



**RIPE**  
NCC

2001:db8:...

2001:db8:2080:bb03:10f

2001:db8:19f2:80::1

2001:db8:19f2:80::1

2001:db8:...

2001:db8:cd0f:2209:4

2001:db8:cd0f:2209:4

# Annual Report 2010

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# RIPE NCC Annual Report **2010**

# Contents

3	Report from the Chairman of the Executive Board	26	Secondary DNS
4	Report from the RIPE NCC Managing Director	26	K-root and Anycast
6	Map Showing the RIR Service Regions	27	ENUM
		27	Information Services
7	<b>About the RIPE NCC</b>	27	Test Traffic Measurement (TTM) Service
8	Introduction	28	Domain Name System Monitoring (DNSMON)
8	Organisation Overview	28	Routing Information Service (RIS)
9	Membership in 2010	28	Hostcount
10	RIPE NCC Services and Activities		
10	The RIPE NCC's Relationship with Réseaux IP Européens (RIPE)	29	<b>RIPE NCC in the Internet Industry</b>
11	Organisational Structure	30	External Relations
11	Members	30	The Internet Governance Forum (IGF)
11	The Executive Board	31	Organisation for Economic Co-Operation and Development (OECD)
12	RIPE NCC Staff	32	RIPE NCC Roundtable Meetings
13	Defining, Setting and Evaluating RIPE NCC Services and Activities	32	RIPE NCC and Law Enforcement Agencies (LEAs)
13	RIPE NCC General Meetings	32	RIPE Cooperation Working Group
13	Articles of Association	32	The Number Resource Organization (NRO)
14	Arbitration	33	The NRO Number Council (NRO NC)
14	Legal Framework	33	The Address Supporting Organization (ASO)
14	Corporate Governance		
		34	<b>RIPE and the RIPE Policy Development Process</b>
15	<b>Activities</b>		
16	New and Significantly Developed Activities 2010	35	RIPE NCC and the RIPE Community
17	Ongoing Activities 2010 - Member Services	35	RIPE Working Groups
21	Assignment and Allocation Policies Implemented in 2010	35	RIPE Task Forces
21	Returned Address Space	36	RIPE Meetings
21	Improving Data Consistency	36	The RIPE Policy Development Process (PDP)
22	IPv4 Address Exhaustion		
22	The Local Internet Registry (LIR) Portal	39	<b>Financial Report</b>
22	RIPE Labs	40	Introduction to the Financial Report
23	RIPE NCC Customer Services	41	Statement of Income and Expenditure 2010
23	Training Services	42	Notes to the RIPE NCC Statement of Income and Expenditure 2010
25	The RIPE Database	44	Balance Sheet 31 December 2010
25	RIPE Database Prototypes	46	Notes to the RIPE NCC Balance Sheet as per 31 December 2010
25	DNS Services	50	Cash Flow
26	Reverse Delegation		





2010 was another interesting year for the RIPE NCC. Economic difficulties continued to affect the RIPE NCC's service region and the pool of unallocated IPv4 address space became ever smaller. In spite of this, it is encouraging to note that RIPE NCC membership grew by 9%, with the strongest growth seen in the UK and Russia.

The Executive Board's main concern has always been to ensure that the RIPE NCC is properly placed to meet the challenges facing the industry and to make sure that we continue to support our core function of coordinating network resources. In the turbulent times ahead this becomes more important than ever before. We intend to continue to work with the RIPE NCC management not only to protect the interests of the RIPE NCC membership now, but also to make sure that we have a stable and effective registry for the future.

With this in mind, we have worked closely, and continue to work closely, with RIPE NCC management on setting a strategy that should carry us through the years ahead. To underpin this, the Executive Board agreed in 2010 to sign a Treasury Statute that will solidify the principle of security that the RIPE NCC bases its treasury strategy on.

At the RIPE NCC General Meeting in May 2010, Remco van Mook was elected to the Executive Board seat vacated by János Zsakó. In order to ensure stability, János provided his expertise and sound financial advice to the Executive Board for the rest of 2010. Also, I was happy to be re-elected to the Executive Board and remain as Chairman. This was the first Executive Board election that allowed members to vote remotely. Membership participation has always been foremost

in our minds and we were pleased to see the level of voting increase. At the November 2010 General Meeting, we asked the membership to approve changes to the Articles of Association to allow for electronic voting on resolutions, and to allow those in attendance to vote electronically. Having gained this approval we plan to continue and extend remote participation.

This General Meeting also saw the membership approve a new RIPE NCC Conflict Arbitration Procedure that further strengthens the framework under which the RIPE NCC operates and gives RIPE NCC members an important resource should the need for arbitration arise. The membership also approved the addition of seven new arbiters, and we are pleased that this panel contains such a wide range of knowledge and experience.

In 2010, the Executive Board also increased its involvement in external relations to represent the global interests of the RIPE NCC. Executive Board members attended a wide range of events and meetings in 2010, enabling us to put across the views of the RIPE NCC membership and also to be fully aware of developments in the Internet industry and be able to report to the membership on them. Continued and increased engagement with governments, regulators and law enforcement agencies is something the Executive Board sees as very important for ensuring the stability of the RIPE NCC and the environment it operates in. We hope to see an increased engagement with the corporate sector in 2011.

Finally, I would like to thank you for your ongoing willingness to engage with us and to make your views known. We rely on feedback from you in order to be effective. I hope this engagement will continue to be a feature of the relationship between the Executive Board and the membership in the years ahead.

A handwritten signature in blue ink, appearing to read 'NR' followed by a stylized flourish.

