

# CERTIFICATE

**ROHDE & SCHWARZ**

Make ideas real



Rohde & Schwarz SwissQual AG, as the issuer of this document, certifies that



**Telia Eesti AS**

Mustamäe tee 3  
15033 Tallinn  
Estonia

attained the

## Best Data Service Performance Score

for Estonia, assessed during the 2024 mobile network benchmarking campaign from September 19 to October 11, 2025. We congratulate **Telia Estonia** for ranking first with a score of **448 out of 600 points**, that corresponds to 75% of the maximum achievable score, on the Rohde & Schwarz Network Performance Score in line with ETSI TR 103 559.

**Hansmann Axel**

CEO Rohde & Schwarz SwissQual AG



Link to the benchmarking  
campaign details



Scoring methodology in  
line with ETSI TR 103 559

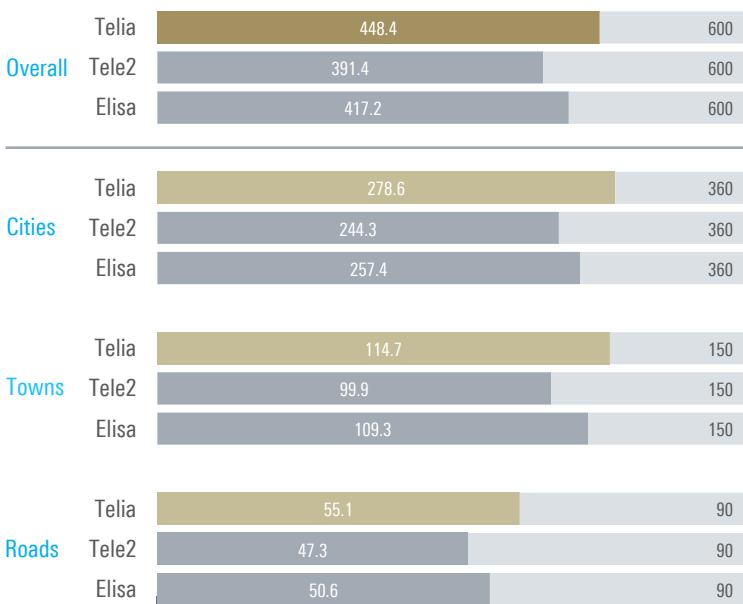


# NETWORK PERFORMANCE SCORE

Commissioned by Telia, Rohde & Schwarz SwissQual AG performed a mobile network benchmarking campaign assessing the quality and performance of Estonia's leading mobile operators. The drive-test based data collection campaign was implemented from September 19 to October 11, 2025 and covered Estonia's main cities, towns and roads.

During this mobile network benchmarking campaign, over 129,200 data tests were performed to calculate a Network Performance Score in line with ETSI TR 103 559.

## Data Services Score



## Measurement campaign overview

- **Driven Kilometers:** 5,740 km
- **Time period:** September 19 to October 11, 2025  
independently selected by Rohde & Schwarz SwissQual AG
- **Test routes:** Covering >64% of Estonian population,  
routes selected independently by Rohde & Schwarz SwissQual AG  
based on population and population density
- **Network operators:** Elisa, Tele2, Telia



# MEASUREMENT CAMPAIGN METHODOLOGY

Rohde & Schwarz SwissQual AG applied a fully transparent, harmonized and end-user centric scoring methodology as described in ETSI TR 103 559 and calculates a single overall Network Performance Score in line with this integrative methodology.

The scoring methodology includes essential aspects of popular mobile services and the resulting Network Performance Score reflects user's perceived performance of a mobile network in daily use regardless of the available technologies. The overall Network Performance Score is an aggregation of rated service performance over different regions covered by mobile networks with a state-of-art mobile phone.

- ▶ Data collection and analysis follows established standards and rules as defined in ETSI and ITU-T.
- ▶ The performance assessment uses tests of popular services in mobile networks, such as voice telephony, data transfer, video and app-specific services.
- ▶ The applied methodology provides insights into dedicated service classes and individual KPIs as well as for individual pre-defined geographical or morphologic categories.
- ▶ The entire measurement campaign used state-of-the art smartphones supported by all operators in Estonia.
- ▶ Data collection and analysis used Rohde & Schwarz SwissQual AG de-facto industry standard benchmarking equipment that supports the Network Performance Score methodology.

