

# best in test.

For adding something on top in Sweden and reaching an overall score of 970 dots in mobile network benchmarking survey we proudly award this certificate to

## Telia Sweden

Score 970 out of 1000 in Total

Score 267 out of 270 in Voice Services

Score 471 out of 480 in Data Services

Score 232 out of 250 in Crowdsourced Quality

Reliability Score 595 out of 600 in Total

*Maziar Kianzad*

Maziar Kianzad

Global Network Benchmarking Lead

Best  
12 In 25  
Test

umlaut



# Measurement Overview

umlaut tested and measured the performance of its voice and data services on smartphones in comparison to other 5G/LTE mobile radio networks in metropolitan and rural areas of Sweden.

The audit was done as a performance benchmark performed by umlaut between 13.11.2025 and 08.12.2025 in cities and towns as well as on connection roads.

Dedicated measurements were taken via outdoor drive tests using a Samsung Galaxy S24 Ultra.

All data measurements have been performed in 5G preferred mode. Voice measurements have been done in 5G/5G preferred mode on both sides, while call origin has been alternated.

In addition crowdsourced performance data has been collected and evaluated between W25 2025 and W48 2025.

The following pages provide a comparative overview about the performance results observed the different tested service types.

Drive Test	Voice	Conversational App	Data
Device	Samsung Galaxy S24 Ultra	Samsung Galaxy S24 Ultra	Samsung Galaxy S24 Ultra
Test Cases	Mobile-to-Mobile Side1 (VoLTE, 5G pref.) to Side2 (VoLTE, 5G pref.) 105 sec call window 70 sec call duration 15 sec call setup timeout Multi-RAB traffic injection on both sides	Mobile-to-Mobile Side1 (VoLTE, 5G pref.) to side2 (VoLTE, 5G pref.) 105 sec call window 70 sec call duration 15 sec call setup timeout	Data 5G preferred HTTP DL datastream 7s HTTP UL datastream 7s HTTP 10MB DL fixed file transfer HTTP 5MB UL fixed file transfer Web Browsing – (4 international pages, 4 local pages, 1 ETSI reference, 1 umlaut reference page) 2 YouTube videos ~45s (Full HD and Live Full HD) Interactivity eGaming, Video Chat HD
Mobility & Route Types	100% Drivetest	~53% in Cities, ~22% in Towns and ~25% on Roads	199,860 Data Samples
Samples	18,881 Voice Samples		
Dates	13.11.2025 – 08.12.2025		

