Report of the President of the Office of Electronic Communications on compliance in the Polish market with Regulation 2015/2120 on open internet access

Warsaw, 29 June 2020

Conclusions

We are presenting the fourth report of the President of UKE on compliance in the Polish market with Regulation (EU) 2015/2120 of the European Parliament and of the Council laying down measures concerning open internet[1] access in the period from 1 May 2019 to 30 April 2020.

In the period concerned, the President of UKE looked at how internet service providers (ISPs) present in contractual documents on the provision of publicly available telecommunications services, including the internet access service (IAS), information on the quality of the services provided, in particular information on download and upload speeds. In addition, the President examined the conditions of service provision, with particular focus on the traffic management measures implemented. The terms and conditions for the provision of specialised services by ISPs were also investigated. Complaints by end-users have also been followed up with regard to the rights and obligations under Articles 3 and 4(1) of the Regulation.
The present report also presents data showing the quality of the internet access service in Poland and the functioning of the service quality monitoring tool the President of UKE made available to consumers.

The analysis of the market situation shows that:

- ISPs comply with their obligation to publish information as set out in Article 4(1) of the Regulation, primarily by posting appropriate templates of contractual documents, in particular rules and regulations and price lists on the relevant pages of their websites.
- ISPs include clear and comprehensible information on download and upload speeds in the contractual documents concerning the internet access service.
- The majority of ISPs indicate the same specialised services as in previous reporting periods; the most frequently indicated services are: IPTV, VoIP and VPN. Compared to previous years, ISPs did not indicate any new specialised services in the questionnaire of the President of UKE.
- Specialised services use from less than 1% to even 23% of the bandwidth available in the network during peak hours (based on ISPs' answers to the questionnaire of the President of UKE). Compared to previous reporting periods, there has been a decrease in the average level of bandwidth usage for the provision of specialised services in ISPs' networks.
- In the reporting period, ISPs did not implement traffic management measures going beyond those set out in the Regulation.
- The results of service quality measurements show a clear (compared to the previous years

[1]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.

covered by the monitoring exercise) increase in data transmission speeds, as evidenced by the higher number of measurements with download speed results within the range of 30–100 Mb/s and above 100 Mb/s.

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1. List of legal acts and abbreviations

- **Digital Agenda** – European Digital Agenda (DAE) is the European Union's Digital plan for the development of the ICT sector until 2020, aiming to widen access to broadband;
- **Certified mechanism** – measurement system designed to measure, among other things, the speed of data transmission in both directions for the internet access service provided via fixed-line public telecommunications networks. The system comprises, among other things,
  a website and a measurement application, e.g., for desktop computers and laptops;
- **Telecommunications Act** – Act of 16 July 2004 – Telecommunications Law (Journal of Laws [Dz. U.] of 2019, item 2460, as amended);
- **Regulation** – Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 in the part on 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;
- **Act of 10 May 2018** on the Protection of Personal Data (Journal of Laws of 2019, item 1781);
- **Act of 19 November 2009** on Gambling Games (Journal of Laws of 2019, item 847, as amended);
- **Act of 16 February 2007** on Competition and Consumer Protection (Journal of Laws of 2019, item 369, as amended);
- **BEREC Guidelines** – BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules, document number: BoR (16) 127 BoR (16) 127;
- **APN** (Access Point Name) – name or address of a gateway between an operator's mobile network and another computer network, enabling, among other things, routing packets between these networks;
- **BEREC** – Body of European Regulators in Electronic Communications;
- **CSSR** (Call Setup Success Rate) – indicator of the effectiveness of calls measured as the fraction of call attempts that result in a connection to the dialled number;
- **DCR** (Dropped Call Rate) – indicator of disconnected calls measured as the fraction of the telephone calls which, due to technical reasons, were cut off before the speaking parties had finished their conversation and before one of them had hung up;
- **DVB-C** (Digital Video Broadcasting – Cable) – standard for the broadcast transmission of digital television intended for use in cable operator networks;
- **IAS** – internet access service;
- **IGMP** (Internet Group Management Protocol) – an TCP/IP protocol, used to manage multicast groups over Internet Protocol (IP) networks;
- **IPTV** (Internet Protocol Television) – delivery of television signal over Internet Protocol (IP) broadband networks;
- **ISP** – internet service provider;

- **MRTG** (Multi Router Traffic Grapher) – software which uses the Simple Network Management Protocol (SNMP) for monitoring and measuring the traffic load on network links. It allows the user to see traffic load on a network over time in graphical form;
- **NAT** (Network Address Translation) – technique for transmitting network traffic through a router that involves remapping of source or destination IP addresses;
- **NB-IoT** (Narrowband Internet of Things) – radio technology standard developed to enable the implementation in a low-power and low data rate wide-area network of, e.g., M2M services (Machine to Machine);
- **LTE** or **4G** (Long-Term Evolution) – standard developed by the 3GPP consortium for wireless data transmission, successor of 3G systems;
- **PSTN** – Public Switched Telephone Network;
- **President of UKE –** President of the Office of Electronic Communications;
- **President of UOKiK** – President of the Office of Competition and Consumer Protection;
- **QoS** – Quality of Service;
- **SNMP** (Simple Network Management Protocol) – family of network protocols for managing devices such as routers, switches, computers or telephone exchanges over IP networks;
- **TCP** – Transmission Control Protocol;
- **VOD** (Video on Demand) – service allowing users to access video or sound recordings at any time, without the constraints of a typical broadcasting schedule;
- **VoIP** (Voice over Internet Protocol) – technology enabling voice processing over Internet Protocol (IP) networks;
- **VoLTE** (Voice over Long Term Evolution) – voice transmission over LTE technology;
- **VoWiFi** (ang.Voice over WiFi) – technology that allows users to make audio calls over wireless local networks;
- **VPBX** (ang.Virtual PrivateBranch Exchange) – a virtual PBX, providing voice calls over IP networks, as a cloud-based solution.

2. Introduction

By drawing up this report, the President of UKE has fulfilled the obligation under Article 5(1)(2) of the Regulation, which obliges the national regulatory authority competent for the telecommunications services market to publish annual reports on the monitoring of the market situation with regard to open internet access and actions taken in this respect, as well as to submit these reports to the Commission and BEREC.

