

February 15, 2024



Barometer of mobile Internet connections in the United Kingdom.

01/01/2023 - 31/12/2023



1

**Introducing
nPerf**

2

**Executive
summary**

3

Analysis

4

Methodology

5

**nPerf Network
assessment**

Expert in the telecom network optimization

nPerf is an independent French company based in Lyon (France). For over a decade, nPerf has been a trusted partner for both fixed and mobile operators, providing comprehensive network testing solutions and analysis. Our mission is to accurately measure, evaluate, and enhance the understanding of Internet connectivity around the world.



300k+ tests daily
worldwide.



26Md+ coverage
scans in total.



3k+ servers all
around the world.

Test your Internet connection with nPerf!

nPerf allows you to test the quality of your fixed, mobile, or Wi-Fi Internet connections up to 10 Gb/s!
Download our app or visit our website!



2. Executive Summary



The subscribers of Three enjoyed the best mobile Internet performances in the United Kingdom during 2023.

Cellular Internet connections in the United Kingdom

	EE	O2	Three	Vodafone
▼ Download bitrates (Mb/s)	80.06	26.91	106.47	60.75
▲ Upload bitrates (Mb/s)	14.61	7.01	14.23	11.99
◀▶ Latency (ms)	38.12	37.67	39.05	44.03
🌐 Web browsing (%)	70.46	67.20	71.25	69.78
🎥 Youtube streaming (%)	82.04	78.99	81.87	81.57
nPerf Score (nPoints)	85 277	65 187	88 566	78 259

Source : nperf.com



Best mobile Internet performance
in 2023




Source : nperf.com



Source : nperf.com

The subscribers of Three enjoyed the best 5G mobile connections in the United Kingdom during 2023.

5G mobile connections in the United Kingdom

	EE	O2	Three	Vodafone
 Download bitrates (Mb/s)	161.21	73.28	250.75	149.75
 Upload bitrates (Mb/s)	23.45	12.99	27.38	22.15
 Latency (ms)	32.89	33.93	31.97	38.67
 Web browsing (%)	76.34	72.84	78.59	74.28
 Youtube streaming (%)	86.71	82.94	87.62	86.14
 nPerf Score (nPoints)	105 418	86 994	114 701	100 019

Source : nperf.com

The UK mobile market presents a fascinating study in the evaluation of Internet Service Providers through various key performance indicators. This analysis delves into nPerf scores, download and upload bitrates, latency, web browsing scores, and YouTube streaming performance, which are instrumental in assessing the quality of user experience in browsing and streaming activities.

Three takes the crown

Three emerges as the standout ISP in the UK mobile market, boasting the highest download bitrate at an impressive 106 Mb/s and an upload speed of 14 Mb/s. With a latency of 39 ms, it ensures a responsive internet experience. The ISP shines with a web browsing score of 71% and a YouTube streaming score of 82%, highlighting its reliability in delivering consistent content access. Three is also winning the 5G battle on every KPI. These outstanding performances culminate in an nPerf score of 88,566 nPoints, positioning Three at the pinnacle of the UK mobile market.

EE : a robust contender

EE demonstrates commendable performance offering the best performance on all KPI except download speed. With download speeds of 80 Mb/s and upload speeds of 15 Mb/s, EE appears as a strong contender in the market. A low latency of 38 ms, coupled with a web browsing score of 70% and a YouTube streaming score of 82%, reflects EE's commitment to providing a seamless online experience. With an nPerf score of 85,277 nPoints, EE stands out as a reliable ISP, ensuring high-quality browsing and streaming services for its users.

Vodafone: solid performance

Vodafone showcases a balanced performance with download speeds of 61 Mb/s and upload speeds of 12 Mb/s. Despite a slightly higher latency of 44 ms, it maintains a web browsing score of 70% and a YouTube streaming score of 82%, mirroring the industry standard. Vodafone's overall nPerf score of 78,259 nPoints signifies its strong position in the market, offering a robust service that caters to a wide range of user needs.

O2: room for improvement

O2, with download speeds of 27 Mb/s and upload speeds of 7 Mb/s, faces challenges in keeping pace with its competitors. A latency of 38 ms is on par with other ISPs, but lower bitrates may impact the quality of data-intensive services. The web browsing score of 67% and a YouTube streaming score of 79% are commendable but highlight areas for enhancement. An nPerf score of 65,187 nPoints suggests O2 has potential for growth.

Conclusion

The UK mobile landscape is marked by the outstanding performance of Three in 4G and 5G, setting the benchmark with the highest download speeds and an impressive nPerf score. EE and Vodafone provide strong alternatives, offering balanced services that cater to both browsing and streaming needs. O2, while lagging behind in certain metrics, shows promise and room for growth.

4. Methodology



nPerf provides a **free tool to assess Internet connection quality** via its website and mobile apps (Android, iOS). Daily, thousands of people rely on nPerf for speed tests in their country, contributing to a comprehensive crowdsourced database covering all operators.

The study employs a strong filtering method to reflect real customer experiences on a specific network (mobile or fixed line). Measures are taken to prevent probes and measurement robots from affecting the results.

For mobile connections, we assess:

▼ Download bitrate :

Indicates the amount of data your connection can receive in one second from the nPerf server. The highest the measured value, the best is the bitrate of your connection.

▲ Upload bitrate :

Indicates the amount of data your connection can send in one second from the nPerf server. The highest the measured value, the best is the bitrate of your connection.

◀▶ Latency (ping) :

It indicated the delay a small packet of data requires to make a round-trip from your computer to the nPerf server. The shorter the delay, the most reactive your connection is. The main is the minimum value.

🌐 Browsing performance :

The browsing test assesses the load time of the fully loaded pages, including images, JavaScript, CSS, and fonts, for the five most popular sites. This indicator reflects the user's perceived quality of the Internet network.

📺 Streaming performance :

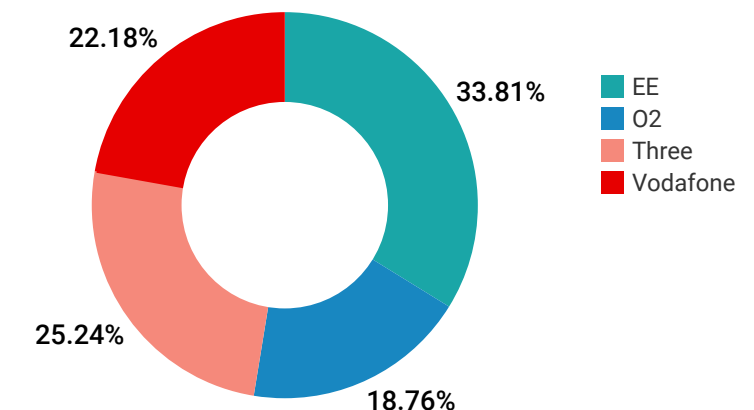
The video streaming test gauges the load time of a fully loaded video in three resolutions on YouTube, considering stalls during playback. This indicator reflects the user's perceived quality of the Internet network.

