

BEREC Report on the implementation of the Open Internet Regulation

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Executive Summary

This report gives an overview of the activities of the NRAs¹ in the course of implementing the Open Internet Regulation (OIR) (Regulation (EU) 2015/2120)² and associated BEREC Open Internet Guidelines³. This report reflects the seventh year of the application of the OIR, covering the period from 1 May 2022 to 30 April 2023. BEREC has gathered information from 28 NRAs via an internal questionnaire. To this information, descriptions of publicly known open internet cases or investigations that arose throughout the 12-month reporting period have been added. However, this report does not constitute an exhaustive description of the current actions in the field of open internet, which are described in further details in the NRAs' annual reports on implementing the OIR.

The information in this report, firstly, refers to topical issues and, secondly, is organised according to the provisions of the OIR. The report shows that NRAs have actively implemented the OIR, monitoring activities have become an ongoing activity and the interaction with the ISPs evolves year after year.

The European Court of Justice (ECJ) issued three rulings (C-34/20 – Telekom Deutschland, C-854/19 – Vodafone and C-5/20 – Vodafone) on 2 September 2021 regarding violations of the European Union (EU) OI rules. This report includes a brief reference to these rulings and outlines the implications of these rulings for Member States and BEREC, as well the actions undertaken by NRAs by 30 April 2023.

Based on the actions undertaken and the information reported by NRAs, some types of zero-rating offers were identified by approximately half of the NRAs, with customer care (9), video streaming (8) and social media services (7) as well as volume and/or time consumption monitoring (7) being the most frequently mentioned types of applications. In three countries, zero-rating services can still be purchased.

Another topic briefly addressed in this report refers to BEREC's actions, with regard to the OIR, to support internet service providers (ISPs) in implementing the European Regulations prohibiting broadcasting or distribution of any content by several Russian state media outlets within the EU.

NRAs take the following recurring actions, concerning Article 3 of the OIR relating to end-users' rights to open internet access;

- information requests to ISPs,

¹ NRA is used in this report as reference to the National Regulatory Authority in the meaning of Article 5(1) of Regulation (EU) 2015/2120 as they have been designated by the national legislator. These do not fully correspond to the NRAs that are BEREC members and observers. See Question 1 below.

² This report refers as "the OIR" to the open internet rules contained in [Regulation \(EU\) 2015/2120](#) of the European Parliament and of the Council of 25 November 2015 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.

³ The 2016 BEREC Guidelines on Net Neutrality were applicable until 11 June 2020 when they were replaced by the 2020 BEREC Guidelines on Open Internet published on 11 June 2020 which were updated and published on 09 June 2022 ([BoR \(22\) 81](#)). This report refers to "BEREC OI Guidelines".

- the analysis of complaints or end-user reports,
- market surveys which don't involve requesting information from ISPs (e.g., checking ISPs' offers on their web pages).

These three actions continue to be used on an equal basis by most NRAs. Moreover, the majority of NRAs indicated that they combined all three of the above sources of information to monitor the commercial and technical conditions related to the provision of internet access services (IAS).

In this year's iteration, BEREC also collected information about the definition of the network termination point (NTP) and of its location. While 10 NRAs have defined the NTP, the remaining NRAs have discussed or are still discussing this issue with their national market players.

Regarding traffic management practices, all but two NRAs monitored these practices in one way or another, with information requests from ISPs (20) and analysis of end-user complaints (20) being the most common mentioned. Market surveys without requesting information from ISPs (15) follow in third place.

Concerning Article 4 of the OIR on monitoring ISPs' compliance with transparency and contractual terms, most NRAs applied multiple methods and often more than two. The top three activities used by NRAs to assess the ISPs' compliance with Article 4 were analysis of end-users' reports and complaints (22) and market surveys without requesting information from ISPs and formal and informal requests for information from the ISPs (21). Also in the reporting period, 16 NRAs did a revision of contracts and they generally found that ISPs provide a definition of speeds in their contracts. Moreover, 12 NRAs reported that ISPs offered new contracts for hybrid services⁴ in their countries, while there are also situations where no new services can be purchased but still some remaining contracts are on the market. A great majority of NRAs (21 out of 28) monitor end-user complaints regarding the performance of the IAS, while two thirds of the NRAs (20 out of 28) offer an IAS quality monitoring mechanism to consumers.

Concerning Article 5 of the OIR on supervision and enforcement, the answers to the questionnaire indicated that most NRAs (23 out of 28) are monitoring the availability of high-speed IAS, with the most popular approaches being either through analysis of complaints and end-user reporting (18) or through information requests from ISPs (12). Technical network monitoring (11) follows closely in third place.

Finally, while the body of the Implementation Report reflects the actions of the last 12 months (thus the most recent reporting period), Annex I describes the relevant definitions, national rules, regulations and specifications in force, internet access quality monitoring tools provided and OIR-related court proceedings based on the NRA responses to questions 3.b., 10, 14, 15, 19, 22, 25 and 31⁵.

⁴ Hybrid internet access services use a combination of technologies.

⁵ This part hosts the actions taken by NRAs, since the entry into force of the Regulation, to the extent that they are relevant to record in the overview provided in this report.

1. Implications of Rulings of the European Court of Justice

BEREC took note of the three ECJ rulings (C-34/20 – Telekom Deutschland⁶, C-854/19 – Vodafone⁷ and C-5/20 – Vodafone⁸) on 2 September 2021⁹ regarding violations of the European Union (EU) open internet rules, considering also the Telenor ECJ ruling of 15 September 2020 (in the cases C-807/18 and C-39/19)¹⁰. The ECJ rulings state that the practices by two German providers (Telekom Deutschland and Vodafone) are incompatible with the Open Internet Regulation (OIR).

The three cases referred to in the ECJ rulings relate to of IAS' offers including a 'zero tariff' option (commonly also referred to as 'zero-rating' options). Such practices entail that the traffic generated by specific (categories of) applications is not counted towards the data volume of the basic package. The main finding from the reasoning of the rulings is that zero tariff options are incompatible with the equal treatment obligation as set out in Article 3(3) of the OIR since traffic is not treated equally. The ECJ did not assess the individual limitations of use as the *"incompatibility remains, irrespective of the form or nature of the terms of use"*¹¹.

In light of the ECJ rulings on the OIR and as announced in the BEREC Work Programme 2022¹², BEREC issued in mid-June 2022 an updated version of the BEREC Guidelines on the Implementation of the Open Internet Regulation (BEREC OI Guidelines).

Since the publication of the ECJ rulings, NRAs have organised their respective national enforcement and supervision actions. BEREC is also providing a forum for NRAs to share information and to enable the consistent application of the OIR.

For instance, in the reporting period the NRAs have taken actions concerning the termination of zero-rating based on Article 3(2), like market surveys (19), informal exchange with ISPs (20 NRAs), formal information requests from ISPs (17), review of terms and conditions of zero-rated products (11) and others. Moreover, in 15 Member States the NRA or a competent authority set or agreed a deadline for providers to terminate and/or stop to offer contracts with zero-rating based on Article 3(2). The presence of zero-rating services based on the exemptions from Article 3(3) have been reported by 6 NRAs.

As a result of the ongoing dismissal of the non-OIR-compliant zero-rating offers by the ISPs, NRAs have reported that the presence of one or more zero-rating services has reduced to 13 Member States at the end of the current reporting period, from 22 Member States in the previous reporting period.

A more detailed description of the latest status-quo regarding zero-rating services can be found below, in chapter 4.

⁶ [C-34/20](#) – Telekom Deutschland

⁷ [C-854/19](#) – Vodafone

⁸ [C-5/20](#) – Vodafone

⁹ This report refers as the "ECJ rulings" to the three rulings issued by the European Court of Justice (ECJ) on 2 September 2021.

¹⁰ [C-807/18 and C-39/19](#) – Telenor

¹¹ ECJ, C-854/19 *Vodafone (Roaming)*, paragraph 33; C-5/20 *Vodafone (Tethering)*, paragraph 32; C-34/20 *Telekom Deutschland*, paragraph 35.

¹² [BEREC Work Programme 2022](#), Section 2.4.3.

2. EU sanctions to ban Russian media outlets

In March 2022, the first restrictive measures, aimed at banning specific Russian media outlets, were taken at EU level in view of Russia's actions destabilising the situation in Ukraine. In the 2022 iteration of its Implementation Report, BEREC informed that it had clarified, in March 2022, that the OIR allows ISPs to take traffic measures to block specific content, applications, or services in order to comply with Union legislative acts. BEREC also clarified that the Regulation (EU) 2022/350¹³, which prohibits broadcasting or distribution of any content by Russian state media outlets Russia Today (RT) and Sputnik within the EU, is a legal Act that falls within the scope of the exceptions in Article 3(3) of the OIR.

In the same report, BEREC indicated that even though no NRA has a specific mandate to enforce the EU sanctions, BEREC NRAs helped ISPs to comply with the measures related to Regulation (EU) 2022/350. BEREC also provided a forum for NRAs to share information and to enable the consistent application of the OIR.

In the reporting period from 1 May 2022 to 30 April 2023, BEREC and its NRAs continued applying a similar approach of sharing information between NRAs and providing guidance to ISPs, when further sanction regulations were enacted extending the restrictive measures to the following entities:

- Rossiya RTR / RTR Planeta, Rossiya 24 / Russia 24 and TV Centre International, according to Regulation (EU) 2022/879¹⁴;
- NTV/NTV Mir, Rossiya 1, REN TV and Pervyi Kanal, according to Regulation (EU) 2022/2474¹⁵;
- RT Arabic and Sputnik Arabic, according to Regulation (EU) 2023/427¹⁶.

¹³ [Council Regulation \(EU\) 2022/350](#) of amending Regulation (EU) No 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine.

¹⁴ [Council Regulation \(EU\) 2022/879](#) of 3 June 2022 amending Regulation (EU) No 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine.

¹⁵ [Council Regulation \(EU\) 2022/2474](#) of 16 December 2022 amending Regulation (EU) No 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine.

¹⁶ [Council Regulation \(EU\) 2023/427](#) of 25 February 2023 amending Regulation (EU) No 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine.

3. NRAs' activities to implement the OIR

Question 1. Which types of activities has your NRA engaged in during 2022/23 in order to implement the OIR? Please provide a brief account of:

- i. internal activities (e.g., preparing new internal procedures, dedicating teams / FTE, etc.)
- ii. external activities (e.g., press-release, meetings with stakeholders or ISPs, drafting national guidelines on enforcement policy, stimulating self-assessment or internal compliance by ISPs, adopting administrative orders/decisions or imposing administrative fines etc.)

In the reporting period, NRAs identified the following **internal activities** related to the implementation of the OIR:

- setting-up/enlarging (a multidisciplinary/cross-functional) **OI team/department** or allocating persons from other teams/departments to work on OI (in case there is no dedicated OI team within an NRA); setting-up OI team on ad-hoc basis;
- supporting/providing input to the department of international affairs of the NRA; supporting the managing director and other bodies of the NRA in regard to OI and related issues; answering/responding to questions regarding open internet issues; preparing the annual net neutrality/open internet report and other documents in regards to open internet;
- discussing how certain **speed values** should be implemented into the contract summary (among other practical issues regarding the supervision on transparency of speed values); setting up/maintaining/updating a special website on OI; knowledge development and policy advice (e.g. on 5G);
- **assessing zero-rating** and similar offers, considering the interpretation given by the ECJ rulings and ordering ISPs to stop these offers;
- **supervision and monitoring** activities of compliance with the provisions of the OIR; supervision of compliance with national secondary legislation; investigations on ISPs' compliance related to Article 4 of the OIR; analysis of traffic management, content-blocking and zero-rating practices; information requests from ISPs; checking relevant information on the ISPs' websites and in contracts; mystery shopping initiatives; analysis of complaints;
- procurement procedure for the development of a **measurement system**; setting up/providing/updating national measurement systems and infrastructure to check and to test measurement and visualise selected qualitative parameters of the IAS (e.g. QoS and speed);
- internal coordination to facilitate the assessment on OI cases and establishing criteria for general cases.

Among the **external activities** identified by NRAs are the following actions:

- holding (informal, virtual) **meetings and workshops with stakeholders and experts**: e.g., on charging for interconnection/fair share, out-phasing of zero-rating, Regulation (EU) 2022/350 and how to implement (technically) the EU sanctions against the Russian regime with regard to broadcasting transmissions via websites, how certain speed values should be implemented into the contract summary (among other practical issues regarding the supervision on transparency of speed values), unlimited offers of ISPs, discussions on the topic “Preparation of model contractual documentation for the use by providers of publicly available electronic communications services” and publication of a non-binding document “Manual for contract summary”, presenting the measurement tool and information on the experience of its operation, issues such as the ECJ judgments from September 2021, public IPv4 addresses without charge, 5G, content blocking;
- participating in relevant **legislative processes**; new Electronic Communications Law/Telecommunications Act; issuing/updating secondary legislation; issuing **administrative decisions** (e.g. formal supervisory procedures against providers and ordering them to cancel the offer of zero-rating in existing contracts; formal supervisory procedures in connection with the blocking of websites due to Regulation (EU) 2022/350; formal supervisory procedures in connection with the blocking of websites due to copy-right issues); drafting **national guidelines** on enforcement policy; extending/updating existing guidelines (e.g. with information on DNS blocking; due to ECJ zero-rating judgement); setting specific deadlines for the ISPs to stop marketing activities related to offers that include zero-rating and selling such offers to new customers;
- monitoring and handling **complaints and inquiries from end-users**; (formal) information requests and/or questionnaires to ISPs (on issues such as: traffic management; zero-rating; Articles 3 and 4 of the OIR); regular on-site audits at points of sale to check whether the consumers are properly informed regarding internet speeds and their rights; market supervision activities; websites surveys; inspection of ISPs in regards to compliance with the OIR; technical monitoring; data collection regarding packages and traffic management treatment; performing formal assessments on the technical and commercial conditions regarding the modem and optical network terminal (ONT) devices for fibre to the home (FTTH) offers as well as monitoring on differentiated QoS levels and port blocking measures; assessment of IAS on trains and monitoring of this service; checking/formal review of terms and conditions of ISPs;
- providing and updating **measurement tools/quality monitoring tools** for end-users; on-going project aiming to implement an automatic mechanism for collecting mobile coverage information through a monitoring tool;
- issuing **press releases and annual OI reports**; giving interviews; establishing/maintaining/updating a website on OI; social media presence (in connection with OI); publications and brochures in connection with OI; participating in university lectures/lectures for younger people; projects for elderly persons.



Finally, many NRAs reported their participation in the BEREC Open Internet Working Group (BEREC OI WG).

4. Article 3(1) to (3) – End-users’ rights, agreements, traffic management

Question 2.a. What approach have you taken to monitor the commercial and technical conditions related to the provision of internet access services (IAS)?

- i. market survey without requesting information from ISPs (e.g., checking the relevant information on the ISP’s web pages, such as the general terms and conditions)
- ii. information request from ISPs
- iii. analysis of complaints and end-user reporting
- iv. technical network monitoring
- v. other, please specify

Question 2.b. Is there any change compared to the previous reporting period? If yes, please provide details.

All NRAs used one or more of the above-mentioned techniques to monitor the commercial and technical conditions related to the provision of IAS in the reporting period (see Figure 1 below). While almost all NRAs undertook a market survey (25), sent out information requests to ISPs (27) and did an analysis of complaints and end-user reporting (25), a smaller number of NRAs (10) used technical network monitoring tools.



Figure 1. Approaches to monitor commercial and technical conditions

Six NRAs (AT, DE, EL, FR, HR, IT) responded that they have also applied other approaches. Examples of alternative approaches by NRAs are the following.

NRA	Other approaches
AT	ISPs are obliged under the Austrian Telecommunications Act to notify their terms and conditions (T&Cs) to RTR at the start of a new communication service. Changes of T&Cs have to be notified as well. This is an on-going measure. Within this framework also the transparency obligations of the OIR are checked and this enables RTR to monitor the commercial and technical conditions related to the provision of the IAS as well.
DE	Reacting to media reports on net neutrality.
EL	Inspections at points of sale were undertaken.
FR	End-users can report issues on the online alert platform “J'alerte l'Arcep” ¹⁷ and they can use the latest version of the traffic management application “Wehe” ¹⁸ to help them detect potential traffic differentiations or port blockings implemented by their ISP.
HR	An end-user survey and on-site audits at points of sale were undertaken.
IT	Marketing and sales audits were undertaken.

Table 1. Examples of other approaches to monitor commercial and technical conditions

Five NRAs (CZ, DE, LT, PL, SE) responded that there are changes compared to the previous reporting period, as described in Table 2 below.

NRA	Changes
CZ	In December 2022, a year after the launch of the publicly available measurement tool NetTest, the mobile app version of NetTest was launched. It is available for Android mobile devices.
DE	ISPs are subject to the obligations of the EU Sanctions Regulation (media ban). To enhance legal certainty for companies, BNetzA informally informs the associations of the telecommunications industry. Whenever a new sanctions' package or implementing regulation is adopted, BNetzA informs about the relevant entities and the domains of which it is aware and which fall under the exceptional circumstances pursuant to Article 3(3) subpara. 3 lit. a of the OIR.
LT	Operators were asked to provide information on what timeline they plan to discontinue “zero-tariff” plans and how they are going to do that, if there are any practical issues with such measures, what impact it can have on end-users.
PL	Operators reduced the number of zero-rating offers for new clients.
SE	A formal supervision over zero-rating offers has been initiated.

Table 2. Changes compared to the previous reporting period

Question 3.a. Pursuant to article 3(1) have you completed any formal assessment of ISP restrictions on the use of technically compliant terminal equipment? If yes, briefly describe

¹⁷ <https://jalerte.arcep.fr/>

¹⁸ <https://itunes.apple.com/fr/app/wehe/id1309242023> and <https://play.google.com/store/apps/details?id=mobi.meddle.wehe&hl=fr>

the practice and the conclusions of the assessment (and enforcement action taken where applicable).

Question 3.b. Has the Network Termination Point (NTP) location been defined in your country? If yes, please provide details (e.g., date of the definition, BEREC's NTP Guidelines¹⁹ were taken into consideration, which is the location, links where documents are available). If no, please provide information if there are discussions or plans to define the NTP in your country and the reasons for this.

In the reporting period, six NRAs (BG, CY, CZ, IT, NL, SK) conducted formal assessments of ISP restrictions on the use of technically compliant terminal equipment, as shown in Table 3 below.

NRA	Changes
BG	CRC collects information on ISP restrictions on the use of technically compliant terminal equipment through an annual questionnaire. The outcome: No restrictions are applied by ISPs regarding the use of technically compliant terminal equipment.
CY	According to the provisions of the OIR (as interpreted in the BEREC OI Guidelines) as adopted in national secondary legislation (Decree 72/2017 ²⁰), ISPs are required to report restrictions on the use of technically compliant terminal equipment. OCECPR's main findings were that most of the ISPs offer their services accompanied with their own terminal equipment to be able to provide support and bundled services (telephony, internet, TV), or to avoid any modification that affects the speed provided. Based on ISPs explanation, the provision of obligatory equipment by the ISPs are justified and according to the provisions of the OIR and the Decree.
CZ	CTU continued its regular monitoring to ensure that end-users' rights to use terminal equipment of their choice within the meaning of Article 3(1) of the OIR are not being restricted. This was done through regular inspections of contractual T&Cs, targeted requests for information and monitoring the nature of complaints. There were two cases of suspected possible restrictions regarding the freedom of choice of terminal equipment. In one case, an inspection found a violation of Article 3(1) of the OIR and a cumulative penalty in form of a fine was imposed in a joint administrative proceeding. In the other case, the investigation is still ongoing.
IT	In the reporting period, AGCOM started a surveillance activity about the restriction on the usage of tethering for their users imposed by a mobile operator. After the intervention of AGCOM, the operator removed the restriction after the current reporting period, in June 2023. Furthermore, AGCOM performed a formal assessment regarding the technical and commercial conditions for the provision of optical network terminals (ONT) devices for FTTH wholesale services offered by the incumbent TIM. These conditions have been approved with Decision n. 11/23/CIR.

¹⁹ BEREC Guidelines on Common Approaches to the Identification of the Network Termination Point in different Network Topologies, [BoR \(20\) 46](#)

²⁰ https://ocecpr.ee.cy/sites/default/files/ec_decree_networkneutrality_gr_kdp-72-2017_03-03-2017_ac.pdf

NL	Consumers have full freedom regarding their choice of terminal equipment. ACM conducted an in-depth investigation into why not all customers of cable operator Ziggo are able to connect their own terminal equipment and assessed whether the enforcement of ACM's Policy Rule ²¹ regarding Enforcement of the Decision on Terminal Equipment is needed. This investigation has resulted in ACM imposing an order subject to periodic penalty payments on Ziggo ²² .
SK	All fixed network ISPs and some mobile network ISPs offer their terminal equipment for rent or sale, with the possibility of using end-users' own terminals based on ISP recommendations to ensure compatibility with the IAS provided. Set-top boxes for IPTV are usually part of the TV service provided.