The present report includes information on:

- the modalities for submitting by ISPs information on the quality of services provided,
- complaints by end-users with regard to the rights and obligations as set out in Articles 3 and 4(1) of the Regulation,
- traffic management monitoring,
- monitoring and evaluation of conditions for the provision of specialised services and their impact on the general quality of IAS,
- the operation of the IAS quality monitoring mechanism,
- data concerning the quality of IAS.

The report covers the monitoring period from 1 May 2019 to 30 April 2020.

3. Regulatory authorities

Pursuant to Article 5(1) of the Regulation, the body which monitors the market situation and ensures compliance with Articles 3 and 4 of the Regulation as well as promotes the availability of non-discriminatory internet access at levels of quality that reflect advances in technology is the national regulatory authority. In Poland – pursuant to Article 190 of the Act of 16 July 2004 – Telecommunications Law – this authority is the President of the Office of Electronic Communications.

In addition, some market practices – in particular those related to advertising messages related to internet access services, which constitute a breach of the provisions of the Regulation where the conditions set out in the Act of 16 February 2007 on Competition and Consumer Protection[2] are met – may constitute a practice in breach of the collective interests of consumers. Pursuant to the Act of 16 February 2007 on Competition and Consumer Protection, conducting proceedings in

[2] Pursuant to Article 24(1) and (2) of the Act of 16 February 2007 on Competition and Consumer Protection, practices infringing collective consumer interests are prohibited. A practice infringing the collective interests of consumers shall mean any activity of an undertaking which is unlawful, contrary to established customs, and detrimental to such interests, in particular: a breach of the obligation to provide consumers with reliable, true and complete information; unfair commercial practices or acts of unfair competition.

cases of practices infringing the collective interests of consumers is the responsibility of the President of the Office of Competition and Consumer Protection.

Where the application of traffic management measures involves the processing of personal data, such practice may be subject to analysis and assessment as to whether the rules governing the processing of such data are compliant with the law. The body responsible for handling such issues, as of 25 May 2018, in connection with the entry into force of the Act on the Protection of Personal Data, is the President of the Personal Data Protection Office[3].

4. Monitoring compliance with the Regulation

The activities for the monitoring of the actual market situation in this respect included sending out by the President of UKE's a questionnaire to 28 ISPs. The questions asked by UKE concerned the ISPs' activities related to:

- traffic management measures applied;
- evaluation of conditions for the provision of specialised services and their impact on the general quality of internet access services;
- ISP transparency requirements;
- procedures for processing end-users' complaints with regard to the rights and obligations set out in Articles 3 and 4(1) of the Regulation.

The President of UKE requested answers from the following ISPs:
Aero2 sp. z o.o., Asta-Net S.A., Beskid Media sp. z o.o., Chopin Telewizja Kablowa S.A., Cyfrowy Polsat S.A., FM Group Mobile sp. z o.o., Gawex Media sp. z o.o., Inea S.A., ITI Neovision S.A., JMDI sp. z o.o., Klucz Telekomunikacja sp. z o.o., Koba sp. z o.o., Korbank – Media Cyfrowe sp. z o.o., Lycamobile sp. z o.o., Netia S.A., Orange Polska S.A., Oxylion S.A., P4 sp. z o.o., Polkomtel sp. z o.o., PSM Winogrady w Poznaniu, Sat-Film sp. z o.o., Servcom S.A., Sileman sp. z o.o., T-Mobile Polska S.A., Toya sp. z o.o., UPC Polska sp. z o.o., Vectra S.A. and Virgin Mobile Polska sp. z o.o.

The selection criterion for the ISPs which the President of UKE asked for answers to the questionnaire was the percentage coverage with services in terms of the number of users and area of service provision in Poland. The ISPs selected provide services to approx. 95% of users on the internet access service market.

[3] Article 34(1) and (2) of the Act of 10 May 2018 on the Protection of Personal Data (Journal of Laws of 2019, item 1781).

4.1. Traffic management measures

The obligation to monitor and ensure compliance of the practices and services provided with Articles 3 and 4 of the Regulation includes an evaluation of the traffic management measures applied.

ISPs, as provided for in Article 3(3) of the Regulation, are required to treat all traffic equally, when providing internet access services, without discrimination, restriction or interference, and irrespective of the sender and receiver, the content accessed or distributed, the applications or services used or provided, or the terminal equipment used. Second subparagraph of Article 3(3) of the Regulation enables the implementation of reasonable traffic management measures, that is measures that are based on objectively different technical quality of service requirements of specific categories of traffic to ensure efficient use of network resources and optimisation of overall transmission quality. It is prohibited to apply traffic management measures that block, slow down, alter, restrict, interfere with, degrade or discriminate between specific content, applications or services, or specific categories thereof, except in cases covered under Article 3(3)(a)–(c).

Information provided by the ISPs indicates that they apply traffic management measures. As in previous years, the implementation of measures is allowed by way of exceptions laid down in Article 3(3)(a)–(c) of the Regulation, which include:

- blocking traffic due to obligations under Article 15f(5) of the Act of 19 November 2009 on Gambling Games[4] (point a);
- managing traffic in accordance with the legislation in order to preserve the integrity and security of the network, of services provided via that network, and of the terminal equipment of end-users (points a and b);
- managing traffic in order to prevent network congestion (point c).

Under the agreement made on 23 March 2020 by and between the Minister of Digital Affairs, the President of UKE and NASK – National Research Institute and the four largest mobile network

[4]Art.15f(5) of the Act on Gambling Games – A telecommunications undertaking providing services related to access to the Internet shall be bound to: 1) prevent access, on a free of charge basis, to websites using names of internet domains entered in the Register through their removal from the ICT systems of telecommunications undertakings, intended to change Internet domain names to IP addresses, within 48 hours following the entry in the Register, at the latest; 2) re-route, on a free of charge basis, connections referring to names of internet domains entered in the Register to the website maintained by the minister competent for public finance, containing a message addressed to recipients of the Internet access service, comprising, in particular, information on location of the Register, entering a searched internet domain in this Register, a list of entities legally offering gambling games in the territory of the Republic of Poland as well as notify of potential penal and fiscal liability of a participant of games arranged contrary to the provisions of the law; 3) enable access, on a free of charge basis, to websites using names of domains deleted from the Register, within 48 hours following deleting the name of the Internet domain from the Register.

operators – Orange Polska S.A., T-Mobile Polska S.A., P4 sp. z o.o. and Polkomtel sp. z o.o. – on cooperation for protection of internet users against data phishing sites, including for personal data, and leading internet users to unfavorable disposition of their financial resources during the state of emergency, epidemic or epidemiological risk in the Republic of Poland[5], the said operators undertook to prevent access to websites that use internet domain names published on the Warning list, maintained by NASK, including internet domains which are used to phish for data and defraud financial means from end-users, by removing these domains from their ICT systems used to change the internet domain names to IP addresses as soon as possible after receiving information about a domain name having been included in the Warning list.

