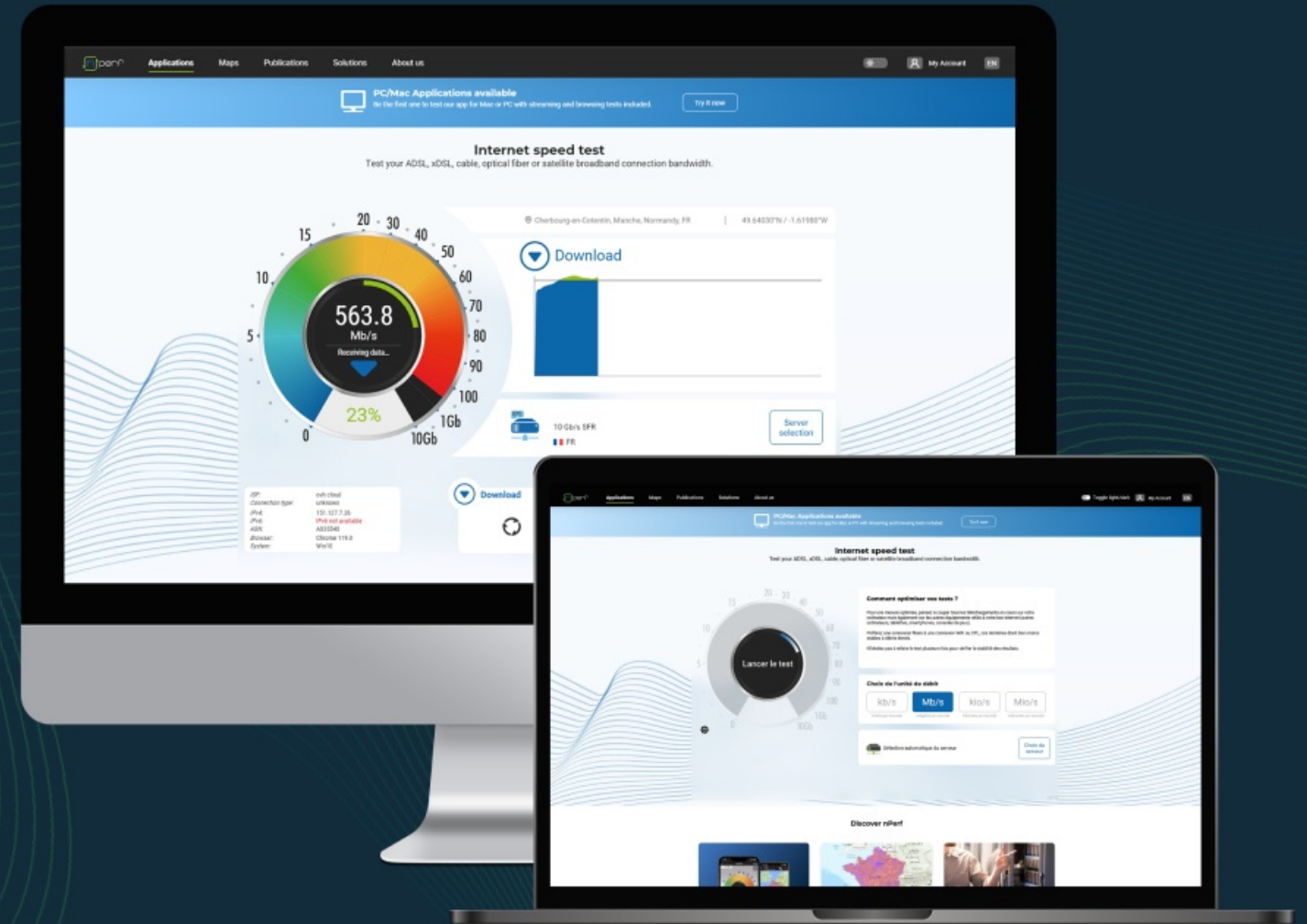


February 12, 2024



# Barometer of fixed Internet Connections in Germany.

01/01/2023 - 31/12/2023



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**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 Vodafone enjoyed the best broadband performances in Germany during 2023.