**Nigel Titley**  
Chairman of the Executive Board



2010 was an important year in the history of the RIPE NCC, being as it was the last full year before the free pool of IPv4 address space exhausted. The RIPE NCC invested much of its time and resources informing its membership and the Internet community about IPv4 exhaustion and promoting IPv6. Against this backdrop of transition, the RIPE NCC

again achieved operational and financial stability while preparing for a post-IPv4 world.

Much of the work carried out by the RIPE NCC throughout the year was aimed at preparation for the future, through support for IPv6 take-up and expanding the services currently offered by the RIPE NCC.

2010 also saw RIPE Labs develop into a platform that is used among the RIPE community and beyond to showcase new tools and interesting research on the Internet. RIPE Labs was an excellent platform to launch RIPE Atlas as part of the RIPE NCC's ongoing strategy to increase its service offering in November. RIPE Atlas is an active measurements network that will provide a vast amount of valuable data to the RIPE community. RIPE Atlas was warmly received at RIPE 61, but it remains a pilot project for now and we will see if it can prove its viability as a service.

During the year, the RIPE NCC continued to carefully monitor the RIPE community's policies regarding IPv4 address exhaustion and to ensure that the RIPE NCC's procedures were in line with the community's wishes.

The Registration Services Department faced an increased workload in 2010 as the IPv4 pool got smaller and demand for IPv6 address space went up, but, I am pleased to report, service levels were maintained throughout the year.

The RIPE NCC also focused on maintaining accurate registration data in 2010. Work on ensuring the accuracy of data continued with the Registration Data Quality project, and this is something that will continue in the years ahead.

A major aspect of the RIPE NCC's work in 2010 was the preparation for the roll out of Internet number resource certification. Certification will provide a stable and secure registry function, where registry data is maintained with a high level of accuracy. By the end of 2010, the RIPE NCC was in a position to launch the initial resource certification service.

2010 also saw the RIPE NCC increase its outreach efforts in the area of Internet governance. The RIPE NCC attended several meetings and workshops held by the Organisation for Economic Cooperation and Development (OECD) in 2010. The RIPE NCC also represented the interests of RIPE NCC members and the RIPE community at the fifth Internet Governance Forum (IGF) in Vilnius, Lithuania. Work with governments and regulators allows the RIPE NCC to contribute to important discussions on Internet-related issues on behalf of the membership. The RIPE NCC's work in the Internet governance arena received widespread recognition at the IGF.

The strong attendance figures at our two Regional Meetings held in association with the Middle East Network Operators Group (MENOG) and the one in Russia were particularly encouraging, allowing the RIPE NCC to engage further with the membership in those regions.

The RIPE NCC held another successful Roundtable Meeting for Governments and Regulators. The RIPE NCC also engaged further with the law enforcement agency (LEA) community, hosting a meeting for LEAs in London to bring that community closer to the work of the RIPE community and the Regional Internet Registries (RIRs).

In 2010, the RIPE NCC acted as the Chair for the Number Resource Organization (NRO) and the Address Supporting Organization (ASO). The RIPE NCC was proud to hold this role at an important time for the RIRs and the Internet as a whole.

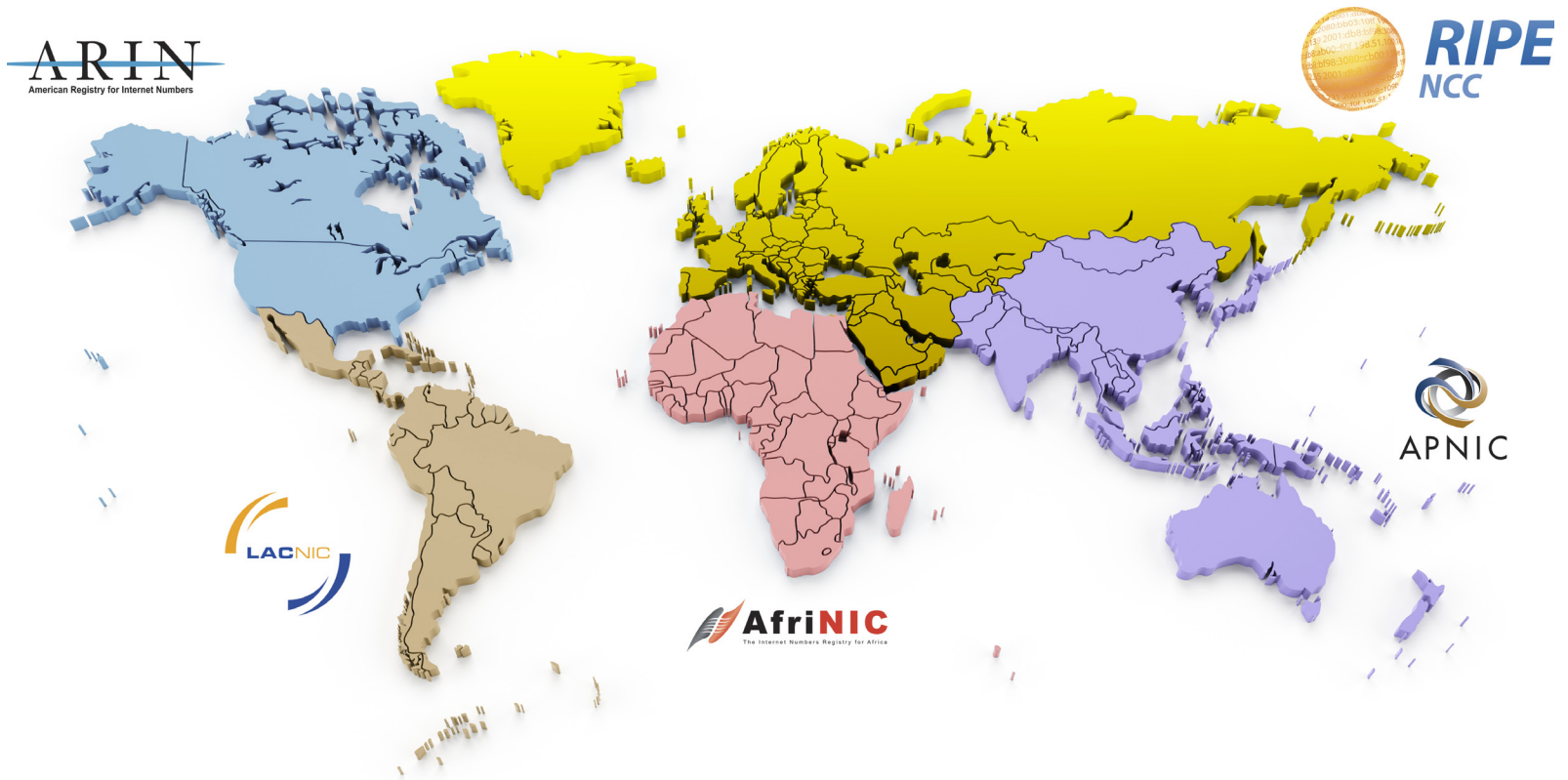
Finally, I would like to thank the RIPE NCC membership for its continued support. The RIPE NCC is always open to receiving feedback from its members with a view to improving the organisation, and this is especially true as we move into a new decade that will undoubtedly be one of transition and change.



