RIPE NCC Activity Plan 2012

RIPE NCC
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Section A: RIPE NCC Vision and Focus

Note on figures presented in this document
All amounts are in kEUR (1,000 EUR). Full Time Equivalents (FTEs) is a standard unit to measure employees working on the activity or project. The category "Costs" is operational expenses including overhead (OPEX). The costs exclude depreciation expenses on investments made. Capital expenditure is all items that are budgeted to be taken as an asset for the activity or project.

Because there is a difference in the way activities and projects are categorised in the RIPE NCC Activity Plan 2012 and the RIPE NCC Budget 2012, there is not in all cases a one-to-one match between the figures presented in the two documents.

1. Vision and Strategy

The RIPE Network Coordination Centre (RIPE NCC) is an independent, not-for-profit membership organisation that serves a membership base of over 7,500 members in 75 countries across Europe, the Middle East and parts of Central Asia. The RIPE NCC operates under the principles of openness, transparency, neutrality and impartiality. All services offered by the RIPE NCC are based on the input and needs of the RIPE NCC members and the RIPE community.

The RIPE NCC has been successful in providing administrative and technical coordination to the Internet community for 20 years. An important aspect of this technical coordination is the RIPE NCC's pioneering function as the first Regional Internet Registry. This function revolves around the reliable and stable allocation of Internet number resources to its members and the responsible storage of an open, publicly accessible registry of Internet number resource allocations.

Given the changing industry landscape and the emergence of new stakeholders in the governance of the Internet, the RIPE NCC will work to help strengthen and grow the community so as to embrace new stakeholders and the next generation of Internet experts. The goal is to work together with all stakeholders to understand their needs and concerns and to develop models of cooperation that not only strengthen the technical community involved with Internet number resources but that also ensure the stability of the Internet.

As a result of the exhaustion of unallocated IPv4 address space, the RIPE NCC will ensure that it continues to fulfill its stewardship duties by adapting its registry function appropriately. This will involve a focus on legacy address space to ensure that it is accurately registered in the RIPE NCC registry. At the same time, the registry will be evolved to ensure that it can accurately deal with the transfer of IPv4 space, a scenario that has become increasingly likely given the scarcity of unallocated IPv4 address space.

An important activity in this respect is the support provided by the RIPE NCC to policy discussions revolving around registration policy in the RIPE NCC service region. As the RIPE community develops new registration policies that account for the changing priorities in an environment where unallocated IPv4 address space is increasingly scarce, the RIPE NCC will ensure that its internal and external procedures evolve accordingly.

At the same time, the RIPE NCC will develop a range of tools that will enhance its registry function in a changing Internet environment. Ranging from the certification of Internet number resources, and associated operational tools for RIPE NCC members with certified address space, to enhanced audit activities, the focus will be on tools and services that optimise the accuracy of registration data and routing activities based on that data. The RIPE NCC's primary focus will continue to be on performing activities that support the operations of its members and the activities of network operators throughout its service region and specifically those activities that require a neutral, impartial and authoritative organisation. The primary goal is to make sure that the RIPE NCC continues to support the needs of its members and the RIPE community while ensuring the overall stability of the Internet.

2. RIPE NCC Focus Points

A) Internet Number Resources Registry Maintenance

Since 1992, the RIPE NCC has been responsible for distributing Internet number resources in its service region. One of the organisation's key responsibilities is the strength and quality of the Internet number resources registry associated with the distribution of these resources. As a result of the depletion of the unallocated IPv4 pool and the relatively large IPv6 allocations, in 2012 the RIPE NCC will shift from a focus on allocation to a focus on improving the completeness and accuracy of the registry.

With the exhaustion of the unallocated IPv4 address pool, there will be increased scrutiny on the processes involved in IP address space allocation, the possibility of a growing demand for resource transfers and an increased potential for conflicts over address space. Given these developments, the RIPE NCC will ensure that it not only provides a robust and authoritative registry but that it is also able to respond to any community-driven initiatives for increasing the accuracy and range of data stored in the registry of Internet number resources.

The accuracy of this data, vital for day-to-day network operations, is also of increasing importance to governments, regulators and law enforcement agencies. In ensuring that this data is comprehensive, accurate and up-to-date, the RIPE NCC's registry function will not only support these stakeholders and its members but will also provide invaluable authoritative data for future Internet coordination, statistical and research activities.

The RIPE NCC will continue work to measure, monitor and enhance the data quality of Internet number resource registrations. The focus here will be on the legacy address space allocated before the Regional Internet Registry system existed. The goal of these activities will be to bring legacy space registration records up to the same standards of accuracy as address space distributed by the RIPE NCC since 1992.

A range of services, such as the Certification system and enhanced audit activities will provide an incentive for holders of this space to ensure that their Internet number resources are accurately registered in the registry. The focus will be on tools and value-added services that the RIPE NCC can provide to its members to improve both their day-to-day operations and the accuracy of the registration data of Internet number resources in the RIPE NCC registry.

The RIPE NCC will also continue to work with the other Regional Internet Registries towards a fully consistent view of all Internet number resource data and statistics. This will involve developing a framework of publically available measurements to demonstrate the increasing data quality of the information held in the RIPE NCC registry.

Activity	FTEs	Costs	Capital Expenditure
Internet Number Resources Registry Maintenance	27	2,971	105

i) Deployment of Internet Number Resource Certification

Following the work done within the IETF in 2009 to develop an underlying technical framework for certification, in 2010 the RIPE NCC reached all necessary testing and deployment milestones for the launch of a production-ready certification system in 2011. This system is based on the community-driven contributions. It will be interoperable with the certification systems launched by the other Regional Internet Registries.

