Annual Report 2024/2025

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1 Objectives of the broadband speed tests

The Bundesnetzagentur's broadband speed checker ("Breitbandmessung") is a quick and easy way for users to check the speed of their internet connections and monitor the performance of their fixed and/or mobile broadband connections.

The speed tests are provider and technology neutral and can be carried out on fixed broadband connections using the free desktop app. There is a free broadband and dead spot checker app ("Breitbandmessung/Funkloch-App", now known as "Mobilfunk-Check" app) for mobile connections.

This report presents the overall results of fixed and mobile broadband speed tests carried out in the operational year 2024/2025.

The results of the broadband speed tests depend on the tariff that the user has agreed with the provider. The tests show if the providers supply their customers with the contractually agreed bandwidth. It should be noted that the report is based solely on the results of users of the apps and not on a representative sample. It is therefore not possible to draw conclusions from the broadband speed test results about broadband coverage or the availability of broadband internet access.

A detailed explanation of the methods is given in a separate document describing the measurement concept, sample selection method, and data evaluation and presentation methods.
It is available (in German) on the broadband speed checker website at ↗ https://breitbandmessung.de/archiv-jahresberichte ("Material, Methoden und Datengrundlage").

The interactive graphs and tables at ↗ https://breitbandmessung.de/interaktive-darstellung provide further breakdowns, in particular with respect to providers and federal states.

2 Results for fixed broadband connections

A total of 184,452 valid tests were carried out in the reporting period from 1 October 2024 to 30 September 2025 by means of individual measurements (2023/2024: 276,081 valid tests). The proportion of users across all bandwidth categories and providers in the year under review whose connection had a download speed at least half their contractually agreed maximum speed was 85.9% (2023/2024: 86.5%); the proportion of users whose connection had a speed equivalent to or higher than their contractually agreed maximum speed was 45.9% (2023/2024: 45.2%) (see Figure 1).

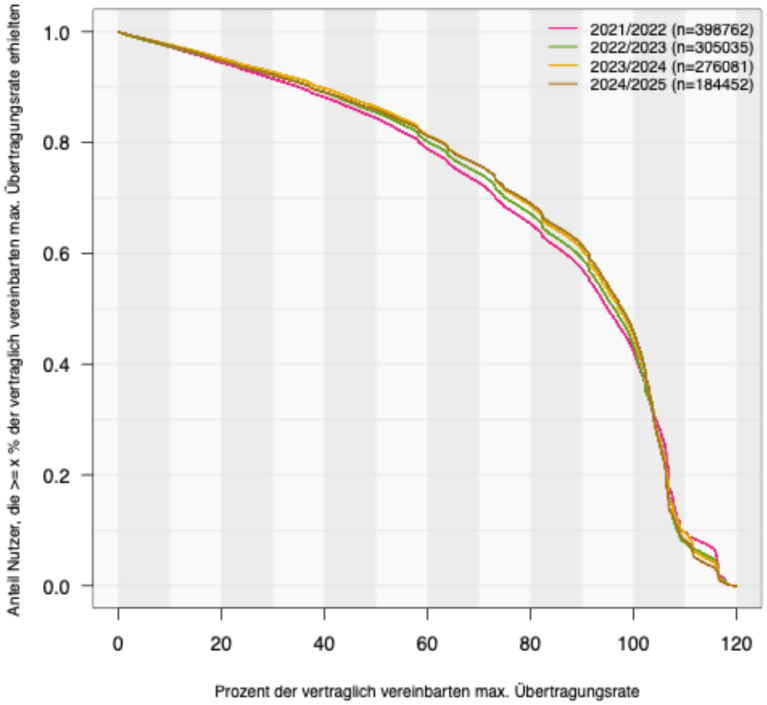

Figure 1: Empirical survival function of the download speeds achieved as a percentage of the contractually agreed maximum for fixed broadband connections[1]

[1] The graph shows the empirical survival function (1 minus the value of the empirical distribution function at the point x) (see "Material, Methoden und Datengrundlage", section 3.6, available at ↗ https://breitbandmessung.de/archiv-jahresberichte). This applies to all other similar graphs in the report.

There are clear differences between the bandwidth categories (see Figure 2).