**Axel Pawlik**

Managing Director, RIPE NCC

## Map Showing the RIR Service Regions



### Map Showing the RIR Service Regions

- **AfriNIC:** Africa
- **APNIC:** Asia Pacific
- **ARIN:** Canada, United States and several islands in the Caribbean Sea and North Atlantic Ocean
- **LACNIC:** Latin America, Caribbean
- **RIPE NCC:** Europe, the Middle East and parts of Central Asia

# About the RIPE NCC

The background features a perspective grid of white lines on a red-to-yellow gradient. Overlaid on this are several semi-transparent, overlapping geometric shapes, primarily squares and rectangles, in various shades of red, orange, and yellow, creating a complex, layered effect.

### Introduction

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:

- Registration and distribution of Internet number resources
- Operating the RIPE Database
- Operating K-root, one of the world's 13 root name server clusters
- Coordinating the RIPE community

Most of the RIPE NCC's members are Internet Service Providers (ISPs) and telecommunication organisations. Other members are corporations, academic institutions and government bodies. At the end of 2010, the RIPE NCC supported 7,167 members in the 76 countries in its service region. The organisation is based in Amsterdam, the Netherlands, and had 124 full-time equivalent (FTE) employees for 2010. It is an open, transparent and neutral organisation.

Similar to 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 35). The activities performed by the RIPE NCC and the services provided are approved each year by its members.

### Organisation Overview

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 its own members. The RIRs maintain registration data for these Internet number resources and ensure that the distribution of them is in accordance with the policies set by the Internet community.

The RIPE NCC manages the life cycle of the Internet number resources that 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 the data in the registration database.

### Membership in 2010



**7,167**

Total number of members at 31 December 2010, an increase (including mergers and closures) of **9%** on 2009



**1,059**

Total number of applications in 2010



**584**

Membership growth



#### Five countries with most new members (net growth):



United Kingdom



Russia



Germany



France



Italy

RIPE NCC members are charged an annual service fee based on the services that they receive (fees shown in EUR).

#### Membership Fees 2010

Extra Small	<b>1,300*</b>	Large	<b>4,100*</b>
Small	<b>1,800*</b>	Extra Large	<b>5,500*</b>
Medium	<b>2,550*</b>	Sign-up Fee	<b>2,000</b>

\* Additional 50 EUR per independent resource assignment

➔ [www.ripe.net/membership/new-members](http://www.ripe.net/membership/new-members)



### 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 operation of an Internet 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
- 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

#### Policy Development:

- The RIPE NCC supports the RIPE Policy Development Process (PDP) and implements the policies decided upon by the RIPE community

#### Training Services:

- 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:

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

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

The RIPE NCC and RIPE are separate entities that are highly interdependent. RIPE was founded in 1989 and is a collaborative forum open to all parties with an interest in the technical development of the Internet. 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.

Valuable input from the Internet industry, governments and regulators is channeled to the RIPE NCC through the RIPE community. As RIPE is not a formal organisation, there are no formal 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 and the maintenance 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 35.



### Organisational Structure

The RIPE NCC organisation consists of members, an Executive Board and RIPE NCC staff. An arbiters panel also exists that can be used by RIPE NCC members to resolve disputes with other members or with the RIPE NCC.

### Members

In order to request and register 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 corporations, academic institutions and government bodies.

RIPE NCC members can:

- Register and request Internet number resources (IPv4, IPv6 and Autonomous System (AS) Numbers) and use services provided for members

