

2022 ANNUAL WORK PROGRAMME



ZAGREB 2021



CROATIAN
REGULATORY AUTHORITY
FOR NETWORK
INDUSTRIES

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01

INTRODUCTION



INTRODUCTION

[The Croatian Regulatory Authority for Network Industries](#) (HAKOM) is a national regulatory authority for electronic communications and postal and rail services. HAKOM is an autonomous and non-profit legal entity with public authority, accountable for its work to the [Croatian Parliament](#). The 2022 Annual Work Programme defines the subjects and outcomes of all HAKOM's activities (goals), related to the time frame, the 2022 Financial Plan and strategic priorities.

Most of the tasks and operations are performed within the scope of public authority pursuant to acts whose implementation falls within HAKOM's competence. These primarily include the [Electronic Communications Act \(ECA\)](#), [Act on Measures to Reduce the Cost of Deploying High-speed Electronic Communications Networks](#), [Postal Services Act \(PSA\)](#), [Act on the Regulation of Rail Services Market and the Protection of Passenger Rights in Rail Transport \(ARRSM\)](#) and [Railway Act \(RA\)](#). Pursuant to these acts, HAKOM is competent to adopt a large number of ordinances regulating in more detail specific markets and it also participates in the implementation of other laws and subordinate legislation.

HAKOM's regulatory principles and goals principally include safeguarding competition and service users' interests by predictable regulatory activities, efficiently managing limited public goods, such as the radiofrequency (RF) spectrum and the numbering and addressing space, promoting effective investments and innovations and contributing to the development of the European Union's internal market. The regulation of all the markets is highly interdisciplinary, involving a combination of technical, economic and legal expertise, and experience gained in one market can often be applied to other markets. HAKOM's inspection powers provide for a swift response to market irregularities, while a high level of user (passenger) protection is ensured by the resolution of disputes between end-users and service providers in all three network industries.



02

ELECTRONIC COMMUNICATIONS

Electronic communications are a dynamic regulatory area. Rapid changes and technological progress require both operators and users to keep abreast of the latest advances. National regulatory authorities are, on the other hand, responsible for long-term market development and user protection. Global trends are increasingly moving towards the provision of converged services, where the emphasis is on users' satisfaction with the quality offered, rather than on the network they use to obtain the desired information or content. The sustainable development of the digital society in the HR will in the forthcoming period depend on the development of 5G networks and fixed very high capacity networks of domestic operators. The challenges imposed often call for the cooperation of public authorities and market stakeholders at all levels.

This section divides HAKOM's activities in 2022 into market regulation, the development and construction of the electronic communications infrastructure, electronic communications services, including network neutrality, the quality and security of communications networks or services, the protection of end-users and vulnerable consumer groups, inspection supervision and market control as well as cooperation.

Regulatory activities

In June 2017, the Croatian Competition Agency (CCA) adopted a decision providing that **the management rights of Hrvatski Telekom (HT) over Optima** were to cease no later than until 10 July 2021. As this procedure was not completed until the set deadline, HAKOM will complete **the adjustment of the analyses of the wholesale broadband access market** in the first half of 2022. The analyses will take into account the new status of Optima and include a detailed geographical analysis of the market and the possibility of its geographical segmentation, which means that they will be carried out on smaller administrative units, rather than on the HR territory as a whole, in compliance with the latest recommendations of the European Commission (EC). In addition to conducting the analyses of wholesale broadband access markets, HAKOM will also monitor conditions in the market for wholesale high-quality access. In line with EC's comments from the latest market analysis, it will carry out an analysis of that market, if necessary, which will include a detailed geographic analysis.

In December 2020, the European Commission adopted a delegated act (DA), whose provisions came into force on 1 July 2021. The delegated act aims to achieve the EU-wide harmonisation by **the implementation and application of provisions on single fixed and mobile voice call termination rates (MTR and FTR)**. This will accelerate the development of the EU single market and reduce trade barriers between Member States, as well as some administrative barriers,

as regulatory authorities will no longer be obliged to develop their own cost models. In 2022, HAKOM will, in cooperation with operators, monitor the implementation of the DA in the Croatian market, eliminate potential ambiguities and monitor the impact of single voice call termination rates in the electronic communications market.

Under the current market regulation, the operator with significant market power (SMP) has the following obligations: the access to and the use of specific network segments, transparency as well as the supervision of prices and cost accounting, accounting separation and non-discrimination. The Equivalence of Input (EoI) is a regulatory measure that the regulatory authority may use to require the SMP operator to offer wholesale services to all operators (including the SMP's retail arm) under equal conditions, i.e., equal realisation deadlines, prices, contractual terms and service quality levels, and using the same systems and processes for orders, realisations and repairs. HAKOM will **analyse the advantages and disadvantages of the EoI** as well as of the impact of the implementation of the already prescribed obligations related to non-discrimination in order to assess the need for and the possibility of imposing the obligation of applying the EoI to the SMP operator.

The development of 5G technology has provided for new market opportunities, such as targeting vertical applications and markets to create opportunities for MVNOs to enter the market. In the context of 5G technology, MVNOs can in 2022 create value added for the further development of efficient market competition and innovative services for end-users. Therefore, **an analysis will be made of various regulatory approaches for MVNOs**, with an aim of finding the best (regulatory) model for them to enter the market.

Reasonable weighted average cost of capital (WACC) rates in the fixed and mobile networks are regularly updated, which is important for further investments as WACC rates provide for the best assessment of return on capital investments to which SMP operators are entitled when investing in the infrastructure. Current WACC values are in effect until 31 December 2022. In 2022, HAKOM will make a new calculation of the WACC, which is to take effect on 1 January 2023.

In 2013, HAKOM set up the interactive GIS portal, which, among other things, shows, in the form of interactive maps, the areas of broadband access availability and the use of broadband access as well as the notices of intent to deploy optical fibre networks. In 2022, HAKOM will **enhance the system of data collection for the review of the coverage by and the use of broadband networks (mapping)**, published on the interactive GIS portal, in order to reduce errors, and widen the scope of data collected for geographical surveys referred to in Article 22 of the European Electronic Communications Code and geographical market analyses.

The optical fibre infrastructure enables the provision of the highest quality broadband access services. However, there are various topologies and technologies comprising the optical fibre infrastructure in a lesser or greater degree. The FTTH (Fibre to the Home) infrastructure, for example, comprises optical fibres stretching to the end-user's premises and enables the highest service quality. However, there is a whole range of hybrid technologies that use the optical fibre infrastructure in one segment and employ copper pairs (FTTB, FTTDP, FTTC) or coaxial cables (HFC DOCSIS) in the final segment reaching the end-user. The service quality offered by such hybrid technologies is lower. HAKOM has noticed that operators, when communicating with end-users, use the terms "fibre optics", "optical fibre", "optical fibre infrastructure" for all these technologies, without emphasising important differences. In an effort to protect end-users and investments in the optical fibre infrastructure, HAKOM **will standardise the use of the terms "optical fibre" and "fibre optics" in marketing messages.**

Construction and the ECI

The household availability of very high capacity networks enables broadband access with download speeds of at least 100 Mbit/s, with a possible upgrade to speeds of up to 1 Gbit/s. In order to attain such availability, **an analysis will be carried out of the regulatory framework in order to reduce the costs of building the electronic communications infrastructure (ECI) and deploying very high capacity networks.** The analysis will include the subordinate legislation having a direct impact on the use of the existing ECI and other associated facilities and the regulations governing technical and other conditions for the construction of new electronic communications networks (ECNs), with a focus on fostering collective investments in the construction of very high capacity networks. The analysis of the regulatory framework will be followed by cooperation in ordinance amendment procedures.

The ECI legalisation procedure is the procedure of regulating the current condition of telecommunication cables installed without the prior conclusion of contracts on the access to and the shared use of cable ducts. Once a procedure has been completed, HAKOM adopts a decision imposing additional obligations on the infrastructure operator, beneficiary operator and legal or natural person, with an aim of regulating the condition of cable ducts. These procedures will promote the shared use of the ECI and improve the safety of use of ECNs, network integrity and the interaction of electronic communications services.

The basis for cooperation with the State Geodetic Administration (SGA) on the establishment of the single ECI cadastre database is provided for by the [State Survey and Real Estate Cadastre Act](#) and the [National Spatial Data Infrastructure Act](#), with the SGA being responsible

for the establishment of the Central Repository of the Cadastre of Lines, with the GIS ECI module (the Geographic Information System of the Electronic Communications Infrastructure and Associated Facilities), i.e., a single base aimed at ensuring access to spatial data on the constructed electronic communications infrastructure and available electronic communications capacities in the HR. The exchange of these data on the ECI between HAKOM and the SGA will be established via HAKOM's future GIS software. This will create the preconditions for the provision of support to the following HAKOM's business processes:

- the process of establishing special conditions for construction;
- the processes related to the right of way certificate and the right of use of real estate;
- the processes related to the legalisation of the ECI;
- ensuring a timely access to information on the existing ECI suitable for the shared use;
- the processes related to the activities of HAKOM as the authority competent for disputes over the shared use of the ECI.

The cartographic representation of the collected and processed data on the availability and use of broadband access speeds and the expression of commercial interest in constructing very high capacity networks via the GIS portal requires **the collection and processing of data on broadband access coverage.** The aim of the system is to define, in accordance with the preset criteria, the areas acceptable for the co-financing of the construction of electronic communications networks through government aid and for monitoring and analysing market and investment development. All collected data and defined areas will be disclosed on HAKOM's website by means of GIS portal thematic browsers. All relevant data comprised by this measure will be available in the electronic form through standardised spatial web services. Data on broadband access availability are also displayed on the [European broadband mapping portal](#)). **Opinions in the procedure of preparation and adoption of physical plans** will be issued on an ongoing basis. Pursuant to the provisions of the [Physical Planning Act](#), HAKOM participates in the adoption of physical plans from the submission of a request (the competent planning authority's decision to commence developing a plan or to amend an existing plan) to the participation in public consultations by providing a written opinion on the draft proposal of a physical plan aimed for public consultations.

As a public authority for construction, HAKOM **establishes special conditions for construction/connection conditions and issues main project certificates.** The process of establishing special conditions for construction and issuing main project certificates has been digitalised by introducing the e-Licen-

ces internet service of the construction authority. Pursuant to the new provisions of the ECA, HAKOM also establishes conditions for connection, so that, in order to achieve further digitalisation and automation, internal processes will be adjusted by connecting them with the SGA infrastructure base in order to accelerate the process of establishing special conditions for construction/connection conditions.

The right of way represents the right of access to, installation, use, repair and maintenance of the ECN and the ECI and other associated facilities, including cable ducts, as well as other related rights, which impose a burden on the real estate on which the ECI and associated facilities have been constructed. As the infrastructure operator is required to pay the right of way fee to the common good manager or the real estate owner, HAKOM will continue to address the requests submitted by real estate owners or common good managers to identify the infrastructure operator and determine the amount of the right of way fee.