The integrity and security of a network, services and the terminal equipment of end-users is ensured by implementing solutions that help identify and respond to emerging threats (e.g. DDoS attacks). ISPs explained that the safety mechanisms implemented may potentially affect the availability of specific content, applications or services, and by responding to end-user complaints they are being adapted in a way to minimise the adverse effects as much as possible. Eight ISPs reported that they block TCP/UDP ports. Ports for incoming internet traffic are blocked, that is: 21(TCP), 22(TCP), 23(TCP), 25(TCP), 80(TCP), 110(TCP), 443(TCP), 445(TCP), 465(TCP), 587(TCP), 8080(TCP), 68(UDP), 123(UDP), 137(UDP), 138(UDP), 139(UDP), 53(TCP, UDP), 135–139(TCP, UDP), UDP ports. Three of these ISPs block all ports. One ISP explained that ports open to certified services which facilitate secure communication between ISP's terminal equipment are an exception. The following justification for blocking port was given: preventing end-users from creating service servers, protecting network devices and end-user devices from external attacks, susceptibility of services running on these ports to attacks, protecting users from unwanted data transfer use resulting from incoming network connections and ensuring network integrity and security. One ISP indicated that they offer services with no such restrictions. For the outgoing internet traffic port 25(TCP) is blocked. This port is blocked due to unsolicited information (SPAM) being sent by end-users. ISPs reported that it is possible to unblock the said port after the end-user submits an appropriate request. As in previous years, ISPs have pointed out that the availability of TCP/UDP ports opened in an active session may be affected by the use of NAT and that the use of certain services by end-users may also be affected by the assignment of dynamic IP addresses or implementation of NAT.

Traffic management measures are also applied for the provision of certain services offered by the internet access service providers.

Based on the information provided, no practices have been identified that could constitute a breach of the provisions of the Regulation.

Also, in the period covered by the report, UKE received no complaints from end-users as regards blocking ports, blocking or restricting access to content, applications or services.

[5] http://www.uke.gov.pl/akt/uke-przystapil-do-porozumienia-chroniacego-abonentow,300.html

In the period covered by the present report, the President of UKE also took action to ensure open internet access and proper internet traffic management. Following the announcement of the state of epidemic emergency caused by the spread of SARS-CoV-2 in Poland, in connection with the increased use of the internet access service, which could have led to congestion of telecommunications networks, the President of UKE, in a letter addressed to the largest ISPs (published on UKE's website on 25 March 2020 as well[6]), called for necessary action to prevent and remove the effects of the aforementioned negative trends. The President of UKE recalled that the prohibition to engage in traffic management measures going beyond reasonable measures (second subparagraph of Article 3(3) of the Regulation) laid down in Article 3(3) of the Regulation does not apply in exceptional circumstances. Therefore, applying traffic management measures is allowed in order to preserve the integrity and security of the network, of services provided via that network, and of the terminal equipment of end-users (third subparagraph of Article 3(3)(b) of the Regulation) as well as to prevent impending network congestion and mitigate the effects of exceptional or temporary network congestion, provided that equivalent categories of traffic are treated equally (third subparagraph of Article 3(3)(c) of the Regulation).

The President of UKE announced also that on 19 March 2020, BEREC adopted and published the Joint Statement from the European Commission and BEREC on coping with the increased demand for network connectivity due to the Covid-19 pandemic, and informed about the approach to applying traffic management measures in this exceptional period presented therein.

Some of the ISPs were also obliged to provide information concerning the evaluation of the performance of networks and telecommunications services provided, as well as of the measures prepared or implemented (including traffic management measures) in relation to the spread of SARS-CoV-2 infections.

Internet traffic has peaked in Poland during the current state of epidemic emergency. ISPs indicated that the application of overload protection mechanisms, changing the configuration of network devices, as well as lowering the quality of video streaming by the main streaming platforms, resulted in decreasing the level of data usage and contributed to the stabilisation of network conditions and avoidance of network congestion.

4.2. Specialised services

Monitoring by the President of UKE of compliance of the practices applied and services provided with the provisions of Articles 3 and 4 of the Regulation covers the evaluation of the conditions for the provision of services other than internet access services which are optimised for specific content, applications or services, or a combination thereof, where the optimisation is necessary in order to meet requirements of the content, applications or services for a specific level of quality,

[6] http://uke.gov.pl/akt/zapewnienie-ciaglosci-uslug-telekomunikacyjnych-w-dobie-koronawirusa,301.html

namely services referred to in BEREC Guidelines as 'specialised services'.

The aim of the study covering the last reporting period performed based on UKE's questionnaire was to establish whether:

1) the specialised services indicated by ISPs meet the requirements regarding the freedom to offer such services in accordance with the first subparagraph of Article 3(5) of the Regulation, in particular whether:
   - they are services other than IAS services,
   - they are optimised for specific content, applications or services, or a combination thereof,
   - optimisation is objectively necessary in order to meet the requirements for a given level of quality;
2) the conditions for establishing and providing specialised services by an ISP are compatible with the second subparagraph of Article 3(5) of the Regulation, that is:
   - the network capacity is sufficient to provide a specialised service in addition to any internet access services provided,
   - specialised services are not used or offered as a replacement for internet access services,
   - specialised services are not to the detriment of the availability or general quality of internet access services for end-users;
3) a specialised service is not used by an ISP to circumvent the rules concerning traffic management measures applicable to the internet access service.

