Barometer of fixed Internet connections in Serbia

Publication of

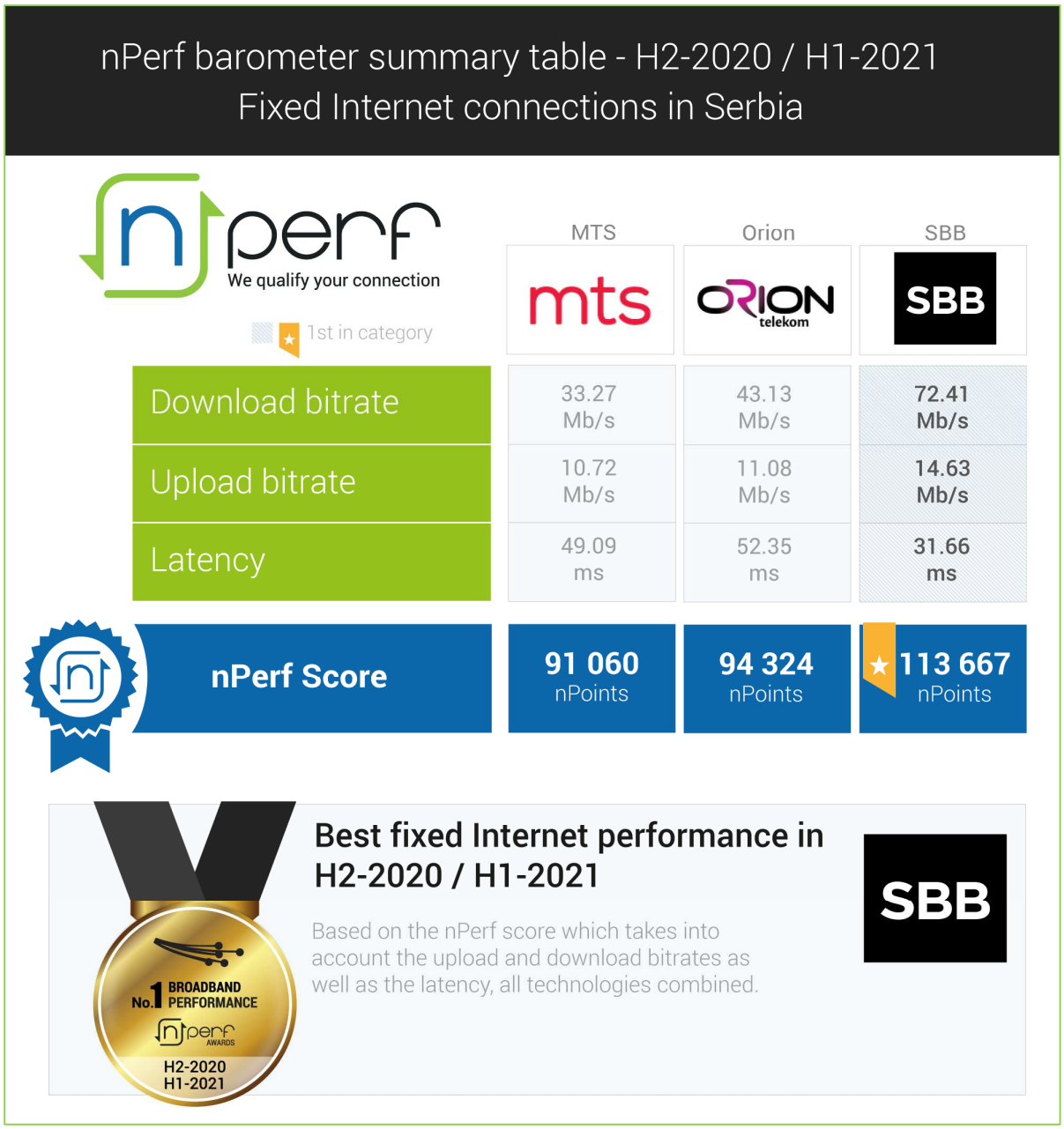
July 12th, 2021

H2 2020 – H1 2021

Content

1 Summary of global results

1.1 Summary table and nPerf score, all technologies combined



1.2 Our analysis

From July 1st, 2020 to June 30th, 2021 nPerf users conducted 243 777 connection tests on Serbia's three largest Internet Service Providers. SBB dominates the market in terms of performance of fixed Internet connections : once again leader on download and upload speed tests as well as on latency results. 47 Mb/s is the average download speed of Serbian people, which is a good global performance. Nevertheless, and as in other countries, this result probably hides the digital divide between different areas.

