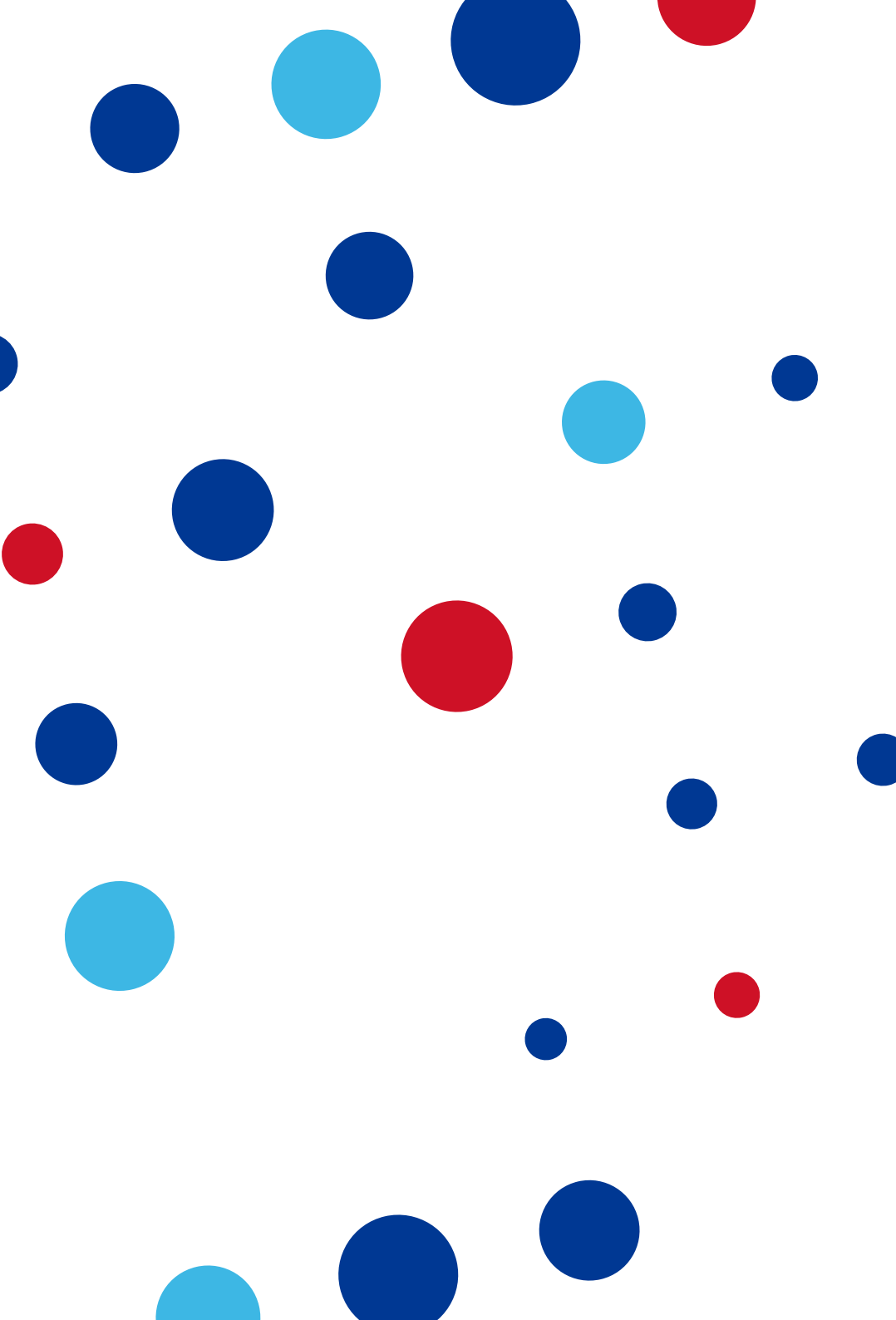


Annual Report 2021

1 Profile of the association	3	8 Turrís	53	13 Structure of the Association	85
		8.1 Hardware development	54	13.1 Member base	86
2 Foreword from the Chairman of the Board of Directors	5	8.2 Software development	54	13.2 Bodies of the Association	89
		8.3 Marketing	55		
3 Foreword from the Chief Executive Officer	7	8.4 Business cooperation	55	14 Human resources	92
				14.1 Number of employees	93
4 The .CZ domain	9	9 CZ.NIC Labs	56	14.2 Employee structure	94
4.1 Status and development of number of registrations	10	9.1 ADAM	57		
4.2 Registrars	14	9.2 BIRD	58	15 Selected financial indicators	96
		9.3 Datovka	58	15.1 Balance sheet	97
5 Infrastructure	20	9.4 Knot DNS and Knot Resolver	59	15.2 Profit and Loss Statement	98
5.1 Data centres	21	9.5 Tablexia	61		
5.2 Technical aspects of domain administration	23	10 Education and awareness	62	16 List of suppliers	99
5.3 Support for internet infrastructure	32	10.1 Communication with the public	63		
5.4 Support for basic internet infrastructure	37	10.2 Popularisation series	64	17 Data on facts between the date of the financial statements and the General Meeting	101
		10.3 The CZ.NIC Academy educational centre	65		
6 The CSIRT security team	39	10.4 Conference	67	18 Auditor's report	103
6.1 CSIRT.CZ - National CERT Team of the Czech Republic	40	10.5 CZ.NIC Edition	68		
6.2 CZ.NIC-CSIRT	44	11 Cooperation, support and partnerships	71	19 Seat and contact details	115
		11.1 Cooperation in the Czech Republic	72		
7 MojelD	46	11.2 Social responsibility (supporting third parties and projects)	75		
7.1 Security of the MojelD service	48	11.3 Cooperation abroad	75		
7.2 Private sector and public administration partnership services	49	12 Grant projects	79		
7.3 Users of MojelD	50	12.1 Involvement in European cooperation projects	80		
7.4 MojelD as a tool for cross-border authentication in Europe	52	12.2 Engagement in national and other projects	84		



1 Profile of the association



CZ.NIC is a special interest Association of legal entities, an open and independent organisation whose main activity is the administration of the register of the top-level national .CZ domain, as well as ensuring the operation thereof.

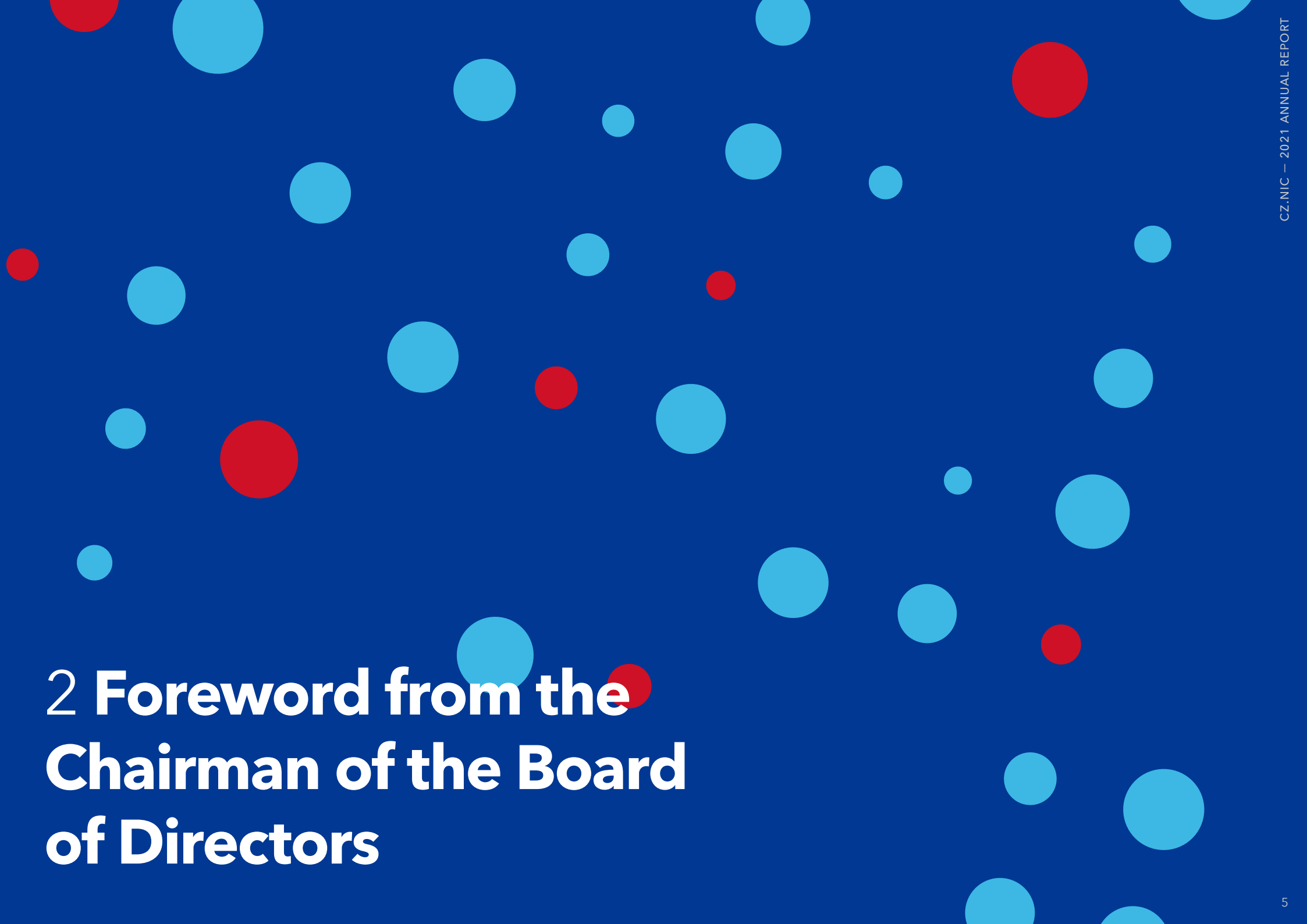
The Association's activities in the field of security are also very important, involving both the CSIRT.CZ national security team and other security projects.

In addition to these activities, the Association is dedicated to research, development and awareness in the field of the internet, internet protocols, network traffic and new technologies in general. The CZ.NIC Association ranks the support and development of the internet community both in the Czech Republic and abroad among its long-term goals.

The CZ.NIC Association was established in May 1998, mainly due to the growing importance of the internet and, thus, the number of its users and those interested in registering domain names in ccTLD .CZ. At the end of 2021, the Association had 120 members divided into three chambers.

At present, the Association represents a stable and trustworthy entity capable of ensuring the reliable operation of the Czech national domain .CZ. Since 2013, the CZ.NIC Association has been the holder of the ISO 27001 certification, confirming the safe handling of information, including setting appropriate rules and procedures.

For domain name holders and registrars, as well as other entities that use the internet for their work and leisure time, the Association is a reliable partner that not only provides domain name administration, but also safeguards internet security and is involved in socially beneficial activities – both in the form of projects and awareness or educational activities.



2 Foreword from the Chairman of the Board of Directors

Ladies and Gentlemen,

Allow me to present the Annual Report of our Association for 2021.

Last year, our entire society suffered the consequences of the global COVID-19 pandemic. Thanks to the dedicated work of the management and our employees, we were able to run all the services of the Association properly and, despite various constraints, we met both the financial and activity plans for 2021.

As stated in the adopted concept of the Association, the main activity is the administration of the national .CZ domain, which we have been doing flawlessly for a long time. However, we are not resting on our laurels; we are trying to upgrade and innovate not only our physical infrastructure, but also our software and services, and we place a special emphasis on cybersecurity. Despite the threat of stagnation in recent years, the number of domains continues to grow, with almost 4% of domains added last year.

In addition to the administration of the national domain, our Association also operates the internet infrastructure and generally beneficial services for the benefit of the local community. The community can benefit from a number of projects that offer useful services. I will mention at least a few of them: the Turris secure router and services based on it, the mojeID (myID) authentication system linked to the National Identity Portal (now also in the highest secure authentication mode), the globally widespread BIRD routing daemon, the Knot DNS server, the Datovka application, and the operation of CSIRT.CZ in the mode of the National CERT of the Czech Republic under the Cyber Security Act.

We do not rely solely on internal sources of funding for our projects; we have managed to secure grants and subsidies for many of them, of which I would mention at least the eIDAS, RegID, PROKI, Safer Internet, WiFi4EU, Sparta, Threat Arrest and CyberExchange projects. We also try to educate both professionals and the general public about internet technologies, especially about their security aspects - we publish books in the CZ.NIC Edition, organise our own seminars and conferences (for example, CSNOG, Internet and Technology), train people in our CZ.NIC Academy, and participate in the creation of movies and series (for example, the film "V síti" (Caught in the Net) and the series "#martyisdead"; both works received the Czech Lion award).

I would like to thank our registrar partners for the care they take with end domain holders. I also thank the employees of the Association, whose excellent work results in the satisfaction of users with our services and brings us a good reputation at home and abroad.

All the important information about the Association and its activities in 2021 is provided in the following chapters of our annual report. I am convinced that we are able to fulfil our vision and the adopted concept of the Association, and we would like to continue to be your reliable and trustworthy partner.

RNDr. Karel Taft, MBA - Chairman of the Board of Directors



3 Foreword from the Chief Executive Officer

Ladies and Gentlemen,

Like 2020, 2021 was also heavily influenced by the COVID-19 pandemic. Unfortunately, the optimistic scenarios that the disease would subside very quickly did not materialise, and so a lot of activities were still carried out primarily online. This was also one of the reasons why the number of registered domains continued to grow quite strongly.

A large number of people also needed to communicate with the state remotely. We tried to accommodate this, and we put our utmost effort into the development of the mojID project. At the beginning of the year, we were accredited for the "high" level of assurance, making mojID the first service to offer both important levels of assurance. We also tried to accommodate users who prefer the mobile app over hardware FIDO2 keys when logging in and accredited our MojID Klíč (MyID Key) app to the "substantial" level of assurance. I believe that it is not only thanks to these modifications that mojID maintains its attractiveness despite the advent of BankID. Another direction of development we took was the possibility of using mojID outside of the Czech Republic, using the international eIDAS gateway. Although this gateway is operated by the Association, mojID has not yet been notarised for such use at the European level. We have already started this process and expect to complete it next year. By the end of 2021, we had also enabled foreign identities to access our Domain Browser, using the abovementioned eIDAS gateway.

Some excellent news and further recognition for our development team was the further deployment of our registration system for a foreign national domain. This year it was Bosnia and Herzegovina, i.e. the .ba domain.

All of our other projects continued to run similarly. It is very difficult to choose a specific one, because all of them followed the approved plan and concept. However, I was personally very pleased with the deployment of our authoritative Knot DNS daemon at another root zone operator. This year it was the B root servers, which are managed by the University of Southern California's Department of Computer Science. This is yet another confirmation of the quality of this software.

I would like to highlight one more area in which the Association was extremely successful, although it is a bit outside the realm of our technological focus. Two audiovisual works, the creation of which we supported - the series #martyisdead and the movie Caught in the Net - were awarded the Czech Lion statuette.

Life does not only bring good things. In 2021, we were very surprised by a strong tornado, which raged mainly in the Břeclav and Hodonín regions and inflicted relatively large devastation. To mitigate the consequences of this disaster, the Association donated CZK 1 million.

Despite the natural disasters, I believe you will agree with me that 2021 was another successful year for the Association. And if you are still hesitating, I hope the following pages will convince you.

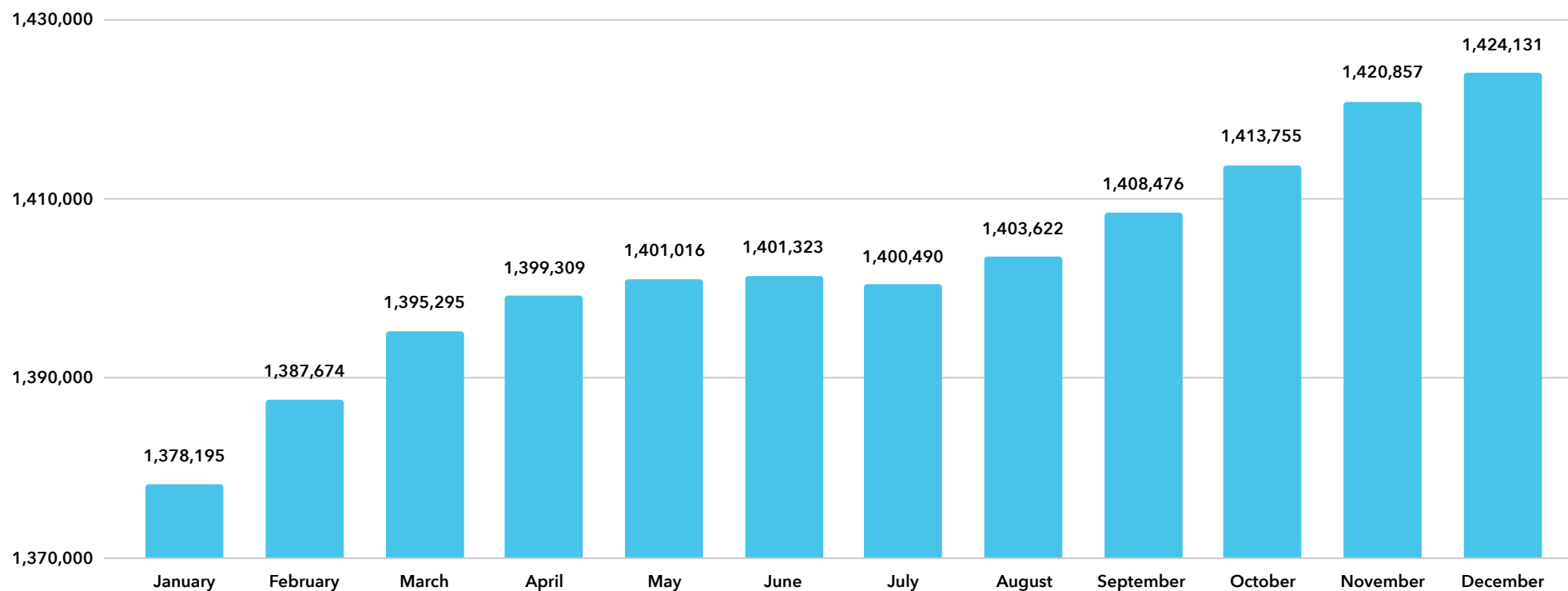
I wish you pleasant reading.

Mgr. Ondřej Filip, MBA - CEO

4 The .CZ domain

4.1 Status and development of number of registrations

Total number of registered .CZ domain names in 2021



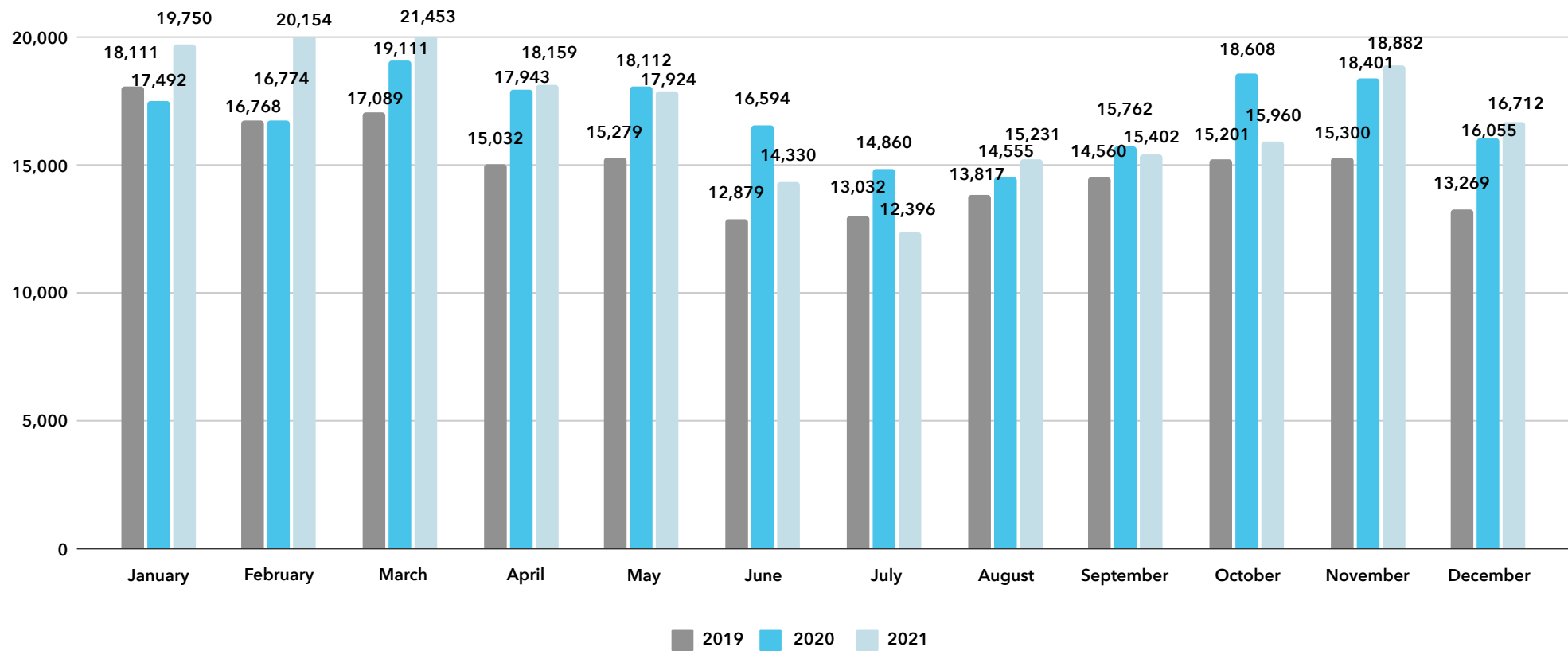
* The data in the chart is always as of the last day of the month; the increase in the number of domain names is calculated from 1 January to 31 December.

During 2021, the number of domains in the .CZ zone increased by 52,565 domain names. In recent years, an accelerated growth in the number of domains has been observed, probably as one of the effects of the COVID-19 pandemic, which brought many activities of everyday life online.

This trend thus also continued in 2021: The number of domains increased to more than 1.42 million registered .CZ domains, which means a 3.8% year-on-year growth.

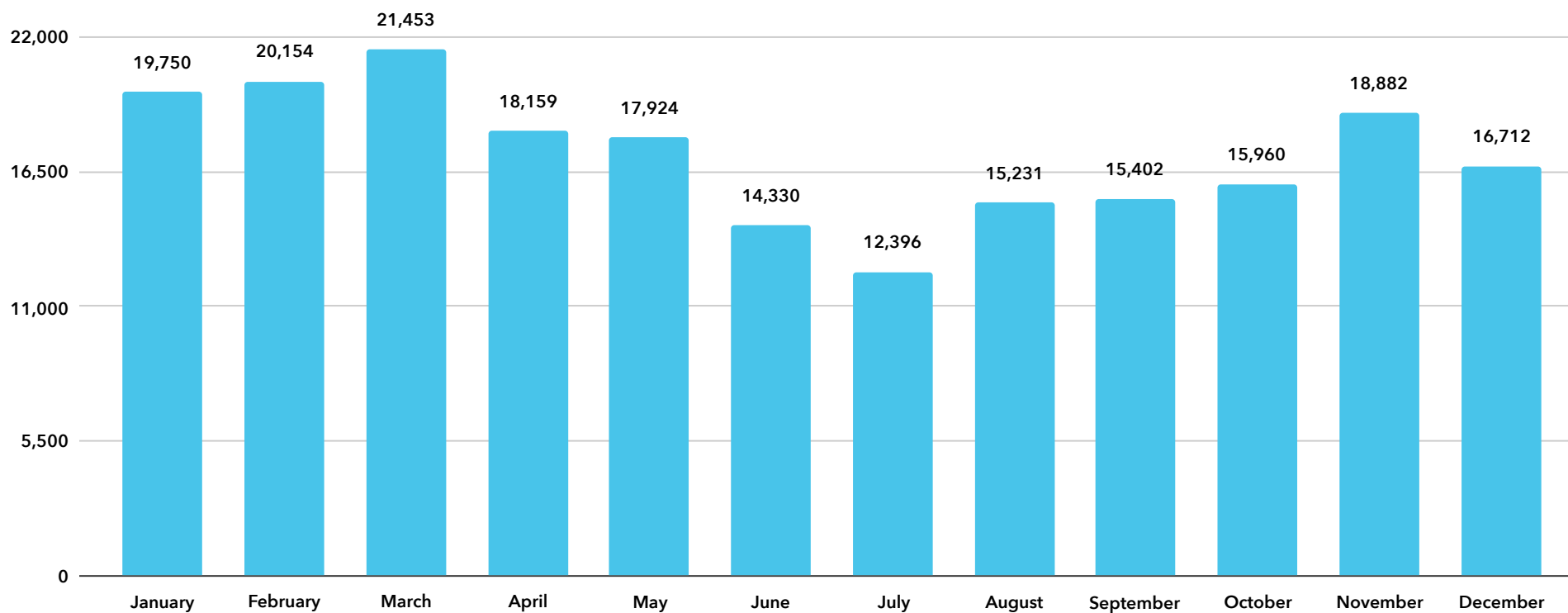
The following histogram shows the monthly numbers of domain registrations over the last three years. In 2021, the largest increases (in January–March and November–December) coincided with the pandemic waves in the Czech Republic.

Number of domain registrations from 2019 - 2021

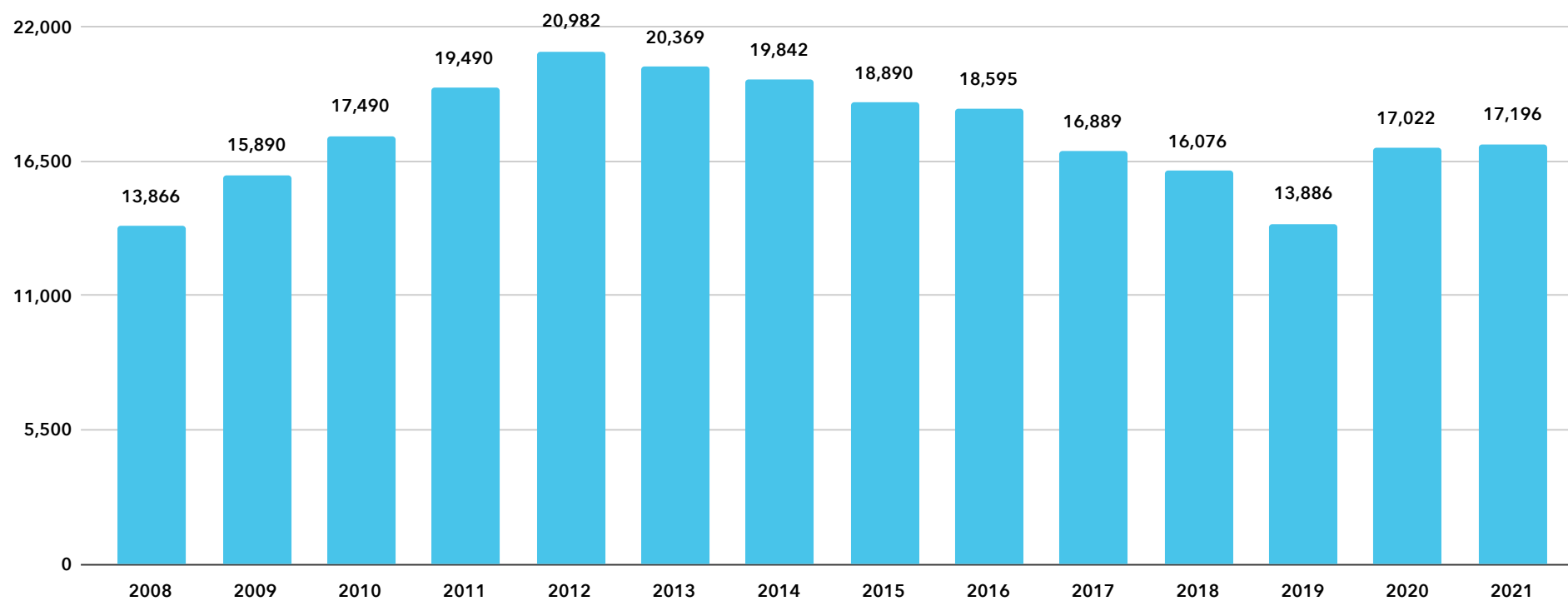


In 2021, an average of **17,196 new domain names** were registered **every month**. The increase in the number of registrations is similar to the previous year.

Number of newly registered .CZ domain names in 2021



Development of the average monthly number of new registrations since 2008



4.2 Registrars

The system of .CZ domain administration is based on a distributed principle in which the registration of domain names is carried out by **contractual partners of the CZ.NIC Association - registrars**. CZ.NIC acts towards them in a similar way to a wholesale partner, but also provides the technical aspects and functionality of the .CZ top-level domain.

At the beginning of 2021, the registrars IGNUM s.r.o. and Stable.cz s.r.o. merged, and now they operate under the name Webglobe, s.r.o. (with the same address and Company ID number as the original IGNUM s.r.o.).

In 2021, Lexsynergy Limited from the UK became a new registrar (from 1 August 2021).

As of the end of 2021, a **total of 45 companies**, 26 of which were domestic and 19 foreign, had concluded a **registrar contract with the Association**. This number of entities offers a broad choice for the end user and also ensures sufficient competition.

4.2.1 Overview of .CZ domain name registrars

List of all accredited registrars as of 31 December 2021

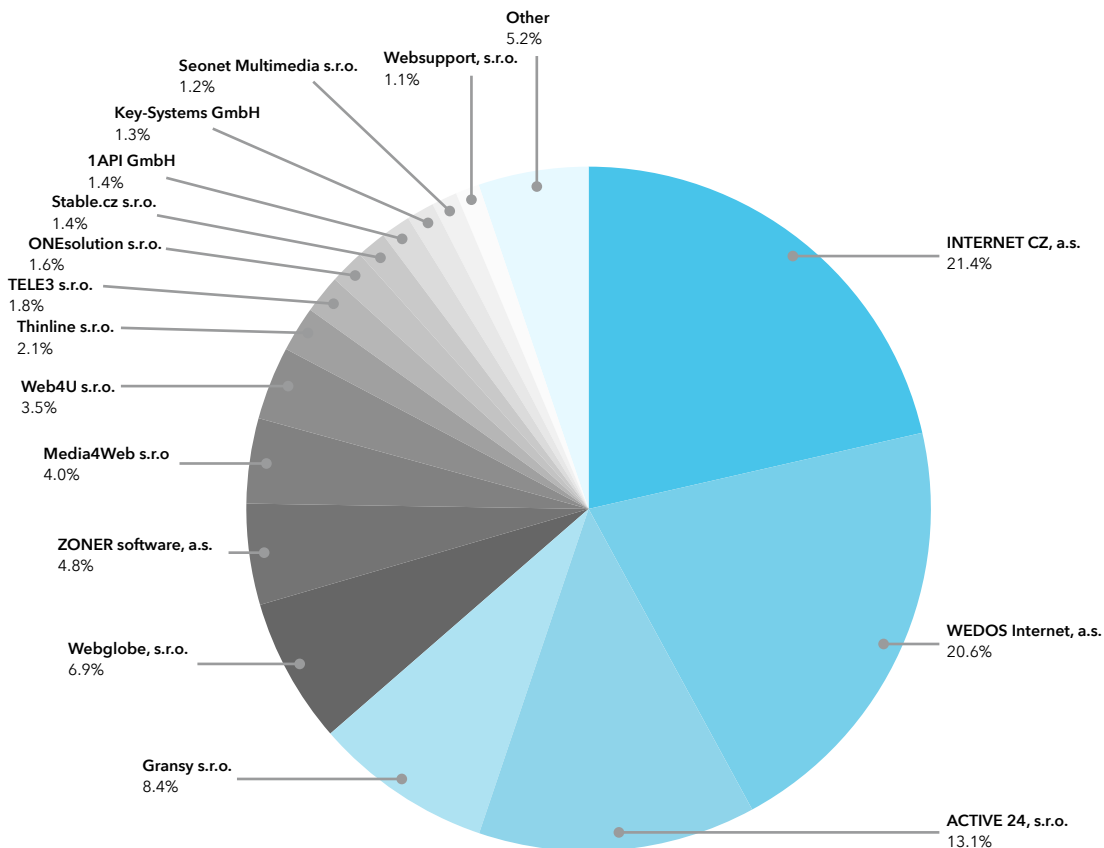
1API GmbH (DE)	MIRAMO spol. s r.o.
ACTIVE 24, s.r.o.	NAMESHIELD SAS (FR)
AERO Trip PRO s.r.o.	nexum Trilog a.s.
Ascio Technologies, Corp.	Com Laude (UK)
Danmark (DK)	ONE.CZ s.r.o.
ASPone, s.r.o.	ONEsolution s.r.o.
e-BAAN Net s.r.o.	Hosting Concepts B.V. (NL)
CORE Association (ES)	OVH, Sas (FR)
O2 Czech Republic a.s.	PIPNI s.r.o.
Dial Telecom, a.s.	Safenames Ltd. (UK)
DomainProfi GmbH (DE)	Seonet Multimedia s.r.o.
Gandi SAS (FR)	Seznam.cz, a.s.
Gransy s.r.o.	TELE3 s.r.o.
Instra Corporation Pty Ltd (AU)	THINline s.r.o.
INTERNET CZ, a.s.	united-domains AG (DE)
InterNetX GmbH (DE)	Variomedia AG (DE)
Corporation Service Company (Singapore) Pte Ltd (SGP)	Web4U s.r.o.
Key-Systems GmbH (DE)	Webglobe, s.r.o.
KRAXNET s.r.o.	Websupport, s.r.o. (SK)
Lexsynergy Limited	WEDOS Internet, a.s.
MarkMonitor Inc. (US)	ProfiHOSTING s.r.o.
Media4web, s.r.o.	ZONER software, a.s.

