

Monitoring compliance with the provisions of the Regulation (EU) no. 2015/2120 on open internet access

01 May 2021 – 30 April 2022



The [National Authority for Management and Regulation in Communications](#) (ANCOM) is the institution that protects the interests of communications users in Romania, by promoting competition and innovation in the markets of electronic communications and postal services, ensuring the competition-oriented management of scarce resources (radio spectrum, numbering and associated technical resources), encouraging efficient investments in networks and infrastructure, and promoting ultra-fast connectivity. Further information on ANCOM's activity is available on www.ancom.ro, www.portabilitate.ro and www.veritel.ro. For testing and monitoring your internet service quality, please access www.netograf.ro. The mobile signal coverage of localities, national and county roads in Romania can be checked on www.aisemnal.ro.

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1. General overview

1.1. Legal framework

In the reference period, there were no major changes in the applicable legislation, hence the same primary and secondary normative acts apply regarding open internet access. Thus, the Romanian legal framework consists of Regulation (EU) 2015/2120¹ (hereinafter referred to as *the Regulation*) and by the secondary legislation developed by ANCOM on setting quality indicators for the provision of the internet access service and the publication of the related parameters², as well as on the transparency of certain information that providers are required to make available to end-users³.

The Romanian legal framework in the field is also complemented by the national transposition of the transparency obligations related to the traffic management practices provided by the Universal Service Directive, implemented into national law through the provisions of Government Emergency Ordinance no. 111/2011 on electronic communications, approved, with amendments and completions, by Law no. 140/2012⁴, with the subsequent amendments and completions.

In completion to the previously mentioned legal framework, ANCOM issued Guidelines on the implementation of the requirements regarding the inclusion in the contracts of information on the speeds of fixed and mobile internet access services⁵. The Guidelines are intended for providers of internet access services and offer recommendations on how to express the speeds mentioned in the provisions of Article 4 para. (1) (d) of Regulation (EU) 2015/2120 and on how to establish the procedure for measuring the speed of the internet access service by the end-users, for both fixed and mobile networks. Further details on these guidelines can be found in Chapter 3 of this report. The guidelines include recommendations for providers on how the provisions of Article 4 para. (1) (d) of the Regulation can be applied, as well as on the steps that consumers may take in order to obtain the remedies they can benefit from under national legislation.

The analysis conducted by ANCOM – on the occasion of the annual control campaign aimed at verifying the information mentioned in the provisions of Article 4 para. (1) (a)-e) of Regulation (EU) 2015/2120 included in the contracts concluded with the end-users by approximately 20 providers of fixed internet access services – revealed that the Guidelines were considered by most of the providers within the scope of ANCOM's analysis for defining the speeds and establishing the procedure for measuring the speeds of the fixed internet access service by the end-users. ANCOM also noted that the respective providers inserted the remedies provided by

¹ Regulation (EU) 2015/2120 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union;

² ANCOM President's Decision no. 1112/2017 on setting quality indicators for the provision of the internet access service and the publication of the related parameters, with the subsequent amendments and completions;

³ ANCOM President's Decision no. 158/2015 on the obligations to inform the end-users, with the subsequent amendments and completions;

⁴ The consolidated version (text available in Romanian) of the Government Emergency Ordinance no. 111/2011 on electronic communications is available at the following address: http://www.ancom.org.ro/uploads/links_files/O_U_G_Nr_111_2011.pdf;

⁵ ANCOM's guidelines are available on the Authority's website, in the Industry/Provider guides section, at the following link: [https://www.ancom.ro/uploads/links_files/2019-10-09_Ghid_masurare_viteze_\(002\).pdf](https://www.ancom.ro/uploads/links_files/2019-10-09_Ghid_masurare_viteze_(002).pdf);

national legislation in their standard contracts (the standard contracts are used as a model for the contracts concluded by the ISPs with the end-users, for the provision of fixed internet access services).

Moreover, during the reporting period, ANCOM continued to monitor the measures taken by providers to ensure the proper functioning of publicly available electronic communications networks and services, as well as the network load levels and congestion cases. ANCOM has also worked to increase transparency for end users, by improving and updating its online map (<https://aisemnal.ro/home>) with the results of the measurements carried out by ANCOM during September - December 2021, which reflect the mobile signal coverage for the main technologies available at the time of the measurements (2G/3G/4G) throughout the country, for each of the mobile operators active on the Romanian market, the level of the aggregated signal throughout the country, and the maximum level measured for signals from neighbouring countries. Also, on aisemnal.ro, ANCOM created and made available to the public the mobile voice signal map of the Bucharest metro network, following the measurement campaign carried out by the Authority in the same period of 2021.

According to Article 5 paragraph (1) of the Regulation, ANCOM *"shall closely monitor and ensure compliance with Articles 3 and 4"* and *"shall publish reports on annual basis regarding their monitoring and findings"*. This report refers to the period between 01 May 2021 and 30 April 2022.

1.2. The institutional implications of Regulation (EU) 2015/2120

In Romania, several national authorities ensure the monitoring and supervision as regards the application of the Regulation.

The main authority responsible for monitoring and ensuring compliance with the provisions of the Regulation is ANCOM, who can verify the compliance of the internet access service providers (hereinafter *ISPs*) with most of the provisions.

No amendments to national laws were required for ANCOM to receive and exercise these powers as the national legislation already contained the necessary provisions in this regard.

Together with ANCOM, two other national authorities are involved in ensuring the observance of the Regulation, as follows:

- The National Consumer Protection Authority (hereinafter *ANPC*) is the authority that can apply sanctions in case of non-observance of the contract provisions, according to the primary national legislation.

In 2010, ANCOM signed an official collaboration agreement with ANPC establishing in detail how the two authorities collaborate, especially in order to enhance efficiency in solving the complaints received from the consumers.

