RIPE NCC Activities & Expenditure 2000

ASCII PostScript

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Version 1.0

RIPE NCC

Document: ripe-197
See Also:
ripe-198

Updates: ripe-186

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1.Scope & Process

This document contains the planned activities for the RIPE NCC and the associated expenditures for the year 2000. The companion document "RIPE NCC Charging Scheme" (ripe-198) outlines how the corresponding revenues are to be raised.

There are well-defined and formal stages in the creation of these documents:

- the RIPE NCC staff drafts them based on input from RIPE and the users of NCC services;
- the executive board of the RIPE NCC proposes them to the RIPE NCC members, and;
- the membership discuss them and approve the final version.

1.1 Status

The RIPE NCC management with the help of extensive input from staff, in particular, Paula Caslav, Joao Luis Silva Damas, Chris Fletcher, Paul Rendek, Henk Uijterwaal and Lee Wilmont, has produced this version of the RIPE NCC Activities and Expenditures 2000. The Executive Board has presented it to the Annual General Meeting of the RIPE NCC membership on 19 October 1999. The document has been adopted by the general meeting. Comments from the RIPE community to the authors and the board are encouraged.

1.2 Changes

This document will not be changed once the process described above has been completed. However, an operating plan must be able to be adapted to changing circumstances. The last several years of the RIPE NCC operations have shown that revisions are sometimes needed in the course of the year and in the current Internet environment it is increasingly difficult to plan for more than 15 months ahead, as required by the process. Any amendments to the RIPE NCC Activities and Expenditures 2000 will be made within the formal structure of the RIPE NCC and therefore requires the approval of the RIPE NCC Executive Board.

2.Principles for NCC Activities

The RIPE NCC performs activities for the benefit of the Internet Service Providers (ISPs) in Europe and the surrounding area. These are primarily activities that the ISPs need to organise as a group even though they may be competing with each other in other areas.

It is therefore critical that the RIPE NCC observes strict neutrality and impartiality with respect to individual members. In particular, the RIPE NCC refrains from activities that are clearly within the realm of the ISPs themselves.

Activities are defined, performed, discussed and evaluated in an open manner. Results of activities, such as software tools, are made available to the public. Budgets and actual results are published. Individual data are kept confidential where required.

While an activity may result in services being provided to an individual ISP, the performance of this activity must benefit the ISPs in the RIPE NCC service region as a whole. Address space registration is an example of such an activity: the service is provided to individual ISPs but all ISPs benefit because address space is distributed according to a common standard and a neutral and accessible registry is maintained. It is because of this distinction that this document is based on activities rather than on services.

3.Activity Areas

All RIPE NCC activities have been grouped into four main categories since 1996. These were Registration Activities, Co-ordination Activities, Administration Activities and New Activities. The evolution of the Test-Traffic Project from New Activities to something more concrete has meant that these categories have had to be reconsidered. In 2000 a new category called Membership Services will be introduced. This will regroup Registration Services and Test-Traffic Measurements and any other services that may be offered to the members in the future.

Some of the administration category, consisting of the RIPE meeting and administrative support for RIPE, has been brought under Co-ordination Activities. The remaining activities have been left as they were and can be considered to be the general administrative overhead. The activity plan for 1999 has been restated based on this premise to ensure comparative figures.

This section will give a general overview of the activity areas for 2000 whereas the budget and the growth plans will be discussed in Section 4. Detailed descriptions of all activities for 2000 can be found in the appendices.

3.1 Membership Services

3.1a Registration Activities

Registration activities represents operations relating to the RIPE NCC's role as a Regional Internet Registry (RIR) for Europe and the surrounding areas. It includes the handling of requests for assignment and allocation of IP address space and AS numbers, management of reverse domain name space associated with this address space as well as the auditing and quality control necessary to ensure fair and expedient processing of requests. Also included are training of Local Internet Registries (LIRs), production of documentation related to Internet registration and specific activities that guarantee a proper and appropriate start of new LIRs.

Services provided in this area are only available to formally established LIRs that contribute to the funding of the RIPE NCC.

3.1b Test-Traffic Measurements

During the last year, the Test-Traffic Project has evolved from a research project to a state where it can be offered as a regular service to all our members. At the moment, approximately 40 measurement stations (so-called "test-boxes") have been installed all over the RIPE NCC service area. Services based on the Test-Traffic data are either in place or being developed. Moreover, the results from the RIPE NCC Test-Traffic project have been compared against results from the Surveyor project from Advanced Networks and Services (USA). The results proved to be comparable, suggesting that both the RIPE NCC Test-Traffic project and the Surveyor project correctly measure delays and losses on the Internet.

To date, test-boxes have been offered free of charge to sites interested in hosting a machine and operated on a "best effort" basis with no guarantees about up-time or availability of results. Also, the number of test-boxes was limited to 1 per member, even though larger ISPs expressed interest in hosting more test-boxes.

The Test-Traffic project is now more mature and it has been shown that Test-Traffic measurements can be done on a regular basis and provide useful information to the sites hosting them. It is time to turn the project from a research topic into a regular service that can be offered to the entire RIPE NCC membership.