SBB records the best results from far

During the last 12 months, SBB has provided the fastest Internet connections on fixed networks in Serbia. With an average download speed of 72 Mb/s, SBB is far ahead from its competitors, indeed, the second one is Orion with 43 Mb/s.

With 72 Mb/s, SBB customers are able to enjoy all the greedy uses in bandwidth such as watching a movie in 4K, multiscreen uses at home and 4K Gaming amongst many others

Latency : confirmed leadership for SBB

Besides being the fastest provider on fixed networks, SBB is also the most reactive ISP, with a very good latency, 31 ms, which is still 10 ms better than throughout the previous period.

Conclusion

On fixed networks, only SBB makes a clear difference.

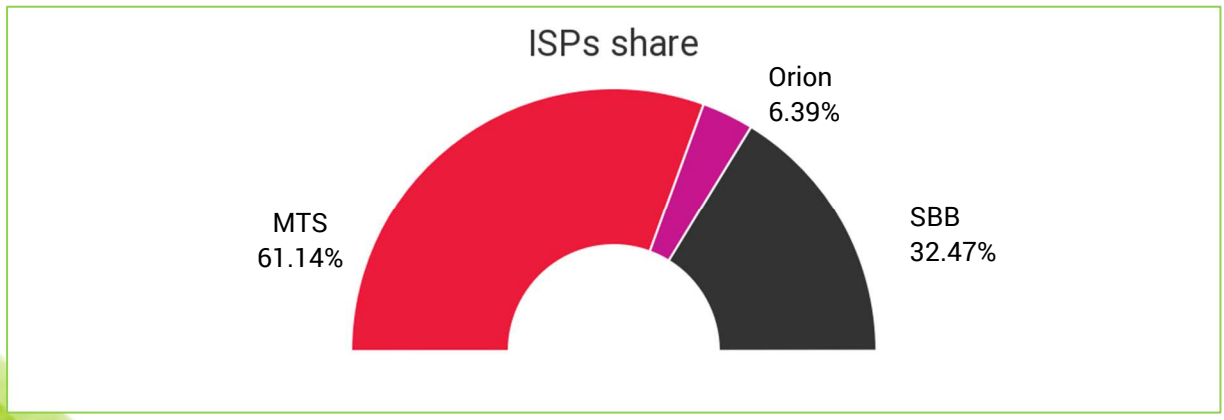
2 Overall results, all technologies combined

2.1 Data amount and distribution

From **July 1st, 2020** to **June 30, 2021** we counted **243 777 tests**, distributed after filtering as follows:

