Kaustisen seutukunta

Matkapuhelinverkkojen mittausten analyysi

20.10.2022 – mittatunti **9**.

Elinkeino-, liikenne- ja ympäristökeskus

Euroopan maaseudun kehittämisen maatalousrahasto: Eurooppa investoi maaseutualueisiin

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WE KEEP THE WORLD ON TRACK

Mittaukset perustuvat kolmelta modeemilta saatuihin mittaustuloksiin. Jokaisella operaattorilla on oma modeemi. 5G tulokset (SS-RSRP, Band, Physical Cell ID) esitetään vain, jos siitä on havaittu mittadataa kyseiseltä ajanjaksolta.

Parametrien tarkasteluun voidaan käyttää oheisia taulukoita:

Lähde: https://www.netvault.net.au/netmon-4g-signal-statistics-explained

RSRP	Signal strength	Description
>= -80 dBm	Excellent	Strong signal with maximum data speeds
-80 dBm to -90 dBm	Good	Strong signal with good data speeds
-90 dBm to -100 dBm	Fair to poor	Reliable data speeds may be attained, but marginal data with drop-outs is possible. When this value gets close to -100, performance will drop drastically
<= -100 dBm	No signal	Disconnection

RSRQ	Signal quality	Description
>= -10 dB	Excellent	Strong signal with maximum data speeds
-10 dB to -15 dB	Good	Strong signal with good data speeds
-15 dB to -20 dB	Fair to poor	Reliable data speeds may be attained, but marginal data with drop-outs is possible. When this value gets close to -20, performance will drop drastically
<= -20 dB	No signal	Disconnection

SINR	Signal strength	Description
>= 20 dB	Excellent	Strong signal with maximum data speeds
13 dB to 20 dB	Good	Strong signal with good data speeds
0 dB to 13 dB	Fair to poor	Reliable data speeds may be attained, but marginal data with drop-outs is possible. When this value gets close to 0, performance will drop drastically
<= 0 dB	No signal	Disconnection

RSRP = Reference Signal Received Power

= tukiasemalta vastaanotetun signaalin teho

RSRQ = Reference Signal Received Quality

= tukiasemalta vastaanotetun signaalin laatu

SINR = Signal to Interference plus Noise Ratio

= signaali-kohinasuhde

Lisäksi esitetty:

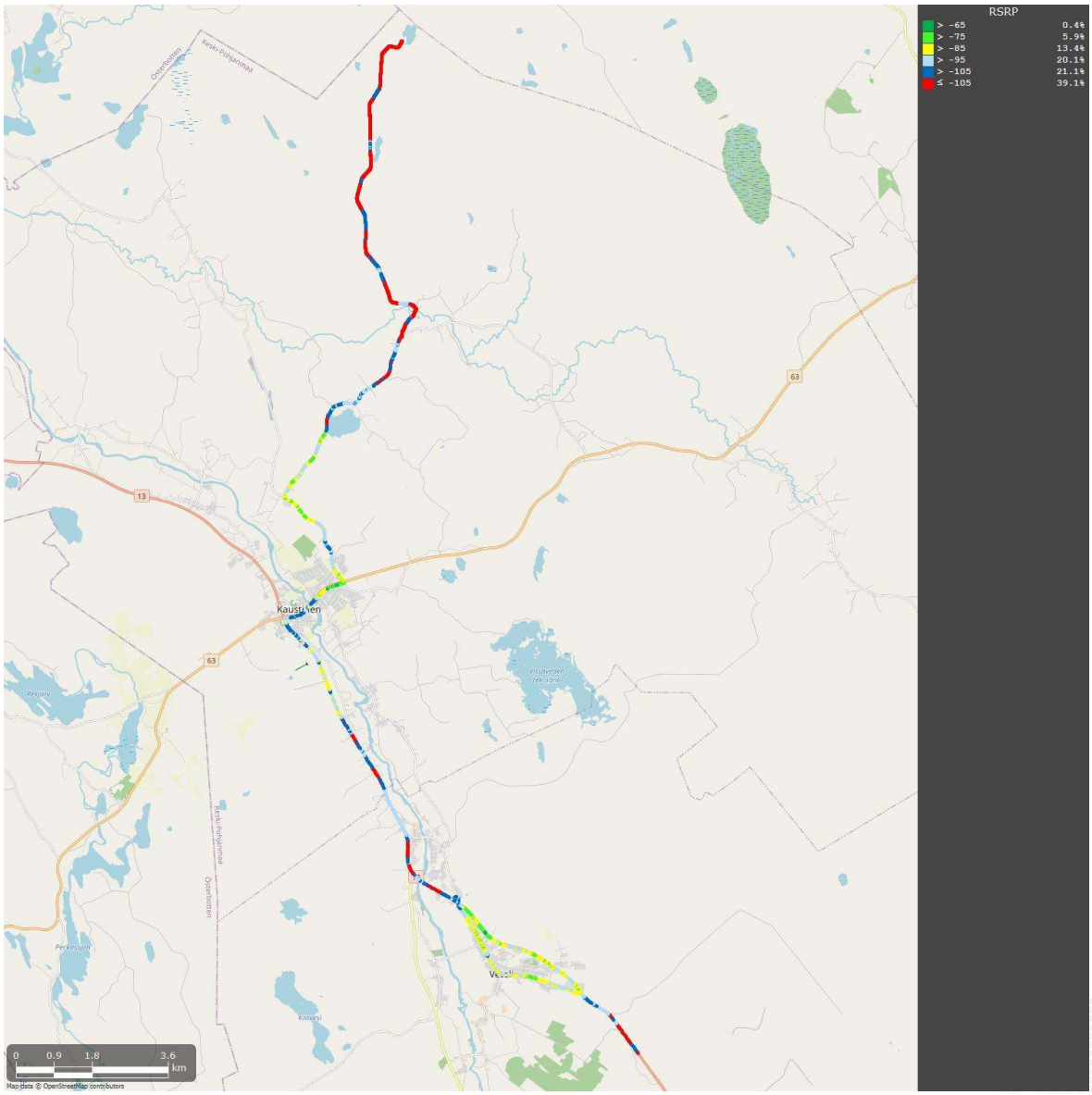
Band = taajuusalue missä modeemi ollut kiinni

