RIPE NCC
RIPE NETWORK COORDINATION CENTRE

Activity Plan and Budget 2023

Date: December 2022
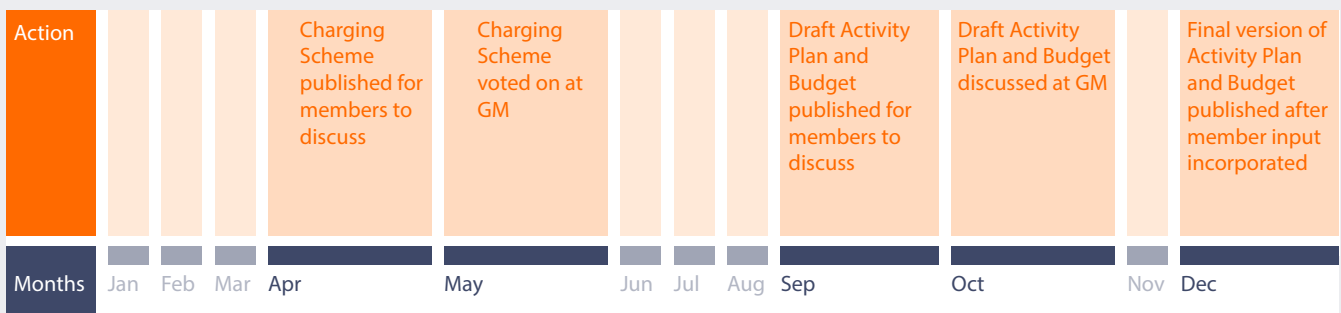
RIPE NCC Activity Plan and Budget 2023

Our Activity Plan and Budget sets out our plans for 2023 along with the associated costs. Costs are provided in terms of Full Time Employees (FTEs), Operational Costs (OPEX) and Capital Expenditure (CAPEX).

This document is the clearest way for members to learn about our plans and influence the direction we take next year. We see this as an integral part of maintaining the trust of our membership, by ensuring high standards of transparency and accountability.

It is important that members understand how to provide feedback. Each year, we publish a draft Activity Plan and Budget at least four weeks before the Autumn RIPE Meeting. At this meeting, time is allocated to discuss our services in the RIPE NCC Services Working Group and during the RIPE NCC General Meeting (GM). We also invite members to ask questions and discuss our plans on the RIPE NCC Membership Discussion mailing list (members-discuss@ripe.net) and the RIPE NCC Services WG mailing list (ncc-services-wg@ripe.net).

The feedback received over this period is then incorporated into a final Activity Plan and Budget that is approved by our Executive Board and published in December.

Shaping the RIPE NCC's Activities and Budget

Action				Charging Scheme published for members to discuss		Charging Scheme voted on at GM				Draft Activity Plan and Budget published for members to discuss		Draft Activity Plan and Budget discussed at GM			Final version of Activity Plan and Budget published after member input incorporated
Months	Jan	Feb	Mar	Apr	May		Jun	Jul	Aug	Sep		Oct		Nov	Dec

Executive Summary

In 2023, we plan for a total budget of 40,000 kEUR, a 12% increase from last year. Our FTE count will grow by 2%, from 187 to 191.

We expect to start the year with 22,500 LIRs, which is unchanged from 2022. Our income will increase from 35,600 to 40,000 kEUR. This is mostly because the 2023 service fee will increase from EUR 1,400 to EUR 1,550. The average cost per LIR is expected to grow from an estimated EUR 1,582 to EUR 1,778, a 12% increase. This higher cost per LIR is offset by the higher service fee. We expect to break even from operations and expect a surplus of 100 kEUR after the Financial Result.

Other factors affecting our budget include high inflation and costs related to major projects planned for 2023, especially our planned migration of some services to the cloud. We will also be improving a number of our services and focusing more heavily on data analysis and outreach, requiring several new FTEs. Our workload remains high in our Registry and in our legal and compliance activities, in large part due to the number of sanctions investigations we need to perform. We will reduce costs in some areas, such as in our training activities where we plan to scale back our Certified Professionals programme.

Overview of 2023 Strategic Focus Points

Our activities are intended to align with the objectives outlined in the RIPE NCC Strategy 2022-2026:

1	**Support an open, inclusive and engaged RIPE community**
2	**Operate a trusted, efficient, accurate and resilient Registry**
3	**Enable our members and community to operate one secure, stable and resilient global Internet**
4	**Maintain a stable organisation with a robust governance structure**
5	**Attract engaged, competent and diverse staff**

To accomplish these long-term goals while addressing more immediate challenges, we have decided on the following focus points for 2023:

› Be resilient in the face of political, legislative and regulatory changes that have the potential to affect our operations
› Secure Internet number resources by developing and operating a resilient, externally auditable and secure Resource Certification Trust Anchor and promote RPKI usage
› Be a centre of excellence for data, measurements and tools that provide insight on the Internet and its operations
› Maintain necessary levels of security and compliance with best practices and applicable regulations
› Maintain a healthy organisational culture with engaged staff aligned with the organisational values

In recent years, we have seen more regulatory developments with the potential to impact our operations or limit our ability to offer the same services to all members. This often takes the form of legislation that seeks to protect critical infrastructure or shape the Internet in some way. In other cases, potential effects on our operations are the unintended consequences of regulation. Since 2019, we have also dealt with the impact of sanctions and second-order effects like banking over-compliance that has limited our ability to accept payments from some countries in our service region, despite the lack of any legal requirement. Taken together, this has been an area of focus and of growing concern for our organisation. This uncertain environment has required us to undertake a lot of exploratory work that will continue in 2023; we will engage with the membership if we have concrete proposals to discuss. This also requires us to continue liaising with high-level stakeholders in the public sector to promote a bottom-up approach to Internet governance.

One of our technical priorities is to maintain a robust Resource Certification (RPKI) infrastructure. RPKI has seen phenomenal growth in recent years, as network operators place greater emphasis on the security of Internet routing. It has also undergone significant development by the technical community. As operators of one of the five RPKI Trust Anchors, we need to ensure that network operators can trust us to run this system responsibly. As part of this, we have reviewed our technical infrastructure and made significant improvements as a result. This work will continue into 2023, and RPKI will remain a key focus as we work to improve its resilience and usability through better

geographic coverage, more features in the RPKI Dashboard, enhanced compliance and alignment with other RIRs. We will also work to promote more RPKI usage in the networking community to help make routing more secure.

In 2023, we will also focus on developing our role as an authoritative source of data, measurements and tools that provide insight on the Internet and its operations. Our aim is to inform network operators and the research community about what is going on with the Internet, so they can operate their networks as effectively as possible. In 2023, we will work on improving the quality of the data collected and provided by services like RIS and RIPEstat and we will continue to develop our tools in this area. These efforts will also help us to make data-driven decisions regarding how we can engage with the RIPE community and our membership more effectively. We are also planning cloud migrations for several applications once we have heard from the community on the criticality of our various services.

Another priority will be maintaining our security and compliance with technical best practices and legal regulations. Along with the creation of a new Chief Information Security Officer role in 2022 to oversee our efforts in this area, we will also establish an internally resourced risk and compliance function in 2023 for better enterprise risk management and alignment of various compliance efforts, including fitting our information security activities into the ISO 27001 framework. We will be training our security engineers and general staff on best practices and will improve our tools and processes to facilitate this. Our goal is to strengthen the overall security of our organisation and ensure the integrity of our network, information and systems.

Our final focus for the year, which supports all of our other activities, is to maintain a healthy organisational culture where staff identify with our principles and mission. We will look to recruit new staff who are capable and reflective of our diverse membership. We will also help our current staff continue developing their skills and promote the internal sharing of knowledge and ideas. This involves maintaining a culture of open dialogue where staff feel they can contribute to our strategy. An engaged and skilled staff is the foundation that allows us to continue meeting the needs of our membership and developing as an organisation.

To show how each of the activity areas in this document contributes to our five-year strategy, we have listed the relevant strategic objectives and goals at the start of the each section.

Overview of RIPE NCC Costs per Activity 2023

Below is an overview of the Full-Time Equivalents (FTEs), Operational Expenses (OPEX) and Capital Expenses (CAPEX) per activity. All amounts are in kEUR. Each activity is linked to the relevant section in the document.

Overview of Costs Per Activity 2023

|	FTEs	OPEX kEUR	CAPEX kEUR	FTE Increase	OPEX % Increase	CAPEX % Increase
The Registry	**70.0**	**10,000**	**-**	**1.3**	**10%**	
Registration Services	19.2	2,180	-	(0.5)	(7%)	
Membership Administration	11.6	1,380	-	3.6	73%	
Registry Accuracy and Investigations	10.2	1,350	-	(2.8)	(21%)	
LIR Portal	15.8	2,520	-	0.8	53%	
RPKI	8.1	1,930	-	(0.9)	(1%)	
RIPE Database	5.1	640	-	1.1	(1%)	
Information Services	**43.5**	**8,200**	**650**	**0.5**	**17%**	**(28%)**
DNS and K-Root	5.1	850	95	1.1	31%	(37%)
RIPE Atlas	9.2	1,400	10	1.2	8%	(80%)
RIPEstat	4.2	600	-	(3.8)	(33%)	(100%)
RIS	5.1	1,100	115	0.1	69%	(54%)
Research	4.8	600		0.8	33%	
IT Support	15.1	3,650	430	1.1	20%	8%
External Engagement and Community	**42.1**	**9,700**	**-**	**1.1**	**7%**	
Community Building and Member Engagement	22.3	5,930	-	2.3	17%	
Community Learning and Development	13.8	1,920	-	(2.2)	(26%)	
Community Coordination and Collaboration	6.0	1,850	-	1	32%	
Organisational Sustainability	**35.0**	**11,000**	**125**	**0.9**	**20%**	**(50%)**
Facilities	3.9	2,190	125	0.1	2%	(50%)
HR	4.5	1,200	-	0.9	30%	
Legal	6.0	1,160	-	1	29%	
Finance	8.0	1,550	-	0	11%	
Information Security, Risk and Compliance	8.0	2,000	-	1	8%	
Office of the Managing Director	3.6	2,600	-	(2.1)	50%	
RIPE Chair	1.0	300	-	0	20%	
RIPE NCC	**190.6**	**38,900**	**775**	**3.8**	**13%**	**(33%)**
Bad Debts	-	280	-	-	12%	
Depreciation	-	820	-	-	(18%)	
RIPE NCC Total	**190.6**	**40,000**	**775**	**3.8**	**12%**	**(33%)**

