

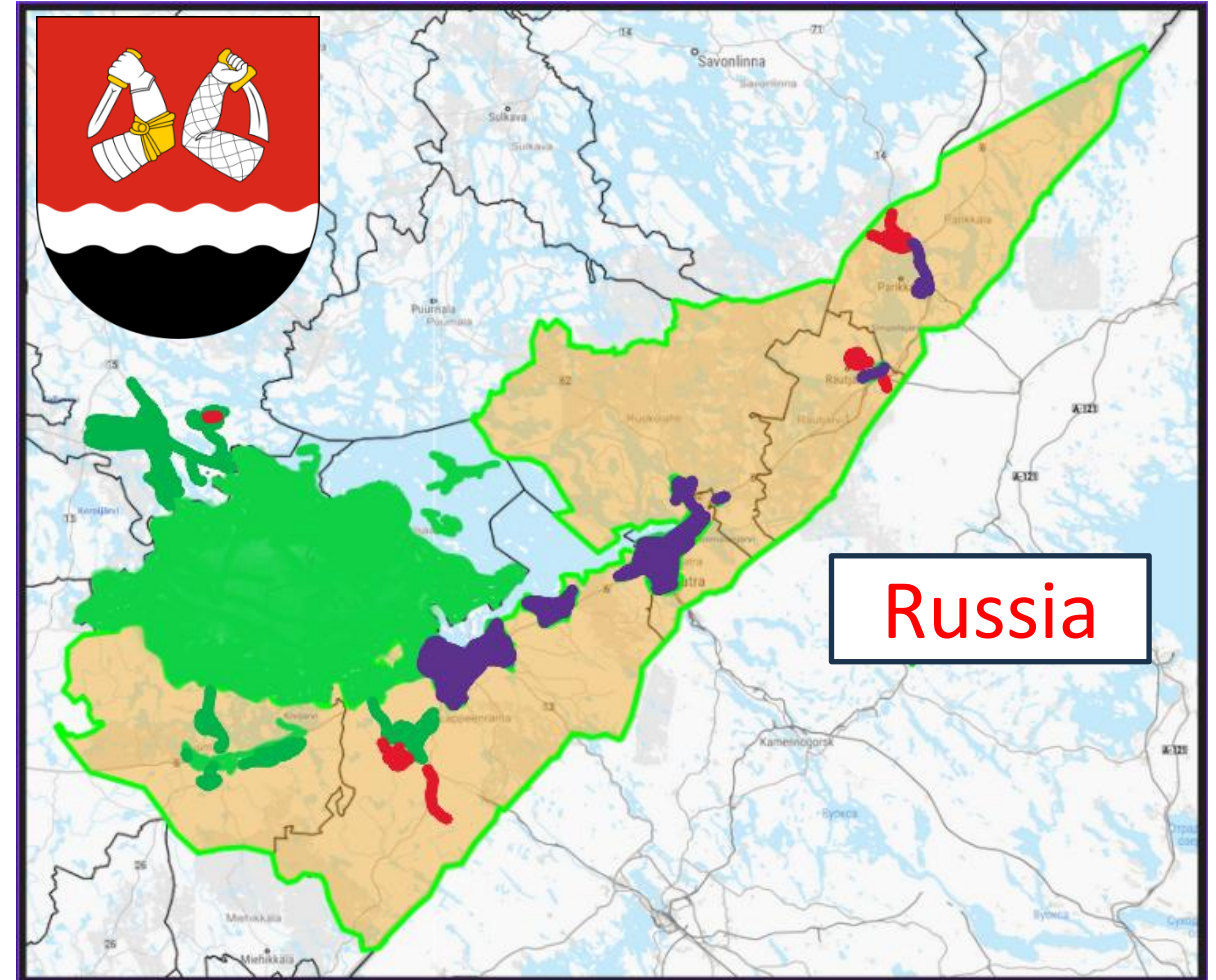
**Working Group on
“Strengthening the
competitiveness and sustainable
growth of rural economies”.**

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**Fiber to the villages
South Karelia**