The RIPE NCC extended the usability of the certification system over the course of 2011 enabling it to support RIPE NCC internal and external business processes. These developments involved extending the basic implementation of the existing central certification model to include a range of operator tools and a non-hosted solution for LIRs. This allowed LIRs to generate and store their own private key for their certificate. In addition to the development of operator tools, the certification system will also benefit in 2012 from an increased focus in RIPE NCC training courses, particularly the Routing Registry course.

The continued development of the certification system will depend on guidance from the RIPE community. The RIPE NCC is prepared to support and enable changes to the system requested by the community and the RIPE NCC's members. At the time of writing this Activity Plan, discussion was still ongoing.

Activity	FTEs	Costs	Capital Expenditure
Deployment of Internet Number Resource Certification	3	139	402

B) External Relations

The RIPE NCC has been called upon by different entities in the public sector (including individual governments and the United Nations) to continue providing support for the technical coordination of the Internet. As a result, the RIPE NCC will continue its successful coordination work with the other RIRs, industry bodies and governments and will focus on capacity building with industry partners and stakeholders with an interest in Internet Governance. The RIPE NCC will build on the well-established and trusted position it has created for the technical community, together with its industry partners, in the field of Internet governance.

The RIPE NCC has received positive recognition for its contributions to the World Summit on the Information Society (WSIS), held from 2003-2005, the ongoing Internet Governance Forum (IGF), the Organisation for Economic Cooperation and Development (OECD) Committee for Information, Computer and Communications Policy (ICCP) and the Council of Europe. These experiences, together with the RIPE NCC's Roundtable Meetings for Governments and recent success with its meetings for law enforcement agencies, demonstrate that the organisation's public affairs activities are an essential contribution to promote public/private sector dialogue and to guarantee the future growth, stability and security of the Internet.

The RIPE NCC's external relations activities will continue to promote this important dialogue between the technical community and governments. One consequence of these activities will be an increased focus on intergovernmental workshops and continued cooperation with governments, regulators and law enforcement agencies. The RIPE NCC will ensure that views of the RIPE community and the RIPE NCC's members are represented to the relevant stakeholders at the same time as explaining recent developments in the Internet landscape and the impact that these developments could have. By providing accurate, up-to-date data and analysis of the latest developments in Internet operations, the RIPE NCC will continue to make expert contributions to public policy debates and to ensure that decisions made at this level are based on authoritative data.

These developments include the pressing need for IPv6 adoption, the exhaustion of unallocated IPv4 address space and the related issues of global and regional fairness. The RIPE NCC will build on its relationships with the public sector, promoting the public/private dialogue required to deal with IP address issues that affect public policy and that have an impact on the technical coordination of the Internet. As part of these efforts, the RIPE NCC will continue to develop relationships with government and law enforcement representatives in order to understand their concerns, to answer their questions and to help them understand the key issues related to the management and distribution of IP addresses. At the same time, the RIPE NCC will continue to work with a range of stakeholders from both the public and private sectors to ensure that the

relevant parties are working together to understand the changing Internet landscape and to make informed decisions that guarantee the stability of the Internet.

Activity	FTEs	Costs	Capital Expenditure
External Relations	4	868	-

C) Increasing Regional Participation

The success of the RIPE NCC and the RIPE community is the result of robust community-driven processes. The RIPE NCC aims to increase regional participation in these processes from Internet stakeholders ranging from RIPE NCC members to governments and law enforcement agencies. Working with these different stakeholders, the RIPE NCC will also encourage capacity building and training in regional areas focusing on the practical details of IPv6 deployment and crucial issues related to Internet governance.

With the significant growth of the IT and Internet industries in the Middle East, Russia and South Eastern Europe, coupled with a rise in RIPE NCC membership, the RIPE NCC will focus on increasing the regional participation from these areas of its service region. By focusing efforts on working with the different communities in these areas, the RIPE NCC will encourage increased regional participation both in the activities of the RIPE NCC and the RIPE Policy Development Process. The aim is to strengthen the RIPE community by enabling regional communities to participate more fully in policy development and to ensure that regional concerns, issues and needs are represented.

The RIPE NCC has provided extensive support in the establishment of regional Network Operator Groups (NOGs). Following the establishment of the Middle East Network Operators Group (MENOG) in 2007 and the Eurasian Network Operators Group (ENOG) in 2011, the RIPE NCC will continue to supply the technical and administrative expertise to develop existing NOGs and to assist in the creation of any new groups required by the Internet community.

Activity	FTEs	Costs	Capital Expenditure
Increasing Regional Participation	2	640	-

D) High Quality Information Services for Operators and the Internet Community

The RIPE NCC provides the global Internet community with a range of data sets, tools and analysis on Internet infrastructure and its development.. Focused on the importance of high-quality, timely data and useful tools, these information services can be used to analyse general Internet operations in the areas of routing, connectivity, and DNS; to run specific measurement experiments; to detect, diagnose and analyse significant network incidents; and to research long-term trends. The RIPE NCC is widely recognized as professional and above all neutral and impartial in this area. This makes the data and analysis very valuable for many users.

The RIPE NCC will continue to improve the quality, completeness and breadth of this data, as well as the speed and manner in which it is collected and processed. The RIPE NCC will focus on refining and improving the features and user-interfaces of its suite of tools and services, in order to provide simpler, more powerful and intuitive interfaces to the data it collects. We will continue merging hitherto separate tools into a few common environments so that data is easier to find and to correlate. Additionally, the RIPE NCC will maintain close dialogues with its members and user community in order to guide the ongoing development of new and existing services.