Statistical precision is crucial in accurately determining winners. At nPerf, we prioritize test quality, precise reporting, and transparency. Analyzing a large volume of tests in this study, we've achieved 3 % precision for absolute values and 1 point for percentage-based results, highlighting the reliability and accuracy of our data.

For a more comprehensive understanding of the user experience, our report features test results during both Busy hours (6 PM to 11 PM) and Idle hours (the rest of the day). Busy hours, marked by network strain, can impact user experience through congestion. This approach helps in understanding how network performance fluctuates throughout the day.

We only include national Internet service providers with test share above 5% share. The chart below shows the overall test distribution for each service provider.

Overall distribution of the tests per provider (ISPs Share)



Source : nperf.com



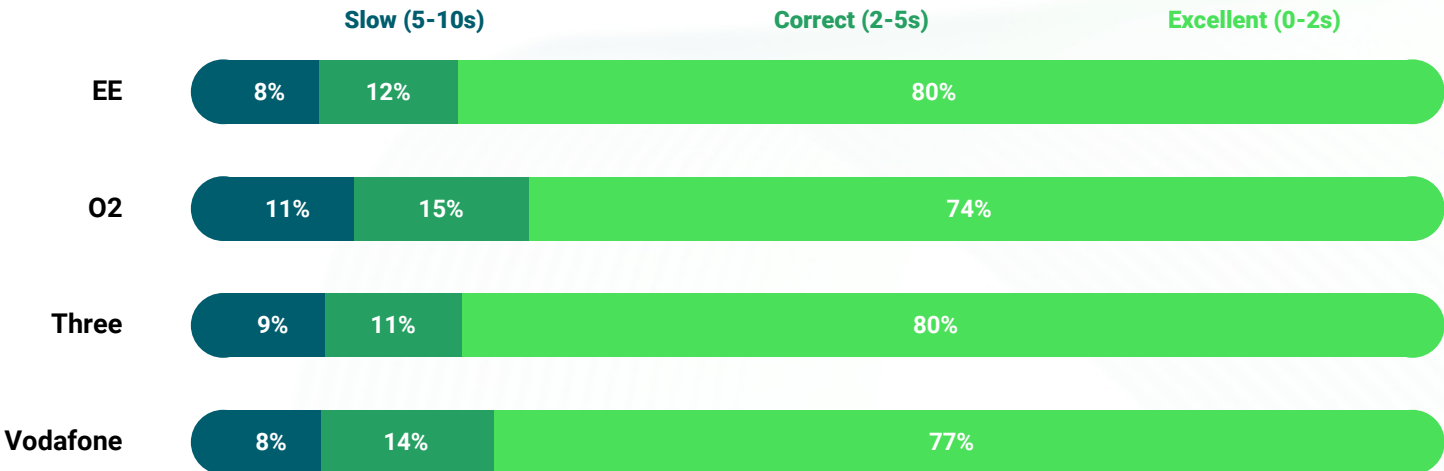
Browsing Performance rate (average)



Source : nperf.com

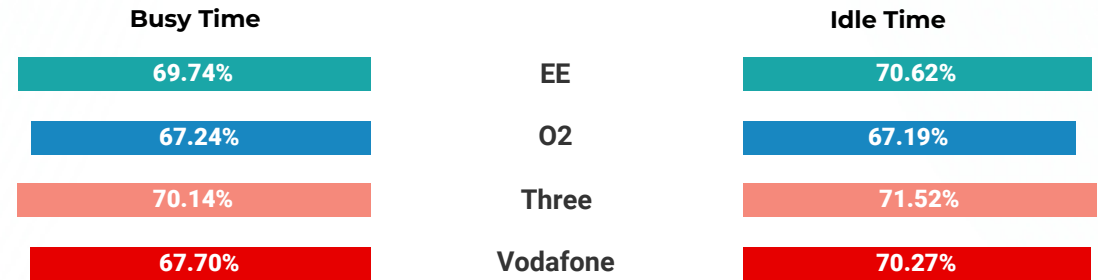
The subscribers of Three and EE enjoyed the best mobile Internet browsing performance in 2023.

Browsing Performance results ventilation (average)



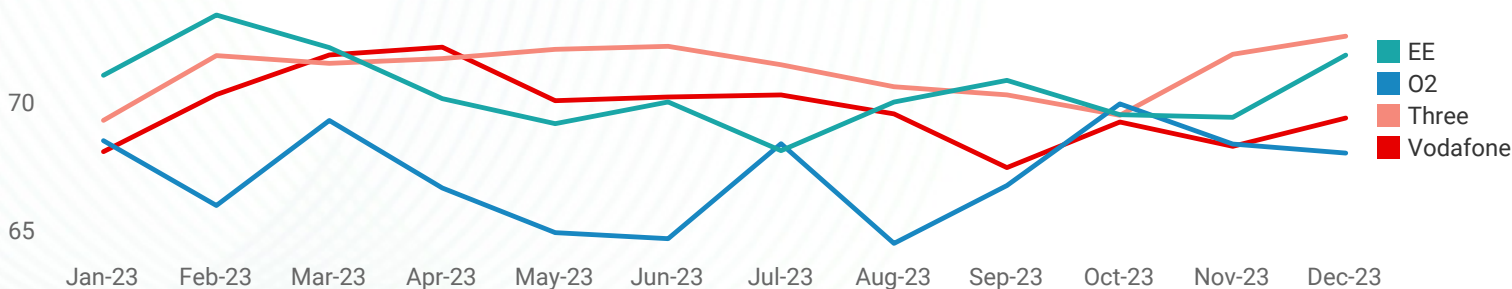
Source : nperf.com

Browsing Performance rate (average)



