Barometer of fixed internet connections in Croatia

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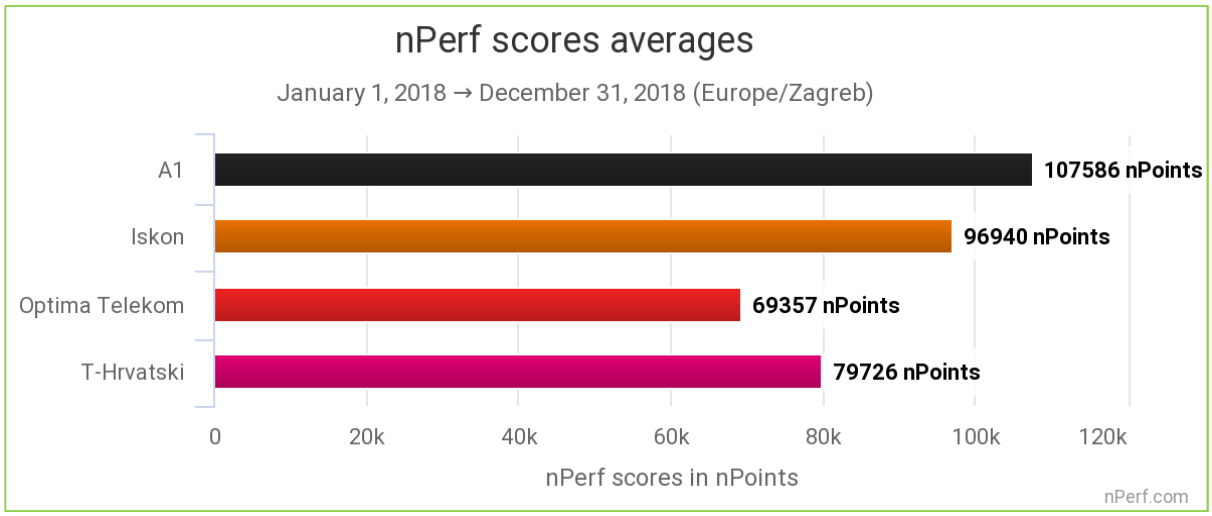
Year 2018

Content

1 Summary of global annual results

1.1 nPerf score, all technologies combined



The highest value is the best.

A1, the best fixed Internet network in 2018.

1.2 Our analysis

In 2018, nPerf users conducted 156.045 connection tests on Croatia's four largest Internet Service Providers. A1 dominates the market in terms of performance of fixed Internet connections by being first on download speed tests and latency tests.

A1 still has a comfortable lead over his rival Iskon who made good progress in 2018 so A1 will have to remain vigilant in 2019.

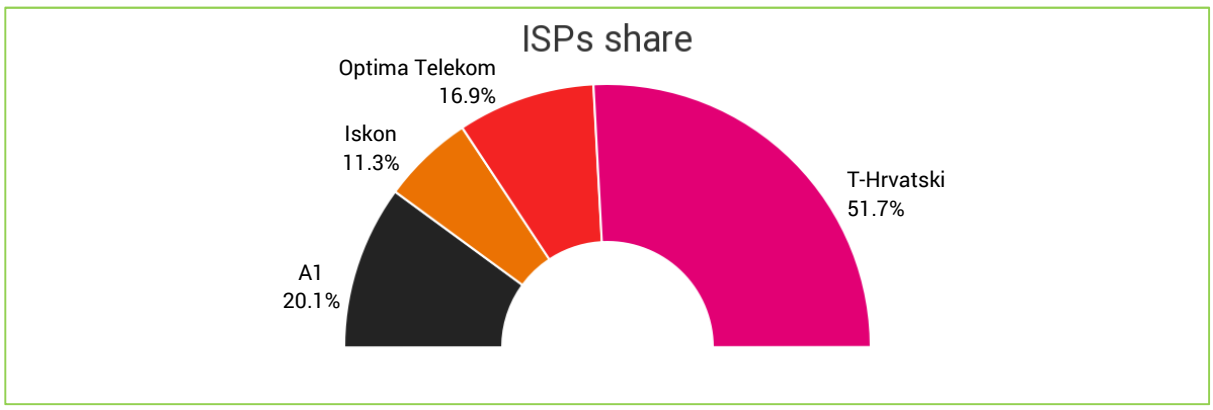
2 Overall results, all technologies combined

