

best in test.

For adding something on top in Canada and reaching an overall score of 897 dots in mobile network benchmarking survey we proudly award this certificate to

Rogers Communications Canada Inc.

Score 897 out of 1000 in Total
Score 269 out of 300 in Voice Services
Score 399 out of 450 in Data Services
Score 229 out of 250 in Crowdsourced Quality



Hakan Ekmen
Chief Executive Officer Telecommunication





Measurement Overview

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

The audit was done as a performance benchmark performed by umlaut between 29.03.2022 and 15.06.2022 in cities and towns as well as on connection roads.

Dedicated measurements have been executed as drive tests outdoors using a Samsung Galaxy S21+5G.

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 03.01.2022 and 19.06.2022.

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



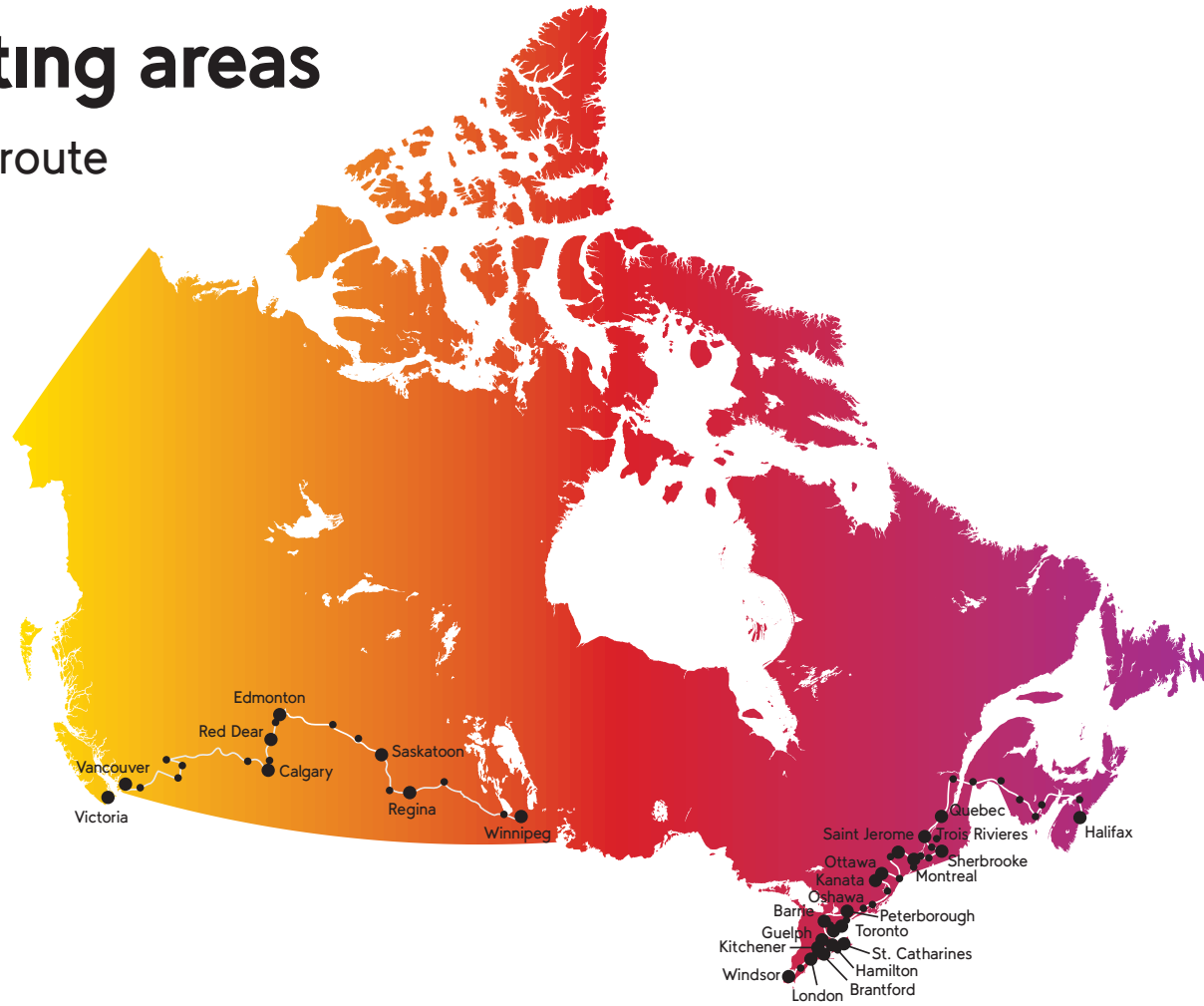
Measurement setup

Drivetest	Voice	Data
Device	Samsung Galaxy S21+5G	Samsung Galaxy S21+5G
Test Cases	Mobile-to-Mobile (M2M) Side1 (5G preferred: Volte) to Side2 (5G preferred: Volte) 115 sec call window 70 sec call duration 15 sec call setup timeout Multi-RAB traffic injection on both sides	Data 5G preferred HTTP DL datastream 7s HTTP UL datastream 7s HTTP 5MB DL fixed file transfer HTTP 2.5MB UL fixed file transfer Web Browsing – Kepler ETSI Ref. Page 10 Live web pages (5 http / 5 https) 2 YouTube HD video ~ 45s 1 YouTube live stream ~ 45s
Mobility and Route Types	100% Drivetest 50–70% in Cities, 10–25% in Towns and 10–40% on Roads	
Samples	~ 38000 per Operator	~ 355000 per Operator
Dates	46 measurement days 29.03.2022 – 15.06.2022	
Crowd Data Assessment	24 weeks 03.01.2022 – 19.06.2022	




