

Draft RIPE NCC Activity Plan and Budget 2014

Introduction to the Draft Activity Plan and Budget 2014

The Draft RIPE NCC Activity Plan and Budget 2014 documents the activities that the RIPE NCC proposes to undertake in 2014, along with their associated costs, provided in terms of Full Time Employees (FTEs), Costs (OPEX) and Capital Expenditure (CAPEX). The document also highlights areas of strategic focus for the organisation.

Increasing transparency is a goal the RIPE NCC is constantly striving towards. This document is the clearest way that RIPE NCC members can learn about, comment on and ultimately shape the direction that the RIPE NCC will take in the coming year. As a consequence, the RIPE NCC views the Activity Plan and Budget as an integral part of maintaining the trust of its members.

To this end, new categories of “activity status” have been attached to the title of each activity in this document. By marking which activities are new and which are being significantly expanded or scaled back, it is hoped that readers will be able to more easily gain an overview of what is being proposed for 2014 compared to the previous year. More details and a definition of each of these categories are provided in the next section of this document.

Where the status of an activity is anything other than “Ongoing”, this document provides details of why the decision was made, when it was made, and whether it was made by RIPE NCC Management, the RIPE NCC Executive Board, the RIPE NCC membership or the RIPE community.

It is important that RIPE NCC members are aware of how they can provide feedback on the Draft Activity Plan and Budget. In 2013, the RIPE NCC conducted a membership and community survey on a variety of topics relating to its services and strategic direction. Using the survey findings and other feedback mechanisms such as mailing lists and the various membership and community meetings held throughout the year, the RIPE NCC developed and presented the first draft of this document to the RIPE NCC Executive Board in August. After the Executive Board’s feedback was incorporated, an updated document was published online and announced to the RIPE NCC membership in September. During this period, members are encouraged to ask questions and discuss this Draft Activity Plan and Budget via the RIPE NCC Membership Discussion mailing list (members-discuss@ripe.net).

The Draft Activity Plan and Budget is further discussed by the membership at the Autumn RIPE NCC General Meeting (GM) in October. The feedback received here is then incorporated into the final Activity Plan and Budget that will be published in December with the approval of the RIPE NCC Executive Board.

New Features in This Draft Activity Plan and Budget

To improve transparency, this Draft Activity Plan and Budget includes several new features, as noted above. The first is the inclusion of an activity status for each of the activities listed. There are five different activity statuses given throughout this document:

- “Ongoing”: Any recurring activity that requires around the same amount of resources as in the Activity Plan and Budget 2013 (less than a 10% deviation)
- “New Activity”: Any activity that is making its first appearance in the Activity Plan and Budget
- “Expanding”: Any activity where expenses will increase by more than 10% over the Activity Plan and Budget 2013 financially (OPEX)
- “Decreasing”: Any activity where expenses will decrease by more than 10% below the Activity Plan and Budget 2013 financially (OPEX)
- “Planned Ending”: Any activity that will come to a complete end in the course of the coming year

Wherever the status of an activity is anything other than “Ongoing”, this document will contain information about when and why the decision was made, and who was responsible for making the decision.

Additionally, usage statistics have been included wherever possible for each activity. These are intended to show the general scale of a service and should be considered indicative only. There are some cases where activities cannot be quantified or the inclusion of statistics is of little relevance so they are not provided.

Note: Individual activities that cost less than 5 kEUR per annum are considered to be negligible costs and therefore their cost details are not included in the Draft Activity Plan and Budget.

Overview of the Strategic Focus Points in 2014

This document highlights the RIPE NCC’s strategic focus points for the coming year. They are, broadly: maintaining a strong registry, providing high-quality tools and measurements, and conducting effective outreach and external relations.

Maintaining the accuracy of data in the RIPE Registry will always be the first and foremost concern of the RIPE NCC. The RIPE Registry, which is comprised of data from the RIPE Database in addition to registration information held by the RIPE NCC, is crucial to the operations of our members and the wider Internet community.

Registry maintenance activity in 2014 will involve the continuation of projects to contact legacy address space holders and End Users of PI address space to ensure that their resources are registered with the correct holder or sponsoring LIR. The RIPE NCC will ensure that the new landscape resulting from IPv4 address exhaustion does not result in the degradation of registry data from IPv4 transfers and the increased potential for address space hijacking. Finally, the RIPE NCC will deliver a new and improved version of its audit activities that will provide more value to members while placing less of a burden on their operations.

The RIPE NCC’s Internet measurements data is central to its credibility and supports the operations of its members and community. In 2014, continued development of RIPE Atlas and RIPEstat will be key strategic focus points for the organisation. All of the RIPE NCC’s data collection activities will be consolidated under RIPE Atlas. Similarly, RIPEstat will become the singular point for data retrieval – resulting in a single, consistent interface from which all of the RIPE NCC’s various data sets can be accessed.

Finally, an increasingly regionalised approach to Internet coordination, along with greater calls from members who want to work with the RIPE NCC in their own language, has led the RIPE NCC to place greater emphasis on its outreach activity. Over the past several years, the RIPE NCC has been placing a particular focus on the Russian and Middle East regions, where a considerable portion of its members are located and where the Internet is rapidly developing and maturing. Catering to these regions that, for the greater part, have been less engaged with Internet coordination historically but which are increasingly important, is consistent with the bottom-up multi-stakeholder approach. This activity will involve hiring additional staff to represent the RIPE NCC in these regions.

Overview of RIPE NCC Costs per Activity 2014

On the following page is an overview of the Full-Time Equivalents (FTEs), Operational Expenses (OPEX) and Capital Expenses (CAPEX) per activity. All amounts are in kEUR. The overview is presented on two levels. It is possible to click on any Level 1 or Level 2 activity for more detailed information.

Note: In some cases, the 2013 budgeted figures are restated for comparison purposes. For example, in 2014, RIPE Atlas contains DNS Monitoring (DNSMON) whereas DNSMON was a separate item in 2013.

Notes on Overview of RIPE NCC Activities

Full-Time Equivalents

Full-Time Equivalents (FTEs) are given up one decimal place for Level 2 activities and rounded to a whole number for Level 1 activities. These figures include the personnel dedicated to each activity as well as supporting staff.

OPEX (Operational Expenses)

Operational expenses are all direct costs that relate to the activity or project, and a portion of overhead that is related to absence (vacation, illness, education) that has been allocated to the project. The overhead allocation is based on the percentage of FTEs involved in the activity divided by the overall FTEs. Operational expenses exclude depreciation and bad debt expenses.

CAPEX (Capital Expenditure)

Capital Expenses are all items that are taken as an asset. These items include hardware and software, infrastructure, office furniture and software development. Hardware and software consists of hardware and purchased activated software. All items under EUR 500 are expensed, as is required by the Dutch tax code. Intangible fixed assets includes only in-house software development. Software development costs are capitalised insofar as they are incurred in respect of potentially valuable projects and are stated at cost. These costs comprise the costs of direct labour as well as outsourced consultancy costs.

Level 1	Level 2	FTEs	OPEX kEUR	CAPEX kEUR
1) Regional Internet Registry		45	4,708	237
	*1.1 Registry Maintenance	32.3	3,436	-
	1.2 RIPE Database	7.6	685	212
	1.3 Resource Certification (RPKI)	3.4	336	25
	1.4 LIR Portal	1.6	251	-
2) Services		26	2,974	415
	2.1 Training	7.2	883	-
	*2.2 RIPEstat	5.9	657	116
	*2.3 RIPE Atlas	10.3	1,239	299
	2.4 Other Services	2.1	195	-
3) Coordination Activities		31	5,705	199
	3.1 DNS Operations	2.7	364	130
	3.2 Data Analysis and Scientific Support	1.9	255	15
	3.3 RIPE Labs	2.1	261	-
	3.4 Government and LEA Liaison	1.8	421	-
	*3.5 Outreach and External Relations	11.7	1,997	-
	3.6 IPv6 Support	1.0	114	-
	3.7 RIPE Meetings	6.7	1,303	54
	3.8 RIPE Policy and Community Support	1.2	108	-
	3.9 ICANN/IANA/IETF/ISOC/RIRs	2.2	882	-
4) Internal		34	6,383	924
	4.1 IT	10.8	1,741	712
	4.2 Facilities (Rent and Utilities)	3.6	1,120	120
	4.3 HR and Management	8.2	2,137	17
	4.4 Finance and Admin	7.1	762	-
	4.5 Specialist Support (Legal and Information Security)	2.1	234	75
	4.6 Organisational Activities (GM and EB Meetings)	2.7	389	-
Total		136	19,770	1,775

* RIPE NCC strategic focus point for 2014

RIPE NCC Activities 2013

1) Regional Internet Registry

*** 1.1 Registry Maintenance *** STRATEGIC FOCUS POINT 2014

Status: Ongoing

Measurable usage: The RIPE NCC is administratively authoritative for 80,000 Internet number resource records

Since 1992, the RIPE NCC has been responsible for assigning and allocating Internet number resources (IPv4, IPv6 and AS Numbers) within its service region. One of the organisation's key responsibilities is to maintain the accuracy and quality of the RIPE Registry, which contains information about the current holders of these resources. This includes information that is contained in the RIPE Database as well as other information held by the RIPE NCC. Maintaining the RIPE Registry remains a strategic focus for 2014.