2.1 Data amount and distribution

From **January 1, 2018** to **December 31, 2018** we counted **156 045 tests**, distributed after filtering as follows:

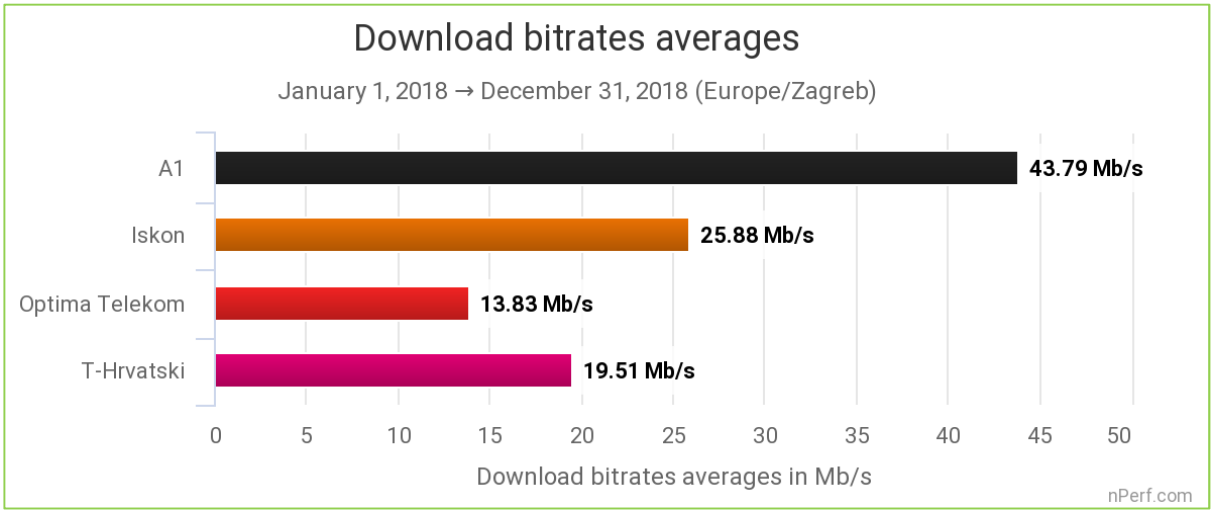
Country	Tests
Croatia	**133 169**

Breakdown of tests by provider



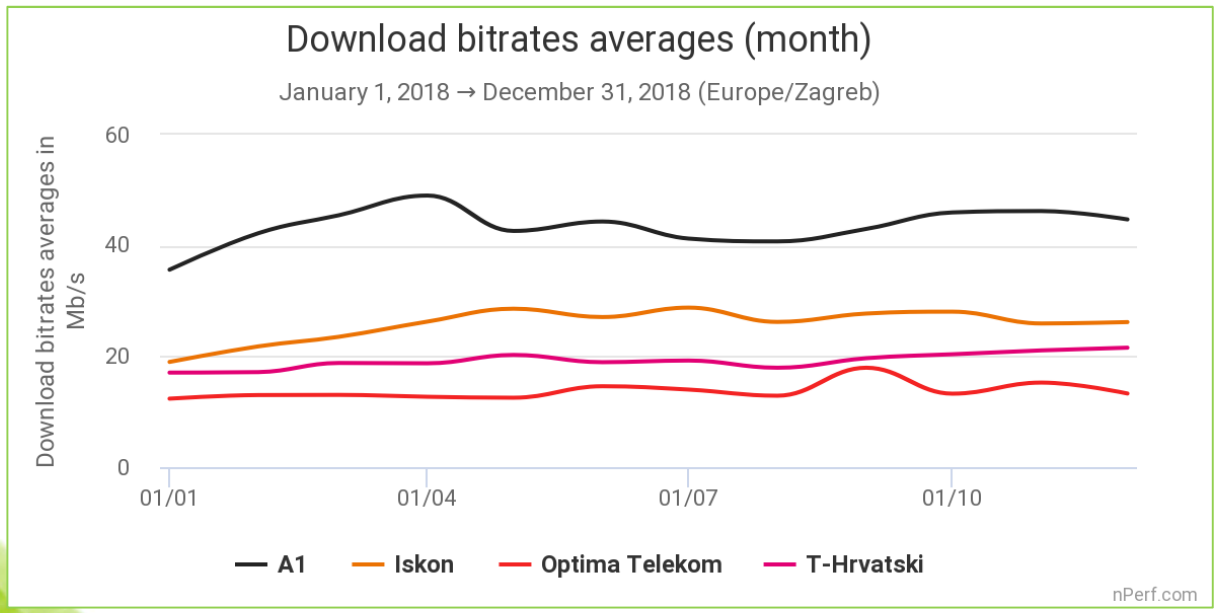