# Testing area

Driving Route



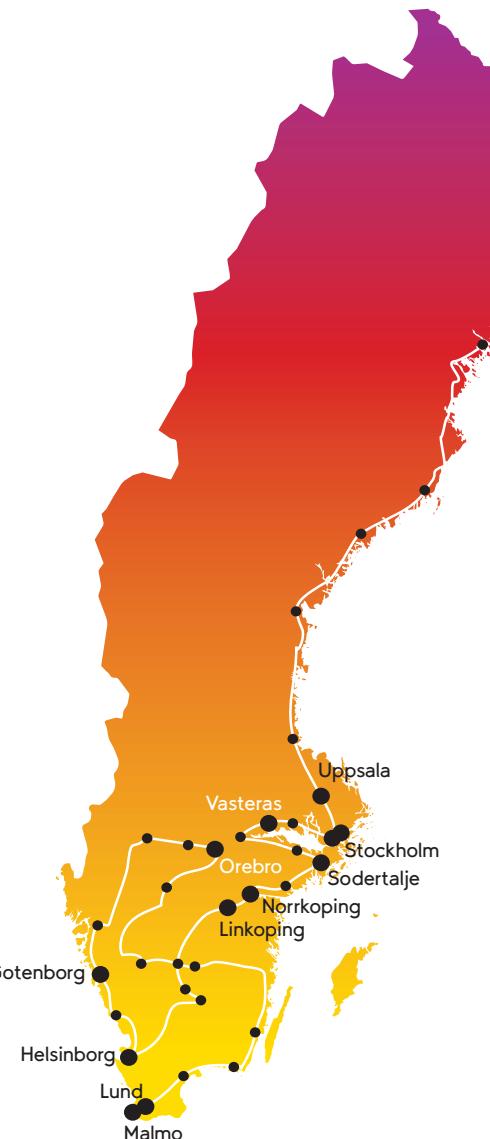
**10,860 km**

measuring distance



**~46%**

of population measured



Crowdsourcing based test area



**96.1%**

of the 'Built-up area'  
covered



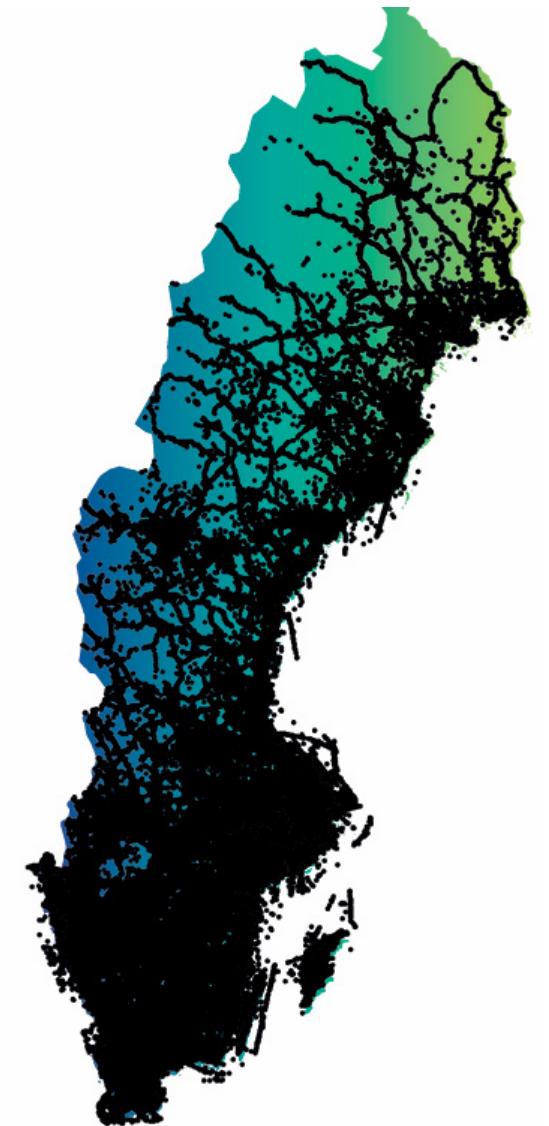
**97.1%**

of the 'Population area'  
covered



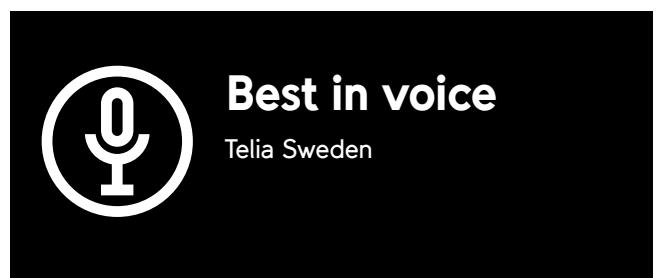
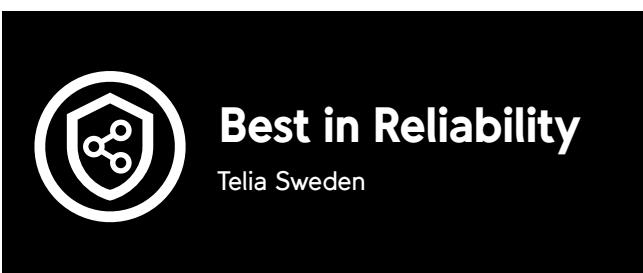
**120,997 km<sup>2</sup>**

size of tested area





# Claims



# Methodology

As the de-facto industry standard, umlaut's benchmarking methodology focuses on customer-perceived network quality and covers a wide range of mobile and fixed broadband services.