4.2.2 Major domain name registrars

The most important registrar, according to the number of administered domains, was the same as last year: INTERNET.CZ, a.s., followed closely by WEDOS Internet, a.s., and then by ACTIVE 24, s.r.o., Gransy, s.r.o. and Webglobe, s.r.o.

Number of domains by registrars

The chart shows registrars with a market share of over 1%.



4.2.3 Certification of Registrars

Launched in the middle of 2011, the certification project has the goal of making it easier for end users (i.e. parties interested in a new registration, as well as existing domain name holders) to find their way amongst the high number of registrars, particularly regarding their portfolios and the quality of service they offer. The certification methodology was prepared **in cooperation with registrars and the APEK (Association of E-commerce)**.

Registrars which are interested in participating in the programme can always receive the *Certified Registrar* logo for the period of one year.

From the initial 9 registrars involved in voluntary certification in 2011, their **number has increased to 10**. Therefore the end customer can enjoy, in particular, the constantly improving quality of services offered.

At the end of 2021, seven registrars met the criteria to receive five stars. For a long time, there has not been a registrar with only three stars among the certified registrars.

The service quality of registrars, reflected by the number of stars assigned

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
*****	3	6	8	9	10	10	9	9	9	8	7
****	3	5	4	3	2	2	3	3	3	3	3
***	2	1									
**	1										

4.2.4 Cooperation with registrars

In accordance with its main activities and long-term objectives, the CZ.NIC Association aims to promote and support domain registration under the top-level .CZ domain. Given the distributed method used for the administration of the national domain, the CZ.NIC Association has limited options for addressing potential domain name holders through direct marketing.

Therefore, a **co-marketing programme** was established, in which (provided the prescribed conditions are met) CZ.NIC contributes to the implementation of communication campaigns of registrars aimed at promoting the registrations of domain names in ccTLD .CZ. The amount of the contribution from CZ.NIC depends on the size of the registrar, the volume of the campaign, and compliance with other factors, such as the use of the mojID service with connection to NIA (which, among other things, influences the correctness of data in the register and the protection thereof) or domain security through DNSSEC, which are used by CZ.NIC to motivate the registrars to expand these technologies.

Also thanks to the co-marketing programme, the **Czech national domain .CZ is popular among users and is well and often visible**, for example on outdoor advertising. The high level of popularity of the programme is demonstrated by the number of registrars involved, as well as by the volume of funds used. In 2021, the programme included 14 registrars, to which the CZ.NIC Association paid a total of CZK 10,757,592.

In 2021, the cooperation was further extended to include a **discount programme for registrars**. The purpose of this programme was to raise users' awareness of the mojID service and the possibilities of its use, especially as a means of electronic identification that can be used to access public administration services (**linking mojID with NIA**) and, at the same time, as a tool for the protection of personal data. Twenty-eight registrars were involved, and the Association supported this programme with a financial amount of CZK 220,840.

4.2.5 Resolving disputes over domain names in ccTLD .CZ

It takes about three years to resolve a dispute in a general court, unless there are complications – for example, in the manner of deciding on a resolution; then you can add another year or two.

The Association thus sought an alternative option for resolving disputes more quickly and for ensuring that the solution was respected, stable and effective. This is why the **Alternative Dispute Resolution (ADR) system** was established in the summer of 2004. Until 2015, it took the form of arbitration, in which it was possible to file a dispute concerning the

domain name against its holder with the Arbitration Court attached to the Economic Chamber of the Czech Republic and the Agricultural Chamber of the Czech Republic. Throughout the ten years of the existence of this alternative dispute resolution system, the Arbitration Court has heard more than one hundred disputes.

Following a decision by the Supreme Court, in March 2015 a new ADR method was introduced, the basic principles of which are essentially identical to those that have been and continue to be used successfully in disputes over generic TLD (UDRP) or domain names registered in the .EU top-level domain. On the basis of a concluded memorandum, the platform where the disputes are conducted is still administered by the Arbitration Court attached to the Economic Chamber of the Czech Republic and the Agricultural Chamber of the Czech Republic, which is one of the three permanent arbitration courts that exist in the Czech Republic. An undeniable advantage is that dispute resolution is conducted online through the Arbitration Court platform.

However, the **ADR system** used since 2015 **is not an arbitration process** that complies with the arbitration law, a fact that is also reflected in the terminology used. **The system is based on contractual arrangements and only a domain name transfer or cancellation can be claimed.** Other claims, e.g. for compensation for damages, need to be filed in a court of competent jurisdiction. The issued decision is not an enforcement title for the execution of the decision; the ongoing dispute, according to the new ADR system, does not constitute an obstacle to *lis pendens* (i.e. proceedings pending in the same matter), and a resolved dispute does not constitute an obstacle to the matter decided. The same claims can, therefore, be forwarded to a general court during the proceedings or afterwards.

More than six years of using the new ADR system shows that this dispute resolution system has been accepted and that its popularity is stable:

Year	Number of disputes initiated in ADR
2015	7
2016	20
2017	22
2018	22
2019	29
2020	29
2021	22

Of all the general courts, the Municipal Court in Prague is the one that most often decides disputes over domain names, especially in view of the fact that it is a specialised court for, inter alia, competition and intellectual property disputes, which are the most frequently violated rights in the case of domain disputes. In conclusion, it should be noted that the majority of claimants, the owners of the rights, leave the Arbitration Court attached to the Economic Chamber of the Czech Republic and the Agricultural Chamber of the Czech Republic with their claim being satisfied, and they usually receive the Expert's decision within three months of the commencement of the dispute resolution.

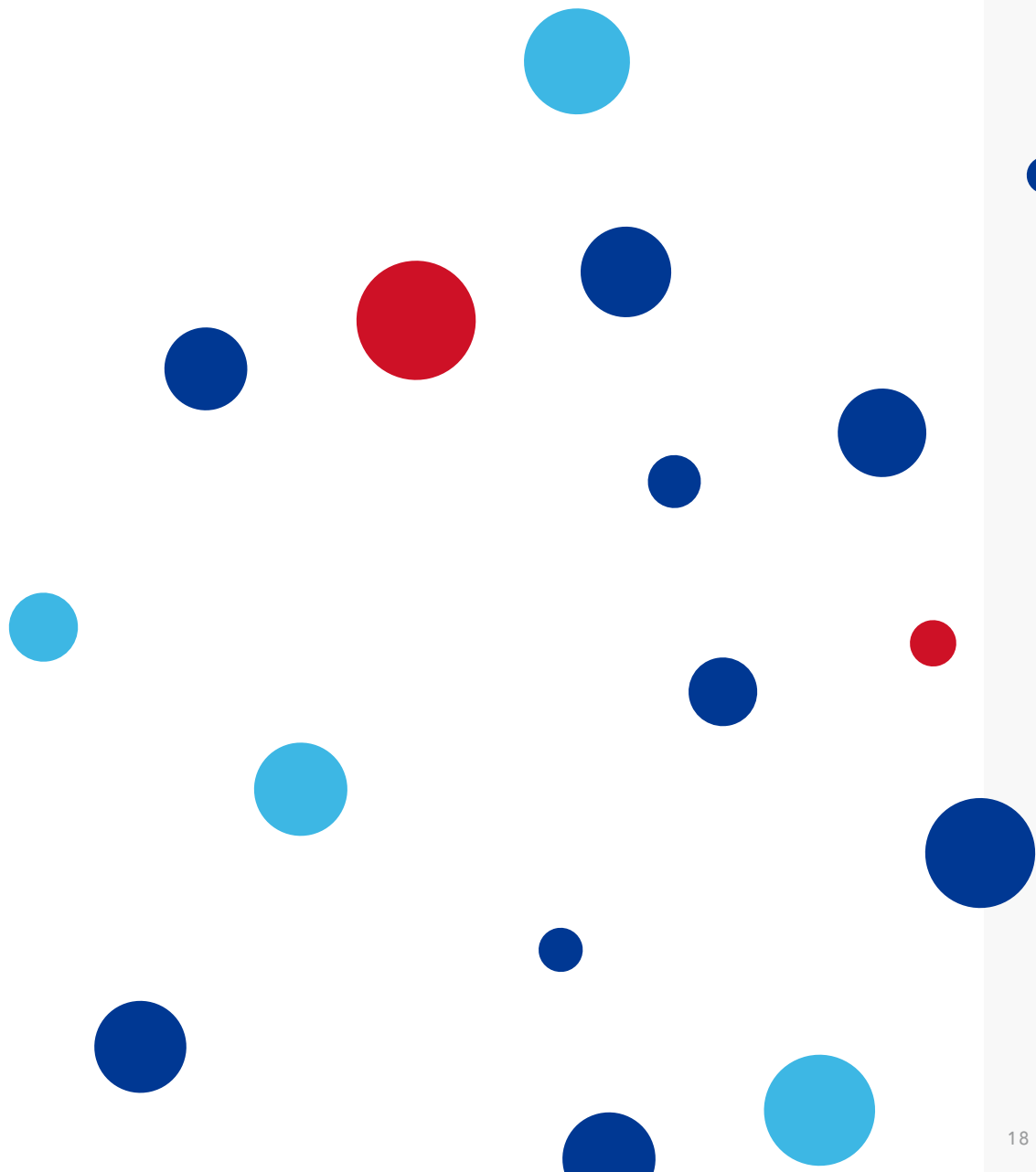
4.2.6 Customer support

Customer support being available **24/7** is an integral part of securing the operation of the .CZ domain.

The objective of customer support is especially **to provide the best possible care to domain name holders**, particularly in situations where a domain name is to be cancelled or transferred, or where contact details change. Assistance for *mojeID* service users and their validation is also an integral part of customer support.

Customer support prides itself on a proactive approach to domain name holders. It aims to eliminate the possibility of a domain name being excluded and forfeited as a result of, for example, an outdated contact or an omission of payment. Given the distributed .CZ domain administration system, customer support is the only case in which the CZ.NIC Association is in direct contact with domain name holders.

In addition to the standard emails, which notify customers especially that their domain registration has not been renewed for the next period, our customer support has manually checked more than 220,000 domains before their removal from the .CZ zone (i.e. effectively being disabled) or contacted by phone or SMS more than 180,000 holders who were threatened with domain name cancellation.



Development of individual customer support tasks

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Manual check of domain names before elimination	-	8,916	15,176	18,586	21,598	20,512	20,894	21,834	21,437	20,867	19,947	18,658
Manual check of domain names before cancellation	-	4,314	11,061	14,378	16,666	16,041	16,529	16,864	17,000	16,869	15,814	15,050
Calls to holders (contacts) of domain names scheduled for cancellation	4,263	4,314	4,767	6,690	7,808	7,367	7,826	7,573	790	904	632*1	444*1
Text messages - information about upcoming domain name cancellation	-	-	-	-	-	-	-	8,139*2	8,948	9,859	8,946	9,028
E-mails sent before elimination	1,201	1,429	1,708	1,716	1,915	1,718	1,849	3,157	2,826	3,036	2,554	2,066
Responses to e-mail inquiries	828	1,240	1,746	1,945	2,782	3,015	2,074	2,319	2,080	2,802	3,646	3,245
Responses to telephone inquiries	561	1,063	1,120	1,242	1,416	1,262	1,227	994	774	720	768	1,547
Requests (validation, blocking...)	145	180	248	315	455	405	701	776	559	363	246	162
Chat inquiries	-	-	-	-	-	166*3	132	114	168	262	460	1,295
Manual data accuracy check	-	-	-	-	1 073*4	875	953	1,372	1,628	1,170	1,701	1,188

The data represents the average number of the given actions per month

*1 Because of the limited operation of offices during the pandemic, the statistics take into account only a portion of the calls made.

*2 Monthly average of sent text messages in the second half of 2017.

*3 Monthly average since April 2015, when the service was launched.

*4 Monthly average since July 2014, when the practice of manual data checking was introduced.

5 Infrastructure

5.1 Data centres

The DSDng central register system is fully redundant. All hardware and software is located in three mutually independent locations:

- the DC TOWER data centre of České Radiokomunikace in Prague 3,
- the CE Colo data centre in Prague 10,
- a non-public location outside of Prague.

All these locations have their own internet connection, as well as a connection to the electrical distribution network. The DC TOWER data centre is connected to the distribution network from three independent transformer stations, while the CE Colo data centre and the location outside of Prague are supplied from two transformer stations. A back-up power supply is available in all data centres via UPS, and possible longer electricity outages are bridged by power from diesel generators.

In 2021, the CZ.NIC Association upgraded the capacity of one data circuit to a non-public location outside of Prague to 100 Gbps. It also accelerated the connection of one data circuit of the Association's offices to the same capacity.

In 2021, in order to ensure high-capacity connections in the future, but also to increase the independence of the Association, the Association began the construction of its own data route between the DC TOWER and CE Colo data centres, with a branch line to the Association's offices.

By the end of the year, the following had been managed physically:

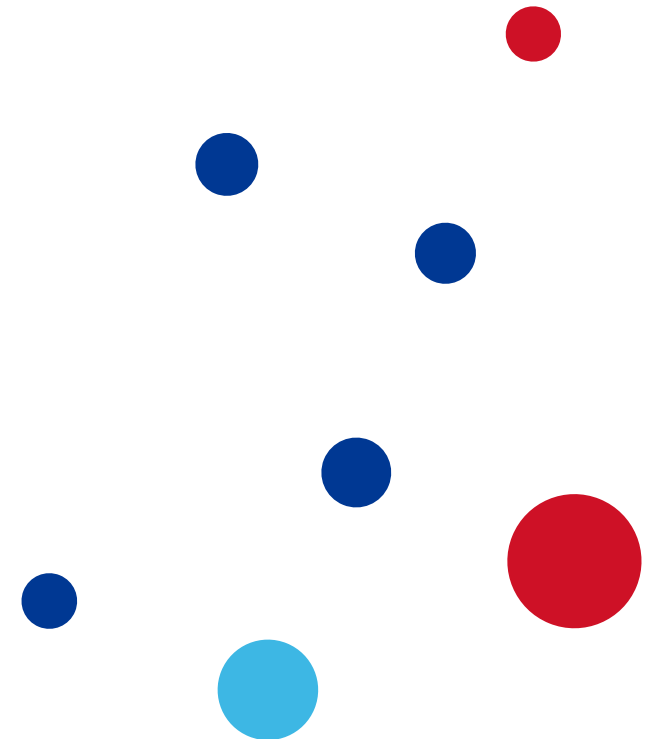
- to lay HDPE from DC TOWER to Votická Street,
- to build 2 HDPE branch lines to the offices,
- to blow these HDPE by microtubes,

- to prepare 2 internal routes in the offices.

The takeover is planned for the following year.

Furthermore, the Association made several significant improvements to the network configuration in 2021:

- it deployed RPKI validators, implemented unified RTBH control, and introduced BGP community traffic control on its core routers,
- it performed a generational renewal and expansion of switch capacity in DC TOWER and the non-public location outside of Prague.



5.2 Technical aspects of domain administration

The **infrastructure of the register** carefully follows the rules of diversity of hardware equipment so that a possible error of a particular hardware manufacturer affects only a part of the infrastructure, thus minimising the possibility of the failure of the central domain register as a whole. Therefore, technologies from different manufacturers are installed in every location. The same approach is also used by the Association for authoritative DNS (Domain Name System) software, which it operates on three different systems (Knot, Bind and NSD).

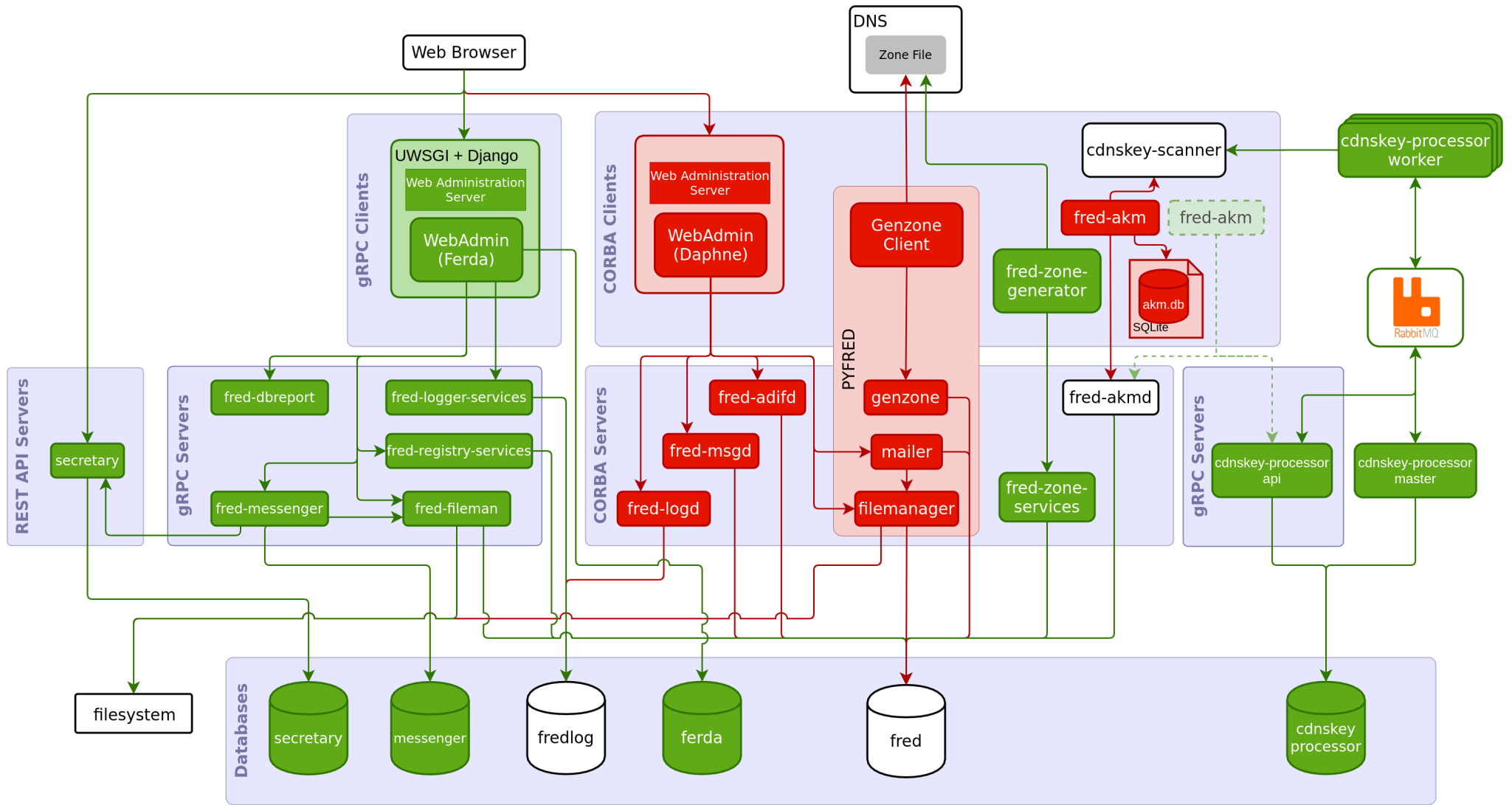
The actual **software of the central register** is designed in a way that ensures that any component of the architecture can be replaced by a copy thereof, which runs on the server in the other locations, at any time. A critical component is the PostgreSQL database, which is always being replicated to both of the other locations during standard operation. When the primary location is down, traffic can be redirected to the replicated database without any limitations or any impact on functionality. Back-up systems are designed and operated in such a way that the operation of the register can be taken over by any components within a very short time.

The central register system is prepared for operation on IPv4 and IPv6, and its current implementation for the .CZ domain (as well as all DNS servers) is operated on both these protocols.

In 2021, the Association continued to make extensive changes to the [FRED system's architecture](#) to increase its modularity and configurability.

In connection with these changes, the Association:

- completed the redesign of the messaging system and launched new servers for them,
- completed the dockerisation of mojelD and the linked web applications,
- started the dockerisation (launched for RDAP and WEBWHOIS),
- prepared the infrastructure for connection to the new cdnskey-processor (new AKM),
- continued to replace the outdated CORBA framework with the more modern GRPC,
- launched a new gRPC interface for working with files (fileman),
- implemented a common templating system (secretary),
- deployed a new Pgwatch2 system for database monitoring.



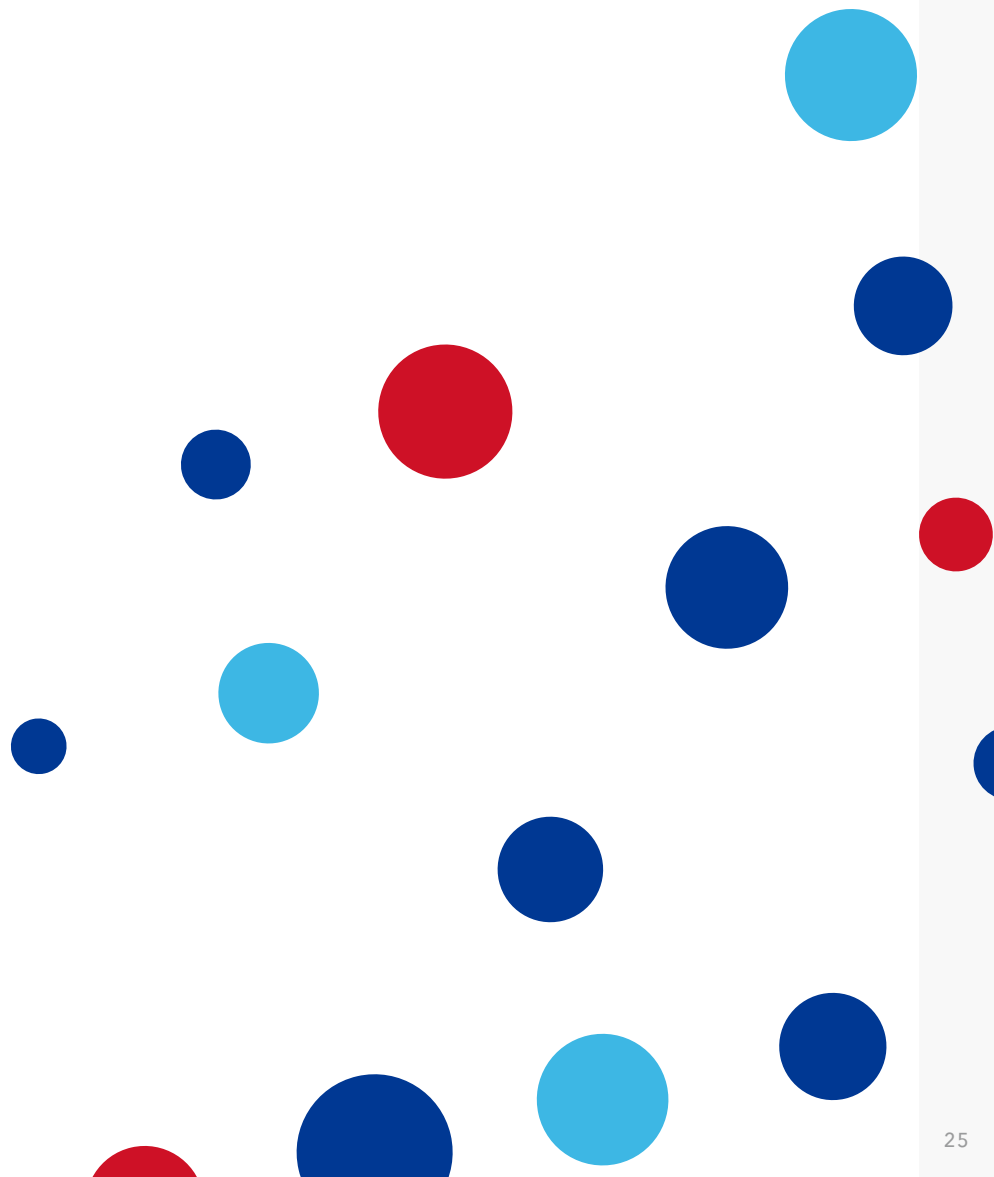
The year 2021 was a **year of upgrades** for the register's infrastructure. There was a rather extensive regular renewal of FRED hardware and mojID servers, together with the need for operating system upgrades, as well as the need to upgrade FRED DB to PostgreSQL v 13.4.

The never-ending work on the long-term maintainability of the registration system continued in 2021. The Association developers created a separate library for strong C++ data types and a separate client library for backend registers.

They also introduced support for new versions of the Python Django framework, and Python in general, and removed their unsupported versions.

In the FERDA module, which enables the managing of register data via a web browser, the developers updated JS dependencies, added display and management of database reports, and also enabled the display of messages that are sent from the register.

Other major changes made in 2021 include a complete rewrite of the Domain Browser, where DNS traffic statistics for domains were newly added. As part of the RegelID project, the Association connected the .CZ domain register to the European Electronic Identity (EU eID) system and thus enabled login to the Domain Browser using the notified identity means of the EU countries.



5.2.1 FRED (Free Registry for ENUM and Domains)

The FRED software for the operation of the central register, developed and operated by the CZ.NIC Association, was made available as open-source under the GNU GPLv3+ licence in order to support smaller registers. This way, smaller and newly-started registers can operate their domains on a system designed for the Czech domain operation, which is, however, prepared (thanks to its parameters and capacity) for a much higher number of domains than are currently registered in ccTLD .CZ.

Apart from the Czech Republic, in 2021 the FRED system was controlling the domain administration in ten additional countries of the world. It is used to administer the domains of Argentina (.AR), Costa Rica (.CR), Albania (.AL), North Macedonia (.MK), Tanzania (.TZ), Angola (.IT.AO and .CO.AO), Malawi (.MW), Lesotho (.LS) and Macao (.MO), and since 2021, Bosnia and Herzegovina (.BA) as well. The deployment in Argentina, with over 670,000 registered domains, is the second-largest instance of the FRED system.

The CZ.NIC Association offers support for the implementation and operation of the FRED system for other TLDs.



Countries where FRED is used for domain administration

5.2.2 Authoritative DNS server system for .CZ

The servers administrating records of .CZ domains are operated by the CZ.NIC Association in several sites around the world. In addition to the three sites in the Czech Republic (mentioned in the [Data centres](#) chapter), additional servers are operated in 12 countries.

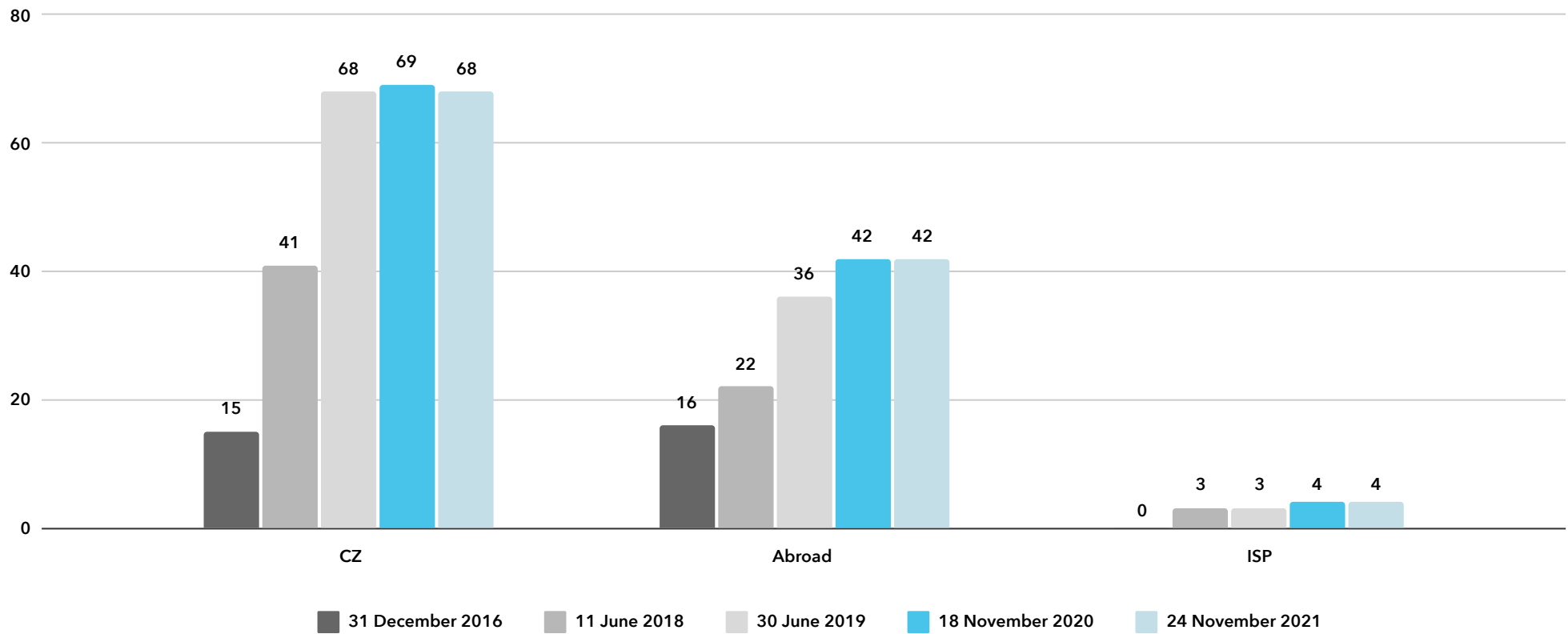
In Europe, these are the hubs in Austria (Vienna), Germany (Frankfurt am Main), the United Kingdom (London), Sweden (Stockholm), Italy (Milan)

and Slovakia (Bratislava). In North America, this includes the United States (Reston), where the Association operates one node in cooperation with ICANN and also a new node in the LINX NoVA peering centre since 2021, as well as a node on the West Coast (Seattle). In South America, this includes Brazil (São Paulo) and Chile (Santiago de Chile). In Asia, the Association operates DNS servers in Japan (Tokyo) and in Singapore (Singapore).