Reducing the cost of deploying very high capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum is envisaged by the Commission Recommendation on a common Union-wide toolbox for reducing the cost of deploying very high capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum in order to foster connectivity in support of economic recovery from the COVID-19 crisis in the Union – Connectivity Toolbox. The implementation has the following goals:

- streamlining permit granting procedure;
- Increasing the transparency of the procedure by means of the single information point (ski.dgu.hr; e-Licences);
- ensuring the realisation of the right of access to existing physical infrastructure and real estate owned and/or controlled by public sector bodies;
- establishing the steady practice of resolving disputes related to infrastructure sharing;
- assessing and reducing the environmental impact of communications networks;
- financial incentives in spectrum allocation processes, with an emphasis on unused frequency bands;
- Union-wide coordination on radiofrequency spectrum management so as to foster high-quality wireless connectivity in the industry;
- informing the public on the impact of electromagnetic fields and care for public health;

In order to fulfil these goals, which are in public interest, HAKOM plans to invest its own financial and human resources and cooperate closely with all stakeholders that are either competent for their implementation or exposed to their influence. The time frame for the realisation of this complex activity depends primarily on the cooperation of competent line ministries, primarily of the Ministry of Physical Planning, Construction and State Assets (MPPCSA), Ministry of the Sea, Transport and Infrastructure (MSTI), Ministry of the Economy and Sustainable Development (MESD) and Ministry of Health (MH) as well as of investors in very high capacity networks (VHCN.) and local self-government units.

In accordance with the proposal for a new ECA, which envisages a “**broadband-ready**” label, HAKOM will assign an appropriate label to all newly constructed buildings and buildings that have undergone major renovation, signifying that they are ready for the deployment of high-speed networks. HAKOM will adopt a decision specifying the shape and size of the label as well as the manner of and conditions for its assignment.

Services

The security of networks and services, as tools for the connectivity of service users, is a prerequisite for a digital society. **The security of electronic communications networks and services** therefore plays an increasingly important role in the activities carried out by HAKOM in cooperation with operators and other competent institutions of the HR and EU. The analyses of security incidents reported by operators, complying with the criteria prescribed in the [Ordinance on the manner and deadlines for the implementation of measures for the protection of security and integrity of networks and services](#), will provide an insight into the state of security of networks and services, assess the measures implemented by operators and review the revisions of security policies. This will provide a basis for HAKOM to put forward its proposals for the improvement of security of networks or services and to timely report on the breaches of security or the loss of integrity of Croatian communications networks or services to the European Union Agency for Cybersecurity (ENISA) and the competent national regulatory authorities of other EU Member States.

The development of new technologies, primarily 5G networks, and a constant increase in the number of communications services users, increasingly call for a high level of network security to be exercised during data transfers through the communications infrastructure, especially by using the internet access service. In cooperation with the National CERT, HAKOM will strongly focus on **the cybersecurity** of end-users of the internet access service. In addition, based on an agreement

between all relevant bodies participating in the work of the National Cybersecurity Council, HAKOM has been assigned the role of the HR coordinator for the implementation of a toolbox to offset identified national 5G risks ([Toolbox](#)). In 2022, the National Cybersecurity Council will continue work on the national implementation of the Toolbox, in particular of technical measures comprised by the Toolbox, prescribed by the Ordinance on the manner and deadlines for the implementation of measures for the protection of security and integrity of networks and services. The effects of the implemented measures will be assessed in cooperation with the EC, primarily with the NIS (Network and Information Security) Cooperation Group, so that further steps can be determined.

In December 2020, the EC, in order to adopt additional measures to further improve the resilience and incident response capacities of public and private entities, competent authorities and the Union as a whole in the field of cybersecurity and critical infrastructure protection, adopted a new cybersecurity strategy. Cybersecurity is a priority in the EC's response to the COVID-19 crisis. This strategy prescribes the strengthening of the EU's strategic autonomy in order to improve its resilience and common response and develop an open and global internet. The proposal is based on the amendment to the NIS Directive (EU 2016/1148) by the new **NIS2 Directive and the implementation of the new CER Directive** (Directive of the European Parliament and of the Council on the resilience of critical entities) repealing Directive 2008/114/EC on the identification and designation of European critical infrastructures and the assessment of the need to improve their protection. HAKOM will, therefore, participate in the national working group on the implementation of the new EU Cybersecurity Strategy and its accompanying measures and directives, such as the NIS2 Directive and the new CER Directive.

HAKOM is entrusted with the task of managing **the addressing and numbering space** in electronic communications. This includes the ongoing monitoring of market conditions, timely preparation of addressing and numbering plans, timely assignment of addresses and numbers and the adoption of necessary regulations enabling users the portability and use of the addressing and numbering space. HAKOM is also responsible for the Central Administrative Database of Ported Numbers (CADPN) and will take care of its maintenance and development, acting in tune with the wishes of users and operators so as to enable the optimum use of the number porting service. HAKOM is also responsible for the addressing and numbering space database of the HR ([e-Operator](#) system), which will be regularly maintained to enable operators to electronically submit requests for the primary allocation, revocation or transfer of rights to use addresses and numbers.

In 2022, HAKOM plans **the implementation and production of the new system of the Central Administrative Database of Ported Numbers (CADPN)**. The aim of the project is to upgrade and widen the functionality of the current system, which has been in operation for sixteen years and has exhibited some difficulties in the process of number porting service provision. Specifi-

cally, in order for the number porting service to continue functioning efficiently, the system is ready for the implementation of advanced technological functionalities in all software modules to the latest stable versions.

Network neutrality and open internet are important for market development and end-users. Pursuant to [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 (TSM Regulation), HAKOM ensures the protection of open internet access. In 2022, HAKOM will continue to supervise, in particular, the following:

- i.) the manner of implementation of the operator transparency requirement under the TSM Regulation (e.g. clearly defined minimum, maximum and normally available internet access speeds in the fixed network and estimated speed in the mobile network);
- ii.) the operator traffic management measures and the duration of measures going beyond reasonable traffic management measures, e.g. those applied in the case of congestion or to protect network security;
- iii.) the impact of specialised services on the internet access service (access and core network);
- iv.) measures to prohibit the blocking or congestion and slowing down of certain applications.

The quality parameters of the provision of public voice services will be monitored and analysed by collecting data from operators, while **the quality of provided internet access services** will be monitored by means of [HAKOMetar](#) and [HAKOMetar Plus](#) user applications. HAKOMetar is a tool for measuring broadband access speeds in the fixed network, which enables users to check the contracted speed. The measurement results are acceptable as evidence in the end-user complaint resolution process. HAKOMetar Plus is a tool for the informative measuring of internet access quality in mobile and WLAN networks, including checking internet openness and neutrality parameters. In addition to ensuring open internet and net neutrality, HAKOM will control the compliance of the roaming service with the TSM Regulation.

According to currently available data, three quarters of the population of the EU-27 has no access to **the IPv6 protocol** and there are major differences across Member States in its implementation. The internet community claims that this is an indication that Europe is a continent of contrasts when it comes to IPv6. The European Commission has declared that IPv6 "is an impor-

tant precondition for digital Europe.” The next relevant factor is the lack of IPv4 addresses that Europe is faced with at the moment. The IPv4 protocol provides the addressing space of about 4.3 billion addresses. However, the success of the internet, the variety of usage and the spread of associated facilities directly result in the gradual exhaustion of IPv4 addresses. In addition, the Open Internet Working Group (OI WG) of the Body of European Regulators for Electronic Communications (BEREC) has noted that public IP addresses are key for enabling users to realise their rights to use and provide application and services, as specified in [Regulation \(EU\) 2015/2120](#) on open internet access. Therefore, both the BEREC and HAKOM have to focus on promoting the adoption of IPv6 protocols. Therefore, in 2022, HAKOM will, in cooperation with other national institutions, primarily with the Croatian Academic and Research Network (CARNET), work proactively on the national promotion of the IPv6 transition in the RH.

In 2020, HAKOM started a project of developing a software tool for **the verification of traffic management measures** used in operator networks. The same year saw the development of the functional specification, design and software of the application as well as a study establishing to which extent internet access service providers in the HR apply measures for the management of user network traffic. As shown by three-week initial measurements carried out for service providers in the mobile and fixed networks, internet access service providers in the HR do not apply discriminatory techniques to network traffic management. HAKOM plans to repeat these measurements in 2022, but in a longer period and from more geographic locations.

The key principle and goal of the electronic communications market regulation in the HR is to ensure access to universal services for all users of electronic communications services, which also includes ensuring **an appropriate quality of universal service provision**. Universal services in electronic communications represent the smallest range of electronic communications services of a specified quality that must be available to all end-users at an affordable price throughout the territory of the HR, regardless of their geographical location, with as little distortion of competition as possible. In 2022, HAKOM will complete the analysis of existing universal services and, based on the annual reports of universal service operators, monitor the fulfilment of universal service obligations and the quality of universal services provided in the previous year; also completed will be the analysis of the accessibility and availability of universal services to all citizens of the HR. The analyses will be published on HAKOM’s website. In 2022, based on these analyses, HAKOM will carry out a new procedure of selecting the universal service operators/operator (USO) for the following three years.

Fostering new services development: HAKOM monitors, on an ongoing basis, the development of the machine-to-machine (M2M) communication and the Internet of Things (IoT). It is essential for future development to examine M2M/IoT services within the EU electronic commu-

nications regulatory framework and analyse potential market barriers, such as, among others, limited resource distribution, standardisation, international roaming, switching operators, number portability as well as cybersecurity and data privacy..

Consumer protection

In 2022, as in the previous years, one of the strategic goals was to achieve as efficient as possible user protection. HAKOM will, in addition to resolving disputes between operators and users, continue to carry out activities aimed at preventing situations that may inflict damage to the user as a weaker party in a contractual relationship with the operator. This will be achieved primarily by timely detecting and correcting operators’ action and by educating and informing users. In order to gain a better insight into problems encountered by users while establishing a subscriber relationship and using services, requests for user dispute resolution will continue to be analysed. **Also analysed will be the semi-annual work of operators’ consumer complaint commissions** and a report on the work of these commissions will be compiled and published. As these analyses will provide information on market condition, i.e., information on difficulties encountered by users and operators while contracting and using/providing services, their results will inform decisions on proposing and introducing adequate measures, i.e., amendments to sectoral regulations.

HAKOM will also continue to analyse and **review operators’ general operating terms and conditions, special conditions for service use and price lists**, bringing them into compliance, if necessary, with regulations in effect.