3.2 Co-ordination Activities

Although these activities are quite diverse their common purpose is to support the coherent operation of the Internet in Europe and the surrounding areas. The primary activity is the provision of access to the RIPE database , providing information about address space and routing policies together with the appropriate contact points. Development and publication of RIPE database software, provision of information services for ISPs and the general public via the Internet and administrative and technical support provided for the RIPE meetings all fall under co-ordination activities.

Operational co-ordination also comes under this category as does the production and publication of software tools for such efforts. Maintenance of the root name server that the RIPE NCC operates is also included in co-ordination activities. The organising of the RIPE meeting is very much a co-ordination activity.

The services performed in this area must be accessible to the general Internet public in order to be effective. When special support is needed RIPE NCC members will receive priority over other users.

3.3 Administration Activities

This area covers all general administrative overheads that cannot be clearly attributed to a specific activity in one of the other areas. It covers all activities necessary to operate an organisation, including building rental, office supplies, etc.

3.4 New Activities

New activities are either entirely unforeseen or have started recently and cannot be fully specified as a regular activity at the time that this document was written. Two such projects are described in more detail in Appendix N.

The existence of these activities gives the RIPE NCC the flexibility to react quickly to the rapid changes in today's Internet. The appropriate RIPE working groups often suggest activities in this area.

If the activities turn out to need long term support they may become a regular RIPE NCC activity subsequently funded by all members. If the activities are short term but substantial or continued support by all members is not appropriate, they may be continued as special projects for which funding is sought separately among interested parties.

These activities are executed under the guidance of the various RIPE working groups with active participation of the RIPE NCC membership.

4.Growth Plan and Budget

The increase of the number of new Local Internet Registries was estimated at approximately one per calendar day for the 1999 budget. For the first half of 1999 the actual increase has been closer to 2 new LIRs per calendar day. No explanation as to why the number of LIRs is increasing at this rate is available but anecdotal evidence from others working in the Internet field suggests that the same rate of growth is being found elsewhere in the RIPE NCC service region. Generally, the increase in new registries drops during the summer months, picks up slightly in the period September to November and virtually stops in December. Experience also shows that an attrition rate of 10% can be expected. For these reasons it is expected that the number of new LIRs will average 1.25 per day for 1999 and that the actual increase of active LIRs for 1999 will be closer to 450 new registries.

The projections for 2000 are as follows:

Registries	Observed		Projected					
	Q1 1999	Q2 1999	Q3 1999	Q4 1999	Q1 2000	Q2 2000	Q3 2000	Q4 2000
Large	75	75	75	75	85	85	85	85
Medium	253	253	253	253	285	285	285	285
Small	1114	1258	1342	1392	1475	1600	1700	1800
Total	1442	1586	1670	1720	1845	1970	2070	2170

Growth is expected to continue at the same rate of 1.25 Local Internet Registries per calendar day for 2000. As is usual in rapid growth industries, the rate of attrition for start-ups is high and it is also expected that this will continue to be true in the RIPE NCC service region as well. However, the wave of mergers and consolidations among ISPs that has been seen in the United States does not seem to have reached the RIPE NCC service region yet. Special attention is being paid to see if this phenomenon is spreading to the

RIPE NCC service region as it may have important consequences for the revenue base.

The number of active Local Internet Registries in the RIPE NCC service region is anticipated to be just over 1,700 by the end of 1999 and approximately 2,170 by the end of 2000, after accounting for expected attrition. The use of the term 'active' should be noted. An increasing number of Local Internet Registries are completing the registration process but have no address allocation. Although the number is not significant at this time it is being carefully monitored.

Local Internet Registry growth, in percentage terms, is therefore expected to be just over 25%. This is the lowest (in relative terms) in RIPE NCC history but at 450 new Local Internet Registries is the largest to date in absolute terms. Experience has shown that additional dramatic increases in improved efficiency, particularly in registration services, are unlikely. The RIPE NCC has essentially a "third line" support function and must provide proper training to the LIRs that typically provide a "second line" support function. This has direct implications for growth of the RIPE NCC in all areas. Training and support is also important to ensure the fair distribution of address space (from LIRs to their customers).

4.1 Professionalism & Legitimacy

The RIPE NCC has continued to provide its services in a reliable and professional manner during this period of sustained, rapid growth. The Internet has continued to make inroads into ever increasing areas of the economies and the lives of the people in the RIPE NCC service region. New energy has been put into efforts at organising the Internet and the administration of the Internet has become the subject of considerable public debate. The RIPE NCC has been playing an active role in these efforts and has stood up well to public scrutiny and, with the vigorous participation of the RIPE community, will put more intensity in this area in 2000.

It has become more and more clear that the RIPE NCC will have to defend its legitimacy and its processes, not only to its members, but to the community at large as well, including governments, institutions, industry and end-users. Greater effort will need to be put into professionalism and quality and this will need to be projected actively to the public at large. Communications and quality management will receive increased attention.