- The National Data Protection Authority (hereinafter *ANSPDCP*) is the only authority responsible for monitoring compliance by the providers with the provisions of the

national legislation in the field of data protection, also when enforcing the data protection obligations referred to in Article 3 paragraph (4) of the Regulation.

ANCOM does not have the power to verify potential breaches of privacy protection obligations.

There is no formal agreement between ANCOM and ANSPDCP, but, according to the Romanian law, if an authority receives a complaint which it doesn't have the legal power to solve, then it must send the complaint to the competent authority within a 5-day timeframe.

1.3. Internal actions

In the reference period, there were no formal dedicated ANCOM departments/units or teams dealing exclusively with open internet access issues. Tasks regarding monitoring and ensuring compliance with the Regulation were carried out by specialists from various ANCOM units covering technical, economic and legal expertise, along with their regular tasks.

Following the establishment at EU level of the Special Reporting Mechanism (*SRM*)⁶ dedicated to issues raised by the COVID-19 pandemic in terms of internet traffic and networks, the activities carried out at national level for monitoring traffic and other related issues have intensified, while reports to the Body of European Regulators for Electronic Communications (BEREC) and to the European Commission have followed the same trend. Thus, the Authority allocated additional human resources for these activities.

1.4. External actions

At national level, ANCOM organised several (both individual and collective) meetings with industry stakeholders in order to clarify various aspects regarding the implementation of the Regulation's provisions, including aspects mentioned in the BEREC Guidelines⁷ on the implementation by national regulators of European open internet access rules (hereinafter referred to as the *BEREC Guidelines*). The topics approached during these meetings concerned: the quality assessment procedure, respectively the procedure for assessing discrepancies between the speeds specified in contracts and those resulting from measurements, how to define in the contracts the speeds laid down by the Regulation, aspects taken into consideration by providers in establishing (committing to ensure) the respective values, as well as traffic management practices and application of judgments C-34/20 – Telekom Germany⁸, C-854/19 – Vodafone Germany⁹ and C-5/20 – Vodafone

⁶https://berec.europa.eu/eng/document_register/subject_matter/berec/others/9236-joint-statement-from-the-commission-and-the-body-of-european-regulators-for-electronic-communications-berec-on-coping-with-the-increased-demand-for-network-connectivity-due-to-the-COVID-19-pandemic

⁷The full version in English is available at

https://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules;

⁸ [https://curia.europa.eu/juris/liste.jsf?oqp=&for=&mat=or&lqrec=fr&jge=&td=%3BALL&jur=C&num=C-34%252F20&page=1&dates=&pcs=Oor&lq=&pro=&nat=or&cit=none%252CC%252CCJ%252CR%252C2008E%252C%252C%252C%252C%252C%252C%252C%252Ctrue%252Cfalse%252Cfalse&language=ro&avg=&cid=10714235](https://curia.europa.eu/juris/liste.jsf?oqp=&for=&mat=or&lqrec=fr&jge=&td=%3BALL&jur=C&num=C-34%252F20&page=1&dates=&pcs=Oor&lq=&pro=&nat=or&cit=none%252CC%252CCJ%252CR%252C2008E%252C%252C%252C%252C%252C%252C%252C%252C%252Ctrue%252Cfalse%252Cfalse&language=ro&avg=&cid=10714235)

⁹ <https://curia.europa.eu/juris/liste.jsf?oqp=&for=&mat=or&lqrec=fr&jge=&td=%3BALL&jur=C&num=C-854%252F19&page=1&dates=&pcs=Oor&lq=&pro=&nat=or&cit=none%252CC%252CCJ%252CR%252C2008E%252C%252C%252C%252C%252C%252C%252C%252Ctrue%252Cfalse%252Cfalse&language=ro&avg=&cid=10714460>

Germany¹⁰ of the Court of Justice of the European Union (CJEU) of September 2021 on zero-rating practices. Regarding the CJEU's interpretations, there are differences of opinion between providers and ANCOM, clarifications in this regard being expected once the updated version of the BEREC Guide is published in June 2022.

At international level, ANCOM continued its active presence in the BEREC Expert Working Group on open internet access issues, taking part in the drafting team for the BEREC report on the implementation of the provisions of Regulation (EU) 2015/2120 in the Member States of the European Union, in the drafting team in charge of updating the BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules and working on several other BEREC internal documents on this issue.

2. Compliance monitoring

ANCOM has focused mainly on analysing the complaints received from end-users regarding the provisions of the Regulation and, where needed, has sent requests for information to the internet access service providers. In the reference period, ANCOM received about 50 complaints on the performance of the internet access service (fixed and mobile), most of them being solved by either offering explanations on the applicable contract and legal provisions, or directly by the ISPs. In some cases, to amicably settle the complaints, ISPs even agreed to terminate end-user contracts without any penalties for early termination, despite the end-users being still within the minimal contract period.

Furthermore, according to the Authority's practice, in respect of transparency in contracts concluded with the end-users, ANCOM initiated its annual verification campaign on approximately 20 ISPs which had not been previously inspected, to check the extent to which the information specified in Article 4 (1) letters a) to e) of the Regulation is reflected in the contracts concluded by the Romanian ISPs. Further details on this action are provided in Chapter 2.3 below.

2.1. Commercial practices

In the reference period, ANCOM continued to monitor the commercial practices carried on the Romanian telecommunication market. Regarding zero-rating practices there were no notable differences from the previous period; the main services identified were:

- music and video streaming;
- social media;
- instant messaging (including voice and video);
- email;
- maps/navigation;
- cloud services;
- applications used for cost control, credit top-up, adding/removing (extra)options.