RIPE NCC Activities 2022

RIPE NCC Service Region

LIR Accounts

24,870 25,352 23,549 23.703

2019
2020
2021
2022
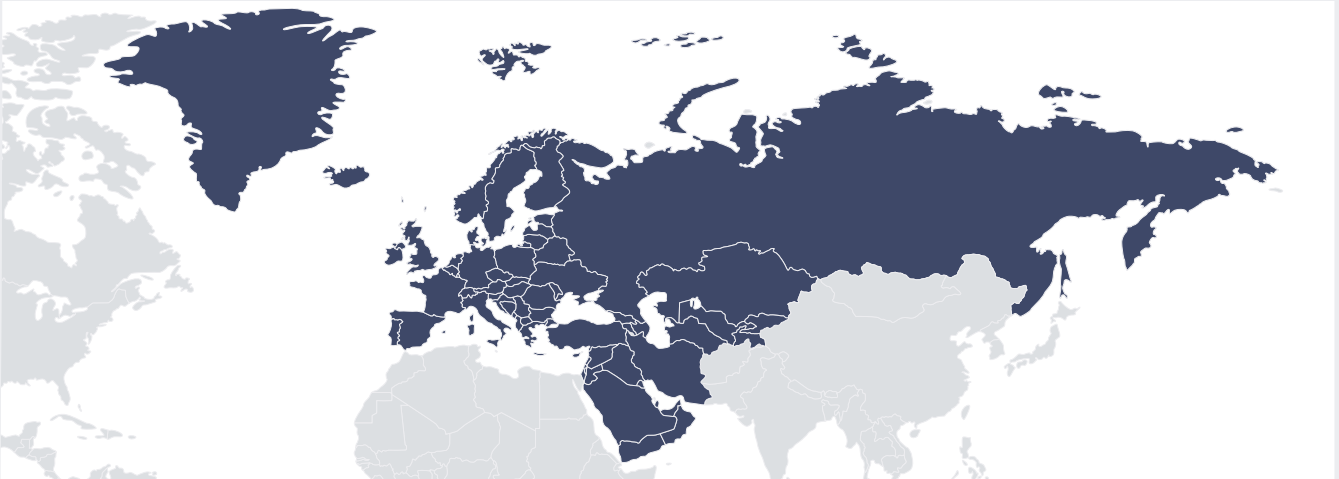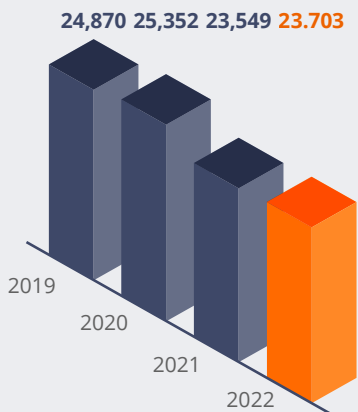
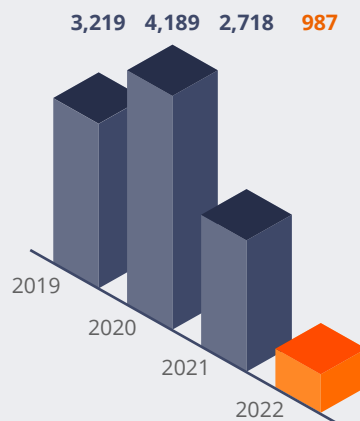## Internet Number Resource Records in the RIPE Registry

152,000

145,000

140,000

130,000

2019   2020   2021   2022
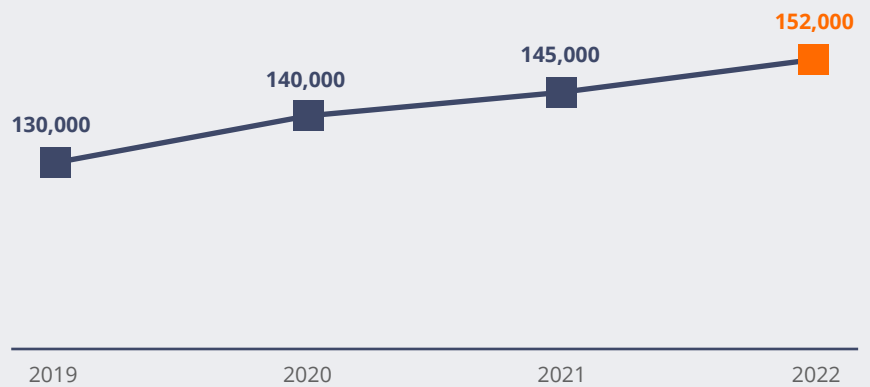
Allocations and Assignments (IPv4, IPv6 and ASNs)

10,757 9,242 7,295 7,428

2019
2020
2021
2022

Assisted Registry Checks Completed

3,219 4,189 2,718 987

2019
2020
2021
2022
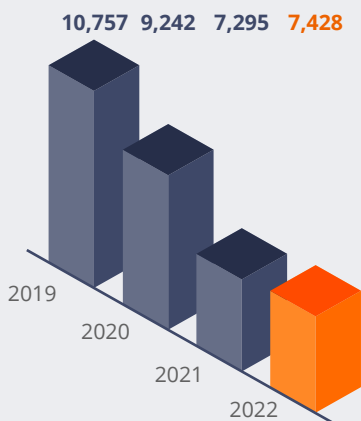
Resource Certificates Created (RPKI)

8,650 12,158 15,355 18,171


2019
2020
2021
2021
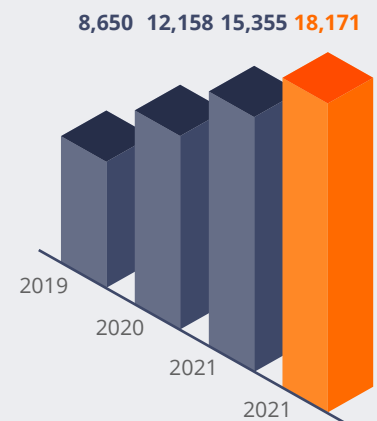
Activity Overviews

For each activity, we have provided a description of what that activity involves together with a summary of what to expect in 2023. All statistics under 'Measurable Usage' relate to a specific period: numbers stated for 2022 are taken from 1 July 2021 - 30 June 2022. The corresponding months are used for 2019, 2020, 2021 and 2022 for consistency.

1. The Registry

RIPE NCC STRATEGY
2022 - 2026
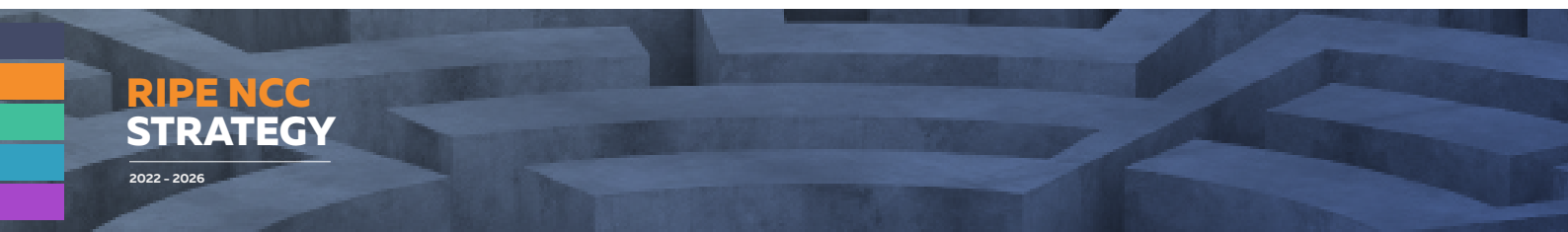
This activity contributes to the following strategic objectives and goals from the RIPE NCC Strategy 2022-2026:

Strategic Objectives

1 Support an open, inclusive and engaged RIPE community

2 Operate a trusted, efficient, accurate and resilient Registry

3 Enable our members and community to operate one secure, stable and resilient global Internet

Strategic Goals

1.1 Support the RIPE community's open, bottom-up process of consensus-based decision-making

1.4 Maintain excellent relationships with technical, governmental and standards bodies

2.1 Ensure that the Registry and RIPE Database have the appropriate levels of accuracy, compliance, resiliency, and security

2.2 Allow updates to the Registry to be done by automated processes with legally accepted digital means

2.3 Improve Registry processes, service delivery and interfaces that allow members to carry out their operations with us quickly and effectively

3.1 Secure Internet number resources by developing and operating a resilient, externally auditable and secure resource certification Trust Anchor

1.1 Registration Services

FTEs: 19.2 (-0.5)	**Cost:** 2,180 (-7%)	**CAPEX:** -

Description

As an authority on unique Internet number resources, we enable our members and others to operate and develop the Internet. We are responsible for maintaining the RIPE Registry and allocating and assigning IP addresses and AS Numbers within our service region, according to policies that have been set by the RIPE community. This includes allocating recovered IPv4 addresses via a waiting list and our efforts to ensure these addresses are fully routable.

The Internet landscape is dynamic and constantly changing. Much of this change needs to be reflected in our registry. When resources are transferred to another network, or when a resource holder changes their company structure or legal name, we review and process updates to the associated registry information. This often requires supporting documentation. A big part of this work is about avoiding conflicts over who holds specific resources. Since the IPv4 run-out in 2019, the number of transfer requests is still increasing, and we continue to deal with fraud cases and disputes over holdership.