The exhaustion of the unallocated "free pool" of IPv4 address space means the RIPE NCC will adapt its registry function to maintain its careful stewardship of resource registrations. This will involve a continuing focus on legacy address space, with the goal of bringing registration records up to the same standards of accuracy as address space that was distributed by the RIPE NCC. Additionally, the RIPE NCC will work to ensure that the RIPE Registry can accurately deal with an increase in IPv4 transfers and a heightened potential for conflicts over address space, both resulting from the growing scarcity of IPv4. The RIPE NCC will continue to respond to any community-driven initiatives to increase the accuracy of data stored in the registry.

A range of services, such as the Resource Certification (RPKI) system and Assisted Registry Checks (an enhancement of the RIPE NCC's audit activities) will provide an incentive for holders of this space to make sure that their Internet number resources are accurately registered. The focus will be on tools and value-added services that the RIPE NCC can provide to its members to improve their day-to-day operations, while at the same time maintaining the accuracy of registry data.

The RIPE NCC will also continue its work in partnership with the other RIRs to improve data quality and to make this data readily available to the Internet community.

Benefits for RIPE NCC members / RIPE community:

- Improves the range of accurate data in the RIPE Registry
- Enables the registry to evolve so that it can deal with changes resulting from the exhaustion of the unallocated IPv4 address pool
- Improves the accuracy of legacy address space registration records

1.1.1 Distribution of IPv4/IPv6 Address Space and Autonomous System (AS) Numbers

Status: Ongoing

Measurable usage: 9,448 allocations and assignments in 2012

The RIPE NCC provides fair, impartial and stable distribution of Internet number resources according to policies developed by the RIPE community. In addition to the allocation and assignment of IPv4 and IPv6 address space, the RIPE NCC also assigns AS Numbers and registers these along with the initial associated routing policy. This ensures the uniqueness of AS Numbers and collects data for the Routing Registry. Since 2007, the RIPE NCC has assigned AS Numbers from both the 16-bit and 32-bit pools.

Benefits for RIPE NCC members / RIPE community:

- Provides fair and impartial distribution of Internet number resources guided by policies developed by the RIPE community
- Promotes the efficient use of IP address space and AS Numbers
- Facilitates the optimal aggregation of routing information
- Supports members with the relevant processes and procedures

1.1.2 Management of Internet Number Resources

Status: Ongoing

Measurable usage: The RIPE NCC is administratively authoritative for around 80,000 Internet number resource records

The RIPE NCC manages the complete lifecycle of Internet number resources within its service region, supporting updates of the registration data and deregistering resources that have been returned. In order to facilitate the transfer of IPv4 Provider Aggregatable (PA) address space between members, the RIPE NCC provides the IPv4 Transfer Listing Service.

Benefits for RIPE NCC members / RIPE community:

- Ensures the uniqueness of IP addresses, aggregation of routing information and conservation of IP address space
- Implements the necessary procedures to enable the processes defined by RIPE Policies
- Enables the accurate registration of network management and contact information

1.1.3 Assisted Registry Checks (ARC) (previously listed as “Auditing”)

Status: Ongoing

Measurable usage: 2,000-3,000 Assisted Registry Checks to be performed in 2014

Since 1996, the RIPE NCC has conducted audits, at the request of the RIPE community, to ensure the fair and neutral application of policies and to actively check the quality and validity of registry data.

The exhaustion of the unallocated IPv4 pool, which may lead to reduced interaction between LIRs and the RIPE NCC, along with member feedback that indicated audits were seen to be excessively time-consuming and disruptive to daily operations, led the RIPE NCC to rethink its audit activities. The Assisted Registry Check (ARC) was designed to deliver significant improvements in efficiency and effectiveness over the existing audit process.

The ARC review gives LIRs an opportunity to receive personalised support from the RIPE NCC. This includes help creating database objects to improve contact data, remove inconsistent resource records and provide clarification on RIPE Policies. The aim is to strengthen registry data while providing added value to the membership.

The ARC review covers four broad subject areas:

- Registry consistency
- Resource consistency
- Route/rDNS consistency
- Resource Certification (RPKI) usage/consistency

Benefits for RIPE NCC members / RIPE community:

- Enables the fair and neutral application of RIPE Policies
- Helps RIPE NCC members to maintain accurate registry data
- Provides RIPE NCC members with an overview of how their networks are perceived by an independent entity
- Increases the effectiveness of existing audit processes
- Provides personalised support to members

1.1.4 Establishing Contractual Relationships With End Users

Status: Ongoing

Measurable usage: 10,000 independent resources still requiring a contractual relationship

In 2014, the RIPE NCC will continue work to implement the RIPE Policy related to establishing an indirect or a direct contractual link between the End Users of independent Internet number resources and the RIPE NCC (ripe-452). Since this policy was implemented in 2009, an additional 25,000 independent resources are now covered by a contractual relationship. The RIPE NCC will also help legacy Internet number resource holders to register those resources that were allocated prior to the formation of the RIR system.

Benefits for RIPE NCC members / RIPE community:

- Maintains the accuracy of the RIPE Registry
- Ensures that Internet number resources are registered to the legitimate End Users or legacy resource holders

1.1.5 Maintenance of Contractual Information on End Users and Sponsoring LIRs

Status: Ongoing

Measurable usage: Approximately 4,000 contractual changes overseen in 2013 so far

Subject to the RIPE Policy on contractual requirements for PI resource holders (ripe-452), the RIPE NCC ensures that changes to contractual arrangements between sponsoring LIRs and End Users are followed up on and the appropriate administrative action taken.

Benefits for RIPE NCC members / RIPE community:

- Ensures that all resources continue to be covered by a contractual relationship
- Maintains the accuracy of the RIPE Registry

1.1.6 Reputation Service

Status: Ongoing

This service shows RIPE Database users the last time each object was audited, either by the RIPE NCC or by the LIR itself.

Benefits for RIPE NCC members / RIPE community:

- Provides an incentive and an easy way for LIRs to keep their RIPE Database objects up to date
- Increases the accuracy of the RIPE Database

1.1.7 History of RIPE Database Object Updates

Status: Ongoing

The RIPE NCC checks for unauthorised changes to RIPE Database objects for which it is administratively responsible (mainly independent Internet number resources).

Benefits for RIPE NCC members / RIPE community:

- Provides active investigation into the reason for unauthorised changes to database objects
- Educates LIRs in the case of a mistaken update, deregistration, RIPE Policy violation or updates related to transfers of resources
- Maintains the accuracy of the RIPE Registry

1.1.8 Resource De-registration

Status: Ongoing

Measurable usage: 198,656 IPv4 addresses deregistered in 2013

The RIPE NCC deregisters Internet number resources that have been allocated or assigned under false pretenses, contravene RIPE Policies or have been hijacked. This activity also applies to LIRs that have been closed for non-payment of their service fee.

Benefits for RIPE NCC members / RIPE community:

- Prevents hijacking of Internet number resources
- Maintains the accuracy of the RIPE Registry

1.1.9 Alternative Means of Communication

Status: Ongoing

The RIPE NCC Survey 2013 showed demand for means of communication with the RIPE NCC in addition to email. Acting on this feedback, the RIPE NCC has increased the level of phone communication and introduced Live Chat.

Benefits for RIPE NCC members / RIPE community:

- Improves communication with the RIPE NCC
- Lowers the resolution time for member questions

1.1.10 Replacement of Registration Services Software

Status: New Activity

To carry out its registry maintenance activities, the RIPE NCC uses a range of custom software developed in-house. In 2014, the software that the RIPE NCC's Registration Services Department has been using will be updated.

The RIPE NCC Executive Board approved the decision to upgrade this software at its 89th Meeting in June 2014.

Registry Maintenance Costs for 2014:

Activity	FTEs	Costs	Capital Expenditure
Registry Maintenance	32.3	3,436	-

1.2 RIPE Database

Status: Ongoing

Measurable usage: 6.8 billion RIPE Database queries in 2012

The RIPE Database contains information about the IP addresses and AS Numbers used by networks within the RIPE NCC's service region. For these resources, the database carries information about their current holders along with contact details and related attributes. Resource holders are responsible for maintaining the information in the database, while the role of the RIPE NCC is as data controller.

The RIPE Database provides information that is crucial for network troubleshooting and determining abuse contacts. The database has a wide range of users, including network engineers, system administrators and researchers. The service is available for anyone that needs information about networks and Internet number resources.

The RIPE Database also includes the RIPE Routing Registry, which is part of the global Internet Routing Registry (IRR). The IRR ensures the stability and consistency of global Internet routing by sharing information between network operators. The IRR consists of several databases, including the RIPE Routing Registry, in which network operators can publish their routing policies and routing announcements.

In 2014, the RIPE NCC will continue to develop the RIPE Database as a service accessible through RIPE NCC Access (single sign-on service) to create a seamless experience that allows RIPE NCC members to shift between querying the RIPE Database and managing Internet number resources and other functions via the LIR Portal.

