



When the transport network is put to the test:
A scenario analysis of military mobility in the
northern Nordic region



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Born and raised in Ostrobothnia on the west coast of Finland, with extensive experience from the maritime industry, the defence industry, security policy, and issues relating to Nordic and subarctic conditions. Master of Science in Mechanical Engineering from the University of Oulu. Reserve Non-Commissioned Officer in the Finnish Navy. Written about defence and security policy under the pseudonym Corporal Frisk for more than a decade.



Agenda

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Strategic infrastructure for military mobility in the northern Nordic region

The current situation in the study region

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Mo i Rana – Storuman

Nordic Connector

Final summary

Military Mobility Northern Nordics

Strategic infrastructure needs for military mobility and security of supply in the northern Nordics

IN BRIEF:

- What demands does military mobility and security of supply place on the transport infrastructure in crisis and war, does today's infrastructure meet these requirements, and what can be done to improve the situation?
- A collaboration between the Kvarken Council, MidtSkandia, and the Fellesrådet for Jämtland Härjedalen and Trøndelag, with funding from Interreg Aurora
- Risk Intelligence was awarded the contract following an open procurement process at the end of 2025
- The work has been ongoing for seven months from December 2025 to the end of June 2026

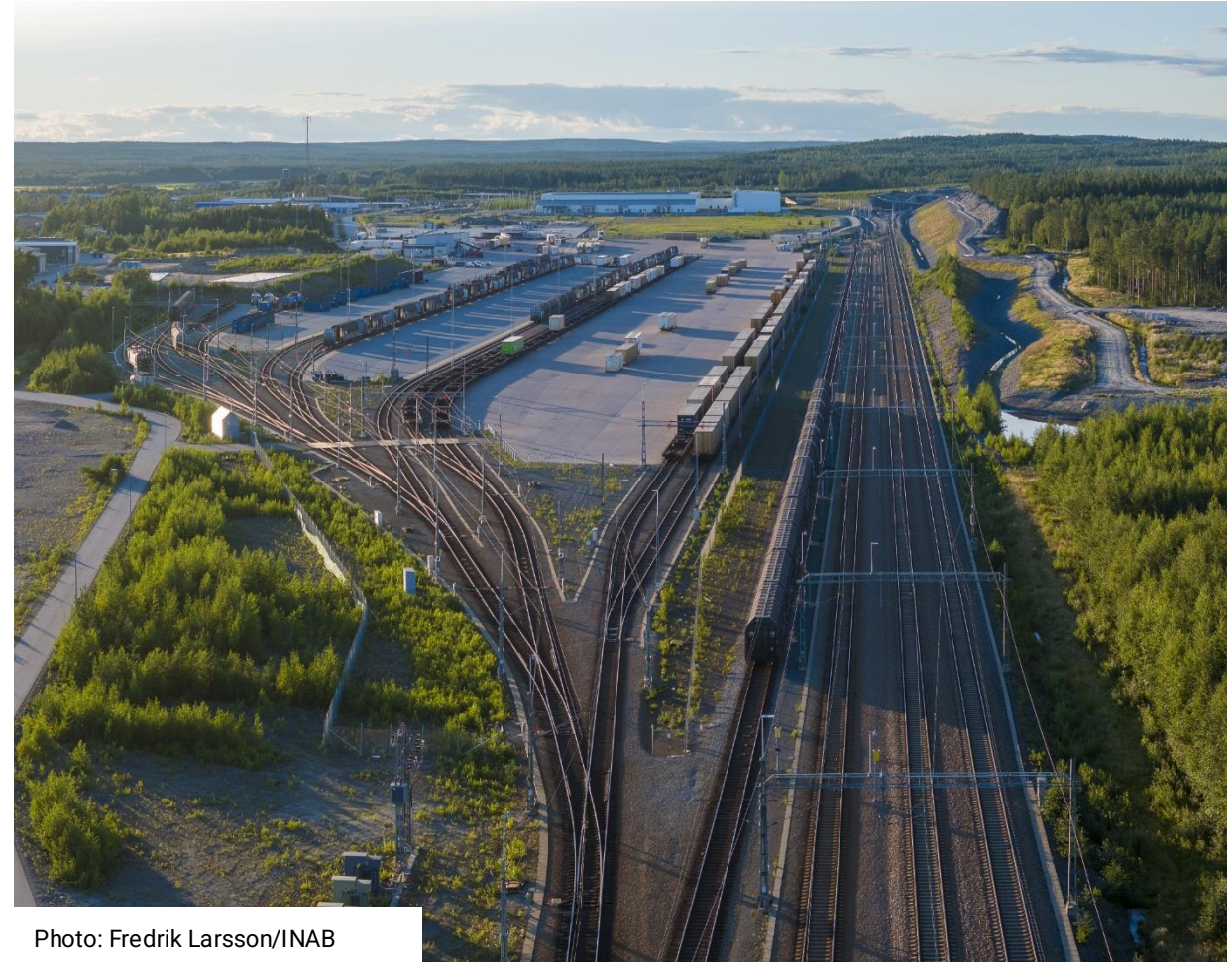
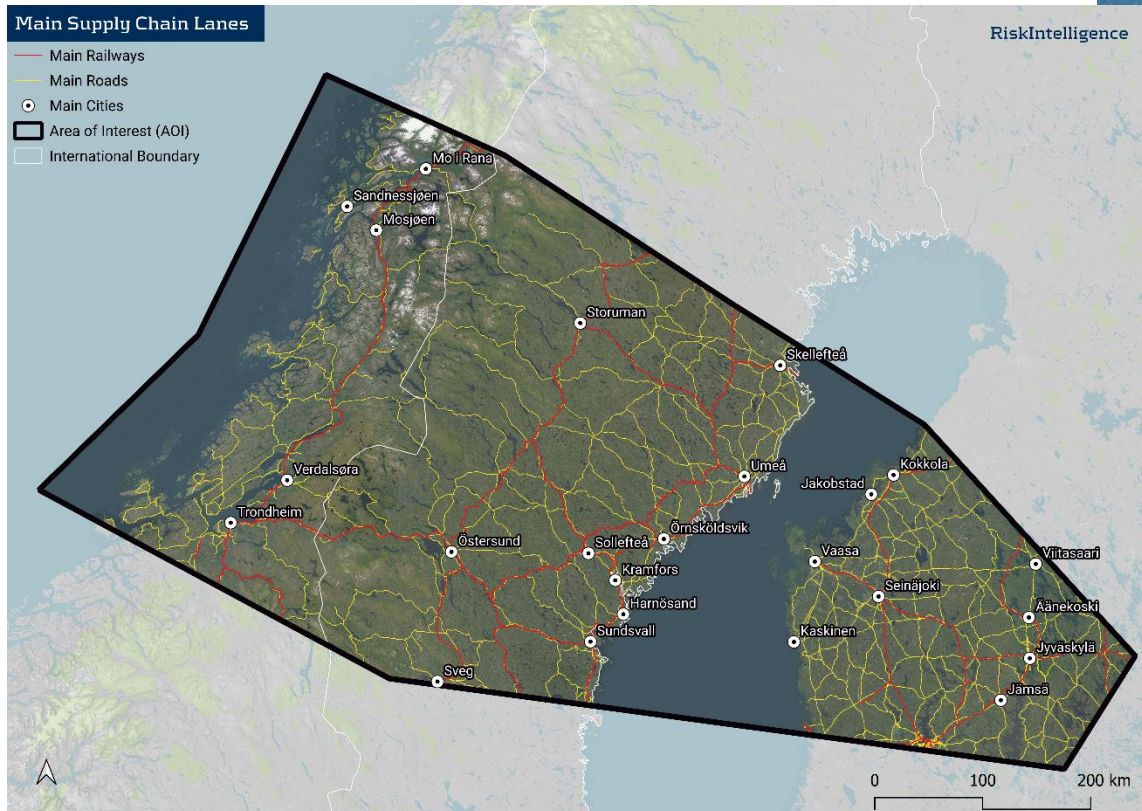


Photo: Fredrik Larsson/INAB

A cross-section through the Nordic countries



Covering the region where the organisations are active

From the Norwegian Atlantic coast, through Sweden, and across the Kvarken to Central Finland

A key area for east-west movement

Unique opportunities for units to enter the Nordic region, and move on to different parts of the country

... but also with challenges

Long distances, sparsely populated areas, challenging geography created by the Scandes and several rivers, north-south connections have traditionally been prioritised, lack of parallel routes

How do you get around?

