2006

RIPE NCC

ANNUAL REPORT

Contents

The RIPE NCC Annual Report 2006 can be found online at:
www.ripe.net/info/ncc/ar.html

Contact:
RIPE Network Coordination Centre
P.O. Box 10096
1001 EB Amsterdam
the Netherlands

Phone: +31 20 535 4444
Fax: +31 20 535 4445
www.ripe.net

Layout: RIPE NCC
Photography: Chris van Houts, pages 3, 4, 10, 33 and 38

Introduction

Highlights 2006

Membership 2006

Total membership (31 December): **4,722**
Total new applications: **775**
Total new members: **512**
Total membership growth: **12%**

Key Financial Figures 2006

Surplus: **2,483 kEUR**
Total expenditure: **9,560 kEUR**

Key Activities 2006

January:

- RIPE NCC Regional Meeting Qatar held.

February:

- Third RIPE NCC Roundtable for Governments and Regulators held.

September:

- RIPE NCC Regional Meeting Moscow takes place.

October:

- RIPE Certification Task Force and RIPE Database Privacy Task Force formed at the RIPE 53 Meeting.
- RIPE NCC participates in the first Internet Governance Forum (IGF).

November:

- RIPE NCC Regional Meeting Bahrain held.

December:

- RIPE NCC participates in the International Telecommunications Union (ITU) Telecom World, Hong Kong.
- Work to ensure 32-bit Autonomous System (AS) Numbers can be allocated as of 1 January 2007, successfully completed.

RIPE 53 Meeting, Amsterdam

Foreword

↑ ***Kees Neggers***
Executive Board Chairman

The Internet industry showed strong growth in 2006 contributing to an increase in RIPE NCC membership to 4,722, a 12% increase on 2005. Most notably the industry continues to gather pace in parts of the RIPE NCC's service region. More organisations from Russia applied for membership during 2006 than from any other country and Russia now has the highest concentration of members.

Cooperation with the other four Regional Internet Registries (RIRs) continued through the year and joint public relations activities achieved excellent results in building relationships with key industry players. I am also happy to report good operational cooperation with the Internet Corporation for Assigned Names and Numbers (ICANN) and that the RIPE NCC welcomed improvements made to the Internet Assigned Numbers Authority (IANA) services.

The RIPE NCC has a policy of keeping reserve funds equal to one year's total expenses in order to guarantee the stability and operational continuity of the organisation. In 2006, the total reserve increased above this level due to the continued higher growth in membership than foreseen together with a more cost effective operation. At the members' General Meeting in October, the members agreed to accept a rebate on their 2007 invoices to bring the reserve back to the target level. A full overview of the organisation's financial situation can be found on page 38.

In particular I'd like to use this opportunity to extend my thanks to Frode Greisen, who stepped down as ICANN Liaison to the RIPE NCC Executive Board in 2006. Frode's support to the board, to the RIPE NCC and to RIPE over the last 15 years has been immensely valuable. Frode not only served as a RIPE NCC Board member since the incorporation of the RIPE NCC as an association in 1999, he also played an important role since the earliest days of the RIPE NCC activities in bringing the RIPE NCC from an idea to the worldwide respected organisation we know today.

On a final note I would also like to thank the RIPE NCC membership and the RIPE community once again for their continued commitment to the organisation and for their essential participation. Only with their support can the RIPE NCC continue its crucial role in the global coordination and development of the Internet.

Kees Neggers
Executive Board Chairman

Review and Outlook

Axel Pawlik
RIPE NCC Managing Director

2006 brought significant internal changes to the RIPE NCC. Many of these changes were preparations for requirements that we will face in 2007 and beyond.

In order to continue to provide stable services to our members and to the Internet community as a whole, we restructured the organisation to ensure that each one of the core services that we provide is operating as efficiently as possible. New procedures and systems that make our processes more consistent and transparent were also put in place. This new way of operating will help us adapt quickly to any changes in Internet number resource allocation that could occur over the next few years without disruption to services.

In 2006, routing security was a hot topic in the RIPE community. Certification of Internet number resources will enable the Regional Internet Registries (RIRs) to authenticate which IP resources were assigned and to which organisation they were assigned to. Over the course of the year, we attended technical and strategic meetings with the other RIRs and continued to have an active dialogue with the community about certification to understand the impact of any kind of certification on our members, our organisation and the Internet as a whole. During the RIPE 53 Meeting in October, the RIPE Certification Task Force was set up by the community to provide feedback to the RIPE NCC and the RIPE community on certification.

We also continued to work on other issues that are important to the RIPE community. Two other RIPE Task Forces were formed at the RIPE 52 Meeting. The RIPE Data Protection Task Force is working together with the RIPE NCC to ensure registry data and data in the RIPE Database complies with relevant data protection regulations. The RIPE IP Anti-Spoofing Task Force focuses on promoting the deployment of ingress filtering.

In 2006, we made considerable efforts to develop and improve our public relations. Central to these activities was the focus on increasing the dialogue between the RIRs and local governments and regulators.

Through the RIPE NCC Roundtable Meetings for Governments and Regulators and the dedicated 'Government and Industry Dialogue' sessions at RIPE Meetings, we continued to explain and promote the RIRs' well-established, community-driven policy-making process. Governments, as part of the Internet community, are key stakeholders and we encourage open, two-way communication with them about their concerns. Representatives from the RIPE NCC also attended meetings at the European Commission and European Parliament.

As a result of our participation in the World Summit on Information Society (WSIS) in 2005, we were also involved in the organisation of the first Internet Governance Forum (IGF). The forum was held in October in Greece and was a great success. It facilitated multi-stakeholder participation and offered a platform where views could be freely exchanged. Together with the other RIRs, the IGF enabled the RIPE NCC to participate in free and open discussion with governments, regulators and industry bodies from around the world on the future of the Internet.

The year ahead

During 2007, the RIPE NCC will launch its new Customer Services Desk. This will enable us to resolve customer enquiries and user requests more efficiently. Over the year, a stakeholder analysis survey will also be prepared to help us find out how we can better serve the different groups who use our services, what they think of the RIPE NCC and where improvements can be made. And, we will continue our focus on external relations, particularly in developing and strengthening relations with governments at a local level.

In 2006, we began to lay the foundations for new processes and activities that will affect our operations in the future. As a result of preparation during the year, we were able to offer 32-bit AS Number assignments as of 1 January, 2007, as requested by the RIPE community. Throughout 2007, we will continue our efforts on planning for certification of Internet number resources and will further investigate the technical, administrative and procedural elements needed to develop a production prototype.

Over the years, we have become a source of statistics on how the Internet operates. One of the key activities in 2007 is to promote our 'Information Services' and to make these services more accessible and user-friendly. In addition to this, the RIPE NCC's Science Group will continue to research, write, publish and present scientific and technical material and propose and develop new services and activities for the benefit of our members and the RIPE community.

We will also continue to encourage government and regulator involvement in the RIPE community and increase our efforts to ensure that these sectors become regular participants in this community. Due to the positive outcome of the first IGF, the RIPE NCC is contributing to the organisation and agenda-setting for the second IGF, which will be held in Brazil in November, 2007. We also look forward to continuing our efforts with other industry organisations, such as the International Telecommunication Union (ITU), the Internet Assigned Numbers Authority (IANA), the Internet Corporation for Assigned Names and Numbers (ICANN) and the Internet Society (ISOC) throughout the year.

Once again, I'd like to thank our members and the RIPE community for their ongoing support and continued participation in the community-led development of the activities and policies that form the basis of the RIPE NCC's mission.

Axel Pawlik
RIPE NCC Managing Director

About the RIPE NCC

The Réseaux IP Européens Network Coordination Centre (RIPE NCC) is an independent, not-for-profit membership organisation. At the end of 2006, we supported **4,722** members in the **71** countries in our service region. We are based in Amsterdam, the Netherlands, and have around 100 staff.

The RIPE NCC supports the operation and development of the Internet through the technical coordination of the Internet infrastructure as one of the world's five Regional Internet Registries (RIR).

We are an open and transparent, neutral and impartial organisaton and have no commercial interests or influences. We operate as a bottom-up and self-governing organisation. This means that the policies and procedures that govern the way we work are proposed, discussed and adopted by our members and the RIPE community.

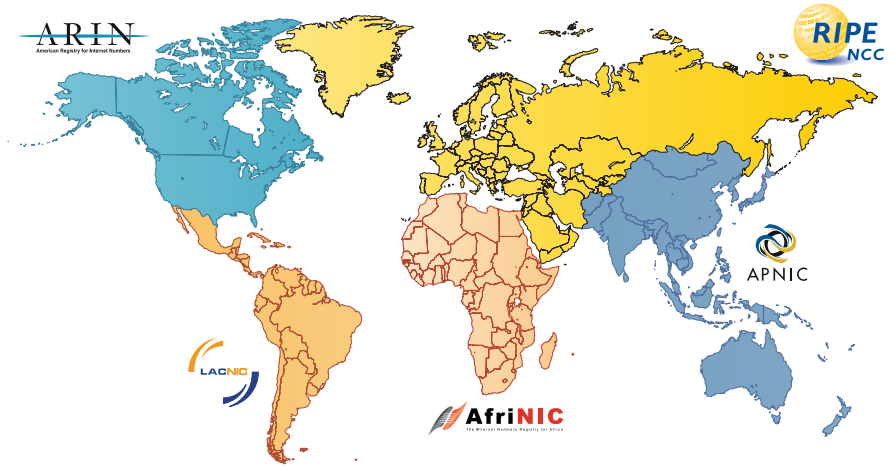
The RIPE NCC performs activities for the benefit of the membership, primarily activities that the members need to organise as a group, although they may compete with each other in other areas.

Our Role as a Regional Internet Registry (RIR)

As the RIR for Europe, the Middle East and parts of Central Asia, we provide Internet number resources, such as IPv4 and IPv6 address space and Autonomous System Numbers (ASNs), to our members. The Internet Assigned Numbers Authority (IANA) allocates blocks of address space to all five RIRs. The RIRs then assign parts of these blocks of address space to their own members.

RIRs maintain registration data for these Internet number resources and ensure that the distribution of them is fair and according to the policies set by their members and the wider Internet community.

Map showing the regions served by each RIR



The other Regional Internet Registries (RIRs) are:

- **AfriNIC** – supporting Africa
- **APNIC** – supporting the Asia Pacific Region
- **ARIN** – supporting North America
- **LACNIC** – supporting Latin America and the Caribbean

More information about the RIPE NCC can be found at: www.ripe.net/info/ncc/

Other Services and Activities

In addition to the services directly related to the assignment and allocation of Internet number resources that we provide to our members, the RIPE NCC also supports the operation and development of the Internet for the benefit of the Internet community as a whole. This includes:

Database Services:

- The development, operation and maintenance of the RIPE Database and the operation of a Routing Registry (RR)

Community Support and Outreach:

- Administrative support for RIPE Working Groups
- Facilitation of RIPE Meetings, Regional Meetings and Roundtable Meetings for Governments and Regulators
- Representation of the RIPE NCC, our members and the RIPE community at industry-related events and when liaising with governments and regulators

Technical Services:

- Operation of K-root, one of the world's 13 root name servers
- Reverse Domain Name System (rDNS) delegations

Information Services:

- The Test Traffic Measurement Service (TTM): continuous monitoring of a network's connectivity to other points on the Internet
- Domain Name System Monitoring (DNSMON): an overview of how DNS root servers and some Top-Level Domain (TLD) name servers are functioning
- The Routing Information Service (RIS): keeps track of changes in the global Internet routing system
- Hostcount: a measurement service providing neutral statistics on the functioning of the Internet

The general Internet community in the RIPE NCC's service region is often referred to as the RIPE community. The RIPE community consists of RIPE NCC members and anyone else with an interest in the Internet. Several public mailing lists are used by the RIPE community to facilitate discussion. The RIPE NCC maintains RIPE mailing lists.