Activity	FTEs	Costs	Capital Expenditure
High Quality Information Services for Operators and the Internet Community	10	1,472	210

i) RIPEstat

During 2011, the RIPE NCC launched RIPEstat, the one-stop information service about IP addresses and Autonomous Systems. This service provides one convenient point to tap into the wealth of data the RIPE NCC has about Internet number resources, such as registration, routing and active measurement data.

The RIPE NCC has this data available in near-real time as well as in a view which provides years of history. RIPEstat will make this data available in one place and in useful combinations. During 2012, RIPEstat will be moved from beta to full production. The RIPE NCC will also work with users to add new functionality and to personalise the service where this makes sense. The RIPE NCC will evaluate reserving premium functionality for its members.

Activity	FTEs	Costs	Capital Expenditure
RIPEstat	3	344	6

ii) RIPE Atlas

During 2011, RIPE Atlas grew to a useful size and user-defined measurements were introduced. During 2012, the RIPE NCC will extend the measurement network and add functionality for hosts and sponsors. The RIPE NCC will also develop new "maps" for the community that will provide unprecedented situational awareness for network operators as well as other interested parties such as governments. The goal is to have more than 4,000 measurement nodes operational worldwide by the end of 2012.

Activity	FTEs	Costs	Capital Expenditure
RIPE Atlas	4	445	113

E) RIPE Labs

RIPE Labs, a platform focused on developing innovative Internet-related tools and ideas, has been well-received throughout the Internet technical community. Providing an open platform enabling direct user engagement and knowledge sharing, RIPE Labs will continue to stimulate community building and the rapid prototyping of new ideas in a pre-production environment. The goal is to provide an iterative, effective and community-driven process of presenting potential tools and services that can be discussed, tested and improved.

Activity	FTEs	Costs	Capital Expenditure
RIPE Labs	2	271	-

3. New and Significantly Developed Activities

A) Resource Transfer Listing Service

In the course of 2012, the RIPE NCC will most likely run out of IPv4 resources and will only be able to hand out a /22 from the last /8 to each LIR that meets the specific requirements for receiving IPv4 addresses. There will still be a demand for these addresses, and there will possibly be organisations that have IPv4 address space that they no longer need and wish to transfer to other organisations.

In order to keep track of these transfers, maintain a strong registry and refer organisations to a place where they can find IPv4 address space, the RIPE NCC will provide a platform where those requiring IPv4 address can find a list of legitimate holders of that space who are willing to transfer it. The RIPE NCC will evaluate these 'transfers' and ensure that only legitimate holders can offer address space. It will also evaluate if the receiving party is eligible to receive the address space according to the current policies.

Activity	FTEs	Costs	Capital Expenditure
Resource Transfer Listing Service	1	52	-

B) Enhanced Audit Activities

The RIPE NCC will extend the current audit services it provides by giving the LIRs the option to self-audit their **inetnum**, **route**, **rDNS** and **person** objects. Confirmation of this self-audit will be visible in the RIPE Database object.

The RIPE NCC will continue to audit LIRs to see if the information is still compliant with current RIPE policies. It will also check that LIR contact, organisation and allocation details are still valid. The confirmation of the RIPE NCC audit will also be made visible in the RIPE Database object.

Activity	FTEs	Costs	Capital Expenditure
Enhanced Audit Activities	9	580	-

4. Closure or Reduction of Activities

Hostcount

When the Hostcount began in 1990, the intention was to get an idea of the size and the growth rate of the Internet. The method adopted was to simply count Address Resource Records (A RRs) in country code Top Level Domains (ccTLDs) in the RIPE NCC service region.

This methodology, however, no longer produced the desired results. For security reasons many Top-Level Domain (TLD) operators block zone transfers which makes it impossible to count the number of A RRs. As there are currently better mechanisms to measure the growth of the Internet, it was decided that the Hostcount had outlived its purpose. Therefore, the Hostcount was discontinued in January 2011 and will not be resumed in 2012.

5. RIPE NCC Ongoing Activities

Information on the RIPE NCC's ongoing activities (Membership Services, Coordination Activities and Information Services) is available in Section B of this document, RIPE NCC Ongoing Activities.

6. Unforeseen Activities

The RIPE NCC will keep a reserve of 50 kEUR to take up any activities that appear necessary during the course of the year. These activities are entirely unforeseen at the time of writing the RIPE NCC Activity Plan 2012 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.

Section B: RIPE NCC Ongoing Activities

1.0 Membership Services

The RIPE NCC aims to exceed its members' service expectations in the registration of Internet resources. The purpose of these distribution activities is:

- To provide a fair, impartial distribution of Internet number resources guided by the RIPE community policies based on the goals of uniqueness, conservation and aggregation
- To actively maintain an accurate resource registry
- To provide accurate and valid Internet Registry resource data
- To provide guidance for internal procedures

1.1 Distribution and Management of Internet Number Resources

In its role as a Regional Internet Registry (RIR), the RIPE NCC provides allocation and registration services to Local Internet Registries (LIRs) in Europe, the Middle East and Central Asia. The overall goal of the RIPE NCC's allocation and registration services is to provide fair, impartial and stable distribution of Internet number resources in its service region. The specific goals for the distribution of IP address space are:

- Uniqueness of IP addresses
- Aggregation of routing information
- Conservation of IP address space
- Procedure and policy definition for IP address space
- Registration of network management and contact information

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

Description of Activity:

The RIPE NCC allocates and assigns Internet number resources according to RIPE community policy.
The RIPE NCC allocates and assigns IPv4 and IPv6 address space to RIPE NCC members and other network operators. The RIPE NCC also assigns AS Numbers and registers these numbers and the initial associated routing policy, ensuring the uniqueness of AS Numbers and collecting data for the Routing Registry. From 2007, the RIPE NCC has assigned AS Numbers from both the 16-bit and 32-bit pools.

