

The 2023 Fixed-Line Network Test in Belgium



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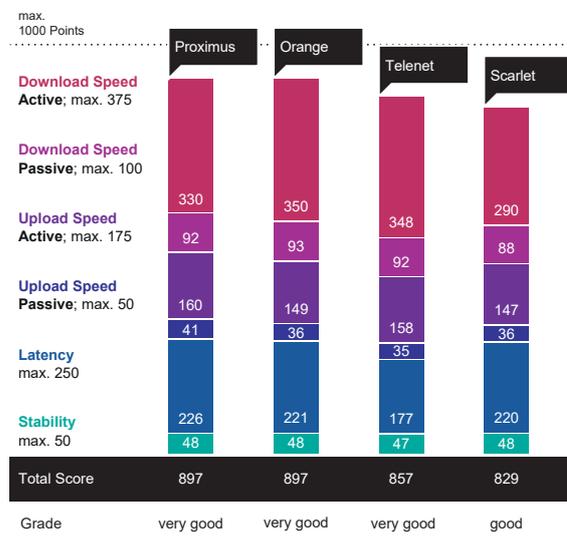
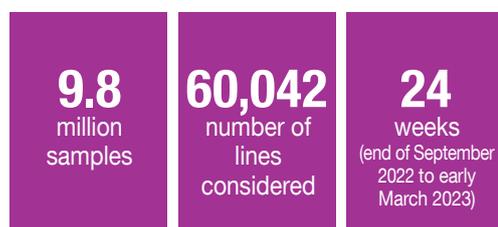
For the first time, umlaut and connect take a closer look at the performance of the fixed-line networks in Belgium. It reveals a tie at the top, three very good operators and a good one by umlaut's assessment.

For the first time in Belgium, umlaut and connect have used umlaut's sophisticated crowdsourcing approach to offer a comprehensive look at the user experience of fixed-line customers in this country. The results reflect a very good level of performance – with the two strongest performing operators, Orange and Proximus achieving the same number of points in the top position. Telenet also achieves the grade “very good” and Proximus' “no-frills” subsidiary Scarlet the grade “good”.

Scope

For its assessment of the Belgium fixed-line operators, umlaut has conducted crowd-sourced analyses based on data gathered between calendar weeks 39 (end of September), 2022, and 10 (early March), 2023. A total of 9,842,973 samples captured from 60,042 different lines has been considered in the analysis. The detailed methodology of our assessment is described on page 7.

Crowdsourcing Facts



Shown latency, download speed, upload speed and total scores are rounded.

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The Belgian Fixed-Line Operators



Orange Belgium is a subsidiary of the French Orange S.A, successor of France Telecom. The company offers mobile and fixed-line telecommunications in Belgium as well as in Luxembourg. In 2016, the former offering under the name Mobistar has been rebranded to Orange. Orange markets fixed-network lines foremost on the basis of cable infrastructure. It currently offers connection bandwidths of up to 400 Gigabit/s. IPTV is also part of the product range. According to its 2022 financial results, Orange has a customer base of approx. 1.7 million broadband internet subscribers. This number equals the published customer count of Telenet, so we assume that both companies share the top position in terms of fixed-line subscribers in Belgium.



Telenet has emerged from the former fiber backbone operator Pandora. In 1999, the company was rebranded under the name of Telenet. Since 2006, the company also offers mobile communications as an MVNO, using the network of Mobistar. Today, Liberty Global holds a major stake in Telenet, and also Vodafone-Ziggo is invested in it. The company offers its fibre-coaxial network based on its fibre backbone which covers Flanders and part of the Brussels regions. Its offer also includes a large number of public Wi-Fi hotspots. In its 2022 financial results, Telenet reports approx. 1.7 million broadband internet subscribers. This number equals the published subscriber count of Orange, so we assume that both companies share the top position in terms of fixed-line subscribers in Belgium.



Proximus is the brand name under which the former incumbent Belgacom (originally RTT – Regie voor Telegraaf en Telefoon/Régie des Télégraphes et Téléphones) operates. Up to 2015, the Proximus brand was only used for the company's mobile communications offering, but today it also designates its fixed-line activities. The Belgian state is still the company's largest shareholder. Its fixed-net offering includes IPTV and public Wi-Fi hotspots – in terms of customer numbers, According to its 2022 financial results, Proximus counts about 1 million residential customers served with convergent technologies plus 252,000 activated fiber lines with up to 10 Gbit/s. These numbers include the no-frills subsidiary Scarlet (see on the right-hand side). With its fiber offering, Proximus states 1.3 million "homes passed".