Efficient military transport relies on the usage of different transport methods

ALL OTHER THINGS BEING EQUAL:

- If possible (i.e. suitable ports are found) and the threat scenario is acceptable, maritime transport is preferred due to its efficiency
- Land transports of over ~200 km is best done by rail, if suitable routes and terminals are available
- For land transports shorter than ~200 km, rural roads are the main option
- If time is of the essence and/or it is people and light equipment that need to be moved, going by air is the primary option



Photo: U.S. Army/Eugen Warkentin



Foto: U.S. Marine Corps/Sgt. Christian M. Garcia

Additional needs: Civil society does not stop

- Experiences from Ukraine point to [the need to maintain the transport flows of civil society](#), including civil industry and trade, but also the transport needs of private individuals
- Some reductions in transports are likely, [however, flows may also shift and new requirements arise](#), for example in the form of regionally increased supply needs, increases in production in the defence industry, or refugee flows
- In addition, existing flows [may be forced to seek new routes](#), due to factors such as changing maritime threat levels

The end result:

The transport infrastructure needs to be able to meet both military and civilian needs - simultaneously

Ports, routes, and hubs

A SOLID FOUNDATION EXISTS:

- The Norwegian Atlantic ports are natural gateways to the Nordic region in cases where the threat picture in the Baltic Sea becomes too high
- The E12 and E14 roads together with the Meråkerbanen/Mittbanan railway offer natural routes for east-west transport
- The Kvarken offers a relatively protected inland sea where transports can be flexibly shifted between Swedish and Finnish ports
- The Finnish road and rail network offer opportunities to shift transport from Ostrobothnia and Central Finland in all directions
- A number of north-south routes are found in the area for increased flexibility and redundancy in the event of disturbances
- The infrastructure for air transport is well developed in the area as a whole



Photo: Håkan Wike/Inlandsbanan AB

The challenges

In the event of a larger mobilization, realistic scenarios could see over 150,000 soldiers with heavy equipment arriving in the Nordic countries from other NATO allies.

CHALLENGES:

- No individual ports or routes have the capacity to meet the full demand of an Article 5-scenario
- The railway network, especially in Norway and across the border to Sweden, suffer from limited capacity and a lack of alternative routes
- The condition of the road network varies greatly, especially off the main roads
- Bottlenecks exist in a number of places when switching between different modes of transport
- The terrain and lack of parallel routes in many locations make the network vulnerable



Photo: U.S. Navy/Lt. Rajeev Bharati



Efforts at all levels: From large to small

- There is no ‘silver bullet’ solution for transport infrastructure, but there are a number of actions that can be taken that strengthen both military mobility and cater to the needs of civil society
- Increased maintenance and preparedness for rapid action and repairs in the event of – natural or man-made – disruptions to transport corridors are low-cost measures that have immediate positive economic effects
- Better connections between ports and road/rail can lift the total capacity in several places and increase traffic safety
- Bypass roads at certain key points (e.g. Brunflo outside Östersund) are also relatively limited projects with a large increase in capacity
- Repairing the Suupohjan rata railway (Kaskinen-Seinäjoki) is an obvious goal, especially when the option to reopen of the Pori-Parkano-Haapamäki line seems to have been discarded once and for all



Photo: John Nilsson/Inlandsbanan AB

Real expansion: Significant increases in capacity require greater ambition

- In particular the vulnerabilities of the railway network can best be eliminated through more ambitious measures
- The construction of a railway between Mo i Rana and Storuman to provide a second route through the Scandes would [radically increase the value of the ports in Helgeland](#) in peace as well as in wartime, but also [create redundancy for other Norwegian Atlantic ports](#)

Improvements to the route from Kvarken to Helgeland is to be viewed as a complete package, and would increase redundancies in crisis and provide economic benefits in peace

Meråkerbanen/Mittbanan

Rail links are key capabilities for efficient land transport of military units. The Trondheim-Östersund railway has unique advantages for NATO's northern flank.

MERÅKERBANEN/MITTBANAN FROM THE POINT OF VIEW OF THE STUDY:

- There are only four railway lines that cross the Swedish-Norwegian border, and the other three – two south of Oslo and Malmaban – suffer from limited spare capacity and/or lack relevance for transports from Trøndelag, Helgeland, Møre og Romsdal, and the southern parts of Nordland
- The problem with the line is a combination of lack of maintenance as well as limited repair capacity in the event of interruptions that lead to repeated and long disruptions in traffic on the Östersund-Trondheim route
- Increased investment in the railway line is one of the most effective single measures for improved military mobility in the Nordic region, that does not require the construction of completely new infrastructure