Goal of Activity:

- To ensure the fair distribution of Internet number resources
- To ensure the efficient use of IP address space and AS Numbers
- To facilitate the optimal aggregation of routing information
- To support members with the processes and procedures

1.1.2 Auditing and Data Accuracy

Description of Activity:

The RIPE NCC actively checks the quality and validity of Internet resource registry data. To ensure fair address space distribution, the RIPE NCC checks that appropriate assignment decisions are made. The RIPE NCC also makes regular reports on these activities to the RIPE community as well as producing statistics on address space usage.

Goal of Activity:

- To promote a consistent and fair application of assignment criteria relating to the conservation of address space and aggregation of routing information
- To identify and improve any parts of the registration procedure that cause delays in order to improve service levels and response times
- To implement mechanisms to improve the quality, range and accessibility of the data the RIPE NCC provides relating to its allocation of Internet number resources to its members
- To provide high quality data on the allocation of Internet number resources that can reliably be used in the daily operations of ISPs

1.1.3 Policy Implementation (procedures)

Description of Activity:

The RIPE NCC implements procedures as part of the RIPE Policy Development Process (PDP). The implementation of RIPE Policy is done in the RIPE NCC Policy Implementation Coordination Group (PICG).

Goal of Activity:

- To provide transparency and consistency of the procedures
- To provide procedural information and responses to the RIPE community
- To support and promote global Internet IP address policies
- To translate RIPE Policy into RIPE NCC procedures
- To document and maintain a clear overview of new and changed procedures

1.1.4 Project Support

Description of Activity:

The RIPE NCC co-ordinates internal projects to support the range of activities related to the distribution of Internet resources.

Goal of Activity:

- To implement policy requests
- To provide cross-departmental dedicated project support

1.1.5 Filtered Resource Assistance

Description of Activity:

The RIPE NCC offers assistance to members whose IP address space is being filtered.

Goal of Activity:

- To help members understand who is filtering their address space and what can be done to have these filters updated
- To assist members in contacting the party that is filtering the relevant IP address space so that the filters can be updated

1.1.6 History of RIPE Database Object Updates

Description of Activity:

The RIPE NCC offers LIRs a complete history trail of their RIPE Database object updates.

Goal of Activity:

- To enable LIRs to use their account on the LIR Portal to view the complete history of the updates to their RIPE Database objects

1.2 Training Courses

The RIPE NCC provides a range of courses to members and non-members, using a variety of teacher-based courses and additional training strategies. The RIPE NCC makes continued efforts to reach a broader audience, particularly members who are unable to attend RIPE NCC training courses due to geographical, financial, scheduling or other constraints. These efforts include developing online modules that cover a range of RIPE NCC procedures and the RIPE Policy Development Process (PDP).

The RIPE NCC provides the following courses to its members for free:

- LIR Training Course
- IPv6 for LIRs Training Course
- Routing Registry Training Course

1.2.1 LIR Training Course

Description of Activity:

The "Local Internet Registry Training Course" is a one-day introduction to administrative procedures and policies related to obtaining and distributing Internet resources (i.e. IP addresses, AS numbers and reverse DNS delegation) and operating a Local Internet Registry (LIR).

Goal of the Activity:

- To help members send correctly prepared Internet number resource requests to the RIPE NCC
- To help ensure a more timely completion of these requests
- To explain the correct procedure for registering and updating registry data relating to Internet number resources
- To create awareness for the RIPE Policy Development Process

1.2.2 IPv6 Training Course

Description of Activity:

The IPv6 Training course is a one-day course about the need for IPv6 and includes basic information on how to plan IPv6 deployment.

Goal of the Activity:

- To increase awareness about IPv4 depletion
- To increase IPv6 uptake
- To remove fears about IPv6 and the deployment process
- To increase awareness about IPv4 and IPv6 coexistence

1.2.3 Routing Registry Training Course

Description of Activity:

The Routing Registry Training Course covers Internet Routing Registry (IRR) usage, related tools and Routing Policy Specification Language (RPSL).

Goal of the Activity:

- To provide an introduction to the Internet Routing Registry (IRR) usage, related tools, Routing Policy Specification Language (RPSL) and the RIPE NCC Routing Information Service (RIS)

1.3 Customer Services

The purpose of the RIPE NCC's Customer Services is to take ownership of first line enquiries and requests, managing each request correctly and efficiently while communicating all necessary details. In order to ensure the complete satisfaction of its members, the RIPE NCC focuses on the following Customer Services goals:

- Act as the general first line contact point for the RIPE NCC as a whole (questions, feedback, issues and problems)
- Bring new members up to speed so that they can request resources and make use of other RIPE NCC services Consolidate customer support services and facilitate the coordination of consistent internal and external service levels

- Answer general member and public enquiries, providing a good resolution in the shortest possible time and escalate when appropriate (following agreed Service Level Agreements)
- Provide the first interface between the RIPE NCC and potential new members
- Handle all phone, mail and email enquiries in a professional manner
- Create standard answers for frequently asked questions
- Document service quality measures and targets and provide reporting on this

1.3.1 New LIR Support

Description of Activity:

The RIPE NCC gives initial support to LIRs and Direct Assignment Users (DAUs) during their set-up phase. Information and support is also extended to potential LIRs and DAUs.

Goal of the Activity:

- To process new LIR and DAU applications smoothly and efficiently from beginning to end
- To support new LIRs and DAUs during their set-up phase, introducing them to the relevant tools, procedures and guidelines
- To give potential LIRs and DAUs enough information to make an informed choice as to whether or not they enter into an agreement directly with the RIPE NCC
- To prepare LIRs and DAUs so that they are able to make use of the RIPE NCC's services

1.3.2 Billing and Administration Support

Description of Activity:

The RIPE NCC provides billing and administrative support for existing and potential LIRs and DAUs.