Table 3. Information on formal assessments

So far, there have been different approaches among NRAs to tackling possible restrictions on the use of technically compliant terminal equipment and defining the NTP. While 11 countries (CY, CZ, DE, DK, EL, FI, LV, NL, PT, SI, SK) have by now defined the NTP (see Annex I – Table 36), the rest have discussed or are discussing this issue with their market players. In some countries there is no need to define the NTP yet, as informal agreements with stakeholders exist.

The NTP has not been defined in 17 countries (AT, BE, BG, EE, ES, FR, HR, HU, IE, IT, LT, LU, MT, NO, PL, RO, SE), four of them providing some more information in this regard:

NRA	Description
HR	Currently in Croatia there is no policy rule on NTP, but HAKOM has recognised the necessity for clearly defining the distinction between NTP, which is part of the network, and terminal equipment, which is not. As the NTP definition is of relevance for the evaluation of the efficiency of the OIR, HAKOM proposed in a bylaw (which is still on public consultation) some NTP policy rules that will transparently allow end-users possibilities to exercise their freedom of choice regarding terminal equipment.
HU	There are no plans to define the NTP.
IT	For fixed networks, AGCOM has not explicitly defined the NTP. However, Decision n. 348/18/CONS is imposing that the end-users have the right to freely choose every equipment used for internet connection that is installed in user's premises and that needs electrical power, including then the broadband router. The decision also prohibits the ISPs to enter into agreements with end-users or to adopt commercial practices that restrict that right. For technical reasons the Optical Network Terminal (ONT) and the Small Form factor Pluggable (SFP) for fibre-to-the-home (FTTH), as well as the modem in case of fixed wireless access (FWA) connections, are still subject to exemptions and can be provided by the network operators.
LT	There was no need to formally define the NTP, but generally it is considered at Point A according to the BEREC NTP Guidelines.

Table 4. Description of NRA plans regarding a possible definition of the NTP

²¹ <https://www.acm.nl/system/files/documents/beleidsregel-handhaving-besluit-eindapparaten.pdf>

²² <https://www.acm.nl/en/publications/acm-daily-penalty-payments-if-cable-operator-ziggo-violates-rules-free-modem-choice-july>

Question 4.a. What types of zero-rating services exist in your country at the end of the reporting period?

- i. none
- ii. music streaming services
- iii. video streaming/IPTV services
- iv. gaming
- v. social media services
- vi. voice and short messages
- vii. cloud services
- viii. email services
- ix. tele-education services and distance learning platforms
- x. emergency communications and public warning systems
- xi. speed measurement services
- xii. customer care services
- xiii. volume and/or time consumption monitoring
- xiv. other, please specify.

Question 4.b. Is there any change compared to the previous reporting period? If yes, please provide details. (e.g., offers voluntarily stopped by ISPs, type of services added to the offers)

Question 4.c. Are any of the above-mentioned zero-rating services based on article 3(2)? If yes, please provide details.

Question 4.d. Are any of the above-mentioned zero-rating services based on the exemptions from article 3(3)? If yes, please provide details.

Question 4.e. Does any ISP in your country offer to conclude new contracts with zero-rating based on article 3(2) at the end of the reporting period? If yes, please provide details.

Question 4.f. Did the NRA or a competent authority set or agreed a deadline for providers to terminate and/or stop to offer contracts with zero-rating based on article 3(2)? If yes, please provide details.

Question 4.g. What other actions have been performed concerning the termination of zero-rating based on article 3(2)?

- i. market survey (checking the relevant information on the ISPs' web pages, such as the general terms and conditions)
- ii. informal exchange with ISPs
- iii. formal information request from ISPs
- iv. exchange with stakeholders (e.g. ISPs, consumer organisations, civil society)
- v. initiation of formal legal proceedings against one or more ISPs (by NRAs or at a court in your country)
- vi. review of terms and conditions of zero-rated products
- vii. other, please specify



Question 4.h. What actions did ISPs take (or do ISPs plan to take) with regard to existing end-users' contracts that include zero-rating based on article 3(2) services (e.g., terminate time limited zero-rating offers, offer new contracts with lower price or higher data volume)?

Question 4.i. Did the NRA or a competent authority or a court make a decision/resolution/judgment regarding the right of end-users to terminate their contract, which includes zero-rating based on article 3(2), without incurring any further costs? If yes, please provide details. If no, to the extent you are aware of, please indicate the practices used by ISPs when changing the contracts in this regard.

Presence of zero-rating services at the end of the reporting period

Due to the ongoing termination of offers with zero-rating components by ISPs, there have been a reduction in the number of countries where those offers are (still) present compared to the previous reporting period: at the end of the current reporting period there were no zero-rating services identified by 15 NRAs (AT, CY, DE, EE, ES, FI, IE, LT, LU, LV, MT, NL, NO, SI, SK), while one or more zero-rating services was reported by all other 13 NRAs (see Figure 2 below for the details of the zero-rated services existing in those countries). At the end of the current reporting period, the most widespread zero-rating service is the customer care service, reported by 9 NRAs. The other zero-rating services reported as present by the NRAs are video streaming/IPTV services (8), volume and/or time consumption monitoring services (7), social media services (7) and music streaming services (6).





Figure 2. Zero-rating services existing at the end of the reporting period

Seven NRAs responded that there are other types of zero-rating services present in their country besides the ones indicated in the questionnaire (see Table 5 below).

NRA	Other zero-rating services
BE	Access to webpage with information on value added services
EL	Payment services, mobile security apps, ringtones and MMS, analytics traffic, DNS traffic, app for scientific research
IT	App for scientific research, maps
MT	Access to the provider's domain
PL	Maps and navigation services, self-services website and applications, banking services
RO	Antivirus
SE	Office 365 applications for business users

Table 5. Other zero-rating services mentioned

22 NRAs (AT, BE, BG, CZ, DE, DK, EL, ES, HR, HU, IT, LT, LU, MT, NL, NO, PL, PT, RO, SI, SK, SE) responded that there are changes compared to the previous reporting period. These changes are typically related to phasing out zero-rating services in light of the ECJ rulings issued in September 2021. Application of these rulings by the ISPs and supervision and

enforcement by the NRAs thus resulted in an important task for the involved parties in the reporting period. For further information, please consult Table 6 below.

NRA Changes compared to the previous reporting period	
AT	In June 2022, the Telecom-Control-Commission of RTR initiated formal supervisory procedures against four providers and ordered on 4 November 2022, the cancellation of the offer of zero-rating in existing contracts by 31 March 2023 (R 12/22, R 13/22, R 14/22 and R 15/22) ²³ due to the violation of the equal treatment obligation according to the OIR, affecting around 100 tariffs. Offers to new customers stopped since the end of summer 2022: no more zero-rating services are available on the market and no more end-users have services/tariffs that include zero-rating. The formal supervisory procedures according to Article 5 of the OIR regarding zero-rating tariffs/services therefore have been completed in Austria.
BE	All commercial zero-rating offers have ended. In principle, only zero-rating based on the provisions of the new Roaming Regulation ²⁴ is present in the Belgian market.
BG	A CRC decision (Decision 33/26.01.2023) was issued, which defines that the offering of zero-rating services must stop on 1 February 2023 and the provision of the service must end in December 2023.
CZ	CTU conducted negotiations with representatives of the largest providers to discuss which tariffs and offers on the market will continue to be compatible with the principles of the OIR, and to address the impact of the ECJ rulings on existing end-user contracts involving prohibited practices. Based on these negotiations, the offer of tariffs containing the zero-rating component in a form contrary to the 2022 BEREC OI Guidelines was discontinued for new customers in the summer of 2022. In the case of end-users whose contracts continued to include illegal practices, these were gradually migrated to new tariffs, without applying the zero-rating practice, until the end of March 2023. At present, only the issue of zero-rating access to the customer self-service of providers of electronic communications services remains to be addressed, which is no longer one of the permissible exceptions within the meaning of the BEREC OI Guidelines. CTU is conducting further investigations in this context.
DE	During the previous reporting period, BNetzA ordered Telekom and Vodafone to stop their zero-rating offers with the deadlines of 1 July 2022 (active marketing to new customers) and 31 March 2023 (termination of existing contracts).
DK	After a supervision carried out in 2022, no ISP in Denmark offers zero-rated services except for customer care.
EL	All ISPs have stopped marketing and offering zero-rating or differentiated pricing offers to new customers. Existing customers are gradually being transferred to

²³ All four decisions are available (in German) at:

https://www.rtr.at/TKP/aktuelles/entscheidungen/entscheidungen/r12_22.de.html

https://www.rtr.at/TKP/aktuelles/entscheidungen/entscheidungen/r13_22.de.html

https://www.rtr.at/TKP/aktuelles/entscheidungen/entscheidungen/r14_22.de.html

https://www.rtr.at/TKP/aktuelles/entscheidungen/entscheidungen/r15_22.de.html

²⁴ [Regulation \(EU\) 2022/612](#) of the European Parliament and of the Council of 6 April 2022 on roaming on public mobile communications networks within the Union (recast).

	contracts without zero-rating services. The transition of business customers to new contracts also takes place but at a slower pace.
ES	Offers voluntarily stopped by ISPs.
HR	HAKOM sent a letter to affected ISPs with defined deadline for stopping marketing of zero-rating offers by 1 July 2022 and for stopping the provision of zero-rating offers from 1 January 2023 (including existing contracts with zero-rating).
HU	NMHH issued decisions in September 2022, which obliged ISPs to stop selling zero-rating services to new customers by 15 November 2022, and to terminate their existing contracts that include zero-rating by 31 March 2023. The ISPs fulfilled the obligations, except for one ISP that has maintained zero-rating for speed-testing and for their own customer-care app. The NRA will assess this practice.
IT	All existing zero-rating offers were voluntarily removed from the market and almost all users migrated to offers without zero-rating components, with a time plan communicated to AGCOM. Migration is still ongoing.
LT	All zero-rating offers were discontinued in 2022.
LU	Zero-rating offers were stopped by the operators, at ILR's request after the publication of the ECJ rulings, by the end of October 2022.
MT	All zero-rated content related to commercial offers was stopped by the end of August 2022, except for one provider allowing its subscribers access to its domain without charging. The provider is assessing the technical limitations it must implement for the necessary changes.
NL	T-Mobile made a formal commitment to stop offering the only zero-rating service in the Netherlands no later than 31 March 2023 ²⁵ . By that date, the whole service was phased out (also for existing contracts with zero-rating).
NO	The zero-rating offers "Music Freedom" from Telenor and Telia, respectively, have been removed from the market during the reporting period.
PL	Operators have significantly reduced the number of zero-rating offers for new clients, but they still exist on the market.
PT	As only one ISP has voluntarily stopped offering zero-rating and similar offers in new contracts, after the publication of the updated BEREC OI Guidelines in June 2022, ANACOM has initiated a formal proceeding and approved a final decision ²⁶ on 1 March 2023. According to this decision, ISPs have to cease zero-rating and similar offers that discriminate between traffic related to zero-rated applications and other traffic for commercial reasons by 31 March 2023 for offers available for new subscriptions, and by 14 July 2023 for existing contracts ²⁷ . In addition, ANACOM published on 12 May 2023 a clarification regarding the determination foreseen in the

²⁵ <https://www.acm.nl/en/publications/acm-accepts-t-mobiles-commitment-zero-rating-service-stop-31-march-2023>

²⁶ <https://www.anacom.pt/render.jsp?contentId=1742492>

²⁷ Without prejudice to end-users of zero-rating and similar offers whose contracts provide for a loyalty period still in progress, may keep those offers until the end of that period.



	decision related to existing contracts ²⁸ . Therefore, at the present moment, considering what is established in ANACOM's decision, zero-rating and similar offers should not be available for new subscriptions, although they may still exist for contracts currently in execution.
RO	Even though the zero-rating offers are still present on the market, there are less and less end-users using them as the ISPs chose to gradually phase them out of the contracts. According to the information received from the ISPs, the zero-rating offers are no longer promoted and/or sold to new customers.
SI	Offers voluntary stopped by the ISP.
SK	ISPs stopped offering the zero-rating services during the reporting period.
SE	One music streaming service has been removed due to the difficulty for the operator to identify the traffic associated with the included music services.

Table 6. Changes compared to the previous reporting period

Zero-rating services based on Article 3(2) or on the exemptions from Article 3(3)

Six NRAs (BG, EL, FR, HU, PT, RO) reported that at least some of the above-mentioned zero-rating services are based on Article 3(2) of the OIR, and five NRAs (BE, DK, EL, MT, RO) reported that there are zero-rating services based on the exemptions from Article 3(3) (see Table 7 and Table 8 for more details).

²⁸According to this clarification, if ISPs provide greater volumes of data for general access to the Internet, at least equivalent to the total volume of data that users currently have available, without increasing prices or changing the other T&Cs, the context that determines the possibility to keep zero-rating and similar offers until the end of the loyalty period does not apply (<https://anacom.pt/render.jsp?contentId=1745019&languageId=1>)

NRA Services based on Article 3(2)	
EL	Some zero-rated services (e.g. music/video streaming, messaging, cloud/email services) were part of commercial offers, where the subscriber paid a fee for zero-rating a specific volume of traffic. Others (e.g. DNS traffic) are zero-rated by default. Speed measurement services do not fall in this category.
HU	According to its general T&Cs, a large ISP still applies zero-rating of its own customer care and consumption monitoring application, and a specific speed measurement service (Speedtest).
RO	Most zero-rating offers are based on the provisions of Article 3(2) and, at the time of their launch, were in line with the BEREC OI Guidelines and the interpretation of OIR before the 2021 ECJ's rulings on zero tariff options.

Table 7. Details regarding services based on Article 3(2)

NRA Services based on the exemptions from Article 3(3)	
BE	Access is provided to dedicated webpages with information on value added services and emergency services, as foreseen in Articles 13 and 15 of the Roaming Regulation
DK	Access to some ISPs' webpages is zero-rated for all customers. ADSI considers this reasonable traffic management in order to ensure adequate customer service.
EL	Speed measurement services.
MT	One provider is seeking compliance with the Roaming Regulation by applying a zero-rated tariff to information that the Roaming Regulation mandates to be offered free of charge.
RO	The national speed measurement tool, Netograf, is zero-rated based on ANCOM's Decision issued in 2017.

Table 8. Details regarding services based on the exemptions from Article 3(3)

Possibility to conclude new contracts with zero-rating based on Article 3(2)

Three NRAs (FR, HU, PL) reported that ISPs in their country still offer to conclude new contracts with zero-rating based on Article 3(2) at the end of the reporting period: the offers continue as informal discussions with the NRA are still ongoing (FR), one large ISP still offers to conclude new contracts with zero-rating services²⁹ (HU) and operators sell services to new customers (e.g. social packages and TV packages) with zero-rating (PL), but the number of offers is reduced.

Deadline for providers to terminate contracts with zero-rating

15 NRAs (AT, BE, BG, CZ, DE, EL, HR, HU, LT, LU, MT, NL, NO, PT, SK) reported that they or a competent authority have set or agreed a deadline for providers to terminate and/or stop offering contracts with zero-rating based on Article 3(2) (see following Table 9). In half of these

²⁹ In particular, NMHH specified that the ISP applies zero-pricing (concerning both the customer service application and the speed test application) in all of its IAS offers, existing and new subscriber contracts.

countries (7 out of 15), the deadline was set so as to terminate these contracts in 2022, while in the remaining countries such contracts were scheduled to be terminated in the course of 2023, implying that in some of these countries the respective actions are still ongoing by the end of the reporting period.

NRA Deadline for providers to terminate contracts with zero-rating	
AT	In June 2022, the Telecom-Control-Commission of RTR initiated formal supervisory procedures against four providers and ordered on 4 November 2022 the cancellation of the offer of zero-rating in existing contracts by 31 March 2023 (R 12/22, R 13/22, R 14/22 and R 15/22). Offers to new customers have stopped since the end of summer 2022. This happened after informal talks between the providers offering zero-rating and RTR.
BE	BIPT set a deadline for one ISP to end commercial zero-rating by the end of 2022 at the latest. In practice, there was no such zero-rating anymore, as of the end of October 2022.
BG	A CRC decision (Decision 33/26.01.2023) was issued, which defines that the offering of the zero-rating services must stop on 1 February 2023 and the provision of the service must end in December 2023.
CZ	Based on negotiations with the largest ISPs, the offer of tariffs containing the zero-rating component in a form contrary to the 2022 BEREC OI Guidelines was discontinued for new customers in the summer of 2022. In the case of end-users whose contracts continued to include illegal practices, these were gradually migrated to new tariffs that do not include the zero-rating practice, until the end of March 2023.
DE	During the previous reporting period, BNetzA ordered Telekom and Vodafone to stop their zero-rating offers with the deadlines of: a) 1 July 2022 regarding active marketing to new customers and b) 31 March 2023 regarding termination of existing contracts.
EL	EETT through an official letter of communication sent to all ISPs on 27 September 2022 set two deadlines: a) as of 27 November 2022, ISPs to stop offering contracts with zero-rating and differentiated pricing offers to new customers and b) as of 27 October 2022, ISPs to stop promoting commercial offers with such services.
HR	HAKOM sent a letter to affected ISPs with a defined deadline to stop marketing of zero-rating offers by 1 July 2022 and to stop providing zero-rating offers from 1 January 2023 (including existing zero-rating contracts).
HU	NMHH obliged ISPs to stop selling zero-rating products to new customers by 15 November 2022, and to terminate their existing contracts that include zero-rating by 31 March 2023.
LT	The deadline was set to 3 October 2022.
LU	Upon ILR's request, operators stopped offering new contracts with zero-rating in June 2022. The deadline to terminate existing zero-rating contracts was set to the end of October 2022.
MT	Following extensive discussion with the provider, MCA set the deadline to: a) 30 June 2022 for the termination of zero-rating advertising, and b) 30 September 2022 for the termination of the zero-rated component from active commercial offers.

NL	T-Mobile made a formal commitment to stop offering the only zero-rating service in the Netherlands no later than 31 March 2023.
NO	Nkom decided that zero-rating offers should be terminated by 31 December 2022.
PT	According to ANACOM's decision ³⁰ of 1 March 2023, ISPs must cease zero-rating and similar offers, which are not compliant with Article 3(3) of the OIR, where applicable: a) until 31 March 2023 in the case of offers available for new contracts, b) until 14 July 2023 in the case of contracts currently in execution, without prejudice to end-users of zero-rating and similar offers whose contracts provide for a loyalty period still in progress, may, if they wish, keep those offers until the end of that period.
SK	NRA and ISPs agreed a deadline for the a) termination of marketing zero-rating offers by 31 January 2023 and b) termination of existing contracts and migration to new offers by end Q1/2023.

Table 9. Deadline for providers to terminate contracts with zero-rating based on Article 3(2)

Actions performed concerning the termination of zero-rating based on Article 3(2)

24 NRAs (AT, BE, BG, CZ, DE, DK, EE, EL, ES, FR, HR, HU, IE, IT, LT, LU, MT, NL, NO, PL, PT, RO, SI, SK) reported actions that they performed concerning the termination of zero-rating based on Article 3(2), as summarised in Figure 3 below. Besides the actions listed in the figure, it has been reported the start of the activities for the inclusion in the national Open Internet Regulation of specific provisions for the termination of zero-rating offers (EL), the monitoring of the deadlines communicated by the operators to terminate existing contracts with zero-rating (IT), the acceptance of formal commitments by ISP (NL) and a decision on zero-rating and similar offers determining ISPs to cease them (PT).



Figure 3. Actions performed concerning the termination of zero-rating based on Article 3(2)

³⁰ <https://www.anacom.pt/render.jsp?contentId=1742492>

Table 10 below summarises what the NRAs reported about the actions that ISPs took (or plan to take) about terminating existing end-users' contracts which include zero-rating services based on Article 3(2) and what kind of replacement services ISPs offer instead.