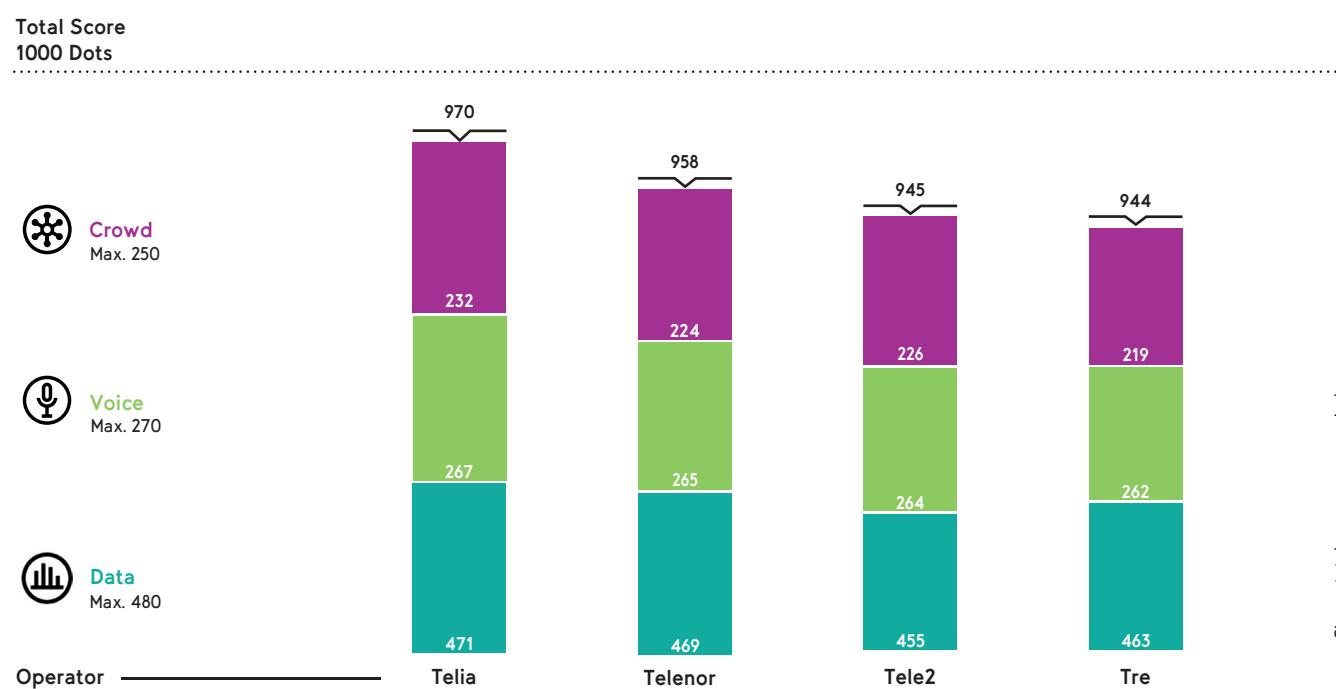
For the collection of crowd-data used for this certification report, we have integrated a background diagnosis processes into thousands of diverse Android apps. If one of these applications is installed on the end-user's phone, data collection takes place 24/7, 365 days a year. We focus on the user experience. Our data collection is compliant with the GDPR, since we do not include any personal user data. This unique crowdsourcing technology allows us to collect data about real-world experience wherever and whenever customers use their smartphones to consume data services or place phone calls.

The umlaut benchmarking framework is based on a unified measurement method for true international comparability combined with the umlaut-Score approach. Our top priority is to fairly and transparently assess the global development of networks, push their quality and performance with our benchmarks and ultimately achieve improvements for every customer.



# Score and breakdown

Telstra achieved the highest overall score among competitors with 920 dots out of 1000.



Overall score considering Crowdsourcing, Voice and Data.

Shown total scores are rounded.  
↑

## Total Scores

		Telia	Telenor	Tele2	Tre
Crowd	max. 250	232	224	226	219
Broadband Coverage	100	88%	81%	83%	79%
Download speed (Service Category)	19	97%	97%	98%	96%
Upload speed (Service Category)	19	92%	92%	92%	89%
Download Speed (Data Rates)	19	99%	100%	99%	93%
Upload Speed (Data Rates)	19	98%	96%	96%	93%
Latency	50	93%	93%	93%	92%
Voice	10	98%	98%	98%	98%
Stability	15	98%	98%	98%	98%
Voice	max. 270	267	265	264	262
Cities drive test	162	99%	98%	98%	96%
Towns drive test	54	99%	98%	97%	98%
Roads drive test	54	99%	99%	98%	99%
Data	max. 480	471	469	455	463
Cities drive test	288	99%	98%	95%	97%
Towns drive test	96	98%	98%	96%	96%
Roads drive test	96	96%	95%	93%	95%
Total	1000	970	958	945	944

Shown scores are rounded.