Goal of the Activity:

- To provide support for billing questions and invoicing (invoicing, reminders and payments
- To provide support for contract-related issues such as LIR or DAU name changes, mergers and closures

1.3.3 Database User Support

Description of Activity:
The RIPE NCC provides user support for the RIPE Database and related services. This includes incident handling and problem resolution as well as responding to user questions and comments.

Goal of the Activity:

- To provide first line user support for the RIPE Database and related service
- To continuously collect user feedback regarding these services
- To report on Service Level Agreement (SLA) adherence
- To create standard answers for frequently asked questions

1.3.4 DNS and Reverse DNS (First Line Support)

Description of Activity:

The RIPE NCC provides DNS coordination and support activities as well as reverse DNS service for IPv4 and IPv6 address space managed by the RIPE NCC.

Goal of the Activity:

- To provide first line user support for DNS, Reverse DNS and related services
- To continuously collect user feedback regarding these services
- To report on SLA adherence
- To create standard answers for frequently asked questions

1.3.5 Active Measurements Support

Description of Activity:

The RIPE NCC provides initial support for active measurement services such as RIPE Atlas, the DNS Monitoring service (DNSMON) and Test Traffic measurements (TTM) during their set-up phase. This includes incident handling and problem resolution as well as responding to user questions and comments.

Goal of the Activity:

- To process new user applications smoothly and efficiently from beginning to end
- To initiate and activate Atlas probes
- To provide first line user support for the services
- To continuously collect user feedback regarding these services
- To create standard answers for frequently asked questions

1.4 RIPE NCC Interaction Mechanisms

The RIPE NCC provides flexible and convenient ways for LIRs and others from the Internet community to interact with the RIPE NCC's systems. There is a specific focus on the security aspects of such interactions to ensure privacy and authentication wherever needed.

1.4.1 Customer Service Centre

Description of Activity:
At RIPE Meetings, the RIPE NCC provides staff who are available for face-to-face consultation about:

- Internet resource requests (IPv4, IPv6, Autonomous System Numbers)
- The RIPE Database
- Changes to registry file information
- Invoice and billing queries
- RIPE NCC Training Courses and the RIPE NCC E-Learning Centre
- The Routing Information Service (RIS) and BGPlay
- Reverse DNS setup, DNSSEC, DNSMON, K-root, the Test Traffic Measurements (TTM) service and email services
- How to become a Local Internet Registry (LIR) or Direct Assignment User (DAU)
- The RIPE NCC and its services

Goal of the Activity:

- To assist members and the RIPE community with any outstanding issues
- To promote greater cooperation between the RIPE NCC, its members and the RIPE community

1.4.2 RIPE NCC LIR Portal

Description of Activity:

The purpose of the LIR Portal is to give LIRs an easy-to-use web interface for accessing RIPE NCC services, for managing their registry's data and for making queries and updates. The LIR Portal is also used by the RIPE NCC to make important announcements to RIPE NCC members and for collection of valuable feedback through a range of member surveys.

Goal of the Activity:

- To enable members to receive Internet number resources in a timely fashion by improving the request, evaluation and approval process
- To enable members to manage their registry data and make queries and updates

2.0 Coordination Activities

2.1 RIPE Database: Maintenance and Development

The RIPE Database contains registration details of IP addresses and AS Numbers used by networks based in the RIPE NCC service region. It shows the organisations that hold the resources, where the allocations were made and contact details for the networks. The organisations that hold those resources are responsible for updating their information in the RIPE Database.

An Internet Routing Registry (IRR), primarily for the RIPE NCC region, is also part of the RIPE Database.
The information in the RIPE Database is used by a range of people, including network engineers, system administrators, researchers and End Users for various purposes such as network troubleshooting or determining abuse contacts. In most cases these users are not RIPE NCC members.

The RIPE NCC regularly makes improvements to the interface for the RIPE Database in order to provide users with more useful features and easier ways to update the database. The RIPE NCC also makes continued efforts to improve the accuracy and the usefulness of the data in the RIPE Database.
The RIPE NCC implements community-driven changes as they arise, making software and system modifications in response to feedback from users and decisions made by the RIPE community.

2.1.1 User support and software maintenance

Description of Activity:

The RIPE NCC provides user support for the database and related services. This includes incident handling and problem resolution as well as responding to user questions and comments.
The RIPE NCC also performs regular software maintenance activities including bug fixes and minor modifications. The results of these software development efforts are made publicly available.
This activity includes the maintenance and improvement of documentation associated with the RIPE Database.

Goal of Activity:

- To provide user support for the RIPE Database and related services
- To continuously collect user feedback regarding the service
- To keep the user community informed about new developments as well as planned and emergency maintenance
- To ensure the high quality of the system software and the reliable operation of the database and related services

2.1.2 New Database Features

Description of Activity:

The RIPE NCC designs and implements new database features as requested by the user community or proposed by the RIPE NCC. It performs the development work based on the priorities established in the appropriate RIPE Working Groups.

Goal of Activity:

- To ensure that the RIPE Database continues to serve the needs of the user community and the priorities of the RIPE Working Groups
- To provide new features to the RIPE Database that reflect the changing requirements of the Internet community

2.1.3 Implementation of New Version of RIPE Database

Description of Activity:

The current version of RIPE Database has been in production for more than ten years and, as a consequence, maintaining and adding features to this old platform has become costly and time consuming. Scaling the old code base for new requirements has also become a burden. As a result of these issues, the RIPE NCC is planning to implement a new version of RIPE Database software with the latest tools and technologies.