Country	Tests
Serbia	**207 552**

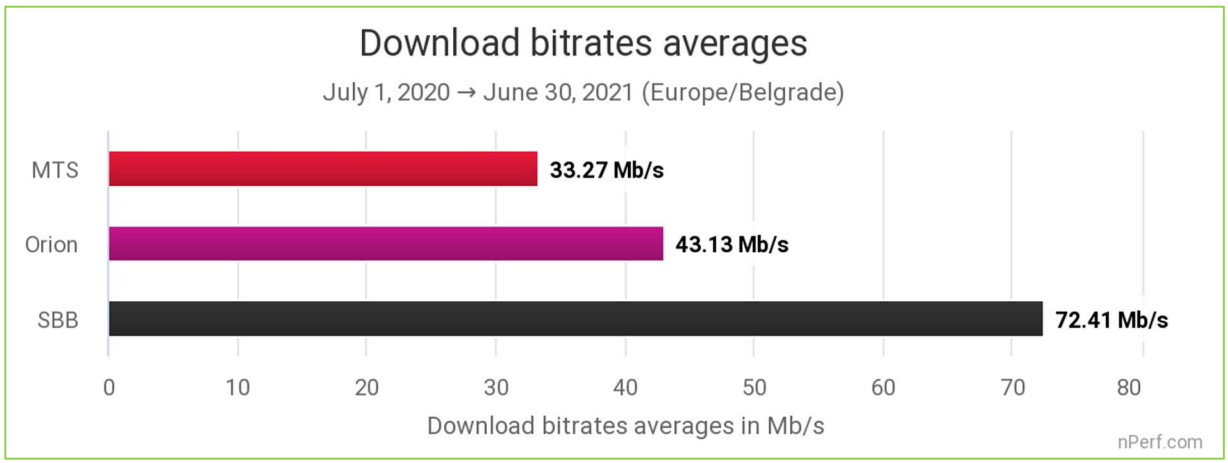
Breakdown of tests by provider



Orion is back again in our publication, because it represents more than 5% of our volume of tests.

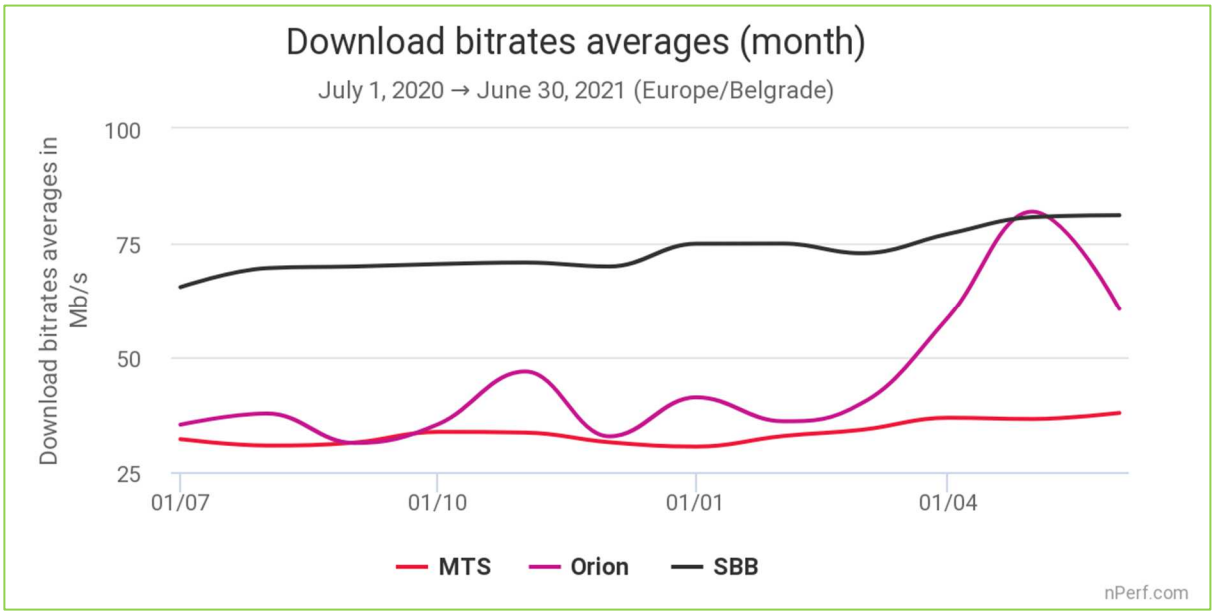
2.2 Download speed

The average download speed in Serbia was 47 Mb/s during the last 2 semesters.



The highest value is the best.

SBB has provided the best fixed download speed during the last 2 semesters.

