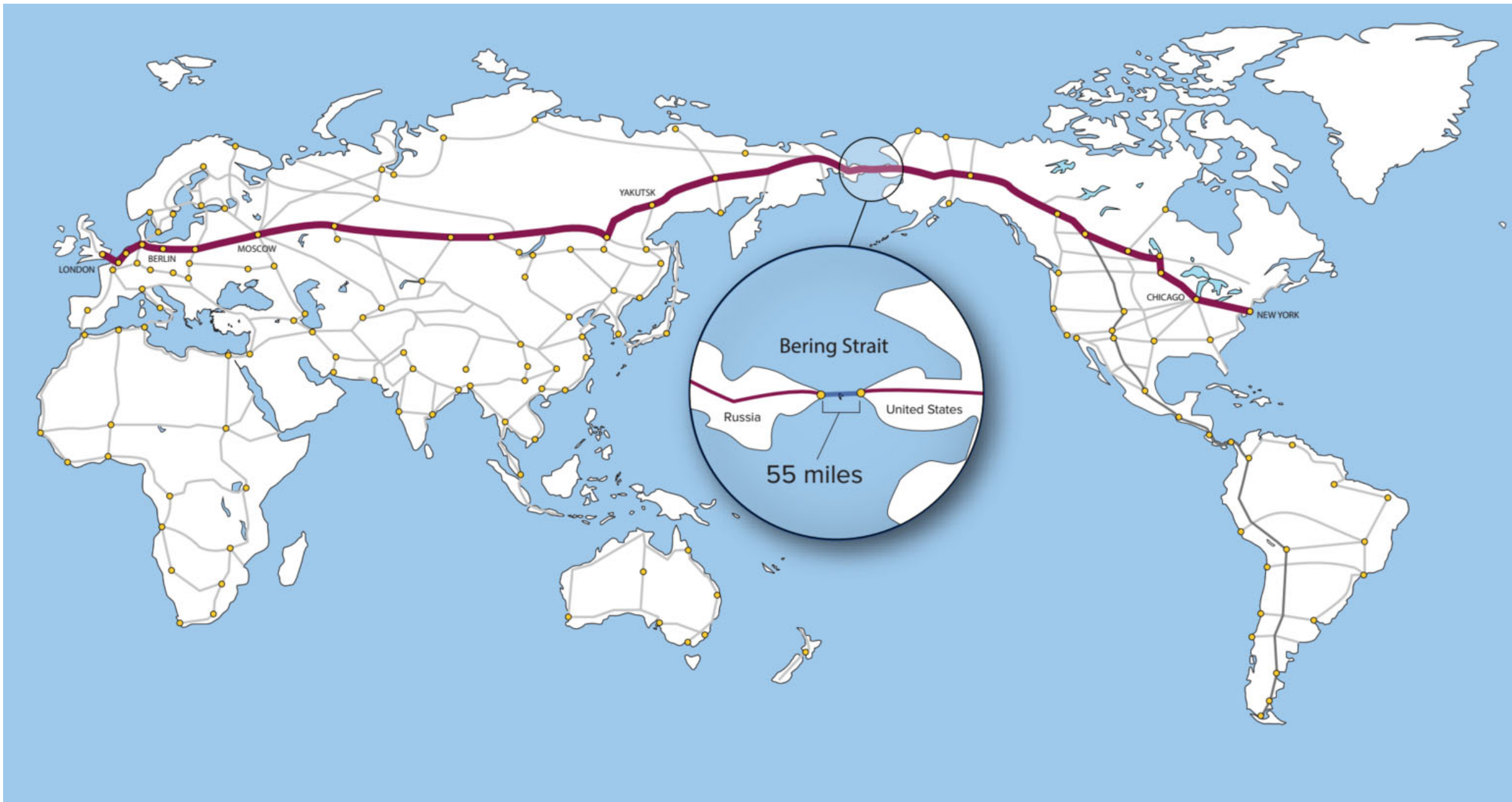
Alf S. Johansen
Project coordinator

Nordic regions should take part in the global change



NOTE: September is the end of summer in the North Pole when the frozen lid of sea ice tends to shrink to its smallest. Unlike the Antarctica, there is no land under the frozen Arctic ice.

Sources: CHINA'S NATIONAL DEVELOPMENT AND REFORM COMMISSION, THE ARCTIC INSTITUTE, NATIONAL SNOW AND ICE DATA CENTRE, REUTERS STRAITS TIMES GRAPHICS



NYA SIDENVÄGEN

- Järnvägstrafiken Kouvola Xian är redan i gång



CONCEPTS



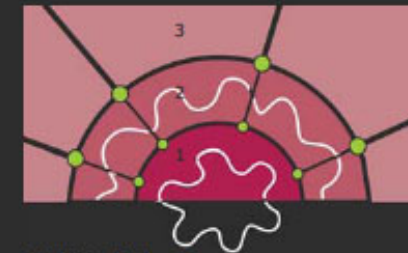
MAIN CORRIDORS OF MOVEMENT AND DEVELOPMENT IN SOUTHERN FINLAND

- South Finland Corridor (Stockholm - Turku - Lahti - St Petersburg)
- Coast Corridor, fast passenger trains (Stockholm - Turku - Helsinki - Kotka - St Petersburg)
- Europe Corridor (Helsinki - Tallinn/Baltic)
- Lake Finland Corridor (Helsinki - Lahti - Mikkeli)
- Inner Finland Corridor (Helsinki - Hämeenlinna - Tampere)
- Logistic Corridor (Hanko - Lohja - Hyvinkää - Mäntsälä)