Scarlet. Today, Scarlet is a discount, „no-frills“ subsidiary of Proximus. Founded in the Netherlands in 1992, Scarlet has been active in Belgium since 1997 and has been part of the Proximus Group since February 2008. Since October 2022, Scarlet is fully owned by its parent company and ceased to exist as a separate company. Under the Scarlet sub-brand, Proximus offers fixed telephony, fixed Internet and IPTV as well as mobile subscriptions for private consumers. Its ambition is to offer the lowest prices on the Belgian marketplace. For its fixed-line offerings, Scarlet uses the infrastructure of its parent company Proximus. The customer numbers published by Proximus include those of Scarlet, but the exact share of subscribers between the two brands is not disclosed.



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Results at a Glance

 <p>Proximus shares the top rank of our 2023 fixed-line network test in Belgium with Orange. This fixed-line provider shows particularly strong results in the Upload categories (both actively measured as well as passively observed) and the Latency assessment. In the Stability category, Proximus achieves a high score together with Orange and Scarlet. Overall, Proximus shows a convincing performance in our analysis and deservedly achieves the grade “very good”.</p>	 <p>Orange shares the top rank of our 2023 fixed-line network test in Belgium with Proximus. Probably due to its fiber-coaxial network, Orange shows particular strengths in the active and passive Download assessments and also achieves good results in the basic KPIs of the Upload category. In terms of Latencies, Orange ranks second in the comparison. In the Stability assessment, Orange achieves a high score together with Proximus and Scarlet. Its convincing performance deserves the grade “very good”.</p>	 <p>Telenet, that is fighting with Orange for the highest fixed-line customer number in Belgium, comes in third. It shows particular strength in the actively performed Download and Upload measurements, and also scores well in the passively observed Download Speeds. Especially the good Upload performance is remarkable for a mostly coax-based network. In terms of Stability, Telenet achieves a high score together with Proximus and Scarlet. The operator shows convincing results, also achieving the grade “very good”.</p>	 <p>The discount subsidiary of Proximus ranks fourth, but can hold up well especially in the passive Upload and Download assessments as well as in terms of Latencies. In the Stability assessment, Scarlet achieves a high score together with Proximus and Orange. The operator misses a better grade due to its results in the active Download and Upload measurements, which may be due to a lower share of high-bandwidth lines in its customer base. All in all, Scarlet achieves the grade “good”.</p>
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Results

Overall Results	max.	Proximus	Orange	Telenet	Scarlet
Download Speed Active	375P.	330	350	348	290
Ø Datarate	112.5	101.6	104.4	105.0	80.7
P10 Datarate	206.3	187.6	194.1	190.8	177.4
P90 Datarate	56.2	40.5	51.2	52.1	31.5
Download Speed Passive	100P.	92	93	92	88
HD Video Class	55.0	51.0	51.4	50.7	50.7
UHD Video Class	30.0	27.3	27.8	27.5	27.2
Highspeed Class	15.0	13.6	13.5	13.7	10.5
Upload Speed Active	175P.	160	149	158	147
Ø Datarate	52.5	48.3	41.8	47.3	39.4
P10 Datarate	96.3	87.7	88.9	88.4	87.0
P90 Datarate	26.2	23.9	18.0	22.4	20.8
Upload Speed Passive	50P.	41	36	35	36
HD Video Class	27.5	21.1	22.5	20.9	18.7
UHD Video Class	22.5	20.4	13.9	14.2	17.6
Latency	250P.	226	221	177	220
Standard Gaming Class	137.5	134.2	134.3	127.6	133.4
Highend Gaming Class	92.8	87.6	86.7	48.8	85.6
ULL Class	19.7	4.7	0.3	0.6	0.9
Stability	50P.	48	48	47	48
Transaction Success	50.0	48	48	47	48
Total	1000P.	897	897	857	829

Percentages and points rounded to integer numbers.

For the calculation of points and totals, the accurate, unrounded values were used.



