

# best in test.

For adding something on top in Australia and reaching an overall score of 893 dots in mobile network benchmarking survey we proudly award this certificate to

## Telstra Australia

Score 893 out of 1000 in Total  
Score 245 out of 270 in Voice Services  
Score 418 out of 480 in Data Services  
Score 230 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 Australia.

The audit was done as a performance benchmark performed by umlaut between 15.10.2024 and 12.11.2024 in cities and towns as well as on connection roads.

Dedicated measurements were taken via outdoor drive tests and walk tests 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 CW22 2024 and CW45 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+	Samsung Galaxy S23+
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 Conversational App – OTT	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   Video Chat HD   Live Web Pages 1 YouTube Full HD video ~ 45s 1 YouTube live stream ~ 45s
Mobility and Route Types	100% Drive test (45 Days) & 100% City Walk Test (10 Days) 61.79% in Cities, 15.65% in Towns and 22.56% on Roads	
Samples	33,291	274,221
Dates	55 measurement days (45 DT + 10 WT) 15.10.2024 – 12.11.2024	
Crowd Data Assessment	24 weeks CW22 2024 – CW45 2024	



# Testing areas

## Drive route

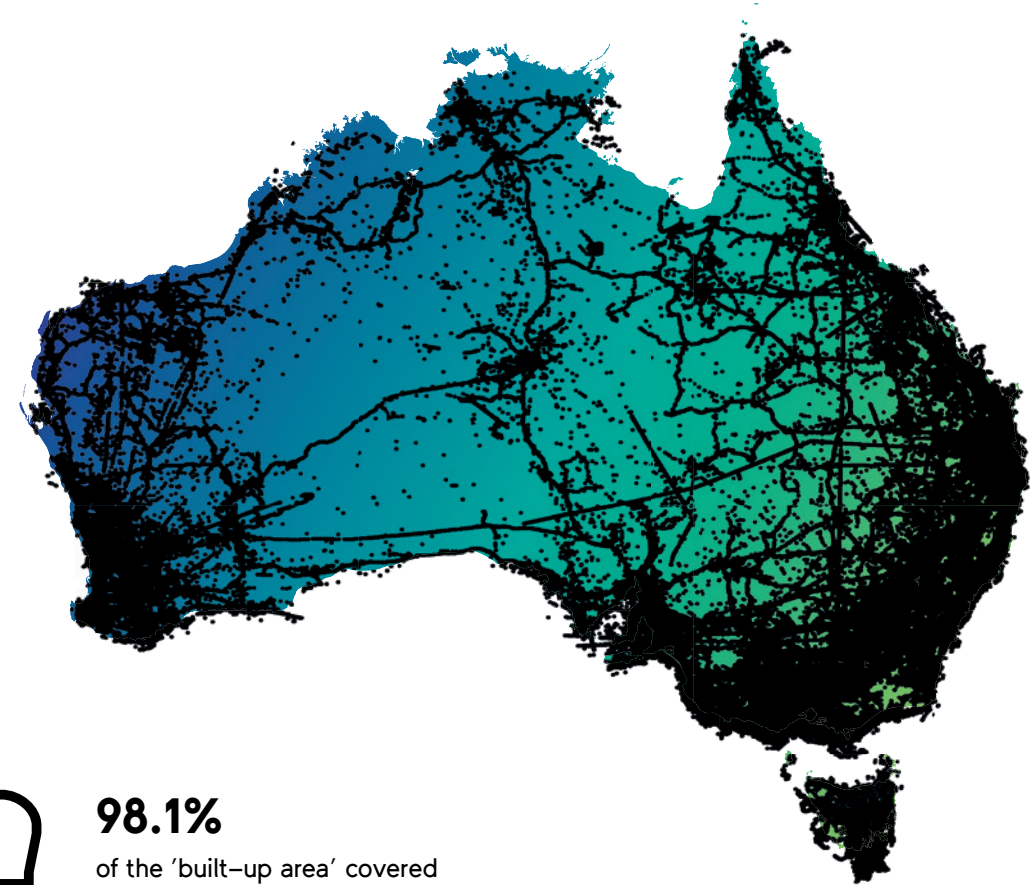


**22,500 km**  
measuring distance



**~70 %**  
of population measured

## Crowdsourcing based test area



**98.1%**  
of the 'built-up area' covered