**Tuomo Puhakainen
Rajakuitu Oy - Border Fiber Ltd**

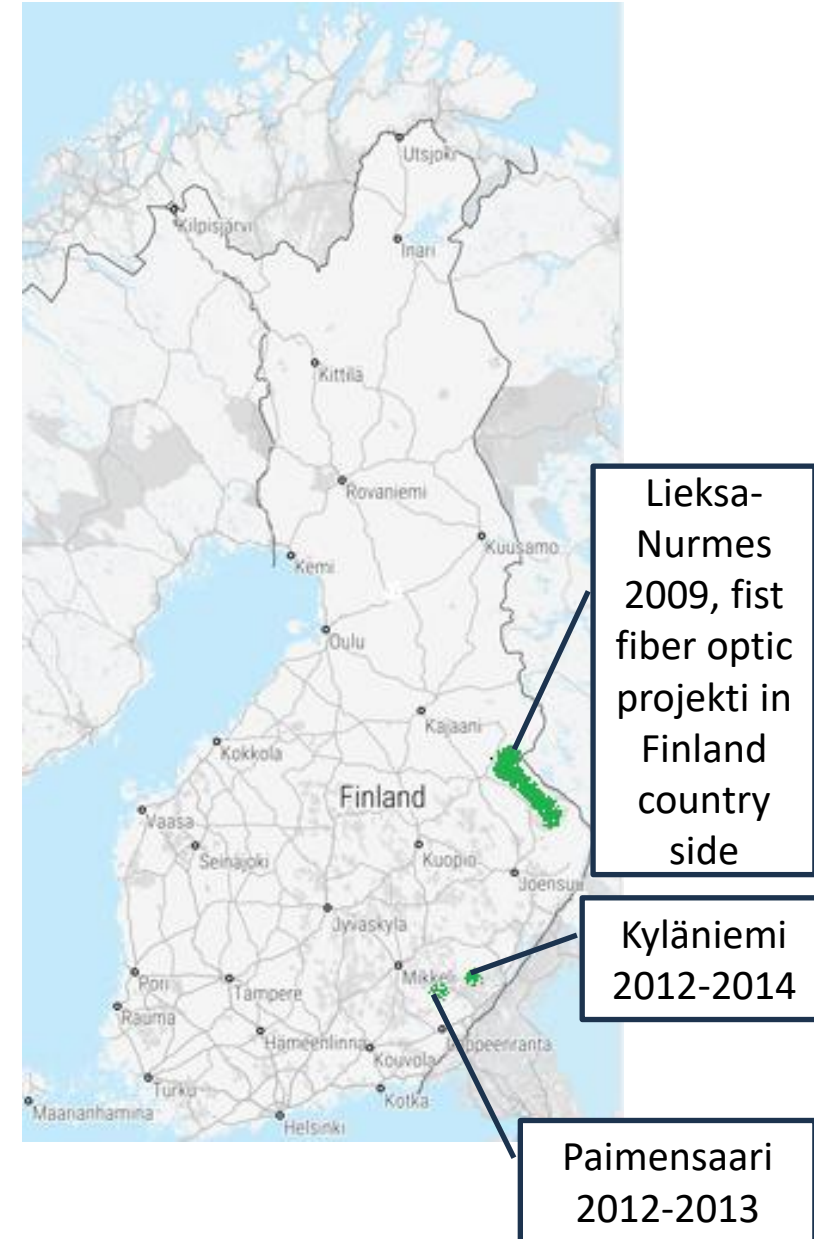
30.9.2026



Tuomo Puhakainen

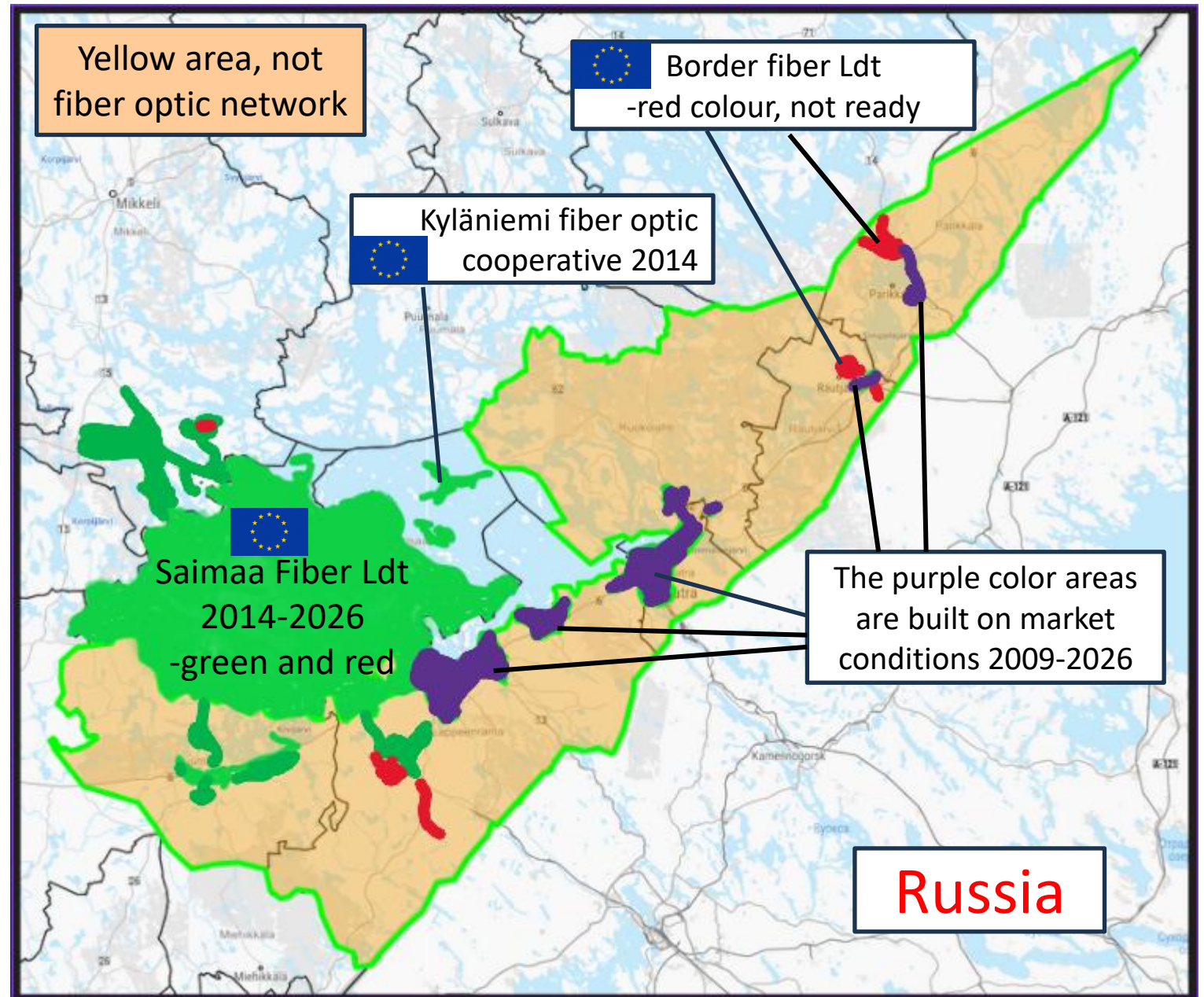


- * 1974-1989 Post and Telegraph of Finland, Telecommunications mechanic
- * 1989-2013 TeliaSonera Sales Manager, Regional Director
- * 1986 first installation of fiber optic cable on poles in Lappeenranta
- * 2013-2026 Own Telecommunications Consulting Company- Nek Saimaa Ltd
- * 2015-2020 Saimaan Fiber Ltd 2014-2020, CEO
- * 2014-2026 Fiber optic network design: Taipalsaari, Savitaipale, Lemi, Luumäki, Lappeenranta, Ruokolahti, Rautjärvi, Parikkala, Imatra and Mikkeli/Suomenniemi
- * 2026 Border Fiber Ltd, Acting CEO
- * Tuomo has been involved in all of Finland's broadband projects, over 52 years in telecommunications



South Karelian

- 124 238 inhabitants
- total 60 000 properties
- Not fiber optic network 24 000 properties