METROPOLIS ROAD HIERARCHY



METROPOLIS FORMS OF TRAFFIC



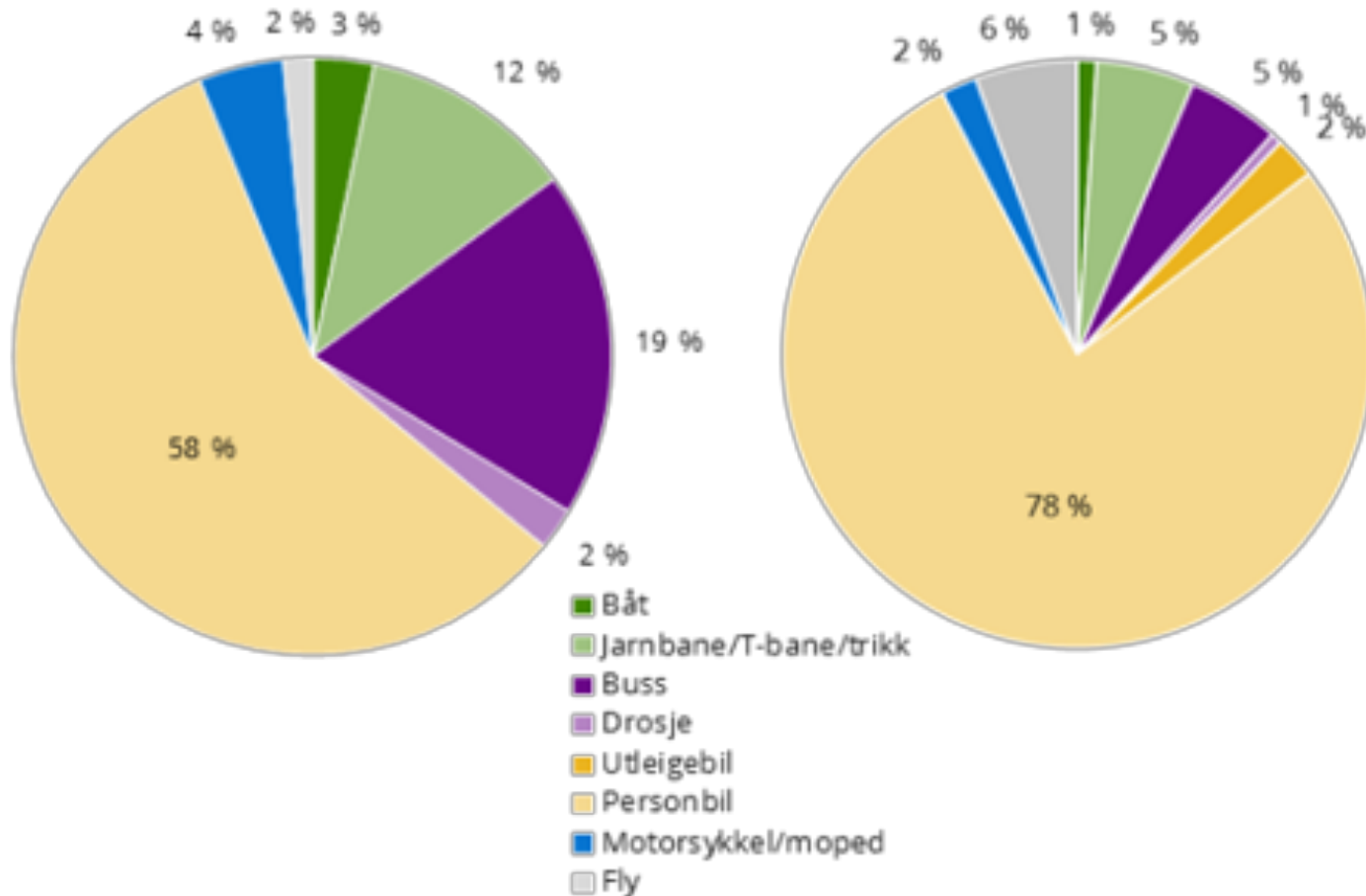
1. Pedestrian, bicycle, rail
2. Ecobus feeding traffic, pedestrian, bicycle, rail
3. Personalized public feeding transport, private cars, light traffic and rails



Delen til transportformer av alle personkilometer. Noreg. 1965 og 2015. Prosent

Alle personkilometer i 1965: 17 milliardar

Alle personkilometer i 2015: 80 milliarder



Kjelde: Statistisk sentralbyrå (Innenlandske transportytelser).

Norwegian
railways' share
is declining:

From 12%, 1965

To 5 %, 2015

Constructed in 1896

Main railway Oslo-
Gothenburg in 2018
in Halden (Østfold region)