Benefits for RIPE NCC members / RIPE community

- Enables a range of users, including network engineers, system administrators, researchers and End Users, to find the information they need for network troubleshooting or determining abuse contacts
- Ensures the stability of global Internet routing
- Provides greater integration with the LIR Portal

1.2.1 Maintenance and User Support

Status: Ongoing

The RIPE NCC works to improve the maintenance of the RIPE Database. This involves updating the software to better support operations and improving internal processes. With continuous progress in the maintenance area, the RIPE NCC can provide a high-quality service to the community with close to 100% uptime. In addition, the RIPE NCC frequently verifies database data and regularly launches initiatives to improve its overall quality.

Benefits for RIPE NCC members / RIPE community

- Provides an efficient system that delivers high-quality data
- Ensures the RIPE Database is available to users

1.2.2 New Feature Development

Status: Ongoing

Improvements to the RIPE Database are made on a continuous basis. The RIPE NCC works closely with the RIPE community to implement new features and priorities are established by the appropriate RIPE Working Groups.

In 2013, the 11-year old RIPE Database software was rebuilt using modern technologies. With the new system in place, the RIPE NCC can now respond more quickly to community requests for new features. By gathering data from customer contacts and training courses, the RIPE NCC will continue to identify where improvements can be made and suggest new features to the RIPE community that enhance the overall user experience.

Benefits for RIPE NCC members / RIPE community:

- Provides more value to RIPE Database users
- Simplifies use of the database
- Creates new ways to use the database
- Ensures the RIPE NCC's priorities for new features match the RIPE community's

1.2.3 Database Resiliency Improvements

Status: New Activity

In 2014, the RIPE NCC will improve the resiliency of the RIPE Database so that it can quickly respond to outages or data loss. This will be achieved by changes to the database infrastructure and the use of distributed storage (by establishing a "warm node"). The RIPE NCC will also investigate alternative back-end systems as well as the automation of manual tasks. The database and its software will be distributed globally to guard against major regional outages.

The RIPE NCC Executive Board approved Phase One of the RIPE Database Resiliency Plan at its 87th meeting in March 2013. This decision was then communicated to the membership at the RIPE NCC General Meeting in May of that same year.

Benefits to RIPE NCC members / RIPE community:

- Reduces RIPE Database downtime
- Increases the trust that users have in the service
- Minimises maintenance

RIPE Database Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
RIPE Database	7.6	685	212

Note: This service is expanding because of a financial technicality. A large part of these costs are software development, which in some cases are taken as an asset (Capital Expense). In 2014, the RIPE NCC expects to be able to take fewer of these cost items as a Capital Expense. Therefore, there is a shift from the Capital Expense to Operational Expense.

1.3 Resource Certification (RPKI)

Status: Ongoing

Measurable usage: Around 6.5 IPv4 /8 blocks covered by ROAs

The Resource Certification (RPKI) system allows RIPE NCC members to request a digital certificate listing the Internet number resources they hold. It offers cryptographic proof that an organisation holds a specific set of resources that have been registered with the RIPE NCC. The practical application offered today is the ability to use resource certificates to help secure Internet routing, particularly BGP origin validation.

In 2014, the RPKI system will be more closely integrated across the five RIRs, with the goal of sharing experiences and expertise. In addition to improving the stability and robustness of the system, these efforts will also have a positive effect on data quality.

As an increasing number of operators are using RPKI data for BGP Origin Validation in their routing workflow, the RIPE NCC will continue to provide a high quality toolset that is tailored to the needs of its users.

Benefits for RIPE NCC members / RIPE community:

- Provides a platform to make Internet routing more secure
- Increases the robustness of the RIPE Registry
- Enables validatable proof of holdership for Internet number resources
- Offers BGP origin validation

Resource Certification (RPKI) Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Resource Certification (RPKI)	3.4	336	25

Note: A large part of these costs are software development, which in some cases are taken as an asset (Capital Expense). In 2014, the RIPE NCC expects to be able to take fewer of these cost items as a Capital Expense. Therefore, there is a shift from the Capital Expense to Operational Expense. By the end of 2014, it is expected that the bulk of the development work for RPKI will be complete, at which time it will become a business as usual activity with significantly reduced costs.

1.4 LIR Portal

Status: Expanding

Measurable usage: 120,000 (logged-in) page views each month

The LIR Portal is a secure web area for RIPE NCC members to manage everything related to their membership and the Internet number resources they hold. Members also create and manage their resource certificates via the LIR Portal.

As the RIPE NCC is now allocating addresses from the last /8, the focus of the LIR Portal is shifting from requesting resources to managing them. The functionality that the LIR Portal provides through the IP Analyser is geared towards increasing data quality in the RIPE Registry and database and helping LIRs to get the most out of the remaining IPv4 address space that they hold.

In 2014, based on user feedback and comments in the RIPE NCC Survey 2013, major work will take place in Q3/Q4 to make the LIR Portal more user-friendly and enhance the services provided through the portal. The RIPE NCC will support LIRs to integrate IPv6 in their operations by providing tools that help with creating and managing an addressing plan. There will be a further focus on unlocking resource data through an API to allow for more integration in the IP address management workflows that operators have.

The RIPE NCC will also work towards a tighter and more seamless integration of LIR Portal functionality with the other services it provides, such as the RIPE Database, RIPEstat and RIPE Atlas. This will offer LIRs more tailored data and a clearer insight into the state of their Internet number resources.

Benefits for RIPE NCC members / RIPE community:

- Provides LIR contact and user management
- Supports efficient Internet number resource requests
- Enables IP address management in the user interface and through an API

LIR Portal Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
LIR Portal	1.6	251	-

2) Services

2.1 Training

The RIPE NCC provides training within its service region to support the correct registration and administration of Internet number resources and in other specialised areas such as IPv6 and routing security. In addition, in 2014, the RIPE NCC will continue to develop its e-learning platform, recognising the benefits this will have in terms of lower training costs and greater accessibility for members and the RIPE community.

2.1.1 RIPE NCC E-Learning Centre

Status: Expanding

Measurable usage: Webinars held weekly / 15 participants per webinar. Webinars cover six topics. Other downloadable resources available 24/7

The RIPE NCC E-Learning Centre enables members and the RIPE community to access learning resources online. Currently, these resources include instructional videos, documentation and live webinars that allow participants to interact with RIPE NCC trainers remotely.

Results from the RIPE NCC Survey 2013 showed that members wanted the RIPE NCC to provide more online learning options. As a result, RIPE NCC Management has decided to implement a Learning Management System (LMS) in 2014. This will allow the RIPE NCC to offer more learning modules and training courses through a portal that will be integrated with the website and the LIR Portal. The new platform will allow members to test and certify their knowledge and will make it possible to replace the outdated training software that is currently being used to register attendees for face-to-face training courses. The webinars will be integrated into the learning portal and continue to be held weekly, focusing on topics and issues most important to LIRs.

Benefits for RIPE NCC members / RIPE community:

- Members and non-members can conveniently access learning resources online
- Members have the opportunity to gain certificates demonstrating their knowledge
- Enables interaction with RIPE NCC trainers on a variety of topics without having to travel
- Allows for more efficient management of face-to-face training courses via an integrated solution

2.1.2 Local Internet Registry Training Course

Status: Ongoing

Measurable usage: 30 courses in 2013 / 20 participants per course

The one-day Local Internet Registry (LIR) Training Course introduces members to the administrative procedures and policies related to obtaining and distributing Internet number resources and operating an LIR.

Benefits for RIPE NCC members / RIPE community:

- Helps members to understand the RIPE NCC's processes and how to request Internet number resources
- Ensures members know the correct procedure for registering and updating registry data and working with the RIPE Database
- Increases awareness of the RIPE Policy Development Process (PDP)
- Gives members an opportunity to meet RIPE NCC staff in person

2.1.3 IPv6 Training Course

Status: Ongoing

Measurable usage: 45 courses in 2013 / 20 participants per course

The IPv6 Training course is a one-day session for members who are thinking about deploying IPv6. The course teaches members how to create a deployment plan, the differences between IPv4 and IPv6 and the implications of IPv4 exhaustion.

Benefits for RIPE NCC members / RIPE community:

- Builds awareness about IPv4 exhaustion and the need for IPv6 deployment
- Assists with the IPv6 deployment process
- Increases awareness about IPv4 and IPv6 coexistence

2.1.4 Routing Security Training Course

Status: Ongoing

Measurable usage: 14 courses in 2013 / 20 participants per course

The Routing Security Training Course is a one-day introductory course for members, covering usage of the Internet Routing Registry (IRR), Routing Policy Specification Language (RPSL) and Resource Certification (RPKI).