¹⁰ [https://curia.europa.eu/juris/liste.jsf?oqp=&for=&mat=or&lgrec=fr&jge=&td=%3BALL&jur=C&num=C-854%252F19&page=1&dates=&pcs=Oor&lg=&pro=&nat=or&cit=none%252CCJ%252CR%252C2008E%252C%252C%252C%252C%252C%252C%252C%252C%252C%252C%252Ctrue%252Cfalse%252Cfalse&language=ro&avg=&cid=10714460](https://curia.europa.eu/juris/liste.jsf?oqp=&for=&mat=or&lgrec=fr&jge=&td=%3BALL&jur=C&num=C-854%252F19&page=1&dates=&pcs=Oor&lg=&pro=&nat=or&cit=none%252CCJ%252CR%252C2008E%252C%252C%252C%252C%252C%252C%252C%252C%252C%252Ctrue%252Cfalse%252Cfalse&language=ro&avg=&cid=10714460)

From publicly available information on IPSs' websites and from the information the ISPs made available in response to the information requests submitted by ANCOM, the following practices were identified:

- Upon concluding a new contract or renewing the existing one for a period of 12 or 24 months, Telekom Romania Mobile Communications S.A. (Telekom Mobile) offers as a bonus unlimited access to internet at speeds up to 1.5 Mbps for video-streaming and up to 150 Mbps for any other content. Thus, the quality of video content is limited to a maximum of 480p. No commercial agreements have been concluded between the ISPs and the CAPs. Customers can easily activate or deactivate the bonus (in which case the tariff plan becomes a classic data-capped plan) as many times as they want during the contractual period. If the bonus is activated, all data traffic is free-of-charge both at national level as well as when roaming in the EEA (subject to regulated FUP), both directly via the mobile device and via *tethering*.

- Vodafone Romania S.A. offers zero-rated access to certain categories of applications. Each category (e.g. social media, video-streaming, audio-streaming, maps, email) is open. Every interested CAP can request to join the programme for free, subject to a commercial agreement and in compliance with specific conditions presented on ISP's website. The CAP must provide certain information such as IP address of the servers or media-storage in order to enable the ISP to identify the specific traffic. All zero-rated applications benefit from unlimited and free-of-charge data traffic both at national level and when roaming in the EEA (subject to regulated FUP), both directly via the mobile device and via *tethering*.

Following a detailed investigation which concerned the practices of Telekom Mobile, ANCOM found that this provider breached the provisions of Article 3 (3) indents (1) and (3) of the Regulation (EU) 2015/2120 and decided that Telekom Romania should remove the discriminatory traffic treatment applied for video-streaming compared to the other traffic categories. The provider challenged ANCOM's decision in Court, asking for its suspension and annulment. In the first instance, the Bucharest Court of Appeal admitted the request to suspend the ANCOM decision until a court ruling on its annulment is pronounced. ANCOM appealed against the ruling of the Court of Appeal on the admission of the suspension request, but the appeal was rejected on 12 December 2019 by decision of the High Court of Cassation and Justice, Administrative and fiscal contentious section. The decision on the suspension has therefore become final. Regarding the case on the annulment of ANCOM President's Decision 669 of 08 August 2018, which was to be judged on the merits at the Bucharest Court of Appeal, Section VIII – Administrative and fiscal contentious. After several postponements of the sentence, on 26 May 2021, the court decided to annul the above-mentioned decision. ANCOM will appeal against this sentence. By the end of the reference period, ANCOM did not receive the reasoned decision of the first instance.

With regard to the other offers identified, given that the Regulation does not expressly prohibit the provision of zero-rating offers, ANCOM continued monitoring their evolution, as there were not sufficient indications of infringements to require intervention by the Authority during the reference period. However, following the CJUE decisions of September 2021, and due to the increase in the amount of data included in the existing offers - as numerous open data packages were launched on the market - the number of zero-rating offers is on a downward trend.

2.2. Traffic management

With a view to monitoring the traffic management practices used/applied by ISPs, ANCOM has paid close attention to end-users' complaints that could be due to specific practices.

During the reference period, ANCOM received a complaint regarding a provider's failure to provide access through the mobile internet service "from/to the address 1.1.1.1 (corresponding to CloudFlare DNS)". ANCOM requested information from the provider, who replied that the aspects complained about were generated by errors at the level of a network equipment, the situation being solved by applying a configuration change. Moreover, ANCOM representatives carried out internet access tests from several SIMs in the provider's network, finding that the IP address can be accessed from several SIMs and devices.

The application of traffic management practices was also monitored through the reporting mechanism set up by the European Commission and BEREC with the support of national regulatory authorities, in order to periodically monitor the traffic in each Member State so that it can quickly respond to network capacity issues due to the COVID-19 pandemic.

In this context, in order to support the steps initiated at European level, ever since 2020, ANCOM has implemented a mechanism for collecting information on the changes registered by the providers of electronic communications networks and services regarding the traffic data and the measures they are taking or planning to take. This mechanism provides for monthly reports to be submitted by all providers of mobile electronic communications networks and services and by the top 5 providers of fixed electronic communications networks and services, based on the number of connections declared in the previous year. In the event of any significant changes between the reporting periods, the providers are to communicate them to the Authority as soon as possible. The national mechanism for regular information collection was stopped at the end of 2020. However, during 2021, providers of electronic communications networks and services had the obligation to submit to ANCOM any significant changes related to their own networks and services. As the situation generated by the Covid-19 pandemic improved, the frequency of reporting to BEREC decreased, therefore it was also decided to stop the Special Reporting Mechanism established at the level of the European Union

Furthermore, at national level, the National Directorate for Cybersecurity - the competent authority for national civilian cyberspace and for cybersecurity risk and incident management - implemented Council Regulation (EU) 2022/350 of 1 March 2022 and Council Decision (CFSP) 2022/351 of 1 March 2022.

ANCOM will continue to monitor the way the provisions of the Regulation are applied.