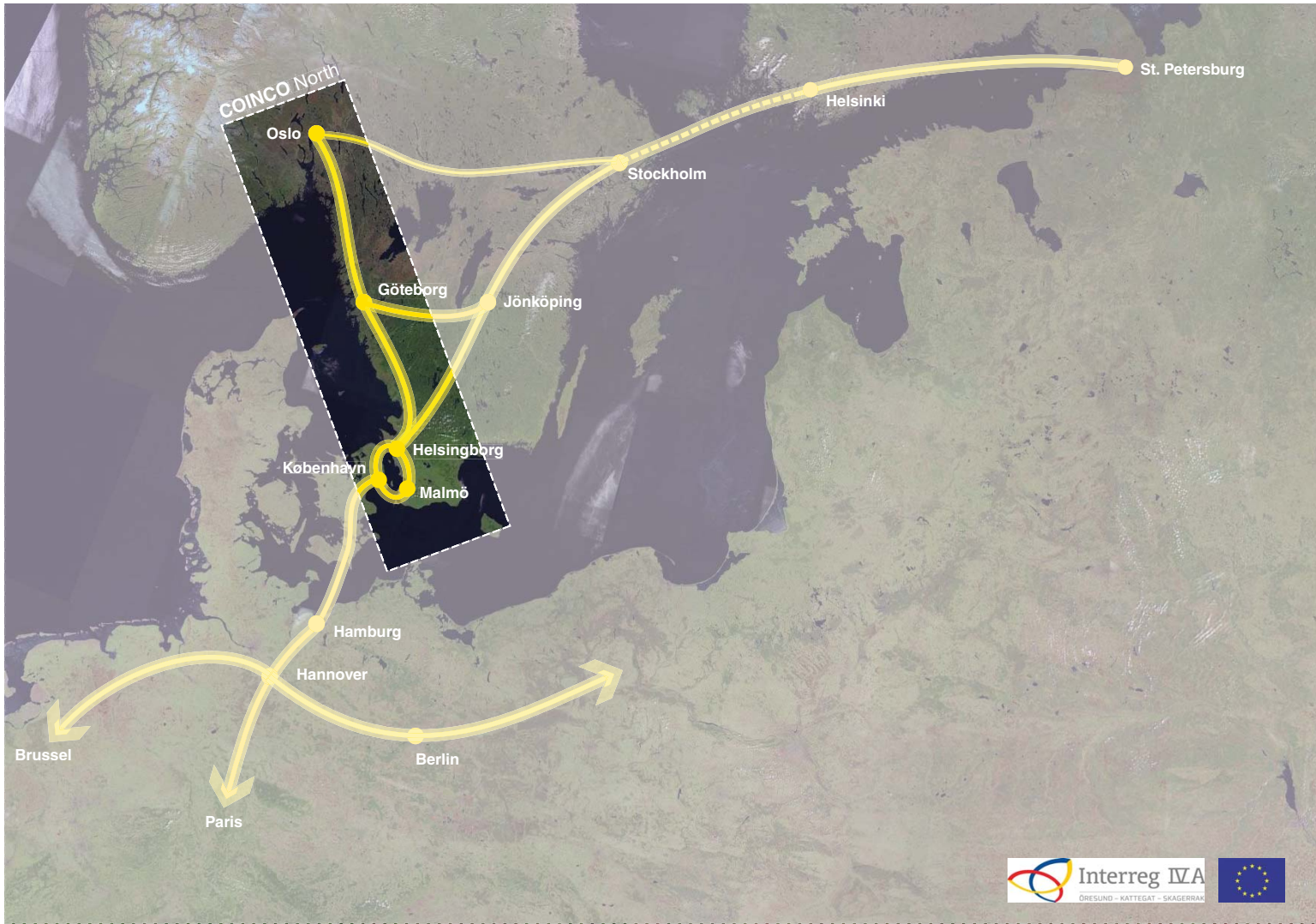


Constructed 100 years later with «same» geometri

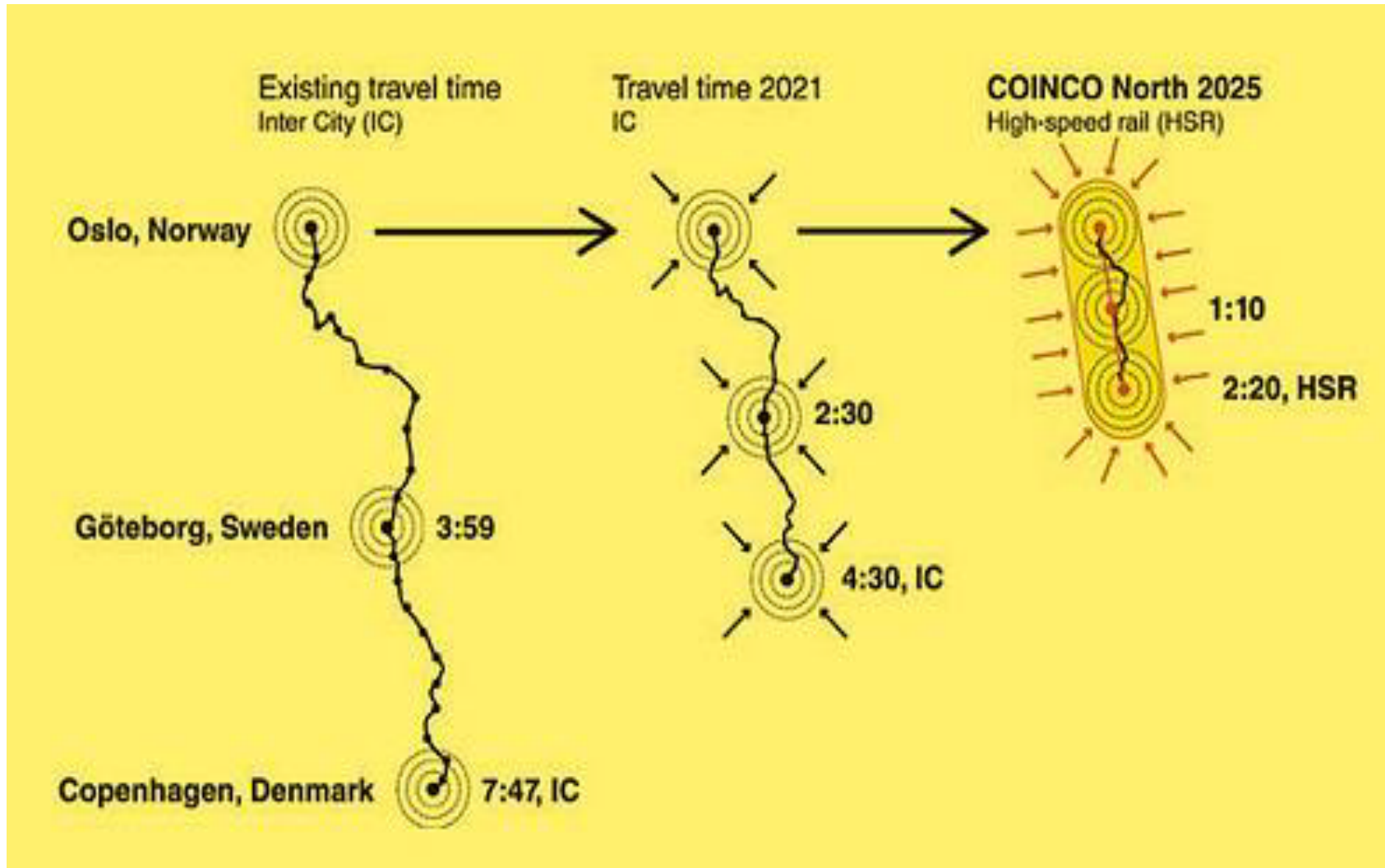