We also support the RIPE Policy Development Process (PDP). We provide assistance to RIPE working groups, analyse the impact of specific proposals and encourage participation from a wider group of stakeholders.

Activities in 2023

We have seen an overall decrease in the number of resource requests and registry update requests, primarily because our IPv4 pool is exhausted. Requests for IPv6 prefixes and AS Numbers should remain stable, though we do expect an increase in registry update requests in the second half of 2023. This is when the 24-month holding period for a significant amount of IPv4 resources will expire and some members with multiple LIR accounts will want to consolidate their resources under a single LIR.

In 2023, we will continue to work on improving our response times by further streamlining our internal processes and becoming more efficient overall. We have also been enhancing our internal controls to ensure the integrity of the RIPE Registry. In 2022, we started work to define a control framework based on international standards. This work will continue in 2023.

Number of Resource Records the RIPE NCC is Responsible for
2019: 130,000 (+9%)
2020: 140,000 (+8%)
2021: 145,000 (+4%)

2022: 152,000 (+5%)

Resources Transferred
2019: 4,744 (+38%)
2020: 4,254 (-10%)
2021: 6,759 (+59%)

2022: 7,167 (+6%)

LIR Mergers
2019: 327 (+59%)
2020: 438 (+34%)
2021: 424 (-3%)

2022: 308 (-27%)

More Information
› Request IPv6
› Request an AS Number
› What is IPv4 Run-out?
› How the IPv4 Waiting List Works
› IPv4 Waiting List
› Resource Transfers
› Inter-RIR Transfers
› Mergers and Acquisitions

1.2 Membership Administration

FTEs: 11.6 (+3.6)	**Cost:** 1,380 (+73%)	**CAPEX:** -

Description

Our Member Services team provides support to members, legacy holders and others who use our services. This includes responding to general queries and processing membership applications, administrative and contractual changes, billing enquiries and account closures. The team is also the first point of contact for questions about the RIPE Database and RIPE Atlas.

Activities in 2023

The one-time /24 IPv4 allocation that each new LIR can request remains a powerful incentive to become a member. However, we expect to see fewer new LIR applications in 2023 due to the number of LIRs already on the IPv4 waiting list and the expectation that only limited resources will be released from quarantine. The increase in FTEs (+3.6) is due to a reorganisation between the Membership Administration and Audit and Investigations activities.

To track and monitor our progress on resolving tickets in a timely manner, we are using a series of KPIs including first response time and ticket processing time, as well as quality checks for which we use customer service surveys (NPS and CES) to identify areas where we can improve our processes for members. We are also using these surveys in other parts of the organisation.

LIR Accounts

2019: 24,870 (+19%)
2020: 25,352 (+2%)
2021: 23,549* (-8%)

2022: 23,703 (+1%) ↗

RIPE NCC Members

2020: 20,307
2021: 20,203 (-0,5%)

2022: 20,381 (+1%) ↗

We are now reporting on the number of RIPE NCC members in addition to the number of LIRs. One member can have multiple LIR accounts and so this is a more representative statistic.

*This figure has been corrected from the 2022 Activity Plan and Budget.

More Information

> New Membership Applications
> Due Diligence Information
> Billing Information
> Closure of Members

1.3 Registry Accuracy and Investigations

FTEs: 10.2 (-2.8)	**Cost:** 1,350 (-21%)	**CAPEX:** -

Description

An important part of our work to maintain accuracy of the RIPE Registry is to verify the information and supporting documents we receive and ensure compliance with RIPE policies. We also proactively check the accuracy of registry data, primarily through our Assisted Registry Check (ARC) activity.

Activities in 2023

The impact of sanctions compliance checks on our workload has continued to increase, with new EU sanctions against Russian entities announced in 2022. Potential sanctions matches often require lengthy investigations that create delays when processing new membership applications or other requests. We expect that sanctions investigations will remain a significant area of focus for the foreseeable future. Our automated sanctions compliance checks are now fully implemented and have been audited by a third party. We will continue to make this automation more efficient and better integrated with our internal tooling.

In 2022, we began the software implementation for new automated 'active registry monitoring'. This checks against third-party data sources to identify when changes to a member's legal structure are not reflected in the RIPE Registry so we can follow up. We will begin this active monitoring in 2023. We will continue to perform additional investigations as needed to further ensure accuracy.

We performed fewer ARCs than planned over the past 12 months. This was because we had to re-prioritise resources in response to a significant increase in requests in late 2021. The situation began to normalise around the beginning of 2022, and at the time of writing our ARCs are back to normal levels. Next year we plan to look for ways to improve or automate parts of this process so we can increase the number of ARCs that we carry out overall.

Investigations Completed
2019: 181 (-7%)
2020: 251 (+39%)
2021: 692 (+175%)

2022: 1,170 (+69%)

Assisted Registry Checks Completed
2019: 3,051 (+32%)
2020: 4,202 (+38%)
2021: 2,718 (-35%)

2022: 987 (-64%)

More Information
› Abuse-c Information
› Assisted Registry Check (ARC)
› Address Hijacking

1.4 LIR Portal

FTEs: 15.8 (+0.8)   **Cost:** 2,520 (+53%)   **CAPEX:** –

Description

As the main interface for our core services, the LIR Portal allows members to securely manage their Internet number resources and related registration information. It has a clean user interface with easy-to-use wizards. Members use it to update their contact, billing and resource information, make resource requests, check the status of tickets and register for RIPE NCC General Meetings. The LIR Portal is closely integrated with the RIPE Database, Registry software and our ticketing system.

Activities in 2023

In 2022, we completed our analysis on a future architecture for RIPE NCC Access, including the vendor selection process. We will begin implementation in Q4 2022 and expect to complete this work in 2023. We have also made improvements to the resilience of our main Registry software and this work will also continue next year.

Much of our focus for 2022 has been on improving the security of our RPKI infrastructure. Next year, we plan to extend this focus to also improve the security of the LIR Portal, our Registry tooling and the RIPE Database. This includes the modernisation of RIPE NCC Access. We also plan to deploy automation that will actively monitor for changes to the business structure of members and notify us when this is not reflected in the Registry.

We will reduce the technical debt of the tooling behind the LIR Portal, as we can see that this is having a strong impact on what we deliver. Finally, we plan to make UI improvements in the LIR Portal and in other internal tooling for our users. We expect increased costs mainly in relation to cloud deployment, a new RIPE NCC Access and UI upgrade.

LIR Portal Uptime

2022: 99.81%

For this report we have introduced % uptime as a new indicator. We define this in terms of the 'LIR Account' page being accessible after logging in.

More Information

› LIR Portal
› Requesting Resources Through the LIR Portal
› Business Applications Quaterly Planning

1.5 RPKI

FTEs: 8.1 (-0.9)	**Cost:** 1,930 (-1%)	**CAPEX:** -

Description

RPKI is a certification system that network operators can use to establish that they are the legitimate holders of specific IP resources. As such, it plays an important role in BGP security, since it allows network operators to determine the authenticity of BGP announcements and route accordingly. As a Certification Authority, the RIPE NCC issues these certificates to resource holders and guarantees their authenticity.

Activities in 2023

For 2023, we will have four focus areas. First, we will look for ways to improve the overall resilience of the RPKI system by providing a better geographic distribution. Second, we plan to improve the user experience – our RPKI Dashboard was designed many years ago, and while users value its simplicity and features, we want to give the UI an update that also incorporates new RPKI objects now standardised in the IETF. Third, to enhance compliance, we will complete an ISAE3000 audit and publish the findings to the community. We also plan to improve some of our policies and procedures as a result of this. Finally, users have indicated that they would appreciate a more unified experience for the maintenance of their RPKI data across the different RIR service regions (in an API, for example). Our aim is to work with the other RIRs to facilitate this. We will also continue with our routine security assessments and improvements to monitoring, alerting and tests.

The budget was increased in 2022 and we will maintain this budget in 2023 to deliver the four items outlined above.

Uptime RPKI Repositories

2022: 99.96%

For this report, we have introduced % uptime of RPKI Repositories as a new indicator.

Address Space the RIPE NCC is Responsible for That is Covered by ROAs

2019: 37% prefixes; 48% addresses
2020: 46% prefixes; 55% addresses
2021: 49% IPv4 addresses; 32% IPv6 addresses

2022: 53% IPv4 addresses ↗

54% IPv6 addresses ↗

More Information

> Resource Public Key Infrastructure
> RPKI Roadmap

1.6 RIPE Database

FTEs: 5.1 (+1.1)	**Cost:** 640 (-1%)	**CAPEX:** –

Description

The RIPE Database contains public information about the IP addresses and AS Numbers used by networks in our service region. This includes contact details and related attributes. This information is vital for the stability of Internet routing as it allows users to find information for network troubleshooting and coordination.

While we are responsible for operating the RIPE Database, resource holders are responsible for maintaining the information they insert into it. Our work in this area also supports integration with the LIR Portal and includes related services such as the RIPE Database Proxy Service and Near Real Time Mirroring (NRTM).

Activities in 2023

Several projects from 2022 will continue into 2023. The Database Working Group has decided on a new NRTM version, for which the RFC draft specification is in progress. New Numbered Work Items (NWIs) have also been created as a result of recommendations from the RIPE Database Requirements Task Force, but there has been no progress on these yet. We have also asked the community for feedback on the service criticality of the RIPE Database. This will provide us with requirements that we can map against our cloud strategy so we can identify ways to improve the resilience of the RIPE Database.

In 2023, we will focus on increasing the security of the RIPE Database. We also plan to improve the resilience of the database and develop the web interface user experience. As with every year, we will maintain our engagement with the RIPE community and will implement any policies or NWIs defined by its working groups.

