

# CERTIFIED MEASUREMENT GUIDE



Český **telekomunikační** úřad

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# 1 Certified measurement carried out in your web-browser

## 1.1 What is the purpose of the certified measurement?

In case that all conditions for measurement are met, the certified measurement allows to use the results of this measurement as conclusive findings about the quality of your Internet Access Service (IAS) on fixed location (so called 'fixed Internet') if offered on the area of the Czech Republic. You can use these findings when you decide to use the remedies available according to the national legislation. In case there appears any significant continuous or significant recurring discrepancy from the actual performance of the service regarding its download or upload speed from the performance stated in the Contractual conditions<sup>1</sup> by your IAS provider, you can submit a claim about the quality of the service (QoS) provided.

The important parameter to assess the performance in the case of the IAS at a fixed location is the value of normally available speed set in the contract. It is decisive to determine whether there are discrepancies, if any.

Another important parameter characterizing the service's performance is the minimum speed set in the contract. If the actually achieved minimum download or upload speed decreases under the contractual minimum speed for the given direction of data communication, the service is having an outage, i.e. it is not being provided. You can use remedies available according to the national law in this case as well and to submit a claim against the QoS.

In case that all conditions for measurement are met, the certified measurement can provide you only with data on the actual performance of your IAS. The qualified assessment in case of a dispute between you and the service provider whether the service is provided in compliance with the contract belongs to the relevant institution, which is the Czech Telecommunication Office, that is entitled to decide within the proceedings on objection against a claim settlement. Note, that the CTU-NetTest measurement tool can be used for advertised download speed values of IAS at a fixed location up to 500 Mb/s (incl.) and for upload speed values up to 250 Mb/s (incl.), given the general nature of accuracy of the measurement tools based on web-browser principles that are using the computing performance of the end device (desktop PC, laptop) for their operation.

Data protection: Information on data protection can be found here:

- <https://nettest.cz/en/Privacy>

## 1.2 Conditions for carrying out the certified measurement

- The certified measurement can be used to measure QoS of the IAs at a fixed location which include all links based on xDSL (incl. hybrid products), cable networks (DOCSIS technologies), wireless networks (Wi-Fi and fixed LTE/5G technologies), and fibre networks, with interconnection to terminal equipment device (modem, or router; demarcation point 7) or to termination point (with the possibility of direct connection of the end device without the necessity of conversion; demarcation point 6) with the end device (desktop PC, laptop) through a cable. Smart end devices (cell-phones, tablets,

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<sup>1</sup> The General Authorisation No. VO-S/1/08.2020-9, amending General Authorisation VO-S/1/07.2005-9 laying down conditions for the provision of electronic communications services.

or even TVs) based on Android or iOS operation system are currently not supported for carrying out the certified measurement in a web-browser. For this purpose, you will have to use a future NetTest tool app for the given operation system.

- Your end device (desktop PC, laptop) used for carrying out the certified measurement must be always connected to Ethernet interface of the terminal equipment device by means of fixed, i.e. metallic (min. Cat.5e) or fibre cable. The results of measurement by means of wireless connection (e.g. Wi-Fi) shall not be considered as relevant.
- The certified measurement carried out in a web-browser is valid only for IAS at a fixed location offered on the area of the Czech Republic.
- The certified measurement can be carried out by means of a web-browser (Chrome, Edge, Firefox, Safari, etc.) on your end device (i.e. desktop PC, laptop) only with an updated operation system and updated browser.
- The CTU-NetTest measurement tool can be used for advertised download speed values of IAS at a fixed location up to 500 Mb/s (incl.) and for upload speed values up to 250 Mb/s (incl.), given the general nature of accuracy of the measurement tools based on web-browser principles that are using the computing performance of the end device (desktop PC, laptop) for their operation. Please note that a significant volume of data can be used for the measurement, depending on the actually achieved speed. Therefore, we recommend carrying out the certified measurement only in case you have unlimited data volume available. To measure higher advertised speeds than the stated limit values, please, contact CTU: [www.ctu.cz/epodatelna](http://www.ctu.cz/epodatelna).
- The performance of the end device as well as of the operation system may have a significant impact on the measured actual speed. To measure speeds over 100 Mb/s, it is recommended to use operation system utilising TCP CUBIC (Windows 10 and higher, Linux kernel 2.6.19 and higher).
- If you are using IAS where the access is slowed down or blocked after reaching a certain volume of data use, the measurement will lose its information value after reaching this data limit.
- The certified measurement is not suitable for identification of the general network outage as in such a case, it is not possible to carry out any measurement at all.