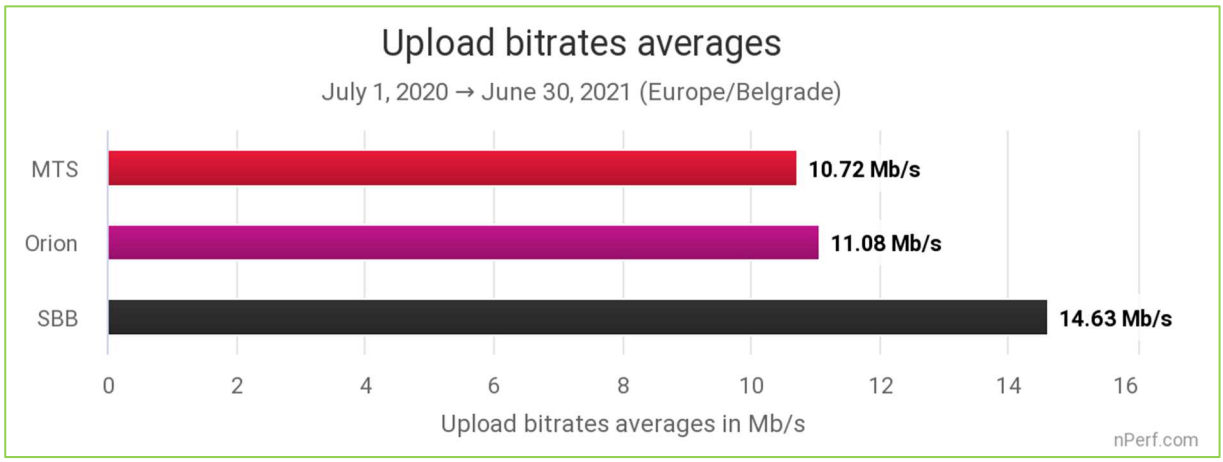


Above graph illustrates the ability of providers to maintain a constant download speed over the period regardless of network load (number of connected clients).

We can notice that Orion shows a spectacular increase of its average download bitrate, doubling it only from March to April 2021. Besides, SBB keeps improving as well : +18.5% throughout this period.

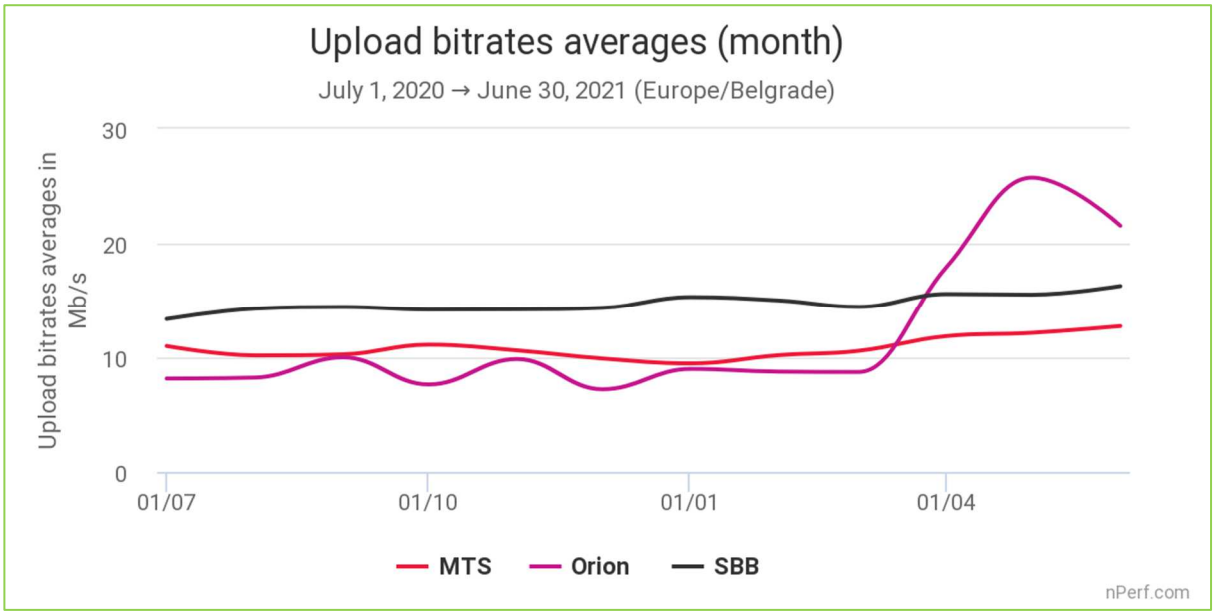
2.3 Upload speed

The average upload speed in Serbia was 12 Mb/s during the last 2 semesters.



The highest value is the best.

SBB has provided the best fixed upload speed during the last 2 semesters.