“Congratulations to Orange and Proximus for both achieving the ,best in test’ accolade among Belgium’s fixed-line providers. With Telenet also receiving the grade ‘very good’ and Scarlet reaching a ‘good’ result, Belgian fixed-line customers have the choice between convincing offerings.”

Hakan Ekmen, CEO Telecommunication at umlaut, part of Accenture

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Detailed Results

Active Download Speeds

In the active Download measurements conducted by umlaut, Orange is ahead, with Telenet following at close distance. Orange leads the field with an advance in the P10 data rates (90 percent faster than the stated value), while Telenet excels at the average and P90 (10 percent faster than this value) datarates. Proximus takes the third rank and Scarlet the fourth in all KPIs considered in this assessment.

ACTIVE
DOWNLOADS

ORANGE

KPI Values	Proximus	Orange	Telenet	Scarlet
Download Speed Active				
Ø Datarate [Mbit/s]	53.8	78.8	83.5	35.7
P10 Datarate [Mbit/s]	10.1	15.3	12.6	7.9
P90 Datarate [Mbit/s]	89.8	153.8	198.9	64.3

Percentages 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 measurements, Proximus takes the lead ahead of Telenet, followed by Orange and then Scarlet. Proximus is leading in the average and P90 datarates, with Telenet following on the second rank in these KPIs. However, Orange scores a little higher than the other contenders in the P10 category – but all in all in this KPI, the four candidates rank quite closely together.

ACTIVE
UPLOADS

PROXIMUS

KPI Values	Proximus	Orange	Telenet	Scarlet
Upload Speed Active				
Ø Datarate [Mbit/s]	28.9	13.6	17.7	12.4
P10 Datarate [Mbit/s]	5.7	8.5	7.3	4.2
P90 Datarate [Mbit/s]	45.6	21.4	30.4	27.0

Percentages 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 active Download measurements, Orange also takes the lead in the passive download analysis. But in this category, Proximus and Telenet follow at a gap of only one score point, both ranking on a par. Scarlet falls a little further behind. Orange's lead is manifested with a narrow advance in the UHD Video class (at least 20 mbps) and also in the HD video class (at least 5 mbps). In the particularly demanding Highspeed class (at least 50 mbps), Telenet, Proximus and Orange score very close together.

PASSIVE
DOWNLOADS

ORANGE

KPI Values	Proximus	Orange	Telenet	Scarlet
Download Speed Passive				
HD Video Class [%]	88.4	89.0	88.0	87.9
UHD Video Class [%]	37.4	39.8	38.3	37.0
Highspeed Class [%]	9.4	9.0	10.1	7.0

Percentages 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 determined Upload speeds, Proximus leads ahead of Orange and Scarlet, who score on a par in this assessment. Telenet follows at a close distance of one score point. Interestingly, Orange is ahead at a small distance in the number of samples fulfilling the requirements of the HD video class (at least 5 mbps). In the more demanding UHD video class (at least 20 mbps), Proximus is leading, ahead of Scarlet. Telenet and Orange score close together in this assessment.

PASSIVE
UPLOADS

PROXIMUS

KPI Values	Proximus	Orange	Telenet	Scarlet
Upload Speed Passive				
HD Video Class [%]	36.9	38.7	36.6	33.8
UHD Video Class [%]	24.0	15.4	15.8	19.5

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

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Detailed Results

Latency

In the Latency category, Proximus leads the field. Regarding the count of samples fulfilling the requirements of the Standard Gaming Class (less than 50 ms), Proximus and Orange are on a par, with Scarlet following at close distance and Telenet coming in last. Almost the same ranking order can be observed in the Highend Gaming Class (less than 20 ms) with Proximus scoring slightly ahead of Orange. However, the most distinct distance can be observed in the most demanding Ultra Low Latency (ULL) Class. Here, Proximus is clearly leading, with Scarlet and Telenet following on the second and third ranks, and Orange coming in last.

LATENCY

PROXIMUS

KPI Values	Proximus	Orange	Telenet	Scarlet
Latency				
Standard Gaming Class [%]	95.1	95.2	89.4	94.4
Highend Gaming Class [%]	58.7	55.9	31.0	52.6
ULL Class [%]	7.2	0.5	0.9	1.3

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

Stability

In our assessment of the availability of a broadband connection, all four contenders score very close together. Proximus, Orange and Scarlet achieve the same score, with Telenet following at a close distance of just one score point. All observed success rates are pleasantly high, so that the customers of all four providers that we have evaluated can rely on mostly stable internet connections.