### Fixed Internet connections in Germany

	1&1	O2	Telekom	Vodafone
▼ Download bitrates (Mb/s)	74.81	89.19	74.63	184.15
▲ Upload bitrates (Mb/s)	28.44	21.34	27.64	26.15
◀▶ Latency (ms)	25.07	27.74	24.73	27.88
nPerf Score (nPoints)	123 990	122 536	123 986	135 445

### FTTH Fixed Internet connections in Germany

	1&1	Telekom	Vodafone
▼ Download bitrates (Mb/s)	490.83	475.12	454.09
▲ Upload bitrates (Mb/s)	347.51	245.13	392.47
◀▶ Latency (ms)	17.04	14.54	15.00
nPerf Score (nPoints)	180 211	179 337	181 886



Best fixed Internet performance  
in 2023



Source : nperf.com



Source : nperf.com



In the dynamic telecom ecosystem in Germany, Key Performance Indicators (KPIs) and nPerf scores are essential tools for assessing the quality of services. These metrics provide insights into user experience, particularly for browsing and streaming, which are at the heart of consumer connectivity needs.

### **Vodafone: the speed titan**

Vodafone stands out with its extraordinary performance, delivering a breathtaking download speed of 184 Mb/s, a feat that positions it at the forefront with an nPerf score of 135,445 points. While its latency of 28 ms and upload speed of 26 Mb/s are average, it's the unparalleled download speed that defines its leadership, promising an unprecedented user experience for streaming and browsing.

### **1&1: consistency as a standard**

1&1 establishes itself as a pillar of reliability, with respectable download and upload speeds of 75 Mb/s and 28 Mb/s, respectively, and an optimal latency of 25 ms. Its nPerf score of 123,990 points attests to a consistent and efficient service, making 1&1 a solid choice for users seeking a stable and dependable connection.

### **Telekom: the perfect balance**

Telekom exhibits a harmony between download and upload speeds (75 Mb/s and 28 Mb/s) along with a latency of 25 ms, illustrating a balanced performance. With an nPerf score of 123,986 points, nearly identical to 1&1, Telekom positions itself as a major player, offering a smooth and seamless user experience, ideal for all online activities.

### **O2: a close challenger**

O2 showcases ambition with a competitive download speed of 89 Mb/s, the best following Vodafone. However, its upload speed of 21 Mb/s and a latency of 28 ms position it as a challenger in this tight race, with the lowest nPerf score of 122,536 points. Despite this, O2 demonstrates potential to disrupt the established hierarchy.

### **Conclusion: a highly competitive market**

The competition in the German fixed broadband market is marked by Vodafone's dominance due to its superior download speed, while 1&1 and Telekom provide remarkable stability and balance, closely contesting for subsequent places. O2, as the challenger, shows a determination to advance despite a slightly lower nPerf score.

## 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 fixed 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) :

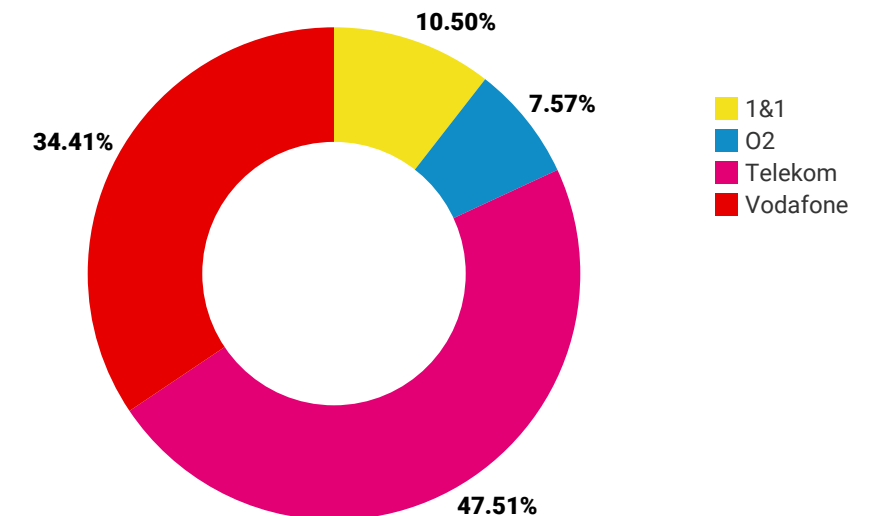
It indicated the delay a small packet of data requires to make a round-trip from your computer to the nPerf server. The shorter the delay, the most reactive your connection is. The main is the minimum value.