4.2 Growth & Stability

The stability of the RIPE NCC is of tremendous importance to the community in general and the membership in particular. Reliable registration and co-ordination services are essential to the functioning of the Internet, as is readiness to meet new challenges. At the beginning of the year 2000 the formal administrative structure necessary to meet these challenges, as they exist today, will be in place. They will continue to be developed so that the stability of the RIPE NCC is safeguarded.

4.3 New and Improved Services

Special emphasis has been placed on the New Projects area and additional staff has been hired. Ideas from membership as to new services and special projects will be actively solicited and developments in the Internet will be closely followed as to their pertinence to members. New training courses will be offered for LIR operations and in the routing registry area.

4.4 Budget

The budgeted costs for the various activities for 2000 are shown below. Definitions for the activity areas can be found in the previous section. Notes on the individual areas follow:

Activity Area	1999	%	2000	%	delta	%
Membership Services						
Registration Activities	2011	42.5	2646	42.6	635	31.6
Test-Traffic Measurements			299	4.8	299	
Co-ordination	1441	30.4	1786	28.8	345	24.0
Administration	964	20.4	990	15.9	26	2.7
New Activities	321	6.8	489	7.9	168	52.3
Total (kEUR)	4737		6210		1473	31.1

The increase in the budget for 2000 is just over 31%. This includes a special reserve of 500,000 EUR for various contingencies, including, costs specifically related to the formalisation of IANA /ICANN agreements, setting up of the Address Supporting Organisation and the Address Council, etc. Because this reserve touches on several of the activity areas it has been distributed among them based on the Full Time Equivalents (FTEs) required by each activity.

Due to the great number of uncertainties facing the RIPE NCC in 2000 and their importance to the continued existence of the activities of the RIPE NCC it would be imprudent not to set aside this amount so that action can be taken immediately when needed.

4.5 Membership Services

4.5a Registration Activities

Growth in Registration Activities continues to keep pace with the growth of the number of new LIRs (if the reserve is excluded) and the budget for this activity remains the highest of all areas.

Unrealised economies of scale in the Registration Services are minimal. Hostmasters deal primarily with the most difficult cases or help relatively inexperienced LIR staff through the initial learning curve. As the number of new LIRs increases this workload increases proportionally.

Training courses are also provided for LIRs. Although these are primarily to new LIRs, existing LIRs may also send staff. New "advanced" courses will further increase the number of course participants. Training facilities will be diversified and improved, existing course material will be reviewed and new courses will be developed. Continued attention will be paid to developments in the area of registration services.

Increased interest in IPv6 is expected and IPv6 address space registration will become more important. The RIPE NCC will require resources to gain experience with IPv6 requests and to produce software tools for handling them. Liaison activities with other Regional Internet Registries will be intensified and greater efforts will be made towards co-ordination of policies and procedures. Close contact with the membership and the community at large is required in order to learn from experiences and to further improve procedures and service levels.

4.5b Test-Traffic Measurements

This area represents approximately 10% of the total Membership Services budget and, as described in the previous section, has evolved from a research project to a point where it can be further developed and offered as a regular service to all interested RIPE NCC members.

At the moment, approximately 40 measurement stations (so called "test-boxes") have been installed all over the RIPE NCC service area and are being used to measure delays and losses in the Internet. Services based on the Test-Traffic data, such as daily plots showing the results of measurements, alarms based on unusual network performance and analysis of network performance over time, are either being offered to the sites hosting the test-boxes or are currently being developed.

The resources budgeted provide the means to continue to run this network during 2000, offer the services mentioned above to the sites already participating in the project and continue the development of new services based on the Test-Traffic data.

The measurement network will be expanded during 2000. However, sites joining the project will have to pay for the hardware of the "test-box" (at the moment approximately 2500 EURO/box) and will be charged a service fee for the operation of the machine by the RIPE NCC. In order to guarantee the integrity of the measurements, the boxes will be operated as "black boxes" with no possibility for the host sites to log in to the box. However, the host sites will continue to have full access to the raw data taken by the box as well as any derived results.

Also, while the RIPE NCC has always focused on measuring network parameters between ISP's, the measurement techniques can also be used to measure network parameters inside the network of a single ISP. Basic support for these kinds of private experiments will start to be offered. Details for these services will be worked out and discussed in the appropriate RIPE working groups in 2000.

4.6 Co-ordination Activities

Following a major re-implementation of the database in 1999, increased focus on quality and consistency of the data registered in the RIPE database is planned in 2000. Efforts will be continued in order to provide proper data maintenance and data management tools including regular updates on the status of the data in the database as well as general help with good data maintenance practices.

Particular attention is given to the data related to routing information in the database. An increasing number of ISPs rely on the Internet Routing Registry (IRR) to support decisions made relating to their network operations. The RIPE NCC continues to promote security mechanisms to ensure reliable and trustworthy data and perform reality checks on the data registered in the IRR.

An important part of co-ordination activities in 2000 is the deployment and support of RPSL. This includes the development of tools to interact with the new database software.