Benefits for RIPE NCC members / RIPE community:

- Teaches members how to make Internet routing more secure and reliable using the Routing Registry and the Resource Certification (RPKI) system
- Explains how to document routing policy in the RIPE Database with RPSL
- Teaches members how to set up the RPKI system in the LIR Portal and use resource certificates to create Route Origin Authorisations (ROAs)
- Explains how to use ROAs in the BGP decision-making process

2.1.5 RIPE Database Training Course

Status: Ongoing

Measurable usage: 15 courses in 2013 / 20 participants per course

The RIPE Database Training Course is a practical introduction for members on usage of the RIPE Database that includes hands-on exercises. The course was first introduced in

2013, after feedback from training course surveys indicated that members wanted a stand-alone RIPE Database course.

Benefits for RIPE NCC members / RIPE community:

- Increases awareness of the function, scope and importance of the RIPE Database
- Contributes to the maintenance of database data by members
- Raises awareness of the applicable database-related widgets and tools in RIPEstat

2.1.6 Hands-on Technical Workshops

Status: Ongoing

Measurable usage: Around eight courses per year, alongside regional meetings, conferences and on-request

The RIPE NCC delivers technical workshops and tutorials alongside regional meetings, conferences and on request. Both the RIPE NCC Survey 2013 and regular training course surveys indicated a need for hands-on training courses on various technical subjects in certain parts of the RIPE NCC service region. In 2014, this training material will be updated and the RIPE NCC will continue to provide tutorials and workshops covering best current practices and popular topics such as IPv6, DNSSEC, Routing, Security and others.

Benefits for RIPE NCC members / RIPE community:

- Builds knowledge of upcoming technologies, best practices, protocols and RIPE Policies
- Increases awareness of the tools and services provided by the RIPE NCC

2.1.7 Training Courses for Law Enforcement Agencies (LEAs) and Other Stakeholders

Status: Ongoing

Measurable usage: Four workshops held annually / 25 participants per workshop

As outlined in section 3.4 Government and LEA Liaison, the RIPE NCC plays an important role in engaging all Internet stakeholders to work towards a stable, secure and global Internet. The RIPE NCC supports these activities by delivering workshops to LEAs and other stakeholders.

Benefits for RIPE NCC members / RIPE community:

- Promotes public/private sector dialogue
- Strengthens the awareness and legitimacy of the bottom-up policy development process
- Enables the future growth, stability and security of the Internet

Training Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Training	7.2	883	-

*** 2.2 RIPEstat *** STRATEGIC FOCUS POINT 2014

Status: Ongoing

Measurable usage: 180,000 average monthly visits

In 2014, RIPEstat will evolve to become the main data-provisioning platform for data collected and analysed by the RIPE NCC. It will gather and combine data from a range of sources, including the RIPE NCC's measurements, routing data, DNS data, along with data from other RIRs, the Internet Routing Registry and other operationally important third parties.

The idea to have a one-stop shop for all information related to Internet number resources has been discussed within the RIPE community for a number of years. RIPEstat was first demonstrated at RIPE 62 in 2011. After the service received positive feedback from users, the RIPE Measurements Analysis and Tools (MAT) Working Group, and from training courses and comments recorded in the RIPE NCC Member and Stakeholder Survey 2011, the service went into production.

In 2014, RIPEstat will continue to incorporate new data sets, both from the RIPE NCC and relevant external parties. The main goal is to make RIPEstat widgets "global" – providing consolidated public data about any Internet number resource, regardless of which RIR it is registered with. The RIPE NCC will also work to consolidate its other public data provisioning activities, such as the Routing Information Service (RIS), and bring them together under the umbrella of RIPEstat – making RIPEstat the single point of entry for data retrieval.

Using feedback from RIPEstat users, the RIPE NCC will continue to evaluate other tools and features that can be incorporated into RIPEstat to make the service more useful to members and the RIPE community.

Benefits for RIPE NCC members / RIPE community:

- Provides current and historical information about Internet number resources, including those the user is responsible for
- Will provide members with routing-specific functions, such as alarms
- Additional targeted analysis options provided specifically for members
- Provides a single, consolidated interface for accessing all RIPE NCC data

RIPEstat Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
RIPEstat	5.9	657	116

*** 2.3 RIPE Atlas *** STRATEGIC FOCUS POINT 2014

Status: Ongoing

Measurable usage: 2.2 billion measurement packets received each month / 10,000 user-defined measurements performed in 2013

Until now, RIPE Atlas has operated as its own independent initiative, consisting of a global network of probes gathering measurement data from thousands of locations around the world. Starting in 2014, the RIPE NCC's focus will be on bringing all of its data collection activities together under the RIPE Atlas infrastructure and working with other interested parties to expand the network's coverage. This means that all data collection will eventually be a part of a common concept, regardless of the collection mechanism or subsystem. In 2014, the RIPE NCC will also continue to distribute additional RIPE Atlas probes.

Community members who participate in data collection (whether via RIS, RIPE Atlas or any other RIPE NCC data collection mechanism) will have a single interface with the RIPE NCC. This simplification will mean the RIPE NCC can spend less time on administration and more time providing better data and analysis. This will also allow the RIPE NCC to operate a wider network of data collection and active measurements, and to integrate different types of collected data together so that it can be seamlessly aggregated, analysed and presented.

RIPE Atlas currently allows users to run their own measurements that test reachability and round trip times, traceroutes, DNS measurements and more – from thousands of vantage points around the globe. All measurements are pooled and provide a big-picture view of the Internet available in several formats, including “traffic maps”.

At RIPE 61 in 2010, the RIPE NCC announced that it intended to start the RIPE Atlas measurement network and the RIPE NCC Executive Board later gave the project its approval. In the period since, the RIPE NCC has managed to build a leading Internet active measurement network that collects unique data, providing valuable live and historical information about the reliability of networks and the Internet's reachability and connectivity.

Benefits for RIPE NCC members / RIPE community:

- Provides timely, hard data on topical issues such as country-wide Internet outages
- Offers topical measurements and data analysis for RIPE NCC members

- Reinforces the credibility and standing of the RIPE NCC by providing a neutral, transparent data collection infrastructure
- Provides data sets that can be used to analyse the operation and growth of the Internet
- Collects measurement data on the state of the Internet, using active data collection methods

2.3.1. RIPE Atlas Probes

Status: Ongoing

Measurable usage: 5,600 probes distributed

By the end of 2013, the RIPE Atlas network will consist of approximately 5,000-6,000 active measurement probes, mostly operating in the RIPE NCC service region.

In 2014, the RIPE NCC will continue to expand the RIPE Atlas infrastructure to accommodate the growing number of probes. The RIPE NCC also plans to distribute additional RIPE Atlas probes in order to gain more vantage points and thereby a more detailed picture of the forwarding plane of the Internet. In 2014, the RIPE NCC will seek sponsorship from organisations to cover some of the cost of RIPE Atlas probes.

The RIPE NCC will maintain a public roadmap for RIPE Atlas and will hold continued dialogue with the RIPE community, especially the RIPE MAT Working Group, on future developments and functionality.

2.3.2 RIPE Atlas Anchors

Status: Ongoing

Measurable usage: 15 RIPE Atlas Anchors deployed

RIPE Atlas anchors are essentially enhanced probes with far greater measurement capacity than regular RIPE Atlas probes. They have two functions: they perform far more measurements than regular probes and act as stable, cooperating regional targets for measurements originating from probes throughout the RIPE Atlas network. This allows users to examine measurement traffic at both the source and the destination. Anchors are hosted by interested organisations (mostly data centres and IXPs), which receive additional benefits for their contribution.

In 2014, the RIPE NCC will continue deploying RIPE Atlas anchors in various partnering networks in order to provide a more robust distribution of possible measurement targets.

2.3.3 Routing Information Services (RIS) and DNS Measurements

Status: Ongoing

The RIPE NCC operates globally distributed measurement networks for the purpose of collecting data on Internet infrastructure, usage and development. In 2014, the RIPE NCC will continue its work in cooperation with a range of stakeholders to unify, optimise and develop new interfaces for this data. Ultimately, these measurements will be incorporated into RIPE Atlas and RIPEstat as outlined in the sections above.

Benefits for RIPE NCC members / RIPE community:

- Provides data sets that can be used to analyse the operation and growth of the Internet
- Provides data that can be used in tools such as RIPEstat and RIPE Atlas

RIPE Atlas Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
RIPE Atlas	10.3	1,239	299

2.4 Other Services**2.4.1 Membership Lifecycle Management**

Status: Ongoing

Measurable usage: 10,000 members; 2,600 membership applications; 19,000 member enquiries

The RIPE NCC manages the complete lifecycle of RIPE NCC memberships, including queries from potential members, membership applications, administrative and contractual changes, billing enquiries, and closing memberships.

Benefits for RIPE NCC members / RIPE community:

- Potential members receive advice regarding membership
- New members are guided through the application process
- Support is given when administrative or financial questions arise
- Members are kept aware of services, tools and features that provide value-for-money
- Members can receive personal support via Live Chat

2.4.2 Test Traffic Measurements (TTM)

Status: Planned Ending

The Test Traffic Measurements (TTM) service will be ended in 2014 and the benefits of the service will be offered through RIPE Atlas in a more focused and up-to-date way.

The RIPE NCC initially proposed discontinuing TTM at RIPE 64 in Ljubljana. After further consultation with the RIPE community, it was agreed that the RIPE NCC would continue to provide this service until 2013.