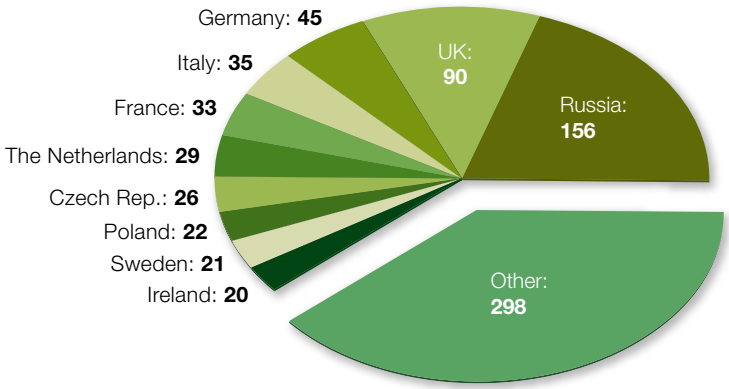
The RIPE NCC and Réseaux IP Européens (RIPE)

RIPE is a collaborative forum open to all parties with an interest in the technical development of the Internet. Although similar in name, the RIPE NCC and RIPE are separate entities that are highly interdependent. The RIPE NCC provides administrative support to RIPE, such as the facilitation of RIPE Meetings and providing administrative support to RIPE Working Groups. More information about RIPE and RIPE Working Groups can be found on page 33.

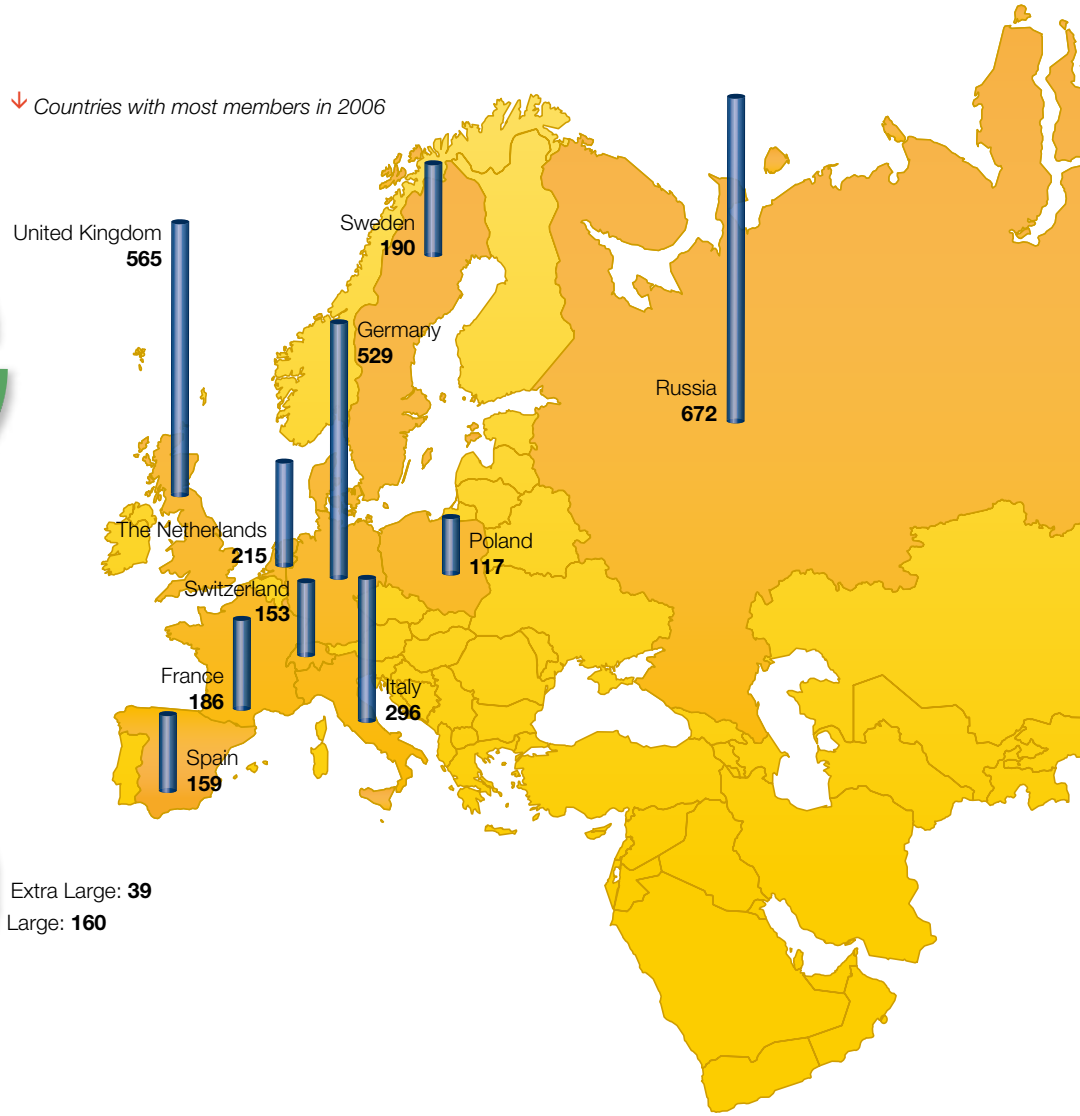
Membership Overview 2006

- Total number of members at 31 December 2006: **4,722** members, an increase of 12% on 2006
- Total number of applications: **775**
- Net growth: **512** members (as a result of mergers and closures)
- Country with most new members: Russia, **145** new members

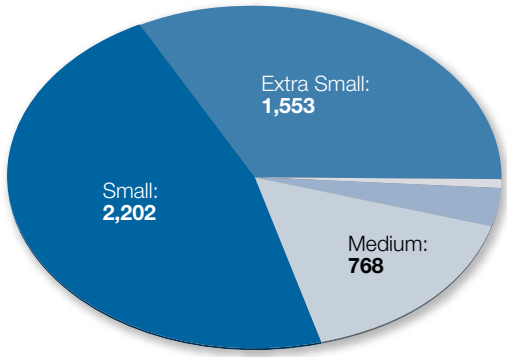
Applications for membership in 2006, per country



Countries with most members in 2006



Number of members in each billing category, 2006



Extra Large: **39**
Large: **160**

Structural Overview

The organisation consists of members, an Executive Board and RIPE NCC staff.

Members
In order to request IPv4 or IPv6 addresses and Autonomous System (AS) Numbers, the requester must be a member of a Regional Internet Registry (RIR), such as the RIPE NCC. Anyone can become a member of the RIPE NCC. The only requirement is payment of membership fees. Most of our members are Internet Service Providers (ISPs), telecommunication organisations, large corporations, academic institutions and government bodies.

RIPE NCC members can:

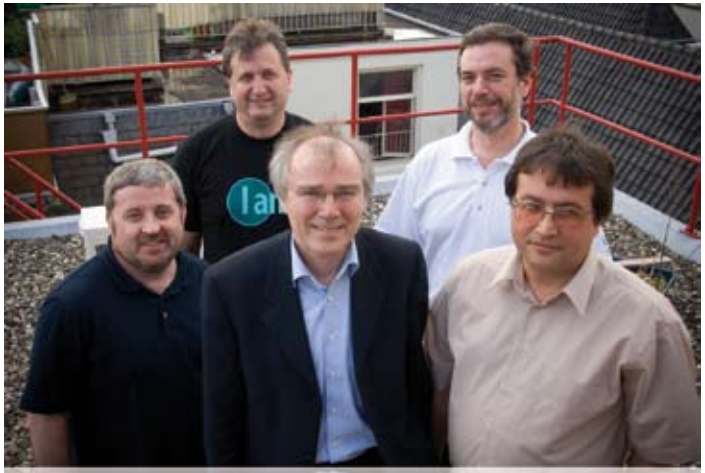
- Request Internet number resources
- Use the other services that the RIPE NCC provides to members and non-members, such as the Routing Information Service (RIS) or the Test Traffic Measurement (TTM) service
- Nominate and elect candidates onto the RIPE NCC Executive Board
- Adopt the RIPE NCC Charging Scheme each year during the RIPE NCC General Meeting
- Approve the Financial Report each year at the RIPE NCC General Meeting
- Provide input for, and feedback on, the RIPE NCC's Activity Plan and Budget
- Give general feedback on the RIPE NCC's activities and services through participation in RIPE Working Groups, mailing lists and the RIPE NCC General Meetings
- Propose a resolution to be adopted during the RIPE NCC General Meetings

Membership Fees
Our members are charged an annual service fee based on the services that the member receives from the RIPE NCC. These services are related to distributing Internet number resources to a member. The annual fee charged is related to the workload involved in providing the services requested by a member.

Yearly Fee 2006 (EUR)

Extra Small	1,500
Small	2,000
Medium	2,750
Large	4,250
Extra Large	5,750
Sign-up Fee	2,000

More information about becoming a member and the fees involved is available at: www.ripe.net/membership



↑ *RIPE NCC Executive Board. Front (from left):* ***Jim Reid*** *(Member),* ***Kees Neggers*** *(Chairman),* ***Dmitry Burkov*** *(Member). Back (from left):* ***Nigel Titley*** *(Secretary),* ***János Zsakó*** *(Treasurer)*

The Executive Board:

- Is elected by the RIPE NCC members during RIPE NCC General Meetings
- Appoints the RIPE NCC management
- Is responsible for the overall financial situation of the RIPE NCC and for keeping the records that allow the current financial situation to be evaluated at any moment
- Represents the membership and provides guidance to the RIPE NCC Managing Director
- Approves the RIPE NCC Activity Plan and Budget each year

The staff:

- Manage and perform the RIPE NCC's operations
- Facilitate RIPE NCC services
- Provide administrative support and facilitation to the RIPE Working Groups and to the RIPE community

Defining, Setting and Evaluating RIPE NCC Services and Activities

All the activities that we perform and the services that we provide are openly defined, discussed and evaluated by our members and by the RIPE community. Each year, the activities that we propose to perform in the coming year are detailed in the RIPE NCC Activity Plan. Input into the Activity Plan is collected from our members and the RIPE community, together with feedback on our activities, via the RIPE Working Groups and RIPE Mailing Lists. The RIPE NCC Executive Board approves the RIPE NCC Activity Plan each year. The RIPE NCC Activity Plan is available to the public at:
www.ripe.net/ripe/docs/ap.html

RIPE NCC General Meetings

All RIPE NCC members are encouraged to attend the RIPE NCC General Meetings that are held twice a year. In 2006, both general meetings took place during the RIPE Meetings. Members vote to accept the Financial Report and adopt the Charging Scheme as stated in the resolutions. Members also elect the Executive Board. During the meeting, feedback on the RIPE NCC can be given directly to the Executive Board. Members must register in advance to attend. For more information see:
www.ripe.net/membership/gm/