**99.1%**  
of the 'Population area' covered

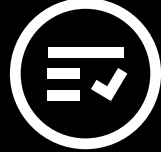


**788,170 km<sup>2</sup>**  
size of tested area




# Claims






**Best in test**  
Telstra Australia



**Best in voice**  
Telstra Australia



**Best in crowd-sourced quality**  
Telstra Australia



# Methodology

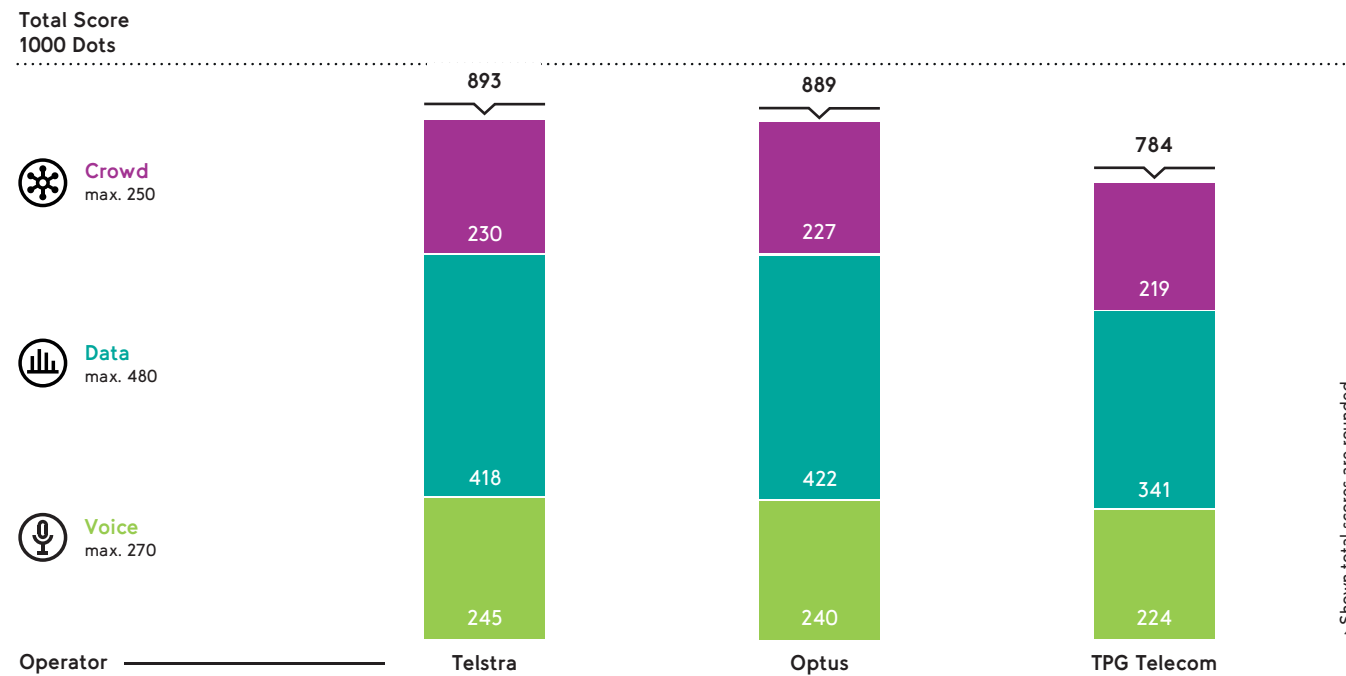
The leader in mobile benchmarking, umlaut, has analyzed the mobile networks of Australia with regards to mobile network performance. We measure smartphone voice and data performance based on extensive drivetests – from major metropolitan areas to smaller cities and connection roads. We objectively define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

Telstra achieved the highest overall score among competitors with 893 dots out of 1000.



→ Shown total scores are rounded.

Overall score considering Voice, Data and Crowdsourcing.

## Total score

		Telstra	Optus	TPG Telecom
Voice	max. 270	245	240	224
Cities Drivetest	122	97%	95%	94%
Cities Walktest	41	98%	97%	97%
Towns Drivetest	54	98%	95%	90%
Roads Drivetest	54	64%	63%	41%
Data	max. 480	418	422	341
Cities Drivetest	216	95%	93%	90%
Cities Walktest	72	90%	90%	89%
Towns Drivetest	96	91%	90%	60%
Roads Drivetest	96	63%	72%	25%
Crowdsourced Quality	max. 250	230	227	219
Broadband Coverage	100	97%	93%	89%
Download Speed	55	88%	89%	87%
Upload Speed	20	86%	84%	87%
Latency	50	86%	86%	81%
Voice	10	98%	98%	99%
Stability	15	96%	96%	96%
<b>Total</b>	<b>1000</b>	<b>893</b>	<b>889</b>	<b>784</b>

Shown scores are rounded.