Taking into account that a well-informed and educated user is a precondition for efficient protection, HAKOM will continue to put a special focus on informing and educating users. In addition to direct communication with users ([telephone contact](#), [e-mail](#), [Ask Us](#) application and social networks), these efforts will include HAKOM’s experts’ participation in radio and TV programmes on user-related topics and cooperation with consumer protection associations. Education will also be carried out by means of **user leaflets, brochures and educational videos** featuring useful advice and information on users rights and operators obligations, which will be distributed to users, consumer protection associations and operators. All materials will be available on HAKOM’s website and free to download for the purpose of informing or educating users. A part of user leaflets and brochures will be offered to consumer protection associations for their activities.

With an aim of enhancing user experience, i.e., assisting users with the use of contracted services, HAKOM provides and regularly updates free user applications, which are available on its website.

HAKOMetar is an application used to measure fixed internet speeds (the measurement results are acceptable as evidence in the cases of complaints against operators and in dispute resolution), while **HAKOMetar plus** is used to measure internet speeds in mobile/wireless networks. It should be emphasised that the **Cost Estimator** application started to be revised, which is one of the activities aimed at enabling users to find the most favourable tariff in accordance with their consumer habits. Data are to be updated in real time to provide users with access to all operators' new tariffs. In cooperation with the MESD, HAKOM also keeps and maintains the **Do Not Call Register**. By entering their telephone numbers in the Do Not Call Register users confirm that they do not want to be contacted for advertising or sales purposes, which can be verified on HAKOM's website. Traders will still be able to access and check numbers in the Register and through the internet service.

In 2022, attention continued to be paid to **young people and children** and their protection on the internet. HAKOM will in February mark the Safer Internet Day with operators and interested stakeholders. In addition, all primary schools in the HR will be provided with updated brochures containing important advice for children and parents on the safe use of internet in the school year 2021/2022. Schools will organise workshops for parents and children, in line with their needs and possibilities.

Additionally, cooperation will be continued with the research and scientific community and the associations of persons with disabilities on the project implemented to make digital content and services as user friendly as possible for persons with disabilities (PWD). The focus will be on proactive action towards market development and the overall accessibility of services through digital media. The project is supported and provided guidelines for by associations dealing with the problems of persons with disabilities, which are indispensable for collecting information on the real needs of persons with disabilities in a digital society.

Inspection

HAKOM will continue to perform **inspection supervisions** and **market controls** under the established principles of proportionality and adequacy. Proportionality is achieved by choosing measures that are proportionate to the nature of violation of law, taking into account the complexity and abundance of regulations and rules that subjects in the market have to comply with. The supervised entities are mainly ordered to take measures necessary for the elimination of established irregularities, while misdemeanour proceedings are initiated in accordance with legal powers, taking into account all circumstances of each inspection supervision. The adequacy of inspection supervision is, as a rule, achieved by eliminating problems that constantly arise in the market and may considerably undermine competition and/or end-user rights.

Inspection supervisions will be carried out according to the control and supervision plan and based on the analysis of the implementation of the regulatory framework as well as in any case when there are justifiable grounds for suspicion of regulatory violations. All administrative acts adopted on the basis of inspection supervisions will be made publicly available.

Cooperation

The role of national regulatory authority implies intensive cooperation with other public authorities in the HR, scientific institutions and market stakeholders as well as **international cooperation**, which includes participation in the work of numerous international institutions or work groups for electronic communications. The most important work will be connected with the EU, i.e., with the EC, BEREC and COCOM, as well as with the bodies such as the ITU, ENISA, EMERG and EaPaReg. As regards **cooperation with domestic institutions**, HAKOM most closely cooperates with the Ministry of the Sea, Transport and Infrastructure (MSTI) and the Ministry of Physical Planning, Construction and State Assets (MPPCSA), but it will also cooperate with other public authorities, consumer protection associations and the scientific community.

Electronic communications market activities in 2022				
No.	Activity	Result	Completion (quarter)	Fin. plan
1.	Draft appropriate implementing regulations on the basis of the new ECA	Implementing regulations	II.	N ¹
2.	Analyse the relevant market – market of network access at a fixed location	Analysis of the market of network access at a fixed location	I.	N
3.	Analyse the relevant market – market of call origination at a fixed location	Analysis of the market of call origination at a fixed location	I.	N
4.	Analyse the wholesale broadband access market, taking into account Optima's new status and the cessation of HT's management rights	Analysis of the wholesale broadband access market	II.	N

1. Plan rashoda uključuje razrede: 31 i 32, bez odjeljaka 3211, 3213, 3232, 3233, 3237, 3238, 3239, 3221 i 3225

5.	Apply the provisions of the delegated act (DA) on single voice call termination rates (MTR and FTR) in the Croatian market	Standard and minimum offers in accordance with the DA	onoging	N
6.	Conduct the margin squeeze test (MST)	Tariff packages of operators subject to the MST in accordance with the Methodology	onoging	N
7.	Analyse the advantages and disadvantages of the implementation of the EoI (Equivalence of Input) in the Croatian market	HAKOM's internal document	II.	N
8.	Analyse various regulatory approaches for MVNOs	HAKOM's internal document	I.-II.	N
9.	Define reasonable weighted average cost of capital (WACC) rates in the fixed and mobile networks	Decision on WACC	IV.	N
10.	Enhance the system of collecting data for the review of the coverage by and the use of broadband networks (mapping)	System with comprehensive data collection for various purposes	I.	N
11.	Standardise the use of the term "optical fibre (fibre optic) network"	HAKOM's act	III.-IV.	N
12.	Resolve regulatory disputes	HAKOM's decisions	onoging	N
13.	Analyse the regulatory framework implementation	Overview of regulatory framework violations	IV.	N
14.	Amend standard offers	New wholesale conditions in standard offers	onoging	N
15.	Supervise the implementation of the regulatory obligation of accounting separation	HAKOM's consent	II.	N
16.	Collect and process data on the EC market condition	Public disclosure of data	quarterly	N
17.	Implement activities related to roaming regulation and additional activities related to defining a new roaming regulation	Support to BEREC and operators	onoging	N

18.	Implement the ECI legalisation procedures	HAKOM's administrative acts	onoging	N
19.	Establish a single ECI cadastre database in cooperation with the SGA	ECI cadastre database	onoging	N
20.	Collect and process data on the broadband access coverage	Graphical display accessible on the internet	onoging	N, 3237
21.	Issue opinions in the procedure of drafting and adoption of physical plans and public consultation, including the State Plan for Spatial Development	HAKOM's opinions	onoging	N, 3211
22.	Establish special conditions for construction/connection conditions/grant main project certificates	HAKOM's administrative acts	onoging	N
23.	Identify the infrastructure operator (right of way)	HAKOM's administrative acts	onoging	N
24.	Issue "broadband-ready" labels for newly constructed buildings and buildings that have undergone major renovation,	"Broadband-ready" labels	onoging	N
25.	Participate in the implementation of the best EU practices (set of measures) in the Connectivity Toolbox	Increase the availability of very high capacity networks (VHCN)	Ongoing, in accordance with the document	N
26.	Implement the measure from the 5G Toolbox for which HAKOM is responsible	Implement the Ordinance on the manner and deadlines for the implementation of measures for the protection of security and integrity of networks and services	onoging	N
27.	Monitor and analyse the safety of networks and services and publish the collected data	Reports on cyber incidents and network safety Quarterly reports Annual Report	onoging quarterly II.	N
28.	Implement NIS2 and CER directives in cooperation with other public authorities in the working group	Proposals for amendments to national laws	IV.	N

29.	Promote the use of IPv6 addresses with other relevant public authorities	National report, workshop	IV.	N	42.	Cooperate with the representatives of operators' consumer complaint commissions	Recommendations for work improvement	I. i III.	N, 3233
30.	Implement the new HAKOMetar	New HAKOMetar	IV.	N, 4262	43.	Analyse general terms and conditions, special conditions and price lists	Amendments to standard offers	onoging	N
31.	Implement net neutrality rules (TSM Regulation)	Operators work in accordance with the TSM Regulation Opinions and comments for BEREC Annual Report for BEREC and EC	onoging onoging II.	N	44.	Educate about and raise awareness of the protection of children in electronic communications	Safer Internet Day marked Brochures updated and delivered to primary schools Workshops for children and young people	I. I. onoging	N, 3233
32.	Analyse quality parameters of operators' service provision	Semi-annual reports	I. i III.	N	45.	Provide users with information on costs and quality	Applications under construction - HAKOMetar - HAKOMetar Plus - Cost Estimator	onoging	N, 3238
33.	Implement the new CADPN system	New CADPN	IV.	4262	46.	Maintain the Do Not Call Register and cooperate with the MESD, traders and users	Register under construction	onoging	N, 3238
34.	Manage the addressing and numbering space	Numbering and addressing plan	onoging	N	47.	Inform and educate users	Brochure, leaflet and video	IV. onoging	N, 3233
35.	Ensure and monitor the number porting process	CADPN under construction	onoging	N	48.	Cooperate with associations for persons with disabilities and the Faculty of Electrical Engineering and Computing	Workshops and lectures, media appearances	onoging	N, 3233
36.	Supervise the quality of universal service provision in electronic communications	Annual report on the quality of universal service provision	onoging II.	N	49.	Respond to user inquiries	Accessibility for persons with disabilities	onoging	N
37.	Analyse the existing universal services and designate USO operators	Analysis of universal services Decision on the USO operator	IV.	N	50.	Perform inspection supervisions	Responses to inquiries	onoging	N, 3211
38.	Verify service quality, evaluate, test and certify the measuring and collection system	Follow up on measurement reports	onoging	N	51.	Issue expert opinions	Expert opinions	onoging	N
39.	Process registration applications and notifications on the start or termination of provision of electronic communications services	HAKOM's certificates and updated list of operators in the e-Operator EU register of operators updated with a list of HR operators	onoging	N, 3238	52.	Cooperate with international bodies	Work in international bodies and work groups	onoging	N, 3211
40.	Resolve complaints and disputes between service users and operators	HAKOM's administrative acts	onoging	N	53.	Cooperate with domestic institutions	Cooperation	onoging	N, 3211
41.	Analyse the work of operators' consumer complaint commissions	Semi-annual reports	I. i III.	N					

03

POSTAL SERVICES

The postal service market still shows a continued increase in total revenues, coupled with a decrease in traffic in letters and a considerable growth of traffic in parcels. HAKOM has been adjusting its regulatory activities to this trend, persisting in the HR, the EU and the world over several years. The following work plans should primarily take into account activities at the European and global levels related to proposals for new postal regulation, which is expected to harmonise services with new user requirements and market changes. Intense discussions have been underway at the global level, within the Universal Postal Union, on the new organisation of postal services and the inclusion of other postal service providers into the UPU, while discussions at the European level concern amendments to the Postal Directive or the drafting of a new postal directive. All this will result in changes in the regulatory framework and, in turn, in national postal legislations. Parcel delivery services connected with internet shopping still have a lot of room for growth.

