

Mobile networks performance in United Arab Emirates December 2020

About SpeedChecker

Since 2008 we have helped millions of users get a better understanding of how to make their Internet go faster. Our solutions empower mobile and fixed operators, regulators and researchers in making their Internet infrastructure better and more available for everyone.

We do that by providing end-users tools such as websites or mobile apps and offer crowdsourcing systems and data to the businesses and organizations.

We collect real world end user experience through our passive and active measurement technology, combined with unique regional and global partnerships with thousands of apps.

More about SpeedChecker [here](#)



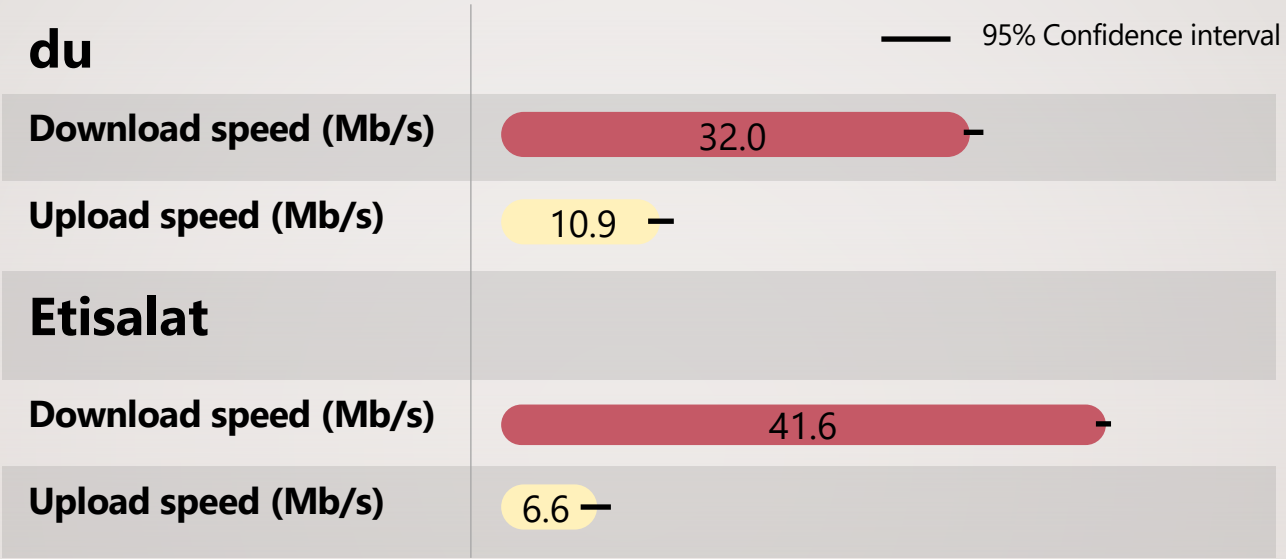
SPEEDCHECKER

About the data

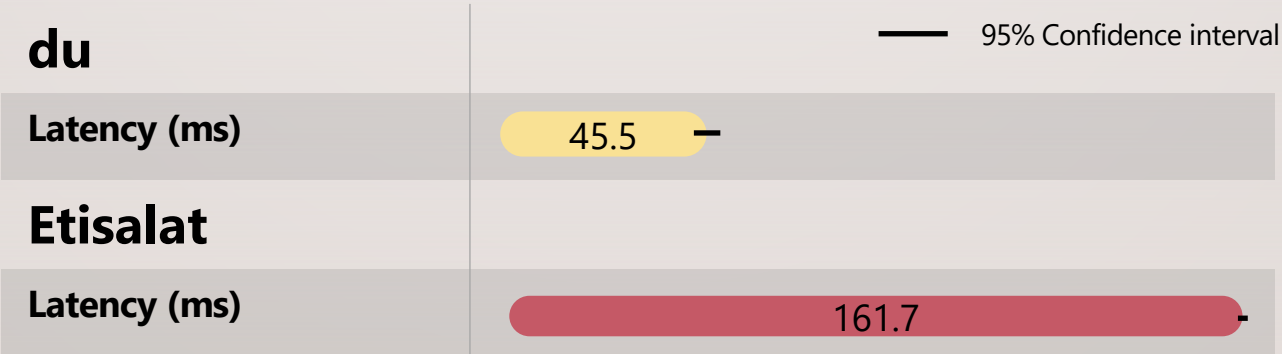
Total number of samples: 41,745
Total number of unique devices: 31,254
Data collection period: 07 December - 15 December 2020

See our [data collection](#) & [measurement methodology](#)