# MEASUREMENT CAMPAIGN CONFIGURATION AND SETUP

## DATA SERVICE TESTING

Measurement device used for data service testing: Samsung S25+ (SM-S936B)

### Data transfer



- ▶ Successful upload and download of data files to a local cloud server (5MB upload and 10MB download)
- ▶ Maximal bitrate measurements in upload and download (7 seconds duration)

### Video streaming



- ▶ YouTube streaming test in line with ETSI TR 101 578 and ITU-T E.804.1
- ▶ Receiving video on demand and live streams for 45s
- ▶ Video Quality measurement in line with ITU-T J.343.1
- ▶ Success, access time and video quality evaluated

### Web Browsing



- ▶ Accessing and retrieving web-content from different websites
- ▶ Testing of locally popular dynamic sites in different sizes
- ▶ In line with ITU-T E.804.1 and ETSI TR 103 733, success and download time evaluated

### Post to Internet / Social Media



- ▶ Uploading data content (files) to WhatsApp (5MB size)
- ▶ In line with ITU-T E.804.1, success and transfer time evaluated

### Interactivity / Latency



- ▶ Measuring latency under realistic traffic and load conditions
- ▶ In line with ITU-T G.1051, success and score evaluated

## Data Transfer Score per Category

Overall	Telia	96.7	180.0
	Tele2	74.9	180.0
	Elisa	89.7	180.0
Cities	Telia	60.1	108.0
	Tele2	47.0	108.0
	Elisa	54.7	108.0
Towns	Telia	25.0	45.0
	Tele2	18.8	45.0
	Elisa	24.0	45.0
Roads	Telia	11.5	27.0
	Tele2	9.0	27.0
	Elisa	10.9	27.0

## Browsing/Social Media Score per Category

Overall	Telia	191.4	240.0
	Tele2	169.0	240.0
	Elisa	172.9	240.0
Cities	Telia	119.9	144.0
	Tele2	106.1	144.0
	Elisa	108.5	144.0
Towns	Telia	48.9	60.0
	Tele2	43.5	60.0
	Elisa	44.7	60.0
Roads	Telia	22.6	36.0
	Tele2	19.5	36.0
	Elisa	19.7	36.0

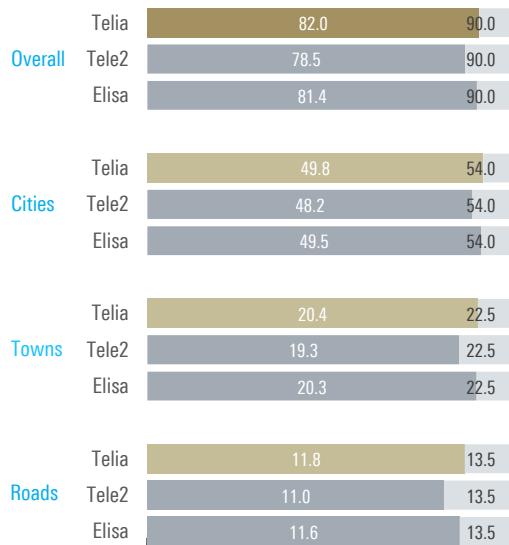
## Data Transfer Score per KPI

Downlink Speed Average	Success Ratio	Telia	35.5	36.0
		Tele2	34.6	36.0
		Elisa	35.1	36.0
10% Downlink Speed	Success Ratio	Telia	15.1	25.2
		Tele2	8.2	25.2
		Elisa	14.4	25.2
90% Downlink Speed	Success Ratio	Telia	9.1	32.4
		Tele2	2.6	32.4
		Elisa	7.7	32.4
Uplink Speed Average	Success Ratio	Telia	11.8	14.4
		Tele2	8.0	14.4
		Elisa	11.6	14.4
10% Uplink Speed	Success Ratio	Telia	10.0	25.2
		Tele2	8.7	25.2
		Elisa	8.5	25.2
90% Uplink Speed	Success Ratio	Telia	7.6	32.4
		Tele2	5.9	32.4
		Elisa	5.3	32.4

