



ANNUAL REPORT 2008

THE RÉSEAUX IP EUROPÉENS NETWORK COORDINATION CENTRE

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Despite the global economic downturn in 2008, which affected industry developments throughout the region, the RIPE NCC saw strong membership growth again. At the end of the year, there were **6,064** members, a **13%** increase from 2007. For the sixth year running, the strongest growth was seen in Russia.

Throughout the year, the Board closely monitored the world's economic developments and the RIPE NCC's financial situation. The RIPE NCC uses long-established principles of conservative cash management, ensuring that its cash reserve is securely held with a full capital guarantee. As the banks increased interest rate returns for deposits, the income the RIPE NCC earned from interest increased considerably over the year. This adds further security to the RIPE NCC's cash reserves at this time of financial uncertainty.

As we head into 2009, the Board will continue to track the global economic situation and pay close attention to developments in the membership.

Working together with the other four Regional Internet Registries (RIRs), the RIPE NCC continued to build on relations with its industry partners and stakeholders, most notably governments and regulators. As the expansion of the Internet and Internet governance become key issues for governments around the world, an increased and open dialogue with these parties is imperative for the continued stability of the Internet.

On the operational side of things, the RIPE NCC is now operating under a comprehensive legal framework, ensuring that it fully complies with EU data protection law. Operational relations with the Internet Corporation for Assigned Names and Numbers (ICANN)

are also continuing smoothly.

Finally, I'd like to thank the RIPE NCC membership for its continued support and encouragement. Your support is key to the RIPE NCC's success. The RIPE NCC Executive Board is here to represent you and you should feel free to approach any of us at any time with your comments and concerns.

I would also like to extend my gratitude on behalf of the Board, the RIPE NCC and the RIPE community to the outgoing Chairman, Kees Neggers, and to Board Member Jim Reid, for their hard work and dedication over the past years. The two newly elected Board Members, Fahad AlShirawi and Andreas Wittkemper, are committed to their core tasks of representing the membership and providing guidance to the RIPE NCC's management team.



Nigel Tittley
RIPE NCC Executive
Board Chairman

A handwritten signature in blue ink, consisting of the letters 'NR' followed by a stylized, cursive flourish.

Nigel Tittley
Executive Board Chairman

2008 was another successful year for the RIPE NCC, both strategically and operationally.

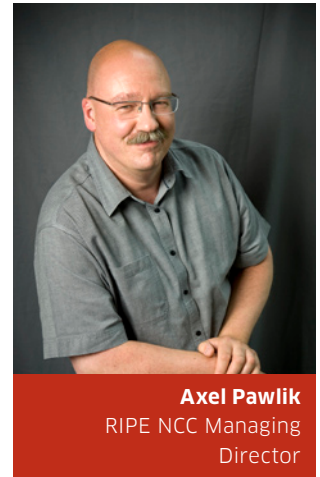
The first RIPE Meeting to be held in the Middle East took place from 26-30 October in Dubai, United Arab Emirates. A RIPE NCC Regional Meeting was also held in this part of our service region and our work with the Middle East Network Operators Group (MENOG) continued throughout the year. As our membership in the Middle East is increasing, these events helped us to strengthen our outreach activities and to encourage participation and feedback from our Middle East members.

Our work with industry partners accelerated pace over the year as well. We were actively involved in events with governments and regulators and attended notable events such as the Internet Governance Forum (IGF) to represent the interest of our members and the RIPE community. Our relationship with the Organisation for Economic Co-operation and Development (OECD) was further strengthened with our participation in the OECD's Ministerial Meeting in Seoul, South Korea in June 2008. During this meeting, the RIPE NCC, working with the other RIRs as the Number Resource Organization (NRO), issued an urgent appeal for investment in IPv6 infrastructure.

The RIPE NCC's Roundtable Meetings continue to provide valuable two-way interaction between governments, regulators and law enforcement agencies on the issues of governance, investment in IPv6 and security. The Executive Board's support for and participation in all these events has been crucial to their success.

Throughout the year, technical operations remained stable. Working together with the RIPE Certification Task Force, efforts continued on building a system for Internet number resource certification.

During the year, the RIPE NCC continued to develop the certification software and volunteers from the RIPE community performed tests and provided feedback on it. Efforts will continue throughout 2009.



Axel Pawlik

RIPE NCC Managing
Director

Over the coming year, the RIPE NCC will focus on evolving and enhancing its registration processes. The depletion of IPv4 and the uptake of IPv6 continues to be one of our hot topics and we will focus on encouraging investment in IPv6 infrastructure. Our Information Services products will also be further developed to enhance the quality and usefulness of the data they provide.

In 2008, the RIPE NCC also began preparations to hold the Number Resource Organization's (NRO) Secretariat in 2009. This position rotates yearly between the five RIRs. NRO Secretariat function duties will be one of our key tasks for 2009. Finally, we'll continue to support the RIPE community and encourage its participation in the RIPE Policy Development Process (PDP).

In closing, I'd like to thank everyone for their support of the RIPE NCC and its activities.

A handwritten signature in blue ink, appearing to be 'A. Pawlik'.

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. It supports the operation and development of the Internet through technical coordination and operates one of the world's five Regional Internet Registries (RIRs). The RIPE NCC's most prominent tasks include:

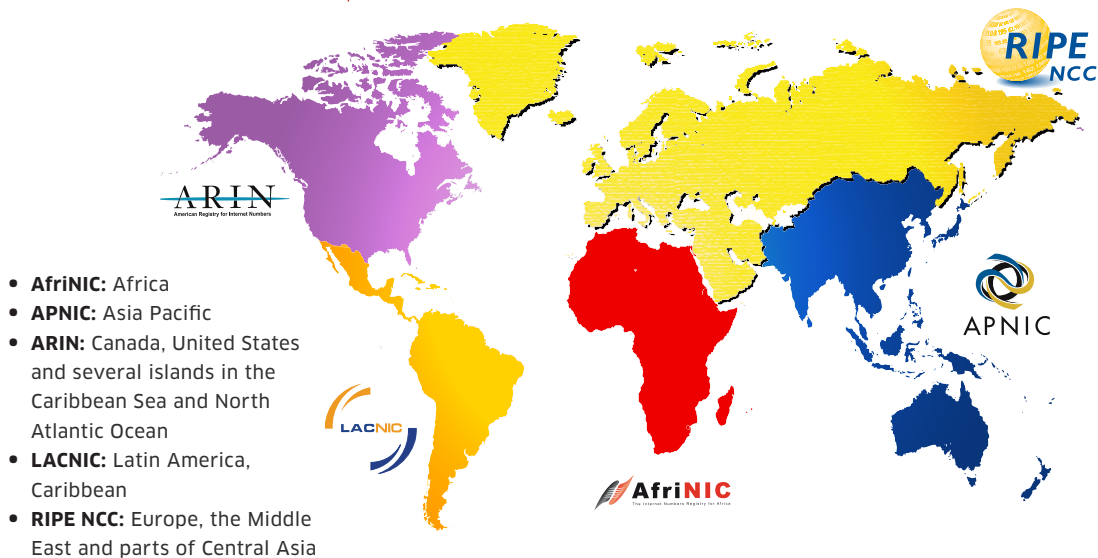
- Distribution and registration of IP addresses and Autonomous System (AS) Numbers
- Operating the RIPE Database
- Operating the K-root server cluster, one of the world's 13 root name servers
- Coordinating the RIPE community

Most of the RIPE NCC's members are Internet Service Providers (ISPs) and

telecommunication organisations. Other members are large corporations, academic institutions and government bodies. At the end of 2008, the RIPE NCC supported 6,064 members in the 75 countries in its service region. The organisation is based in Amsterdam, the Netherlands, and has around 110 staff.

It is an open, transparent and neutral organisation. As with the four other RIRs, the RIPE NCC operates as a community-driven, bottom-up and self-governing organisation. The policies that govern the way the RIPE NCC operates are proposed, discussed and accepted by the RIPE community (see page 10). The activities performed by the RIPE NCC and the services it provides are approved each year by its members. ■

Map Showing the RIR Service Regions



As the RIR for Europe, the Middle East and parts of Central Asia, the RIPE NCC provides Internet number resources – IPv4 and IPv6 addresses and Autonomous System (AS) Numbers – to its members. The Internet Assigned Numbers Authority (IANA) allocates blocks of IP addresses and blocks of AS Numbers to all five RIRs. Each RIR then allocates or assigns parts of these blocks to their own members. The 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 the Internet community.

The RIPE NCC manages the life cycle of the Internet number resources it allocates or assigns. Active management of the Internet Resource Life Cycle contributes to fairness and transparency in the distribution of Internet number resources and improves the accuracy of registration data. The diagram below shows the four phases of the life cycle and documents the processes that occur during each phase. ■

The Internet Resource Life Cycle Management Process

1. Requesting

The RIPE NCC establishes a relationship between itself and the organisation or individual that is requesting Internet number resources.

It also checks that Internet number resources are allocated or assigned on the basis of need and ensures that details are recorded accurately in the RIPE Database.

2. Monitoring

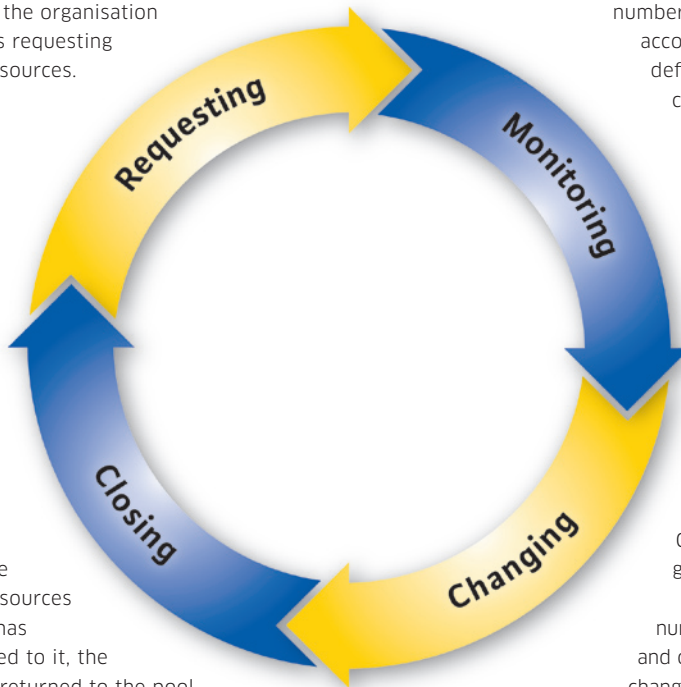
The RIPE NCC ensures that Internet number resources are used according to the policies defined by the Internet community. It checks that the records relating to Internet number resources are correctly recorded and performs audits and consistency checks to ensure that data quality is maintained.

4. Closing

When an entity no longer needs the Internet number resources that the RIPE NCC has assigned or allocated to it, the resources must be returned to the pool for redistribution.

3. Changing

Organisations evolve, grow or merge, which means that Internet number resource needs and organisational details change. These changes are tracked by the RIPE NCC.