Countries where servers managing records of .CZ domains are located

Number of physical .CZ DNS anycast servers



5.2.3 DNS infrastructure upgrade

In 2021, the CZ.NIC Association continued increasing the resilience of the .CZ DNS infrastructure against DoS attacks and to cover the needs of the continuous growth of operations. After massive investments in building 100 Gbps DNS stacks in the Czech Republic, where the operational requirements are the highest, in 2021 the Association focused more on increasing performance, renewing infrastructure and strengthening connectivity, particularly in more remote regions:

- Chile - DNS node hardware renewal,
- Japan - hardware renewal and upgrade, new 10 Gbps peering in JPNAP and IP transit,
- USA (ICANN) - hardware renewal,
- USA (LINX NoVA) - brand new node,
- Sweden - hardware renewal, new 10 Gbps peering in NETNOD,
- non-public location outside of Prague - increasing the diversity of ARM server installations.

In total, the DNS infrastructure for the .CZ domain at the end of 2021 had the unique capacity of 110+ physical servers and a connection capacity of 500+ Gbps distributed in 20 geographically remote locations in 12 countries on four continents.

In order to ensure stable operation of the .CZ domain, the Association performs periodic maintenance and development of the DNS anycast software, in addition to regular hardware renewals. In 2021, the Association completed the transition to the supported operating systems

Ubuntu 20.04 and Debian 10 on DNS servers. This regular activity will be made even more efficient in the future by the improvements made to Ansible OS automation and IPMI upgrades.

The most significant and also the most challenging software upgrade was the completion of the replacement of the BIND DNS daemon with the internally developed KNOT on the hidden master DNS servers. The deployment of KNOT on these servers provided a leap forward in DNSSEC technology support. The time required to generate and sign a zone was reduced to one-fifth after migration, the system uses supported tools instead of legacy CRON tasks, and DNSSEC signing is fully automatic (except for the retained offline KSK ceremony).

In 2021, the Association started to collect new statistical data, processed subsequently by the ADAM project using the C-DNS probe instead of collecting PCAPs, and improved the monitoring of individual node operation using RIPE probes, thus further improving its ability to respond to anomalous operational conditions, or to effectively decide on the most beneficial investments in the further development of the entire DNS infrastructure.

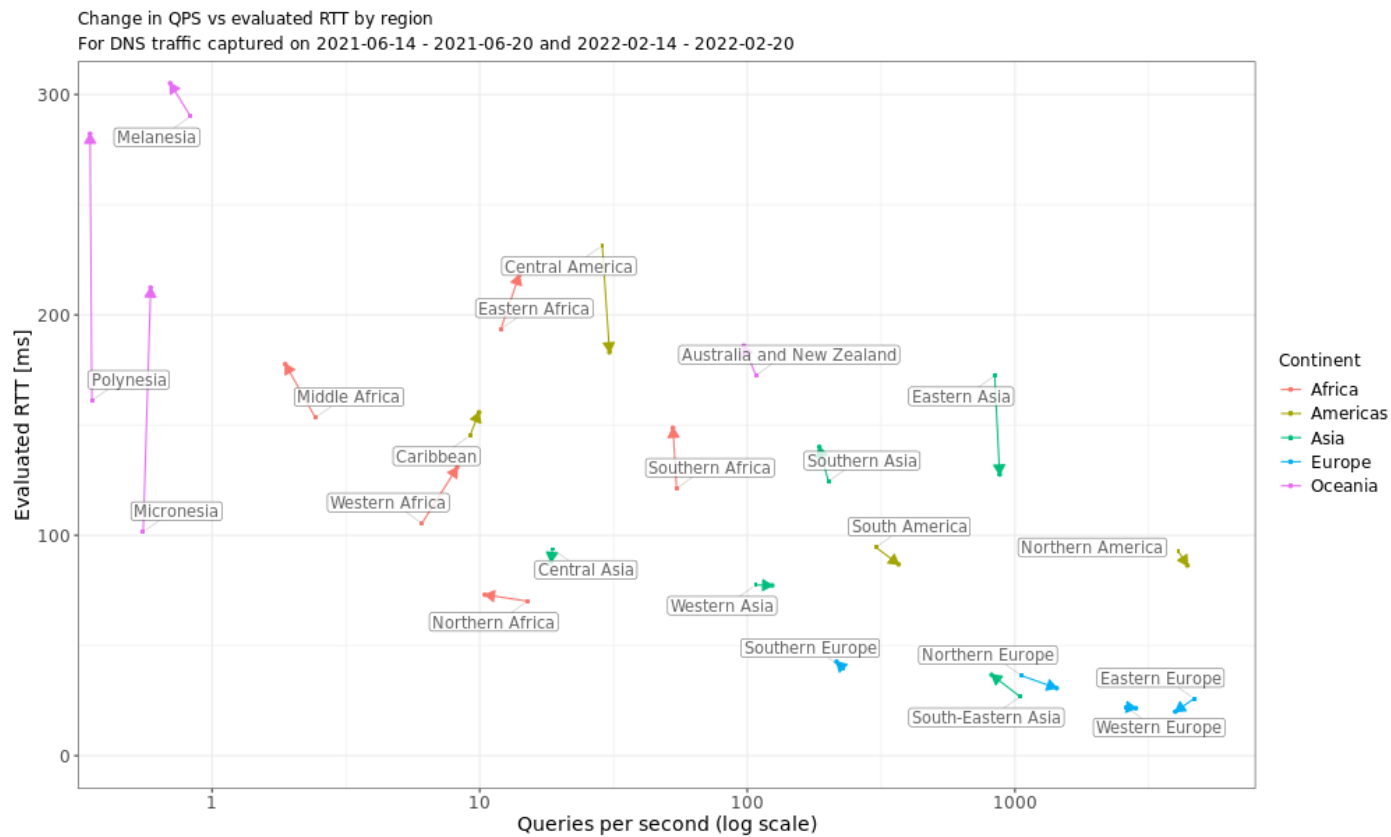
All changes to the DNS anycast infrastructure are carefully planned and then evaluated by the Association using the outputs of the ADAM project, which collects and processes operational data from all DNS anycast nodes.

One of the most important DNS traffic parameters monitored by the ADAM project is RTT (round-trip-time) - the time required for communication between a DNS traffic source and an authoritative DNS server, or its weighted averages related to a specific DNS traffic source, or a geographical or network aggregation of these sources.

Thanks to this method, the Association is able to effectively manage the quality of DNS traffic of the .CZ domain in relation to the size of traffic in individual regions of the world. Thus, all the investments in DNS infrastructure mentioned in this chapter were first confirmed by simulating traffic clearance using the planned DNS nodes and then evaluated by analysing the actual situation.

An example is a comparison of two RTT states in each region for the time period of part of June 2021 and part of February 2022. While the changes in the Oceania region may be considered insignificant due to minimal DNS traffic, the reduction in RTT in operationally more significant regions of Central America and East Asia is directly related to the DNS infrastructure upgrades mentioned above.

Changes in RTT .CZ DNS anycast after DNS node upgrade in Japan



For major internet service providers, CZ.NIC operates mirrors of .CZ DNS anycast nodes – ISP DNS stacks, in the networks of those providers. The main advantage of this service is the full availability of services in the .CZ domain in the event of an attack against the authoritative DNS servers of the CZ.NIC Association.

Customers of companies with the ISP DNS stack will thus not be affected by any attack in any way, and the internet services in the .CZ domain will remain fully available to them. Another advantage is the acceleration of their responses in the network of a provider with the ISP DNS stack. The companies that use this service of the CZ.NIC Association are Seznam.cz, a.s., Vodafone Czech Republic and CESNET.

5.2.4 Utilisation of .CZ DNS infrastructure

Since 2018, the Association has been operating a part of the secondary DNS servers of .CA – domains of the Canadian Internet Registration Authority (CIRA) – on a commercial basis. This cooperation continued successfully in 2021.

The Canadian register has more than three million domains and is, therefore, approximately twice the size of its Czech counterpart. From a technical point of view, this involves the sharing of the capacity of DNS servers, which are primarily intended for the .CZ domain, with another entity. As a result of significant upgrades in recent years, this capacity is dimensioned many times higher than the actual utilisation, and therefore it is useful and beneficial to use it for other projects as well.

5.3 Support for internet infrastructure

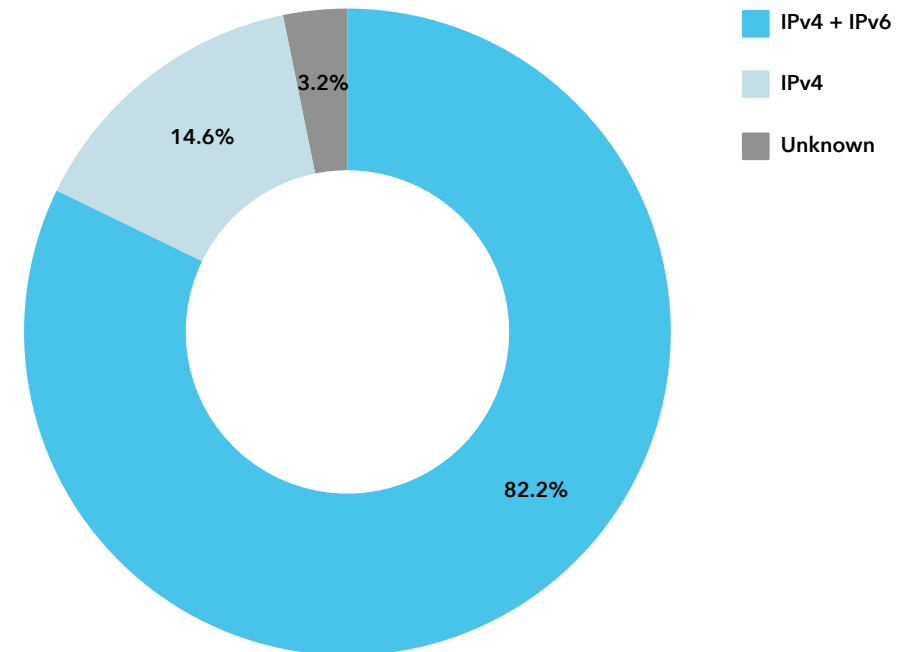
5.3.1 IPv6 support

IP addresses, similarly to DNS, are the basic building blocks of the internet. Without IP addresses, it is not possible to connect to the global network, which also prevents the mutual recognition and interconnection of computers. The current space of IP addresses of the version 4 internet protocol (IPv4) has essentially been exhausted. The new version of internet protocol, IPv6, is the response to the lack of IPv4 addresses, as it offers a much bigger bank of addresses, as well as new options.

The long-term goals of the Association include **supporting the deployment of the IPv6 technology** at all levels, i.e. content, networks and end devices. In cooperation with registrars, which are often also web hosting operators, the CZ.NIC Association tries to support IPv6 on the side of web, e-mail and DNS servers. The Association also participates in promoting IPv6 within state administration.

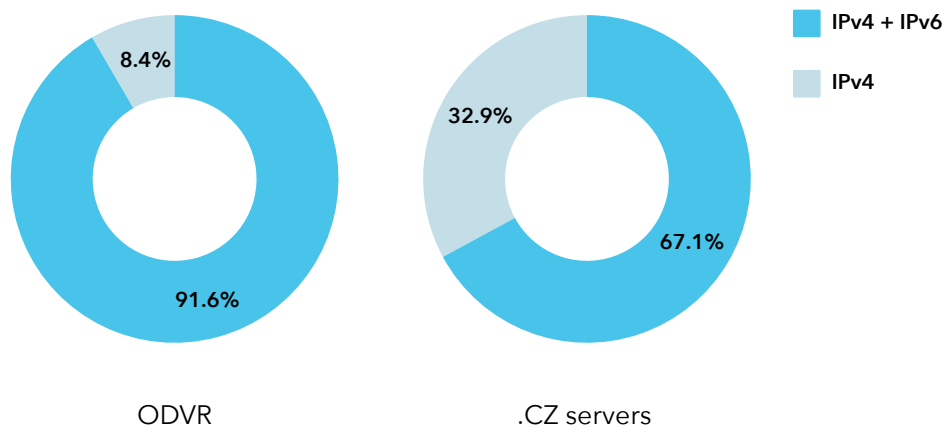
In some areas, the push for IPv6 support is successful. The following chart shows that a significant majority of .CZ second-level domains already had authoritative DNS servers responding to queries via both IPv4 and IPv6 at the end of 2021.

Percentage of .CZ domains that have authoritative DNS servers supporting IPv6



The representation of IPv6 in DNS traffic was significantly lower in comparison. For authoritative servers it is one-third, and for the public ODVR resolver it is less than one-tenth, as can be seen in the following chart showing traffic for the last 6 months of 2021:

Proportion of IPv6 traffic in DNS on the public resolver (ODVR) and on authoritative servers



Also due to the declining presence of IPv4-only networks, **in 2021 the Association discontinued the operation of the IPv6 tunnels Teredo and 6to4**, which had facilitated mutual communication between IPv4 and IPv6 in previous years.

5.3.2 DNSSEC support

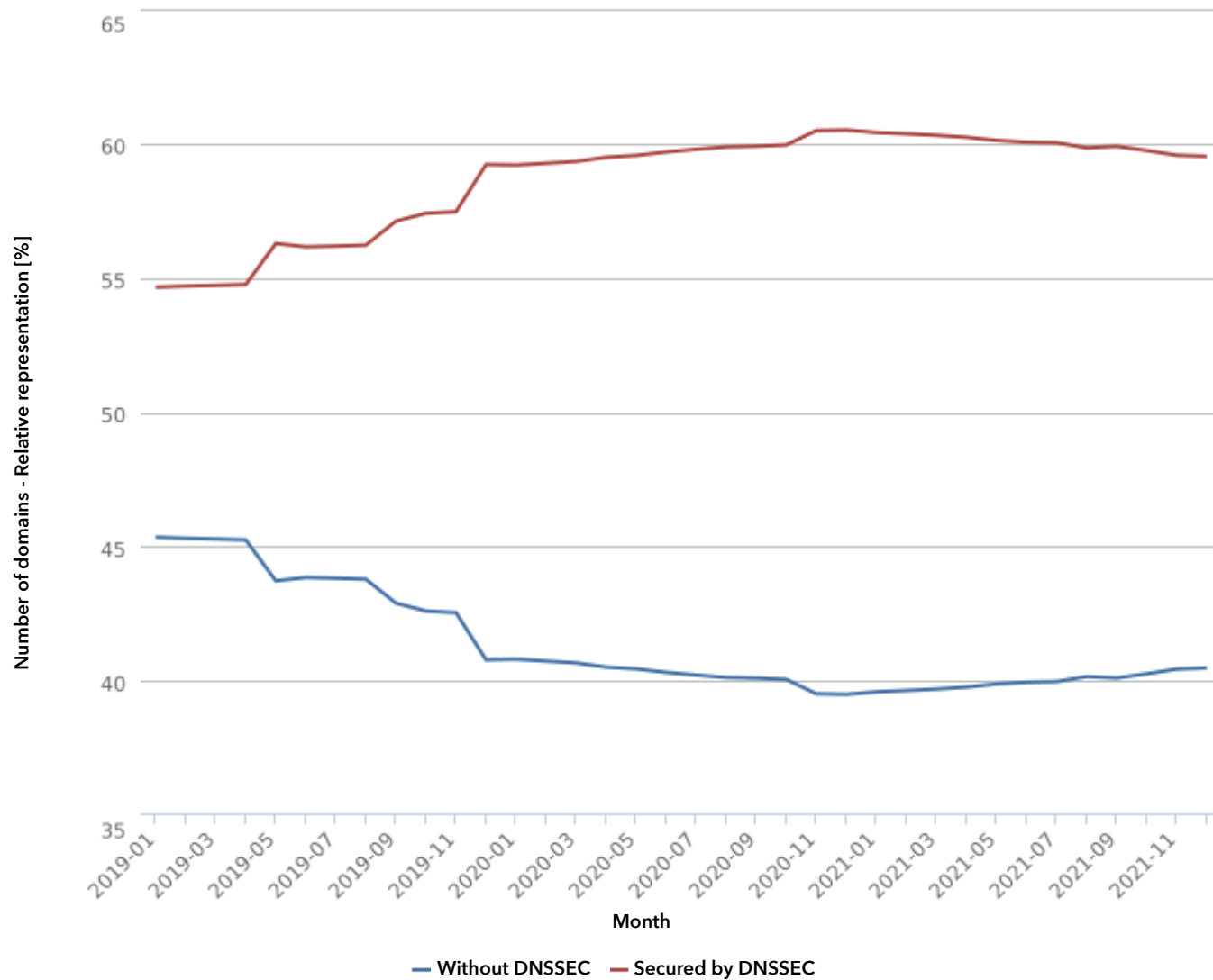
DNSSEC is a DNS extension that increases its security through asymmetric cryptography.

The **DNSSEC technology gives users the certainty** that the information they have obtained from DNS was provided from a correct source, that it is complete and that its integrity was not compromised during the transfer. **The DNSSEC technology has been available since 2008 within the Czech national domain .CZ.** The .CZ domain was thus one of the first top-level domains where this technology could be used.

The absolute number of domains secured with DNSSEC has been steadily increasing since then, also driven by cooperation with registrars, but the proportion of domains with this security extension fell slightly to 59.6% in 2021. With its share of signed domains, the Czech Republic continues to clearly rank among the world leaders.

The Managing Director of the Association, Ondřej Filip, has been a member of the prestigious Trusted Community Representatives (TCR) group since 2019. The TCR group was established within the international organisation IANA in an effort to increase DNS security using the DNSSEC technology.

Development of the proportion of .CZ domains with/without DNSSEC



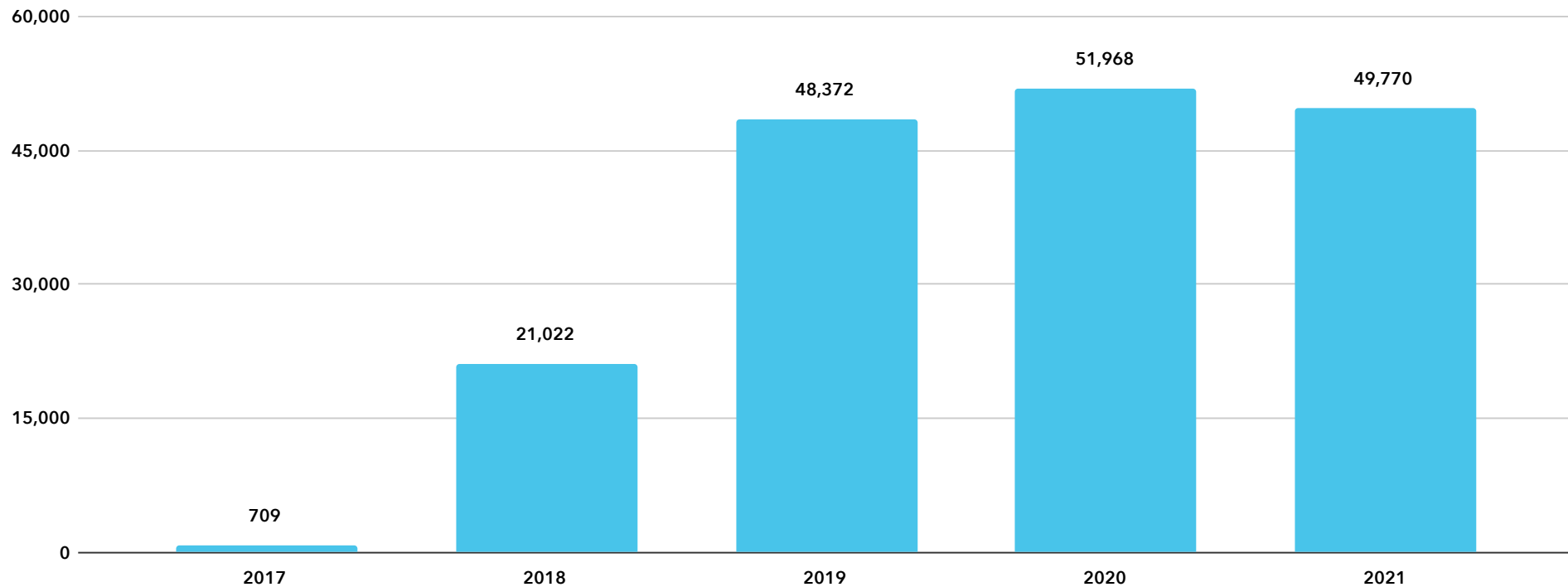
In addition to support from registrars, the main internet service providers in the Czech Republic are gradually introducing DNSSEC technology as well. This makes the system fully functional for most regular internet users.

The high level of support for DNSSEC for the .CZ domain is, among other things, aided by the **support of the DNSSEC key automation management**, which CZ.NIC introduced in 2017, the first in the world to do so. This was possible thanks to introducing support for the new RFC 7344 and RFC 8078 standards in the FRED domain administration system. These extensions are thus available to all TLD administrators that use the

FRED system. Administrators of authoritative DNS servers will then be assisted in the implementation of this simplification via Knot DNS, which is also compatible with these standards.

DNSSEC can now be easily deployed also for those domains where it was not previously possible - e.g. for domains not supported by the DNSSEC registrar, or for domains that are administered by someone other than the registrar. However, the number of domains under automated DNSSEC key management declined slightly in 2021, as can be seen in the chart below.

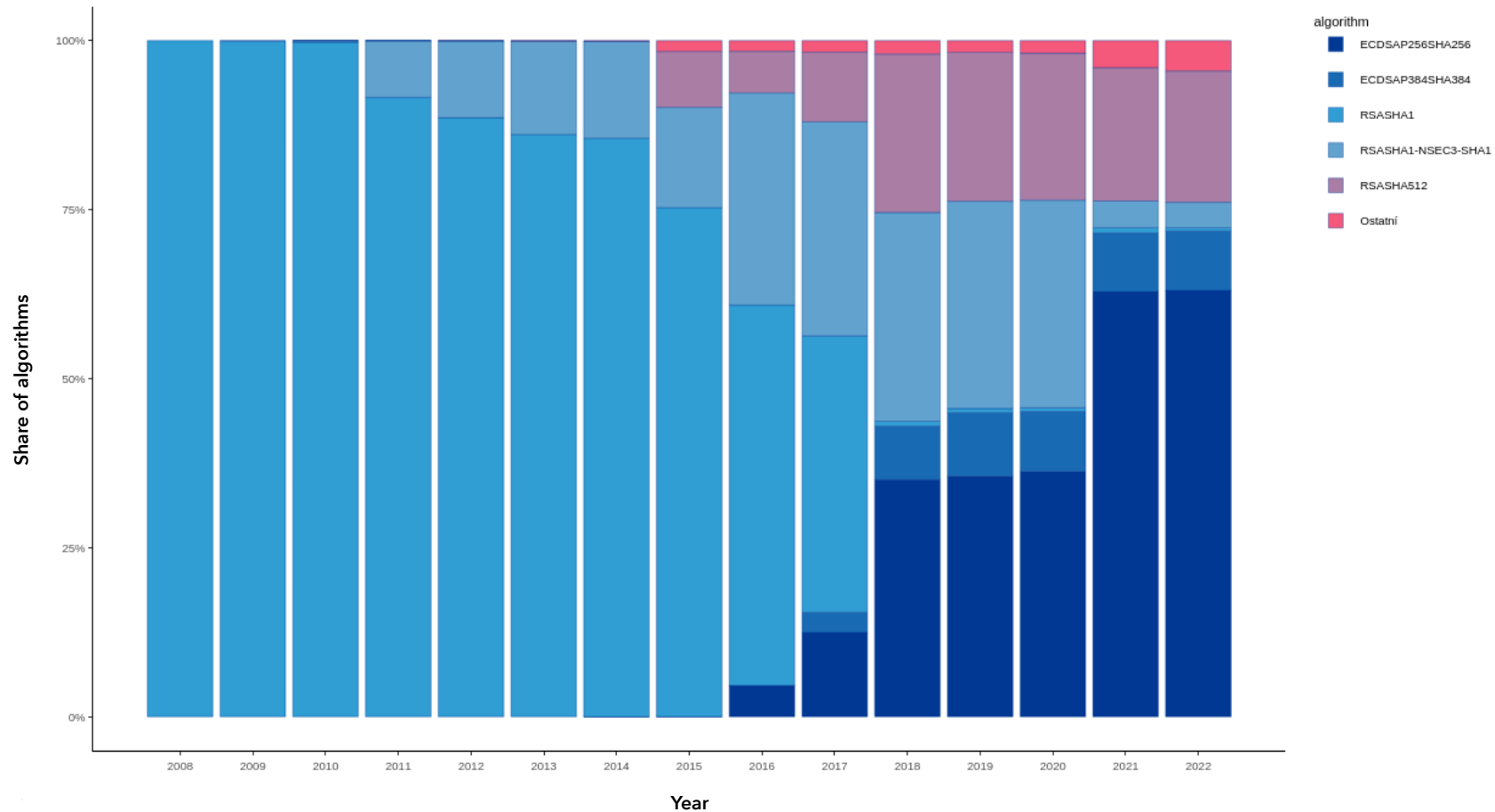
Development of the number of domains under the system of automated DNSSEC key management



The choice of an encryption algorithm is a very important parameter affecting the level of security with the DNSSEC technology. The following chart shows how the representation of individual algorithms in the .CZ domain has been changing since 2008.

The decline of the previously dominant RSASHA1 algorithms (RSASHA1-NSEC3-SHA1) using the SHA-1 hash function also continued in 2021. The function is considered weak, but according to current recommendations, it does not yet pose any significant threat to DNSSEC security. The migration to more secure cryptographic algorithms was almost complete at the end of 2021, as less than 5% of second-level domains under .CZ continue to use these weaker algorithms.

Evolution of the representation of individual DNSSEC algorithms in the .CZ domain



5.4 Support for basic internet infrastructure

Operation of root servers

In 2021, the CZ.NIC Association continued to operate mirrors on the root servers F, K and L. Therefore, CZ.NIC runs mirrors on three out of a total of 13 root name servers that are the basis of the internet domain names system (DNS). Their operation improves not only the security and stability of the root servers on a global scale, but especially their availability in the European region.

In the middle of 2021, cooperation with the ISC company was terminated, and thus the operation of the F root server mirror was terminated too.

In the second half of the year, the Association staff performed a hardware upgrade of the L root servers.

Support for evolving registers

Besides these root servers, the Association's infrastructure is also used to support emerging registers through the operation of secondary name servers for their ccTLD. Angola, Malawi, North Macedonia, Tanzania and, since 2020, also Guatemala have been using this option to manage their national domains. Also in 2021 in its data centres, the Association operated the infrastructure for the operation of the DNS register of Brazil's domains and the association of Latin American ccTLD LacTLD.

Hosting DNS zones and servers

On the basis of mutual knowledge sharing and long-term cooperation, the Association also offered DNS zone hosting to the Czech neutral peering node NIX.CZ.

Another form of support aimed at the local internet community is hosting the servers of some non-profit organisations – such as the server of the Jeden svět na školách (One World in Schools) project of the Člověk v tísni (People in Need) organisation, or operating a server with a mirror of popular Linux distributions – Ubuntu, Debian, Fedora, etc.

Open DNSSEC Validating Resolvers (ODVR)

Since 2010, the Association has also operated Open DNSSEC Validating Resolvers ([ODVR](#)), which are freely available for use instead of the DNS resolvers as an alternative to DNS resolvers operated by connection providers.

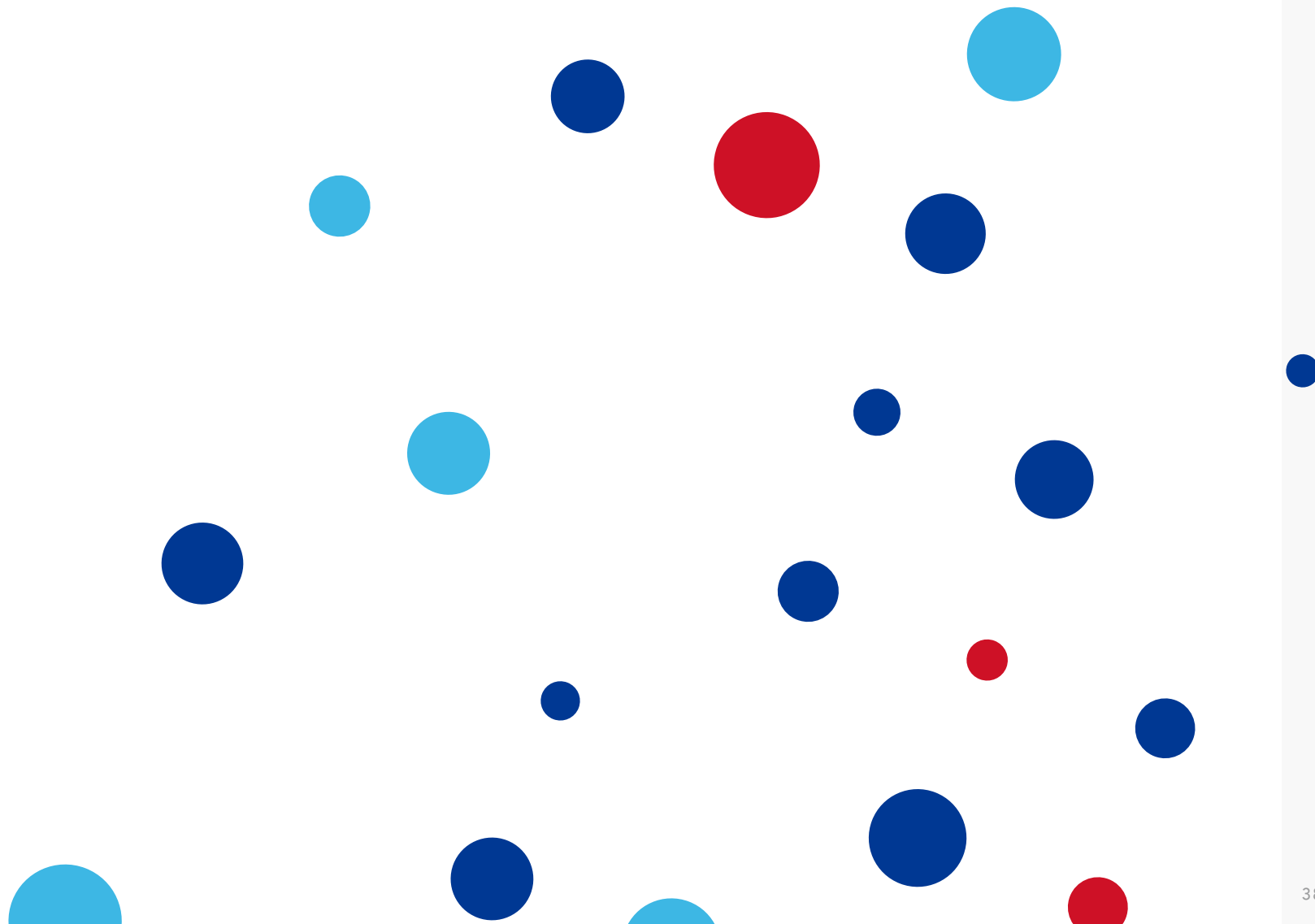
The ODVR service (also because it is operated on the Association-developed Knot Resolver) supports encrypted DNS communication using DNS-over-HTTPS (DoH) and DNS-over-TLS (DoT). Since 2020, the option of using this encrypted DNS communication has even been incorporated in the user interface of the Google Chrome browser (from version 87 on Windows and Android OS).