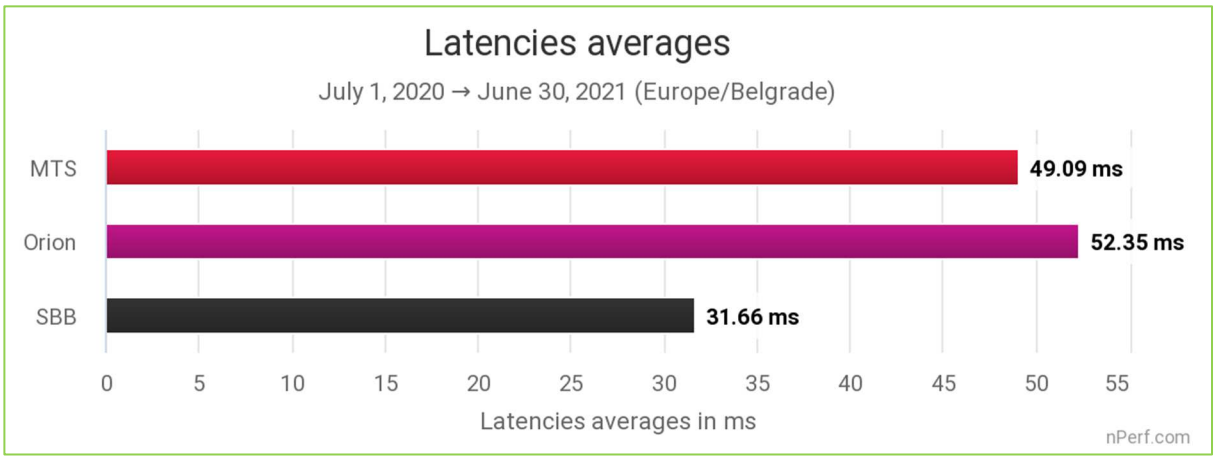
The highest value is the best.

Above graph illustrates the ability of providers to maintain a constant upload speed over the period regardless of network load (number of connected end-users).

SBB and MTS have seriously enhanced their average upload speed this time again, but also and above all, Orion turns it three times faster in just a couple of months. This impressive jump appears at the same moment than with its download speed, in March and April, from 9 to 18 and then 26 Mb/s on average.

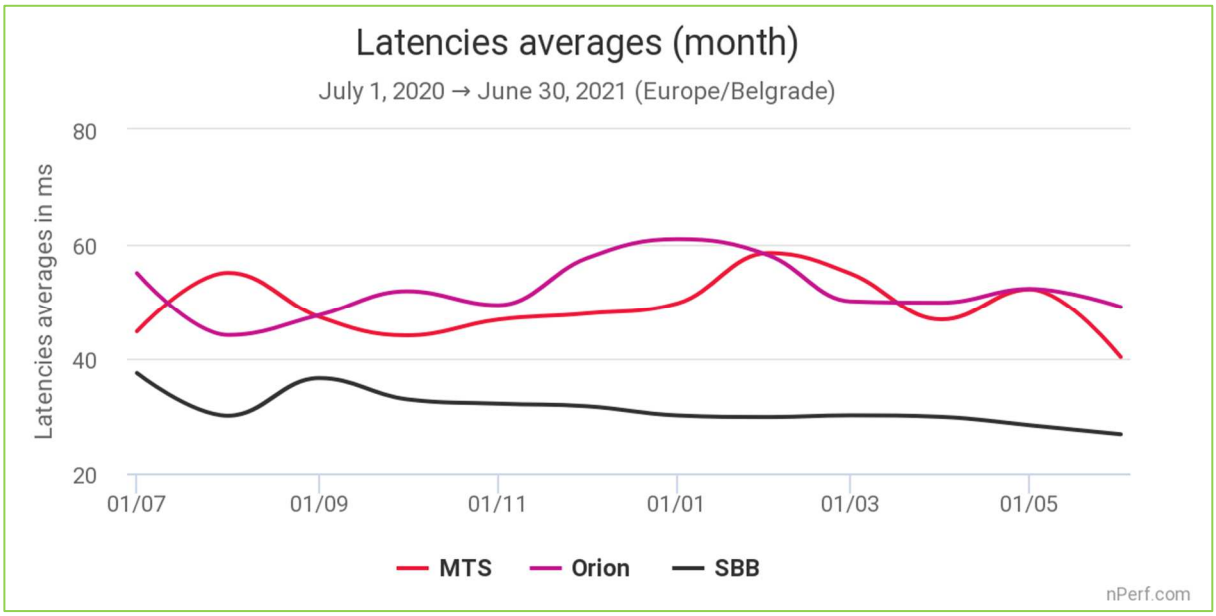
2.4 Latency

The average latency in Serbia was 44 ms during the last 2 semesters.