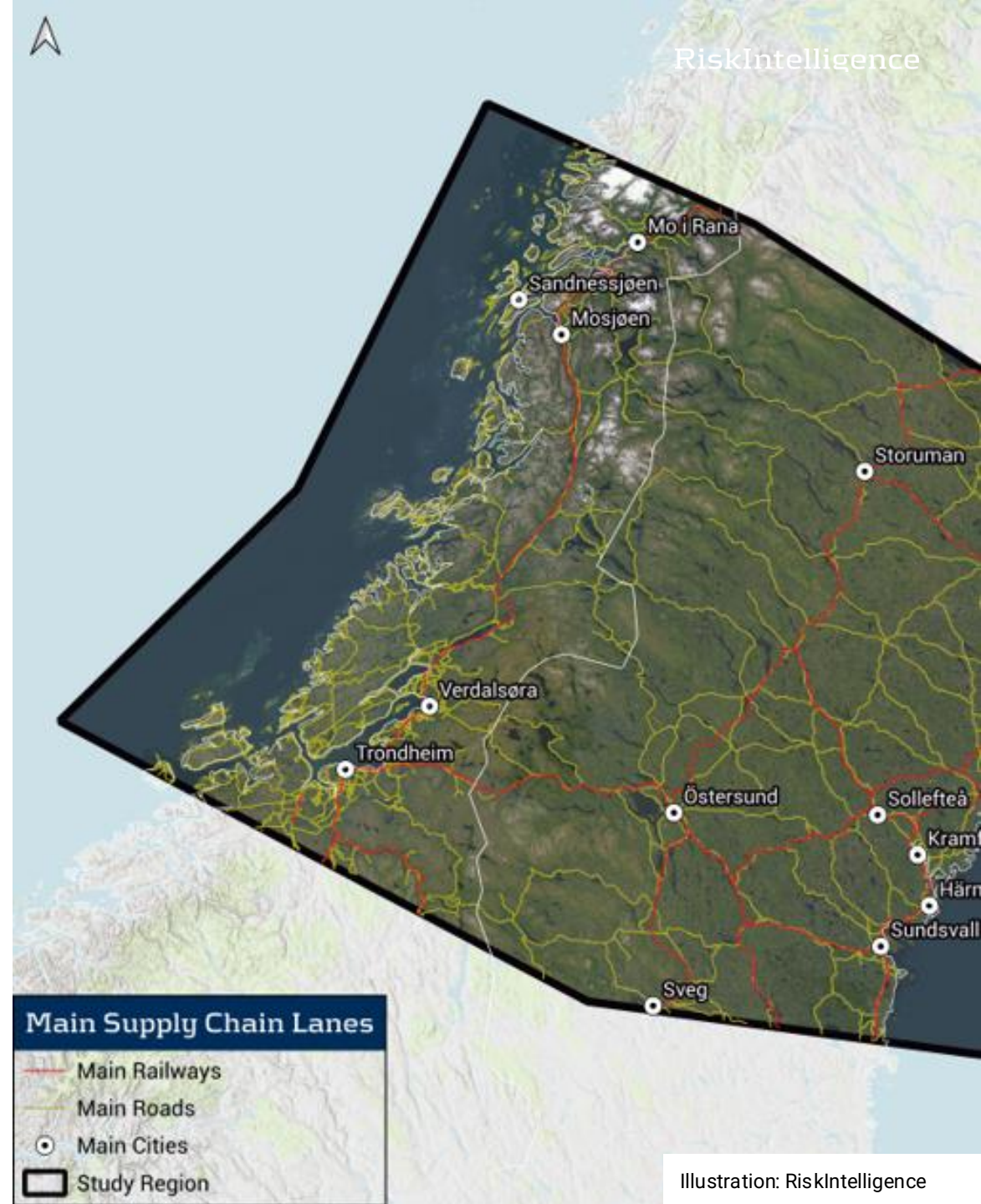
Photo: DoW/Maj. Allan Laggui

Mo i Rana - Storuman

A railway across the border between Mo i Rana and Storuman increases the capacity of Helgeland's ports, and creates needed redundancies.

THE RAILWAY LINE FROM THE POINT OF VIEW OF THE STUDY:

- All rail traffic across the border north of Oslo is dependent on a single-track railway connection that has proven vulnerable to weather and external action
- Traffic eastwards from Helgeland by rail requires a detour towards Trondheim, and disturbances north of the junction make rail transport from Helgeland and the northern ports of the Trondheim fjord impossible
- A railway that roughly follows the E12 between Storuman and Mo i Rana is the natural solution
- A railway line to Storuman will make transports eastwards from Helgeland more efficient, but also create an alternative for the ports in Trøndelag in the event of disruptions on the Nordlandsbanen or the Meråkerbanen/Mittbanan



Nordic Connector

A fixed link between the Finnish and Norwegian/Swedish road and rail networks is the missing link in the region.

