

The 2025 Fixed-Line Network Test in the Netherlands

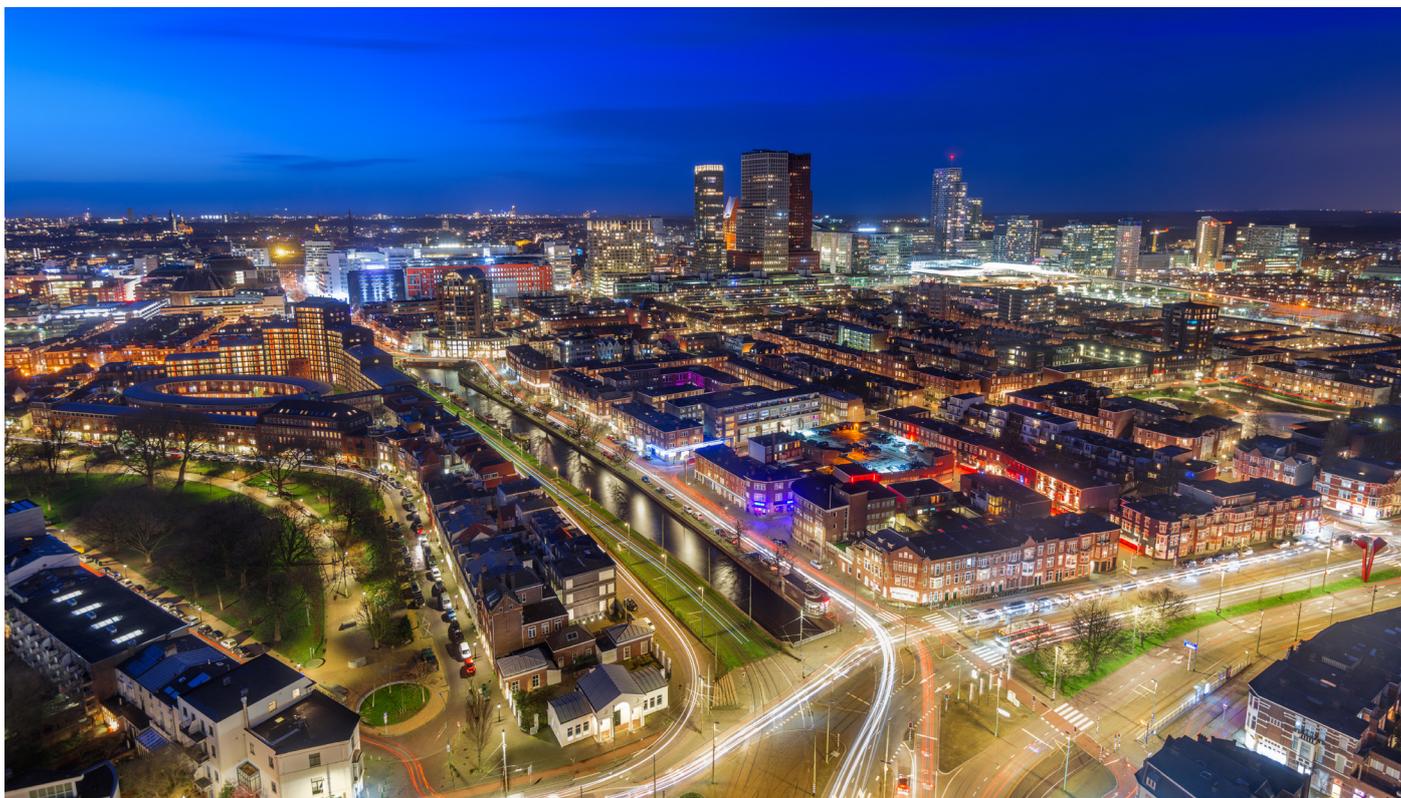


Photo: Sean Pavone, shutterstock

For the fourth time, umlaut and connect have examined the performance of the fixed-line networks in the Netherlands. This year, two nationally active operators achieved outstanding results and one achieves the score ,very good'. The regional assessment also shows outstanding results.

Once again, umlaut and connect have applied umlaut's sophisticated crowdsourcing approach to offer a comprehensive look at the user experience of fixed-line customers in the Netherlands. The results of this analysis show that the performance level of all the operators analysed has improved once again compared to our test in the previous year – most clearly in the case of this year's nationwide winner Odido and the also outstanding KPN.