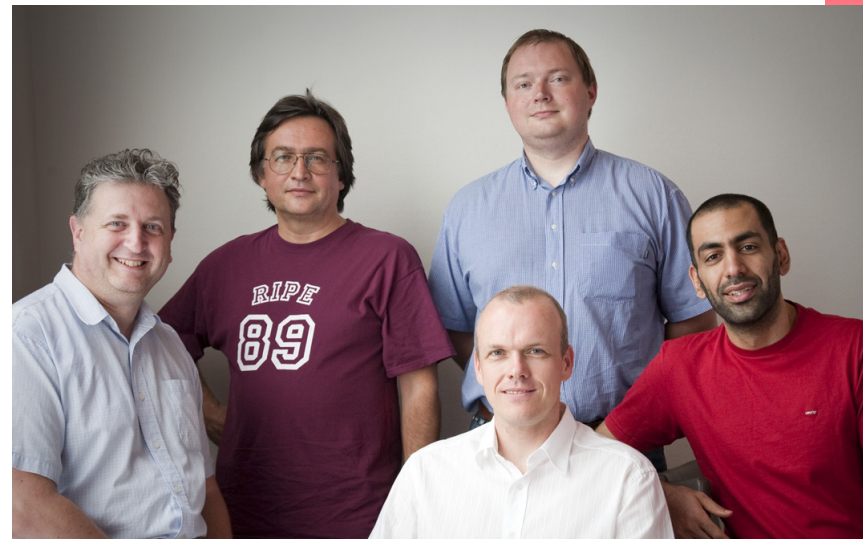
RIPE NCC members have the right to:

- Provide input for, and feedback on, the RIPE NCC's Activity Plan and Budget
- Adopt the RIPE NCC Charging Scheme
- Approve the RIPE NCC's Financial Report
- 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 RIPE NCC General Meetings

### The Executive Board

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

- Represent the membership and provide guidance to the RIPE NCC Senior Management
- Are responsible for the overall financial position of the RIPE NCC and for keeping records that allow the current financial situation to be evaluated at any moment
- Approve the RIPE NCC Activity Plan and Budget
- Appoint the RIPE NCC management
- Call RIPE NCC General Meetings



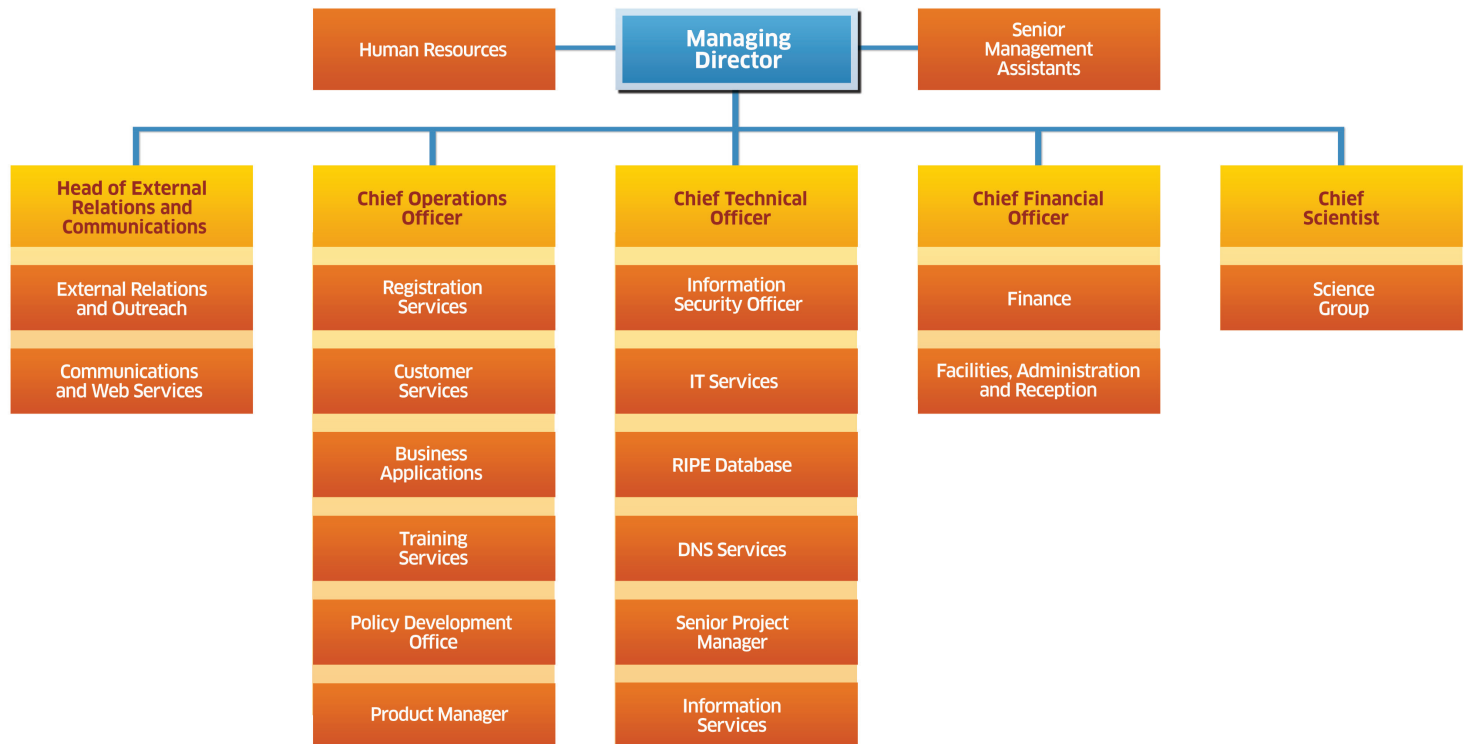
*Clockwise from left: Nigel Titley, Dmitry Burkov, Remco van Mook, Fahad AlShirawi, Andreas Wittkemper*

**RIPE NCC Staff**

Under the RIPE NCC Articles of Association, the RIPE NCC Executive Board delegates to the RIPE NCC management team all operational decisions relating to the Standard Service Agreement.

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 that 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 annual 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.