## Browsing/Social Media Score per KPI

Browsing Success Ratio	Telia	73.8	75.0
	Tele2	71.7	75.0
	Elisa	72.9	75.0
Browsing Average Duration	Telia	58.8	75.0
	Tele2	54.0	75.0
	Elisa	58.2	75.0
Social Success Ratio	Telia	39.5	45.0
	Tele2	32.7	45.0
	Elisa	32.9	45.0
Social Average Duration	Telia	13.3	27.0
	Tele2	10.4	27.0
	Elisa	8.9	27.0
Social Bad Ratio	Telia	6.0	18.0
	Tele2	2.0	18.0
	Elisa	0.0	18.0

## Video Score per Category



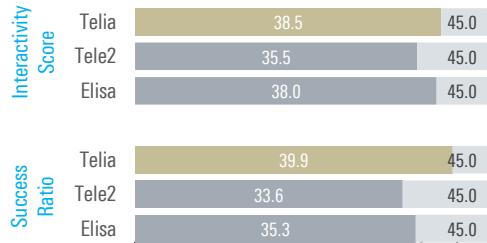
## Interactivity Score per Category



## Video Score per KPI



## Interactivity Score per KPI



Data KPIs				
Geographical Category	Service KPI	Elisa	Tele2	Telia
City	HTTP Success Ratio	99.84 %	99.59 %	99.97 %
	HTTP Download Throughput (Average)	528 Mbps	176 Mbps	592 Mbps
	HTTP Download Throughput (10 percentile)	60 Mbps	20 Mbps	104 Mbps
	HTTP Download Throughput (90 percentile)	1003 Mbps	386 Mbps	1082 Mbps
	HTTP Upload Throughput (Average)	47 Mbps	49 Mbps	66 Mbps
	HTTP Upload Throughput (10 percentile)	11 Mbps	13 Mbps	20 Mbps
	HTTP Upload Throughput (90 percentile)	90 Mbps	88 Mbps	119 Mbps
	Web Browsing Success Ratio	99.67 %	99.40 %	99.89 %
	Web Browsing Duration (Average)	0.67 s	0.82 s	0.62 s
	Social Media Success Ratio	97.26 %	96.88 %	99.06 %
	Social Media Duration (Average)	3.15 s	2.88 s	2.28 s
	Social Media Bad Ratio (>5sec)	15.19 %	10.57 %	5.44 %
	YouTube Success Ratio	99.93 %	99.65 %	99.86 %
	YouTube Video Quality	4.48 VMOS	4.45 VMOS	4.51 VMOS
Town	YouTube Video Quality Bad Ratio	0.69 %	0.83 %	0.41 %
	YouTube Setup Duration	0.75 s	0.93 s	0.65 s
	YouTube Setup Bad Ratio	0.07 %	0.69 %	0.14 %
	Interactivity Success Ratio	96.32 %	96.06 %	98.86 %
	Interactivity Score (Average)	87.95 %	84.24 %	89.81 %
	HTTP Success Ratio	99.91 %	99.09 %	100.00 %
	HTTP Download Throughput (Average)	562 Mbps	172 Mbps	592 Mbps
	HTTP Download Throughput (10 percentile)	150 Mbps	14 Mbps	126 Mbps
	HTTP Download Throughput (90 percentile)	981 Mbps	385 Mbps	991 Mbps
	HTTP Upload Throughput (Average)	44 Mbps	45 Mbps	59 Mbps
	HTTP Upload Throughput (10 percentile)	8 Mbps	11 Mbps	17 Mbps
	HTTP Upload Throughput (90 percentile)	87 Mbps	82 Mbps	110 Mbps
	Web Browsing Success Ratio	99.66 %	99.13 %	99.81 %
	Web Browsing Duration (Average)	0.63 s	0.85 s	0.63 s
	Social Media Success Ratio	96.23 %	96.11 %	99.60 %
	Social Media Duration (Average)	3.27 s	2.92 s	2.51 s
	Social Media Bad Ratio (>5sec)	15.08 %	9.14 %	7.37 %
Village	YouTube Success Ratio	99.81 %	99.03 %	100.00 %
	YouTube Video Quality	4.47 VMOS	4.41 VMOS	4.46 VMOS
	YouTube Video Quality Bad Ratio	1.36 %	2.15 %	1.93 %
	YouTube Setup Duration	0.75 s	0.97 s	0.66 s
	YouTube Setup Bad Ratio	0.19 %	0.97 %	0.00 %
	Interactivity Success Ratio	98.54 %	96.54 %	98.72 %
	Interactivity Score (Average)	89.98 %	85.07 %	90.16 %
	HTTP Success Ratio	99.92 %	99.10 %	100.00 %