Achieved percentage of the maximum score in each of the different data services.

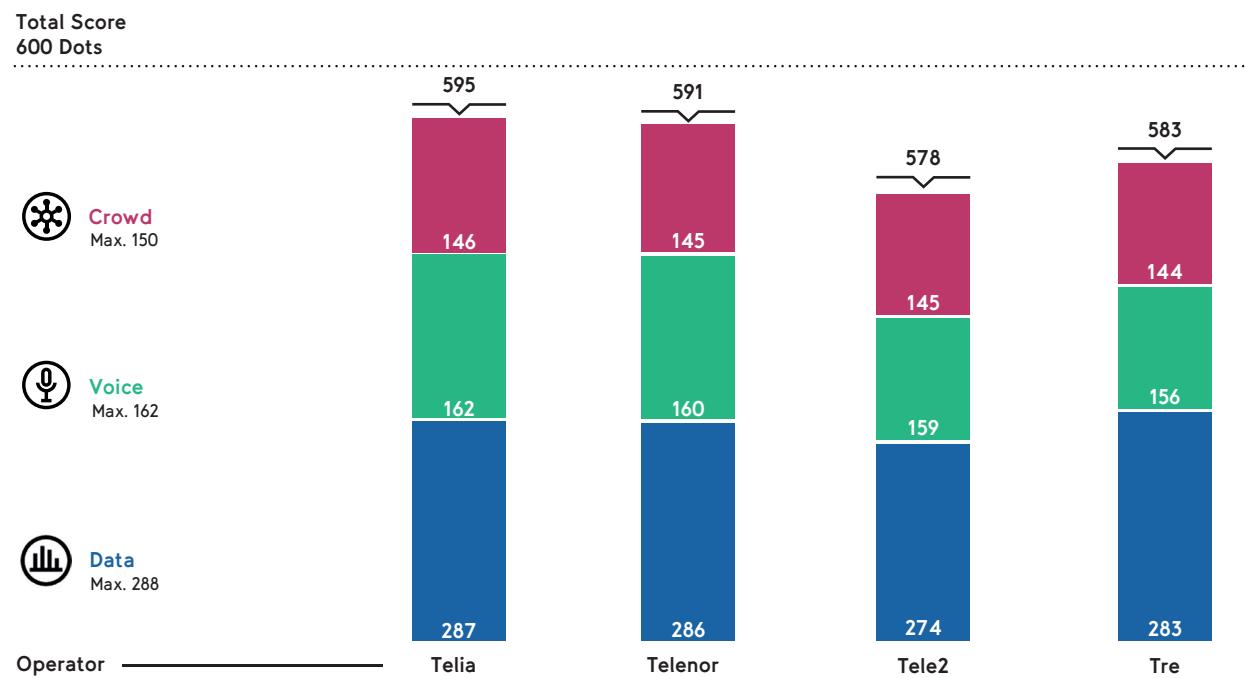
Data	Service group	Max.	Telia	Telenor	Tele2	Tre
Cities drive test	Web Browsing	50.4	99%	99%	99%	99%
	File Download	57.6	99%	99%	97%	98%
	File Upload	57.6	99%	99%	95%	99%
	YouTube	49.0	99%	99%	97%	98%
	OTT	73.4	97%	97%	91%	94%
Towns	Web Browsing	16.8	99%	99%	99%	98%
	File Download	19.2	99%	99%	99%	94%
	File Upload	19.2	99%	98%	97%	98%
	YouTube	16.3	98%	99%	98%	97%
	OTT	24.5	97%	95%	88%	95%
Roads	Web Browsing	16.8	97%	98%	97%	97%
	File Download	19.2	95%	95%	94%	90%
	File Upload	19.2	93%	94%	92%	96%
	YouTube	16.3	97%	95%	95%	97%
	OTT	24.5	96%	94%	88%	95%

Achieved percentage of the maximum score in each of the different crowdsourcing services.