Membership in 2008

Total number of members at 31 December 2008: **6,064** members, an increase of **13%** on 2007

Total number of applications in 2008: **942**

Membership growth: **695** members (as a result of mergers and closures)

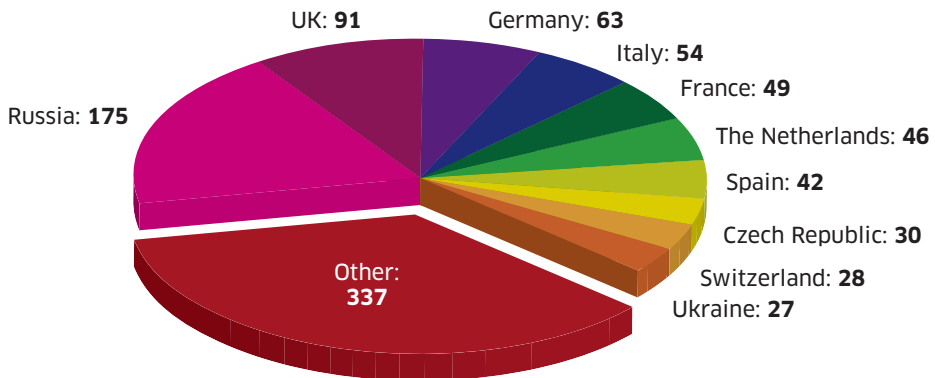
Five countries with most new members (net growth):

- Russia: **147**
- Germany: **65**
- United Kingdom: **50**
- Italy: **43**
- The Netherlands: **40**

RIPE NCC members are charged an annual service fee based on the services that they receive.

Yearly Fee 2008 (EUR)	
Extra Small	1,300
Small	1,800
Medium	2,550
Large	4,100
Extra Large	5,500
Sign-up Fee	2,000

More information about membership fees is available at: www.ripe.net/membership/new-members ■



Applications For Membership in 2008, Per Country

RIPE NCC Services and Activities

In addition to providing services related to the assignment and allocation of Internet number resources, the RIPE NCC also supports the operation and development of the Internet for the benefit of the Internet community as a whole. The RIPE NCC's service offering includes:

Database Services:

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

Technical Services:

- Operation of K-root, one of the world's 13 root name server clusters
- Reverse Domain Name System (rDNS) delegations
- Technical administration of Tier-0 ENUM

Community Support and Outreach:

- Administrative support for RIPE Working Groups and RIPE Task Forces
- Maintenance and development of RIPE community mailing lists
- Facilitation of RIPE Meetings
- Facilitation of RIPE NCC Regional Meetings to reach members, governments and industry partners in the RIPE NCC service region
- Roundtable Meetings for governments, regulators and law enforcement agencies
- Representing the RIPE NCC, its members and the RIPE community at regional and global industry-related events and when liaising with governments and regulators
- Support for the Middle East Network Operators Group's (MENOG) activities

Training:

- Provision of RIPE NCC Training Courses for members and other stakeholders throughout the RIPE NCC's service region
- A free online E-Learning Centre available to everyone

Information Services:

- The Test Traffic Measurement Service (TTM)
- Domain Name System Monitoring (DNSMON)
- The Routing Information Service (RIS)
- Hostcount++ ■

As of 2008, the RIPE NCC's online services can be accessed using IPv6 as well as IPv4.

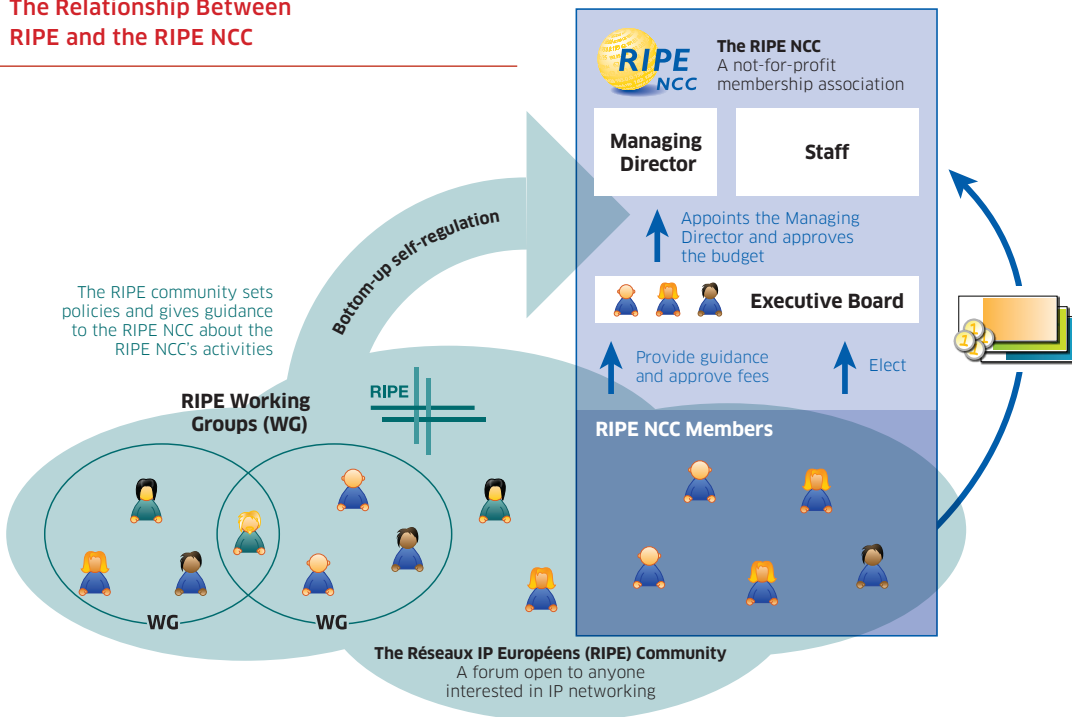
The RIPE NCC's Relationship with Réseaux IP Européens (RIPE)

The RIPE NCC and RIPE are separate entities that are highly interdependent. RIPE is a collaborative forum open to all parties with an interest in the technical development of the Internet and was founded in 1989. The term “RIPE community” is used to describe the individuals or organisations, 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. The RIPE community provides crucial input to the RIPE NCC from the Internet

industry, the community, governments and regulators. As RIPE is not a formal organisation, there are no requirements for participation. The RIPE NCC provides administrative support to RIPE, the RIPE Working Groups and RIPE Task Forces, such as the facilitation of RIPE Meetings, the maintenance and development of the RIPE Document Store and publicly archived mailing lists.

More information about RIPE, RIPE Working Groups and RIPE Task Forces can be found on page 36. ■

The Relationship Between RIPE and the RIPE NCC



Organisational Structure

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, organisations and individuals can become a member of one of the world's five Regional Internet Registries (RIRs). RIPE NCC membership is open to everyone. Members are required to sign a Standard Service Agreement and pay the initial sign-up and service fees. The majority of the membership base is made up of Internet Service Providers (ISPs) and telecommunication organisations. Other members include large corporations, academic institutions and government bodies.

RIPE NCC members can:

- Request Internet number resources (IPv4, IPv6 and Autonomous System (AS) Numbers) and use member services

RIPE NCC members have the right to:

- Provide input for, and feedback on, the RIPE NCC's Activity Plan and Budget
- Adopt the RIPE NCC Charging Scheme each year
- Approve the RIPE NCC's Financial Report each year
- Propose resolutions and vote on them during the RIPE NCC General Meetings
- Nominate and elect candidates to the RIPE NCC Executive Board
- 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



RIPE NCC Executive Board as of 7 May, 2008

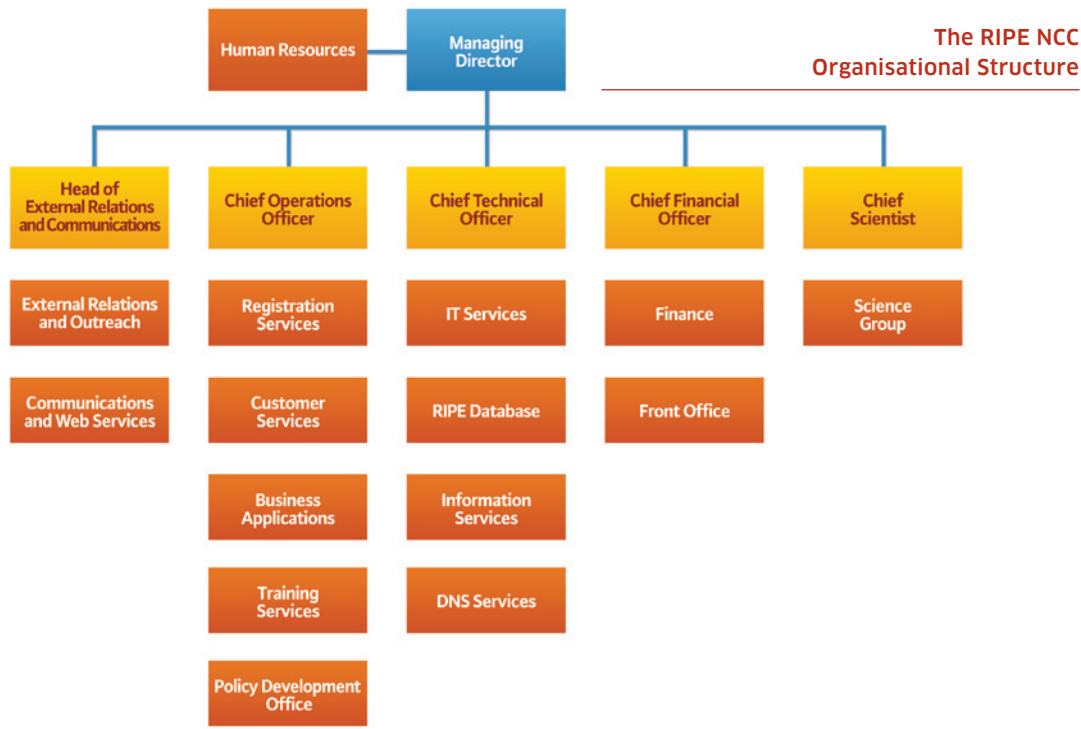
From left: Andreas Wittkemper, Nigel Titley, Dmitry Burkov, János Zsakó, Fahad AlShirawi

The Executive Board

RIPE NCC members elect the Executive Board. The Board currently consists of five people. The Executive Board:

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

More information about the Executive Board, including the minutes from Executive Board meetings, can be found at: www.ripe.net/info/ncc/board



RIPE NCC Staff

The staff:

- Perform the RIPE NCC’s operations and facilitate RIPE NCC services
- Provide administrative support to members, to the RIPE Working Groups and to the RIPE community
- Cooperate closely with counterparts in the other four Regional Internet Registries (RIRs), with industry partners such as the Internet Society (ISOC) and the Internet Corporation for Assigned Names and Numbers (ICANN) and with governments and regulators
- Implement and facilitate the policies proposed and accepted by the RIPE community

Defining, Setting and Evaluating RIPE NCC Services and Activities

All the activities that the organisation performs and the services it provides are defined, discussed and evaluated by RIPE NCC members and by the RIPE community. All proposals, plans, documents and discussions are publicly documented.