Regulatory activities

Regulatory activities are prescribed by the Postal Services Act and aligned with the provisions of **the EU Postal Directive, the Regulation on cross-border parcel delivery services and the acts of the UPU**. With significant changes to the European and global regulatory frameworks announced for the following medium-term period, the focus will be on discussions and proposals on the European and global levels. This will enable a substantial and timely cooperation on the compilation of proposals for amendments to or the renewal of the Croatian legislative framework for postal services. The activities are primarily related to the new organisation of the universal service, which was prepared for adoption at the Congress of the UPU, and the broader opening of the UPU to other postal services providers. Activities at the European level primarily involve work in various expert working groups and at plenary sessions of the European Regulators Group for Postal Services (ERPG) and, if necessary, in other postal organisations, such as the European Committee for Postal Regulation (CERP) and the Postal Committee of the European Commission.

HAKOM will at the same time continue to perform its legally mandated tasks, in particular by collecting data and analysing postal market conditions as well as by disclosing results and preparing for potential new sets of statistical data resulting from regulatory changes. The manner of performance and the price of the universal service, guaranteed by the PSA to all citizens of the HR under equal conditions irrespective of their geographical location, will be supervised on an ongoing basis and the improvement of the quality of this service will be stimulated, in order for them to remain the best choice for citizens and small and medium-size entrepreneurs as regards their price to quality ratio. HAKOM will continue its proactive regulatory activities aimed at

strengthening competition in the letter segment of the postal market and its activities related to equal market competition in the segment of parcel services.

In the forthcoming period, special attention will be paid to the analysis of the organisation of the postal network and to the modelling and simulation of new solutions to optimise the public operator network and reduce the unfair financial burden on the designated universal service provider, which is paid from the state budget. The consultations will involve the broader social community and government institutions so that the real needs for the density of coverage by postal offices could be analysed, as innovations and new technological solutions make such a dense network of postal offices no longer necessary. This is confirmed by new postal service providers, which do not use offices to perform postal activity.

Universal service

The designated universal service provider pursuant to the PSA is HP – Hrvatska pošta d.d. (HP), which has **the right and obligation to provide the universal service** in the whole territory of the HR with the prescribed quality and affordable prices. HAKOM's regulatory activities primarily involve precisely the control of the HP's fulfilment of the universal service obligation in accordance with the PSA and the Ordinance on the provision of universal service.

The activities include, among other things, the verification of compliance of general terms and conditions, price lists and other acts that the universal service provider adopts pursuant to the PSA. In addition, closely monitored are permitted exemptions from the universal service provision set forth in the said Ordinance, especially the exemption from the five-day delivery obligation in the rural area. The control of HP's fulfilment of obligations also includes monitoring changes in the number and locations of postal offices and other access points as well as monitoring the prescribed density of the access point network. The supervision is especially focused on procedural compliance during the closure and moving/reorganisation of postal offices and the regulation of their working hours. The **upgrade of the existing [interactive GIS portal](#)** is planned to include basic data on the postal network in order for a transparent and updated access to the structure and functions of the postal network to be publicly available.

An important element of the universal service provision is its quality, both regarding transport deadlines and regarding the number of submitted and resolved user complaints. The universal service provider is obliged to carry out a quality measurement in accordance with Croatian norms and submit **the Report on the quality of universal service performance** to HAKOM. In

order for the measurement results stated in the Report to be verified, especially regarding the quality of transport of postal items, an independent audit will be performed. If service quality fails to meet the prescribed criteria, the audit results will serve as a basis for the implementation of adequate corrective measures.

In order to liberalise further the opening of the postal market, HAKOM has amended the Ordinance on the universal postal service in the part related to transparency and equal access to the postal network of other providers of interchangeable postal services, consolidators and large users. Plans for the following period envisage the close monitoring and evaluation of new solutions for the network access of the universal service provider, with an aim of enabling equal market competition for other providers, especially at public tenders for the provision of postal services. Depending on the results of the analyses, regulatory measures will be adopted to amend the conditions for and the prices of access to the postal network.

Pursuant to the PSA, the universal service provider has the obligation of **accounting separation of revenues and costs** both for universal services and for interchangeable and other postal services. The universal service provider is obliged to perform accounting separation in accordance with the Instructions of HAKOM. The detailed regulatory report is submitted to HAKOM, which will, as in the previous years, carry out an audit to verify the reliability of accounting operations and issue a Statement of (non) compliance.

The audited report is a basic document used by HAKOM to conduct regulatory activities, as provided by law, in particular the regulation of the universal service price and the postal network access price as well as the calculation of **the cost of an unfair financial burden (net cost)** on the universal service provider. Specifically, the universal service provider is entitled to the reimbursement of the net cost when universal service obligation generates an unfair financial burden, which is established on the basis of HAKOM's calculation and paid from the state budget.

Consumer protection

HAKOM's activities related to user protection will primarily include the procedures of **resolving disputes between users and postal services providers** pursuant to the PSA. The information collected during dispute resolution procedures will also be used to introduce improvements to the market by inspection supervisions and potential corrections of subordinate legislation and providers' general terms and conditions. On the basis of analyses of disputes with postal services providers, HAKOM will issue recommendations and guidelines to providers aimed at establishing

a uniform practice of user dispute resolution and eliminating observed inconsistencies. Special care will be taken to protect postal services users by means of education and by providing them with timely information on consumer rights, in particular during the resolution of disputes pursuant to the PSA and preventive inspection supervisions in the case of frequent providers' violations. Various communication channels will be applied to inform and educate postal services users and information interesting for users will be published regularly.

Inspection

HAKOM conducts part of its regulatory activities within **inspection supervisions**, which are carried out under the established principles of appropriateness and proportionality. Their main goal is a regulated postal market, especially regarding the obligations of the universal service provider and the protection of rights of postal services users. Inspection supervisions will be carried out according to plan or on the basis of information about potential irregularities or regulatory violations. Depending on the facts established during supervisions, postal inspectors will take legal measures and actions within their competence, and all administrative acts adopted by postal inspectors and judgements passed on the basis thereof will be published on HAKOM's website.

Cooperation

Domestic cooperation will involve an intensive cooperation with all stakeholders in the postal services market, including public law bodies in the HR, such as the MSTI, CBS, CCA and MESD, as well as the representatives of consumer protection associations and the academic community. **International cooperation** will be primarily related to active participation in the work of the European Regulators Group for Postal Services (ERGP) and, jointly with the MSTI, in the work of the EC's Postal Directive Committee and the European Committee for Postal Regulation (CERP). In cooperation with MSTI, HAKOM will participate in the work of the bodies of the Universal Postal Union (UPU). HAKOM will also continue cooperation with the stakeholders of postal services markets from other countries.

Postal services market activities in 2022				
No.	Activity	Result	Completion (quarter)	Fin. plan
1.	Analyse the organisation of the postal network and model and simulate new solutions	Amendments to the Ordinance on the provision of universal services	IV.	N
2.	Collect and process data on postal services market condition	Data published	quarterly	N
3.	Review the obligations of all postal services providers	Verified providers' registration/removals, logbook keeping, general terms and conditions, status changes, etc.	onoging	N
4.	Control the fulfilment of universal service obligation	Verified five-day delivery obligation, postal network density, postal offices' working hours, etc.	onoging	N
5.	Determine a price limit for a part of the universal service in the medium term	Decision on the price limit for the period 2023 to 2025	IV.	N
6.	Monitor and analyse the prices of universal service of network access	Affordable and cost-oriented prices for all users	onoging	N
7.	Resolve regulatory disputes	HAKOM's decisions	onoging	N
8.	Supervise the implementation of obligation of accounting separation	RFS audit Statement of compliance	IV.	N

9.	Establish the unfair financial burden on universal service providers (net cost)	Revision of requests for the reimbursement of net costs Decision on the net cost amount	IV.	N
10.	Analyse the Report on the quality of provision of universal service	Revised Report and remedial action	III.	N
11.	Redesign the interactive GIS portal	New interactive GIS portal includes an overview of the postal network	IV.	N, 3213, 4541
12.	Resolve user disputes with postal services providers	HAKOM's decisions	onoging	N
13.	Respond to inquiries and reports of users and other postal market stakeholders	Responses to users and other stakeholders	onoging	N
14.	Perform inspection supervisions	Supervision administrative acts	onoging	N
15.	Give expert opinions	Expert opinions	onoging	N, 3237
16.	Cooperate with postal market stakeholders	Regular meetings and panels	onoging	N, 3211
17.	Cooperate with international bodies	Work in international bodies and work groups Expert proposals	onoging	N

04

RAIL SERVICES

Due to the situation caused by the COVID-19 pandemic, the rail services market and consequently the transport market function under considerably difficult conditions. The restrictions on movement during the pandemic have had a significant impact on the use of rail passenger transport services. The pandemic has also led to the decrease or suspension of production in many industrial sectors, thus generally reducing the quantity of goods transported by rail. Nevertheless, through its regulatory activity, the ARRSM and the RA, HAKOM tries to ensure transparent, non-discriminatory and adequate conditions for the provision of rail services, without which the transport market would not even exist. In the described circumstances, the work on the protection of the rights of passengers in rail transport is even more important, which might be jeopardised or limited due to these extraordinary circumstances. For this purpose, HAKOM will also regularly carry out inspection supervision activities aimed at eliminating any irregularities in the rail services market as well as in the area of the rights of passengers, as fast and as efficiently as possible. In its work, HAKOM will seek to promote the application of advanced technologies and the synergy brought about by the regulation of several network industries because such solutions can indeed be crucial in such challenging times.

Regulatory activities

HAKOM carries out most of its activities ex officio, within the supervision of the rail services market, so that the focus will be on the control of **charges for rail services** and the accounting separation of charges for rail services. Once the register of service facilities is set up, its operation will attempt to ensure better functionality and regular updating. In addition to the national register, activities, tasks and the development of the Rail facilities portal will be monitored. Methodologies for the calculation of charges for rail services provided by service facility operators will also be reviewed. **Data on market development and passenger rights protection will be collected** for the purpose of monitoring and improving the HR market as well as for the purpose of participation in the working groups of the Independent Regulators Group of the European Union and European Commission. If necessary, a supervision of the obligation to keep separate accounts will be carried out, including separate balance sheets and income statements, for all service facilities operated and services provided by service facility operators. HAKOM will act in an open manner towards the market, directing its activities towards **ensuring equal conditions and non-discriminatory access to rail services** to all applicants. By acting proactively ex officio and performing inspection supervisions, HAKOM will control the market, by identifying and removing potential barriers within the shortest possible period. Regulatory experience gained from supervision and market analyses will be exchanged with EU regulatory authorities, the MSTI, the Croatian Railway Safety Agency (CRSA) and the EC, for the

purpose of harmonising the practice and regulations of Member States. HAKOM will actively participate in the MSTI working group for the preparation of the strategic and legislative framework for rail transport.

Consultations with the representatives of rail service users are carried out by surveying passengers and users of freight transport. In addition to online surveying, the implementation and analysis of consultations will be complemented by on-site surveying for the first time in 2022. The results of the consultations will be published on HAKOM's official website.