NRA	ISPs' actions regarding existing contracts with zero-rating
BE	One ISP migrated its customers to a new tariff plan without zero-rating (with a higher price of EUR 1 and higher data volume). The second ISP eliminated the zero-rating component from their offers: depending on the usage profile of the customer, they either did nothing more or contacted the customer to convince him to subscribe to a new tariff plan. In the latter case, temporary promotions could be given as well. The zero-rating offers of these two ISPs were not available to new customers even before the ECJ rulings. The third operator eliminated zero-rating from all of its offers without changing their price, in most cases including a permanent higher data volume in the offer. Sometimes temporary promotions were given as well. In some cases, no additional volume or promotion was given, based on the past usage profile of the customer.
BG	ISPs started to offer plans with unlimited data usage at a maximum speed, or in other cases after certain data volume at a maximum speed (e.g., 1000 MB, 5000 MB, ...) the remaining data usage speed is reduced (e.g., 2 Mbit/s, 10 Mbit/s, ...) according to the mobile plan.
CZ	The migration of existing subscribers was generally seen as a new offer when cancelling a tariff, with the offer being adjusted primarily in terms of data volume and price so that the subscriber could choose a similar volume of data usually consumed, including the previously zero-rated services. The solutions offered to subscribers included the possibility to increase the data volume without differentiating the purpose of use, using the offer of an unlimited tariff or consuming unlimited data at a reduced speed after the basic data volume has been used up.
DE	ISPs have terminated the last existing contracts including zero-rating offers and offered new contracts with higher data volume.
DK	Contracts with zero-rating have been amended, so that they no longer contain zero-rated services. The relevant ISP has not offered new contracts with e.g., lower price/higher data volume.
EL	Based on informal information exchange, some ISPs have already started moving their customers to new contracts offering them increased data volume.
ES	Offer new contracts with higher data volume.
HR	Terminate time limited zero-rating offers and offer new contract with higher data volume.
HU	The ISPs changed their T&Cs and modified the existing contracts that included zero-rating. Some ISPs offered additional data volume.
IT	The zero-rated component of the offer was replaced with an additional data allowance not connected with specific services. In some cases, there has been changes in the cost of the offer or just the removal of the zero-rated component, with the option for the users to terminate their contract without incurring in any further costs.
LT	Additional data allowance offered for users that had zero-rating options.
LU	ISPs offer new contracts with higher data volume.

MT	The provider terminated the zero-rated component from all services active at the time.
NL	Some customers were offered unlimited data for a time period, other customers received an offer for a new contract with lower prices.
NO	ISPs terminated zero-rating offers by 31 December 2022.
PL	Operators reduced the number of zero-rating offers for new clients.
PT	Considering that the deadline set in ANACOM's decision has not yet expired, it is not clear at the reporting time what the ISPs' plans are regarding existing end-users' contracts that include zero-rating and similar offers. Notwithstanding, ANACOM has ordered, in its decision, ISPs to send detailed information on the changes made in those contracts, as well as the information disclosed to end-users, by 14 July 2023.
RO	All ISPs providing zero-rating offers chose the natural migration of their customers to better offers without zero-rating.
SI	Offered new contracts with higher data volume.
SK	Some ISPs offered compensations, e.g. higher data volume.

Table 10. ISPs' actions regarding contracts with zero-rating based on Article 3(2) services

End-users' rights to terminate their contract

Two NRAs (BE, HU) reported that they or a competent authority or a court have made a decision/resolution/judgment regarding the right of end-users to terminate their contract, which includes zero-rating based on Article 3(2), without incurring any further costs. In both cases, the NRAs reported to the ISPs their decision that subscribers have the right to terminate their contract without incurring costs when the contracts are changed by removing the zero-rating components. One NRA (HU) asserted to the ISPs that this is related to the fact that the OIR has not changed (meaning there was no change in legislation), and these changes are not directly mandated by the NRA but rather are decided by the ISP. The other NRA (BE) is in the process of investigating the applicability of the exception related by "contract changes imposed by Union Law" contained in Article 105(4) of the European Electronic Communications Code (EECC) raised by an ISP.

One NRA (MT) reported that in its interpretation it concluded that the termination of zero-rated offers included in active contracts was necessary for ISPs to adhere to a mandatory aspect the OIR provisions as interpreted by ECJ. This in substance means that ISPs in such instances may terminate the zero-rated services from active contracts without offering their subscribers the option to terminate the contract free of charge once such a norm is consequential to a legal requirement as interpreted by the ECJ.

One NRA (NL) reported that, according to their national law, ISPs are not obliged to offer compensation to existing customers because of the ECJ rulings: affected consumers do not have the option to terminate free of charge their plans due to a regulation or measure adopted by the government that requires a provider to change a clause in the contract with a subscriber.



Question 5. Pursuant to article 3(2) have you performed any formal assessment of agreements on commercial and technical conditions as well as commercial practices such as application-agnostic differentiated pricing? If yes, briefly describe the practice and the conclusions of the assessment (and enforcement action taken where applicable).

Five NRAs (AT, BG, CY, CZ, NO) have performed formal assessments of agreements on commercial and technical conditions as well as commercial practices such as application-agnostic differentiated pricing (see Table 11 below).

NRA	Conclusions of the assessments on commercial practices
AT	ISPs are obliged under the Austrian Telecommunications Act to notify their T&Cs to RTR at the start of a new communication service. Changes of T&Cs have to be notified as well. This is an on-going measure. Also within this framework, the transparency obligation of the OIR is checked and this enables RTR to monitor agreements on commercial and technical conditions as well as commercial practices on an ongoing basis.
BG	The assessment showed that ISPs did not offer zero-rated services, but application-agnostic differentiated services, which consist of offering additional free data volume for a list of applications, where the end-user can choose for which application to use the additional data volume. This is the reason for CRC to come out with the Decision 33/26.01.2023 mentioned above.
CY	According to the provisions of the OIR (as interpreted in the BEREC OI Guidelines), ISPs reported to OCECPR about their agreements on commercial and technical conditions as well as commercial practices. Following an assessment of ISPs' reports, OCECPR concluded that the agreements on commercial and technical conditions as well as commercial practices performed by ISPs agreement do not constitute an infringement of the OIR. No zero-rating services exist in Cyprus, therefore no specific assessment was made expressly for zero-rating services.
CZ	CTU continued to pay attention to selected business practices of ISPs, including zero-rating practices, inter alia by monitoring the published contractual T&Cs of providers who have provided the service so far.
NO	Assessments were made in connection with the work on the annual national net neutrality report, resulting in high-level conclusions and no concrete enforcement actions.

Table 11. Conclusions of the assessments on commercial practices

Question 6.a. What approach have you taken to monitor the traffic management practices of ISPs?

- i. market survey without requesting information from ISPs
- ii. information request from ISPs
- iii. analysis of complaints and end-user reporting
- iv. technical monitoring

v. other, please specify:

Question 6.b. Is there any change compared to the previous reporting period? If yes, please provide details.

26 NRAs (AT, BE, BG, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IT, LU, LV, MT, NL, NO, PL, PT, RO, SI, SK) used one or more of the above-mentioned approaches to monitor traffic management practices in the reporting period, as presented in Figure 4 below. 15 NRAs undertook a market survey without requesting information from ISPs. 20 NRAs reported that they had submitted information requests to ISPs, while 20 NRAs had analysed complaints and end-user reports. Technical monitoring is up and running in four Member States.

Other solutions included meetings held with ISPs on how to implement (technically) the EU sanctions against Russia, with regard to broadcasting transmissions via websites (BE). In FR, end-users can report issues on the online alert platform “J’alerte l’Arcep” and they can use the last version of the traffic management application “Wehe” to help them to detect potential traffic differentiations or port blockings implemented by their ISP. In AT, ISPs are obliged under the Austrian Telecommunications Act to notify their (or changes to their) T&Cs at the start of a new communication service. This is an on-going measure, which allows RTR to also check the transparency obligation.

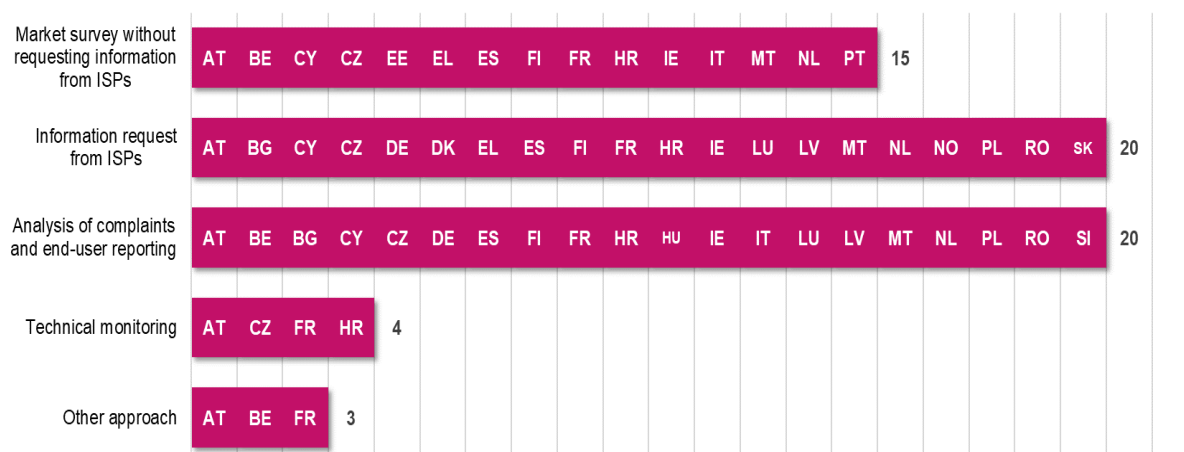


Figure 4. Approaches to monitor traffic management practices

Three NRAs (BE, DK, PT) stated that there has been a change compared to the previous reporting period. In BE, the NRA has investigated possible unlawful blocking of email messages. In DK and PT, NRAs did not receive complaints or did not send information requests.

Question 7. Pursuant to article 3(3) subs. 1 to 3, have you completed any formal assessment of an ISP’s traffic management practices? If yes, briefly describe the practice and main conclusions of the assessment (and enforcement action taken where applicable).

10 NRAs (AT, BG, CY, CZ, DE, FR, IT, MT, PL, SK) reported that they had completed formal assessments of traffic management practices in the reporting period, as outlined in Table 12 below.

NRA	Main findings
AT	There were a number of formal proceedings in regard to supervisory procedures relating to website blocking due to copyright issues and due to the EU Sanctions against Russia. All procedures were dropped as no breach of Article 3 of the OIR was identified.
BG	On an annual basis, CRC is collecting such information with a dedicated questionnaire. The conclusion is that the traffic management practices applied by ISPs is in line with Article 3(3) subs. 1-3 of the OIR.
CY	According to the provisions of the OIR (as interpreted in the BEREC OI Guidelines), ISPs reported to OCECPR on traffic management practices. OCECPR concluded that any traffic management practices used by ISPs do not constitute an infringement of the OIR.
CZ	In the context of the monitoring activities, CTU has recorded a suspected violation of Article 3(3) of the OIR in the reporting period. This investigation has not yet been completed.
DE	<p>BNetzA has conducted informal reviews of planned DNS blockings. Right holders can submit a request for review to CUII (an Online Copyright Clearance System). If CUII recommends that a requested DNS block should be implemented, it forwards its recommendation to BNetzA. This is done on a voluntary basis. The examination or statement carried out by BNetzA also takes place informally at this point. BNetzA considers the net neutrality aspects and provides CUII with its (informal) opinion. In two cases, BNetzA considered the DNS blocking to be necessary to enforce a claim under Section 7(4) of the German Telemedia Act (TMG) and thus justified under Article 3(3) subpara. 3 lit. a of the OIR.</p> <p>BNetzA has issued a list of domains whose blocking by ISPs does not constitute a violation of net neutrality. For example, ISPs are subject to the obligations of the EU Sanctions Regulation (media ban). In order to ensure a certain degree of legal certainty for companies, BNetzA informs the associations of the telecommunications industry informally. Whenever a new sanctions package or implementing regulation is adopted, BNetzA informs relevant stakeholder associations about the relevant organisations and the domains of which we are aware and which, based on the EU Sanctions Regulations fall under the exceptional circumstances pursuant to Article 3(3) subpara. 3 lit. a) of the OIR.</p>
FR	Arcep is still assessing possible traffic management practices in internet offers on trains. No conclusion has been reached so far and Arcep is currently monitoring the case.
IT	During the reporting period, the port blocking practice of an ISP, related to the usage of unauthenticated SMTP on port 25, has been assessed. Due to the fact that the port blocking was implemented for security reasons, in particular to avoid its usage by virus programs and the consequent IP address banning that could affect also other users, and that the users could request the removal of the blocking, no further action has been taken.

MT	For the past years, MCA was using the TCPI questionnaire to probe various issues related to OI. The same procedure was applied this year. The main ISPs apply IP blocking intended to stop the unlicensed transmission of copyrighted content, which prohibits ISPs in Malta from carrying illegal traffic consisting of the transmission of Spanish football La Liga matches on their electronic platforms. This action is the result of a court decree in favour of "La Liga Nacional e Futbol Profesional" issuing a request for prohibitory injunction against the three main ISPs. The blocking targets a number of IP addresses identified in a study commissioned by PwC and accepted by the court. ISPs also block the DNS resolution of a number of domains related to entities which are addressed by the EU Sanctions.
PL	<p>At the turn of 2021 and 2022, UKE conducted an inspection of one of the largest ISPs in Poland in terms of users regarding compliance with Articles 3(3) and 5(2) of the OIR in the period from 2017 to 2019.</p> <p>The audit revealed that: between 1 January 2017 and 15 May 2019, there was a breach of the terms of the OIR resulting from the practice of prioritising business over retail customer traffic. These practices, during the period of their application, were constant in nature, regardless of the level of traffic on the network. They also applied to the internet access traffic, which did not have special requirements in terms of delays and fluctuations necessary for the proper operation of the service. Currently, UKE is in the process of assessing the collected evidence in order to resolve administrative proceedings for imposing a fine under Article 209 (1) (25) of the Act of 16 July 2004 – Telecommunications Law.</p>
SK	ISPs use practices imposed by European or national legislation. The provisions of several acts (i.e., the Act n.171/2005 Coll. on gambling games, the Act n.166/2003 Coll. on the Protection of Privacy against the Unauthorised Use of Technical-Intelligence Measures, child protection platform) for blocking of inappropriate content are complied with in practice. The list of prohibited websites is compiled and published by the Regulatory authority of the gambling on its website ³¹ .

Table 12. Main findings of traffic management practices

Question 8. In the reporting period, have you conducted any research or survey on port blocking practices by ISPs? If yes, please briefly describe the main findings.

10 NRAs (AT, DK, EL, FI, HR, LV, MT, NO, PL, SI) surveyed port blocking practices by ISPs in the reporting period. The information provided in Table 13 below summarises the facts provided by the NRAs.

³¹ <https://www.urhh.sk/web/guest/zoznam-blokovanych-webov>

NRA	Main findings
AT	<p>ISPs are obliged under the new Telecommunications Act to notify their T&Cs to RTR at the start of a new communication service. Changes of T&Cs have to be notified as well. Thus, RTR may come across issues of port blocking when checking the T&Cs.</p> <p>Occasionally, ISPs contact the NRA and enquire if the blocking of a certain port is in line with the OIR.</p>
DK	About 50 percent of the Danish operators block port 25.
EL	<p>Port blocking has been reported for a) preventing cyber-attacks, b) preventing spam and phishing messages, c) management of terminal equipment (in ports reserved for such management).</p> <p>It is sometimes used in combination with blocking of specific protocols for network security reasons. It can be a temporary or permanent measure or can be applied automatically. There does not seem to be a set of ports uniformly blocked by all ISPs.</p>
FI	<p>In September 2022, Traficom took a decision in a case where an ISP was permanently blocking outgoing email traffic to port 25 from certain enterprise subscriptions. Traficom found that the ISP did not have a legitimate ground for the practice and that it thus violated both national law and the OIR. Traficom ordered the ISP to change its practice, which the ISP followed.</p>
HR	<p>NMHH gathered responses which showed that ISPs use temporarily port-blocking measures, justifying it with security exceptions (malware, phishing, spoofing, preventing DDoS attacks, etc.). No new ports were reported to be blocked in comparison to previous years.</p>
LV	<p>According to the information declared annually by the ISPs, SPRK has found that some ISPs block certain ports to avoid security threats and malware. Compared to the previous reporting period, the percentage of ISPs that block ports has decreased and is about 10%.</p>
MT	Port blocking is used by ISPs, justified for network security measures.
NO	<p>An ISP's customer experienced difficulties connecting a Nintendo Switch to the internet. The cause was that some ports for incoming communication were blocked, the service is based on P2P communication, and it required a public IP address instead of using Carrier-Grade Network Address Translation (CGNAT). The problem was solved by allocating the customer a public IP address.</p>
PL	<p>Most ISPs do not apply TCP or UDP port blocking practices. ISPs who apply such a practice block ports for the incoming internet traffic. Only port 25 (TCP) is blocked for outgoing internet traffic. In general, ports are blocked to ensure the integrity and the security of the network and services provided by means of the network and end-users' terminal devices.</p>
SI	<p>Some operators block certain ports for security reasons (preserving the integrity and security of the network and services provided via that network) and to limit unsolicited communications. There are no differences on port blocking practices compared to the previous reporting periods.</p>

Table 13. Main findings of port blocking practices



5. Article 3(5) – Specialised services

Question 9.a. What approach have you taken to monitor services other than IAS (called specialised services below)?

- i. market survey without requesting information from ISPs (e.g., checking ISP's offers on their web pages)
- ii. information request from ISPs
- iii. analysis of complaints and end-user reporting
- iv. technical network monitoring
- v. other, please specify:

Question 9.b. Is there any change compared to the previous reporting period? If yes, please provide details.

Six NRAs (BE, DK, LT, LU, NL, SE) did not monitor specialised services in the reporting period, while most NRAs (22) used one or more of the above-mentioned approaches to monitoring specialised services. As shown in Figure 5 below, 21 NRAs sent information requests to ISPs and/or undertook an analysis of complaints and end-user reporting, while about half of them (12) performed a market survey without requesting information from ISPs. One NRA used technical network monitoring.

Furthermore, FR mentioned other approaches, namely that end-users can report issues to the online alert platform “J'alerte l'Arcep” and they can use the traffic management application “Wehe”.

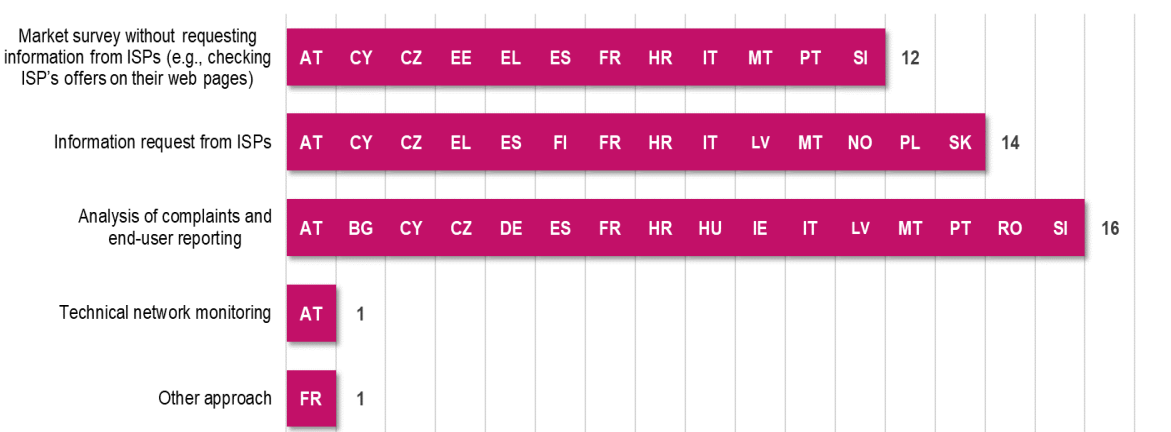


Figure 5. Approaches regarding monitoring of specialised services

Two NRAs responded that there are changes compared to the previous reporting period, as outlined in Table 14 below.

NRA	Changes
LV	13% of electronic communications merchants stated that they provide specialised services. VoIP and IPTV services are most often specified. As of 2023, all 3 mobile voice service operators have started to offer voice telephony service with support of VoLTE technology.
PT	In the reporting period, ANACOM did not send any information request to ISPs related to specialised services, contrary to what happened in the previous period.

Table 14. Changes compared to the previous reporting period regarding monitoring of specialised services

Question 10. Is there an NRA or national interpretation or guidance on “services other than internet access services”, which has not yet been mentioned in the previous BEREC OI Implementation Questionnaires? If yes, please provide any information and examples other than the ones mentioned in BEREC OI Guidelines (VoLTE, IPTV).

None of the countries nor NRAs provided new guidance on specialised services in the reporting period. One NRA (AT) stated that the definition in the BEREC OI Guidelines is adequate, concluding that no further NRA/national interpretation is necessary.

Question 11. Have you completed any formal assessment of the provision of specialised services by ISPs? If yes, briefly describe the practice and the conclusions of the assessment (and enforcement action where applicable).