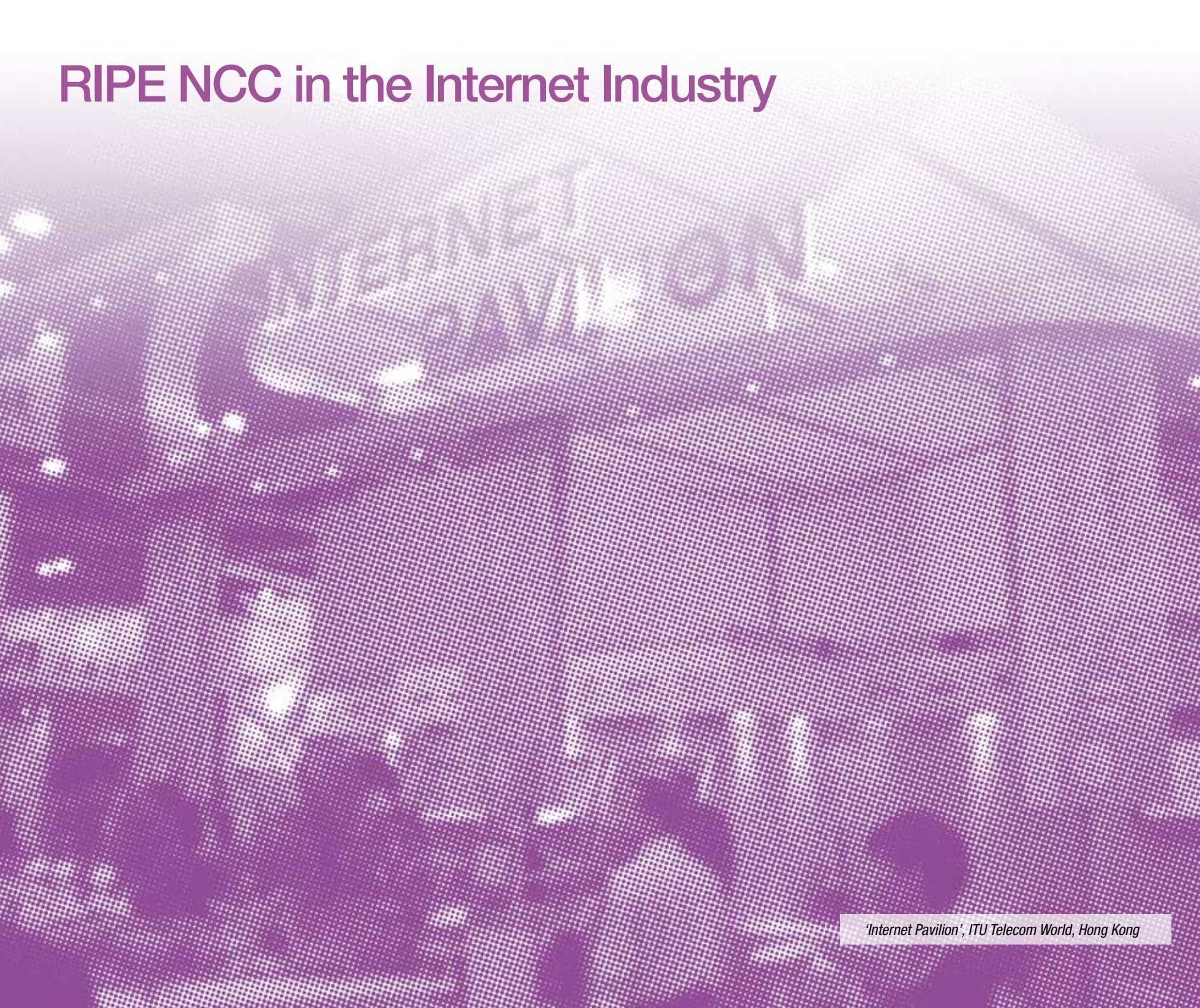
Corporate Governance and Arbitration

The RIPE NCC **Articles of Association** can be found at: www.ripe.net/ripe/docs/articles-association.html

The RIPE NCC conducts corporate governance best practice where possible. Our organisational, management and Executive Board structures are transparent. There is a clear division of responsibilities and duties between our members, the RIPE NCC Executive Board and the RIPE NCC's Managing Director, as stated in the RIPE NCC Articles of Association. The Articles of Association were revised in 2003 to enable improvements of the operational management within our organisational structure.

An arbitration committee is also in place to resolve any conflict or disputes between our members or between members and the RIPE NCC in a timely, professional manner. The arbitration committee consists of representatives from a variety of backgrounds and fields of expertise and is open to anyone. It operates as a neutral and objective body. More information about the arbitration committee can be found at: www.ripe.net/ripe/docs/arbitration.html

RIPE NCC in the Internet Industry



'Internet Pavilion', ITU Telecom World, Hong Kong

Internet Industry Activities 2006

↑ *The Internet Governance Forum (IGF), Greece*

In 2006, we added a Public Affairs Officer to our communications team to coordinate outreach and public policy work. Throughout the year, we continued to develop and promote relations with governments and regulators to enhance the cooperation between the public and private sector on Internet management issues.

The Internet Governance Forum (IGF)

Working with the other Regional Internet Registries (RIRs) and other industry partners, we became closely involved in preparations for the IGF. The RIPE NCC participated in multi-stakeholder consultations prior to the meeting. The RIRs were also represented on the IGF's Advisory Board by two of the other RIR's directors. United Nations Secretary-General Kofi Annan named Raúl Echeberría, Executive Director of LACNIC and Adiel Akplogan, CEO of AfriNIC, to serve on the IGF's 46-member Advisory Group.

The IGF took place in Athens, Greece, from 30 October to 2 November 2006, and was an outstanding success. It enabled multi-stakeholder participation and provided a platform where views could be freely exchanged by all involved. Several potential work programs were identified and forwarded to the second IGF, which will be held in Brazil in November 2007. More information about the IGF can be found at: www.igfgreece2006.gr

International Telecommunications Union (ITU) Telecom World, Hong Kong

↑ *The co-sponsored 'Internet Pavilion' at the ITU Telecom World, Hong Kong*

The RIPE NCC also participated in the 'Internet Pavilion' at the ITU Telecom World, Hong Kong in December. The Internet Pavilion was co-sponsored by the RIRs, the Internet Corporation For Assigned Names and Numbers (ICANN) and the Internet Society (ISOC). Representatives from all of these organisations were on duty each day to explain and promote the existing open, transparent, bottom-up development processes of the Internet community. The Internet Pavilion aimed to give attendees an understanding of why a collaborative and cooperative governance model is essential to the development and success of the Internet. More information about the ITU is available at:
www.nro.net/governance/itu-exhibition-info.html

ITU TELECOM WORLD 2006
Hong Kong
4-8 December

↑ *RIPE NCC Roundtable Meeting, February 2006*

Roundtable Meetings for Governments and Regulators

The third RIPE NCC Roundtable Meeting for Governments and Regulators was held on 7 February, 2006 and was attended by representatives from 12 countries. The Roundtable Meetings are designed to encourage and promote dialogue between the Internet industry and governments about Internet administration issues.

During the meeting, concepts such as IPv4 and IPv6 address space distribution, root name servers and the Regional Internet Registry (RIR) system are discussed. The meetings provide attendees with an overview of the main elements involved in the technical coordination of the Internet. Relevant topics, such as security in Internet routing and how to participate in policy-making, are also discussed. More information about the Roundtable Meetings can be found at: www.ripe.net/meetings/roundtable/

Outreach to Governments and Regulators

Building on our position as a neutral organisation with proven expertise in the technical coordination of IP networking, RIPE NCC representatives attended several meetings at the European Commission and European Parliament. These meetings included IGF briefing and debriefing sessions and consultations on the 2006 review of the European Union regulatory framework for electronic communications.

We also invited governments and regulators to attend the RIPE NCC Regional Meetings (see page 31) and the RIPE Meetings (see page 33). During the RIPE 52 Meeting in Istanbul, a lunch meeting was held with meeting attendees from the government and regulator sectors to discuss how their specific needs could be met. As a result of this, a dedicated government and industry dialogue session was held during RIPE 53 in Amsterdam. These sessions will continue during future RIPE Meetings. All governments and regulators are encouraged to participate and exchange their views.

On 24 October, 2003, APNIC, ARIN, LACNIC and the RIPE NCC entered into a **Memorandum of Understanding (MoU)** to form the NRO. The fifth RIR, AfriNIC, signed the MoU in April 2005.

The Number Resource Organization (NRO)

The NRO serves as a coordinating mechanism of the Regional Internet Registries (RIRs) to act collectively on matters relating to the interests of the RIRs. It 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.

The directors of each RIR make up the NRO Executive Council (EC). The EC positions of Chairman, Secretary, Treasurer and Member rotate between the RIRs on a yearly basis. In 2006, ARIN served as Chair of the NRO.

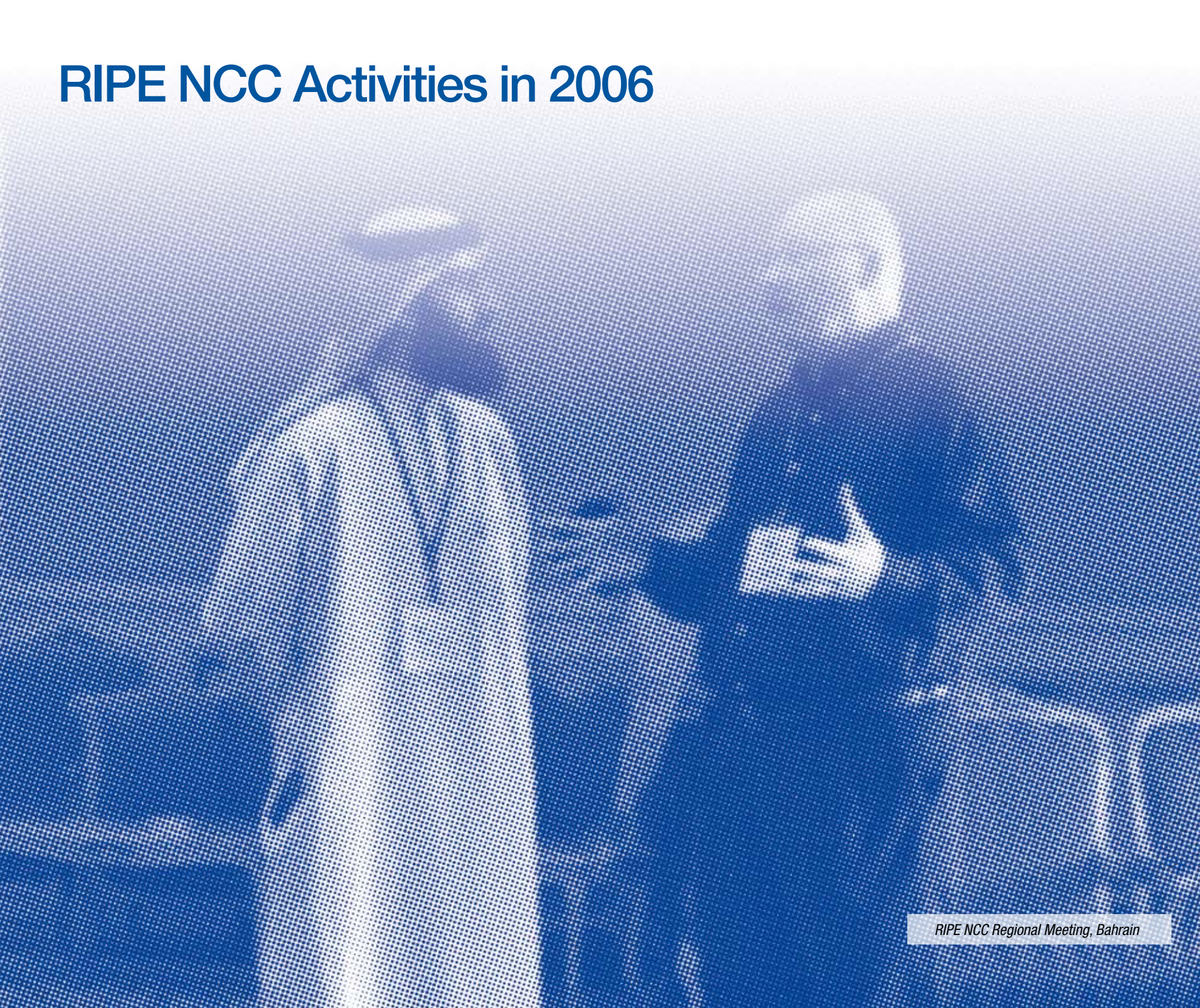
The NRO Number Council (NC) is made up of three nominees from each RIR's local Internet community and acts as an advisory body to the NRO EC. During the RIPE 53 Meeting in 2006, Dave Wilson of HEAnet was elected from the RIPE NCC's service region to take the vacant seat on the NRO NC. The NRO NC also performs the role of the Address Supporting Organization Address Council (ASO AC). More information about the NRO can be found at:
www.nro.net

The Address Supporting Organization (ASO)

The ASO is one of the three supporting organisations called for in the Internet Corporation for Assigned Names and Numbers (ICANN) bylaws. The ASO reviews recommendations on global IP address policy and advises the ICANN Board on these matters.