RIPE Atlas Anchor hosting

The CZ.NIC Association is actively involved in the RIPE Atlas global monitoring network project and supports this project by hosting fixed monitoring points called RIPE Atlas Anchor.

Hosting a public NTP server

One of the key operating conditions of many computer systems is correct time synchronisation. Systems connected to the internet use the NTP internet protocol for this purpose. The CZ.NIC Association has long hosted a public top-level NTP server (stratum 1) controlled by GPS and fitted with a high-quality oscillator of the OCXO DHQ type.



6 The CSIRT security team

The growing importance of the internet and the rising number of its users are accompanied by a growing number of security incidents, such as the misuse of a computer, a network element or a network for illegal activities – e.g. spam, copyright breaches, phishing or tapping of data. The severity of these incidents is also increasing. The dependence on cyberspace and the level of criticality of failure associated with it are also increasing. It is not only the ordinary user, various private-law institutions, but also the infrastructure of the state itself that is exposed to cyberspace and the risks associated with it.

It is therefore necessary to create, formalise and streamline the defence against attacks on these entities – CSIRTs (Computer Security Incident Response Teams) are being created for this purpose. CZ.NIC has long-term experience with projects in the field of internet infrastructure, and therefore it is involved in supporting the activities of security teams at the national and academic level. The Association also runs its own CZ.NIC-CSIRT team, responsible for dealing with incidents within AS25192, as well as incidents that affect the name servers for the .CZ domain and 0.2.4.e164.arpa.

6.1 CSIRT.CZ - National CERT Team of the Czech Republic

The [CSIRT.CZ](#) security team is the **official national security team of the Czech Republic** and is operated in accordance with Act No. 181/2014 Coll., on cybersecurity, and the public-law contract concluded

on 18 December 2015 with the National Security Authority (NSA). As of 1 August 2017, the newly established National Cyber and Information Security Agency (NÚKIB) took over the position of the NSA and thus became the manager of cybersecurity issues and the national authority in this field.

The mission of the CSIRT.CZ team is, in particular, to **deal with incidents** connected with **cybersecurity in networks operated in the Czech Republic**.

In addition, it also focuses on **prevention, research and education**.

CSIRT.CZ collects and evaluates data on reported incidents and forwards them to the persons responsible for the operation of the network or service which is the source of the incident in question, and/or provides help with coordination. In its activities, the team cooperates with a number of entities, with which it exchanges information on individual incidents and their solutions on the basis of mutual trust.

Cooperation of CSIRT.CZ

In order to be able to effectively fulfil the mandatory requirements defined by the legislative framework binding for the Czech Republic, the team cooperates with various entities at both the national and the international level:

- **national level** - mainly with NÚKIB (especially the government CERT team), the Police of the Czech Republic (PČR), CSIRT/CERT with different constituencies, internet service providers (ISPs), banks and others,
- **international level** - the team is part of the CSIRTs Network structure (a network bringing together national and governmental CSIRTs/CERTs of the EU Member States), actively cooperates with the European Network and Information Security Agency (ENISA) and EUROPOL.

Other international structures of which it is an active member include:

- FIRST organisation,
- Trusted Introducer (certified team level).

In 2021, the CSIRT.CZ security team participated in a number of **grant projects**.

- The [PROKI](#) (Prediction and Protection from Cyber Incidents) project was supported within the Security Research Programme of the Czech Republic 2015–2020. However, the team continues to operate, utilise and develop the PROKI beyond 2020.
- Continued cooperation on the **Safer Internet Centre (SIC CZ)** project, which was implemented by the CZ.NIC Association under the name [Bezpečně na netu](#) (Safe on the Net).
- Cooperation with the operation of the **STOPonline.cz hotline**, which is designed to report illegal online content, to raise awareness, and to educate both children and parents.
- As part of the Cyber Exchange project, which is based on the technical and administrative exchange of experts across national and governmental security teams of the EU member states included in the project, a visit to the **Foundation for Research and Technology (FORTH)** was carried out in 2021.

During 2021, CSIRT.CZ also participated in activities within the [SPARTA](#) international project, which seeks to solve the problem of negatively influencing democratic elections by using information technology, and the **THREAT ARREST** project was completed in 2021.

6.1.1 Traffic statistics

In 2021, CSIRT.CZ handled **1,726 security incidents**. This represents an increase of 36.2% year-on-year compared to the previous year. However, compared to pre-pandemic incident statistics, this is an **increase of 80%**.

The team once again achieved the highest registered number of addressed incidents in the records of its own statistics. This increase reflects, among other things, the total number of responses to incidents.

It is not uncommon to have dozens of e-mails related to a single incident. The list of reasons includes the complexity of attacks, botnets, vulnerable devices and compromised incident accounts.

Number of incidents addressed

	2017	2018	2019	2020	2021
Sensor Network*	13,858	18,435	14,911	16,217	10,284
Phishing	409	518	483	738	1,281
Spam	121	144	128	216	165
Malware	99	135	85	109	141
Other	200	58	85	86	54
Probe	26	171	141	68	66
Trojan	94	0	0	0	0
DOS	14	7	16	16	11
Botnet	29	20	4	2	1
Virus	0	0	0	0	0
Portscan	13	16	3	29	7
Pharming	3	10	9	3	0
Total	1,008	1,079	954	1,267	1,726

* Sensor Network is not counted in the total number

In 2021, there was again a sharp increase in reported incidents falling under the phishing category; a rise, but not as significant, was also recorded in the malware category.

The increased activity of attackers is attributed to the emergency situation surrounding the pandemic, in which employee isolation and working outside the normal work environment may make users more vulnerable to this type of attack.

6.1.2 Awareness and educational activities

In spite of the ongoing pandemic situation, the continuity of awareness-raising and educational activities from previous years was maintained in 2021, despite the difficult conditions, particularly with regard to the regulations in force.

The awareness-raising and educational activities, in which team members participated both externally and internally, included the following:

Performances at events

- Locked Shields – participation in an international cyber exercise,
- Internet and Technology 2021.

Commenting on what is happening in the mass media

Security trainings

Launch of pilot training *Basics of CSIRT/CERT functioning*

Internet Security and Privacy **online course**

Publication activities – publication of awareness-raising and educational articles:

- Security Insights – 25 episodes of a series published on Root.cz
- [Security News](#) – thematic posts from the field of cybersecurity on the CSIRT.CZ website
- Thematic posts on the [CZ.NIC blog](#)

6.1.3 National and international cooperation

The **strategic partners** in the field of national cooperation are, naturally, the **National Cyber and Information Security Agency (NÚKIB)** and the Governmental CERT of the Czech Republic (**GovCERT**).

CSIRT.CZ cooperates with these entities in the field of legislation, cyber exercises, the formulation of common positions within the CSIRT Network and other projects. CSIRT.CZ and GovCERT meet several times per year on various occasions, thus providing sufficient space for the regular exchange of information about the work of individual teams and their possible coordination. In addition, both organisations regularly participate in meetings within the TF-CSIRT or CSIRT Network.

The scope, nature and frequency of national and international cooperation between CSIRT.CZ and GovCERT.CZ, and other national and governmental teams of the EU Member States, was influenced by the fact that on 1 January 2022 the Czech Republic became one of the members of the trio under the rotating presidency of the CSIRTs Network. The presidency was preceded by several months of preparation and cooperation - for example, with ENISA.

At the national level, there was significant cooperation with the **Police of the Czech Republic** in 2021. There were dozens of incidents involving fake e-shops, fraudulent investment sites, fraudulent Facebook ads and more.

National and international cooperation also includes support for teams wishing to join the TF-CSIRT and FIRST organisations. This includes familiarising security teams of different constituencies with the possibilities of joining the structures of the international community and then discussing and implementing the steps leading to the acceptance of these teams into the international communities, and consequently to their active participation. For some types of membership, it includes an *on-site visit*, which involves checking the functionality and meeting the stipulated requirements for interested parties, which are a necessary condition for joining the community.

6.1.4 Preventive activities

The core role of CSIRT.CZ is to focus on prevention and awareness. Ongoing prevention services include:

Penetration testing

In 2021, the penetration testing of several entities belonging to the critical infrastructure of the state and entities from the commercial sphere was successfully carried out.

PROKI (Prediction and Protection from Cyber Incidents)

The CSIRT.CZ team continued to work on the PROKI project even after the formal end of the project. In 2021, the cooperation with the Turris Sentinel project was expanded in order to detect attackers based on logs captured from firewalls and by operating honeypots and mini-pots.

Owners and operators of Turrus routers can participate voluntarily and become a part of a distributed network of security probes. Outputs from the Turrus Sentinel project are stored together with data from PROKI.

PROKI statistics	Number
Number of e-mails sent from PROKI	32,454
Number of unique recipients (abuse contacts) of PROKI reports	628
Number of unique Czech IP addresses that we by some means recorded	88,871

MDM service

The MDM (Malicious Domain Manager) service is a proprietary, freely available, open-source application based on the principle of using publicly available sources informing about domains with web presentations that have been attacked or have been abused for phishing or for spreading malicious code, and then informing the persons responsible for the operation of such domains with a request to investigate or correct the situation. In 2021, 386 URLs on 271 domains were addressed.

Web scanner

[Web scanner](#) is one of the preventive security services that is intended for operators and administrators of websites, especially non-profit organisations and public administration, helping them detect potential vulnerabilities in their internet presentations. The vulnerability assessment takes into account current trends and rankings compiled within the *Open Web Application Security Project (OWASP)*.

In 2021, 26 domains used the web scanner service based on 18 orders, of which nine were domains of important entities and five were entities within the Safer Internet Centre project.

6.2 CZ.NIC-CSIRT

The CZ.NIC-CSIRT team is responsible for **handling incidents that affect name servers for the .CZ domain**, 0.2.4.e164.arpa and AS 25192.

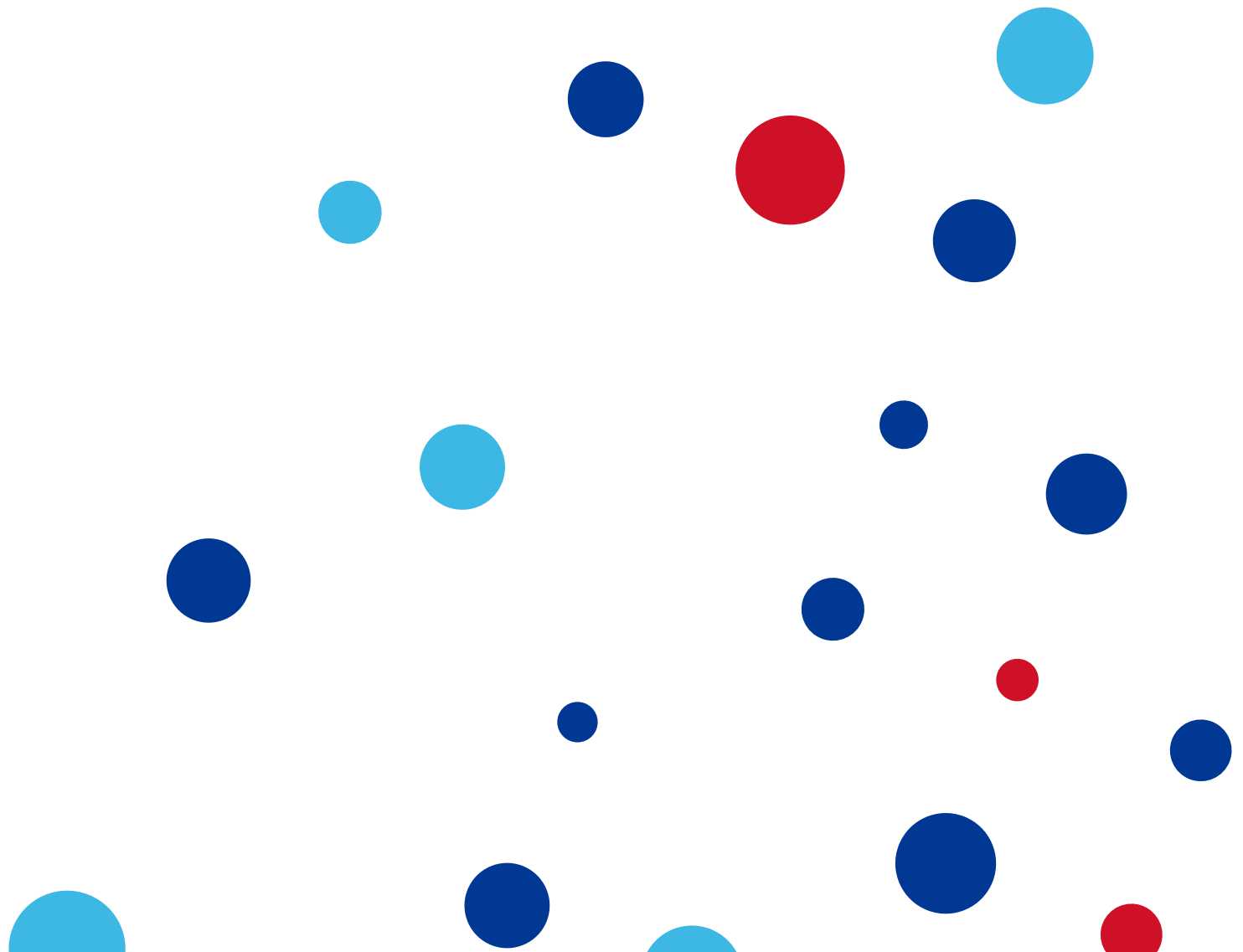
On the basis of the [Rules of Registration](#), the CZ.NIC Association is entitled to cancel the delegation of a domain name if it is used in such a way that threatens national or international computer security. This can happen, for example, by distributing harmful content (viruses, malware) or by faking the content of another service (phishing) through the domain name or services available through it.

The CZ.NIC-CSIRT team can also cancel the domain name when the server available through the domain name is the control centre of networked hardware which distributes harmful content (botnet).

Activities of CZ.NIC-CSIRT in 2021

Within the activities of CZ.NIC-CSIRT, the Association operates **its own system used for searching websites with .CZ (MDM) domains that have been attacked**. Within the CZ.NIC Association, the CZ.NIC-CSIRT team ensures implementation and fulfilment of internationally accepted information security management systems (ISMS) certification in compliance with the ISO 27001 standard. An **external audit** took place in 2021, which confirmed that CZ.NIC continued to meet all the requirements of this standard.

In addition to the above, CZ.NIC-CSIRT also focused on the gradual implementation of the requirements of the Cyber Security Act (SIEM), changes in the KSK ceremony required by the transition to Knot, the penetration testing of the MojelD service and the Turris router, and the preparation of internal training to detect fraudulent e-mails and to test the Association's employees for resistance to phishing attacks.



7 MojelD

[MojelD](#) is a service that enables internet users in the Czech Republic to use **the same identification data for logging in to various internet services**. This gives the user a means of identification with which they can log in, with just one name and password, to those applications, services and systems that support MojelD, and have done so for **more than 11 years**.

Moreover, since 2020, it has been possible to link the MojelD user account with the National Identification and Authentication Point (NIA) to **log in to electronic public administration services**.

Thus, MojelD is currently clearly perceived as a **significant way of authenticating and identifying internet users** in the Czech Republic.

The user has complete control over sharing and providing their personal data, and they do not have to invent new login names and passwords (since they only have one, which is the one to MojelD); the login data is always entered on a login page that they are familiar with.

In addition to limiting the amount of information it has to process about the user (including eliminating the obligation to store and protect user passwords), an operator that allows login to its systems via MojelD receives verified and up-to-date data.

In 2021, attention was focused on **improving security and user comfort**. The Ministry of the Interior accreditation for the "substantial" level of assurance has been extended by MojelD to include the "high" level of assurance. **There is no more secure means of electronic identification in the Czech Republic at the moment**.

The ability to authenticate users through the NIA has gradually replaced the former identity verification called "validation", and therefore the complete abolition of validation and validation points is planned for 2022.

The MojelD Klíč mobile app was added to the security keys that users can use to secure their MojelD account. This modern, convenient and easily accessible security method soon became the most widely used of the options on offer. In the future, it is to completely replace the older MojelD Autentikátor application, as well as one-time passwords.

7.1 Security of the MojelD service

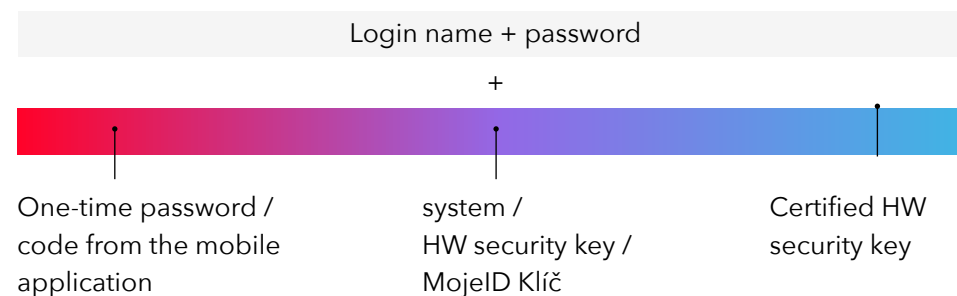
The basic features of MojelD include the security and trustworthiness of the entire system, and the protection of personal data. The register of user details is protected on the same high level as the .CZ domains register. At each login, the user himself can define which details from his profile are to be handed over to the given provider for whose services the user wants to sign up using MojelD. This gives the **user maximum control over his data**.

MojelD offers **a wide range of login options**. A login name and password are the basics. Furthermore, the service provider may determine whether it finds this level of security of user login to its services sufficient, or whether the user must, in addition, authenticate by means of:

- a one-time password*,
- the MojelD Autentikátor mobile application*,
- the MojelD Klíč mobile application,
- a system security key (often included with common operating systems, such as Windows 10 and 11 or Android version 7 and above),
- a hardware security key (a suitable USB/NFC key is a prerequisite for the "high" assurance level).

* The options for logging in using a one-time password, as well as the older MojelD Autentikátor applications, were replaced during the year by the more secure, modern and user-friendly MojelD Klíč application. They were retained only for existing users, and the discontinuation of their support is planned in the future.

Security level options for login methods



Assurance level "high"

There are **three levels of assurance** of means to access public administration services: low, substantial, high. They indicate how much the service provider can trust the way the user's identity is verified by the operator of the electronic identification system.

Since 2020, MojelD has been providing the "substantial" level of assurance, and **in 2021 it received the accreditation of the Ministry of the Interior for the level of "high" assurance**.

In terms of security, the MojelD service has reached the same level as the eObčanka; therefore, with MojelD, users can access all online public administration services, including the most secure ones (e.g. setting up a property account for managing government bonds).

To activate this level, stricter account security and identity verification requirements are set. Since the launch of the option to activate the "high" level of assurance at the end of November 2021, around 3,000 users had used it by the end of December.

7.2 Private sector and public administration partnership services

A key factor in the systematic expansion of the MojelD service is its support by internet service providers. The growing range of places where MojelD can be used is having an impact on attracting new users, for whom it is important to be able to log in to as many services as possible with one name and password - whether those which they use every day, or those which they are either visiting for the first time or on a one-off occasion.

7.2.1 Private sector service providers

In the private sector, MojelD is used by:

- e-shops that are interested in the possibility of verifying the age of their customers when selling specific goods or services,
- community servers,
- discussion forums,
- news sites,
- servers providing microservices,

- advertising servers,
- some energy suppliers, and others.

The complete list of partners can be found in the [catalogue on the MojelD website](#).

7.2.2 Public administration service providers

In the autumn of 2020, the option **of linking** the MojelD account to the **National Identification and Authentication Point (NIA)** was launched.

Individuals can thus use MojelD to **log in to state administration and self-government services**, such as:

- **the Citizen's Portal** (checking the validity of documents, the balance of points in a driver's account, extracts from public registers, etc.),
- the Financial Administration Portal **Moje daně (My Taxes)** (online filing of personal income tax returns, real estate tax returns and other tax returns),
- the **ePortal** of the Czech Social Security Administration (for example, to view the pension insurance information sheet),
- the **Ministry of Finance Portal** to set up a property account (with the "high" level only),
- client applications **of health insurance companies** (reports on care provided, insurance premium payers and arrears, applications for contributions from prevention funds, etc.),
- the patient application for eReceipt electronic prescriptions,
- **the web portals of some regions, cities and municipalities,**

- library systems,
- systems of educational institutions and other entities.

The expected trend for the future is the development of eGovernment, and with it, a further expanding network of partners from the field of public administration.

7.2.3 Cooperation and implementation partners

The year 2021 also saw the start of cooperation with several partners for the implementation of MojelD and an increase in the total number of users and users linked to the NIA.

When implementing MojelD, service providers do not depend solely on the technical support from the CZ.NIC Association. The long-term cooperation continues with the developers DATRON, a.s. and VERA, spol. s r.o., which develop portals for public services. The cooperation was also expanded during the year to include several technical partners for the integration of MojelD. Their current list is available on the MojelD website on the [How to get started](#) page.

As of 31 December 2021, the list of implementation partners was as follows:

- Behavin s.r.o.
- Trigama International s.r.o.
- EzConvey s.r.o.
- AMI Praha a.s.

7.3 Users of MojelD

The user base is the most valuable asset of the MojelD service. Without an increasing number of users, it would be difficult to attract more and more important service providers and make the service known among the general public.

Throughout 2021, the MojelD **user base grew** by more than **130,000 new users**, to a **total of 829,717 users**. The **number of users thus grew almost 280% faster** than in the previous year, representing the **highest user growth since 2014**.

As of 31 December 2021, **a total of 40,260 users** of MojelD were **linked to the National Identification and Authentication Point (NIA)**. Compared to the end of 2020, the **number of users linked to the NIA increased more than eight times**, and further growth will be one of the targets in 2022.

Level of user identity authentication

Year	Partially identified contact	Identified contact	Validated contact	Contact linked to the NIA	Total users
2010	1,324	2,168	163		3,655
2011	24,369	17,218	680		42,267
2012	86,218	75,513	1,760		163,491
2013	144,376	143,364	3,324		291,064
2014	211,409	207,242	5,920		424,571
2015	241,270	249,649	8,280		499,199
2016	257,650	273,334	10,446		541,430
2017	283,133	293,503	18,378		595,014
2018	301,806	308,764	23,233		633,803
2019	318,547	344,738	26,290		663,285
2020	336,375	361,689	30,501	4,611	698,064
2021	420,103	409,614	64,213	40,260	829,717

The #overenomojeid campaign

The linking of user accounts to the basic registers was supported by the #overenomojeid marketing campaign. Users who registered for the campaign on the [MojelD - Ověřeno \(Verified\)](#) website, completed the process of linking their account to the NIA, and shared information about the authentication option on their social networks with the hashtag #overenomojeid received a free USB/NFC security key, which is suitable for logging in to the public administration services.

The interest of the users far exceeded the possibilities of the campaign, so the most active users of MojelD got first priority. The campaign was launched in September 2020, and several thousand security keys were sent to users until its end in October 2021.

The success of the campaign is also confirmed by its nomination for the "Křišťálová Lupa 2021 (Crystal Magnifier 2021) - Czech Internet Award", which recognises the most popular and interesting projects and services on the Czech Internet. The campaign #overenomojeid was nominated in the Marketing Inspiration category.

The Internet and Technology 21.2 Conference

During the breaks at the IT 21.2 conference, which the CZ.NIC Association held on 10 November 2021 at the Grandior Hotel in Prague, participants had the opportunity to visit the MojelD stand and the Czech POINT mobile stand. It was possible to have your identity verified at Czech POINT, which is a condition for access to public administration services. MojelD specialists present at the stand helped with the process of activating eGovernment services and provided participants with the necessary USB/NFC security keys, or assisted with the activation of the MojelD Klíč mobile application. At least one of these two sites was visited by the vast majority of participants, and those who were older or were less technically proficient especially appreciated the help.

7.4 MojelD as a tool for cross-border authentication in Europe

In the previous year, the CZ.NIC Association also actively participated in the Czech Republic's involvement in building an infrastructure for cross-border electronic identification, as defined by the **eIDAS** regulation.

This regulation builds on the work under the STORK (Secure idenTity acROss boRders linKed) pilot project, which the Association participated in, together with the Ministry of the Interior of the Czech Republic during 2012-2014.

As an output of this project, the **Association operated a gateway for cross-border authentication** that used MojelD as the only means of authentication. This gateway was gradually replaced in 2018 and 2020 by the official eIDAS node for the Czech Republic, operated by the Association on the basis of the contract with the National Registers Authority.

This node also includes a middleware component necessary for logging in with the German electronic identity card.

The Association has twice won tenders to operate this system, namely for the years 2018 to 2020 and for 2020 to 2024. As a part of the contract, the active involvement of the Association's staff in the functioning of the

eIDAS Cooperation Group and eIDAS Technical SubGroup platforms continued throughout the year.

In order for **MojelD** to return to the role it played in the STORK pilot project, i.e. as a **tool that is also usable abroad**, the Association negotiated with the Ministry of the Interior of the Czech Republic to start the process of notifying MojelD according to the eIDAS regulation. This process started in September 2021 and should be completed in the first half of 2022.

8 Turrís

Turris network devices have been developed by the Association since 2013. They use an open-source system based on Linux. They have the ability to automatically update throughout their lifetime and have a distributed adaptive firewall, as well as other superior security features. More information on all the Turris models - Omnia, MOX and Shield - can be found on the website www.turris.cz.

In 2021, production was successful despite the existing global supply chain complications, and work was also done to develop the sales network. The overall year-on-year growth in units sold was ~250%.

For 2022, we plan to continue to deepen our cooperation with customers and partners in order to maintain the set growth rate. The end of restrictive pandemic measures and the new device on offer at Turris can be expected to help.

8.1 Hardware development

In 2021, the hardware section of the Turris team began working on new devices. The first of them is a compact device designed for home users, which places particular emphasis on their security. It should extend the functionality of the existing Turris Shield product and replace it in the Turris family product portfolio as an affordable and user-friendly router that can be taken on the go when needed.

The second major project the developers were working on is the successor to the iconic and sought-after Turris Omnia device. A powerful router that will support 10 Gb/s WAN and LAN ports, Wi-Fi 6 connectivity and 5G cellular technology. A partial prototype in two colours was

presented at public presentations. Thanks to this development, Wi-Fi 6 and 5G cards were found and functionally tested, which can be used not only in new devices, but can also be implemented in existing devices. This proves that Turris products can be continuously improved and their lifetime extended when using new technologies. By doing so, the Association contributes, among other things, to the sustainability of its products and reduces its ecological footprint.

Production in 2021 reached almost 10,000 devices, an all-time record. This quantity was achieved while maintaining the current high quality and therefore also the minimum number of units returned. The devices are still manufactured in the Czech Republic.

8.2 Software development

Software development continued in 2021 as well. One of the big priorities was better integration of the Turris Sentinel security software. An option for more detailed settings and the basic monitoring of triggered traps were integrated into the reForis user interface. A device token system enabling identification of data sent without knowing the specific router or user was also implemented.

We are also testing a new website that displays information collected within the Turris Sentinel project. The new website offers multiple views of the data and allows users to browse the results collected from each router. It should be in production in early 2022.

Migration for routers using Turris OS 3 was tested repeatedly during the year and launched on all routers at the end of the year.

The routers were migrated to the latest version of Turris OS. At the same time, work began on migration to the new OpenWrt release and will be completed in 2022, as well as a redesign and several new features in the user interface.

8.3 Marketing

The year 2021 was also marked by a focus on marketing. More social networking was started and an Instagram account was set up, and activity on the community user forum increased. Turris is thus opening up more to a wider audience outside the open-source and geek communities. Turris' marketing activities, including cooperation with experts and influencers in the fields of wireless networking and cybersecurity, generally led to significantly higher brand visibility with both distributors and the media.

By participating in WISPAPALOOZA 2021 in Las Vegas, USA (the largest meeting of internet providers and wireless equipment manufacturers in the world), the first business steps were taken in the overseas market.

8.4 Business cooperation

The pandemic affected and minimised participation in, among other things, foreign trade fairs, which are the best opportunity for Turris to attract new customers. Nevertheless, it was possible to attend several events that were held, for example:

- MWC Barcelona [ES],
- WISPAPALOOZA [US],
- WISPA UK [UK],
- ISP Alliance [CZ],
- MikroExpo [CZ].

Given the constraints, most of the business activities focused on the online world and plans for 2022.

The company managed to increase the number of devices sold by 2.5 times year-on-year and to enter new markets through distributors. Cooperation with CzechTrade, especially the USA and Western European offices, intensified as part of the planned expansion to the USA.

There is also an effort to develop cooperation with educational institutions:

- Tomas Bata University in Zlín (workshop and participation in security days),
- Universidad Carlos III de Madrid,
- and others.

9 CZ.NIC Labs

The CZ.NIC Labs is an organisationally separate research and development workplace that focuses primarily on **innovative projects for the benefit of** the Czech and global **internet communities that** support important trends in contemporary society, such as open data, eGovernment, open source software and support for disadvantaged users. They have their workplaces in all regional branches of the Association.

The projects are mainly focused on:

- infrastructure protocols and services,
- DNS traffic monitoring,
- network security.

Brief summary of activities in 2021

The flagship projects developed in 2021 are:

- [ADAM](#) - a system for the monitoring and analysis of services provided by the Association,
- [BIRD](#) - a multiprotocol routing daemon,
- [Datovka](#) - a multiplatform desktop and mobile application for access to ISDS data boxes,
- [Knot DNS](#) and [Knot Resolver](#) - implementation of authoritative and recursive DNS server,
- [Tablexia](#) - an educational application for children with dyslexia and other learning difficulties.

9.1 ADAM

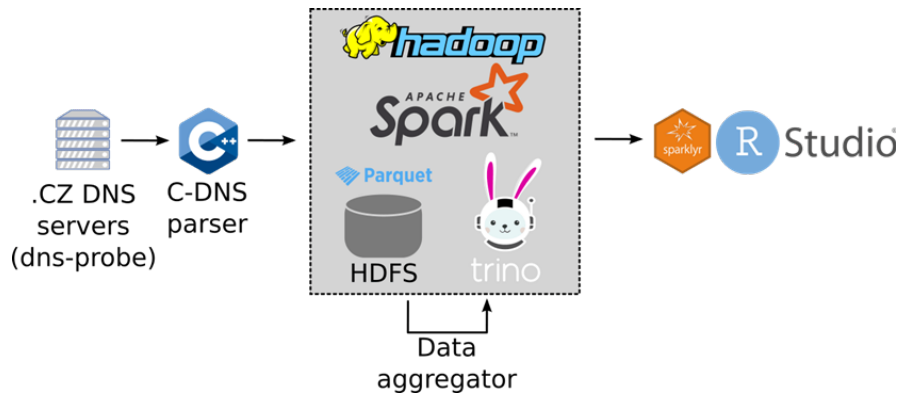
An important prerequisite for the reliable operation of DNS servers in the .CZ domain, domain register and other services provided by the CZ.NIC Association is, among other things, the systematic and detailed monitoring of real DNS traffic and its immediate and additional analysis. These procedures can detect potential technical problems or network attacks, to which the DNS infrastructure is permanently exposed, in a timely manner, and also effectively plan further development of the infrastructure and services.

The ADAM (Advanced DNS Analytics and Monitoring) project aims to **develop tools for** the effective and robust **collection and processing of data on DNS transactions**, to improve and expand the methods of their analysis and to develop appropriate user interfaces and reporting methods.

The main task for 2021 was a complete renewal of the hardware running the Apache Hadoop distributed database. It stores data about all transactions captured on both authoritative DNS servers and the public ODVR resolver. The new hardware assembly (in operation from March 2021) has six data nodes and two redundant control nodes. The total capacity of the data disks is 192 TB.