The RIPE NCC continues to provide a reliable service and user support. In light of the new database software, user support may require additional attention.

Information Services and administrative and technical support of RIPE Meetings have been incorporated into co-ordination activities.

4.7 Administration Activities

Administration Activities would show a decline of just over 7% for 2000 if the reserve were not taken into account. This is due to two principal reasons: 1) the RIPE meeting has been taken out of Administration Activities and added to Co-ordination Activities; and 2) the costs in 1999 were higher than normal because there was major effort and expense put into providing the necessary administrative structure so that the RIPE NCC would be well prepared to handle the future.

Administration Activities include providing and maintaining a "state of the art" computing infrastructure, Human Resources, financial management, general office supplies and services such as reception, etc. and other common administrative services that are difficult to attribute directly to the other activities.

4.8 New Activities

An ongoing investment will be made in New Activities in 2000, not only in time and energy but also in personnel and money. This is planned to continue throughout 2000. The goal is to become more pro-active and to attain a higher profile in the wider RIPE community.

Due to its unique position, the RIPE NCC can play an important role in facilitating new projects and services for its members as well as for the RIPE community. Depending on the nature of the projects, the RIPE NCC will either utilise the expertise of its current staff or hire additional staff. The orientation will be broadened to include not only the development of new services but also the more active "marketing" of them.

Two new projects have already been started (Routing Information Services and Routing Registry Consistency, see Appendix N) and increased attention will be brought on technological development relating to the Internet. Participation in the Working Groups of organisations such as the IETF or NANOG will be increased.

4.9 Summary

Excluding the reserve, the not quite 20% increase in the total budget is lower than the 25% growth in the number of members. All activities directly pertaining to members show increases ranging from almost 19% to just over 35% while the administrative costs (overhead) show a decrease of more than 11% over the previous year. This budget is based on an analysis of 1998 audited financial statements and the 1999 second quarter results and is a reasonable and realistic estimate of what the RIPE NCC needs to continue to operate efficiently for the next year.

5.Challenges

Managing the growth while remaining stable, professional and pro-active in developing new activities and keeping abreast of leading edge technical developments, continues to be one of the greatest challenges facing the RIPE NCC. This plan ensures the timely and proficient delivery of essential services to the members and, at the same time, maintains the flexibility necessary to be able to react promptly to the continually changing environment. The success of this plan lies in finding and keeping the people who work to make it happen.

The last twelve to eighteen months have seen finding personnel become the greatest challenge. The biggest single limit to the growth of the RIPE NCC is the lack of IT personnel, not just in the Netherlands and the European community but in the entire RIPE NCC service region. The RIPE NCC will have to continue to offer salaries that are competitive, a working environment that stimulates and challenges personnel, training, personal growth and career development.

6.Appendices

All activities described in the appendices below are grouped into relevant activity areas. The descriptions list related activities as well as links to the relevant RIPE working groups. Activities that commence during the year or existing activities that increase significantly are reported. In addition, special budgeting considerations are listed where appropriate.

Appendix M - Membership Services

Activities included in Appendix M relate directly to services provided to the RIPE NCC's membership. Services performed in this area are only accessible to formally established members of the RIPE NCC.

M1 Regional Internet Registry

In its role as a Regional Internet Registry the RIPE NCC provides Internet registration services for Europe and surrounding areas. The overall goal of this activity is to provide fair, impartial and stable distribution of Internet numbers (IPv4 and IPv6) in the RIPE NCC service region. The specific goals for the distribution of address space are uniqueness of addresses, conservation of the remaining IPv4 address space, procedure and policy definition for IPv6 address space, aggregation of routing information and registration of network management information. To determine the resources needed, a constant linear growth of approximately 1.25 new LIRs per calendar day is assumed. This is the growth rate expected during 1999, and is an increase over the one registry per day experienced in 1997 and 1998.

Increased automation provides a clear structure in communication between the NCC and the LIRs. Requests are automatically checked for completeness and syntactic correctness. This eliminates much of the purely clerical work of the RIPE NCC Hostmasters. It also saves time as LIR staff receive immediate feedback on the most common problems.

Experience shows that there are little economies of scale left in the registration services area. The RIPE NCC hostmasters now mostly deal with the most difficult cases or support relatively inexperienced LIR staff during their initial learning curve. They also provide training courses for LIRs. This is very much a "third line" support activity. It also requires a high level of scrutiny because of the absolute requirement for fairness and impartiality in registration services decisions. In 2000 both work flow and quality management will have to keep step with the expected growth and ensure that peaks in the load lead neither to unacceptable delays nor to a reduction in quality. The impartiality and neutrality of the RIPE NCC has to be maintained at all times. No significant shifts in the resources needed to perform activities M1.1 - M1.5 reliably is assumed. The basic procedures have not changed. Common to all of registration activities is liaison with the RIPE Local IR Working Group (WG) and with the other Regional Internet Registries about general application of procedures and policies.

M1.1 First Address Space Assignment

Description:

> The RIPE NCC will give special attention to initial address space requests from new LIRs. It will assist in producing the first assignment and allocate an aggregatable range of addresses for further assignments.