KVARKEN FIXED LINK FROM THE POINT OF VIEW OF THE STUDY:

- A fixed link eliminates the need for loading/unloading for transport across the Bothnian Sea
- The capacity increase compared to ferry traffic is dramatic, from ~300 vehicles per day to ~4,160 vehicles per day
- A rail link enables efficient transport directly to Finland from bases in France, Germany, and Italy, or from the Norwegian Atlantic ports
- Historical experience from World War II and on to Ukraine shows that bridges are resilient to hostile activities
- The proliferation of drones has not significantly increased the threat to fixed transport infrastructure



Photo: RiskIntelligence



Photo: RiskIntelligence

Summary: A transport network under pressure

- The transport network needs to be able to handle **civilians and military transport requirements simultaneously** in the event of a crisis
- **The military needs in a major crisis are often underestimated** and can involve 150,000+ soldiers, nearly 40,000 military vehicles, and various types of equipment equivalent to 150,000+ twenty-foot containers
- No transport node or corridor can handle the entire flow on its own, **rather a comprehensive usage of societal resources and different routes will be required**
- The study region offers good opportunities to meet the needs, **but will also require continued investment to reduce vulnerabilities**, and it is **possible to increase capacity through a number of measures** at different levels

Interested in hearing more?



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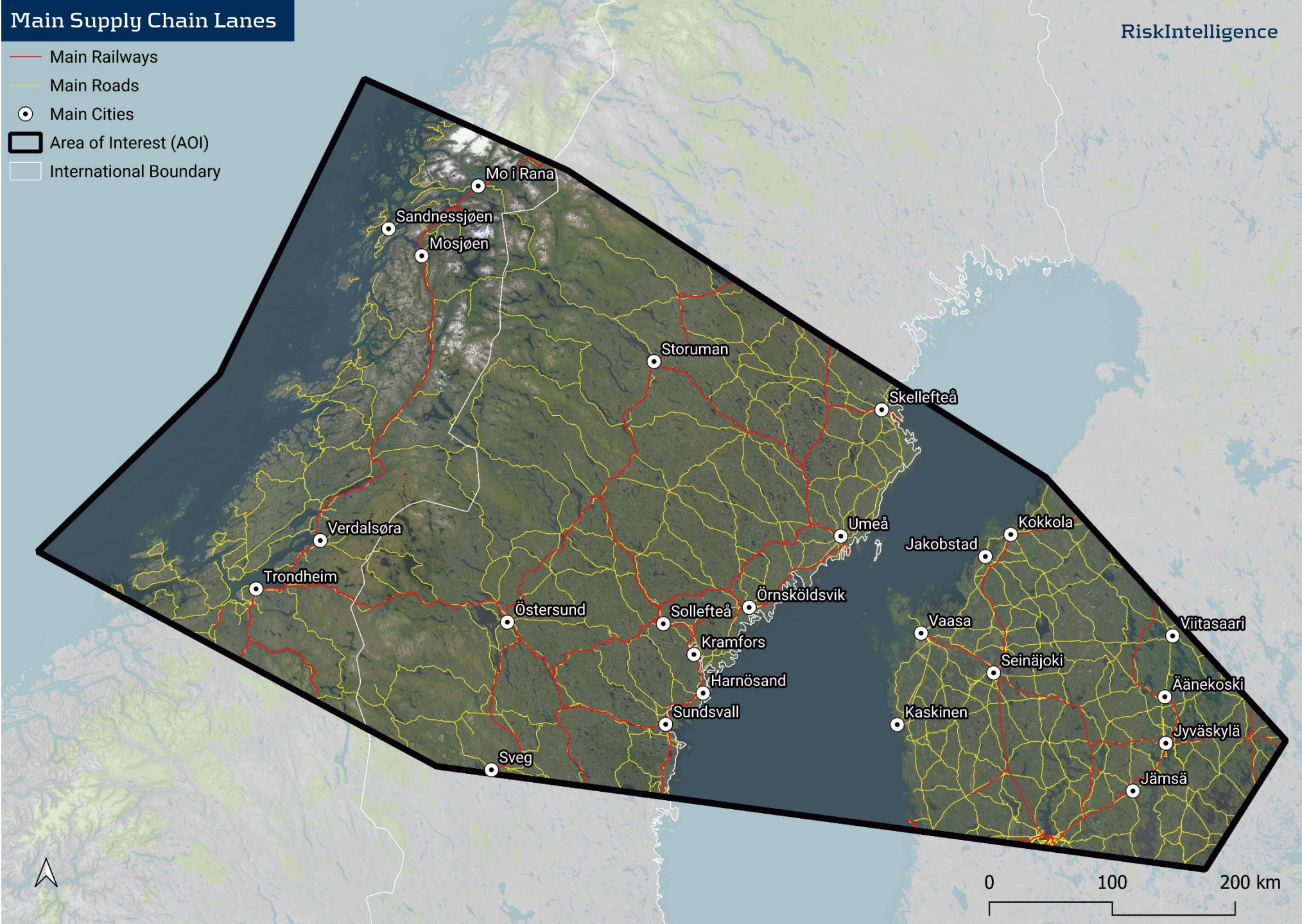