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 2 % 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.

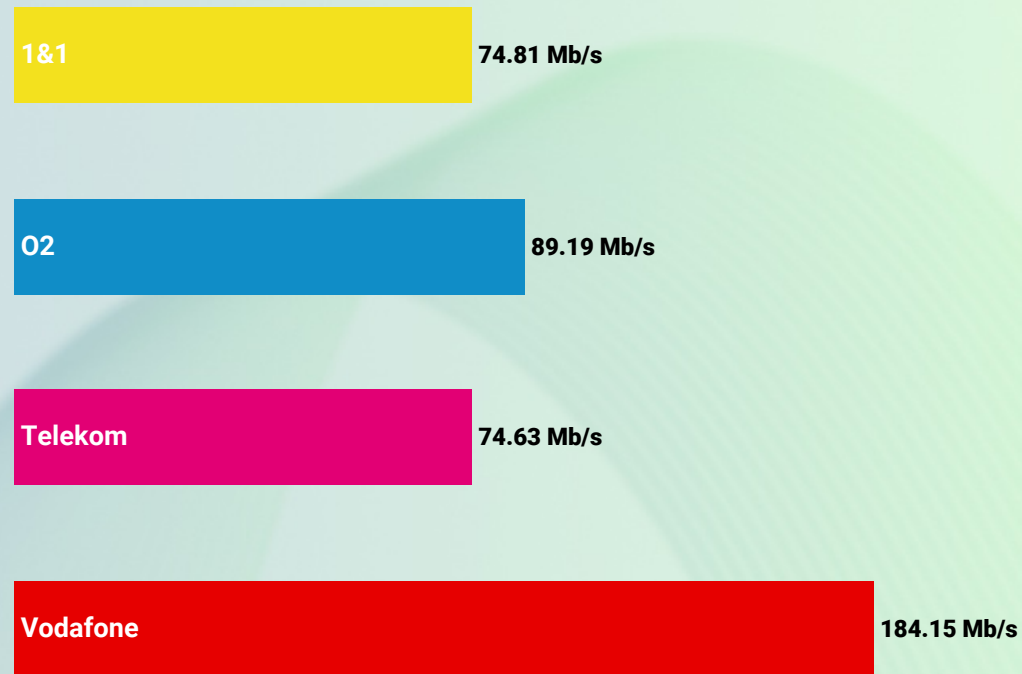
Overall distribution of the tests per provider (ISPs Share)



Source : nperf.com



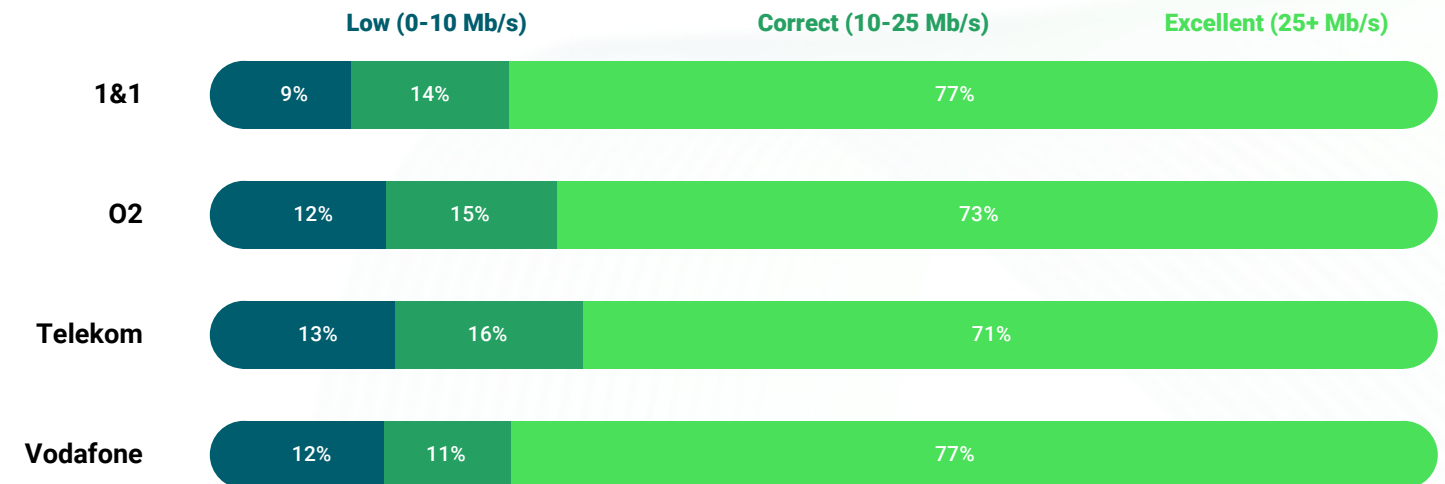
## Download Speed (average)