At the same time as the hardware renewal, the previously used Cloudera Express software system, for which the licensing terms had changed, was replaced with a set of separate open-source components. The selection of these components and their configuration in the new system is described in [the ADAM report 2/2021](#). The current procedure of processing data from DNS servers is schematically shown in the following figure.

Processing of DNS server traffic data



In November 2021, new statistics were deployed in production mode, providing information on all the main services operated by the CZ.NIC Association on several thematically focused web pages.

The source data for all charts, tables and other materials is also available through the [REST API](#).

9.2 BIRD

The daemon for the dynamic routing of the IP protocol is intended for Linux and BSD. The project began at the Faculty of Mathematics and Physics of Charles University, and the CZ.NIC Labs are participating in its further development. It is currently the most used route server software within peering centres in the world. According to a survey conducted by EURO-IX, more than two-thirds of the centres use it.

Even in 2021, the main goal was to work on a multithreaded development version that could fully exploit the potential of modern multi-core

processors. Nevertheless, the BIRD development team managed to reserve the capacity to release a new stable version 2.0.8. This version brought a number of improvements, but perhaps the most interesting one is the improvement in support for the RPKI security mechanism. The release of the multithreaded version remains the main goal for next year.

9.3 Datovka

The Datovka project is developing a library and an application for accessing data boxes. The desktop application with the library is available for Windows, macOS and Linux, while the mobile Datovka is designed for Android and iOS.

In 2021, the time-keeping data structures in the libdatovka library interface were replaced with new, system-independent structures that ensure correct retention of time values beyond 2038. The library can also be supplemented with custom functions for time conversion. The library was extended with functions for checking the status of the data vault and verifying the possibility of sending postal data messages.

Desktop Datovka, thanks to new features in the libdatovka library, offers users a choice of payment methods for postal data messages when multiple payment methods are available. You can now also optionally turn on notifications for automatic deletion of data messages from the data box server. The ability to work with found messages in the data message search dialog was added.

A wizard for creating a user account was added to the **mobile application**. Similar to the desktop application, it is now possible to select the payment method for postal data messages. Additionally, the way in which

downloaded data messages are stored was modified to be more similar to the method that the desktop application uses.

In addition to the development of the above-mentioned software, in 2021 the CZ.NIC Association was dedicated, within the Datovka project, to the design and implementation of a prototype server for sharing tags between instances of the Datovka application. The goal of the server is to facilitate cooperation between users of the desktop application, so that they can share data message labels. The integration of the client for this server into the desktop application and the production version of the server are planned for next year.

9.4 Knot DNS and Knot Resolver

Knot DNS is a software implementation of an authoritative DNS server.

Its main goals include achieving high performance in processing DNS queries and the efficient administration of large TLD zones, including advanced automation of DNSSEC signing. The project has already gained recognition in the DNS community and among users, whose number is constantly increasing.

In 2021, the expansion of XDP mode to include basic TCP protocol support continued. This implementation showed great performance potential compared to the classic network stack capabilities of the operating system. It is also possible in XDP mode to consider the current routing and filter or otherwise influence incoming traffic accordingly. The `kxdpgun` testing tool was also extended to support TCP.

The server now offers the possibility to automatically generate catalogue zones based on the current configuration and the possibility to assign catalogue zones to configuration groups, which can greatly simplify their use.

Other notable innovations include the use of `epoll` or `kqueue`, depending on the capabilities of the operating system. In addition, the parsing of `SVCB/HTTPS` records, the extension of error codes in `EDNS` and a number of other minor improvements were implemented.

The Knot Resolver project is developing the recursive DNS resolver

and pioneering technologies that improve security and performance. It has been protecting users with the Query Name Minimisation technique since 2015 and providing this protection as the default resolver on Turris Omnia routers since 2016. In 2018, the so-called aggressive DNSSEC cache was added to improve performance while protecting against Random Subdomain attacks. In the same year, Cloudflare deployed our implementation on the public resolver 1.1.1.1.

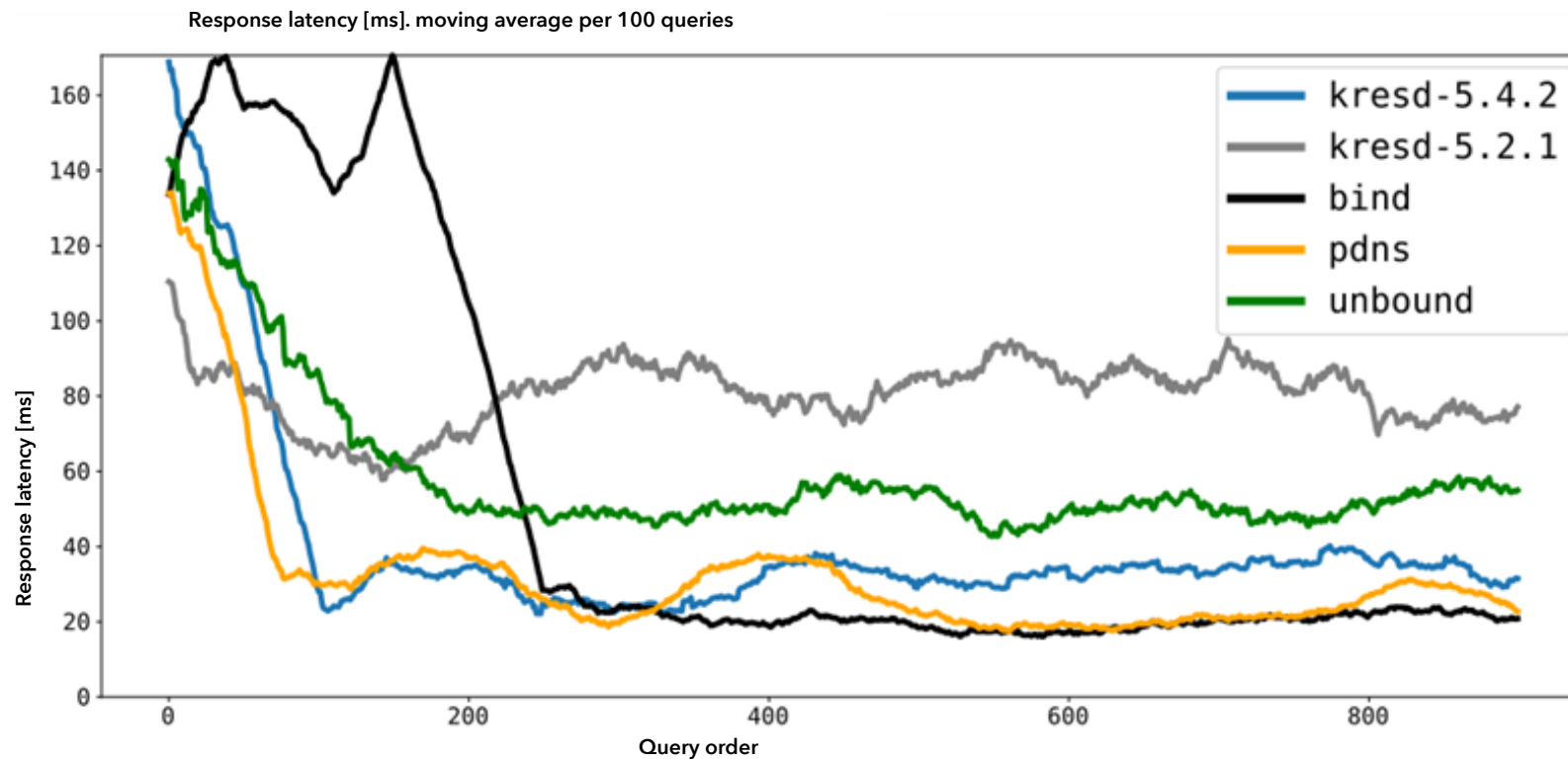
In 2019, experimental support for the DNS-over-HTTPS protocol was added and further optimisation was made to improve throughput; protection against other types of attacks, such as `NXNSAttack` and fragmentation attacks, was added in 2020.

In 2021, some parts of the resolver related to bug detection were redesigned. The process of selecting which messages are logged has been improved, and the logs themselves also contain more metadata. It is now possible to set up a function whereby when an internal state inconsistency is detected, the resolver will attempt to recover while collecting information to help fix the problem.

The stability of support for the DNS-over-HTTPS protocol was fine-tuned, according to experience with operation on public [ODVR](#) resolvers.

The last major change was rewriting the algorithm for selecting authoritative servers that the resolver contacts. This resulted in more maintainable code and improved average response times, when there are significant differences between server speeds. The change in behaviour can be seen in the following chart, showing the response times of different resolver implementations when simulating communication with root servers according to their real latencies from New Caledonia.

Response latency



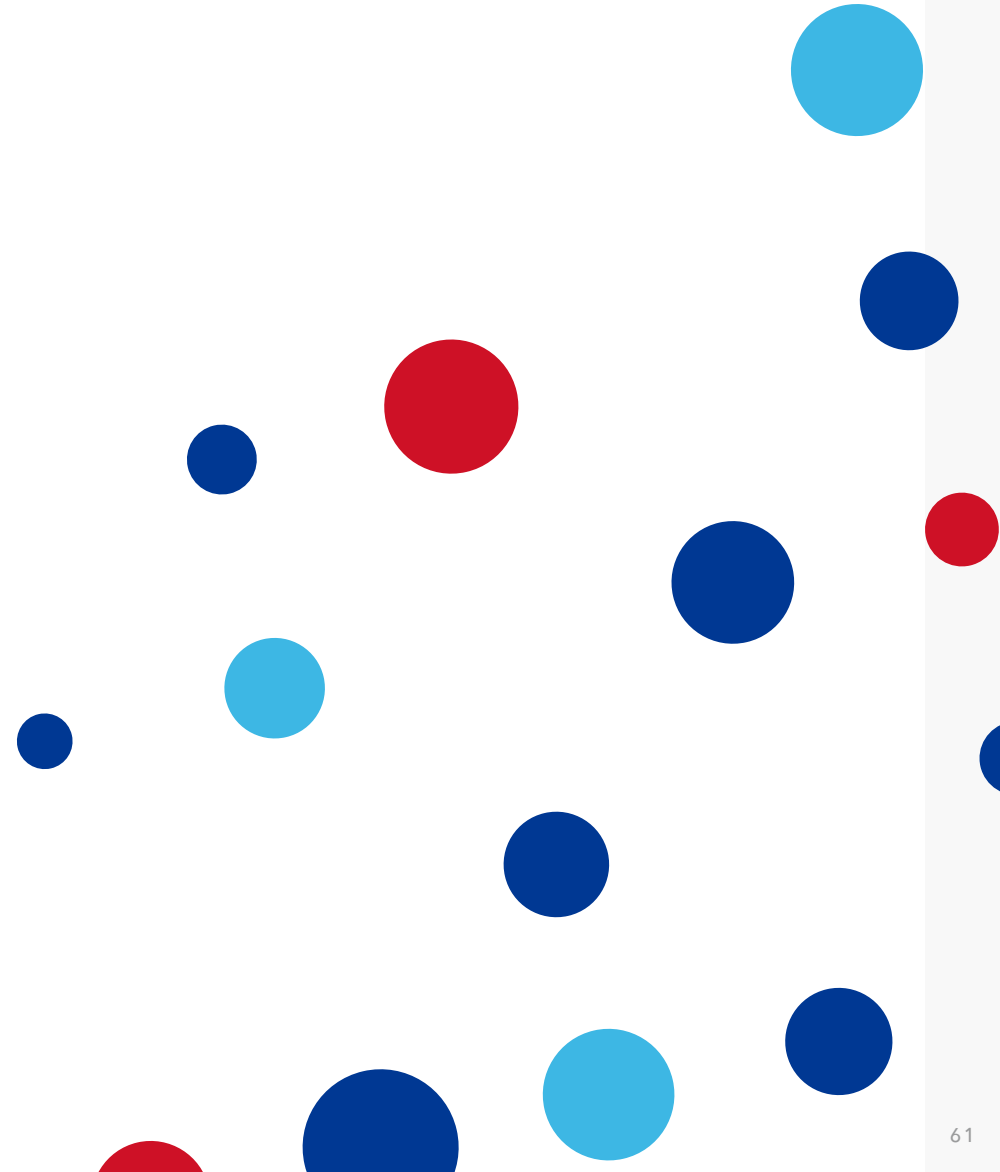
9.5 Tablexia

Tablexia is a modern educational application that **helps with the development of cognitive skills**. It is intended primarily for children with dyslexia at the second level of elementary school.

The application is intended for use both in schools as a supplement to standard teaching and in pedagogical and psychological counselling centres and other counselling facilities for pupils with learning difficulties. It is available for free in the Google Play and the App Store, and its desktop version is available on the [project website](#).

In 2020, three complete new games were released – Archiv (Archive), Na stopě (On the Trail) and Chyť zloděje (Catch the Thief). Since the games could not be properly tested with children in schools, minor adjustments to them, especially in the difficulty settings, were made during 2021 after feedback had been collected. In the spring of 2021, preparations began for **research that aimed to test the effectiveness of the application**. The preparation included the development of the research methodology (including a test battery), approaching schools, and a timetable. Unfortunately, despite all the preparations, the research could not take place due to the pandemic.

During the year, the mobile development team **focused on the issue of cyberbullying** and prepared a project called Kybertopia (Cybertopia). This is an educational adventure game created in the Godot programme, whereby the player finds himself in the role of a person helping his classmate who is being bullied by an older student using a fake social network profile. In addition to the educational component, the game includes various mini-games such as tic-tac-toe, puzzles and a car race.



10 Education and awareness

10.1

Communication with the public

Both public and private media – daily newspapers, radio, television and media servers dealing with the internet and technologies – provide information about the CZ.NIC Association and its activities.

In total, the Association published:

- **10 press releases,**
- **40 press announcements,**

which were given to professional journalists and journalists from media focusing on the general public or specific target groups. Press releases and announcements are published by the CZ.NIC Association on its website in the [News](#) section, which is also part of the information pages of the Association's learning centre (the CZ.NIC Academy), the CSIRT.CZ security team and selected CZ.NIC Labs projects.

The communication was mainly related to topics concerning the administration, operation and development of the Czech national domain, key projects of the Association, and activities related to its operations – for example cybersecurity, personal data protection, and education and awareness in the field of the internet and internet technologies.

Media outputs



In 2021, press releases appeared mainly in technically-oriented media. This most frequently meant the Root.cz and Lupa.cz portals. Last year, it was largely on these portals that CZ.NIC employees published a total of 71 articles. In the print media, this included, for example, interviews in the Deník regional newspaper.

Ondřej Filip, CEO of the CZ.NIC Association, as well as other employees, appeared as **guests on television and radio programmes**, most often on Czech Television – Dobré ráno (Good Morning) and Horizont ČT24 – and on Czech Radio. The interest was mainly in topics related to internet security, the online safety of children, and the Czech national domain.

Social media

The Association has long been using social networks – Facebook, Twitter and LinkedIn – as its official communication channels. Supporters were able to read, in regular posts, about the activities of the Association, events and current happenings in individual projects.

Audience on social media at the end of 2021:

	Twitter: 5,049
	Facebook: 3,215
	LinkedIn: 1,396

Other communication channels

An important part of the communication is the **CZ.NIC News newsletter**.

In 2021, the Association's staff wrote 56 articles on the online [CZ.NIC Staff Blog](#). The blog plays the role of the Association's official communication channel, so it is also used by journalists with a different focus.

	Media outputs		Social networks (fans)	
	Articles	Blog	Facebook	Twitter
2012	21	97	900	630
2013	29	95	1,100	1,000
2014	38	84	1,500	1,750
2015	57	82	1,800	2,370
2016	57	59	2,600	3,088
2017	73	49	2,826	3,573
2018	56	55	2,905	3,942
2019	63	47	2,984	4,297
2020	64	50	3,156	4,605
2021	71	56	3,215	5,049

Internal communication is provided primarily by the **IN Newsletter**, which CZ.NIC employees usually receive once every two weeks.

10.2 Popularisation series

Jak na Internet (How to Use the Internet)

The Jak na Internet (How to Use the Internet) series is the Association's **largest educational activity** that is focused on the general public. With its 125 episodes broadcast on Czech Television channels, it has reached a total of 225 million views since 2012. In addition to the public service media, the series is also available on local cable television.

The popularity of the series is also evidenced by the repeatedly positive results in awareness surveys among the internet public. More than a quarter (**25-35%**) of **internet users in the Czech Republic** knows the Jak na Internet (How to Use the Internet) series.

In addition to television, Jak na Internet (How to Use the Internet) is also broadcast on a YouTube channel. There, the individual episodes reach approximately half a million total views. The video content can also be found in the entertainment portals of RegioJet buses and trains, and on the Methodological Portal of RVP.CZ for teachers.

Extension texts published on the [Jak na Internet \(How to Use the Internet\)](#) website are also gaining in popularity. This is evidenced, among other things, by the fact that they are widely cited in graduate theses (see [Theses.cz](#)).

Selected episodes of the series are also published in a two-part [comic book adaptation](#).

Co-production programmes of Czech Television

In the past, the CZ.NIC Association has made the creation of several co-production programmes of Czech Television possible.

These included two seasons of the series **Nauč tetu na netu (Teach Your Aunt to Use the Internet)** and selected episodes from the series **Lovci záhad (Hunters of Mysteries)**, intended for children and young people. The original series [Nebojte se Internetu \(Don't Be Afraid of the Internet\)](#) is aimed at seniors.

All of the above-mentioned video materials were also available online in 2021 and were systematically used by organisations that focus on educating the selected risk groups – children and seniors.

Last year, the first season of the **Datová Lhota** series was created. Aimed at the youngest viewers, the series became the most watched show on the CT:D channel in 2020 and had above-average ratings overall. This first series had 10 episodes.

In 2021, the collaboration continued with the production of the second season of the series, which is expected to premiere in 2023.

Employees of the Association also participated in the creation of an educational series, **Alenka v říši GIFů (Alice in the Land of GIFs)**, focused on digital literacy and the prevention of risky behaviour on the internet, which was also presented at the beginning of 2021 on the children's channel CT:D.

Support for the film **V síti (Caught in the Net)**

In recent years, a documentary film called [V síti](#) (Caught in the Net) was created with the support of the Association, which deals with the issue of children's risky online communication. In early 2021, the film won the Czech Lion Award in the Best Documentary feature category.

#martyisdead

The [#martyisdead](#) series, co-produced by the CZ.NIC Association, was awarded the Czech Lion Award in the category of exceptional feat in the area of audio-visual arts for its worldwide success.

This project won a Global Emmy Award one year previously. This is a truly historic achievement for the Czech Republic.

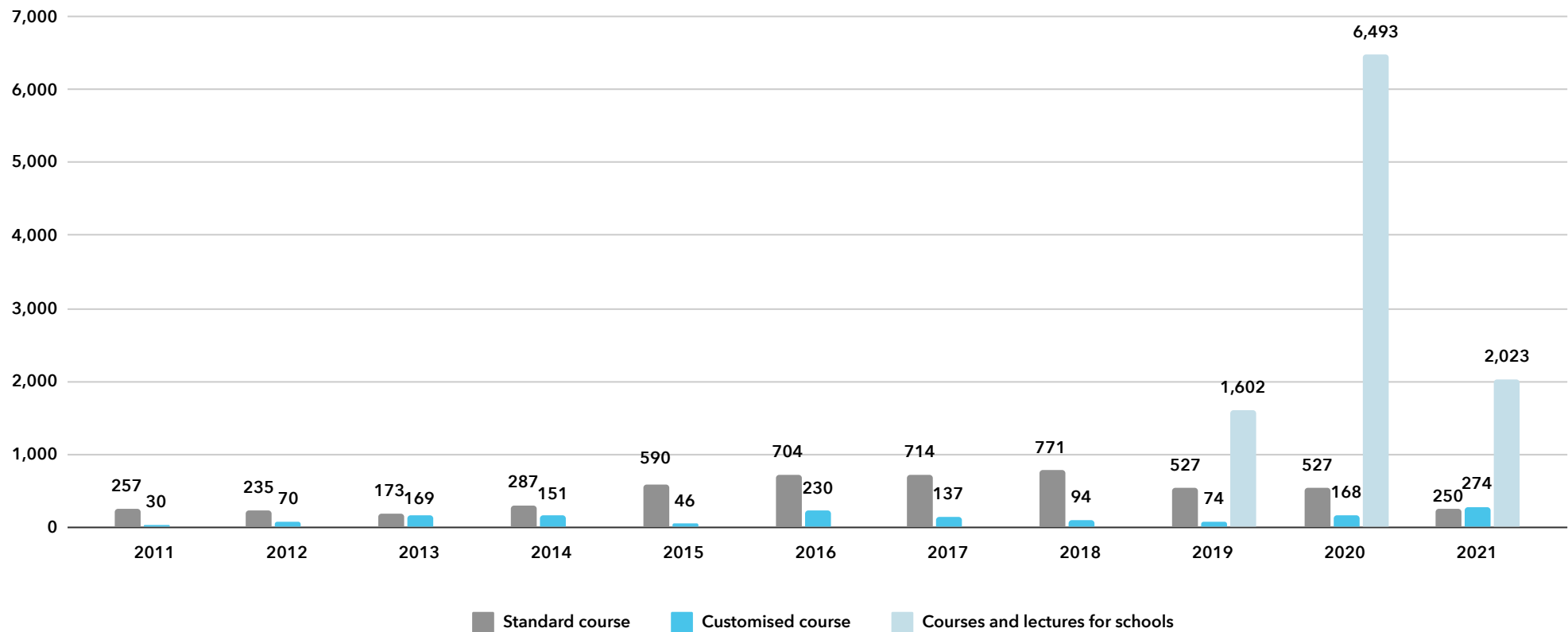
10.3 The CZ.NIC Academy educational centre

In 2021, the [CZ.NIC Academy](#) expanded its portfolio of courses with three new ones: DNS Knot – practical deployment of DNSSEC, Moodle practically, Python effectively. In addition to these face-to-face courses, a new electronic course for the Tablexia application was created at the Academy. Due to the pandemic situation, the courses were held this year not only face to face, but also in online form, roughly in a 1:1 ratio.

The Academy offered its space not only for face-to-face courses, but also served as a background for other face-to-face events (seminar for

members on MojED) and for those in the online space (courses, Internet and Technology 21 conference, Turrís Academy, meetings with members before the General Meeting). In July, the Academy provided its facilities for the traditional company suburban camp.

Development of the number of participants in the CZ.NIC Academy



List of professional courses conducted at the CZ.NIC Academy in 2021

Name	Number of courses	Number of participants
Ansible - Mass Automation and Server Management	3	38
Internet Security and Privacy	1	6
Barrier-Free Digital Design for Beginners	1	10
DNSSEC - Securing DNS	2	15
E-mail Authentication	5	72
Git - Universal Versioning System	4	32
DNS Knot - Practical DNSSEC Deployment	1	10
Cyberbullying and Other High-Risk Phenomena on the Internet	2	18
Moodle in Practice	1	8
Practice of Verifying Electronic Signatures	2	19
The Principles and Administration of DNS	3	19
Python Formally	1	17
Turris in Practice	1	11
Introduction to Forensic Memory Analysis	3	21
Introduction to Linux	3	23

List of customised courses conducted at the CZ.NIC Academy in 2021

Name	Number of courses	Number of participants
Arduino for teachers	1	19
Cyberbullying and Other High-Risk Phenomena	2	48
Social Engineering Perpetrated on Children	1	16
Basics of CSIRT/CERT functioning	1	17

List of courses and lectures for schools held in 2021

Name	Number of courses	Number of participants
The (Un) Safe Mobile Phone	22	694
Discussion of the Book "ONLINE ZOO"	11	233
Digital Footprint	7	189
Cyberbullying	7	160
Cyberbullying from a Legal Perspective	2	108
Online Content Beyond the Edge	4	116
Follow the Animals to the ON-LINE ZOO	1	16

Total number of courses organised by the CZ.NIC Academy in 2021

Course type	Total number of courses	Total number of participants
Professional courses	33	319
Customised courses	5	100
Schools	54	1,516
Total	92	1,935

10.4 Conference

On 10 June, the CZ.NIC Association organised an online conference, **Internet and Technology 21**, with the subtitle MojelD.

Its main topics were:

- electronic identity in the Czech and international context,
- legal framework of electronic identities in the Czech Republic,
- summary of news in the MojelD project,
- using the MojelD service in practice.

The autumn conference **Internet and Technology 21.2** was a face-to-face conference and took place on 10 November in Prague.

During the conference, presentations were made on the management of the Czech national domain, key projects of the Association, security in cyberspace and internet regulation.

As part of the accompanying programme, conference participants could set up access to online public administration services, i.e. their Citizen Identity, or secure their MojelD account with a physical security key and, in addition, the MojelD Key application, with the assistance of trained staff.

In 2021, the CZ.NIC Association presented itself at a number of events and professional conferences in the Czech Republic:

- Linux Days,
- OpenAlt,
- Install Fest,
- Zlín Film Festival,
- the d-Test conference - consumer protection in electronic communications,
- Risks of Online Communication,
- Cybersecurity in Business,
- participation in the jury at the Opening Data Together event.

Abroad, it was mainly participation in events of the following organisations:

- CENTR,
- RIPE,
- IETF.

On 14 December, the Association became a partner of the online professional meeting **Internet Measurement Day - Czech Republic**, which is prepared for the Czech internet community by the international organisations ICANN and RIPE NCC.

10.5 CZ.NIC Edition

Publishing specialised and popular publications on topics related to the internet and its technologies is a traditional awareness-raising activity of the Association. **Printed and electronic books** are published in the CZ.NIC Edition.

Electronic versions of books are available for free download on the website of the [CZ.NIC Edition](#), as well as in the content distributors network (Palmknihy, Wooky, eReading, Flexibooks, BookPort, Municipal Library of Prague) in PDF or e-reader formats (EPUB and MOBI).

Printed books are also available in the book distribution networks Kosmas, Euromedia Group and Pemic Books, and in the IKAR network in Slovakia.

Following the **publication of the first audiobook, Online ZOO**, the Association managed in the past to establish cooperation with Grand IT company, which provides distribution of electronic content. At present,

it cooperates with, for example, such portals as Galerie Vodafone, Alza, Audiolibrix, Digiport, iKiosek and others.

In 2021, the Edition was expanded to include a printed title:

ON-LINE ZOO - POEMS

This title is authored by Libor Manda, project manager of the CZ.NIC Association.

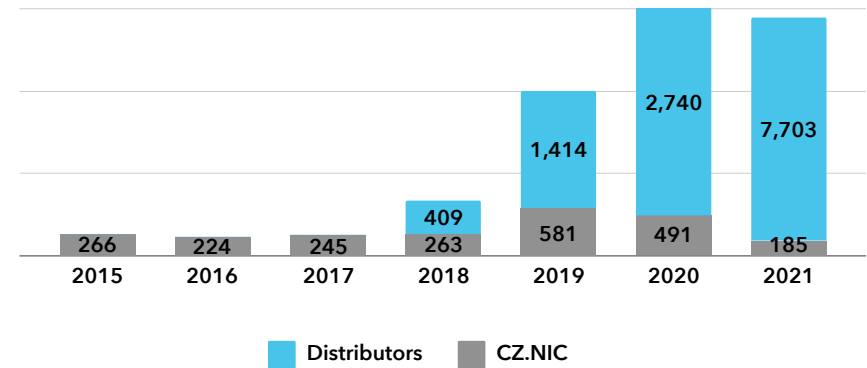
On-line Zoo - Poems is based on the previously published book On-line Zoo within the Safer Internet Centre project.

In the form of verses, the book introduces even the youngest readers to the basics of safe behaviour on the internet and points out the possible risks associated with its use. The verse form is very well accepted by children.

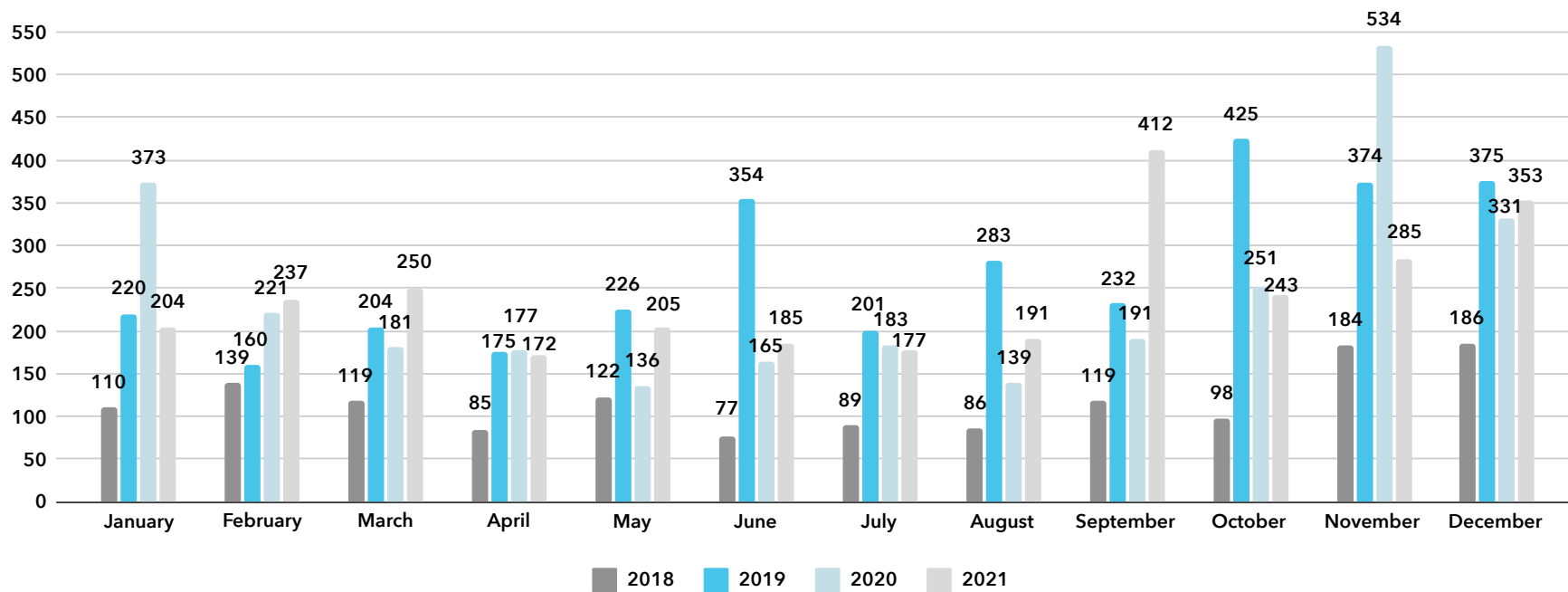
This brings the number of titles available to **26 professional or popular science titles**.

In 2021, **a total of 2,914 printed books were sold** in the CZ.NIC Edition, which represents a slight increase compared to 2020.

Overview of book sales by channel



Development of the sale of titles in the CZ.NIC Edition



11 Cooperation, support and partnerships

Connecting tens of millions of users across all continents, the internet is clearly the most important communication tool today. We often hear that the internet has no borders and does not fall under the authority of any government. This does not mean, however, that the internet is not governed or that it has no rules. Nevertheless, unlike many other sectors, the rules are often created by the internet community, which also includes employees of the CZ.NIC Association.

To ensure that no efforts of any member or organisation are in vain, mutual cooperation is essential, both at the national and international levels.

Cooperation with our domestic partners helps find the most acceptable system for national domain administration for the Czech user. At the same time, it contributes, mostly thanks to the projects of our Labs, to the expansion of new technologies and the development of the information society.

International cooperation not only helps follow world trends, but also – thanks to the active participation of the Association’s employees – contributes to their creation and thus influences our everyday lives.

Thanks to their high level of expertise, the representatives of the Association, both management and other staff, are welcome guests at both domestic and international expert forums.