The lowest value is the best.

SBB has provided the best fixed latency during the last 2 semesters.



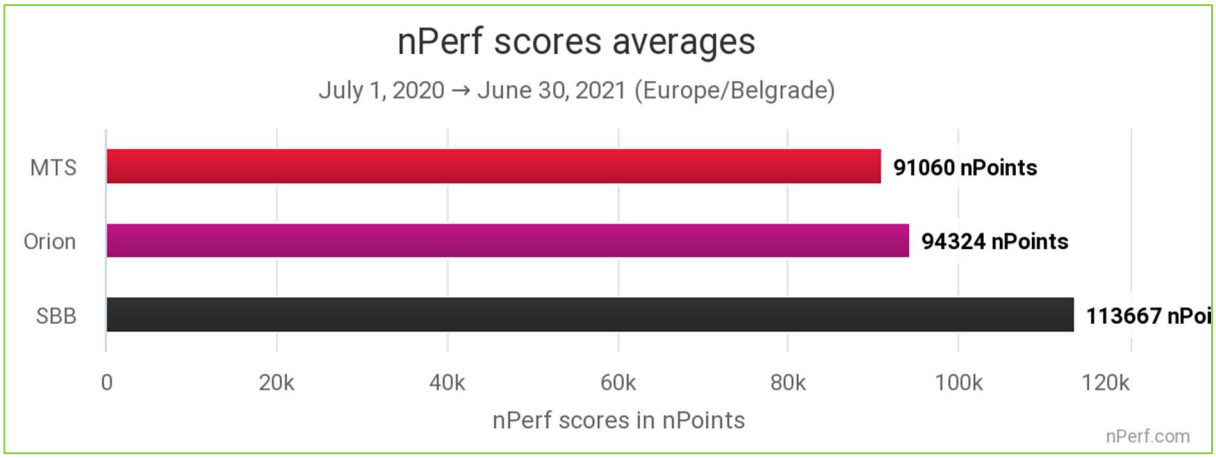
This graph illustrates the ability of providers to maintain a constant latency throughout the period, regardless of network load (number of connected clients).

We note that SBB provided a fairly stable average latency, while constantly improving it.

2.5 nPerf score, all technologies combined

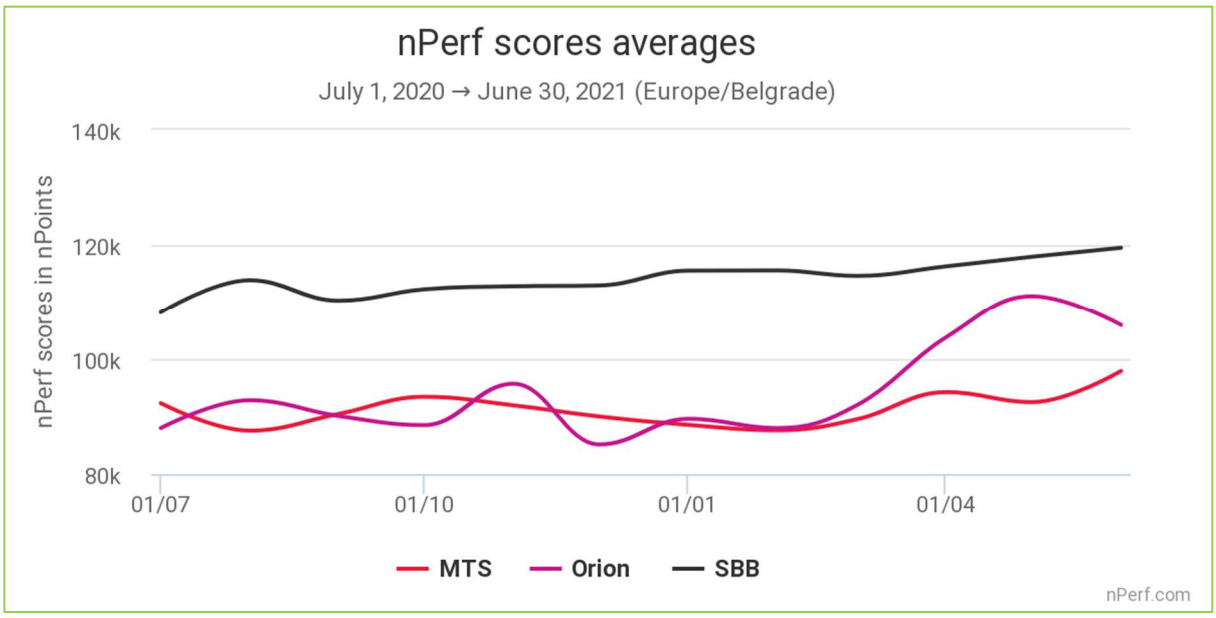
The nPerf score, expressed in nPoints, gives an overall picture of the quality of a connection. It takes into account measured bitrates (2/3 Download + 1/3 Upload) and latency. These values are calculated on a logarithmic scale to better represent the perception of the user.