Information and conclusions resulting from the survey carried out are as follows:

1) 9 ISPs confirmed the provision of the following specialised services within their network:
   - VoIP (3 ISPs), IPTV (4 ISPs), data transmission (2 ISPs), VPN (3 ISPs), VoLTE (2 ISPs), telemetering (1 ISP), MMS (1 ISP), VoWiFi (1 ISP), private APN (2 ISPs), NB-IoT (1 ISP), VPBX (1 ISP), VOD (1 ISP);
2) 3 ISPs stated also that they act as intermediaries in offering the following specialised services in the name and on behalf of another entity:
   - IPTV (2 ISPs), VoIP (1 ISP), other audiovisual services (1 ISP);
3) 17 ISPs stated that they do not provide or act as intermediaries in providing specialised services in the name and on behalf of other entities.

ISPs most often indicated the following specialised services: IPTV, VoIP and VPN. Compared to previous years, ISPs did not indicate any new specialised services in the questionnaire of the President of UKE.

IPTV and VoLTE are considered to be specialised services in BEREC Guidelines (par. 113) provided that they meet the requirements of the Regulation, in particular of the first subparagraph of Article 3(5). BEREC Guidelines do not mention VoIP in this context. ISPs indicating VoIP as a specialised service argue that this service cannot be provided as part of IAS due to, among other things, lack of possibility to ensure within IAS quality comparable to the quality within PSTN, which entails e.g. greater latency or jitter values which within IP networks may be substantial. In order to ensure proper optimisation for specialised services, ISPs apply solutions consisting in, among other things, separation of traffic in the data link layer (VoIP) as well as multicasting with the use of IGMP in a band separate from the internet (IPTV).

Most ISPs stated that they do not use a specialised service to provide IAS. In the case of 4 ISPs, the answer regarding the above was positive. However, ISPs noted that this access is often an additional option and its parameters do not differ from an IAS provided under general terms. In the case of the "Biznesowy VPN" (Business VPN) specialised service, an ISP indicated that this service covers access to the internet as an additional option in the IAS offer for business. Access to internet is possible also in the case of the "Prywatny APN" (Private APN) and IP VPN services. It must be stated in this context that in accordance with paragraph 115 of the BEREC Guidelines, to the extent that corporate services such as VPN also provide access to the internet, the provision of such access to the internet by a provider of electronic communications to the public should comply with Article 3(1) to (4) of the Regulation.

Therefore, the President of UKE will examine ISPs' offers with respect to the conditions of offering this access and its possible differentiation on the grounds of the category of the end user, that is business or mass customer market.

Evaluation of the impact of the provision of a specialised service on IAS by ISPs is carried out by:

- examining the level of saturation of a band using the monitoring of the network devices and their ports using statistics for MRTG and SNMP,
- controlling the throughput of connections and analysing access quality,
- analysing the load on the network in the backbone, distribution and access segments,
- defining the saturation ceiling of a band within the network intended for the provision of specialised services,
- monitoring packet/frame loss on network interfaces,
- monitoring service quality indicators within a mobile network, namely the CSSR and the DCR,
- carrying out a technical survey during which technical possibilities for the provision of a specialised service are defined respecting the Fair Usage Policy.

3 ISPs stated that they do not evaluate the impact of specialised services on IAS due to marginal utilisation of their network resources by the specialised service or due to the manner in which traffic is separated in the network for both services. The analysis of ISPs' answers included in the President of UKE questionnaire shows that specialised services use from less than 1% to even 23%

of the bandwidth available in the network during peak hours. Compared to previous reporting periods, a decrease may be observed in the average level of bandwidth usage for the provision of specialised services over ISPs' networks.

Among the actions aimed at ensuring an adequate quality of IAS and specialised services, ISPs mentioned:

- constructing a backbone network with excess capacity enabling demand for bandwidth to be met,
- expanding the infrastructure aimed at increasing network capacity while exceeding certain bandwidth occupation levels by specialised services,
- dividing the area into smaller areas to lower the usage of access links,
- changing the technology of providing audio-visual services (e.g. from IPTV to DVB-C).

The verification of information provided in the questionnaire of the President of UKE concerning the possible negative impact of the provision of specialised services on the quality of IAS is hampered due to the lack of appropriate measurement tools.

4.3. Presenting information required in contractual documents under Article 4(1)(d) (part 1)

In the previous reporting period, the President of UKE audited the manner in which ISPs include and present the information required under Article 4(1)(d) (part 1) of the Regulation in contractual documents on the provision of publicly available telecommunications services including the internet access service, as well as whether ISPs publish such information.

Pursuant to the Regulation, ISPs are required to ensure that contractual documents on the internet access service contain clear and comprehensible information on:

- for fixed networks:

1. minimum download and upload speed of the internet access service,
2. normally available download and upload speed of the internet access service,
3. maximum download and upload speed of the internet access service,
4. advertised download and upload speed of the internet access service,

- for mobile networks:

1. estimated maximum download and upload speed of the internet access service,
2. advertised download and upload speed of the internet access service,

Market practices of the 10 largest internet access service providers were audited: Multimedia Polska S.A., Vectra S.A., Orange Polska S.A., Polkomtel sp. z o.o., T-Mobile Polska S.A., P4 sp. z o.o., Netia S.A., UPC Polska sp. z o.o., Toya sp. z o.o. and Inea S.A.

The audit found no uniform market practice in this area. ISPs provided information on the speed of internet access services in various manners, which made it difficult to compare offers and services.

Control actions carried out showed that in the case of 9 out of 10 ISPs, contractual documents did not meet all the transparency requirements laid down in Article 4(1)(d) (part one) of the Regulation. Therefore, the President of UKE sent audit recommendations to operators, as concerns the necessity to change particular clauses in contractual documents. Recommendations of the President of UKE concerned primarily instructions to:

- delete evaluative terms which, as non-defined, make it impossible for subscribers to clearly understand the provisions contained in the documents,
- introduce clear information indicating availability times for the normally available speed of the service offered,
- introduce clear information indicating availability times for the maximum speed of the service offered,
- provide information on data transmission speed as single numerical values in bits per second in the same units, that is kb/s or Mb/s,
- include in a single document (contract template) information on all data download and upload speeds, that is the minimum, normally available, maximum and advertised download and upload speed in the case of fixed networks or of the estimated maximum and advertised download and upload speed in the case of mobile networks,
- cease to use in contractual documents text printed in a very small and illegible font,
- eliminate from contractual documents numerous references to various contractual documents.

Having eliminated the irregularities indicated in audit recommendations, all operators subjected to the audit meet the obligations imposed as defined in Article 4(1)(d) (part one) of the Regulation.