Source : nperf.com

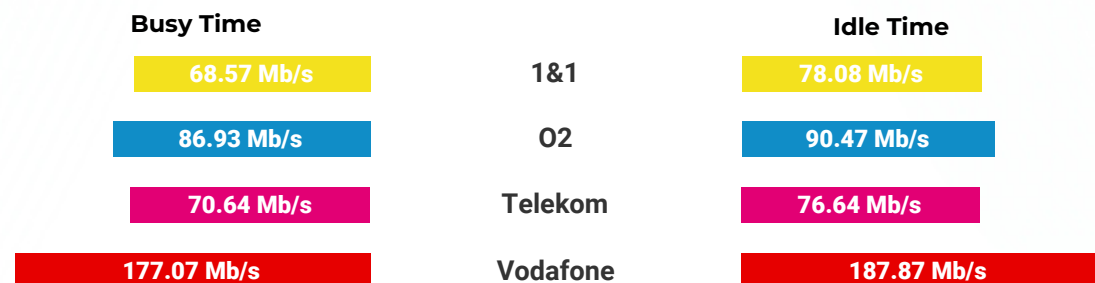
The subscribers of Vodafone enjoyed the best average broadband download speed in 2023.

## Download Speed results ventilation (average )



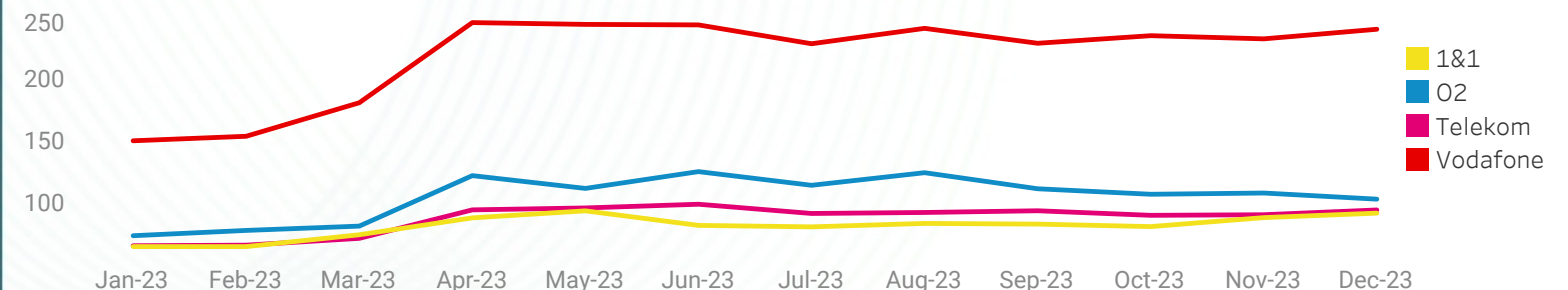
Source : nperf.com