Crowd	Service group	Max.	Telia	Telenor	Tele2	Tre
Crowdsourced Quality	Broadband Coverage	100	88%	81%	83%	79%
	Download speed (Service Category)	19	97%	97%	98%	96%
	Upload speed (Service Category)	19	92%	92%	92%	89%
	Download Speed (Data Rates)	19	99%	100%	99%	93%
	Upload Speed (Data Rates)	19	98%	96%	96%	93%
	Latency	50	93%	93%	93%	92%
	Voice	10	98%	98%	98%	98%
	Stability	15	98%	98%	98%	98%



# Reliability



Reliability score considering Crowd, Voice and Data.

Shown total scores are rounded.  
↑

## Total Scores

	Service group	Max.	Telia	Telenor	Tele2	Tre
Reliability	Crowd	150	97%	96%	97%	96%
	Voice	162	100%	99%	98%	96%
	Data	288	100%	99%	95%	98%

Score achievement in school grades:  
outstanding ( 95%), very good ( 85% and <95%), good ( 75% and 85%), satisfactory ( 65% and <75%), sufficient ( 55% and <65%).



### Voice KPI overview

Achieved values of all networks under test in each of the relevant Voice Key Performance Indicators (KPIs) for the geographical categories "Cities", "Towns" and "Roads".

Voice	Service group	Unit	Telia	Telenor	Tele2	Tre
Cities drive test	Qualifier	[%]	100.0%	99.9%	99.9%	99.6%
	Call Setup Time P90)	[s]	0.9	1.5	1.2	1.1
	Speech Quality (P10)	[MOS-LQO]	4.4	4.5	4.5	4.5
Towns	Qualifier	[%]	100.0%	100.0%	99.8%	99.8%
	Call Setup Time P90)	[s]	0.9	1.5	1.3	1.1
	Speech Quality (P10)	[MOS-LQO]	4.4	4.5	4.5	4.5
Roads	Qualifier	[%]	99.9%	99.9%	99.6%	99.9%
	Call Setup Time P90)	[s]	1.0	1.5	1.4	1.1
	Speech Quality (P10)	[MOS-LQO]	4.4	4.5	4.5	4.5

### Data Service KPI overview

Achieved values of all networks under test in each of the relevant Data Key Performance Indicators (KPIs) for the geographical category "Cities".

Services	KPI name	Unit	Telia	Telenor	Tele2	Tre
HTTP Web page DL Smartphone	Qualifier	[%]	100.0%	100.0%	99.9%	100.0%
	Overall session time	[s]	0.9	0.9	0.9	1.0
	Qualifier	[%]	100.0%	100.0%	99.7%	100.0%
HTTP 10MB DL Smartphone	Average session time	[s]	0.5	0.6	0.7	0.8
	90% faster than	[Mbit/s]	137.6	128.2	108.4	67.3
	10% faster than	[Mbit/s]	418.8	340.4	329.2	306.5
HTTP 5MB UL Smartphone	Qualifier	[%]	100.0%	100.0%	99.9%	100.0%
	Average session time	[s]	0.9	1.0	1.1	1.2
	90% faster than	[Mbit/s]	29.9	27.3	27.7	23
HTTP DL FDTT	10% faster than	[Mbit/s]	103.4	96.9	95.7	94.6
	Qualifier	[%]	100.0%	100.0%	99.7%	100.0%
	10% faster than	[Mbit/s]	1099.6	889.2	874.9	749.6
HTTP UL FDTT	Faster than 20Mbits/s	[%]	100.0%	99.9%	99.9%	98.8%
	Faster than 100Mbits/s	[%]	98.8%	99.2%	99.0%	89.1%
	Qualifier	[%]	100.0%	100.0%	99.1%	100.0%
YouTube	10% faster than	[Mbit/s]	162	138.6	137.6	141.5
	Faster than 2Mbits/s	[%]	100.0%	100.0%	100.0%	100.0%
	Faster than 5Mbits/s	[%]	100.0%	99.9%	99.8%	100.0%
YouTube live smartphone	Qualifier	[%]	100.0%	100.0%	99.7%	100.0%
	Start time	[s]	1.3	1.4	1.4	1.5
	Average resolution	[p]	1080.0	1080.0	1080.0	1080.0
Interactivity EGaming	Qualifier	[%]	100.0%	100.0%	99.7%	99.9%
	Start time	[s]	1.9	1.9	2.0	2.2
	Average resolution	[p]	1079.9	1080.0	1079.7	1079.7
Interactivity videochat	Qualifier	[%]	99.6%	99.8%	96.3%	97.9%
	Interactivity score	[%]	88.3%	85.5%	82.6%	85.3%
	Qualifier	[%]	99.2%	98.6%	91.0%	94.4%
Conversational app	Interactivity score	[%]	93.7%	91.8%	89.3%	89.2%
	Qualifier	[%]	100.0%	100.0%	100.0%	99.9%
	Speech quality (P10)	[MOS-LQO]	4.2	4.0	4.0	4.0