2.3. Transparency in contracts concluded with the end-users

During the reference period, ANCOM continued to analyse the contracts concluded by the ISPs with the end-users. This analysis was carried out both following subscribers' complaints, and as part of ANCOM's annual campaign, targeted at approximately 20 ISPs providing fixed internet access services. According to the Authority's practice, regarding the transparency of contracts concluded between providers and end users, ANCOM's annual control plan targets a set of

approximately 30 providers, which vary every year, whose contracts are verified from the perspective of compliance with Art. 4 para. (1) indent (1) letters a)-e) of the Regulation.

Having analysed part of the contracts during the campaign, ANCOM found that most of the information on speeds and the speed measuring procedure was not included in those contracts. Moreover, the remedies available to consumers in the event of a significant, permanent or recurring discrepancy between the actual performance of the Internet access service in terms of speed or other quality of service parameters and the performance indicated in the contract between an end-user and the ISP – such as compensation payments that providers owe to their subscribers or, in some cases, early contract termination – were only partially provided in the contracts checked by ANCOM.

In respect of the contracts checked by ANCOM, the control campaign ended with the imposition of remedial measures in respect of the assessed breaches. The scrutinized providers were obliged to amend the provisions of the end-user standard contract for the provision of fixed internet access services and the contracts checked during the campaign. Thus, the contractual provisions regarding the speeds that a user can benefit from under the contract concluded with the respective ISP have been improved and completed. Furthermore, the procedure for measuring the quality of the internet access service that a consumer can follow in order to benefit from the remedies provided by the national legislation (compensation or termination of the contract on the provision of internet access services) has been either introduced or modified, as applicable. Moreover, where appropriate, the remedies available to consumers in the event of significant, permanent, or recurring differences between the actual performance of the internet access service in terms of speed or other QoS parameters and the performance indicated by the ISP in the contract were further detailed or included in the relevant contracts. ANCOM noted that, when drafting or amending the new contractual clauses, the ISPs considered most of the provisions of the ANCOM Guidelines on the implementation of the requirements regarding the contracts' comprising information on the internet access speeds through fixed and mobile networks, although the Guidelines are not compulsory and failure to implement its provisions is not sanctioned by the Authority.

3. Transparency measures for ensuring open internet access

The obligation to ensure transparency regarding the quality of the internet access service laid down by Article 4 para. (2) of Regulation (EU) 2015/2120 is detailed in the secondary legislation laid down by ANCOM, i.e. ANCOM President's Decision no. 158/2015, as well as ANCOM President's Decision no. 1112/2017. ANCOM President's Decision no. 158/2015 provides the steps required for making available to the public the information regarding the quality of the internet access service. ANCOM President's Decision no. 1112/2017 sets the (technical and administrative) quality indicators for the provision of the internet access service that are relevant from the end-users' point of view, definitions and measuring methods for this set of indicators, and imposes on the providers the obligation to publish the quality parameters and to include them in the contracts concluded with the end-users. The Decision does not impose target-values for these parameters. The value of the parameters (quality level) to be ensured by the ISPs is stipulated in the contract on the provision of the internet access service concluded with the end-users, irrespective of the payment method (prepaid or post-paid/subscription).

The *administrative quality indicators* established under the Decision no. 1112/2017 are the following:

- term for providing the internet access service;
- frequency of the end-user complaints;
- fault report rate;
- frequency of bill correctness complaints;
- fault repair time;
- end-user complaint (other than fault-related) resolution time.

The *technical quality indicators* established through the above-mentioned decision are the following:

- data transfer speed
- packet transmission delay
- jitter and
- packet loss rate.

Within the Decision, ANCOM defined the technical quality parameters provided in the Regulation, without approaching further issues regarding these parameters. The parameters were defined in broad terms, precisely for not hindering/restricting the providers. Thus, ANCOM aims to closely monitor the implementation of the Regulation's provisions by the providers and to step in subsequently, as appropriate. Moreover, ANCOM President's Decision no. 1112/2017 also establishes the quality parameters measured by the end-users, so that they can monitor and assess the quality of the contracted service.

In order to apply the provisions of Article 4 para. (1) letter (d) of Regulation (EU) 2015/2120 as uniformly as possible, ANCOM developed and published the Guidelines on the implementation of the requirements regarding the inclusion in the contracts of information on the speeds of fixed and mobile internet access services, on which further information is provided in Chapter 1.1 of this Report. The ANCOM Guidelines are intended for the electronic communications networks and services providers and bring clarifications and good practice examples concerning the legal requirements the providers must implement as regards the inclusion in the contracts of the information on the internet access speeds through fixed and mobile networks, such as:

- how the speed values should be expressed.
- factors that may influence reaching certain speeds, so that users understand the issues that may affect the results of a measurement.
- the conditions in which measurements should be performed by the users to obtain the internet access speeds from the contract, for example conditions related to the terminal from which the measurements are performed.
- aspects to be included in contracts to identify significant discrepancies, permanently or regularly recurring, between the actual performance of the service and that indicated in the contract, for example the number of days for performing measurements, the number of measurements to be performed per day and the corresponding time intervals.
- how a user can submit a complaint regarding the non-compliance with the contractual clauses, to be able to benefit from remedies.

3.1. Data transfer speed

According to the provisions of ANCOM President's Decision no. 1112/2017, **data transfer speed** is the data transmission rate, measured in Megabits/second (Mbps), achieved separately for the transmission of the test files downstream, respectively upstream, between the end-user's terminal equipment and a test server.

The data transfer speed is specified based on the transport layer protocol payload.

For **internet access services on fixed networks**, the following parameters have been defined:

- *Minimum speed* – the lowest data transmission rate that an end-user can experience in accessing the service, according to the contractual or general conditions, as appropriate. In principle, the actual speed, experienced by the end-users, should not be lower than the minimum speed, except in cases of service interruption.
- *Normally available speed* – the data transmission rate that an end-user can experience most of the time when accessing the service, during a specified period.
- *Maximum speed* – the data transmission rate that an end-user can experience at least once during a specified period.
- *Advertised speed* – the data transmission rate that a provider uses in advertising materials, in promoting commercial offers. The advertised speed should not exceed the maximum speed.