The activities that the RIPE NCC proposes to perform in the coming year are detailed in the Activity Plan. Input into the Activity Plan and feedback on activities is collected from members and the RIPE community via the RIPE Working Groups, RIPE mailing lists and at the members-only General Meetings. The RIPE NCC Executive Board approves the Activity Plan each year. The 2008 Activity Plan is available online at: www.ripe.net/ripe/docs/ripe-426.html ■

RIPE NCC General Meetings

All RIPE NCC members are encouraged to attend the RIPE NCC General Meetings. Currently, these meetings are held twice a year. During the General Meetings, members can vote to accept the audited Financial Report and adopt the RIPE NCC Charging Scheme. Members are also responsible for electing the Executive Board. Feedback on the RIPE NCC's activities and services can also be given directly to the Executive Board. In 2008, the RIPE NCC General Meetings took place alongside the RIPE 56 and RIPE 57 Meetings. During the General Meeting held on 7 May, 2008, Executive Board elections took place. The terms of two Executive Board members, Jim Reid and Kees Neggers, expired and RIPE NCC members elected Fahad Alshirawi and Andreas Wittkemper to the two available seats. The General Meetings are only open to RIPE NCC members. Minutes from each meeting are, however, available to the public. For more information about General Meetings and minute archives, see: www.ripe.net/membership/gm ■

Articles of Association

The rights and obligations of all the RIPE NCC's entities are detailed in the Articles of Association (AoA). The current AoA can be found at: www.ripe.net/ripe/docs/articles-association.html ■

Arbitration

An arbitration committee exists to resolve any dispute between RIPE NCC members and the RIPE NCC that is related to the services provided by the RIPE NCC. The arbitration

committee operates as a neutral and objective body and consists of RIPE community members. The RIPE NCC's Executive Board appoints the arbiters with approval from the General Meeting. More information about the arbitration committee can be found at: www.ripe.net/ripe/docs/arbitration.html

Legal Framework

In 2008, the RIPE NCC worked to strengthen the legal framework it operates under. With assistance from the RIPE Data Protection Task Force, the RIPE NCC created a new Terms and Conditions document and an Acceptable Use Policy that govern the use of the RIPE Database. In addition, to comply with EU data protection regulations, a procedure to remove personal data from the RIPE Database was established. All of the legal documentation concerning the RIPE NCC is available at: www.ripe.net/legal ■

Corporate Governance

The RIPE NCC conducts corporate governance best practice where possible and operates under transparent organisational, management and Executive Board structures. It has clear and open communication channels regarding its operations. There is also clear division of responsibilities and duties between members, the Executive Board and the management team, as stated in the RIPE NCC Articles of Association (AoA). The AoA can be found at: www.ripe.net/ripe/docs/articles-association.html ■

Activities

New and Significantly Developed Activities in 2008

Support for Internet Number Resource Certification

With the Internet landscape set to change significantly over the coming years, it is vital that the RIPE NCC continues to provide a stable and secure registry function, where registry data is maintained with a high level of accuracy. The certification of RIPE NCC Internet number resource allocations will be a significant enhancement to this registration function. Digital certificates issued with RIPE NCC allocations will serve as an authoritative statement of an allocation's uniqueness and legitimacy at the time of allocation and have the potential to play an important role in resource transfers, secure routing and automated provisioning.

To ensure that the RIPE community guides the plans for Internet number resource certification, the RIPE Certification Task Force was formed in 2006 and has been working with the RIPE NCC and other industry stakeholders to develop a RIPE NCC Internet number resource certification system. Work on this project in 2008 included the release of beta software and facilitation of the test phase by volunteers from the RIPE NCC membership. The beta certification software provided a web-based portal that:

- Enabled RIPE NCC members to request certificates for their IPv4 and IPv6 Provider Aggregatable (PA) resources
- Enabled RIPE NCC members to manage ROAs for PA address space
- Provided a public web interface for certificate and ROA validation
- Provided a public repository of certificates and ROAs
- Handled key roll-overs and revocation ■

Closure or Reduction of Activities in 2008

Deployment of Internet Security Infrastructure (DISI)

DISI has been integrated into activities focused on DNS Security (DNSSEC) and ongoing work on the certification of Internet number resources. ■

More information about the Certification Task Force can be found at: www.ripe.net/ripe/tf/certification



RIPE NCC Managing Director Axel Pawlik (right) takes part in a panel session on Internet governance during the RIPE NCC Regional Meeting, Moscow, 2008

Registration Services

As a Regional Internet Registry (RIR), the RIPE NCC's most prominent activity is to register and distribute IPv4 and IPv6 addresses and Autonomous System (AS) Numbers in its service region. The goal is to ensure fair distribution of Internet number resources and to maintain accurate registration data. The Internet Assigned Numbers Authority (IANA) allocates blocks of addresses to the five RIRs. The RIRs then allocate parts of these address blocks. During the year, Registration Services' service levels remained stable and were comparable to the service level in 2007.

2008 saw the RIPE NCC's Registration Services processes audited by an external organisation, KPMG. Auditors examined whether procedures were missing, if procedures were consistent and accurately documented, and whether the IP Resource Analysts (IPRAs) followed them. The auditors found that most procedures were well documented although improvements could be made to the levels of detail and amount of documentation produced. Work is currently underway to make the improvements suggested.

Internet number resource allocations and assignments made by the RIPE NCC in 2008:

- IPv4: **1,657** allocations
- IPv6: **428** allocations
- ASN: **2,465** assignments
- PI: **2,182** assignments
- Anycast: **4** (IPv4) and **4** (IPv6) assignments

A more in-depth overview of assignments and allocations can be found on pages 17-19.

Requests for Internet Number Resources

In 2008, the RIPE NCC's Registration Services Department received a total of **15,261** requests, an increase compared to the **14,876** requests received in 2007. These requests included requests for:

- Provider Aggregatable (PA) assignments
- Provider Independent (PI) assignments
- IPv4 and IPv6 allocations
- AS Number assignments
- Anycast assignments

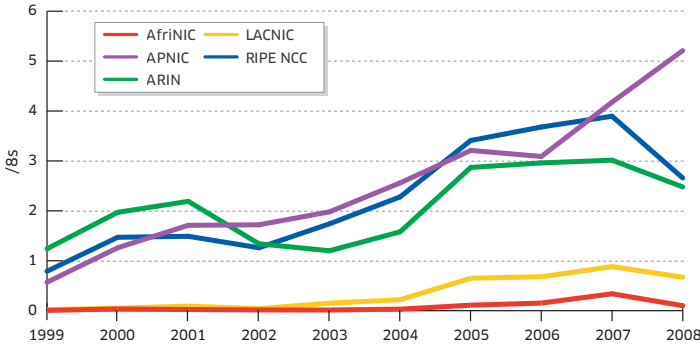
From the total number of requests, **6,740** allocations and assignments of Internet number resources were made. ■



An attendee talks with RIPE NCC staff in the RIPE NCC Services Centre during the RIPE 57 Meeting in Dubai, United Arab Emirates

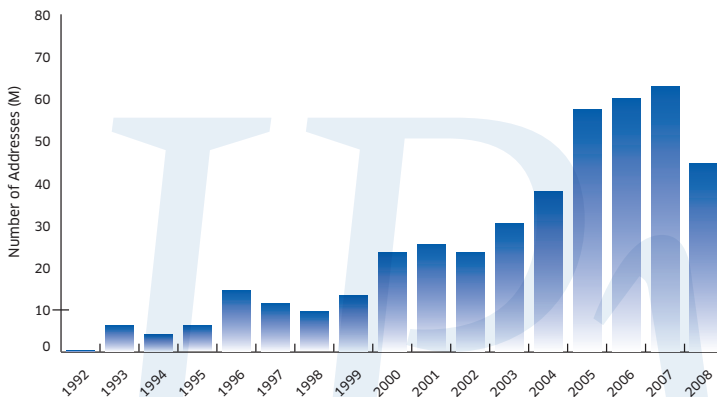
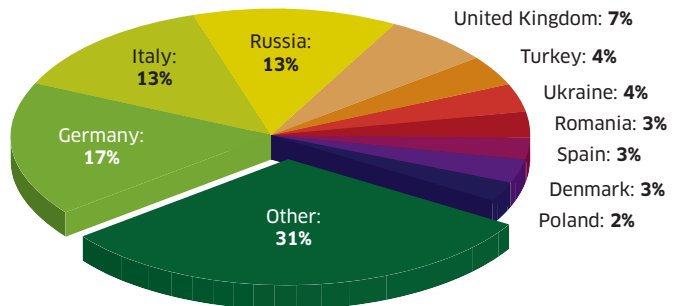
IPv4 ALLOCATIONS 2008

The RIPE NCC allocated **44,718,080** IPv4 addresses during the year. Compared with 2007, this is a **39%** decrease in the total number of IPv4 addresses allocated and a 22% decrease in the number of allocations made. The IANA did not allocate any blocks of IPv4 addresses to the RIPE NCC in 2008.



Total Amount of IPv4 Addresses Allocated by All RIRs Per Year in /8s

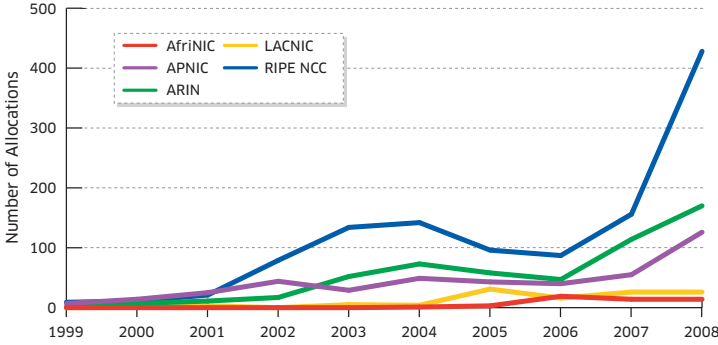
Total Amount of IPv4 Addresses Allocated by The RIPE NCC in 2008, Per Country



Total Amount of IPv4 Addresses Allocated by The RIPE NCC Per Year (1992-2008)

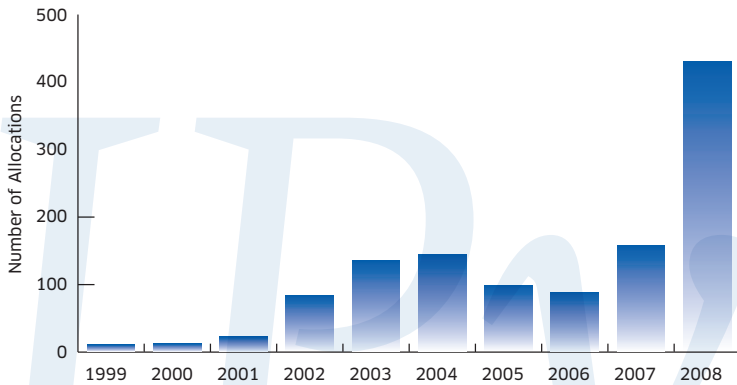
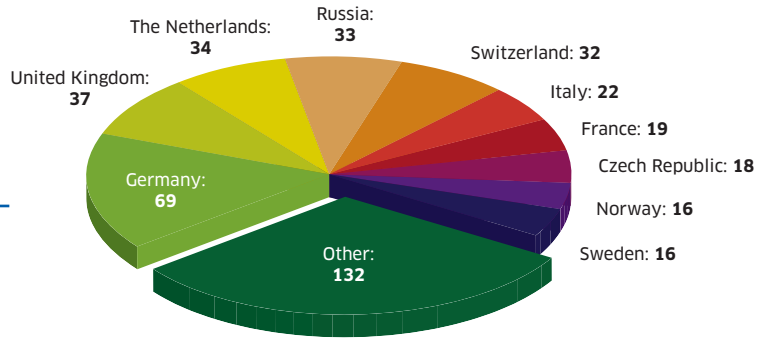
IPv6 ALLOCATIONS 2008

During 2008, the RIPE NCC made **428** IPv6 allocations, a **175%** increase in the number of allocations made compared with 2007. The IANA did not allocate any blocks of IPv6 address space to the RIPE NCC in 2008.