Testing areas

Drive route



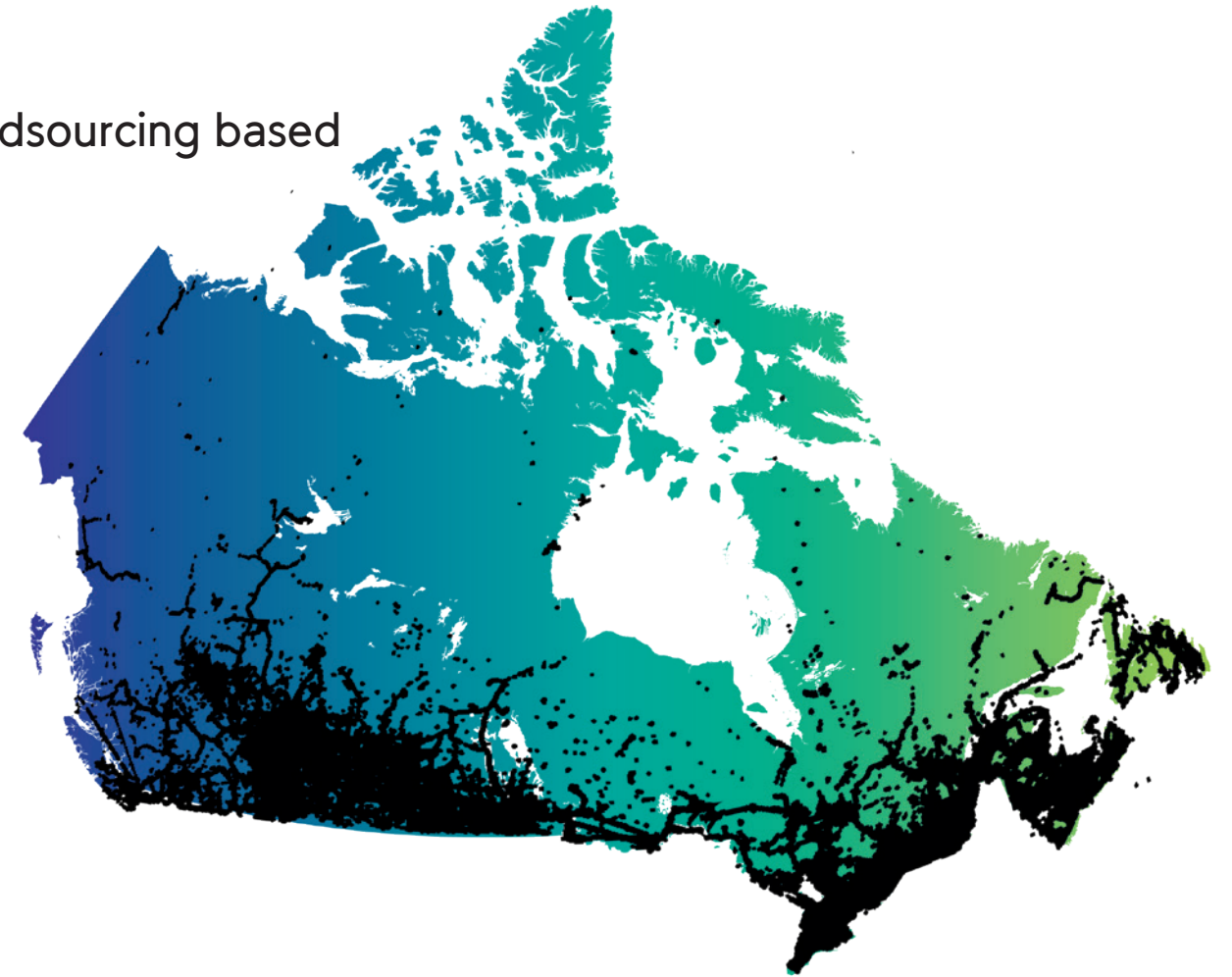
 **31.000 km**
measuring distance


 **62 %**
of population measured

Cities measured: Windsor, London, Brantford, St. Catharines, Hamilton, Kitchener, Guelph, Barrie, Toronto, Oshawa, Peterborough, Kanata, Ottawa, Saint Jerome, Montreal, Sherbrooke, Trois Rivières, Quebec, Halifax, Vancouver, Victoria, Calgary, Red Deer, Edmonton, Saskatoon, Regina, Winnipeg
Towns measured: Chatham Kent, Ingersoll, Woodstock, Welland, Bradford West Gwillimbury, Clarington (Bowmanville Newcastle), Cobourg (inc Port Hope), Belleville, Brockville, Cornwall, Lachute, Chateaugay, Granby, Magog, Drummondville, Victoriaville, Saguenay, Riviere du Loup, Edmundston, Fredericton, Saint John, Quispamsis, Truro, Chilliwack, Kelowna, Vernon, Kamloops, Canmore, Airdrie, Leduc, Lloydminster North Battleford, Moose Jaw, Yorkton, Portage la Prairie




Crowdsourcing based



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