The ASO Address Council (AC) appoints directors to the ICANN Board of Directors. ASO AC members are appointed from each of the five RIR regions. The local Internet community in each region selects two members and the Executive Board of each RIR appoints one member to the ASO AC. The ASO AC secretariat function rotates between the RIRs on an annual basis. In 2006, ARIN performed the secretariat function.
More information about the ASO is available at:
www.ripe.net/info/resource-admin/aso.html

RIPE NCC Activities in 2006



RIPE NCC Regional Meeting, Bahrain

Registration Services

Allocations and assignments made by the RIPE NCC in 2006:
IPv4: **1238** allocations
IPv6: **86** allocations
ASN: **2051** assignments

As a Regional Internet Registry (RIR), our most prominent activity is to distribute IPv4 and IPv6 addresses and Autonomous System (AS) Numbers in the RIPE NCC service region. Our goal is to ensure fair distribution of unique Internet resources and maintain accurate registration data.

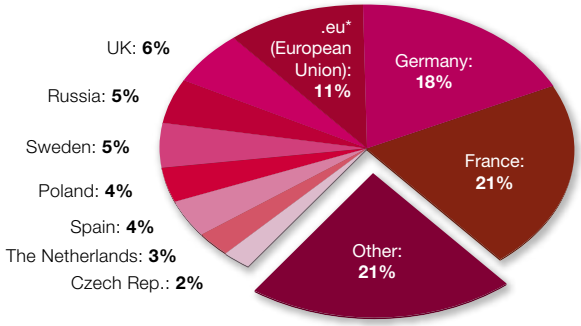
Resource Requests

In 2006, **14,358** requests for Internet resources were processed, a slight increase from the 14,257 requests for Internet resources in 2005. These requests dealt with Provider Aggregatable (PA) assignments, Provider Independent (PI) assignments, IPv4 and IPv6 allocations, registry issues, Autonomous System (AS) Number assignments, anycast assignments and audit issues. During the year, service levels remained stable and all requests for resources were responded to within one working day.

IPv4 Allocations 2006

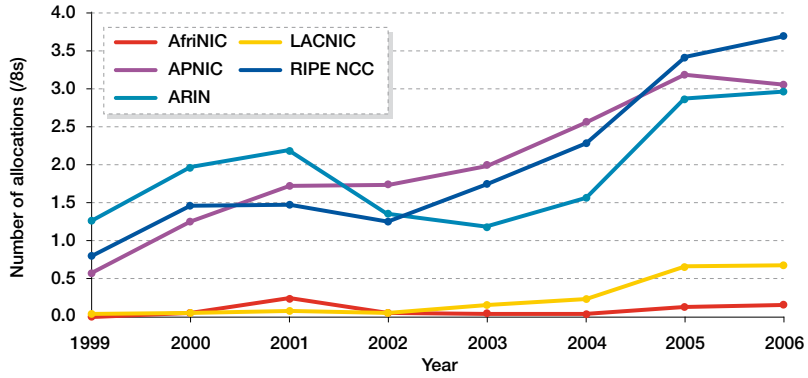
The Internet Assigned Numbers Authority (IANA) allocated three slash (/) 8s (48 million IPv4 addresses – see chart on page 19 for 'slash notation') to the RIPE NCC in 2006. We allocated about 60 million IPv4 addresses during 2006. This is an increase of 5.2% IPv4 addresses allocated compared with year 2005.

RIPE NCC IPv4 allocations, 2006



* .eu refers to allocations made to members who choose the European Union as their office or network location.

IPv4 allocations, all RIRs, 1999-2006 (/8s)

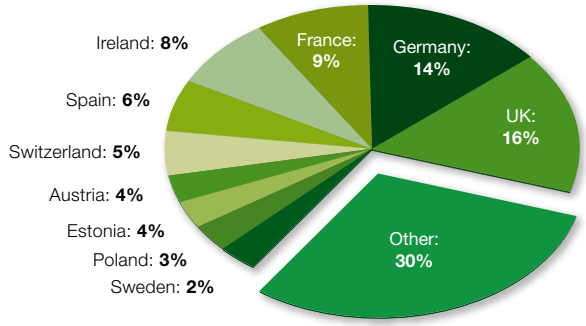


IPv6 Allocations 2006

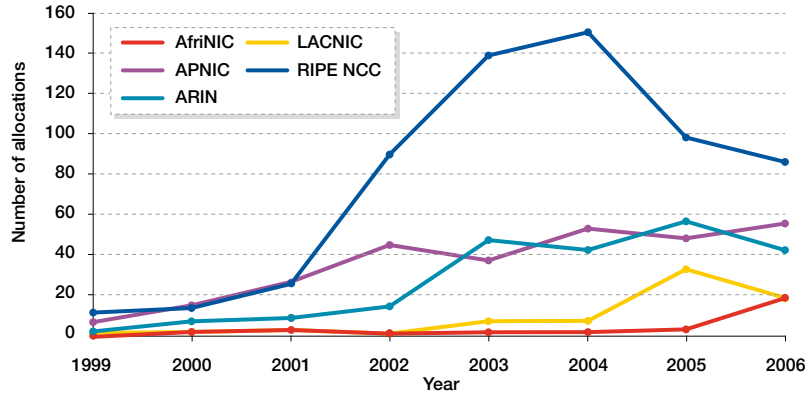
The IANA allocated IPv6 address space equal to a /12 to the RIPE NCC in 2006. During the year, the RIPE NCC made 86 IPv6 allocations. 17 of these IPv6 allocations were larger than the minimum /32 prefix length. Four /48 assignments were made to Internet Exchange Points (IXPs) during 2006. The total number of IPv6 assignments in 2006 was slightly less than in 2005, when a total of 94 IPv6 allocations were made. →

Although fewer assignments were made in 2006, the total number of individual IPv6 addresses assigned in 2006 was larger than in 2005 because of the size of each allocation.

RIPE NCC IPv6 allocations, 2006



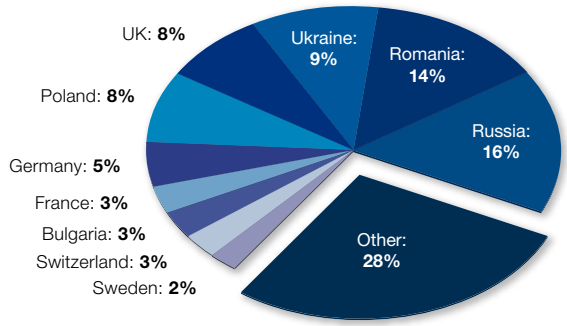
IPv6 allocations, all RIRs, 1999-2006



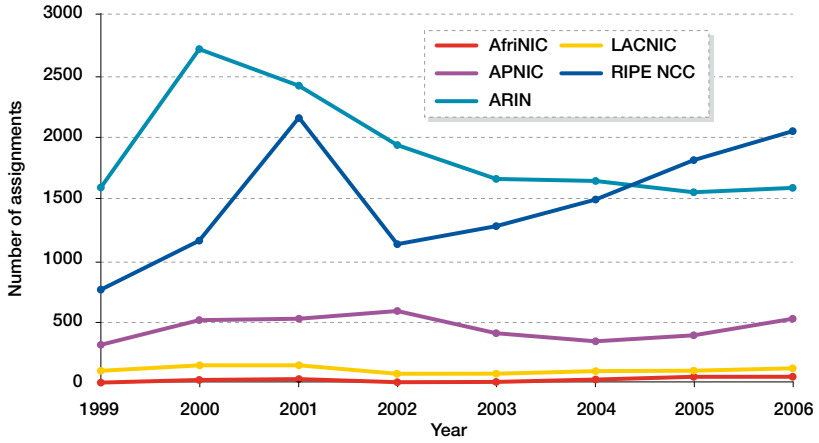
Autonomous System Numbers (ASN) Assignments 2006

The IANA allocated two blocks of 1,024 AS Numbers to the RIPE NCC in 2006. We assigned 2,051 AS Numbers during the year. This is an increase of 12.8%, compared to the 1,819 AS Numbers that were assigned during 2005.

RIPE NCC ASN assignments, 2006



ASN assignments, all RIRs, 1999-2006



The Internet Assigned Numbers Authority (IANA) allocates blocks of address space to all the Regional Internet Registries (RIRs). RIRs then allocate parts of this address space to their own members. To find out how many IPv4 addresses are contained in each 'slash notation' prefix, see the chart below.

IPv4 Address Space
CIDR Chart: Subnet masks in slash notation

pref	no. of addrs	pref	no. of addrs
/32	1	/16	64 K
/31	2	/15	128 K
/30	4	/14	256 K
/29	8	/13	512 K
/28	16	/12	1 M
/27	32	/11	2 M
/26	64	/10	4 M
/25	128	/9	8 M
/24	256	/8	16 M
/23	512	/7	32 M
/22	1 K	/6	64 M
/21	2 K	/5	128 M
/20	4 K	/4	256 M
/19	8 K	/3	512 M
/18	16 K	/2	1024 M
/17	32 K		

Find out more about IP addressing and slash notation at: www.ripe.net/info/info-services/addressing.html

New Resources

Two policies introducing two new types of assignments, 32-bit AS Numbers and address space for anycasting, were accepted during 2006. During the year, we updated our procedures for these additions and made the first anycast assignments. The first 32-bit AS Numbers were ready to be assigned as of 1 January 2007. More information about these policies can be found on page 27 or online at: www.ripe.net/ripe/policies/

Address Space Returned

During 2006, around 800,000 unused IP addresses were returned upon our request. This address space will be used for future Provider Independent (PI) address space assignments.

Request Forms

In 2006, we completed our project to review, edit and republish request forms and supporting notes. The wording of the forms was changed without altering the content to make them easier to use. All forms are available for members via the Local Internet Registry (LIR) Portal: https://lirportal.ripe.net/

We also created an ENUM (see page 26) request form, available at: www.ripe.net/enum/

Internal Procedures Formalised

During the year, we also formalised all of our internal assignment and allocation procedures. This enables us to improve our consistency, to ensure fair distribution of Internet number resources and to enable stakeholders to see how data is registered. Internal audit procedures were also rewritten in order to better facilitate our audit process. Further details about audits are available at: www.ripe.net/rs/audit/

The Local Internet Registry (LIR) Portal

Our **members** are often referred to as **'Local Internet Registries' (LIRs).** Both these terms are used interchangeably and mean the same.

↑ *LIR Portal Screenshot*

The LIR Portal is the secure, web-based gateway that offers an easy way for our members to manage their allocations and assignments and use our services. The LIR Portal is available to all members and around 80% have an active LIR Portal account. By using the LIR Portal, members can:

- Request Internet number resources (IPv4, IPv6 and AS Numbers)
- Update their own records in the RIPE Database
- View the status of open tickets
- Pay fees
- Register for RIPE NCC Training Courses, RIPE Meetings and RIPE NCC Regional Meetings

During 2006, we continued to encourage members to make their Internet number resource requests via the LIR Portal. Over 60% of Internet resource requests in 2006 were made using the LIR Portal, almost three times as many as in 2005. With its standard request forms, the LIR Portal enables members to provide more relevant information in their requests. These requests can be processed much faster than those submitted by e-mail.

Improvements

In 2006, we made several improvements to the LIR Portal's usability, including the addition of 'RS' (Serbia) and 'ME' (Montenegro) as accepted country codes and automatic capitalisation of country, nic-handle and maintainer attributes in the request forms. For more information about the LIR Portal, see: https://lirportal.ripe.net/

The RIPE Database

The RIPE Database Help Desk can be contacted at: ripe-dbm@ripe.net

More information and documentation about the RIPE Database can be found at: www.ripe.net/db/

The RIPE Database contains information about IPv4 and IPv6 allocations and AS Number assignments as well as information about the organisations, contacts and reverse Domain Name System (rDNS) delegations relating to them.

