

best in test.

For adding something on top in New Zealand and reaching an overall score of 801 dots in mobile network benchmarking survey we proudly award this certificate to

One New Zealand

Score 801 out of 1000 in Total
Score 210 out of 270 in Voice Services
Score 371 out of 480 in Data Services
Score 220 out of 250 in Crowdsourced Quality



Hakan Ekmen
Global Networks Lead, Comms Industry





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 New Zealand.

The audit was done as a performance benchmark performed by umlaut between 08.04.2024 and 29.04.2024 in cities and towns as well as on connection roads.

Dedicated measurements have been executed as drive tests outdoors using a Samsung Galaxy S23+.

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 CW46 2023 and CW17 2024.

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



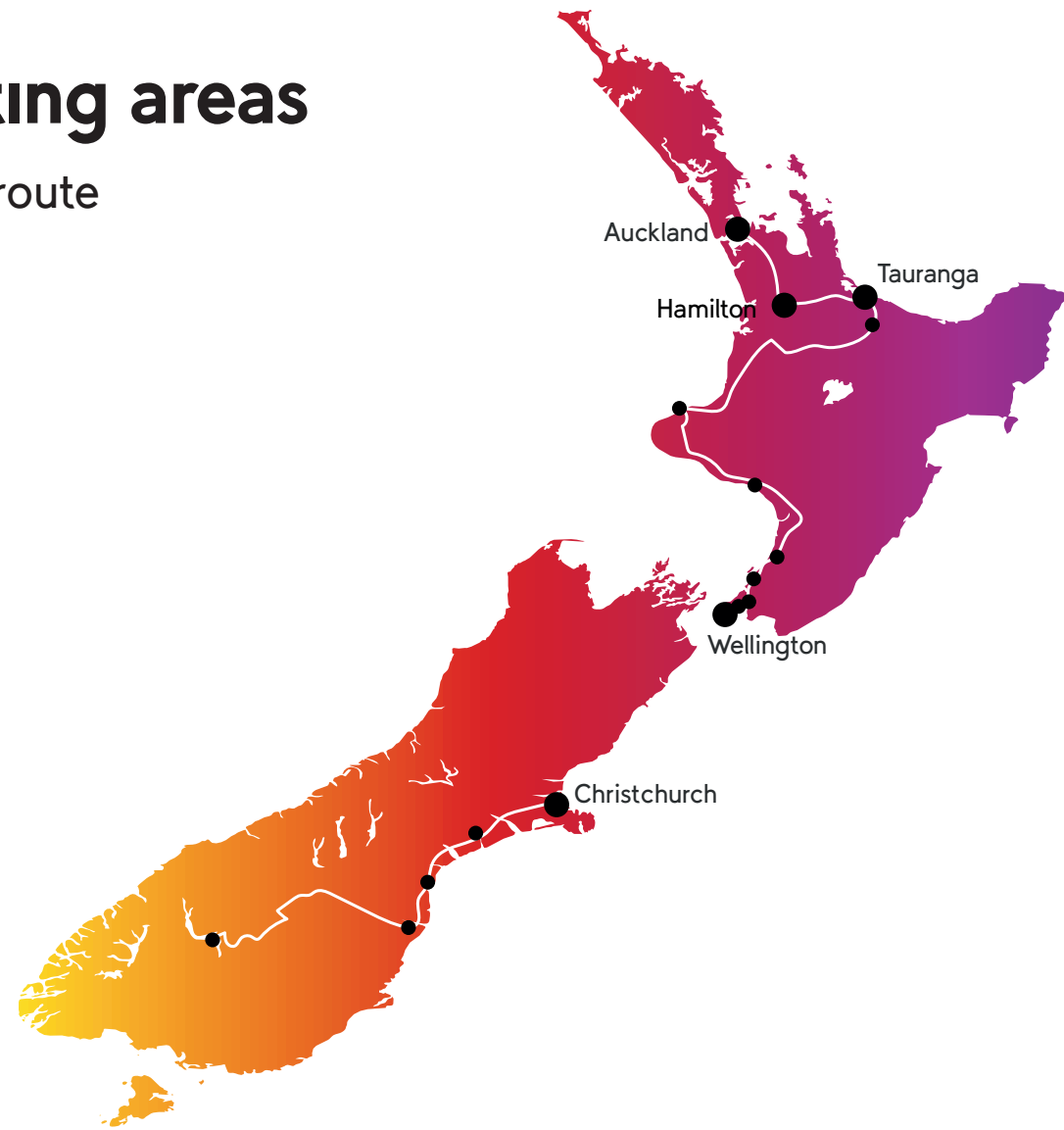
Measurement setup

Drivetest	Voice	Data
Device	Samsung Galaxy S23+ (5G)	Samsung Galaxy S23+ (5G)
Test Cases	Mobile-to-Mobile (M2M) Side1 (5G Preferred) to Side2 (5G Preferred) 105 sec call window 70 sec call duration 15 sec call setup timeout Multi-RAB traffic injection on both sides Generic OTT Voice Channel	Data 5G preferred HTTP DL DataStream 7s HTTP UL DataStream 7s HTTPS 10MB DL fixed file transfer HTTPS 5MB UL fixed file transfer Web Browsing – Kepler E-Gaming Live web pages 1 YouTube Full HD video ~ 45s 1 YouTube live stream ~ 45s
Mobility and Route Types	Drive test 100% Drive test: 58.2% in Cities, 21.1% in Towns and 20.7% on Roads	
Samples	~ 3229 per Operator	~ 24251 per Operator
Dates	14 measurement days 08.04.2024 – 29.04.2024	
Crowd Data Assessment	24 weeks CW46 2023 – CW17 2024	