Total Amount of IPv6 Allocations Made by All RIRs Per Year

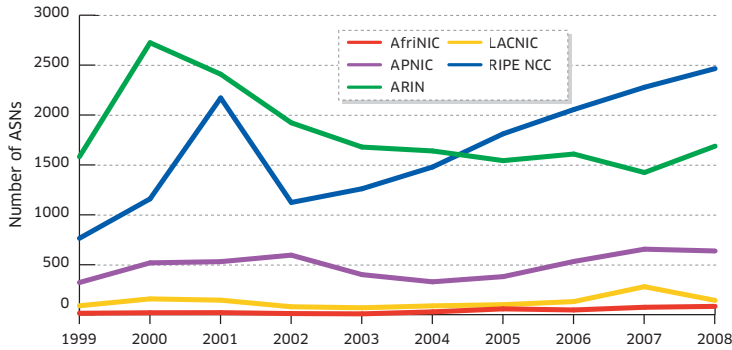
18 Total Amount of IPv6 Allocations Made by The RIPE NCC in 2008, Per Country



Total Amount of IPv6 Allocations Made by The RIPE NCC Per Year (1999-2008)

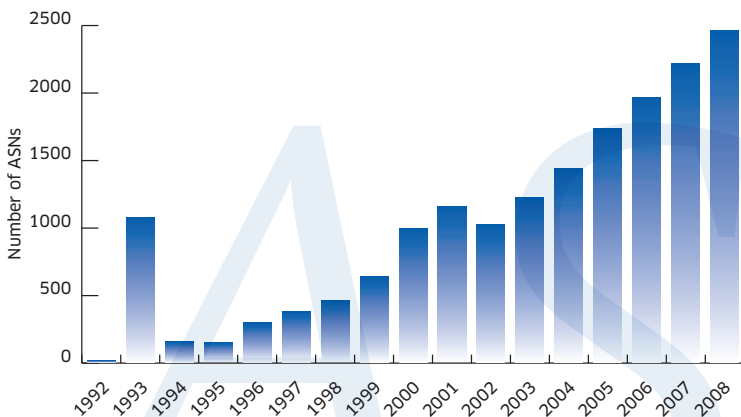
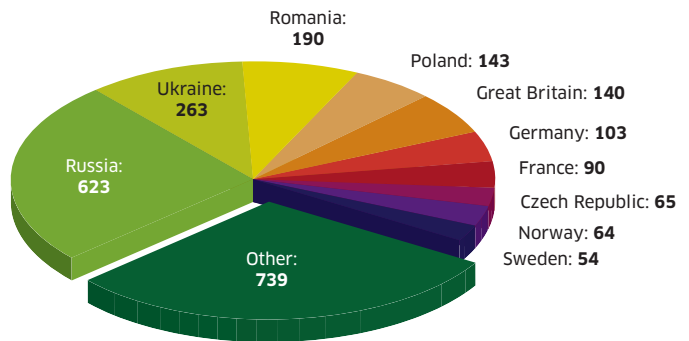
AUTONOMOUS SYSTEM (AS) NUMBER ASSIGNMENTS IN 2008

The IANA allocated **2,048** ASNs to the RIPE NCC in 2008. **2,465** ASNs were assigned during the year, an **11%** increase on the amount assigned in 2007.



AS Numbers Assigned by All RIRs Per Year (1999-2008)

AS Numbers Assigned by The RIPE NCC in 2008, Per Country



Total Number of AS Numbers Assigned by The RIPE NCC per Year (1992-2008)

Assignment and Allocation Policies Implemented in 2008

All the policies detailing the way in which the RIPE NCC allocates and assigns Internet number resources to its members are proposed, discussed, accepted or rejected by the RIPE community. The RIPE NCC implements the policies that the RIPE community accepts into its operations and procedures. In 2008, the RIPE NCC began work to implement two new policies, 2007-01, "Direct Internet Resource Assignments to End Users from the RIPE NCC" and 2007-08, "Enabling Methods for Reallocation of IPv4 Resources".

More information about these proposals, the RIPE community and the RIPE Policy Development Process (PDP) can be found on page 38.

Returned Address Space

As part of the RIPE NCC's management of the Internet resource life cycle, over 1.5 million unused IPv4 addresses were returned to the RIPE NCC during 2008. A total of **3,864,576** IPv4 addresses have now been returned over the last three years, contributing towards good stewardship of Internet number resources. The RIPE NCC re-allocates the addresses that have been returned.

Improving Data Consistency

Over 2008, the RIPE NCC continued its efforts to improve data consistency as part of a project to ensure that all Internet number resource allocation, assignment and registration data is correct and consistent.

Membership Survey 2008

The third RIPE NCC Membership Survey was conducted in 2008. These surveys enable the RIPE NCC to gather feedback from its members about the services provided and offer a chance for members to make suggestions for improvements or new services. The results of the survey were published in 2009. More information, including survey results, can be found at:

www.ripe.net/membership/survey ■

The Local Internet Registry (LIR) Portal

The LIR Portal is the secure members-only portal that enables RIPE NCC members to manage their allocations and assignments online. In 2008, the RIPE NCC began to assign an LIR Portal account to all new members as soon as their membership had been activated, eliminating the need for members to manually activate their own accounts. Like all RIPE NCC services, the LIR Portal can now be reached using IPv6 as well as IPv4. More information about the LIR Portal can be found at:

<https://lirportal.ripe.net> ■

The screenshot shows the RIPE NCC LIR Portal homepage. At the top left is the RIPE NCC logo. Below it is a navigation menu with links for Login, Events, Glossary, and Contact. The main content area is titled "Welcome to the RIPE NCC LIR Portal" and includes a "New Users Click Here" link. Below this is a "Latest News!" section with a list of new features to the LIR Portal, including IPv4 Allocation Object Editor, IPv6 Allocation Object Editor, Organisation Object Editor, and a Save/Resume feature for PA Wizard requests. Further down, there is a section titled "The LIR Portal lets you manage your registry data and make queries and updates." followed by a list of features of the LIR Portal, such as viewing and editing LIR contact and addresses information, viewing billing information, viewing IP and AS resources, viewing status of open tickets, news and events board, submitting IPv4, IPv6 and AS Number request forms, updating certain attribute values in allocation objects, and requesting approval and having an assignment automatically registered in the RIPE Database. At the bottom left, there is a note that all information exchanged is encrypted to ensure security. At the bottom right, there is a "LOGIN" form with fields for Name, Username, and Password, and a "New user account? Click the link below" link. Below the login form is the "NCC LOGO FOR MEMBERS" section, which includes a note that if you would like to indicate on your website or any other publication that your organisation is a member of the RIPE NCC, you should use the following graphics, available in GIF, JPEG, PNG, and EPS formats. At the bottom right, there is a RIPE NCC Member logo.

Training

The RIPE NCC's Training Services Team delivers training courses to members throughout the RIPE NCC's service region. The following training courses were offered in 2008:

- **The LIR Training Course**

Shows members how to request Internet number resources and how to interact with the RIPE NCC.

- **The Routing Registry (RR) Course**

Explains the features of Routing Policy Specification Language (RPSL) and the Routing Registry (RR) and related tools to experienced network operators.

- **The DNS for LIRs**

Provides 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.

All RIPE NCC Training Courses are regularly updated to include information on any new policies accepted by the RIPE community and modifications to procedures and software. For more information about RIPE NCC Training Services, see:

www.ripe.net/training

The following courses were given in 2008: **45** Local Internet Registry LIR courses, **16** Routing Registry courses, **9** DNS for Local Internet Registry courses. These courses were held in **37** countries throughout the RIPE NCC service region and attracted over **1,500** participants.



A RIPE NCC Training Course takes place at the RIPE NCC offices, Amsterdam, the Netherlands

Training Seminars

In addition to these courses, a one-day seminar covering all three training courses was held alongside the RIPE NCC Regional Meeting in Moscow (see page 22). The Training Team also gave several tailored seminars and presentations during industry conferences, operator groups and peering forums, including seminars at the European Commission's European IPv6 Day, Delft Technical University and the Telecommunications Forum (TELFOR) 2008.

Hosted Courses

Of the **70** training courses given throughout the year, **14** were held at venues provided by a host. More information about hosted courses, details on how to host a course and an overview of the 2008 hosts can be found at: www.ripe.net/training/hosting.html

IPv6 Courses

At the request of the RIPE community, the Training Team began preparing for the development of IPv6 Training Courses.

Screencast Modules

The Training Team also released screen cast modules about the certification of Internet number resources. The screencasts were used to explain the RIPE NCC's work on certification. ■

RIPE NCC E-Learning Centre

The E-Learning Centre is free and open to anyone and offers short online courses on topics relevant to the Internet industry, the RIPE community, governments and regulators. E-Learning modules also supplement the material covered in the RIPE NCC's Training Courses listed above. Further modules are in the process of being developed based on feedback from our users. More information about the RIPE NCC E-Learning Centre can be found at: <https://e-learning.ripe.net> ■



Regional Support

The RIPE NCC offers support to members throughout its service region.

This enables it to communicate more effectively with members about the specific technical, administrative and policy issues that affect a particular region.



RIPE NCC Head of External Relations and Communication Paul Rendek opens the RIPE NCC Regional Meeting Moscow, Russia, 2008

The RIPE NCC Regional Meetings bring together a region's members, local governments and key players in the global and local Internet industry, encourage dialogue and provide a platform for attendees to work together to identify key regional issues. Members can give feedback directly to RIPE NCC representatives so their changing needs can be continuously evaluated and addressed. These events are free of charge and open to anyone, although registration is required. More information about RIPE NCC Regional Meetings is available at:

www.ripe.net/meetings/regional ■

Two RIPE NCC Regional Meetings were held during 2008:

April: Salmiya, Kuwait, alongside the MENOG 3 Meeting (see page 23)
September: Moscow, Russia

Middle East Network Operators Group (MENOG) Meeting

MENOG is a regional forum that offers network engineers and other technical staff the opportunity to share knowledge and experiences and identify areas for regional cooperation. Created in 2007 by the region's Internet community, the RIPE NCC has provided administrative support for MENOG since its inception.

In 2008, the MENOG 3 Meeting took place in Salmiya, Kuwait in April. In addition, workshops and tutorials were organised by MENOG and took place



Top: RIPE NCC Executive Board Member and MENOG Coordination Team Member Fahad AlShirawi speaks at the opening plenary of the MENOG 3 Meeting.
Bottom: Attendees at the RIPE NCC Regional Meeting, Salmiya, Kuwait, 2008.

alongside the RIPE 57 Meeting in Dubai in October. More information about MENOG can be found at: www.menog.net ■

Customer Services

The RIPE NCC's Customer Services Team provides first-line user support and enables members to communicate with the RIPE NCC more effectively by streamlining and coordinating internal activities. During 2008, the Customer Services Team processed a total of **16,748** requests, compared to the **17,797** requests in 2007. These numbers include requests for:

- RIPE Database user support
- DNS user support
- New LIR queries and applications
- Billing
- General administrative support to LIRs
- Legal requests and abuse complaints

The initial response time to requests was stabilised to one working day.

During the year, the team worked in implementing organisation-wide procedures to facilitate policy 2007-01, "Direct Internet Resource Assignments to End Users from the RIPE NCC", which was accepted by the RIPE Community. See page 39 for more details about this policy. ■

The RIPE Database

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

Anyone can use the RIPE Database to make queries and RIPE NCC members can update information relating to their Internet number resource allocations and assignments. During 2008, 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, in which network operators can publish their routing policies and routing announcements.

Throughout 2008, several updates and improvements to the RIPE Database were made:

RIPE Database Architecture

The RIPE Database architecture was improved to enhance resilience and performance. The new architecture improved an already high availability service and further reduced the risk of data loss. The increased service capacity is expected to handle the predicted growth of the service over the coming years.

Legal Documentation

As part of the strengthening of its legal framework (see page 13), the RIPE NCC published the “Terms and Conditions of Use” for the RIPE Database. A procedure to remove personal data from the RIPE Database was also implemented to address users’ possible concerns about the security of personal data. More information about these documents can be found at:

<http://www.ripe.net/legal/>

Data Protection

Upon recommendation from the RIPE Data Protection Task Force, all objects in the RIPE Database are now required to have a maintainer (**mntner**). An automated process that monitors personal data in the RIPE Database was also implemented to remove any personal data that is not related to operational data.

White Pages

The RIPE Database now has a White Pages listing which enables industry partners and community participants who may not be members of the RIPE NCC to maintain a presence in the RIPE Database. An entry in the White Pages prevents the automatic deletion of an un-referenced **person** object. The RIPE community requested this feature and the RIPE Working Group Chairs oversee all White Page entries.

Forward Domain Objects

During the RIPE 57 Meeting, the Council of European National Top-Level Domain Name Registries (CENTR), the RIPE Database Working Group and the DNS Working Group agreed that all forward domain data from the RIPE Database should be removed. The RIPE NCC began

preparations to implement this during the year.