- We have used EU rural funding to build a fibre optic network in rural areas, but it would not have been possible to build fibre optic networks in rural areas WITHOUT EU FUNDING



This is not the
truth!

TRAFICOM
Transport and
Communications Agency

1 Gbit/s availability for households

- ☐ No 1 Gbps availability
- ☐ 1 - 24 % of homes
- ☐ 25 - 49 % of homes
- ☐ 50 - 69 % of homes
- ☐ 70 - 89 % of homes
- ☐ ≥ 90 % of homes

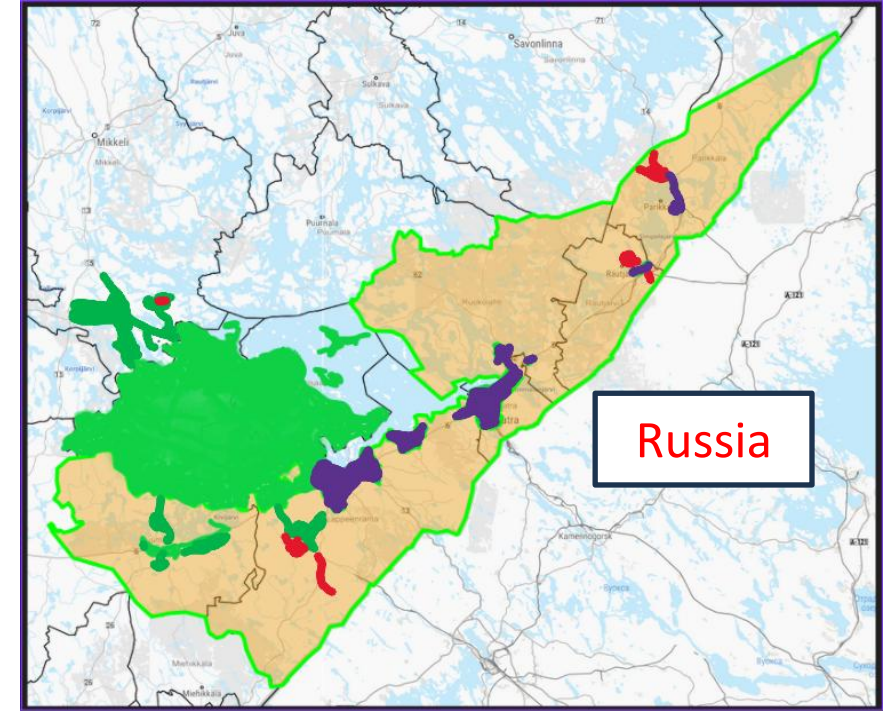
This is the truth!

There is no 1G availability in
the yellow area.

Russia

4+1 reasons why we need better fiber optic connections at the border

1. 5G restrictions at the Russian border
 2. 3G network shutdown will worsen telephone connections
 3. Russia is disrupting mobile and GPS traffic in Eastern Finland
 4. Our economy has gone downhill since Russia's invasion of Ukraine - the border is total closed
- +1. Hope for the better!