## Download Speed (average )



Source : nperf.com

## Download Speed evolution over the year (average )

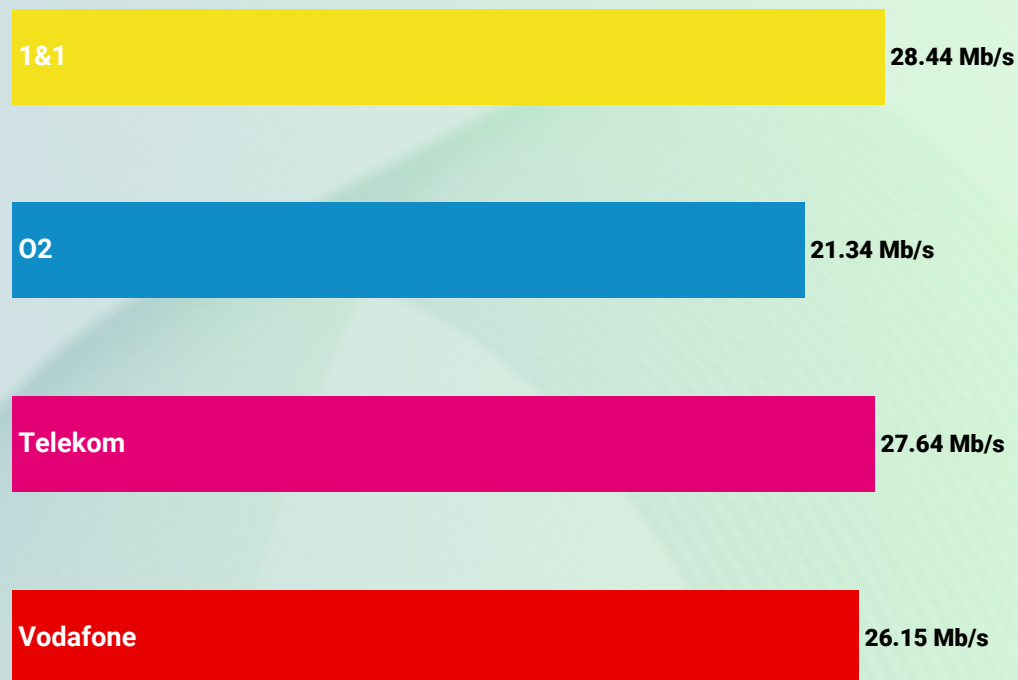


Source : nperf.com





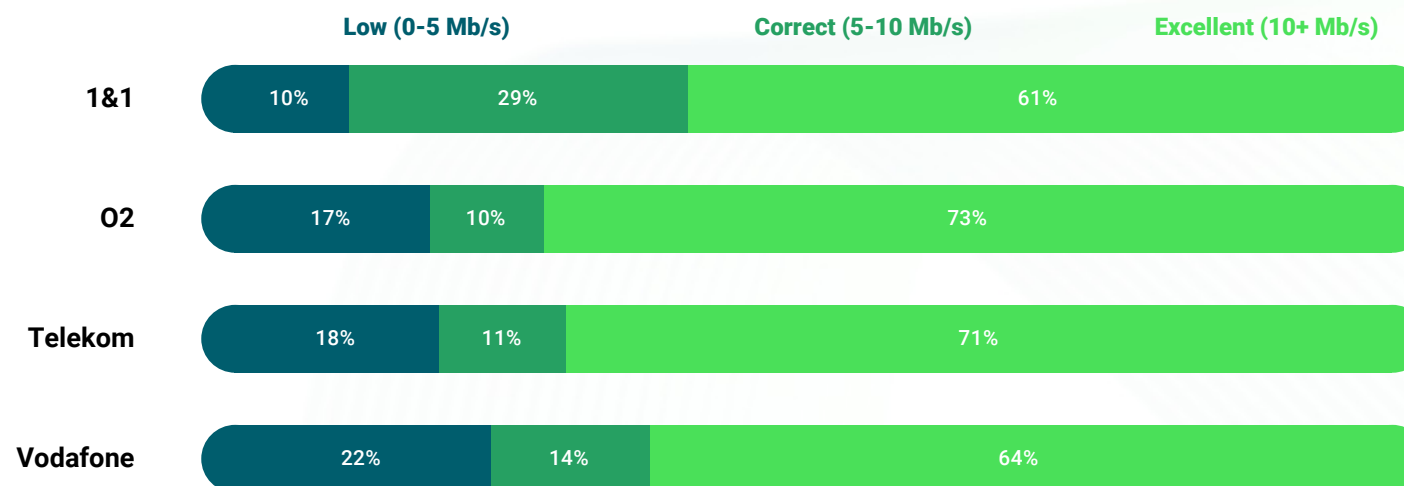
## Upload Speed (average)