Source : nperf.com

Browsing performance rate (average) evolution over the year



Source : nperf.com



Quality of Experience : Streaming



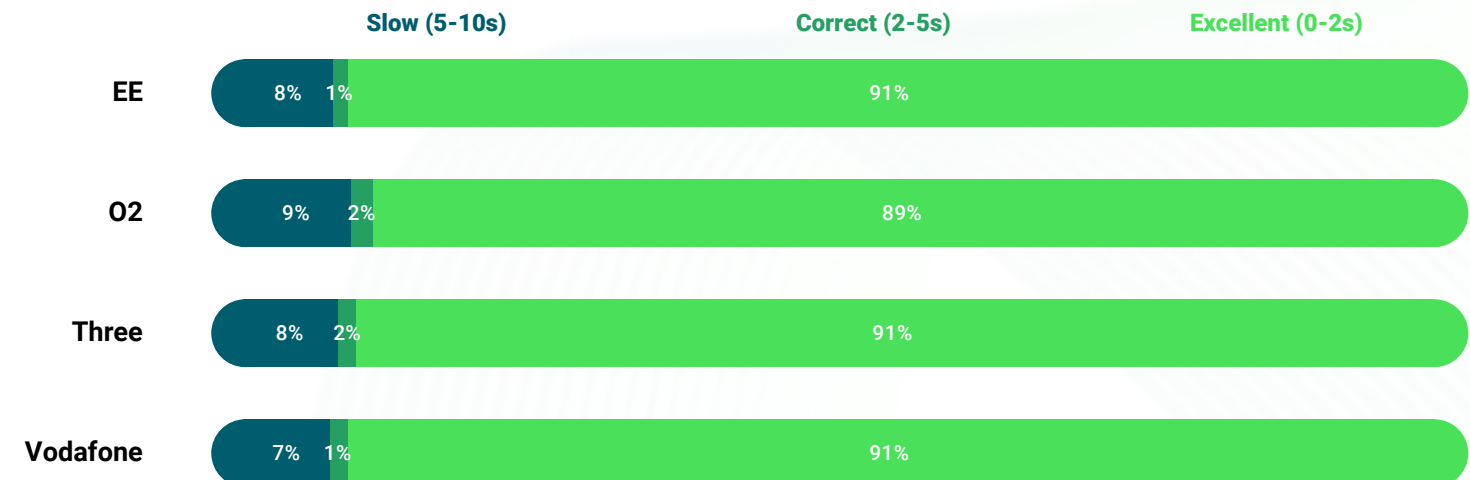
Streaming Performance rate (average)



Source : nperf.com

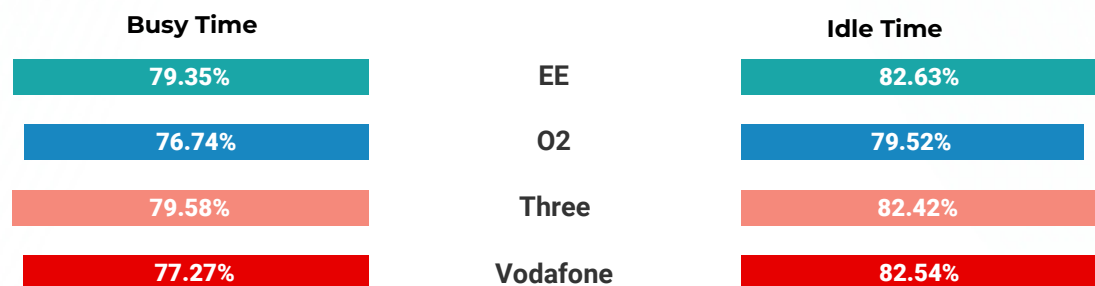
The subscribers of EE, Three and Vodafone enjoyed the best mobile Internet streaming performance in 2023.

Streaming Performance results ventilation (average)



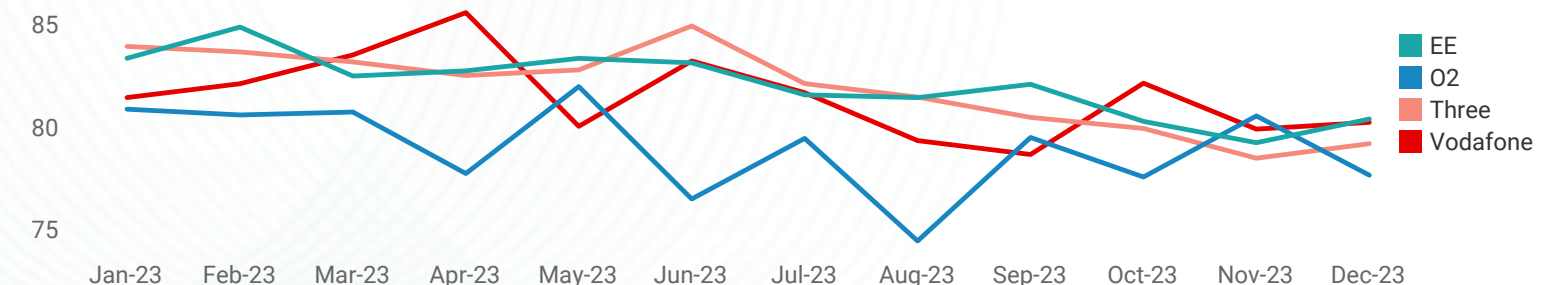
Source : nperf.com

Streaming Performance rate (average)