Near Real-Time Mirroring (NRTM)

In 2008, a near real-time mirroring (NRTM) service that excludes personal data was initiated. This service provides users with near real-time RIPE Database information.

Queries

There was a significant increase in the amount of queries that the whois servers handled over 2008 – an increase of around 50% on the peak load since the beginning of the year. The query cluster was expanded to meet the growing demand.

Documentation

The RIPE Database documentation was updated to reflect the changes made to the software and operational usage. The documentation is now more closely coupled to the software releases and updates will be made for all changes to the software. ■

DNS Services

As part of the technical support for allocated address space, the RIPE NCC provides primary and secondary Domain Name System (DNS) services for reverse domains. Reverse zones are used to map IP addresses into names. For example, a reverse zone maps the address 193.0.14.129 to the name k.root-servers.net.

For the reverse zones maintained by the RIPE NCC, full DNS Security (DNSSEC) support, including zone signing and support for secure delegations, is provided. A secondary DNS service for a number of country code Top-Level Domains (ccTLDs) is also provided. The

RIPE NCC also runs the Tier-0 registry and the DNS service for the e164.arpa domain to support ENUM (see page 26). In 2008, the RIPE NCC began accepting secure delegations for this zone. ■

Reverse Delegation

The RIPE NCC provides reverse domain delegations for IPv4 and IPv6 address space that it allocates and assigns. This continues to be one of the primary DNS activities. RIPE NCC members maintain their own reverse delegations by updating their information in the RIPE Database, the authoritative source for reverse zones. More information about the RIPE Database can be found on page 24. In 2008, the RIPE NCC continued to carry out periodic lameness checks for the delegations it supports. During the year, the single server ns.ripe.net was replaced with a load-balanced cluster to improve the resiliency and reliability of the reverse delegation of all the /16 IPv4 and /32 IPv6 zones that use ns.ripe.net as a secondary server. ■

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. The RIPE NCC provides 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 or those who have difficulty obtaining and paying for commercial DNS services. As requested by the RIPE community, the RIPE NCC continued the phase-out of secondary DNS services for well-established ccTLD operators. At the end of 2008, a stable secondary DNS service was provided to 87 ccTLDs. ■

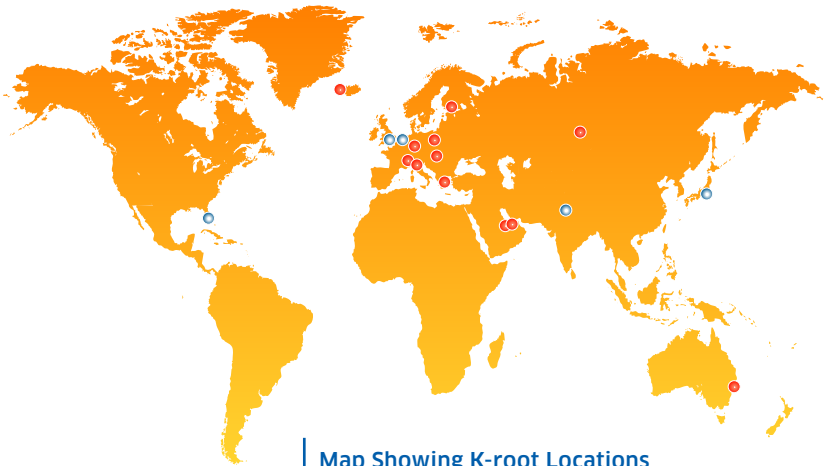
K-root and Anycast

The RIPE NCC operates K-root, one of the Internet's 13 root name server clusters. Root name servers are a crucial part of the Internet Domain Name System (DNS) infrastructure. The K-root server has been operated by the RIPE NCC since 1997, when the first server was installed at the London Internet Exchange (LINX). Currently, K-root consists of 17 nodes, all of which are operated by the RIPE NCC. K-root operations were stable throughout 2008. On 4 February 2008, the Internet Assigned Numbers Authority (IANA) introduced K-root's IPv6 address, which has been operational since 2007, into the root zone and the hints file.

Since then, K-root's IPv6 footprint has grown from a single site to nine locations around the world, including two global instances. Additionally, K-root's traffic engineering practices were changed slightly to improve the efficiency of the Anycast network. This has resulted in better distribution of the queries. The K-root website was rebuilt and improved query statistics are being published. More information about K-root is available at: <http://k.root-servers.org> ■

ENUM

The RIPE NCC provides Domain Name System (DNS) operations for the e164.arpa zone (ENUM) in accordance with the instructions from the Internet



Map Showing K-root Locations

● Global nodes ● Local nodes

Architecture Board (IAB). These instructions can be found at: www.ripe.net/enum/instructions.html

ENUM is an Internet standard defined in RFC3671 for mapping E.164 telephone numbers into domain names and storing these in the DNS. The RIPE NCC delegates domains for E.164 country codes to entities (Tier-1 registries) requesting them 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

A plan to deploy DNSSEC in the e164.arpa zone (ENUM) was presented to the Internet Architecture Board (IAB) and to the RIPE community and received support. The zone was first signed in November 2007 and the RIPE NCC started to support secure delegations in March 2008. ■

Information Services

The RIPE NCC's Information Services provide a deeper insight into the workings of the Internet. Most of these services and tools are offered free of charge. All data generated is available to anyone. As the RIPE NCC is a neutral and impartial organisation, commercial interests do not influence the data collected.

In 2008, “single sign-on” was implemented to enable users to access all Information Services using just one login account. A flexible alarms system was also built and has so far been implemented for the Routing Information Service (RIS) and the DNS Monitoring (DNSMON) service.

During the year, APNIC, the RIR for the Asia Pacific region, agreed to actively promote the RIPE NCC's Information Services in the Asia Pacific region, helping to increase the reach of these services. An overview of each of the RIPE NCC's Information Services can be found below. ■

Test Traffic Measurement (TTM) Service

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 deployed at participating sites and measurement traffic is sent between them.

During 2008, **13** new TTM test-boxes were deployed, bringing the total number of deployments to **110** worldwide. In addition, the RIPE NCC signed a Memorandum of Understanding (MoU) with AfrINIC and the Kenya Internet Exchange (KIXP) to deploy and operate one TTM test-box each.

The first test-boxes to be deployed on the African continent will be installed in Johannesburg and Nairobi. And, in partnership with APNIC, a TTM test-box was deployed in Brisbane, bringing the total of test-boxes in the Asia Pacific region to four.

The TTM Task Force

The TTM Task Force was set up in 2006 to provide input to the RIPE Test Traffic Working Group on proposals for the future of the TTM service. In 2008, this task force was disbanded after completing its work to publish the “TTM Futures Final Proposal”. The TTM WG accepted the task force's proposal and implementation of the improvements documented in the proposal began during the year. Implementations so far include adhoc testing for TTM service subscribers and the publication of an improved TTM charging scheme, giving users more flexible options for payment. ■

The TTM Futures Final Proposal can be found at:
www.ripe.net/maillists/ncc-archives/tt-tf/2007/msg00005.html

More information about TTM and the TTM charging scheme can be found at:
www.ripe.net/projects/ttm.html

Domain Name System Monitoring (DNSMON)

The DNSMON service uses the TTM service test-boxes to provide an objective overview of DNS root servers and participating Top-Level Domain (TLD) name servers. The measurements show the quality of the DNS and enable users to distinguish between server-side and client-side problems. The DNSMON service was launched in April 2005.

There are three levels of DNSMON service available:

- **Level 1:** Provides root server operators full access to the root domain free of charge, enhancing global cooperation in ensuring the stability of the DNS.
- **Level 2:** Provided for a fee to participating TLDs. Subscribers can access the subscriber-only DNSMON server and access data as near to real time as possible.
- **Level 3:** Data is provided to the public free of charge but with an artificial two-hour delay.

By the end of 2008, around **33** TLDs were using DNSMON. New DNSMON subscriptions in 2008 included .ir (Iran) and .mx (Mexico).

In 2008, the DNSMON service was extended to include the monitoring of Tier-1 ENUM domains at the RIPE community's request and, by the end of the year, there were new DNSMON ENUM subscriptions for .de and .uk.

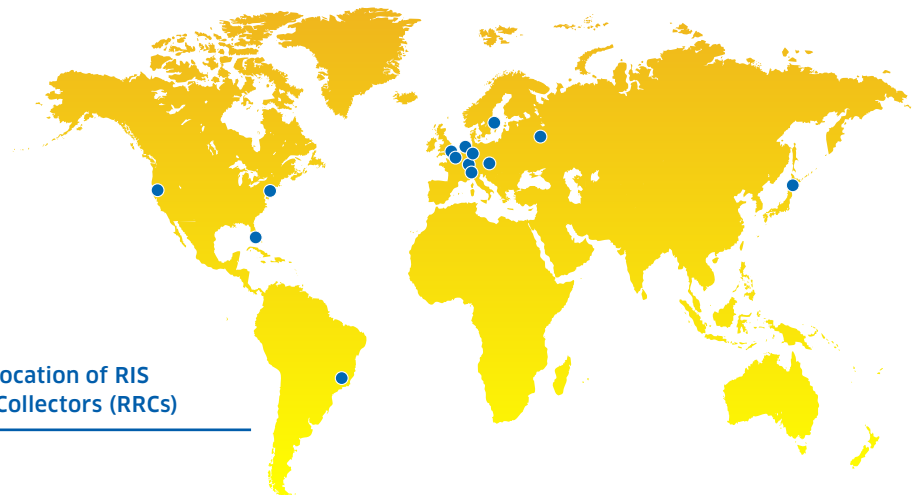
During the year, an alarms system that uses the RIPE NCC Information

Services alarms framework was implemented for the DNSMON service. Anycast instance reporting for the root zone was also implemented. 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 peering sessions. This information is collected by the **15** Remote Route Collectors (RRCs) located at major Internet exchanges around the world. In 2008, these RRCs held over **600** peering sessions. The 15th RRC, located in Miami, went live in February 2008.

The RIS offers several tools that enable users to search, analyse and monitor changes in the global routing system. They are available to the public free of charge.



Map Showing Location of RIS Remote Route Collectors (RRCs)

IS Alarms

IS Alarms is one of the RIS's integrated tools, enabling network administrators to monitor routing changes related to a network. The service offers a new look and feel as well as a faster and more efficient back-end processing system. By the end of 2008, IS Alarms had over **2,000** users. ■

All the raw data collected since the RIS project started in 1999 is available at: www.ripe.net/projects/ris/rawdata.html

More information about the RIS and the tools available can be found at: www.ripe.net/projects/ris/tools



RIPE 57 Meeting, Dubai,
United Arab Emirates

Hostcount

The RIPE NCC coordinates the collection of data from the DNS zones of the Top-Level Domains (TLDs) in its 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 2008, the RIPE NCC launched an updated version of Hostcount, with a new look and feel that provides more reliable and accurate data. During the year, the ccTLD for Ireland, .ie, began to provide data for Hostcount using the Hostcount DIY Kit, a copy of the Hostcount software that ccTLDs can implement and run on the RIPE NCC's behalf. ■

More information about Hostcount can be found at: www.ripe.net/hostcount

Further information about all of the RIPE NCC's Information Services can be found at: <http://is-portal.ripe.net/>

RIPE NCC in the Internet Industry

Throughout the year, the RIPE NCC worked extensively to develop and promote relations with governments, regulators and industry partners.

External Relations

In 2008, the RIPE NCC began working with Racepoint Group, a global external relations agency specialising in digital media, to further promote the RIPE NCC as a legitimate and leading industry organisation.