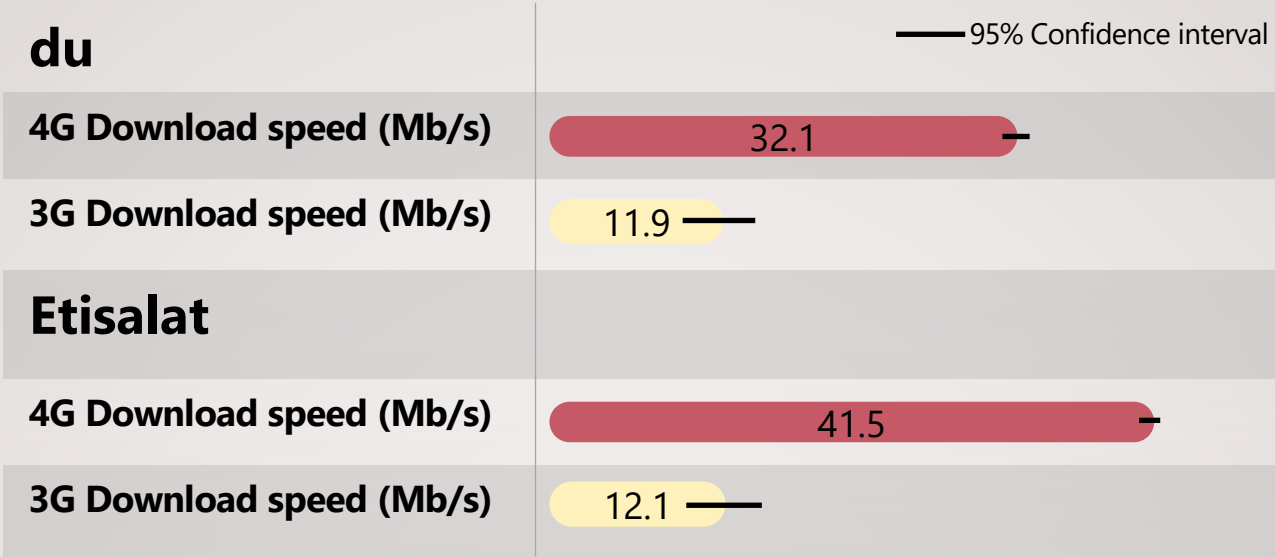
MNO speed benchmark



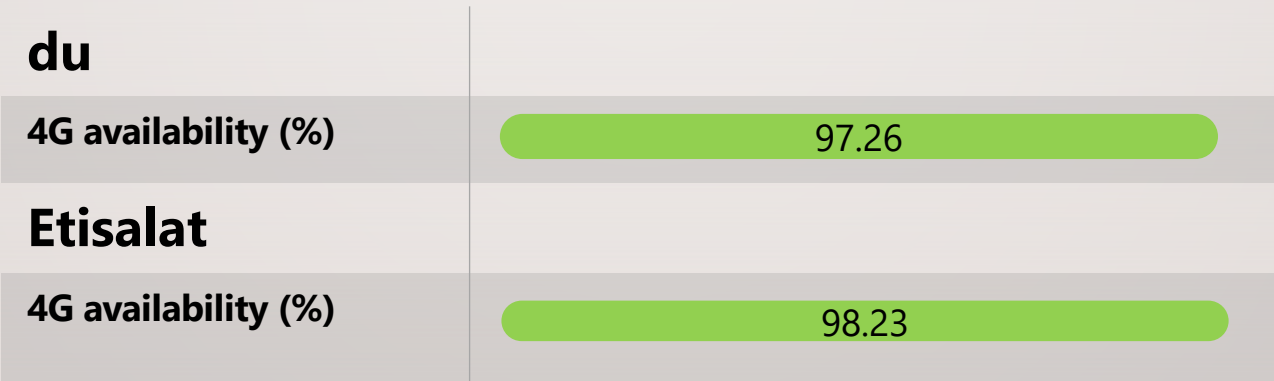
MNO latency benchmark



MNO 4G and 3G download speed benchmark

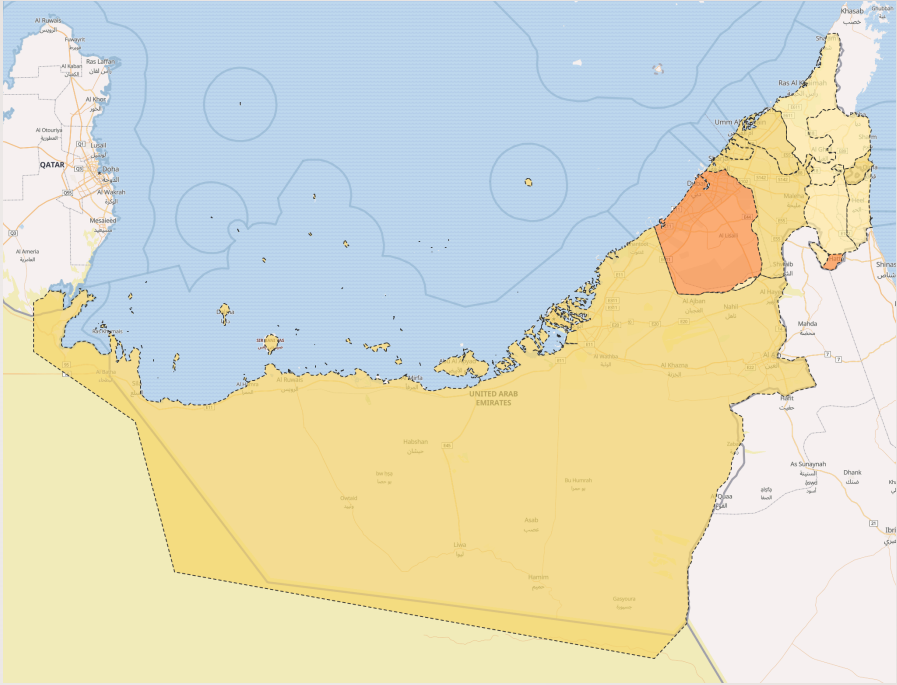
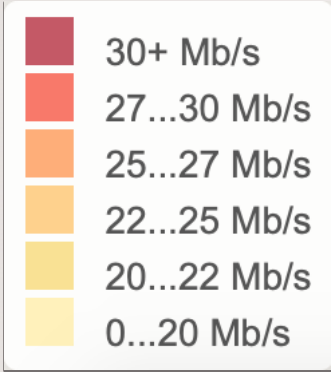


MNO 4G Availability benchmark

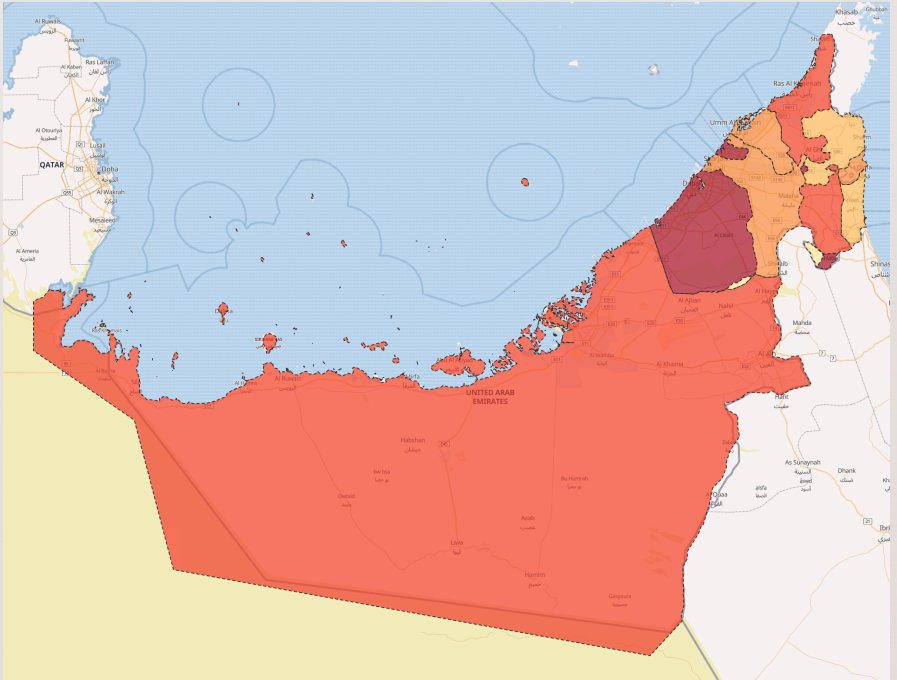
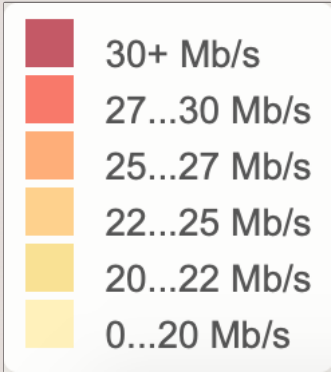