 **98.0 %**
of the 'Population area' covered

 **479.379 km²**
size of tested area



Claims




Best in test
Rogers Communications
Canada Inc.



Best in voice
Rogers Communications
Canada Inc.



Best in reliability
Rogers Communications
Canada Inc.



Methodology

The leader in mobile benchmarking, umlaut, has analyzed the mobile networks of Canada 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.

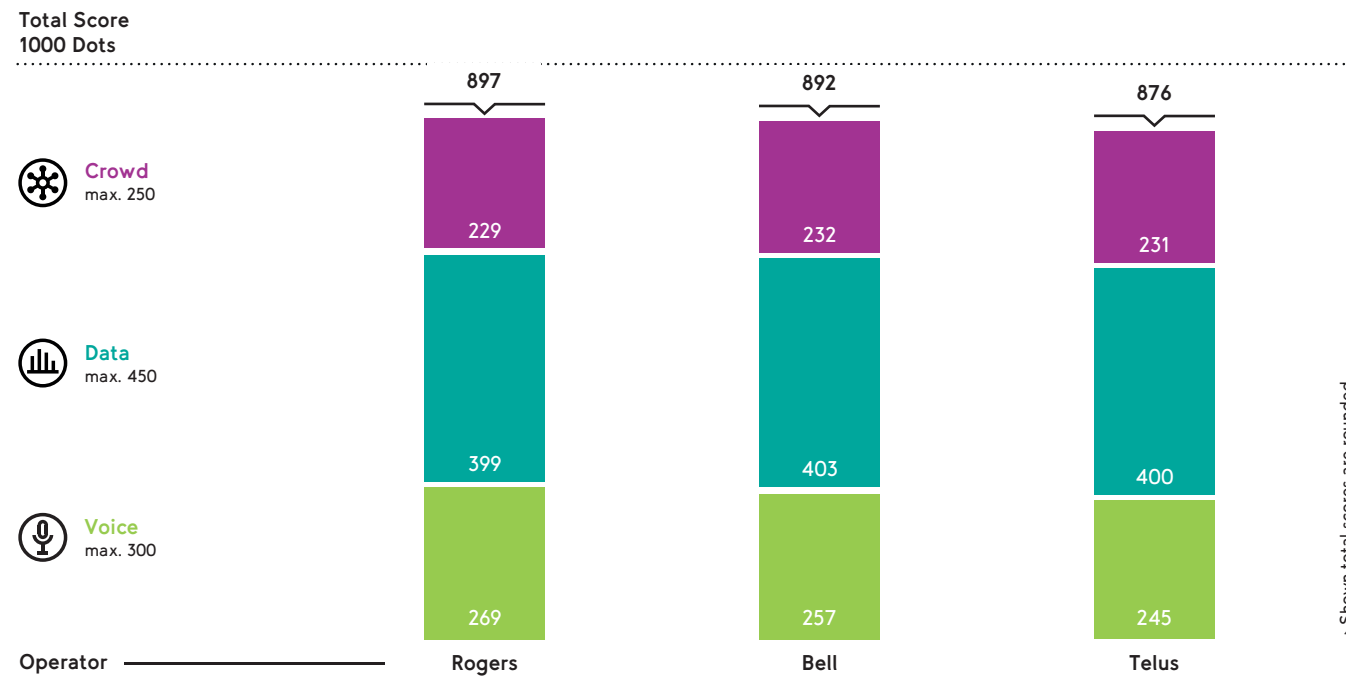
As the de-facto industry standard, our benchmarking methodology focuses on customer-perceived network quality and covers a wide range of mobile services. Today, more than 200 mobile networks in more than 120 countries are being evaluated by our unique scoring methodology. It allows a technical analysis that is unpre-

cedented 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

Rogers Communications Canada Inc. achieved the highest overall score among competitors with 897 dots out of 1000.