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

Data	Service Group	max	Telstra	Optus	TPG Telecom
Cities Drivetest	Web Browsing	37,8	98%	97%	93%
	File Download	48,6	98%	98%	93%
	File Upload	48,6	92%	90%	91%
	YouTube	48,6	94%	91%	84%
	OTT	32,4	91%	88%	88%
Cities Walktest	Web Browsing	12,6	95%	95%	92%
	File Download	16,2	96%	96%	92%
	File Upload	16,2	89%	84%	90%
	YouTube	16,2	85%	88%	80%
	OTT	10,8	87%	89%	90%
Towns	Web Browsing	16,8	96%	95%	64%
	File Download	21,6	95%	93%	66%
	File Upload	21,6	89%	89%	62%
	YouTube	21,6	91%	89%	37%
	OTT	14,4	86%	84%	80%
Roads	Web Browsing	16,8	71%	82%	30%
	File Download	21,6	70%	76%	18%
	File Upload	21,6	61%	64%	13%
	YouTube	21,6	50%	65%	33%
	OTT	14,4	65%	77%	37%



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

Crowd	Service Group	max	Telstra	Optus	TPG Telecom
Crowdsourced Quality	Broadband Coverage	100	97%	93%	89%
	DL Speed	55	88%	89%	87%
	UL Speed	20	86%	84%	87%
	Latency	50	86%	86%	81%
	Voice	10	98%	98%	99%
	Stability	15	96%	96%	96%



### 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	Telstra	Optus	TPG Telecom
Cities Drivetest	Qualifier	[%]	99,7	99,6	99,4
	Call Setup Time (P90)	[s]	1,6	2,0	2,2
	Speech Quality (P10)	[MOS-LQO]	4,5	4,5	4,4
Cities Walktest	Qualifier	[%]	99,8	99,8	99,8
	Call Setup Time (P90)	[s]	1,4	1,7	1,9
	Speech Quality (P10)	[MOS-LQO]	4,6	4,6	4,6
Towns	Qualifier	[%]	99,9	99,6	98,8
	Call Setup Time (P90)	[s]	1,6	2,3	2,1
	Speech Quality (P10)	[MOS-LQO]	4,5	4,5	4,5
Roads	Qualifier	[%]	92,0	92,0	81,3
	Call Setup Time (P90)	[s]	1,9	2,4	2,6
	Speech Quality (P10)	[MOS-LQO]	4,4	4,3	4,0



### 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 Drivetest	KPI Name	Unit	Telstra	Optus	TPG Telecom
HTTP Web Page DL Smartphone	Qualifier	[%]	99,8	99,8	99,4
	Overall Session Time	[s]	1,2	1,4	1,6
HTTP 10MB DL Smartphone	Qualifier	[%]	99,9	99,9	99,9
	Overall Session Time	[s]	0,9	1,0	1,7
	90% faster than	[Mbit/s]	72,5	59,0	27,3
	10% faster than	[Mbit/s]	274,0	357,1	228,6
HTTP 5MB UL Smartphone	Qualifier	[%]	99,9	100,0	99,9
	Average Session Time	[s]	2,5	2,8	2,7
	90% faster than	[Mbit/s]	8,1	7,0	7,9
	10% faster than	[Mbit/s]	70,7	76,1	68,0
HTTP DL FDTT	Qualifier	[%]	99,9	99,9	99,8
	10% faster than	[Mbit/s]	573,9	956,3	518,6
	faster than 20 Mbit/s	[%]	98,6	98,8	94,6
	faster than 100 Mbit/s	[%]	89,5	86,4	71,2
HTTP UL FDTT	Qualifier	[%]	99,8	99,7	99,8
	10% faster than	[Mbit/s]	85,5	104,6	84,6
	faster than 2 Mbit/s	[%]	99,4	98,8	99,1
	faster than 5 Mbit/s	[%]	96,3	95,2	95,8
YouTube	Qualifier	[%]	99,7	99,2	98,8
	Start Time	[s]	1,9	2,0	2,2
	AVG Resolution	[p]	1080,0	1079,9	1079,5
YouTube Live Smartphone	Qualifier	[%]	99,7	99,3	98,0
	Start Time	[s]	2,8	3,0	3,2
	AVG Resolution	[p]	1079,7	1079,8	1078,2
Interactivity EGaming	Qualifier	[%]	96,2	95,9	95,9
	Interactivity egaming	[%]	79,8	73,3	71,7
Interactivity Videochat	Qualifier	[%]	93,6	93,5	92,9
	Interactivity videochat	[%]	91,3	88,9	86,2
Conversational App	Qualifier	[%]	99,9	99,6	99,9
	Speech Quality (P10)	[MOS-LQO]	3,8	3,7	3,8