Additionally, the President of UKE sent a relevant indication and guidelines to the largest professional chambers of telecommunications undertakings, so that businesses which were not subjected to the audit could read the recommendations of the President of UKE and introduce them in contractual documents for the internet access services offered.

4.4. Publication of information

ISPs comply with their obligation to publish information as set out in Article 4(1) of the Regulation by posting appropriate templates of contracts, in particular rules and regulations and price lists on the relevant pages of their websites, notably in “Documents” or “To download” tabs or on pages dedicated to the different offers. Access to the templates published, depending on the supplier, requires between two and five links (clicks) of a site.

Some ISPs additionally publish also information going beyond contract templates. Entrepreneurs include information and explanations relevant from the point of view of the end-user also in the following tabs: “Help”, “FAQ”, “Instructions”, “News” and “Net neutrality”.

4.5. Quality of the internet access service

In ‘Strategic lines of actions of the President of UKE for 2017-2021’[7], the President of UKE indicates, among other things, the objective to ensure that end-users have access to modern services and to protect their rights. This approach is manifested, among other things, in the support for improving the quality of such services. The President’s strategy is consistent with the requirements of the Regulation which seeks to support the access of EU citizens to IAS while maintaining levels of quality that reflect advances in technology. Internet access service offered to end-users should enable using content, applications and services available on the internet, the condition for which is ensuring an adequate level of its quality.

The President of UKE presents the data concerning IAS quality collected based on the measurements performed using measuring applications that are publicly available in Poland, offered by V-SPEED sp. z o.o. research entity. In order to present the current market situation, the data analysed are from April 2020, and in order to observe the trend of developments over five years, the data was compared to data from April 2019, 2018, 2017 and 2016. To evaluate the market situation, an analysis of the data collected from consumer tests was carried out using:

- an application accessible via a web browser available at *www.speedtest.pl*. The results pertain to all technologies available in fixed and mobile networks (in April 2017, approx. 1.8 million tests were carried out,
  in April 2018 – approx. 1.7 million,
  in April 2019 – approx. 2.0 million,
  and in April 2020 – approx. 3.8 million);
- *Internet Speed Test* application available for mobile devices. The results pertain to all technologies available in mobile networks
  (in April 2017, approx. 111 thousand tests were carried out,
  in April 2018 – approx. 250 thousand,
  in April 2019 – approx. 530 thousand,
  and in April 2020 – approx. 822 thousand).

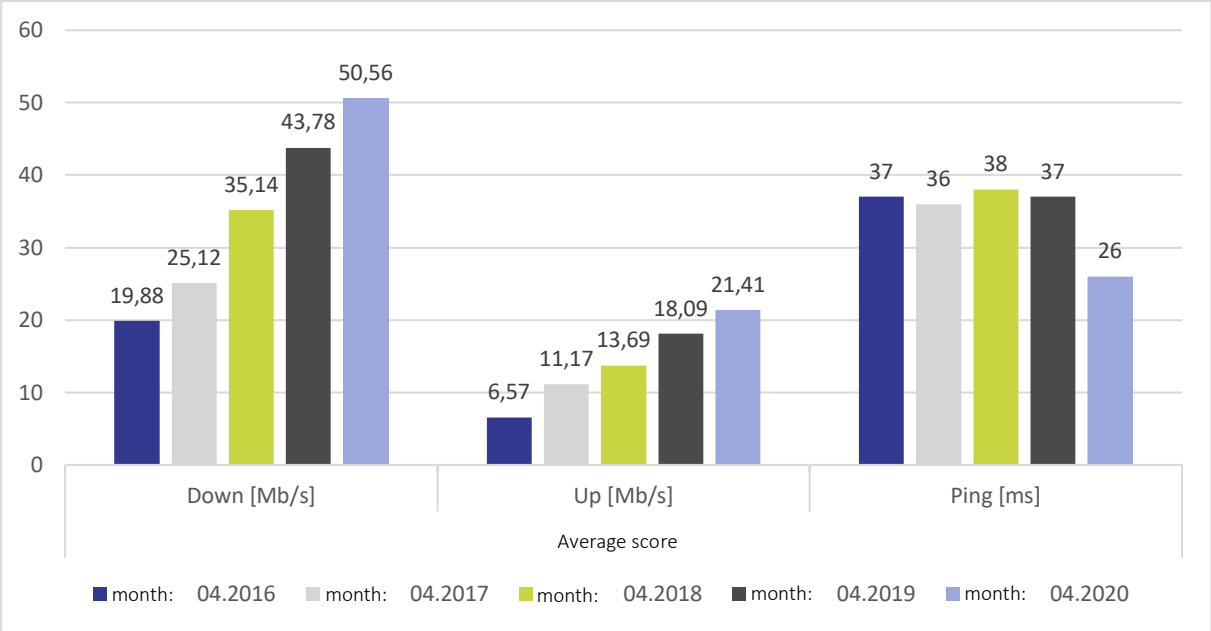
The great number of measurements enables the formulation of general conclusions, in particular in the context of the trend of developments. It must be taken into account that the measurements were performed by end-users, that is internet users, on their own, and are

[7] https://uke.gov.pl/en/newsroom/strategic-lines-of-actions-of-the-president-of-uke-for-2017-2021,10.html

burdened with the influence of their terminal equipment, tariff plan limits, usage of Wi-Fi in home networks, number of devices which are active at the same time, conditions of the propagation of radio waves, etc. Data obtained in this way enables information about the perceived quality of the service used by the users, but to a lesser extent provides indication of the technical feasibility of delivering services by ISPs. Data from April 2020 are characterised by atypical user behaviour due to the ongoing state of epidemic emergency related to the spread of SARS-CoV-2. In the period under analysis, many users worked remotely from their homes. To this end they used their home service volumes, frequently also mobile internet access, in order to perform job-related tasks. One must also keep in mind that in the period under analysis – April 2020 – the education system was based on e-learning solutions which considerably consumed the resources of the internet service. Additionally, traffic anomalies related to the major increase in the usage of streaming platforms offering a wide range of videos as well as popular science and entertainment programmes.