Regional comparison of MNO download speed performance

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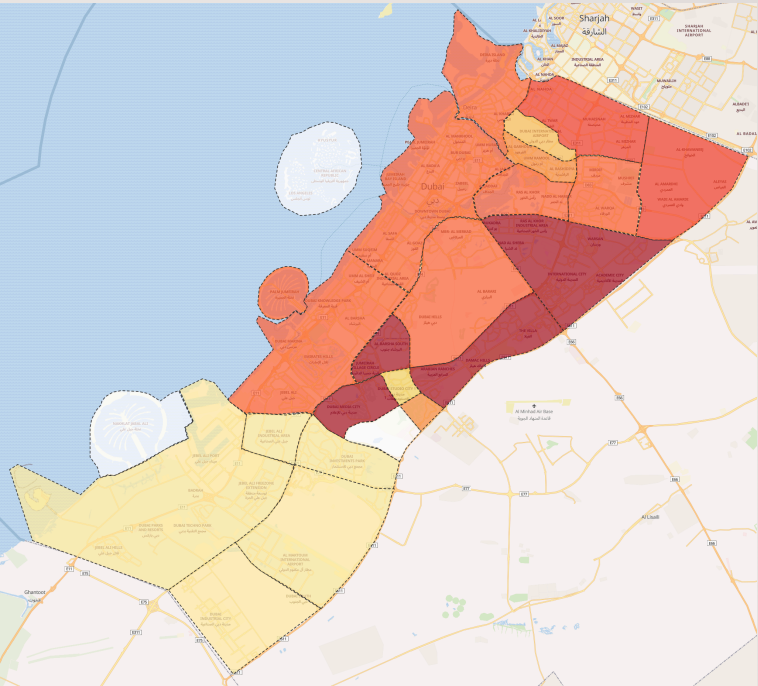
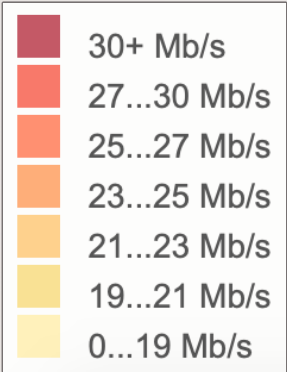


Etisalat

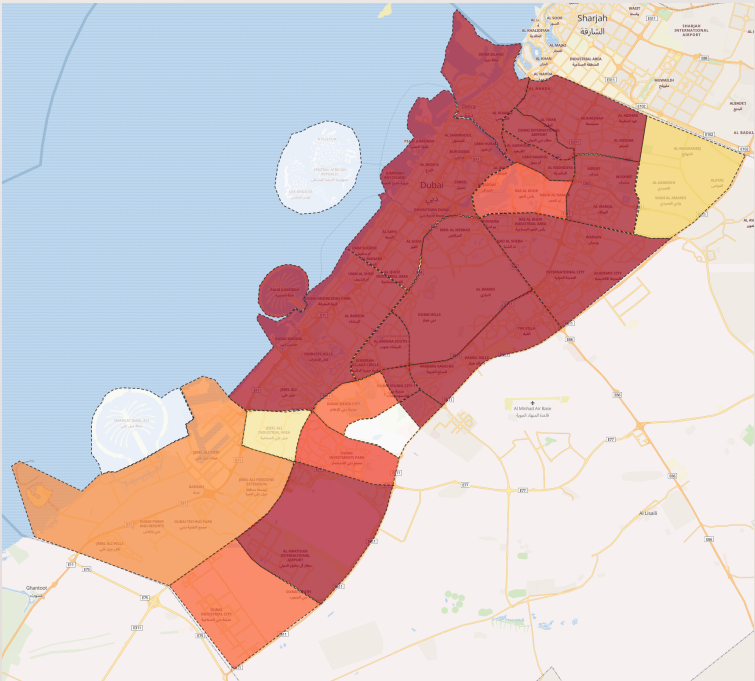
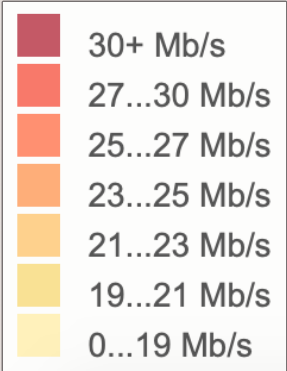


MNO download speed performance in Dubai

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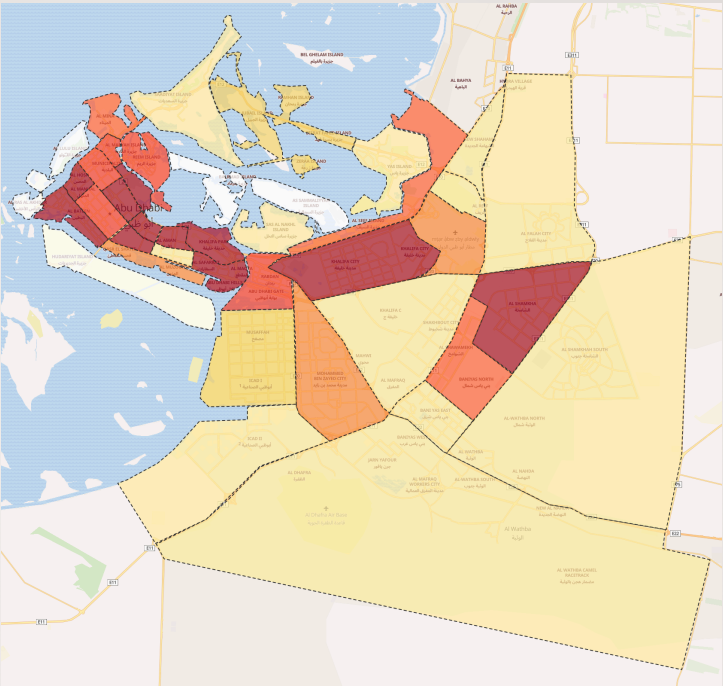
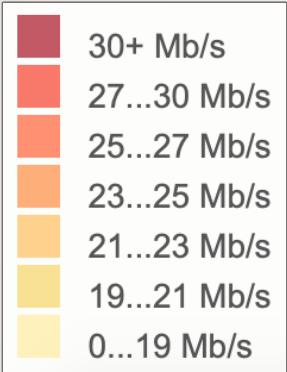