Cell id = solu missä modeemi ollut kiinni

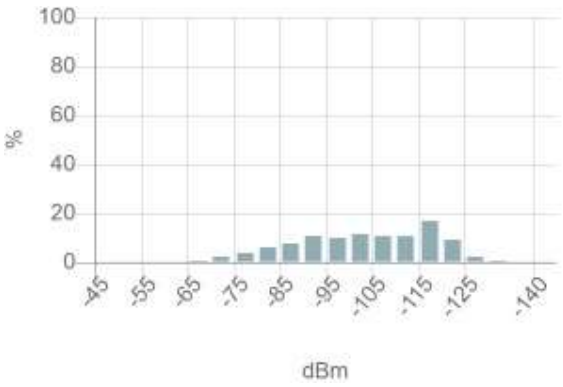
Speed = mittausauton nopeus m/s

Telia mittatunti **9**

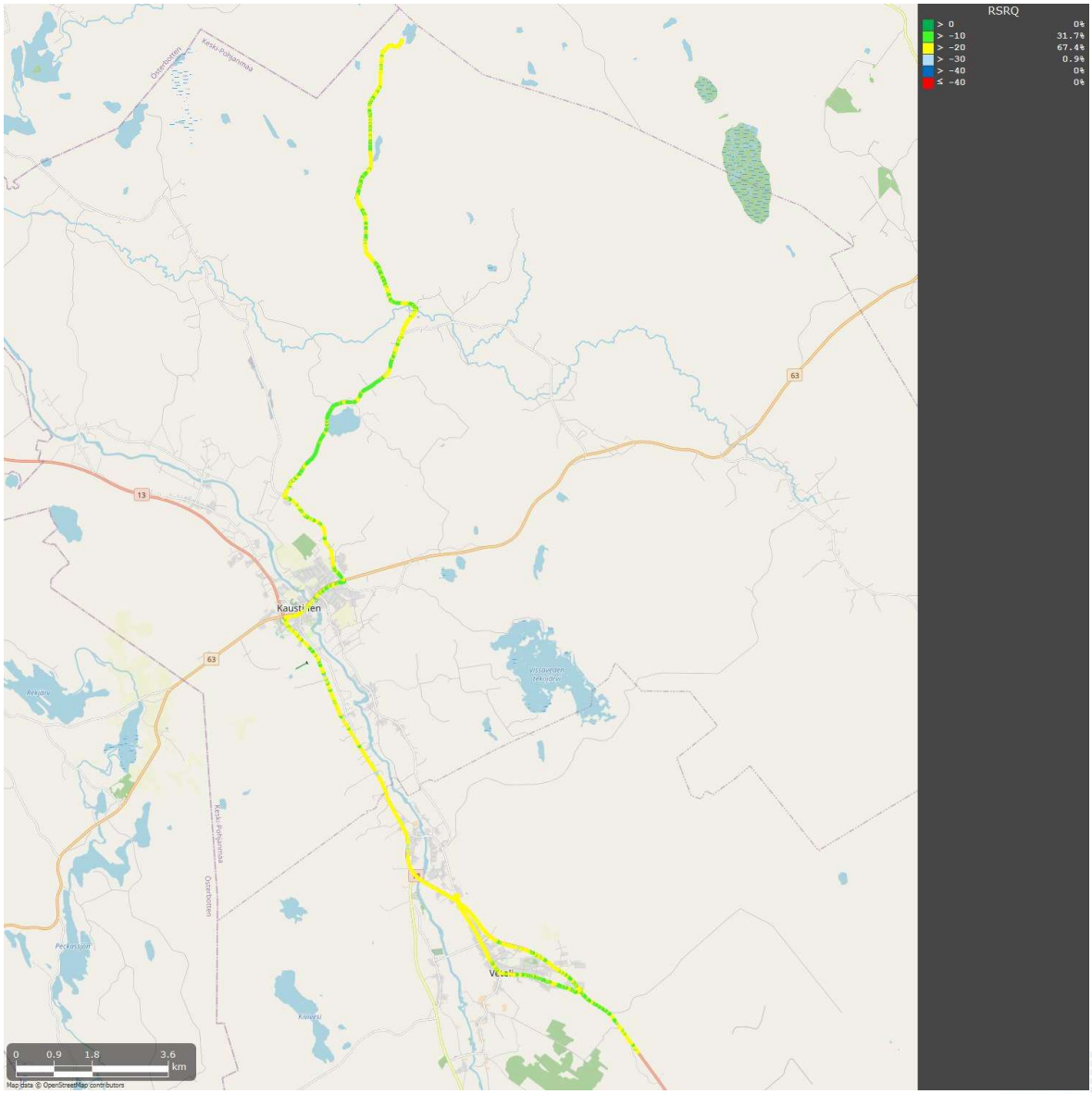
20221020-084240



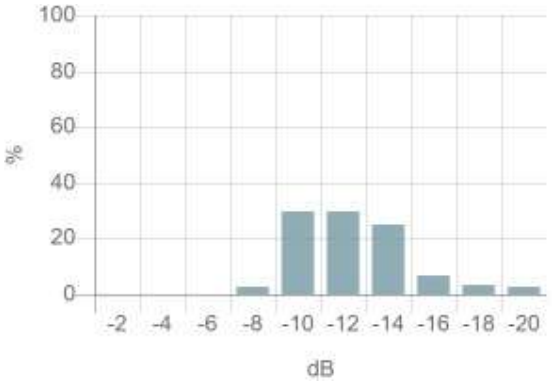
RSRP



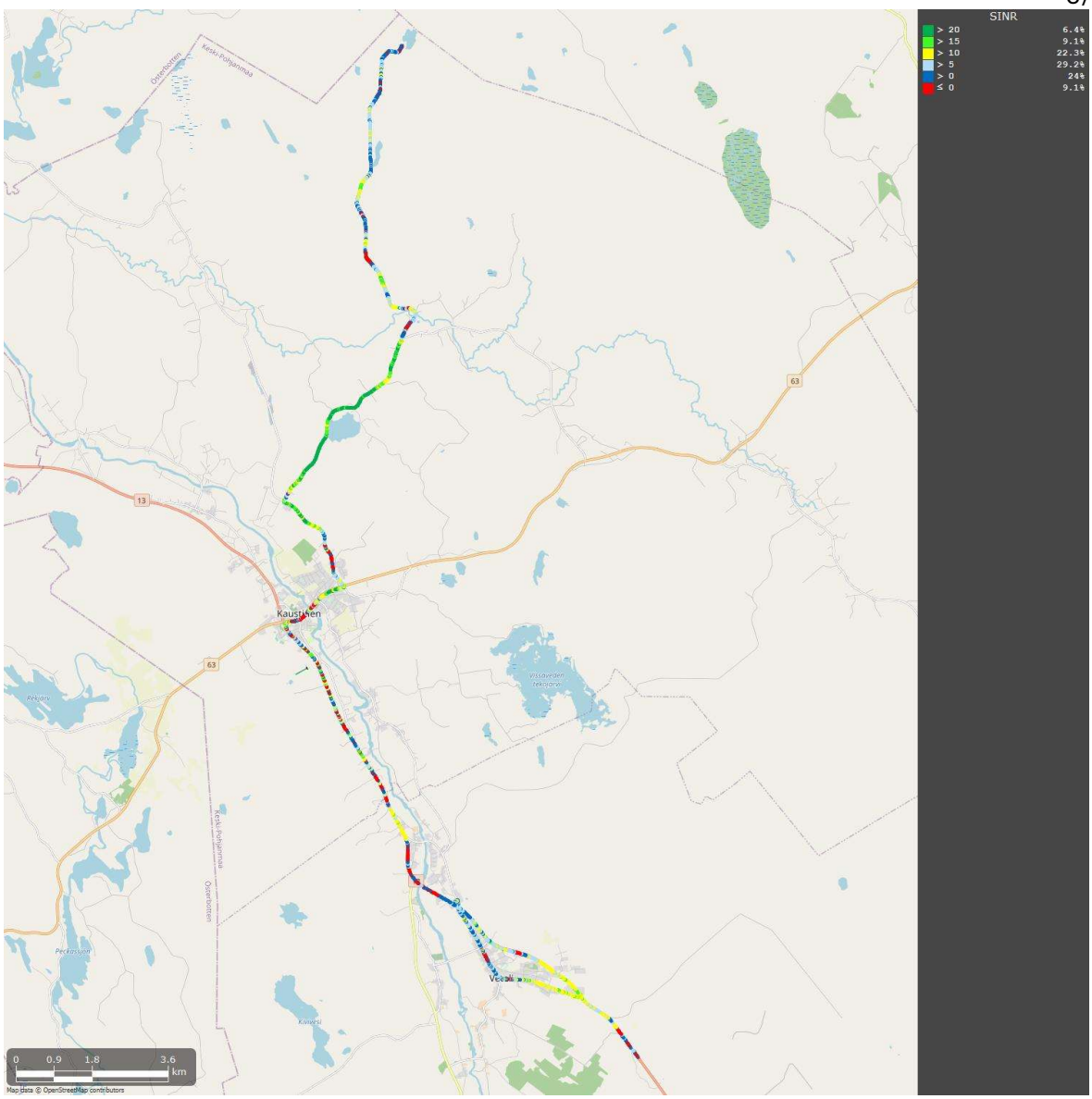
RSRP



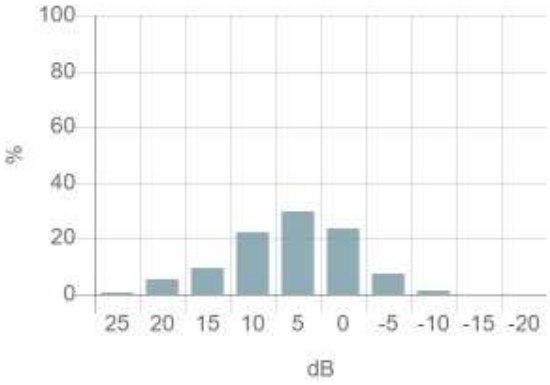
RSRQ



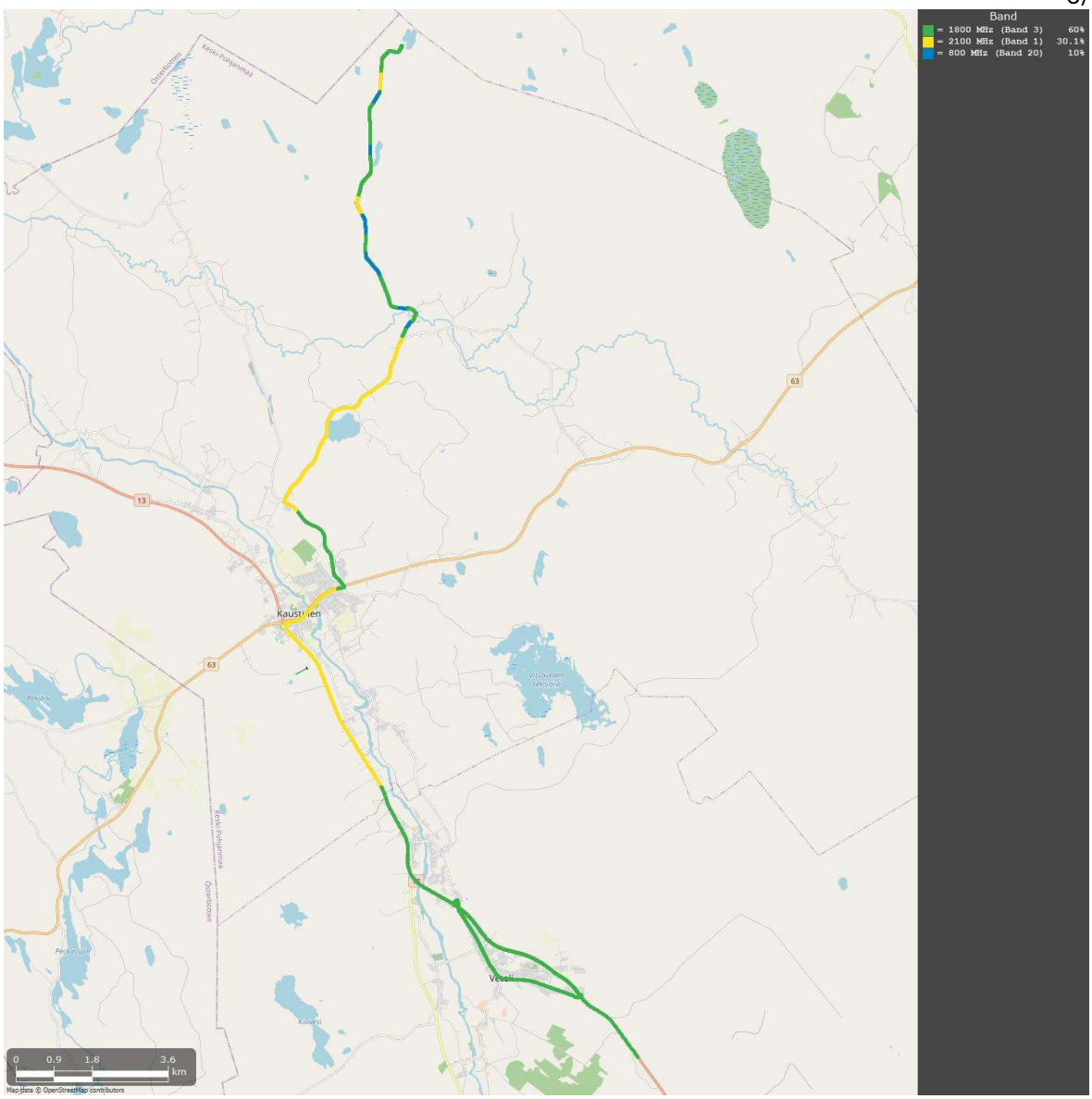
RSRQ


SINR
> 20 6.4%
> 15 9.1%
> 10 22.3%
> 5 29.2%
> 0 24%
≤ 0 9.1%
Kaustinen
0 0.9 1.8 3.6
km

SINR


100
80
60
40
20
0
%
25 20 15 10 5 0 -5 -10 -15 -20
dB

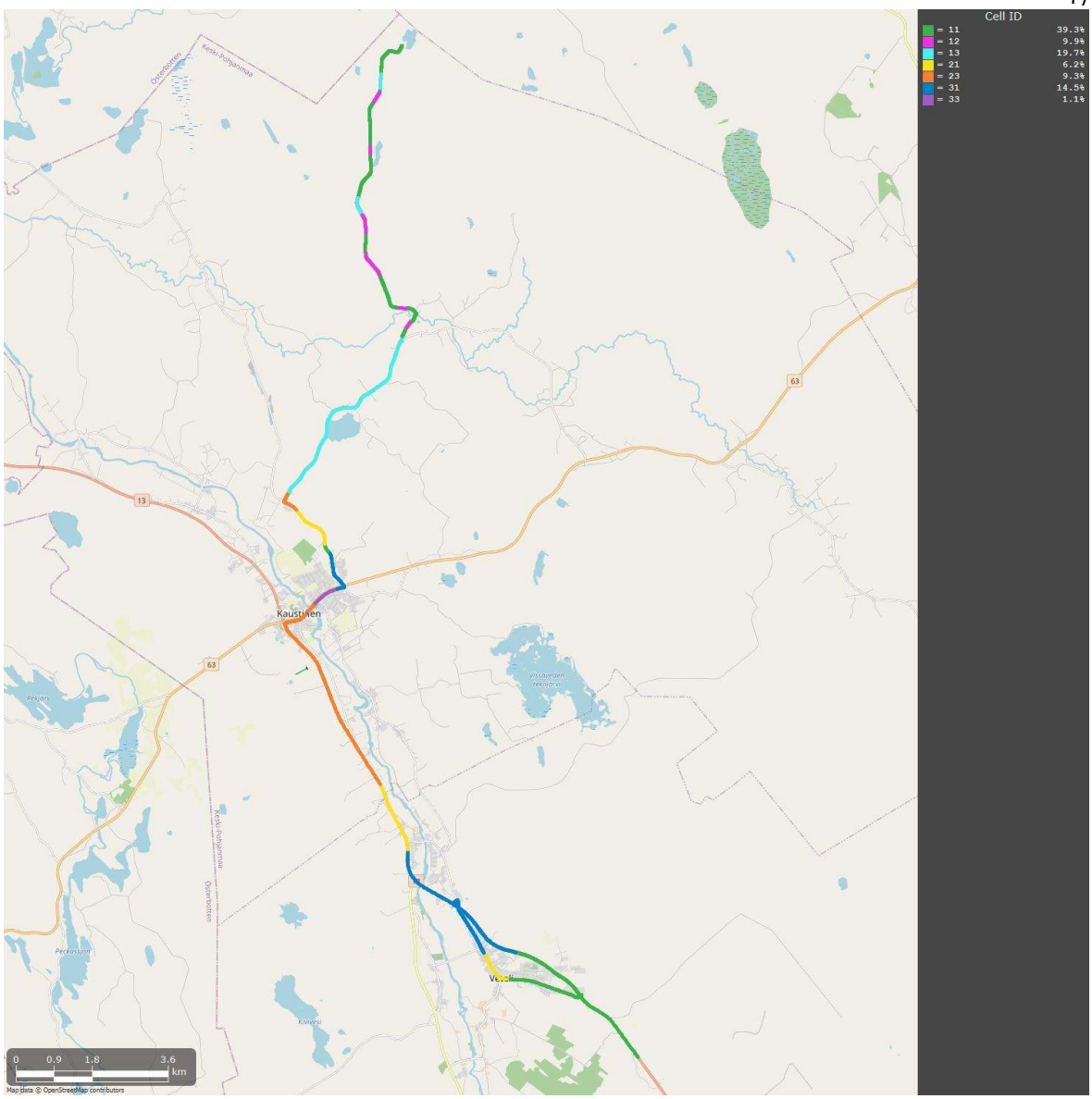
SINR


Band
= 1800 MHz (Band 3) 60%
= 2100 MHz (Band 1) 30.1%
= 800 MHz (Band 20) 10%
0 0.9 1.8 3.6
km