Testing areas

Drive route



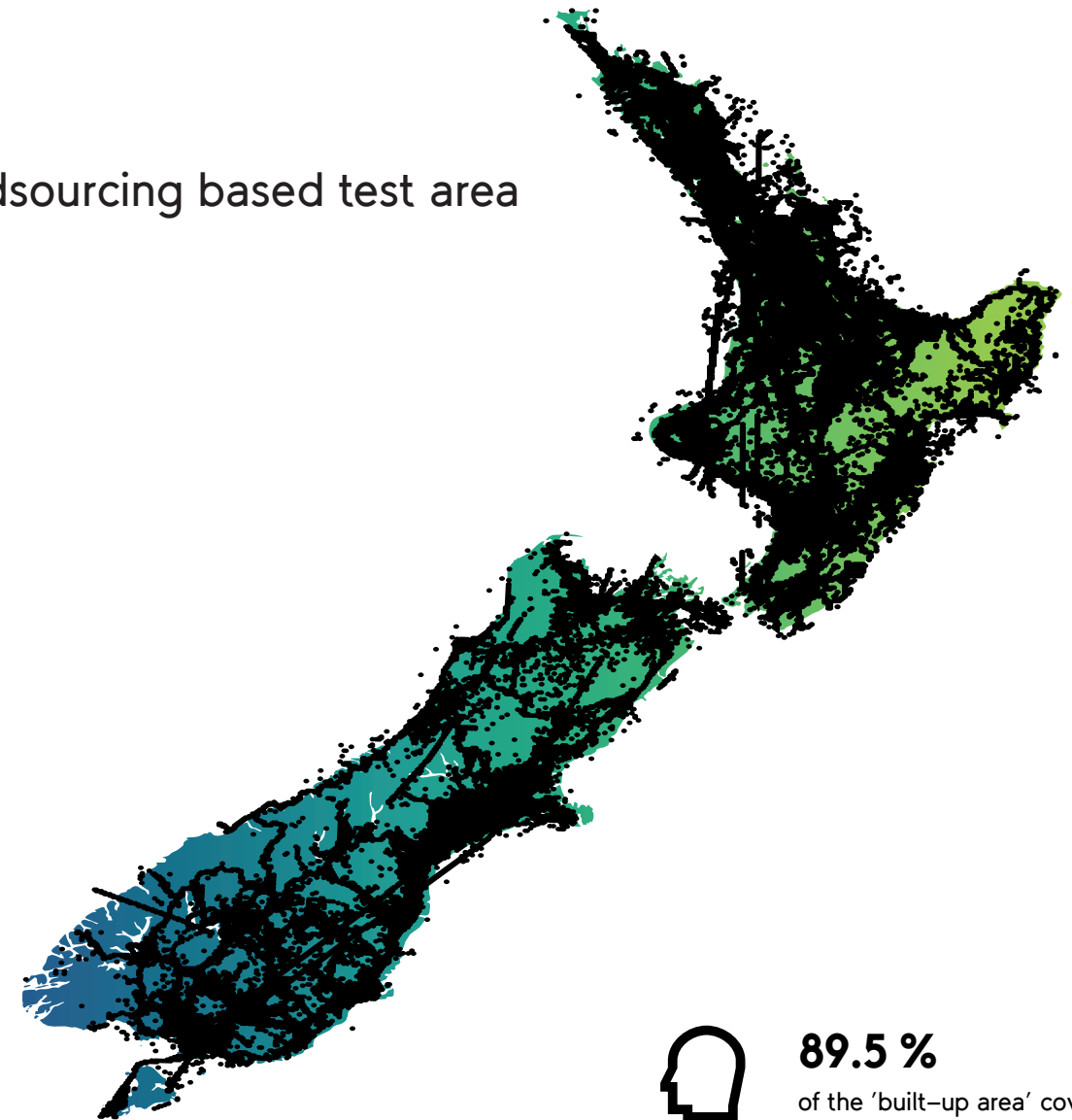
7,416 km
measuring distance



59.23%
of population measured



Crowdsourcing based test area



116,958 km²
size of tested area



89.5 %
of the 'built-up area' covered



98.5 %
of the 'Population area' covered



Claims




Best in test
One New Zealand



Best in data
One New Zealand



Best in voice
One New Zealand



Best in Reliability
One New Zealand



Best in crowd-sourced quality
One New Zealand



Methodology

The leader in mobile benchmarking, umlaut, has analyzed the mobile networks of New Zealand with regards to mobile network performance. We measure smartphone voice and data performance based on extensive drivetests – from major metropolitan areas to smaller cities and connection roads.

We objectively define the routes and test methodology and publish the results through certificates or public benchmark reports. In addition crowdsourced performance data has been collected and evaluated.

As the de-facto industry standard, our benchmarking methodology focuses on customer-experienced network quality and covers a wide range of mobile services.