The RIPE NCC works together with the agency to:

- Develop and distribute press releases
- Identify opportunities to get key messages into industry-related publications and the global media
- Liaise and foster relations in multi-stakeholder environments (governments, regulators)
- Provide RIPE NCC spokespeople at high-level events

Highlights during the year included over **200** pieces of coverage in targeted media (technology, business and public sector publications) and **40** media briefings. In addition, **12** by-lined articles positioning the RIPE NCC and the Number Resource Organization (NRO – see page 33) as industry leaders appeared in business

and public sector publications, including *The Economist*, *The Guardian*, *Computer Weekly* and *Information Age*. The RIPE NCC's PR activities will continue and expand throughout the coming year. ■

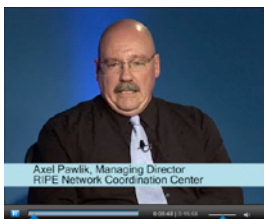
The Internet Governance Forum (IGF)

The third IGF was held from 3-6 December 2008 in Hyderabad, India. The event, organised by the United Nations, has taken place annually for the last three years. The RIPE NCC has participated in the IGF from its inception on its own behalf and together with the other Regional Internet Registries (RIRs) as the Number Resource Organization (NRO – see page 33).

The forum provides an opportunity for the many different stakeholders in the Internet community to come together and discuss Internet Governance issues.

Under a general theme of "Internet For All," the 2008 event featured discussions and workshops across five specific areas:

- Reaching the next billion
- Promoting cyber-security and trust
- Managing critical Internet resources
- Taking stock and the way forward
- Emerging issues – the Internet of tomorrow ■



RIPE NCC Managing Director Axel Pawlik is interviewed about the future of the Internet for Computing.co.uk. See the full interview at: <http://www.computing.co.uk/itweek/video/2222613/interview-future-web>



MENOG Coordination Team member Guarab Upadhaya (second from right) and Afrinic CEO Adiel A. Akplogan (far right) address the challenges for ISPs in the developing world at the IGF 2008

Full details of the NRO's activities at the IGF can be found at: www.nro.net/governance

More information about the IGF can be found at: www.intgovforum.org

The ITC's efforts culminated in the release of a memo, "Memorandum on the Future of the Internet in a Global Economy", which urged governments, civil society and the private sector to ensure that human capacities are enhanced or enabled through creativity and confidence and that the convergence of Internet technology is preserved. The RIPE NCC was involved in drafting this memo and donated the services of its PR agency, Racepoint (see page 31), to the ITC to increase the media coverage of its efforts.

The ICT's memorandum and background information about the Ministerial Meeting can be found at: www.ripe.net/news/ITC-memorandum.html

In addition, the RIPE NCC participated in the Business and Industry Advisory Committee (BIAC) to the OECD and the ICCP's Technical Workshop on "ICT and Innovation" held in Paris from 10-11 December, 2008. During the workshop, the ICCP agreed to formalise the ITC's involvement in its work. At the end of 2008, the ITC was working on a proposal for the ITC to be formally recognised by the OECD. ■

Cooperation with the OECD

The RIPE NCC has been working together with the Organisation for Economic Co-Operation and Development's (OECD) Committee for Information, Computer and Communication Policy (ICCP) since 2007.

During 2008, the RIPE NCC attended the prestigious OECD Ministerial Meeting on the Future of the Internet Economy, held in Seoul, South Korea from 17-18 June. Working together with the other RIRs and industry partners as the "Internet Technical Community (ITC)", the RIPE NCC played an active role in the Technical Community stakeholder forum, which took place alongside the Business and Civil Society stakeholder forums.



APNIC's Chief Scientist Geoff Huston represents the five RIRs during a panel session at the OECD Ministerial Meeting in Seoul, Korea in 2008.

RIPE NCC Roundtable Meetings

Roundtable Meetings for Governments and Regulators have been held since 2005.

These meetings are designed to enhance cooperation between the technical community in the RIPE NCC's service region and local governments and regulators.



Roundtable

In 2008, one Roundtable Meeting was held on 29 September in Amsterdam. 35 government representatives, law enforcement representatives and public sector representatives from 11 countries attended the meeting. Issues including IP address registration, IPv4 exhaustion and criminal activity on the Internet were discussed.

Due to positive feedback received from participants, two Roundtable meetings will now be held each year. Attendance at Roundtable Meetings is by invitation only. More information about the meetings can be found at: www.ripe.net/meetings/roundtable ■

RIPE Task Force on Enhanced Cooperation

The RIPE Task Force on Enhanced Cooperation was set up in 2007 to advise on cooperation between the RIPE community and relevant stakeholders, particularly governments and regulators. After two years of work, the task force delivered its final report and recommendations. Recommendations included setting up a new RIPE Cooperation Working Group and the maintenance of a document that details the RIPE Policy Development Process (PDP) and the reasons for it.

The RIPE Cooperation Working Group was established and held its first session at RIPE 57. The Cooperation Working Group is actively involved in the RIPE NCC's Roundtable Meetings and provides valuable input from the RIPE community about issues that affect governments, regulators and law enforcement agencies. ■

The Number Resource Organization (NRO)

The NRO serves as a coordinating mechanism for 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 and other interested parties 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.

The 2008 officers were:

- Chairman – Paul Wilson (APNIC)
- Secretary – Adiel Akplogan (AfriNIC)
- Treasurer – Axel Pawlik (RIPE NCC)
- Members – Raúl Echeberría (LACNIC), Ray Plzak (ARIN).

During 2008, the RIPE NCC began preparations for the handover of the NRO Secretariat from AfriNIC, which held the function in 2008.

The NRO at the OECD Ministerial Meeting

Working together with the other RIRs as the NRO, the RIPE NCC also prepared

and released an appeal for investment in IPv6, noting that IPv6 was vital to the Internet economy and urging all stakeholders to help accelerate the widespread deployment of IPv6. The appeal was noted during the Ministerial Meeting and formed part of the OECD's Seoul Declaration. Together with Racepoint, the NRO worked to ensure that the global media was informed about the RIRs' participation. There was widespread media coverage of the event, with many media outlets picking up the key messages detailed in the NRO's memorandum. ■

More information about the NRO's participation in the Ministerial Meeting can be found at:

www.ripe.net/news/RIR-appeal-ipv6-investment.html

The Seoul Declaration can be viewed at:

www.oecd.org/dataoecd/49/28/40839436.pdf

More information about the NRO can be found at:

www.nro.net

The NRO Number Council (NC)

The NRO NC is comprised of three people from each RIR's local Internet community and acts as an advisory body to the NRO EC. The NRO NC also performs the role of the Address Supporting Organization Address Council (ASO AC). More information about the NRO NC can be found at: www.nro.net/about/number-council.html ■

The Address Supporting Organization (ASO)

The ASO is one of the three supporting organisations required by 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 two 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.

In 2008, the RIPE NCC's representatives on the ASO AC were:

- Hans Petter Holen (Visma IT)
Jan 2008-31 Dec 2010
- Dave Wilson (HEAnet)
Jan 2007-31 Dec 2009
- Wilfried Woeber* (UniVie/ACOne)
Jan 2006-31 Dec 2008

* Selected by the RIPE NCC Executive Board

The ASO Secretariat function rotates between the RIRs on an annual basis and was performed by AfriNIC in 2008. During the year, the RIPE NCC began preparations for the handover of the 2009 ASO Secretariat from AfriNIC.

More information about the ASO is available at:

www.aso.icann.org ■

RIPE and the RIPE Policy Development Process (PDP)



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 smooth operation of the Internet.

The RIPE NCC and RIPE, although similar in name, are separate entities. They are, however, highly interdependent. The RIPE NCC provides administrative support to RIPE and the RIPE Working Groups, such as the facilitation of RIPE Meetings and the maintenance and development of the RIPE Document Store and publicly archived mailing lists.

The RIPE community is the collective term for individuals or organisations, 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 Internet industry, the public, governments and regulators. 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 38). All of RIPE's activities are documented, archived and available to the public.

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 mailing lists that are open to anyone and publicly archived to facilitate discussion. The RIPE Working Groups also meet twice a year in dedicated sessions during RIPE Meetings. Working groups can be formed or disbanded as necessary by the RIPE community. More information about the RIPE Working Groups can be found at: www.ripe.net/ripe/wg ■



Rob Blokzijl
RIPE Chair

RIPE Working Groups:

- Address Policy Working Group
- Anti-Abuse Working Group
- Cooperation Working Group
- Database Working Group
- DNS Working Group
- EIX (European Internet Exchanges) Working Group
- ENUM Working Group
- IPv6 Working Group
- RIPE NCC Services Working Group
- Routing Working Group
- Test Traffic Working Group

RIPE Task Forces

The following RIPE Task Forces were in action during 2008:

- The Data Protection Task Force
- The RIPE Certification Task Force
- The RIPE Task Force on Enhanced Cooperation (see page 33)

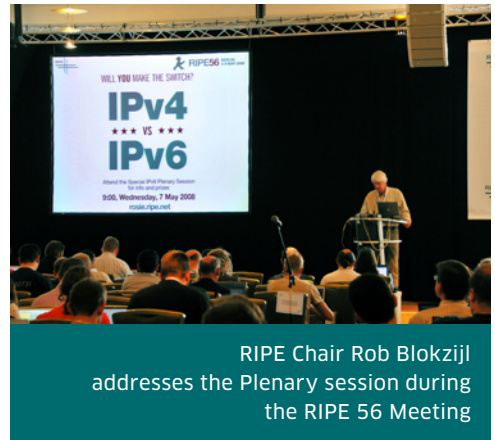
More information about RIPE Task Forces can be found at:

<http://www.ripe.net/ripe/tf/index.html> ■

The RIPE NCC facilitates remote participation and feedback mechanisms during RIPE Meetings for those who are unable to take part in person. All sessions are webcast, audiocast or podcast and remote participants can contribute to discussions during the meeting sessions using Internet Relay Chat (IRC) or Jabber. ■

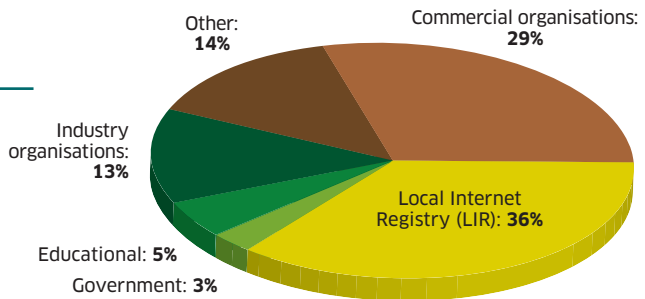
RIPE Meetings

The RIPE NCC supports and facilitates RIPE Meetings. Held twice a year, these five-day events are open to everyone, although registration is required. RIPE Meetings bring together key industry players, network operators, governments, regulators and individuals to discuss the technical, administrative and policy issues surrounding IP networking. Relevant tutorials, trainings and demonstrations are also provided.

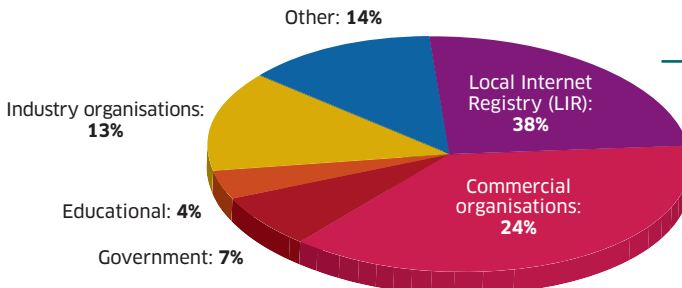


RIPE Chair Rob Blokzijl addresses the Plenary session during the RIPE 56 Meeting

RIPE 56 Attendance



RIPE 57 Attendance



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 can suggest a new policy or a change to an existing policy, not just RIPE NCC members.