Thus, this score reflects the overall quality of the connection for mainstream consumer use.



The highest value is the best.

SBB has delivered the best fixed Internet performance during the last 2 semesters.



The highest value is the best.

SBB stays in the top position while improving its score. However, Orion Telekom comes closer to the leader due to its speed bitrates improvements since March 2021.

3 Methodology

3.1 The panel

nPerf offers an Internet speed test application, which can be used for free at www.nPerf.com.

Everyone is free to use nPerf to measure the speed of their Internet connection. All users of the nPerf application form the panel of this study.

In addition, the results from the nPerf speed tests integrated on our partner websites are also included in the panel.

The website of our partner in Serbia (https://www.umrezen.in.rs/speedtest/) remains the one which carried out the largest number of speed tests in this country (~66%). Nevertheless, this proportion is smaller than throughout the previous period (H2 2019 / H1 2020).

Thus, the nPerf study is based on thousands of tests, making it the study with the largest panel in the country.

3.2 Speed and latency tests

3.2.1 Objectives and operation of the speed and latency test

The purpose of the nPerf Speed Test is to measure the maximum capacity of the data connection in terms of data rates and latency.

To achieve this, nPerf establishes multiple connections simultaneously to saturate the bandwidth to accurately measure it. The speed used for the barometer is the average speed measured by the application.

Speed measurements thus reflect the maximum capacity of the data connection. This rate may not be representative of the user experience experienced during normal use of the Internet, as it is measured only on nPerf servers.

The measured bit rate can be impacted by the quality of the user's local network, especially since the expected flow is high. Thus, for an optical fibre Internet connection, a local Wi-Fi or Power-Line connection can greatly reduce performance. However, since these constraints are identical to all market operators, they do not bias the comparison. In addition, the user is made aware of these constraints and invited to use a wired local connection for testing very high speed.

3.2.2 nPerf servers

To ensure maximum user bandwidth at all times, nPerf relies on a network of servers dedicated to this task.

These servers are located with hosts outside Serbia. **Local providers are welcome to install nPerf servers, that's free!**

The total bandwidth available worldwide is greater than 8 Tb/s, with more than **1900** active nPerf servers.

3.3 Statistical accuracy

With regard to the total volume of unit tests, the statistical precision used in this publication is:

- ✓ 2% for absolute values

If, for a given indicator, one or more operators have results very close to the best, in the confidence interval defined above, these will share first place.

3.4 Filtering of test results

The results obtained are subject to automatic and manual checks to avoid duplication and to rule out possible abusive or fraudulent use (massive tests, robots ...).

Tests performed on cellular connections (2G, 3G, 4G) are also excluded from this barometer.

4 You too, participate in the nPerf panel!

To participate in the panel, simply test your connection on the website www.nperf.com. For mobile Internet, you can also use the nPerf app, available for free on the Apple AppStore for iPhone and iPad and on Google Play for Android device.

5 Custom analysis & contact

Do you need further study or want to get the raw data, punctually or automatically, to compile it yourself?

You can contact nPerf via www.nPerf.com "Contact Us" section or directly from the mobile app.

Phone contact: +33 482 53 34 11

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Stay in touch with us, follow us!