Goal:

> This will help LIRs to process successfully their first request and provide a better understanding of the procedures for further requests. This initial support also promotes a good working relationship between the RIPE NCC and the LIR and ensures that the LIR is able to provide the same support to their customers. In addition, it enables neutral and impartial treatment of all LIRs.

Related Activities:

> M1.8

RIPE Working Group Advising:

RIPE Local IR WG

M1.2 Assignment Approval

Description:

Certain IP address requests require approval from the RIPE NCC, especially when they are above a threshold size. The RIPE NCC will evaluate these IP address requests. LIRs also request the opinion of the RIPE NCC about assignments even when it is not strictly required. The RIPE NCC will provide recommendations and guidelines for future requests.

Goal:

This activity will ensure uniform application of policies and assignment criteria by all LIRs and will help make the LIR familiar with request evaluation

Related Activities:

M1.7, M1.8

RIPE Working Group Advising:

RIPE Local IR WG

M1.3 PI Assignment

Description:

The RIPE NCC will process all requests for PI (provider independent) address space submitted by LIRs.

Goal:

This activity will prevent fragmentation of the LIRs allocated address space by making the PI assignment from an address pool managed by the RIPE NCC. This will promote aggregation of routing information.

RIPE Working Group Advising:

RIPE Local IR WG

M1.4 Address Allocation

Description:

The RIPE NCC will allocate IPv4 address space to LIRs for further assignment to end-users. IPv6 address space will also be allocated to Top Level Aggregate Registries. These activities will also contain auditing of assignments made from previous IPv4 and IPv6 allocation s. Tools to support the allocation process and to ensure the best aggregation possible will be enhanced. This particularly includes tools and software to support the newer IPv6 activity.

Goal:

This activity helps to ensure fair distribution of IPv4 and IPv6 address space. It will also support the efficient use of address space in order to conserve the remaining IPv4 address space and to aggregate IPv4 and IPv6 routing information.

Related Activities:

M1.7, M1.8

RIPE Working Group Advising:

RIPE Local IR WG

M1.5 AS Number Assignments

Description:

The RIPE NCC will assign AS numbers according to global and local policies. It will register these numbers and the associated routing policies routing policies is expected to change to that developed by the IETF rps working group. Documentation and training materials will be updated and an additional training course will be developed. The RIPE NCC plans to produce a Web-based AS number request form to reduce the Hostmaster workload.

Goal:

This activity ensures uniqueness of AS numbers and helps in collecting data for the Routing Registry autonomous systems that are visible in global Internet routing.

Related Activities:

RIPE Working Group Advising:

RIPE Local IR WG RIPE Routing WG RIPE Database WG

M1.6 Reverse Delegation

Description:

The RIPE NCC will delegate reverse DNS zones for the address ranges allocated or assigned via the RIPE NCC. In order to provide this service the RIPE NCC will provide a reliable secondary nameserver and work to avoid pollution of the DNS in the zones delegated to the RIPE NCC. Therefore, the RIPE NCC will check all zones under its responsibility as to proper set-up and functioning. Adaptation of existing software for IPv6 needs is expected to consume considerable amounts of resources as will rewriting the existing inaddr software. More proactive checking of already delegated zones will be an important goal.

Goal:

This activity ensures the proper address-to-name mapping for addresses allocated to the RIPE NCC.

RIPE Working Group Advising:

RIPE Local IR WG RIPE DNS WG

M1.7 Consistency & Auditing

Description:

The RIPE NCC will actively check the quality and validity of registry data. This will also include the production of statistics on address space usage. In order to ensure fair address space distribution, the RIPE NCC will regularly check that assignment guidelines are applied uniformly. This activity is separated from the other registration activities as it is defined and executed somewhat independently from the day-to-day processing of requests; consistency checking and auditing are performed within other activities. Observations are reported back to the RIPE Local IR Working Group for further investigation and improvement of the procedures.

Goal:

This activity promotes a consistent and fair application of assignment criteria relating to the conservation of address space and aggregation of routing information. This activity assists in identifying parts of the procedure that causes problems.

Related Activities:

All registration activities

RIPE Working Group Advising:

RIPE Local IR WG

M1.8 Registration Activities Quality Management

Description:

Due to the size and continued growth of registration activities it is important to systematically monitor the quality of registration activities. This becomes even more important as the quality and fairness of industry self-regulation activities in the Internet environment come under increased scrutiny from many sectors, including governments and consumers. The RIPE NCC will continuously develop and monitor the quality measures for registration activities and give careful attention to customer questions and suggestions. This will also include proposals for possible automation and other improvements of internal procedures. This activity may eventually lead to seeking a formal quality management certification. This particular activity provides quality control that is performed independently and managed separately from day-to-day request processing.

Goal:

This activity helps to maintain a high quality of services provided to the LIRs and increases the credibility and legitimacy of the industry self-regulation process.

Related Activities:

All registration activities and related administrative support activities.