2.2 Download speed

In 2018, the average download speed in Croatia was 24 Mb/s.



The highest value is the best.

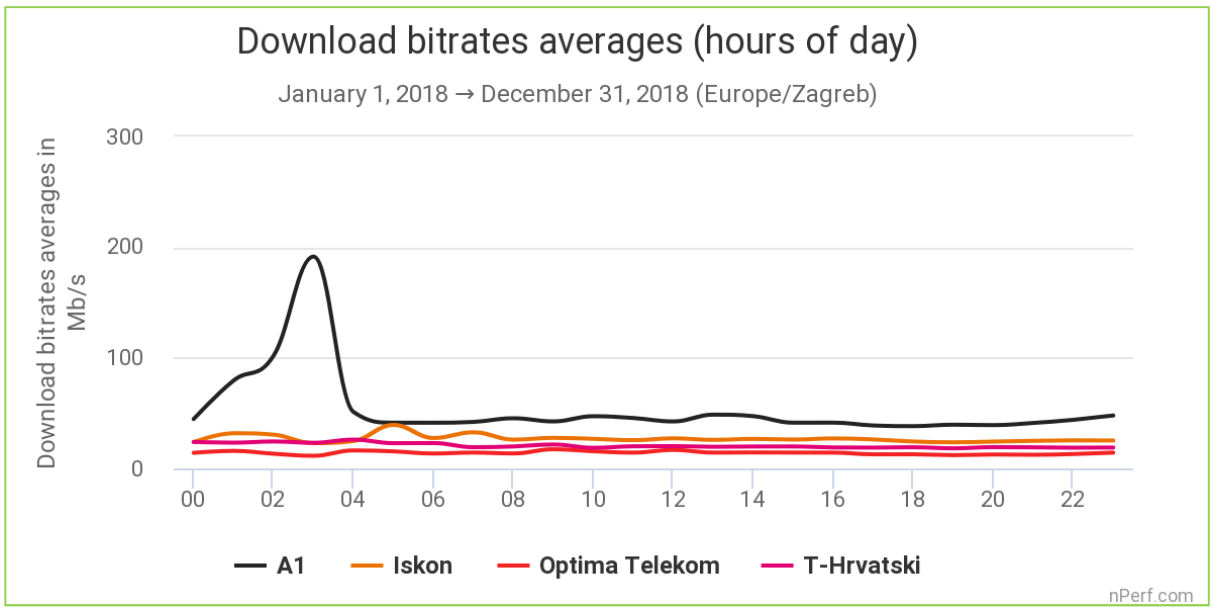
All technologies combined, **A1** has offered the best download speed to its subscribers in 2018



The highest value is the best.