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 phases of the RIPE PDP. If, according to the chairs of the relevant RIPE Working Groups, there is consensus in the RIPE community to accept a proposal, it completes the PDP and “acceptance” is declared. The RIPE NCC then implements the policy into its working procedures. More information about the RIPE PDP can be found at:

www.ripe.net/ripe/policies ■

Proposal Overview 2008

Submitted Proposals

Nine new proposals were submitted during 2008:

2008-01, “Assigning IPv6 PI to Every INETNUM Holder” proposed that the RIPE NCC should conduct a one-time operation to assign a /56 IPv6 Provider Independent (PI) prefix to all End Users with an IPv4 assignment registered in the RIPE Database.

2008-02, “Assigning IPv6 PA to Every LIR” proposed that the RIPE NCC should conduct a one-time operation to allocate an IPv6 block to every Local Internet Registry (LIR) that does not have any existing IPv6 allocation.

2008-03, “Global Policy for the Allocation of the Remaining IPv4 Address Space” described the proposed process for the allocation of the remaining IPv4 space from the Internet Assigned Numbers Authority (IANA) to the Regional Internet Registries (RIRs). The proposal states that when a minimum amount of available space is reached, one /8 will be allocated from the IANA to each RIR, replacing the current IPv4 allocation policy.

2008-04, “Using the Resource Public Key Infrastructure to Construct Validated IRR Data” discussed the introduction of a new registry that augments Internet Routing Registry (IRR) data with the verifiable trust model of the Resource Public Key Infrastructure (RPKI).

2008-05, “Anycasting Assignments for TLDs and Tier 0/1 ENUM” proposed allowing Tier-0 and Tier-1 ENUM operators to receive IPv4 and IPv6 anycast assignments and extending the number of anycast prefixes that can be assigned from one to up to four assignments.

2008-06, “Use of Final /8” described how the RIPE NCC should make allocations from its last /8 of IPv4 address space when there is total depletion of the IANA’s free pool of IPv4 Internet number resources.

2008-07, “Ensuring Efficient Use of Historical IPv4 Resources” proposed that documentation showing historical Internet number resources held by a RIPE NCC member should be required when assessing eligibility for further IPv4 address space.

2008-08, “Initial Certification Policy for Provider Aggregatable Address Space Holders” described guidelines on how LIRs can receive certificates for their Provider Aggregatable (PA) address space.

allocations and how these certificates should be maintained when the RIPE NCC deploys a certification service.

2008-09, “ASPLAIN Format for the Registration of 4-byte ASNs” sought modification of the current policy document ripe-389, “Autonomous System (AS) Number Assignment Policies and Procedures” to use ASPLAIN for recording and representing 32-bit (or four-byte) AS Numbers.

Two proposals that were submitted in 2006 were still in the PDP at the end of 2008:

2006-01, “Provider Independent (PI) IPv6 Assignments for End User Organisations” discussed a solution for organisations that need IPv6 Provider Independent (PI) address space.

2006-05, “PI Assignment Size” suggested that the minimum assignment size for PI assignments should be a /24 when routing is a major issue for a multihomed End User.

Discussions on these two proposals were temporarily halted by the RIPE Address Policy Working Group Chairs so that proposal 2007-01, “Direct Internet Resource Assignments to End Users from the RIPE NCC” could first conclude the PDP. This is because both 2006-01 and 2006-05 concern PI assignments and 2007-01 deals with a fundamental issue about End User assignments. Discussions on 2006-01 and 2006-05 were resumed when proposal 2007-01 was accepted in October 2008.

Concluded Proposals

Nine proposals concluded the PDP during 2008. The Community accepted three of these proposals:

2007-01, “Direct Internet Resource Assignments to End Users from the RIPE NCC”

The acceptance of this proposal means that a contractual relationship between an End User and a sponsoring LIR or between an End User and the RIPE NCC will have to be established before the End User receives Internet number resources directly from the RIPE NCC. This contractual relationship is to be put in place for all End Users of those PI Internet number resources that were previously assigned either directly by the RIPE NCC or through an LIR. The proposal also reaffirms and clarifies the existing RIPE policy that IPv4 PI address assignments of any type cannot be sub-assigned.

The requirements for the contractual relationship are currently described in the draft RIPE Document “Contractual Requirements for Provider Independent Resource Holders in the RIPE NCC Service Region”. At the end of 2008, proposal 2007-01 was awaiting formal documentation by the RIPE NCC.

2007-08, “Enabling Methods for Reallocation of IPv4 Resources”

This proposal is now formally documented in RIPE Document ripe-441, “IPv4 Address Allocation and Assignment Policies for the RIPE NCC Service Region”.

2008-03, “Global Policy for the Allocation of the Remaining IPv4 Address Space”

This proposal is now formerly documented in RIPE Document ripe-436, “Global Policy for the Allocation of the Remaining IPv4 Address Space”.

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

Withdrawn Proposals

Six proposals were withdrawn in 2008:

2007-06, “Global Policy for the Allocation of the Remaining IPv4 Address Space” 2007-07, “End Policy for IANA IPv4 Allocations to RIRs”

The two proposals above were withdrawn because the authors decided to combine them into one proposal, 2008-03, “Global Policy for the Allocation of the Remaining IPv4 Address Space”, after receiving feedback from the RIPE community. Proposal 2008-03 was subsequently accepted by the RIPE community and is described on page 38.

2007-09, “Cooperative Distribution of the End of the IPv4 Free Pool”

This proposal described a new process for RIR-to-RIR redistribution of the tail end of the IPv4 free pool, which would take effect after the IANA’s IPv4 reserve is exhausted. For the proposal to be effective as a policy it was necessary to have at least two RIRs applying the process. After the proposal was abandoned in the other RIR regions in which it was proposed, the author decided to withdraw it in the RIPE region.

2008-01, “Assigning IPv6 PI to Every INETNUM Holder”

2008-02, “Assigning IPv6 PA to Every LIR”

These two proposals were withdrawn by the author due to insufficient support from the RIPE community. See page 38 for further details of these proposals.

Current Policy Proposals

www.ripe.net/ripe/policies/proposals

Archived Policy Proposals

www.ripe.net/ripe/policies/proposals/archive ■



Plenary sessions in progress at the RIPE 57 Meeting, Dubai, United Arab Emirates

Financial Report



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Auditors' report

To: the RIPE NCC General Meeting

Auditors' report

Introduction

We have audited the accompanying financial statements of Réseaux IP Européens Network Coordination Centre, Amsterdam, for the year 2008 as set out on pages 44 up to 52, which comprise the balance sheet as at 31 December 2008 the profit and loss account for the year then ended and the notes. These financial statements are the responsibility of the company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

Scope

We conducted our audit in accordance Dutch Law. This law requires that we plan and perform the audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant 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 2008 of Réseaux IP Européens Network Coordination Centre have been prepared, in all material respects in accordance with the accounting policies selected and disclosed by the company, as defined in the notes of the financial statements.

Amstelveen, 11 March 2009

KPMG ACCOUNTANTS N.V

H.A.N. Spoelstra AA

KPMG Accountants N.V., registered with the trade register in the Netherlands under number 33263683 and a member firm of the KPMG network of independent member firms affiliated with KPMG International, a Swiss cooperative.

All our services are subject to our general conditions, which are filed at the Amsterdam District Court under number 95/2008, and which we will send to you on request.

Although the worsening economic situation in 2008 affected large sections of the RIPE NCC service region, strong membership growth continued for the RIPE NCC. The membership grew by 695 members, the highest growth since 2000.

Because of this high membership growth, the RIPE NCC's income from service fees continued to increase. Controlled growth of operations also contributed to an increase in expenses to just above the budgeted expenses for 2008. The RIPE NCC proposes that the resulting surplus is added to the clearing house reserve to cater for future uncertainties.

Both RIPE Meetings in 2008 exceeded budgeted costs due to external factors. Improved planning will help to lower the expenses associated with the RIPE Meetings in the coming years.

Low-risk cash management principles have always been used by the RIPE NCC and, in 2008, these principles became all the more important to ensure financial security in the uncertain economic climate.

While the capital reserve was guaranteed, improved cash management and the increased interest rate returns on deposits meant that the interest earned by the RIPE NCC increased considerably over the year.

The RIPE NCC's Personnel Fund, which was set up in 1997 to provide security for RIPE NCC employees at the organisation's inception, was dissolved in 2008. This means that a more accurate reserve level can now be reflected in the balance sheet and helps to simplify the RIPE NCC's internal structure.

Over the year, the RIPE NCC's work on several software development projects continued with the aid of specialised consultants. Projects such as Internet number resource certification will lead to an increase in intangible fixed assets, further adding to the organisation's overall value.

On a final note, 2008 was a stable year financially for the RIPE NCC. And with continued careful management and tracking of the RIPE NCC's financial state, I'm confident about our stability and growth in the next years.



Axel Pawlik
RIPE NCC Managing
Director

A handwritten signature in blue ink, appearing to read 'A. Pawlik'.

Axel Pawlik
RIPE NCC Managing Director

STATEMENT OF INCOME AND EXPENDITURE 2008

<i>(In kEUR)</i>	Actual Year 2008	Budget 2008
Income		
Service Fees	11,425	10,920
Sign Up Fees	1,918	1,092
RIPE Meeting	303	218
Other Income	149	206
Total Income	13,795	12,436
Expenditures		
Personnel	7,634	7,776
General Operating Expenses	3,355	3,241
RIPE Meeting	816	539
Training Courses	276	315
Regional Meetings	119	138
Financial Expenses	80	70
Subtotal Operational Expenses	12,280	12,079
Miscellaneous Expenses	(1,339)	250
Depreciation	787	596
Total Expenses	11,728	12,925
Surplus/Deficit Before Interest Income	2,067	(489)
Interest Income	757	517
Surplus/Deficit	2,824	28
Full Time Equivalentents (FTEs)	107.0	105.6

Actual Year 2007	Difference 2008 vs Budget 2008		Difference 2008 vs 2007	
9,951	505	5%	1,474	15%
1,840	826	76%	78	4%
219	85	39%	84	38%
186	(57)	-28%	(37)	-20%
12,196	1,359	11%	1,599	13%
7,102	(142)	-2%	532	7%
2,796	114	4%	559	20%
401	277	51%	415	103%
319	(39)	-12%	(43)	-13%
118	(19)	-14%	1	1%
65	10	14%	15	23%
10,801	201	2%	1,479	14%
144	(1,589)	-636%	(1,483)	-1030%
729	191	32%	58	8%
11,674	(1,197)	-9%	54	0%
522	2,556		1,545	
548	240	46%	209	38%
1,070	2,796		1,754	
99.5	1.4	1%	7.5	8%

(In kEUR)

31 December 2008

Assets

Fixed assets

Computers	875
Infrastructure	187
Office Equipment	98

Total Fixed Assets	1,160
---------------------------	--------------

Intangible Fixed Assets

Software Development	777
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Total Intangible Fixed Assets	777
--------------------------------------	------------

Current Assets

Accounts Receivable	3,461
VAT	68
Miscellaneous Receivables	1,104

Total Current Assets	4,633
-----------------------------	--------------

Cash On Hand

21,449

Total Assets	28,019
---------------------	---------------

Liabilities

Capital

Reserves	477
Clearing House	13,287
Surplus	2,824

Total Capital	16,588
----------------------	---------------

Current liabilities

Creditors	563
Wage Taxes and Social Securities	303
Unearned Revenues	9,735
Miscellaneous Payables	830

Total Current Liabilities	11,431
----------------------------------	---------------

Total Liabilities	28,019
--------------------------	---------------

31 December 2007

795	
285	
72	
	1,152
271	
	271
2,988	
75	
984	
	4,047
	19,436
	24,906
477	
12,217	
1,070	
	13,764
875	
276	
8,753	
1,238	
	11,142
	24,906

General Information

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 was prepared in accordance with the historical cost convention. The accounting principles were in accordance with the previous accounting year.