Figure 1

Average download and upload speed and ping from the browser application
Browser application – all suppliers

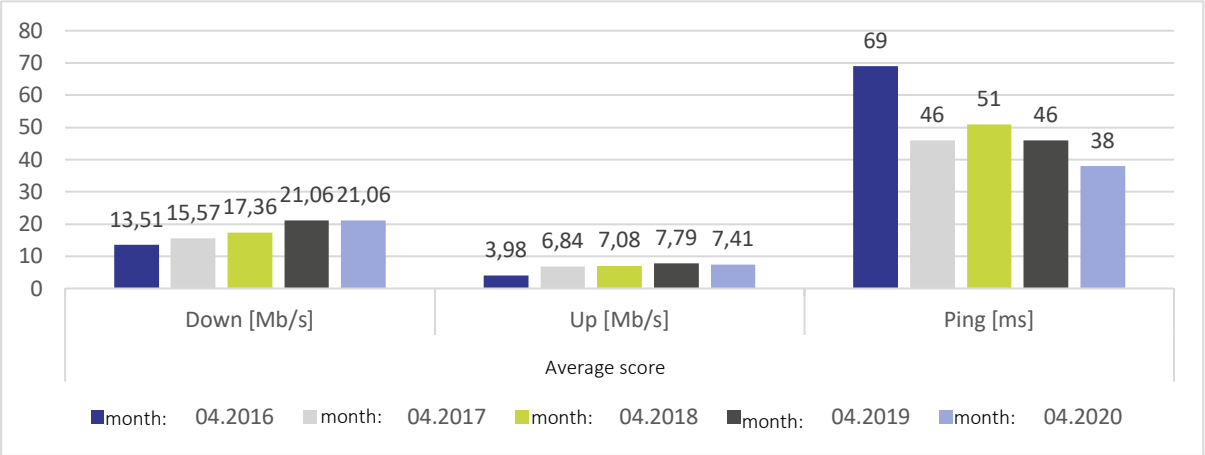


Source: UKE

Over a period of five years there has been a clear upward trend in the average download and upload speed. Average ping values are at comparable levels, with a significant decrease observed this year.

Figure 2

Average download and upload speed and ping from the mobile application
Browser application – all mobile suppliers

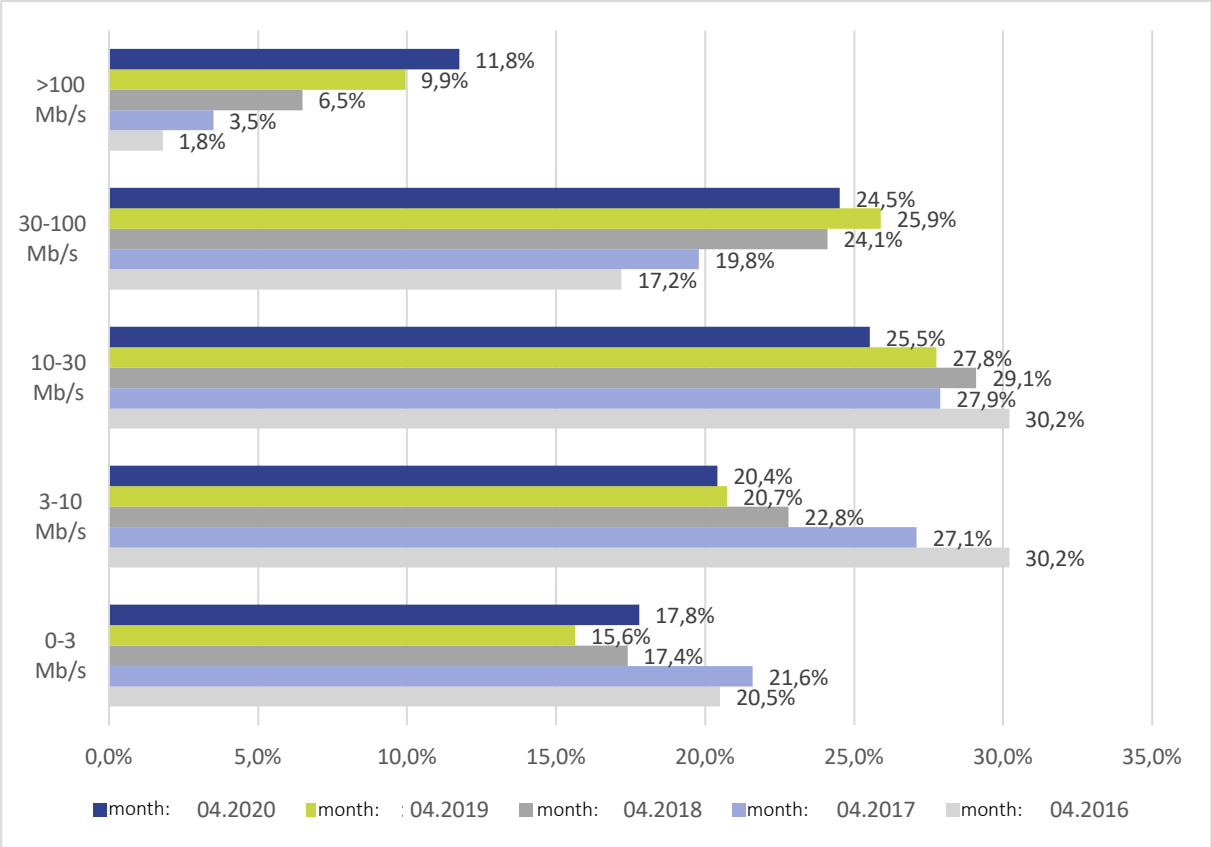


Source: UKE

Over the period of four years (2016–2019), most IAS providers have witnessed an upward trend in average data stream speeds in both directions in mobile networks. The data for 2020 is atypical due to different behaviour of users compared to previous years in connection with the epidemic situation in Poland (fight against SARS-CoV-2). Increased mobile networks traffic has resulted in no change in the average download speed and a slight decrease in upload speed. Average ping value is around 50 ms. In the case of services in the LTE technology itself, the average ping value is around 41 ms for the years 2016–2019, and 35 ms for 2020.