Access to rail network and service facilities

The right of **access to the rail network and service facilities**, as well as to all services required for the performance of rail transport, is prescribed by law. Regulatory activities will remove potential and real barriers for the access to the market and its functioning, promote a simpler use of rail services and the market orientation of rail service providers and improve the provision of rail services in general.

HAKOM on an ongoing basis monitors the preparation, adoption, implementation and application of the conditions and criteria contained in the Network Statement. Special attention will be paid to the compilation and publication of the **Network Statement (NS)**, its content, amendments to any versions of the Network Statement as well as the descriptions of service facilities that service facility operators are obliged to publish. It should be noted that two network statements are applied in a single year, while at the same time a new network statement is being prepared, so that activities related to three different statements are carried out simultaneously. Its importance for the market is emphasised by the fact that the network statement contains links to the descriptions of service facilities or the descriptions themselves. The purpose of the supervision of conditions for access to the rail services market is to eliminate unauthorised provisions or prevent a service provider – infrastructure manager/service facility operator from discriminating applicants, as well as to verify the compliance of the network statement's content with the legislation of the HR and the EU.

Protection of passengers' rights in rail passenger transport

Pursuant to the ARRSM, HAKOM is competent for the protection of passengers' rights in rail passenger transport and for the implementation of Regulation (EC) No 1371/2007 of the Europe-

an Parliament and of the Council of 23 October 2007 on rail passengers' rights and obligations (Regulation No 1371/2007). These activities are carried out with a special focus on **persons with disabilities and persons with reduced mobility** and raising awareness of their rights, primarily among railway workers directly involved in transport. For this purpose, education of individuals responsible for assistance to persons with disabilities employed by operators of service facilities and railway undertakings will be initiated. Pursuant to Regulation (EC) No 1371/2007 and other regulations that govern passengers' rights in rail passenger transport or the performance of inspection supervision, HAKOM will analyse the protection of passengers' rights, impose measures to eliminate irregularities and promote improvements in the offer of passenger transport services in rail transport.

Disputes between passengers and railway undertakings will be resolved within the shortest period possible, transparently and objectively, in accordance with regulations and based on proposals put forward by the Commission for the Protection of User Rights. Dispute analyses will serve as a basis for identifying the needs to improve the conditions and the form of transport provision, monitoring the condition and creating grounds for ordering appropriate adjustments to be implemented by railway undertakings by ex officio procedures and inspection supervisions.

Railway undertakings and railway station/stop operators are obliged to ensure equal access to services to all users, with an adequate provision of services to persons with disabilities and persons with reduced mobility posing a special challenge. In order to improve quality standards, encouragement will be given to a dialogue between stakeholders in the rail services market and railway undertakings and associations representing the interests of persons with disabilities. HAKOM will contribute to raising the level of passengers' rights protection by participating in the preparation of regulations in the area of rail passenger transport and passengers' rights protection that are concerned with the observed market challenges. HAKOM will actively participate in the working group for the analysis of the Act on Transportation Contracts in Railway Traffic and give its opinion on the need and scope of its amendments and in the working group for the preparation of the Act on Integrated Passenger Transport.

Inspection

In the area of passengers' rights protection, HAKOM performs inspection supervision of the implementation of the ARRSM, Regulation (EC) No 1371/2007 and other regulations governing passengers' rights in rail transport. Within inspection supervisions at official places and in vehicles, HAKOM will control the conditions and accessibility of services, paying special attention to persons

with disabilities and persons with reduced mobility. Railway undertakings and railway station/stop operators will be encouraged to train their employees in providing assistance to persons with disabilities. HAKOM will perform inspection supervisions, as appropriate, of the implementation of the RA and resolving regulatory issues, in particular those regarding access to rail services and service facilities.

Cooperation

Being a member of the European Network of Rail Regulatory Bodies (ENRRB), HAKOM will actively participate in the work and exchange of regulatory practice with the EC. As to the engagement in the work of the Independent Regulators' Group – Rail (IRG), HAKOM will chair this organisation in 2022, after the adoption of comprehensive amendments to the basic acts of the organisation. During its term as chair, HAKOM will try to promote current topics such as the application of advanced technologies and the synergy of the regulatory authority for multiple network industries.

HAKOM will also actively participate in the meetings of the National Enforcement Bodies of Regulation (EC) No 1371/2007 on Rail Passengers' Rights and Obligations (NEB). The aim of the meetings is to exchange experiences, establish best practices for the protection of rail passengers and harmonise practices. The new Regulation (EU) 2021/782 of the European Parliament and of the Council of 29 April 2021 on rail passengers' rights and obligations has been published and will be implemented from 7 June 2023, so that 2022 will be the year dedicated to the preparation for the new rules in rail passenger transport.

HAKOM will prepare opinions and participate in the defining of guidelines for the production of documents within the scope of the rail services market as well as in the area of rail passengers' rights protection. HAKOM will cooperate with the authority responsible for safety and interoperability of the railway system – the Croatian Railway Safety Agency, with the authority responsible for the issuance of licences for the provision of rail transport services – the MSTI, and with other institutions within the rail system.

Rail services market activities in 2022				
No.	Activity	Result	Completion (quarter)	Fin. plan
1.	Supervise the implementation of the 2022 Network Statement and any amendments	Control – Publishing amendments to the statement – Regulatory compliance analysis	ongoing	N
2.	Supervise the implementation of the 2023 Network Statement and any amendments	Control – Publishing amendments to the statement – Regulatory compliance analysis	ongoing	N
3.	Supervise the preparation, publishing and implementation of the 2024 Network Statement	Control – Publishing the draft – Publishing the statement – Regulatory compliance analysis	ongoing	N
4.	Resolve regulatory disputes	HAKOM's decisions	ongoing	N
5.	Keep the register of rail services of service facility operators	Register operational and updated	ongoing	N
6.	Control charges for rail services and accounting separation	Charges comply with regulations	ongoing	N
7.	Supervise the rail services market	Non-discriminatory and transparent conditions of access to the network and service facilities	ongoing	N
8.	Perform inspection supervisions	Supervision administrative acts	ongoing	N, 3211
9.	Collect and process data on rail services market condition	Data published	quarterly	N

10.	Resolve passenger disputes	HAKOM's administrative acts	ongoing	N
11.	Carry out inspection supervision in the area of rail passengers' rights protection	Supervision administrative acts	ongoing	N
12.	Cooperate in the preparation of regulations in the area of the rail services market and rail passengers' rights protection and harmonisation with EU regulations	Proposals for improvement	ongoing	N
13.	Hold consultations with representatives of rail service users	Survey	III.	N
14.	Raise the level of service for persons with disabilities	Training of service facility operators' employees	IV.	N
15.	Report to the EC and the MSTI in the framework of rail market supervision	Report	IV.	N
16.	Cooperate with rail market stakeholders	Regular meetings Round table(s)	ongoing	N, 3233
17.	Cooperate with international bodies	Work in international bodies and working groups	ongoing	N, 3211
18.	Chair IRG – Rail	IRG Work Programme IRG Activity Report	I.-IV.	N



05

RF SPECTRUM MANAGEMENT

The RF spectrum encompasses the 9 kHz to 275 GHz RF band, used by different radio communication services: broadcasting, mobile services, fixed services, satellite services, radio astronomy, radio navigation, etc. These services use the RF spectrum for numerous purposes, with different services often using the same frequency band for different purposes. For instance, the same band is used for TV broadcasting, cameras and microphones when broadcasting different events, such as concerts and soccer games, as well as for WAS/RLAN networks and meteorological radars. Constant progress and changes in technology (e.g. DVB-T2 and 5G) and catering to the needs of the society also lead to ongoing changes in the way individual frequency bands are used. For example, the 470–860 MHz frequency band, traditionally used for terrestrial television, is being freed up in the last five years for the introduction of the terrestrial wireless broadband networks – the new generation of mobile communication networks. In order to ensure smooth operation of all existing networks and the introduction of new networks, the use of the RF spectrum needs to be carefully planned and coordinated both in the HR and internationally. The main changes and guidelines for the future application of the RF spectrum are adopted at ITU's World Radiocommunication Conferences, such as the one that will be held in 2023 for which HAKOM will be preparing intensively in 2022. Developed and secure electronic communications, especially radio communications, still play an important role in many economic and social activities, in particular after the outbreak of the COVID-19 pandemic, when numerous activities, due to measures restricting the mobility of people, continued to run smoothly by means of remote access or distribution of information.

One of HAKOM's key competences is the management of the RF spectrum as a naturally limited public good that needs to be managed rationally and responsibly for the benefit of the society as a whole. The RF spectrum is managed pursuant to the provisions of the ECA, in line with the principles of objectivity, transparency and non-discrimination, with an aim to create a stimulating environment for efficient investments, innovation and market competition.

Efficient management also requires daily, systematic control and supervision of the RF spectrum, measurements, examinations and identification of the sources of interferences and implementation of measures to eliminate them. For this purpose, a system of control and measuring centres and stations has been set up, which is constantly upgraded and regularly maintained.

Fifth generation of mobile communication networks (5G)

The public showed exceptionally high interest in 5G technology over the last two years. Therefore, HAKOM will continue educating and informing the public about all activities connected with 5G and its deployment in the HR in a timely manner. In order to achieve this, it will primarily use its

own 5G website and other communication channels, as well as actively participate in expert meetings. It will also continue to publish regularly all relevant documents relating to 5G and organise events focusing on 5G. HAKOM will organise the “[5G Day](#)”, aiming to present and stimulate the possible applications of 5G technology, which can additionally drive the development and faster recovery of the economy and, in general, contribute to a better quality of life in the HR.

Cooperation with market participants within the **5G working group** will continue, primarily through activities of the task force for electromagnetic fields (EMFs) and small cells and the task force for the construction of infrastructure in order to adopt adequate measures to address remaining challenges and remove impediments to the 5G rollout. In addition, HAKOM will continue to carry out activities relating to 5G deployment at the international level, especially those relating to cross-border cooperation. HAKOM will continue to measure the appropriate parameters of mobile communications networks, including the parameters of the fifth generation of mobile communication networks (5G).

The rollout of 5G networks is planned according to the licences issued for the use of the RF spectrum from 2021 to 2027, which is in compliance with the deadlines determined by the National Plan for the Development of Broadband Access in the Republic of Croatia 2021-2027. Coverage obligations apply to operators that in 2021 obtained the licence for the individual 5G baseband (700 MHz, 3.6 GHz and 26 GHz), although they can also be realised by using any other frequency bands allocated to the individual licence holder.

The operators that have been granted the licence for RF spectrum use in the 700 MHz band are subject to the obligations of coverage of 90 percent of the population of each unit of local self-government in the urban area of the HR until 31 December 2025, 25 percent of the total surface of the rural area of the HR until 31 December 2025 and 50 percent of the total surface of the rural area of the HR until 31 December 2027. An additional obligation refers to the coverage of highways and railway routes in the HR included in the trans-European transport network (TEN-T). The obligation to cover highways will depend on the realisation of the coverage of 99 percent of the total length of routes until 31 December 2025, and the obligation to cover railways will depend on the realisation of the coverage of 95 percent of the total length until 31 December 2025.