11.1 Cooperation in the Czech Republic

The CZ.NIC Association is a natural partner of public administration and special-interest associations operating in the field of the internet.

11.1.1 Cooperation with public administration

The domain name **administration system**, together with the related **internet infrastructure**, is a **core critical infrastructure** of the state, similar to the energy or transport networks. The administrator of the national .CZ domain, the CZ.NIC Association, considers the protection of this key infrastructure as one of its basic duties. Without the efficient and secure functioning of this critical infrastructure, neither the further development of the digital economy in the Czech Republic, nor the further development of e-government services for Czech citizens and companies is possible.

For this reason, the Association continuously cooperates with a number of state bodies and organisations. First and foremost is the cooperation with the **National Cyber and Information Security Agency (NÚKIB)**, for which the CZ.NIC Association operates the so-called **National CSIRT of the Czech Republic** on the basis of a public law contract.

Another flagship project in cooperation with the state administration is the [Safer Internet Centre](#), which includes the [STOPonline.cz](#) service, whose staff is dedicated to reporting objectionable content on the internet, especially child pornography.

The CZ.NIC Association also cooperates closely with the **Ministry of the Interior of the Czech Republic** and operates the national **eIDAS** node for the second period on the basis of a contract from an open tender. A major benefit for the use of state administration services was the creation of an alternative to the state identity tool, e-ID, in the previous period, when the MojelD service was accredited at the “high” level.

The Association was also active in commenting on draft legislation that may have an impact on the digital world. Furthermore, the Association representatives cooperated with the Czech Telecommunication Office, Ministry of Industry and Trade, Police of the Czech Republic, enforcement authorities, courts and authorities according to the statutory authorisation, i.e. with the Office for Personal Data Protection, trade and tax offices, the Customs Administration and other entities.

At the end of the year, the **Memorandum of Cooperation with the Czech Trade Inspection Authority** was concluded, where the [DNS crawler](#) tool, developed within the ADAM project, will assist in detecting so-called risky online stores. The Czech Trade Inspection Authority will thus gain a tool for its effective action in the field of consumer protection in the internet environment.

11.1.2 Cooperation with the non-profit sector and social responsibility

The CZ.NIC Association supports a number of organisations and projects in the non-profit sector.

OSF Foundation

The main goals of the project **Náš stát, naše data (Our State, Our Data)**, of which the Association is a long-term partner, are to promote the principles and standards of open data and to promote, raise awareness and coordinate activities and experts on this topic. In 2021, the situation was still complicated by anti-epidemic measures, so a large portion of the events took place online. The Association's experts joined the project, for example, by speaking at the Pandemic Open Data Expo, where the MojelD service was presented in a virtual room by Jaromír Talíř, technical partner of the CZ.NIC Association.

Representatives of the Association participated in the second year of the **Civic Tech Open** event, where they sat, as in recent years, on the expert juries of the **Společně otevíráme data (Together We Open Data)** competition, which for the ninth time awarded the best public applications using open data for socially beneficial services, namely in the categories Education, Urban Data, Health, Climate and the Environment.

Faculty of Mathematics and Physics, Charles University

In the upcoming five years, the Association will continue to be a partner of the Faculty of Mathematics and Physics of Charles University, where both entities will cooperate particularly in the field of research, development and education, as they are connected by a number of topics related to the internet and internet networks, as well as by key projects of the Association, such as the BIRD routing daemon and the Knot DNS authoritative DNS server.

11.1.3 Membership in professional and interest organisations

Czech Television - Děčko

In 2021, the CZ.NIC Association was represented in *“Děčkolegium”*, an informal board of advisors providing expert advice, feedback and opinions on the programmes and content of the popular Czech children’s channel Děčko. It also helps to acquaint parents with media issues.

NIX.CZ

The largest Czech Internet Exchange Point (IXP) covers domestic and foreign internet service providers for the purpose of interconnecting their networks. The NIX.CZ Association is the largest IXP in the Czech Republic and one of the most important ones in the world.

The CZ.NIC Association is a member of NIX.CZ and actively contributes to its activities, primarily through the **FENIX** project. NIX.CZ also uses the products of the CZ.NIC Labs, especially the BIRD multiprotocol routing daemon.

Involvement in the FENIX project

The Association helped establish the FENIX project on the platform of the biggest Czech peering node, NIX.CZ, in 2013. The main aim of the project is to secure the availability of internet services among entities involved in this activity in the event of massive DoS attacks. The FENIX project is intended for businesses providing connectivity for major connection and content providers that need to secure their operation in the most critical situations.

Any entity that meets the entry terms and conditions can join the FENIX project. These terms and conditions resonate with what the CZ.NIC Association has been promoting for a long time by its activities, especially with the development of a trustworthy, secure and stable internet infrastructure and services of general interest. To join the FENIX project, the applicant must, for example, run its own CERT/CSIRT team, support IPv6 and DNSSEC, have response rate limiting implemented and use BCP-38 source address filtering on its network.

11.2 Social responsibility (supporting third parties and projects)

Helping people affected by the tornado

An extreme storm accompanied by hail and a tornado hit several municipalities in the Břeclav and Hodonín regions in June 2021. The CZ.NIC Association contributed **a total of CZK 1 million** to the inhabitants of these municipalities for the relief effort through a public collection by the Czech Radio Foundation and the Via Foundation. Some staff also participated in the immediate help in the form of cleaning up the damage.

ADRA, People in Need, Safety Line

The Association supports, in particular, the educational project of the humanitarian and educational organisation Člověk v tísní (People in Need) entitled **One World**. This project offers schools documentary films and accompanying methodological aids for teaching current topics of the contemporary world and modern history.

Within the **"Pomáhejte ověřením" (Help by Verification)** project, domain holders could contribute, when verifying their contact information, through the CZ.NIC Association to the activities of three non-profit organizations - ADRA, Člověk v tísní (People in Need) and Linka bezpečí

(Safety Line). These organisations received a total amount of more than CZK 349,000.

Secondary school vocational activity

The Association is a long-standing partner of the Secondary School Vocational Activity competition, which is instituted by the Ministry of Education, Youth and Sports of the Czech Republic. This project is designed to lead gifted students to take an independent and creative approach to solving expert issues. The Association supported this activity with CZK 300,000.

Helping animals

The CZ.NIC Association has long contributed to the Prague and Zlín Zoos for the breeding of the Australian cassowary, whose original home is New Guinea and Australia. In 2021, the contribution amounted to CZK 13,000.

11.3 Cooperation abroad

Thanks to the activities of the Association on the international internet scene, foreign stakeholder organisations are increasingly choosing CZ.NIC as a partner for cooperation and the Czech Republic as the location for their meetings. This gives representatives of the local internet community easier access to interesting topics and to the world's leading experts from the field of the internet.

11.3.1 Membership in professional and interest organisations

APWG (Anti-Phishing Working Group)

A global coalition of private companies, state institutions and security forces focused on the global fight against cybercrime, especially spam.

CENTR (Council of European National Top Level Domain Registries)

A non-profit organisation associating administrators of top-level domain names, both national and generic. It primarily targets European registers, but its members also include representatives of more distant regions, e.g. Canada and Japan.

The CZ.NIC Association has been a member since 2001 and has been regularly involved in individual working groups' meetings. The CENTR Technical Working Group has been headed by Jaromír Talíř, technical partner of the Association, since 2019.

DNS-OARC (The Domain Name System Operations, Analysis and Research Centre)

A trusted platform where key entities meet and share their experience with DNS operation, analyses and research, so that they can coordinate their work as efficiently as possible, particularly in the field of security.

Jaromír Talíř, technical partner of the CZ.NIC Association, has been a member of the DNS-OARC Board of Directors since 2019.

EURid (The European Registry of Internet Domain Names)

An association, which, under the authority of the European Commission, administers the .EU top-level domain. CZ.NIC is its associate member and has a representative on the Board of Directors.

EuroISPA (European Internet Services Providers Associations)

The European Internet Services Providers (ISP) Association is the largest organisation, bringing together more than 2,300 organisations around the world. The main objective of EuroISPA, of which CZ.NIC has been a member since 2008, is to represent ISPs within the legislative processes of the European Union and facilitate the exchange of experience among individual internet service providers.

CSIRT Network

A CSIRT teams interest group, which acts as a contact point for the obliged entities identified in the NIS Directive (Directive of the European Parliament and of the Council concerning measures for a high common level of security of network and information systems across the Union). The group primarily deals with technical issues related to the implementation of this agenda.

In 2021, CSIRT.CZ actively participated in meetings and activities within the European Network of National and Governmental Teams – CSIRTs Network, supervised by an observer from the European Commission and

supported by ENISA, which serves as a secretariat and active support for incident coordination across the EU.

CSIRTs Network provides a forum for cooperation and information sharing. The persistence of the COVID-19 pandemic brought, also in 2021, various new challenges related to cooperation between teams, as well as in the field of prevention and awareness. However, these aforementioned challenges, bringing new needs in line with the corresponding situation, have helped develop deeper, more effective cooperation and more prompt responses in dealing with cross-border incidents or with prevention itself.

FIRST (Forum of Incident Response and Security Teams)

The first international organisation associating security teams. It has over 600 teams in more than 90 countries around the world, with significant representation by American and European teams. It is the only organisation that provides membership to teams from around the world and also covers product teams. The CSIRT.CZ team became a member of the FIRST organisation as early as 2015.

ICANN (Internet Corporation for Assigned Names and Numbers)

An international non-profit organisation founded in 1998, the main task of which is to administer and assign not only generic top-level domain names (gTLDs) and top-level national domain names (ccTLDs), but also IP addresses. The CZ.NIC Association, as a national domain administrator, sends its representatives to regular meetings, and its experts actively participate in the activities of the working groups. Ondřej Filip, managing director of the CZ.NIC Association, is a member of the prestigious Security & Stability Advisory Committee (SSAC) within ICANN.

IETF (Internet Engineering Task Force)

An organisation founded in 1986, which is directly linked to the birth of the internet. It is made up of an international community of leading specialists, network architects, and representatives from the commercial sector. The IETF approves and promotes internet standards – and RFC documents – which govern the majority of internet operations. Our employees are actively involved in some of them. Meetings of the members of this organisation have also taken place in Prague several times, thanks to the cooperation of the CZ.NIC Association.

The CZ.NIC Labs' employees participate, within the IETF, mainly in the activities of the DNSOP (DNS operation), NETCONF (network devices configuration) and NETMOD (configuration and status data modelling) working groups. Ladislav Lhotka, the head of the CZ.NIC Labs, has long been an active member of the IETF community, and he is the first Czech ever to participate in the creation of an internet standard as the lead author (RFC 6110). In September 2021, the IETF organisation issued a new internet standard (RFC 9108) – here the CZ.NIC Labs' head acts as a co-author. In addition to these two documents, Ladislav is a signatory to five other internet standards.

INHOPE (International Association of Internet Hotlines)

INHOPE is an international association of over 50 hotlines aimed at combating and eliminating illegal online content, especially child pornography. The main benefits of INHOPE membership include access to the ICCAM database (derived from "I see Child Abuse Material") and the possibility of effective cooperation with other countries and institutions, particularly Interpol, in removing illegal content.

The CZ.NIC Association, with the STOPonline.cz line operated by it, became an associate member in June 2017. In 2018, the Association

gained full membership in this prestigious association, as part of the Safer Internet Centre project implementation. From the following year onwards, the Association will also receive a special financial reward in recognition of the high number of reports processed.

RIPE NCC (Réseaux IP Européens Network Coordination Centre)

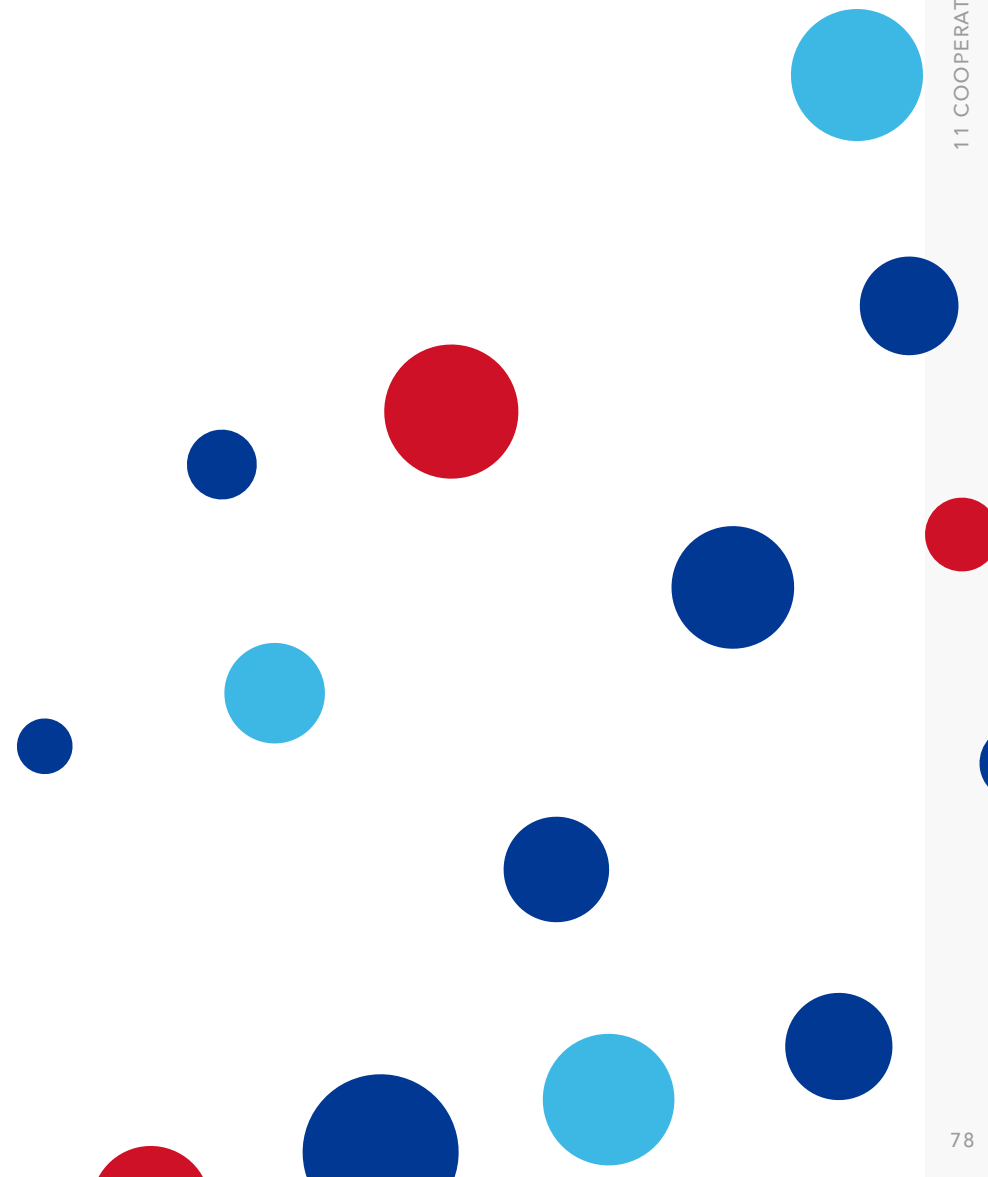
An independent non-profit organisation that supports internet infrastructure. Its core activities include the operation of the RIR (Regional Internet Registry), which allocates internet resources and related services (such as IP addresses) to its members. The CZ.NIC Association, as one of the members, not only attends regular meetings, but also participates in other thematic meetings and training events organised by this organisation. Ondřej Filip, CEO of the CZ.NIC Association, has been a member of the Board of Directors of this organisation since 2019.

TF-CSIRT

TF-CSIRT is an organisation that brings together security teams, predominantly from Europe. The CSIRT.CZ team has the highest possible level of membership of this organisation – certified. CZ.NIC-CSIRT is an accredited member.

US WISPA

An association of wireless internet service providers dedicated to the development of wireless internet, compliance with the highest standards of provided services, and the use of the latest technology in practice in the UK and Ireland.





12 Grant projects

The CZ.NIC Association continued to participate in a number of research and development projects that addressed new technological challenges at the national and international levels and supported the development of modern technologies and the information society. In accordance with the long-term focus of the Association and the development strategy for the period of 2020-2024, innovative projects with high added technological and social value entered key areas of interest.

The Association's priorities in this area include:

- cybersecurity,
- low-level internet protocols,
- IPv6,
- routing,
- the area of electronic identity,
- safe behaviour on the internet,
- eGovernment.

From our point of view, grant projects are an opportunity to pursue interesting research and development activities, including those that may not be primarily attractive to traditional commercial entities at the moment. At the same time, they give us the opportunity to cooperate nationally and internationally with partners from the private, academic, non-profit and public sectors to further push the boundaries of our knowledge and skills.

By participating in international projects, the Association also contributes significantly to the development of key internet infrastructure, including the area of electronic public administration services. At the national level, the projects contribute to the development of cybersecurity solutions and significantly influence the scope and form of activities implemented to promote a safe internet for children and young people. By implementing them, CZ.NIC strengthens its position as a trusted partner of the state and a responsible player in the field of technology.

12.1 Involvement in European cooperation projects

The CZ.NIC Association is involved in interesting European projects co-financed from the main EU development programmes, Horizon 2020 and the Connecting Europe Facility (CEF). Through them, the European Commission implements its strategies and goals in key areas of the economy. Great attention is paid to information and communication technologies and European networks.

In the period under review, the following projects were implemented with the support of the European Commission:

- Safer Internet Centre CZ (SIC CZ),
- CyberExchange,
- THREAT-ARREST,
- SPARTA,
- RegelID,
- CZ Node Upgrade,

Safer Internet Centre CZ (SIC CZ)

CZ.NIC has been the national coordinator of Safer Internet activities since 2019, also implemented under the name **Bezpečně na netu (Safe on the Net)**. Through the Safer Internet programme, the European Commission is working to create safe internet for children and young people, and to promote mutual cooperation both in Europe and globally.

Thanks to the Safer Internet Centre CZ, among other things, the reputation of CZ.NIC is being strengthened among the professional and lay public.

The Safer Internet Centre CZ is based on three pillars:

1. a centre for the prevention of negative phenomena associated with the use of modern technologies,
2. a helpline for children and adults, provided by the Safety Line as a project partner,
3. the STOPonline.cz line for reporting illegal content on the internet.

A number of preventive and educational activities were implemented under the umbrella of the Centre in 2021. Despite the unfavourable situation caused by the COVID-19 pandemic, dozens of educational events were held, mostly in the form of online seminars. In cooperation with the partner Linka bezpečí (Safety Line), hundreds of children and teachers were given knowledge and experience in the area of internet safety during these seminars.

Physically, educational activities were carried out for selected schools; children from the first and second grades of elementary schools and preschoolers.

Another activity of the Centre is the creation of preventive and educational content:

In cooperation with the **Ministry of Education, Youth and Sports, the Ministry of the Interior of the Czech Republic, NÚKIB and partners from the private sector, bulletin boards** with basic recommendations and information on safe behaviour on the internet were created.

A total of **4,200 bulletin boards** were distributed to all primary schools, and subsequently a wave of interest was generated from secondary schools and public institutions (e.g. libraries or children's homes).

In cooperation with the Centre for Virtual Risk Communication at Palacký University, the **"Online World in Children's Homes"** research was carried out, the results of which were of interest to the international **Insafe** organisation, which brings together national centres for safe internet.

The results of the research were subsequently presented at the conference, which was one of the important activities of the 2022 **Safer Internet Day**. The acquired knowledge will also be used to prepare online tutorials aimed specifically at children and educators in children's homes.

In cooperation with influencer Martin Mikyska, alias Mikýř, (who subsequently won one of the Crystal Magnifiers for 2021 for his activities on the internet), an Instagram campaign was implemented on the topic of **Hate Speech on the Internet**.

The Association also continued its educational activities related to the On-line Zoo book, whose target group is children aged 5-7. The topics contained in the book concerning internet safety were converted into poems, and the publication was published as part of the CZ.NIC Edition.

Last but not least, a meeting of representatives of the public, non-profit and private sectors in the Advisory Board, and of Czech youth in the Youth Panel, also took place remotely. Of the large events, the Zlín Film Festival was at least successfully held, and two debates with children and young people took place there. The festival in Zlín was also attended by representatives of the Youth Panel, with whom the founders of the successful podcast "U kulatého stolu" (At the round table) made short prevention videos on topics of the students' choice.

At the same time, the National Safer Internet Centre was continuously involved in activities at the European and international levels. Since 2021, the Association has been directly involved in the activities of selected Insafe working committees, including the core Governance Working Group, Assessment Working Group and Steering Committee.

Insafe expressed interest in selected outputs of the Association's activities.

STOPonline.cz line

An integral part of the SIC CZ project is also the **operation** of the [STOPonline.cz](#) line for reporting illegal content – especially child abuse, inappropriate child nudity and cyber grooming. On the basis of a declaration of cooperation, the hotline cooperates with the Office of the Criminal Police and Investigation Service, General Crime Department.

In 2021, a total of 3,944 reports were received on STOPonline.cz. Almost 800 cases were related to child pornography or nudity; 90 reports of inappropriate content were handed over to ISPs for resolution, and 14 cases were submitted to the Police of the Czech Republic.

A new category of *Incitement to Suicide via Websites* was created, with a total of six reported cases.

CyberExchange

The Association is a participant in the European CyberExchange project, which **supports active cross-border cooperation in the fight against cyber threats**. A total of 11 national and governmental security teams from the Czech Republic, Croatia, Latvia, Luxembourg, Malta, Poland, Austria, Romania, Greece and Slovakia are involved in the project.

The core of the project is professional internships, during which representatives of the security teams have the opportunity to share their experience and strengthen their professional capacities. The project also supports technical internships aimed at supporting the deployment of modern software tools developed by individual national teams. In this respect, CyberExchange is compatible with the MeliCERTes platform, which is one of the “building blocks” of cross-border digital infrastructure services.

Due to the ongoing COVID-19 pandemic, it was agreed to extend the project until June 2022 (the original plan was until 2020). CZ.NIC staff have participated in two exchange internships during the project period. We also hosted representatives of CERT.PL.

THREAT-ARREST

The aim of the THREAT-ARREST research project, completed in the reporting year 2021, **was to develop an advanced training platform**. The project was implemented under the European programme Horizon 2020.

The new platform achieved the planned goal of covering emulation and simulation of gaming and visualisation capacity and their application for the preparation and development of expertise in the field of the protection of high-risk cyber systems and entities. Through the outputs of the project, the ability of security teams to face advanced, known and new computer attacks is to be increased. Training activities are built on selected model scenarios supplemented by advanced tools for their evaluation.

From the point of view of achieving the set goal, the key is the design and development of a CTPP (Cyber Threat and Training Preparation) platform, intended to practice defence against cyber attacks and improve the protection of selected systems. Throughout the THREAT-ARREST project, CERT/CSIRT.CZ specialists of the CZ.NIC team were involved in selected

project activities primarily related to the development and evaluation of the CTPP model in question.

SPARTA

In 2019, CZ.NIC joined a project supported by the Horizon 2020 programme. This was the SPARTA research and development project, in which a total of 44 organisations across Europe pooled their knowledge and skills.

The general objective of the project is to **map and re-evaluate the current method of conducting cybersecurity research in Europe**. Within the individual parts of the project, solutions are being developed and shared to help security experts prevent cybercrime and increase cybersecurity.

CZ.NIC is represented in the project by experts from the national CERT/CSIRT team, who, from the position of the end user, participate in the implementation of one of the research programmes of the project called T-Shark. The aim of this programme is to create a comprehensive framework for the detection, identification and, above all, prediction of cyber threats, and for the sharing of information among partners.

At the same time, the implementation of the project makes it possible to establish and deepen relations with actors across the continent who, from various angles of their professional activities, focus on cybersecurity. This fact helps further establish CZ.NIC in the professional European community.

RegelD

At the end of 2020, the European Commission published the *Connecting Europe Facility - TELECOM* publication, in which it presents selected activities supporting the deployment of digital networks and cross-border

interoperable services throughout Europe. The highlighted projects also included the RegelD project, which is managed and supported by the CZ.NIC Association.

The project supports the integration of eID DSI with the registration services of national top-level domain administrators (TLDs) in four EU countries: the Czech Republic, Denmark, Estonia and the Netherlands. The project will reduce restrictions on the administration of domain names of the EU residents in other EU Member States. Applicants for registration will be able to secure their registered domain information through national eIDs (electronic identifications). This will increase trust, confidence and security throughout the internet environment. In addition, this should prevent false domain registrations, which will significantly help in the fight against cybercrime and will contribute to the protection of intellectual property rights.

The project will also identify barriers to the connection of national registrars to the eIDAS infrastructure, and these will be shared with relevant stakeholders. The project thus prepares the environment for the future absorption of eID DSI in various segments of the internet domains.

Due to the COVID-19 pandemic and technical and procedural challenges at the partner Member States level, the project was extended until the end of 2021 (i.e. 6 months beyond the project plan). In the case of CZ.NIC, the project outputs were brought to the level of their possible deployment into live operation.

CZ Node Upgrade

This project is a continuation of the CZ.PEPS project implemented from 2016-2019.

The goal of the new CZ Node Upgrade project **is to update the eIDAS node** to the latest version of the CEF eIDAS Node 2.5 software, which implements the new version of the eIDAS 1.2 technical specifications. By its financial support for this upgrade, the European Commission is seeking to encourage Member States to support the latest versions of the specifications for the purpose of maximum interoperability. The eIDAS node allows for the cross-border recognition of electronic identification in Europe, in accordance with Regulation 910/2014 of the European Parliament and of the Council (the so-called eIDAS). The project was successfully completed in 2021.

12.2 Engagement in national and other projects

The CZ.NIC Association is also actively involved, in the long term, in national scientific research and development projects, especially within the **Security Research Programme of the Czech Republic** for the years 2016-2021.

Cyber Threat Intelligence (CTI) system building and verification operation

The project announced by the Ministry of the Interior of the Czech Republic as part of the above-mentioned programme focuses on strengthening

the protection of critical information infrastructure and other important information systems and networks.

The general aim was to design and verify in operation the feasibility of the mechanism for detection, identification and prevention of cyber threats and the evaluation of cybersecurity incidents (so-called Cyber Threat Intelligence; CTI). The main task here became to create procedures for identifying problems (attacks, threats, vulnerabilities) typical for network environments of a similar nature. Part of the solution that will contribute to the implementation of Act No. 181/2014 Coll., on Cybersecurity, is the sharing of information on security events, incidents and threats, both between national and governmental CERTs, and between national and governmental CERTs and selected electronic communications' network operators.

Thanks to an effective system for detecting, identifying and predicting cyber threats and evaluating cybersecurity incidents, the damage caused by cybercrime is being reduced. The project is being implemented in close cooperation with the CESNET Association and in communication with the project guarantor in the form of the National Security Authority (NSA). Specialists from several departments are involved therein on behalf of CZ.NIC.

The project included the distribution and placement of more than 700 hardware probes based on Turris probes, which functioned, in the environment of selected public administration entities, as devices for data collection and, at the same time, as protection against cyber attacks.

The project team managed to complete the project within the stipulated deadline. Its implementation not only helped increase the security of the Czech Republic, but also further deepened the level of communication and relations with the CESNET Association and the specialists from the NÚKIB.



13 Structure of the Association

13.1 Member base

The member base of the Association is made up of a number of **entities which are significantly involved in the functioning of the Czech internet**. Among the members there are representatives of internet and telecommunications service providers, domain name registrars, publishers of internet and print media, and e-commerce businesses, as well as entities for which the internet and domain names are “only” an important communication tool.

The CZ.NIC Association is thus one of the places where these representatives can meet and, at the same time, influence the future direction of the Czech internet. Further expansion of the Association’s knowledge portfolio, streamlining its management and response to the constant development of the internet, allows a wide range of business activities for members and their involvement in the Association’s activities, either by attending General Meetings, working groups and seminars, or e-mail conferences, or by directly working in the Association’s bodies.

Membership conditions

A legal entity that meets the following general terms and conditions for membership can become a member of the Association:

- location of the registered office or organisational unit in the territory of a Member State of the European Union,
- holding at least one domain name in ccTLD CZ,
- payment of the entrance membership fee.

The members of the Association are divided into three chambers:

- Chamber of Domain Name Holders,
- ISP Chamber,
- Chamber of Registrars.

The statutes govern the special terms and conditions of membership in the individual chambers. The chamber arrangement brings benefits to the members of the Association, who can easily formulate and defend their opinions and interests together with other similarly-oriented entities.

This arrangement also makes the operation and negotiations of the Association bodies, particularly the Collegium and General Meeting, more efficient.

13.1.1 Number of members by chamber

As of 31 December 2021, the CZ.NIC Association had a total of **120 members**.

Development of the number of members by chamber

Chamber/ Year	ISP	Registrars	Domain name holders	Total
2008	15	11	31	57
2009	17	14	32	63
2010	19	19	37	75
2011	23	17	49	89
2012	27	18	61	106
2013	27	19	65	111
2014	24	20	69	113
2015	23	20	72	115
2016	25	20	67	112
2017	26	18	71	115
2018	26	19	69	114
2019	27	17	72	116
2020	27	17	75	119
2021	29	16	75	120

Division of members by chamber

ISP	23%
Registrars	14%
Domain name holders	63%

13.1.2 Overview of members by chamber

Overview of chamber members as of 31 December 2021

Chamber of Domain Name Holders (Business Name, Company ID No.)

ABRATICA s.r.o.	26108534
ACOMWARE s.r.o.	25047965
ADAPTIVITY s.r.o.	24156027
AdminIT s.r.o.	27864901
Advio Network, s.r.o.	28565673
Adytia Innovation OÜ	14498430
AKREDIT, spol. s r. o.	25797387
ALEF NULA, a.s.	61858579
ALENSA, s.r.o.	27179681
AliaWeb, spol. s r. o.	26117363
Asociace pro elektronickou komerci, z.s. (Association of E-commerce)	68684797
AUDITEL, s.r.o.	26775034
CD PROFESIONAL security agency, s.r.o.	25712713
CISCO SYSTEMS (Czech Republic) s.r.o.	63979462

Q3, s.r.o.	26226073 (now 4305426)
ComSource s.r.o.	29059291
Com-Sys TRADE spol. s r. o.	16188781
CQK HOLDING a.s.	28405579
CYBERSALES a.s.	26199653
Datahost s.r.o.	26390973
DELL Computer, spol. s r. o.	45272808
ECOMOLE LTD.	9526615
ekolo.cz s.r.o.	27141659
Fortion Networks, s.r.o.	26397994
Greenlux s.r.o.	28608747
Holubová advokáti s.r.o.	24686727
ICZ a.s.	25145444
igloonet, s.r.o.	27713482
I. H. P. společnost s ručením omezeným	48117846
INBES, spol. s r. o.	14502593
Intell. Net s.r.o.	27971546
Internet Info, s.r.o.	25648071
Internet Mall, a.s.	26204967
i - registry s.r.o.	28451082
Klíč, spol. s r. o.	28129377
Laurián s.r.o.	29018919
MAFRA, a.s.	45313351
Mailkit s.r.o.	26449901
MARIAS s.r.o.	26136139
MASANTA s.r.o.	25730533
MEDIA FACTORY Czech Republic a.s.	26288311
Michal Krsek & partneři s.r.o.	27418570
MITE Infonet s.r.o.	25660292
Modrá Busina s.r.o.	28885961
Moonlake Web Services, s.r.o.	29249911

Neutral czFree eXchange, z.s.p.o.	75093201
NEW MEDIA GROUP s.r.o.	26124611
Nux s.r.o.	27234631
Občanské sdružení Ubuntu pro Českou republiku	22674608
Orego finance s.r.o.	24718955
PharoCom s. r. o.	25172131
Prague Business Office s.r.o.	27143481
Pražský Účetní Servis s.r.o.	26740575
Qrator Labs CZ s.r.o.	3620174
SH.cz s.r.o.	25492063
Skymia s. r. o.	28238613
Software602 a.s.	63078236
Socha, spol. s r.o.	48291153
Solitea, a.s.	1572377
SVBsoft, s. r. o.	28523644
TechLabs s. r. o.	8618445
Tech Ware spol. s r.o.	14891107
TIKWI s.r.o.	28917651
Trustica s.r.o.	26514362
Unie vydavatelů, z.s. (Czech Publishers Association)	15887081
ÚVT, s.r.o.	25701118
Vedea s.r.o.	28913876
VIZUS.CZ s.r.o.	27155315
VOLNÝ, a.s.	63080150
Vymáhání a odkup pohledávek s.r.o., in liquidation	27566510
Webarium, s.r.o.	26089602
Webnames s.r.o.	44848692
Web security s.r.o.	6927351
Ztracené kobylinky, z.s.	22753001
1X s.r.o.	44632142

ISP Chamber (Business Name, Company ID No.)