Two NRAs (CY, SK) completed a formal assessment of the provision of specialised services in the reporting period. The information provided in Table 15 below summarises the results of the assessments carried out by those NRAs.

NRA	Main findings
CY	According to the provisions of the OIR (as interpreted in the BEREC OI Guidelines) and as adopted in a national secondary legislation (Decree 72/2017), ISPs reported to the NRA about providing specialised services. OCECPR concluded that the provision of the type of specialised services offered by the ISPs does not constitute an infringement of the OIR.
SK	ISPs in Slovakia offered IPTV, VoD and SVoD services that could meet the criteria for the specialised services. The traffic for these services can be optimised in the network to provide services of the required quality.

Table 15. Main findings of the provision of specialised services

6. Article 4(1) – Approaches to monitoring and enforcement compliance

Question 12.a. What approach have you taken to monitor and to enforce ISPs' compliance with their transparency obligations set out in article 4?

- i. market survey without requesting information from ISPs (e.g., checking the applicable "terms and conditions")
- ii. (formal or informal) information request from ISPs
- iii. analysis of complaints and end-user reporting
- iv. other, please specify:

Question 12.b. Is there any change compared to the previous reporting period? If yes, please provide details.

As shown in Figure 6 below, most NRAs used at least one approach to monitoring and enforcing ISPs' compliance with their transparency obligations in the reporting period: 21 NRAs undertook a market survey without requesting information from ISPs, 21 submitted information requests to ISPs and 22 analysed complaints and end-users' reports.

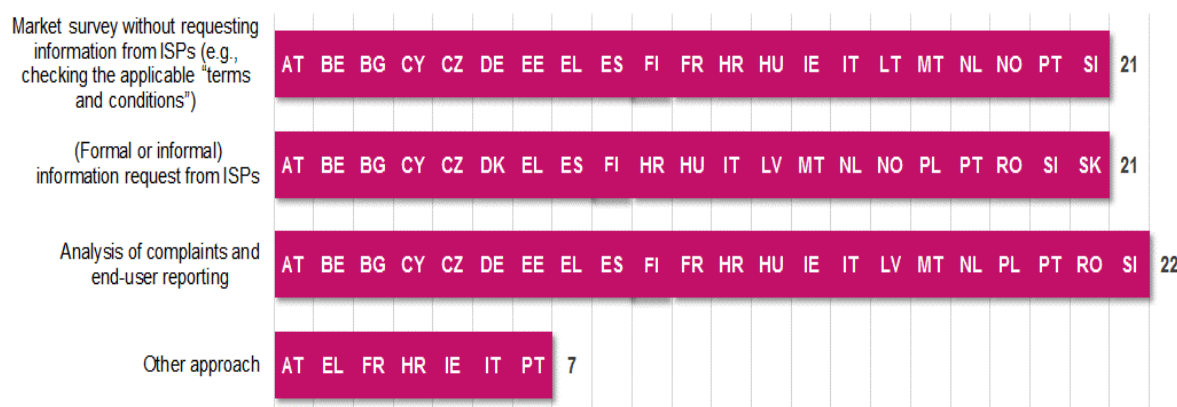


Figure 6. Approaches regarding monitoring and enforcing ISPs' compliance with their transparency obligations set out in Article 4 of the OIR

Furthermore, seven NRAs mentioned other approaches as outlined in Table 16 below.

NRA Other approaches	
AT	ISPs are obliged under the Telecommunications Act to notify their T&Cs to RTR at the start of a new communication service. Changes of T&Cs have to be notified as well. This is an on-going measure. Within this framework also the transparency obligations of the OIR are checked. RTR is entitled to object to specific clauses within 6 weeks if they do not meet legal standards.
EL	On-site audits at points of sale were carried out.
FR	According to Article 45 of the Executive Order n. 2021-650 complementing the French Consumer Code, operators must comply with the transparency measures of Article 4(1) of the OIR.
HR	On-site audits at points of sale were carried out.
IE	A mystery shopping initiative was conducted to test compliance with transparency obligations. At the end of the reporting period, the results have not yet been available.
IT	AGCOM published statistical comparative values of ISPs' QoS results. Also, AGCOM runs a surveillance activity on service and general conditions contents.
PT	ANACOM analysed the contractual terms used by the main ISPs in their contracts and monitored published information about speeds on the ISPs' websites, with a focus on new providers.

Table 16. Examples of other approaches to monitor the ISPs' compliance with the transparency obligations

Five NRAs (BE, CZ, IE, PT, SI) pointed out that there was a change when compared to the previous period, as detailed in Table 17.

NRA Description of the change performed	
BE	An in-depth inquiry was undertaken into the way one new entrant to the fixed market mentioned the speed values on their website and in (pre)contractual documents. This was done based on a formal request for information. Moreover, a sample survey on whether network operators advertised their mobile speeds on their websites was conducted, but that first, limited survey did not reveal any examples of such advertisements.
CZ	The third stage of the extensive national inspection carried out between August 2022 and November 2022 has been completed. It focused on compliance with the obligations under Article 4(1) (d) and (e) of the OIR and on compliance with the obligations arising from the General Authorisation ³² specifying the method of designating individual speeds and their discrepancies. This stage focused on the remaining small providers offering an IAS at a fixed location, who had not complied with all their legal obligations by the end of the second stage. At the same time, in view of the effect of certain provisions of the amendment to the Electronic Communications Act and the end of the transitional period (until 30 June 2022), the scope of the inspection was also extended to the fulfilment of the obligation to provide a pre-contractual summary of the contract, which contains, in accordance with Article 102(3)(f) of the EECC, the information required under Article 4(1) (d) and (e) of OIR.

³² https://www.ctu.eu/sites/default/files/obsah/ctu-new/WEB_EN/vo-s-10820209en_1.pdf

IE	Mystery shopping initiative tested transparency obligations. At the end of the reporting period, the results have not yet been available.
PT	In the period concerning the questionnaire, the monitoring of the information on speeds published on the websites of smaller ISPs continued, namely based on the collection of information through the Annual Electronic Communications Questionnaire. ANACOM has monitored published information about speeds from fewer ISPs' websites, in comparison with the previous reporting period.
SI	New legislation has been adopted: <ul style="list-style-type: none"> • Electronics Communication Act³³ – Implementing EECC • New secondary legislation (General Act on internet access services and the related rights of end users³⁴) • There are some new transparency obligations: in case an energy saving mode is used in mobile networks which effects the end user experience, and when introducing security measures that cause the limitation in accessing IAS.

Table 17. Changes compared to the previous reporting period

Question 13. In the reporting period, have you completed any formal assessment of the ISPs' contract conditions and their compliance with requirements set out in article 4(1), subs. a-e? If yes, please describe the main findings. [Note: detail of compliance in relation to speeds' information requested below under Q16 and Q17]

In 10 Member States (AT, BE, BG, CY, CZ, FI, HR, LV, MT, SK), a formal assessment of the ISPs contract conditions and their compliance with requirements set out in Article 4(1) a-e was completed by the NRA in the reporting period (Table 18). No formal assessment was carried out in 18 Member States (DE, DK, EE, EL, ES, FR, HU, IE, IT, LT, LU, NL, NO, PL, PT, RO, SI, SE).

NRA	Main findings
AT	ISPs are obliged under the Telecommunications Act to notify their T&Cs to RTR at the start of a new communication service and when there are changes of the T&Cs. Several issues regarding the provision of a public IPv4 address and regarding devices were resolved informally in this process. Thus, in the end all notified T&Cs complied with the law.
BE	BIPT took note of the information on speeds the largest network operators reported to include in their contracts and did an in-depth inquiry on the way one new entrant to the fixed market mentioned the speed values on its website and in (pre)contractual documents. Initially, the ISP which was subject to the in-depth inquiry did not mention the normally available upload/download speed information in its contracts, nor the advertised speed. After notice of defaults by the BIPT, the defaults were corrected.

³³ <http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO8611>

³⁴ <https://www.uradni-list.si/glasilo-uradni-list-rs/vsebina/2019-01-2467/splosni-akt-o-storitvah-dostopa-do-interneta-in-s-tem-povezanih-pravic-koncnih-uporabnikov>

BG	With a dedicated annual questionnaire, CRC is collecting such information. ISPs point out that speeds and traffic management rules are described in end-users' contracts.
CY	ISPs have submitted their contracts to OCECPR, according to the provisions of the OIR and the Decree. Further to OCECPR's assessment of the contracts, ISPs comply with the requirements set out in Article 4(1) of the OIR.
CZ	The third stage of extensive inspection was completed, targeting ISPs that did not comply with their obligations imposed under the General Authorisation as of 1 August 2022, even on the basis of previous two stages of this inspection. New administrative offence proceedings were subsequently initiated. CTU also launched another planned inspection, which focused, among others, on compliance with the obligation to provide pre-contractual information pursuant to Article 4(1)(d) and (e) of the OIR in accordance with Act N. 374/2021 Coll.
FI	Traficom has reviewed how the speeds are defined regarding 5G FWA.
HR	Since operators in Croatia are obliged under the Croatian Telecommunications Act (ZEK) to notify their terms and conditions to HAKOM before they launch a communication service, HAKOM regularly checks if they meet particular legal standards set out in the ZEK and compliance with the OIR. Changes of previously approved T&Cs must be notified as well. Transparency is generally at a satisfactory level.
MT	Monitoring of new offers is an ongoing process to ensure that no infringement to the obligations under the OIR are carried out.
SK	According to the outcome of information request from selected ISPs: <ul style="list-style-type: none"> • 80% of ISPs complied with contract conditions set out in article 4(1) (a); • 90% of ISPs complied with contract conditions set out in article 4(1) (b); • 55% of ISPs complied with contract conditions set out in article 4(1) (c); • 100% of ISPs complied with contract conditions set out in article 4(1) (d); • 100% of ISPs complied with contract conditions set out in article 4(1) (e).

Table 18. Main findings of assessing the ISPs' contract conditions

Question 14.a. Have any national specifications been set in relation to the different types of speeds laid out in article 4(1), sub. d, which have not yet been mentioned in the previous BEREC OI Implementation Questionnaire? If yes, please provide details. [Note: if the specifications were set before the reporting period, they should be reported in Annex I.]

Question 14.b. Were these requirements:

- i. imposed by the NRA or another competent Authority?
- ii. agreed upon by market players?

Question 15. Are these requirements or the NRA's opinion/recommendation legally binding?

Within the current reporting period, national specifications were set with regard to the different types of speeds by three Member States (CY, IT, LV). In three Member States (CY, HR, MT), the NRA imposed legally binding definitions, while in one Member State (SK) the national specifications have been imposed as a recommendation. Moreover, in one Member State (IT) the definitions are developed collaboratively between the NRA and the industry, and in one Member State (LV) the ISP sets the own definitions. Further information is outlined in Table 19 below. In 22 Member States (AT, BE, BG, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, LT, LU, NL, NO, PL, PT, RO, SI, SE), no national specification was set in the current reporting period, however, in one Member State (MT) the policy is currently under review.

NRA	National specifications
CY	<p>According to the provisions of the OIR as adopted in national secondary legislation (Decree 72/2017), the speed values to be included in the contract, including information published on the ISPs' website, are presented as follows:</p> <ul style="list-style-type: none"> • as far as fixed networks are concerned, minimum, standard and maximum speed, in percentage of advertised speed; • as far as mobile networks are concerned, where applicable, the advertised speed, in percentage to the estimated maximum speed. <p>In relation to the provision of broadband internet access from a fixed network, ISPs are required to set the time periods during the day in which maximum speed is achieved, the periods expected to reach normally available speed, and the periods when speed may be limited to the minimum.</p>
IT	<p>With the new resolution n. 23/23/CONS, AGCOM has introduced in Italian regulation the estimated maximum and advertised download and upload speeds of the IAS in the case of mobile networks. Estimated maximum speeds shall be indicated for each technology, together with coverage maps (with a resolution of at least 100 meters) for each network technology. Advertised speeds are the speeds that the operator uses in the commercial communications, including advertising and marketing, and are the speeds that the operator is realistically able to provide to its users, under conditions of normal use, in the national territory.</p>
LV	<p>In accordance with the provisions of the Electronic Communications Services Agreement, which entered into force on 22 September 2022, an ISP providing an IAS in a fixed network shall specify information on the minimum, normally available and maximum speed in the contract. Also, an ISP providing an IAS in a mobile network shall specify the minimum and maximum speed in the contract.</p>

Table 19. National specifications of speeds set in the reporting period

For further details regarding the NRAs' existing national specifications in relation to the different types of speeds, please refer to Annex I of this report.

Question 16. In the reporting period, has your NRA reviewed the terms and conditions in ISP contracts for IAS in the fixed networks? Please also consider hybrid services (see also Question 19.b.). If yes, did ISPs define minimum, maximum, advertised and normally available upload and download speeds? Please briefly explain the main findings.

The T&Cs in ISP contracts for fixed networks were reviewed in 16 Member States (AT, BE, BG, CY, CZ, DE, EL, HR, HU, IE, IT, MT, NO, PL, PT, SI, SK), while in 11 Member States (DK, EE, ES, FI, FR, LT, LU, LV, NL, RO, SE) NRAs did not carry out such a review.

An overview over the main findings is shown in Table 20 below. In general, the contracts contain information on normally available, minimum, maximum and advertised upload and download speeds. This information is based on either a definition or recommendation of the NRA or on a definition by the ISP itself. In some Member States, the ISPs had to be reminded by the NRA after regular or random sampling to comply with the obligations of the OIR.

NRA	Main findings
AT	ISPs are obliged under the Telecommunications Act to notify their T&Cs to RTR at the start of a new communication service and when there are changes of the T&Cs. Thus in the end all notified T&C's complied with the law. Thus, ultimately all notified T&Cs complied with the law.
BE	BIPT took note of the information on speeds the largest network operators reported to include in their contracts and did an in-depth inquiry on the way one new entrant to the fixed market mentioned the speed values on its website and in (pre)contractual documents. Initially, the ISP subject to the in-depth inquiry did not mention the normally available upload/download speed information in its contracts, nor the advertised speed. After notice of defaults by the BIPT, the defaults were corrected.
BG	ISPs define minimum, maximum, advertised and normally available upload and download speeds according to CRC's Position (decision n. 170/18.04.2019). The review of ISPs' T&Cs shows that they are in compliance with the OIR.
CY	ISPs define minimum, maximum, advertised and normally available upload and download speeds. ISPs defined in their contracts minimum, maximum and normally available upload and download speeds of IAS in the fixed network as described in Q14.a.
CZ	ISPs define minimum, maximum, advertised and normally available upload and download speeds. Within the above-mentioned inspections, compliance with Article 4(1) (d) of the OIR and compliance with the obligations arising from the General Authorisation specifying the method of designating individual speeds and their discrepancies of the IAS at a fixed location were examined. For findings, see Q12 and Q13.
DE	ISPs are not able to (legally) define speeds. They typically mention in their T&Cs concrete figures for the minimum, maximum, advertised and normally available upload and download speeds. Customers are entitled to reduce the price if a measurement with the NRA's tool reveals a significant difference between the contractually agreed speed and the actual speed.
EL	Fixed ISPs have incorporated minimum, maximum and normally available speeds in consumer contracts following the entry into force of national provisions on 25 November 2020. Speeds are provided per area and access technology. Audits at points of sale verified compliance of ISPs with the requirements.
FI	Traficom did not any extensive reviewing during the reporting period, but all ISPs follow the OIR and Traficom's Opinion. They have defined the speeds in their contracts based on the NRA's information.

HR	ISPs define minimum, maximum, advertised and normally available upload and download speeds. Based on the conducted review of the terms and conditions in ISP contracts, HAKOM conclude that ISPs are in compliance with the Regulations.
HU	ISPs define minimum, maximum, advertised and normally available upload and download speeds. NMHH has conducted a comprehensive check of T&Cs for 20 ISPs (both fixed and mobile). General compliance was high, only 2 providers omitted the include the normally available speeds in their T&Cs. NMHH has issued a formal notice compelling them to rectify this.
IE	ISPs define minimum, maximum, advertised and normally available upload and download speeds. In general, the required speeds are defined in customer contracts.
IT	During the reporting period, AGCOM started a public consultation for QoS requirement of fixed services (including FWA) with resolution n. 405/22/CONS. The new provision was introduced by Decision 156/23/CONS in July 2023-
LV	In the past, the majority of ISPs declared in the annually submitted information that the contracts contain information about the minimum, normally available and maximum speeds. In 2022, the range of information required from ISPs annually was revised and during the reporting period SPRK did not require ISPs to declare speed information included in the contracts. In the future, it is planned to carry out separate information revision campaigns, evaluating the information contained in the contracts.
MT	ISPs include a reference to the so-called Typical Speed Range (TSR) for their fixed services which is defined in an MCA Decision. The TSR metric provides information related to the Minimum, Maximum and typically available speeds of a broadband connection.
NO	ISPs defined the required speed parameters.
PL	ISPs define minimum, maximum, advertised and normally available upload and download speeds. However, the audit activities carried out in 2019 revealed that the contractual documents for nine out of ten ISPs did not meet all the transparency requirements set out in the controlled provision of the OIR. As a result, the President of UKE issued a follow-up recommendation to operators on the need to amend specific provisions in contractual documents. In 2022, a follow-up audit was conducted. At the end of the reporting period, the evaluation of the evidence gathered is on-going.
PT	ISPs define minimum, maximum, advertised and normally available upload and download speeds. In general, ISPs provide information on minimum, normally available, maximum and advertised, download and upload, speed of the IAS, as well as an explanation for each type of speed.
SI	ISPs define minimum, maximum, advertised and normally available upload and download speeds. Operators adhere to regulations. All major ISPs defined in their contracts evaluated maximum and advertised upload and download speeds of the IAS. Speed is defined based on contractual package.
SK	ISPs define minimum, maximum, advertised and normally available upload and download speeds. According to outcome of information request of selected ISPs, all of them defined in their contracts minimum, maximum, advertised and normally available upload and download speeds.

Table 20. Main findings of assessing fixed ISPs' contracts regarding definition of speeds

Question 17. In the reporting period, has your NRA reviewed the terms and conditions in ISP contracts for IAS in the mobile networks? Please also consider hybrid services (see also Question 19.b.). If yes, did they define advertised and estimated maximum upload and download speeds? Please briefly explain the main findings. If available, please provide information regarding contractual conditions, such as examples of “realistic usage conditions” under which the estimated maximum speed can be achieved (paragraph 153 of BEREC OI Guidelines).

The T&Cs in ISP contracts for mobile networks were reviewed in 16 Member States (AT, BE, BG, CY, CZ, DE, EL, HR, HU, IE, IT, MT, NL, NO, PT, SI and SK), while 11 NRAs (DK, EE, ES, FI, FR, LT, LU, LV, PL, RO, SE) did not review the terms and conditions.

An overview of the main findings is shown in Table 21 below. Most contracts contain information on advertised and estimated maximum upload and download speeds. This is often based on definitions by the ISPs, but some NRAs provide definitions or are discussing the definitions with mobile network operators.

NRA	Main findings
AT	There is no national definition of advertised and estimated maximum upload and download speeds. ISPs are obliged under the Telecommunications Act to notify their T&Cs to RTR at the start of a new communication service and when there are changes of T&Cs. Within this framework also the transparency obligations of the OIR are checked. In this regard, RTR checks whether the providers stick to the terminology as used in the OIR. This is an on-going measure. Thus, in the end all notified T&Cs complied with the law.
BE	BIPT took note of the information on speeds the largest network operators reported to include in their contracts, but the NRA still has to define next steps.
BG	CRC defined advertised and estimated maximum upload and download speeds. CRC's view is that the advertised and maximum speed are the same, and that the estimated maximum speed should respond to the maximum of the capability of each generation mobile network (3G, 4G, 5G). In their contracts, mobile operators have included those speeds along with a short explanation of the conditions for realistic usage.
CY	ISPs define advertised and estimated maximum upload and download speeds. OCECPR has reviewed the contracts of mobile ISPs. The main finding is that ISPs defined where applicable in their contracts the advertised speed, in percentage to the estimated maximum speed. Following an assessment of the reports, OCECPR's main findings were that an ISP use some practices which may constitute an infringement of the provisions of the OIR. OCECPR informed the ISP concerned that their practices may constitute an infringement and requested further action to ensure compliance with the provisions of the OIR and Decree 72/2017.
CZ	CTU defined advertised and estimated maximum upload and download speeds. Within the above-mentioned inspections, compliance with Article 4(1) (d) of the OIR and compliance with the obligations arising from the General Authorisation specifying the method of designating individual speeds and their discrepancies of the mobile IAS were examined. For findings, see Q12 and Q13.