Etisalat

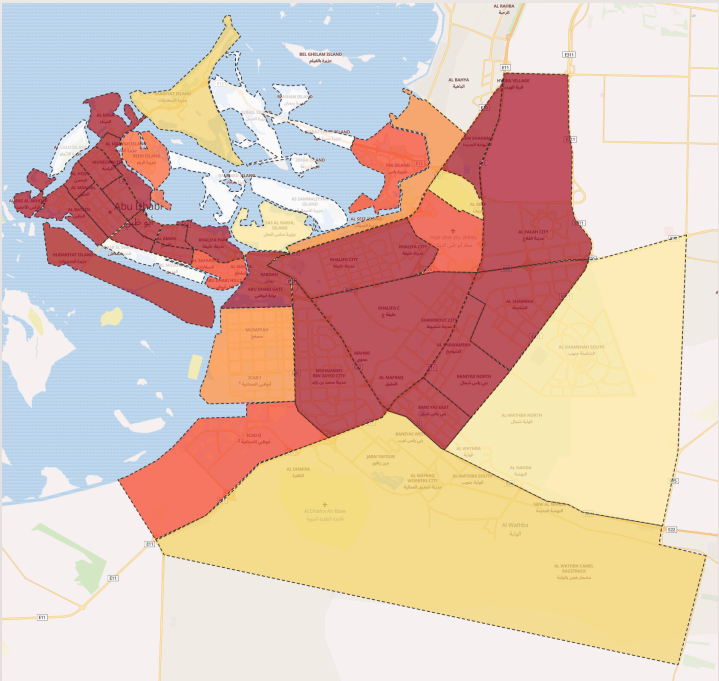
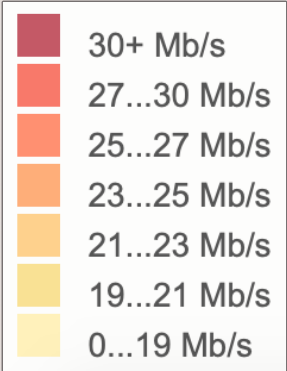


MNO download speed performance in Abu Dhabi

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Etisalat



ARE YOU LOOKING FOR MORE DETAILED CROWDSOURCED DATA IN UNITED ARAB EMIRATES?

What you see in this free report is a high-level snapshot of the crowdsourced data we offer to our clients. Our crowdsourcing system contains billions of data points collected from mobile devices worldwide. Unlike our competitors, we can sell access to the data with different granularity: Our clients can pick data they need with significant cost savings associated with a reduced scope.



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Flexibility is in our DNA

Our customers value our flexible and modular approach in delivering our solutions. There is no one size fits all in providing crowdsourcing projects. Customers increasingly require tailored solutions which will satisfy all technical, operational and legal requirements.



With reduced scope comes reduced price. Our Basic KPI set is a more cost effective way to get speed test data. Our Advanced KPI set is more comprehensive with 100+ active and passive KPIs.



Crowdsourcing is about trade-offs. Do you want more tests or do you want tests to run longer? Do you want to collect data passively without impacting the network and user bandwidth or run active tests which will stress and assess the capacity better?



Do you want us to host the solution for fast & easy deployment or require data to be within your data center for compliance reasons.



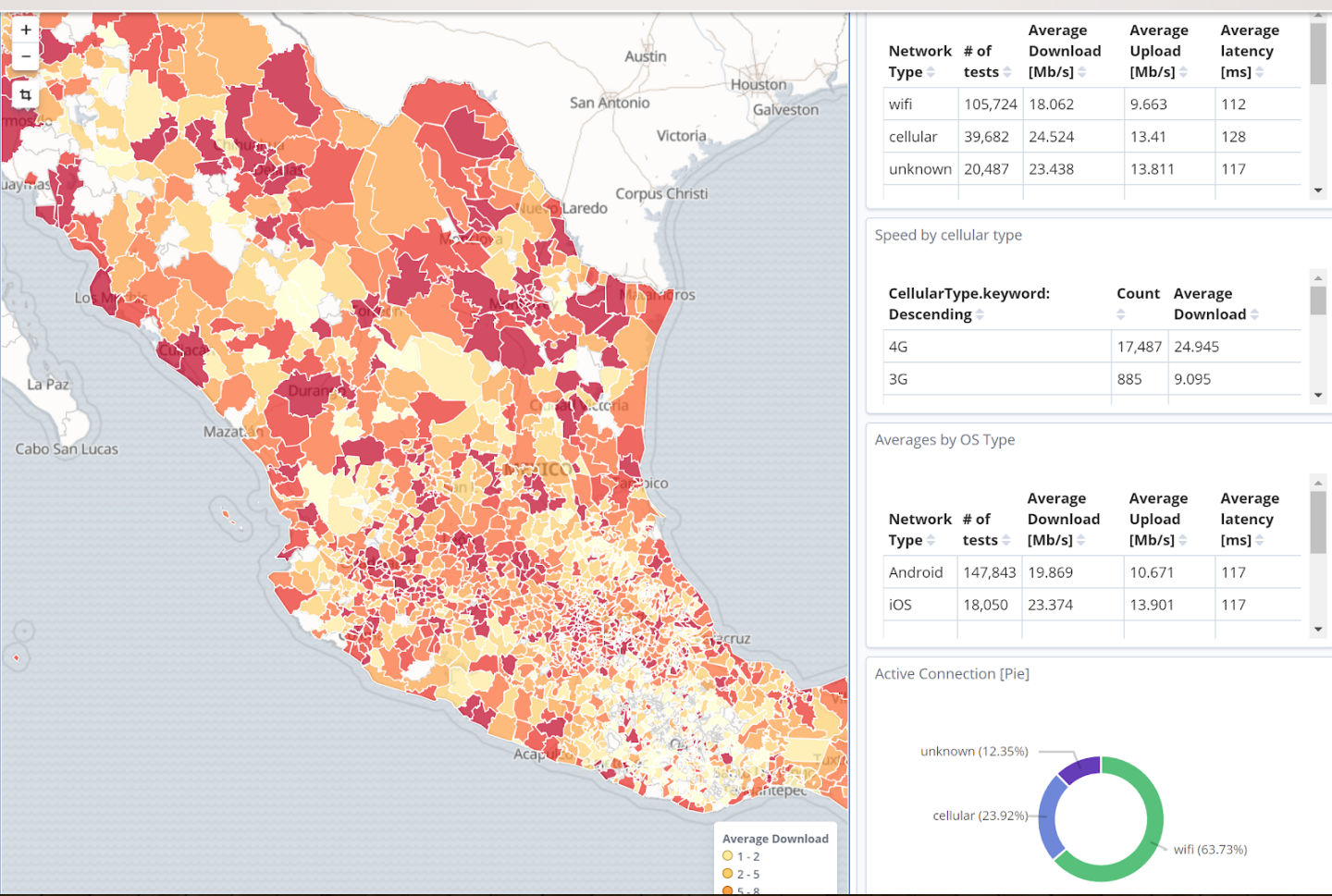
You not only want the data but you also want your own app or web-based tester? We can do it all. Our team can produce iOS, Android, HTML, Windows and MAC clients tailored to your specific needs.



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Basic Crowdsourcing System

System offers full analytical options like our Advanced system but with the limitation of a smaller Basic KPI set. Basic KPIs include speed test data along with device and network information but do not contain detailed Radio KPIs nor passive measurements.

