

NET CHECK

Substantiation of London's Best Network claim carried out by NET CHECK

20th April 2023 – 2nd May 2023

SUBSTANTIATION OF CLAIMS

Claim:

London's Best Network

SUMMARY

The claim "London's Best Network" achieved by Vodafone is based on NET CHECK's mobile benchmark that was carried out between the 20th of April and the 2nd of May 2023, across the Greater London Area.

The purpose of the benchmark was to assess the overall performance of the mobile networks in terms of accessibility, reliability, and quality of typical telecommunication services like voice calls, internet browsing, live video streaming, online gaming, online meetings as well as data up- and downloading.

This report is an independent evaluation that compares the network capabilities of four network operators: Vodafone, EE, Three, and O2.

NET CHECK BENCHMARK

NET CHECK was founded in 1999 as a company with the main field of expertise in improving quality of telecommunication networks. In the years to follow, NET CHECK has become a renowned partner of network operators and infrastructure providers for design, construction, operation, and optimisation of mobile and fixed communication networks of all technologies.

As part of the NC Group, NET CHECK is independent of any industry stakeholders. It is also a trusted partner of scientific and government institutions due to its high level of expertise, data quality and security.

To follow its mission to improve the network quality, NET CHECK has developed a number of communication network testing products.

The NET CHECK Benchmark is a testing procedure that measures the performances of different networks. It follows the NET CHECK Methodology, devised for evaluating user experience, and compares the different network operators by creating a ranking.

METHODOLOGY

The NET CHECK Benchmarking methodology strives to provide a precise, unbiased and balanced assessment of network performances. It is based on ETSI (European Telecommunications Standards Institute) standards that were further developed by NET CHECK's experts and is in essence same for all markets that NET CHECK operates in.

The methodology is updated once a year in accordance with the technology and industry development.

In order to simulate user behavior, NET CHECK performs a series of tests across a geographically representative area using state-of-the-art technology. The measurement sets consist of equipment produced by the market leader Rohde & Schwarz and some of the latest commercially available Android smartphones, Samsung Galaxy S21+ 5G and Samsung Galaxes S22+ 5G. Using commercially available tariffs ensures to reflect the real user experience.

To capture the diversity of user behaviour, the tests are conducted in two ways:

- The **walk tests** replicate user experience in areas of interest like airports, train stations, malls, tourist attractions and pedestrian zones and in the means of public transport that connect them. The measurement engineers carry special backpacks containing the smartphones equipped with SIM cards of all the operators;
- The **drive tests** are performed along the highways, main and rural roads, and along the city streets. The smartphones are placed in the roof boxes on top of the measurement vehicles, and they simulate the users traveling by car.

This approach allows performance measurement of Data and Voice services for all the network operators simultaneously and in the same locations, averts bias and warrants credible comparison.

Voice services are tested in regular calls, Whatsapp calls and data being sent during regular calls. To measure the quality of data services, the test engineers perform data up- and downloads, web browsing, live video streaming and interactivity testing, consisting of online gaming and online meeting simulations. All of these test activities are done in both drive and walk measurements.

The collected data is verified and analyzed to calculate Key Performance Indicators (KPIs). These KPIs form the basis for the ranking and are distinguished in two services: Data services and Voice services.

The maximum ranking for an operator is 1.000 ranking points, where 350 points is the maximum for voice services and 650 points is the maximum for data services.

The assessment criteria and ranking weights are determined exclusively by NET CHECK's experts.

THE RESULTS

Facts from NET CHECK's tests conducted in the Greater London Area in April and May 2023:

- 33 local government districts covered
- 894 km driven
- 120 km covered in walk tests
- 2,400 test calls performed
- 24,000 speech samples collected
- 30,000 data samples collected

Out of 1,000 possible ranking points, Vodafone achieved the highest ranking with 884,92 overall points, EE achieved 871,34 points, Three 711,12 points and O2 765,93 points. As a result, NET CHECK concludes that Vodafone is the best network in London.

Full verification details can be found on <http://nc-group.net/netcheck-benchmark-london2023.pdf>

Results from the Mobile Network Benchmark of Greater London executed by NET CHECK between of 20th April and 2nd of May