1. 5G restrictions at the Russian border

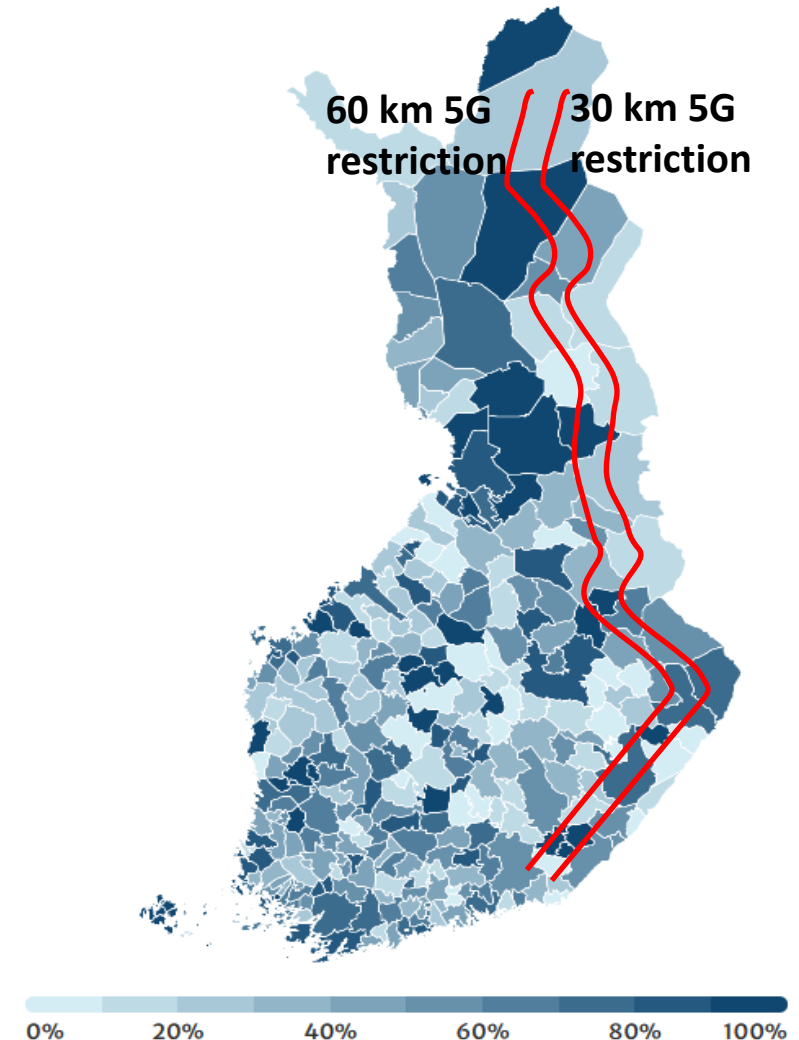
A strip of land approximately 1,300 kilometers long and 60 kilometers wide on the Finnish side of the state border between Finland and Russia will be left without the most efficient 5G speed.

In practice, this means that some areas of municipalities in Eastern Finland will not be receiving the most efficient 5G network.

The agreement is based on the use of the 790 - 862 MHz frequency band in terrestrial systems between the telecommunications administrations of the Russian Federation and Finland. The agreement was signed in November 2011.

Aeronautical Radionavigation Service stations need protection, which means that in practice the Russian missile defense system needs protection.

23% of Finland's area is within 5G restricted areas.
This particularly emphasizes the construction of fiber optic networks.



2. 3G network shutdown will worsen telephone connections in Eastern and North of Finland from 2023 onwards

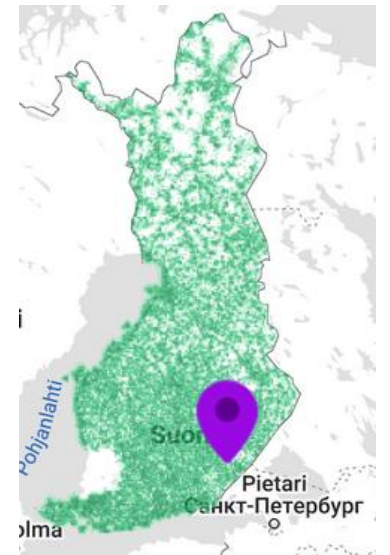
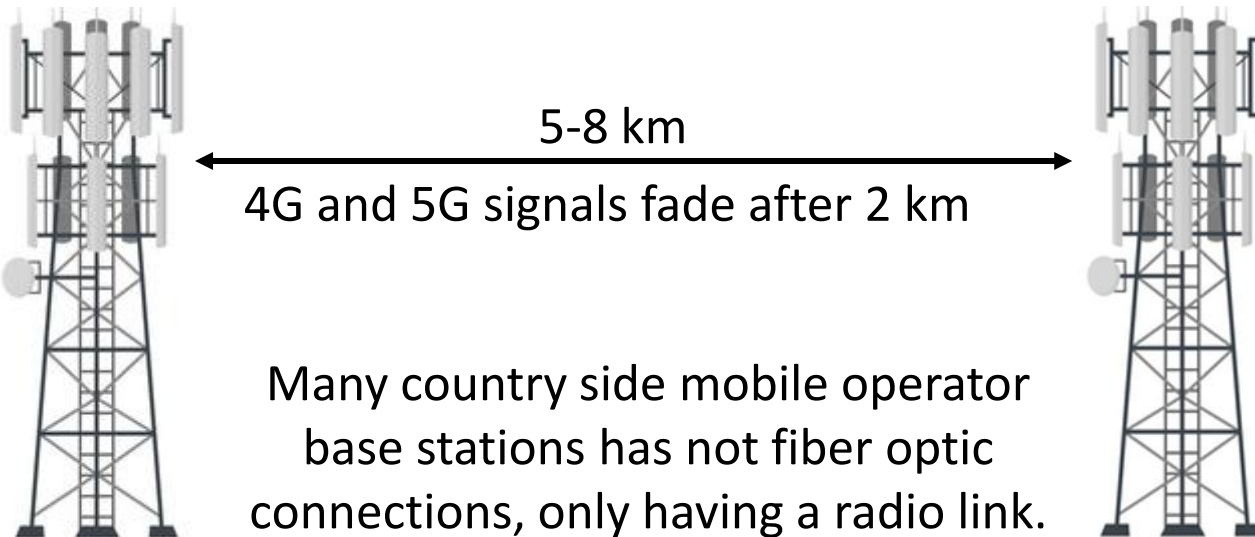
In 4G networks, voice is transmitted as data, if the 4G network's uplink data traffic is below 0,4 kbits, then calls start to drop out.