DE	Providers typically mention in their T&Cs concrete figures for the respective mobile speeds.
EL	EETT defined advertised and estimated maximum upload and download speeds. Mobile ISPs provide maximum speed estimates (downlink and uplink) per area and technology following the entry into force of the national provisions on 1 March 2021. The speed estimates are given in ranges and are publicly available through interactive maps on the ISPs' websites. There are no advertised speeds in mobile offerings. Audits at points of sale verified conformance of ISPs to the requirements.
FI	Traficom's Opinion on speeds is available at: https://www.traficom.fi/sites/default/files/media/regulation/Verkkoneutraliteettikannanotto-mobiililaajakaistaliittymista_EN.pdf
FR	ISPs only define the theoretical maximum speed for their mobile IAS in their mobile contracts, that is the maximal reachable speed for a given access technology (2G, 3G, 4G and 5G).
HR	Mobile ISPs are in compliancy with the Regulations. ISPs defined in their contracts advertised and estimated maximum upload and download speeds of the IAS (estimated maximum speeds are made available in a geographical manner providing mobile IAS coverage maps with estimated speed values of network coverage in all locations for different network technologies).
HU	NMHH has conducted a comprehensive check of T&Cs for 20 ISPs (both fixed and mobile). General compliance was high, only 1 provider omitted the estimated maximum speeds from their T&Cs. The NRA has issued a formal notice compelling them to rectify this.
IE	In general, the required speeds are defined in customer contracts. For mobile networks, the estimated maximum speeds specified by the providers are rather unambitious (e.g. 4G – 10Mbit/s, 5G – 25Mbit/s). Further information on the specifications of speeds are provided on the respective ISPs' websites: <ul style="list-style-type: none"> • https://n.vodafone.ie/support/mobile/data-speed-information.html • https://www.three.ie/legal/terms/mobile-and-fwa-network-speeds.html • https://www.eir.ie/opencms/export/sites/default/.content/pdf/terms/Terms_and_Conditions_of_the_eir_Mobile_Service.pdf
IT	See answer to Q14.a. regarding resolution n. 23/23/CONS. These definitions will be discussed in technical working groups with network operators.
LT	Realistic usage conditions are changing very rapidly, even more with the deployment of 5G, therefore it is difficult to include into the contracts even estimated maximum speeds. For many years, the expected speeds only increase with time, ISPs often reference their coverage maps with available speeds, or results of drive-test measurements performed by RRT.
LV	In the past, the majority of ISPs declared in the annually submitted information that the contracts contain information about the minimum and estimated maximum speeds. In 2022, the range of information required from ISPs annually was revised and during the reporting period SPRK did not require ISPs to declare information included in the contracts regarding speed information. In the future, it is planned to carry out separate information revision campaigns, evaluating the information contained in the contracts.

MT	Providers of mobile broadband IAS provide information about the estimated maximum upload and download speeds their networks can reach. In addition to providing the estimated maximum speeds, providers also explain that achieving the stated speeds is subject to various conditions (such as coverage, in-building/in-vehicle use, end-user device, etc).
NL	No definition of advertised and estimated maximum upload and download speeds available.
NO	ISPs defined the required speed parameters.
PT	In general, ISPs provide information on minimum, normally available, estimated maximum and advertised, download and upload, speed of the IAS, as well as an explanation for each type of speed. The main ISPs provide the definition of estimated maximum speed and identify the factors that might affect that speed, in accordance with paragraph 153 of the BEREC OI Guidelines.
SI	All major ISPs defined in their contracts advertised and estimated maximum upload and download speeds of the IAS. Speed is defined based on contractual package. Estimated maximum speed is defined as a speed which is achievable based on contractual package, current radio signal quality, current available resources in the cell, terminal equipment, current used access mobile technology (2G, 3G, 4G, 5G).
SK	According to outcome of information request of selected ISPs, all of them defined in their contracts estimated maximum upload and download speeds.

Table 21. Main findings of assessing mobile ISPs' contracts regarding definition of speeds

Question 18. In the reporting period, have you completed any formal assessment of the ISPs' obligation to publish, according to article 4(1), sub. 2, the information referred to in article 4(1), subs. 1 a-e? If yes, please provide details.

Formal assessments of the ISPs' obligation to publish information according to Article 4(1) of the OIR were carried out in nine Member States (AT, BE, BG, CY, CZ, HR, IT, MT and SK), while in 18 Member States no formal assessment was completed (DE, DK, EL, ES, FI, FR, HU, IE, LT, LU, LV, NL, NO, PL, PT, RO, SI and SE). A detailed overview is shown in Table 22 below.

NRA	Main findings
AT	See answer to Q16 and Q17.
BE	In-depth inquiry into the way one new entrant on the fixed market mentioned the speed values on its website. Initially, the ISP did not mention the normally available upload/download speed information on its website. After notice of defaults by the BIPT, the defaults were corrected.
BG	A random check of contracts has been performed. The published information in the contracts is in line with Article 4(1), subparagraph 2
CY	Following an assessment of ISPs reports, OCECPR found out that ISPs comply with the relevant legislation.

CZ	CTU inspected the information stated in published contractual T&Cs related to the provision of IAS and its compliance especially with the article 4(1)(d) and (e) of the OIR.
DE	BNetzA mainly applies a complaint-based approach. Besides this, the NRA carries out regular spot checks of the respective wording used by providers in their T&Cs.
HR	A regular assessment of the ISPs' websites is performed a few times within each reporting period. Regarding transparency requirements and publication of information referred to in Article 4(1) of the OIR please see the answer for Q13.
IT	AGCOM monitors and publishes data on the minimum contractually agreed speed for fixed networks. These values are published on a webpage where users can compare the offers (https://www.misurainternet.it/confronto_banda_minima/). Moreover, AGCOM currently verifies contractual conditions and operators' terms of service, publishing them on its website (https://www.agcom.it/carte-dei-servizi).
MT	MCA regularly reviews the T&Cs of product offers on the market. This review also includes checks to ensure inclusion of information referred to in Article 4(1) subparagraphs 1 a-e.
SK	According to the outcome of an information request sent to selected ISPs, ISPs fulfilled the obligation to publish the information referred to in Article 4(1), subparagraphs 1 a-e.

Table 22. Main findings regarding transparency of information

Question 19.a. Have you imposed additional transparency requirements regarding the publication of information referred to in article 4(1), subs. 1 a-e, which have not yet been mentioned in the previous BEREC OI Implementation Questionnaire? If yes, please provide details of the requirements. [Note: if the requirements were set before the reporting period, they should be reported in Annex I.]

Question 19.b. In the reporting period, have any ISPs offered hybrid services in your country (as specified in paragraph 141.b. of BEREC OI Guidelines)? If yes, please provide details.

In four Member States (AT, EE, IT, SI), additional transparency requirements were imposed. In 22 Member States (BE, BG, CY, CZ, DE, DK, EL, ES, FI, HR, HU, IE, LT, LU, LV, MT, NL, NO, PL, PT, RO, SK, SE), no additional transparency requirements were imposed.

The detailed responses are shown in Table 23 below.

NRA	Additional transparency requirements
AT	On an informal level, transparency requirements are regularly discussed with ISPs, RTR had/has bilateral meetings with ISPs, which also cover issues regarding the OIR and the accompanying BEREC OI Guidelines. The regular exchange between ISPs and RTR concerning different matters of telecommunications including OI is ongoing. Within this forum, RTR presents latest developments regarding OI to the ISPs

	and ISPs are welcome to present their views. An organised informal exchange took place three times in the reporting period ³⁵ .
IT	For mobile networks, with the resolution n. 23/23/CONS, AGCOM introduced the following additional obligations in the national regulation: <ul style="list-style-type: none"> • publication of maximum download and upload speeds for each technology, together with coverage maps (with a resolution of at least 100 meters) for each network technology; • publication of advertised download and upload speeds; • inclusion of the information related to the performance of the internet access offers (including speeds, QoS mechanisms, traffic management measures) with the contractual documentation; • publication of the network performance measured in drive test measurement campaigns.
SI	Operators must explain to end-users how the energy efficient network mode influences access to their services.

Table 23. Additional transparency requirements imposed in the reporting period

In 12 Member States (AT, DE, DK, EL, FI, HR, HU, MT, NL, PL, PT, SI, SK), hybrid services were offered in the reporting period, while in 11 Member States, no hybrid services are available (CZ, EE, ES, FR, IE, IT, LT, LU, NO, RO, SE).

NRA	Main findings
AT	ISPs are obliged under the Telecommunications Act to notify their T&Cs to RTR at the start of a new communication service. Changes of T&Cs have to be notified as well. Because of this RTR is always informed when new hybrid services are offered on the market. Besides that, RTR constantly monitors which new services are offered on the market.
DK	Fixed Wireless Broadband is used in several rural areas.
EL	One ISP provides hybrid access combining xDSL and 4G services. The 4G connection is activated when there is high utilization of the xDSL connection.
FI	New contracts for hybrid connections have not been offered since 2021, but there are still remaining contracts.
HR	The major ISP in Croatia provides hybrid services in areas where only a slow copper IAS is available, combining xDSL and 4G services.
HU	Several ISPs offer hybrid services where a mobile IAS component serves as either backup or a booster of the fixed IAS component. The subscriber cannot use the two components separately, and they are not necessarily aware when each is in use.
MT	Products on the market include a dual device which uses mobile broadband service as a backup to the fixed broadband service.

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https://www.rtr.at/TKP/was_wir_tun/telekommunikation/anbieterservice/mobilregulierungsdialog/mobilregulierungsdialog.de.html

NL	Multiple ISPs offer fixed wireless services (e.g., KPN) in areas where only a slow copper IAS is available.
PL	The President of UKE notices such a service on the market and conducts monitoring activities in the field in the scope of interconnection.
PT	The major ISPs in Portugal offer hybrid services namely in areas not covered by VHCN (Fiber or DOCSIS 3.1). These offers include wireless (LTE) technologies for the provision of IAS at a fixed location.
SI	2 ISPs provide hybrid access combining xDSL and 4G services (one of them still offers them, while the other one only provides services to existing users).
SK	Some ISPs are offering fixed LTE.

Table 24. Information on hybrid services

7. Article 4(2) – Procedures for end-user complaints

Question 20.a. Have ISPs established new or adapted the existing “transparent, simple and efficient procedures to address end-user complaints...” according to article 4(2)? If yes, please provide details. (e.g., hotlines, complaint templates)

Question 20.b. Is there an industry-wide approach in relation to these procedures? If yes, was this approach:

- i. imposed or facilitated by the NRA
- ii. prescribed by national legislation
- iii. voluntarily agreed upon by the market players
- iv. other, please specify:

Question 20.c. Do you collect or monitor end-user complaints? (Please see Question 23 about complaints related to the quality of IAS). If yes, what are the typical issues end-users complain about? (Please state the number or percentage, if available.) Were there any complaints regarding the zero-rating offers (e.g., about withdrawing of, change of contracts)? (Please state the number or percentage, if available.)

In 15 Member States (CY, DE, DK, EE, EL, ES, FR, HR, IT, LT, LV, MT, NO, PL, SK), ISPs established new or adapted the existing “*transparent, simple and efficient procedures to address end-user complaints...*” according to Article 4(2) of the OIR.

Additionally, 14 Member States have reported the presence of an industry-wide approach regarding procedures to address end-user complaints (CY, DE, DK, EL, FR, HR, HU, IT, LV, MT, NO, PL, RO, SI). Additional information on this aspect is summarised in Figure 7 below.



Figure 7. Industry-wide approach regarding procedures for end-user complaints

Furthermore, 20 out of 28 NRAs have reported to collect or monitor end-user complaints. Some NRAs have also reported further details on the complaints received as summarised in Table 25. Only four Member States (BE, DE, PT, SE) reported to have received complaints regarding zero-rating offers: further details in this regard are reported in Table 26.

NRA	Details on the received end-users' complaints
AT	Complaints from end-users are dealt with in the framework of the conciliation body of RTR and only to a very small extent are these complaints related to questions regarding the OI. The largest part is related to inadequate service provision (quality issues) by ISPs, but there has been a decline in these complaints over the last three years. There were also isolated cases in the reporting period on other OI-related issues, related to the blocking of certain ports or the usability of certain services, such as VoIP. It can be assumed that the Austrian providers comply with their obligations under the OIR towards their end-users. The numbers of OI-complaints (usually on the contractual internet speed/quality) are 69 for the mobile networks and 47 for the fixed networks.
BE	BIPT is not a body that handles individual complaints. End-user complaints are in principle handled by the Ombudsman for Telecommunications. BIPT does receive reports, as a signal, on the basis of which (among other things) it decides to intervene in order to structurally solve shortcomings on the market with regard to the law and the interests the BIPT must defend. The NRA counted 6 complaints on the usage of "unlimited" internet in marketing and/or on the impact of the BIPT Guidelines on that issue and 2 on zero-rating.
BG	Typical issues are the provision of a lower speed than the contractual one and interruptions or missing of the service at all.
CY	Issues are mainly related to quality of service, pricing and technical nature.
CZ	The complaints mainly concerned non-compliance with the quality parameters of the IAS agreed in the contract, the malfunction of the IAS or the reduced quality of the specialised services offered (IPTV, inter-device communication services) or the availability and effectiveness of remedies. Another group of complaints and enquiries, related to the IAS, concerned the newly established possibility of switching the ISP while maintaining the continuity of service provision.

DE	Typical issues concern zero-rating discontinuation, internet speeds, bill correctness.
EL	Consumers complain mainly about speeds.
ES	57 claims received by the Telecomm Users Agency (Ministry of Economy). (0.37% of total claims). Speed is the typical issue.
HR	Issues are related to bill correctness, number portability, fault repair, QoS.
HU	Complaints specifically concerning OI rules are quite rare (maximum 1-2 in a year). They usually state that a certain service or content is not accessible from an ISP's network but is available from another network.
IE	The majority of Net Neutrality queries relate to slow IAS speeds.
IT	Besides the complaints related to IAS quality, users report difficulties regarding the usage of their own modems in fixed connections. The number of those complaints, in relation to other issues like, for example billing, is quite low.
LU	No issues regarding OI have been indicated in the report on mediation activities.
LV	Complaints received in 2022 can be divided into four categories: invoices (35%), service quality (29%), contracts (15%) and other different cases (21%).
NL	Issues are related to internet speeds and terminal equipment. ACM received 39 signals in total.
PL	272 complaints received, the main issue is QoS (mobile and fixed).
PT	<p>In the reporting period, there were 423 complaints directly submitted to ANACOM about IAS, around 12% of the overall complaints regarding electronic communications services. Based only on the complaints' descriptions, these complaints focused:</p> <ul style="list-style-type: none"> • Service faults/malfunctioning: mentioned in 61% of IAS complaints; • Internet speeds below what is advertised/subscribed: mentioned in 39% of IAS complaints; • Traffic shaping: mentioned in less than 1% of IAS complaints. <p>Almost all of these complaints are about fixed IAS.</p> <p>Complaints subjects are of multiple choice, so the sum of subjects does not add to 100%.</p>
RO	<p>ANCOM received 48 complaints related to the quality of IAS. About half of the complaints referred to fixed IAS and the other half to mobile IAS.</p> <p>Mostly, end-users complained about slow transfer speeds and were offered advice regarding the use of the official monitoring tool and the procedures of the ISP in order to measure the actual speed and ask for remedies.</p> <p>It should be noted that some complaints (15) also mentioned poor mobile signal coverage (including indoor areas).</p>
SE	There has only been a handful of complaints/questions with no typical issue. There has been no ground for any formal investigation.

Table 25. Details on the received end-users' complaints

NRA Details on complaints regarding zero-rating offers	
BE	2 complaints received: One on the fact that zero-rating still existed (but based on outdated information) and one on the legality of the contract change following the ECJ rulings.
PT	There were less than 1% of complaints regarding zero-rating and similar offers, including information requests.
SE	Rather than complaints there has been consumer "questions" as to why zero-rating has been removed by certain operators.

Table 26. Details on complaints regarding zero-rating offers

8. Article 4(3) – Additional transparency requirements

Question 21.a. Did you nationally (e.g., NRA, Ministry) provide guidance or impose additional transparency or information requirements on ISPs following the enforcement of the OIR? If yes, please provide details of the requirements.

Question 21.b. Is there any change compared to the previous reporting period? If yes, please provide details.

A number of Member States have provided guidance or imposed additional transparency or information requirements on ISPs following the enforcement of the OIR. For most of them, the measures that were taken in previous years are still in force. Only in two Member States, additional guidance or requirements have been set in the reporting period, as outlined in Table 27 below.

NRA Measures taken during reporting period	
IT	AGCOM published the resolution n. 23/23/CONS ³⁶ concerning mobile networks with additional transparency and information obligations and is currently running a similar consultation for the fixed networks, including FWA.
SI	There is new secondary legislation ³⁷ based on the new Electronic Communications Act (transposing EECC) – adoption of a new General act on OI and end-users' rights.

Table 27. Measures taken during reporting period

³⁶ <https://www.agcom.it/visualizza-documento/081e817f-e33c-487b-b334-05da41927b2f>

³⁷ <https://www.uradni-list.si/glasilo-uradni-list-rs/vsebina/2023-01-0554/splosni-akt-o-storitvah-dostopa-do-interneta-in-s-tem-povezanih-pravic-koncnih-uporabnikov>

9. Article 4(4) – Monitoring mechanisms

Question 22. Is there an NRA or national interpretation of “significant discrepancy, continuous or regularly recurring”? If yes, how are these terms interpreted? [Note: if the interpretation was set before the reporting period, it should be reported in Annex I] If yes, was the definition:

- i. imposed by the NRA (e.g. using article 5(1))
- ii. voluntarily agreed upon by the market players
- iii. other, please specify:

13 NRAs (BG, CY, CZ, DE, EL, ES, HR, IT, LV, MT, PL, RO, SI) gave a material interpretation of “*significant discrepancy, continuous or regularly recurring*”, as can be seen in Annex I. Although adopted in previous years, the interpretations are still valid in 12 of these Member States.

One NRA (LV) provided an interpretation during the reporting period and mentioned that, in accordance with the provisions of the Electronic Communication Services Agreement (details are specified in Annex I):

- the fixed ISPs shall specify the following information about the connection speed in the contract:
 - maximum (advertised) speed,
 - normally available speed,
 - minimum guaranteed speed,
- the mobile ISPs shall specify the following information about the connection speed in the contract:
 - maximum (advertised) speed,
 - the minimum guaranteed speed.

The same NRA also clarified that if any of the conditions, as described in Annex I, are not fulfilled during emergency measurements, it is considered a significant discrepancy in the quality of the IAS.

Moreover, eight NRAs reported that the definition was imposed by the NRA (BG, CY, CZ, EL, ES, HR, LV, PL), while three NRAs (DE, IT, RO) mentioned a specific approach as detailed in Table 28 below.

NRA	Approach for the definition
DE	Binding notice by BNetzA (according to paragraph 57(5) of the Telecommunication Law (TKG))
IT	Discussed within a technical committee with operators, consumers’ associations and DGTCSI-ISCTI and then approved by NRA (decision n. 244/08/CSP and further modifications).

RO	The interpretation of significant discrepancy, continuous or regularly recurring is included in the guidelines developed by ANCOM in order to provide a common understanding of the implementation of the provisions of Art. 4(1) (d) of the OIR.
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Table 28. Approach for the definition of “significant discrepancy, continuous or regularly recurring”

Question 23. Do you collect or monitor the number of end-user complaints about the performance of the IAS, relative to contracted parameters (speeds or other QoS parameters)? If yes, what was the level of end-user complaints?

In 21 Member States (AT, BG, CY, CZ, EE, EL, ES, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI), NRAs have collected and monitored the number of end-user complaints related to the performance of the IAS in the reporting period. Additional information on this matter is summarised in Table 29. below.