Source : nperf.com

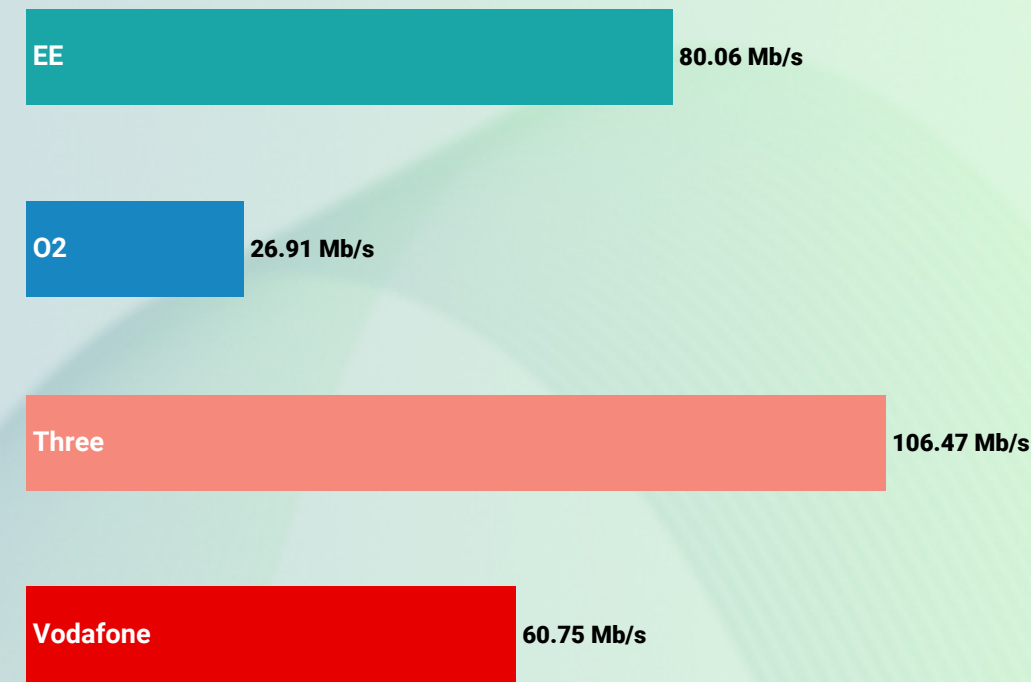
Streaming performance rate (average) evolution over the year



Source : nperf.com



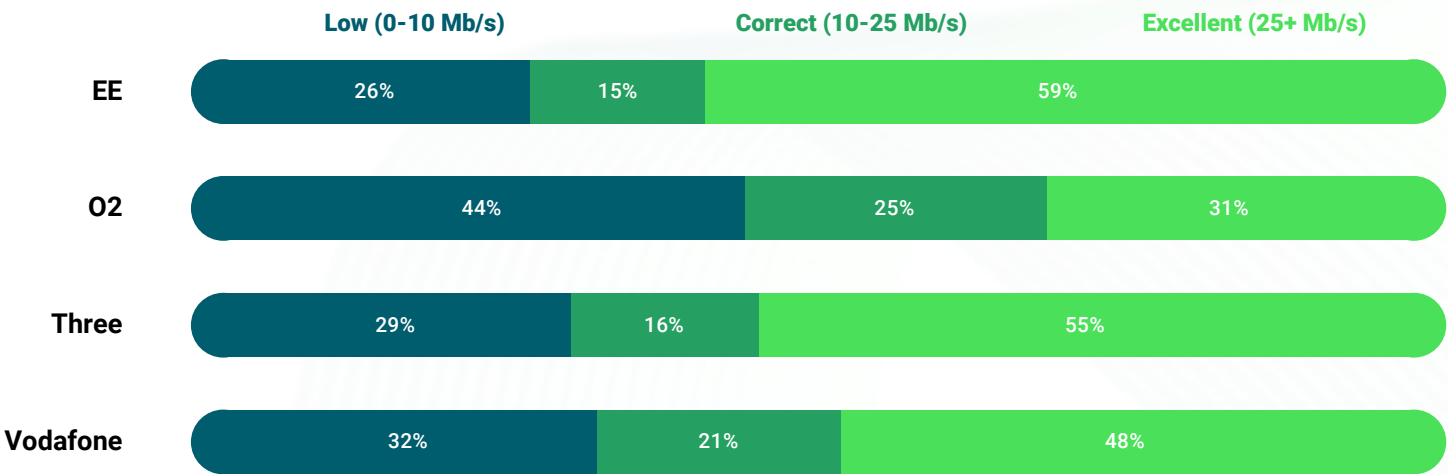
Download Speed (average)



Source : nperf.com

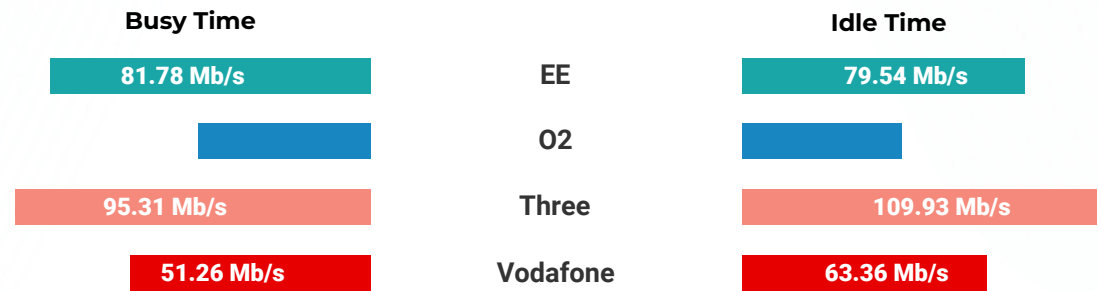
The subscribers of Three enjoyed the best average mobile Internet download speed in 2023.

Download Speed results ventilation (average)



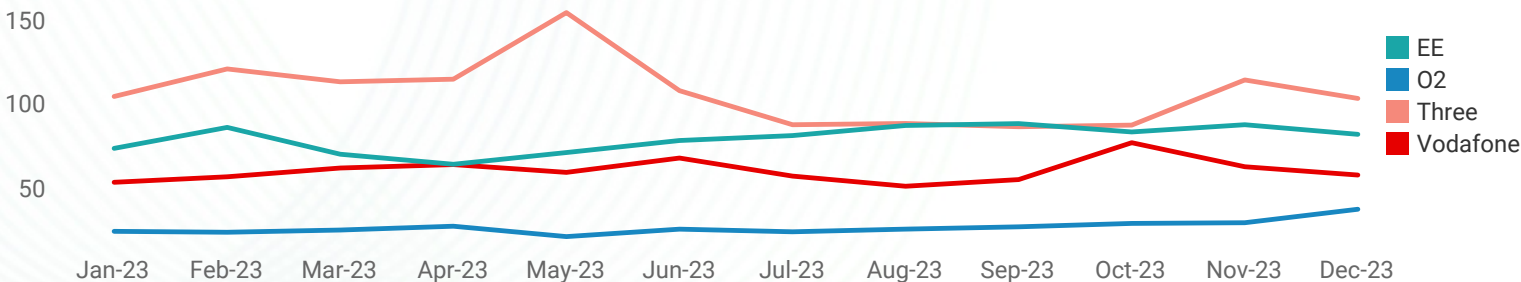
Source : nperf.com

Download Speed (average)



Source : nperf.com

Download Speed evolution over the year (average)