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Main Supply Chain Lanes

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- Main Railways
- Main Roads
- Main Cities
- ▭ Area of Interest (AOI)
- ▭ International Boundary



Main Supply Chain Lanes (NO-SE)

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Standout Elements

 Garrison Drevjamoen leir

 Featured Airports

 Featured Ports

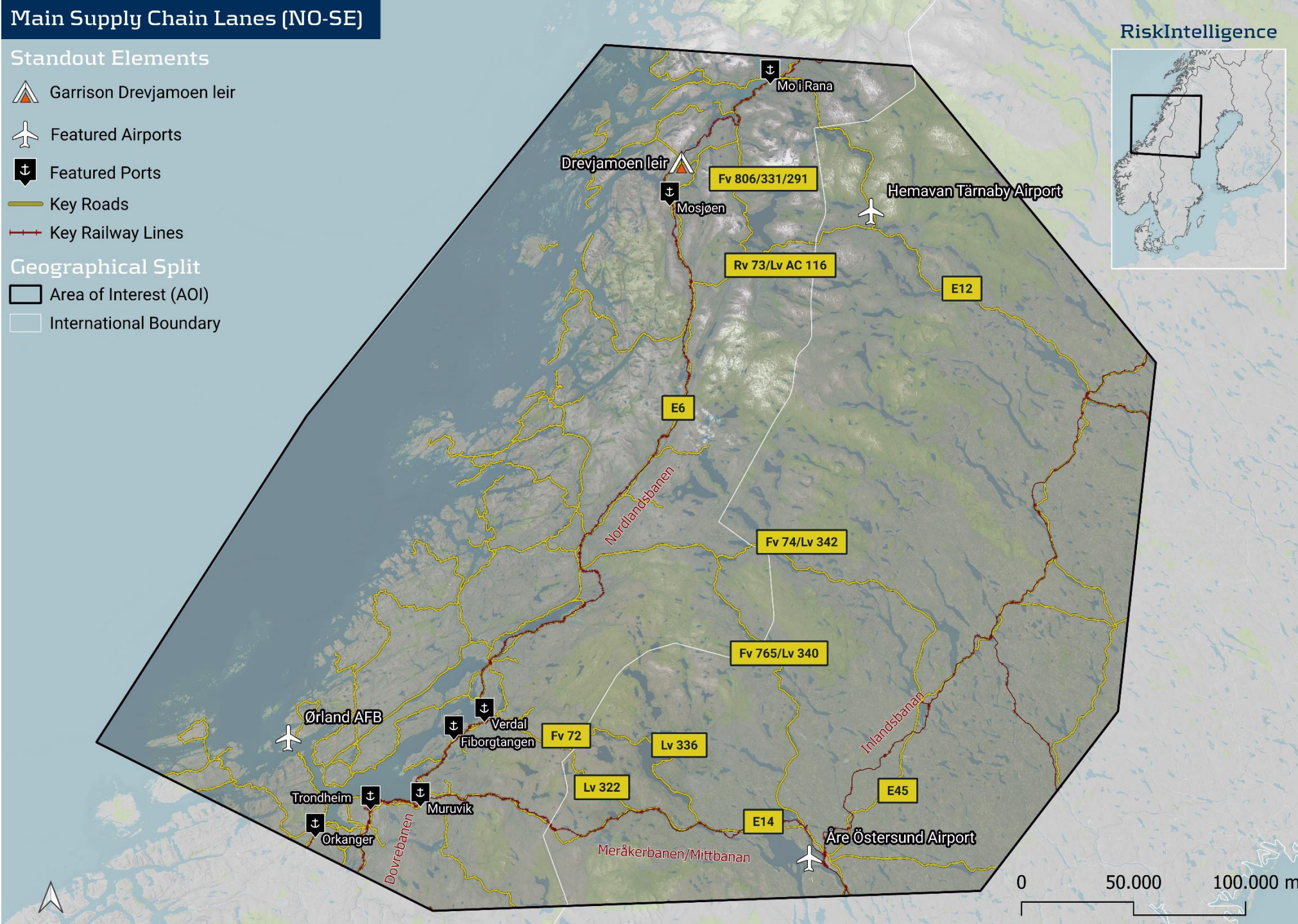
 Key Roads

 Key Railway Lines

Geographical Split

 Area of Interest (AOI)

 International Boundary



Main Supply Chain Lanes (SE)

Standout Elements

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⚓ Featured Ports

— Key Roads

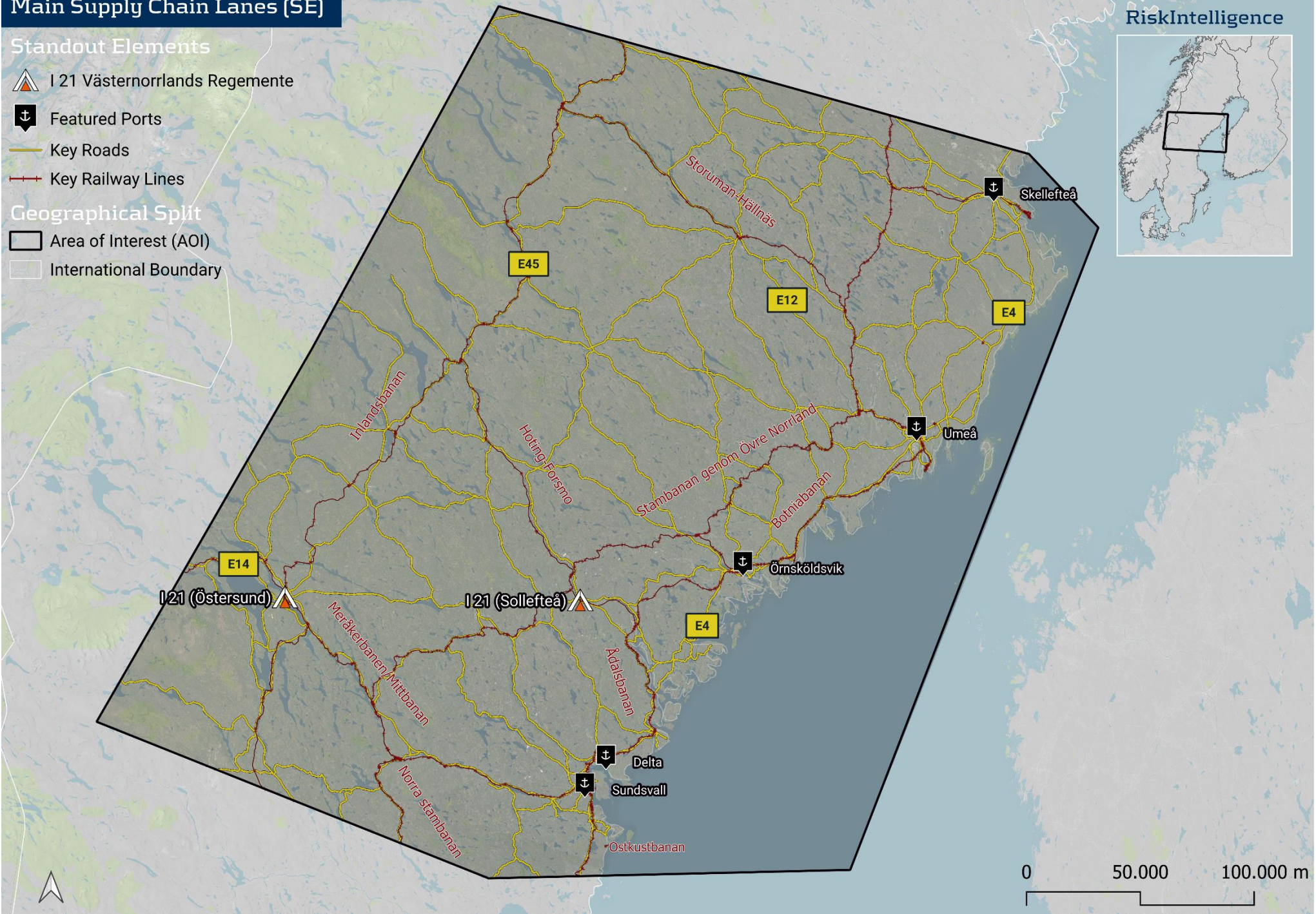
— Key Railway Lines

Geographical Split

▭ Area of Interest (AOI)