NRA	Information related to net neutrality complaints
AT	Only to a very small extent are end-user complaints related to questions of OI. Proceedings, in which inadequate service provision (quality issues) by an ISP is brought forward, make up the largest proportion. Numbers regarding OI-complaints (usually on the contractual internet speed/quality): mobile networks: 69 complaints; fixed networks: 47 complaints.
BE	Among the reports received this year, none were on the performance of the IAS.
BG	Most of the complaints were about speed, coverage, service interruptions.
CY	OCECPR received only few complaints relating to QoS parameters during the reporting period. These mainly concerned fixed broadband connections. The usual issue was that consumers could not receive the advertised speeds of their contracts either because there was a technical limitation from ISPs' side or due to incorrect performance measurements from the consumer side.
CZ	During its ongoing monitoring activities, a continuing trend of an increasing number of complaints concerning the fulfilment of the obligations by ISPs was noted. The vast majority of these complaints and enquiries (90%) relate to non-compliance with the agreed quality parameters specified in the contract or the inclusion of quality parameters for the IAS in the contract that are not in accordance with the General Authorisation issued. The launch of the web version of NetTest and its abundant use was also reflected in the nature and number of complaints and enquiries.
EE	ECPTRA collects and evaluates all complaints about violations of electronic communications. The number of QoS complaints is extremely low or zero.
EL	The total number of complaints about speeds reported by the 4 major ISPs was 151 463 (119 593 for fixed and 31 870 for mobile), in about 14.5 million subscriptions with IAS (about 4.5 million fixed and 10 million mobile subscriptions).
ES	57 claims received in Telecom Users Agency (Ministry of Economy). (0.37% of total claims).
FI	There is no process for monitoring the level of net-neutrality-specific complaints (the number of complaints is monitored on basis of more general criteria). Traficom does not process complaints relating to the performance of the IAS in relation to the

	contracted parameters. Such complaints may be processed in alternative dispute resolution mechanisms such as the Consumer Disputes Board.
FR	Arcep does not monitor formal end-user complaints concerning discrepancies of performances. End-users can report such problems on the online alert platform "J'alerte l'Arcep".
HR	HAKOM acts as a 2 nd level for the resolution of complaints (complaints are first addressed to the ISPs). During this reporting period, HAKOM received 30 complaints regarding internet QoS in fixed networks and 15 complaints regarding internet QoS in mobile networks. In most complaints about mobile IAS which related to service quality, it was found that the main reason is poor network coverage. In the reporting period, 10 end-users' complaints regarding achieved minimum speed were submitted through HAKOMetar certified tool towards ISPs.
HU	In 2022, 15.7% of complaints submitted to the NRA were connected to QoS (this includes all service types, not just IAS). However, only looking at complaints concerning IAS, 37% were connected to QoS. In Q1 2023, the situation was different, only 5.8% of all complaints and 12% of the complaints concerning IAS were connected to QoS.
IE	Approx. 2% of all complaints within the period relate to Net Neutrality issues.
IT	Operators must periodically communicate the number of complaints received against agreed performance. These mostly concern minimum speed.
LT	A total of 93 complaints were received during the reporting period, of which 19 were related to quality of IAS.
LU	In the reporting period, no complaint received on this issue.
LV	In 2022, SPRK received 14 end-user complaints about IAS, of which 7 (50%) of the complaints were related to inadequate quality of IAS.
MT	In the reporting period, MCA recorded 14 complaints categorised as follows: 5 complaints regarding discrepancies between the contracted speed and the actual speed performance of the service; 9 complaints regarding faults to an IAS.
NL	8 in total
PL	272 complaints received
PT	In the reporting period, there were 423 complaints directly submitted to ANACOM about IAS, around 12% of the overall complaints regarding electronic communications services. Internet speeds below what is advertised/subscribed are mentioned in 39% of IAS complaints.
RO	48 complaints in the reporting period, approximately 2% of the total number of complaints regarding electronic communication services.
SI	2.96 % of all complaints relating to electronic communications received.
SE	There has only been a handful of complaints/questions with no typical issue.

Table 29. Level of end-user complaints about the performance of internet access services

Question 24. In the reporting period, have specific additional remedies been introduced for consumer redress in relation to non-conformance of IAS with the contract terms (e.g., legal action before courts and/or NRA, right to early termination, compensation)? If yes, please provide details.

In the reporting period, one NRA (LV) introduced additional remedies for end-user complaints in case of non-conformance of IAS with the contract terms. In particular, on 1 October 2022, new provisions of the Electronic Communication Services Agreement entered into force in Latvia, which include a section on the procedure for determining compensation, in cases where any inconsistency with the conditions stipulated in the contract is found.

Question 25. Are there any updates regarding your IAS quality monitoring tool for consumers or any respective measurement tool projects? If yes, please provide details. [Note: please check Annex I for existing detailed information regarding monitoring tools.]

14 NRAs (AT, BG, CZ, EL, FI, FR, HR, IE, IT, LT, LU, LV, PL, PT) mentioned updates or plans regarding their IAS quality measurement tool as summarised in Table 30 below. For further details regarding NRAs' existing measurement tools, please refer to Annex I of this report.

NRA	Information related to IAS quality monitoring tool
AT	RTR is regularly updating its monitoring tool and related website and collaborating with other NRAs who have similar tools (based on the source code of RTR-NetTest).
BG	CRC officially approved its measurement tool in 2022.
CZ	A year after the launch of its own publicly available measurement tool – NetTest, CTU launched the NetTest mobile app in December 2022, which is currently available only for Android mobile devices. The mobile application, like the web version, enables performing the certified measurement, which significantly facilitates the process for end-users to claim about the quality of IAS.
DE	BNetzA considers its broadband measurement mechanism (“Breitbandmessung”) certified according to Article 4(4) of the OIR and in line with paragraph 161 of the BEREC OI Guidelines.
EL	The upgrade of EETT’s existing speed measurement platform, HYPERION, was completed in April 2023.
FI	Traficom continued to develop its monitoring tool Bittimittari.fi during the reporting period, but its launch happened just after the reporting period’s end-date. The tool is planned to be certified by the end of 2023.
FR	A few years ago, Arcep started to work with the measurement ecosystem stakeholders (ISP, measurement tools, academics, consumer associations) to enhance the quality of measurement tools on the market. Following past collaborations with the concerned parties, Arcep adopted a Decision in 2020 that detailed the implementation of an Application Programming Interface (API) by operators in their network, which helps better characterise the user environment in fixed IAS. This API will be accessed only by QoS measurement tools that comply with a Code of Conduct for measurement tools. For example, this API will provide the measurement tool with a series of technical indicators such as the internet access technology, the advertised uplink and downlink speeds, and Wi-Fi signal quality. The API has been developed and is currently being deployed gradually by the operators, according to the deployment timeline set up in the Decision. In parallel to the API deployment, Arcep and the concerned parties updated the Code of Conduct for

	measurement tools. This updated version contains transparency criteria, on which measurement tool companies must commit to communicate. Just like the previous version, it takes into account the elements listed in the BEREC Net neutrality regulatory assessment methodology ³⁸ and also use additional usage-based criteria, such as web page loading time or criteria related to video streaming or characterisation of the test servers. Moreover, Arcep is also involved in BEREC works on national NRAs measurement tools, and these tools could benefit from the aforementioned work.
HR	HAKOM finished a project for upgrading existing HAKOMetar measurement tool (for fixed network).
IE	ComReg has continued to engage with peer NRAs to refine its planning in preparation for monitoring tool deployment.
IT	The drive test campaign for the measurement of the performance of the mobile networks included in its 2022 edition the measurement of the 5G networks.
LT	RRT is planning to introduce a crowdsourced IAS monitoring tool for end-users. Specifications are being prepared.
LU	ILR updated its IAS quality monitoring tool "Checkmynet.lu" in October 2022. The tool provides more detailed information such as more QoS tests and now uses maps made in Luxembourg by geoportail.lu. This update also encompasses the publication of a desktop app for Windows, Linux and Mac OS.
LV	In the second quarter of 2022, SPRK announced a procurement procedure for the development and maintenance of a new internet service quality measurement tool, but the procurement procedure ended without a result. Considering the result of the procurement procedure, additional information research and clarification of the documentation was carried out, and in 2023, it is planned to re-announce the procurement.
PL	<p>Since 1 December 2018, consumers can use the service quality monitoring and evaluation mechanism, which is certified by the President of UKE. The mechanism is available at: pro.speedtest.pl. From 1 December 2020, the new version of the certified mechanism includes several important changes for the user compared to the previous version:</p> <ul style="list-style-type: none"> • increasing the maximum measured speed from 1 Gbit/s to 2.5 Gbit/s; • increasing the availability of applications for various operating systems (Windows and Mac OS); • introducing the option of automatic sequential measurements; • exemption from the obligation to register measurements for information purposes only; • introduction of the English-language version of the application and website. <p>The system consists of a website, an application for desktop computers (Windows and Mac OS) and a web application. There is also a mobile application that works on Android and iOS, however, due to legal and technical conditions, the results of mobile</p>

³⁸ BEREC Net Neutrality Regulatory Assessment Methodology ([BoR \(22\) 72](#))

	measurements are only informative. In November 2022, the President of UKE extended the certificate for the PRO Speed Test Internet access quality monitoring mechanism for another two years (until December 2024).
PT	There is an ongoing project aiming to implement an automatic mechanism for collecting mobile coverage information (date, location, ISP, network type and signal level), through ANACOM's monitoring tool (NET.mede), which requires the respective consent of the user. The ultimate goal of this project is the statistical treatment of the collected data and the possible dissemination of information on the coverage of mobile networks by ANACOM.

Table 30. Information related to IAS quality monitoring tool for consumers.

10. Article 5(1) – Supervision and enforcement

Question 26. Did you impose any QoS requirements on ISPs under the OIR (other than definition of contractual speeds)? (e.g., latency, packet loss, minimum speeds requirements) If yes, which requirements were imposed?

None of the NRAs imposed additional QoS requirements on ISPs in the reporting period.

Question 27.a. What approach have you taken to measure the availability of high-quality IAS (see recital 19 of the OIR)?

- i. market survey without requesting information from ISPs
- ii. information request from ISPs
- iii. analysis of complaints and end-user reporting
- iv. technical network monitoring
- v. other, please specify:

Question 27.b. Is there any change compared to the previous reporting period? If yes, please provide details.

In the reporting period, 23 NRAs (AT, BE, BG, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IT, LT, MT, NO, PL, PT, RO, SK) have monitored the availability of high-speed IAS. The NRA responses suggest that the most popular approaches to measuring the availability of high-quality IAS are through analysis of complaints, through information requests from ISPs and by technical monitoring of networks (see Figure 8 and Table 31).



Figure 8. Approaches to monitor the availability of high-quality IAS

Four NRAs reported that they (also) applied other approaches, as outlined in Table 31 below.

NRA	Other approaches taken
DE	BNetzA used a broadband measurement mechanism.
NO	Nkom applied BEREC's method for assessment of general quality of IAS in case of 4G and 5G networks.
PL	UKE purchased reports from the tests carried out by end-users via the www.speedtest.pl tool.
RO	ANCOM monitors the availability of high-quality IAS by publishing annually reports on the quality of the IAS and every semester statistics (on Netograf.ro) on the quality of the fixed and mobile internet service. This information is summarised in a map. Following monitoring campaigns conducted between 2019 and 2022, ANCOM developed a map of mobile signal coverage where end-users can follow the evolution of the coverage from one year to another. The map reflects the mobile signal coverage for all technologies available at the time of measurements (2G/3G/4G) for each of the mobile operators active on that market, the level of the aggregate signal throughout the country, the maximum level measured for signals from neighbouring countries as well as, since this last reporting period, the map with mobile voice signal of the Bucharest metro network.

Table 31. Other approaches taken by NRAs to monitor the availability of high-speed IAS

Only three NRAs reported changes in their approaches, as illustrated in Table 32 below.

NRA	Changes
EL	The obligation for major ISPs to report link utilisation on interconnection links was added.
IT	In 2022, an official measurement campaign for 5G networks was carried out for the first time. The results of the official campaign have been published at the beginning of 2023.
MT	The QoS monitoring set up by the providers became restricted in the parameters that could be monitored. A review of the situation and of the regulatory tools related to QoS is currently in progress

Table 32. Changes in the approach to monitor the availability of high-speed IAS

Question 28. If you performed measurements of IAS quality, please report the main findings in relation to the provisions of the OIR.

15 NRAs (AT, BE, CZ, DE, EL, FR, HR, HU, IT, LT, LU, NO, PT, RO, SI) reported that they have performed some form of measurements of IAS quality in the reporting period. These measurements are performed either on the fixed or on the mobile networks, or on both. This includes measurements by NRAs themselves, as well as measurements obtained from crowdsourced measurement applications and tools.

Nine NRAs (CZ, EL, HR, HU, LT, LU, NO, PT, RO) indicated explicitly that there has been an overall increase in network speeds and capacity or at least that there has been no degradation compared to the previous reporting period.

Five NRAs (AT, DE, IT, LU, PT) published reports about the results of their measurements as summarised in Table 33 below.

NRA	Main findings of measurements of IAS quality
AT	Since 2012, RTR have offered the RTR-NetTest (https://www.netztest.at), a crowd-sourced open data and open source measurement tool which allows measuring different QoS parameters, including blocking of UDP and TCP ports. The results of several million tests can be downloaded at https://www.netztest.at/en/Opendata . Within the framework of monitoring activities according to the OIR, the test results are used. Documents and reports of RTR use data of these measurements on a regular basis (e.g. "Internet Monitor", which monitors the development of internet access services in Austria, see https://www.rtr.at/TKP/aktuelles/publikationen/Uebersichtseite.de.html).
BE	Some drive test measurements (QoS-2) were performed on mobile networks, but not in the context of the provisions of the OIR.
CZ	To assess the performance of the IAS, CTU analysed the results measured by NetTest which includes hundreds of thousands of measurements. The most important finding was based on an analysis of the change in average speed depending on the time of day, with a period of 60 minutes, for the specific period under review. This statistical monitoring of the development of service performance showed a variation of values of around 40% of its daily maximum value. This variation of values, when compared with the definition of the normally available speed for IAS provided at a fixed location, corresponded with the requirement that the normally available speed, from which large deviations devolve, should be at least 60% of the advertised speed. Another important observation is the increase in the average performance of IAS at a fixed location in Q1/2023, when the performance of services reached 83.35 Mbit/s in the download direction, which is an increase of about 13 Mbit/s compared to the previous quarter and indicates a steadily increasing quality of IAS provided at a fixed location in the Czech Republic.
DE	End-user measurements are covered in annual reports. A reporting period runs from October in one year to September in the following year.

	<p><u>Fixed broadband connections:</u></p> <p>In the period from October 2021 to September 2022, the proportion of users across all bandwidth categories and providers whose fixed broadband connection had a download speed at least half their contractually agreed maximum speed was 84.4%; the proportion of users whose connection had a speed equivalent to or higher than their contractually agreed maximum speed was 42.3%. The results differ especially with respect to bandwidth classes and providers. For the first time, gigabit connections are also considered in the report.</p> <p>Based on the speeds measured as a percentage of the contractually agreed speeds, upload performance was on a similar level to the download performance. Looking at providers' latency times, the best results were achieved in higher bandwidth classes. Low latency plays a particularly important part in performance for video calling and online gaming.</p> <p><u>Mobile broadband connections:</u></p> <p>Mobile broadband performance was again considerably lower than fixed-line broadband. The proportion of users across all bandwidth categories and providers whose connection had a download speed at least half their contractually agreed estimated maximum speed was 23.2% (2020-2021: 20.1%); the proportion of users whose connection had a speed equivalent to or higher than their contractually agreed estimated maximum speed was 3.0% (2020-2021: 2.6%). Again, results differ with respect to bandwidth classes and providers.</p> <p>Based on the speeds measured as a percentage of the contractually agreed estimated maximum speeds, upload performance was similar to download performance. The latency measured on mobile broadband connections was noticeably higher than on fixed broadband connections, the positive trend of previous years of lower latency times has not continued.</p>
EL	<p>Country-level results for fixed broadband speeds in 2022 (increase percentages are with respect to 2021):</p> <ul style="list-style-type: none"> • Mean: 47.94 Mbit/s download (+36.53%), 7.28 Mbit/s upload (+26.33%) • Median: 39.82 Mbit/s download (+47.8%), 6.28 Mbit/s upload (+31.9%)
FR	<p>Regarding <u>fixed</u> IAS, Arcep initiated a co-construction approach with the measurement ecosystem stakeholders (ISP, measurement tools, academic, and consumer associations) to enhance the quality of measurement tools accessible to end-users and currently on the market. The API project and the Code of Conduct for measurement tools are part of this new form of fixed internet access quality monitoring.</p> <p>Regarding <u>mobile</u> IAS, Arcep's monitoring system focusses on the issues of coverage and quality of service. In 2022, the overall quality of mobile IAS in the country has slightly decreased (the average downlink speed has decreased to 63 Mbit/s in 2022 instead of 71 Mbit/s in 2021).</p>
HR	<p>End-users can check the IAS speeds by using two tools HAKOMetar (fixed network) and HAKOMetar Plus (mobile/WLAN network). According to the conducted individual measurements, results showed that the overall quality of internet access in the</p>

	country is constantly increasing. Also, in 2023, HAKOM performed measurements of mobile IAS QoS by drive-tests covering 29 cities and 3 900 kilometers of roads and highways in the country (area where more than 50% of the total population lives). The measurement showed that the performance of mobile networks is very good and that providers increased transmission capacities and quality while simultaneously investing in new technologies. The measurement report on the QoS in mobile networks is available on the website ³⁹ .
HU	In general, the quality of IAS continues to be good. A marked improvement could be detected along with the continued roll-out of VHCN, most notably FTTH. By contrast, the quality of IAS offers with slow speeds (<10 Mbit/s) shows a degradation. This is due to limitations of the access technologies used. However, only a very small (and shrinking) number of subscribers still uses these offers.
IT	Fixed IAS quality is measured in each Italian region with probes measuring the two most common profiles for each operator. Data is aggregated and published every six and twelve months on the webpage https://www.misurainternet.it/valori_statistici/ . Mobile IAS quality is measured with drive test campaigns. In 2022, the measurement campaign for mobile networks involved 45 cities with static and dynamic measures and included 5G networks. Results for the official campaign are published on the website www.misurainternetmobile.it . Users can also verify the QoS measured in the nearest measurement point to their address using a web GIS application.
LT	In 2022, RRT performed measurements of mobile IAS QoS by drive-tests covering most cities and roads in the country. During the year, the average download speed was 160 Mbit/s and average upload speed was 26 Mbit/s for the best operator. Other operators recorded about 64-87 Mbit/s download, and 17 Mbit/s upload on average. All operators increased their respective download speeds significantly: 25-53% increase year over year.
LU	<p>Since 2018, ILR offers a crowdsourced measurement tool (www.checkmynet.lu). Around 50 000 measurements were performed during the reporting period (corresponding to a decrease of around 10 000 measurements when compared to the previous reporting periods). A continuous increase in download and upload speeds can be observed in both fixed and mobile networks. In Q1/2023, the measurements showed:</p> <ul style="list-style-type: none"> • an average download speed of 167 Mbit/s (average annual increase of 28%) and an average upload speed of 103 Mbit/s (average annual increase of 27%) for fixed networks; • an average download speed of 171 Mbit/s, (average annual increase of 44%) and an average upload speed of 35 Mbit/s, (average annual increase of 23%) for mobile networks. <p>Further information is available at https://assets.ilr.lu/telecom/Documents/ILRLU-1461723625-976.pdf.</p>
NO	The measurement results indicate a continued positive development of IAS speeds for mobile and fixed networks in the market.

³⁹ https://www.hakom.hr/UserDocImages/2023/dokumenti/Testiranje%20kvalitete%20mobilnih%20mreza%20-%20Hrvatska%202023_Mobile%20Benchmark%20Measurements%20-%20Croatia%202023.pdf?vel=4349151

PT	<p>During the period covered by the questionnaire, ANACOM published two quarterly reports of 2022 and the 2022 annual report, based on the main results of the tests ran by NET.mede users.</p> <p>Please refer to https://www.anacom.pt/render.jsp?categoryId=367635 for further details.</p> <p>In 2022, NET.mede users ran around 743,000 tests on the speed of IAS (473,000 tests less compared to 2021), via web browser or the NET.mede application, 67% and 24% of which were carried out, respectively, on fixed and on mobile accesses. The remainder came either from accesses identified as non-residential, from foreign operators or were undefined. Regarding the tests carried out on NET.mede in 2022, in half of the tests (median) it was found:</p> <ul style="list-style-type: none"> • a download speed of 108 Mbit/s or more, in fixed residential accesses, and of 15 Mbit/s or more, in mobile accesses; • an upload speed of 72 Mbit/s or more, in fixed residential accesses, and of 7 Mbit/s or more, in mobile accesses; • a latency of 13 milliseconds (ms) or less, in fixed residential, accesses and of 37 ms or less in mobile accesses. <p>Compared to 2021, there is thus an overall improvement, both in fixed and mobile accesses, with increases in download and upload speeds.</p> <p>In addition, ANACOM has also continued its studies to evaluate mobile service performance and coverage of GSM, UMTS and LTE, including IAS, based on drive-tests, carried out by experts from ANACOM. In this regard, ANACOM published, in the reporting period, several studies concerning municipalities (in the mainland and islands), one island, one river, one mountain range and nine railway axes.</p> <p>All these studies can be consulted at https://www.anacom.pt/render.jsp?categoryId=293495&pag=1.</p>
RO	<p>The tests performed on Netograf indicate that, in 2022, Romanian end-users experienced increasing fixed and mobile download speeds, compared to 2021. The average download speed for fixed internet increased from 260 Mbit/s in 2021 to 331 Mbit/s in 2022. The average download speed for mobile internet increased from 30 Mbit/s in 2021 to 38 Mbit/s in 2022.</p>
SI	<p>There were some sample measurements done on different kind of access technologies and different ISPs. The findings were that the ISPs in general adhere to the provisions of the OIR.</p>

Table 33. Main findings of measurements of IAS quality

Question 29. In the reporting period, have you taken any other steps to ensure compliance with articles 3 and 4 according to article 5(1) not mentioned elsewhere in this questionnaire? (e.g., legal decisions taken by the NRAs) If yes, please provide details.