Goal of Activity:

- To ensure that the RIPE Database software can scale to new performance and hardware requirements
- To make the software maintainable
- To ensure the implementation of new features can happen in a timely fashion and without spending resources to create more legacy code

2.2 RIPE

The RIPE NCC supports the RIPE community through technical and administrative coordination.

2.2.1 Supporting the RIPE Policy Development Process (PDP)

Description of Activity:

The RIPE community develops and sets policies through a long established, open, bottom-up process of discussion and consensus-based decision making. Anyone interested in the well-being of the Internet may bring up proposals within the RIPE community forum and take part in the related discussions. The RIPE NCC provides administrative and facilitative support for this process.

Goal of Activity:

- To track proposals and make sure the milestones of the PDP are applied as necessary
- To monitor policy-related topics and developments and report these to the RIPE community
- To analyse RIPE policies and proposals and report the findings back to the RIPE community
- To support the RIPE NCC's implementation and execution of policies
- To make sure all policies are documented in RIPE Policy documents and these policy documents are kept up-to-date
- To perform outreach activities for the promotion of the RIPE Policy Development Process

2.2.2 RIPE Meetings

Description of Activity:

The RIPE NCC organises RIPE Meetings, providing all administrative and technical support.

Goal of Activity:

- To support the open, bottom-up, industry self-regulatory structure common to all RIR communities in managing Internet number resources
- To stimulate the participation of the RIPE community and other stakeholders in the IP policy-making process and the technical coordination of IP networking
- To contribute to the stable operation of the RIPE NCC by allowing for guidance and advice from the RIPE Working Groups
- To enable attendees to provide input and feedback on the RIPE NCC Activity Plan

2.3 Mailing List Management

The RIPE NCC maintains a number of high volume external mailing lists. The processing of mailing list traffic is constantly monitored. Efforts are made to support subscribers with problems and to reduce or control the spam on external mailing lists so that they can be easily and efficiently moderated without losing any End User functionality.

The goal is to ensure the exchange of information among the RIPE community and the RIPE NCC membership, as well as to provide support for subscribers of the RIPE and RIPE NCC mailing lists.

2.4 Domain Name System (DNS) Coordination

The RIPE NCC provides DNS coordination and support activities as well as reverse DNS service for IPv4 and IPv6 address space managed by the RIPE NCC.

For reverse DNS associated with 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. The purpose of these activities is to maintain and improve the operations of an efficient, responsive and robust DNS service.

2.4.1 Reverse DNS

Description of Activity:

The RIPE NCC delegates reverse DNS zones for the address ranges managed by the RIPE NCC. To support this service, the RIPE NCC 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 efforts in the area of DNSSEC deployment, 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 through publishing operational white papers, documentation and software toolkits.

Goal of Activity:

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

2.4.2 Operating the K-root Name Server

Description of Activity:

The RIPE NCC operates the K-root server. 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) in the United Kingdom.

Since 2003, the RIPE NCC has been deploying anycast instances of the K-root server with local reachability. The RIPE NCC has also deployed five global nodes of the K-root name server. The RIPE NCC collects and analyses data to determine the performance of the K-root anycast nodes that have been deployed.

Goal of Activity:

- To improve the resiliency, efficiency, security and quality of the K-root service
- To isolate the impact of an "external" Denial of Service (DoS) attack and localise the impact of a "local" DoS attack
- To efficiently maintain 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

2.4.3 Secondary DNS Service

Description of Activity:

The RIPE NCC offers a secondary name service to the other Regional Internet Registries along with some country code Top-Level Domain (ccTLD) operators, although it no longer provides this service to well-established ccTLDs.

Goal of Activity:

- To support the stability of the global DNS by offering a professional and stable service to the other Regional Internet Registries and developing ccTLD operators that require it

2.4.4 DNS Services in the e164.arpa Domain

Description of Activity:

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, allowing mapping of telephone numbers to domain names in order to help facilitate such services as Voice over IP (VoIP).

Goal of Activity:

- To support 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
- To support security of the e164.arpa domain by deploying and maintaining DNSSEC and allowing secure delegations from ENUM operators

2.5 Reporting on RIPE NCC and RIPE Activities and Developments

The RIPE NCC reports on its activities and RIPE developments using a variety of media:

- The RIPE NCC website
- The RIPE NCC Annual Report, including financial statements
- The RIPE NCC Member Update newsletter
- Email reporting to RIPE NCC members and interested parties
- RIPE Meetings, RIPE NCC Regional Meetings and Roundtable Meetings
- Press releases, media briefings and speaker opportunities
- Social media and social networking

The goal of the RIPE NCC's reporting activities is to provide the membership and other interested parties with open, detailed information about the ongoing activities of the RIPE NCC and its role in Internet administration. It also furthers the RIPE NCC's efforts to communicate more effectively with its membership and stakeholders and to increase participation in RIPE.

2.5.1 Annual Report

Description of Activity:

The RIPE NCC Annual Report, including financial statements, is published in advance of the RIPE NCC General Meeting (GM).

Goal of Activity:

- To provide a full account of the RIPE NCC's activities in the previous year and audited financial statements for RIPE NCC members to vote on at the GM

2.5.2 Minutes and Reports from RIPE Meetings

Description of Activity:

The RIPE NCC provides minutes, webcasts, audiocasts and transcriptions of RIPE Working Group and Plenary sessions at RIPE Meetings, as well as links to relevant presentations. In addition, the RIPE NCC provides reports after each RIPE Meeting that summarise the highlights and actions that came out of the meeting.