2.4.3 RIPE Database Proxy Service

Status: Ongoing

Measurable usage: 8 contracts have been signed; 4 actual users of the service

The RIPE Database Proxy Service is for third parties who send queries to the RIPE Database on behalf of their clients. It ensures that the daily access limits for users of the RIPE Database are correctly applied. For example, if a third party provides their clients with a web-based gateway to the RIPE Database, the proxy service ensures that daily limits are calculated based on the clients' queries and avoids the possibility of the third party's server being denied access to the RIPE Database because of too many queries from its clients.

At the 87th Executive Board Meeting, held on 26 March 2013, the RIPE NCC Executive Board decided that the RIPE Database Proxy Service should be continued free of charge, for both members and non-members, under a formal contract with the users of the service.

Benefits for RIPE NCC members / RIPE community

- Provides third parties with a mechanism for ensuring that their clients' RIPE Database queries are not added to their daily access limit
- Helps to ensure the accessibility of query gateways to the RIPE Database that third parties provide to their clients

2.4.4 Near Real Time Mirroring (NRTM)

Status: Ongoing

Measurable usage: 16 users of the NRTM service

The Near Real Time Mirroring (NRTM) service provides RIPE NCC members with a local copy of the RIPE Database. This local copy is kept up to date with modifications from the RIPE Database in near real time. The NRTM feeds do not contain any personal or private data.

Benefits for RIPE NCC members / RIPE community

- Provides members with a local copy of the RIPE Database
- Enables members to use RIPE Database data (e.g. routing data) in near real time to manage their networks without the need to continuously query the RIPE Database for changes

Other Services Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Other Services	2.1	195	-

3) Coordination Activities

3.1 DNS Operations

Status: Expanding

The RIPE NCC provides DNS coordination and support activities as well as reverse DNS services for the IPv4 and IPv6 address space that it manages. For reverse DNS associated with the address space managed by other RIRs, the RIPE NCC provides secondary DNS to support the reliability of reverse lookups. The scalability of the DNS infrastructure for secondary, reverse and primary DNS services is improved based on the requirements specific to each of these services.

In 2013, the RIPE NCC expanded its authoritative and secondary DNS services by adding a third cluster node, in addition to those currently located in Amsterdam and London, to improve resilience and geographical coverage.

K-root and other DNS service nodes will continue to be well maintained and, as a consequence, various upgrades and replacements are planned for 2014. The expansion of DNS services to increase coverage is not planned for 2014.

Security-related aspects of the RIPE NCC's DNS services are becoming increasingly important and will be an area of focus in 2014.

This activity is expanding financially due to planned installation of more robust infrastructure for reverse DNS and K-root.

Benefits for RIPE NCC members / RIPE community:

- Provides reverse DNS services for RIPE NCC members with registered IP addresses
 - Ensures the stability and diversity of the DNS root name server system
 - Guarantees the neutral, impartial and professional provision of key high-level DNS services
- Provides a secondary service for ccTLD operators

3.1.1. Reverse DNS and Reverse DNS Support

Status: Expanding

Measurable usage: three reverse provisioning instances; 10.3 billion reverse root queries daily

The RIPE NCC delegates reverse DNS zones for the address ranges that it manages. To support this service, it provides reliable, authoritative name servers and checks all zones under its responsibility to ensure they are properly set up and functioning correctly.

As part of its DNSSEC deployment efforts, the RIPE NCC publishes signed zones and provides tools for users to secure delegations received from the RIPE NCC. In addition, the RIPE NCC shares experience by publishing operational white papers, documentation and software toolkits.

This activity is expanding financially due to planned installation of more robust infrastructure.

Benefits for RIPE NCC members / RIPE community:

- Supports the proper address-to-name mapping for addresses allocated to the RIPE NCC
- Provides reliable and secure reverse DNS services
- Supports the operation and maintenance of DNSSEC

3.1.2 Secondary DNS Service

Status: Ongoing

Measurable usage: 77 TLDs hosted as secondary

The RIPE NCC offers a secondary name service to the other RIRs, along with some country code Top-Level Domain (ccTLD) operators, who are in the start-up phase of their operations. The RIPE NCC no longer provides this service to well-established ccTLDs.

In 2014, the RIPE NCC will work on clarifying its policy for hosting secondary ccTLD name servers, as well as developing documentation on the procedures and requirements for receiving the service.

Benefits for RIPE NCC members / RIPE community:

- Supports the stability of the global DNS by offering a professional service to the other RIRs and developing ccTLD operators that require it

3.1.3 DNS Service in the e.164.arpa Domain (ENUM)

Status: Ongoing

Measurable usage: 52 delegations in the ENUM (e164.arpa) zone

The Internet Architecture Board (IAB) has an agreement with the RIPE NCC under which the RIPE NCC provides technical operation of the e164.arpa domain. This domain

implements support in the DNS for the ENUM protocol, which allows the mapping of telephone numbers to domain names in order to help facilitate services such as Voice over IP (VoIP).

Benefits for RIPE NCC members / RIPE community:

- Supports the operations of one of the systems required for the deployment of the ENUM protocol, promoting increased integration between the Internet and services provided through the traditional telephony infrastructure
- Supports security of the e.164.arpa domain by deploying and maintaining DNSSEC and allowing secure delegations from ENUM operators

3.1.4 K-root Operations

Status: Expanding

Measurable usage: 17 K-root instances; 1.7 billion queries daily

The RIPE NCC operates the K-root server through a set of globally distributed anycast clusters. Root name servers are a crucial part of the Internet DNS infrastructure. The RIPE NCC has operated the K-root server since 1997, when the first server was installed at the London Internet Exchange (LINX). The RIPE NCC has since deployed five global nodes of the K-root name server. Since 2003, the RIPE NCC has also been deploying anycast instances of the K-root server with local reachability. Currently there are 12 local nodes active.

The RIPE NCC collects and analyses data to evaluate the performance of the existing K-root anycast nodes and to determine if additional anycast nodes should be deployed. Global coverage and capacity of the existing K-root anycast instances is sufficient and no further local or global node deployments are planned for 2014.

This activity is expanding financially due to planned installation of more robust infrastructure.

Benefits for RIPE NCC members / RIPE community:

- Provides a resilient, efficient, secure and quality service
- Isolates the impact of an "external" Denial of Service (DoS) attack and localises the impact of a "local" DoS attack
- Efficiently maintains the network of anycast instances of K-root by monitoring network and instance problems, performing trend analysis and determining if, and where, other anycast nodes should be deployed.

DNS Operations Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
DNS Operations	2.7	364	130

3.2 Data Analysis and Scientific Support

Status: Expanding

The RIPE NCC has a long-standing tradition of providing the operator community with data analysis about the state of the Internet and providing new and innovative tools that help the community understand various aspects of routing, DNS, reachability and other topics.

In 2014, the RIPE NCC will allocate more time to these scientific publications and analyses. It will also continue to develop prototype tools which, if they show enough value to the RIPE NCC membership and the community at large, can be evolved into future RIPE NCC services.

Benefits for RIPE NCC members / RIPE community:

- Regular reporting and analysis of various RIPE NCC-related statistics such as membership growth and Internet number resource usage
- Accurate and methodological analysis of Internet events, with a particular emphasis on using data collected by the RIPE NCC's measurement systems
- Publication of interesting finds about the working of the Internet, relevant to network operators
- Prototypes of new and innovative tools that have potential to become future RIPE NCC services

Data Analysis and Scientific Support Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Data Analysis and Scientific Support	1.9	255	15

3.3 RIPE Labs

Status: Decreasing

Measurable usage: 109 articles published in 2012; 111,000 unique visitors

RIPE Labs is a platform for network operators, developers and industry experts to expose, test and discuss innovative Internet-related tools, ideas, analysis and statistics that can benefit members and the RIPE community. These ideas are being developed both within the RIPE NCC and the community at large.

In 2014, the RIPE NCC will enhance the usability of the website with the inclusion of additional feedback functionality such as polls and surveys. The RIPE NCC will also continue to reach out to the wider community and, as requested by respondents in the RIPE NCC Survey 2013, RIPE Labs will have an additional focus on IPv6 deployment, routing, measurements and statistics, and operator tools.

This activity is decreasing financially but not operationally. This is because back-end upgrades are completed and similar costs are not foreseen for 2014.

Benefits for RIPE NCC members / RIPE community:

- Informs the community about new ideas and prototypes the RIPE NCC is working on
- Provides a platform for community members to present and discuss their research and use cases
- Provides a channel for the community to provide feedback to the RIPE NCC

RIPE Labs Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
RIPE Labs	2.1	261	-

3.4 Government and Law Enforcement Agencies Liaison

Status: Ongoing

The RIPE NCC engages strategically with governments, law enforcement agencies (LEAs) and inter-governmental organisations on behalf of its membership and community. This role has gained steadily in importance over recent years, and the RIPE NCC is recognised as a leader and innovator in this area among its industry partners.