### Data Service KPI overview

Achieved values of all networks under test in each of the relevant Data Key Performance Indicators (KPIs) for the geographical category "Town".

Services	KPI name	Unit	Telia	Telenor	Tele2	Tre
HTTP Web page DL Smartphone	Qualifier	[%]	100.0%	99.9%	99.9%	100.0%
	Overall session time	[s]	1.0	1.0	1.0	1.1
	Qualifier	[%]	100.0%	100.0%	100.0%	100.0%
HTTP 10MB DL Smartphone	Average session time	[s]	0.7	0.7	0.8	1.5
	90% faster than	[Mbit/s]	81.9	119.5	94	29.9
	10% faster than	[Mbit/s]	355.9	293	289.9	234.6
HTTP 5MB UL Smartphone	Qualifier	[%]	100.0%	100.0%	100.0%	100.0%
	Average session time	[s]	1.0	1.2	1.5	1.3
	90% faster than	[Mbit/s]	27.4	21.8	18.9	19.1
HTTP DL FDTT	10% faster than	[Mbit/s]	91.2	82.2	87	72.8
	Qualifier	[%]	100.0%	99.9%	100.0%	99.9%
	10% faster than	[Mbit/s]	1040.6	873.2	851.3	570.5
HTTP UL FDTT	Faster than 20Mbits/s	[%]	99.4%	100.0%	100.0%	96.5%
	Faster than 100Mbits/s	[%]	96.6%	97.9%	98.9%	62.3%
	Qualifier	[%]	100.0%	100.0%	99.6%	100.0%
YouTube	10% faster than	[Mbit/s]	151.6	129.3	131	112
	Faster than 2Mbits/s	[%]	100.0%	100.0%	100.0%	100.0%
	Faster than 5Mbits/s	[%]	100.0%	99.8%	99.9%	99.9%
YouTube live smartphone	Qualifier	[%]	100.0%	100.0%	99.9%	100.0%
	Start time	[s]	1.4	1.5	1.5	1.6
	Average resolution	[p]	1080.0	1080.0	1080.0	1080.0
Interactivity EGaming	Qualifier	[%]	100.0%	100.0%	100.0%	99.9%
	Start time	[s]	2.0	2.0	2.1	2.3
	Average resolution	[p]	1078.8	1079.8	1079.7	1079.3
Interactivity videochat	Qualifier	[%]	99.5%	99.6%	97.8%	98.6%
	Interactivity score	[%]	83.4%	82.1%	76.6%	82.7%
Conversational app	Qualifier	[%]	99.2%	97.8%	88.2%	96.8%
	Interactivity score	[%]	93.3%	90.8%	88.4%	89.3%
Speech quality (P10)	Qualifier	[%]	100.0%	99.9%	100.0%	100.0%
	Speech quality (P10)	[MOS-LQO]	4.2	4.0	4.0	4.0

### Data Service KPI overview

Achieved values of all networks under test in each of the relevant Data Key Performance Indicators (KPIs) for the geographical category "Road".