## 2 The process of the certified measurement

### 2.1 Basic information

Before launching the test, please, consider the following information that need to be taken into account to reach a relevant test result.

- The test is simple, but it requires basic knowledge of computer operation. In case you do not have it, ask your relatives or friends for assistance, or you can contact CTU using the address [nettest@ctu.cz](mailto:nettest@ctu.cz).
- The certified measurement is a cycle composed of 6 time-diversified tests carried out during a period of one calendar day. A measuring framework takes 1 hour and 30 minutes. Within the test, individual measurements are carried out automatically, having duration of 10 seconds for each direction of data communication (download and upload). The time spacing between individual tests is 15 minutes.
- If random 3 tests in upload or download direction (or both directions) show the resulting (i.e. actually achieved) speed is lower than the normally available speed stated in Contractual conditions for the given IAS at a fixed location, it is the case of significant

recurring discrepancy of the service performance. If all 6 tests show the resulting speed is lower than the normally available speed, it is the case of significant permanent discrepancy of the service performance. If a random test shows the resulting speed is lower than the value of minimum speed stated in Contractual conditions for the given direction, it is the case of service outage.

- Note that it is necessary to leave the end device (desktop PC, laptop) switched on for the whole duration of the measurement. Especially make sure that the saving mode (sleep mode) will not get activated during the measurement. The same applies for the web-browser bookmark with the running measurement, which must remain active.
- Do not use your device for any other applications during the whole certified measurement process, not even for an ordinary activity (other use of web-browser, using e-mail client, cloud storage, etc.).
- Before launching the measurement cycle, make sure that no other users utilise the IAS (e.g. family members on their smart end devices, mobile phones, tablets, TV, etc.). Ideally, it is recommended to temporarily deactivate the wireless interface (Wi-Fi) of the end device and to unplug other metallic or fibre cables from the end device (leave only the WAN port connection and connection of your end device where the certified measurement will be carried out).
- It is recommended to check whether the network interface of your end device (desktop PC, laptop), on which you will carry out the certified measurement, corresponds to the advertised service speeds. An example of a wrong practice would be to measure a service with advertised speed of 300/30 Mb/s (download/upload) on a PC where the network interface (Network Interface Controller) or used cable support maximal speed on 100 Mb/s only.
- It is also suitable to check the status of the computing performance of your end device (desktop PC, laptop), whether it is not being fully utilised (Ctrl+Alt+Delete → Task Manager → Performance), especially with regard to full utilisation of the processor, memory and drive, where the negative impact on the measurement result has also hidden background data transmission on your end device (Task Manager → Performance → Ethernet Network). It is also recommended to measure the performance of end device by some free computing performance benchmarks (CPU-Z, Cinebench, etc.).

You can find a checklist at the end of this document which will help you to carry out the certified measurement.

Questions on the certified measurement you may have can be sent to [nettest@ctu.cz](mailto:nettest@ctu.cz).

## 2.2 Personal data and information on the measurement environment

Before launching the measurement cycle, you need to fill in the marked fields in a related web form and to take a photo of your end device. Upload this photo in the dedicated part of the web form called "Photo Uploading" by clicking on "Choose File". You can upload multiple photos. The uploaded photos will be used to assess whether your end device is not in error/malfunction status during the measurement cycle, or without network connectivity.

**Notice:** Take such pictures of your end device so it is clear what is connected to the terminal equipment device (if there are cables connected to the individual ports or not), name of its producer and version of the terminal equipment device, and possibly also the status of indicative LED diodes.