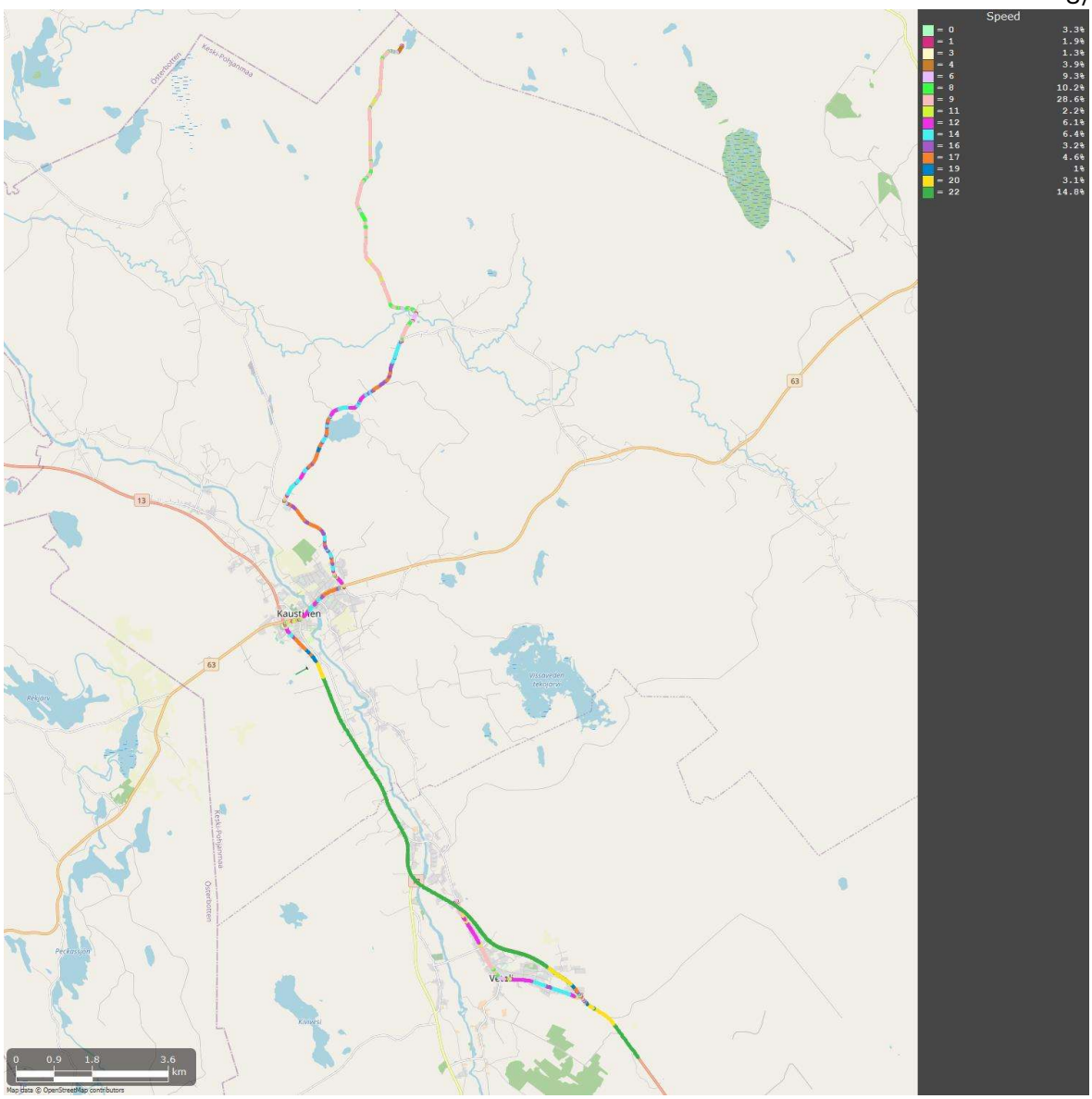
Band


1800 MHz (Band 3)
2100 MHz (Band 1)
800 MHz (Band 20)

Band


Cell ID
= 11 39.3%
= 12 9.9%
= 13 19.7%
= 21 6.2%
= 23 9.3%
= 31 14.5%
= 33 1.1%
Kaustinen
Veteli
63
13
0 0.9 1.8 3.6
km

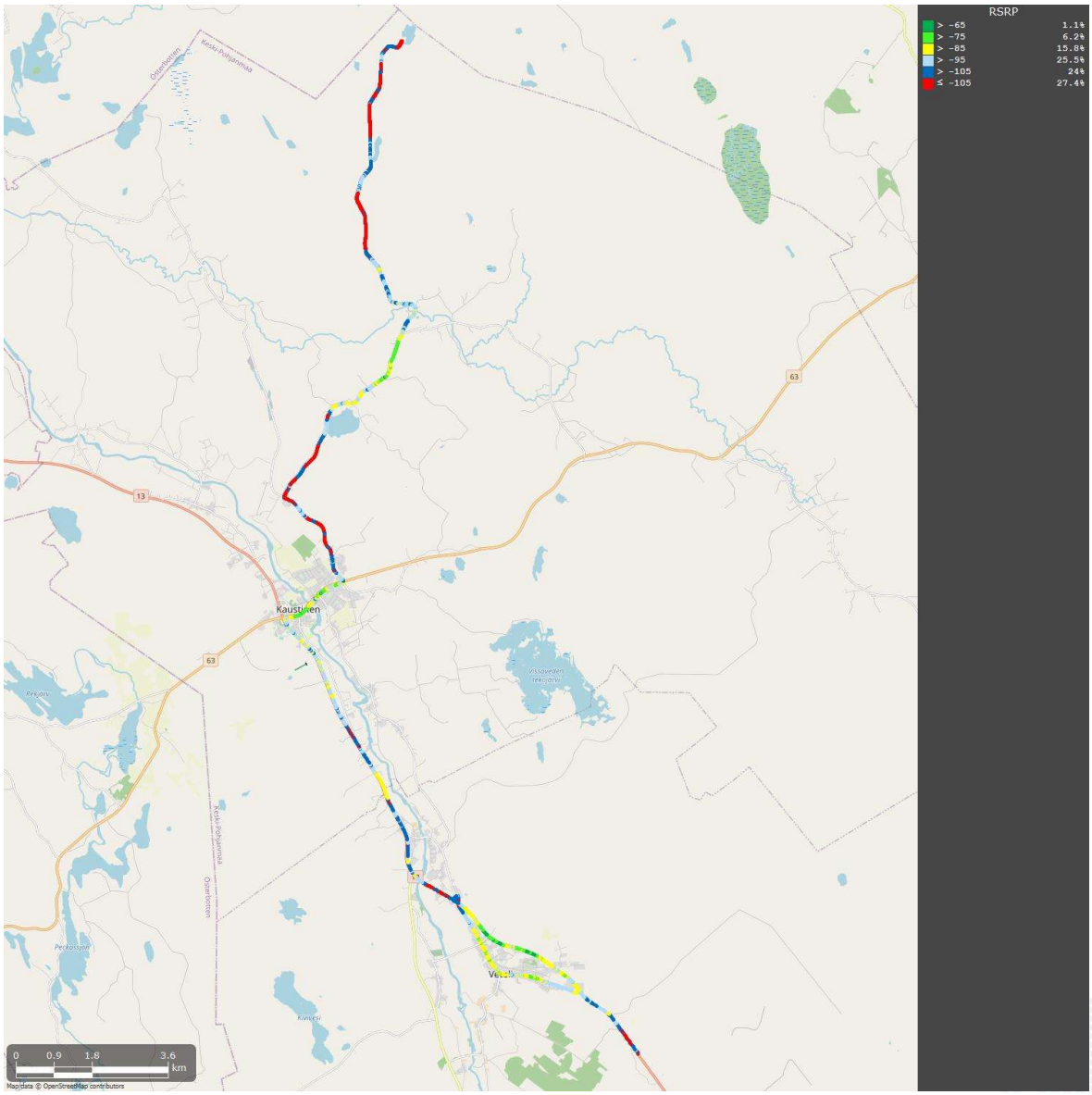
Cell ID


Speed
= 0 3.3%
= 1 1.9%
= 3 1.3%
= 4 3.9%
= 6 9.3%
= 8 10.2%
= 9 28.6%
= 11 2.2%
= 12 6.1%
= 14 6.4%
= 16 3.2%
= 17 4.6%
= 19 1%
= 20 3.1%
= 22 14.8%
Kaustinen
63
13
0 0.9 1.8 3.6
km