The obligation of coverage by 4G and/or 5G networks is prescribed for remote rural areas that are not covered by the appropriate signal level. These areas are defined at the level of the populated area and divided into three groups so that the operator must ensure the coverage of 95 percent of the population in the areas from the group for which it has taken the obligation of coverage until 31 December 2024. In addition, the areas of special interest have been defined for which the obligation of 4G and/or 5G network coverage is prescribed in which the operator must, within the peri-

od of three years of the issuance of the licence, ensure the coverage of 80 percent of the surface of the area. Areas are defined at the level of the unit of local self-government and divided into three groups and the operator realises the coverage in the area for which it has assumed the obligation. The above obligations to cover rural communities and areas of special interest apply to operators that have obtained the licence for the RF spectrum use within the 700 MHz band.

For the 3.6 GHz frequency band, obligations are related to the installation of a certain number of base stations. Operators that have been granted licences on a national level have the obligation to put in operation one base station in each county and the City of Zagreb until 31 December 2022 and 200 base stations until 31 December 2025. At regional level, the holder of the licence in the 3.6 GHz frequency band must put into operation one base station in each county until 31 December 2022, other than Međimurje and Varaždin Counties, and one base station in each of the two counties until 31 December 2024.

In order to monitor the deployment of 5G networks and check the fulfilment of the conditions under the licence, the holders of licences have the obligation to provide HAKOM with information on the geographical location and technical data for the installed base station or changed data on the existing radio station, which includes the data for each individual sector according to the pre-defined format before the start of operation. On a quarterly basis, the holders of licences have the obligation to provide HAKOM with a georeferenced coverage map with the calculated values of signal levels, separately for each frequency band in which the individual technology is applied, according to the previously agreed format.

Based on the submitted data and the sample of control measurements determined according to the submitted data, HAKOM will check the fulfilment of conditions and obligations from the licences issued for the RF spectrum use.

Spectrum allocation for mobile communications networks

After the spectrum for 5G mobile communications networks in primary bands of 700 MHz, 3.6 GHz and 26GHz was allocated in 2021, in order to ensure regulatory predictability, HAKOM intends to ensure conditions and launch the procedure for spectrum allocation for the existing bands that are already in use (800/900/1800/2100/2600 MHz), since licences for these frequency bands cease to be valid in 2024. HAKOM intends to carry out a new public auction procedure to grant the right of use of the above frequency bands and start the preparation in 2022. When launching the new procedure for granting the right of use of the RF spectrum, HAKOM will define the precise range

of frequency blocks as well as other elements of the allocation procedure. The allocation of the RF spectrum for which operators do not have the rights of use will also be considered through public consultations.

Regulatory activities

After the new Electronic Communications Act enters into force, subordinate legislation on the use of RF spectrum will be drafted, which primarily refers to the ordinances on the conditions of allocation and use of the RF spectrum, amateur radio communications and special conditions of installation and use of radio stations.

In May 2020, the Government of the HR published the National Action Plan for the use of the 470-790 MHz frequency band (NAP) setting the deadline for the switchover of all television programmes to digital broadcasting in the DVB-T2 system within the 470-694 MHz frequency band and the granting of permission to use the 700 MHz frequency band for terrestrial wireless broadband electronic communications services at the latest by 31 December 2021. International activities directed at removing potential interferences with 5G networks in the HR in the 700 MHz band and an uninterrupted operation of digital television in new TV channels within the 470-694 MHz band will also be continued in accordance with the NAP. Also, depending on the market interest, HAKOM will issue licences for the use of the RF spectrum for the two remaining DVB-T2 multiplexes on the state and/or regional levels.

The start of the commercial operation of the 5G network in Croatia in the 700 MHz band after the issuance of licences for the use of the RF spectrum might lead to interferences for users in the reception of digital television in the adjacent 470-694 MHz band. The obligation of non-interferences in the reception of the digital television signal within the 470-694 MHz frequency band is prescribed for the holders of licences in the 700 MHz frequency band. For this purpose, HAKOM has prepared a procedure for the removal of interferences and will continue with activities within the framework of its competences to limit such interferences to the smallest possible extent and have them removed as soon as possible.

The radiofrequency spectrum in the 174-240 MHz frequency band for the provision of the service of operation of the first digital radio multiplex in the territory of the HR was allocated in the second half of 2021. The launching of the commercial digital radio broadcasting (DAB+) in the HR, which is expected until 2022, will contribute to the development of the radio market and ensure the availability of a larger number of radio channels to listeners. The frequency band earmarked for the FM

radio (87.5-108 MHz) is exceptionally congested, so it is precisely the possibility of introducing new programme features that represents one of the principal advantages of the digital radio in the VHF III frequency band (174-240 MHz). In 2022, HAKOM will continue the process of international harmonisation of the technical parameters of digital radio transmitters in order to ensure technical preconditions for its continued implementation in the HR. It is worth noting that there is no obligation to put out the analogue FM radio, so that the speed and success of the DAB+ platform implementation will primarily depend on the penetration of DAB+ receivers, user interest in new radio content and the interest of existing and future broadcasters in providing new content via the digital radio. As regards the FM radio, in 2022, HAKOM will continue ensuring technical parameters for concessions for the provision of radio media services in accordance with the requests of broadcasters and the Agency for Electronic Media (AEM).

In 2021, with the assistance of the ITU-R, HAKOM initiated the procedure for the assignment of resources for the national coverage in the stationary satellite network on geostationary orbital position 63°E. In the forthcoming period, as well as in 2022, HAKOM intends to continue such activities, which primarily include coordination with other administrations and satellite operators and their rights to satellite resources.

By employing modern IT tools and systems, HAKOM constantly improves its operation ensuring users of the RF spectrum faster and easier access to its services and publicly communicates information falling within its competence. Within the framework of the e-Agency programme, and in connection with the use of the RF spectrum, the following [e-Licence](#) services are currently available, providing for a simple and speedy way of submitting applications and issuing licences for the use of the RF spectrum: [e-Vessels](#), [e-Broadcasting](#) and [e-Microwave](#). In 2022, HAKOM will continue improving the existing applications and implement two new services of the e-Licences type, for satellite and air traffic control communications, which will additionally contribute to e-operation and the improvement in the quality of provided services. In addition to the mentioned licensing applications, there is also the application for an overview of licences (Pregled dozvola), which enables an overview of issued licences for the use of the RF spectrum, in general and individually, which will be updated as appropriate.

HAKOM also intends to ensure the availability of the insight for users into licences in electronic form by means of different electronic channels (e.g. by means of the personal user mailbox or the e-Citizens system), followed by the issuing of e-licences, which is enabled by the e-signature service.

In 2022, HAKOM will continue to launch and publish radio interfaces. The European Commission will be notified about regulated radio interfaces in the HR, and the specifications of radio inter-

faces will be published on HAKOM's website and regularly reported to the EFIS (ECO Frequency Information System).

In order to meet the transparency requirements under the TSM Regulation relating to the speed of internet access in mobile communications networks, HAKOM will continue to publish data on its website submitted by operators within the framework of comparable coverage maps, as well as data on the quality of data and voice services.

EMF level verification

The protection from radio communications electromagnetic fields (EMFs) in the areas of increased sensitivity is one of HAKOM's important and regular activities. Within the framework of monitoring data on base stations, HAKOM will continue running calculations and, where necessary, conducting **measurements of the level of electromagnetic fields** on the ground. It will continue to carry out control measurements of the EMF levels of base stations and other radio stations and publishing measurement results via its internet GIS portal <http://mapiranje.hakom.hr/>. Through activities related to the control of the EMF levels of radio stations, which, where necessary, also include preventive or corrective activities, HAKOM ensures compliance of the construction of radio stations with regulations in the field of electronic communications and indirectly with health care regulations prescribing EMF protection.

The work of the task force for EMFs and small cells, established within the framework of the 5G working group, will continue in 2022. Cooperation with the relevant representatives of the scientific community, institutions and other stakeholders within the framework of this task force is aimed, among other things, at informing and educating the public on the impact of EMFs on humans and ensuring a responsible approach to the construction of the 5G network.

Spectrum control

One of HAKOM's key roles is to ensure the use of the RF spectrum in compliance with issued (valid) licences and to protect the holders of licences for the RF spectrum use. Accordingly, HAKOM regularly **controls and monitors the RF spectrum**, which includes daily, weekly and monthly measurements and different measuring campaigns. Measurements are carried out by a highly sophisticated measuring system consisting of multiple control and measuring centres, control and

measuring stations, measuring vehicles and manual measuring devices. All measurements are conducted in accordance with clearly defined procedures complying with applicable norms, regulations and recommendations. The results obtained also serve as the basis for further planning and coordination of the RF spectrum. Within the framework of **protection from interferences** special attention will be awarded to the protection of services competent for search and rescue, emergency services, maritime and air traffic control radio communications that are important for protecting human lives and property, as well as to operators of mobile electronic communications.

Measuring campaign — Italian interference: From July to September, every year comprehensive measurement activities are undertaken, measuring interferences with Croatian radio (FM and T-DAB+) and television (DVB-T/T2) networks which originate from the Italian Republic in VHF and UHF frequency segments. The results obtained by these measurements are processed and consequently interferences are reported to the Italian administration and the International Telecommunication Union (ITU) in order to ensure the preconditions for the switchover to DVB-T2 and to enable the introduction of new mobile services in the RF spectrum of the second digital dividend.

Measuring campaign — WAS/RLAN in the 5 GHz frequency band: The first meteorological radars within the 5470–5725 MHz frequency band are expected to become operational in 2021. Therefore, HAKOM expects activities related to targeted checks of the use of the 5 GHz frequency band to intensify, as well as activities related to the removal of unwanted interferences with the operation of meteorological radars. Within this framework HAKOM will verify the compliance of WAS/RLAN devices with previously amended conditions for use laid down in general licences. For this purpose, the application for reporting user RLAN devices, which HAKOM put in operation in 2021, will also be used. The objective of the measurement is primarily to enable undisturbed implementation and use of new meteorological radars in the 5 GHz frequency band.

Measuring campaign — verification of mobile network coverage: In order to meet the transparency requirements under the TSM Regulation relating to the speed of internet access in mobile communications networks, a measuring operation will be carried out aiming at verifying data on the coverage of mobile networks supplied by mobile network operators. The operation will be carried out on an ongoing basis in order to regularly refresh data published within the framework of comparable coverage maps.