Goal of Activity:

- To keep the RIPE community, the RIPE NCC membership and other interested parties up-to-date with the decisions and discussions that took place at the previous RIPE Meeting

2.5.3 RIPE NCC Member Update

Description of Activity:

The Member Update publication fulfils a request made by members in the 2002 RIPE NCC Membership Survey by providing information on the RIPE NCC and the development and performance of its services to the membership. It also provides updates on policy development issues affecting the RIPE community.

Goal of Activity:

- To publish the latest Member Update on a quarterly basis

2.6 RIPE NCC External Relations

The purpose of the RIPE NCC's external relations activities is to:

- Support and represent the interests of the RIPE NCC's membership and the RIPE community
- Communicate the RIPE NCC's role in IP address management and the technical coordination of the Internet
- Win continued support for RIPE's long-established, bottom-up, industry self-regulation and promote the open structures and processes in which RIPE and the RIPE NCC operate
- Ensure that the RIPE NCC and the RIPE community continue to play an effective role in the further formalisation of Internet administration, particularly technical coordination and the development of policy related to Internet number resource distribution

2.6.1 Coordination with Governments and Regulators

Description of Activity:

Building on its position as a neutral and trusted organisation with proven expertise in the technical coordination of IP networking, the RIPE NCC continues to develop relations with government and regulator representatives. This is part of continued efforts to enhance the cooperation between the public and private sector regarding Internet management issues.

The RIPE NCC facilitates Roundtable Meetings to discuss Internet management issues relevant to governments and regulators. The Roundtable Meetings provide a chance for attendees to learn more about how to participate in IP address management policy-making. High-level discussions of topics such as IP address space management and root server operations also provide attendees with an overview of the main elements involved in the technical coordination of the Internet.

Goal of Activity:

- To develop close contact with governments and regulators with an interest in the technical coordination of IP networking
- To explain the proven, long-standing industry self-regulatory structures of the RIRs and secure continued support for the existing registry process
- To communicate the principles of Internet industry self-regulation to policy makers in the public and the private sector, and to encourage well-informed decisions
- To encourage the participation of public and private sectors in the formation of policies related to Internet number resource distribution
- To bring together the public and private sector to discuss IP networking issues

2.6.2 Coordination with Industry Bodies

Description of Activity:

The RIPE NCC continues to support and represent the interests of its membership and the RIPE community to Internet industry groups. The main goals of these outreach activities remain the promotion of the open, bottom-up, industry self-regulatory structure common to all RIR communities in managing Internet number resources as well as the general technical coordination needed to support the stable operation of the Internet. The RIPE NCC also conducts a range of outreach efforts that aims to include all members of the technical community, from educational to operational groups, who have an interest in IP address space allocation and distribution.

The RIPE NCC represents the interest of its members and the RIPE community by actively participating in various industry-related forums and meetings.

Goal of Activity:

- To increase the awareness of RIPE and the RIPE NCC with existing and new players in the Internet community
- To ensure that the RIPE NCC continues to play an effective role in the further formalisation of Internet administration

2.6.3 RIPE NCC E-Learning Centre

The RIPE NCC provides a range of courses to members and non-members, using a variety of teacher-based courses and additional training strategies. A key strategy in this respect is the RIPE NCC E-Learning Centre. This is a free resource allowing members and non-members to access online modules on a variety of courses ranging from IPv6 and DNSSEC to the RIPE Policy Development Process.

2.6.4 Liaison and Outreach

2.6.4.1 Increasing Participation in the Policy Development Process

Description of Activity:

The RIPE NCC aims to increase the participation of RIPE NCC members and the RIPE community in the Policy Development Process (PDP) and the discussion that occurs on the RIPE NCC mailing lists. In broad terms, this activity will ensure the sustainability of the PDP by educating new participants of the community about how the process works and its role in supporting the open, bottom-up, industry self regulatory structure common to all RIR communities. Outreach activities will seek to widen the demographic make-up of current participants.

Goal of Activity:

- To ensure the sustainability of the RIPE PDP
- To explain the importance of the Policy Development Office in facilitating the RIPE PDP
- To increase the diversity of voices participating in the RIPE PDP
- To provide a RIPE Day at RIPE NCC Regional Meetings where attendees can find out more about the RIPE PDP, discuss current policies and be kept informed about recent discussions taking place in RIPE Working Groups

2.6.4.2 Regional Support

Description of Activity:

The RIPE NCC organises Regional Meetings that provide a focused effort to proactively encourage feedback from RIPE NCC members and the RIPE community. In addition, these meetings are intended to increase the involvement of RIPE NCC members, the RIPE community and other stakeholders in the open policy-making process.

Goal of Activity:
-
- To promote local contact with members
- To provide a forum for discussing issues relevant to a specific area of the RIPE NCC service region
- To enable the RIPE NCC to continuously evaluate and address the changing needs of RIPE NCC members

2.7 Information Dissemination

The RIPE NCC ensures timely and effective information dissemination of relevant publications, announcements and web postings (via the RIPE NCC website) to the RIPE NCC membership, RIPE community, governments and other stakeholders.

The goal of this activity is:

- To build awareness of the RIPE NCC and its services
- To inform selected audiences about RIPE and RIPE NCC-related issues, news and noteworthy events
- To support the efforts of the organisation in its representation of the RIPE NCC membership, RIPE community and their interests to new industry players and governments

2.7.1 Social Media

Description of Activity:

The RIPE NCC provides tools and mechanisms for new and existing audiences to interact and participate in online forums, communities and information sharing and dissemination. The focus will be on reinforcing the RIPE NCC's presence on social networking and media sites, introducing and maintaining new methods of interaction and facilitating community involvement.

Goal of Activity:

- To encourage increased participation of the RIPE NCC's current stakeholders and facilitate the participation of new audiences
- To enable increased feedback on the activities and services that the RIPE NCC provides
- To raise awareness about the RIPE NCC and the RIPE community in new arenas and stimulate support for both these organisations and the community-driven processes fundamental to their activities.