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

Globally, all ISPs provided fairly stable performance throughout the year and It's Iskon who has improved the most. A1 remains far ahead.

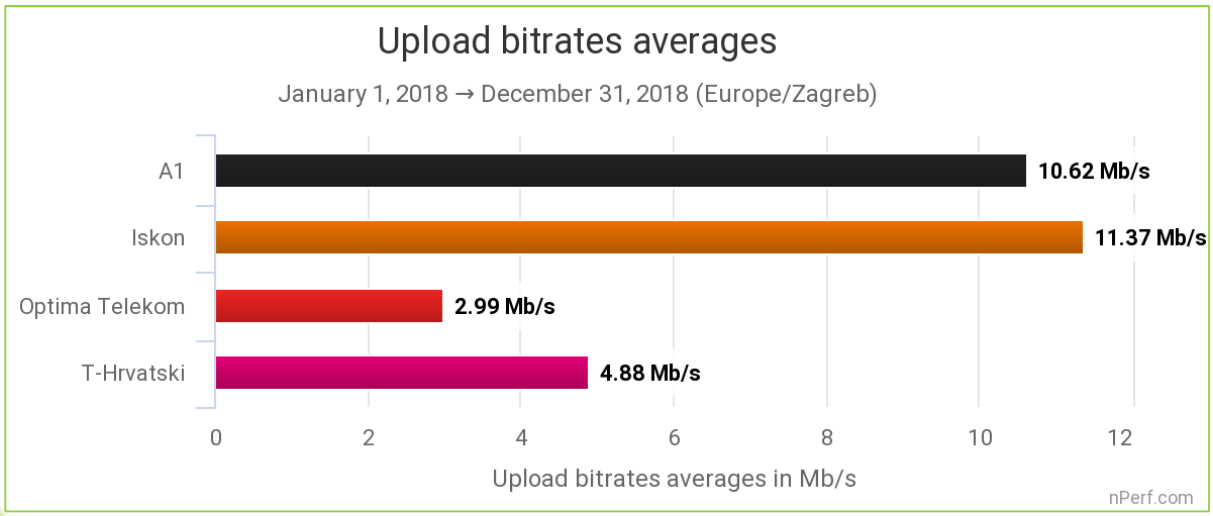


The highest value is the best.

This graph illustrates the ability of providers to ensure a constant download speed throughout the day, regardless of network load (number of connected clients). We note that there is no decline of the troughput during the busy hours. This is probably due to the fact that many networks are bundled and therefore offer a very wide bandwidth.