New railways will provide new times, and regional change



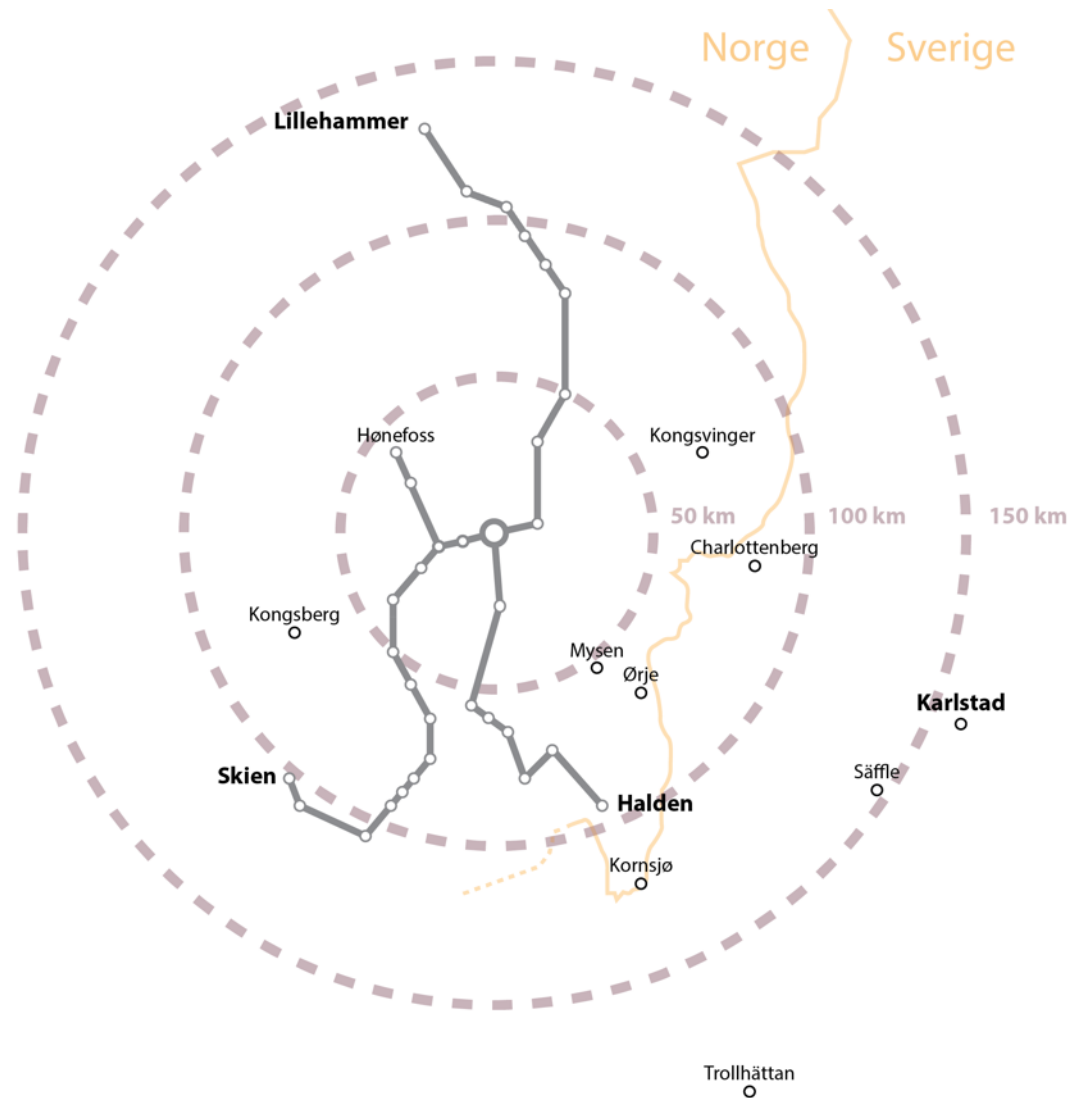


COINCO North's vision, brave and forgotten !