### 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 Walktest".

Data Cities Walktest	KPI Name	Unit	Telstra	Optus	TPG Telecom
HTTP Web Page DL Smartphone	Qualifier	[%]	99,6	99,6	99,3
	Overall Session Time	[s]	1,3	1,5	1,5
HTTP 10MB DL Smartphone	Qualifier	[%]	100,0	100,0	99,8
	Overall Session Time	[s]	1,2	1,4	1,8
	90% faster than	[Mbit/s]	45,3	44,8	26,9
	10% faster than	[Mbit/s]	253,2	277,8	261,3
HTTP 5MB UL Smartphone	Qualifier	[%]	99,8	99,5	99,5
	Average Session Time	[s]	2,8	2,9	2,7
	90% faster than	[Mbit/s]	8,7	8,1	8,2
HTTP DL FDDT	Qualifier	[%]	99,8	99,8	99,8
	10% faster than	[Mbit/s]	521,9	725,4	558,8
	faster than 20 Mbit/s	[%]	96,5	97,5	95,1
HTTP UL FDDT	Qualifier	[%]	99,5	99,0	99,8
	10% faster than	[Mbit/s]	75,8	101,4	101,6
	faster than 2 Mbit/s	[%]	98,7	97,0	99,0
	faster than 5 Mbit/s	[%]	95,2	95,0	96,3
YouTube	Qualifier	[%]	99,3	99,3	98,1
	Start Time	[s]	2,1	2,2	2,2
	AVG Resolution	[p]	1080,0	1080,0	1079,0
YouTube Live Smartphone	Qualifier	[%]	97,5	98,5	97,5
	Start Time	[s]	2,9	3,1	3,2
	AVG Resolution	[p]	1080,0	1080,0	1077,2
Interactivity EGaming	Qualifier	[%]	91,1	95,8	95,6
	Interactivity egaming	[%]	81,5	71,8	77,1
Interactivity Videochat	Qualifier	[%]	91,0	94,4	94,2
	Interactivity videochat	[%]	89,9	89,0	86,4
Conversational App	Qualifier	[%]	99,7	99,6	99,6
	Speech Quality (P10)	[MOS-LQO]	4,1	4,1	4,1



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	Telstra	Optus	TPG Telecom
HTTP Web Page DL Smartphone	Qualifier	[%]	99,7	99,7	95,8
	Overall Session Time	[s]	1,4	1,6	2,0
HTTP 10MB DL Smartphone	Qualifier	[%]	99,8	99,9	98,4
	Overall Session Time	[s]	1,4	1,7	4,5
	90% faster than	[Mbit/s]	42,5	32,4	8,2
	10% faster than	[Mbit/s]	244,9	192,8	182,4
HTTP 5MB UL Smartphone	Qualifier	[%]	99,9	99,9	98,1
	Average Session Time	[s]	3,0	3,1	6,3
	90% faster than	[Mbit/s]	7,2	6,8	2,8
HTTP DL FDDT	Qualifier	[%]	99,7	99,6	97,9
	10% faster than	[Mbit/s]	536,4	413,3	340,5
	faster than 20 Mbit/s	[%]	96,4	97,3	77,2
HTTP UL FDDT	Qualifier	[%]	99,8	99,9	97,9
	10% faster than	[Mbit/s]	73,0	74,4	56,6
	faster than 2 Mbit/s	[%]	98,4	98,1	94,6
	faster than 5 Mbit/s	[%]	94,5	94,5	79,5
YouTube	Qualifier	[%]	99,4	99,3	85,2
	Start Time	[s]	2,1	2,3	2,7
	AVG Resolution	[p]	1080,0	1080,0	1075,8
YouTube Live Smartphone	Qualifier	[%]	99,2	99,2	87,4
	Start Time	[s]	3,0	3,2	3,7
	AVG Resolution	[p]	1079,3	1078,0	1071,6
Interactivity EGaming	Qualifier	[%]	92,7	92,1	91,6
	Interactivity egaming	[%]	73,2	67,7	65,2
Interactivity Videochat	Qualifier	[%]	91,8	94,5	89,2
	Interactivity videochat	[%]	89,4	87,4	85,3
Conversational App	Qualifier	[%]	99,8	99,3	99,1
	Speech Quality (P10)	[MOS-LQO]	3,8	3,7	3,7