	HTTP Download Throughput (Average)	565 Mbps	175 Mbps	595 Mbps
	HTTP Download Throughput (10 percentile)	152 Mbps	14.5 Mbps	127 Mbps
	HTTP Download Throughput (90 percentile)	984 Mbps	386 Mbps	992 Mbps
	HTTP Upload Throughput (Average)	44.5 Mbps	45.5 Mbps	59.5 Mbps
	HTTP Upload Throughput (10 percentile)	8.5 Mbps	11.5 Mbps	17.5 Mbps
	HTTP Upload Throughput (90 percentile)	87.5 Mbps	82.5 Mbps	110.5 Mbps
	Web Browsing Success Ratio	99.67 %	99.15 %	99.82 %
	Web Browsing Duration (Average)	0.64 s	0.86 s	0.64 s
	Social Media Success Ratio	96.25 %	96.13 %	99.61 %
	Social Media Duration (Average)	3.28 s	2.93 s	2.52 s
	Social Media Bad Ratio (>5sec)	15.09 %	9.15 %	7.38 %
Suburb	YouTube Success Ratio	99.82 %	99.04 %	100.00 %
	YouTube Video Quality	4.48 VMOS	4.42 VMOS	4.47 VMOS
	YouTube Video Quality Bad Ratio	1.37 %	2.16 %	1.94 %
	YouTube Setup Duration	0.76 s	0.98 s	0.67 s
	YouTube Setup Bad Ratio	0.20 %	0.98 %	0.01 %
	Interactivity Success Ratio	98.55 %	96.56 %	98.73 %
	Interactivity Score (Average)	89.99 %	85.08 %	90.17 %
	HTTP Success Ratio	99.93 %	99.11 %	100.00 %
	HTTP Download Throughput (Average)	568 Mbps	178 Mbps	598 Mbps
	HTTP Download Throughput (10 percentile)	154 Mbps	14.8 Mbps	128 Mbps
	HTTP Download Throughput (90 percentile)	986 Mbps	388 Mbps	993 Mbps
	HTTP Upload Throughput (Average)	44.8 Mbps	45.8 Mbps	59.8 Mbps
	HTTP Upload Throughput (10 percentile)	8.8 Mbps	11.8 Mbps	17.8 Mbps
	HTTP Upload Throughput (90 percentile)	87.8 Mbps	82.8 Mbps	110.8 Mbps
	Web Browsing Success Ratio	99.68 %	99.17 %	99.83 %
	Web Browsing Duration (Average)	0.65 s	0.87 s	0.65 s
	Social Media Success Ratio	96.26 %	96.14 %	99.62 %
	Social Media Duration (Average)	3.29 s	2.94 s	2.53 s
	Social Media Bad Ratio (>5sec)	15.10 %	9.16 %	7.39 %
Rural	YouTube Success Ratio	99.83 %	99.05 %	100.00 %
	YouTube Video Quality	4.49 VMOS	4.43 VMOS	4.48 VMOS
	YouTube Video Quality Bad Ratio	1.38 %	2.17 %	1.95 %
	YouTube Setup Duration	0.77 s	0.99 s	0.68 s
	YouTube Setup Bad Ratio	0.21 %	0.99 %	0.02 %
	Interactivity Success Ratio	98.56 %	96.57 %	98.74 %
	Interactivity Score (Average)	89.99 %	85.09 %	90.18 %
	HTTP Success Ratio	99.94 %	99.12 %	100.00 %
	HTTP Download Throughput (Average)	571 Mbps	181 Mbps	601 Mbps
	HTTP Download Throughput (10 percentile)	156 Mbps	15.2 Mbps	130 Mbps
	HTTP Download Throughput (90 percentile)	988 Mbps	390 Mbps	994 Mbps
	HTTP Upload Throughput (Average)	45.1 Mbps	45.9 Mbps	60.1 Mbps
	HTTP Upload Throughput (10 percentile)	9.1 Mbps	11.9 Mbps	17.9 Mbps
	HTTP Upload Throughput (90 percentile)	87.9 Mbps	82.9 Mbps	110.9 Mbps
	Web Browsing Success Ratio	99.69 %	99.18 %	99.84 %
	Web Browsing Duration (Average)	0.66 s	0.88 s	0.66 s
	Social Media Success Ratio	96.27 %	96.15 %	99.63 %
	Social Media Duration (Average)	3.30 s	2.95 s	2.54 s
	Social Media Bad Ratio (>5sec)	15.11 %	9.17 %	7.40 %