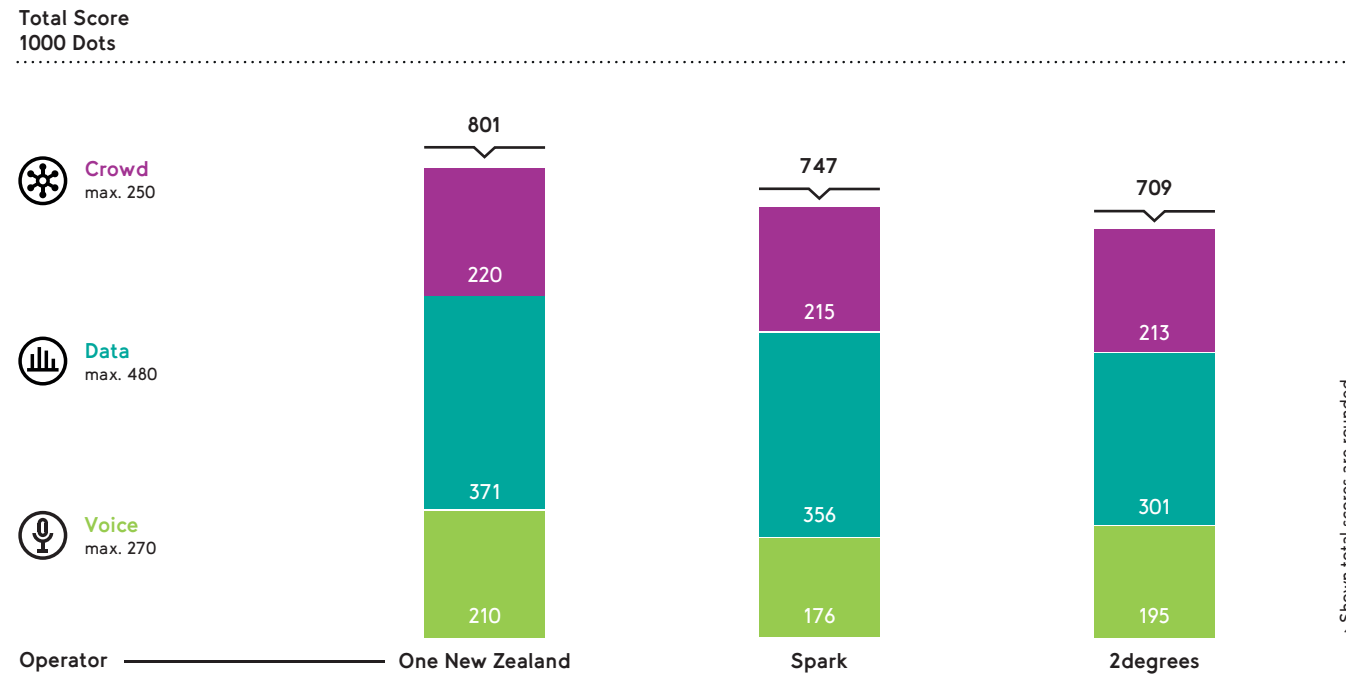
Today, more than 200 mobile networks in more than 120 countries are being evaluated by our unique scoring methodology.

It allows a technical analysis that is unprecedented in its level of detail and enables comparisons between the network performance and capability of each mobile network. Our public benchmarks as well as the certificate benchmarks help network operators to demonstrate how well they are delivering wireless connections to consumers, business users and enterprises and reveals the areas of improvement.



Score and breakdown

One New Zealand achieved the highest overall score among competitors with 801 dots out of 1000.



→ Shown total scores are rounded.

Overall score considering Voice, Data and Crowdsourcing.

Total score

	One New Zealand	Spark	2degrees
Voice (max. 270)	210	176	195
Cities Drivetest	162 (88%)	74% (74%)	81% (81%)
Towns Drivetest	54 (88%)	75% (75%)	83% (83%)
Roads Drivetest	54 (37%)	29% (29%)	35% (35%)
Data (max. 480)	371	356	301
Cities Drivetest	288 (86%)	83% (83%)	71% (71%)
Towns Drivetest	96 (87%)	83% (83%)	76% (76%)
Roads Drivetest	96 (40%)	39% (39%)	25% (25%)
Crowdsourced Quality (max. 250)	220	215	213
Broadband Coverage	112 (87%)	90% (90%)	85% (85%)
Download Speed	75 (90%)	84% (84%)	90% (90%)
Latency	50 (88%)	78% (78%)	78% (78%)
Voice	13 (86%)	93% (93%)	92% (92%)
Total	1000	747	709

Shown scores are rounded.



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

Data	Service Group	max	One New Zealand	Spark	2degrees
Cities	Web Browsing	64,8	92%	92%	72%
	File Download	64,8	90%	84%	71%
	File Upload	64,8	78%	77%	79%
	YouTube	64,8	84%	82%	56%
	OTT	28,8	90%	77%	84%
Towns	Web Browsing	21,6	93%	90%	79%
	File Download	21,6	91%	86%	66%
	File Upload	21,6	73%	73%	77%
	YouTube	21,6	88%	83%	74%
	OTT	9,6	92%	78%	89%
Roads	Web Browsing	21,6	46%	47%	25%
	File Download	21,6	46%	43%	19%
	File Upload	21,6	19%	24%	14%
	YouTube	21,6	41%	37%	33%
	OTT	9,6	61%	50%	44%