In 5G networks, voice is not transmitted as data.

Especially in Eastern and Northern Finland, the 3G network outage worsened phone reception, as base stations are few and far between.



DNA 3G coverage map 2022



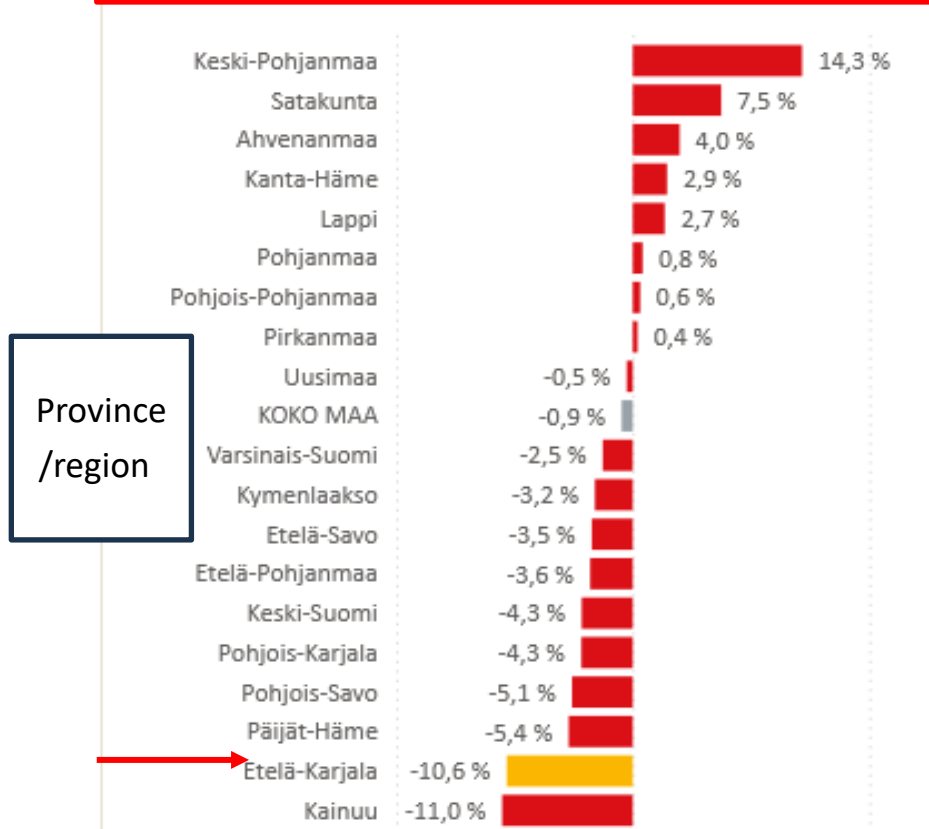
Telia 3G coverage map 2022

3. Russia is disrupting mobile and GPS traffic in Eastern Finland