STABILITY

PROXIMUS,
ORANGE &
SCARLET

KPI Values	Proximus	Orange	Telenet	Scarlet
Stability				
Transaction Success [%]	97.8	97.9	97.5	97.6

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



The 2023 Fixed-Line Network Test in Belgium

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, part of Accenture, 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 analyze 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, Part of Accenture and headquartered in Aachen, Germany. For the data collection, umlaut has integrated a background diagnosis process into thousands of popular Android apps. If one of these applications is installed on the end-user's phone and the user authorizes the background analysis, data collection takes place in the background during smartphone use. 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 (in contrast to mobile network connections) and identifying the network operator, the collected samples can be limited to fixed-line connections. Using a complex set of rules and comprehensive checks, umlaut hardens the validity of the evaluations. Among other steps, data recorded when the smartphone battery is low is filtered out, as are measurements when the transfer volume is too low or extremely low data rates indicate interference. Thus, the influence of the mobile devices is likely to be small. The Wi-Fi speeds achievable on current smartphones are usually significantly higher than the total data rates observed, so the influence of the Wi-Fi link speed on the measurement results can be neglected.

Passive Data Rates

The passive gathering of the data rates observed for downloads and uploads take place in the background while the users employ everyday applications on their devices such as web browsing, streaming or gaming. In order to classify the observed speeds, umlaut has defined four application-related speed classes: "HD Video" requires 5 Mbps, "UHD Video" requires 20 Mbps and "Highspeed" requires 50 Mbps.

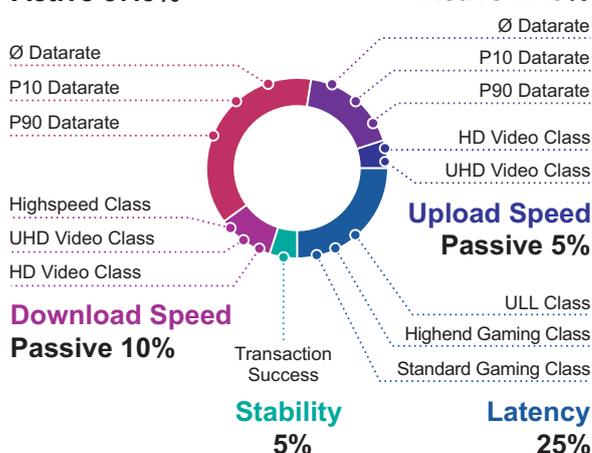
For the typically lower rates of data uploads, only the speed classes "HD Video" (min. 5 Mbps) and "UHD Video" (min. 20 Mbps) are considered. The observed passive download speeds make up 10% of the total result, the upload speeds contribute 5% to the total result.

Active Data Rates

In addition to the passive measurements, which register the throughputs requested by the apps running in the foreground, umlaut also conducts active measurements of upload and download data rates once a month. They determine the amount of data

Download Speed

Active 37.5%



that could be transferred in 3.5 seconds. For the determined measurement values, our scoring considers the average data rate, the P10 value (90% of the values higher than the specified threshold, a good approximation of the typical minimum speed) and the P90 (10% of the values higher than this threshold, a view at the peak values). This measurement typically approaches the maximum possible throughput of a considered fixed line. The determined active download speeds make up 37.5% of the total score, the active upload tests contribute 17.5% of the total result.

Latency

The latency measurements are carried out every 15 minutes – "pings" are performed in direct succession to the connection tests. Their results are also assigned to an application-related class: Roundtrip times of less than 50 ms qualify a sample for "Standard Gaming" and less than 20 ms for "Highend Gaming". If the latency is faster than 10 ms, the sample is counted as "Ultra Low Latency" (ULL) which would qualify for near real-time applications.

The tables in this report show the percentage of the examined connections that were able to achieve the required threshold values in the different classes or did even better. The assessment of latency makes up 25% of the total score.

Stability

Based on the determined data rates and additional browsing and connection tests, umlaut also examined when a broadband connection could be used at all. The averaged and weighted results define the percentage of transaction success. The stability assessment makes up 5% of the total score.