Control and measurement system

Maintenance and procurement of the control and measuring system: The sophisticated measuring system employed for measurements used in the control of the RF spectrum is regularly maintained and upgraded to keep up with the latest technologies implemented in the area of electronic communications. Regular measuring system maintenance activities include: agreements on maintenance, repair, development, upgrades and calibration of measuring equipment and system software support; repairs, maintenance and procurement of communications equipment for linking of the control and measuring system as well as its leasing, regular control of certified anti-theft and fire alarm systems; maintenance of antenna poles, which includes painting, verification of verticality and grounding; works related to facilities management, detailed annual checks of control and measuring centres, control and measuring stations and measuring vehicles and regular calibration of measuring instruments in accordance with the calibration plan.

Construction of a control and measuring station (CMS) on Bilogora: In order to improve the quality of the RF spectrum control and monitoring, the construction of a CMS in the Northern Croatia region is planned. The construction of the new CMS will provide for spectrum monitoring and control in a several times wider coverage of the HR territory than the area currently covered by the existing CMSs located in Northern and North-West Croatia.

Inspection

Inspection supervision is performed after irregularities and divergences from the conditions laid down in the licence for the RF spectrum use are established through measurements. In addition, there is an ongoing proactive and reactive supervision of the radio equipment put on the market and/or in operation (use) pursuant to the Law on Technical Requirements for Products and Conformity Assessment and [Directive 2014/53/EU](#) (Radio Equipment Ordinance).

Cooperation

Participation in the work of **international working groups related to RF spectrum management** within the framework of the CEPT and ITU and specialised working groups within the framework of BEREC and the EC are key for the positioning of the HR and the protection of national interests. Participation in the work of the RSC and the RSPG, bodies competent for the harmonisation of the RF spectrum and the adoption of EU-wide RF spectrum management policies is espe-

cially noteworthy. Within the framework of the above bodies, HAKOM intends to continue intensified activities for the removal of interferences in the 470-694 MHz as well as the FM radio (87.5-108 MHz) and ensuring preconditions for the uninterrupted operation of the digital radio within the VHF III band. Within the framework of international cooperation, HAKOM will participate in international conferences and symposiums, as well as working groups connected with RF spectrum management and in the preparation of documents important for the regulation of the EU-wide radiofrequency spectrum use. This, among others, also refers to preparing European positions for the forthcoming World Radiocommunication Conference WRC2023 at which, among other things, the future of the UHF frequency band used for television broadcasting in Croatia will also be discussed. In addition, HAKOM will cooperate with neighbouring countries' administrations in relation to cross-border cooperation and harmonisation of the RF spectrum use and the exchange of experiences on RF spectrum management. The RF spectrum will be harmonised on the international level in accordance with international regulations and agreements. Where necessary, HAKOM's representatives will participate in coordination meetings with neighbouring countries' administrations and enter into implementing agreements relating to the use of the RF spectrum.

Participation in international meetings for removing interferences and interaction with international institutions competent for the area of radio communications is extremely important for eliminating long-standing interferences in the frequency bands for the FM radio and digital terrestrial television. HAKOM will continue to participate in the work of the Working Group on cross-border coordination (Good Offices) established by the Radio Spectrum Policy Group of the EC. It will also participate in international meetings, report on the status of interferences and seek further involvement of the competent bodies of the International Telecommunication Union (ITU), the Radio Regulations Board (RRB) and the Director of the Radiocommunication Bureau (BR) in resolving the problem of interferences in the segment of terrestrial broadcasting.

Domestically, HAKOM will cooperate with different ministries, agencies, institutes and other authorities to keep RF spectrum management effective and well-designed and ensure a stimulating environment for investments, innovation and market competition in the area of electronic communications. Cooperation will also continue with members of the academia and the industry on a consultative and educational level.

RF spectrum management activities in 2022				
No.	Activity	Result	Completion (quarter)	Fin. plan
1.	Verify the conditions from the 5G licence	RF spectrum use and meeting the prescribed conditions in accordance with the licence	IV.	N
2.	Head and organise the work of the 5G working group	Working group meetings and required documents prepared	ongoing	N, 3293
3.	Organise the "5G Day"	"5G Day"	III.	N, 3293, 3233
4.	Prepare technical parameters for the tender for radio broadcasters	Technical parameters for requested concessions	ongoing	N, 3233
5.	Allocate RF spectrum for mobile communications networks	RF spectrum use licences for mobile communications networks	IV.	N
6.	Harmonise RF spectrum internationally	Implementing agreements concluded with neighbouring countries and radio stations harmonised	ongoing	N, 3211
7.	Upgrade the GIS platform	Platform upgraded	ongoing	N, 3213, 4541
8.	Ensure technical preconditions for a further development of digital radio	Radio frequencies for digital radio and RF spectrum use licences for commercial operation issued in line with expressed interest	IV.	N, 3233
9.	Amend the Table of frequency allocations and RF spectrum allocation plans	Table of allocation and allocation plans	III.	N, 3238

10.	Issue licences for RF spectrum use pursuant to submitted applications	HAKOM's administrative acts	ongoing	N	21.	Implement Measuring operation — verification of mobile network coverage	Detailed measurement reports	ongoing	N
11.	Prepare calculations and annual invoices for the RF spectrum use pursuant to valid licences	Annual invoices for the RF spectrum use issued	ongoing	N	22.	Maintain control and measurement system	New measuring equipment for new technologies (5G) Measuring equipment calibrated	ongoing	N, 3232, 4541
12.	Upgrade the e-Licences service	New e-Licences services for satellite and air traffic communications e-Licences	IV.	N, 4541	23.	Construct a control and measuring station (CMS) on Bilogora	New control and measuring station	III.	N, 3239, 4212, 4221
13.	Issue compliance certificates	Certificates for radio stations that complied with conditions	ongoing	N	24.	Perform inspection supervisions	Supervision administrative acts	ongoing	N, 3211
14.	Plan and optimise radiocommunication networks	Efficient use of RF spectrum: – Improved coverage of existing networks – Conditions for operation of new networks ensured	ongoing	N	25.	Cooperate in international activities related to RF spectrum	Work in international bodies and expert groups Cooperation	ongoing	N, 3211
15.	Update radio interfaces	New radio interfaces	ongoing	N	26.	Remove international interferences	International meetings International interferences requiring additional coordination removed	ongoing	N, 3211
16.	Implement subordinate legislation in the area of RF spectrum management	Implementing regulations	II.	N					
17.	Regular radiofrequency spectrum control	Measurement reports on conducted measurements	ongoing	N					
18.	Control the levels of electromagnetic fields (EMFs)	GIS browser of radio stations and EMF measurements Measurement reports	ongoing	N					
19.	Implement Measuring campaign — Italian interference	Measurement report Reports for the removal of interferences	III. – IV.	N					
20.	Implement Measuring operation — WAS/RLAN in the 5 GHz frequency band	Detailed measurement reports	ongoing	N					

06

**DEVELOPMENT PROGRAMMES
AND THE NATIONAL BROADBAND
COMPETENCE OFFICE (BCO)**

The implementation of the projects under the Framework National Programme for the Development of Broadband Infrastructure in Areas Lacking Sufficient Commercial Interest for Investments (FNP) will continue in 2022, as well as HAKOM's role of the Competent Authority for the Framework Programme (CAFP).

The CAFP coordinates the implementation of projects and cooperation with other authorities within the system, in particular Intermediate Bodies levels 1 and 2 – the Ministry of Regional Development and EU Funds (MRDEF) and the Central Finance and Contracting Agency (CFCA). The CAFP will publish all activities related to the FNP implementation at <https://nop.hakom.hr/>.

In 2022, the CAFP will continue to monitor progress in the implementation of the announced commercial investments by operators. HAKOM as the national Broadband Competence Office will focus its activities on achieving the objectives of the Gigabit Society and the National Plan for the Development of Broadband Access 2021-2027.

Activities of development programmes and the BCO in 2022				
No.	Activity	Result	Completion (quarter)	Fin. plan
1.	Verify and approve Broadband Infrastructure Development Plans (BIDP)	Certificates of conformity of BIDP with FNP structural rules	I.	N
2.	Cooperate with ministries, agencies and business entities with regard to FNP implementation (MRDEF, MSTI, CFCA, operators)	Activities related to FNP implementation carried out	ongoing	N
3.	Provide technical assistance in the planning, implementation and monitoring of broadband networks building projects	Consultation and information provided to stakeholders	ongoing	N
4.	Inform beneficiaries on project statuses	Beneficiaries informed	ongoing	N,

5.	Participate in the work of the Operational Programme Competitiveness and Cohesion (OPCC) Monitoring Committee	Participation in the Committee meetings Monitoring progress in achieving specific OPCC objectives	ongoing	N, 3211
6.	Monitor the implementation of commercial interest	The report on the implementation of the commercial interests of operators prepared	IV.	N
7.	Report to the European Commission on FNP implementation	Written report on FNP implementation	IV.	N, 3237
8.	Activities of the Broadband Competence Office (BCO)	BCO website developed Coordination of bodies included in BCO activities	I. ongoing	N
9.	Consult and inform citizens and legal persons with regard to broadband internet access development	Consultation conducted and information provided	ongoing	N
10.	Cooperate with stakeholders with regard to broadband development	Cooperation realised Participation in the work of expert groups Meetings	ongoing	N
11.	Cooperate with international bodies and participate in meetings of the European BCO Network and in the work of other international groups	Cooperation realised and the level of expertise raised Meetings	ongoing	N, 3211, 3233



/Administration
/Human Resources
/Legal
/Accounting
/Finance
/Marketing
/Publicity
/Promotion
/Research
/Business
/Development
/Engineering
/Manufacturing
/Planning



07

HAKOM'S OTHER ACTIVITIES



Regulatory framework

EU legislation is subject to frequent changes of acts. With regard to the changes in the electronic communications, postal and rail services markets, one of HAKOM's strategic activities will be to carry out a detailed analysis of such EU acts from the perspective of the interests of the HR and the stakeholders in the HR market. The results of the analysis will be embedded in the proposal of the positions adopted by the Government of the HR based on which further negotiations in the legislative procedure will be conducted. In March 2020, a working group of the line ministry was formed, competent for drafting the new Electronic Communications Act transposing Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (OJ L 321, 17.12.2018) into the Croatian legal system. HAKOM's representatives form part of the working group. The adoption of the new Electronic Communications Act is expected by the end of 2021. HAKOM's activities will also focus on participation in the legislative procedure for the adoption of EU regulations.

HAKOM will continue its cooperation with competent ministries with regard to the transposition of the acquis and adjust certain sectoral rules upon need. Primarily by participating in BEREC's activities, HAKOM will also continue to monitor the development of the future legislative framework at the EU level concerning the potential regulation of digital platforms within sectoral regulations. Accordingly, future acts will be analysed in detail and the results obtained from such analyses will be included in the proposal of positions adopted by the Government of the HR.