In the reporting period, no NRAs have taken additional steps to ensure compliance with the above.

11. Article 6 – Penalties

Question 30. Regarding the rules on penalties to infringements of articles 3, 4, and 5 pursuant to article 6 of the OIR you apply, is there any change compared to the previous reporting period? If yes, please provide details.

In previous years, all NRAs reported the possibility of imposing penalties in cases of infringements of the abovementioned Articles, which is proportionate and may amount to a maximum of 10% of the most recent annual turnover of an undertaking.

In the reporting period, only one NRA (ES) mentioned an update on their Telecommunications Law (i.e., New Law 11/2022 of 28 June) which includes as specific infringement of the non-compliance of the OIR.

Question 31. In the reporting period, related to the OIR, have there been any of the following?

- i. new court proceedings
- ii. NRA decisions
- iii. updates to cases reported previously
- iv. other, please specify

If yes, please provide details.

In the reporting period, in HU, an ISP has initiated a court proceeding on the NRA's decision concerning the phase-out of zero-rating. This ISP did not contest the obligation itself, only the statement of the NRA that subscribers had a right to withdraw from their contracts without penalties.

Also, four NRAs (HU, NL, PT, RO) reported issuing decisions related to the OIR. The main concerns referred to are described in Table 34 below.

NRA	NRA decisions
HU	ISPs were required to cease selling zero-rating offers by 15 November 2022, and to remove zero-rating from their existing contracts by 31 March 2023.



NL	T-Mobile would have to stop offering zero-rating services by 31 March 2023 ⁴⁰ .
PT	ISPs have to cease ⁴¹ zero-rating and similar offers that discriminate between traffic related to zero-rated applications and other traffic for commercial reasons, within 20 working days of the publication of ANACOM's decision, for offers available for new subscriptions, and within 90 working days for existing contracts, without prejudice to end-users of zero-rating and similar offers whose contracts provide for a loyalty period still in progress, may, if they wish, keep those offers until the end of that period. In addition, ANACOM published on 12 May 2023 a clarification regarding the determination foreseen in the decision related to existing contracts ⁴² .
RO	2 decisions regarding contravention sanctions for non-compliance with Article 4(1) of the OIR.

Table 34. Information about NRA decisions

In the reporting period, two NRAs (AT, RO) outlined updates to their on-going cases. The full status-quo can be seen in the Annex I, but the main changes are shown in Table 35 below.

NRA Updates on on-going cases	
AT	<p>In June 2022, the Telecom-Control-Commission of RTR initiated formal supervisory procedures (based on Article 5 of the OIR) against four providers and ordered on 4 November 2022, the cancellation of the offer of zero-rating in existing contracts by 31 March 2023 (Decisions R 12/22, R 13/22, R 14/22 and R 15/22).</p> <p>They were prohibited from offering:</p> <ul style="list-style-type: none"> • A1 Telekom⁴³: the zero tariff (zero-rating) "Free Stream" in tariffs and options as well as offering a zero tariff under the name "epaper" in tariffs in existing customer contracts; • T-Mobile⁴⁴: from offering the zero tariff "Magenta Stream" in tariffs and the offer of a zero tariff when using the additional package "Media Center" in tariffs in existing customer contracts; • Hutchison⁴⁵: offering the zero tariff "MyStream" in tariffs as well as the offer of a zero tariff when using the additional packages "Spotify Premium" or "3 Cloud" in tariffs in existing customer contracts; • Educom⁴⁶: the offer of the zero tariff "free e-learning" in tariffs in existing customer contracts; <p>due to violation of the equal treatment obligation according to the OIR.</p> <p>Altogether around 100 tariffs were affected. The list of tariffs concerned in the four legal decisions can be found in the respective decisions. (Offers to new customers were stopped proactively by the providers since the end of summer 2022.)</p>

⁴⁰ <https://www.acm.nl/en/publications/acm-accepts-t-mobiles-commitment-zero-rating-service-stop-31-march-2023>

⁴¹ <https://www.anacom.pt/render.jsp?contentId=1742492>

⁴² <https://www.anacom.pt/render.jsp?contentId=1745019&languageId=1>

⁴³ https://www.rtr.at/TKP/aktuelles/entscheidungen/entscheidungen/r12_22.de.html

⁴⁴ https://www.rtr.at/TKP/aktuelles/entscheidungen/entscheidungen/r13_22.de.html

⁴⁵ https://www.rtr.at/TKP/aktuelles/entscheidungen/entscheidungen/r14_22.de.html

⁴⁶ https://www.rtr.at/TKP/aktuelles/entscheidungen/entscheidungen/r15_22.de.html

	<p>The formal supervisory procedures according to Article 5 of the OIR with regard to zero-rating tariffs/products therefore have been completed in Austria.</p> <p>The links to all individual decisions of the NRA can be found at: https://www.rtr.at/TKP/was_wir_tun/telekommunikation/weitere-regulierungsthemen/netzneutralitaet/nn_procedures.en.html</p>
RO	<p>ANCOM received the Court's motivation for annulment of the ANCOM President's Decision n. 669/08.08.2018 (through which Telekom Mobile Romania was sanctioned for violating the provisions of Article 3(3) subparagraph 1 and 3 of the OIR) and have appealed the Court's decision. A first trial term is being established for 23 November 2023.</p>

Table 35. Updates on court proceedings related to open internet

Other activities were reported by CZ, where 63 decisions were issued in the context of administrative offence proceedings with providers, and by HU where the NRA issued a press-release with the objective of informing consumers about the potential consequences of the discontinuation of zero-rating practices.

Annex I: Summary of the definitions, national rules, guidance, measurement tools and court cases

Annex I describes the relevant definitions, national rules, regulations and specifications in force, internet access quality monitoring tools provided and OIR-related court proceedings based on the NRA responses to questions 3.b., 10, 14, 15, 19, 22, 25 and 31.

Question 3.b. Has the Network Termination Point (NTP) location been defined in your country? If yes, please provide details (e.g., date of the definition, BEREC's NTP Guidelines⁴⁷ were taken into consideration, which is the location, links where documents are available). If no, please provide information if there are discussions or plans to define the NTP in your country and the reasons for this.

The NTP was defined in 11 countries, either in the reporting period or before.

NRA	Definition of NTP
CY	According to Law 24(I)/2022 ⁴⁸ , NTP means the physical point at which an end-user is provided with access to a public electronic communications network, and which, in the case of networks involving switching or routing, is identified by means of a specific network address, which may be linked to an end-user's number or name.
CZ	The NTP is defined as a physical point in which access to the public communication network is provided to an end-user.
DE	The NTP has been defined in Article 73 paragraph 1 of the Telecommunication Act (TKG) ⁴⁹ .
DK	The NTP is defined in Article 2(8) of the Act on Electronic Communications Networks and Services (Consolidated Act N. 955 of 17 June 2022) ⁵⁰ .
EL	EETT's Decision 1058/11/2022 ("Regulation for the definition of the Network Termination Point for fixed service provision", Gov. Gazette 7271/B/31-12-2022) defines the NTP location at point A (according to the BEREC NTP Guidelines) with one exception: when IPTV is offered, and the modem is integrated with the "mediabox" used to provide the TV service. In this case, the above-mentioned Decision gives the right to the consumer to request that the provider installs a dedicated modem/router, so the NTP is set at point A ⁵¹ .
FI	The NTP was defined in the Regulation 65 A/2014 M, that came into force on 17 December 2014. That regulation has since been replaced by newer versions and currently the NTP is defined in Chapter 2, Section 4 of the Regulation 65 E/2022 ⁵² .

⁴⁷ BEREC Guidelines on Common Approaches to the Identification of the Network Termination Point in different Network Topologies, [BoR \(20\) 46](#)

⁴⁸ https://ocepr.ee.cy/sites/default/files/nomos_24i.2022_.pdf

⁴⁹ https://www.gesetze-im-internet.de/tkg_2021/_73.html

⁵⁰ <https://www.retsinformation.dk/eli/ta/2022/955>

⁵¹ <https://www.eett.gr/anakinosis/kanonismos-gia-to-simeioy-termatismoy-diktyoy-statheris-ypiresias>

⁵² https://www.finlex.fi/data/normit/48858/M_65_E2022_M_EN.pdf

LV	BEREC NTP Guidelines were taken into the utmost account defining NTP. NTP is defined in the Electronic Communications Law ⁵³ , whereas mobile and fixed NTP definitions are included into General Authorisation and Registration rules.
NL	The NTP was laid down in the policy rule regarding network termination point, published in July 2021 ⁵⁴ . ACM's policy rule is based on the BEREC NTP Guidelines. According to ACM, the NTP is located at the end of the cable that the operator has installed into the consumer's home.
PT	The NTP is defined in the Electronic Communications Law (Law No 16/2022) ⁵⁵ . The definition was based on BEREC's NTP Guidelines.
SI	Final adoption date 10 May ⁵⁶ ; point B was chosen according to the BEREC NTP Guidelines.
SK	The Act No. 452 ⁵⁷ of 2 November 2021 on electronic communications states in article 2 (6) that " <i>network termination point means the physical point at which a subscriber is provided with access to a public network, and which, in the case of networks involving switching or routing, is identified by means of a specific network address, which may be linked to a subscriber's number or name.</i> "

Table 36. NTP definition

Question 10. Is there an NRA or national interpretation of or guidance on “services other than internet access services”, which has not yet been mentioned in the previous BEREC OI Implementation Questionnaires? Y/N

If yes, please provide any information and examples other than the ones mentioned in BEREC OI Guidelines (VoLTE, IPTV).

EL: EETT introduced national measures (EETT Decision 876/7B/17-12-2018) that oblige ISPs to provide contractual information about the quality requirements of the specialised services and the potential impact to the subscriber's IAS. EETT also stipulates that ISPs should ensure the network has sufficient capacity, so that the provision of specialised services to a subscriber does not impair the quality of other subscribers in the network. A quality impairment exists when there is continuous or repeated performance decrease with respect to a previous level of performance, or when it can be proven that this reduction is statistically significant ($\alpha \leq 0.05$).

NL: ACM published an explanatory document on traffic management⁵⁸.

⁵³ <https://likumi.lv/ta/id/334345-elektronisko-sakaru-likums>

⁵⁴ <https://www.acm.nl/system/files/documents/beleidsregel-handhaving-besluit-eindapparaten.pdf>

⁵⁵ <https://www.anacom.pt/render.jsp?contentId=1737530>

⁵⁶ <https://www.uradni-list.si/glasilo-uradni-list-rs/vsebina/2023-01-1696/splosni-akt-o-lokacijah-omreznih-prikljucnih-tock>

⁵⁷ https://www.teleoff.gov.sk/data/files/52416_act_452_2021.pdf

⁵⁸ <https://www.acm.nl/sites/default/files/documents/2020-01/traffic-management-voorlichtend-document.pdf>

Question 14. Have any national specifications been set in relation to the different types of speeds laid out in article 4(1), sub d, which have not yet been mentioned in the previous BEREC OI Implementation Questionnaire? Y/N

If yes, please provide details.

Were these requirements:

- imposed by NRA or other competent Authority?
- agreed upon by market players?

Question 15. Are these requirements or the NRA's opinion/recommendation legally binding?

Specifications set

National specifications in relation to different types of speeds have been set in 17 Member States (AT, BE, BG, CY, CZ, DK, EL, FI, HR, IT, LT, LV, MT, NL, RO, SI, SK). There is a variety of institutional settings on how specifications are set. In 15 cases (AT, BE, BG, CY, CZ, EL, FI, HR, LT, LV, MT, NL, RO, SK, SI), this involved activities by the NRA, which takes the form of recommendations, secondary legislation or decisions. In one case, they were agreed upon by market players (DK), but there are also cases where the agreement by market players comes along with legally binding specifications (IT).

Seven NRAs (BG, CY, FI, HR, LV, SI, SK) used percentage values by defining minimum and normally available speeds as a percentage of the maximum speeds, as presented in Table 37.

NRA	Specification of speeds by the use of percentages	Achievability of speeds
BE	Normally available upload and download speed: speed the end-user can expect during at least 95% of the time.	<ul style="list-style-type: none"> • Minimum upload and download speed: speed below which the ISP will never go, except in case of interruption of the connection • Maximum upload and download speed: speed the end-user may expect to receive in principle at least once a day.
BG	The normally available speeds should be 80% of maximum speed.	Normally available speed should be available 80% of the time over 24 hours.
CY	ISPs are obligated to specify in their contracts: <ul style="list-style-type: none"> • as far as fixed networks are concerned, minimum, standard and maximum speed, in percentage of advertised speed; 	ISPs are required to set the time periods within the day in which maximum speed is achieved, the periods expected to reach normally available speed, and the periods when speed may be limited to the minimum.

	<ul style="list-style-type: none"> as far as mobile networks are concerned, where applicable, the advertised speed, in percentage to the estimated maximum speed. 	
EL	<p>ISPs can perform individual measurements at subscriber connection or aggregate measurements over a geographical area (e.g. municipality, or area defined by local exchange). The measurement sample should not be older than 1 year and estimates should be defined by confidence intervals with confidence level $\geq 95\%$. Based on the measurement sample, the minimum, maximum and normally available speeds are defined as follows:</p> <ul style="list-style-type: none"> Minimum speed 5% of measurements during peak hours Maximum speed 95% of measurements during non-peak hours Normally available speed 50% of measurements during peak hours 	<p>Peak hours from 19:00 to 23:00 for residential users, and from 09:00 to 17:00 for non-residential (business) users.</p> <p>ISPs are free to provide different intervals for peak hours, based on the actual usage of their networks.</p>
FI	<p>Requirements set for subscriptions with the maximum speed ≤ 100 Mbit/s:</p> <ul style="list-style-type: none"> Minimum speed must be at least 70% of maximum speed Normally available must be at least 90% of maximum speed 	<p>Normally available speed should be achieved 90% of the time during each four-hour period.</p>
HR	<ul style="list-style-type: none"> Minimum speed $\geq 70\%$ of max. speed Normally available speed: not specified because of the high threshold for minimum speed 	
IT	<p>Minimum speed/maximum speed: 95- and 5-quantile (respectively) of the speeds measured in a time interval (6 months for statistical comparative values / 24 hours for single users' lines) Measures are sampled every 15 minutes. Average and standard deviations are also calculated and published.</p>	<p>Maximum speed is defined based on actual measurements, therefore it is achievable.</p>
LT	<ul style="list-style-type: none"> Minimum speed is such speed that ensures the provision of IAS; 	

	<ul style="list-style-type: none"> • Normally available speed is calculated as 80th percentile of all speed values measured; • Maximum speed is calculated as 95th percentile of all speed values measured. 	
LV	<p><u>Fixed network:</u></p> <ul style="list-style-type: none"> • maximum (advertised) speed; • normally available speed must be at least 70% of maximum (advertised) speed and not less than the minimum speed value set by the NRA; • minimum guaranteed speed must be at least 20% of maximum (advertised) speed and not less than the minimum speed value set by the NRA. <p><u>Mobile network:</u></p> <ul style="list-style-type: none"> • maximum (advertised) speed; • the minimum guaranteed speed must be not less than the minimum broadband internet access service connection speed value set by the NRA, at the fixed-service receiving location within the ISP's designated coverage area in the mobile network, within the end-user's premises or household, if the internet access service is provided using a router-modem. 	<p>Fixed network:</p> <ul style="list-style-type: none"> • Normally available speed must be accessible to the end-user at least 95% of the time within a 24-hour period. • Minimum speed for the fixed network should be at least 6 megabits per second for download speed and at least 2 megabits per second for upload speed. <p>Mobile network:</p> <ul style="list-style-type: none"> • Minimum guaranteed speed for both download and upload directions, at the fixed-service receiving location within the ISP's designated coverage area in the mobile network, within the end user's premises or household, using a router-modem, should be at least 2 megabits per second. Minimum guaranteed speed must be accessible to the end-user at least 95% of the time within a 24-hour period. <p>In other cases, ISPs determines the minimum guaranteed speed value.</p>
NL	<p>ISPs are obligated to specify in their contracts internet speeds on fixed networks:</p> <ul style="list-style-type: none"> • Minimum speed • Normally available speed • Maximum download speed 	<ul style="list-style-type: none"> • The measured speed can never be below the minimum speed, except if a situation occurs as described in Section 7.1a of the Dutch Telecommunications Act. • The normally available speed must be reached in at least eight out of ten measurements of an internet access service that an end-user conducts in a single week. The measurements should be spread out evenly across at least three days in said week and can be done at any given time during the day, but that no more than one

		<p>measurement per hour can be counted.</p> <ul style="list-style-type: none"> • At least 90% of the maximum speed is reached in one of the ten measurements that an end-user conducts in a single week.
MT	All fixed broadband ISPs are obliged to include in their contracts a metric termed Typical Speed Range (TSR).	An NRA decision published in 2016 defines the TSR as a metric with which the ISP indicated the expected performance of a fixed broadband connection. The TSR is expressed as a range between two figures - the minimum and maximum speeds. Therefore, a broadband connection is expected to perform within the declared TSR. The Decision also states that in those cases where the headline speed includes a numerical figure to describe speed, the IAS provider is expected to provide a connection which can physically achieve the stated headline speed. The same rules apply to broadband services which are marketed as fixed, even if these are offered through mobile infrastructure.
SI	<ul style="list-style-type: none"> • Minimum speed must be at least 50% of the maximum and at least 25% of the maximum inlet and outflow speed using FWA access. • Normally available speed must be at least 80% of the maximum incoming and outgoing connection speed. In the case of FWA access, the normally available speed must be at least 50% of the maximum speed. 	<ul style="list-style-type: none"> • Normally available speed: at least 90% of the time of the day outside peak hours • Maximum speed: achievable at least once per day • Minimum speed: lowest actual data transfer speed from the server or to the server (except for network failures)
SK	<ul style="list-style-type: none"> • Minimum speed: $\geq 40\%$ of maximum speed • Normally available speed: $\geq 90\%$ of maximum speed • Advertised speed: recommended to be applied so that it allows to evaluate advertised speed against real performance of internet access service 	<ul style="list-style-type: none"> • Normally available speed: 90% of any continuous 4-hour measurement period • Maximum speed: at least once between 00:00 and 24:00

Table 37. Specification of speeds by the use of percentages and achievability of speeds

Legally binding or informal

In 12 of the 16 Member States (BE, CY, CZ, DK, EL, HR, IT, LV, MT, NL, RO, SI) that have set national specifications, the requirements or NRAs' opinion/recommendation were legally binding. In the remaining Member States (AT, BG, FI, SK), the specifications or requirements were not legally binding.

Question 19. Have you imposed additional transparency requirements regarding the publication of information referred to in article 4(1), subs 1 a-e? Y/N

If yes, please provide details of the requirements.

Nine NRAs (AT, BE, BG, DE, EL, IT, LT, SI) have imposed additional transparency requirements regarding the publication of information referred to in Article 4(1), subparagraphs 1 a-e, as summarised in Table 38 below.