▭ International Boundary

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Main Supply Chain Lanes (FI)

Standout Elements

✈️ Featured Airports

⚓ Featured Ports

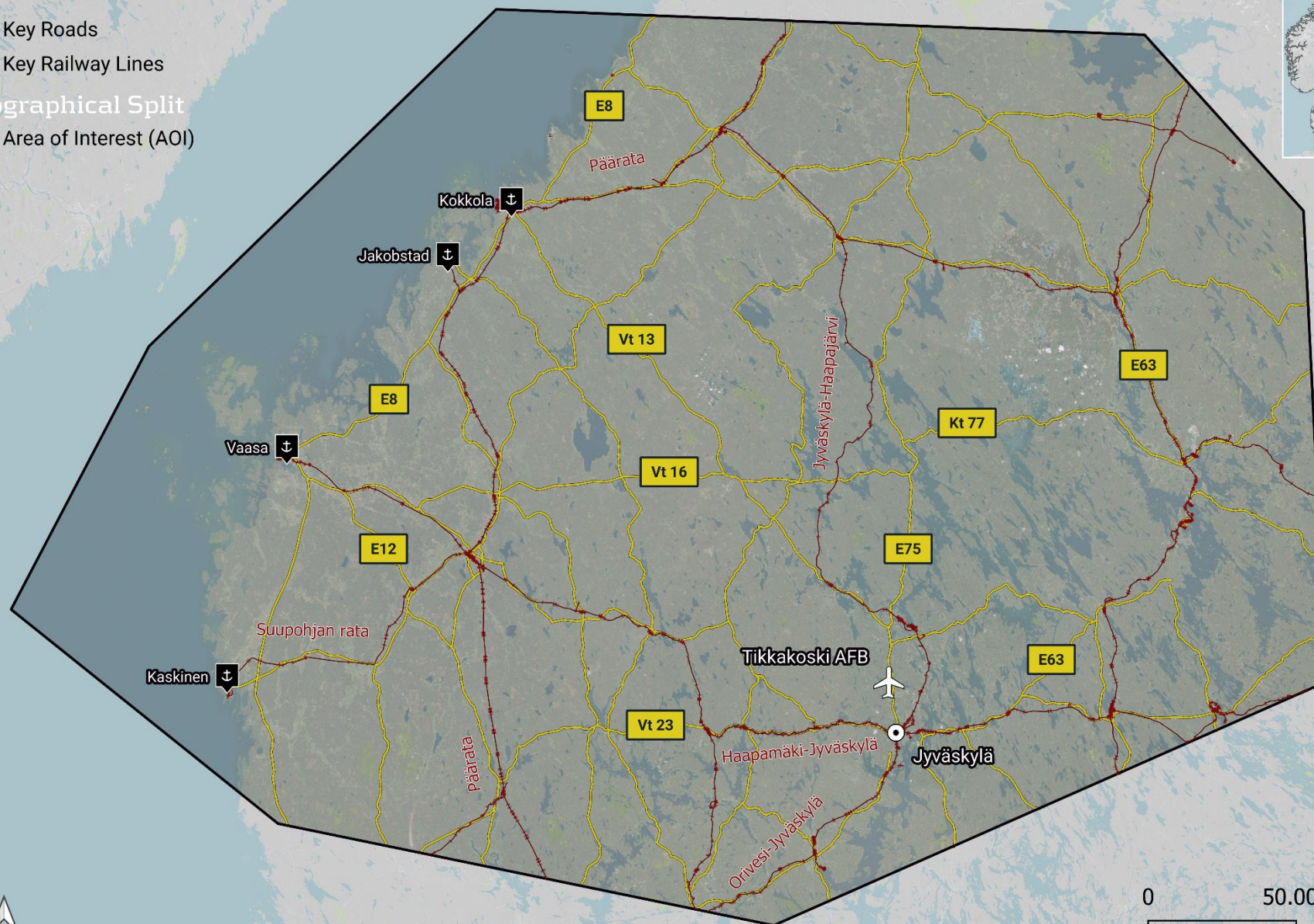
— Key Roads

— Key Railway Lines

Geographical Split

□ Area of Interest (AOI)

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