The financial year 2008 resulted in a surplus of **2,824** kEUR. This positive result is due to a higher than expected income from membership growth and due to the RIPE NCC Personnel Fund dissolution payment. The RIPE NCC proposes that this surplus will accumulate in the RIPE NCC's Clearing House. In 2008, the RIPE NCC's capital increased to an amount equal to **142%** of total expenses, compared to **118%** of total expenses at the end of 2007. Excluding the one time payment from the RIPE NCC Personnel Fund, the capital equals **126%** of the total expenses. The RIPE NCC's Executive Board and the RIPE NCC's management aim to keep a minimum of one year's total expenses in reserve to ensure the RIPE NCC's financial stability and its operational continuity. ■

in members resulted in a **5%** increase in service fee income compared with the budget 2008 and a **15%** increase compared to 2007. The total number of applications for membership was **1,082**, an increase of **13%** compared to the number of applications in 2007. This led to a **76%** increase on the budget of sign-up fee income.

Income from RIPE Meetings held in 2008 increased from 2007 and increased from the budgeted income by approximately **40%** in comparison with the budget and with 2007. During 2008, two RIPE Meetings were held and both were well-attended.

Other income includes fees from the Test Traffic Measurement (TTM) Service, the DNS Monitoring (DNSMON) Service, EU VAT reclamations from 2007 that were submitted in 2008 and a revaluation of the Internet Corporation of Assigned Names and Numbers (ICANN) accrual. While DNSMON income increased by **13%** from 2007 to **85** kEUR in 2008, the exchange rate gain in 2008 was minimal at **-99%** compared to the exchange rate gain in 2007. As a result of this, other income decreased in 2008 compared to 2007. ■

Revenues

Revenues were **11%** above budgeted income and **13%** above the revenue for 2007. This increase was a result of high membership growth in 2008. The service fees for members remained the same as in 2007.

In 2008, the total number of members increased to **6,064**, a growth of **695** members. This net growth takes into account closed members and applicants that never became members. This is an increase of **13%** in the number of members compared to 2007. The increase

Expenditures

Total expenditure in 2008 was below the budget for 2008 at **-1,197** kEUR. In comparison to 2007, expenses increased by **54** kEUR. The lower than expected expenses were a result of the dissolution payment received from the RIPE NCC Personnel Fund. Overall operational expenses were **2%** above the budget and **14%** above 2007.

Personnel expenses decreased by **2%** compared to the budget and increased by **7%** compared to 2007. This was a result of the increased staffing levels

needed to deal with a higher workload due to membership growth and industry developments. For the full year, **107.0** full-time equivalents (FTEs) were employed compared to the **105.6** budgeted for in 2008 and the **99.5** FTEs employed in 2007. The number of FTEs is calculated on the basis of the actual number of hours worked. In previous years the FTEs were calculated on the basis of the number of days worked as defined by social security benchmarks. ■

General Operating Expenses

General operating expenses were **4%** above the budget for 2008. The main reasons for this were the increased external relations activities and costs for legal and strategic consults.

RIPE Meeting expenses were above budget due to the later than usual selection of the location and date for the RIPE 56 Meeting in Berlin, Germany and the higher than expected venue costs of the RIPE 57 Meeting venue in Dubai, UAE. The number of attendees exceeded the budgeted number at both meetings, with the RIPE 56 Meeting attracting the highest number of attendees ever. Costs for the RIPE NCC's Training Services decreased in 2008 compared to 2007. In 2008, fewer face-to-face training courses were delivered as more training was undertaken via e-learning tools. The average costs per training course remained at a similar level to 2007.

As in 2007, two RIPE NCC Regional Meetings were held during 2008, one in Moscow, Russia and one in Salmiya, Kuwait.

Financial expenses are bank charges and credit card charges. The number of transactions in 2008 increased compared to 2007 although the average charge remained the same in 2008.

Miscellaneous expenses consist of bad debts and RIPE NCC Personnel Fund contributions. Bad debts were **193** kEUR in 2008. The RIPE NCC Personnel Fund Board and the RIPE NCC Executive Board reached an agreement to dissolve the Personnel Fund in 2008. The settlement of the dissolution led to a net amount of **1,532** kEUR being administered as a negative expense. The average amount of cash on hand over the course of 2008 was higher than in 2007. In addition, the average interest received over the cash reserves increased to about **4%**. This increased the interest income to **757** kEUR, an increase of **38%** compared to 2007. ■

General Operating Expenses (In kEUR)	2008	Budget 2008	2007
Housing/Office Costs	1,103	1,090	1,032
External Relations/ICANN	604	523	466
IT Infrastructure	442	469	367
Travel	514	554	508
Consultancy, incl. Legal	692	605	423
Total General Operating Expenses	3,355	3,241	2,796

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 and Intangible Fixed Assets

Assets are valued at historical cost and are depreciated on a straight-line basis starting from the month after acquisition. Computers consist of hardware and purchased activated software. Fixed assets are depreciated for the actual period of economic use. Hardware is written off in three years and software is written off in two years. Infrastructure is written off in three years and office equipment in five years.

In 2008, like 2007, the expenses, personnel and consultancy costs associated with two software development projects, Internet Number Resource Certification and improved Billing software, were added as an intangible fixed asset. Intangible fixed assets are valued at historical cost and are depreciated on a straight-line basis starting from the month after acquisition. Intangible fixed assets are written off in three years.

For 2008, the amount for fixed assets was lowered from EUR 1,000 to EUR 500. All items under EUR 500 were expensed. This

reflects the decrease in the price of assets that are documented as fixed assets. ■

Current Assets

At year-end 2008, accounts receivable consists of **95%** of invoices pertaining to 2009. The accounts receivable level increased in comparison to 2007. This increase is due to the higher number of members at year-end 2008. There has not been an increase in bad debtors.

The provision for bad debts is accounted for on the basis of a percentage of the accounts receivable. This percentage is based on an average over the past two years. In 2008, this average was **2.0%**. Although the RIPE NCC performs active investigations into extra payments or overpayments by members to the RIPE NCC, the total amount of extra payments and overpayments in 2008 was **65 kEUR**. This was reported as creditors.

Other debtors, such as Test Traffic Measurement (TTM) and DNS Monitoring (DNSMON) customers accounted for **34 kEUR** at year-end 2008. Accounts receivable include those payments that could not be identified and attributed to any specific member. At year-end this amounted to **44 kEUR**. ■

Accounts Receivable

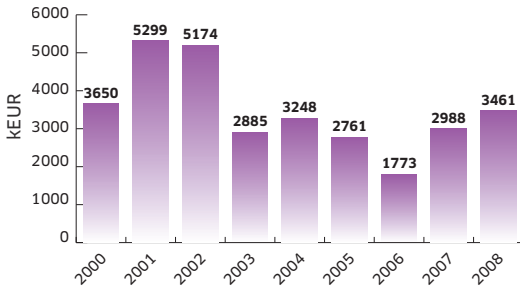
Due to a lower level of creditors than in 2007, the outstanding amount of VAT receivable from the tax authorities has decreased. Miscellaneous receivable includes pre-payments for rent,

Fixed Assets (In kEUR)	Computers	Infrastructure	Office Equipment	Software Development
Book Value 1/1/2008	795	285	72	271
Purchase Costs	576	36	53	636
Depreciation	496	134	27	130
Book Value 31/12/2008	875	187	98	777

equipment, pension, health insurance 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.

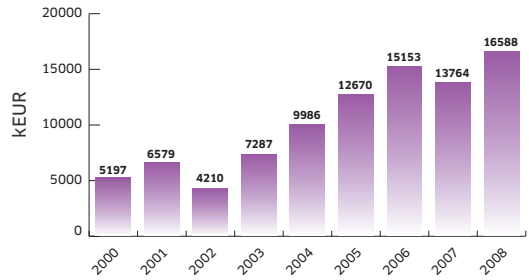
Other items listed under miscellaneous receivable are interest receivables, credit card payments to be received and payments in transit. In addition, miscellaneous receivable includes a small inventory for the sale of K-root and Test Traffic Measurement (TTM) equipment. ■



Accounts Receivable

Capital

The RIPE NCC has a tax-free ruling with the Dutch tax authorities. A surplus of up to three times the total amount of service fees received from members in a year can be deposited in a clearing house. Excess amounts have to be redistributed to RIPE NCC members. At the end of 2007, the capital had decreased compared to 2006 as a redistribution of around EUR 2.5 million to members took place. In 2008 no redistribution to members occurred and, as a result of the surplus accumulated in 2008, the capital increased to **16,588** kEUR by year-end 2008 – an amount 1.25 times the total amount of service fees. ■



Capital Development

Current Liabilities

The creditor level at the end of 2008 decreased as no large invoices were outstanding. There was no restatement at 31 December 2008 from creditors to accounts receivable for outstanding credit notes with suppliers.

The unearned revenues consist of invoices sent in 2008 but pertaining to 2009. The reason for the increase in unearned revenues at the end of 2008 in comparison with the end of 2007 was that the membership grew from **5,369** to **6,064** members during the year. ■

Wage Taxes and Social Securities

The increase in wage taxes and social securities category at year-end 2008 versus year-end 2007 was due to a higher number of staff employed at 31 December, 2008. ■

Miscellaneous Payable

The miscellaneous payables include the accrued holiday allowance and the accrued holiday days for employees. This amount is based on the number of outstanding vacation days at 31 December, 2008, valued on the December 2008 salary.

Miscellaneous Payable (In kEUR)	31/12/2008	31/12/2007
Accrued ICANN Contribution	112	716
Holiday Allowance/Holiday Days	475	437
Other Payables	243	85
Total Miscellaneous Payable	830	1,238

In the course of 2008, all previous outstanding contributions were paid to the Internet Corporation for Assigned Names and Numbers (ICANN). At year-end 2008 only the contribution for the ICANN fiscal year 2008/2009 was outstanding. ■

Items not shown in Balance Sheet

The RIPE NCC rents office space in two buildings and has separate rental agreements for these. These rental agreements have been extended until December 2009. For these rental agreements, two bank guarantees have been issued for an amount of **132** kEUR.

At 31 December 2008, the RIPE NCC had no financial liability or obligation towards the Number Resource Organization (NRO). All items were settled before year-end 2008. There was no material interest in the NRO that needs to be noted in this financial statement. ■

Cash Flow

All amounts are expressed in kEUR. Foreign currencies are converted at the daily exchange rate at the date of transaction or valuation. The cash flow overview reflects the increased income received in sign-up fees from new members and the expected cash outflow to cover expenses. The RIPE NCC's cash flow increased

over 2008 and at year end the cash amounted to **21,449** kEUR.

The RIPE NCC's cash management is based on the basic principle of security. The cash is held in several deposit accounts and is spread evenly between three different banks. This secure method of managing the cash funds has proven necessary in the past year due to the uncertain economic climate and has guaranteed that no funds have been lost. Moreover, due to the economic climate, the RIPE NCC has increased its interest income considerably as banks now offer increased interest rate returns for deposits. The RIPE NCC Executive Board and the management will continue to manage the cash in accordance with the principles described above. ■

(In kEUR)

Begin Cash Balance 1 January 2008	€ 19,436
Cash Inflow	
Sign Up Fees	€ 2,083
Service Fees	€ 11,182
TTM/DNSMON	€ 166
RIPE Meetings	€ 229
Interest Received on Deposits	€ 689
Other	€ 358
Total Inflow	€ 14,707
Cash Outflow	
Salary	€ 3,823
Wage Tax and Social Security	€ 2,560
Pension and Health	€ 793
RIPE and Regional Meetings	€ 620
ICANN Contribution	€ 812
Creditors	€ 4,086
Total Outflow	€ 12,694
Total Cash Inflow Balance	€ 2,013
End Cash Balance 31 December 2008	€ 21,449

Photographs on pages 3, 4, 11 and 43 by Chris van Houts.

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