Figure 3

Distribution of the number of download speed measurements in ranges
Browser application – all suppliers (%)

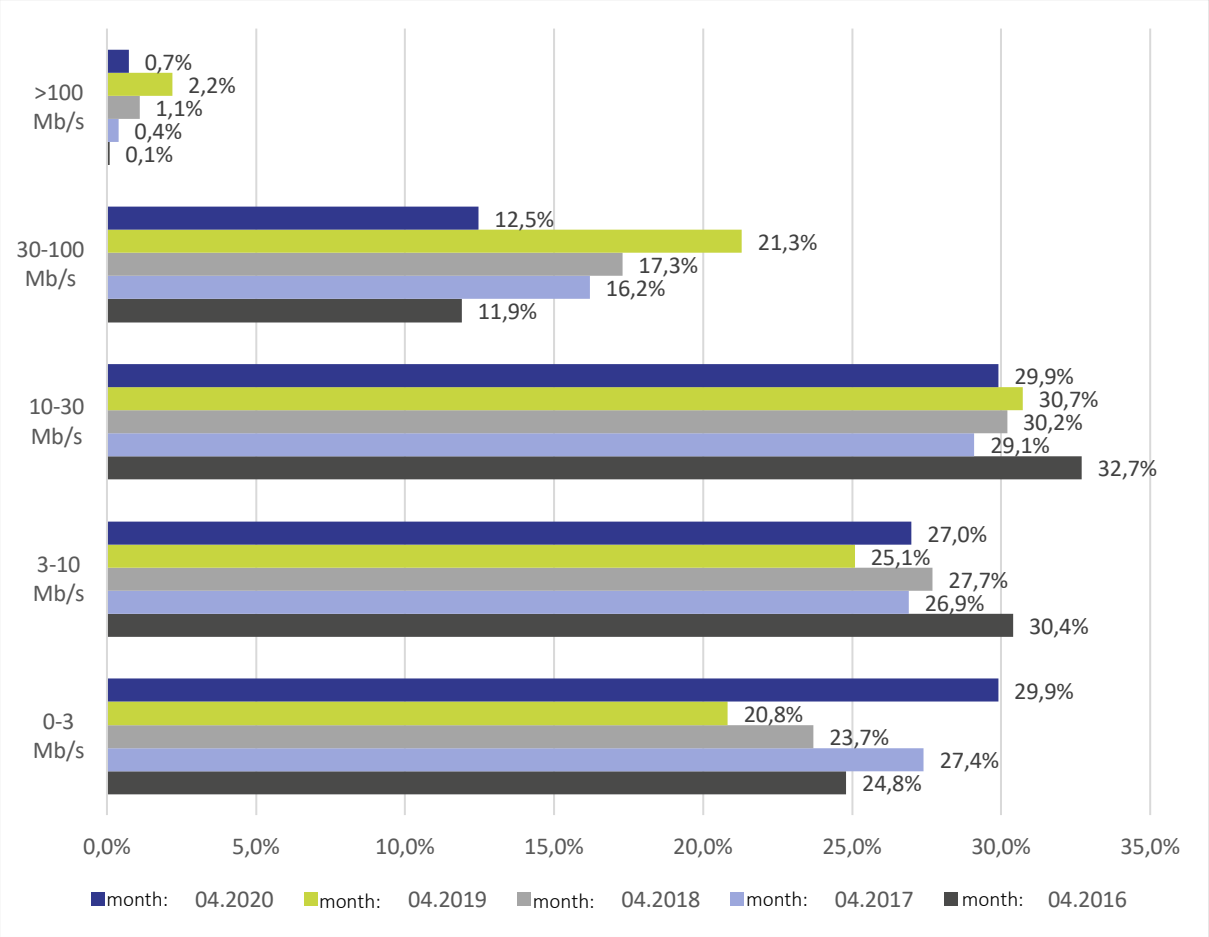


Source: UKE

In the case of measurements performed with the use of a browser in the user direction, the results obtained prove that over the period of four years there has been a clear increase in the share of speed in the user direction (download) in the range 30–100 Mb/s and above 100Mb/s. This direction of developments is in line with the increase in the use of optical fibre technology in fixed networks.

Figure 4

Distribution of the number of download speed measurements in ranges
Browser application – all mobile suppliers (%)



Source: UKE

In the case of measurements performed with the use of a browser in the user direction, the results obtained prove that over the period of five years there has been a clear increase in the share of speed in the user direction (download) in the range 30–100 Mb/s and above 100Mb/s. This direction of developments is in line with the increase in the use of optical fibre technology in fixed networks.

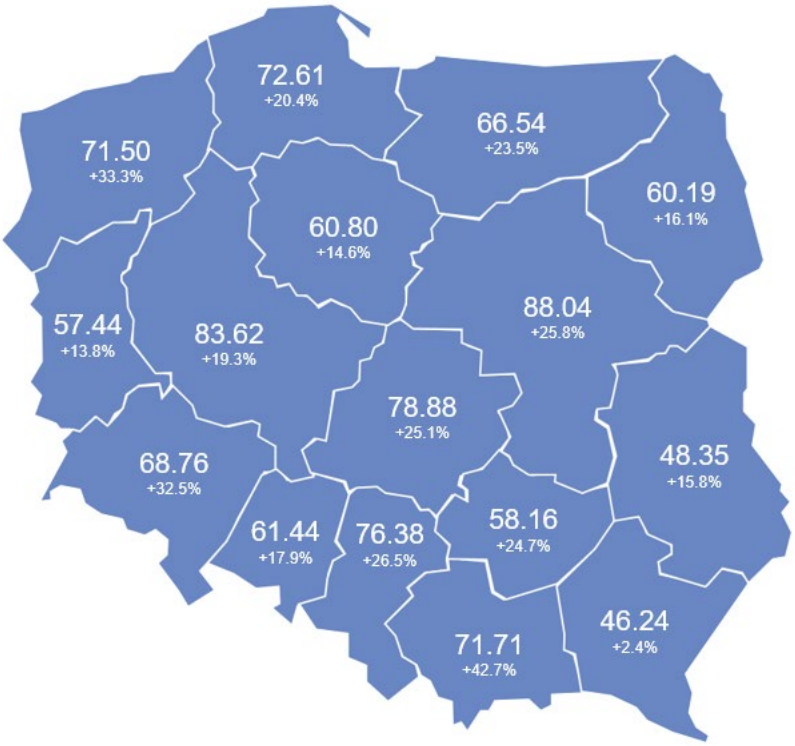
Similar trends were observed in the case of measurements performed using an application in mobile networks. This direction of developments is in line with the increase in the use of LTE technology in mobile networks. It is a positive sign in the context of the implementation of the *Digital Agenda 2020* in Poland[8]. The data for mobile networks is dissimilar due to different

[8] Digital Agenda 2020 assumes that Europe needs widely available and competitively-priced fast and ultra fast internet access. The programme is to guarantee broadband access to internet speeds of above 30 Mb/s for all

behaviour of users compared to previous years in connection with the epidemic situation in Poland (fight against SARS-CoV-2) and indicates high traffic rates in mobile networks.