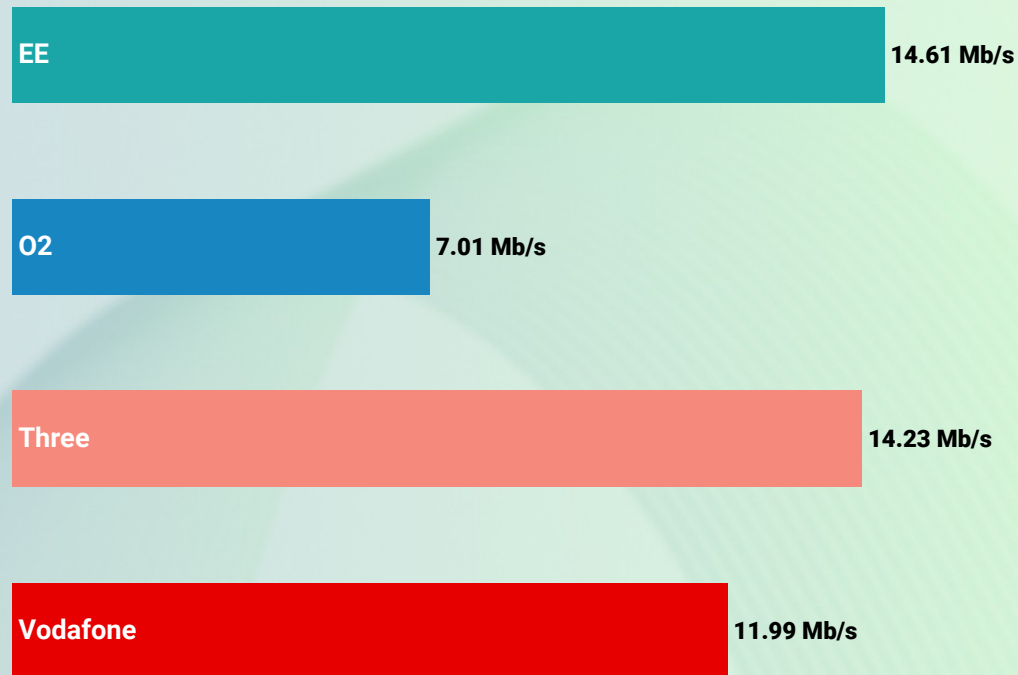
Source : nperf.com



Speed : Upload



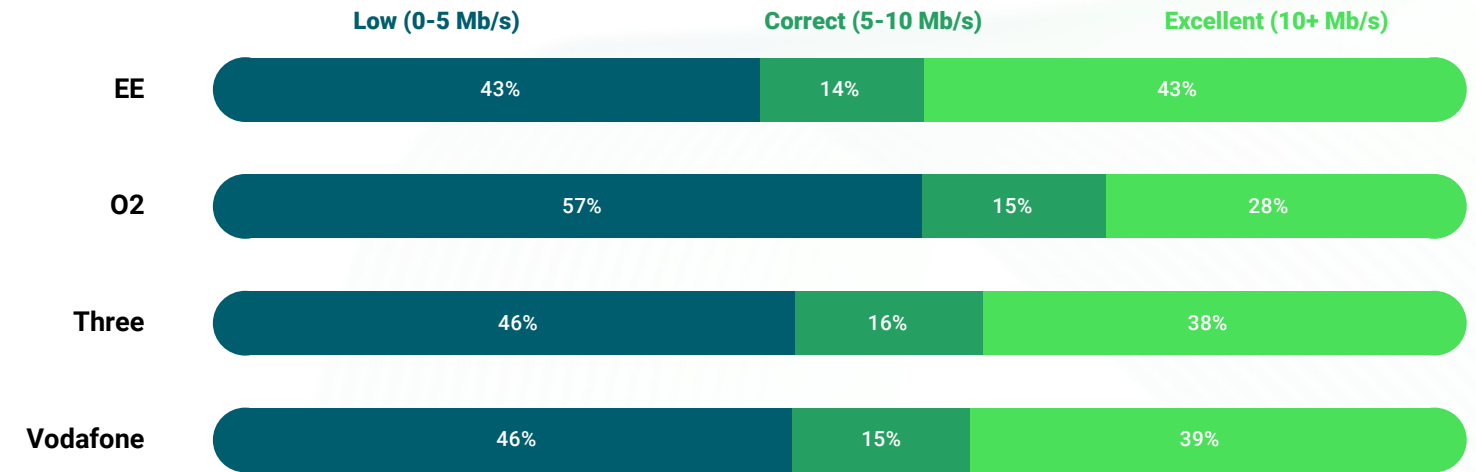
Upload Speed (average)



Source : nperf.com

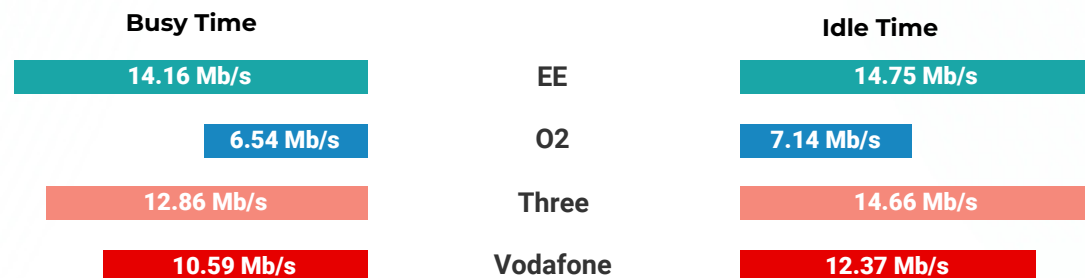
The subscribers of EE and Three enjoyed the best average mobile Internet upload speed in 2023.