➔ [www.ripe.net/ripe/docs/ap](http://www.ripe.net/ripe/docs/ap)

### 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
- Adopt the RIPE NCC Charging Scheme
- Approve any resolutions that may be proposed by the Executive Board or the RIPE NCC membership
- Elect Executive Board members

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 2010, the RIPE NCC General Meetings took place alongside the RIPE 60 and RIPE 61 Meetings. Executive Board elections were held during the General Meeting held on 5 May 2010. The term of Executive Board members Nigel Titley and János Zsakó expired, and RIPE NCC members re-elected Nigel Titley and elected Remco van Mook to the available seats.

At the General Meeting on 17 November 2010, the membership approved the RIPE NCC Charging Scheme 2011 and changes to the RIPE NCC Articles of Association (AoA). Provisions to allow for electronic voting on resolutions were added to the AoA. The new RIPE NCC Conflict Arbitration Procedure was also approved, and the following additional people were appointed to the Arbiters Panel: Pierre Baume, Conor Dufficy, Ronald Duncan, Alireza Ghafarallahi, James Hickman, Ondřej Surý and Nick Williams.

The General Meetings are only open to RIPE NCC members and RIPE NCC supporters. Minutes from each meeting are, however, available to the public.

➔ [www.ripe.net/gm](http://www.ripe.net/gm)

➔ [www.ripe.net/lir-services/ncc/supporters/ripe-ncc-supporters](http://www.ripe.net/lir-services/ncc/supporters/ripe-ncc-supporters)

### Articles of Association

The rights and obligations of all the RIPE NCC's entities are detailed in the Articles of Association (AoA).

➔ [www.ripe.net/ripe/docs/articles-association](http://www.ripe.net/ripe/docs/articles-association)

### Arbitration

An Arbitration Panel exists to resolve any dispute related to services provided by the RIPE NCC. This Arbitration Panel operates as a neutral and objective body and is made up of technical or operational experts from the RIPE community. The RIPE NCC's Executive Board appoints the arbiters. Their appointment must then be approved by the RIPE NCC membership at the RIPE NCC General Meeting.



*RIPE NCC Arbiters, from left: James Hickman, Nick Williams, Olaf Kolkman, Pierre Baume, Jaap Akkerhuis, Ondřej Surý, Keith Mitchell, Kurt Kayser, Conor Dufficy, Wilfried Woeber, Alireza Ghafarallahi (Not pictured: Ronald Duncan, David Kessens)*

In November 2010, the RIPE NCC General Meeting approved a new arbitration procedure. The new procedure clarifies the roles and responsibilities of arbiters, details the procedure for appointing new arbiters and introduces the option of dismissing arbiters. The procedure also details the process for the settlement of conflicts related to RIPE NCC services and extends the scope of arbitration to include evaluation of the validity of requests for Internet number resources made by the RIPE NCC for its own use, in accordance with the RIPE policy, "Allocating/ Assigning Resources to the RIPE NCC".

The General Meeting approved the appointment of seven new arbiters in November 2010.

➔ [www.ripe.net/ripe/docs/arbitration](http://www.ripe.net/ripe/docs/arbitration)

### Legal Framework

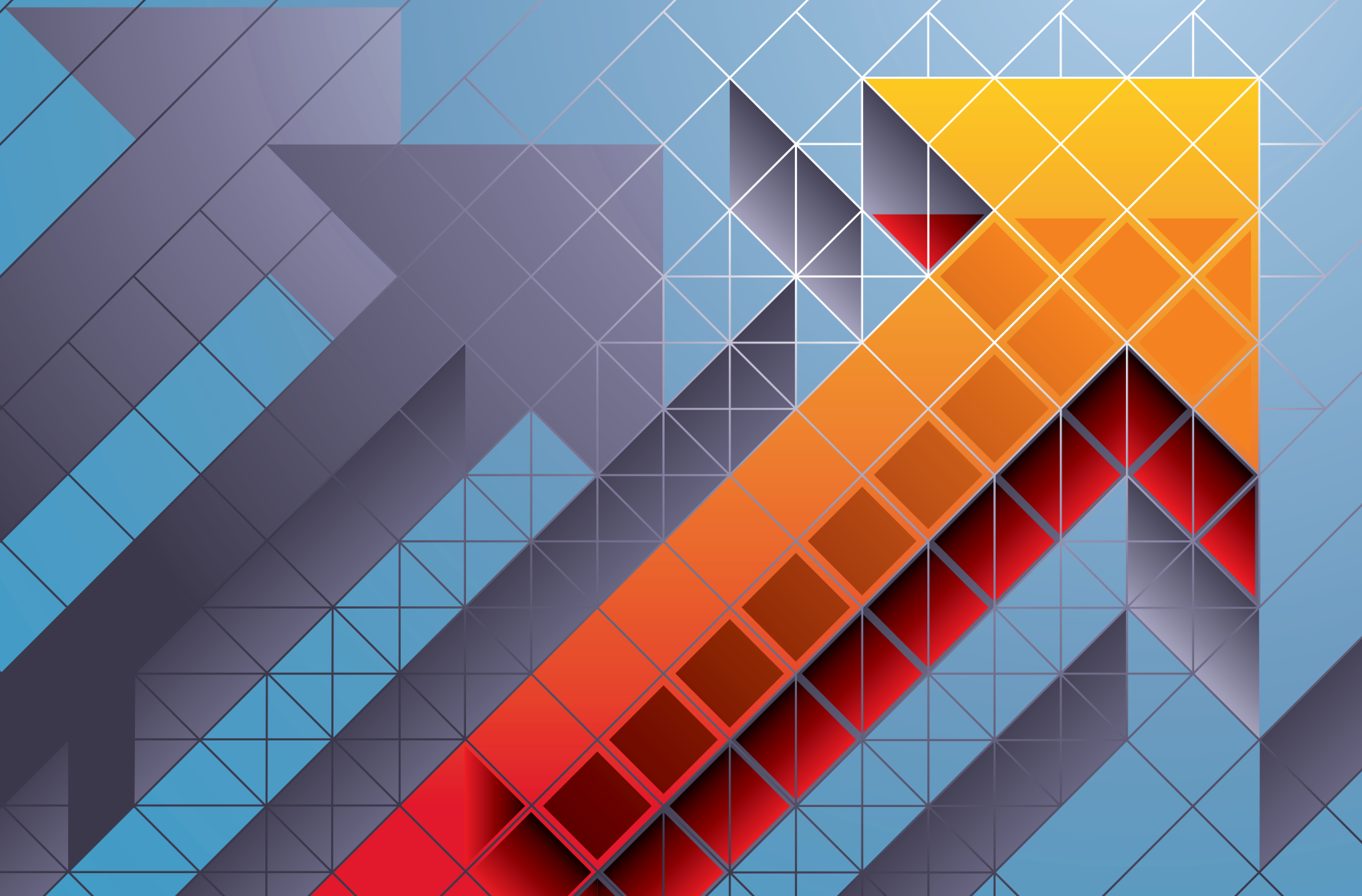
In 2010, the RIPE NCC enhanced the legal framework under which it operates by reinforcing the legal structure surrounding existing RIPE NCC services. It created Terms and Conditions for new RIPE NCC services, and the RIPE NCC participated in the European Commission's discussions around a legal framework for the fundamental right to protection of personal data. The RIPE NCC sees such self-governance as an important means of ensuring stability for the future.