Map 1

Average download speed [Mb/s] and year-on-year change [%] from browser application for all fixed providers



Source: UKE

Average download speeds in fixed networks across the country are similar. In April this year, compared to the same period of the previous year, an increase in the average download speed was recorded in all voivodeships (2.4–42.7%). The highest increase in the average download speed was achieved in the Małopolskie Voivodeship. A similar trend was found in all voivodeships regarding the average upload speed (6.2–41.1%). Moreover, a decrease in the average value of data streams ping was noted in all voivodeships (16.7–33.3%).

Map 2

Europeans by 2020, and access to internet connections of above 100 Mb/s for at least half of European households.

Average download speed [Mb/s] and year-on-year change [%] from mobile application, all technologies, for mobile providers

Source: UKE

Average download speeds in mobile networks across the country are similar. In comparison to April 2019, most voivodeships noted a 0.9–9.13% decrease in the average download speed. The highest decrease in the average download speed was noted in the Mazowieckie Voivodeship. As regards upload speed, these decreases show less similarity and range between 1.07% and 12.23%, with the exception of the Podlaskie Voivodeship, where a 12.1% increase was recorded. All voivodeships recorded a decrease in the average value of data streams ping of 7.33% to 21.74%.

In April 2020, the share of measurements performed in LTE technology was 87% of all measurements made in mobile networks with the use of a mobile application. In April 2019, the share was 84%, in April 2018 – 74%, in April 2017 – 69%, and in April 2016 it was 56%. This may indicate an increase in the use of LTE technology for data transmission over mobile networks, which translates directly into an increase in service quality.

5. Other activities of the President of UKE

5.1. Complaints of end-users

The complaints with respect to the right to an open internet access addressed to the President of UKE concerned primarily the quality of internet access services provided. End-users provided information on lowered – as compared to the contents of the contract – service speeds, and complained about high ping and packet loss values. These complaints represented a small share, approx. 4% of all complaints lodged with the Office of Electronic Communications in the period from 1 May 2019 to 30 April 2020.

Of the complaints received during this period, more than 30% concerned the quality of services provided over mobile networks, 29% were related to the quality of services over fixed networks, while the remaining 41% did not concern the quality of provided internet access services, but other net neutrality issues.

5.2. Penalty proceedings

Pursuant to Article 209(1)(29a) of the Telecommunications Act, anyone who fails to fulfil the obligations set out in Article 3 and 4 and Article 5(2) of the Regulation shall be subject to a penalty. The President of UKE imposes a financial penalty by way of a decision following administrative proceedings. The penalty may amount to up to 3% of the entity's income earned in the previous calendar year. When determining the amount of the penalty, the President of UKE takes into account the scope of the infringement, the previous activities of the entity and its financial capacity.

In the reporting period, the President of UKE conducted one administrative procedure in relation to Skynet sp. z o.o. for the infringement specified in Article 4(1)(d) of the Regulation.

The President of UKE imposed on Skynet sp. z o.o. a penalty of PLN 15 000. It results from the failure to comply with the obligation laid down in Article 4(1)(d) of Regulation (EU) 2015/2120 of the European Parliament and of the Council on open internet access, that is the obligation to include in contracts concerning internet access service information on the minimum, normally available and maximum download and upload speeds.

In the course of the proceedings conducted by the President of UKE, it was found that Skynet sp. z o.o. failed to meet its obligation to include information on the minimum and normally available speed in its contracts. The company began to include the required information in its contracts in early 2019. The fulfilment of the obligation (with a delay) resulted in a reduction of the penalty.

5.3. Certified IAS quality monitoring mechanism

The President of UKE, with a view to supporting end-users, as well as creating market conditions to support the activities of ISPs in improving the quality of telecommunications services, decided to create and make available to end-users a tool for IAS quality measurement (certified IAS quality monitoring mechanism). The tool developed and created under the supervision of the President of UKE was certified by the President of UKE on 29 November 2018. The certificate was granted for a period of 24 months.

The certified mechanism is a measurement system designed to measure, among other things, the speed of data transmission for the internet access service provided via fixed-line public telecommunications networks. The system enables measurements via a dedicated desktop application and website.

The desktop application enables the IAS users of a fixed network to demonstrate continuous and regularly recurring discrepancies between the actual quality of service and the quality indicated by the IAS provider in the contract. The application provides users with reliable results that will enable them to make claims under the contract regarding the improper performance of the contract for the provision of IAS, as part of complaint or court proceedings. To this end, the user, according to a ready procedure, must perform certified measurements and then generate a measurement report.

In addition, the tool allows non-certified measurements to be taken to provide users with information.

In the period from 1 May 2019 to 30 April 2020, users performed the following measurements:

- certified – application for Windows – 29,835;
- non-certified – application for Windows – 57,384;
- non-certified – Web application – 8,798;
- non-certified – application for Android – 266,555;
- non-certified – application for iOS – 40,075.

As for the functioning of a certified measurement mechanism on the market, control activities were carried out in 10 telecommunications undertakings as regards exercising subscriber rights with respect to complaints[9], including the handling of complaints submitted using reports generated via the certified mechanism.

Due to the small number of complaints with a report generated via the certified mechanism attached, telecommunications operators have not yet developed a special practice of verifying such reports. Telecommunications operators, with regard to which complaints lodged using the

[9]Ordinance of the Minister of Administration and Digitisation of 24 February 2014 on complaints regarding telecommunication services (Journal of Laws of 2014, item 284, as amended).

certified mechanism were found during the control, compare the data sent by subscribers to data downloaded directly from pro.speedtest.pl.

It was also found that for all operators covered by controls, complaints regarding the internet access service, lodged on the basis of reports generated using the certified mechanism, were dealt with subject to the same rules as all complaints. This means that these complaints are handled in accordance with the applicable complaint handling procedure and instructions on how to proceed in the case of reports of internet access service speeds lower than those established in the contract.

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