Geographical Category	Service KPI	Elisa	Tele2	Telia
Road	HTTP Success Ratio	97.62 %	97.92 %	98.17 %
	HTTP Download Throughput (Average)	352 Mbps	83 Mbps	349 Mbps
	HTTP Download Throughput (10 percentile)	22 Mbps	11 Mbps	19 Mbps
	HTTP Download Throughput (90 percentile)	875 Mbps	197 Mbps	908 Mbps
	HTTP Upload Throughput (Average)	29 Mbps	27 Mbps	42 Mbps
	HTTP Upload Throughput (10 percentile)	3 Mbps	2 Mbps	4 Mbps
	HTTP Upload Throughput (90 percentile)	69 Mbps	65 Mbps	91 Mbps
	Web Browsing Success Ratio	98.12 %	97.91 %	98.54 %
	Web Browsing Duration (Average)	0.76 s	0.91 s	0.80 s
	Social Media Success Ratio	81.50 %	82.60 %	88.20 %
Home	Social Media Duration (Average)	4.25 s	4.16 s	3.62 s
	Social Media Bad Ratio (>5sec)	23.23 %	21.95 %	18.61 %
	YouTube Success Ratio	99.00 %	98.62 %	99.13 %
	YouTube Video Quality	4.45 VMOS	4.37 VMOS	4.45 VMOS
	YouTube Video Quality Bad Ratio	2.15 %	4.45 %	1.89 %
	YouTube Setup Duration	0.95 s	1.06 s	0.86 s
	YouTube Setup Bad Ratio	1.25 %	1.13 %	0.75 %
	Interactivity Success Ratio	88.40 %	87.79 %	91.58 %
	Interactivity Score (Average)	86.60 %	82.12 %	84.87 %

## About Rohde & Schwarz SwissQual AG

Together with teams from the global Rohde & Schwarz group of companies, our employees in the Swiss Rohde & Schwarz SwissQual AG subsidiary develop and market integrated solutions and managed services to test and improve the quality and performance of mobile networks.

Our experts for global benchmarking campaigns plan and run large-scale optimization and benchmarking campaigns and empower customers to make QoE centric business decisions with confidence, to deliver better services with higher quality for their end users, to reduce time to market for new technologies and services and to safeguard and increase the value of their business.

For more information about Rohde & Schwarz products visit:  
[www.rohde-schwarz.com/mnt](http://www.rohde-schwarz.com/mnt)

For more information about mobile network testing managed services visit:  
[www.rohde-schwarz.com/mnt/network-analytics-services](http://www.rohde-schwarz.com/mnt/network-analytics-services)

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Telia Estonia sponsored an independent evaluation of its mobile network performance that was conducted by Rohde & Schwarz SwissQual AG. Telia was ranked with the leading performance score in Estonia based on an ETSI approved methodology