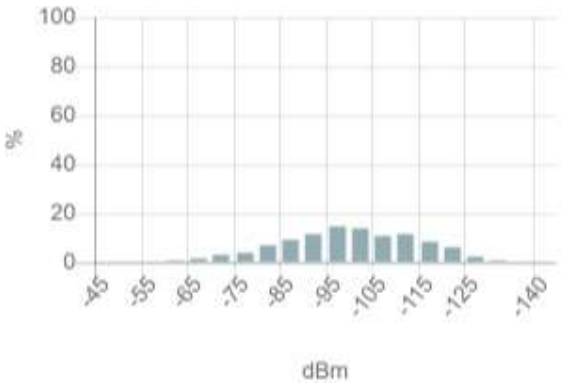
Speed

Elisa mittatunti **9**

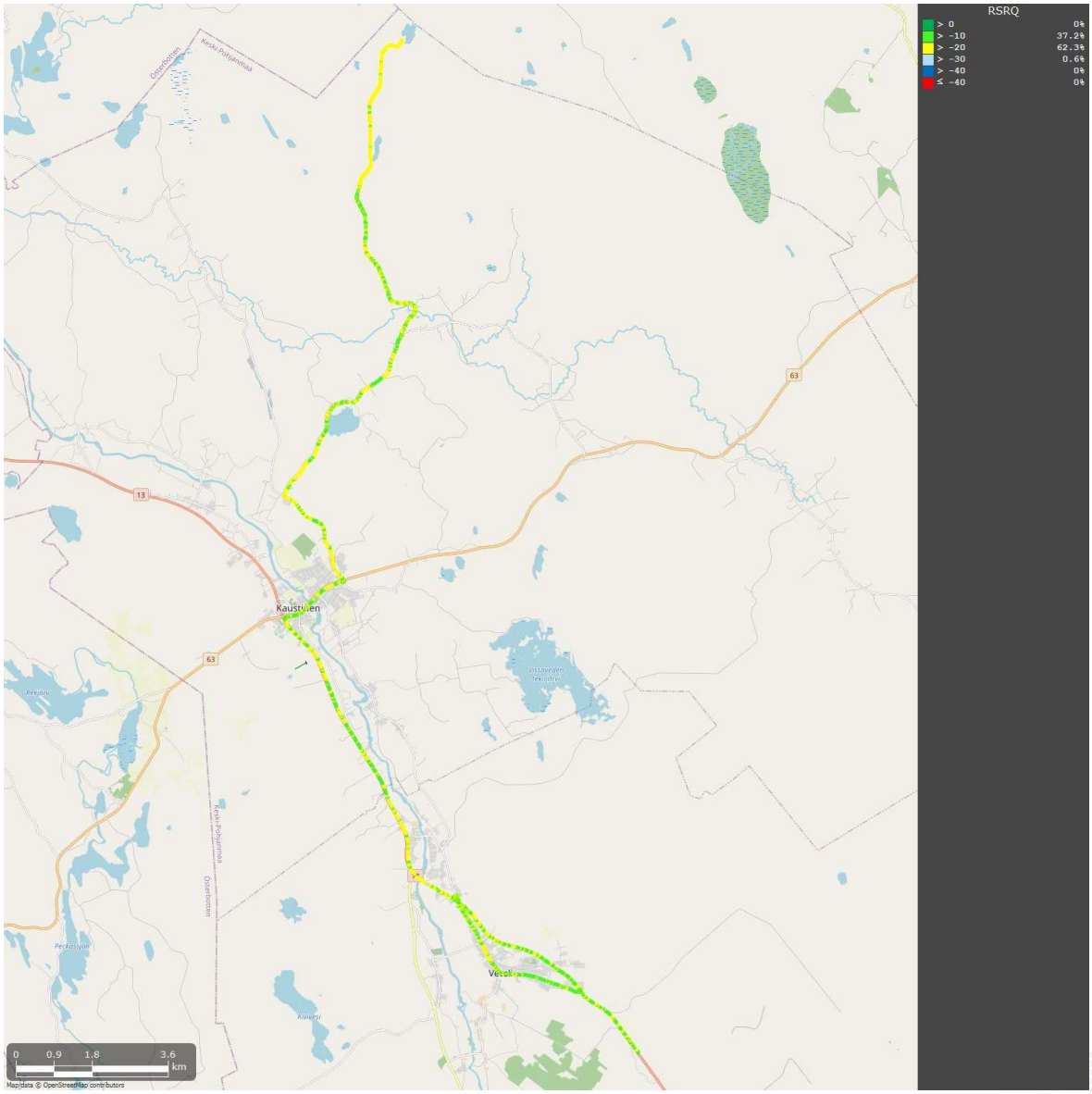
20221020-084240



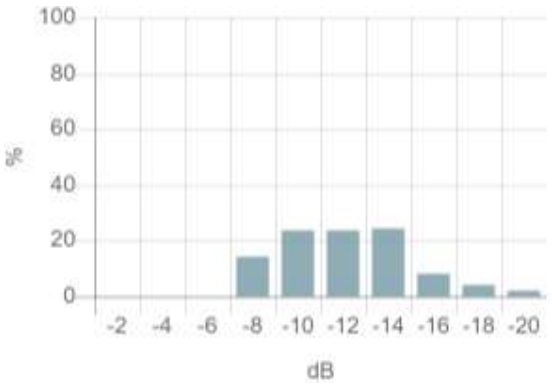
RSRP



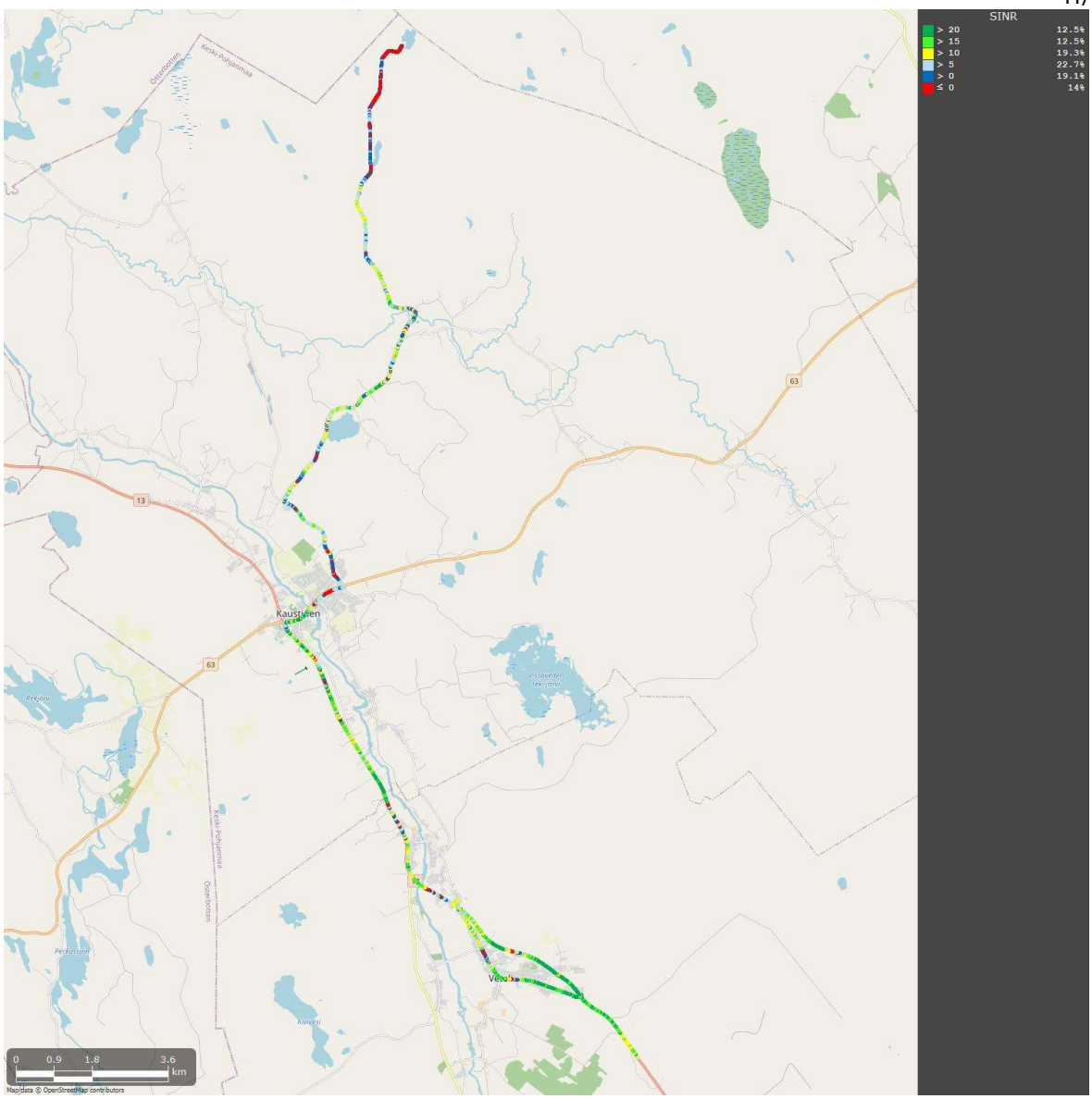
RSRP



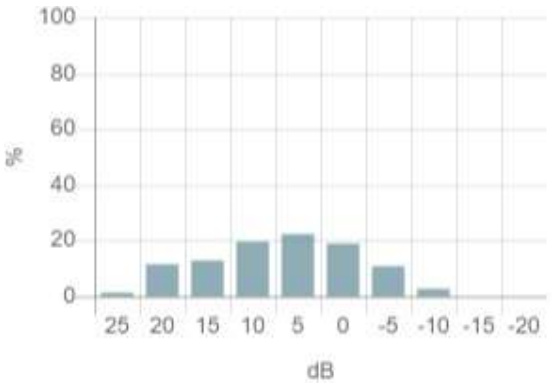
RSRQ



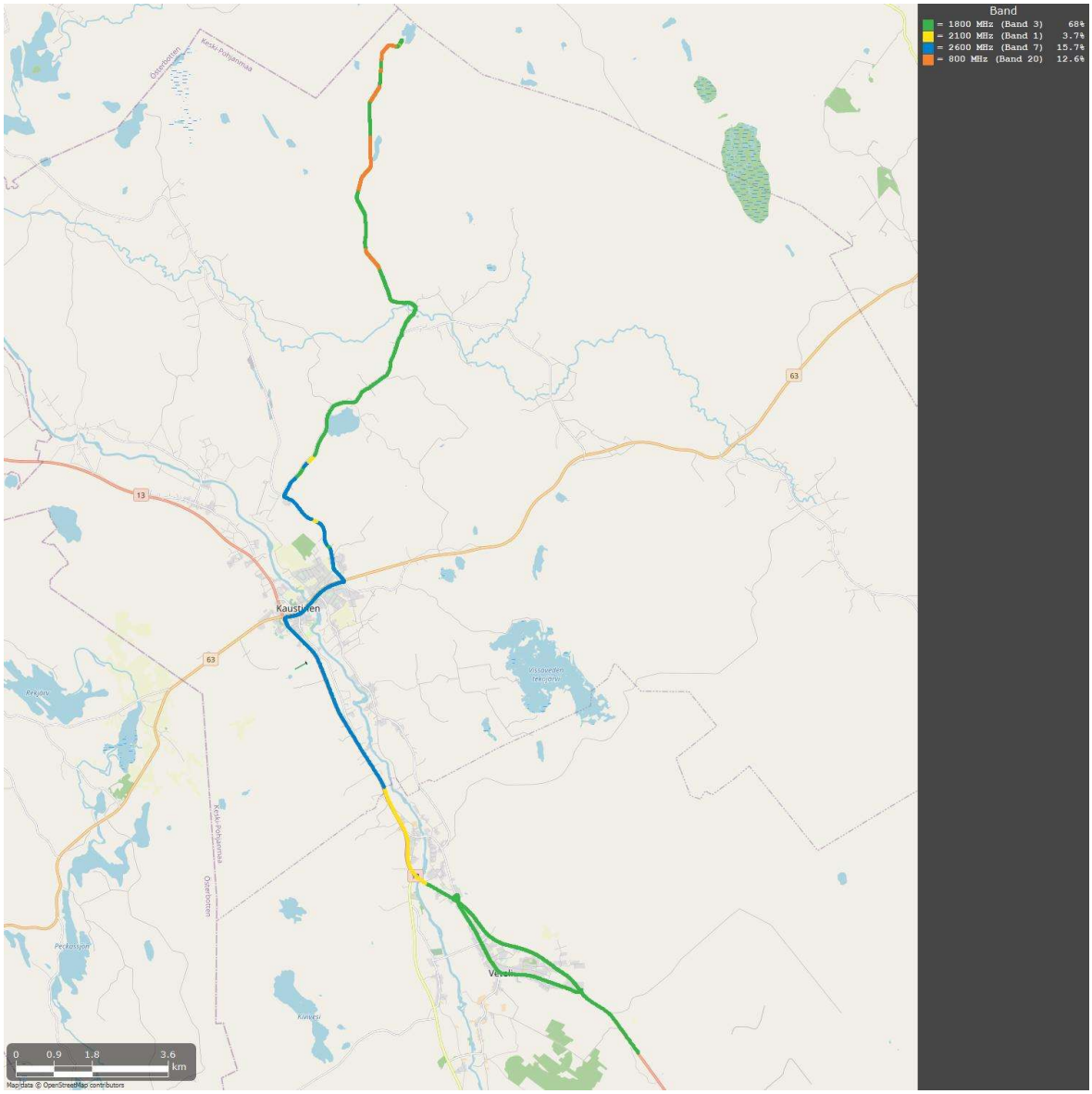
RSRQ


SINR
> 20 12.5%
> 15 12.5%
> 10 19.3%
> 5 22.7%
> 0 19.1%
≤ 0 14%
Kaustinen
0 0.9 1.8 3.6
km