Source : nperf.com

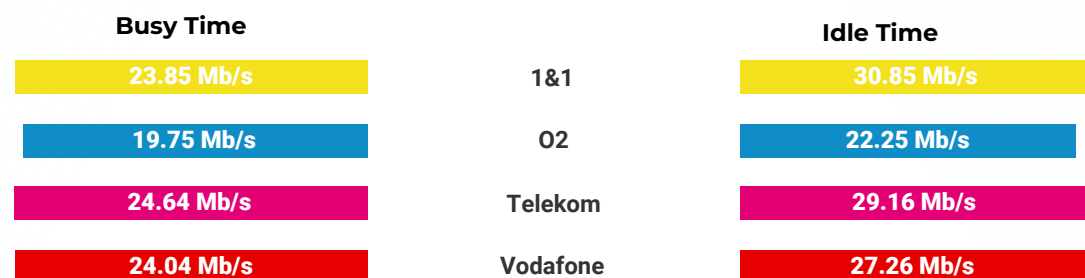
The subscribers of 1&1 enjoyed the best average broadband upload speed in 2023.

## Upload Speed results ventilation (average)



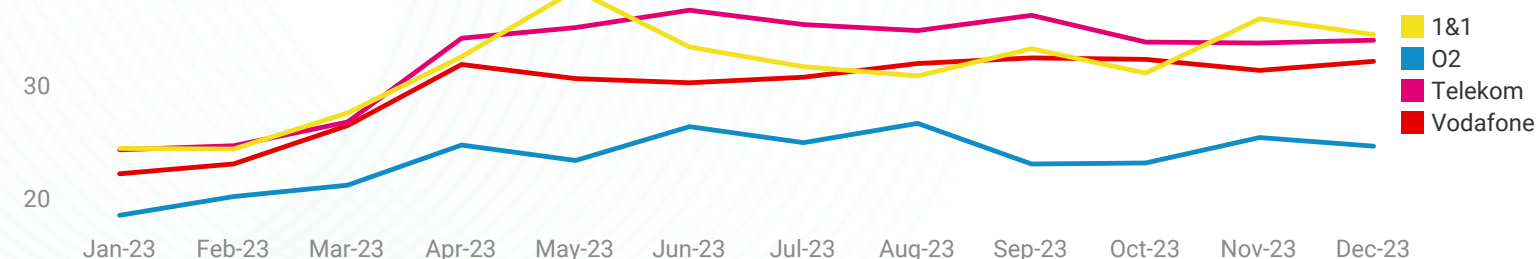
Source : nperf.com

## Upload Speed (average)



Source : nperf.com

## Upload Speed evolution over the year (average)



Source : nperf.com





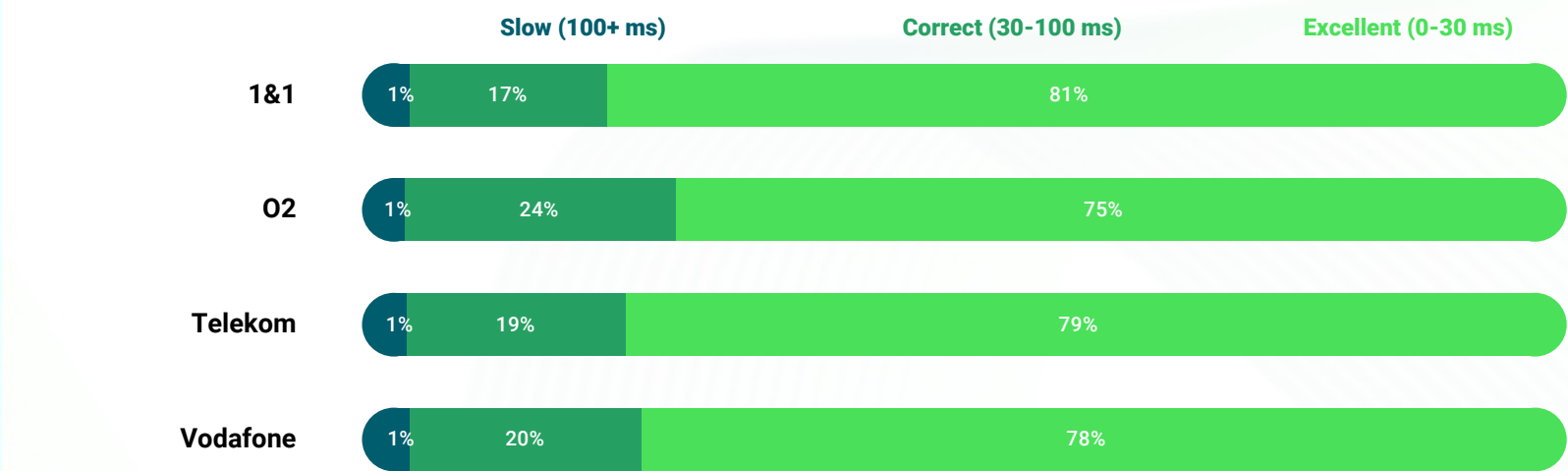
Latency Speed (average)



Source : nperf.com

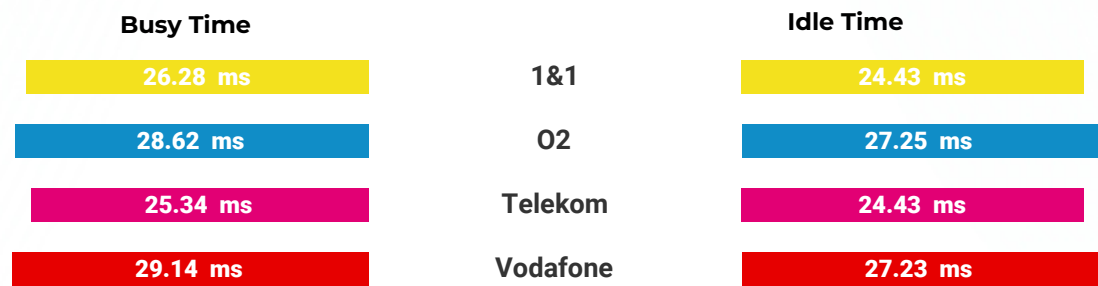