For **internet access services on mobile networks**, the following parameters have been defined:

- *Estimated maximum speed* – the data transmission rate that an end-user can experience in realistic usage conditions. This speed will be specified separately, for different network technologies.
- *Advertised speed* – the data transmission rate that a provider uses in advertising materials, in promoting commercial offers. The advertised speed should not exceed the estimated maximum speed.

To ensure the possibility to assess the quality of the service provided, the technical quality parameters will be accompanied by the following information – according to the provisions of ANCOM President's Decision no. 1112/2017:

- a description of the conditions under which the minimum speed, the normally available speed and the maximum speed could be achieved, for internet access services on fixed networks.
- a description of the methodology used to ascertain the estimated maximum speed and a description of factors influencing the achievement of the estimated maximum speed, for internet access services on mobile networks.

The data transfer speed measured by ANCOM's application – *Netograf* – is calculated in real time for internet access services, in the cases of both fixed and mobile networks, dividing the dimension of the test file by the transfer time required for error-free transmission. The results will be presented to the user after the measurement has been completed. Measurements are

performed at the edge of the network by means of which the internet access services are provided (e.g. at the end-users' premises, for fixed access, or via the radio access network, for mobile access). The test server is located outside the network that provides the internet access service, at the national internet exchange point. The measurement uses multiple TCP connections for saturating the measured path.

The quality of an internet access service must not be assessed based exclusively on data transmission speed. Packet transmission delay, jitter and packet loss rate are the parameters that, besides data transmission speed, may create a thorough and accurate image of the internet access service quality. ANCOM did not impose on the providers the obligation to publish the three quality parameters and to include them in the contracts concluded with the end-users. Nevertheless, ANCOM President's Decision no. 1112/2017 defines these parameters and ANCOM's application will measure them. Thus, the end-users are able to receive relevant, complete, comparable and easily accessible information on the quality of the internet access services.

3.2. The certified monitoring mechanism – Netograf

In 2014, ANCOM launched Netograf.ro, an online application where internet access users can measure service quality as regards technical parameters. In 2019, ANCOM extended the Netograf platform, making publicly available a set of applications (a web app, as well as desktop and mobile apps) through which users of internet access services can test, monitor and assess the service performance ensured by the providers and its evolution over time, respectively the improving or the degrading quality of the internet access service offered.

During 2020, the Netograf platform was improved by upgrading the web app, the desktop and mobile apps (for Android and iOS). Moreover, with a view to enhancing the platform functionalities, the methodology for finding the location of the terminal used in the measurements has been improved. The platform allows the test location to be identified, where the user enables the location finding option, thus providing valuable information to ANCOM for its statistics based on location, as well as for uploading the Netograf users' test results onto the corresponding map.

During 2021, the Netograf applications incurred no further changes or developments, but the technical assistance and support services, necessary for the proper functioning of the applications, were maintained.

Using this application, internet access service users can measure parameters: data transfer speed, delay, jitter and packet loss rate, and they can compare the measured values with the nominal values of the respective parameters indicated by the providers in the contract. Measuring the quality parameters of the internet access services does not require creating a user account. However, if the user wishes to create an account, Netograf makes available several additional features such as the possibility to display graphs and tables with the historical values of the completed tests, and to schedule tests at regular time intervals, during one or several days. Netograf tests the quality of the connection between the end-user's terminal equipment and a test server connected to two national public interexchange internet nodes.

The measurements indicate a value of the parameters close to the actual user experience in accessing the internet, as the measured path includes the provider's network as well as, in the case of very small providers, other networks interconnected with their own network. On Netograf, the users of internet access services have access to relevant, detailed, and easy to reach information on the quality of the contracted services, in terms of technical parameters, based on which they can make informed decisions. Netograf is not only an information tool for end-users, raising awareness on the quality of services as a key component in a competitive market, but it is also a measuring instrument by which end-users are enabled to detect any discrepancy between the real/measured performance of the service and the performance indicated by providers in the contracts.

This issue is detailed in ANCOM's Guidelines on the implementation of the requirements regarding the inclusion in the contract of information on the access speeds on fixed and mobile networks.

Thus, for the fixed internet access service, ANCOM established, through the Guidelines, the conditions that need to be met and the procedure that a user must follow in order to ascertain **significant discrepancies** and, on the other hand, **discrepancies that are permanently or regularly recurring**.

In order to ascertain **significant discrepancies**, the user must perform, under certain conditions, at least 6 measurements within 24 hours, of which at least one must be taken between 23:00 and 07:00. Measurements must be carried out at intervals of at least one hour apart. A discrepancy is considered to be significant if it meets at least one of the following conditions:

- the minimum speed is not achieved for at least two measurements.
- at least half of the measurements performed by the user do not exceed 50% of the normally available speed indicated in the contract.

In order to ascertain **discrepancies that are continuous or regularly recurring** between the contractual speeds and the actual performance of the internet access service, the user is required to perform measurements, under certain conditions, for at least 5 days (out of which at least one should be a weekend day), during a maximum of 30 consecutive days, performing a minimum of 6 measurements per day, out of which at least one daily measurement should be carried out between 23:00 and 07:00. Measurements must be made at least one hour apart. A discrepancy is considered to be continuous or regularly recurring if it meets at least one of the following conditions:

- the minimum speed is not achieved for at least two measurements.
- at least half of the measurements do not reach the normally available speed.
- no measurements reach the maximum speed.