The RIPE NCC's liaison strategies in this area include:

- RIPE NCC Roundtable Meetings for Governments and Regulators, held twice yearly
- Engagement with LEA representatives at events including the annual Global e-Crime Congress and targeted sessions with individual agencies
- Direct engagement with government agencies (including those of Belgium, Germany, Lebanon, Moldova, the Netherlands, Norway, Qatar, Saudi Arabia, Sweden, the United Arab Emirates and the United Kingdom) and organs of the European Union on issues of relevance to the RIPE NCC and its members and community
- Participation in international discussions of Internet-related public policy development in forums including the International Telecommunication Union (ITU), the Conference of European Postal and Telecommunications Administrations (CEPT), the Organisation for Economic Cooperation and Development (OECD) and the World Summit on the Information Society (WSIS)
- Cooperative educational and capacity building initiatives with public sector organisations such as the RIPE NCC/MENOG IPv6 Roadshow

2014 will see a number of major international events in this area, including the ITU World Telecommunications Development Conference (WTDC), the WSIS+10 conference and the ITU Plenipotentiary 2014. As government interest in Internet governance issues continues to intensify, the RIPE NCC will continue to build on its current liaison strategies and explore new avenues to inform and engage public sector representatives. The RIPE NCC will continue to inform the community of its activities in this area via RIPE mailing lists and reports at RIPE Meetings and other community events.

Benefits for RIPE NCC members / RIPE community:

- Ensures that the interests and concerns of the RIPE NCC membership and RIPE community are heard in Internet governance discussions at the national, regional and global level
- Promotes openness and transparency in the development of public policy relating to the Internet as well as raising any specific concerns of the RIPE NCC membership or the RIPE community
- Ensures the RIPE NCC can inform its membership and community of relevant public policy issues or discussions

Government and LEA Liaison Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Government and LEA Liaison	1.8	421	-

***** 3.5 Outreach and External Relations *** STRATEGIC FOCUS POINT 2014**

Status: Ongoing

The RIPE NCC supports the open, multi-stakeholder model of Internet governance by engaging with a broad range of stakeholder groups. Among the stakeholder groups that the RIPE NCC has developed relationships with are:

- RIPE NCC membership
- Internet technical community (including Network Operators Groups)
- Industry partners (RIRs, ICANN, the Internet Society etc.)
- Internet industry and professional groups
- Academia and the research community
- Public sector (governments and regulators)
- Law Enforcement Authorities (LEAs)
- The Free and Open Source Software (FOSS)

In the RIPE NCC Survey 2013, a significant number of respondents indicated they were looking for closer links with the technical community. A significant part of this will be made possible through outreach activities currently deployed by the RIPE NCC.

3.5.1 Regional Support and Outreach

Status: Expanding

Regional organisation and participation are crucial to successful community-driven, bottom-up policy development models, providing all stakeholders with the means to contribute and have their voice heard. The RIPE NCC has been very active in supporting the development of regional forums with the RIPE NCC service region, including:

- Regional and national Network Operator Groups (including the Middle East Network Operators Group (MENOG), the Eurasia Network Operators Group (ENOG) and RIPE NCC South East European Regional Meetings)
- Regional Internet governance forum events (including EuroDIG, the Arab IGF and national IGF events)
- Regionally targeted educational initiatives (the RIPE NCC/MENOG IPv6 Roadshow)

Over the past several years, the RIPE NCC has been steadily increasing its outreach activities with a particular focus on the Russian and Middle East regions. With the continued growth of both regions and direct feedback given to the RIPE NCC from various reporting channels (mainly the RIPE NCC Membership and Stakeholder Survey 2011 and the RIPE NCC Survey 2013 and focus group meetings) it has become clear that more local resources are needed to meet the expectations of our members, the Internet community and government.

Regional engagement and organisation poses various challenges, including the need for local industry knowledge and language. Preliminary plans for an increased presence was announced at RIPE 66 by RIPE NCC Management. The RIPE NCC Executive Board at the 89th Executive Board meeting on 25 June 2013 gave approval for the expansion of the RIPE NCC's regional outreach activity. The RIPE NCC Executive Board Chairman announced this decision to members and the RIPE community in July 2013.

The RIPE NCC will expand its capacity to meet these challenges over the coming year by expanding its presence in the Russian and Middle East regions. By the end of 2014, the RIPE NCC expects to have hired additional staff from each region, to be based in their respective regions. These staff will help the RIPE NCC engage more effectively with RIPE NCC members, industry and government bodies in those regions.

Additionally, the RIPE NCC is continuing to build on work with industry partners, including ICANN and the Internet Society on various initiatives to build regional engagement with the Internet technical community.

Benefits for RIPE NCC members / RIPE community:

- Embraces external groups and stakeholders as part of the open RIPE community, strengthening the authority and legitimacy of the RIPE bottom-up policy development process
- Ensures that all RIPE NCC stakeholders feel engaged and represented in the operation and guidance of the organisation
- Positions the RIPE NCC to facilitate expert technical input into policy and decision-making processes outside the RIPE forum that may impact on, or be affected by, IP addressing issues.
- Enables effective coordination of the Internet technical community's input into multi-stakeholder Internet governance discussions

Outreach and External Relations Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Outreach and External Relation	11.7	1,997	-

3.6 IPv6 Support**3.6.1 Training and Education****i) RIPE NCC IPv6 Training Course for LIRs (see 2.1.3)****ii) RIPE NCC/MENOG IPv6 Roadshows**

Status: Ongoing

The IPv6 Roadshow events are a joint initiative from the Middle East Network Operators Group (MENOG), the RIPE NCC and APNIC. They consist of three- or five-day hands-on training events targeted at an audience of government and enterprise network operators.

In 2014, there will be around ten IPv6 Roadshow events scheduled throughout the Middle East region. The RIPE NCC will also work with regional partners, including governments, to launch an IPv6 Roadshow Train-the-Trainer Program, which will enable local trainers to deliver the IPv6 Roadshow course material in their community.

Benefits for RIPE NCC members / RIPE community:

- Provides education and capacity building in a context that recognises the Middle East region's specific needs
- Builds relationships with public sector bodies and actors in the Middle East
- Enables local trainers to acquire the knowledge and skills to educate their communities

iii) RIPE NCC/ENOG IPv6 Roadshows

Status: Ongoing

Building on the success of the RIPE NCC/MENOG IPv6 Roadshows, these events will be rolled out in 2014. Recognising the needs of operators in this region, the IPv6 Roadshow events will be delivered in Russian. To enable this the existing materials will be translated and a Train-the-Trainer Program will be introduced to enable Russian speaking trainers to deliver the training material.

Benefits for RIPE NCC members / RIPE community:

- Provides education and capacity building in a context that recognises the specific needs of stakeholders in Russia and the CIS countries
- Builds relationships with public sector bodies and actors in Russia and the CIS countries
- Enables local trainers to acquire the knowledge and skills to educate their communities

3.6.2 IPv6 Outreach

Status: Ongoing

The RIPE NCC will continue to focus a great deal of its outreach efforts on IPv6 awareness-raising efforts across the full range of RIPE NCC stakeholders groups. This includes work to inform and educate governments, regulators and LEAs about IPv6 deployment, engagement with national forums and task forces, and meetings with LEAs around the world. The RIPE NCC will also continue to work closely with the OECD on IPv6-related activities conducted under the remit of that organisation.

Specifically, these efforts will include:

- Presence and participation in global, regional and national events, including technical forums, governmental meetings and business events
- Ongoing development of printed and online materials to facilitate IPv6 deployment for all stakeholders
- IPv6 messaging and communication in the traditional and online media, utilising the RIPE NCC's Public Relations agency and social media networks
- Collaborative efforts with other RIRs and industry partners on global education and capacity building
- Regular RIPE NCC Roundtable Meetings for governments, regulators and LEAs

Benefits for RIPE NCC members / RIPE community:

- Builds awareness among all Internet stakeholders of the need to deploy IPv6
- Ensures that the interests of the RIPE NCC membership and the technical community are represented in all relevant forums
- Highlights the work being done by the RIPE NCC and RIPE community in data-gathering and analysis

- Promotes capacity building, particularly in developing areas, and facilitates knowledge sharing with global experts
- Highlights the advantages of the community-driven, bottom-up system for managing and distributing Internet number resources

3.6.3 Online IPv6 Resources, Measurements and Analysis

Status: Ongoing

The RIPE NCC supports IPv6 adoption by providing resources, measurements and analysis to its membership and the wider RIPE community. This activity includes maintenance of the IPv6ActNow.org website, the provision of IPv6-related statistics and the IPv6 RIPEness rating system, which measures and ranks the IPv6 preparedness of individual RIPE NCC members based on a number of specific indicators.

In 2014, the RIPE NCC will continue work to more closely integrate the IPv6ActNow.org website with the main www.ripe.net website and the growing body of IPv6-related material on RIPE Labs. As more focus is being put on the deployment of IPv6, RIPE NCC Management has decided to further develop its measurements and statistics, making these easily accessible via interfaces on RIPE Labs and RIPEstat, and providing additional reporting through articles on RIPE Labs and third-party websites.

Recognising the advances being made towards IPv6 deployment, the RIPE NCC will use the measurements taken through the IPv6 RIPEness system to look more closely at the delivery of IPv6 services to End Users, as reflected in the development of a “fifth star” in the IPv6 RIPEness system.