2.8 RIR Coordination

The RIPE NCC participates in coordination activities with the other RIRs. These coordination activities include:

- High-quality, consistent services
- The consistent application of approved policy
- Joint technical and communication projects
- Liaison activities
- The presentation of a global view of IP address management

The RIRs work together through the Number Resource Organization (NRO) to act collectively on matters relating to the interests of the RIRs. The NRO offers a single contact point that enables global partners to reach the RIRs collectively. This means that a global, uniform view supported by all five RIRs can be presented when necessary.

3.0 Information Services

The RIPE NCC operates globally distributed measurement networks for the purpose of collecting data on Internet infrastructure usage and development. These datasets are used to provide analysis on, and tools to examine, the operation and growth of the Internet. The RIPE NCC continues to integrate new services into its existing portfolio, while working directly with stakeholders to unify, streamline, optimise and develop new interfaces to this data.

3.1 Routing Analysis

The RIPE NCC operates a worldwide network of Border Gateway Protocol (BGP) monitoring probes, known as Remote Route Collectors (RRCs). They provide a fully integrated global view of routing information at key locations around the planet. All collected data is time-stamped, stored in a database and used as the input for various tools, as well as being made available for raw download. By providing services such as de-bogonising, BGP beacons and the suite of Routing Information Service (RIS) tools, the RIPE NCC provides network operators with the facilities they need to help them operate and monitor autonomous systems and IP prefixes.

The goal of this activity is:

- To collect BGP information at multiple locations worldwide and make this data available to the community
- To provide tools to access the data and further enhance these tools based on community feedback
- To provide services which process this data for the benefit of the community

3.2 Connectivity Measurement

The RIPE NCC's connectivity measurement services are focused around the Test Traffic Measurements (TTM) service that provides impartial measurements of the end-to-end performance characteristics of the inter-provider Internet. This is achieved by installing measurement probes at participating sites worldwide. The test-boxes exchange measurement traffic based on metrics developed by the IETF IP Performance Working Group (IPPM).

The TTM platform has been active for almost ten years. In 2012, the RIPE NCC will work together with existing TTM hosts to re-evaluate the goals and use cases for the service and will implement the necessary changes to make the service more useful in today's Internet environment.

The goal of this activity is:

- To collect independent measurements of performance-related quantities of the Internet, particularly between the networks operated by users of the TTM service
- To provide useful trend analysis and to refine the system based on user feedback

3.3 DNS Measurements

The RIPE NCC DNS measurement services are focused on the DNS Monitoring Service (DNSMON) which provides a comprehensive, objective and up-to-date overview of the quality of the service offered by certain DNS root, Top-Level Domain (TLD) and ENUM tier-1 name servers. DNSMON measures DNS performance between sites that take part in the TTM service and those where monitored DNS servers are installed. The data is updated regularly and presented at various levels of granularity. The RIPE NCC provides DNSMON to root server operators free of charge as a service to the Internet community. TLD and ENUM operators may request monitoring of their own name servers and gain access to the DNSMON helpdesk on a cost recovery basis.

The goal of this activity is:

- To provide high-quality monitoring of important DNS servers
- To allow users to view historical data, enabling a quick analysis of both past and present DNS issues

3.4 RIPEstat

RIPEstat is a new web application that draws together data from existing routing, connectivity and DNS measurement platforms, as well as from other RIPE NCC and external data sources. RIPEstat presents all of this data in a single, rich and intuitive interface. It is designed to be flexible and easily extendable so that it can evolve over time by adding new views of data combined from existing or new sources.

The goal of this activity is:

- To provide users with a single interface to aggregate information about Internet number resources
- To streamline and simplify the RIPE NCC's existing suite of tools and make it easier for users to query the data held by the RIPE NCC

3.5 RIPE Atlas

RIPE Atlas is a next generation active measurement network to allow distributed active measurements about the Internet. It is intended to scale up to thousands of small, hardware measurement devices ("probes") that can be hosted by ISPs, businesses or private individuals. The eventual scale of the network allows monitoring global reachability and performance of Internet services using latency checks, path discovery, DNS check and other methods.

The goal of this activity is:

- To build and grow a new, enhanced distributed measurement network

- To allow interested parties (probe hosts, sponsors, and the measurement community in general) to monitor Internet services and networks, using pre-defined and ad-hoc measurements
- To build a measurement community around such measurements, in order to facilitate sharing and discussion of events and results

3.6 Additional Information Services

All RIPE NCC Information Service platforms are designed to be scalable so that new tools and services based on community feedback can be efficiently and rapidly deployed. The RIPE NCC is committed to reacting to such requirements and acting on its own initiative in order to meet current and future user needs, which are evaluated in consultation with the community via the RIPE Measurement Analysis and Tools (MAT) Working Group.

The goal of this activity is:

- To respond to requests from the community to investigate the possibilities for expanding the RIPE NCC's Information Services portfolio to better serve the community
- To pro-actively seek ways in which the RIPE NCC's Information Services' infrastructure can be used to better serve the community
- To monitor the latest research and technical developments related to Internet measurements

3.7 Reporting and Statistics Collection

The RIPE NCC provides authoritative data and reports on the operational development of the Internet, and the consumption rate of Internet number resources. As part of these activities, the RIPE NCC also raises awareness of issues related to the Internet.

The goal of this activity is:

- To provide useful, up-to-date information relevant to a range of interested parties, including:
  - o Network operators
  - o RIPE Working Groups
  - o Industry bodies
  - o Law enforcement agencies
  - o Governments and regulators
  - o The media
  - o Research institutes