SINR


100
80
60
40
20
0
%
25 20 15 10 5 0 -5 -10 -15 -20
dB

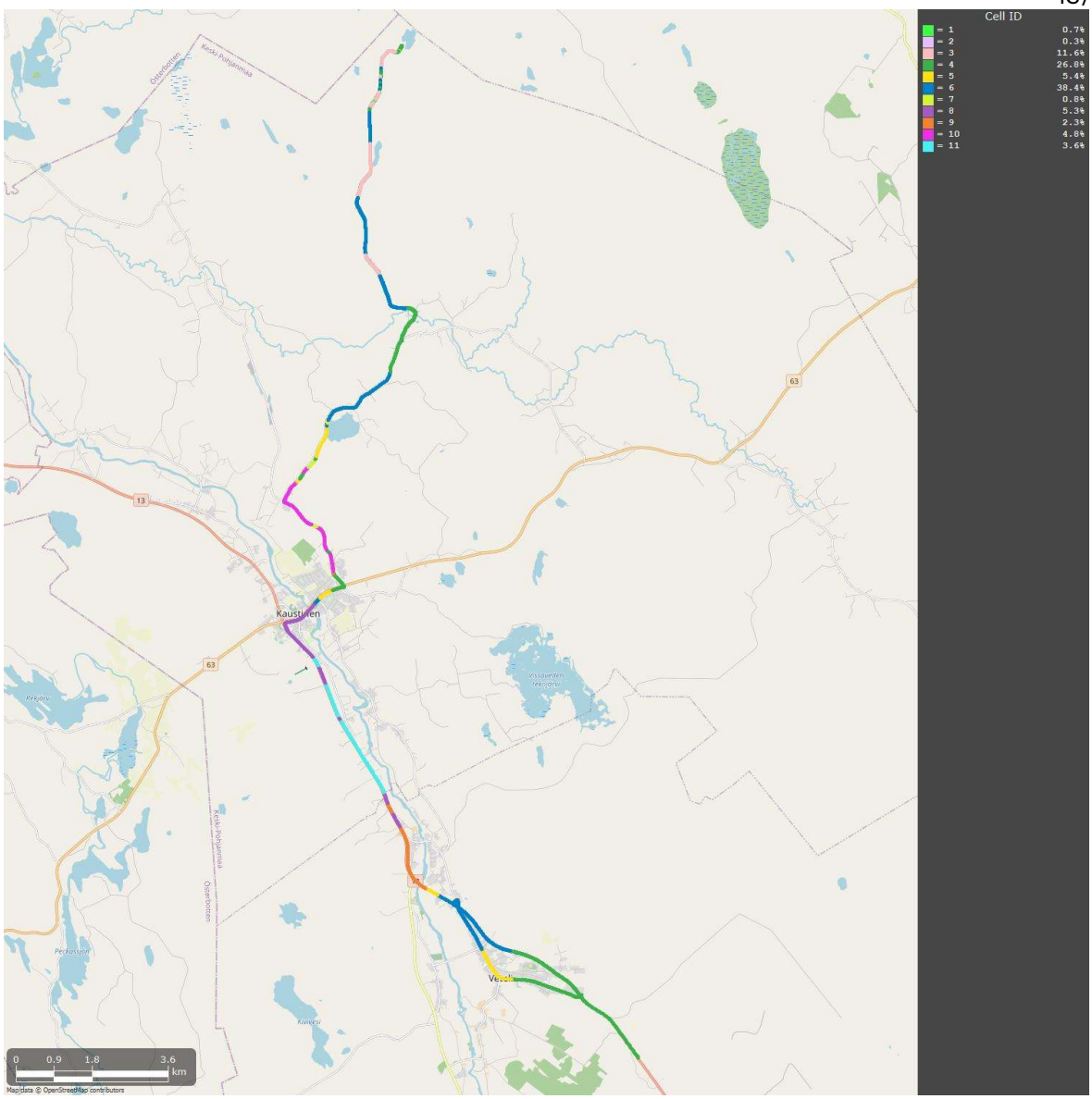
SINR


Band
= 1800 MHz (Band 3) 68%
= 2100 MHz (Band 1) 3.7%
= 2600 MHz (Band 7) 15.7%
= 800 MHz (Band 20) 12.6%
0 0.9 1.8 3.6
km

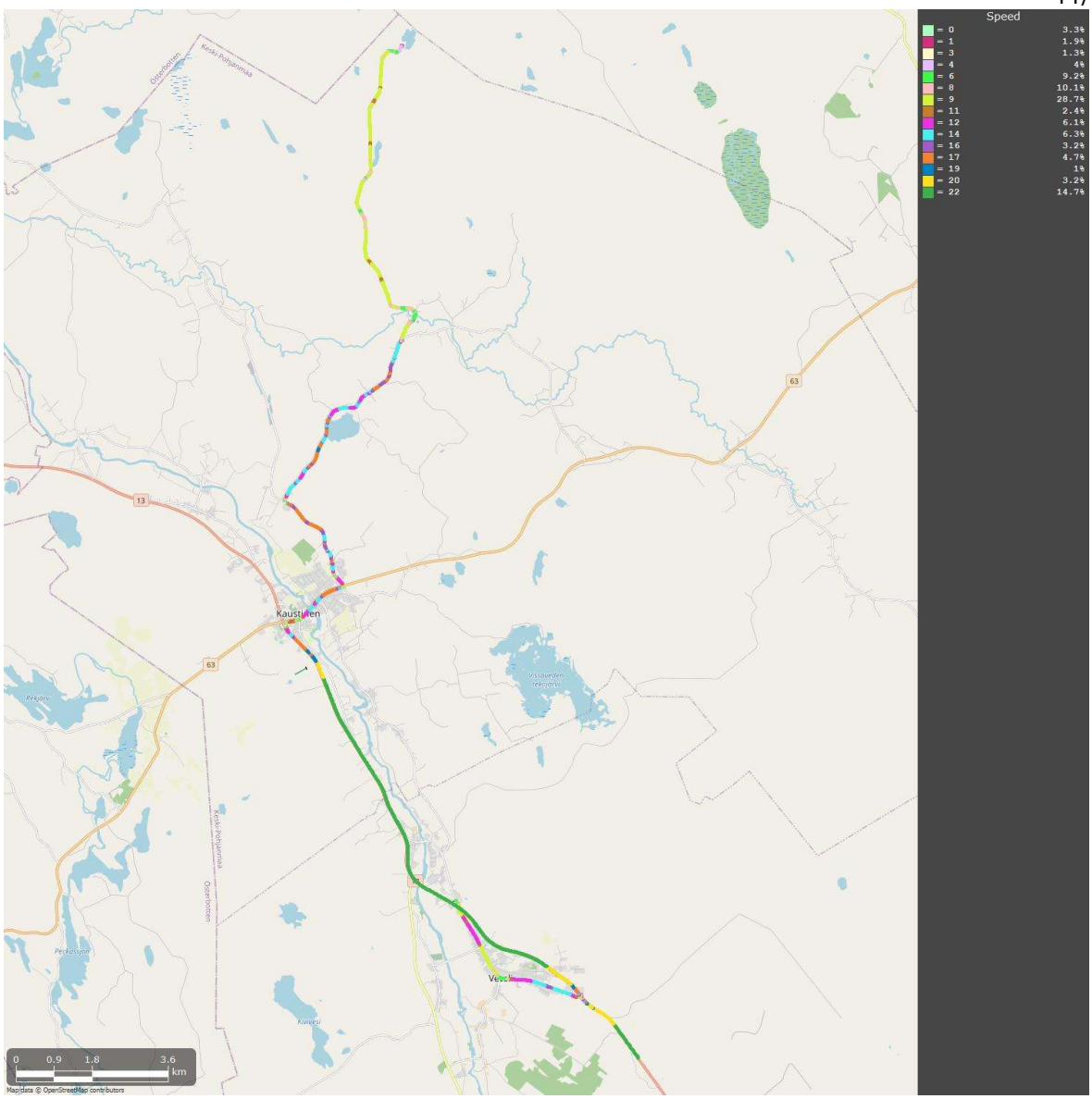
Band


1800 MHz (Band 3)
2100 MHz (Band 1)
2600 MHz (Band 7)
800 MHz (Band 20)

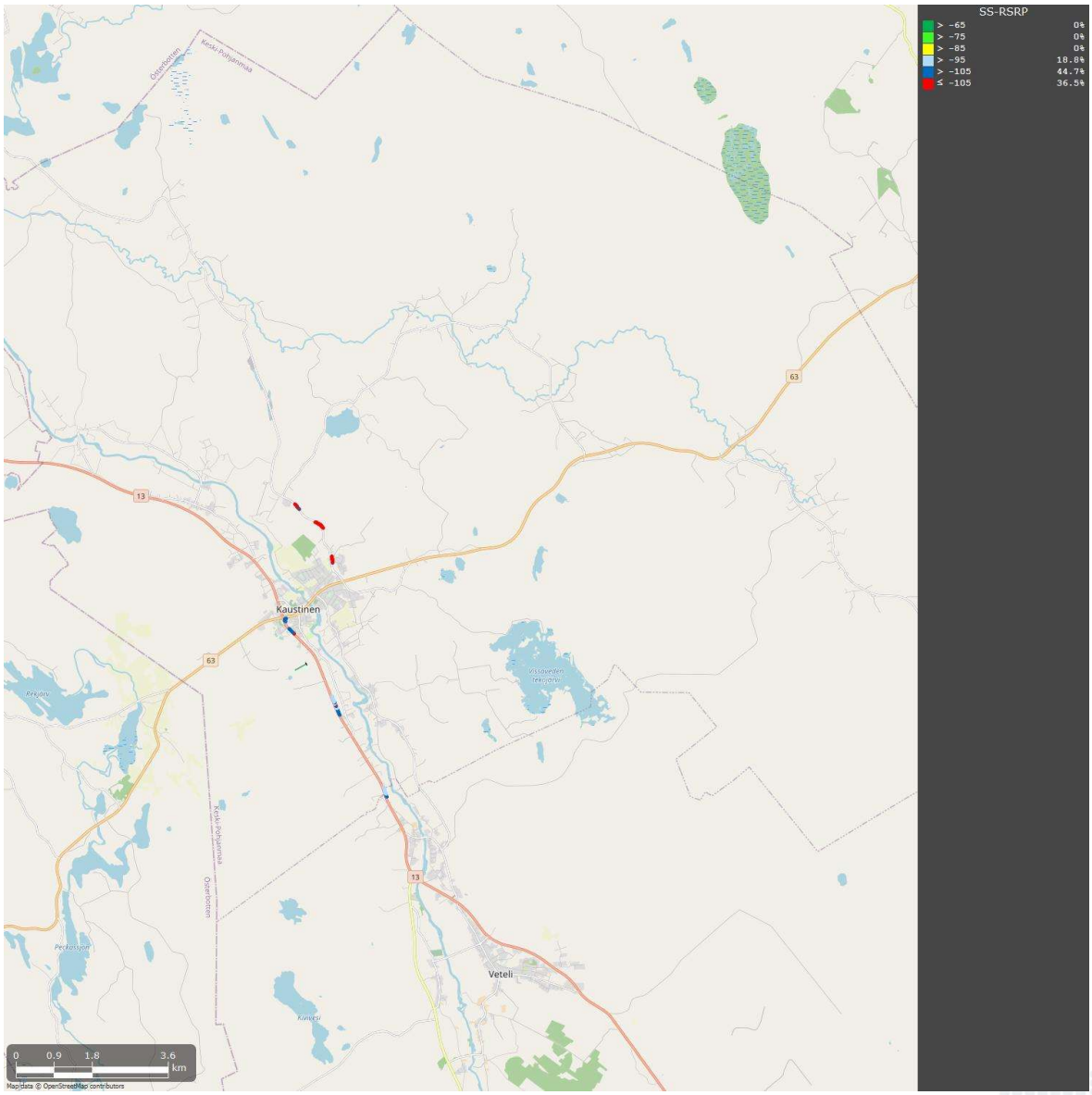
Band


Cell ID
= 1 0.7%
= 2 0.3%
= 3 11.6%
= 4 26.8%
= 5 5.4%
= 6 38.4%
= 7 0.8%
= 8 5.3%
= 9 2.3%
= 10 4.8%
= 11 3.6%
Kaustinen
Veteli
63
13
0 0.9 1.8 3.6
km