4. Our economy has gone downhill since Russia's invasion of Ukraine - the border is pretty much closed

Gross Domestic Product (GDP) change 2022-2023



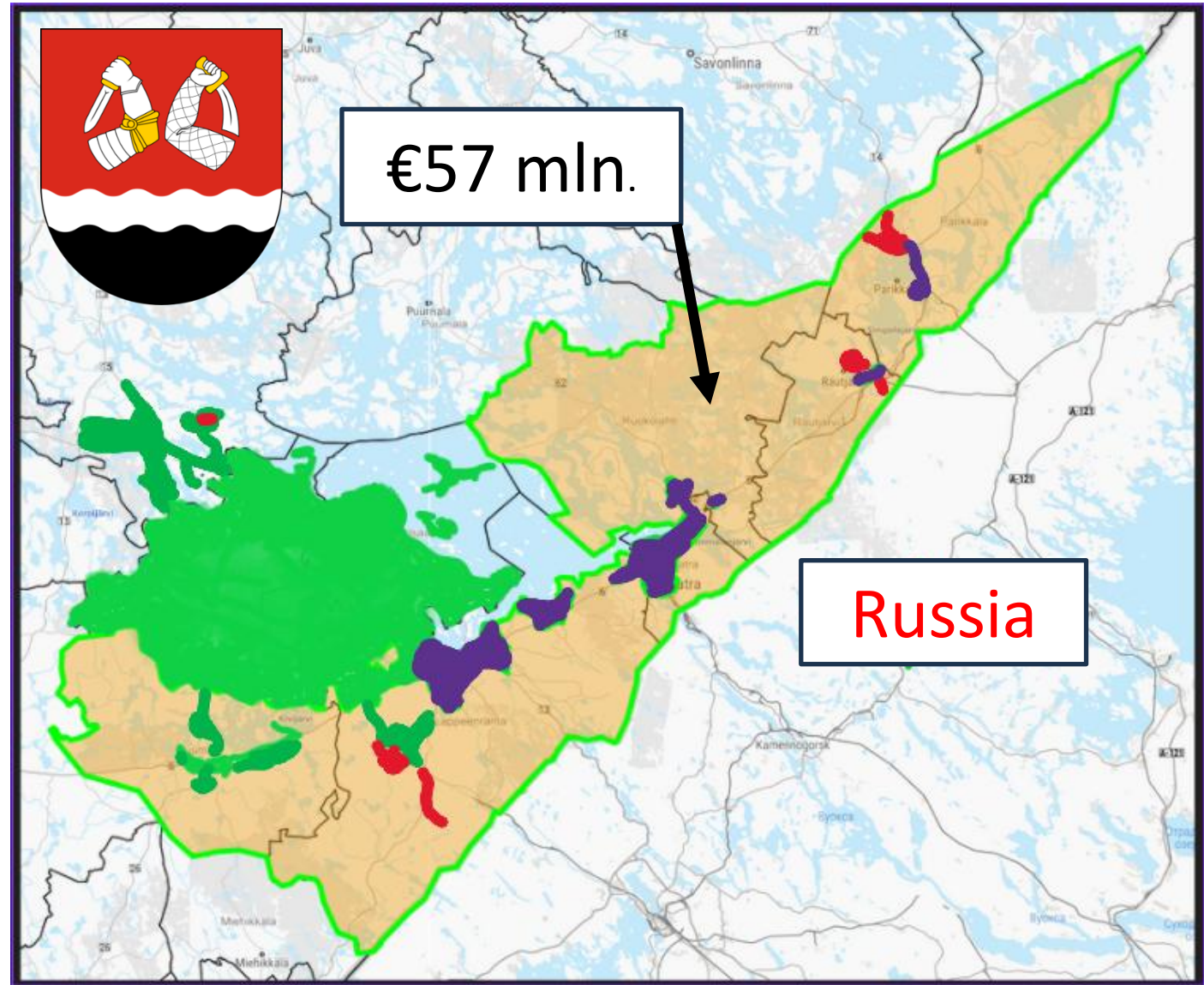
After 2023, the situation has worsened in Eastern Finland

Situation at border crossings



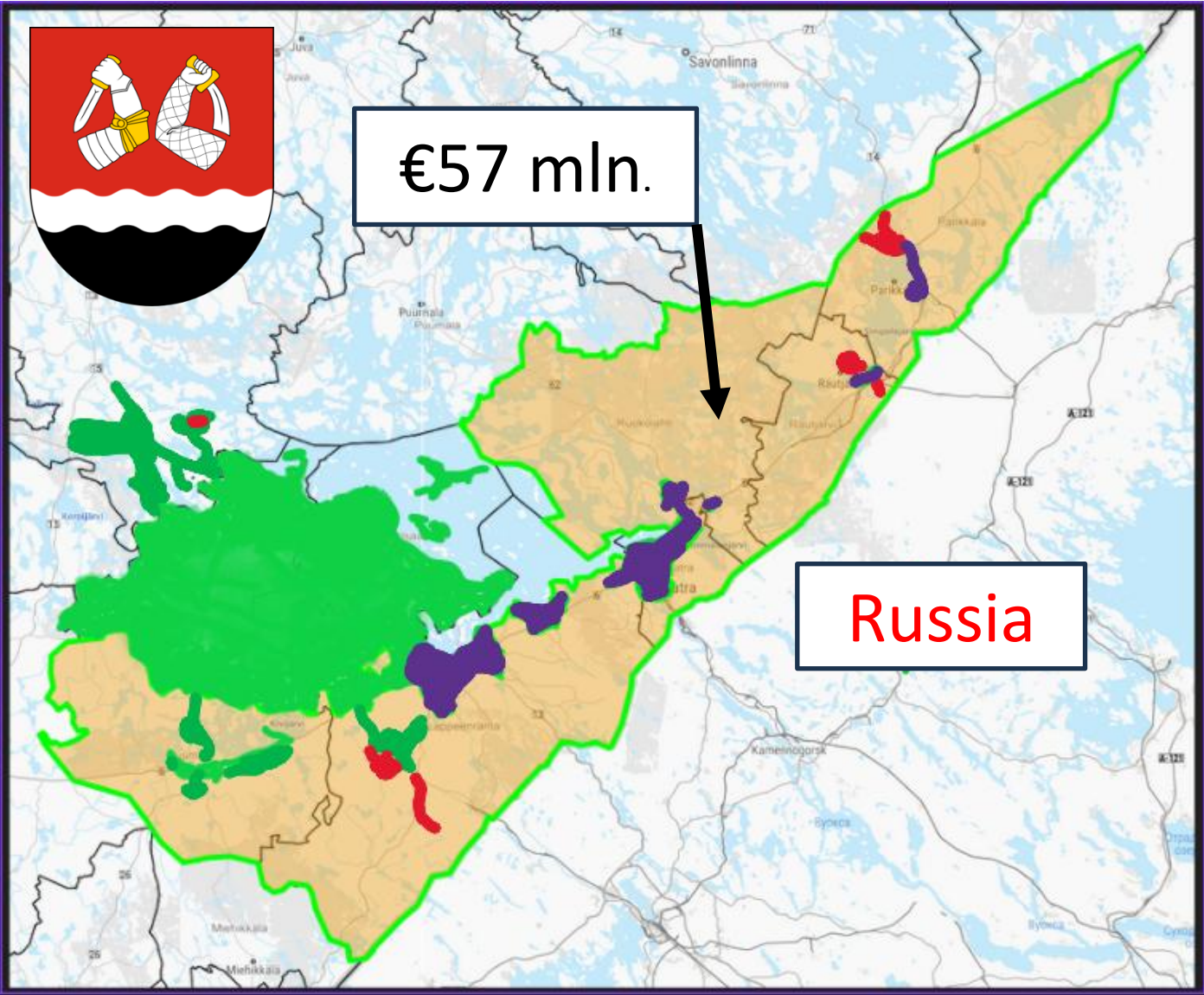
+1 Hope for the better!