RIPE Working Group Advising:

RIPE Local IR WG

M2 Initial Support for new LIRs

The initial support for newly established registries is provided in addition to other registration activities. It is not initiated by a request for address space or AS numbers sent to the RIPE NCC but is part of the process to establish a new LIR. During this phase additional clarification and explanation is involved to familiarise the new LIR with all procedures necessary to operate an Internet registry.

M2.1 Registry Set-up

Description:

The RIPE NCC will provide initial support to LIRs during their set-up phase. It will support and provide information to potential LIRs.

Goal:

This activity supports new LIRs during their set-up phase to introduce tools, procedures and guidelines. It will also give potential LIRs enough information to make an informed choice as to whether or not they become a LIR.

Related Activities:

M2.2

RIPE Working Group Advising:

RIPE Local IR WG

M2.2 Training Courses

Description:

The RIPE NCC will further develop and continue to deliver Training Courses for LIRs. The course material includes IP address assignment and allocation procedures and policies, delegation of reverse domains and usage of the RIPE database

Goal:

The goal of this activity is to familiarise the new LIRs with procedures and policies and keep established LIRs up-to-date with new guidelines and developments. This will facilitate smooth operations between the RIPE NCC and the LIRs. With the consistent application of policies the RIPE NCC can ensure fair distribution of address space among the community.

RIPE Working Group Advising:

RIPE Local IR WG

M3 Liaison & Co-ordination

Description:

In order to execute its activities the RIPE NCC has to act as a liaison and co-ordinate with a variety of organisations and track the activities of others. Examples of such organisations are IANA , ICANN, IETF, RIPE, ARIN, and APNIC. It is often difficult to attribute liaison and co-ordination resources to specific activities and it is therefore an activity in its own right.

Goal:

To maintain the necessary relationships with other organisations related to the operations of the RIPE NCC. Budgeting: Costs for this activity are split evenly between the registration and co-ordination activity budget lines.

M4 Test Traffic Measurements

Description:

1. Continue to run a network of test-boxes. The RIPE NCC will continue to operate a network of test-boxes as well as a service where the host sites can retrieve the data produced by their text-box.

The network will be expanded during 2000, as discussed in section 4.

The test-boxes currently measure delays between all possible pairs of test-boxes. As not all of these combinations are of interest to the sites hosting them solutions will have to be found to remove uninteresting paths from the measurement program.

Finally, in order to improve the quality of the data and to detect problems with the test-boxes, Data Quality Monitoring (DQM) will be done on a regular basis.

2. Run standard analysis. The RIPE NCC will continue to run analysis code on the test-traffic data on a daily basis and provide the sites hosting the test-boxes with plots showing the results of the measurements over the last day(s). The current version of the analysis code will be expanded to show summary numbers, trends over time and other suggestions made for expanding or improving the project.

3. Interaction with the test-box hosts in the Test Traffic (TT)-WG. It is impossible to know what the users want and in which direction the project should move without closer interaction with them. Active participation in the RIPE TT-WG as well as other working groups (for example IETF-IPPM) related to the Test-Traffic Project will be continued.

4. Continue development work on the project. Development work on the project will continue in several different areas:

a. Develop models to parameterise the data. A model will be developed to describe the data over long time intervals and to look for trends in the data over time. This can be used as a planning tool for ISPs. b. Generate Network alarms. A method to detect unusual network conditions and warn the network operators about these conditions was proposed at RIPE-33. Development work in this area will continue. c. Any developments in the Internet related to the Test-Traffic Measurements will be energetically followed and responded to. The same is true for suggestions made for expanding or improving the project.

RIPE Working Group Advising:
Test-Traffic Working Group

Appendix C - Co-ordination Activities

The activities performed in this area must be accessible to users of the Internet and the general public in order to be effective. Their common purpose is to support the coherent operation of the Internet in Europe and the surrounding areas.

C1 RIPE Database Maintenance and Development

Description:
The RIPE NCC will assure the reliability of the RIPE database and extend its functionality as needed. The quality of data will be improved, both by improving consistency and providing reliable security mechanisms. C1 activities include the work related to the RIPE database software and the quality of data registered in the database.

Goal:
The RIPE database is the core software on which the Regional IP Registry and the RIPE Routing Registry are based. Reliability and good functionality of the RIPE database are essential for the RIPE NCC and LIRs. This set of activities is designed to continue consistent support and provide a reliable service both in the short and long term and to continue developments according to the needs of the RIPE community.

RIPE Working Group Advising:
RIPE Database WG

C1.1 User Support and Software Maintenance

Description:
The RIPE NCC will manage a role mailbox for questions and comments and address user questions promptly. The RIPE NCC will also perform basic software maintenance activities including bug fixes and minor modifications. In parallel, the RIPE NCC will provide robust portable releases with fixed bugs and new features. It will also work on maintaining and improving user documentation.