The RIPE NCC has fortified its corporate governance by producing a series of documents that describe RIPE NCC procedures in a clear and transparent way. The procedural document, "Closure of LIR and Deregistration of Internet Number Resources" is the first of these documents and describes the various reasons and procedures for terminating the RIPE NCC Standard Service Agreement and for the removal of Internet number resource registrations.

### Corporate Governance

The RIPE NCC aims to implement 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.

# Activities



## New and Significantly Developed Activities 2010

### Support for Internet Number Resource Certification

The RIPE NCC strives 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 registry function. Certification will also help to ensure long-term routing stability.

Resource certificates issued with RIPE NCC allocations will allow RIPE NCC members to digitally certify their Internet resources and will serve as an authoritative statement of an allocation's uniqueness and legitimacy at the time of allocation. Certification also has 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 2010 focused on the creation of a final release of the certification software. By the end of 2010, the RIPE NCC was in a position to release a robust production system with a limited feature set that will be expanded over time. Certification is now offered in a hosted solution through the LIR Portal.

Functionality that the RIPE NCC plans to add to the certification software includes an "up-down" protocol that will allow LIRs to run their own certificate authority and create sub-certificates for their End Users. Alongside this, work on the certification policy is ongoing.

➔ [www.ripe.net/certification](http://www.ripe.net/certification)

### RIPE Atlas

At the RIPE 61 Meeting in Rome, the RIPE NCC presented RIPE Atlas, a prototype service for next generation Internet measurements.

RIPE Atlas is a distributed measurement network consisting of thousands, and potentially tens of thousands, of measurement nodes ("probes") placed all around the Internet, connected to a controlling framework.

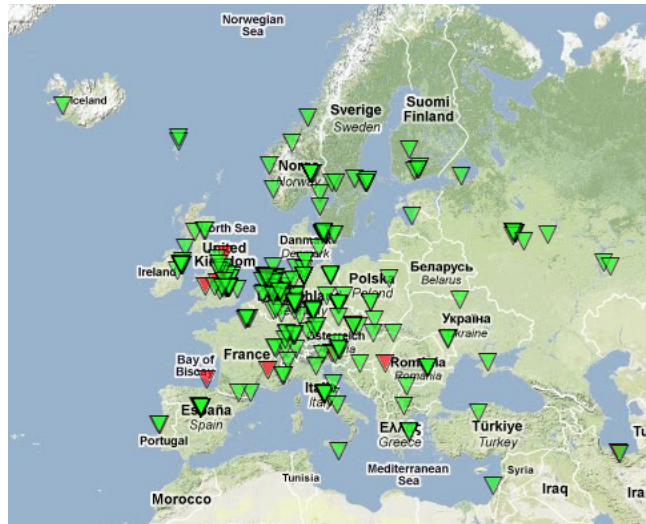
The probes are hardware devices capable of executing active measurements.

Eventually, this will enable the RIPE NCC to observe Internet behaviour in real time with unprecedented detail. It will also allow probe hosts and sponsors to execute their own measurements from thousands of probes.

The launch of the prototype at RIPE 61 was met with overwhelming interest: about 250 probes were distributed to individuals and volunteers have registered for probes at over 700 network locations. The present goal is to distribute and activate 300 of these measurement devices by mid-2011, as well as to obtain commitments from future sponsors for further expansion of the network.







Active RIPE Atlas probe locations in the RIPE NCC service region at year end 2010

## Ongoing Activities 2010 – Member Services

### 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 to its members. During the year, Registration Services' service levels remained stable and were comparable to the service level in 2009.