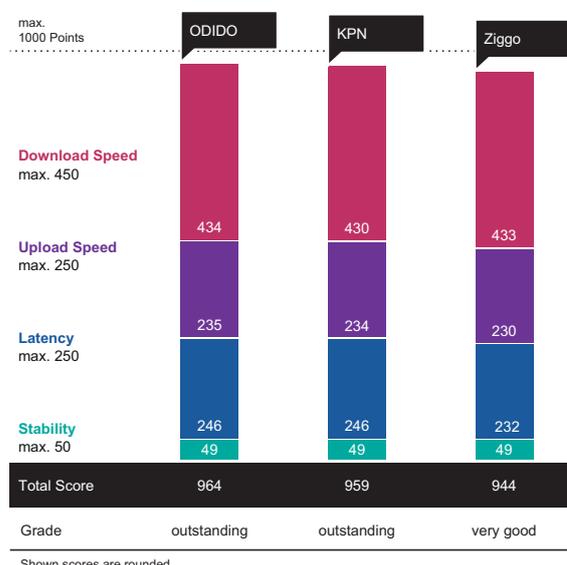
Scope

For its assessment of the Dutch fixed-line operators, umlaut has conducted crowd-sourced analyses based on data gathered between the calendar weeks 33/2024 (mid-August) and 04/2025 (late January). A total of 97,748,663 samples was considered in the nationwide analyses. The detailed methodology of our assessment is described on page 8 of this report.

Crowdsourcing Facts

97.7
million
samples

24
weeks
(mid-August 2024 to
late January 2025)



The Dutch Fixed-Line Operators



The Koninklijke PTT Nederland N.V. emerged from the privatisation of the formerly state-owned PTT in 1998. For 2024, the company reported approx. 3.8 million fixed-line customers. 1.7 million of these are designated as fixed-mobile households. Based on these numbers, KPN managed to surpass former market leader Ziggo in terms of subscriber numbers in 2024 and is the largest Dutch fixed-line operator in the Netherlands at the time of writing this report.

In early 2021, KPN and the Dutch pension fund APG announced the start of their joint fibre company “Glaspoort”, which is scheduled to invest more than 1 billion Euros in the construction of approximately one million fibre connections in villages, small residential areas and business parks. According to the latest published annual results at the end of 2024, the network counted 613,000 homes passed and 384,00 homes connected. In addition, KPN itself counts approx. 4.5 million homes passed and approx. 2.2 million homes connected. In 2024, Glaspoort announced its plan to acquire parts of the fibre-optic network owned by Delta in various municipalities in the Netherlands, covering a total of approximately 200,000 households.



The Dutch subsidiary of the international Vodafone Group acquired the operator Libertel in 2003, forming Vodafone Netherlands. In 2016, it merged with the cable and fibre operator Ziggo. Today, 50 per cent of the joint company Vodafone-Ziggo is owned by the Vodafone Group and another 50 per cent by Liberty Global. For its fiscal year 2024, Vodafone-Ziggo specifies 3.4 million fixed (broadband, video and telephony) subscribers. 1.5 million of these households are designated as “converged households” – i.e. they use both the mobile and the fixed-line network of the operator. Based on these numbers, Vodafone-Ziggo had the second largest fixed-line market share in the Netherlands at the time of writing this report.

Also, according to Vodafone-Ziggo’s latest publications, the company’s fixed-line network reaches approx. 7.6 million “homes passed” – which would translate to approx. 90 per cent of the 8.4 million households in the Netherlands.



In 2000, Deutsche Telekom bought a minority of the Dutch mobile network operator Ben, which was later extended to a 100 per cent acquisition. In 2003, Ben was renamed T-Mobile Netherlands, with the brand “Ben” becoming a “no-frills” offer within its portfolio. In 2007, T-Mobile Netherlands additionally acquired Orange. The acquisition of Thuis in 2016 marked T-Mobile Netherlands’ entry into the fixed broadband market. In 2018, the company completed its acquisition of the smallest Dutch operator, Tele2, which brought both its own mobile as well as its own fixed-line network to the merger. Telekom holds 75 per cent and Tele2 25 per cent of the infrastructure assets.

The company also announced a strategic partnership with Open Dutch Fiber in 2021. In the same year, T-Mobile Netherlands was acquired by the private equity investors Apax and Warburg Pincus. In consequence, the company was renamed as „Odido“ in fall 2023. According to recent market studies, Odido is believed to have a share of 10 to 15 per cent of the Dutch fixed-line market. Although the company does not publish exact subscription numbers, Odido is thus quite certainly the third largest fixed-line broadband operator in the country.