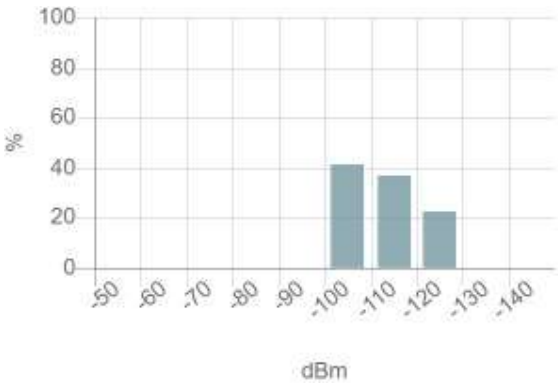
Cell ID


Speed
= 0 3.3%
= 1 1.9%
= 3 1.3%
= 4 4%
= 6 9.2%
= 8 10.1%
= 9 28.7%
= 11 2.4%
= 12 6.1%
= 14 6.3%
= 16 3.2%
= 17 4.7%
= 19 1%
= 20 3.2%
= 22 14.7%
Kaustinen
Veteli
63
13
0 0.9 1.8 3.6
km

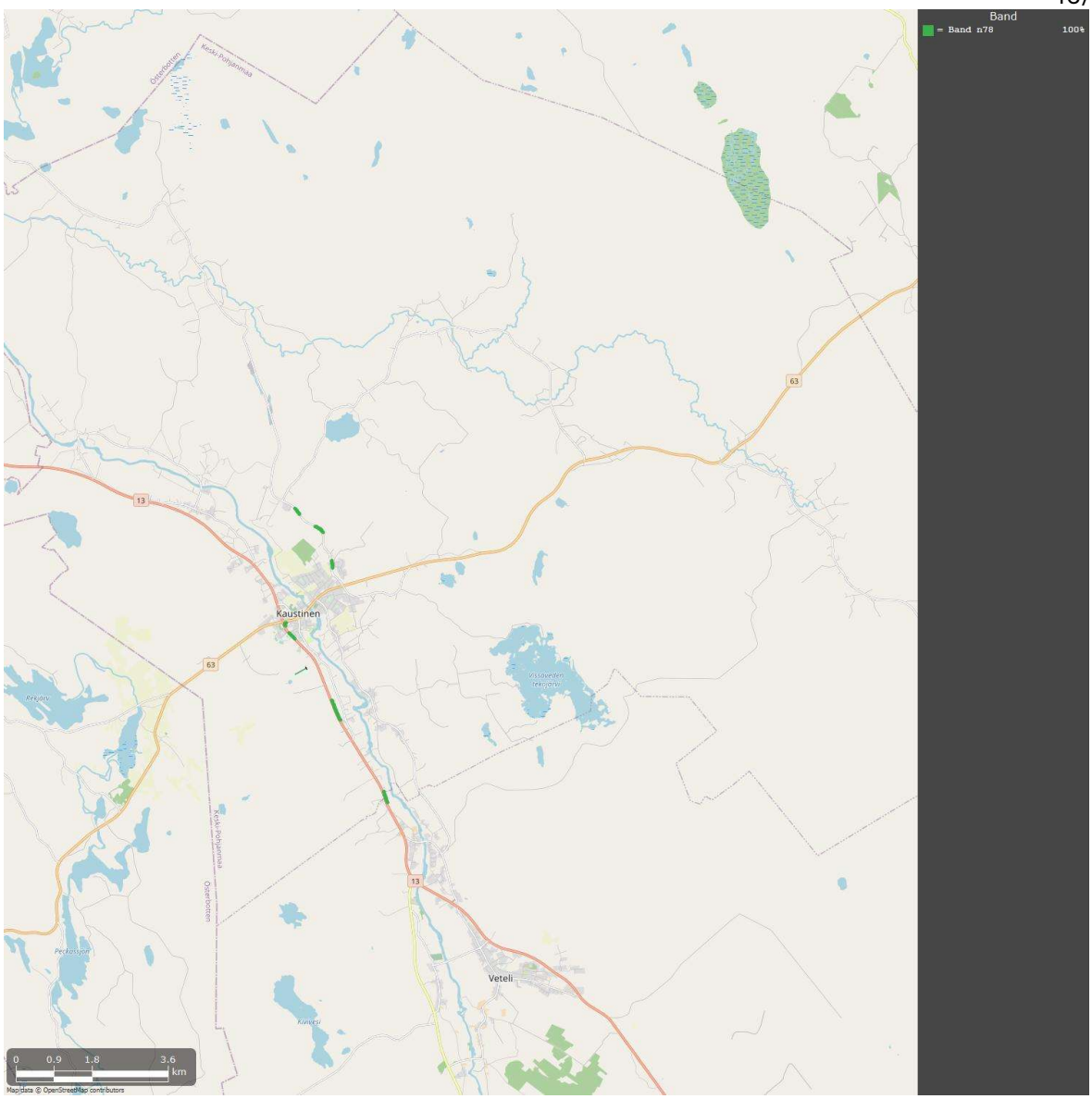
Speed



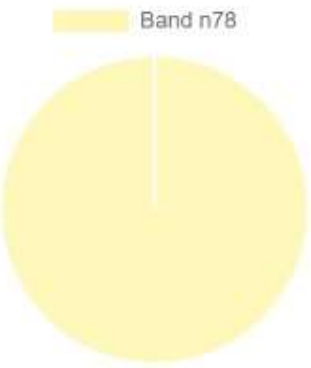
SS-RSRP



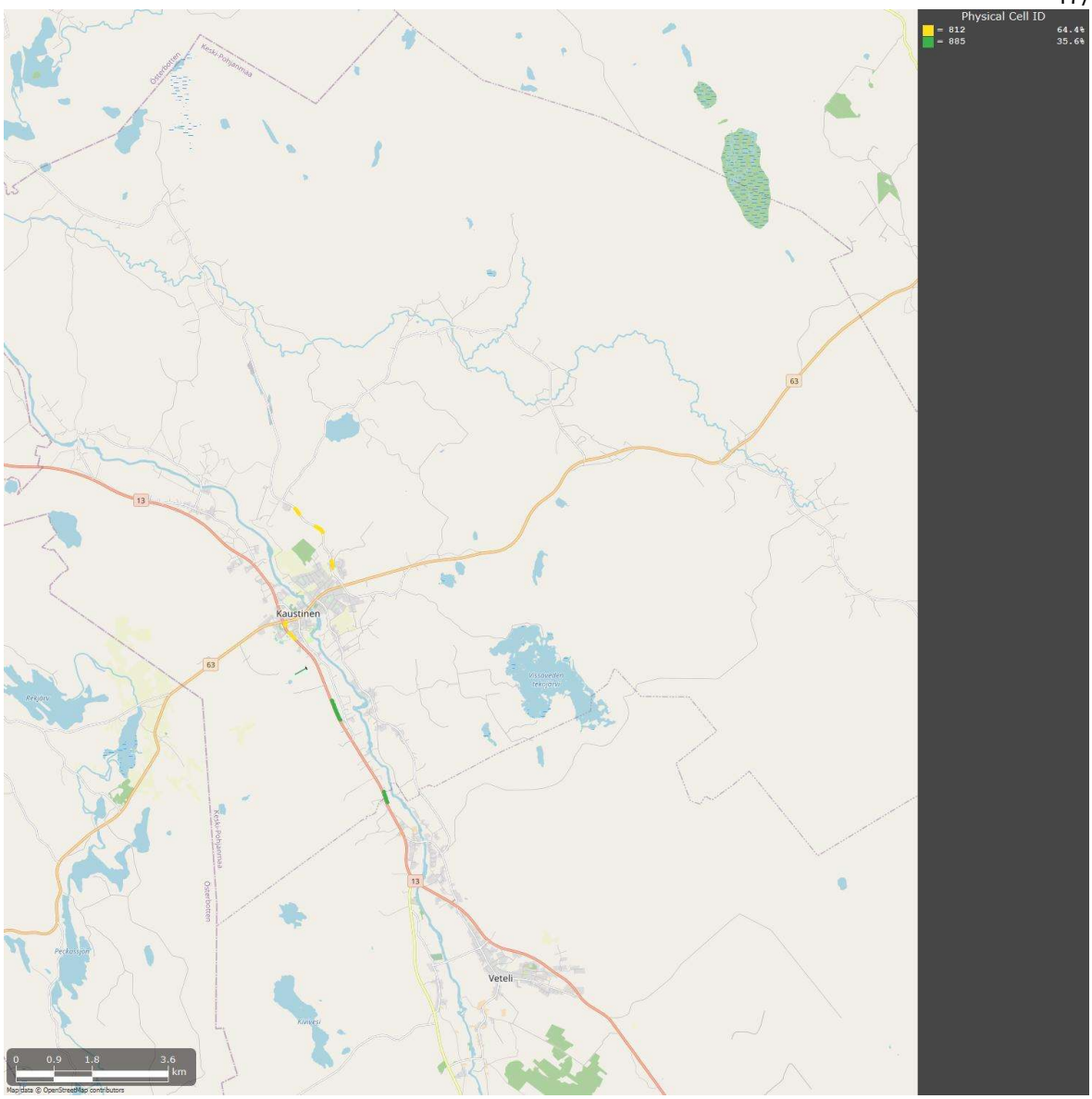
SS-RSRP



Band



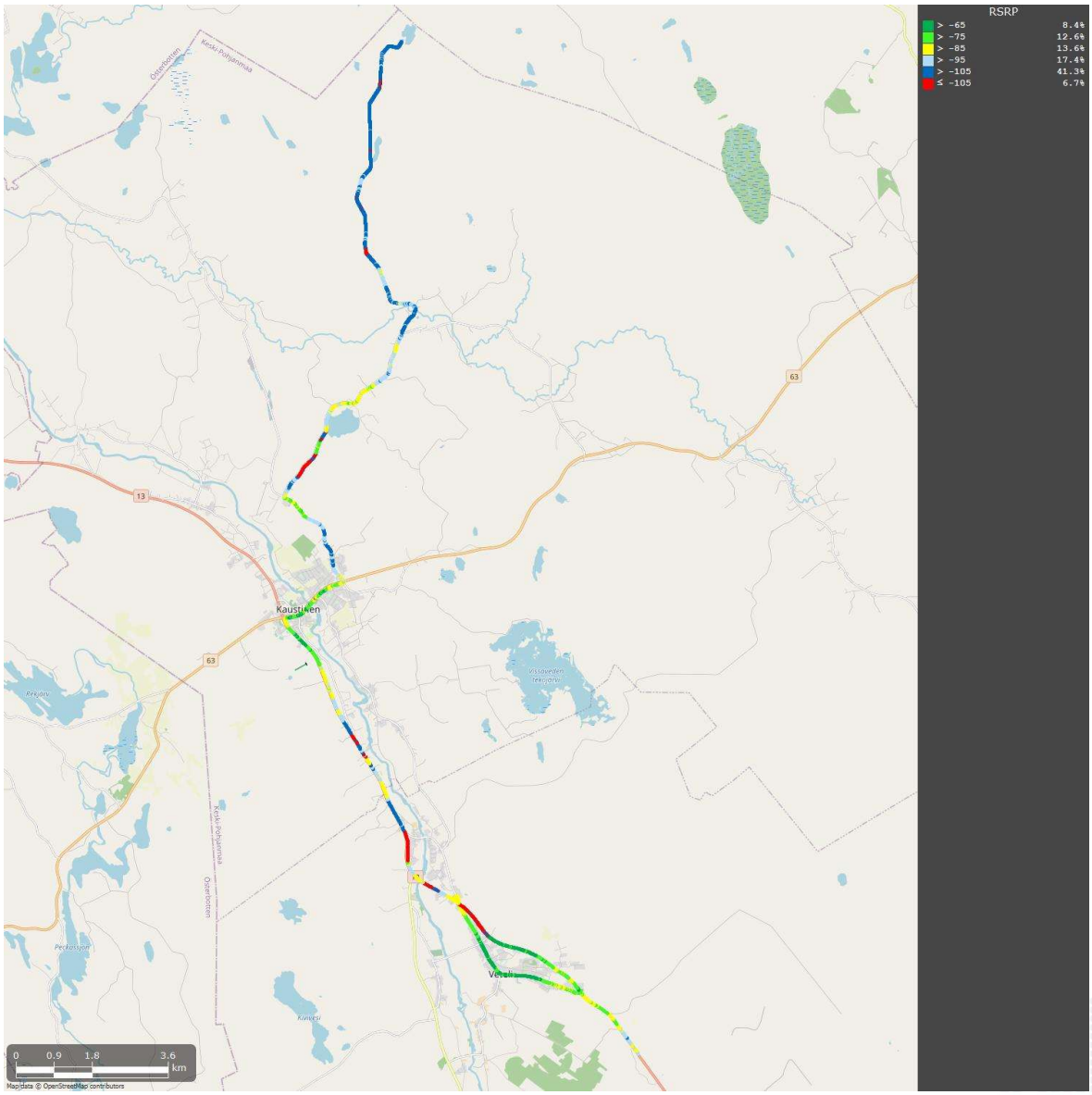
Band



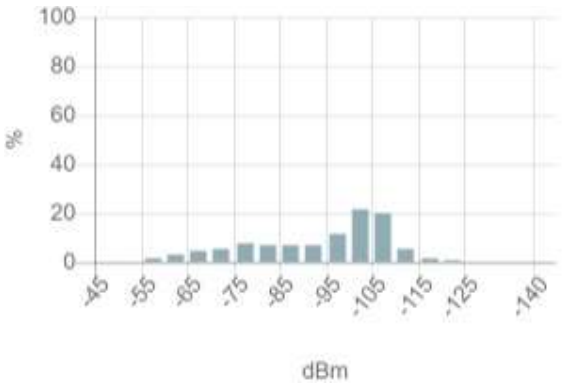
Physical Cell ID