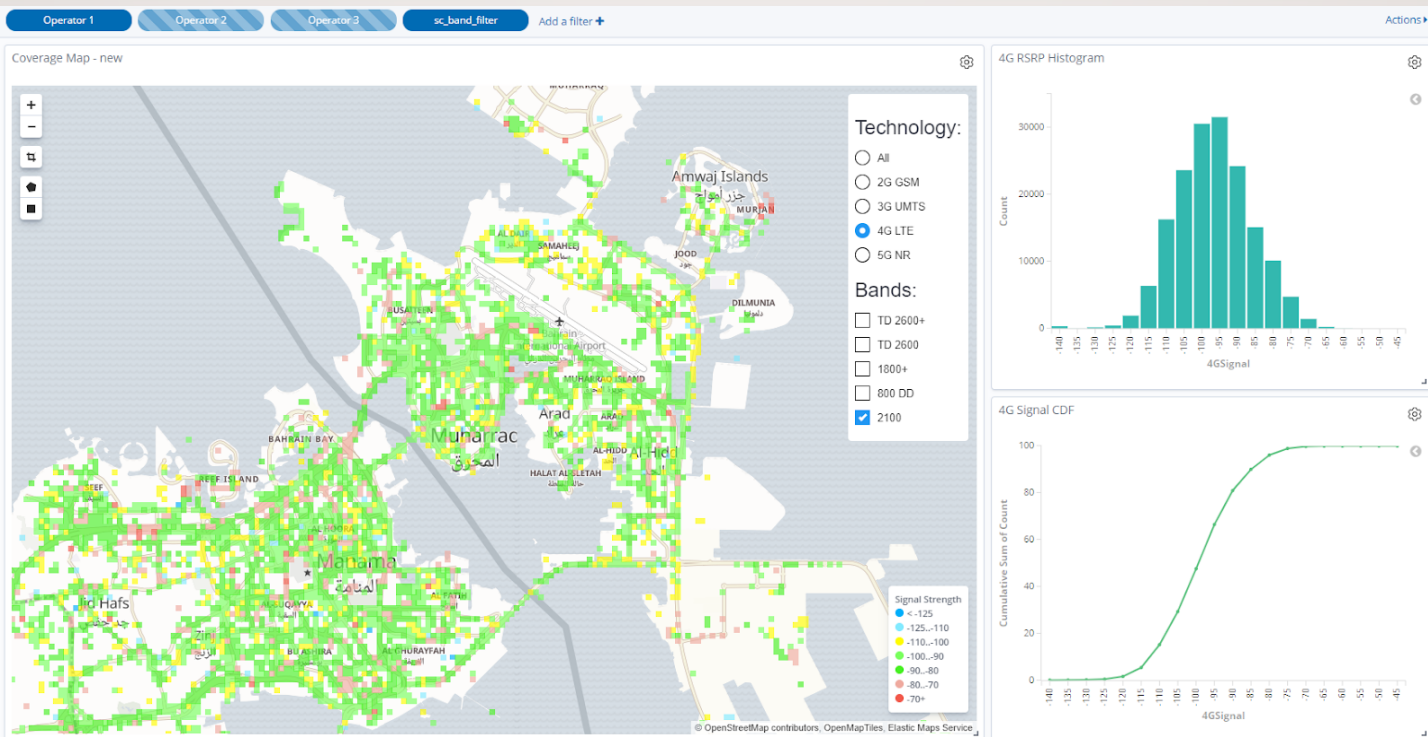


Advanced Crowdsourcing System

Step up from our Basic system to our Advanced Crowdsourcing system with more than 100+ KPIs to analyse

Coverage Analysis Dashboard

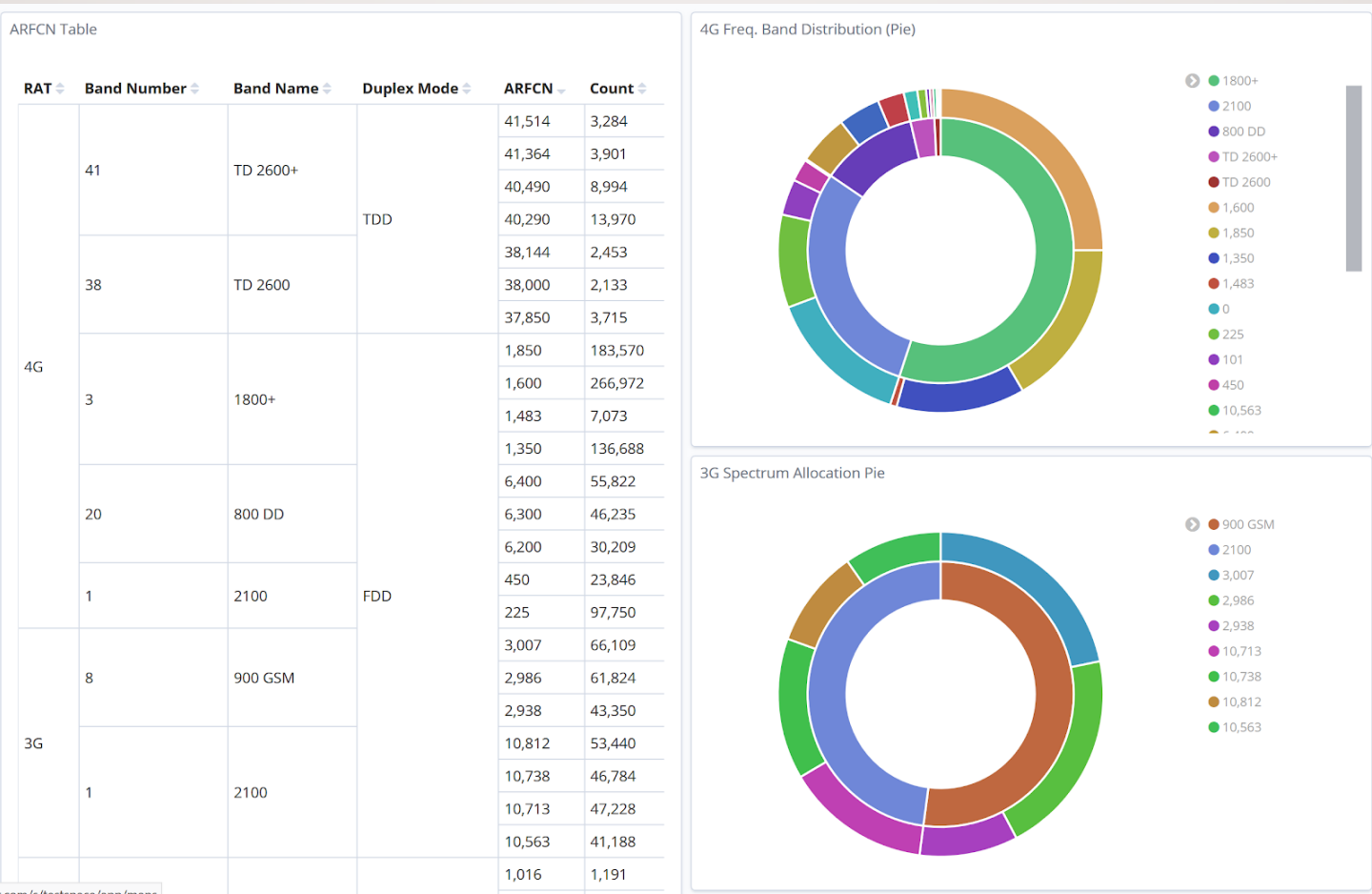
- ✓ Statistical research on basis of millions of crowdsourced samples
- ✓ Multiple signal metrics RSRP, RSRQ, SNR, RSSI, CQI
- ✓ Split by MNO, Radio Access Type, Band (down to individual ARFCN)
- ✓ Possibility to filter by: speed (e.g. High-Speed Train Scenarios)
- ✓ Possibility to separate samples between Indoor/Outdoor