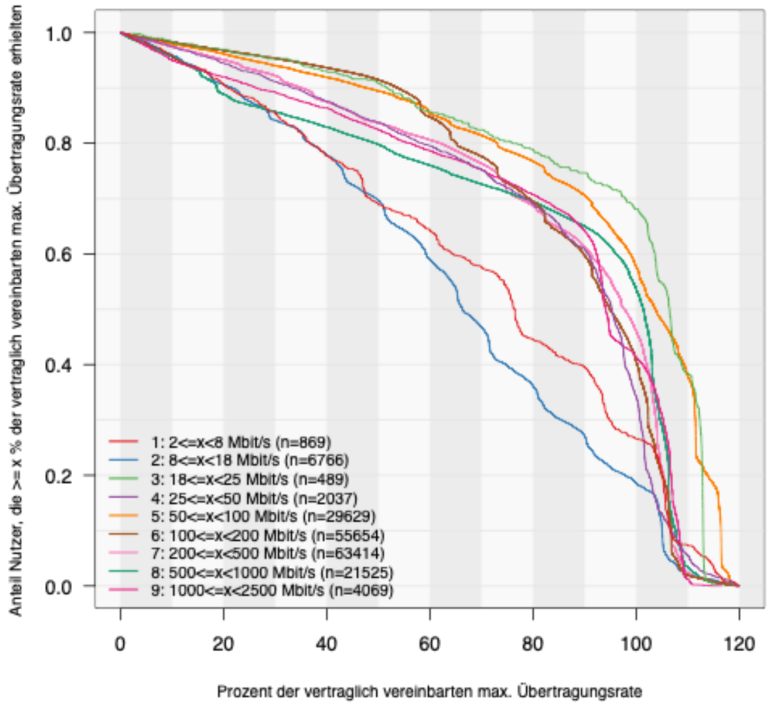

Figure 2: Empirical survival function of the download speeds achieved as a percentage of the contractually agreed maximum broken down by bandwidth category for fixed broadband connections in the year under review 2024/2025

The results for the 10 providers with the largest number of valid tests are shown in Figure 3. The results for the majority of the providers were again better than the year before.

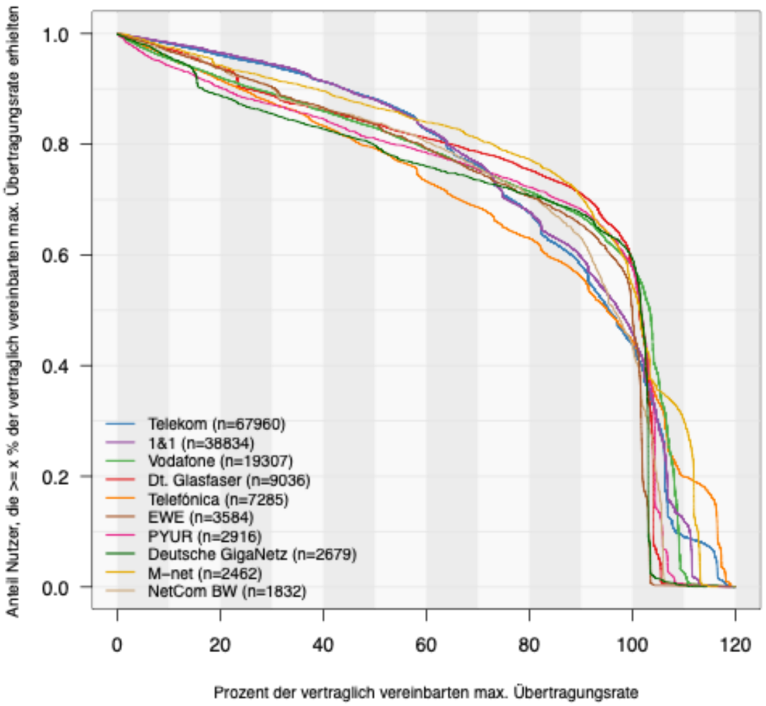

Figure 3: Empirical survival function of the download speeds achieved as a percentage of the contractually agreed maximum for the 10 providers with the most valid tests for fixed broadband connections in the year under review 2024/2025

Regarding the geographic areas, the speeds measured as a percentage of the contractually agreed maximum speeds were generally higher in urban areas than in semi-urban or rural areas.[2] In urban areas, 62.7% of users (2023/2024: 62.6%) achieved at least 90% of the contractually agreed speeds, while in semi-urban areas the proportion was 60.8% (2023/2024: 59.1%) and in rural areas 59.4% (2023/2024: 58.0%). The results have again improved, with the biggest improvement in semi-urban areas.