The 2025 Fixed-Line Network Test in the Netherlands

Results at a Glance



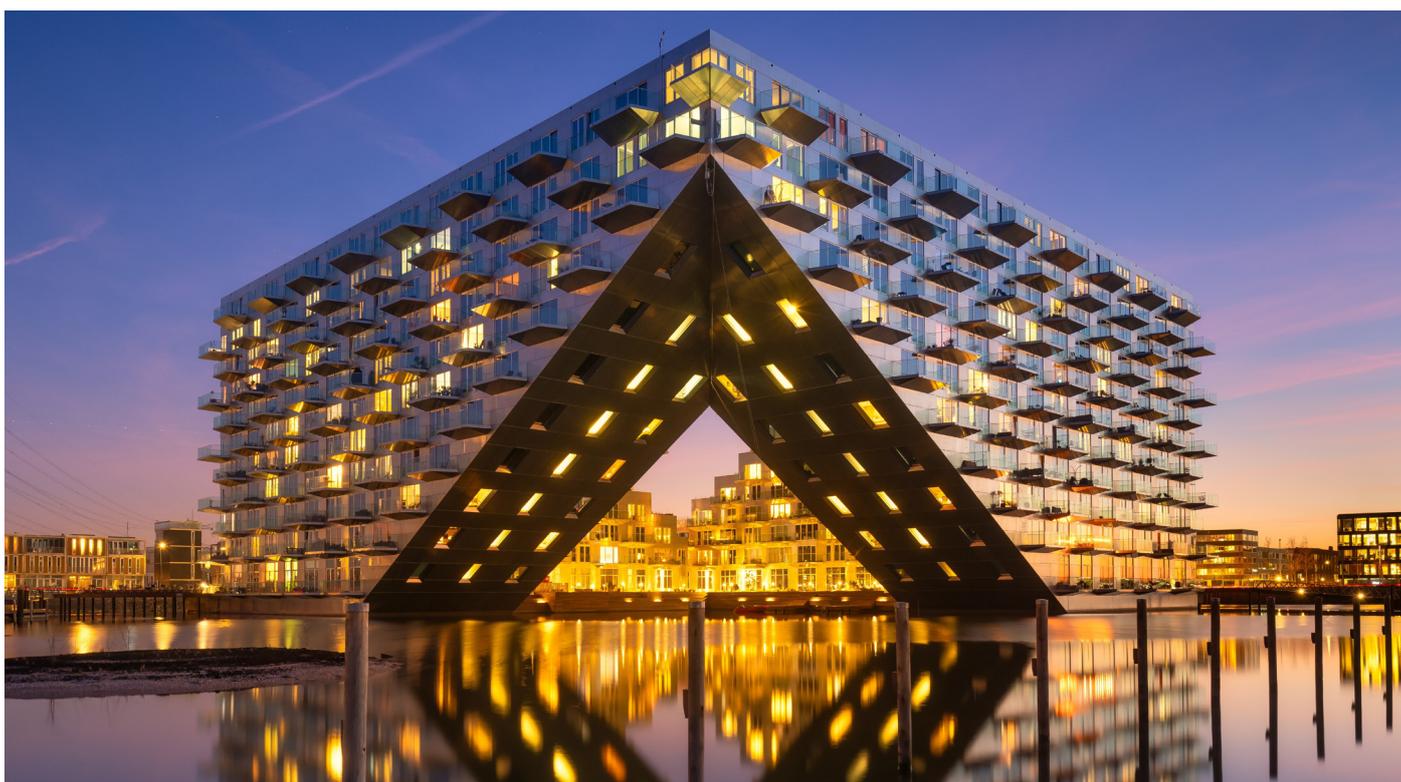
Odido is the winner of the umlaut connect 2025 Fixed-Line Network Test in the Netherlands, achieving the overall grade “outstanding”. With a plus of 11 score points, the operator also achieves the biggest score improvement in comparison to the previous year’s results. The fixed-line operator is slightly ahead of Ziggo in Download performance and slightly ahead of KPN in Upload performance. In the Latency category, Odido and KPN are leading on a par, ahead of Ziggo. In terms of Stability, the results of all three nationwide operators are on the same level.



KPN ranks second, five points behind the overall winner Odido and also with the impressive overall grade “outstanding”. The Netherlands’ now largest fixed-line provider improved its score by 8 points in comparison to its results from the previous year’s fixed-line test. KPN is particularly strong in the Reliability assessment. It also shares the highest score with Odido in the Latency category, ahead of Ziggo. KPN also shows excellent results in the Upload Category, scoring just one point behind Odido. In terms of Stability, the results of all three nationwide operators are on the same level.