8 mill city

The Oslo region-perspective

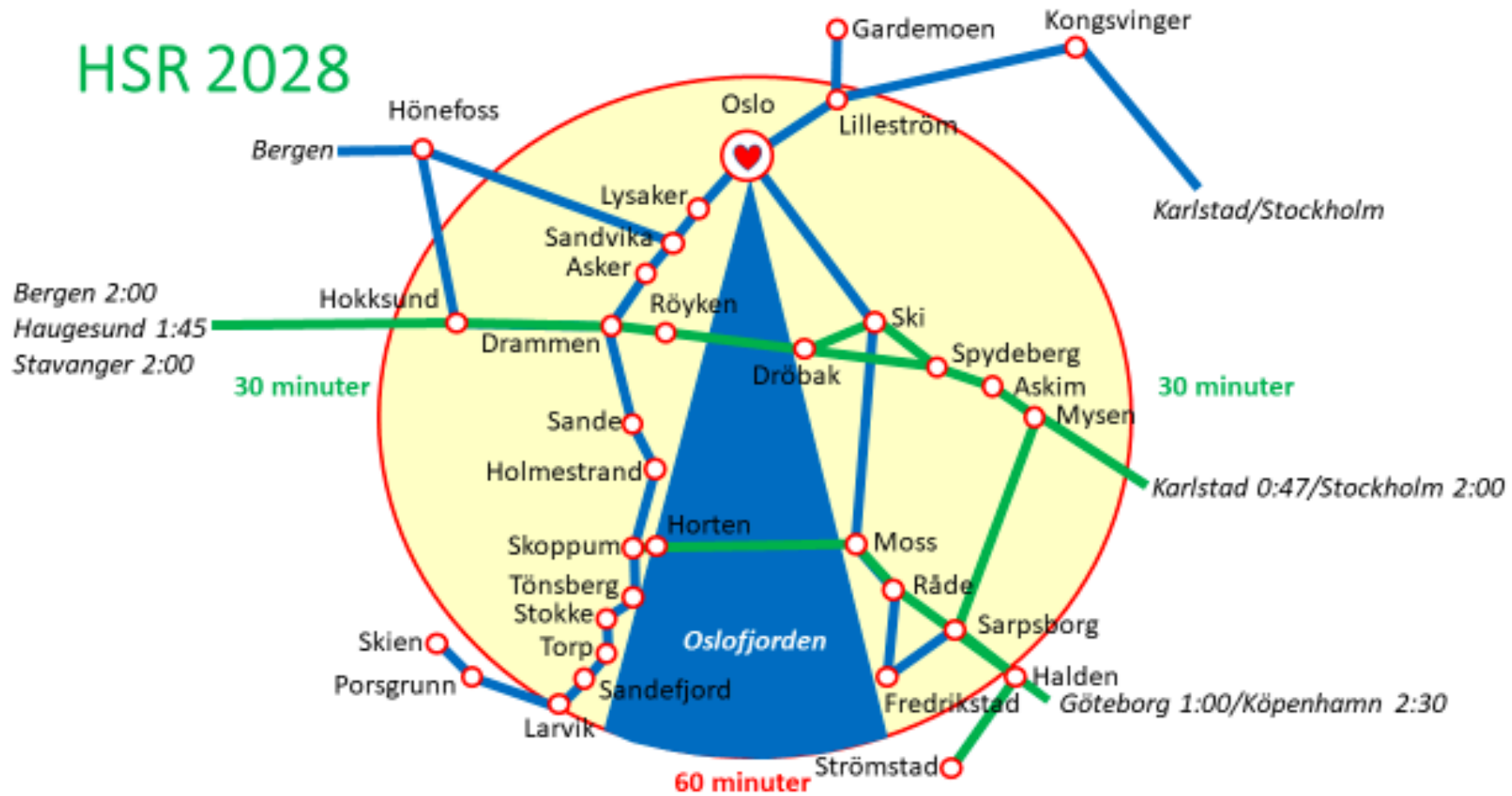


Central Scandinavia
= 15 millions in 2080

HSR is the key to make
it work in a sustainable
way



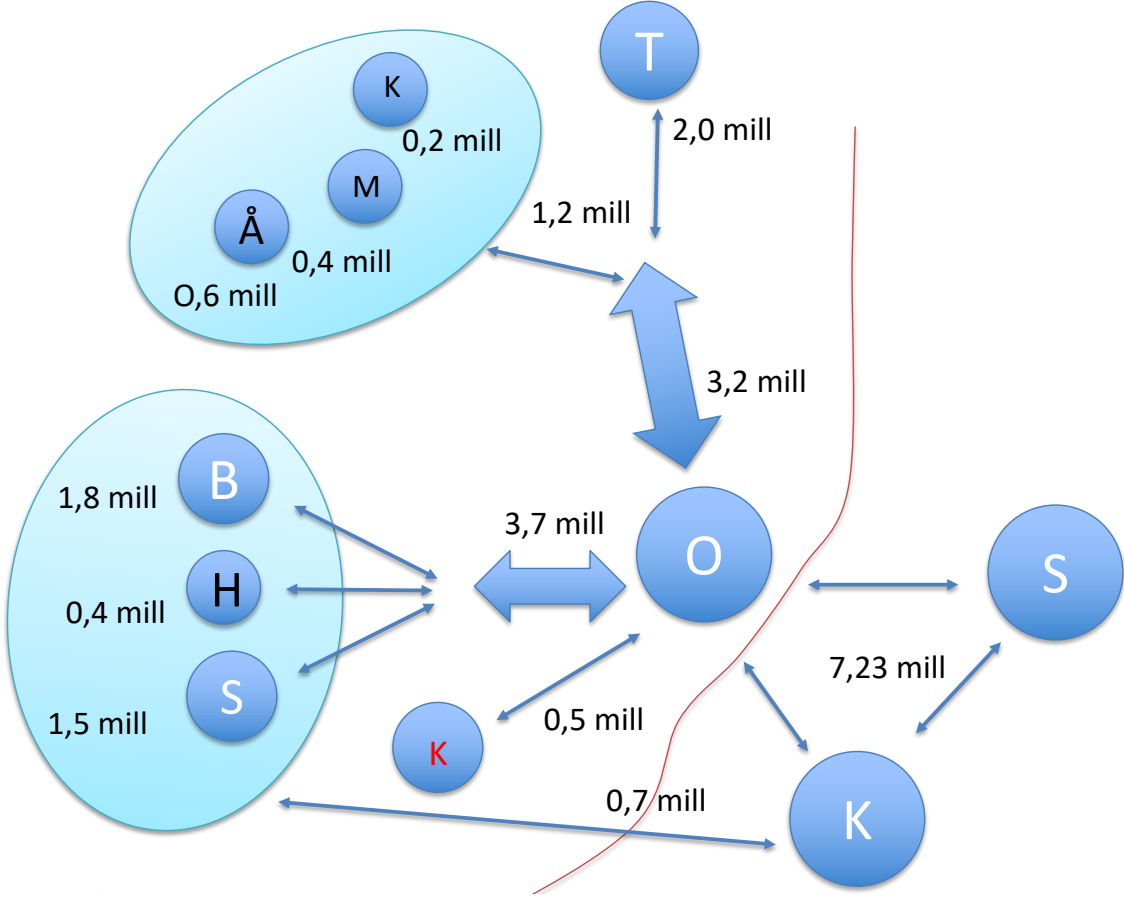
Oslo region connected by railways in 2028 ?



Slab track is a necessity for > 250 kmph ++



Big air traffic at short distances today



Various options for creation of the
Nordic HSR network
has been analyzed

Red: Nordic HSR 2025-2050
Orange: Other major Nordic railways
Yellow: Connected HSR close to the Nordic region