Goal:
This activity is intended to provide a timely response to user enquiries. It also helps assure the smooth operation of the registry system

RIPE Working Group Advising:
RIPE Database WG

C1.2 Consistency & Accuracy

Description:
The RIPE NCC will continue working to prevent inconsistencies and inaccuracies in the RIPE Database contents by using syntax checks, modifying contact reference mechanisms and educating users. The RIPE NCC will perform database clean-up activities to improve the quality of data already in the RIPE database routing registry

Goal:
The value of the RIPE database for its users depends on the quality of data in the database. The quality of the data depends on the accuracy of the data in each object as well as a consistent reference mechanism that leads to the other objects. The goal of this activity is to monitor and improve the consistency and accuracy of the data maintained in the RIPE database

RIPE Working Group Advising:
RIPE Database WG

C1.3 Database Availability & Exchange

Description:
The RIPE NCC will provide access to the RIPE Database via whois servers and by supporting other sites in mirroring the data. For example, support will be given to LIRs in setting up secondary database servers. The RIPE NCC will actively pursue and co-ordinate data exchange both with other Regional IP Registries and other Routing Registries.

Goal:
This activity is intended to enable RIPE database users to acquire the information they need quickly and to help those outside the RIPE region acquire information in the RIPE database as easily as possible. This is essential for both the IP and the Routing Registries.

RIPE Working Group Advising:

RIPE Database WG

C1.4 New Database Features

Description:

The RIPE NCC will design and implement new database features as requested by the user community or proposed by the RIPE NCC. The RIPE NCC will perform the development work based on the priorities established in the appropriate working groups.

Goal:

The purpose of this activity is to provide new functionality as the RIPE database user community expresses the need for it.

Related Activities:

C1.1

RIPE Working Group Advising:

RIPE Database WG

C1.5 Routing Registry Tool Deployment and Training

Description:

The RIPE NCC will continue the incorporation of RPSL extensions in the RIPE Database code and implement the next transition steps from ripe-181 to RPSL. The RIPE NCC will work to create support tools such as RR tools and the RA toolset. These tools will be made available to members of the RIPE community. The RIPE NCC will design and deploy a training course to teach the RPSL language and the use of the RR tools in configuring routers and examining policies and routing in the Internet.

Goal:

The IETF has developed a new standard language for the Routing Registry : RPSL based on RIPE work. RPSL will be supported as it is generally more powerful than ripe-181 Useful RR tools are currently being developed elsewhere. In particular, the RA toolset can be used to define routing registry objects and to evaluate currently registered objects in the process. It further allows configurations to be generated from the contents of the routing registry

RIPE Working Group Advising:

RIPE Routing WG

C2 Information Services

Description:

The RIPE NCC will provide services and technical infrastructure to facilitate exchange of information mainly to the RIPE NCC membership, the RIPE community and RIPE working groups. The RIPE NCC will continue developing and improving the external representation and image of the organisation. This includes the management of electronic mailing lists, a publicity database and provision of the RIPE NCC Web and ftp servers. The content of the web and ftp sites will be continuously maintained, improved and extended.

Goal:

The RIPE NCC is known to be a neutral source of authoritative information on the Internet in its region of operation and beyond. This activity is designed to ensure that it continues to be a useful resource to the ISPs and other interested parties in Europe and globally.

C2.1 Mailing List Management

Description:
: The RIPE NCC will maintain high quality mailing lists for exchanging information among the RIPE NCC members, the RIPE community and interested public. Effort will be spent to prevent spam (unsolicited advertising) on the lists, support subscribers with requests and problems and to improve the quality of the address lists in order to minimise bounces. Mailing list traffic will be constantly monitored.

Goal:
: The mailing lists maintained by the RIPE NCC have a history of constructive and concise discussions on issues of importance to the RIPE community. Mailing list maintainers are faced with challenges ranging from spam to increased size and usage of lists. This activity is intended to maintain the quality of the mailing lists and serves to facilitate discussion and consensus forming in the RIPE community.

C2.2 Maintenance of Information Services

Description:
: The RIPE NCC will maintain a WWW and ftp server at http://www.ripe.net/ and ftp://ftp.ripe.net/ respectively and the accompanying <webmaster@ripe.net> role mailbox to provide help and information to users. This includes the following detailed activities: continuous modification and re-structuring of the information on the WWW server providing the best structure for ease of use to visitors of the site. The RIPE NCC will also monitor the content of the servers to assure accuracy, consistency and a user-friendly environment.

Goal:
: The purpose of this activity is to ensure that the information and services on the RIPE NCC servers are up-to-date and working well and that responses to user needs are provided in a timely manner.

Related Activities:
: C2.3

RIPE Working Group Advising:
: all

C2.3 Reporting

Description:
: The RIPE NCC will continue to report about its activities to its membership, the RIPE community and the general public both on the network and at RIPE meetings. This will take the form of constantly updated statistics published on the RIPE NCC web site and regular reporting to the RIPE NCC membership. The RIPE NCC will publish an Annual Report, including financial statements, for distribution to its membership, suppliers and interested members of the public. The

Annual Report will also serve as a general Public Relations document. The RIPE NCC will monitor press clippings and produce press releases when necessary, regarding issues concerning the operations of the RIPE NCC. Continuous effort will be placed in developing the Web site to provide up-to-date and informative documentation essential to the RIPE NCC membership.