Based on the speeds measured as a percentage of the contractually agreed maximum speeds, upload performance was again generally similar to download performance. The proportion of users across all bandwidth categories and providers in the year under review whose connection had an upload speed at least half their contractually agreed maximum speed was 89.4% (2023/2024: 90.7%); the proportion of users whose connection had a speed equivalent to or

[2] Details of the geographical classification are given in a separate document (see "Material, Methoden und Datengrundlage", section 3.5, available at ↗ https://breitbandmessung.de/archiv-jahresberichte).

higher than their contractually agreed maximum speed was 42.7% (2023/2024: 43.5%). The results were slightly worse than in the previous year.

Users in the upper bandwidth categories tended to obtain the best results for latency times. In the year under review, 96.3% of users (2023/2024: 96.0%) achieved latency of 40 ms or less. 77.4% achieved latency of 20 ms, representing a minor decrease on the previous year (2023/2024: 78.8%). Low latency plays an important role in performance for video calling and online gaming.

Most users (79.0%; 2023/2024: 79.6%) continued to be satisfied with the performance of their broadband connection in the year under review (rating of 1 to 3 on a scale of 1 to 6, with 1 being the highest). 10.3% of customers (2023/2024: 10.0%) gave their connection a rating of 5 or 6. The actual speeds measured by satisfied users were generally closer to the contractually agreed maximum speeds than those measured by less satisfied users.

3 Results for mobile broadband connections

The methodological changes introduced for mobile connections in the last year under review were continued and further clarified this year. They have made it necessary to adjust the presentation of results again. In particular, 4G and 5G are evaluated separately. A distinction is also made between bandwidth categories in the case of 5G.

The ongoing expansion of the 5G networks is reflected in a further increase in the proportion of 5G measurements, with 424,388 valid tests undertaken up from 246,331 in 2023/2024. As 5G permits much higher speeds that are sometimes well over the contractually agreed estimated maximum, all 5G tests are included in bandwidth categories 7 (200 to less than 500 Mbps) and 8 (500 Mbps and above), even if they exceed the contractually agreed estimated maximum speeds. The 120% limit continues to apply to the lower 5G bandwidth categories 1 to 6 (2 to less than 200 Mbps) and to 4G tests.[3]

A total of 342,450 valid tests with 4G technology were made during the reporting period (2023/2024: 315,974). Of these, 183,096 tests were in bandwidth categories 1 to 6 (53.5%), while 159,354 tests (46.5%) were in bandwidth categories 7 (200 to less than 500 Mbps) and 8 (500 Mbps and above).

A total of 123,360 tests with 5G technology (29.1%) were in bandwidth categories 1 to 6 (2 to less than 200 Mbps). The great majority of 5G tests, however, came under bandwidth categories 7 (200 to less than 500 Mbps) and 8 (500 Mbps and above) with 60.8% and 10.1% respectively. A total of 301,028 valid tests were made in these two categories (2023/2024: 205,571).

To sum up, it may be observed that the majority of tests with 5G technology were in bandwidth categories 7 and 8, as were almost half of the tests based on 4G.

[3] An explanation of the 120% limit may be found in a separate document (see "Material, Methoden und Datengrundlage", section 3.2 "Validierung", available for download at ↗ https://breitbandmessung.de/archiv-jahresberichte).

As a result, the evaluation below focuses on bandwidth categories 7 and 8.

Figure 4 shows the results of the tests in bandwidth categories 7 (200 to less than 500 Mbps) and 8 (500 Mbps).