The subscribers of Telekom and 1&1 enjoyed the best average broadband latency in 2023.

Latency Speed results ventilation (average)



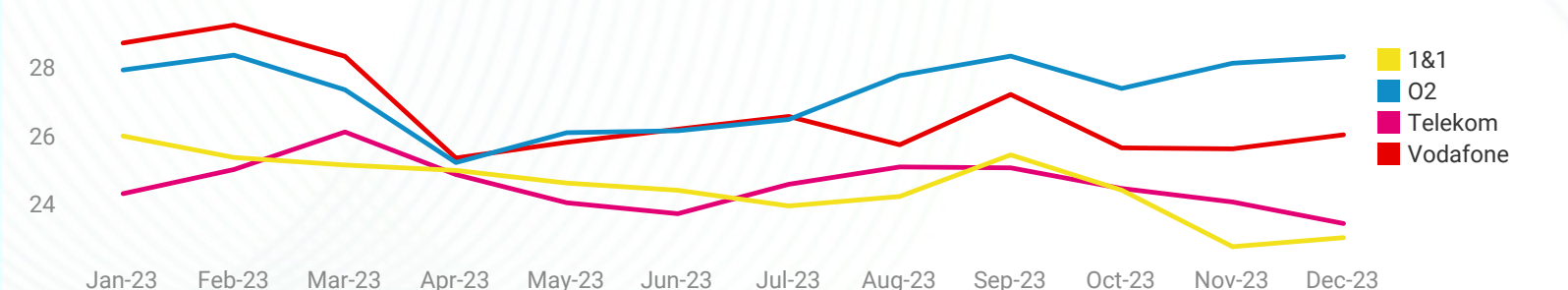
Source : nperf.com

Latency Speed (average)



Source : nperf.com

Average latency Speed evolution over the year



Source : nperf.com

nPerf Score (nPoints)



Source : nperf.com

The subscribers of Vodafone , 1&1 and Telekom enjoyed the best broadband performances in Germany during 2023 on FTTH.