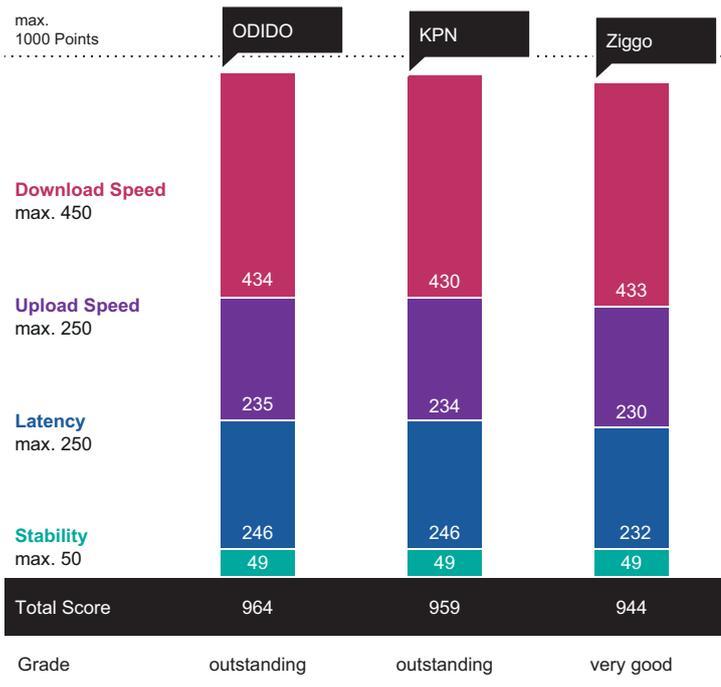


Ziggo ranks third and achieves the overall grade “very good”. The Netherlands’ second-largest fixed-line operator also manages to improve its score by 2 points compared to its test result from the previous year. Ziggo achieves very strong results in the Download Speeds, scoring just one point behind Odido. It also excels in the other categories, but falls a little behind the rest of the field in the Latency assessment. In our Reliability assessment, Ziggo ranks second together with Odido. In terms of Stability, the results of all three nationwide operators are on the same level.



The 2025 Fixed-Line Network Test in the Netherlands

Results



Shown scores are rounded.

BEST IN TEST
ODIDO
2/2025
FIXED LINE NETWORK TEST
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The 2025 Fixed-Line Network Test in the Netherlands

Detailed Results

Active Download Speeds

In the Active Download Speed measurements conducted by umlaut, Ziggo takes the lead with the highest values in the average and P90 values (top 10 percent of the measurements faster than...). In the P10 evaluation, which indicates the threshold surpassed by 90 percent and thus the majority of the samples, KPN comes in first, followed by Odido and then Ziggo, both with only a small gap.

**ACTIVE
DOWNLOADS**

ZIGGO

KPI Values	ODIDO	KPN	Ziggo
Download Speed Active			
Ø Datarate [Mbps]	176.3	140.7	207.3
P10 Datarate [Mbps]	34.8	36.3	32.6
P90 Datarate [Mbps]	423.7	253.3	430.9

Percentages are rounded to one decimal place and points rounded to integer numbers. For the calculation of points and totals, the accurate, unrounded values were used.

Active Upload Speeds

In the actively performed Upload Speed measurements, Odido takes the lead, showing the highest measurement values in every category. KPN follows at close distance on second place, and Ziggo, again with a small gap, on third. In the average data rates, as well as in the P90 values, the ranking is quite distinct. In the P10 value (90 percent of the samples better than the determined threshold), Ziggo follows closely behind Odido, with KPN coming in third.

**ACTIVE
UPLOADS**

ODIDO

KPI Values	ODIDO	KPN	Ziggo
Upload Speed Active			
Ø Datarate [Mbps]	136.5	118.5	52.7
P10 Datarate [Mbps]	24.4	22.5	24.0
P90 Datarate [Mbps]	328.3	274.3	104.0

Percentages are rounded to one decimal place and points rounded to integer numbers. For the calculation of points and totals, the accurate, unrounded values were used.

Passive Download Speeds

As in the passively determined Download Speeds, all three operators rank quite close together. Overall, KPN takes a narrow lead with the highest shares in both investigated KPIs. In the UHD Video class (minimum 20 Mbps) KPN has a narrow lead, with Odido and Ziggo following on a par on second place. In the Highspeed Class (minimum 50 Mbps), KPN takes a narrow lead over second-placed Odido, while Ziggo is a little more distinctly behind in this KPI.

**PASSIVE
DOWNLOADS**

KPN

KPI Values	ODIDO	KPN	Ziggo
Download Speed Passive			
UHD Video Class [%]	47.7	49.0	47.7
Highspeed Class [%]	12.6	12.9	10.6

Percentages are rounded to one decimal place and points rounded to integer numbers. For the calculation of points and totals, the accurate, unrounded values were used.

Passive Upload Speeds

In the passively observed Upload Speeds, Ziggo takes the lead with the highest fulfilment rates both in the HD Video Class (at least 5 Mbps) as well as in the UHD Video Class (at least 20 Mbps). KPN follows on the second rank in both KPIs, with Odido coming in third. However, the gaps are narrow overall.

**PASSIVE
UPLOADS**

ZIGGO

KPI Values	ODIDO	KPN	Ziggo
Upload Speed Passive			
HD Video Class [%]	35.9	36.6	38.0
UHD Video Class [%]	27.2	28.7	30.3

Percentages are rounded to one decimal place and points rounded to integer numbers. For the calculation of points and totals, the accurate, unrounded values were used.

The 2025 Fixed-Line Network Test in the Netherlands

Detailed Results

Latency

In the Latency category, KPN gains the highest amount of score points. This is particularly due to its high fulfillment level in the most demanding Ultra Low Latency (ULL) Class with roundtrip times not exceeding 10 ms. In this KPI, Ziggo falls noticeably behind the other two contenders. In the Standard Gaming class (not slower than 50 ms), KPN is ahead, with Odido and Ziggo following at close distances. In the Highend Gaming Class (latency below or equal 20 ms), KPN leads, followed by Odido by a narrow margin, while Ziggo falls slightly further behind.