RIPE Database Uptime

2022: 100%

For this report, we have introduced % uptime as a new indicator. We measure this by averaging the uptime of Whois p43 via IPv4 and IPv6.

More Information

- ❯ RIPE Database
- ❯ Numbered Work Items
- ❯ Near Real Time Mirroring (NRTM)
- ❯ RIPE Database Requirements Task Force
- ❯ RIPE Database Quarterly Planning

2. Information Services

RIPE NCC STRATEGY
2022 – 2026

This activity contributes to the following objectives and goals from the RIPE NCC Strategy 2022-2026:

Strategic Objectives

1 Support an open, inclusive and engaged RIPE community

3 Enable our members and community to operate one secure, stable and resilient global Internet

Strategic Goals

1.4 Maintain excellent relationships with technical, governmental and standards bodies

3.2 Support the global naming system by operating K-root and Authoritative DNS services

3.4 Be a centre of excellence for data, measurements and tools that provide insight on the Internet and its operations

3.5 Support the innovation and evolution of the Internet through contributing to initiatives meant for the good of the Internet

2. Information Services

RIPE Atlas at a glance

Results collected

1,100 million/day

ASNs covered

IPv4	IPv6
3,594 (4.89%)	1,667 (5.71%)

Active probes

11,800

RIPE Atlas anchors

773
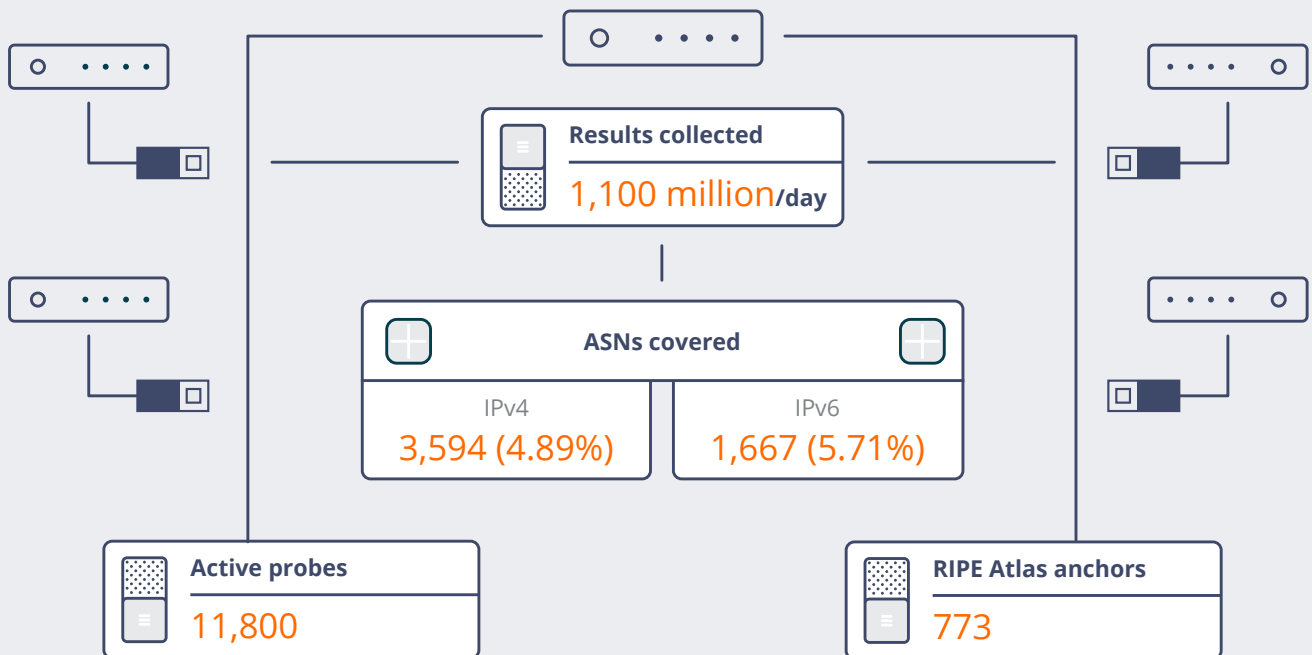
RIPEstat queries per day

98mln

75mln

67mln

70mln

	2019	2020	2021	2022

(y-axis: million, 0–100)
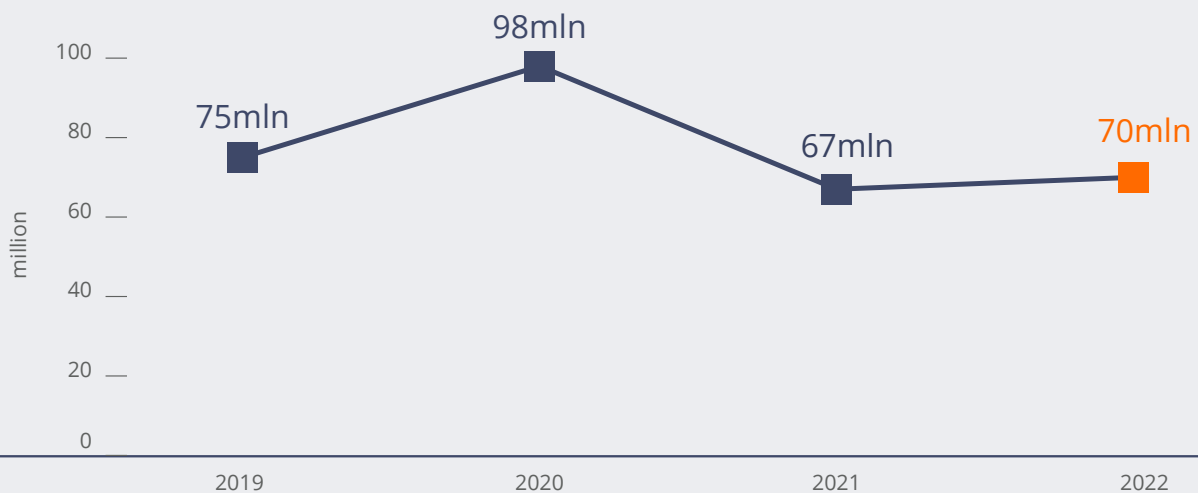
2.1 DNS and K-Root

FTEs: 5.1 (+1.1)   **Cost:** 850 (+31%)   **CAPEX:** 95 (-37%)

Description

We provide stable DNS support for our registered resources and global secondary services to some ccTLDs, as well as reverse DNS (rDNS) services for the IPv4 and IPv6 address space we manage. For reverse DNS associated with the address space managed by other RIRs, we provide secondary DNS services to support the reliability of these reverse lookups. We also operate K-root, one of the Internet's 13 root name servers, through a set of distributed nodes using IPv4 and IPv6 anycast.

Activities in 2023

In 2023, we will continue to expand the number of hosted K-root and AuthDNS nodes. We also plan to complete a fourth core site for our AuthDNS service. This was delayed until 2023 due to global supply chain issues affecting hardware deliveries. The new fourth core site will result in additional recurring costs (OPEX) for hosting the equipment and will also require an investment in hardware (CAPEX).

K-root Instances

2019: 68 (+11%)
2020: 78 (+14%)
2021: 84 (+7%)

2022: 95 (+13%)

More Information

› DNS
› K-root
› AuthDNS

2.2 RIPE Atlas

FTEs: 9.2 (+1.2)	**Cost:** 1,400 (+8%)	**CAPEX:** 10 (-80%)

Description

RIPE Atlas is a leading Internet measurement network that provides live and historical information about the connectivity of networks around the world. We run this globally distributed network to collect data on Internet infrastructure, usage and development. The data that RIPE Atlas provides can be used to analyse the operation and growth of the Internet.

Activities in 2023

The number of active RIPE Atlas probes has remained stable, and we are on schedule to deliver 3,000 new version 5 hardware probes in late 2022 and in 2023. We have updated our sponsorship model and are already receiving sponsors under this new approach. Several other activities are ongoing, such as our efforts to publish RIPE Atlas measurements via Google's BigQuery platform.

In 2023, we will continue work on RIPE IPmap, our infrastructure geolocation service, to improve the accuracy and volume of the data we provide. We will also update our RIPE Atlas ambassador model to help us grow the network through promotion at local events and helping us to distribute probes. We will work on making the RIPE Atlas infrastructure more robust and evaluate ways to extract more information from our data sets.

One major project will be finalising the migration of our big data backend from on-premise to the cloud. We plan to complete this in 2023, freeing up resources for our on-premise Hadoop cluster. Extra expenses will be incurred as part of this migration.

Connected RIPE Atlas Probes

2019: 10,315 (-0.5%)
2020: 11,000 (+7%)
2021: 11,500 (+5%)

2022: **11,800** (+3%)

Measurement Results per Day

2019: ~600 million (+22%)
2020: ~900 million (+50%)
2021: ~1000 million (+11%)

2022: **~1100 million** (+10%)

RIPE Atlas Anchors

2019: 479 (+49%)
2020: 650 (+36%)
2021: 723* (+11%)

2022: **773** (+7%)

This figure has been corrected from the 2022 Activity Plan and Budget.

More Information

> RIPE Atlas
> RIPE Atlas Network Coverage
> RIPE IPmap
> RIPE Atlas Quarterly Planning

2.3 RIPEstat

FTEs: 4.2 (-3.8)	**Cost:** 600 (-33%)	**CAPEX: (-**100%)

Description

RIPEstat is a web-based application that provides current and historical information about IP addresses, AS Numbers and related information for hostnames and countries. This includes registration information, routing and DNS data, geographical information, abuse contacts and more. RIPEstat draws from both internal RIPE NCC data sets and external sources.