For the mobile internet access service, ANCOM has established the procedure that a user must follow in order to ascertain the **discrepancies that are significant, permanent, or regularly recurring** between the contractual speeds and the actual performance of the internet access service. Thus, the user is required to perform measurements, under certain conditions, for at least 5 days (out of which at least one should be a weekend day), within a timeframe of 30 consecutive days, performing a minimum of 6 measurements per day, out of

which at least one daily measurement should be performed between 23:00 and 07:00. Measurements must be made at least one hour apart. A discrepancy is considered to be significant, permanent, or regularly recurring if at least half of the measurements performed are below certain values, stipulated by providers in the contracts.

Moreover, Netograf makes available to Internet access services statistics on the quality of Internet access services provided by various operators. In the *Technical Parameters* section, the average results of the measurements are presented based on the tests performed by the users through the Netograf applications. As well, the test results can be viewed graphically on the map of Romania. These statistics are for information purposes only, and not a guarantee that a user's connection will always ensure a certain quality level. According to ANCOM President's Decision no. 1112/2017 on setting quality indicators for the provision of the internet access service and publishing the corresponding parameters, ISPs are required not to charge, limit or block the end-users' data traffic from and to Netograf.ro. The accuracy of the test results can be influenced by several factors. End-users can find a series of recommendations for obtaining most accurate results, here: <https://www.netograf.ro/#/about>.

3.3. Monitoring signal coverage of mobile telephony networks

ANCOM has carried out annual campaigns to measure the coverage of the national territory with mobile voice signal since 2019. The results of these measurement campaigns have been reflected on a map, available for end users here: <https://aisemnal.ro/home>.

The map shows the mobile signal coverage of localities, national and county roads in Romania, and was fully developed by ANCOM following its annual monitoring campaigns, therefore the users can follow the evolution of signal coverage from year to year. The platform reflects the mobile signal coverage for all technologies available at the time of measurement (2G/3G/4G) for each of the mobile operators active on the Romanian market, the aggregate signal level at the level of the entire country, the maximum measured level for signals from operators in neighbouring countries, as well as - starting with 2022 - the mobile voice signal coverage map of the Bucharest metro network.

As part of the monitoring campaign carried out between September and December 2021, measurements were made in 1,786 localities, covering 25,156 km of roads. The localities were selected based on the operators' reports, ANCOM measuring those in which the operators reported significant improvements for the mobile voice service. Of the 3,562,308 points related to the 2020 measurements and represented on the aisemnal.ro map, those points associated with the squares (50x50m) where measurements were made in 2021 were eliminated and replaced with new measurements, thus the 2021 map has a number of 3,581,833 points, of which 383,828 points corresponding to the 2021 measurements that are framed in polygons to highlight the area where the measurements were made. Also, during the 2021 campaign, measurements were taken directly in the Bucharest metro, on both directions of each metro line, these being represented on a schematic map of the metro in a dedicated section.

In the process of defining the signal levels represented in the National Map of Mobile Signal Coverage, ANCOM considered the circumstances in which users may need to find out the level of the mobile signal offered by the operators.

Thus, through aisemnal.ro, ANCOM informs and answers users' questions:

- Where is the best signal?
- Is there indoor signal?
- Is there outdoor signal?
- Where is the weak signal?
- What are the no-signal areas?
- Where does signal from neighboring countries prevail, with a likelihood of incurring international roaming charges?
- Is there signal at all?

3.4. Means of ensuring information transparency on the internet access service quality

ANCOM President's Decision no. 1112/2017 also introduced specific obligations on the providers of electronic communications services (hereinafter *ECS providers*) in respect of the means of ensuring transparency regarding the quality of the internet access service provided, by amending accordingly the provisions of ANCOM President's Decision no. 158/2015 establishing various transparency obligations for the ECS providers, regarding the tariffs charged, the conditions of use of the services, as well as the quality of the service, which were considered relevant for the end-user to make an informed decision. Thus, based on ANCOM President's Decision no. 158/2015, with the subsequent amendments, the providers are required to publish on their websites, in the content of the first description of each tariff plan containing an internet access service, the values of each type of speed established by the Regulation.

Furthermore, based on the provisions of this decision, the providers also have the obligation to communicate to end-users, before the conclusion of an internet access service contract, information on the values for each type of speed established by the Regulation. This obligation applies to contracts concluded in the presence of the two parties in the providers' shops.

The providers' website must also display information on the speeds measurement procedure that allows a consumer to identify any significant discrepancy, continuous or regularly recurring, between the actual performance of the internet access service regarding speed or other quality of service parameters, and the performance indicated by the provider of internet access services in the contract. The providers also have to publish on their website the remedies available to the consumer in accordance with the national law, if such discrepancies are found by using the certified quality measurement mechanism.

4. Quality of the internet access service

Annually, ANCOM prepares a report on the quality of the internet access service, based on the measurements performed by users through the Netograf online platform. The most recent report illustrates the evolution of the values of internet access service quality parameters in 2021 and presents comparative statistics on service quality, and analyses on the evolution thereof. In 2021, the statistics were based on the analysis of 187,497 valid tests. 80% of all the valid tests were performed by fixed connections and 20% were performed by mobile connections.