LATENCY

KPN

KPI Values	ODIDO	KPN	Ziggo
Latency			
Standard Gaming Class [%]	99.1	99.3	99.0
Highend Gaming Class [%]	90.3	90.8	83.5
ULL Class [%]	60.9	63.2	19.6

Percentages are rounded to one decimal place and points rounded to integer numbers.
For the calculation of points and totals, the accurate, unrounded values were used.

Stability

The Transaction Success rates of KPN and Ziggo are on a par, with Odido following at such a narrow gap, that in fact all three operators achieve 49 out of 50 points in the Stability category. This high level of Transaction Successes is good news for Dutch fixed-line customers – they can rely on stable, highly available internet connections, regardless of the operator they choose.

STABILITY

ALL OPERATORS

KPI Values	ODIDO	KPN	Ziggo
Stability			
Transaction Success [%]	99.3	99.4	99.4

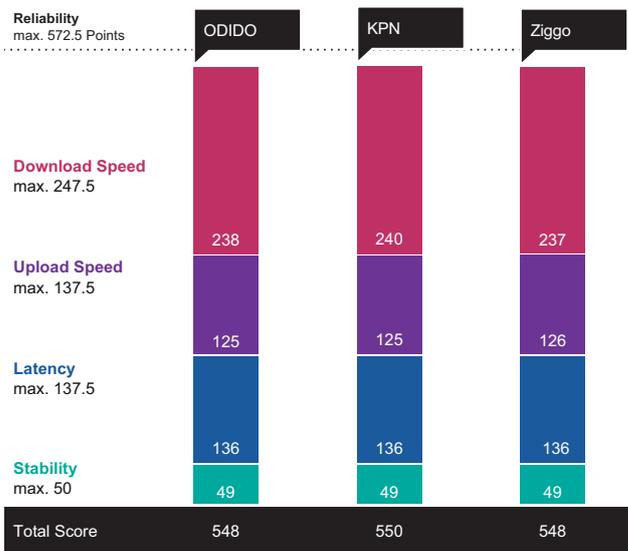
Percentages are rounded to one decimal place and points rounded to integer numbers.
For the calculation of points and totals, the accurate, unrounded values were used.

Reliability

The "Reliability" section is not based on additional KPIs, but is rather a different look at the results of the various test categories. The analysis is based on the fact that umlaut distinguishes between "Qualifier KPIs" (the mandatory) and "Differentiator KPIs" ("freestyle") for all KPIs – also see page 8. The Reliability assessment solely concentrates on the "Qualifier KPIs". As this evaluation only considers a subset of the achievable points, the reachable maximum in this section is only 572.5 points.

In this consideration, KPN takes a narrow lead, closely ahead of Odido and Ziggo, who score on a par. In the Latency and Stability categories, all three operators achieve the same scores. In the Upload Speed category, Ziggo scores one point ahead of Odido and KPN, who score on a par in this category. KPNs lead is manifested in the Download Speed category, where this operator leads two points ahead of Odido and three points ahead of Ziggo.

All three Dutch operators achieve a Reliability score of more than 95 per cent of the possible points – this is an outstanding result. Although the gaps are minor, the results can be interpreted to the effect that KPN is slightly ahead when it comes to fulfilling basic connectivity needs, while Odido secures its overall win in this benchmark by delivering a little bit more in the performance-oriented part of our scoring.

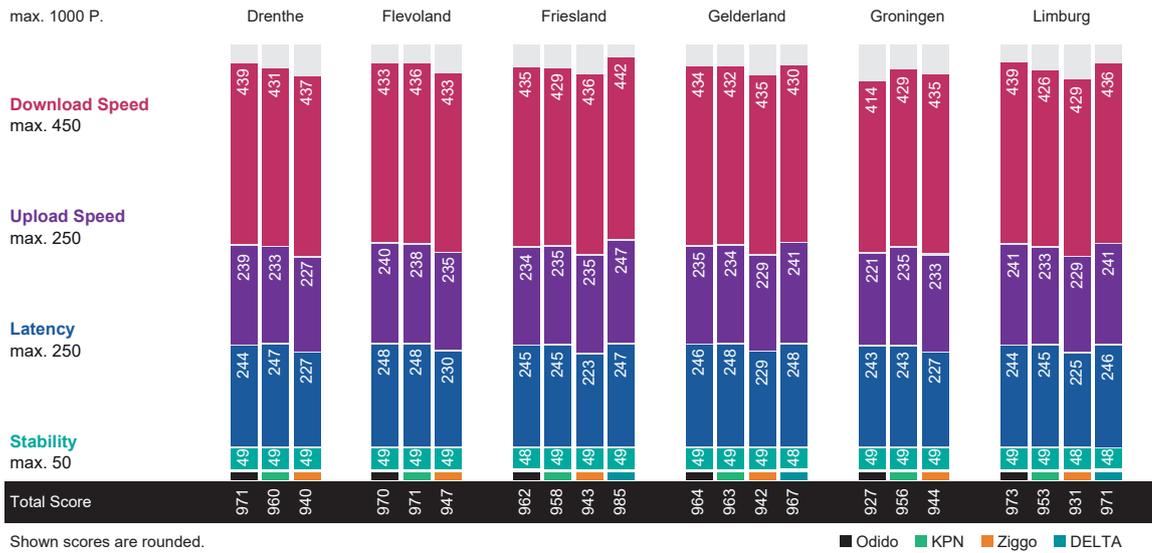




The 2025 Fixed-Line Network Test in the Netherlands



Score Results per Province



Shown scores are rounded.