ABAK, spol. s r.o. CZE ABAK, GmbH GER ABAK, Co.Ltd. ENG	40763153
Casablanca INT a.s.	9070931
CESNET, z.s.p.o.	63839172
COOLHOUSING s.r.o.	14893983
ČD - Telematika a.s.	61459445
České Radiokomunikace a.s.	24738875
Dragon Internet a.s.	27237800
Družstvo EUROSIGNAL	26461129
Faster CZ spol. s r.o.	60722266
FreeTel, s.r.o.	24737887
H17 Networks, s.r.o.	27374041
INTERNEXT 2000, s.r.o.	25352288
IPEX a.s.	45021295
ISP Alliance a.s.	28205812
JHComp s.r.o.	26051362
LAM plus s.r.o.	25129619
Mach3net s.r.o.	27344860
Master Internet, s.r.o.	26277557
Nej.cz s.r.o.	3213595
NetArt Group s.r.o.	27612694
NetX Networks a.s.	8544603
Pe3ny Net s.r.o.	27252183
PODA a.s.	25816179
STARNET, s.r.o.	26041561
T-Mobile Czech Republic a.s.	64949681
ÚVT Internet s.r.o.	24288705
VIVO CONNECTION, spol. s r.o.	26900696
VSHosting s.r.o.	61505455
2 connect a.s.	29007542

Chamber of Registrars (Business Name, Company ID No.)

ACTIVE 24, s.r.o.	25115804
e-BAAN Net s.r.o.	26867257
INTERNET CZ, a.s.	26043319
KRAXNET s.r.o.	26460335
Media4web, s.r.o.	26735903
ONE.CZ s.r.o.	25503651
ONEsolution s.r.o.	27710335
O2 Czech Republic a.s.	60193336
Dial Telecom, a.s. (now Quantcom, a.s.)	28175492
Seonet Multimedia s.r.o.	27522041
Seznam.cz, a.s.	26168685
TELE3 s.r.o.	26096960
Webglobe, s.r.o.	26159708
Web4U s.r.o.	26058774
ZONER software, a.s.	49437381
ZooControl s.r.o.	5766656

13.2 Bodies of the Association

13.2.1 General Meeting

The supreme body of the Association is the General Meeting, i.e. all members of the Association. They are divided into three chambers - the

Chamber of Registrars, the ISP Chamber, and the Chamber of Domain Name Holders.

Each member of the Association has the right to participate in the General Meeting and promote their ideas, opinions and comments.

13.2.2 Collegium

The Collegium is a body of the Association consisting of members elected by the individual chambers of the General Meeting and/or by other persons.

The powers of the Collegium include, for example, approving the Association's concept and budget, approving agreements concluded between the Association and the state, and electing and removing members of the Board of Directors and the Supervisory Board.

The Collegium has a total of 21 members, of which 18 are elected by the individual chambers of the General Meeting. Public administration bodies nominate three members.

Members of the Collegium are elected to serve three-year terms of office.

Members of the Collegium elected by the General Meeting

Chamber of Domain Name Holders

- Marek Antoš
- Jan Gruntorád (23 December 2021 – 31 December 2021)
- Bedřich Košata
- Dan Ohnesorg

- Jan Redl
- Karel Taft (elected for a further term of office from 23 December 2021)
- Pavel Tvrdlík (1 January 2021 – 22 December 2021)

ISP Chamber

- Tomáš Dragon (re-elected for a further term of office from 23 December 2021)
- Tomáš Košnar
- Vlastimil Pečínka
- Zbyněk Pospíchal
- Marcel Procházka
- Milan Švácha (re-elected for a further term of office from 23 December 2021)

Chamber of Registrars

- Tomáš Fiala
- Ilona Filípková (re-elected for a further term of office from 23 December 2021)
- Tomáš Hála
- Martin Kukačka (re-elected for a further term of office from 23 December 2021)
- Stanislav Kysela
- Petr Šmída

Collegium members nominated by state authorities

- Zina Bumbálková, Ministry of Industry and Trade of the Czech Republic
- Marie Moravcová, Czech Chamber of Commerce (until 17 May 2021)
- Lenka Náhlovská, Czech Chamber of Commerce (until 18 May 2021)
- Jiří Peterka, Czech Telecommunication Office

13.2.3 Board of Directors

The Board of Directors is a governing body that manages the Association's activities and acts in its name.

Members of the Board of Directors

- Karel Taft (*1971), Chairman of the Board of Directors
- Marek Antoř (*1979), Vice-Chairman of the Board of Directors
- Ilona Filípková (*1972), member (since 25 June 2021)
- Tomáš Kořnar (*1965), member
- Martin Kukačka (*1980), member

13.2.4 Supervisory Board

The Association's control body, which supervises the performance of the Board of Directors and the implementation of the Association's activities.

Members of the Supervisory Board

- Jan Redl, Chairman of the Supervisory Board
- Ilona Filípková, member (until 25 June 2021)
- Jan Gruntorád, member (since 23 December 2021)
- Vlastimil Pečínka, member

13.2.5 Management

- Ondřej Filip, Chief Executive Officer
- Martin Peterka, Chief Operating Officer and Deputy Managing Director
- Tomáš Fuňka, Chief Financial Officer
- Zdeněk Brůna, Chief Technical Officer
- Ladislav Lhotka, Head of Research Team (CZ.NIC Labs)
- Michal Hrušecký, Head of the Hardware Development Department
- Jaromír Talíř, Technical Fellow
- Ondřej Písek, Chief Marketing Officer
- Vilém Sládek, Chief Communications Officer
- Jaromír Novák, Partner for Relations with Public Administration
- Petr Palán, Global Growth Manager

14 Human resources

The strength of the Association lies in its professionally competent and qualified employees, who are essential for the fulfilment of the Association's objectives and further development. It is no exaggeration to say that many of our employees are leading experts in their fields with a domestic as well as international reputation.

To strengthen individual competencies, all employees are continuously educated, both in the field of foreign languages, so-called soft skills, and in professional knowledge, so that they can achieve the highest possible professional and personal qualities and contribute with their knowledge and skills to the further development of the Association and thus also the Czech internet.

14.1 Number of employees

In 2021, the number of employees of the Association increased slightly again.

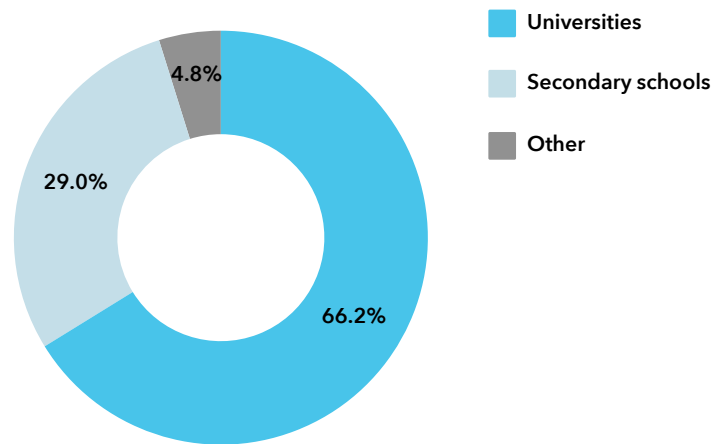
Department	Number of employees (as of 31 December 2020)	Number of FTEs (as of 31 December 2020)	Number of employees (as of 31 December 2021)	Number of FTEs (as of 31 December 2021)
Management	11	10.600	11	10.600
Marketing/PR	9	9.000	9	9.000
Academy	1	1.000	1	1.000
Development	24	21.550	25	20.550
Network Administration	13	11.250	12	9.500
CZ.NIC Labs	27	24.350	26	22.750
Legal	2	1.750	2	1.750
Secretariat	2	2.000	2	2.000
HR	1	0.000	1	0.000
Customer Support	11	11.000	13	13.000
CSIRT	9	7.000	9	8.000
HW Development Department	29	23.100	29	24.750
EU Projects	5	2.750	5	2.750
Total	144	125.350	145	125.650

14.2 Employee structure

Employee structure by education

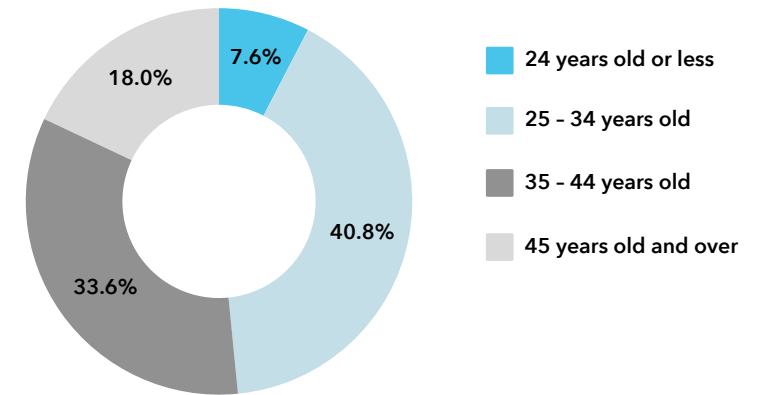
Most employees of the Association have a university degree. The CZ.NIC Association also provides fresh university graduates with the opportunity to acquire professional experience, building suitable conditions for them and assigning them to its branches in Brno, České Budějovice and Plzeň.

At the same time, the Association has an open door for talented secondary school students and university students. Therefore, the ratio of university-educated to secondary-school-educated workers has changed slightly in favour of secondary-school graduates.



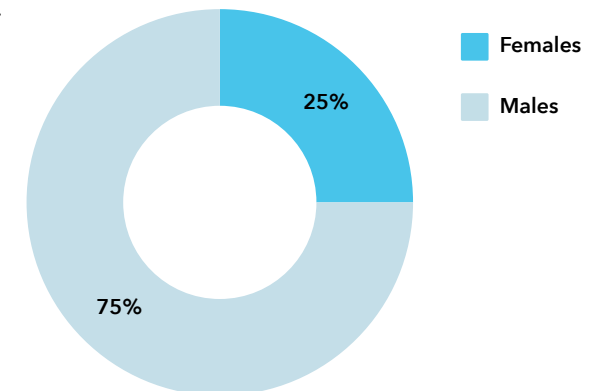
Employee structure by age

The average age of the Association’s employees is 36 years. In terms of age structure, employees aged 25-34 predominate. This is primarily caused by the high number of university-educated employees and the support of university graduates.



Employee structure by gender

In recruiting new employees, the CZ.NIC Association encourages equal opportunities and the involvement of women. Among other things, it offers the possibility of working part-time, which allows employees to combine their work and parental responsibilities. Given the structure of graduates in the technical branches of universities, however, the proportion of men still prevails, just like in other technology companies. Nevertheless, in 2021, the number of women in the Association increased slightly again.



Impact of COVID-19 on employees

In 2021, the pandemic of the disease COVID-19 continued, which had a significant impact on the field of HR.

The CZ.NIC employees approached all the regulations very responsibly, and thanks to the experience from the previous year, they coped with the obstacles that arose; therefore, the operation of the Association was not significantly disrupted by the pandemic.

15 Selected financial indicators

15.1 Balance sheet

	2017	2018	2019	2020	2021
Total assets	503,747	534,656	569,478	602,667	633,438
Fixed assets	85,885	89,103	89,001	80,579	75,682
Intangible fixed assets	659	1,438	1,333	931	253
Tangible fixed assets	85,226	87,665	87,668	79,648	75,429
Non-current financial assets	0	0	0	0	0
Current assets	416,699	444,082	479,202	521,033	556,449
Inventories	20,829	40,435	41,045	49,591	57,000
Receivables	17,174	8,860	10,425	14,560	24,348
Current financial assets	102,257	132,609	194,885	206,593	208,510
Cash	276,439	262,178	232,847	250,289	266,591
Accrual of assets	1,163	1,471	1,275	1,055	1,307
Total liabilities	503,747	534,656	569,478	602,667	633,438
Equity	332,308	338,039	358,705	382,368	403,553
Share capital and capital funds	0	0	0	0	0
Funds from profit	156,847	167,121	172,853	193,520	217,183
Profit/loss of previous years	165,185	165,185	165,185	165,185	165,185
Profit/loss of the current fiscal period	10,276	5,733	20,667	23,663	21,185
External sources	53,906	67,723	68,862	72,841	79,128
Reserves	3,064	6,454	8,691	14,512	14,671
Payables	50,842	61,269	60,171	58,329	64,457
Accrual of liabilities	117,533	128,894	141,911	147,458	150,757

In thousands of CZK

15.2 Profit and Loss Statement

	2016	2017	2018	2019	2020	2021
Revenue from the sale of products and services	166,635	182,860	178,530	193,364	207,631	220,532
Revenue from the sale of goods	28,262	13,886	11,267	20,210	24,522	54,530
Other operating income	1,884	12,184	13,304	13,813	11,657	9,878
Production consumption	73,668	75,970	67,523	70,268	65,827	94,937
Change in inventories of the Association's own operations	-372	0	-951	82	256	445
Activation	-153	0	0	0	0	0
Personnel costs	85,706	98,706	111,018	117,380	129,418	144,066
Valuation adjustments in the operating area	16,996	16,524	12,747	17,104	14,393	12,924
Other operating expenses	1,486	2,258	3,957	5,005	7,663	2,865
Operating profit/loss	19,450	15,472	8,807	17,548	26,253	29,703
Interest yields and similar revenue	138	62	311	1,286	920	279
Other financial income	13,417	96,726	57,271	30,343	24,606	43,495
Other financial expenses	11,731	100,810	58,233	25,590	22,578	47,976
Financial profit/loss	1,824	-4,022	-651	6,039	2,948	-4,202
Profit before tax	21,274	11,450	8,156	23,587	29,201	25,501
Income tax	-376	1,174	2,423	2,920	5,538	4,316
Profit after tax	21,650	10,276	5,733	20,667	23,663	21,185

In thousands of CZK

16 List of suppliers

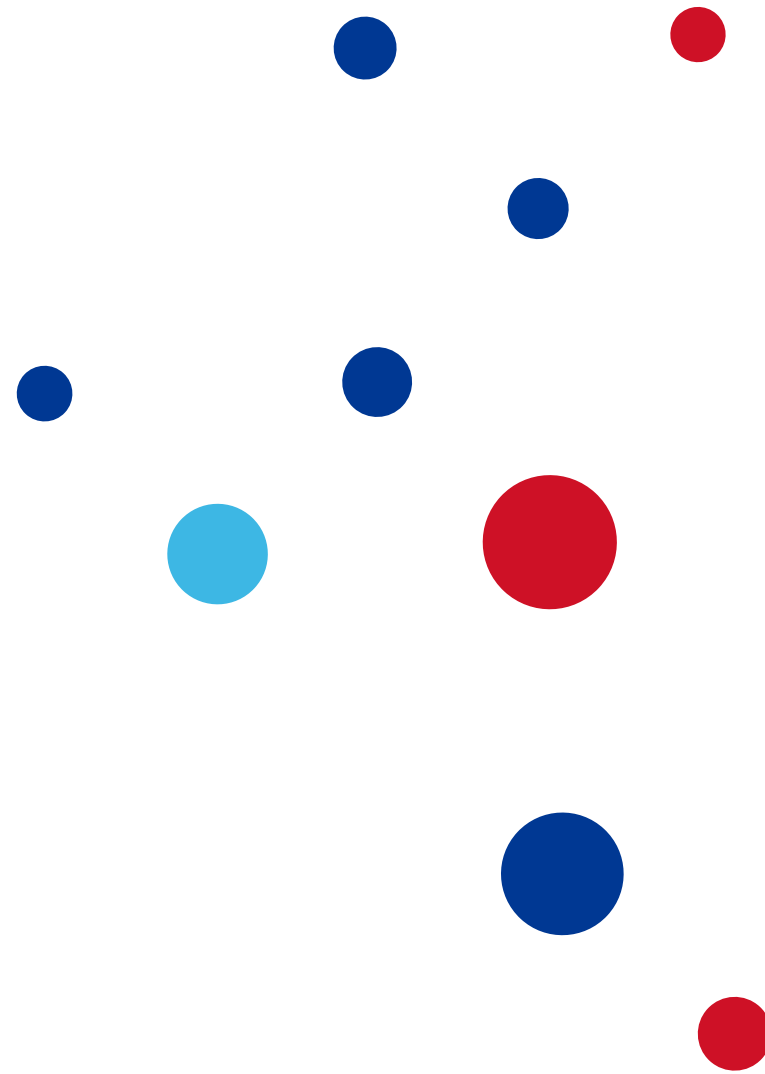
List of suppliers according to Art. 45.4. of the Statutes:

AsiaRF Co., Ltd, Taiwan, P.R.C.	CZK 5,073,475
AVNET Europe COMM.VA, Belgium, BE, EU (BE0464298616)	CZK 9,502,199
SECTRON s.r.o., Ostrava, CZ, EU (CZ64617939)	CZK 7,234,074



17 Data on facts between the date of the financial statements and the General Meeting

No events occurred in the given time period that had an impact on the data presented in the financial statements for 2021.





18 Auditor's report

CZ.NIC, z.s.p.o.

Účetní závěrka

a

Zpráva nezávislého auditora

za rok končící 31. prosince 2021

Auditor

interexpert BOHEMIA spol. s r.o.

INTEREXPERT BOHEMIA, spol. s r.o., Míkulandská 2, Praha 1, 110 00, Tel:+420 224 933 658, Fax:+420 224 934 101
e-mail: secretary@interexpert.cz www.interexpert.cz

CZ.NIC, z.s.p.o.

Účetní období končící 31. prosince 2021

Obsah:

Zpráva nezávislého auditora

Účetní výkazy:

Rozvaha

Výkaz zisku a ztráty

Přehled o peněžních tocích

Přehled o změnách vlastního kapitálu

Příloha účetní závěrky

Výroční zpráva

Zpráva nezávislého audítora

Účetní jednotka:	CZ.NIC, z.s.p.o.
Sídlo:	Milešovská 1136/5, 130 00 Praha 3 - Vinohrady
Právní forma:	Zájmové sdružení právnických osob (dále jen „Sdružení“)
Identifikační číslo:	679 85 726
Rozvahový den:	31.12.2021
Účetní období:	01.01.2021 – 31.12.2021
Účel činnosti:	Sdružení zejména a) provozuje a rozvíjí doménu nejvyšší úrovně ccTLD CZ; b) provozuje a rozvíjí důvěryhodnou, bezpečnou a stabilní informační a komunikační infrastrukturu, včetně vývoje a podpory rozvoje internetových služeb, a to především prostřednictvím inovativních projektů s otevřeným zdrojovým kódem; c) šíří a podporuje výuku, vzdělávání, osvětu a diskusi o aspektech internetových technologií; d) zabývá se zvyšováním úrovně kybernetické bezpečnosti.

Výrok audítora

Provedli jsme audit přiložené účetní závěrky výše uvedené účetní jednotky sestavené na základě českých účetních předpisů, která se skládá z rozvahy k 31.12.2021, výkazu zisku a ztráty za období 01.01.2021 - 31.12.2021 a přílohy této účetní závěrky, která obsahuje popis použitých podstatných účetních metod a další vysvětlující informace. Údaje o účetní jednotce jsou uvedeny v příloze této účetní závěrky.

Podle našeho názoru účetní závěrka podává věrný a poctivý obraz aktiv a pasiv účetní jednotky k 31.12.2021 a nákladů a výnosů a výsledku jejího hospodaření za rok končící 31.12.2021 v souladu s českými účetními předpisy.

Základ pro výrok

Audit jsme provedli v souladu se zákonem o auditorech a standardy Komory auditorů České republiky pro audit, kterými jsou mezinárodní standardy pro audit (ISA) případně doplněné a upravené souvisejícími aplikačními doložkami. Naše odpovědnost stanovená těmito předpisy je podrobněji popsána v oddílu Odpovědnost audítora za audit účetní závěrky. V souladu se zákonem o auditorech a Etickým kodexem přijatým Komorou auditorů České republiky jsme na účetní jednotce nezávislí a splnili jsme i další etické povinnosti vyplývající z uvedených předpisů. Domníváme se, že důkazní informace, které jsme shromáždili, poskytují dostatečnou a vhodnou základ pro vyjádření našeho výroku.

Ostatní informace uvedené ve výroční zprávě

Ostatními informacemi jsou v souladu s § 2 písm. b) zákona o auditorech informace uvedené ve výroční zprávě mimo účetní závěrku a naši zprávu audítora. Za ostatní informace odpovídá představenstvo Sdružení.

Naš výrok k účetní závěrce se k ostatním informacím nevztahuje. Přesto je však součástí našich povinností souvisejících s ověřením účetní závěrky seznámení se s ostatními informacemi a

posouzení, zda ostatní informace nejsou ve významném (materiálním) nesouladu s účetní závěrkou či s našimi znalostmi o účetní jednotce získanými během ověřování účetní závěrky nebo zda se jinak tyto informace nejeví jako významně (materiálně) nesprávné. Také posuzujeme, zda ostatní informace byly ve všech významných (materiálních) ohledech vypracovány v souladu s příslušnými právními předpisy. Tímto posouzením se rozumí, zda ostatní informace splňují požadavky právních předpisů na formální náležitosti a postup vypracování ostatních informací v kontextu významnosti (materiality), tj. zda případné nedodržení uvedených požadavků by bylo způsobilé ovlivnit úsudek činěný na základě ostatních informací.

Na základě provedených postupů, do míry, jež dokážeme posoudit, uvádíme, že

- ostatní informace, které posuzují skutečnosti, jež jsou též předmětem zobrazení v účetní závěrce, jsou ve všech významných (materiálních) ohledech v souladu s účetní závěrkou a
- ostatní informace byly vypracovány v souladu s právními předpisy.

Dále jsme povinni uvést, zda na základě poznatků o povědomí o Sdružení, k nimž jsme dospěli při provádění auditu, ostatní informace neobsahují významné (materiální) věcné nesprávnosti. V rámci uvedených postupů jsme v obdržených ostatních informacích žádné významné (materiální) věcné nesprávnosti nezjistili.

Odpovědnost statutárního orgánu účetní jednotky za účetní závěrku

Představenstvo účetní jednotky odpovídá za sestavení účetní závěrky podávající věrný a poctivý obraz v souladu s českými účetními předpisy a za takový vnitřní kontrolní systém, který považuje za nezbytný pro sestavení účetní závěrky tak, aby neobsahovala významné (materiální) nesprávnosti způsobené podvodem nebo chybou.

Při sestavování účetní závěrky je představenstvo účetní jednotky povinno posoudit, zda je účetní jednotka schopna nepřetržitě trvat, a pokud je to relevantní, popsat v příloze účetní závěrky záležitosti týkající se jeho nepřetržitého trvání a použití předpokladu nepřetržitého trvání při sestavení účetní závěrky, s výjimkou případů, kdy představenstvo plánuje zrušení účetní jednotky nebo ukončení její činnosti, resp. kdy nemá jinou reálnou možnost než tak učinit.

Odpovědnost audítora za audit účetní závěrky

Naším cílem je získat přiměřenou jistotu, že účetní závěrka jako celek neobsahuje významnou (materiální) nesprávnost způsobenou podvodem nebo chybou a vydat zprávu audítora obsahující náš výrok. Přiměřená míra jistoty je velká míra jistoty, nicméně není zárukou, že audit provedený v souladu s výše uvedenými předpisy ve všech případech v účetní závěrce odhalí případnou existující významnou (materiální) nesprávnost. Nesprávnosti mohou vzniknout v důsledku podvodu nebo chyb a považují se za významné (materiální), pokud lze reálně předpokládat, že by jednotlivě nebo v souhrnu mohly ovlivnit ekonomická rozhodnutí, která uživatelé účetní závěrky na jejím základě přijmou.

Při provádění auditu v souladu s výše uvedenými předpisy je naší povinností uplatňovat během celého auditu odborný úsudek a zachovávat profesní skepticismus. Dále je naší povinností:


- Identifikovat a vyhodnotit rizika významné (materiální) nesprávnosti účetní závěrky způsobené podvodem nebo chybou, navrhnout a provést auditorské postupy reagující na tato rizika a získat dostatečnou a vhodnou důkazní informace, abychom na jejich základě mohli vyjádřit výrok. Riziko, že neodhalíme významnou (materiální) nesprávnost, k níž došlo v důsledku podvodu, je větší než riziko neodhalení významné (materiální) nesprávnosti způsobené chybou, protože součástí podvodu mohou být tajné dohody (koluze), falšování, úmyslná opomenutí, nepravdivá prohlášení nebo obcházení vnitřních kontrol.

- Seznámit se s vnitřním kontrolním systémem účetní jednotky relevantním pro audit v takovém rozsahu, abychom mohli navrhnout auditorské postupy vhodné s ohledem na dané okolnosti, nikoli abychom mohli vyjádřit názor na účinnost jejího vnitřního kontrolního systému.
- Posoudit vhodnost použitých účetních pravidel, přiměřenost provedených účetních odhadů a informace, které v této souvislosti představenstvo účetní jednotky uvedlo v příloze účetní závěrky.
- Posoudit vhodnost použití předpokladu nepřetržitého trvání při sestavení účetní závěrky představenstvem a to, zda s ohledem na shromážděné důkazní informace existuje významná (materiální) nejistota vyplývající z událostí nebo podmínek, které mohou významně zpochybnit schopnost účetní jednotky nepřetržitě trvat. Jestliže dojdeme k závěru, že taková významná (materiální) nejistota existuje, je naší povinností upozornit v naší zprávě na informace uvedené v této souvislosti v příloze účetní závěrky, a pokud tyto informace nejsou dostatečné, vyjádřit modifikovaný výrok. Naše závěry týkající se schopnosti účetní jednotky nepřetržitě trvat vycházejí z důkazních informací, které jsme získali do data naší zprávy. Nicméně budoucí události nebo podmínky mohou vést k tomu, že účetní jednotka ztratí schopnost nepřetržitě trvat.
- Vyhodnotit celkovou prezentaci, členění a obsah účetní závěrky, včetně přílohy, a dále to, zda účetní závěrka zobrazuje podkladové transakce a události způsobem, který vede k věrnému zobrazení.

Naší povinností je informovat představenstvo a dozorčí radu mimo jiné o plánovaném rozsahu a načasování auditu a o významných zjištěních, která jsme v jeho průběhu učinili, včetně zjištěných významných nedostatků ve vnitřním kontrolním systému.

INTEREXPERT BOHEMIA, spol. s r.o.
Mikulandská 2, 110 00 Praha 1
Oprávnění KA ČR č. 267

Ing. Emil Bušek, jednatel a auditor
Oprávnění KA ČR č. 1325

Datum:	31-05-2022
Podpis audítora:	



ROZVAHA
k 31.12.2021

AKTIVA	Řádek č.	Běžné úč. období			Minulé úč. období	
		Brutto	Korekce	Netto	Netto	
		v tis. Kč	v tis. Kč	v tis. Kč	v tis. Kč	v tis. Kč
AKTIVA CELKEM	001	770 818	-137 380	633 438	602 667	
A. Pohledávky za upsaný základní kapitál	002			0	0	
B. Dlouhodobý majetek	003	211 278	-338 596	75 682	80 579	
B.I. Dlouhodobý nehmotný majetek	004	17 923	-17 070	253	851	
B.I.1. Nehmotné výsledky výzkumu a vývoje	005			0	0	
B.I.2. Ocenitelná práva	006	17 923	-17 070	253	851	
B.I.2.1. Software	007	7 124	-7 124	0	28	
B.I.2.2. Ostatní ocenitelná práva	008	10 799	-10 546	253	902	
B.I.3. Goodwill	009			0	0	
B.II. Dlouhodobý hmotný majetek	014	193 355	-117 926	75 429	79 648	
B.II.1. Pozemky a stavby	015	87 113	-23 164	63 949	67 158	
B.II.1.1. Pozemky	016	9 027		5 027	5 027	
B.II.1.2. Stavby	017	82 095	-23 164	68 922	82 133	
B.II.2. Hmotné movité věci a jejich soubory	018	105 174	-64 762	10 412	12 488	
B.II.5. Poskytnuté zálohy na dlouhodobý hmotný majetek a neokoncený dlouhodobý hmotný majetek	024	1 058	0	1 056	0	
B.II.5.1. Poskytnuté zálohy na dlouhodobý hmotný majetek	025			0	0	
B.II.5.2. Neokoncený dlouhodobý hmotný majetek	026	1 058		1 056	0	
B.III. Dlouhodobý finanční majetek	027	0	0	0	0	
C. Oběžná aktiva	037	558 233	-1 764	556 469	521 033	
C.I. Zásoby	038	56 784	-1 764	57 000	49 591	
C.I.1. Materiál	039	55 286	-1 723	53 563	35 496	
C.I.2. Nedokončená výroba a pokusovny	040			0	0	
C.I.3. Výrobky a zboží	041	3 498	-61	3 437	14 095	
C.I.3.1. Výrobky	042	1 064	-61	1 003	1 285	
C.I.3.2. Zboží	043	2 434		2 434	12 730	
C.II. Pohledávky	046	24 348	0	24 348	14 560	
C.II.1. Dlouhodobé pohledávky	047	1 537	0	1 537	1 124	
C.II.1.4. Odložená daňová pohledávka	051	1 277		1 277	860	
C.II.1.5. Pohledávky - ostatní	052	260	0	260	264	
C.II.1.5.1. Pohledávky za společnosti	053			0	0	
C.II.1.5.2. Dlouhodobé poskytnuté zálohy	054	260		260	264	
C.II.2. Krátkodobé pohledávky	057	22 811	0	22 811	13 436	
C.II.2.1. Pohledávky z obchodních vztahů	058	8 537		8 537	3 995	
C.II.2.4. Pohledávky - ostatní	061	14 274	0	14 274	9 441	
C.III. Krátkodobý finanční majetek	068	208 510	0	208 510	206 590	
C.III.1. Podíly - ověřená nebo ověřitelná osoba	069			0	0	
C.III.2. Ostatní krátkodobý finanční majetek	070	208 510		208 510	206 590	
C.IV. Peněžní prostředky	071	266 591	0	266 591	250 289	
C.IV.1. Peněžní prostředky v pokladně	072	61		61	80	
C.IV.2. Peněžní prostředky na účtech	073	266 530		266 530	250 209	
D. Časové rozlišení aktiv	074	1 307	0	1 307	1 065	
D.1. Náklady příštích období	075	1 307		1 307	1 065	
D.2. Komplexní náklady příštích období	076					
D.3. Příjmy příštích období	077					

PASIVA	Řádek č.	Běžné úč. období		Minulé úč. období	
		Netto		Netto	
		v tis. Kč		v tis. Kč	
PASIVA CELKEM	078	633 438	602 667		
A. Vlastní kapitál	079	403 553	382 368		
A.I. Základní kapitál	080	0	0		
A.II. Ážio a kapitálové fondy	084	0	0		
A.III. Fondy ze zisku	092	217 183	193 520		
A.III.1. Ostatní rezervní fondy	093				
A.III.2. Statutární a ostatní fondy	094	217 183	193 520		
A.IV. Výsledek hospodaření minulých let (+/-)	095	165 185	165 185		
A.IV.1. Nerozdělený zisk minulých let	096	166 570	166 570		
A.IV.2. Neuhrazená ztráta minulých let (-)	097				
A.IV.3. Jiný výsledek hospodaření minulých let (+/-)	098	-1 385	-1 385		
A.V. Výsledek hospodaření běžného účetního období (+/-)	099	21 185	23 663		
A.VI. Rozhodnuto o zálohové výplatě podílu na zisku (-)	100				
B.+C. Cizí zdroje	101	79 128	72 841		
B. Rezervy	102	14 671	14 512		
B.4. Ostatní rezervy	106	14 671	14 512		
C. Závazky	107	64 457	58 329		
C.I. Dlouhodobé závazky	108	15 094	0		
C.I.3. Dlouhodobé přijaté zálohy	113	15 094			
C.II. Krátkodobé závazky	123	49 363	58 329		
C.II.3. Krátkodobé přijaté zálohy	128	-10	16 069		
C.II.4. Závazky z obchodních vztahů	129	19 687	6 554		
C.II.8. Závazky ostatní	133	30 686	35 706		
C.II.8.1. Závazky ke společníkům	134				
C.II.8.2. Krátkodobé finanční výpomoci	135				
C.II.8.3. Závazky k zaměstnancům	136	10 309	8 471		
C.II.8.4. Závazky ze sociálního zabezpečení a zdravotního pojištění	137	5 589	5 096		
C.II.8.5. Stát - daňové závazky a dotace	138	13 432	21 444		
C.II.8.6. Dohadné účty pasivní	139	1 118	496		
C.II.8.7. Jiné závazky	140	238	199		
D. Časové rozlišení pasiv	141	150 757	147 458		
D.1. Výdaje příštích období	142	249	571		
D.2. Výnosy příštích období	143	150 508	146 887		

Sestaveno dne: 31.05.2022	Podpisový záznam statutárního orgánu účetní jednotky:
Právní forma účetní jednotky: zájmové sdružení právnických osob	
Předmět podnikání:	
provoz a rozvoj domény nejvyšší úrovně cc.LTD CZ	

Zpracováno v souladu s vyhláškou č. 500/2002 Sb. ve znění pozdějších předpisů.