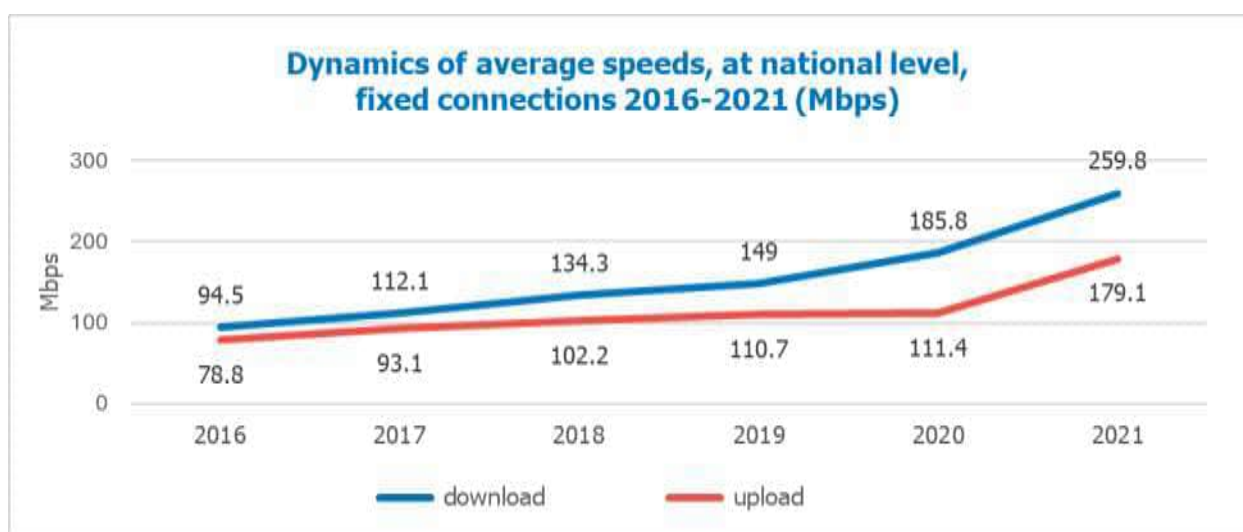
Given that fixed and, respectively, mobile access technologies have different characteristics from the perspective of service provision, thus yielding substantially different values of the quality parameters, ANCOM analysed separately the performance of fixed network ISPs and that of mobile network ISPs.

4.1. Quality of the fixed internet access service

Tests performed by users on Netograf in 2021 show that the national average download speed for fixed internet access services was 259.8 Mbps, whereas the average upload speed was 179.1 Mbps.

Compared to the previous year, in 2021 there was an increase in the download speed nationwide by about 40% (the average speed in 2020 being 185.8 Mbps). The upload speed also registered a significant increase, by 60% (average speed in 2020 being 111.4 Mbps), for fixed network connections.

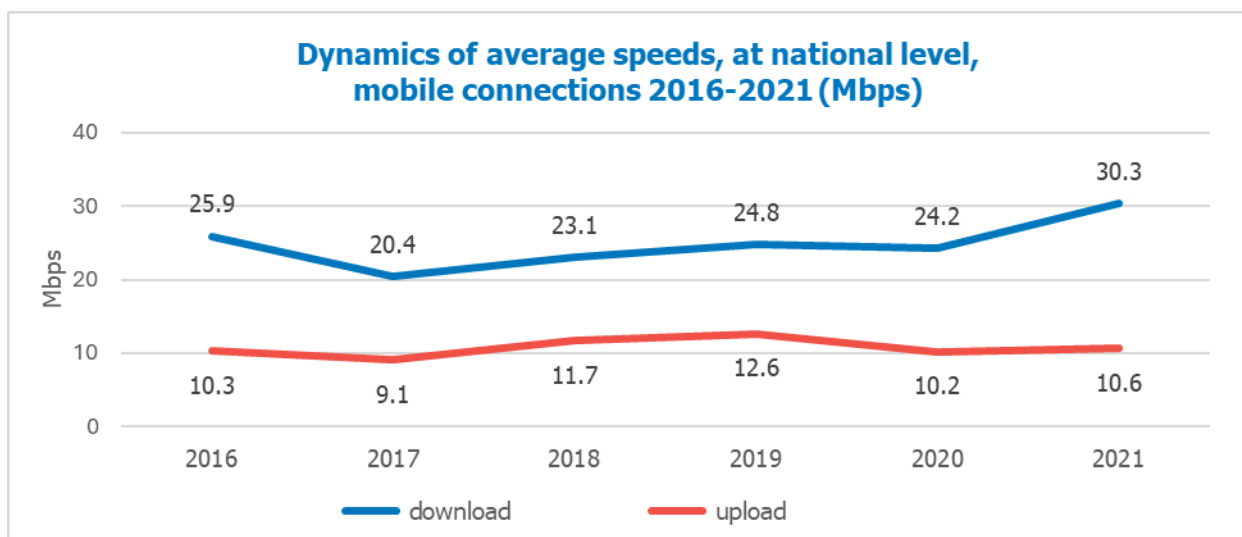
The evolution of the average download speed at national level during 2016 - 2021, for fixed internet access services, is presented in the figure below.



4.2. Quality of the mobile internet access service

According to the results of the tests performed on the Netograf online platform, in 2021 Romanian users witnessed average download speeds of 30.3 Mbps for the mobile internet access service, at national level. The average upload speed nationwide was 10.6 Mbps for the mobile internet access service. Compared to the previous year, in 2021 the average download speed at national level increased by 25%, respectively the average upload speed by 3.9% (in 2020, these speeds were 24.2 Mbps for download, respectively 10.2 Mbps for upload).

The evolution of the average download speed for mobile internet access services, at national level, during 2016 - 2021, is presented in the figure below.



The data recorded through the Netograf computer platform regarding data transfer speeds are correlated with the general trend resulting from the providers' reporting of statistical data, corresponding to the speed value indicated by the provider. Thus, the number of ultra-fast fixed connections (ensuring at least 100 Mbps) increased by 15% compared to the previous year, the share of ultra-fast connections reaching 85% at the end of 2021. In terms of access connections to mobile internet, the number of 4G/5G connections grew annually by 15%, so that in 2021 they held a majority share of 74% of all mobile internet connections.

4.3. Internet access services during the COVID-19 pandemic

In the context of the COVID-19 pandemic, a series of measures were taken in our country, involving an additional use of electronic communications networks and services. In 2020, ANCOM had sent a notice to the most important telephone and internet operators warning them to prepare for taking the necessary and possible measures with a view to avoiding and solving the occurring cases of congestion or interruption of voice and/or data traffic. ANCOM's analysis of the data transmitted by the operators showed that some of them expected traffic increases by over 50% compared to normal situations.