Dna mittatunti **9**

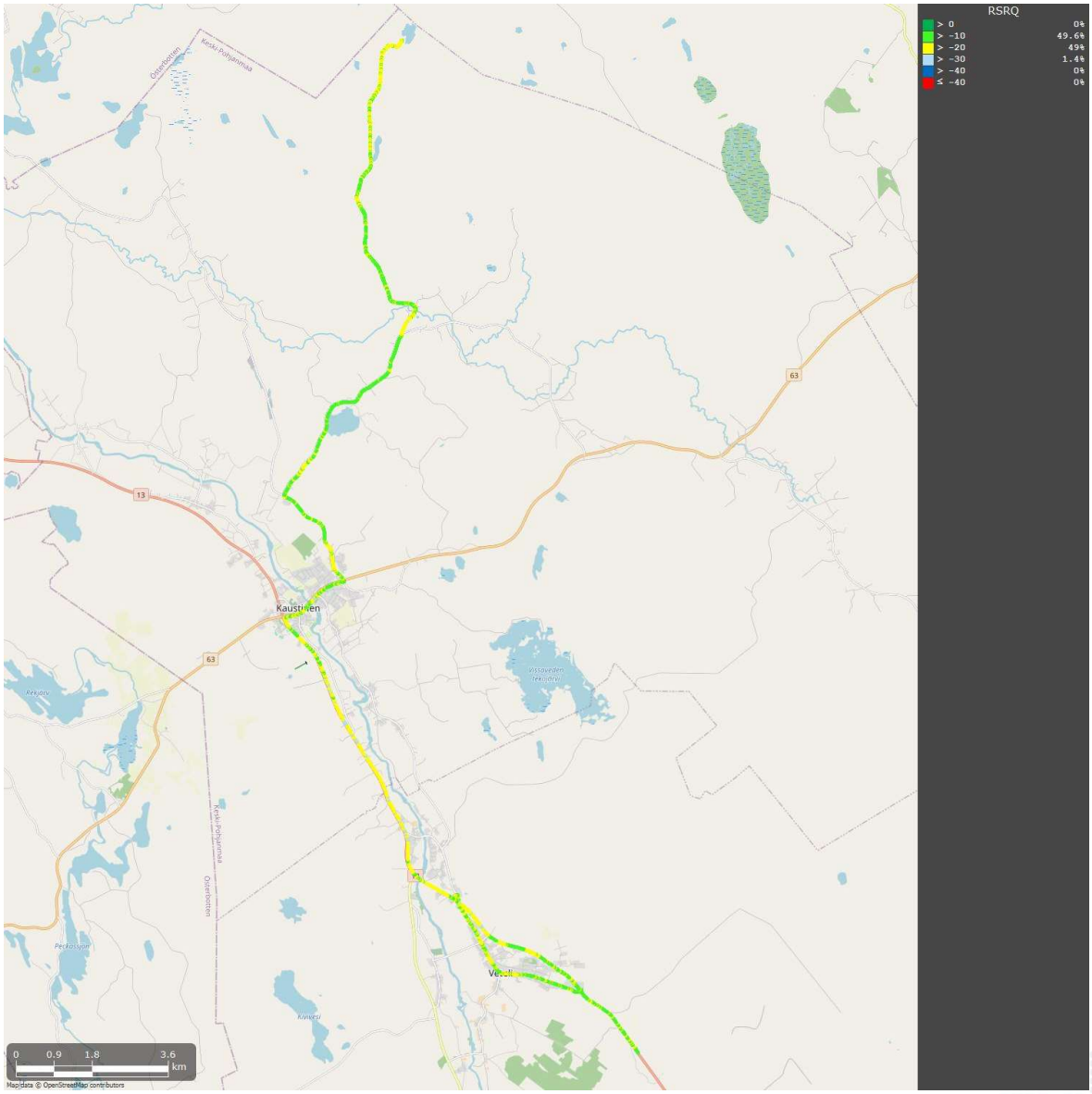
20221020-084240



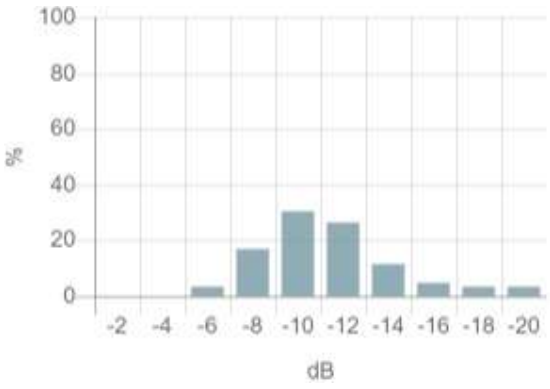
RSRP



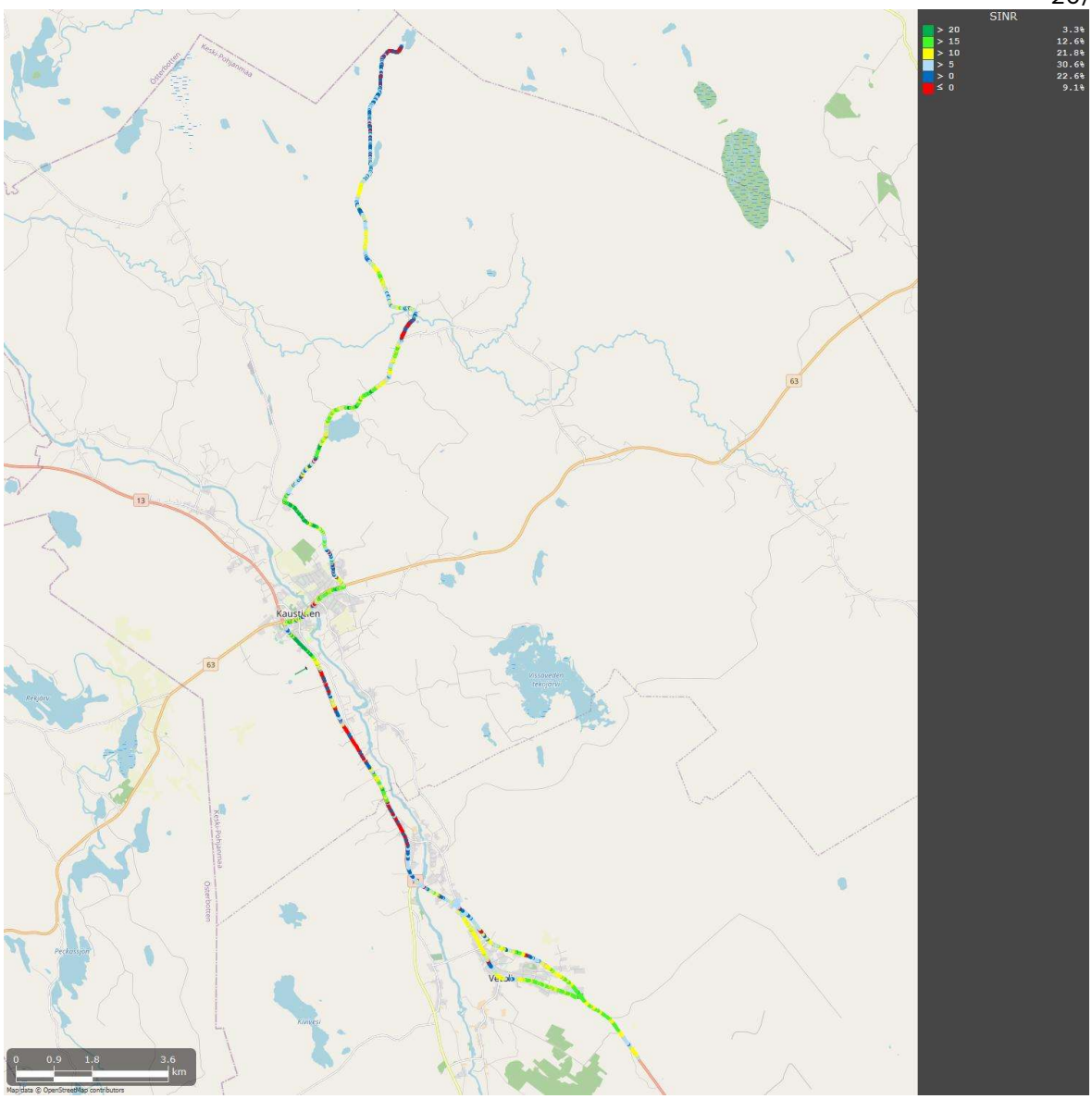
RSRP



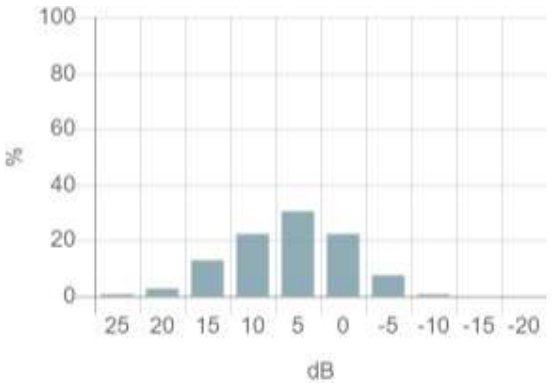
RSRQ



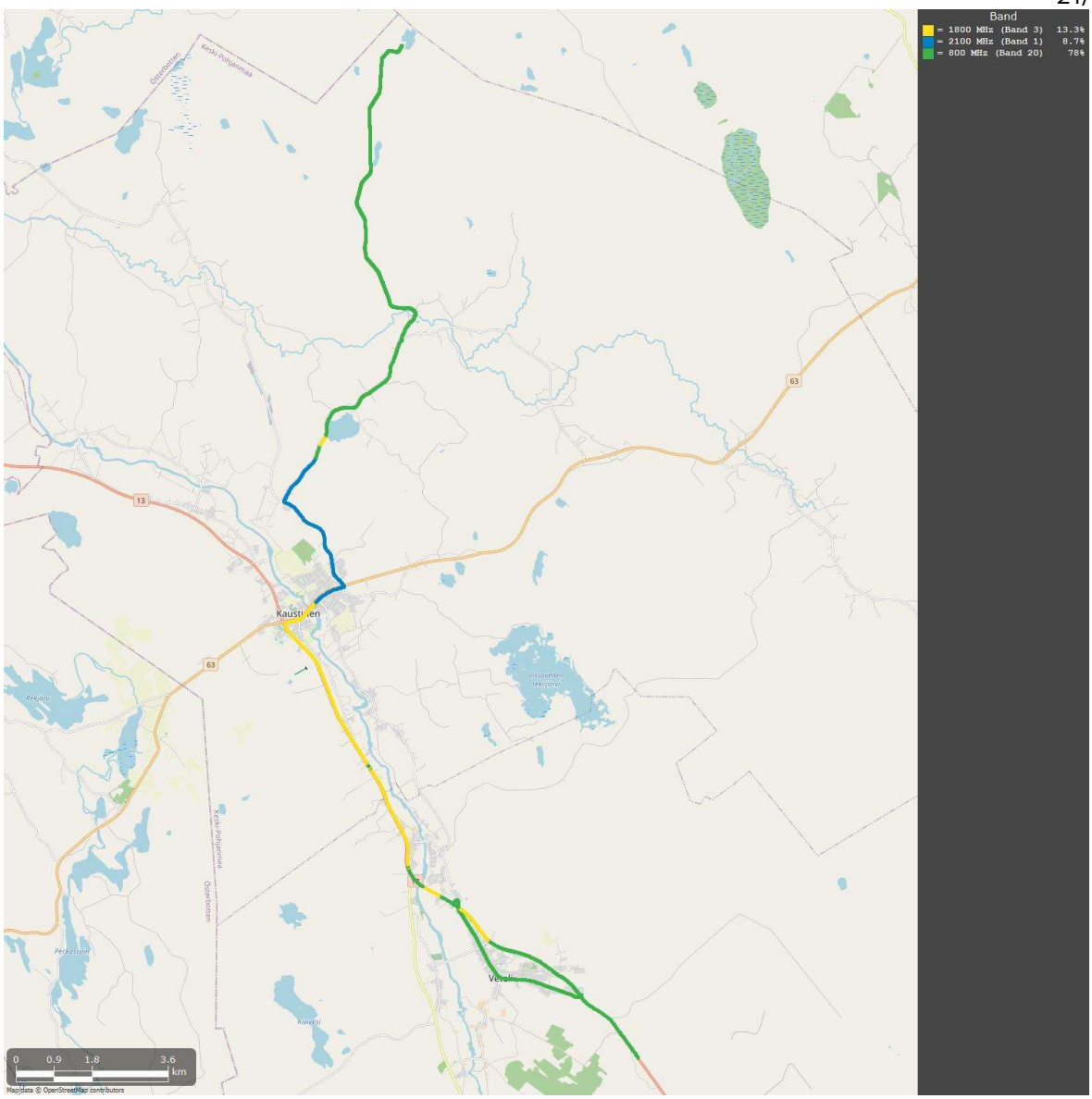
RSRQ


SINR
> 20 3.3%
> 15 12.6%
> 10 21.8%
> 5 30.6%
> 0 22.6%
≤ 0 9.1%
0 0.9 1.8 3.6
km

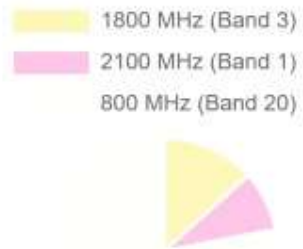
SINR


100
80
60
40
20
0
%
25 20 15 10 5 0 -5 -10 -15 -20
dB

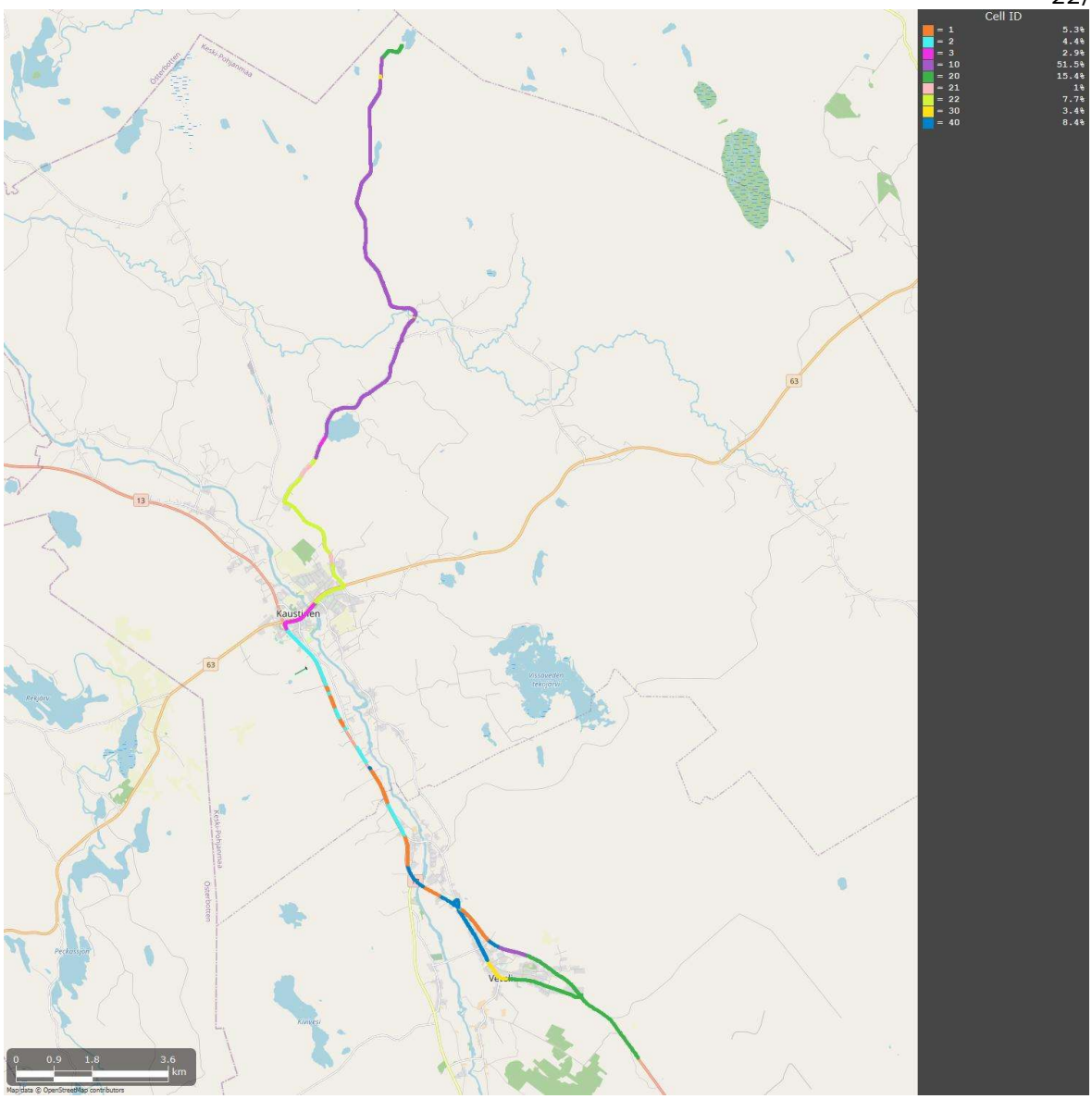
SINR


Band