NRA	Additional transparency requirements
AT	<ul style="list-style-type: none"> • On an informal level, transparency requirements are regularly discussed with ISPs. • RTR had/has bilateral meetings with ISPs, which also cover issues regarding the OIR and the accompanying BEREC OI Guidelines. • Also, the regular exchange between ISPs and RTR concerning different matters of telecommunications (including OI issues) is ongoing. Within this forum, RTR presents the latest developments regarding OI to the ISPs, and ISPs are welcome to present their views. • Furthermore, there are some non-binding templates/recommendations for ISPs, available on RTR's website.
BE	<p>On 23 February 2022, BIPT published guidelines on the use of the term “unlimited internet” in commercial communications of ISPs. BIPT acknowledges that a fair use policy (FUP) can define the limits of the “fair use” to guarantee high-quality internet to all of the network’s customers. BIPT, however, finds that ISPs may only use the term “unlimited” for tariff plans where the data volume allows most of the customers to access to the internet without speed restrictions. BIPT thinks that for fixed internet the limit in the FUP should be set at a monthly data volume of at least 3 terabytes, while in the case of mobile internet this is 300 gigabytes.</p> <p>The matter of transparency is also dealt with by the BIPT Guidelines. These Guidelines state that in pre-contractual and contractual documents and on the ISP website clear, easy to understand and to access, precise and up-to-date information needs to be given on the FUP and on what the FUP means in practice. In addition, the Guidelines state that if the FUP is applied, only speed reductions are admissible, not blocking the “unlimited” IAS offer.</p> <p>Finally, there is a review clause in the Guidelines to adjust the thresholds where appropriate.</p>

BG	In its Position, CRC expressed its view about publishing the information referred to in Article 4(1) (b) of the OIR, regarding the consequences of IAS' speed reduction when the data cap is exceeded. The Position of CRC elaborates what this information should include and the way it should be presented in the contracts/ general conditions and on the ISPs' websites.
DE	The ordinance for framework provisions on the promotion of transparency, publication of information and additional facilities for cost monitoring on the telecommunications market entered into force on 1 June 2017. From that date on, the ordinance obliges fixed and mobile ISPs to provide more transparency when offering IAS.
EL	The EETT Decision 876/7B/17-12-2018 includes more detailed transparency requirements regarding the publication of information referred to in Article 4(1), subparagraphs 1 a-e of the OIR. Apart from the requirements on contractual speeds, the remaining requirements entered into force on 5 June 2020. The transparency requirements for contractual speeds entered into force on 25 November 2020, for fixed networks, and on 1 March 2021, for mobile networks.
IT	<p>AGCOM (by virtue of a competence attributed by the Decree Law of 16 October 2017, n. 148 art. 19 quinquiesdecies), adopted a resolution (n. 292/18/CONS) regarding the definition of the technical characteristics and the corresponding names of the various types of physical infrastructure used for the provision of telephone services, television networks and electronic communications.</p> <p>With this provision, AGCOM proposed some transparency measures in the broadband and ultra-broadband retail offers, requiring the operators to make clear the physical architecture through which the respective fixed access services are offered, as well as the quality of service that the user could experience. The definitions and technical characteristics of the access network architectures are introduced at the same time.</p>
LT	In connection to transposing the EECC into national law, new rules for publication of QoS parameters were approved. For the IAS, operators must publish not only the information about QoS parameters referred to in Article 4(1), subparagraphs 1 a-e of the OIR, but also latency, jitter and packet lost ratio.
SI	Based on the General Act (legally binding since autumn 2019), AKOS requires ISPs to communicate to end-users the information regarding speeds on monthly bills, user portals or any other adequate transparent way that allows the user to get acquainted with this information at any time and in each billing period.

Table 38. Introduction of additional transparency requirements

Question 22. Is there an NRA or national interpretation of “significant discrepancy, continuous or regularly recurring”? Y/N

If yes, how are these terms interpreted?

If yes, was the definition:

- i. imposed by the NRA (e.g., using article 5(1)),
- ii. voluntarily agreed upon by the market players

iii. other _____

13 NRAs (BG, CY, CZ, DE, EL, ES, HR, IT, LV, MT, PL, RO, SI) gave a material interpretation of “*significant discrepancy, continuous or regularly recurring*”, as can be seen in Table 39 below.⁵⁹

NRA	Interpretation
BG	<ul style="list-style-type: none"> • Significant continuous discrepancy – two consecutive weeks in one billing period; • Regularly recurring discrepancy – more than one temporary discrepancy; • A temporary discrepancy – three consequent days in one billing period.
CY	<p>Non-compliance if results of measurements over three consecutive days show that the speed received by the end-user is less than or equal to 80% of the minimum or normally available speed specified by the ISP.</p>
CZ	<ul style="list-style-type: none"> • For the IAS at a fixed location, significant continuous discrepancy from the normally available speed shall mean a continuous decrease in the actually achieved speed below the defined value of the normally available speed in an interval longer than 70 minutes. Regularly recurring discrepancy from the normally available speed shall mean a discrepancy at which the actually achieved speed decreases at least three times below the defined value of the normally available speed in an interval longer than or equal to 3.5 minutes in a time range of 90 minutes. • For the mobile IAS, significant continuous discrepancy from the advertised speed shall mean a continuous decrease in the actually achieved speed below 25% of the value of the advertised speed in an interval longer than 40 minutes. Regularly recurring discrepancy from the advertised speed shall mean a decrease in the actually achieved speed at least five times below 25% of the value of the advertised speed in an interval longer than or equal to 2 minutes in a time range of 60 minutes.
DE	<p>Legal basis entitling the consumer to reduce the contractually agreed fee (§ 57 (4) TKG); interpretation by binding notice by BNetzA (according to § 57 (5) TKG). The binding notice specifies the non-conformity regarding fixed down- and upload speeds if one of these cases occurs:</p> <ul style="list-style-type: none"> • 90% of the contractually agreed maximum speed is not achieved at least once at two out of three measurement days; • the normally available speed is not achieved in 90% of the measurements; • the speed falls below the contractually agreed minimum speed at least two out of three measurement days. • By measuring with the broadband monitoring mechanism, the following requirements need to be considered:

⁵⁹ See the 2020 iteration of this report, which illustrates those cases where there was already such an interpretation, https://ber.ec.europa.eu/eng/document_register/subject_matter/ber.ec/reports/8256-report-on-the-implementation-of-regulation-eu-20152120-and-ber.ec-net-neutrality-guidelines

	<ul style="list-style-type: none"> • 30 measurements must be performed; • The measurements must be taken on three separate days with at least one day without measurements in between those days • The number of measurements is to be spread equally over the three measuring days, so that 10 measurements are taken on a specific day; • Measurements can be conducted not closer than every five minutes, between the fifth and sixth measurement of a day there has to be a break of at least three hours • The 30 measurements have to be conducted within 14 days • The measurements must be taken using a LAN connection; • The measurements are to be carried out using the installable version of the NRA's broadband monitoring mechanism
EL	A continuous or regularly recurring discrepancy is considered to exist when it occurs in two out of at least three measurement samples, taken by the ISP in consecutive days.
ES	There has to be a breach of either minimum or normally available speed. It has to be "continuous".
HR	If an end-user complains about broadband speed on a fixed electronic communications network, the end user must submit to the operator the results of at least three (3) tests conducted in a period of five (5) consecutive days (at least one test must be carried out every 24 hours) which shows that speeds is below 70% of maximum/advertised speed. Tests are carried out by means of a certified tool HAKOMetar for broadband speed tests prepared by the Agency. The results of the tests represent adequate proof in the procedure for the resolution of complaints made by end users.
IT	A continuous or regularly recurring discrepancy is considered to exist when minimum contractual speed is not met twice in 45 days. In such a case, the current national regulation lets users terminate the contract without additional costs. In order to check minimum speed reached by a user, the user has to run a free software (Ne.me.sys), certified by ISCOM, for 24 hours. Ne.me.sys samples measurements every 15 minutes. Minimum speed is calculated as the 95-quantile of measurements in the interval.
LV	<p><u>Fixed networks:</u></p> <ul style="list-style-type: none"> • maximum (advertised) speed; • normally available speed, which is available to the end-user no less than 95% of the time per day and whose value is not lower than 70% of the maximum (advertised) connection speed and is not lower than the minimum broadband internet access service determined by the SPRK connection speed value in a fixed electronic communications network; • minimum guaranteed speed, the value of which is at least 20% of the maximum (advertised) connection speed specified in the contract and is not lower than the minimum broadband Internet access service connection speed value determined



	<p>by the SPRK in a fixed electronic communications network and which describes the lowest speed that can be available to the end user during peak hours.</p> <p><u>Mobile networks:</u></p> <ul style="list-style-type: none"> • maximum (advertised) speed, which describes the maximum speed actually available to the end-user; • minimum guaranteed speed, the value of which is no less than 95% of the time per day is not lower than the minimum broadband internet access service connection speed value determined by the SPRK in a mobile electronic communications network at the fixed service receiving location in the coverage area specified by the operator in the end-user's premises or household, if the Internet access service is provided through a router-modem. <p>A mobile ISP shall determine the minimum guaranteed speed if he provides the IAS to the end-user in another way.</p> <p>If any of the above-mentioned conditions are not fulfilled during emergency measurements, it is considered that there is a significant discrepancy in the quality of the IAS.</p>
MT	<ul style="list-style-type: none"> • “significant discrepancy”: this definition is implicit as any connection performing below the stated ISP’s information regarding speed is considered as discrepant; • “regularly recurring”: no interpretation published.
PL	<p>As part of a certified mechanism to measure regularly recurring significant discrepancies of service quality, there should be at least six certified measurements carried out at intervals of 30 minutes, in two daily cycles with an interval of less than seven days between them.</p>
RO	<p><u>For the fixed IAS:</u></p> <p>In the guidelines issued, ANCOM recommended the conditions that must be met and the procedures that a user must follow in order to ascertain on one hand the significant discrepancies and on the other hand the continuous or regularly recurring discrepancies.</p> <p>In order to ascertain significant discrepancies, the user must perform, under certain conditions, at least six measurements during 24 hours, of which at least one measurement must be performed in the 23:00-07:00 timeframe. Measurements must be carried out at intervals of at least one hour apart. A discrepancy is considered significant, if at least one of the following cases occurs:</p> <ul style="list-style-type: none"> • 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. <p>To ascertain continuous or regularly recurring discrepancies between contractual speeds and the actual performance of the internet access service, the user has to perform measurements, under certain conditions, for at least 5 days (of which at least one weekend day) during a maximum of 30 consecutive days, performing at least 6 measurements per day, of which at least one measurement per day in the 23:00-07:00 timeframe. Measurements must be carried out at intervals of at least one hour</p>

	<p>apart. A discrepancy is considered continuous or regularly recurring, if at least one of the following cases occurs:</p> <ul style="list-style-type: none"> • the minimum speed is not achieved for at least two measurements; • at least half of the measurements do not achieve the normally available speed; • no measurement achieves the maximum speed. <p><u>For mobile IAS:</u></p> <p>ANCOM established a procedure that a user must follow in order to ascertain significant, continuous or regularly recurring discrepancies between the contractual speeds and the real performance of the internet access service. Thus, the user will have to perform measurements, under certain conditions, for at least five days (of which at least one must be a weekend day) during a maximum of 30 consecutive days, performing at least six measurements per day, of which at least one measurement per day in the 23:00-07:00 timeframe. Measurements must be carried out at intervals of at least one hour apart. A discrepancy is considered significant, continuous or regularly recurring, if at least half of the measurements performed are below certain values, assumed by ISPs in their contracts. These values are calculated according to a series of rules established in the guidelines developed by ANCOM.</p>
SI	<ul style="list-style-type: none"> • Minimum speed: at least one of the correctly performed measurements, regardless of the time of the day, falls at the specified minimum speed. • Normally available speed: the average of all correctly performed measurements outside the peak hours is lower than the contractually agreed normally available speed (the measurement with the highest and lowest speed are excluded from the calculation).

Table 39. Interpretation of terms

Question 25. Are there any updates regarding your IAS quality monitoring tool for consumers or any respective measurement tool projects? Y/N

20 NRAs (AT, BE, BG, CY, CZ, DE, DK, EL, HR, HU, IT, LT, LU, NO, PL, PT, RO, SE, SI, SK) provide an IAS quality monitoring tool and in nine Member States (AT, BG, CY, CZ, DE, HR, IT, PL, RO) it is considered a certified monitoring mechanism according to Article 4(1) (d) of the OIR.

NRA	Name of tool	URL	Certified
AT	RTR-Netztest / RTR-NetTest	https://www.netztest.at	Yes
BE	BIPT Speedtest	http://www.bipt-speedtest.be/#/test/run	No
BG	CRC nettest	https://nettest.crc.bg/#/home	Yes
CY	cyNettest	https://cynettest.ee.cy/ https://ocecpr.ee.cy/el/content/cynettest-systima-ektimisis-poiotitas-eyryzonikon-syndeseon#English_Version	Yes
CZ	NetTest	https://nettest.cz/en/	Yes
DE	Breitbandmessung	https://breitbandmessung.de	Yes
DK	Tjekditnet (Ookla)	https://tjekditnet.dk/	No
EL	HYPERION	https://hyperiontest.gr	No
HR	HAKOMetar HAKOMetar Plus	https://www.hakom.hr/hr/hakometar/132 https://hakometarplus.hakom.hr/home	Yes
HU	Szelessav	http://szelessav.net/en/internet_speedtest	No
IT	Ne.Me.Sys/Misura Internet	https://misurainternet.it	Yes
LT	matuok.lt (Ookla)	http://matuok.lt	No
LU	checkmynet.lu	https://checkmynet.lu/	No
NO	Nettfart	https://nettfart.no/en/test	No
PL	PRO Speed Test	https://pro.speedtest.pl/	Yes
PT	NET.mede	https://netmede.pt/	No
RO	Netograf	https://www.netograf.ro/#/	Yes
SE	Bredbandskollen	http://www.bredbandskollen.se/	No
SI	AKOSTestNet	https://akostest.net	No
SK	Meracinternetu/ MobilTest	https://www.meracinternetu.sk	No

Table 40. IAS quality measurement tools provided by NRAs

All of the above-mentioned IAS quality monitoring tools can measure download and upload speeds as well as latency. Additionally, many tools allow to perform measurements of jitter (15 out of 20) and packet loss (12 out of 20). With some of these tools (7 out of 20), end-users can also check if any ports are blocked. All but one tools are available as a browser version. The majority of these tools (16 out of 20) are provided as an Android and iOS app, while some (9 out of 20) also consist of installable clients.

NRA	Download speed	Upload speed	Latency (Ping)	Jitter	Packet loss	TCP/UDP port blocking	Web browser	Android app	iOS app	Installable client
AT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
BE	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	No
BG	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
CY	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
CZ	Yes	Yes	Yes	No	No	No	Yes	Yes	No	No
DE	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes
DK	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	No
EL	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No
HR	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
HU	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
IT	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
LT	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No
LU	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
NO	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
PL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PT	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
RO	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
SE	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	No
SI	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
SK	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No

Table 41. Indicators measured with the tool and supported platforms

Question 31. Have there been any new court proceedings or updates to the cases reported previously related to the OIR?

If yes, please provide details.

Six NRAs (AT, DE, HU, IT, NL, RO) reported national court proceedings related to the OIR. An overview is provided in Table 42 below.

NRA	Court proceedings
AT	<p>Please see chapter “Measures in accordance with Article 5(1)” in RTR’s Net Neutrality Report 2023 (and also in the past OI reports). The list of all cases and court proceedings (including a brief overview) can be found at: https://www.rtr.at/TKP/was_wir_tun/telekommunikation/weitere-regulierungsthemen/netzneutralitaet/nn_reports.en.html.</p> <p>The links to the individual decisions can be found at: https://www.rtr.at/TKP/was_wir_tun/telekommunikation/weitere-regulierungsthemen/netzneutralitaet/nn_procedures.en.html</p>
DE	<p>StreamOn: The Administrative Court of Cologne ruled in its interim proceedings (11 November 2018) that BNetzA is not hindered to enforce its decision of 15 December 2017, forbidding the video throttle contained in the zero-rating offer StreamOn.</p> <p>Telekom appealed the interim ruling. The Higher Administrative Court finally confirmed in the interim proceedings (12 July 2019) that BNetzA’s decision has to be executed immediately. Deutsche Telekom deactivated its video throttling on 9 August 2019.</p> <p>The Administrative Court of Cologne suspended the main proceedings and addressed the ECJ (preliminary ruling) for a clarification whether (inter alia) the throttling of video streaming is in line with article 3(3) of the OIR and the principle of equal treatment. The ECJ pronounced its judgment on 2 September 2021, as already outlined in Chapter 1 of this Report. Following this ruling, BNetzA prohibited the marketing of the zero-rating option and terminated the existing customer contracts.</p> <p>Vodafone Pass: There were no court rulings in administrative court proceedings against BNetzA’s decisions. However, there was one court ruling in civil proceedings: A consumer association sued Vodafone for various clauses in the T&Cs of Vodafone Pass. On 8 May 2019, the District Court of Duesseldorf ruled inter alia that the clauses used are misleading insofar as it is not obvious for the end-user that (e.g.) voice- or video-telephony is not zero-rated. Regarding tethering, the court argued that counting data consumed by tethering against the data allowance does not constitute a violation of Article 3(1) of the OIR.</p> <p>The District Court of Duesseldorf passed the issue of tethering to the ECJ (preliminary ruling) requesting clarification whether there is a violation of article 3 of the OIR because zero-rating of applications in Vodafone Pass applies only when a mobile device is used. The ECJ pronounced its judgment on 2 September 2021. Following this ruling BNetzA prohibited the marketing of the zero-rating option and terminated the existing customer contracts.</p>
HU	<p>In two previous cases (Telenor – My chat and Telenor – My Music), the NRA established that these offers violate Articles 3(2) and 3(3) of the OIR and mandated Telenor Hungary to bring these offers into compliance. Following a preliminary ruling from the ECJ, the national court gave its judgments and dismissed the actions</p>

	brought by Telenor Hungary against the decisions of the NRA. In practice, the offers were already discontinued by Telenor Hungary.
IT	<p>On 2 August 2018, AGCOM published a decision stating that end-users have the right to freely choose their broadband router (AGCOM Resolution n. 348/18/CONS). According to AGCOM, ISPs cannot require end-users to rely exclusively on the router supplied by the ISP itself. This decision was appealed and the appeal procedure is pending.</p> <p>With sentences n. 1200/2020 and n. 1201/2020, the Lazio Regional Administrative Court confirmed the lawfulness of the provision of article 5, paragraph 1 of resolution n. 348/18/CONS. The sentences were appealed to the Council of State. On 2 August 2021, the Council of State rejected the request to modify the previous decision n. 1200/2020. Decision on sentence n. 1201/2020 is still pending.</p>
NL	T-Mobile introduced a zero-rating offer, which resulted in legal proceedings. The result was that ACM found the offer to be in line with the OIR. An NGO attempted to appeal this decision, but the court decided that ACM was correct in its assessment that the offer was allowed.
RO	<p>ANCOM concluded that a certain traffic management practice constitutes an infringement of Article 3(3) third subparagraph of the OIR and ordered that ISP to stop the practice. The ISP challenged ANCOM's decision in front of the Romanian Courts and asked for both the suspension and the annulment of the decision. In the first instance, the Bucharest Court of Appeal decided to suspend the ANCOM decision until the ruling on the substance on its annulment. ANCOM appealed the ruling of the Appeal Court on the decision suspension. However, the appeal was rejected on 12 December 2019 by the decision of the High Court of Cassation and Justice, Administrative and Fiscal Contentious Section, and thus the decision on the suspension has remained definitive. Regarding the cause which concerns the annulment of the ANCOM President's Decision n. 669/08.08.2018, on which the Bucharest Court of Appeal, Administrative and Fiscal Contentious Section VIII, was to issue the ruling on the substance, after several deferrals of the ruling, on 26 May 2021, the Court decided to annul the above-mentioned decisions. ANCOM appealed the Court decisions regarding the annulment of the ANCOM President's Decision n. 669/08.08.2018, a first trial term being established for 23 November 2023.</p> <p>Telekom Romania case: ANCOM appealed the Court's decision to annul the ANCOM President's Decision n. 669/08.08.2018.</p>

Table 42. Court proceedings related to the OIR



Annex II: Abbreviations for countries

Throughout the report, Eurostat country codes are used as abbreviations for the names of the Member States⁶⁰. The country codes and the respective names of the NRAs are shown in the following table.

Albania	AL	AKEP	Lithuania	LT	RRT
Austria	AT	RTR	Luxembourg	LU	ILR
Belgium	BE	BIPT	Malta	MT	MCA
Bulgaria	BG	CRC	Montenegro	ME	EKIP
Croatia	HR	HAKOM	North Macedonia	MK	AEC
Cyprus	CY	OCECPR	Norway	NO	Nkom
Czech Republic	CZ	CTU	Poland	PL	UKE
Denmark	DK	ADSI	Portugal	PT	ANACOM
Estonia	EE	ECSTRA	Romania	RO	ANCOM
Finland	FI	Traficom	Serbia	RS	RATEL
France	FR	Arcep	Slovakia	SK	RU
Germany	DE	BNetzA	Slovenia	SI	AKOS
Greece	EL	EETT	Spain	ES	CNMC
Hungary	HU	NMHH	Sweden	SE	PTS
Ireland	IE	COMREG	Switzerland	CH	BAKOM
Italy	IT	AGCOM	The Netherlands	NL	ACM
Latvia	LV	SPRK			

Table 43. Country codes and NRAs

⁶⁰ The Eurostat country codes are available via the official link: http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Country_codes

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