Legend: Odido (black), KPN (green), Ziggo (orange), DELTA (teal)

BEST LOCAL RESULT

ODIDO
2/2025

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Drenthe, Limburg, Noord-Brabant, Overijssel, Zuid-Holland, Joint Win: Noord-Holland

BEST LOCAL RESULT

KPN
2/2025

FIXED LINE NETWORK TEST IN THE NETHERLANDS
www.connect-testlab.com

Flevoland, Groningen, Zeeland, Joint Win: Noord-Holland

In addition to the nationwide assessment, umlaut has also evaluated the local results achieved in the twelve Dutch provinces. With these analyses, inhabitants of these various parts of the country can check which operator may locally be the best choice. If a result is not published for a particular operator in a particular province, the number of samples for this confinement was too low to specify a statistically reliable result.

Odido is Local Champion in five Provinces, Co-Winner in Noord-Holland

In the detailed analysis, Odido takes the lead in five of the considered Dutch provinces. In Drenthe, Lim-

burg, Noord-Brabant, Overijssel and Zuid-Holland, the operator achieves outstanding results with the locally derived scores ranging above 950 points. In Noord-Holland, the three operators Odido, KPN and Ziggo all score 955 points and thus share the first rank. Here, the local provider Delta falls slightly behind at a score gap of just two points.

KPN Winner in three Provinces, Co-Winner in Noord-Holland

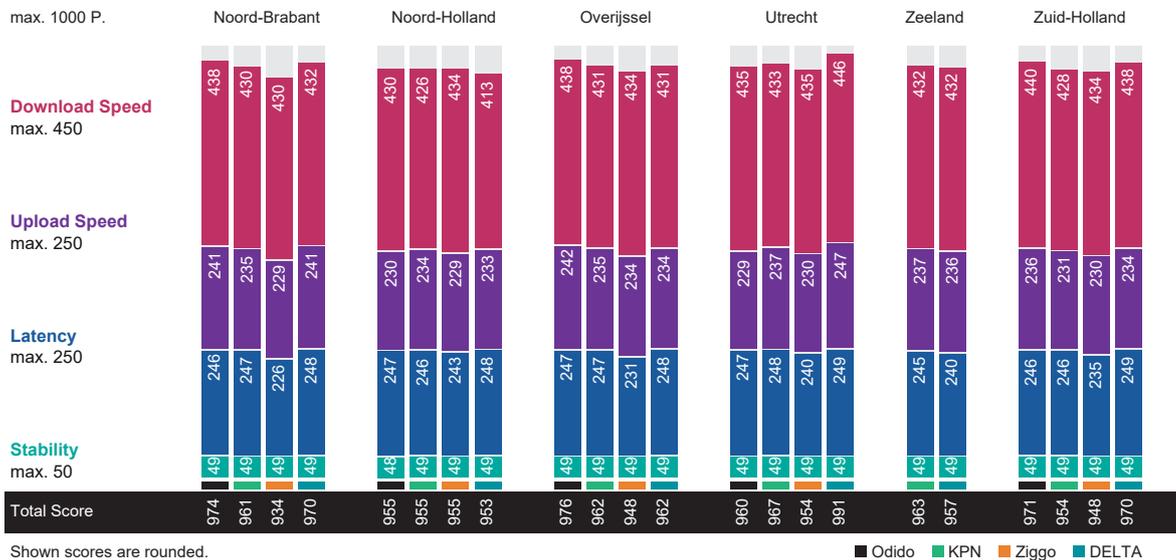
KPN takes the lead with outstanding results in Flevoland, Groningen and Zeeland. In Noord-Holland, the operator shares the top position at 955 points with Odido and Ziggo.

Ziggo Co-Winner in Noord-Holland

Ziggo achieves 955 points in Noord-Holland and thus shares the first rank with Odido and KPN there.

Delta ahead in three provinces

Delta offers a TV cable network as well as fibre connections to approximately 1.7 million households in various Dutch provinces. Currently, we consider Delta as a regional fixed-line provider in the Netherlands, based on the observed distribution of Delta lines. The operator leads in Friesland, Gelderland and Utrecht and also achieves outstanding scores in Limburg, Noord-Brabant, Noord-Holland, Overijssel, Zeeland and Zuid-Holland.