We maintain and operate this database. Anyone can use the database to make queries. During 2006, almost a billion queries were served – an average of 31 queries per second, mostly for IP address lookups.

The RIPE Database also includes the RIPE Routing Registry (RR), which is part of the global Internet Routing Registry (IRR). The IRR ensures the stability and consistency of global Internet routing by sharing information between network operators. The IRR consists of several databases, including the RIPE RR, that mirror each other and in which network operators can publish their routing policies and routing announcements. More information about the RIPE Database and the IRR can be found at: www.ripe.net/db/

New RIPE Database Features in 2006

- The **irt** Object

The 'incident response team' (irt) database object lists details of who to contact in case of security incidents and abuse complaints on a particular network. Following discussion in the RIPE Database Working Group, improvements to the query behaviour of the **irt** object were proposed and implemented. The changes increased usability and accessibility of information related to **irt** objects.

- Objects and Attributes

A more formal syntax of the 'nserver:' attribute was implemented to support glue records in the Domain Name System (DNS). These changes were made to further support the DNS provisioning system. Changes were also made to several objects and attributes to support the introduction of 32-bit AS Numbers.
More information about 32-bit AS Numbers can be found on page 27.

- CRYPT-PW

A proposal to phase out CRYPT-PW as an authentication method was adopted and is in the process of being implemented. This is another step in further securing access to the database's update mechanism.

- 'Getting Started' manual

The RIPE Database 'Getting Started' manual was updated and republished at: www.ripe.net/docs/db-start.html

Following requests from the RIPE community, registration data is also available using the Internet Registry Information Service (IRIS). The IRIS server can be accessed using the IRIS protocol. More information about IRIS can be found at: www.ripe.net/db/iris-pilot/

RIPE DB Software

The RIPE Database software is published under an open source licence. The Concurrent Versions System (CVS) is used to publish the software and Bugzilla is used to track bugs and requests.

RIPE Database Service and Support

The RIPE Database Help Desk dealt with an average of 215 enquiries per week in 2006.

Data Protection Task Force

During the RIPE 53 Meeting, the RIPE Data Protection Task Force (DP-TF) was created to work with the RIPE NCC on developing the procedures and practices required to ensure that registry data and the data in the RIPE Database comply with relevant data protection regulations. More information is available at: www.ripe.net/ripe/tf/dp/

Deployment of Internet Security Infrastructure (DISI)

During 2006, we were involved in on-going discussions with the RIPE community and the other Regional Internet Registries (RIRs) about certification of Internet number resources. The use of certification in the future would enhance the integrity of the Internet resource distribution structure and the use of these resources in operating the Internet.

Work on this issue so far has involved investigating routing security issues and the prospect of issuing 'public key' certificates for each IPv4 or IPv6 address assigned and for each Autonomous System (AS) Number allocated by an RIR.

In 2006, the RIPE NCC participated in the inter-RIR design team to discuss implementation issues and in the Internet Engineering Task Force's (IETF) Secure Inter-Domain Routing (SIDR) Working Group to discuss the required standards.

During the RIPE 53 Meeting, the RIPE Certification Task Force (CA-TF) was set up by volunteers from the RIPE community and key RIPE NCC staff. The CA-TF will participate in any trials and provide feedback to the RIPE NCC and the RIPE community. More information about certification and the Certification Task Force can be found at:
www.ripe.net/ripe/tf/certification/

Domain Name System (DNS) Services

DNS Services

As part of the technical support for allocated address space, we provide primary and secondary Domain Name System (DNS) services for reverse domains. We also provide a secondary DNS service for country code Top-Level Domains (ccTLDs). Secure delegations are available in all the reverse zones that we maintain. We run the Tier-0 registry and the DNS service for the e164.arpa domain to support ENUM. More information about ENUM can be found on page 26.

Reverse Delegation

We provide reverse domain delegations for IPv4 and IPv6 address space allocated by the RIPE NCC. This continues to be one of our primary DNS activities. The RIPE Database, the authoritative source for reverse zones, supports the management of reverse DNS, enabling Local Internet Registries (LIRs) to maintain their own reverse delegations by updating their information.

In January 2006, Domain Name System Security (DNSSEC) deployment in the reverse DNS tree was completed with all reverse zones being signed. We also began to support secure delegations in these zones. More details about reverse delegation are available at:
www.ripe.net/reverse/

Secondary DNS

The secondary DNS service ensures the reliability and robustness of the general DNS infrastructure and forms an important part of the RIPE NCC's DNS service. We provide a secondary DNS service for other Regional Internet Registries' (RIRs) reverse zones and for some country code Top-Level Domain (ccTLD) organisations, mainly those in developing countries.

Our secondary DNS service offering has changed over recent years. Some TLDs have become quite large and many TLD operators are now stable, well-funded organisations. Operating secondary name servers has become more complex and costly with an increased load and Denial of Service (DoS) attacks on such servers. At the same time, commercial DNS server operations have become available. In the light of these changes, it is no longer appropriate for us to provide a free secondary DNS service for all TLDs and we are selectively phasing out this part of the DNS service. While our membership is in favour of this, it has also stated that the stability of the DNS is crucial. Therefore, the funding of a secondary DNS service for those TLDs that have difficulty obtaining and paying for commercial DNS services will continue. At the end of 2006, we were providing a stable secondary DNS service to 79 ccTLDs.

"Anycast" refers to the network addressing and routing scheme in which data is routed to the 'nearest' or 'best' destination.

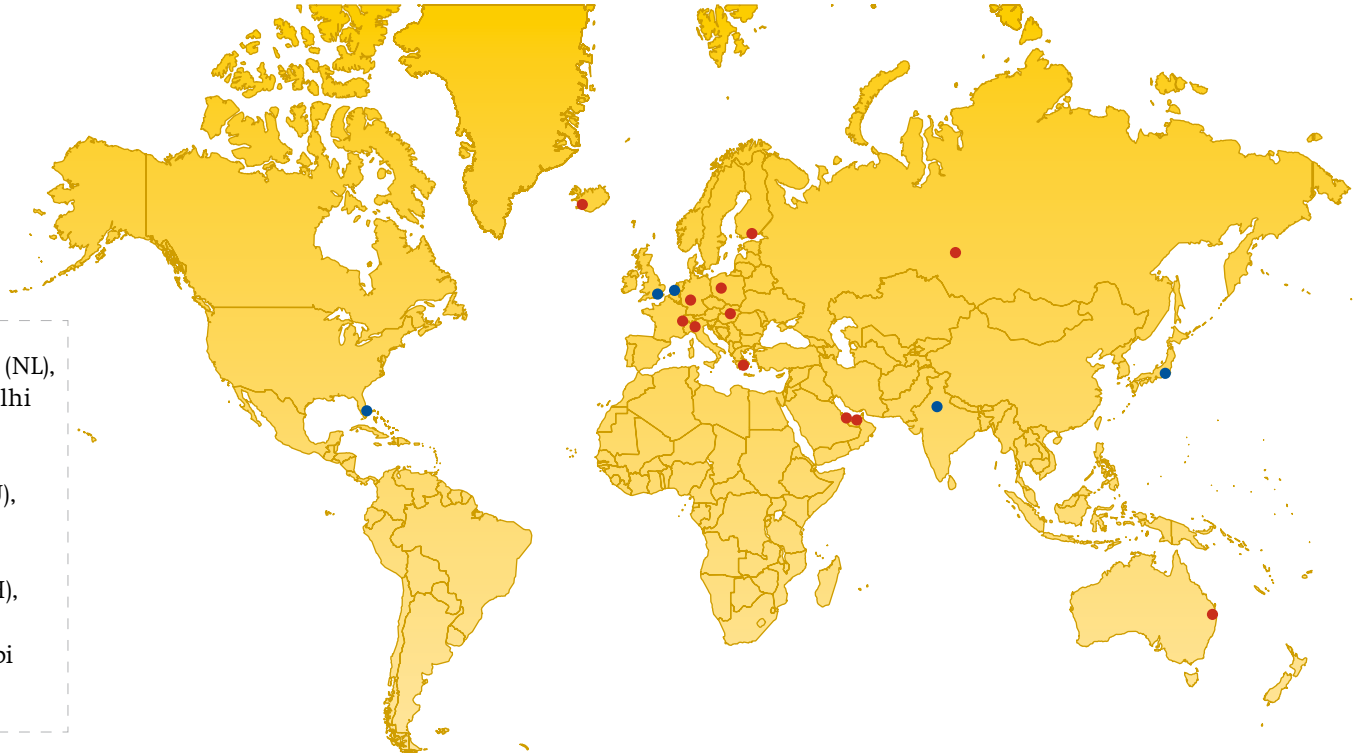
K-root and Anycast

We also operate K-root, one of the Internet's 13 root name servers. Root name servers are a crucial part of the Internet Domain Name System (DNS) infrastructure. We have operated the K-root server since 1997, when the first server was installed at the London Internet Exchange (LINX). In January 2006, a new local instance of a K-root server was deployed in Russia. Currently, K-root consists of five globally available nodes and 12 nodes with local availability, all operated by the RIPE NCC.

During the year, we also completed research into understanding the impact of the anycast network on the DNS route service that we provide. This research was published as a RIPE Document and is available at: www.ripe.net/ripe/docs/ripe-393.html

We are now considering further deployment of anycast nodes into the geographical areas that are not effectively covered. More information about K-root can be found at: http://k.root-servers.org

Map showing K-root locations



- **Global nodes:** Amsterdam (NL), London (GB), Tokyo (JP), Delhi (IN), Miami (US)
- **Local nodes:** Budapest (HU), Milan (IT), Helsinki (FI), Reykjavík (IS), Poznan (PL), Frankfurt (DE), Geneva (CH), Athens (GR), Doha (QA), Novosibirsk (RU), Abu Dhabi (AE), Brisbane (AU)

ENUM

The RIPE NCC provides Domain Name System (DNS) operations for the e164.arpa zone (ENUM) in accordance with the instructions from the Internet Architecture Board (IAB). These instructions can be found at: www.ripe.net/enum/instructions.html

ENUM is the Internet Engineering Task Force (IETF) standard, as described in RFC3761, to map telephone numbers into the DNS according to the International Telecommunication Union (ITU) standard E.164.

The RIPE NCC delegates domains for E.164 country codes to entities requesting them (Tier-1 registries) after approval is given by the ITU Telecommunication Standardization Sector – Telecommunication Standardization Bureau (ITU-T TSB). The ITU-T TSB handles delegation requests following the ITU-T Study Group 2 (ITU-T SG2) interim procedures. More information about ENUM can be found at: www.itu.int/ITU-T/inr/enum/procedures.html

In 2006, the RIPE NCC made nine new ENUM delegations, one re-delegation and two delegation extensions. We also implemented full support for glue records for the e164.arpa delegations, along with automated checking of DNS configuration when changes to the delegations are submitted.