→ Shown total scores are rounded.

Overall score considering Voice, Data and Crowdsourcing.

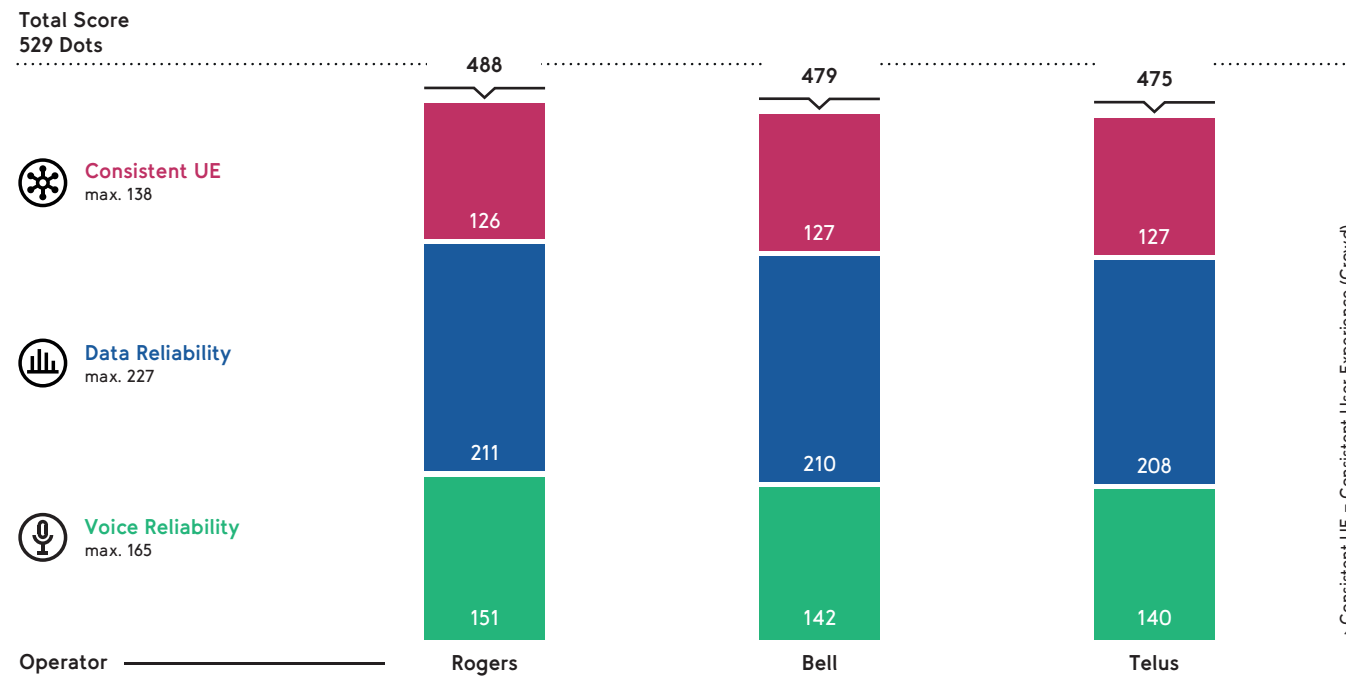
Total score

	Rogers Wireless	Bell	Telus
Voice (max. 300)	269	257	245
Cities Drivetest	180	95%	88%
Towns Drivetest	60	95%	87%
Roads Drivetest	60	69%	75%
Data (max. 450)	399	403	400
Cities Drivetest	270	93%	93%
Towns Drivetest	90	88%	92%
Roads Drivetest	90	75%	76%
Crowdsourced Quality (max. 250)	229	232	231
Broadband Coverage	125	94%	95%
Download Speed	75	89%	89%
Latency	50	89%	92%
Total	1000	897	876

Shown scores are rounded.



Reliability



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

Total score

	Service Group	max	Rogers Wireless	Bell	Telus
Reliability	Voice Reliability	165	91%	86%	85%
	Data Reliability	227	93%	93%	91%
	Consistent User Experience	137,5	92%	93%	92%

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



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