### Requests for Internet Number Resources

In 2010, the RIPE NCC's Registration Services Department received a total of **15,620** requests, an increase compared to the **14,908** requests received in 2009. These requests included requests for:

- Provider Aggregatable (PA) assignments
- Provider Independent (PI) assignments
- IPv4 and IPv6 allocations
- Autonomous System Number assignments
- Anycast assignments
- Assignments for Internet Exchange Points (IXPs)
- Assignments to Direct Assignment Users (DAUs)

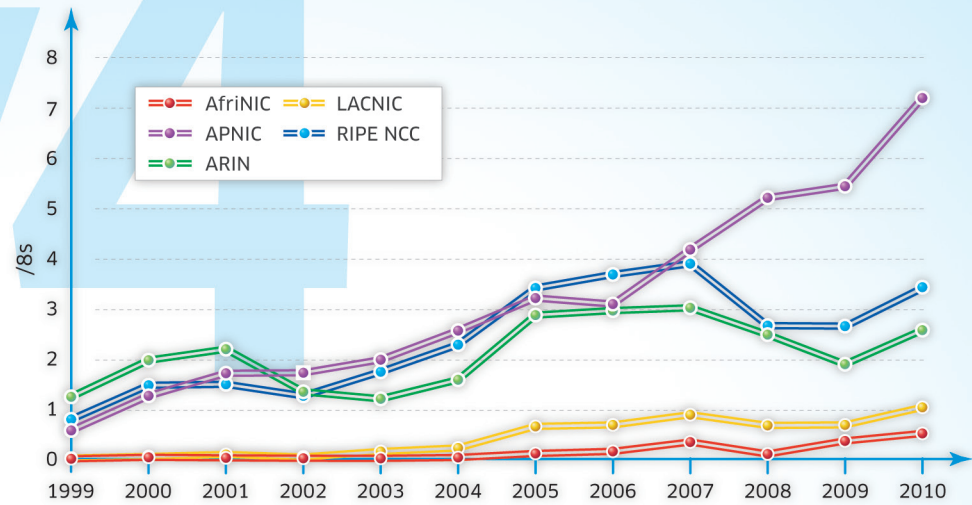
From the total number of requests, **6,512** allocations and assignments of Internet number resources were made. Internet number resource allocations and assignments made by the RIPE NCC in 2010:

- IPv4: **1,828** allocations
- IPv6: **834** allocations
- ASN: **2,453** assignments
- PI: **2,411** (IPv4) and **192** (IPv6) assignments
- Anycast: **9** (IPv4) and **10** (IPv6) assignments
- IXP: **13** IPv6 assignments

A more in-depth overview of assignments and allocations can be found on pages 18-20.

## IPv4 Allocations 2010

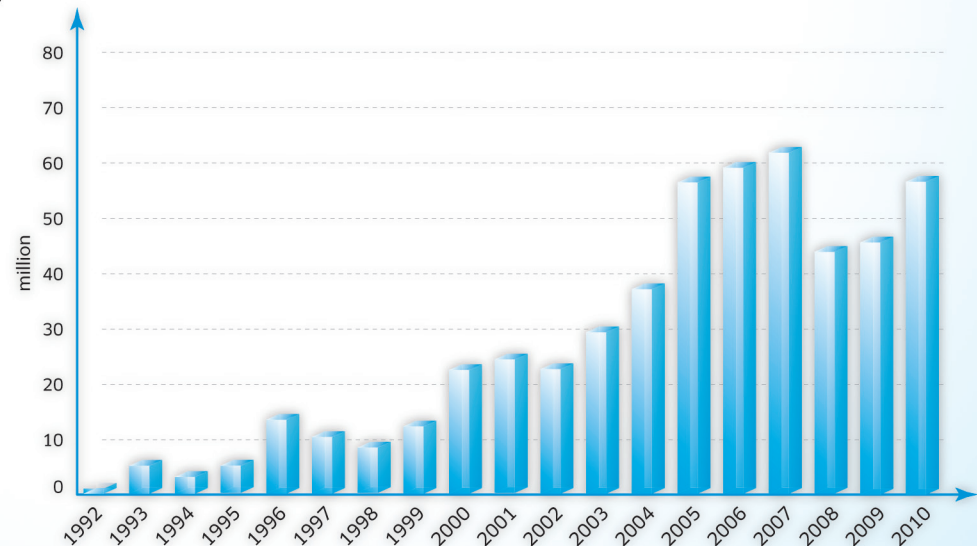
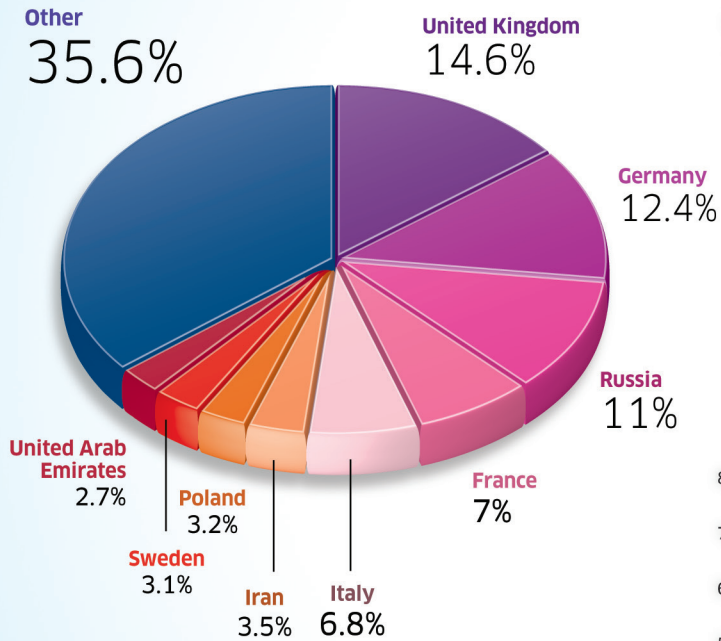
The RIPE NCC allocated **57,595,904** IPv4 addresses during the year. Compared with 2009, this is a **19%** increase in the total number of IPv4 addresses allocated. The IANA allocated **4 /8** blocks of IPv4 addresses to the RIPE NCC in 2010.