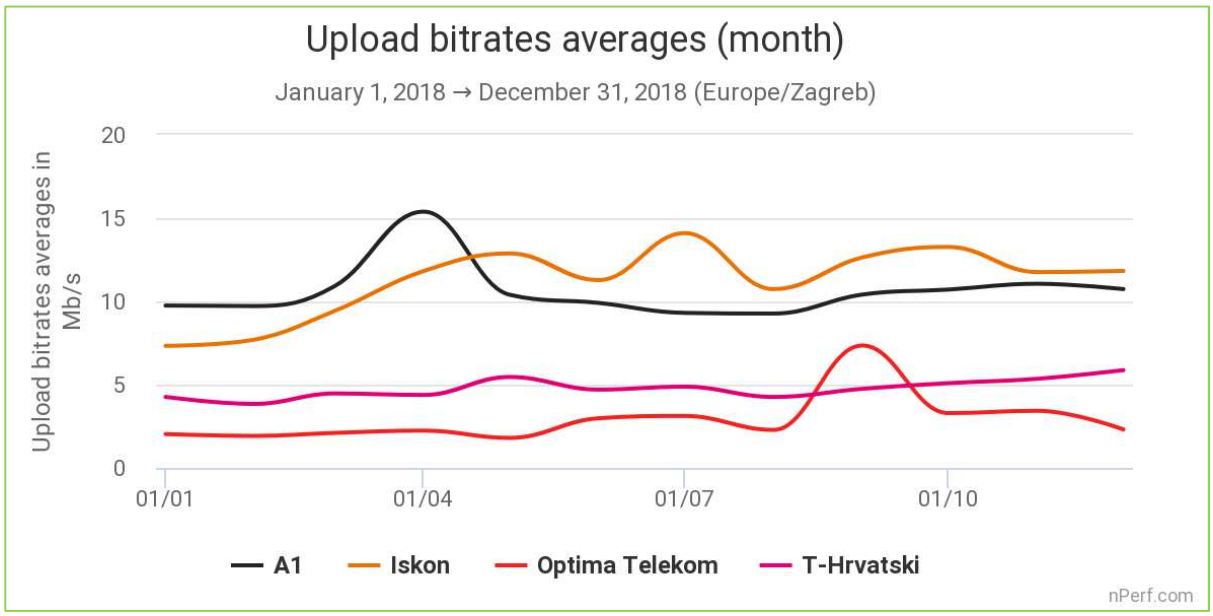
2.3 Upload speed

In 2018, the average upload speed in Croatia was 6 Mb/s.



The highest value is the best.

All technologies combined, **Iskon** has offered the best upload speed to its subscribers in 2018.



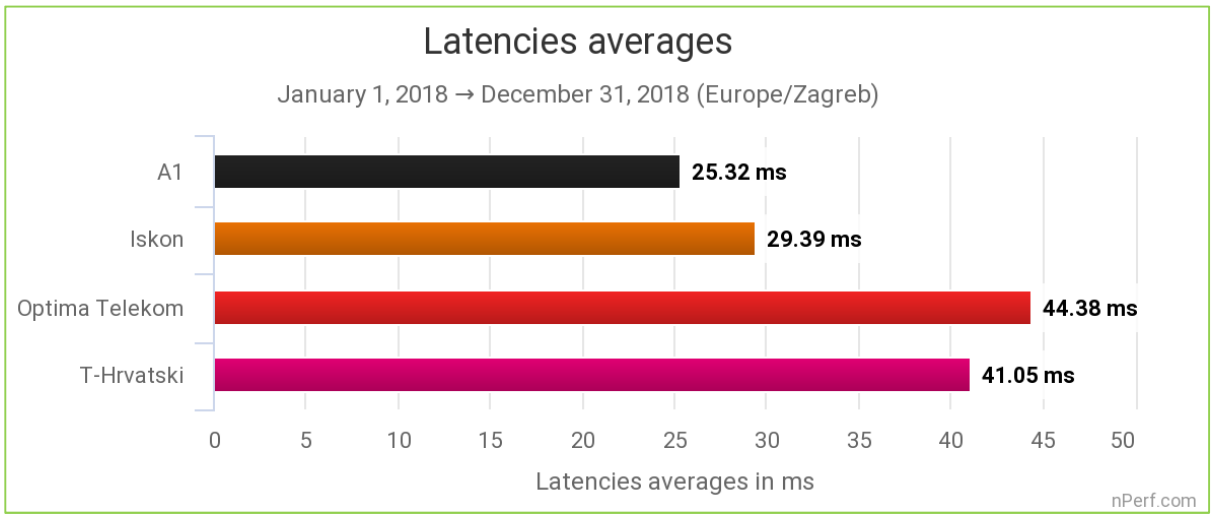
The highest value is the best.

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

Globally, all ISPs provided fairly stable performance throughout the year and It's Iskon who has improved the most.