To ensure the continuity of service provision in the event of an increase in data traffic, the operators monitored the load and the level of traffic on their own network, as well as other quality parameters of the network. The operators' risk management actions identified a number of possible threats and risks - related at least to the security of services and networks, the supply of commercial equipment necessary for electronic communications services -, and they carried out actions to prevent or reduce these risks.

The increase in traffic was due to the increasingly intense implementation of teleworking, e-learning for school and university students, and the significant take-up of online entertainment. Under these circumstances, the most widely used electronic communications services in these cases - mobile voice services and fixed and mobile internet access services - were expected to see a significant increase in traffic, while the traffic that normally runs within a private network (institution, economic agent) was to be carried out on the public network. Thus, after a sharp increase at the beginning of the pandemic period, voice and data traffic stabilized rapidly at

higher values than before the pandemic, the most significant increases being recorded in the case of fixed internet access services.

Providers were required to take all appropriate security measures to manage the risks to the security of electronic communications networks and services so as to ensure a level of security appropriate to the identified risk and to prevent or minimize the impact of security incidents on interconnected users and networks. Moreover, in order to ensure service continuity in the event of an increase in data traffic, providers took steps to more effectively monitor the available network capacity and intervene where necessary, modernize network equipment, and simplify and streamline procurement. They also took measures to optimize the use of technical resources. Consequently, Romanian networks were able to effectively support and manage the demand growth, for the users to enjoy good connectivity.

5. Transparent, simple and efficient complaint settling procedures

According to the secondary legislation issued by ANCOM¹¹, ISPs have to publish on their website and also to hand in to end-users, upon the contract conclusion, a procedure that details the steps an end-user has to follow in order to submit a complaint related to the provision of electronic communication services. This is a general procedure that also applies to the complaints related to the application of the Regulation.

No changes occurred during the reference period as regards the procedure the end-users can follow in order to complain about issues related to the application of the Regulation's provisions.

Concerning the minimum required content of the procedure, in ANCOM President's Decision no. 158/2015, the Authority has established that internet access service providers should include in the procedure and thus make available, in a transparent manner, the following information:

- how an end-user can submit a complaint.
- the name, address and the working program of the department in charge of solving the complaints.
- the maximum timeframe for submitting the complaint, if applicable.
- the maximum timeframe for solving the complaint.
- the maximum timeframe for remedying the disturbance.
- the compensations applicable if the provider exceeds the timeframe for solving the complaint and for remedying the disturbance.
- the timeframe and means by which the provider informs the end-user on the outcome of his/her complaint.
- a specification of the fact that the end-user can address a complaint to ANCOM or can use other Alternative Dispute Resolution procedure if he/she is not satisfied with the way in which his/her complaint has been solved by the provider.

All electronic communications service providers have implemented this procedure, as it is mandatory, and may trigger sanctions - if not implemented according to the conditions set by ANCOM President's Decision no. 158/2015.

¹¹ ANCOM President's Decision no. 158/2015, whose text in Romanian is available at the following link: http://www.ancom.org.ro/uploads/forms_files/decizia_2015_1581428306401.pdf

6. Penalties

Regarding the sanctions applicable in case of non-compliance with the provisions of the Regulation, no changes have occurred in the legal framework, from the previous reporting period. Thus, according to the provisions of Article 142 indent 55 of Government Emergency Ordinance no. 111/2011, the non-compliance by the providers with the obligations deriving from the regulations of the European Union in the field of electronic communications, where the competence of monitoring and verification of the compliance with these obligations belongs to the national regulatory authority, is a contravention that can be sanctioned by ANCOM. Therefore, ANCOM can sanction any breach of the provisions of the Regulation, with the exceptions mentioned above, related to the competence of the national ANPC and the national ANSPDCP, as mentioned in section 1.2 above.

Government Emergency Ordinance no. 111/2011 also provides for the penalties applicable in case that the contraventions provided by Article 142 indent 55 are observed, as a result of infringements of the provisions of Articles 3, 4, and 5 of the Regulation.

There were no changes from the previous reporting period, the maximum thresholds of the fine that can be applied to the providers with a turnover above 3,000,000 RON remained at 5% of the turnover, respectively 10% of the turnover in the case of repeated breaches.

Thus, according to Article 143 of Government Emergency Ordinance no. 111/2011, a breach of the obligations laid down in the Regulation constitutes a contravention that can be sanctioned by ANCOM as follows:

- by fine - ranging from 5,000 RON up to 60,000 RON and - in case of repeated breach - up to 100,000 RON.
- by fine of up to 5% of the annual turnover, or up to 10% of the turnover - in case of repeated breach - for the providers with an annual turnover of more than 3,000,000 RON.

Such breaches may also be sanctioned by warning, according to Government Ordinance no. 2/2001 on the legal framework for contraventions, with the subsequent amendments and completions.

The contravention is assessed, and appropriate penalties are applied by decision of the ANCOM President. The decision is an enforceable title and can be challenged in administrative contentious, at the Bucharest Court of Appeal, within 30 days from the time it was communicated.

According to the provisions of Article 149 (1) letter a) of Government Emergency Ordinance no. 111/2011, where an infringement has been found, ANCOM may also require the cessation of the infringement either immediately or within a reasonable timeframe, as well as any other measures necessary to ensure the cessation of the infringement and the remedy of the respective situation. The measures shall be proper and proportionate to the committed breach and shall provide a term within which the provider must comply with them. The non-observance

of the measures ordered by ANCOM is, in its turn, according to the provisions of art. 151 of the Government Emergency Ordinance no. 111/2011, sanctionable with an administrative fine of up to 30,000 RON per day of delay.

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