Activities in 2023

In 2023, ongoing activities will include service monitoring and efforts to improve our UI. We will focus on enhancing our data quality through output checking and will continue to improve service delivery and reliability. In consultation with the community, we will extend our data lake with new data sets and add new UI use cases. Through these efforts, we will aim to offer more valuable data to our users as part of our strategic focus on improving our measurements and tools. The decrease in FTEs (-3.8) is due to a transfer of staff to other projects (RIPE Atlas, RIS, DNS and K-root) to better reflect their workload in the document. However, the number of staff working on RIPEstat remains the same, it is just counted differently as most staff share their time between different projects.

Queries Per Day*

2019: 75 million (+35%)
2020: 98 million (+30%)
2021: 67 million (-31%)

2022: 70 million (+4%) ↗

* Daily average based on the last week of June of each year.

More Information

> RIPEstat
> RIPEstat Data API
> RIPEstat Quarterly Planning

2.4 RIS

FTEs: 5.1 (+0.1)	**Cost:** 1,100 (+69%)	**CAPEX:** 115 (-54%)

Description

Our Routing Information Service (RIS) uses a globally distributed set of Remote Route Collectors (RRCs), usually located at Internet Exchange Points, to collect and store Internet routing data. Volunteers peer with our RRCs using the BGP protocol, and RIS stores the update and withdraw messages. RIS data can be accessed either directly or through RIPEstat, RIPE Atlas and other network monitoring tools.

Activities in 2023

We added several prototype services in 2022 and will seek feedback from the RIPE community on areas for further improvement. Several activities are ongoing: improving the RIS website, migrating jobs to newer servers and enhancing data quality. We will be moving ahead with our new selective peering strategy in 2023, becoming more strategic about who we peer with. This will help us to collect more useful data and insights.

Route Collectors

2019: 21 (+5%)
2020: 21 (0%)
2021: 22 (+5%)

2022: 23 (+5%) ↗

Peers

2019: 1,003 (+27%)
2020: 1,261 (+26%)
2021: 1,371 (+9%)

2022: 1,424 (+4%) ↗

More Information

› Routing Information Service (RIS)
› RIS Quarterly Planning

2.5 Research

FTEs: 4.8 (+0.8)	**Cost:** 600 (+33%)	**CAPEX:** -

Description

We have a long tradition of providing the operator community with data analysis on the state of the Internet and developing innovative tools to help the community understand various aspects of routing, DNS, reachability and other topics. We also collaborate with members of the research community. Regular reporting and analysis of RIPE NCC-related statistics and accurate methodological analyses of Internet events provide valuable information that can act as an early warning for the community.

Activities in 2023

We will continue to develop country and region-focused Internet reports and will translate these reports into local languages. We will also maintain our collaboration with industry partners, like-minded operators and research institutions to provide a better understanding of Internet behaviour. This includes engaging in direct partnerships with individuals or teams that are interested in Internet measurements.

As a major source of data and tools used by researchers and network operators for insights on the Internet, we are committed to extracting more value and information from our existing data sets. We are currently exploring an initiative to engage in focused analyses and reporting on the evolution of the Internet in different regions and groups. We are also working to provide deep dives into Internet events that had significant impact. This project will include reports and analyses based on the aggregation of data from RIPE Atlas, RIPEstat, RIS and other sources. This will help us use our data better internally to drive our decision-making as an organisation. Externally, we will be able to tell more accurate, compelling and relevant stories about the state of the Internet. We will be adding one FTE to support the work in this area.

More Information
> RIPE NCC Country Reports
> RIPE NCC Prototype Tools and Visualisations

2.6 IT Support

FTEs: 15.1 (+1.1)   **Cost:** 3,650 (+20%)   **CAPEX:** 430 (+8%)

Description

IT provides the backend, infrastructure and network support for all of our internal and external services. We run a state-of-the-art, secure and redundant IT platform with 24/7 support in two data centres and two cloud locations for our services, as well as efficient internal support for staff. Members can flag technical emergencies outside regular office hours so they can be addressed directly.

Activities in 2023

In 2021, we published an updated cloud strategy based on community input. This strategy identifies certain requirements for services depending on their criticality. We followed up by developing a methodology for establishing the criticality levels of specific services to guide us in any cloud deployments. In 2022, we engaged with the community on defining the criticality of eight major applications: the RIPE Database, Email (MX servers), K-root/DNS, LIR Portal, RIPE NCC Access, reverse DNS, Resource Certification (RPKI) and our ripe.net website. In 2023, we expect to migrate a number of applications to the cloud in line with their criticality level and the corresponding requirements set out in our cloud strategy.

In 2023, we will also focus on containerising applications to support easier maintenance and increased portability. In the second half of the year, we expect to finalise the overhaul of our email infrastructure. We will also begin two new projects: we will increase the capacity of our internal network, and we will upgrade our virtual environment (computing and storage) to improve its performance and its resilience and capacity. Both projects will require capital expenses, which are reflected in our budget. We also expect an increase in infrastructure-related operational expenses for any cloud migrations due to the dual costs incurred during the transition period. The operation of RIPE Atlas will also move under this activity by the end of 2022; this will require more IT resources and so we will add a new FTE to the team.

More Information

> Service Announcements
> Report Technical Emergency
> RIPE NCC Cloud Strategy Framework
> RIPE NCC Service Criticality Framework
> IT and Information Security Quarterly Planning

Cloud Migration

The decision to move elements of our services to the cloud, and in what form, will ultimately depend on their criticality levels as agreed with the RIPE community. These discussions are ongoing at the time of writing. Nevertheless, we have investigated the suitability of cloud deployment for some of our services and included the costs in the table below for transparency. These costs are budgeted under the relevant activity.

Activity	Cloud provider	Current cost	Change cost	New cost
LIR Portal	AWS	6 kEUR	~1 kEUR	15 kEUR
LIR Portal - SSO	SaaS	50 kEUR	0	75 kEUR
RIPE Atlas Backend	AWS	600 kEUR	220 kEUR	500 kEUR

3. External Engagement and Community

RIPE NCC
STRATEGY
2022 – 2026

This activity contributes to the following objectives and goals from the RIPE NCC Strategy 2022-2026:

Strategic Objectives

1 Support an open, inclusive and engaged RIPE community

3 Enable our members and community to operate one secure, stable and resilient global Internet

4 Maintain a stable organisation with a robust governance structure

Strategic Goals

1.1 Support the community in being recognised as inclusive and diverse and one that sees participation from all relevant groups

1.2 Create and foster environments and dialogues throughout the service region to maintain a highly engaged community

1.3 Support the RIPE community's open, bottom-up process of consensus-based decision-making

1.4 Maintain excellent relationships with technical, governmental and standards bodies

1.5 Increase community knowledge through learning and development activities

3.3 Support the growth of the Internet through promoting the use of best practices for Internet Resources and standards such as IPv6 and RPKI

3.5 Support the innovation and evolution of the Internet through contributing to initiatives meant for the good of the Internet

4.2 Be resilient in the face of political, legislative and regulatory changes that have the potential to affect our operations

4.3 Protect the Joint Internet Number Registry as developed by the Internet community

3. External Engagement and Community

Social Media

Twitter **@ripencc**	Facebook **@ripencc**	Linkedin	Youtube
25,883 followers	7,766 followers	12,208 followers	3,690 subscribers

Follow us for updates on RIPE NCC events, announcements, webinars, training courses and more.

RIPE Labs Statistics

138 articles published	23.205 unique page views per month (average)	18.662 unique visitors per month (average)	Popular content 1. RIPE Community, 2. Events, 3. Operational, 4. Governance, 5. Routing	Articles published by

Articles published by
staff 62   external 76
total 138

RIPE 83 Virtual Conference

Attendees

Returning 623 online   **Newcomer** online 389
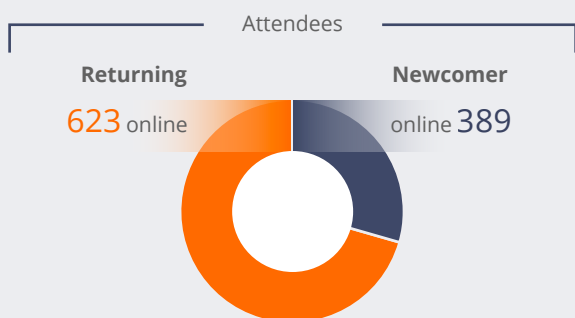
87 countries participated online   **4** Sponsors

Online

DE **215**	NL **124**	UK **59**	FR **51**	IT **38**
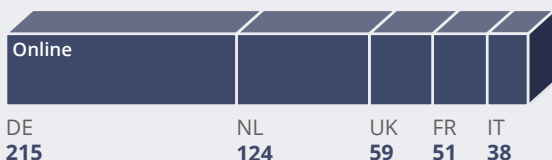
Top 5 Countries

RIPE 84 Onsite and Virtual Conference

Attendees

Returning 439 onsite / 416 online   **Newcomer** onsite 184 / online 190
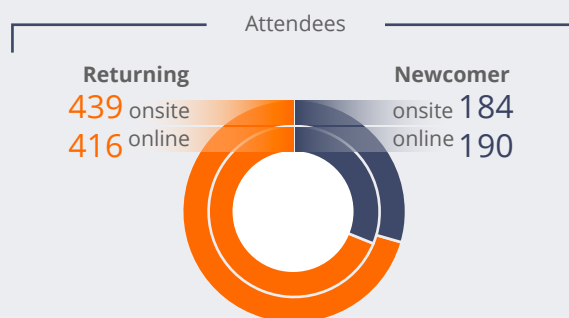
41 countries participated onsite   **8** Sponsors
75 countries participated online

Onsite

DE **225**	NL **66**	UK **44**	FR **28**	US **25**

Online

DE **123**	NL **45**	US **34**	UA **34**	RU **28**
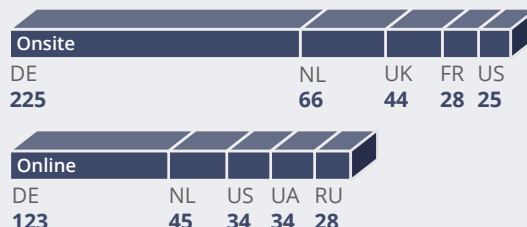
Top 5 Countries

3.1 Community Building and Member Engagement

FTEs: 22.3 (+2.3)   **Cost:** 5,930 (+17%)   **CAPEX:** –

Description

The Internet Number System depends on an active, diverse and engaged technical community to provide guidance and direction. Supporting this community has always been a driving force behind what we do as an organisation in our role as RIPE secretariat. Our community building and member engagement activities are all designed to create feedback loops that help us to better understand members' local needs so we can deliver relevant content and services. Through these efforts, we also inform the community about our services and tools and ideas we are developing that could be useful to their operations.