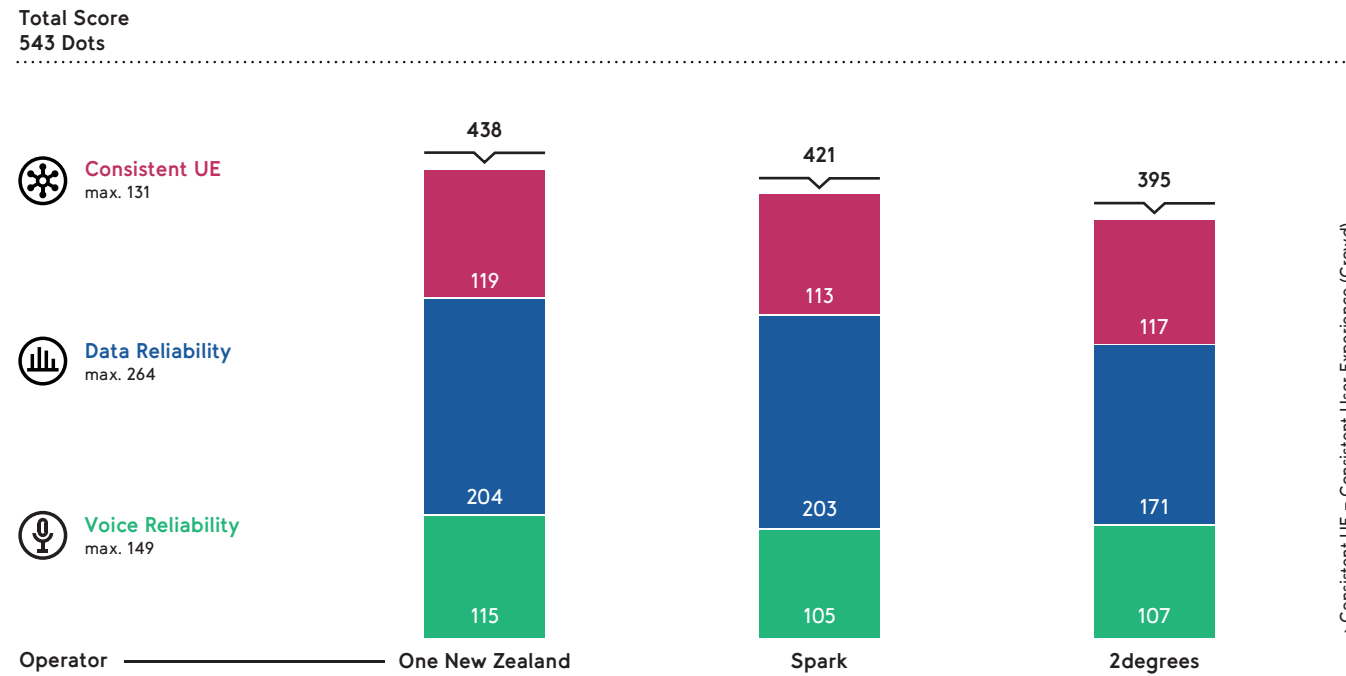


Achieved percentage of the maximum score in each of the different crowdsourcing services.

Crowd	Service Group	max	One New Zealand	Spark	2degrees
Crowdsourced Quality	Broadband Coverage	112	87%	90%	85%
	DL Speed	75	90%	84%	90%
	Latency	50	88%	78%	78%
	Voice	13	86%	93%	92%



Reliability



Reliability score considering Voice Reliability, Data Reliability and Consistent UE.