Upload Speed results ventilation (average)



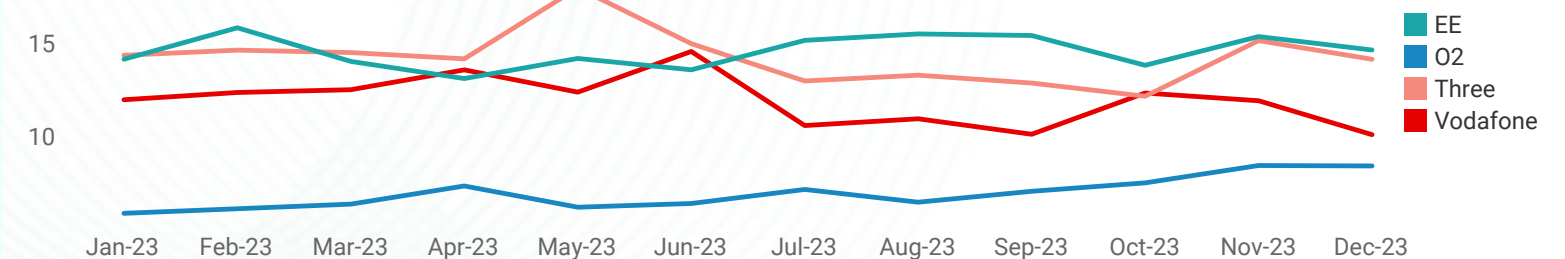
Source : nperf.com

Upload Speed (average)



Source : nperf.com

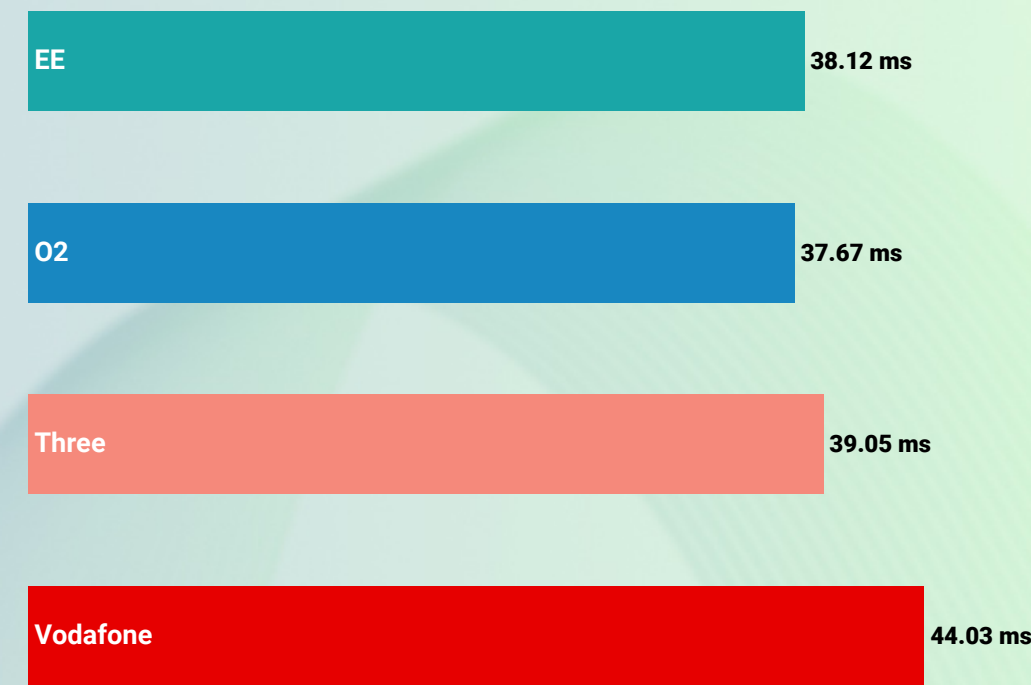
Upload Speed evolution over the year (average)



Source : nperf.com



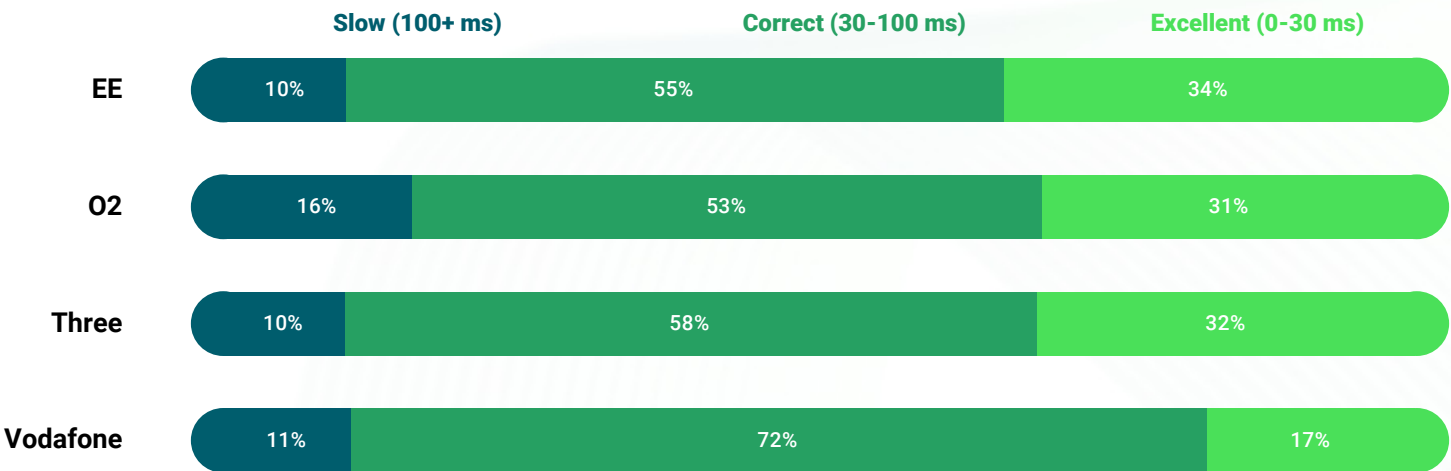
Latency Speed (average)



Source : nperf.com

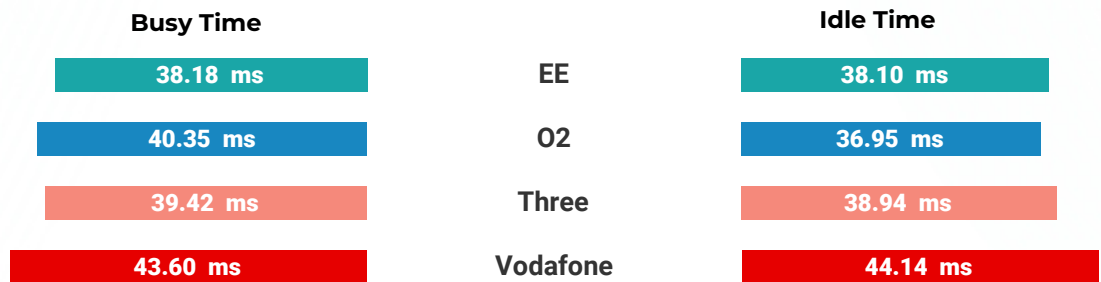
The subscribers of O2 and EE enjoyed the best average mobile Internet latency speed in 2023.