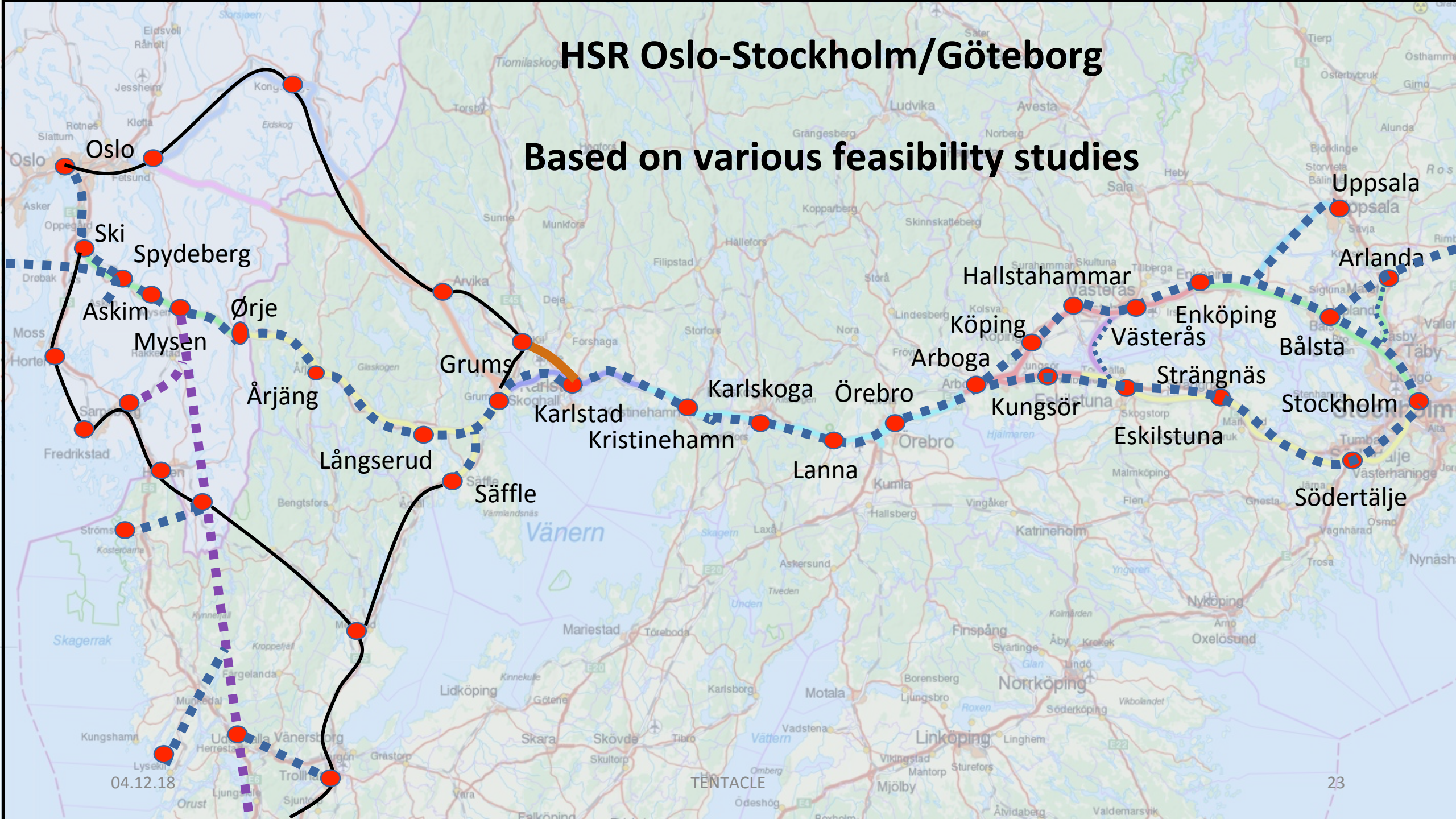


Norsk
Bane/
Deutsche
Bahn
analyzed
HSR
corridors
cross-
border



HSR Oslo-Stockholm/Göteborg

Based on various feasibility studies

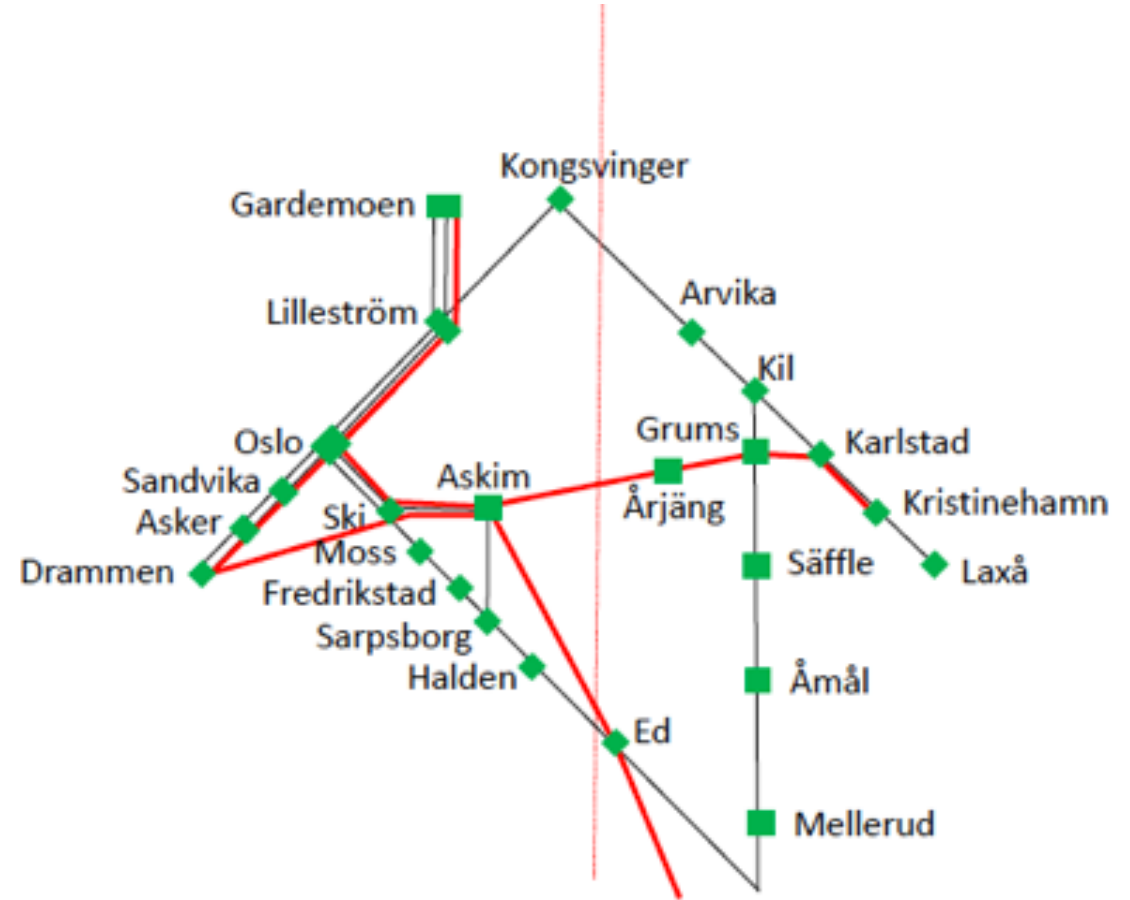


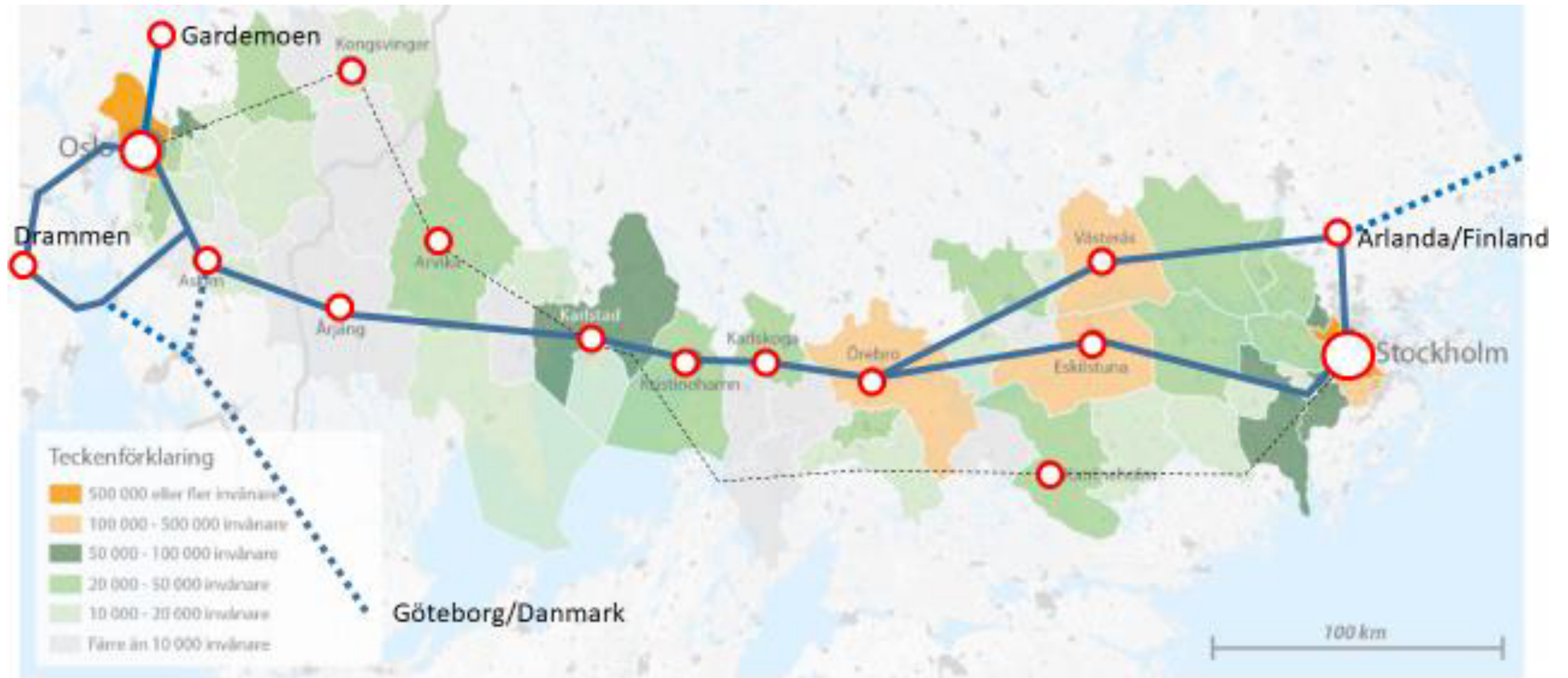
Höghastighetsbana Oslo – Stockholm/Köpenhamn