- The rural areas of South Karelian are home to a wide range of businesses: farms, forestry and other production. Recently, many information technology companies have also moved to the rural areas.
- We need good understanding and support for building fiber optic networks
- The construction of a fiber optic network on South Karelian will cost 57 million euros for the yellow areas on the map.



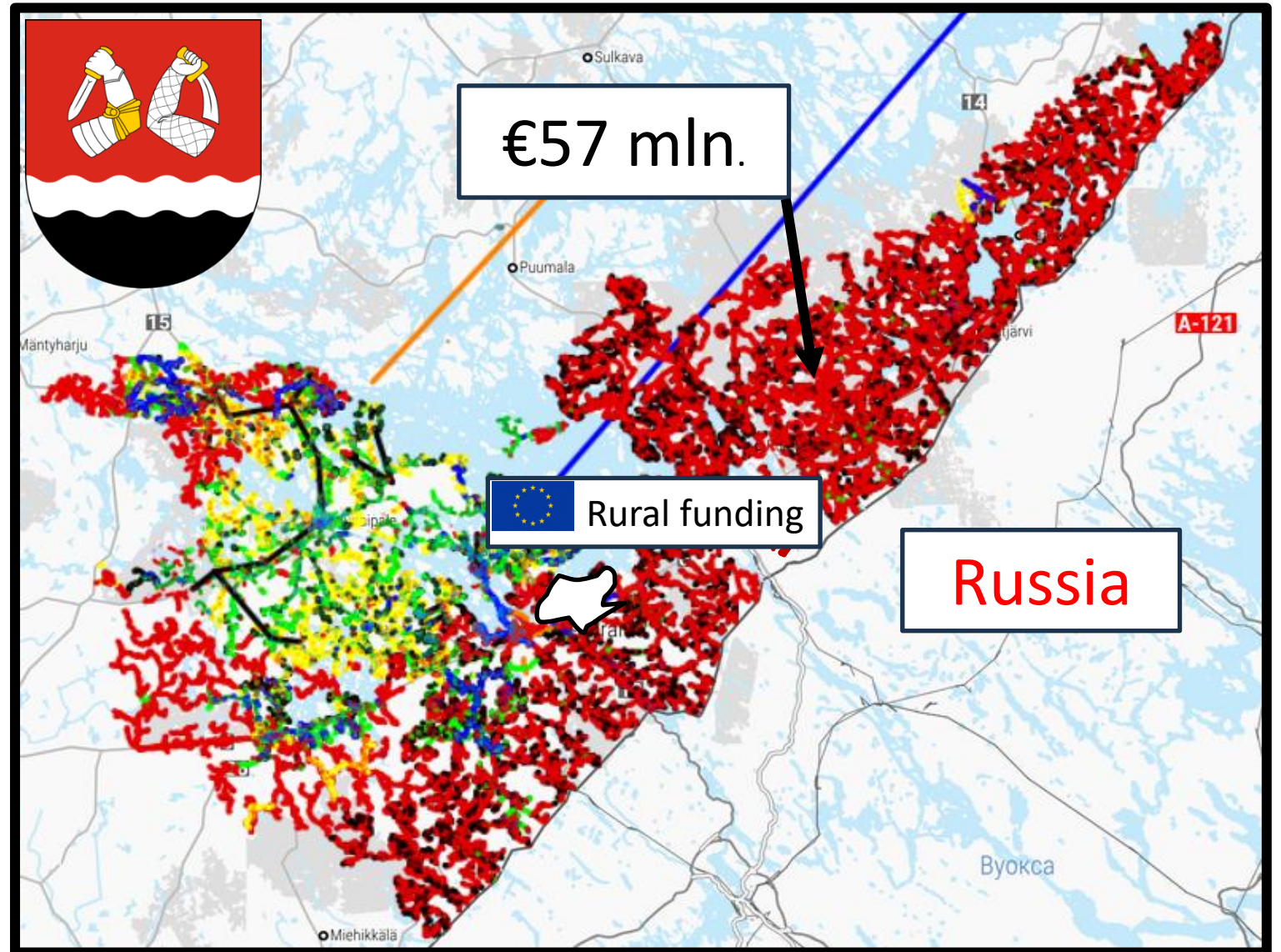
+1. Hope for the better!