Advanced Crowdsourcing System

Frequency Bands Dashboard

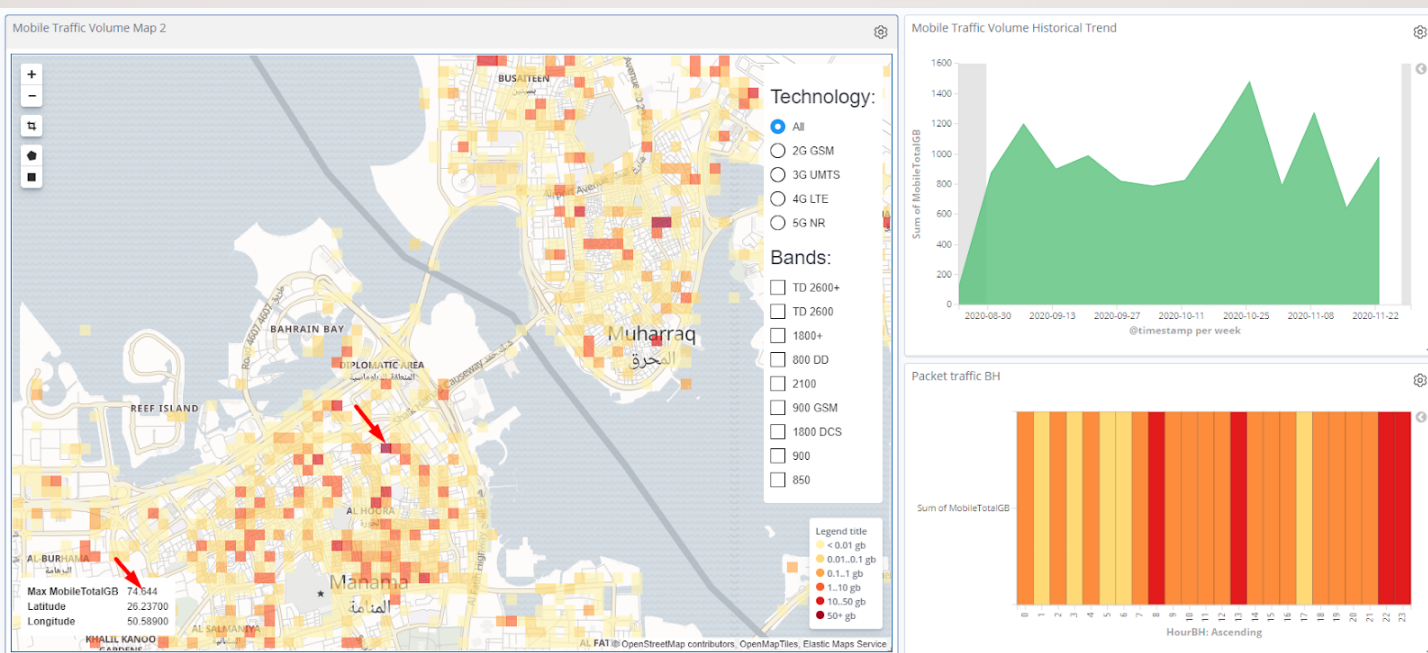
The Frequency Bands Dashboard reveals frequency usage for different areas and comparison between operators. It is grouped by RAT, band number and ARFCN.



Advanced Crowdsourcing System

Cellular Data Usage Dashboard

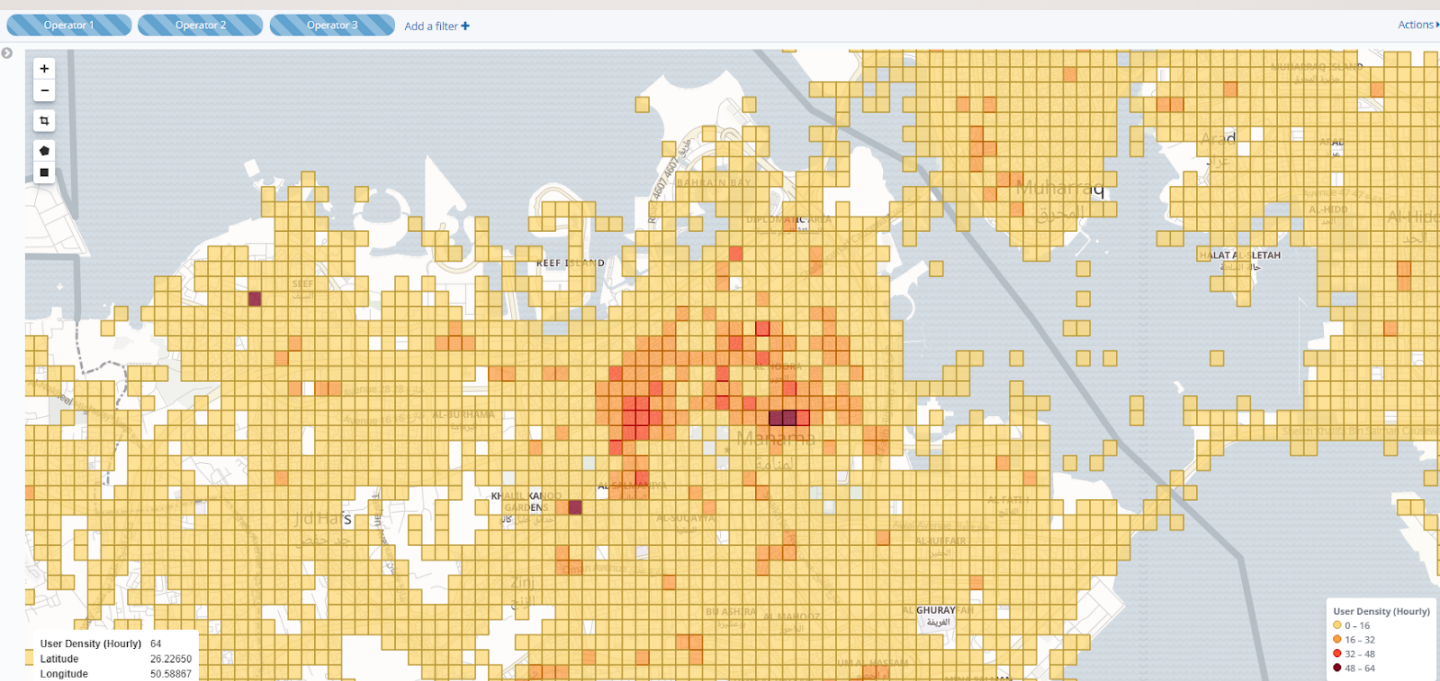
The Cellular Data Usage dashboard shows the locations with the highest traffic demands to suggest to the operators which areas would benefit from additional investment or where network expansion might be required.