Publicity of operations

The publicity of operations is defined by two levels: the legislative level and the level that makes HAKOM's activities transparent or more efficient for the users of its services. The legislative level stipulates the submission of the Annual Activity Report for the previous year and the Financial Statement to the Croatian Parliament and the Government of the HR; the adoption and publishing of the Annual Work Programme and the Financial Plan for the following year in addition to the prior public consultation for all of those having a large impact on the market; the publication of adopted decisions; the publishing of the adopted rulings, frequency plans and the like. In addition to the legally prescribed procedures, attention is also paid to disclosing any other information important to end-users or business entities, primarily on the internet: the publishing of news, advice and warnings (including through the social media), with the possibility of a daily telephone contact for users or contacts via other electronic means (the "[Ask Us](#)" application, [email](#), social networks).

Information access

HAKOM, as a public authority, enables the users to exercise the right of information access and the re-use of information in accordance with the provisions of the Act on the Right of Access to Information – by submitting oral or written requests. Information access is enabled by the timely publishing of information on HAKOM's activities at HAKOM's official website and by providing information based on submitted requests. In this way, HAKOM fulfils the principle of transparency and publicity of its operations as well as the timeliness, completeness and accuracy of information published. HAKOM will continue to publish information relevant for its work and organisation regularly, in particular the information impacting user interests.

Personal data protection

In activities undertaken within the framework of its legal powers, HAKOM processes personal data of data subjects (users and applicants) in accordance with the General Data Protection Regulation (Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC), other relevant data protection regulations and HAKOM's Personal Data Protection Policy. HAKOM constantly undertakes appropriate measures for the protection of personal data that ensure appropriate security of the personal data, including protection against unauthorised or unlawful processing and against accidental loss, destruction or damage.

In accordance with the Electronic Communications Act, HAKOM will continue to monitor the implementation of obligations under the Directive on e-privacy (Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector, as amended by Directive 2009/136/EC), which are transposed into the provisions of Title XII of the ECA. In addition, taking into consideration the beginning of negotiations with the European Parliament with regard to the adoption of the new e-privacy Regulation, repealing the mentioned e-privacy Directive, HAKOM's activities are expected to intensify in monitoring the mentioned negotiations and the anticipated adoption of the new Regulation.

Court proceedings

Court proceedings in which HAKOM will participate as a party in the proceedings will include administrative disputes initiated against HAKOM's final decisions, misdemeanour proceedings initiated by HAKOM against natural and legal persons due to the violations of legislative provisions falling within HAKOM's competence and enforcement proceedings against legal and natural persons for the non-payment of fees for the right of use (state budget) and for HAKOM's work, and pre-bankruptcy and bankruptcy proceedings where HAKOM applied for its claims against a debtor upon whom pre-bankruptcy or bankruptcy proceedings have been initiated.

Competence development and business processes improvement

Employees are HAKOM's largest and the most important resource. In 2022, special attention will be paid to the creation of organisational culture and environment in which competence development is considered to be an added value contributing to the organisation's progress. With this aim, HAKOM will continue to develop the competences of its employees and promote lifelong learning and development. Employee training, their education at graduate and postgraduate studies will be further pursued and the personal career development system will be completely implemented.

As a pilot entity, HAKOM will continue to participate in the project of the Ministry of Justice and Administration entitled the "Development of a competency framework for public administration employees" and completely build a business and professional competency system with the goal to improve the expert, efficient and professional provision of services to users.

HAKOM is continually working on improving and advancing its operations by focusing on service user satisfaction. Its business policy is focused on the opportunities for improvement and readiness for change. With the aim of a further optimisation of HAKOM's own processes and the possibilities to achieve improvements in its operation, a **Business Process Management** (BPM) methodology will be integrated as a systematic approach to improving operations, based on process modelling, measurement, analysis, improvement and management.

The integration of the regulatory impact assessment system began in 2020, and by the end of the year funds were received within the framework of the new cycle of the Technical Support Instrument (TSI) "21HR30 Enhancement of implementation of regulatory impact assessment system in Croatian Regulatory Authority for Network Industries merged with 21HR31 Support to effective implementation of ex-post regulatory impact assessment (RIA) on a national level". The project

completion in 2022 will include an analysis of the prepared guidelines, proposals for improvement as well as proposals for the setting up of the RIA process at the level of HAKOM as a whole.

A **Project Management** (PM) process will be set up, which will enable the instantaneous availability of data on the project scope, milestones, costs, participants and the status of project activities. The PM will ensure that the data are user-friendly, understandable, comprehensive, updated and accurate.

e-Agency

The development of external user-oriented services within the e-Agency programme will continue with the aim of improving, enhancing and modernising the current business processes at HAKOM. In addition to the introduction of office management in accordance with regulations, it is also necessary to introduce and implement new internal processes and systems as well as to improve the current services. For this reason, **new functionalities** will be added to the **office management programme** to achieve higher efficiency and better monitoring of business organisation processes. Three new services for the users of HAKOM's services will be set up, i.e. the three types of e-Licences: for mobile, fixed and amateur radio stations.

Implementation of the new ERP system: With the aim of enhancing its organisational and financial efficiency, HAKOM plans to implement the new ERP system, which also includes the integration of a new accounting programme. It is expected to achieve a more efficient posting and financial reporting process and result in improved employee performance and a more efficient financial management and control.

Digital archiving of cases: With the goal of a complete digitalisation of operations, HAKOM will implement the functionalities of digital archiving of cases, which will contribute to financial savings as well as saving time and paper.

HAKOM activities in 2022				
No.	Activity	Result	Completion (quarter)	Fin. plan
1.	Participate in drafting proposals of positions in adopting EU regulations	Proposals of positions of the HR	ongoing	N
2.	Transpose the acquis	Drafting regulations	ongoing	N, 3211
3.	Participate in the legislative procedure of adopting EU regulations	Drafting regulations	ongoing	N, 3211
4.	Harmonise regulations	Proposals of amendments to regulations	ongoing	N
5.	Prepare the annual report and financial statement for 2021 and submit them to the Croatian Parliament	Annual report and financial statement for 2021	II.	N
6.	Prepare the annual work programme and the financial plan for 2023	Annual work programme and the financial plan for 2023	IV.	N
7.	Adopt the Ordinance on payment of fees for carrying out of tasks of HAKOM	Ordinance on payment of fees	IV.	N
8.	Enable information access	Information pursuant to the Act on the Right of Access to Information	ongoing	N
9.	Protect personal data processed by HAKOM in the capacity of controller	High level of protection of personal data	ongoing	N

10.	Participate in court proceedings	Preparing acts and depositions: motions for indictment, misdemeanour warrants, lawsuits, appeals, responses to lawsuits and appeals and motions for enforcement. Representation before courts, administrative and other state authorities	ongoing	N
11.	HAKOM employee education	New competences	ongoing	N, 3213
12.	Implement the Regulatory Impact Assessment (RIA) system	RIA implemented	IV.	N
13.	Implement the Project Management (PM) process	Processes set up	II.	N
14.	Continue with the pilot project "Development of a competency framework for public administration employees"	Development of the competency framework	IV.	N, 3238
15.	Develop and implement the personal career development system	Module integrated	IV.	N, 3238
16.	Implement the new ERP system	Implementation of the new ERP system initiated	III.	N, 4541

ABBREVIATIONS

AEM – Agency for Electronic Media

ARRSM – Act on the Regulation of Rail Services Market and the Protection of Passenger Rights in Rail Transport

BCO – Broadband Competence Office

BEREC – Body of European Regulators for Electronic Communications

BR – Radiocommunication Bureau

CADPN – Central Administrative Database of Ported Numbers

CAFP – Competent Authority for the Framework Programme (for the development of broadband internet access)

CBS – Croatian Bureau of Statistics

CCA – Croatian Competition Agency

CEPT – European Conference of Postal and Telecommunications Administrations

CERP – European Committee for Postal Regulation

CFCA – Central Finance and Contracting Agency

CMS – Control and Measuring Station

COCOM – Communications Committee

DA – European Commission delegated act on single voice call termination rates

DAB – Digital Audio Broadcasting

DVB-T2 – Digital Video Broadcasting –Terrestrial2

EaPaReg – Eastern Partnership Electronic Communications Regulators Network

EC – European Commission

ECA – Electronic Communications Act

ECI – Electronic Communications Infrastructure

ECN – Electronic Communications Network

EFIS – ECO Frequency Information System

EMERG – Euro-Mediterranean Regulators Group gathers regulators from the Euro-Mediterranean countries

EMF – electromagnetic field

ENISA – European Network and Information Security Agency

ENRRB – European Network of Rail Regulatory Bodies

EOI – Equivalence of Input

ERP – Enterprise Resource Planning

ERGP – European Regulators Group for Postal Services

EU – European Union

FM – Frequency Modulation

FNP – Framework National Programme (for the development of broadband internet access)

FTTH/B/DP/C – Fibre to the Home/Building/Distribution Point/Cabinet

GIS – geographic information system

GIS ECI – geographic information system of the electronic communications infrastructure and other associated facilities

HAKOM – Croatian Regulatory Authority for Network Industries

HFC – Hybrid Fibre-Coaxial network

HP – Hrvatska pošta d.d.

HR – Republic of Croatia

HT – Hrvatski Telekom d.d.



IoT – Internet of Things
IRG – Independent Regulators Group
IRG-Rail – Independent Regulators Group – Rail
ITU – International Telecommunication Union
ITU-R – International Telecommunication Union – Radiocommunications
MESD – Ministry of Economy and Sustainable Development
MSTI – Ministry of the Sea, Transport and Infrastructure
MPPCSA – Ministry of Physical Planning, Construction and State Assets
MRDEF – Ministry of Regional Development and EU Funds
MST – Margin Squeeze Test
MVNO – Mobile Virtual Network Operator
M2M – Machine to Machine
nCERT – national Computer Emergency Response Team
NEB – National Enforcement Body (national authority for the enforcement of regulations on the rights of passengers in rail transport)
NIS – Network and Information Security
NS – Network Statement
NAP – National Action Plan for the use of the 470-790 MHz frequency band
OPCC – Operational Programme Competitiveness and Cohesion

PSA – Postal Services Act
PWD – Persons with a disability
PM – Project Management
RA – Railway Act
RF – Radiofrequency
RFS – Regulatory Financial Statement
RIA – Regulatory Impact Assessment
RRB – Radio Regulations Board
RSC – Radio Spectrum Committee
RSPG – Radio Spectrum Policy Group
SGA – State Geodetic Administration
SMP – Significant Market Power operator
SPSD – State Plan for Spatial Development
UHF – Ultra High Frequency: radiofrequency band spread in the range between 30 MHz and 300 MHz
UPU – Universal Postal Union
VHCN – Very High Capacity Network
VHF – Very High Frequency – electromagnetic waves in the radiofrequency band from 30 MHz to 300 MHz
WACC – Weighted Average Cost of Capital (for reasonable rates of return on invested capital)
WAS/RLAN – Wireless Access System/Radio Local Area Network
WLAN – Wireless Local Area Network