Shown scores are rounded.

Legend: Odido (black), KPN (green), Ziggo (orange), DELTA (teal)

BEST LOCAL RESULT

ZIGGO
2/2025

FIXED LINE NETWORK TEST IN THE NETHERLANDS
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Joint Win: Noord-Holland

BEST LOCAL RESULT

DELTA
2/2025

FIXED LINE NETWORK TEST IN THE NETHERLANDS
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Friesland, Gelderland, Utrecht

Case Study: Coverage

In preparation for future developments of our test, we have also analysed the geographical availability of broadband connections in the Netherlands for the three nationwide operators.

Geographic availability is another dimension of the capabilities of a fixed-line operator. If a broadband provider supplies customers more or less in the whole country, this is much more complex and inevitably leads to the effect that the statistics on a very large number of users also include connections with lower bandwidths. As part of a 'case study', umlaut is therefore investigating what results the analysis tools used for this purpose can deliver. How the results of such an analysis may be incorporated into the overall evaluation in the future will be subject to further development.

Super tiles as a basis

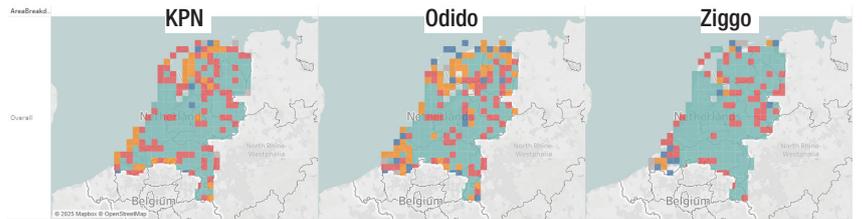
The basis of the maps presented on the right-hand side are 2x2-km tiles ('evaluation areas'). We combine 8x8 of these into a 'super tile'. Background: As a result of our crowdsourcing approach, providers with a small market share are also represented in smaller user numbers. In order to achieve reliable results even with a smaller number of customers, we have therefore selected relatively large tiles. If there is at least one subscriber connection of the respective provider in the area of a super tile, it is shown on the map and included in the count. For the Netherlands, the number of super tiles totals 323, of which 320 are inhabited or built-up areas.

Observation of Speed Classes

The highest download data rate determined during the observation period is also taken into account for each subscriber line. These maximum download data rates across all super tiles serve as an indicator of the degree of coverage and the availability of high-bit-rate services. The adjacent Speed Class Bar Chart shows the percentage of super tiles in which the analysis has seen a download data rate in the defined speed classes. This makes the distribution of the values per operator easier recognizable.

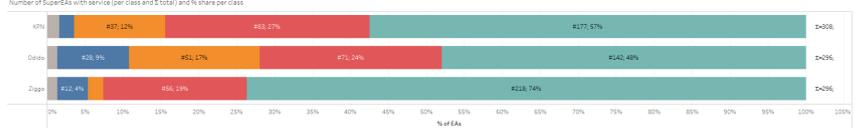
Qualifier and Differentiator KPIs

As an indication of how these metrics could be applied into a future evaluation, we show on the right-hand side a Qualifier and a Differentiator KPI: The Qualifier represents the percentage of areas where we have seen any connection at all, including those where no speed info could be retrieved. The Differentiator is the weighted average of the Speed Classes in relation to the area per ISP where at least the lowest Speed Class was observed. This KPI rewards when high bitrate products are available in as wide an area as possible.



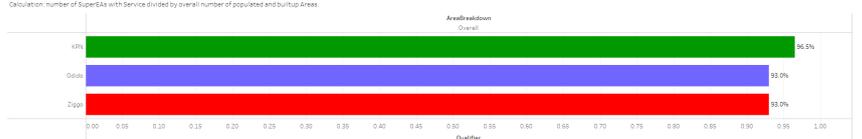
The evaluation of Speed Classes per Super Tile shows large areas where are connection speed of above 500 Mbps was observed. There are however relevant numbers of tiles where the maximum observed Speed Class was lower.

Share of Area per maximum Speed Class



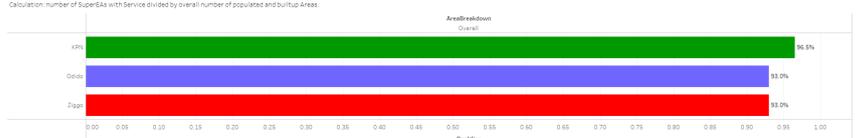
The Speed Class Bar Chart makes the distribution of Speed Classes per operator easier recognizable.

Qualifier - Share of covered ZoomEAs



This Qualifier KPI represents the percentage of areas where we have seen any connection at all, including those where no speed info could be retrieved.

Qualifier - Share of covered ZoomEAs



The Differentiator is the weighted average of the Speed Classes in relation to the area per ISP where at least the lowest Speed Class was observed.