Latency Speed results ventilation (average)



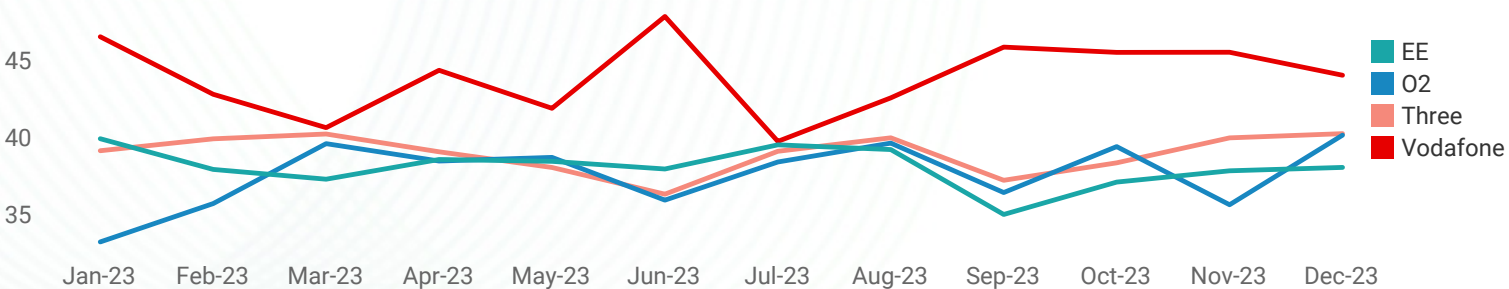
Source : nperf.com

Latency Speed (average)



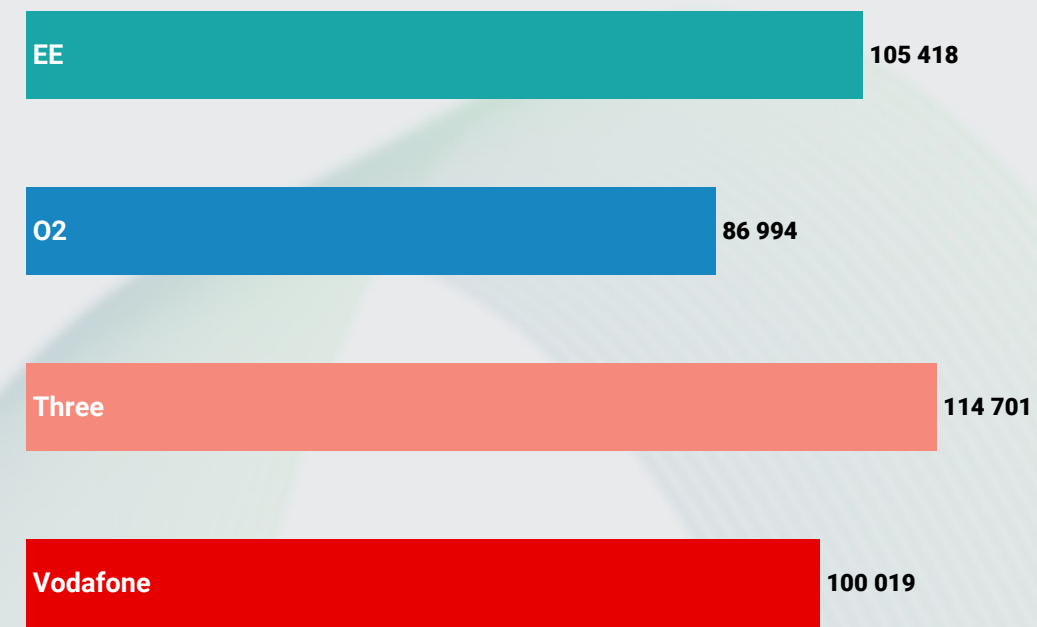
Source : nperf.com

Latency Speed evolution over the year (average)



Source : nperf.com

5G nPerf score (average)



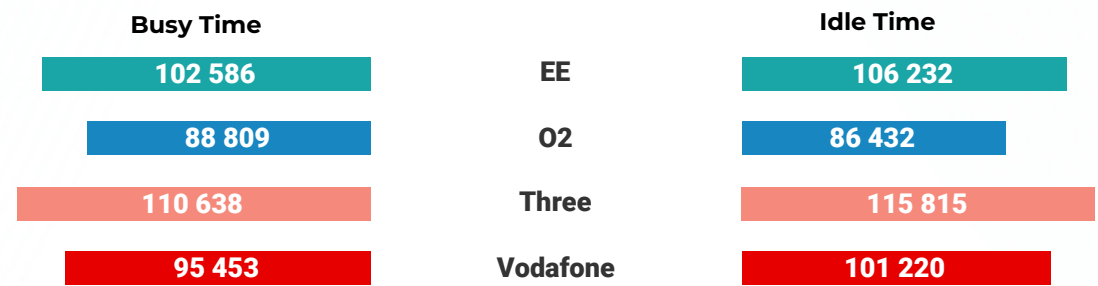
Source : nperf.com

The subscribers of Three enjoyed the best 5G mobile connections in the United Kingdom during 2023.

- Best 5G Mobile Performance : Three (114 701 nPoints)
- Best 5G Mobile Download speed : Three (250.75 Mb/s)
- Best 5G Mobile Upload speed : Three (27.38 Mb/s)
- Best 5G Mobile Latency speed : Three (31.97 ms) and EE (32.89 ms)
- Best 5G Mobile Browsing experience : Three (78.59 %)
- Best 5G Mobile Video experience : Three (87.62 %) and EE (86.71 %)