We maintain a high standard of accuracy and transparency in our reporting and when responding to questions from our membership or the RIPE community. We provide platforms that allow people to access our information, including ripe.net and the RIPE Document Store, RIPE Labs, and the various membership and RIPE community mailing lists. We also publish key RIPE NCC governance documents, including the Annual Report and the Activity Plan and Budget.

Activities in 2023

We organise two RIPE Meetings each year, which serve as a core focal point for most of the community's activities. In 2022, we returned to in-person meetings. As we improved our capabilities for remote meetings during the pandemic, we have now incorporated this remote capacity into a hybrid model that allows for better interaction between on-site and online attendees. In 2023, we plan to continue developing this hybrid format to make it more accessible and inclusive for all participants. We will also work to better understand the carbon footprint of our events with a view towards identifying ways to reduce this over time.

We are putting a concerted effort into our regional outreach activities so that we can get more understanding of local contexts and develop our services in response. We will give particular attention to Central Asia and South East Europe. In these regions, we will organise RIPE NCC Days, Internet Measurement Days, hackathons and the newly launched Central Asia Peering and Interconnection Forum. We will also continue long-standing events in our service region such as MENOG and SEE, and we will participate in other local community events.

There is a significant overlap between NOGs, the RIPE NCC's membership and the RIPE community. This is why engaging with NOGs is another focus area for us in 2023. We will provide funding and logistical support and will send staff to attend or present.

Next year, we will be running the RIPE NCC Survey 2023, our first large stakeholder survey since 2019. We are also developing our data analysis capabilities so we can better understand our large and diverse membership. This data-driven approach will help us to identify areas where we can offer improved support and make more of an impact through our engagement efforts.

RIPE Labs is our platform for the community to publish ideas and research. At the time of writing, we are starting the second season of our new RIPE Labs podcast. We will continue to develop this along with additional media content like videos and animations. Our goal here is to provide helpful information to our members and substantive content or discussions for the RIPE community.

3.1 Community Building and Member Engagement continued

Another focus area for next year will be supporting the RIPE community's efforts to become more diverse and inclusive. This includes attracting more newcomers, more academics, more women and more attendees from underrepresented regions through initiatives such as RACI, RIPE Fellowships, free childcare at events, attending other community events and inviting diverse speakers. Around the time of publication of this draft, we also plan to release a new platform with key RIPE NCC materials translated into six languages. We will continue to develop this platform in 2023 and will look for other areas where translations can make things easier for our members. We will also continue to run the RIPE NCC Community Projects Fund, which awards EUR 250,000 each year to projects that have value to the operation of the Internet.

We have begun work to update the design of www.ripe.net to make it easier to navigate, which will require an overhaul of the entire content management system. We plan to launch the updated site in 2023. One key improvement will be to clearly indicate whether a web page relates to the work of the RIPE community or the RIPE NCC. This will fit together with our work, requested by the RIPE Chair Team, to update the RIPE community's brand. We will also look at updating the design of the RIPE Meeting websites as part of this.

We will be adding two FTEs to this activity to support our event organisation and web services.

More Information

- › RIPE NCC Open House
- › RIPE NCC Member Lunches
- › Meetings and Events
- › Participate in the RIPE Community
- › RIPE Meetings
- › RACI

- › RIPE NCC Hackathons
- › RIPE Policy Development
- › Current Policy Proposals
- › RIPE NCC Community Projects Fund
- › Rob Blokzijl Foundation

3.2 Community Learning and Development

FTEs: 13.8 (-2.2)	**Cost:** 1,920 (-26%)	**CAPEX:** -

Description

A key part of our work has always been to support our membership through learning and development activities across our service region. Having the relevant skills and awareness of best current practices helps members make informed decisions and improvements to their local Internet. We provide both in-person and online education in daily operations and specialised areas like IPv6 and routing security. We also provide e-learning courses and micro-learnings through the RIPE NCC Academy that allow people to study at their own pace. Our RIPE NCC Certified Professionals Programme helps people get recognised for their expertise by allowing them to sit an exam and earn verifiable digital badges and certificates.

Activities in 2023

In 2022, we returned to in-person training courses as promised. We reduced the number of webinars as a result, though webinars continue to have a high level of registrations and participation. We had previously explored running a large-scale Certified Professionals programme on a cost recovery basis, but have since decided to make it more sustainable and efficient by bringing down costs, corresponding to the demand we have seen over the last couple of years. Our goal for the programme is to ensure high-quality and valued qualifications together with a good user experience. We have continued our work to create new training materials and update existing material, with a focus on quality. One of our major outputs in 2022 will be a new routing security e-learning course and certification, which is part of a larger focus that will emphasise routing security and RPKI in the coming year. E-learning participants are also now able to practice what they have learned in a newly launched hands-on lab environment to provide them with the same level of practice as in-person workshop attendees.

In 2023, we will expand both the frequency and locations of our in-person training courses, while webinars will continue at their current reduced level. We will shift our focus from creating new content to improving our foundational elements – needs assessments, learning paths and user experience. Our goal is to improve the quality of our learning experiences by tailoring content to learners' needs, ensuring the content is relevant and up to date, uses sound pedagogical methodologies, and provides engaging and accessible learning experiences.

Our overall budget will decrease from 2022. While there are increased expenses for more in-person training, we are reducing our budget for Certified Professionals, which brings down the overall costs for this activity. A significant part of the costs associated with Certified Professionals came from an external proctoring service we were using for the exams. Since the pandemic, we have also seen an increase in the number of remote online proctoring services. In 2023 we will look for more efficient and scalable options for certifications, like record-and-review or on-site tests. We also plan to slow down our development of training material and instead focus on quality control and improvements to our existing courses. We will be reducing the FTE count by two in this area.

3.2 Community Learning and Development continued

Webinars
2019: 34
2020: 53
2021: 97

2022: 69 ⬂

E-learning modules completed (excluding microlearnings):
2020: 5,882*
2021: 20,176

2022: 29,182 ⬈

Training Courses and Workshops
2019: 108
2020: 64
2021: 0

2022: 7 ⬈

Certified Professionals Exams Completed
2020: 317
2021: 1,372

2022: 1,077 ⬂

* Figure starts from the launch of the updated RIPE NCC Academy in 2020.

More Information
> Training courses
> Webinars
> RIPE NCC Academy
> RIPE NCC Certified Professionals

3.3 Community Coordination and Collaboration

FTEs: 6.0 (+1)	**Cost:** 1,850 (+32%)	**CAPEX:** -

Description

The RIPE NCC is part of a much larger Internet governance system. We work to support and defend this system, often using the RIPE community as an example of how well it works in practice.

Today we stand at a crossroads between a world that is fragmented along geopolitical lines and a digital one that is more inclusive and stable. The increasing rate of conflicting regulatory developments across our service region has a huge impact on the RIPE NCC and our operations. We need to prepare for and mitigate potential challenges in this area.

This means it is important that, together with the RIPE community, we continue to engage with public authorities in our service region. Through targeted events, publications and outreach, we provide policy makers and agencies with informed perspectives on issues relevant to our membership and the RIPE community. Engagement with public authorities also ensures that we are aware of legislative developments that can affect our operations or our ability to carry out our mission as a Regional Internet Registry.

We are committed to maintaining close relationships with our industry partners, working with our fellow Regional Internet Registries (RIRs) under the umbrella of the Number Resource Organization (NRO), as well as with the Internet Corporation for Assigned Names and Numbers (ICANN), the Internet Engineering Task Force (IETF) and the Internet Society (ISOC). Effective coordination between these technical bodies is vital to ensure the stable operation and governance of the Internet. We also contribute to community-driven Internet governance events, including the global Internet Governance Forum (IGF) where we participate both as the RIPE NCC and as part of the NRO.

Activities in 2023

In 2022, we have seen increased government focus on digital issues influenced by changes in the global geopolitical landscape. We strongly believe that Internet number resources should be kept separate from political disputes, especially in light of how fundamental connectivity has become to our societies. We are concerned that sanctions restricting the use of Internet number resources will continue to put pressure on the existing system of Internet governance. Maintaining our engagement with public authorities will remain a priority so we can prepare for any legislative developments.

We have also been providing more insights into Internet development and the factors that affect it in specific countries or regions, based on what we see. Going forward, we will continue to focus on providing more data insights to help the community and other stakeholders get a clear picture of the Internet, and to help us decide on where our engagement efforts can have the most impact.

In 2023, we will continue to investigate the possibility of a blanket exemption from EU sanctions regulation for Internet number resources so we can serve all members throughout our service region equally. This will require us to work with external consultants and experts in this field.

Another main focus in 2023 will be increasing network operators' adoption of routing security best practices. To support this, we will work with public authorities to build awareness of resource certification.

3.3 Community Coordination and Collaboration continued

Post-COVID, physical meetings have returned. This means we will be travelling again to maintain our strong relationships with technical, governmental and standards bodies. This includes RIPE NCC-organised meetings such as government roundtables as well as participating at other public policy meetings.

We will be adding one FTE to support our data analysis activities.