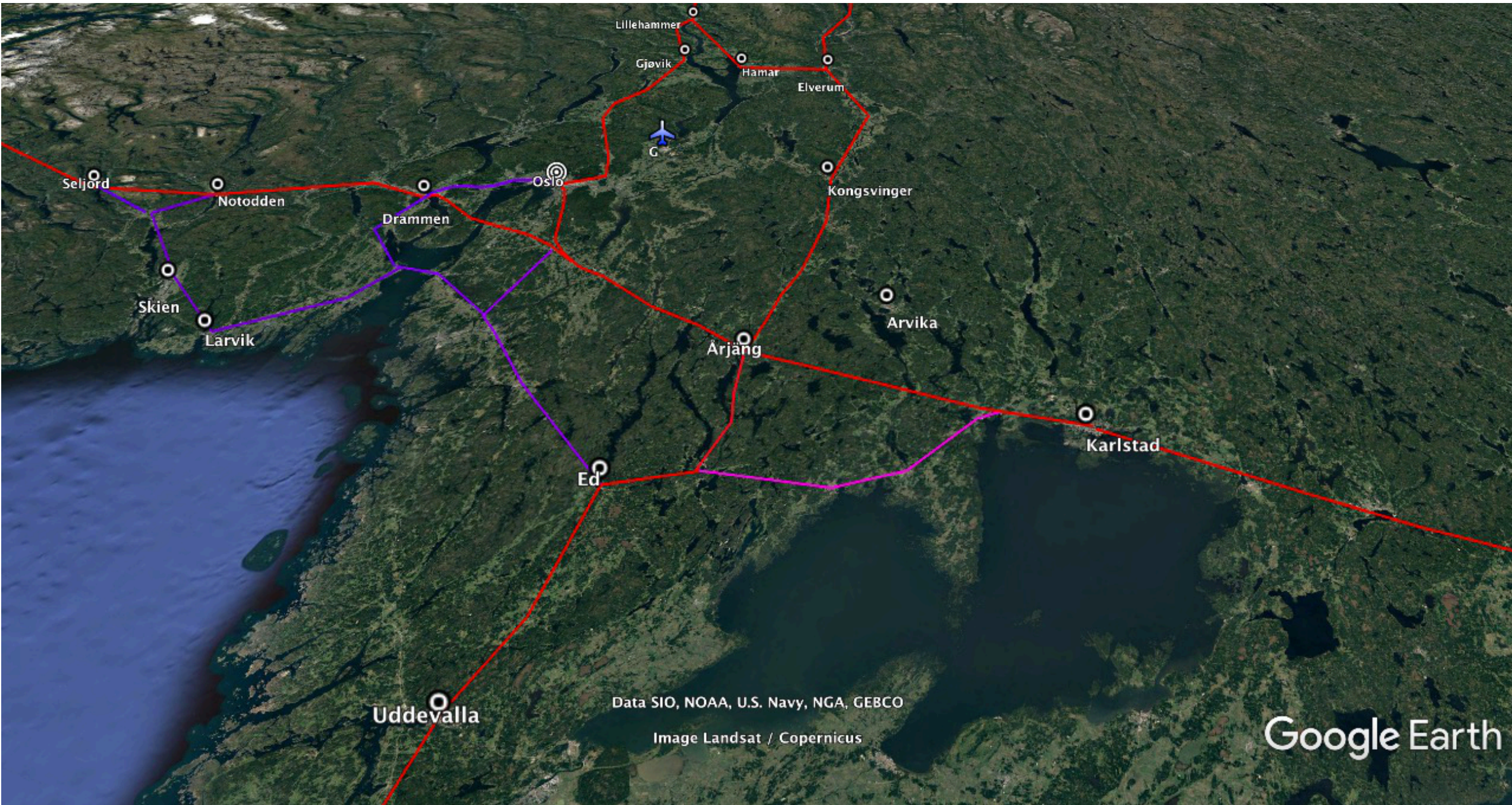
Möjlighetsstudie till Tentacle projektet
Slutrapport 2018-06-11



Snabbbyggnation av höghastighetsjärnväg 20 mil per år.