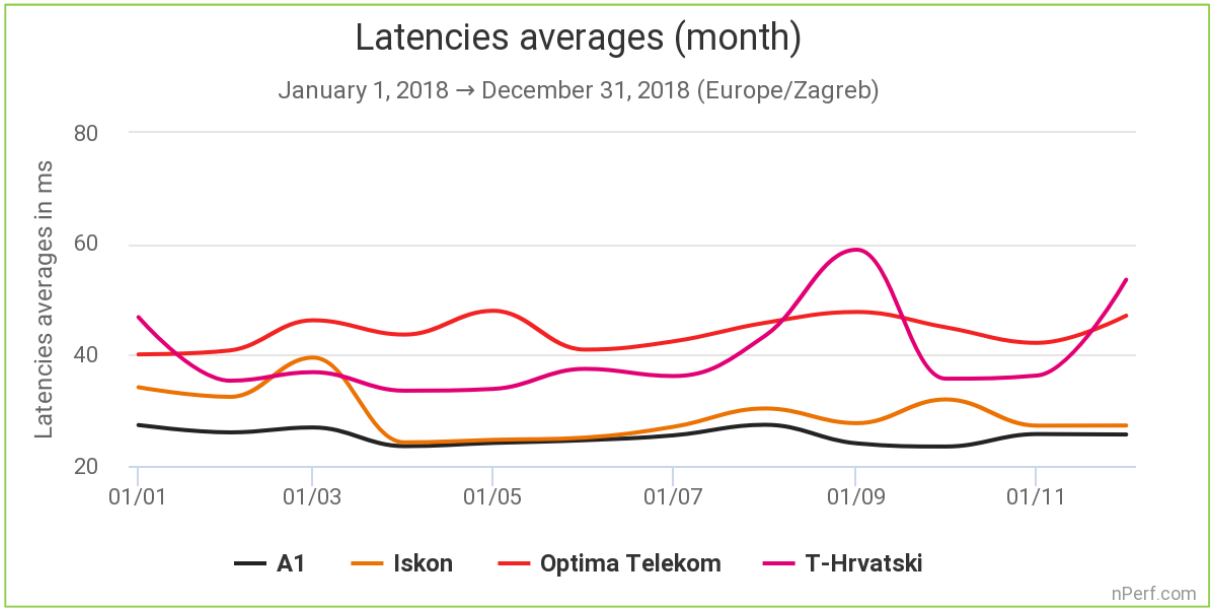
2.4 Latency

In 2018, the average latency in Croatia was 37 ms.



The lowest value is the best.

All technologies combined, **A1** has offered the best average latency to its subscribers in 2018.



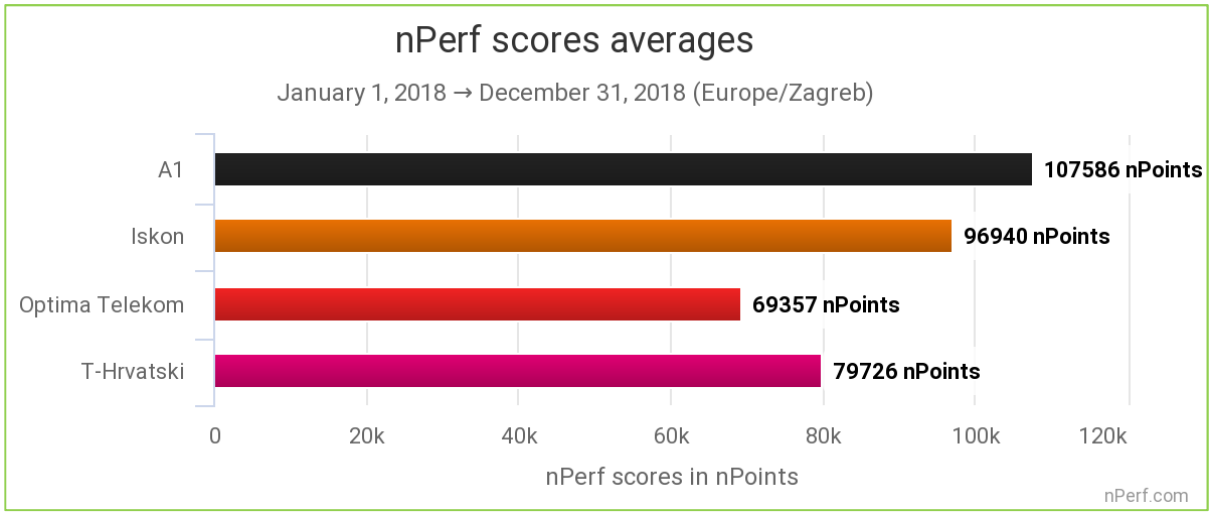
The lowest value is the best.