32-bit AS Numbers

Read ripe-353: 'ASN Missing In Action – A Comparison of RIR Statistics and RIS Reality' at: www.ripe.net/ripe/docs/ripe-353.html

Policy proposal 2005-12: '4-Byte AS Number Policy' can be found at: www.ripe.net/ripe/policies/proposals/2005-12.html

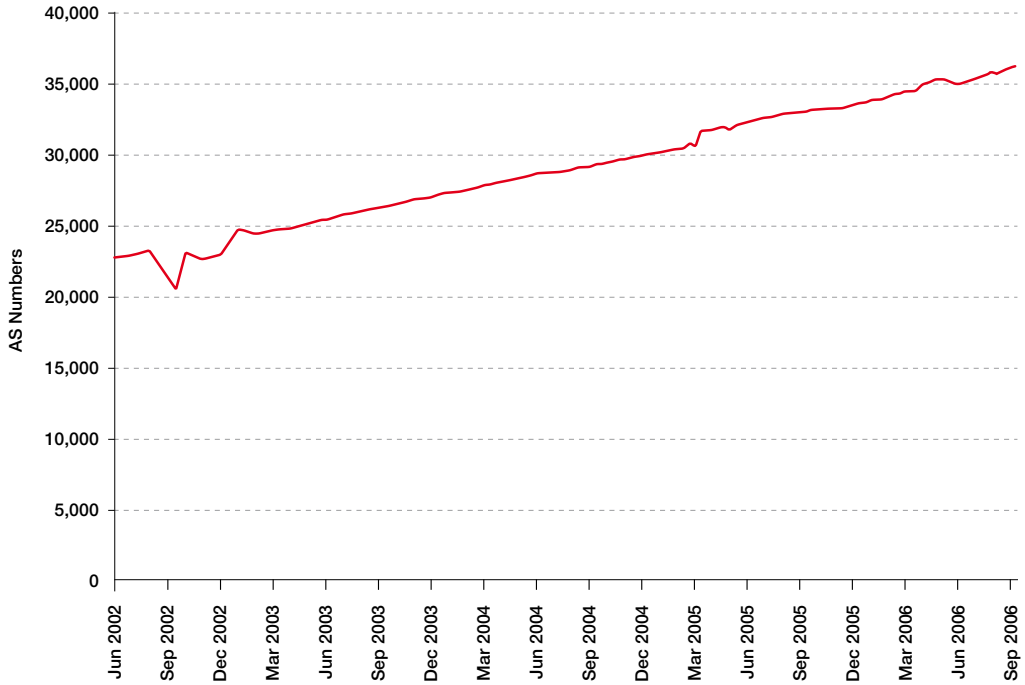
During 2006, we continued to work on 32-bit AS Numbers (ASNs) deployment. Currently, ASNs are represented by a 16-bit number. There are about 65,000 16-bit ASNs available.

In 2005, the RIPE NCC published ripe-353: 'ASN Missing In Action – A Comparison of RIR Statistics and RIS Reality'. This document showed that the pool of available 16-bit ASNs could run out by the year 2013. The agreed solution was to extend AS Number space to 32-bits, increasing the pool of ASNs to around four billion. The global Internet community asked the Regional Internet Registries (RIRs) to start allocating 32-bit ASNs as of 1 January, 2007.

In order to allow network operators to deploy 32 bit-ASNs, the RIRs needed to set up a mechanism to distribute 32-bit ASNs. During 2006, we carried out an investigation into which of our internal systems would be affected by the introduction of 32-bit ASNs. Subsequently, an internal task force was set up and changes were implemented.

The RIPE NCC's first 32-bit ASN trial request was completed successfully in November and we were ready to process requests on 1 January 2007. The supporting systems, such as the Routing Information System (RIS), Routing Registry Consistency Check (RRCC) and K-root were in the process of being updated at the end of 2006.

→ ***Total amount of AS Numbers over time, all RIRs***



Information Services

↑ *Test Traffic Measurement test-box*

Read the proposals relating to TTM at: www.ripe.net/ripe/policies/proposals/archive/

More information about the TTM service can be found at: www.ripe.net/ttm/

We offer several information services to our members and to the RIPE community, some free of charge. Because the RIPE NCC is a neutral, impartial and not-for-profit organisation, commercial interests do not influence the data collected. An overview of all information services can be found at: www.ripe.net/projects/

Test Traffic Measurements (TTM)

The RIPE NCC TTM service enables users to continuously monitor the connectivity of their networks to other points on the Internet using a neutral and reliable measurement system. TTM test-boxes are installed at participating sites and measurement traffic is sent between them. From this traffic, packet losses, delays and other parameters are determined according to the metrics developed by the Internet Engineering Task Force's (IETF) IP Performance Metrics (IPPM) Working Group. The test-boxes are also used for the Domain Name System Monitoring (DNSMON) service (see below). During 2006, five new TTM test-boxes were installed.

The RIPE Test Traffic Working Group provides feedback on the TTM service. A presentation on the future of the TTM service was given at the RIPE 52 Meeting and this resulted in the creation of the TTM Task Force (TTM TF). In 2005, the working group made two proposals and their implementation began in 2006. Proposal 2005-11: 'Multicast Monitoring on RIPE NCC Test Traffic Boxes' asked the RIPE NCC to monitor the performance of multicast networks. The first results of this were shown during the RIPE 53 Meeting. This presentation can be found at: www.ripe.net/ripe/meetings/ripe-53/presentations/cbm.pdf

The working group's second proposal, 2005-10: 'Consumer Broadband Monitoring Feasibility', asked the RIPE NCC to investigate the possibility of measuring performance to consumers with affordable devices. In collaboration with the University of Pisa, Italy, a prototype for this monitoring was developed and results presented at the RIPE 53 Meeting in October. The presentation can be viewed at: www.ripe.net/ripe/meetings/ripe-53/presentations/cbm.pdf

Domain Name System Monitoring (DNSMON)

The DNSMON service uses Test Traffic Measurement (TTM – see above) service test-boxes to provide an objective overview of DNS root servers and participating Top-Level Domain (TLD) name servers. The measurements show the availability of the root servers and are presented so that users can distinguish between server-side and client-side problems. We offer two DNSMON services, one of which is provided to TLDs together with the TTM service for a fee. The other is available to anyone for free. For more details about DNSMON, please see ripe-342: 'DNS Monitoring Service for TLD Administrators Service Description', available at: www.hostcount.ripe.net/ripe/docs/dnsmon.html

More information about RIS can be found at: www.ripe.net/ris/

The DNSMON service was launched in April 2005 and, by 2006, around 20 TLDs were using it. More information about DNSMON can be found at: http://dnsmon.ripe.net

Routing Information Service (RIS)

The RIS keeps track of changes in the global Internet routing system by collecting and storing the Border Gateway Protocol (BGP) routing information that is gathered from a peering session. This information is gathered by the 14 Remote Route Collectors (RRCs) located at the major Internet exchanges around the world. In 2006, these RRCs facilitated over 600 peering sessions. The fourteenth RRC was installed in São Paulo, Brazil, in January, 2006.

Several tools that enable users to search, analyse and monitor changes in the global routing system are available for free to the community. 'MyASN' is just one of the RIS's integrated tools, and it enables network administrators to monitor routing changes related to a network. There are now around 980 MyASN user accounts. More information on the tools available can be found at: www.ripe.net/projects/ris/tools/

The RIS Database stores data for a three-month period. All the raw data collected since the project started in 1999 is available at: www.ripe.net/projects/ris/rawdata.html

Hostcount

The RIPE NCC coordinates the collection of data from the DNS zones of the Top-Level Domains (TLDs) in our service region and publishes summary statistics. Hostcount has been performed since 1993, making it one of the world's longest running data collection projects on, and about, the Internet. During 2006, we began to develop a more accurate and scalable system. Accuracy will be improved by introducing a count of those hosts with individual in-addr entries and indicating whether counted hosts are actually visible in the BGP routing table. Scalability will be improved by deploying a 'Do It Yourself kit' at remote sites in order to spread the load associated with gathering and processing Hostcount data.

Training

Learn at your own pace in your own space with the RIPE NCC E-Learning Centre:

RIPE NCC E-Learning Centre

https://e-learning.ripe.net/

During 2006, staff from Local Internet Registries (LIRs) could take the following training courses:

- **LIR Training Course –** training our members how to request Internet resources and how to interact with the RIPE NCC.
- **Routing Registry (RR) –** for experienced network operators, the course explains the features of Routing Policy Specification Language (RPSL) and the Routing Registry (RR) and related tools. It also includes demonstrations of tools and interactive practical exercises.
- **DNS for LIRs –** providing information about the Domain Name System (DNS) services offered by the RIPE NCC. It covers the reverse DNS (rDNS) procedures and checks, as well as giving information about DNS Monitoring (DNSMON), K-root and anycasting. The course also covers DNS Security (DNSSEC) and the specific procedures to secure the in-addr.arpa zones.

In 2006, the RIPE NCC's Training Team gave:

- 56 LIR Courses
- 13 RR Courses
- 12 DNS for LIRs Courses

These courses were held in 31 countries throughout our service region, with over 1,900 LIR staff members attending. In addition, one-day seminars covering all three training courses were held alongside the RIPE NCC Regional Meetings (see next page) in Moscow and in Bahrain. These seminars were tailored specifically for the unique needs of our members in different regions.

↑ *RIPE NCC Training Course, Amsterdam*

Throughout the year, we continued to give training courses at venues provided by host companies. Additionally, we delivered several presentations during conferences and peering forums.

All RIPE NCC Training Courses are regularly updated to include new policies and modifications to processes and software, and to ensure that the information presented in the training courses is up-to-date.

For more information about RIPE NCC Training Services, see:
www.ripe.net/training/

Regional Support

Our regional activities help us to communicate more effectively with members throughout our service region about the specific local issues that affect their operations. These activities also enable members to provide feedback, enabling us to continuously evaluate and address their changing needs.

RIPE NCC Regional Meetings are held in various parts of our service region each year, bringing together the region's members, local governments and key players in the global and local Internet industry. These two-day events are free of charge and open to everyone, although registration is required.

The Regional Meetings enable us to understand the different technical, administrative and policy issues that affect members and industry organisations in a particular part of the RIPE NCC's service region. The meetings encourage dialogue and provide a platform for attendees to work together to identify key regional issues. Attendees can talk to with RIPE NCC staff and are shown how they can influence the RIPE Policy Development Process (PDP) and RIPE NCC activities. RIPE NCC Training Courses (see previous page) are also given during Regional Meetings.

↑ *RIPE NCC Regional Meeting in Doha, Qatar*

Meetings in 2006

Three RIPE NCC Regional Meetings were held during the year:

- January: **Doha, Qatar**
- September: **Moscow, Russia**
- November: **Manama, Bahrain**

More information about RIPE NCC Regional Meetings is available at:
www.ripe.net/meetings/regional/

Réseaux IP Européens (RIPE)

RIPE 53 Meeting, Amsterdam

About RIPE

↑ ***Rob Blokzijl***
RIPE Chair

RIPE (Réseaux IP Européens) is a collaborative forum open to all parties with an interest in wide area IP networks and the technical development of the Internet. It has existed since 1989. The RIPE community's objective is to ensure the administrative and technical coordination necessary to enable the operation of the Internet.

Although similar in name, the RIPE NCC and RIPE are separate entities. They are highly interdependent. The RIPE NCC provides administrative support to RIPE, such as the facilitation of RIPE Meetings and giving administrative support to RIPE Working Groups (see below).

The RIPE community is the collective term for any individual or organisation, whether members of the RIPE NCC or not, with an interest in the technical coordination of the Internet and the way the Internet is managed, structured or governed. It provides the RIPE NCC with crucial input from the public and the Internet industry. There are no membership requirements for participation in RIPE. All activities are performed on a voluntary basis, except those performed by the RIPE NCC, and decisions are formed by consensus, using the RIPE Policy Development Process (PDP – see page 35). More information about RIPE is available at:
www.ripe.net/ripe/

RIPE Working Groups

In order to discuss technical or service issues and policy proposals, the RIPE community formed a number of RIPE Working Groups. Each of the working groups uses publicly archived mailing lists, open to anyone, to facilitate discussion. The RIPE Working Groups also meet twice a year in dedicated sessions during RIPE Meetings. A working group can be formed or disbanded as necessary.