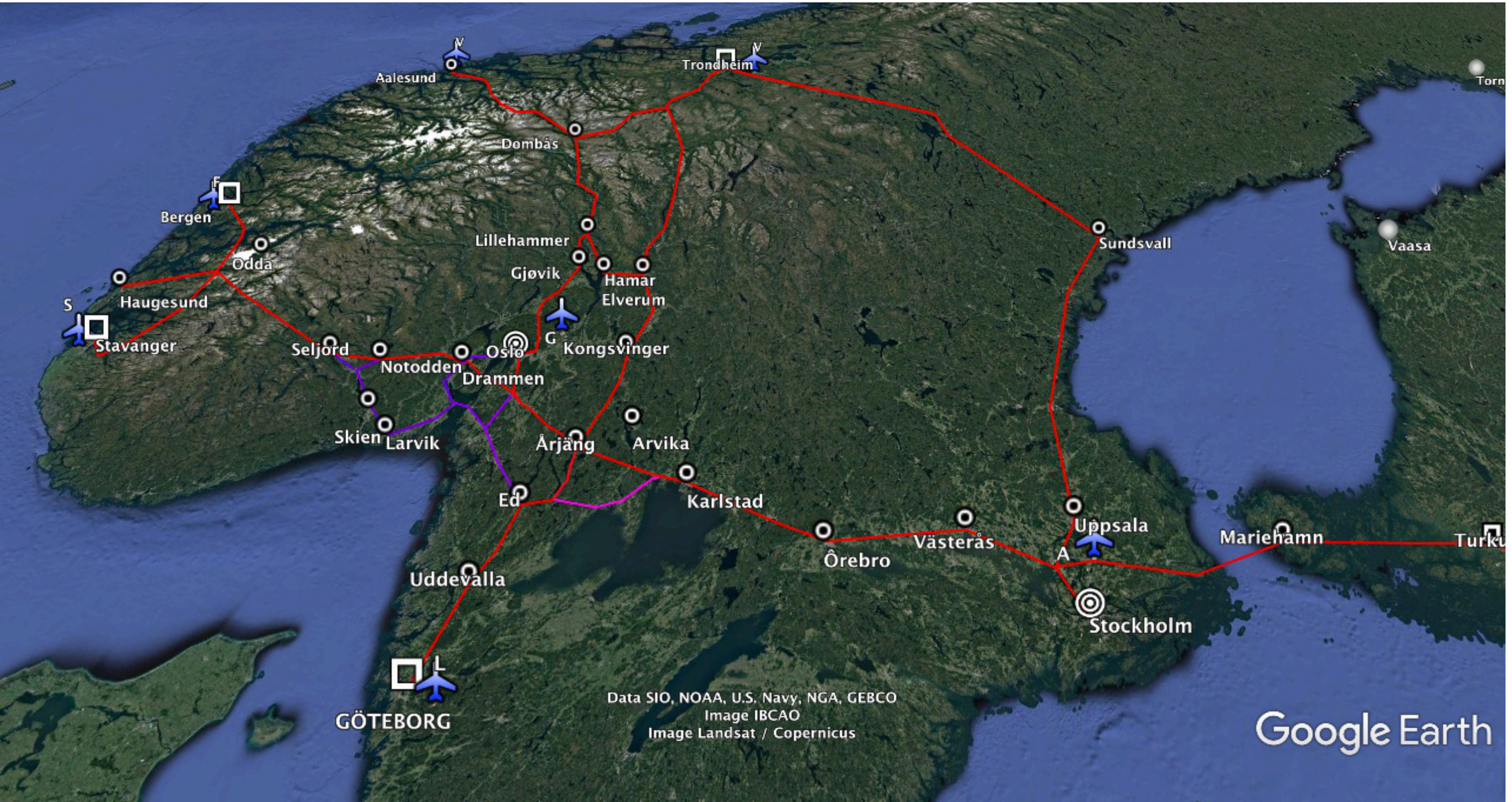




Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Image Landsat / Copernicus

Google Earth



Aalesund

Trondheim

Bergen

Dombås

Lillehammer

Sundsvall

Vaasa

Haugesund

Odda

Gjøvik

Hamar

Elverum

Stavanger

Seljord

Notodden

Oslo

Kongsvinger

Drammen

Skien

Larvik

Årjäng

Arvika

Ed

Karlstad

Örebro

Västerås

Uppsala

Mariehamn

Turku

Uddevalla

GÖTEBORG

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image IBCAO
Image Landsat / Copernicus

Google Earth

HSR Oslo-Spydeberg < 10 minutes non-stop, with speed 300-400 kmph

Spydeberg station gets 10 trains per hour:

5 Oslo-Stockholm + 5 Oslo-Copenhagen

Minimum 2 trains will stop in each direction every hour .

Scenario



HSR «stop pattern» is important for the railway economy, climate and labour market

A fast train can stop more often and still deliver acceptable travel time

- 1 non-stop service per hour: 1:45 (Oslo-Stockholm)
- 4 multiple stop services per hour provide 6 stops (Travel-time 2:15)
- Small stations get 1-2 stop per hour. Large stations 4 stops per hour.

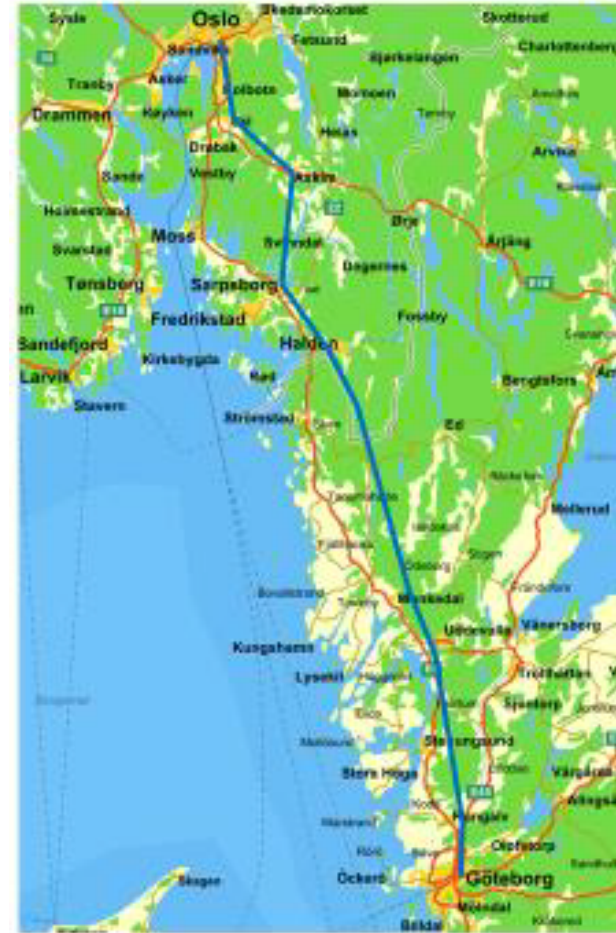
Many trains per hour is important:
4-6 trains per hour in each direction

INTERCITY



Oslo Halden: 1:08
Oslo-Gothenburg: 2:30 (vision)
Oslo-Copenhagen: 5:00

HSR



Oslo-Göteborg: 1:00 (non stop)
Oslo-Kastrup: 2:00 (1 stop)

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