Total score

	Service Group	max	One New Zealand	Spark	2degrees
Reliability	Voice Reliability	149	77%	70%	72%
	Data Reliability	264	77%	77%	65%
	Consistent User Experience	131	91%	86%	89%

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	One New Zealand	Spark	2degrees
Cities	Qualifier	[%]	99,4	98,5	98,7
	Call Setup Time (P90)	[s]	2,6	5,0	3,3
	Speech Quality (P10)	[MOS-LQO]	3,4	3,1	3,4
	Multirab connectivity	[%]	100,0	99,9	98,6
Towns	Qualifier	[%]	99,5	98,8	99,0
	Call Setup Time (P90)	[s]	2,6	4,9	3,2
	Speech Quality (P10)	[MOS-LQO]	3,4	3,0	3,5
	Multirab connectivity	[%]	100,0	100,0	98,3
Roads	Qualifier	[%]	83,3	81,2	79,4
	Call Setup Time (P90)	[s]	3,5	5,3	4,0
	Speech Quality (P10)	[MOS-LQO]	3,2	2,9	3,1
	Multirab connectivity	[%]	98,9	99,7	97,2



Data Services KPI overview

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

Data Cities	KPI Name	Unit	One New Zealand	Spark	2degrees
HTTP Web Page DL Smartphone	Qualifier	[%]	99,2	99,3	97,9
	Overall Session Time	[s]	1,5	1,7	2,4
HTTP 10MB DL Smartphone	Qualifier	[%]	99,7	99,9	99,0
	Overall Session Time	[s]	1,9	2,6	4,8
	90% faster than	[Mbit/s]	21,2	15,5	7,9
	10% faster than	[Mbit/s]	296,3	204,2	246,3
HTTP 5MB UL Smartphone	Qualifier	[%]	99,7	100,0	99,0
	Average Session Time	[s]	5,3	4,6	4,3
	90% faster than	[Mbit/s]	2,9	4,3	5,7
	10% faster than	[Mbit/s]	64,0	55,9	36,9
HTTP DL FDTT	Qualifier	[%]	99,3	99,4	98,5
	10% faster than	[Mbit/s]	600,9	477,2	503,4
	faster than 20 Mbit/s	[%]	92,5	87,5	75,3
	faster than 100 Mbit/s	[%]	72,1	56,2	45,0
HTTP UL FDTT	Qualifier	[%]	99,1	98,6	98,5
	10% faster than	[Mbit/s]	86,3	90,9	96,8
	faster than 2 Mbit/s	[%]	96,5	95,7	98,3
	faster than 5 Mbit/s	[%]	88,1	87,5	94,5
YouTube	Qualifier	[%]	98,7	98,3	95,3
	Start Time	[s]	2,6	2,9	3,5
	AVG Resolution	[p]	1075,8	1071,5	1075,3
YouTube Live Smartphone	Qualifier	[%]	98,0	98,6	92,8
	Start Time	[s]	3,0	3,4	4,0
	AVG Resolution	[p]	1078,0	1070,9	1075,6
Interactivity	Qualifier	[%]	91,7	80,9	97,0
	Interactivity egaming	[%]	77,8	64,1	59,0
Conversational App	Qualifier	[%]	99,5	99,5	99,8
	Speech Quality (P10)	[MOS-LQO]	3,4	3,2	2,9