= 1800 MHz (Band 3) 13.3%
= 2100 MHz (Band 1) 0.7%
= 800 MHz (Band 20) 78%
0 0.9 1.8 3.6
km

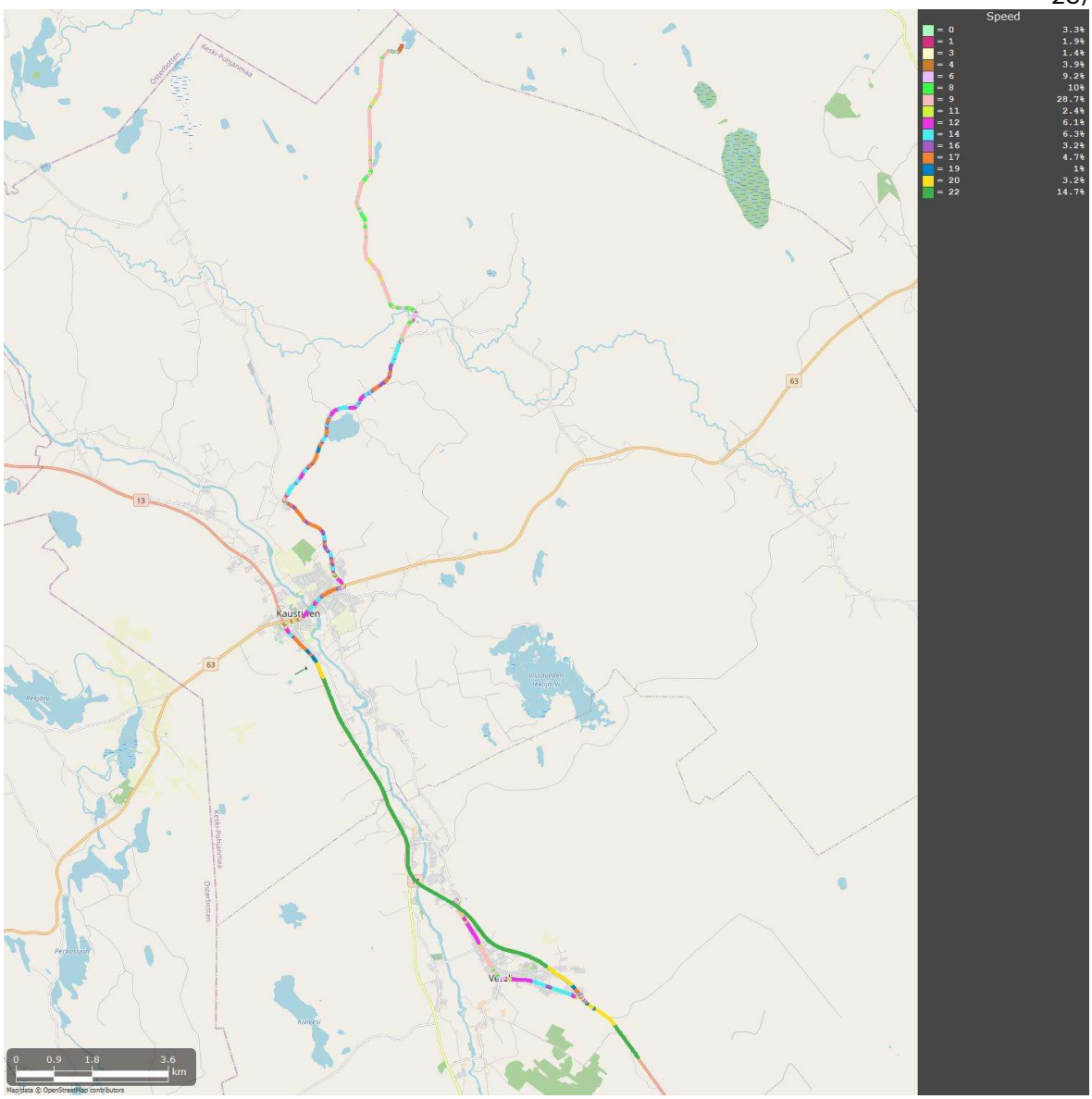
Band


1800 MHz (Band 3)
2100 MHz (Band 1)
800 MHz (Band 20)

Band


Cell ID
= 1 5.3%
= 2 4.4%
= 3 2.9%
= 10 51.5%
= 20 15.4%
= 21 1%
= 22 7.7%
= 30 3.4%
= 40 8.4%
Kaustinen
63
13
0 0.9 1.8 3.6
km

Cell ID


Speed
= 0 3.3%
= 1 1.9%
= 3 1.4%
= 4 3.9%
= 6 9.2%
= 8 10%
= 9 28.7%
= 11 2.4%
= 12 6.1%
= 14 6.3%
= 16 3.2%
= 17 4.7%
= 19 1%
= 20 3.2%
= 22 14.7%
Kaustinen
63
13
0 0.9 1.8 3.6
km

Speed