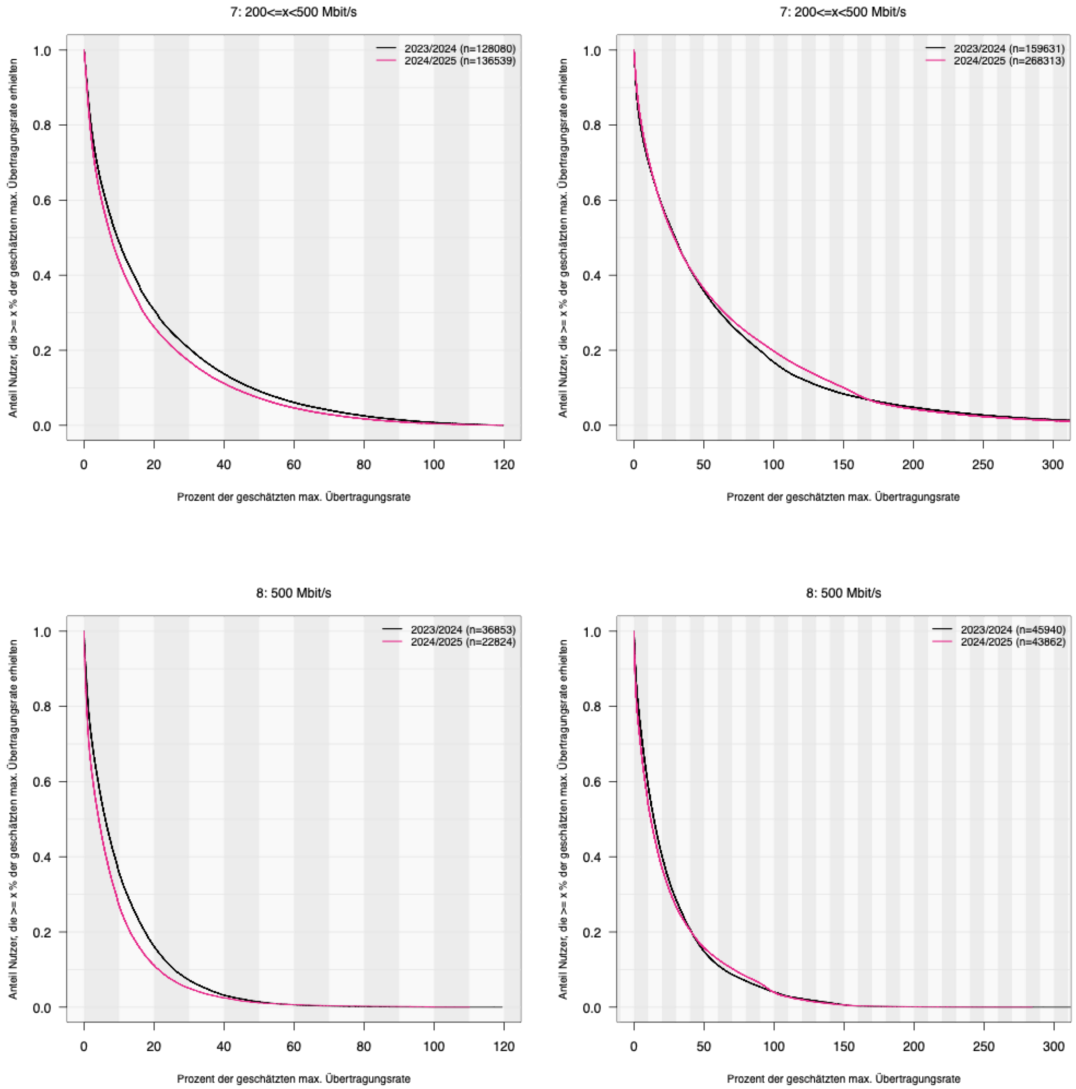

Figure 4: Empirical survival function of the download speeds achieved with 4G (left) and 5G (right) as a percentage of the contractually agreed estimated maximum in bandwidth categories 7 (top) and 8 (bottom)

The results from tests with 5G in the two highest bandwidth categories are considerably better than with 4G. In addition, some of the speeds measured with 5G are much higher than the contractually agreed estimated maximum. Although it is possible to achieve comparatively high speeds with 5G in all the networks, there are large differences between the two bandwidth categories due to the different contractually agreed speeds.

Figure 5 shows the results of the tests in bandwidth category 7 for the individual providers[4]. Approximately 40% of all valid 4G tests and approximately 62% of all valid 5G tests were in this bandwidth category. There are clear differences between the curves for the individual providers.