RIPE Meetings

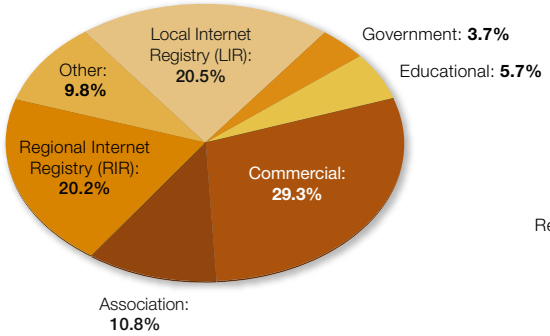
The RIPE NCC supports and facilitates the RIPE Meetings. Held twice a year, these five-day events are open to everyone, although you must register to attend. The meeting brings together key industry players, network operators, governments, regulators and individuals to discuss the technical, administrative and policy issues surrounding IP networking. Relevant tutorials are also provided.

We understand that not everyone is able to attend RIPE Meetings, so remote participation is provided and encouraged. All sessions are webcast, audiocast or podcast and remote participants can contribute to discussions using Internet Relay Chat (IRC) or Jabber.

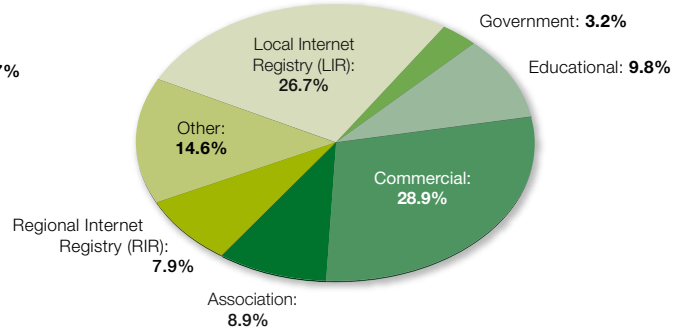
More information about RIPE Meetings can be found at: www.ripe.net/ripe/meetings/

During 2006, RIPE 52 was held in Istanbul, Turkey, in April and RIPE 53 was held in Amsterdam, the Netherlands, in October.

RIPE 52, attendees by industry sector



RIPE 53, attendees by industry sector

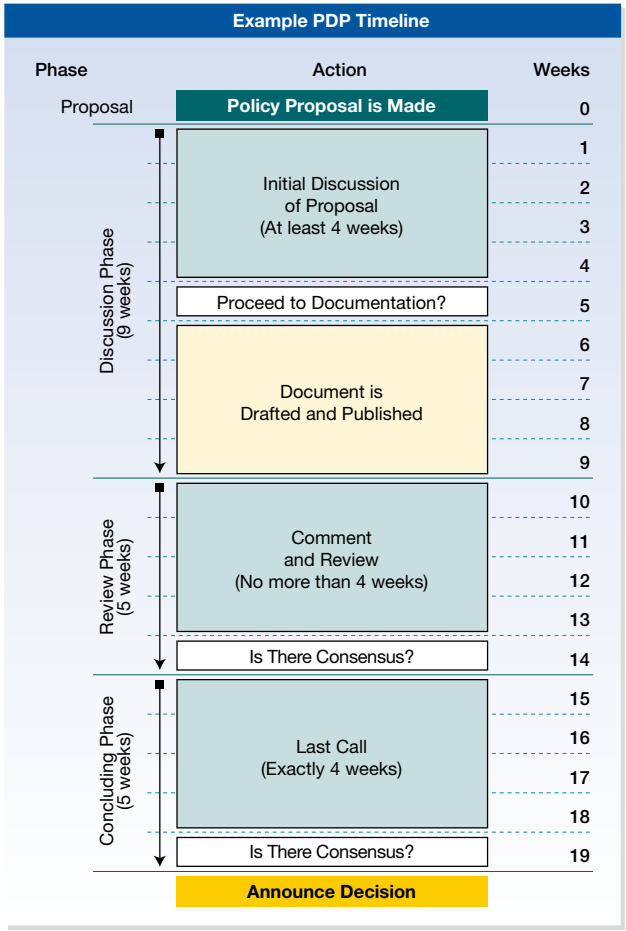


RIPE Policy Development

The RIPE community develops and sets policies for the technical coordination of the Internet and the distribution of Internet number resources through a long established, open, bottom-up process of discussion and consensus-based decision-making. This process is called the RIPE Policy Development Process (PDP). Anyone in the RIPE community can suggest a new policy or a change to an existing policy. You do not have to be a member of the RIPE NCC to do this.

Although it provides administrative support for the RIPE PDP, the RIPE NCC does not accept or reject any policy. The RIPE community is responsible for this. Any policy proposal must complete the built-in phases of the RIPE PDP, as shown in the diagram opposite. If, according to the RIPE PDP, there is enough consensus in the RIPE community to accept the proposal, it completes the PDP and 'acceptance' is declared.

In April 2006, the RIPE NCC appointed a Policy Development Officer to coordinate and support the RIPE PDP. Further details about the RIPE PDP can be found at: www.ripe.net/ripe/policies/



All policy proposals can be found online at: www.ripe.net/ripe/policies/

Proposal Overview 2006

Seven new proposals were submitted during 2006:

- 2006-01: 'Provider Independent (PI) IPv6 Assignments for End User Organisations'
- 2006-02: 'IPv6 Address Allocation and Assignment Policy'
- 2006-03: 'LIR-PARTITIONED status for IPv6' (subsequently withdrawn)
- 2006-04: 'Contact e-mail Address Requirements'
- 2006-05: 'PI Assignment Size'
- 2006-06: 'IPv4 Maximum Allocation Period'
- 2006-07: 'Minimum IPv4 Assignment Window'

One proposal, submitted in 2005, had not completed the PDP in 2006 and was still in the process at the start of 2007:

- 2005-8: 'Proposal to Amend the IPv6 Assignment and Utilisation Requirement Policy'

Concluded Proposals

Seven proposals concluded the PDP during 2006. The community accepted three of these proposals:

- 2005-01: 'IP Assignments for Anycasting DNS'
- 2005-09: 'Internet Assigned Numbers Authority (IANA) Policy for Allocation of IPv6 Blocks to Regional Internet Registries'
- 2005-12: '4-Byte AS Number Policy'

These three proposals were then outlined in the following four RIPE Documents:

- ripe-389: 'Autonomous System (AS) Number Assignment Policies and Procedures'
- ripe-388: 'IPv6 Address Allocation and Assignment Policy'
- ripe-387: 'IPv4 Address Allocation and Assignment Policies for the RIPE NCC Service Region'
- ripe-376: 'Internet Assigned Numbers Authority (IANA) Policy for Allocation of IPv6 Blocks to Regional Internet Registries'

These documents can be viewed in the RIPE Document Store at: www.ripe.net/ripe/docs/titletoc.html

Withdrawn Proposals

One of the proposals submitted in 2006 was withdrawn by the proposer. Three other proposals that were submitted in 2005 were withdrawn in 2006.

RIPE NCC
Financial Report
2006

Introduction to the Financial Report

↑ ***Axel Pawlik***
RIPE NCC Managing Director

2006 was a year of transition for the RIPE NCC and I am proud to announce that the first steps of the organisational restructuring were successfully completed. It also proved to be another year of strong membership growth. This, together with improved cost control, resulted in a 2,483 kEUR surplus.

This surplus means that the RIPE NCC Clearing House reserve has now accumulated to a figure well above one year's total expenses to 159% of total expenses. The RIPE NCC keeps reserve funds equal to one year's total expenses in order to guarantee the stability and operational continuity of the organisation. To lower the reserve towards this target, part of this reserve will be distributed to existing members via a rebate on their 2007 invoice.

Because of the higher influx of new members, the revenue for 2006 was higher than expected. Membership closures were at a similar level to 2005, even though the re-signing of contracts was finalised in 2006 and several members were closed due to non-signing. The total number of members in 2006 was 4,722, with the strongest growth in Russia, the UK and Germany respectively.

The total costs for the year were below the budgeted figure as a result of a lower number of staff than budgeted for and improved cost control. The average number of staff employed by the RIPE NCC over the year was 88.4 full time equivalents (FTEs). As a result of the organisational restructuring, several new and vacant positions were filled over the course of 2006. At year end the number of FTEs in employment was 92.7.

Looking ahead to 2007, the Regional Internet Registries (RIRs) will continue to cooperate with industry partners and are currently discussing a contract with the Internet Corporation for Assigned Names and Numbers (ICANN). In the first half of 2007, each RIR will make a significant contribution to ICANN to support its activities and the contract negotiations.

Over the past five years, RIPE NCC expenses have remained at a stable level. Because of the organisational restructuring and upcoming contribution to ICANN, the RIPE NCC has budgeted for its expenses to increase substantially in 2007.

Axel Pawlik
RIPE NCC Managing Director

Statement of Income and Expenditure 2006

(in kEUR)	Actual Year 2006	Budget 2006	Actual Year 2005	Difference FY06 vs Bud FY06		Difference FY06 vs FY05	
Income							
Service fees	11,615	10,457	11,789	1,158	*11%*	(174)	*-1%*
RIPE Meeting	194	246	243	(52)	*-21%*	(49)	*-20%*
Other income	234	125	72	109	*87%*	162	*225%*
Total income	**12,043**	**10,828**	**12,104**	**1,215**	*11%*	**(61)**	*-1%*
Expenditures							
Personnel	5,848	6,450	5,857	(602)	*-9%*	(9)	*0%*
Operational expenses	2,281	2,897	2,327	(616)	*-21%*	(46)	*-2%*
RIPE Meetings	416	364	455	52	*14%*	(39)	*-9%*
LIR Courses	277	245	269	32	*13%*	8	*3%*
Regional Meetings	139	80	54	59	*74%*	85	*157%*
Depreciation	621	728	468	(107)	*-15%*	153	*33%*
Subtotal expenses	**9,582**	**10,764**	**9,430**	**(1,182)**	*-11%*	**152**	*2%*
Surplus before misc. and fin. expenses	2,461	64	2,674	2,397		(213)	
Miscellaneous costs	344	400	263	(56)	*-14%*	81	*31%*
Financial expenses	(366)	(285)	(273)	(81)	*28%*	(93)	*34%*
Total expenses	**9,560**	**10,879**	**9,420**	**(1,319)**	*-12%*	**140**	*1%*
Surplus/Deficit	**2,483**	**(51)**	**2,684**	**2,534**		**(201)**	

Balance Sheet as at 31 December 2006

(in kEUR)	31 December 2006		31 December 2005	
Assets				
Fixed assets				
Computers	886		883	
Infrastructure	201		173	
Office equipment	46		79	
Total Fixed assets		**1,133**		**1,135**
Current assets				
Accounts receivable	1,773		2,761	
VAT	28		23	
Miscellaneous receivables	623		609	
Total Current assets		**2,424**		**3,393**
Cash on hand		**18,771**		**17,300**
Total ASSETS		**22,328**		**21,828**
Liabilities				
Capital				
Reserves	477		477	
Clearing House	12,193		9,509	
Surplus	2,483		2,684	
Total Capital		**15,153**		**12,670**
Current liabilities				
Creditors	189		416	
Wage taxes and social securities	232		141	
Unearned revenues	5,580		7,767	
Personnel fund	(83)		(161)	
Miscellaneous payables	1,257		995	
Total Current liabilities		**7,175**		**9,158**
Total LIABILITIES		**22,328**		**21,828**

Notes to the RIPE NCC Statement of Income and Expenditure 2006

General

All amounts are expressed in kEUR. Foreign currencies are converted at the daily exchange rate at the date of transaction or valuation. The balance sheet has been prepared in accordance with the historical cost convention. The accounting principles were in accordance with the previous accounting year.

The financial year 2006 resulted in a surplus of 2,483 kEUR. This positive result is due to a higher than expected income from membership growth and the effective control of expenses. This surplus increases the RIPE NCC's reserve above the set threshold. This threshold is equal to one year's expenses and was set by the Executive Board and the RIPE NCC's Management to ensure the financial stability and therefore the operational continuity of the RIPE NCC. During 2007, the RIPE NCC's reserve will be lowered towards the threshold of one year's expenses by giving a rebate to existing members.

Revenues

Revenues were just below 2005, -1% and 11% above the budgeted income for 2006. The income from service fees in 2006 was just below that of 2005 due to the decrease in fees for existing members combined with the positive effect from the increased number of membership applications.