This graph illustrates the ability of providers to maintain a constant latency during the period, regardless of network load (number of connected clients). We note that A1 and Iskon have stabilized and reached good latencies (< 30ms) during the year 2018.

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.



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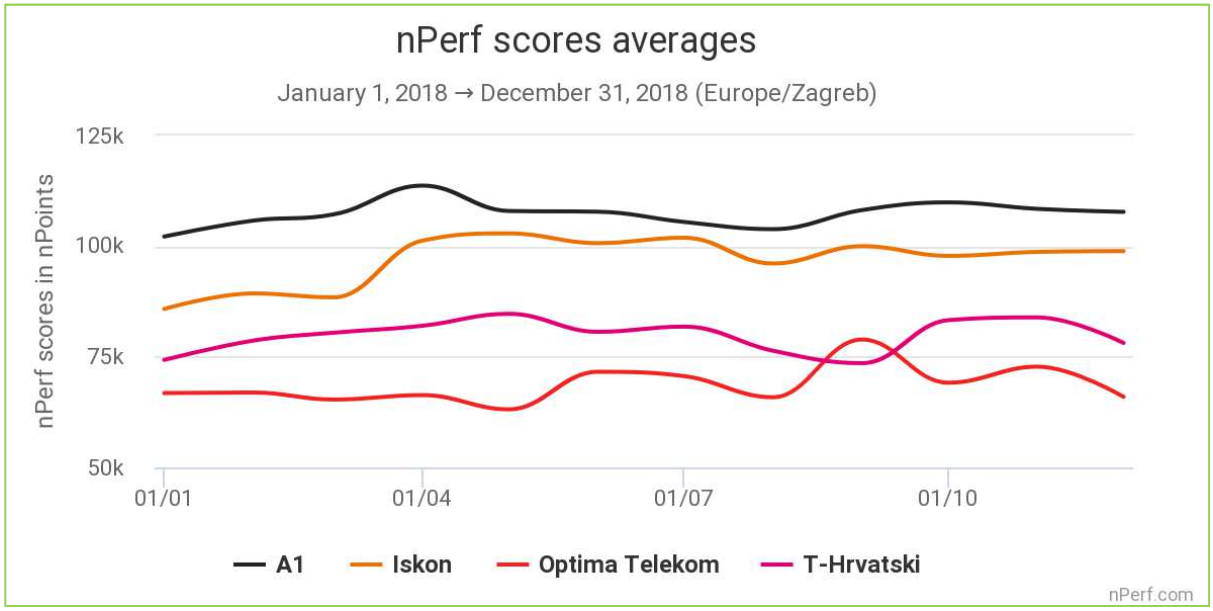

The highest value is the best.

It's **Iskon** who has improved the most on 2018.

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.

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

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 fiber internet connection, a local WiFi 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 in Croatia abroad. nPerf has also installed dedicated servers directly at Croatian providers like Hrvatski Telekom to maximize measurement reliability.

Other local providers are welcome to install nPerf servers, that's free!

The total bandwidth available for Croatia is greater than 10 Gb/s.

3.3 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, on Google Play for Android devices and on the Windows Store for Windows Phone and Windows Mobile devices.

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.

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