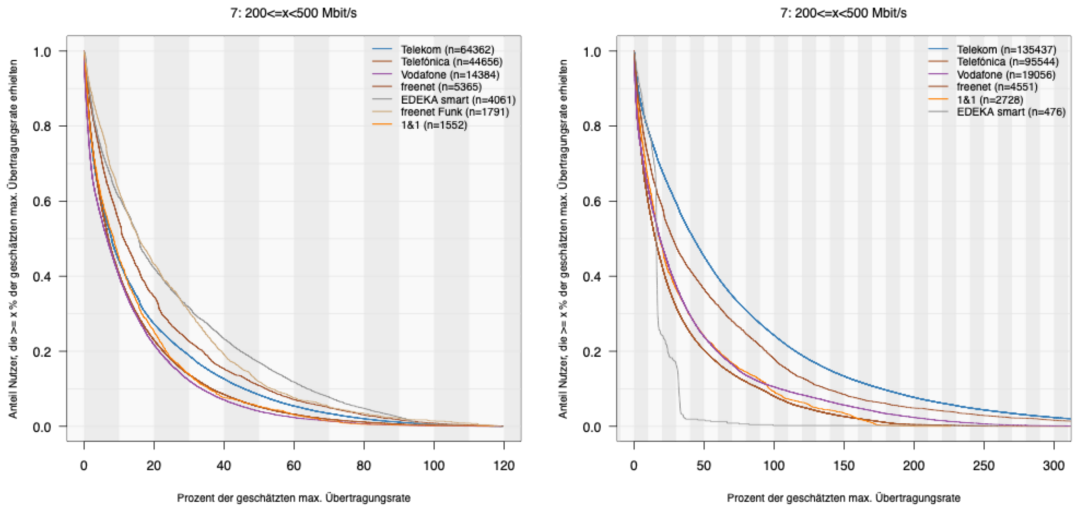

Figure 5: Empirical survival function of the download speeds achieved with 4G (left) and 5G (right) as a percentage of the contractually agreed estimated maximum in the bandwidth category 7 of the 2024/2025 reporting year for the individual providers

In the first national mobile network measurement week, users did not just measure network availability but also tested speeds in the mobile communications network. A significant rise in testing activity was recorded during the measurement week and in the subsequent months, bringing the total number of tests well above that of the previous year.

[4] Independent brands of telecommunications companies are also classed as providers. Details of which results are shown for which providers are given in a separate document (see "Material, Methoden und Datengrundlage", section 3.5, available at ↗ https://breitbandmessung.de/archiv-jahresberichte).

Based on the speeds measured as a percentage of the contractually agreed maximum speeds, upload performance was again similar to download performance. There were differences between 4G and 5G especially in the two highest bandwidth categories, with the speeds in the 5G network being higher in both percentage and absolute terms.

The 5G tests showed generally better latency than the 4G tests, so a greater proportion of users benefited from lower latency. Better latency times were generally measured with both 4G and 5G in the higher bandwidth categories. Irrespective of that, latency in the mobile network is usually greater than in the fixed network.

Across all technologies and bandwidth categories, the majority of users gave their providers a rating of 1 to 3. For the 4G technology, the share of users giving their provider those ratings in the bandwidth categories 1 to 6 (2 to less than 200 Mbps) was 69.0% (2023/2024: 70.0%), while in the bandwidth categories 7 (200 to less than 500 Mbps) and 8 (500 Mbps) it was 64.7% (2023/2024: 62.3%). There was a similar picture for the 5G technology, where the share was 72.4% in the bandwidth categories 1 to 6 (2023/2024: 75.5%) and 73.2% in the bandwidth categories 7 to 8 (2023/2024: 73.1%).

Across the board, the trend continues that the actual speeds measured by more satisfied end-users were closer to the contractually agreed estimated maximum speeds than was the case for dissatisfied customers.

4 Annex

4.1 Additional visuals and documents

Interactive graphs and tables

All of the graphs in the annual report together with additional graphs and tables are available as interactive visuals at
↗ https://breitbandmessung.de/interaktive-darstellung (in German).

Material, methods and data basis

An explanation of the material, methods and data basis used for this annual report is given in a separate document. It is available (in German) on the broadband speed checker website at
↗ https://breitbandmessung.de/archiv-jahresberichte (“Material, Methoden und Datengrundlage”).

Technical specification

A technical description of the measurement system and methods is given in a separate document available (in German) at
↗ https://breitbandmessung.de/ueber-den-test (“Technische Spezifikation”).

General description for users

Detailed information about the tests using the desktop app and the Mobilfunk-Check app, including a step-by-step guide for users, is set out in separate documents available (in German) at
↗ https://breitbandmessung.de/ueber-den-test (“Beschreibung – Die Desktop-App der Breitbandmessung aus Sicht des Nutzers” and “Beschreibung - Die App Mobilfunk-Check aus Sicht des Nutzers”).

4.2 Statistics software

R Version 4.5.1

R Core Team (2024 & 2025). R: A language and environment for statistical computing.
R Foundation for Statistical Computing, Vienna, Austria.
www.R-project.org

4.3 Publisher's details

The report on broadband speed tests was commissioned from zafaco GmbH by the Bundesnetzagentur. The report covers the results of the tests carried out in the tenth operational year (1 October 2024 to 30 September 2025).

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