Data Services KPI overview

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

Data Towns	KPI Name	Unit	One New Zealand	Spark	2degrees
HTTP Web Page DL Smartphone	Qualifier	[%]	99,3	99,2	98,3
	Overall Session Time	[s]	1,6	1,8	2,1
HTTP 10MB DL Smartphone	Qualifier	[%]	99,5	99,7	99,0
	Overall Session Time	[s]	2,1	2,4	5,7
	90% faster than	[Mbit/s]	22,5	22,5	6,1
	10% faster than	[Mbit/s]	287,8	187,6	200,2
HTTP 5MB UL Smartphone	Qualifier	[%]	99,5	99,5	99,5
	Average Session Time	[s]	6,0	5,4	4,7
	90% faster than	[Mbit/s]	2,7	3,5	4,3
HTTP DL FDTT	10% faster than	[Mbit/s]	56,2	44,3	29,2
	Qualifier	[%]	99,8	99,3	98,7
	10% faster than	[Mbit/s]	611,1	440,2	426,0
HTTP UL FDTT	faster than 20 Mbit/s	[%]	94,0	91,7	74,4
	faster than 100 Mbit/s	[%]	68,8	58,9	31,0
	Qualifier	[%]	98,8	98,7	99,5
YouTube	10% faster than	[Mbit/s]	79,5	63,0	59,4
	faster than 2 Mbit/s	[%]	96,5	96,2	95,9
	faster than 5 Mbit/s	[%]	87,3	85,2	91,1
	Qualifier	[%]	99,2	98,8	97,6
YouTube Live Smartphone	Start Time	[s]	2,7	3,0	3,2
	AVG Resolution	[p]	1077,7	1074,8	1075,4
	Qualifier	[%]	98,8	98,8	96,9
Interactivity	Start Time	[s]	3,1	3,5	3,8
	AVG Resolution	[p]	1078,4	1070,4	1069,8
	Qualifier	[%]	93,9	83,4	96,5
Conversational App	Interactivity egaming	[%]	71,5	55,6	68,1
	Qualifier	[%]	99,5	100,0	99,5
Speech Quality (P10)	Speech Quality (P10)	[MOS-LQO]	3,5	3,4	3,1



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

Data Roads	KPI Name	Unit	One New Zealand	Spark	2degrees
HTTP Web Page DL Smartphone	Qualifier	[%]	87,9	89,1	79,8
	Overall Session Time	[s]	2,0	2,2	2,9
HTTP 10MB DL Smartphone	Qualifier	[%]	89,5	91,3	85,0
	Overall Session Time	[s]	5,1	7,4	12,4
	90% faster than	[Mbit/s]	6,8	4,0	2,7
	10% faster than	[Mbit/s]	196,6	164,3	108,0
HTTP 5MB UL Smartphone	Qualifier	[%]	83,2	87,2	76,0
	Average Session Time	[s]	11,8	12,1	13,1
	90% faster than	[Mbit/s]	1,2	1,2	1,1
HTTP DL FDTT	10% faster than	[Mbit/s]	35,8	36,1	21,5
	Qualifier	[%]	89,6	89,6	84,2
	10% faster than	[Mbit/s]	377,6	322,5	162,6
HTTP UL FDTT	faster than 20 Mbit/s	[%]	77,8	69,5	50,2
	faster than 100 Mbit/s	[%]	35,0	33,2	16,2
	Qualifier	[%]	83,9	87,2	72,4
YouTube	10% faster than	[Mbit/s]	35,9	54,7	35,8
	faster than 2 Mbit/s	[%]	85,9	87,8	82,5
	faster than 5 Mbit/s	[%]	69,4	69,4	65,5
	Qualifier	[%]	85,0	83,8	71,8
YouTube Live Smartphone	Start Time	[s]	3,0	3,3	3,9
	AVG Resolution	[p]	1068,7	1064,2	1065,9
	Qualifier	[%]	83,6	82,8	66,4
Interactivity	Start Time	[s]	3,4	3,9	4,3
	AVG Resolution	[p]	1072,6	1058,9	1047,7
	Qualifier	[%]	69,5	56,0	63,3
Conversational App	Interactivity egaming	[%]	63,7	48,0	53,6
	Qualifier	[%]	94,1	96,3	94,2
Speech Quality (P10)	Speech Quality (P10)	[MOS-LQO]	3,5	3,0	2,6



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", "Latency" and "Voice Crowd".

Category	KPI name	Unit	One New Zealand	Spark	2degrees
Broadband Coverage	Coverage Quality	[%]	92.8	94.9	91.0
	Coverage Reach	[%]	85.5	92.5	84.1
	Time on broadband	[%]	95.5	95.1	94.9
Download Speed	Basic internet class	[%]	95.1	90.4	94.6
	HD video class	[%]	84.1	81.3	83.4
	UHD video class	[%]	32.4	30.4	30.8
Latency	OTT voice class	[%]	97.3	95.6	96.1
	Gaming class	[%]	80.0	69.4	68.8
Voice	HD voice	[%]	91.2	94.8	94.7



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