More Information

› RIPE NCC Roundtable Meetings for Governments and Regulators
› Internet Technical Community Coordination
› Number Resource Organization (NRO)
› RIPE NCC Internet Country Reports

4. Maintaining a Strong Organisation

RIPE NCC
STRATEGY
2022 – 2026

This activity contributes to the following objectives and goals from the RIPE NCC Strategy 2022-2026:

Strategic Objectives

4 Maintain a stable organisation with a robust governance structure

5 Employ engaged, competent and diverse staff

Strategic Goals

4.1 Ensure the organisation's stability and financial strength

4.2 Be resilient in the face of political, legislative and regulatory changes that have the potential to affect our operations

4.3 Protect the Joint Internet Number Registry as developed by the Internet community

4.4 Maintain necessary levels of security and compliance with best practices and applicable regulations

5.1 Attract, develop and retain talented people from across the service region

5.2 Maintain a healthy organisational culture with engaged staff aligned with the organisational values

5.3 Offer working mobility within the service region to support staff and our vision, mission and strategic objectives

4. Maintaining a Strong Organisation

GM Votes
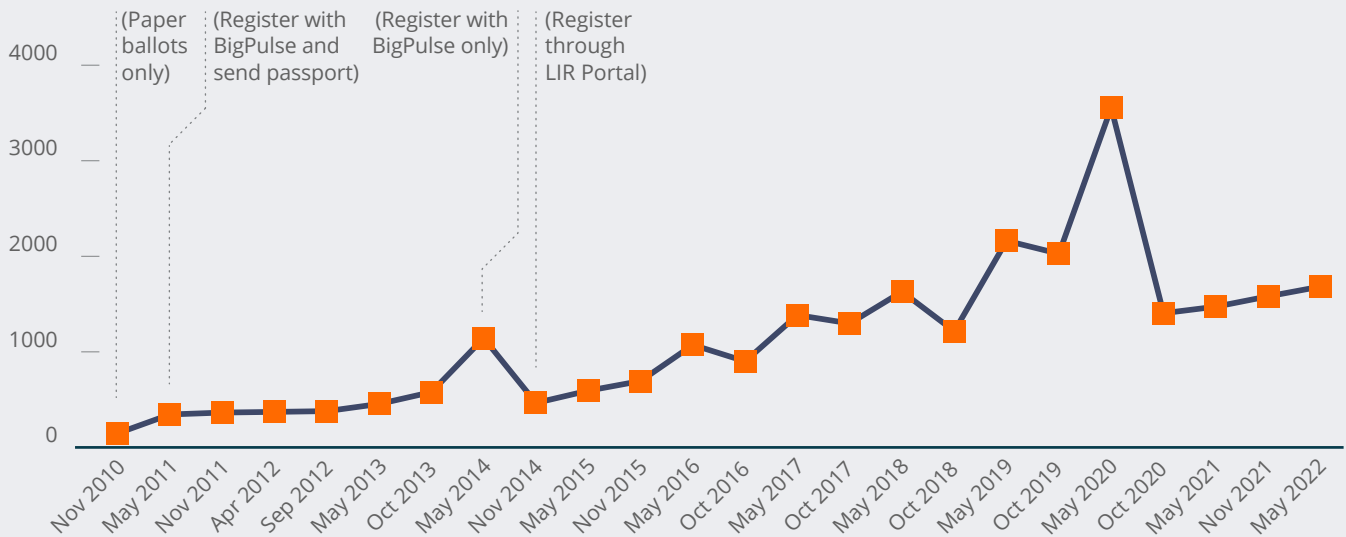
RIPE NCC Organisation Structure

RIPE NCC Membership

Executive Board

Managing Director

The Registry	**Information Services**	**Community & Engagement**	**Organisational Sustainability**
• Registration Services • Membership Administration • Registry Accuracy and Investigations • LIR Portal • RPKI • RIPE Database	• DNS and K-Root • RIPE Atlas • RIPEstat • RIS • IT Security • Research • IT Support	• Community Building and Engagement • Community Learning and Development • Community Coordination and Collaboration	• Facilities • HR • Legal • Finance • Information Security and Compliance • Office of the Managing Director
Registration Services	**Global Information Infrastructure**	**Communications**	**Managing Director Advisors**
Registry Monitoring	**Information Technology**	**Community Development**	**Facilities & Admin**
Member Services	**Research & Development**	**Events**	**Finance**
Software Engineering		**Learning & Development**	**Human Resources**
		Membership Engagement	**Information Security & Compliance**
		Public Policy & Internet Governance	**Legal**
		Web Services	

4.1 Facilities

FTEs: 3.9 (+0.1)	**Cost:** 2,190 (+2%)	**CAPEX:** 125 (-50%)

Description

Facilities covers our internal administrative function along with the rent and maintenance for all facilities and equipment. We have our head office in Amsterdam (as well as external storage) and an office in Dubai. Our Amsterdam office includes a media room with modern equipment for high-quality media production. This activity provides efficient and centralised administrative services and staff support, such as travel booking for meetings and events. We ensure a secure, healthy and productive environment for our staff.

Activities in 2023

In 2023, we will continue to improve and maintain our facilities. We will update the tools in our meeting rooms to better support a hybrid way of working. We will also improve the security of our office space.

More Information

> Office Information

4.2 HR

FTEs: 4.5 (+0.9)	**Cost:** 1,200 (+30%)	**CAPEX:** -

Description

We need to attract and retain qualified people from across our service region to ensure we have the right skills to meet our members' needs. HR supports the organisation in hiring, onboarding and growing the talent of employees in all parts of the organisation. This includes fostering an organisational culture that promotes staff engagement and development.

Activities in 2023

In 2023, we will continue with our leadership development programme. Our overall focus is on improving our recruitment and personnel planning strategy in line with the changing labour market, hybrid working principles and increased work mobility, with a concrete action plan and metrics. The goal is to attract a diverse and skilled workforce and to retain our existing staff by ensuring an inclusive culture that encourages feedback. Our budget for 2023 reflects expenses related to these leadership and personal development programmes along with staff engagement and recruitment efforts.

More Information

› Staff
› Careers at the RIPE NCC

4.3 Legal

FTEs: 6.0 (+1)	**Cost:** 1,160 (+29%)	**CAPEX:** -

Description

We maintain a comprehensive legal framework that sets out the standards and procedures for our operations. This is essential to ensure that we remain accountable for all of our activities, that our exposure to liability is limited and that we remain able to support the RIPE community. A key aim is to make sure that our members have confidence in the self-regulatory system we operate under and in existing Internet governance structures more generally. We also work to ensure that our legal framework and procedures are consistent with applicable national and international legislation. As a membership organisation that is legally based in the Netherlands, we must be able to demonstrate full compliance with all applicable sanctions under Dutch law. Finally, we support RIPE community discussions by providing legal analysis for policy proposals and other suggestions related to the operations of the RIPE NCC.

Activities in 2023

In 2023, we will focus on four areas. The first is investigating possible ways to improve our resilience in the face of political, legislative and regulatory changes that have the potential to affect our operations. Second, we will continue monitoring legal developments related to GDPR and other applicable privacy-related laws and regulations to ensure that our procedures and framework remain up to date. Third, we will reinforce the legal framework of RPKI when necessary. And fourth, we will reinforce the legal framework for our services that involve sharing data and enabling measurements to provide insight on the Internet and its operations.

Increased numbers of EU sanctions in 2022 have required us to dedicate a great deal of effort to compliance work. To provide a sense of the scale of this work, so far we have received more than 800 alerts of potentially sanctioned entities that require further investigation. In 2023, we expect more sanctions, which may require that we intensify our compliance work as well as our search to find a more permanent solution. We will continue to pursue all legal means to ensure that we can provide uninterrupted services to all members.

Our activities next year will require extra expenses and another FTE.

More Information
› Legal Information
› Sanctions Transparency Reports (Q1, Q2 and Q3)

4.4 Finance

FTEs: 8.0 (0)	**Cost:** 1,550 (+11%)	**CAPEX:** –

Description

High-quality administrative processes ensure that we make efficient use of our resources. Our accounting, administration and reporting adhere to the General Dutch Accounting Standards and aim to provide a true and fair view of our financial situation, beyond what is required by law. We maintain processes to ensure effective cost control and produce useful financial reports to facilitate informed management decisions. We have three priorities in our work. First, we provide efficiency by securing high-performance, low-cost expenditures. Second, we ensure effectiveness by evaluating the utility of expenditures for achieving organisational goals. Third, we comply with legislation as well as RIPE NCC and RIPE community regulations.

Activities in 2023

In 2022, our finances remained healthy, but developments in our service region brought more uncertainty than usual. Our internal controls and financial governance allowed us to remain in a solid position regardless. We updated our management reporting and will continue this work in 2023. We developed models for a new charging scheme, though discussion with the membership was postponed due to the war in Ukraine. We expect to work more on this in the next year.

Other ongoing work includes further improvements to our Enterprise Resource Planning system. In 2023, we will also continue to focus on internal control and management reporting to better facilitate informed decision-making. Our primary goal is to ensure the RIPE NCC's stability and financial strength. Our budget will increase slightly due to work on our management reporting and ensuring our resilience to changing regulations and sanctions.

More Information

> Billing, Payment and Fees

4.5 Information Security, Risk and Compliance

FTEs: 8.0 (+1)	**Cost:** 2,000 (+8%)	**CAPEX:** -

Description

Both our members and the RIPE community trust us to maintain an accurate registry of IP resources and provide services that support their operations. Our services not only have to be secured against intrusion, but we also need to make sure our infrastructure is not used to attack others. Considering the services we run, including RIPE Atlas with its 10,000+ probes or our globally distributed K-root nodes, there is a lot at stake. We also need to provide a secure computing platform for our staff that allows them to perform their duties from the office, at home or abroad.

To maintain trust, we are strengthening our internal policies and processes to ensure the security and integrity of our network, information and systems. We have established a new organisational unit that combines the resources for IT security, risk and compliance. Centralising these capabilities supports a better internal focus on these key aspects, together with clear accountability.