Benefits for RIPE NCC members / RIPE community

- Provides comprehensive, impartial information to assist in deploying IPv6
- Provides analysis on the rate of IPv6 deployment
- Establishes the RIPE NCC and the RIPE community as authoritative sources of data and analysis
- Encourages RIPE NCC members to become IPv6-ready and rewards them for doing so
- Provides a unique indicator of IPv6-readiness across the RIPE NCC service region (and at more specific levels, including by country, sector, LIR size)

3.6.4 CPE Survey

Status: Decreasing

The Customer Premises Equipment (CPE) survey collects data on the IPv6 readiness of CPEs from various vendors. Availability of IPv6 support in CPE has increased over the last years and several manufacturers and carriers are now supplying CPE which have IPv6 turned on by default. As the number of devices with IPv6 support continues to increase, eventually becoming the industry de-facto standard, RIPE NCC Management has decided that it will scale down its efforts to maintain a comprehensive list of all available models.

Benefits for RIPE NCC members / RIPE community:

- Keeps all stakeholders informed about hardware-related IPv6 developments
- Encourages vendors to ensure their equipment is IPv6 ready
- Provides a neutral overview of equipment features derived from community collaboration

IPv6 Support Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
IPv6 Support	1.0	114	-

3.7 RIPE Meetings

Status: Ongoing

Measurable usage: 500+ attendees per meeting; 1,000+ remote participants

The RIPE NCC organises two five-day RIPE Meetings each year at various locations throughout its service region, trying to vary these geographically. RIPE Meetings bring together Internet Service Providers (ISPs), network operators and other interested parties from all over the world. The RIPE NCC provides all administrative, logistical and technical support.

In 2014, the RIPE NCC expects that both RIPE Meetings will receive attendance in excess of 600 people. For those that are unable to physically attend RIPE Meetings, state of the art webcasting services and live transcription will be made publically available.

The RIPE NCC sends staff to RIPE Meetings who are available for face-to-face consultation about: Internet resource requests, the RIPE Database, invoice and billing queries, RIPE NCC training services, RIPE NCC tools and measurement services, RIPE Labs, and any other services that are made available to members or the wider community.

Benefits for RIPE NCC members / RIPE community:

- Supports the open, bottom-up, industry self-regulatory structure
- Stimulates participation of the RIPE community in the IP policy-making process and the technical coordination of IP networking
- Facilitates networking opportunities with key players in the Internet industry
- Contributes to the stable operation of the RIPE NCC by allowing for guidance and advice from the RIPE Working Groups
- Encourages participation of individuals who have little or no experience of the RIPE community

RIPE Meetings Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
RIPE Meetings	6.7	1,303	54

3.8 RIPE Policy and Development

Status: Ongoing

Measurable usage: five policies/policy changes implemented in 2013

The RIPE NCC provides support to any and all stakeholders who wish to participate in formulating RIPE Policy or who wish to be part of the RIPE community. It supports the RIPE Policy Development Process (PDP) and offers assistance to the RIPE Working Groups and Working Group Chairs as required so that they are able to develop policy in a consensus-based, bottom-up manner. The RIPE NCC provides information and statistics to various working group mailing lists and creates impact analyses that highlight the expected outcome of RIPE Policy proposals to facilitate community discussion. The RIPE NCC also implements procedures as part of the RIPE Policy Development Process (PDP).

In recent years important stakeholders within the Internet community, both technical and non-technical, have shown an increased interest in the RIR system. The RIPE NCC plays an active role in promoting the bottom-up policy development process:

- The engagement of the community members to participate in policy discussion
- The engagement of all the stakeholders in the Internet community that look at RIPE as a model of policy-making process
- The education and awareness building of the community members over the PDP and the multiple channels of communications available to participate in the self-regulation system – the process and procedures for the above engagement and awareness building
- Representation of RIPE NCC roles in the coordination of Internet policy
- The existing collaborations with other important Internet institutions such as ICANN, the ASO AC, the NRO

The RIPE NCC maintains a number of high-volume external mailing lists. Traffic is closely monitored and efforts are made to support subscribers with problems and to control spam so the mailing lists can be easily and efficiently moderated without losing any End User functionality.

Benefits for RIPE NCC Members / RIPE Community:

- Promotes the RIPE Policy Development Process (PDP)
- Strengthens the RIPE community and encourages involvement
- Educates the RIPE community about the PDP and promotes its use

- Helps to anticipate problems related to the PDP or policy proposals by analysing their potential impact for the community
- Provides transparency and consistency of the procedures
- Translates RIPE Policy into RIPE NCC procedures
- Documents and maintains a clear overview of new and changed procedures
- Facilitates the exchange of information among the RIPE community and the RIPE NCC membership

RIPE Policy and Development Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
RIPE Policy and Community Support	1.3	108	-

3.9 ICANN/IANA/IETF/ISOC/RIRs

Status: Ongoing

The RIPE NCC is strongly committed to maintaining close relationships with its industry partners, including the four other Regional Internet Registries (RIRs), ICANN, the IETF and the Internet Society (ISOC). These relationships are vital to ensuring coordinated administration of the resources that each organisation is responsible for. Cooperation with these industry partners is also an valuable means of expanding the range of stakeholders with whom the RIPE NCC engages.

The RIPE NCC supports ICANN, particularly in relation to its role in managing the IANA functions, and works with the IETF and the Internet Society to ensure implementation of agreed technical standards and coordination among those who support the global operation of the Internet.

As the need for technical community engagement with other Internet stakeholders increases, RIPE NCC Management plans to build on the organisation's leadership position in this area through new and expanded cooperative engagement efforts, building on activities like the RIPE NCC Roundtable Meetings.

Benefits for RIPE NCC members / RIPE community:

- Promotes the open, bottom-up, industry self-regulatory structure common to the RIR communities and other Internet technical coordination bodies
- Facilitates coordinated implementation of global policies developed by the Policy Development Processes (PDPs) of the five RIRs
- Facilitates the general technical and outreach coordination necessary to support the stable operation and governance of the Internet

ICANN/IANA/IETF/ISOC/RIRs Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
ICANN/IANA/IETF/ISOC/RIRs	2.2	882	-

4) Internal

4.1 IT

Status: Ongoing

This activity includes the operation of the internal network and all related infrastructure (such as co-location facilities, archiving and storage and email delivery), internal support for staff, and IT support and enhancement for all external services provided by the RIPE NCC.

In 2014, this internal service will be expanded to facilitate improvements to the RIPE NCC's information and measurement activities, establish additional co-location facilities, create an off-site resiliency location and establish a "warm node" for some of the RIPE NCC's core services.

Additional key areas will be automation improvements to the RIPE NCC's network infrastructure, a high availability virtual server environment and a focus on efficiency to facilitate service improvements.

The RIPE NCC monitors its critical services 24/7. This monitoring includes RIPE NCC websites, the RIPE Database, K-Root, DNS and reverse DNS, the LIR Portal and Resource Certification (RPKI). A technical emergency hotline is in place to ensure issues relating to RIPE NCC's critical services can be dealt with appropriately.

Benefits for RIPE NCC members / RIPE community

- Supports the efficient deployment and enhancement of services
- Provides of 24/7 support for services
- Ensures efficient IT support for staff to facilitate delivery of RIPE NCC services
- Enables members and the RIPE community to flag technical emergencies outside of the RIPE NCC's regular office hours
- Ensures the details of technical emergencies are forwarded to the RIPE NCC's 24/7 teams in a timely manner

IT Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
IT	10.8	1,741	712

4.2 Facilities – Rent and Utilities

Status: Ongoing

Facilities include all of the rent, utilities, security, repair and maintenance costs for the RIPE NCC's building and equipment.

In 2014, the RIPE NCC will continue to improve its facilities in order to provide a work environment that maximises the productivity of its employees. The RIPE NCC is in the process of reviewing its current location to ensure its efficiency.

Benefits for RIPE NCC members / RIPE community:

- Creates a secure, healthy environment for employees
- Provides up-to-date and well-maintained equipment

Facilities – Rent and Utilities Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Facilities – Rent and Utilities	3.6	1,120	120

4.3 HR and Management

Status: Ongoing

In 2014, the RIPE NCC will review its current Business Continuity Plan to improve the procedures in preparation for a more efficient recovery in the event of a disaster that affects its ability to operate.

Benefits for RIPE NCC members / RIPE community:

- Ensures the continuation of critical RIPE NCC services in the event of a disaster
- Maximises the efficiency of the RIPE NCC's internal structure

HR and Management Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
HR and Management	8.2	2,137	17

4.4 Finance and Admin

Status: Ongoing

The RIPE NCC maintains high-quality administrative processes and is constantly looking to increase efficiency. In 2014, the RIPE NCC will continue work to improve its billing processes and facilities to offer convenient payment methods and minimise administrative overhead. Internally, the RIPE NCC will continue to enhance its financial and performance indicator reporting tools and improve the management of documents and processing of paperwork.