Advanced Crowdsourcing System

User Density Map

The User Density Map shows the locations with the highest subscriber density to suggest to the operators the areas where additional investments into network expansion might be required.



Advanced Crowdsourcing System

Video Experience dashboard

Streaming video apps such as YouTube or Netflix are being increasingly used by consumers who expect the best video quality with low start-up time and no rebufferings. Our data can contain metrics such as video download speed, streaming bit rate, start-up time and more.

Youtube by ISP

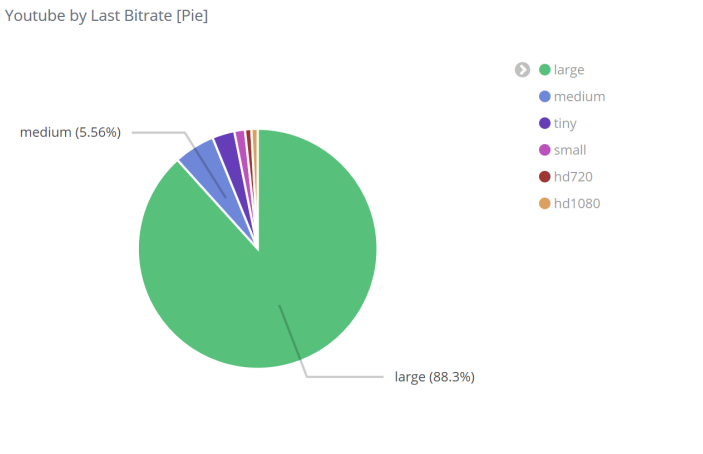
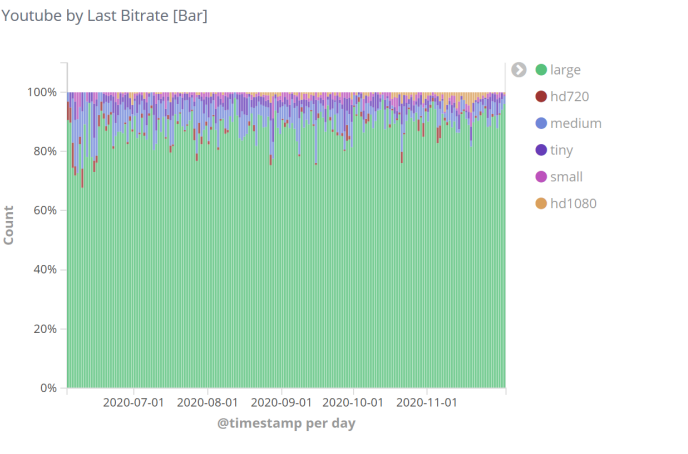
| ISP | # of tests | Start time [ms] | Rebuffer rate [#] | Speed [Mb/s] |
|------------|------------|-----------------|-------------------|--------------|
| Operator 1 | 16,370 | 3014 | 0.156 | 41.65 |
| Operator 2 | 14,433 | 3208 | 0.237 | 30.309 |
| Operator 3 | 7,024 | 3009 | 0.183 | 31.67 |
| | | | | |
| | | | | |

Export: [Raw](#) [Formatted](#)

Youtube by Network Type

| ISP | # of tests | Start time [ms] | Rebuffer rate [#] | Speed [Mb/s] |
|------|------------|-----------------|-------------------|--------------|
| WIFI | 26,946 | 3070 | 0.199 | 38.184 |
| 4G | 8,971 | 3177 | 0.178 | 32.701 |
| 3G | 2,609 | 3104 | 0.167 | 16.128 |
| 5G | 4 | 1564 | 0 | 38.33 |
| | | | | |
| | | | | |

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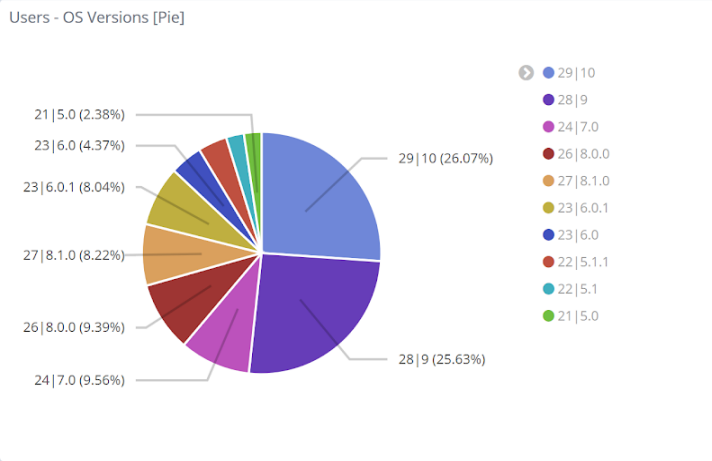
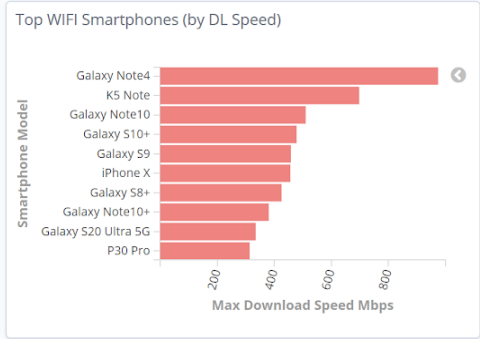
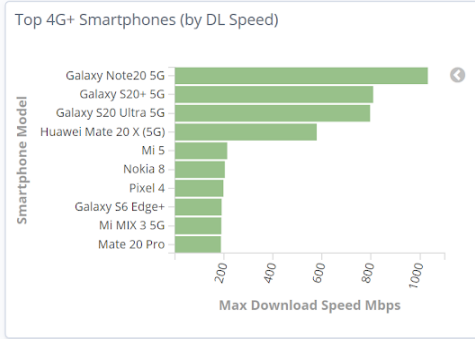
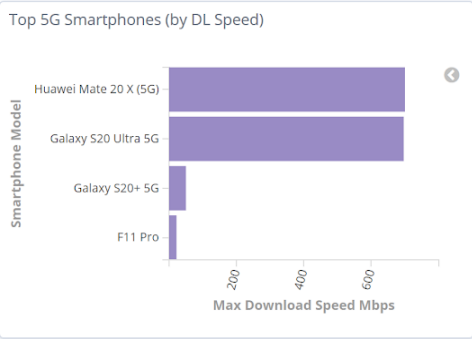