Activities in 2023

In 2023, there will be a strong focus on the preventive side of information security. We will be implementing tooling and processes that promote 'secure by design' principles and the proactive identification and timely remediation of vulnerabilities in the development lifecycle of our services and their supporting infrastructure.

From a detection and response perspective, we will evolve our suite of security products. Our primary objective is to enable our security engineers to detect and respond to attacks both on-premise and in the cloud. To achieve this, we will be working to provide them with all the necessary information on how to investigate attacks and the tooling to mitigate them. To bolster security at an individual level, we will develop a security awareness programme to enable each of our employees, based on their activity and risk profile, to follow relevant security awareness training. We will also continue our cooperation with security organisations, which will help foster an open, transparent and inclusive security culture that is consistent with the values of the RIPE community.

We will establish an internally resourced risk and compliance function in 2023 to augment the agility of our enterprise risk management and align various compliance efforts. In particular, this function will continue our work to provide a third-party assurance report for RPKI and the Registry. Recruitment efforts in 2022 forced us to postpone aligning our information security activities against the ISO 27001 framework, so in 2023 we will take the first steps for this process. Compared to 2022, there will be no significant budget variations, although the introduction of the risk and compliance function will require an increase in FTEs.

More Information
› Responsible Disclosure Policy

4.6 Office of the Managing Director

FTEs: 3.6 (-2.1)	**Cost:** 2,600 (+50%)	**CAPEX:** –

Description

The Managing Director of the RIPE NCC is responsible for the day-to-day operation of the organisation and is invited to attend meetings of the Executive Board as set out in the Articles of Association. The Managing Director also serves on the Executive Council of the Number Resource Organization (NRO), which is the coordinating body for the five Regional Internet Registries (RIRs).

The Office of the Managing Director includes an Executive Assistant who supports the Managing Director and the Executive Board. This activity also includes two advisors, our Global Strategic Engagement Advisor and Chief Scientist, as well as the contributions we make to external organisations (see table below).

As our environment becomes more uncertain and affected by political developments, we need to adapt and respond quickly. We will therefore continue to update our leadership philosophy and internal structure to ensure we remain geared towards high performance and quality service delivery. An important part of this is having a clear vision and mission and a five-year strategic plan that provides direction for all of our activities.

Activities in 2023

In 2023, the budget for the Number Resource Organization (NRO) will increase to fund programme managers who will work on the three goals outlined in the NRO Strategic Review Process: provide a robust, coordinated and secure RPKI service, ensure the cybersecurity of the RIRs and proactively engage governments as critical stakeholders in the success of the Internet Number Registry System. We will also continue to offer travel support to the three NRO NC/ASO AC representatives to visit ICANN meetings and other RIR meetings.

We will also support the organisation and activities of the Open CSIRT Foundation, and specifically the transition of the "Trusted Introducer" service for CSIRTs from GÉANT to a new independent foundation. Our motivation is to promote closer cooperation between the Foundation and the RIPE community by contributing 50 kEUR per year for the next three years and serving on the organisation's Supervisory Board.

We will continue to make a series of annual contributions to organisations that play an important administrative role in global Internet governance. For transparency, all contributions are listed in the table below.

Internally, we will continue to look for a way to improve our corporate structure so that it better meets the legal requirements that affect our operations across our service area and allows us to best mitigate potential risks. To this end, we have set aside a budget of 400 kEUR. Any plans in this area will be communicated with our membership in advance of implementation.

NRO shared costs contribution	600 kEUR
NRO ICANN contribution for IANA number functions	320 kEUR
IETF Endowment contribution	100 kEUR
ISOC Platinum membership	54 kEUR
Open CSIRT Foundation	50 kEUR

4.7 RIPE Chair

FTEs: 1.0 (0)	**Cost:** 300 (+20%)	**CAPEX:** -

Description

The RIPE Chair Team is responsible for ensuring that RIPE functions properly and plays an important role in its development as a community. The Team oversees RIPE Meeting planning from selecting the location to setting the agenda. They also support the Working Group Chair Collective and ensure that Working Groups are created and have chairs elected following relevant RIPE procedures. The RIPE Chair Team overall ensures RIPE policies and procedures are being followed so that community processes run smoothly.

Activities in 2023

As secretariat for the RIPE community, we fund the work of the RIPE Chair Team. In 2020, our Executive Board agreed to remunerate this role in a five-year contract that stipulates the independence of the RIPE Chair from the RIPE NCC. We also fund the travel and expenses incurred by the RIPE Chair Team in carrying out their duties. The total financial commitment for this activity is budgeted at 300 kEUR for 2023.

More Information

> RIPE Chair Team
> RIPE Community
> RIPE Chair Team Reports (September 2022)

5. Unforeseen Activities

There may be activities that were not entirely foreseen at the time of writing this document or that only started recently and are not at the stage where they can be estimated to have a material financial impact. Reacting quickly to changes in the environment or new requirements of the RIPE NCC membership and other stakeholders is always a goal of the RIPE NCC. In line with good corporate governance, any unforeseen activities that arise are developed in close consultation with the RIPE NCC Executive Board. When there is any material financial impact, the Executive Board must approve the resulting action.

The Joint RIR Stability Fund is also in place to mitigate and prepare for unforeseen disruptions or threats and to safeguard the stability of the RIR system. We are committed to a maximum contribution of 1,000 kEUR via the fund, which would come from our reserves if activated.

Budget Figures 2023

RIPE NCC Budgeted Statement of Income and Expenditure 2023 (in kEUR)

Income	B2023	B2022	Budget 2022 vs Budget 2023		LE2022
Service Fees Existing members	34,875	31,500	3,375	11%	32,493
Independent Resource Fees	1,050	1,050	-	0%	1,104
Service Fee New Members	1,550	1,050	500	48%	1,240
Re-Opening Fees	100	100	-	0%	20
Members Fees	**37,575**	**33,700**	**3,875**	**11%**	**34,857**
Member Sign-up Fees	1,600	1,200	400	33%	1,787
RIPE Meeting	300	250	50	20%	223
Sponsorship	350	250	100	40%	255
Certified Professionals	125	150	(25)	(17%)	30
Other Income	50	50	-	0%	11
Total Income	**40,000**	**35,600**	**4,400**	**12%**	**37,163**
Expenditures					
Personnel	**21,556**	**19,342**	**2,214**	**11%**	**18,692**
Housing & Insurances	1,400	1,244	156	13%	1,067
Office Expenses	787	736	51	7%	397
Contributions	1,494	945	549	58%	808
Information Technology	4,250	3,688	562	15%	3,705
Travel	1,198	816	382	47%	808
Consultancy	5,160	4,533	627	14%	3,965
Outreach & PR	2,775	2,756	19	1%	1,488
Bank Charges	280	290	(10)	(3%)	289
Depreciation	830	1,000	(170)	(17%)	694
Bad Debt & Unforseen	270	250	20	8%	250
Total expenses	**40,000**	**35,600**	**4,400**	**12%**	**32,163**
Surplus Before Financial Result	**-**	**-**	**-**	**-**	**5,000**
Result on Interest Income	50	150	(100)	(67%)	(85)
Result on Exchange Differences	-	-			75
Result Revaluation Financial Fixed Assets	50	100	(50)	(50%)	(1,300)
Financial Result	**100**	**250**	**(150)**	**(60%)**	**(1,310)**
Surplus/Deficit	**100**	**250**	**(150)**	**(60%)**	**3,690**
FTEs	**190.6**	**186.8**	**3.8**	**2%**	**172.1**
Capital Expenditure (CAPEX)	**777**	**1,150**	**(373)**	**(32%)**	**280**
Number of LIRs	**22,500**	**22,500**	**0**	**0%**	**23,463**
Expense per LIR	1,778	1,582	196	12%	1.371
Average Personnel Costs per Employee	113	104	10	9%	109
Number of Trips	579	527	52	10%	404

Development of the RIPE NCC Reserves

The Table below shows the RIPE NCC's capital development. The RIPE NCC Capital consists of the Clearing House and any addition to the Clearing House, either from capital gains or from an accumulation of the surplus.

Development of the RIPE NCC Reserves With a Redistribution in 2023 (in kEUR)

Year	Surplus	Addition to the Capital	Capital at 31 December	Expenses Per Year	% of Expenses
2015	(262)	-	25,063	21,978	114%
2016	325	-	25,388	23,528	108%
2017	(173)	-	25,215	25,848	98%
2018	245	-	25,460	28,089	91%
2019	6,774	6,774	32,234	32,118	100%
2020	238	-	32,472	29,093	112%
2021	2	-	32,474	29,612	110%
2022 LE	-	-	32,474	32,163	101%
2023 Budget	-	-	32,474	40,000	81%

Development of the RIPE NCC Reserves Without a Redistribution in 2023 (in kEUR)

Year	Surplus	Addition to the Capital	Capital at 31 December	Expenses Per Year	% of Expenses
2015	(262)	-	25,063	21,978	114%
2016	325	-	25,388	23,528	108%
2017	(173)	-	25,215	25,848	98%
2018	245	-	25,460	28,089	91%
2019	6,774	6,774	32,234	32,118	100%
2020	238	-	32,472	29,093	112%
2021	2	-	32,474	29,612	110%
2022 LE	2,781	2,781	35,255	32,163	110%
2023 Budget	-	-	35,255	40,000	88%

Appendix 1: Membership Services

> Distribution and Management of Internet Number Resources
> IPv4 Waiting list
> IPv4 Transfer Listing Service
> Assisted Registry Check (ARC)
> LIR Portal
> Training Courses and Webinars

Appendix 2:
Changes to the Draft Activity Plan and Budget 2023

Amendments to the Activity Plan

> Rephrased description under the RIPE Database
> Added additional information to explain significant FTE changes in Membership Administration and RIPEstat
> Minor editorial changes