Goal:

This activity provides the RIPE NCC membership and other interested parties with open, detailed information about the ongoing RIPE NCC activities.

Related Activities:

C4

C3 DNS Co-ordination

The RIPE NCC does not provide domain name registration services. It does however provide DNS co-ordination and support activities as well as registration of reverse address mapping domain registration s within the in-addr

C3.1 European Root Name Servers

Description:

The RIPE NCC will support the operation of the root name servers located in Europe and the surrounding area. In particular it will operate the server currently located at the LINX in London (k.root-servers.net).

Goal:

Those few DNS name servers serving the "." (root) zone are critical elements of the Internet infrastructure that should be operated in a neutral and professional way. The goal of this activity is to ensure that this happens.

RIPE Working Group Advising:

RIPE DNS WG

C3.2 Secondary DNS Service

Description:

The RIPE NCC will provide secondary name service and limited support to those country TLD administrators wishing to use it. The RIPE NCC will assist IANA in the administration of those TLD s as described in RFC1591. Secondary DNS service will also be provided for all in-addr reverse mapping for sub-TLAs it allocates.

Goal:

Many users in Europe depend on DNS name servers serving the zones of two letter ISO3166 country code top level domain s. Name service for these zones should be reliable. New countries should be supported to establish their country code TLD s. Reverse zones are served in a secondary capacity to assist in ensuring the reliability of reverse lookups.

RIPE Working Group Advising:

RIPE DNS WG

C3.3 DNS Hostcount

Description:

The RIPE NCC will provide various monthly statistics (e.g. the number of hosts registered) from the DNS of the TLD s corresponding to countries it serves. The statistics are gathered in collaboration with numerous organisations performing local counts per country TLD

Goal:

The goal of this activity is to collect and publish uniform time series data about the growth of the Internet in the region and continues a time series started in October 1990. The information is used extensively by organisations operating in this region and beyond.

RIPE Working Group Advising:

RIPE DNS WG

C4 RIPE Meeting

Description:

The RIPE NCC will provide administrative and technical support for the RIPE meetings. These meetings take place three times a year and are open to the public. Actual costs regarding venue, equipment hire, etc. are partially covered by charging an attendance fee as well as through corporate sponsorship of the meetings. These meetings are organised on a not-for-profit basis.

Goal:

To provide support of an infrastructure whereby the RIPE meetings can be held. Guidance and advice from the RIPE Working Groups and membership is invaluable to the RIPE NCC in supporting its effective role in further formalising Internet Administration. RIPE also plays an influential role in defining the annual activity plan and these meetings are therefore essential to the stable operations of the RIPE NCC.

Appendix N - New Activities

This area represents those activities that are either unforeseen or cannot be fully specified at the time of writing. By nature new activities are hard to specify in detail and priorities can change quickly. Activities may be dropped or added as necessary. The activity descriptions below are therefore more of a subjective statement of direction rather than a fixed plan of action. In particular, some of the ideas below have not yet been fully discussed in the relevant RIPE working groups.

N1 Routing Information Services

Description:

This activity has been on the activity plan for several years but due to time and resource constraints, very little progress was made. This changed in 1999 when a Network Engineer joined the New Projects group and started to work full-time on this project.

Goal:

The goal of the Routing Information Server (RIS) is to collect routing information between AS's at several major exchange points in near real time and store that in a database. This historic information will be made available to ISP's in order to facilitate their operations. At a later stage, the information will be compared against the information from the Internet Routing Registry (IRR).

Work on the Routing Information Server started in July 1999. A project plan was presented at RIPE-33 and it is hoped that the first version of this service will be presented and made available to beta-users early in 2000. The product will be further developed based on their experiences and it is also planned to carry out statistical analyses on the data are also planned to be carried out.

Projections are to turn this activity into a regular service that can be used by all members by the end of 2000.

RIPE Working Group Advising:

RIPE Routing WG

N2 Routing Registry Consistency

Description:

This activity seeks to improve data quality in the Internet routing registry as a public source of intended routing information (as described by the maintainers of the data, the ISPs). It also aims to improve data accessibility and processing capabilities to enable users to extract the largest possible benefit from this information source.

Goal:

The objective of this activity is to provide a public, accurate and reliable source of information about public routing information in the "European" Internet, comparing the intended routing policies as described in the IRR to the information actually exchanged by routing protocols. A coupling to the RIPE NCC's address assignment activities is also an objective of this activity.

RIPE Working Group Advising:

RIPE Routing WG

N3 Unforeseen Activities

Description:

The RIPE NCC will actively follow the developments in the Internet community and react to any requirements for new activities from the RIPE membership. The RIPE NCC has been requested to start a fair number of new activities during the course of the year at short notice. Many of them have been successful because this possibility has been designed into the activity plans since the RIPE NCC's inception.

Goal:

The goal of this activity is to ensure that the RIPE NCC continues to react to the developments and changing needs of the Internet environment.

RIPE Working Group Advising:

Depending on the activity