Services	KPI name	Unit	Telia	Telenor	Tele2	Tre
HTTP Web page DL Smartphone	Qualifier	[%]	99.8%	99.9%	99.7%	99.7%
	Overall session time	[s]	1.2	1.2	1.2	1.3
	Qualifier	[%]	100.0%	100.0%	100.0%	99.8%
HTTP 10MB DL Smartphone	Average session time	[s]	2.1	1.9	2.3	2.5
	90% faster than	[Mbit/s]	18.9	21.7	18.8	20
	10% faster than	[Mbit/s]	197.4	203.6	211	98.4
HTTP 5MB UL Smartphone	Qualifier	[%]	100.0%	99.9%	99.7%	99.8%
	Average session time	[s]	2.5	2.9	3.1	2.1
	90% faster than	[Mbit/s]	8	7.3	6.2	10.5
HTTP DL FDTT	10% faster than	[Mbit/s]	61.4	57.2	56.4	57.1
	Qualifier	[%]	100.0%	99.7%	99.4%	99.8%
	10% faster than	[Mbit/s]	465.1	525.9	452.8	131.1
HTTP UL FDTT	Faster than 20Mbits/s	[%]	88.6%	89.8%	89.4%	91.0%
	Faster than 100Mbits/s	[%]	64.4%	51.5%	51.6%	21.3%
	Qualifier	[%]	99.5%	100.0%	99.7%	99.8%
YouTube	10% faster than	[Mbit/s]	90.7	76.3	74.7	74.4
	Faster than 2Mbits/s	[%]	98.7%	99.1%	99.0%	100.0%
	Faster than 5Mbits/s	[%]	95.0%	96.4%	96.2%	99.1%
YouTube live smartphone	Qualifier	[%]	100.0%	99.7%	99.7%	99.9%
	Start time	[s]	1.8	1.9	1.9	1.8
	Average resolution	[p]	1079.6	1078.9	1079.3	1080.0
Interactivity EGaming	Qualifier	[%]	99.5%	99.4%	99.2%	99.8%
	Start time	[s]	2.4	2.4	2.5	2.5
	Average resolution	[p]	1078.2	1076.0	1078.2	1078.7
Interactivity videochat	Qualifier	[%]	99.1%	98.1%	96.4%	97.2%
	Interactivity score	[%]	78.6%	77.5%	72.7%	79.0%
Conversational app	Qualifier	[%]	97.6%	94.3%	85.3%	95.4%
	Interactivity score	[%]	90.8%	90.4%	87.4%	89.1%
Speech quality (P10)	Qualifier	[%]	100.0%	100.0%	99.6%	100.0%
	Speech quality (P10)	[MOS-LQO]	3.9	3.8	3.7	3.9



### Crowd KPI overview

Achieved values of all networks under test in each of the relevant Crowd Key Performance Indicators (KPIs) for the categories "Broadband Coverage", "Download Speed", "Upload Speed", "Latency", "Voice Crowd" and "Stability".

Category	KPI name	Unit	Telia	Telenor	Tele2	Tre
Broadband Coverage	Coverage Reach	[%]	85.7 %	77.1 %	79.4 %	74.8 %
	Time on broadband	[%]	99.8 %	99.0 %	99.5 %	99.4 %
Download Speed (Service Category)	Basic internet class	[%]	99.2 %	99.1 %	99.5 %	98.7 %
	HD video class	[%]	95.7 %	96.2 %	96.8 %	95.2 %
	UHD video class	[%]	83.5 %	83.7 %	85.1 %	78.9 %
Upload Speed (Service Category)	Basic internet class	[%]	96.5 %	96.5 %	96.5 %	96.0 %
	HD video class	[%]	87.8 %	87.7 %	87.8 %	84.8 %
Download Speed (Data Rates)	P10 data rate	[Mbit/s]	20.0	17.1	16.4	11.2
	P90 data rate	[Mbit/s]	415.3	524.9	491.3	228.5
	AVG data rate	[Mbit/s]	159.1	212.9	193.8	96.7
Upload Speed (Data Rates)	P10 data rate	[Mbit/s]	6.2	5.1	4.9	4.2
	P90 data rate	[Mbit/s]	77.5	70.8	75.1	55.6
	AVG data rate	[Mbit/s]	36.8	31.9	32.0	25.3
Latency	OTT voice class	[%]	98.4 %	98.5 %	98.6 %	98.5 %
	Gaming class	[%]	91.4 %	92.8 %	92.0 %	93.1 %
	Egoshooter class	[%]	8.8 %	10.2 %	8.3 %	6.0 %
Voice	HD voice	[%]	98.8 %	98.5 %	98.6 %	98.8 %
Stability	Transaction Success	[%]	98.5 %	97.9 %	98.0 %	97.7 %