### 2.3 Carrying out of the individual measurement cycles

After entering the mandatory data, you will be allowed to launch the measurement cycle. The individual tests, i.e. measurement of the speed in download and upload direction and also of roundtrip delay (ping), are carried out automatically. After finishing the measurement cycle, you will be asked to download the certified measurement's result in PDF document.

**Notice:** The PDF documents are not saved by the CTU's information system. Therefore, save the result on your end device immediately or print it. If you won't do so, it will be lost afterwards, and it won't be possible to load it again.

## 3 The result of the certified measurement

The certified measurement is a cycle composed of 6 time-diversified tests and its result is accompanied by the data you provided and the required photos. In case you would present us the resulting PDF document directly, make sure it is signed with a recognised electronic signature (or send it from your Data Mailbox). It serves also as a confirmation that all the data you provided is correct and that you carried out the certified measurement.

You can send us this PDF document in printed version as well. In that case, please, have on mind that CTU will require to have this PDF document with results of the certified measurement of IAS at a fixed location with your own signature.

The PDF document contains the following information:

- List of individual tests (measurements);
- Summary of the measurements;
- Location of the measurements;
- Your answers for questions regarding the measurement environment;
- Your photos of the measurement environment (the status of the terminal equipment device);
- Individual detailed results of the measurement.

Save the PDF document or its printed content on a safe place so that you can later use it as a prove for submitting a claim and also for possible subscriber dispute.

## 4 Next steps

If you think that the results of the certified measurement indicate problems with the quality of your IAS, significant permanent or significant regular discrepancy from the actual service performance with regard to the speed in download or upload direction, or that there are even outages of this service (speed decrease under the minimum speed), the best solution is to contact your provider in a timely manner, but within 2 months from the day when the defective service provision occurred at latest, and to submit a claim against the service provided by your provider. The PDF document with results of the certified measurement must be enclosed to the claim as it allows to apply conclusive findings about the quality of your IAS.

The IAS provider is obliged to settle your claim without undue delay, within 1 month from delivering of your claim at the latest.<sup>2</sup> The delivery of the claim must be done in a provable manner.

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<sup>2</sup> In case that settling your claim requires discussion with foreign provider, the claim must be settled within 2 months from its delivering at the latest.

If your service provider will not settle your claim within the 1 month from its delivering or you are not satisfied with the settlement, you are entitled to submit a proposal to open a proceedings on objection against a claim settlement to CTU without undue delay, but within 1 month from delivering the claim settlement or from passing the futile expiry date for its settlement, otherwise the right to apply the objection against the claim's settlement will expire. It is possible to submit the proposal for administration procedure according to a valid legal arrangement in writing, electronically, or orally into a protocol. Submitting the proposal in writing can be done by means of a form available at <https://www.ctu.cz/formulare> (Czech only) at local CTU branch (according to your place of residence). Submitting the proposal electronically can be done also by means of Data Mail to CTU Data Mailbox (ID a9qaats). For these purposes, CTU will require the PDF document with results of the certified measurement that was already used for submitting the claim against the given service.

**Notice:** The result of the proceedings on objection against a claim settlement done by CTU always relies on individual circumstances of the case, especially on specific provisions of the contract you concluded with the service provider. Therefore, the result of your certified measurement cannot *a priori* indicate the result of the procedure.

## 5 Checklist

This checklist will help you carry out the certified measurement.

Step	Done?
Is your end device (desktop PC, laptop) connected to a terminal equipment device (modem, router) directly by a cable?	
Did you ensure that nobody else is using the IAS during the certified measurement?	
Did you check that the computing performance of your end device (desktop PC, laptop) is not significantly fully utilised by some background process or application (Task Manager)?	
Did you ensure that your end device (desktop PC, laptop) will not go into save or sleep mode during the measurement (1 hour, 30 minutes)?	
Did you enter all obligatory data?	
Did you take all requested photos of the terminal equipment device and did you upload them?	
Did you save or print the PDF document with results after the certified measurement finished?	