Companien and properties in yellow area without fiber optic network	Only South Karelian
Yellow Rural area properties	24 000
* Many homes and holiday homes in rural area are used for remote work	
Companies in yellow rural area	1 200+farmers
Yellow area building cost	57 000 000 €
The goal is 30% penetration of all properties	7200
Fiber optic network costs at 30% penetration to one property	7 917 €

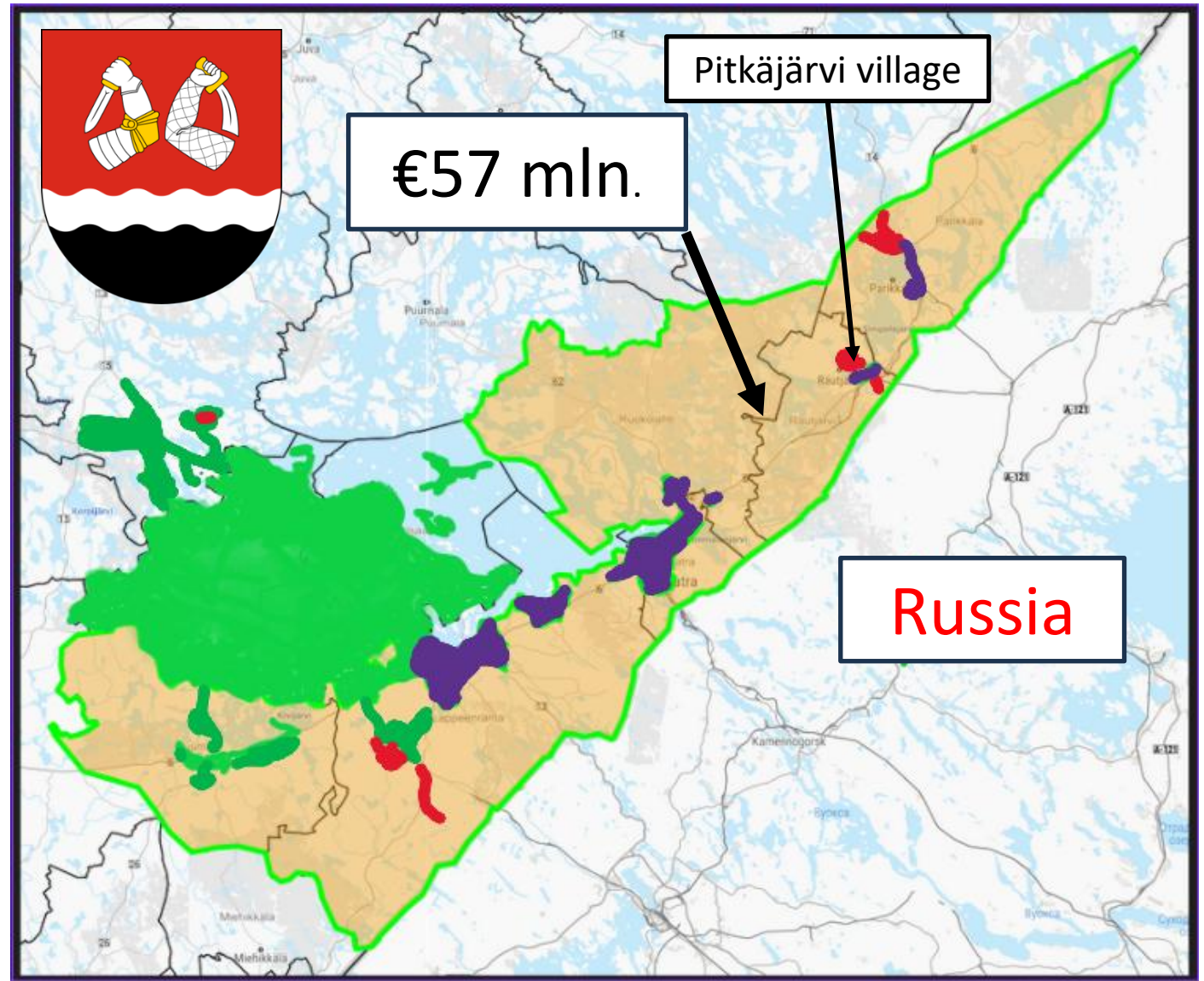


+1. Hope for the better!

- Fiber optic networks are planned for every village and house in South Karelia - we need EU help to implement them
- We have used EU rural funding to design a fiber optic network in rural areas in the municipalities of Lappeenranta, Imatra, Ruokolahti, Rautjärvi and Parikkala. Otherwise, the design would not have been completed. I have personally led the design with design companies.



A picture from the fiber optic event in **Pitkäjärvi** village on 16 August 2026, where mobile connections are really bad!



**Kiitos –
Thank You!**