The total membership increased to 4,722, a 12% growth compared to 2005. The total number of membership applications in 2006 was 775. Taking into account closed members and applicants that never became members, the net growth for 2006 was 512 members. Most membership applications in 2006 came from organisations in Russia (156), the United Kingdom (90) and Germany (45).

Income from the RIPE Meetings in 2006 was below that of 2005 and below the 2006 budgeted RIPE Meeting income. This is a result of the low attendance at the RIPE 52 Meeting. During 2006, two RIPE Meetings were held. Other income includes fees from the Test Traffic Measurement (TTM) Service and income from DNS Monitoring (DNSMON) Service, EU Value Added Tax (VAT) reclamations from 2005 submitted in 2006 and a revaluation of the accrual for the Internet Corporation of Assigned Names and Numbers (ICANN) contribution. Other income is higher as a result of increased income from the DNSMON Service and the favourable exchange rate between US dollar (USD) and the euro (EUR).

Expenditures

Total expenditure in 2006 is 1% above the total expenditure in 2005. The main reason for this increase in expenditure was an increase in the number of RIPE NCC Regional Meetings and higher depreciation expenses. The expenses were well below the budgeted figures. Personnel expenses were in line with 2005 but substantially below the budgeted expenses for 2006 (-9%). This is a result of a lower number of staff than expected. For the full year, 88.4 full-time equivalents (FTE) were employed compared to 90.6 FTE for the year 2005 and 93.7 FTE budgeted for 2006. This number of FTEs is calculated on the basis of the number of days (as defined by social security benchmarks) worked by employees. Operational expenses decreased due to the lower ICANN contribution for 2006 and lower consultancy costs.

The deviation from the budgeted operational expenses for 2006 is a result of effective control of expenses. Travel expenses, marketing costs and IT infrastructure expenses were all lower than expected. RIPE Meeting expenses were below 2005 but up from the budget as a result of a re-statement of RIPE Meeting travel expenses. In 2006, three RIPE NCC Regional Meetings were held compared to only one held in 2005 and the two budgeted for 2006.

Miscellaneous expenses consist of bad debts and Personnel Fund expenses. Bad debts were 427 kEUR compared to 423 kEUR in 2005. In 2006, bad debts included a provision of 172 kEUR for the bad debts for the year 2007. In 2006, the liability to the Personnel Fund was -83 kEUR as a result of a decrease in the number of employees with indefinite employment contracts.

Financial expenses include bank charges and interest received on the current and deposit accounts. Bank charges increased because the RIPE NCC received more payments. The interest received from the RIPE NCC's accounts increased over 2006 as a result of a higher cash amount and a higher average interest received on these accounts than in 2005.

Notes to the RIPE NCC Balance Sheet as at 31 December 2006

General Information

All amounts are expressed in kEUR. Foreign currencies are converted at the daily exchange rate at the date of transaction or valuation. Historic costs have been used throughout unless otherwise stated.

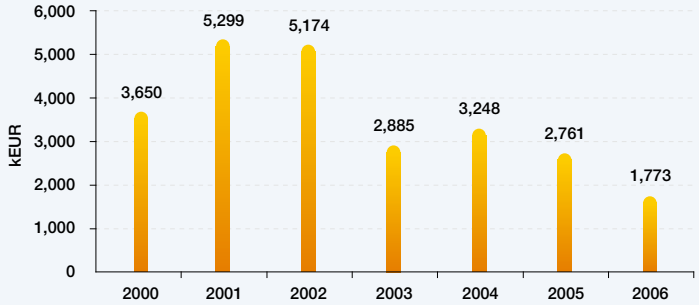
Fixed assets	Computers	Infrastructure	Office equipment
Bookvalue 1/1/2006	883	173	79
Purchase costs	475	134	10
Depreciation	(472)	(106)	(43)
Bookvalue 31/12/2006	**886**	**201**	**46**

Assets are valued at historical costs and are depreciated on a straight-line basis, starting from the month after acquisition. Computers consist of hardware and software. Hardware is written off in three years while software is written off in two years. Infrastructure is written off in three years and office equipment in five years. All items under EUR 1,000 are expensed.

Current Assets

Accounts receivable for 2006 decreased in comparison with 31 December 2005, due the decrease in service fees for 2007 and the rebate that will be given to members in 2007. In 2006, a bad debt provision of 172 kEUR was made for invoices sent in 2006 pertaining to 2007. In 2006, in line with 2005, a re-statement was made for all extra payments or over payments made by members to the RIPE NCC. This amounts to 43 kEUR and is reported as 'creditors'.

Accounts receivable

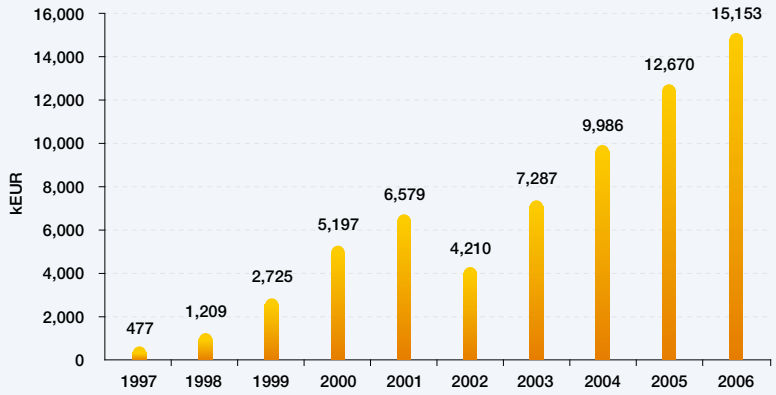


Suspense accounts are stated as accounts receivable for 2006. Suspense accounts contain unidentified payments made by members.

Miscellaneous receivable includes pre-payments for rent, equipment, pension, health and deposits for RIPE Meeting venues. The RIPE NCC has a pension system of defined contribution with a pensionable age of 65 years, in accordance with Dutch fiscal requirements. Other items listed under miscellaneous receivable are interest receivable, credit card payments to be received and payments in transit. In addition, miscellaneous receivable includes, for 2006, a small inventory for the sale of K-root and TTM equipment.

Capital

Capital development



Until 1998, surpluses were accumulated in the RIPE NCC reserve. In 1998, the RIPE NCC agreed with the Dutch tax authorities on a tax ruling that allows surpluses to be deposited into a Clearing House on a tax-free basis. All yearly surpluses since 1998 have been deposited to the Clearing House. In 2004, the Clearing House ruling with the tax authorities was revised so that the Clearing House ruling applied to the members as one group and not as individuals. This was approved by the members at the RIPE NCC General Meeting in May 2004. Currently, the maximum reserve in the Clearing House is limited to three times the total amount of service fees received from the members.

Current Liabilities

9 kEUR is re-stated from the creditors to the accounts receivable at 31 December, 2006. This refers to credit notes receivable from creditors. The unearned revenues consist of invoices sent in 2006 but pertaining to 2007. The decrease in service fees for the year 2007 is compensated for by the membership growth of 4,210 to 4,722 members over the year 2006. This resulted in a similar level of unearned service fees at year-end 2006 compared to 2005. The invoices for 2007 include a rebate which amounts to 2,130 kEUR. This lowers the unearned revenues at year-end 2006.

Wage taxes and social securities	31/12/2006	31/12/2005
Wage taxes	169	128
Social securities	63	13
Total wage taxes and social securities	**232**	**141**

At year end 2006, only the December tax payment was still due. In December 2006 92.7 FTE were employed while in December 2005 just 86.9 FTE were employed.

Miscellaneous payable	31/12/2006	31/12/2005
Accrued ICANN contribution	815	633
Holiday allowance/holiday days	344	295
Other payables	98	67
Total miscellaneous payable	**1,257**	**995**

The miscellaneous payable include the accrued holiday allowance and the employees' accrued holiday days. This amount is based on the number of outstanding vacation days at 31 December, 2006 valued in the December 2006 salary. In the course of 2006, no payments were made to ICANN. Therefore, the accrued ICANN contribution increased at year end.

Items not shown in the balance sheet

The RIPE NCC rents office space in two buildings and has four separate rental agreements for these. Four bank guarantees have been issued for an amount of 132 kEUR. These rental agreements were re-negotiated in 2005 and have been extended until December 2008 and 2009.

Currently, the RIPE NCC has no financial liability or obligation toward the Number Resource Organization (NRO). All items were settled at year end 2006. There is no material interest in the NRO that needs to be noted in the financial statements.

Cash Flow

Begin Cash Balance 1 January 2006	**€ 17,300**
Cash Inflow	
Service fee	€ 10,040
TTM/DNSMON	€ 136
RIPE Meetings	€ 225
Interest received	€ 301
Other	€ 354
Total Inflow	€ 11,056
Cash Outflow	
Salary	€ 2,881
Wage tax and social security	€ 1,845
Pension and health	€ 500
RIPE Meetings and Regional Meetings	€ 324
Creditors	€ 4,035
Total Outflow	€ 9,585
Total Cash Inflow Balance	**€ 1,471**
End Cash Balance 31 December 2006	**€ 18,771**

The cash flow overview reflects the increased income received from service fees and the lower than expected cash outflow to cover our expenses. The RIPE NCC's cash management is based on two principles: security and liquidity. The cash is placed in several deposit accounts spread between three separate banks. The cash is liquid apart from two separate year deposit accounts for a total amount of EUR 5 million.

Auditors' Report

Auditors' report

Introduction

We have audited the accompanying financial statements 2006 of Réseaux IP Européens Network Coordination Centre, Amsterdam, which comprise the balance sheet as at 31 December 2006, the profit and loss account for the year then ended and the notes.

Management's responsibility

Management of the association is responsible for the preparation of the financial statements in accordance with principles selected and disclosed by the entity. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation of the financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditor's responsibility

Our responsibility is to express an opinion on the financial statements based on our audit. We conducted our audit in accordance with Dutch law. This law requires that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements 2006 of Réseaux IP Européens Network Coordination Centre are prepared, in all material aspects, in accordance with principles selected and disclosed by the entity, as defined in the notes of the financial statements.

Amstelveen, 29 March 2007

KPMG Accountants N.V.

H.A.N. Spoelstra AA

Glossary

Some frequently used industry-related terminology:

DNS – Domain Name System: Each domain name (such as www.ripe.net) has an IP address (such as 193.0.0.214). Computers can only work with numbers but people find it easier to remember names. The DNS is a database of information that translates the domain name you type into an IP address.

ASN – Autonomous System Number: A unique number assigned to an autonomous system (collection of IP networks controlled by one entity). It is used as an identifier and in the exchange of information.

Internet Number Resources: Collective term for IPv4 and IPv6 addresses and AS Numbers.

IPv4 – Internet Protocol version 4: A 32-bit numerical address, such as 207.142.131.235. IP addresses ensure that two computers communicating over the Internet can identify one another.

IPv6 – Internet Protocol version 6: A 128-bit hexadecimal address, such as 3ffe:501:8::260:97ff:fe40:efab. IP addresses ensure that two computers communicating over the Internet can uniquely identify one another.

LIR – Local Internet Registry: RIPE NCC members are referred to as LIRs as most members allocate the IP addresses they receive from the RIPE NCC on a local level.

RIPE – Réseaux IP Européens: RIPE is a collaborative forum open to all parties with an interest in the technical development of the Internet. Although similar in name, the RIPE NCC and RIPE are separate entities but are highly interdependent.

RIPE community: The collective term for any individual or organisation, whether members of the RIPE NCC or not, with an interest in the technical coordination of the Internet and the way the Internet is managed, structured or governed.

RIPE Document: Formally published documents outlining RIPE NCC and RIPE policies and procedures.

RIR – Regional Internet Registry: RIRs oversee the allocation and assignment of Internet number resources within a particular geographical region. The RIPE NCC is one of the world's five RIRs.

www.ripe.net