Advanced Crowdsourcing System

Device Information Dashboard

The Device Information dashboard contains information about devices that are in use for each operator as well as all the performance KPIs. Specific relevant device KPIs are:

- ✓ Model name
- ✓ Manufacturer
- ✓ OS version
- ✓ Platform (iOS/Android)
- ✓ Top 5G / 4G / Wifi smartphones



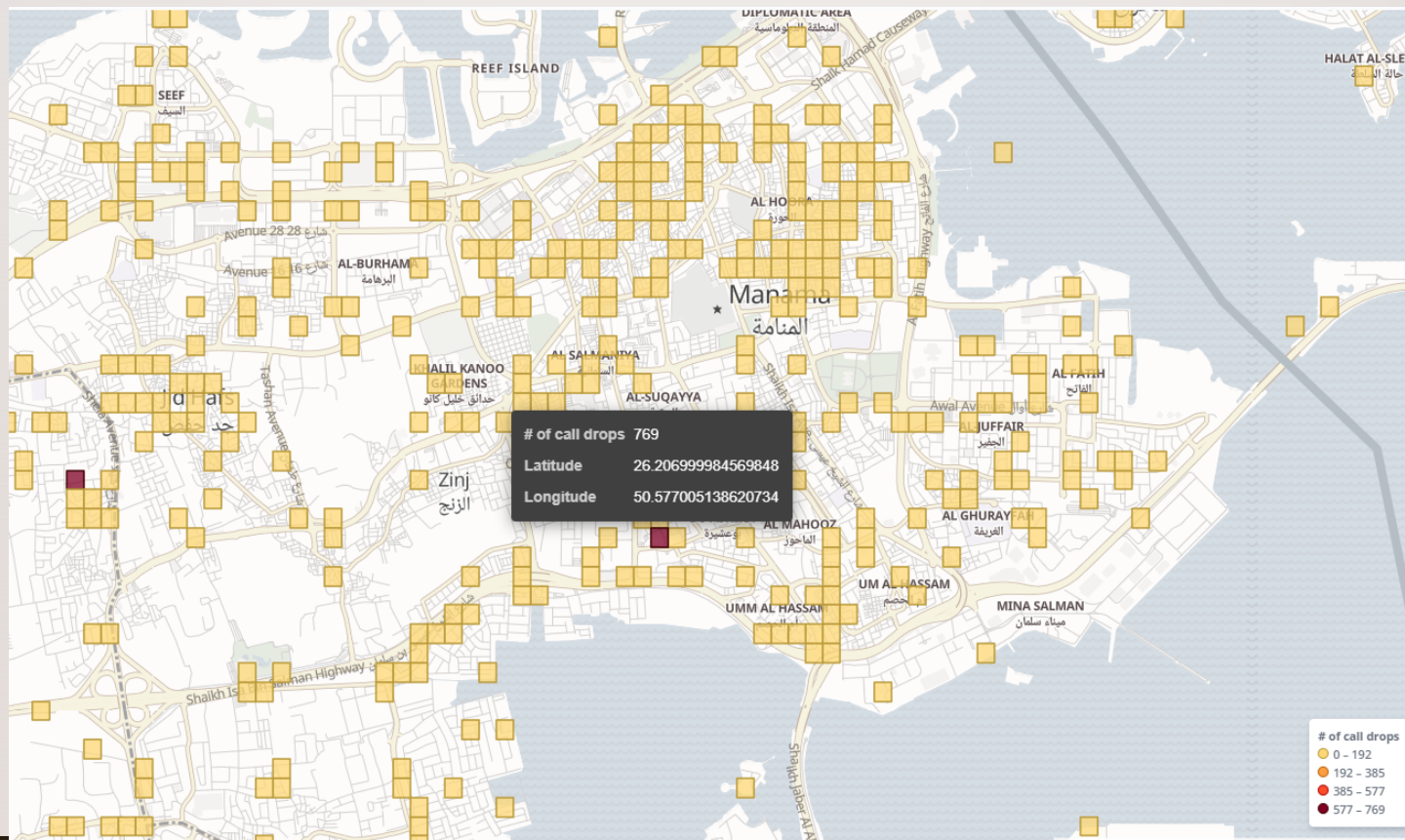
Users - OS Versions [Table]

| OS Version | Users |
|------------|-------|
| 29 10 | 1427 |
| 28 9 | 1403 |
| 24 7.0 | 523 |
| 26 8.0.0 | 514 |
| 27 8.1.0 | 450 |
| 23 6.0.1 | 440 |
| 23 6.0 | 239 |
| 22 5.1.1 | 215 |
| 22 5.1 | 132 |
| 21 5.0 | 130 |

Advanced Crowdsourcing System

Voice Quality Dashboard

The Voice Quality dashboard shows the user issues visualized on a map to spot any areas where users are making calls and their quality is not satisfactory or calls are being dropped. In the example below we see two areas where the call drop is particularly high and may benefit from further investigation.



Data collection methodology

Our data is collected from end user devices running Android and iOS systems. All measurements are executed towards a CDN which has a large geographical footprint and hosts a significant part of the content that is being accessed by the users. This ensures our results are a good approximation of the user's actual quality of experience.

All measurements must contain accurate location information using GPS or wi-fi geolocation method. Measurements are considered only from the apps that have been approved by SpeedChecker. Submitted measurements are checked if they are within expected ranges and additional security precautions are implemented to ensure measurement data is not being manipulated.

The data collection process aims to deliver a single measurement sample from every device in our crowdsourcing system device pool and we strive to remove all duplicates. Due to privacy settings on some users phones we cannot reliably detect unique devices therefore some devices have contributed to more than 1 measurement into this dataset.



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Measurement methodology

The methodology is based on the concept of the [ITU-T Q.3960 \(2016\)](#), "Framework of Internet related performance measurements" and "Supplement 71 to ITU-T Q-series Recommendations".

This test methodology aims at delivering an accurate measurement of the maximum bandwidth available over a given internet connection. This is achieved by transferring multiple parallel data streams over separate TCP connections within a predefined amount of time. The transferred data consists of randomly generated data with high entropy.

| # | Parameter | Unit | ITU Range | Current Setting |
|---|--|------|----------------------|-------------------------------|
| 1 | Number of parallel threads | # | $1 \leq n \leq 10$ | Dynamic addition from 1 to 10 |
| 2 | Duration of pre-test | s | $0 \leq T_p \leq 5$ | 1s |
| 3 | Duration of the downlink test | s | $5 \leq T_d \leq 15$ | 5s |
| 4 | Duration of the uplink subtest | s | $5 \leq T_u \leq 15$ | 5s |
| 5 | Number of 'pings' during delay subtest | s | $5 \leq p \leq 20$ | $p = 10$ |



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