Methodology

The umlaut connect Fixed-Line Network Test is based on a sophisticated crowdsourcing approach. The analysis considers data gathered over a period of 24 weeks and represents the real-life user experience of fixed-line customers.

The network tests conducted by umlaut and connect are widely accepted as the de-facto industry standard and for being highly objective. With a further refinement of the crowdsourcing methodology already known from umlaut's accredited mobile network tests, it became also possible to analyse relevant performance KPIs of fixed-line services.

Comprehensive crowdsourcing

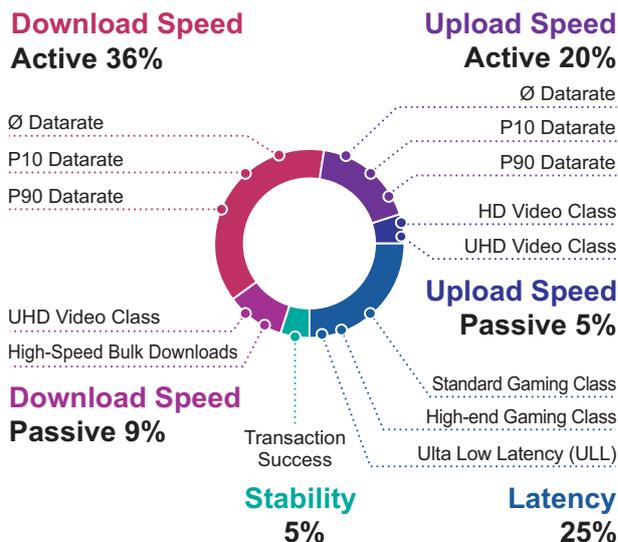
The results of this test are based on a comprehensive analysis of crowd-sourced data which is performed by umlaut, based in Aachen, Germany. For the data collection, umlaut has integrated a background diagnosis process into a large number of popular apps. If one of these applications is installed on the end-user's smartphone or tablet and the user authorizes the background analysis, data collection takes place in the background during use of the respective devices. Samples are generated in specific intervals (from one second up to 15 minutes) and sent daily to umlaut's cloud servers, where the data is further processed. By filtering the network access technology to those samples collected via Wi-Fi (as opposed to mobile network connections) and identifying the network operator, the collected samples can be limited to fixed-line connections. A complex set of rules and extensive checks ensure the validity of the evaluations. For example, conspicuously slow connections are filtered out – the threshold value is derived from the average performance of all lines observed in a country. By using heuristic methods, this also filters out samples which were collected via FWA (fixed-wireless access) as best as possible. The analysis of Wi-Fi samples takes into account the fact that most Internet connections today are used this way. Since the Wi-Fi speeds achievable with current smartphones and tablets are usually significantly higher than the observed data rates, the influence of the Wi-Fi link speed on the measurement results is negligible.

Passive Data Rates

The passive gathering of the data rates observed for downloads and uploads takes place in the background while the user's employ everyday applications on their devices such as web browsing, streaming or gaming. In order to classify the observed speeds, umlaut has defined application-related speed classes: "UHD Video" requires 20 Mbps and "Highspeed Bulk Downloads" require 50 Mbps. For the typically slower rates of data uploads, the speed classes "HD Video" (min. 5 Mbps) and "UHD Video" (min. 20 Mbps) are considered. The observed passive download speeds make up 9% of the total result, the upload speeds contribute 5% to the total result.

Active Data Rates

In addition to the passive observations of the data rates requested by apps, active measurements of the upload and download data rates also take place typically eight times a month. They determine the amount of data that could be transferred in 3.5 seconds and derive the data rate from this. Our scoring considers the average



data rate, the P10 value (90% of the values are above the specified threshold, a good approximation of the typical minimum speed) and the P90 value (10% of the values are above this threshold, a look at the peak values) for the determined measurements. The determined active download speeds account for 36% of the overall result, and the active upload tests contribute 20% to it.

Latency

Latency measurements are taken every 15 minutes – for this purpose, "pings" are performed directly after the connection tests. The first "hop", which is affected by WiFi, is corrected. umlaut also assigns the results of the latency determinations to an application-related class: Roundtrip times of less than 50 ms qualify a sample for standard gaming and less than 20 ms for high-end gaming. If the latency is shorter than 10 ms, the sample is counted as Ultra Low Latency (ULL), which is sufficient for near-real-time applications. Our tables show the percentage of connections that reached the required thresholds in the mentioned classes or performed better. The latency score accounts for 25% of the total result.

Stability

Based on the determined data rates and additional browsing and connection tests, umlaut also examines when a broadband connection is available at all. The averaged and weighted results define the percentage of the Internet transaction success rate and account for 5% of the total score.

Reliability

umlaut divides all measured values into basic requirements ("Qualifier KPIs") and values related to peak performance ("Differentiator KPIs"). The presentation of reliability takes only the "Qualifier KPIs" into account and thus allows a statement on how well a provider's network meets the purely basic requirements.