Benefits for RIPE NCC members / RIPE community

- Increases efficiency in payment and administration for members and the RIPE NCC
- Ensures a professionally managed organisation with efficient administrative processes and cost-effective processes
- Meets the financial needs of organisations in different parts of the RIPE NCC service region

Finance and Admin Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Finance and Admin	7.1	762	-

4.5 Specialist Support (Legal & Information Security)

Status: Decreasing

4.5.1 Legal

The RIPE NCC follows national and international legal developments and updates its internal activities accordingly. The RIPE NCC also produces a range of corporate governance documents that set the standards and procedures for its internal and external operations.

The RIPE NCC focuses efforts on helping legislators and Law Enforcement Agencies (LEAs) to understand how the self-governing mechanism of the RIPE community and the RIR system functions, and how they can participate. The RIPE NCC also provides legislators with technical knowledge to support the development of appropriate public policy.

This activity is decreasing financially because costs were budgeted for specific legal reasons in 2013 that did not materialise. The budgeted costs for 2014 are therefore lower.

Benefits for RIPE NCC members / RIPE community:

- Ensures that the RIPE NCC is run within an up-to-date legal framework and with a full set of corporate governance documents
- Improves legislators and LEA's understanding of the Internet governance model and the role of RIRs to gain their support for the current model
- Ensures that legislators receive the technical community's perspective

4.5.2 Information Security

In 2014, there will be a sustained focus on the security of the RIPE NCC's public and member services. Activities will include implementing and maturing the RIPE NCC's security, intelligence and analysis capabilities and performing in-depth security audits of its services.

Other activities are aimed at evaluating the security of the internal RIPE NCC network, outreach to the security community and further development of the RIPE NCC's capabilities to respond quickly and efficiently to incidents.

Benefits for RIPE NCC members / RIPE community:

- Ensures the availability, confidentiality and integrity of the RIPE NCC's services and data
- Minimises the impact of security incidents on the RIPE NCC's services and subsequently minimises the possible impact on our members

Specialist Support (Legal & Information Security) Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Specialist Support (Legal & Information Security)	2.1	234	75

4.6 Organisational Activities (Executive Board, Arbitration Panel and General Meetings)

Status: Expanding

The RIPE NCC supports twice-yearly RIPE NCC General Meetings (GMs). At these GMs, members vote annually on the RIPE NCC Financial Report and on the Charging Scheme for the following year. At GMs, members can also exercise their rights to vote in Executive Board elections and on resolutions, such as amendments to the Articles of Association. In order to facilitate an informed membership at the GM, the RIPE NCC prepares various sets of documentation including a draft Activity Plan and Budget, a Charging Scheme and an Annual Report, which includes a summary of the RIPE NCC's financial status from year to year. The RIPE NCC provides remote participation facilities and electronic voting capabilities for those members who are unable to attend the GM in person but who wish to follow proceedings and vote in elections and on resolutions.

As set out in the RIPE NCC Articles of Association, the RIPE NCC supports a neutral and objective arbitration panel that exists to resolve any disputes relating to its services. The arbiters are appointed by the RIPE NCC's Executive Board and approved by the RIPE NCC membership.

The RIPE NCC also facilitates multiple meetings for its Executive Board over the course of each year. These meetings deal with strategic and financial issues pertinent to the organisation as well as the RIPE NCC's relationship with industry partners. At these meetings, the RIPE NCC Executive Board incorporates feedback from the membership and the RIPE NCC Management into their discussion and final decision on the RIPE NCC's Activity Plan and Budget for the following year. The Executive Board also plays a crucial role in the RIPE NCC's outreach and member liaison activities.

This activity is listed as expanding because the costs for this was higher than budgeted for in 2013. The Executive Board also proposes an increase to the maximum number of Board members, which could increase costs in 2014 if approved by the RIPE NCC membership at the General Meeting in Autumn 2013.

Benefits for RIPE NCC members / RIPE community:

- Allows RIPE NCC members' interests to be represented by Executive Board
- Gives members the opportunity to give feedback directly to the Executive Board on the RIPE NCC's Activity Plan and Budget
- Allows members to approve the RIPE NCC Charging Scheme and Financial Report
- Members can elect representatives to the Executive Board
- Provides opportunities to follow GM proceedings and cast votes from anywhere in the world

Organisational Activities (GM and EB Meetings) Costs for 2014

Activity	FTEs	Costs	Capital Expenditure
Organisational Activities (GM and EB Meetings)	2.7	389	-

5) Unforeseen Activities

There may be activities that are entirely unforeseen at the time of writing the RIPE NCC Activity Plan 2014 or have started recently and are not at the stage where they can be quantified as a budgeted activity. A quick, well-focused reaction to the changing environment and new requirements of the RIPE NCC members and other stakeholders has always been a strong point of the RIPE NCC. In line with good corporate governance, any activities that fall under this category are developed in close consultation with the RIPE NCC Executive Board.

Appendix 1: Membership Services

- Distribution and Management of Internet Number Resources
- Assisted Registry Check (ARC)
- Resource Certification (RPKI)
- IPv4 Transfer Listing Service
- Resource Transfers
- Reputation Service
- LIR Portal
- IP Analyser
- Training Courses: LIR; IPv6; Routing Registry and Resource Certification (RPKI); RIPE Database
- DNS Monitoring (DNSMON)
- Near Real Time Mirroring (NRTM)

Appendix 2: Summary of Activity Statuses (excluding “Ongoing”)

New Activity

[1.1.10 Replacement of Registration Services Software](#)

[1.2.3 Database Resiliency Improvements](#)

Expanding

[1.4 LIR Portal](#)

[2.1.1 RIPE NCC E-Learning Centre](#)

[3.1 DNS Operations](#)

[3.1.1 Reverse DNS and Reverse DNS Support](#)

[3.1.4 K-root Operations](#)

[3.2 Data Analysis and Scientific Support](#)

[3.5.1 Regional Support and Outreach](#)

[4.6 Organisational Activities \(Executive Board, Arbitration Panel and General Meetings\)](#)

Decreasing

[3.3 RIPE Labs](#)

[3.6.4 CPE Survey](#)

[4.5 Specialist Support \(Legal & Information Security\)](#)

Planned Ending

[2.4.2 Test Traffic Measurements \(TTM\)](#)

Appendix 3: Budget Figures 2014

RIPE NCC Budgeted Statement of Income & Expenditure 2014

In kEUR Income	Budget 2014	LE 2013	Budget 2013	Difference 14/13	Difference 14/B13
Member Service Fees	19,147	17,901	17,742	1,246	1,405
Sign-up Fees	2,100	2,200	2,100	(100)	-
RIPE Meetings	300	300	250	-	50
Other Income	100	200	100	(100)	-
Total Income	21,647	20,601	20,192	1,046	1,455

Expenditure					
Salary wage components	8,660	8,260	7,949	400	711
Secondary benefits	1,732	1,800	1,673	(68)	59
Miscellaneous personnel	1,705	1,340	1,826	365	(121)
<i>Subtotal Personnel</i>	<i>12,097</i>	<i>11,400</i>	<i>11,448</i>	<i>697</i>	<i>649</i>
Housing	758	760	776	(2)	(18)
Office Costs	1,760	1,450	1,576	310	184
Marketing / ER	599	500	648	99	(49)
Contributions	378	480	407	(102)	(29)
IT Infrastructure	1,249	1,100	1,097	149	152
Travel	1,155	1,100	1,262	55	(107)
Consultancy	1,638	1,116	1,116	522	522
Financial Expenses	156	153	153	3	3
Subtotal Operational Expenses	19,770	18,059	18,483	1,711	1,287

Miscellaneous Expenses	150	150	150	-	-
Depreciation	1,400	1,500	1,747	(100)	(347)
Subtotal Miscellaneous Expenses & Depreciation	1,550	1,650	1,897	(100)	(347)

Total Expenses	21,320	19,709	20,380	1,611	940
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Interest Income	600	450	600	150	-
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Surplus / Deficit	927	1,342	412	(515)	415
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Capital Expenditure	1,775	1,418	1,807	357	(32)
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Number of FTEs	136	130	135	6	1
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Development of the RIPE NCC Reserves

The table below summarises the RIPE NCC's capital development. The capital consists of the RIPE NCC reserves, including the surplus/deficit for the year at issue.

Year	Surplus/ Deficit	Capital at 31 December	Total Expenses Per Year	% Capital of Expenses
2009	821	17,409	14,683	119%
2010	714	18,123	16,561	109%
2011	923	19,046	18,162	105%
2012	2,358	21,403	18,441	116%
LE 2013	1,342	22,745	19,709	115%
Budget 2014	927	23,672	21,320	111%

Specification of Budgeted Income 2014

Income	Amount in kEUR	
LIR Service Fees	17,168	
PI Assignment Charge	850	
<i>Service Fees Existing LIRs</i>		<i>18,018</i>
New LIR Service Fees	1,129	
New LIR Sign Up Fees	2,100	
<i>Service Fees New LIRs</i>		<i>3,229</i>
RIPE Meeting Fees	300	
Other Income	100	
<i>Non Service Fees Income</i>		<i>400</i>
Total Budgeted Income		21647