- Best FTTH Internet Performance : Vodafone (181 886 nPoints), 1&1 (180 211 nPoints) and Telekom (179 337 nPoints)
- Best FTTH Download speed : 1&1 (490.83 Mb/s)
- Best FTTH Upload speed : Vodafone (392.47 Mb/s)
- Best FTTH Latency speed : Telekom (14.54 ms)

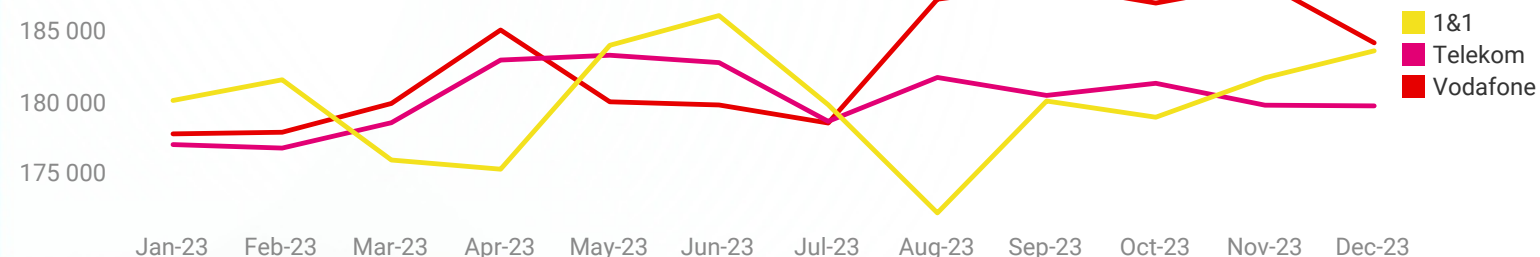
Source : nperf.com

nPerf Score (nPoints)



Source : nperf.com

nPerf score evolution over the year (average)



Source : nperf.com



## nPerf Score (nPoints)



Source : nperf.com

**The subscribers of Vodafone enjoyed the best broadband performances in Germany during 2023.**

The nperf score takes into account the measured bitrates and the latency. 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.

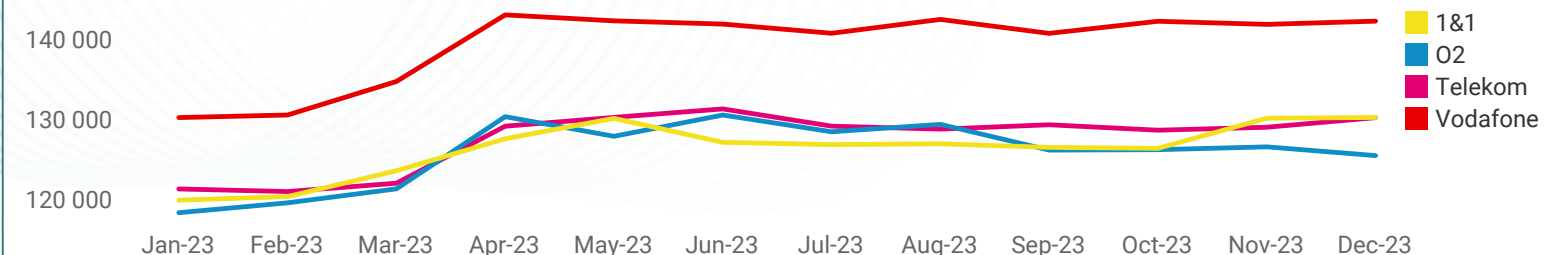
Source : nperf.com

**Best fixed Internet performance in 2023**



Source : nperf.com

## nPerf score evolution over the year (average)



Source : nperf.com