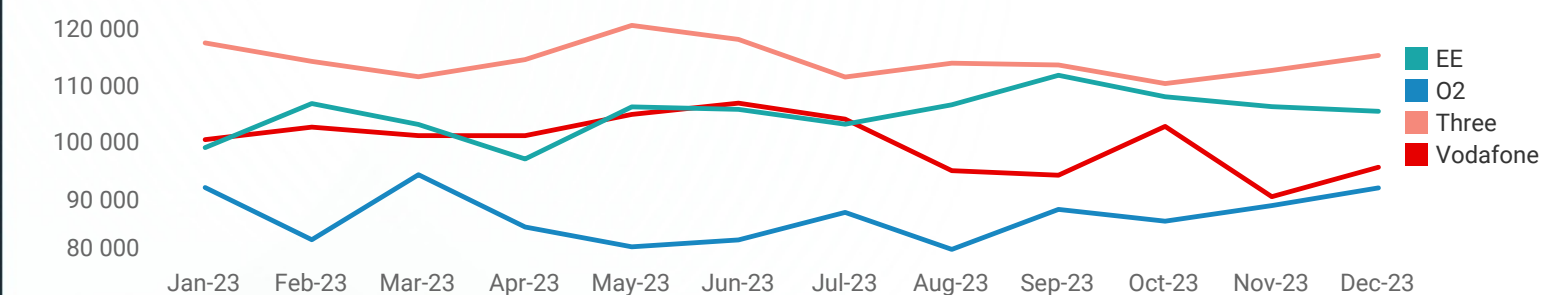
Source : nperf.com

5G nPerf score (average)



Source : nperf.com

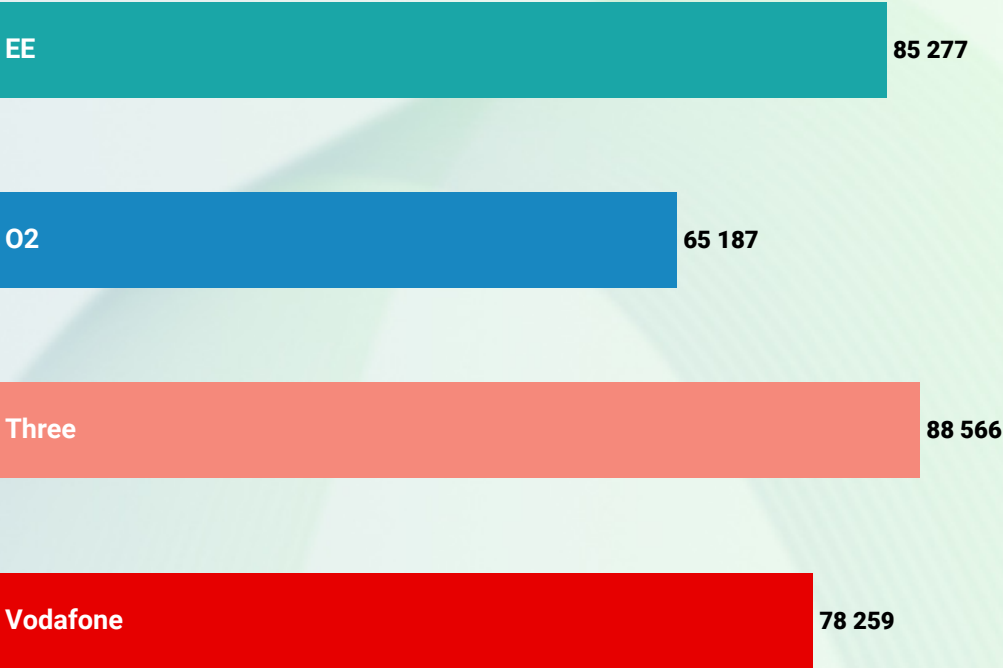
nPerf score evolution over the year (average)



Source : nperf.com



nPerf Score (nPoints)



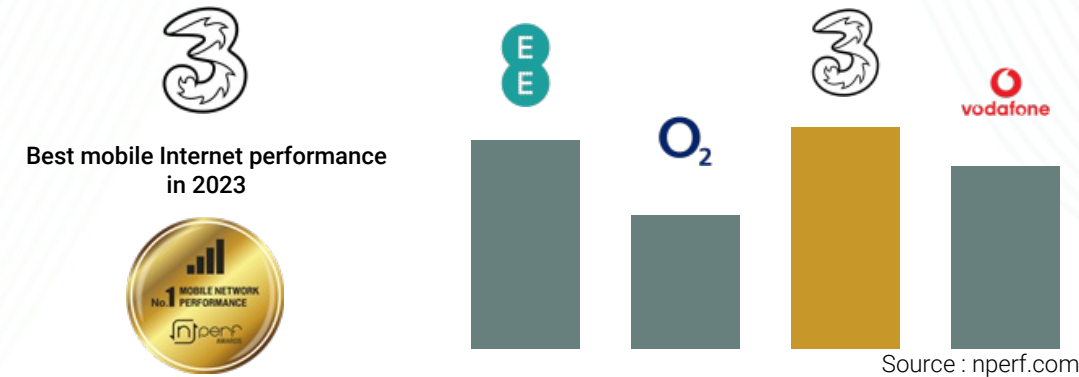
Source : nperf.com

The subscribers of Three enjoyed the best mobile Internet performances in the United Kingdom during 2023.

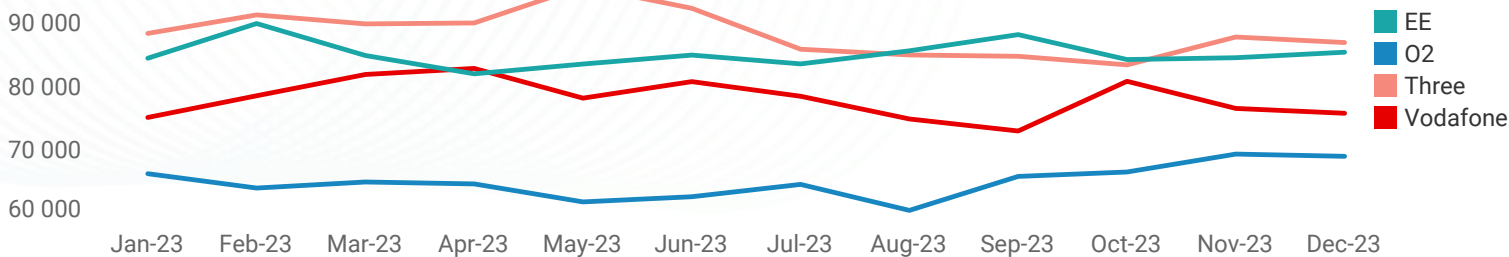
The nperf score takes into account the measured bitrates, the latency and the Qoe tests. The value of the points for the rates and the latency is calculated on a logarithmic scale, to better represent the perception of the user.

Thus, this score reflects the overall quality of the connection experienced by the user.

Source : nperf.com



nPerf score evolution over the year (average)



Source : nperf.com