Název a sídlo účetní jednotky

CZ.NIC, z.s.p.o.
Mláčovská 1139/5
130 00 Praha 3
IČ: 67985728

VÝKAZ ZISKU A ZTRÁTY

k 31.12.2021

	Řádek č.	Běžné úč.období		Minulé úč.období	
		řádek č.	v tis. Kč	v tis. Kč	v tis. Kč
I.	Tržby z prodaje výrobků a služeb	01	220 532	207 831	
II.	Tržby za prodej zboží	02	54 530	24 522	
A.	Výkonová spotřeba	03	94 937	85 827	
A.1.	Náklady vynaložené na prodané zboží	04	39 474	14 244	
A.2.	Spotřeba materiálů a energie	05	11 986	11 070	
A.3.	Služby	06	43 477	40 513	
B.	Změna stavu zásob vlastní činnosti (+/-)	07	445	256	
C.	Aktivace (-)	08			
D.	Osobní náklady	09	144 066	129 418	
D.1.	Mzdové náklady	10	105 947	96 041	
D.2.	Náklady na sociální zabezpečení, zdravotní pojištění a ostatní náklady	11	38 119	33 377	
D.2.1.	Náklady na sociální zabezpečení a zdravotní pojištění	12	34 586	31 641	
D.2.2.	Ostatní náklady	13	3 533	1 736	
E.	Úpravy hodnot v provozní oblasti	14	12 824	14 393	
E.1.	Úpravy hodnot dlouhodobého nehmotného a hmotného majetku	15	11 634	14 597	
E.1.1.	Úpravy hodnot dlouhodobého nehmotného a hmotného majetku - trvalé	16	11 634	14 597	
E.1.2.	Úpravy hodnot dlouhodobého nehmotného a hmotného majetku - dočasné	17			
E.2.	Úpravy hodnot zásob	18	1 290	-204	
E.3.	Úpravy hodnot pohledávek	19			
III.	Ostatní provozní výnosy	20	9 878	11 657	
III.1.	Tržby z prodaného dlouhodobého majetku	21	549	388	
III.2.	Tržby z prodaného materiálu	22			
III.3.	Jiné provozní výnosy	23	9 329	11 269	
F.	Ostatní provozní náklady	24	2 865	7 863	
F.1.	Zůstatková cena prodaného dlouhodobého majetku	25			
F.2.	Zůstatková cena prodaného materiálu	26			
F.3.	Daně a poplatky	27	225	158	
F.4.	Rezervy v provozní oblasti a komplexní náklady příštích období	28	159	5 821	
F.5.	Jiné provozní náklady	29	2 481	1 684	
*	Provozní výsledek hospodaření (+/-)	30	29 703	28 253	

	Řádek č.	Běžné úč.období		Minulé úč.období	
		řádek č.	v tis. Kč	v tis. Kč	v tis. Kč
IV.	Výnosy z dlouhodobého finančního majetku - podíly	31	0	0	
IV.1.	Výnosy z podílů - ovládaná nebo ovládaná osoba	32			
IV.2.	Ostatní výnosy z podílů	33			
G.	Náklady vynaložené na prodané podíly	34			
V.	Výnosy z ostatního dlouhodobého finančního majetku	35	0	0	
V.1.	Výnosy z ostatního dlouhodobého finančního majetku - ovládaná nebo ovládaná osoba	36			
V.2.	Ostatní výnosy z ostatního dlouhodobého finančního majetku	37			
H.	Náklady související s ostatním dlouhodobým finančním majetkem	38			
VI.	Výnosové úroky a podobné výnosy	39	279	920	
VI.1.	Výnosové úroky a podobné výnosy - ovládaná nebo ovládaná osoba	40			
VI.2.	Ostatní výnosové úroky a podobné výnosy	41	279	920	
I.	Úpravy hodnot a rezervy ve finanční oblasti	42			
J.	Nákladové úroky a podobné náklady	43	0	0	
J.1.	Nákladové úroky a podobné náklady - ovládaná nebo ovládaná osoba	44			
J.2.	Ostatní nákladové úroky a podobné náklady	45			
VII.	Ostatní finanční výnosy	46	43 495	24 606	
K.	Ostatní finanční náklady	47	47 976	22 578	
*	Finanční výsledek hospodaření (+/-)	48	-4 202	2 946	
**	Výsledek hospodaření před zdaněním (+/-)	49	25 501	29 201	
L.	Daň z příjmů	50	4 326	5 538	
L.1.	Daň z příjmů splatná	51	4 734	6 422	
L.2.	Daň z příjmů odložená	52	-418	-885	
**	Výsledek hospodaření po zdanění (+/-)	53	21 185	23 663	
M.	Převod podílu na výsledek hospodaření společníkům (+/-)	54			
***	Výsledek hospodaření za účetní období (+/-)	55	21 185	23 663	
*	Čistý obrát za účetní období = I. + II. + III. + IV. + V. + VI. + VII.	56	328 714	289 836	

Sestaveno dne: 31.5.2022

Právní forma účetní jednotky: zájmové sdružení právnických osob

Předmět podnikání:

provoz a rozvoj domény nejvyšší úrovně ccLTD CZ

Podpisový záznam statutárního orgánu účetní jednotky:

Zpracováno v souladu s vyhláškou č. 500/2002 Sb.
ve znění pozdějších předpisů

Název a sídlo účetní jednotky
CZ.NIC, z.s.p.o.
Milešovská 1136/5
130 00 Praha 3
IČ: 67985726

PŘEHLED O PENĚŽNÍCH TOCÍCH (CASH FLOW)

k 31.12.2021

F. Stav peněžních prostředků a peněžních ekvivalentů na začátku účetního období	Rád.	Běžné úč. období
	č.	v tis. Kč
Peněžní toky z hlavních výdělečných činností (průvozní činnosti)		
Z. Účení zisk nebo ztráta před zdaněním	2	25 501
A. 1 Úpravy o nepeněžní operace	3	10 965
A. 1. 1 Odpisy stálých aktiv a umořování opravní položky k nabytému majetku	4	11 634
A. 1. 2 Změna stavu opravních položek, rezerv	5	159
A. 1. 3 Zisk z prodeje stálých aktiv	6	-549
A. 1. 4 Výnosy z podílů na zisku	7	0
A. 1. 5 Vyúčtované nákladové úroky s výjimkou úroků zahrnovaných do ocenění dlouhodobého majetku a vyúčtované výnosové úroky	8	-279
A. 1. 6 Případné úpravy o ostatní nepeněžní operace	9	0
A. * Čistý peněžní tok z průvozní činnosti před zdaněním a změnami pracovního kapitálu	10	36 465
A. 2 Změna stavu napěněných aloek pracovního kapitálu	11	-25 003
A. 2. 1 Změna stavu pohledávek z průvozní činnosti, přechodných účtů aktiv	12	-10 040
A. 2. 2 Změna stavu krátkodobých závazků z průvozní činnosti, přechodných účtů pasiv	13	-5 607
A. 2. 3 Změna stavu záloob	14	-7 405
A. 2. 4 Změna stavu krátkodobého finančního majetku nespádajícího do peněžních prost. a ekvivalentů	15	-1 917
A. ** Čistý peněžní tok z průvozní činnosti před zdaněním	16	11 433
A. 3 Vypáčené úroky s výjimkou úroků zahrnovaných do ocenění dlouhodobého majetku	17	0
A. 4 Přijaté úroky	18	279
A. 5 Zaplacená daň z příjmů a doméřky daně za minulé období	19	-4 316
A. 6 Přijaté podíly na zisku	20	0
A. *** Čistý peněžní tok z průvozní činnosti	21	7 395
Peněžní toky z investiční činnosti		
B. 1 Výdaje spojené s nabytím stálých aktiv	22	-6 737
B. 2 Příjmy z prodeje stálých aktiv	23	545
B. 3 Ziskůžky a úvěry spřízněným osobám	24	0
B. *** Čistý peněžní tok vztahující se k investiční činnosti	25	-6 192
Peněžní toky z finančních činností		
C. 1 Dopady změn dlouhodobých, resp. krátkodobých závazků	26	15 094
C. 2 Dopady změn vlastního kapitálu na peněžní prostředky a ekvivalenty	27	0
C. 2. 1 Zvýšení peněžních prostředků z důvodů zvýšení základního kapitálu, dňa a fondů ze zisku.	28	-23 653
C. 2. 2 Vypáčení podílů na vlastním jmění společníkům	29	0
C. 2. 3 Dávků vřádky peněžních prostředků společníkům a akcionářům	30	0
C. 2. 4 Úhrada ztráty společnosti	31	0
C. 2. 5 Přímé platby na vrub fondů	32	23 653
C. 2. 6 Vypáčení podílů na zisku včetně zaplacené daně	33	0
C. *** Čistý peněžní tok vztahující se k finanční činnosti	34	15 094
F. Čisté zvýšení resp. snížení peněžních prostředků	35	16 302
R. Stav peněžních prostředků a pen. ekvivalentů na konci účetního období	36	268 593

Sestaveno dne: 31.5.2022

Podpisový záznam statutárního orgánu účetní jednotky:

Právní forma účetní jednotky: zájmové sdružení právnických osob

Předmět podnikání:

provoz a rozvoj domény nejvyšší úrovně cclTD CZ

Zpracováno v souladu s vyhláškou č. 500/2002 Sb.
ve znění pozdějších předpisů

Název a sídlo účetní jednotky

CZ.NIC, z.s.p.o.
Milešovská 1136/5
130 00 Praha 3
IČ: 67985726

PŘEHLED O ZMĚNÁCH VLASTNÍHO KAPITÁLU

k 31.12.2021

Mínulé účetní období	Fondy ze zisku	Výsledek hospodaření minulých let	Zisk (+) Ztráta (-) za období	Vlastní kapitál
	v tis. Kč	v tis. Kč	v tis. Kč	v tis. Kč
Počáteční zůstatek k 1.1.2020	172 853	165 185	20 667	358 705
Zvýšení	20 667		23 663	
Snížení	0		-20 667	
Ostatní pohyby				
Konečný zůstatek k 31.12.2020	193 520	165 185	23 663	382 366

Běžné účetní období	Fondy ze zisku	Výsledek hospodaření minulých let	Zisk (+) Ztráta (-) za období	Vlastní kapitál
	v tis. Kč	v tis. Kč	v tis. Kč	v tis. Kč
Počáteční zůstatek k 1.1.2021	193 520	165 185	23 663	382 366
Zvýšení	23 663		21 185	
Snížení	0		-23 663	
Ostatní pohyby				
Konečný zůstatek k 31.12.2021	217 183	165 185	21 185	403 553

Sestaveno dne: 31.5.2022

Podpisový záznam statutárního orgánu účetní jednotky:

Právní forma účetní jednotky: zájmové sdružení právnických osob

Předmět podnikání:

provoz a rozvoj domény nejvyšší úrovně cclTD CZ

PŘÍLOHA
ROČNÍ ÚČETNÍ ZÁVĚRKY

K 31. 12. 2021

CZ.NIC, z. s. p. o.

CZ.NIC, z. s. p. o.

Účetní období od 01.01.2021 do 31.12.2021 (v tisících Kč)

I VŠEOBECNÉ INFORMACE

Název: CZ.NIC, z. s. p. o. (dále jen „sdužení“)
Sídlo: Milešovská 1136/5, Vinohrady, Praha 3
Právní forma: zájmové sdružení právnických osob
Spolkový rejstřík: Městský soud v Praze oddíl L vložka 58624
Datum vzniku: 27.5.1998
Identifikační číslo: 67985726
Předmět podnikání: provoz a rozvoj domény nejvyšší úrovně ccTLD CZ,
provoz a rozvoj důvěryhodné, bezpečné a stabilní informační a komunikační
infrastruktury, vývoj a podpora rozvoje internetových služeb, osvětové aktivity
v oblasti domén a kybernetické bezpečnosti
Kategorie účetní jednotky: Střední účetní jednotka
Rozvahový den: 31.12.2021

Zápis do spolkového rejstříku

V průběhu roku došlo k následujícím zápisům do spolkového rejstříku:

Ing. Ilona Filípková byla vymazána jako členka dozorčí rady, 23.7.2021

Ing. Ilona Filípková byla zapsána jako členka představenstva, dne 23.7.2021

Statutární a dozorčí orgány

Statutární a dozorčí orgány sdužení jsou k 31.12.2021:

Předseda představenstva: RNDr. Karel Taft, MBA
Místopředseda představenstva: JUDr. PhDr. Marek Antoš, LL.M., Ph.D.
Členové představenstva: Ing. Tomáš Košnar, Ing. Martin Kukačka, Ing. Ilona Filípková

Předseda dozorčí rady: Mgr. Jan Redl
Členové dozorčí rady: Mgr. Vlastimil Pečinka, Ing. Jan Gruntorád, CSc.

2 ZÁKLADNÍ VÝCHODISKA PRO VYPRACOVÁNÍ ÚČETNÍ ZÁVĚRKY

Příložená individuální účetní závěrka byla připravena v souladu se zákonem č. 563/1991 Sb., o účetnictví, ve znění pozdějších předpisů (dále jen „zákon o účetnictví“) a prováděcí vyhláškou č. 500/2002 Sb., kterou se provádějí některá ustanovení zákona č. 563/1991 Sb., o účetnictví, ve znění pozdějších předpisů, pro účetní jednotky, které jsou podnikateli účtujícími v soustavě podvojného účetnictví, ve znění pozdějších předpisů, ve znění platném pro rok 2021 (dále jen „prováděcí vyhláška k zákonu o účetnictví“).

3 OBECNÉ ÚČETNÍ ZÁSADY A POUŽITÉ ÚČETNÍ METODY

a) Zásady vedení účetnictví

Účetnictví je vedeno v souladu s účetními předpisy platnými v České republice.

Částky v účetní závěrce a v příloze jsou zaokrouhleny na tisíce českých korun, není-li uvedeno jinak.

b) Dlouhodobý nehmotný majetek

Nakoupený dlouhodobý nehmotný majetek je oceňován v pořizovacích cenách, které zahrnují cenu pořízení a všechny náklady s pořízením související.

Účetní odpisy dlouhodobého nehmotného majetku jsou vypočteny na základě pořizovací ceny a předpokládané doby ekonomické použitelnosti příslušného majetku. Účetní odpisy jsou kalkulovány ve shodě s odpisy stanovenými zákonem o daních z příjmu.

c) Dlouhodobý hmotný majetek

Nakoupený dlouhodobý hmotný majetek je oceňován v pořizovacích cenách, které zahrnují cenu pořízení a veškeré náklady s pořízením související (např. clo, dopravné, náklady na montáž). Dlouhodobý hmotný majetek vytvořený vlastní činností se oceňuje vlastními náklady.

Majetková aktiva získaná formou daru jsou vykázána v reprodukční pořizovací ceně k datu převzetí příslušného majetku.

Účetní odpisy jsou kalkulovány ve shodě s odpisy stanovenými zákonem o daních z příjmu. Jestliže zůstatková hodnota dlouhodobého hmotného majetku přesahuje jeho odhadovanou užitnou hodnotu, je k takovému majetku tvořena opravná položka.

Náklady na opravy a údržbu dlouhodobého hmotného majetku se účtují přímo do nákladů. Rezerva je tvořena na významné opravy, které bude podle odhadu vedení třeba provést v budoucích účetních obdobích. Technické zhodnocení každého jednotlivého dlouhodobého hmotného majetku přesahující 80 tis. Kč za účetní období je aktivováno.

Dlouhodobý hmotný majetek, jehož doba použitelnosti je delší než jeden rok a pořizovací cena nepřevyšuje 80 tis. Kč za položku, je účtován do nákladů při jeho pořízení.

d) Dlouhodobý finanční majetek

Dlouhodobý finanční majetek je při nabytí oceněn v pořizovacích cenách. Součástí pořizovací ceny jsou přímé náklady s pořízením související (např. poplatky a provize makléřům a burzám).

e) Krátkodobý finanční majetek

Krátkodobý finanční majetek tvoří cenné papíry k obchodování, dlužné cenné papíry se splatností do 1 roku držené do splatnosti, vlastní akcie, vlastní dluhopisy. Krátkodobý finanční majetek je oceněn pořizovací cenou. K rozvahovému dni účetní jednotka přeceňuje krátkodobý finanční majetek reálnou hodnotou. Toto přecenění je v daném účetním období zachyceno ve výnosech, resp. nákladech souvisejících s krátkodobým finančním majetkem.

f) Zásoby

Nakupované zásoby jsou oceněny pořizovacími cenami s použitím metody váženého aritmetického průměru. Pořizovací cena zásob zahrnuje náklady na jejich pořízení včetně nákladů s pořízením souvisejících (náklady na přepravu, clo, provize atd.).

Výrobky a nedokončená výroba se oceňují kalkulovanými vlastními náklady. Vlastní náklady zahrnují přímé náklady vynaložené na výrobu, popř. i přiřaditelné nepřímé náklady, které se vztahují k výrobě. Nepřímé náklady se přiřazují na jednotky ks.

Opravná položka k pomalu obrátkovým a zastaralým zásobám či jinak dočasně znehodnoceným zásobám je tvořena na základě analýzy obrátkovosti zásob a na základě individuálního posouzení zásob.

g) Pohledávky a závazky

Pohledávky se oceňují při svém vzniku jmenovitou hodnotou. Ocenění pochybných pohledávek se snižuje pomocí opravných položek na vrub nákladů na jejich realizační hodnotu, a to na základě individuálního posouzení jednotlivých dlužníků a věkové struktury pohledávek.

Dohadné účty aktivní se oceňují na základě odborných odhadů a propočtů.

Pohledávky i dohadné účty aktivní se rozdělují na krátkodobé (doba splatnosti do 12 měsíců včetně) a dlouhodobé (splatnost nad 12 měsíců), s tím, že krátkodobé jsou splatné do jednoho roku od rozvahového dne.

CZ.NIC, z. s. p. o.

Účetní období od 01.01.2021 do 31.12.2021 (v tisících Kč)

h) Peníze a peněžní ekvivalenty

Peněžní prostředky (hotovost, bankovní účty, ceniny) jsou oceněny ve jmenovité hodnotě.

i) Vlastní kapitál

Ostatní kapitálové fondy jsou tvořeny z rozhodnutí valné hromady, a to ze zisku sdružení.

j) Účtování výnosů a nákladů

Výnosy a náklady jsou časově rozlišeny, tj. jsou zařazeny do toho účetního období, do kterého věcně i časově přísluší.

V souladu s principem opatrnosti sdružení účtuje na vrub nákladů tvorbu rezerv a opravných položek na krytí rizik, ztrát a znehodnocení, která jsou ke dni sestavení účetní závěrky známa.

k) Přepočtení cizí měny

Majetek a závazky v cizí měně jsou přepočítávány na českou měnu v kurzu platném ke dni uskutečnění příslušné účetní operace, vyhlášeném k tomuto datu Českou národní bankou („ČNB“).

Veškerá peněžní aktiva a pasiva, pohledávky a závazky vedené v cizích měnách byly přepočteny v rámci roční účetní závěrky kurzem zveřejněným ČNB k rozvahovému dni. Veškeré realizované a nerealizované kursové zisky a ztráty jsou vykázány ve výkazu zisku a ztrát.

l) Daň z příjmů

Daň z příjmů ve výkazu zisku a ztrát za dané období se skládá ze splatné daně a ze změny stavu v odložené dani.

Splatnou daň z příjmů účetní jednotka vypočetla s použitím platné daňové sazby z hospodářského výsledku, upraveného o stále a přechodné rozdíly.

Odložená daň zohledňuje všechny dočasné rozdíly mezi zůstatkovou hodnotou aktiva nebo pasiva v rozvaze a jejich daňovou hodnotou. Uplatňuje se zde sazba daně z příjmů právnických osob platná pro účetní období, ve kterém se očekává realizace odložené daně. Odložená daňová pohledávka je zaúčtována, pokud je pravděpodobné, že bude možné ji daňově uplatnit v následujících účetních obdobích.

m) Dotace

Dotace je zaúčtována v okamžiku jejího přijetí či nezpochybnitelného nároku na přijetí. Dotace přijatá na úhradu nákladů se účtuje do provozních nebo finančních výnosů. Dotace přijatá na pořízení dlouhodobého majetku včetně technického zhodnocení a na úhradu úroků zahrnutých do pořizovací ceny majetku snižuje pořizovací cenu nebo vlastní náklady na pořízení. Dotační programy jsou sledovány v oddělené evidenci prostřednictvím účetního softwaru tak, aby vyhovovaly specifickým požadavkům jednotlivých poskytovatelů dotací.

n) Změny způsobů oceňování, srovnatelnost údajů z minulého a běžného období

Ve srovnání s minulým účetním obdobím nedošlo k žádným podstatným změnám způsobů oceňování, odpisování a účtování.

CZ.NIC, z. s. p. o.

Účetní období od 01.01.2021 do 31.12.2021 (v tisících Kč)

4 DLOUHODOBÝ NEHMOTNÝ, HMOTNÝ A FINANČNÍ MAJETEK

a) Přehled dlouhodobého majetku

Přehled o stavu dlouhodobého nehmotného, hmotného a finančního majetku v letech 2020 a 2021 v pořizovacích cenách:

	Stav k 31.12.2020	Přírůstky	Vyřazení	Převody	Stav k 31.12.2021
Nehmotné výsledky výzkumu a vývoje	0	0	0	0	0
Software	7 124	0	0	0	7 124
Ocenitelná práva	10 627	172	0	0	10 799
Goodwill (+/-)	0	0	0	0	0
Jiný dlouhodobý nehmotný majetek	0	0	0	0	0
Nedokončený dlouhodobý nehmotný majetek	0	0	0	0	0
Poskytnuté zálohy na dlouhodobý nehmotný majetek	0	0	0	0	0
Pozemky	5 027	0	0	0	5 027
Stavby	82 086	0	0	0	82 086
Samostatné movité věci	103 434	5 496	-3 756	0	105 174
Jiný dlouhodobý hmotný majetek	0	0	0	0	0
Nedokončený dlouhodobý hmotný majetek	0	0	0	0	1 068
Poskytnuté zálohy na dlouhodobý hmotný majetek	0	0	0	0	0
Oceňovací rozdíl k nabytému majetku	0	0	0	0	0
Podíly v účetních jednotkách	0	0	0	0	0
Ostatní dlouhodobé cenné papíry a podíly	0	0	0	0	0
Půjčky a úvěry - ovládaná nebo ovládající osoba	0	0	0	0	0
Jiný dlouhodobý finanční majetek	0	0	0	0	0
Požizovaný dlouhodobý finanční majetek	0	0	0	0	0
Poskytnuté zálohy na dlouhodobý finanční majetek	0	0	0	0	0
Celkem 2021	208 298	5 668	-3 756	0	211 278
Celkem 2020					208 298

CZ.NIC, z. s. p. o.

Účetní období od 01.01.2021 do 31.12.2021 (v tisících Kč)

Přehled o stavu opravných položek a oprávek:

	Stav k 31.12.2020	Odpisy	Prodeje, likvidace, vyřazení	Převody	Stav k 31.12.2021	Opravné položky	Účetní hodnota
Nehmotné výsledky výzkumu a vývoje	0	0	0	0	0	0	0
Software	7 095	29	0	0	7 124	0	0
Ocenitelná práva	9 725	821	0	0	10 546	0	253
Goodwill (+/-)	0	0	0	0	0	0	0
Nedokončený dlouhodobý nehmotný majetek	0	0	0	0	0	0	0
Jiný dlouhodobý nehmotný majetek	0	0	0	0	0	0	0
Poskytnuté zálohy na dlouhodobý nemotný majetek	0	0	0	0	0	0	0
Pozemky	0	0	0	0	0	0	5 027
Stavby	19 953	3 211	0	0	23 164	0	58 922
Samostatné movité věci	90 946	7 572	-3 756	0	94 762	0	10 412
Jiný dlouhodobý hmotný majetek	0	0	0	0	0	0	0
Nedokončený dlouhodobý hmotný majetek	0	0	0	0	0	0	1 068
Poskytnuté zálohy na dlouhodobý hmotný majetek	0	0	0	0	0	0	0
Oceňovací rozdíl k nabytému majetku	0	0	0	0	0	0	0
Podíly v účetních jednotkách	0	0	0	0	0	0	0
Ostatní dlouhodobé cenné papíry a podíly	0	0	0	0	0	0	0
Půjčky a úvěry - ovládaná nebo ovládající osoba	0	0	0	0	0	0	0
Jiný dlouhodobý finanční majetek	0	0	0	0	0	0	0
Pořizovaný dlouhodobý finanční majetek	0	0	0	0	0	0	0
Nedokončený dlouhodobý nehmotný majetek	0	0	0	0	0	0	0
Poskytnuté zálohy na dlouhodobý finanční	0	0	0	0	0	0	0
Celkem 2021	127 719	11 633	-3 756	0	135 596	0	75 682
Celkem 2020					127 719		80 579

7

CZ.NIC, z. s. p. o.

Účetní období od 01.01.2021 do 31.12.2021 (v tisících Kč)

5 ZÁSoby

	K 31. 12. 2020	K 31. 12. 2021
Materiál	35 904	55 286
Nedokončená výroba a polotovary	0	0
Výrobky	1 451	1 064
Zboží	12 730	2 434
Poskytnuté zálohy na zásoby	0	0
Celkem (Brutto)	50 085	58 784
Opravná položka k zásobám	494	1 784
Celkem (Netto)	49 591	57 000

6 POHLEDÁVKY

Sdružení nevytváří opravné položky k pohledávkám, protože neneviduje žádné pohledávky po splatnosti.

7 REZERVY

Jednotlivé rezervy se mezi rozvahovými dny 31. 12. 2020 a 31. 12. 2021 vyvíjely následovně:

	Zůstatek k 31.12.2020	Netto změna v roce 2021	Zůstatek k 31.12.2021
Na důchody a podobné závazky	0	0	0
Na daň z příjmu	0	0	0
Podle zvláštních právních předpisů	0	0	0
Ostatní	14 512	159	14 671
Celkem	14 512	159	14 671

8 ZÁVAZKY

Přehled o závazcích vůči orgánům státní správy:

	Sociální zabezpečení	Zdravotní pojištění	Daňové nedoplatky
K 31.12.2020	3 538	1 558	21 444
K 31.12.2021	3 792	1 796	13 432

Jedná se o závazky vyplývající u mezd a DPH za období 12/2021.

8

CZ.NIC, z. s. p. o.

Účetní období od 01.01.2021 do 31.12.2021 (v tisících Kč)

9 VÝNOSY Z BĚŽNÉ ČINNOSTI

Výnosy z běžné činnosti se člení následovně:

	2020	2021
Tržby za prodej zboží	24 522	54 530
Tržby za prodej vlastních výrobků	481	497
Tržby za prodej služeb	207 150	220 035
Změna stavu vnitropodnikových zásob vlastní výroby	0	0
Tržby za prodej vlastního majetku a materiálu	388	549
Ostatní provozní výnosy	11 269	9 329
Výnosové úroky	920	279
Finanční výnosy	24 606	43 495
Celkem	269 336	328 714

10 OSOBNÍ NÁKLADY

	2020	2021
Mzdové náklady	105 947	96 041
Zákonné sociální pojištění	34 586	31 641
Ostatní osobní náklady	3 533	1 736
CELKEM OSOBNÍ NÁKLADY	144 066	129 418

V roce 2021 neobdrželi členové statutárních a kontrolních orgánů žádné zálohy, zápůjčky, úvěry, přiznané záruky ani jiné výhody nad rámec stanovených odměn.

11 DAŇ Z PŘÍJMŮ

Daňový náklad v jednotlivých obdobích zahrnuje:

	2020	2021
Splatná daň	6 421	4 734
Odložená daň - pohledávka	-883	-418
Celkem	5 538	4 316

CZ.NIC, z. s. p. o.

Účetní období od 01.01.2021 do 31.12.2021 (v tisících Kč)

12 PŘEDPOKLAD NEPŘETRŽITÉHO TRVÁNÍ SDRUŽENÍ

Účetní jednotka vykazuje k 31.12.2021 kladový vlastní kapitál. Vzhledem ke kladnému vlastnímu kapitálu není pochybnost o předpokladu nepřetržitého trvání sružení v budoucnu.

Účetní závěrka k 31. prosinci 2021 byla sestavena za předpokladu nepřetržitého trvání účetní jednotky. Přiložená účetní závěrka tudíž neobsahuje žádné úpravy, které by mohly z této nejistoty vyplývat.

13 UDÁLOSTI PO DATU ÚČETNÍ ZÁVĚRKY

Mezi rozvahovým dnem a vyhotovením této roční účetní závěrky nedošlo k žádným událostem, které by měly významný dopad na účetní závěrku k 31. 12. 2021.

Sestaveno dne: 31.05.2022

19 Seat and contact details

CZ.NIC, z. s. p. o.

Milešovská 1136/5
130 00 Prague 3

Company ID No.: 67985726

Tax ID No.: CZ67985726

Phone: +420 222 745 111

www.nic.cz

The Association is incorporated in the Register of Associations maintained by the Municipal Court in Prague, File No. L 58624.

CZ.NIC - 24-hour customer support

Tel.: +420 222 745 111

Tel.: +420 731 657 660

E-mail: podpora@nic.cz