### 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 "Roads".

Data Roads	KPI Name	Unit	Telstra	Optus	TPG Telecom
HTTP Web Page DL Smartphone	Qualifier	[%]	94,9	97,1	81,5
	Overall Session Time	[s]	1,9	1,8	2,5
HTTP 10MB DL Smartphone	Qualifier	[%]	97,2	98,0	85,1
	Overall Session Time	[s]	4,9	4,5	9,7
	90% faster than	[Mbit/s]	6,9	7,3	3,3
	10% faster than	[Mbit/s]	203,0	150,3	143,0
HTTP 5MB UL Smartphone	Qualifier	[%]	96,1	97,0	76,1
	Average Session Time	[s]	7,2	7,6	15,3
	90% faster than	[Mbit/s]	2,3	2,2	0,9
	10% faster than	[Mbit/s]	44,8	45,2	34,9
HTTP DL FDDT	Qualifier	[%]	96,1	97,9	83,3
	10% faster than	[Mbit/s]	400,7	242,3	199,9
	faster than 20 Mbit/s	[%]	72,2	73,9	46,1
	faster than 100 Mbit/s	[%]	38,6	30,7	22,9
HTTP UL FDDT	Qualifier	[%]	94,4	95,8	77,5
	10% faster than	[Mbit/s]	51,0	55,1	40,3
	faster than 2 Mbit/s	[%]	93,0	92,2	79,6
	faster than 5 Mbit/s	[%]	81,0	79,6	55,5
YouTube	Qualifier	[%]	92,2	94,3	69,2
	Start Time	[s]	2,7	2,5	3,2
	AVG Resolution	[p]	1076,7	1077,9	1072,7
YouTube Live Smartphone	Qualifier	[%]	87,6	92,6	66,9
	Start Time	[s]	3,6	3,5	4,4
	AVG Resolution	[p]	1074,6	1073,4	1057,4
Interactivity EGaming	Qualifier	[%]	82,0	86,0	64,3
	Interactivity egaming	[%]	63,5	64,8	61,4
Interactivity Videochat	Qualifier	[%]	77,0	87,4	60,1
	Interactivity videochat	[%]	86,1	87,9	85,6
Conversational App	Qualifier	[%]	93,1	96,7	84,6
	Speech Quality (P10)	[MOS-LQO]	3,5	3,5	3,3



### 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", "Voice Crowd" and "Stability".

Category	KPI name	Unit	Telstra	Optus	TPG Telecom
Broadband Coverage	Coverage Quality	[%]	99.3	98.6	95.9
	Coverage Reach	[%]	94.6	83.9	77.0
	Time on broadband	[%]	99.3	99.2	98.9
Download Speed	Basic internet class	[%]	96.8	96.9	96.0
	HD video class	[%]	88.1	88.1	86.8
	UHD video class	[%]	33.1	32.1	30.7
Latency	OTT voice class	[%]	96.6	96.4	95.0
	Gaming class	[%]	85.5	87.0	83.6
	Egoshooter class	[%]	21.5	20.4	23.5
Voice	HD voice	[%]	98.9	98.5	99.6
Download Speed Active	90% faster than	[Mbit/s]	4.6	5.3	4.7
	10% faster than	[Mbit/s]	248.5	220.2	240.4
	AVG data rate	[Mbit/s]	94.0	91.5	91.4
Upload Speed Active	90% faster than	[Mbit/s]	2.4	2.2	2.3
	10% faster than	[Mbit/s]	35.2	38.8	41.5
	AVG data rate	[Mbit/s]	15.9	16.7	18.1
Stability	Transaction success	[%]	96.0	96.0	95.8



**umlaut – Part of Accenture**

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