↑ Total number of IPv4 addresses allocated by all RIRs per year in /8s

← Total number of IPv4 addresses allocated by the RIPE NCC in 2010 per country

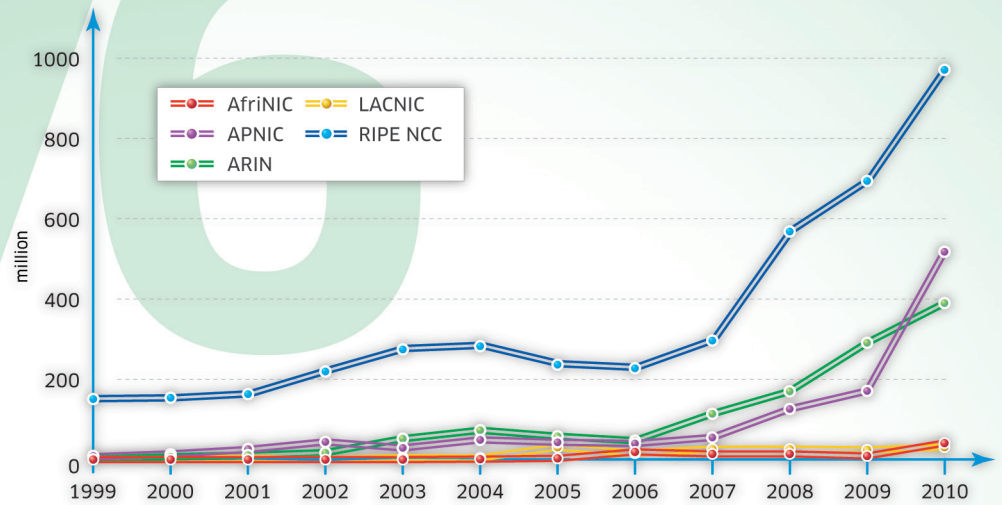
↓ Total number of IPv4 addresses allocated by the RIPE NCC per year (1992-2010)





## IPv6 Allocations 2010

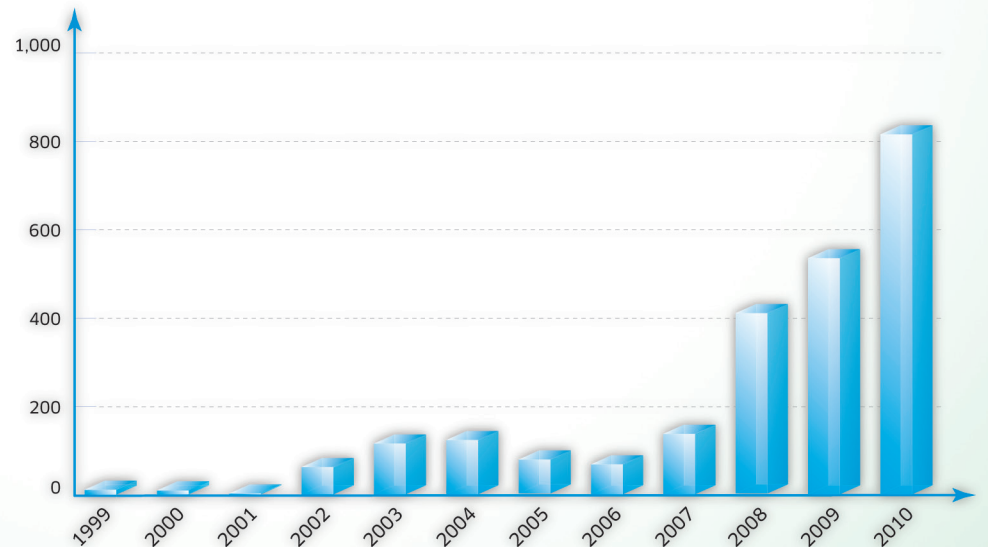
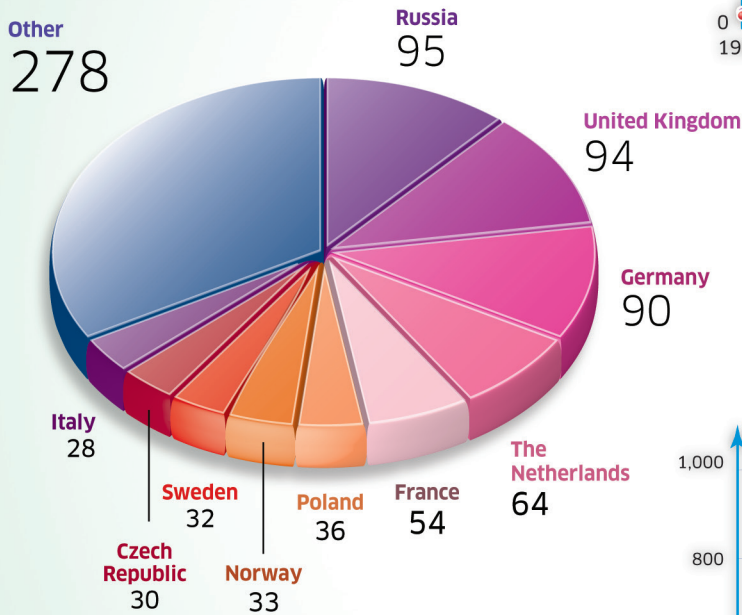
During 2010, the RIPE NCC made **834** IPv6 allocations, a **50.5%** increase on the number of allocations in 2009. **2,469** LIRs held an IPv6 allocation at the end of 2010. IANA did not allocate any blocks of IPv6 address space to the RIPE NCC in 2010.



↑ Total number of IPv6 addresses allocated by all RIRs per year

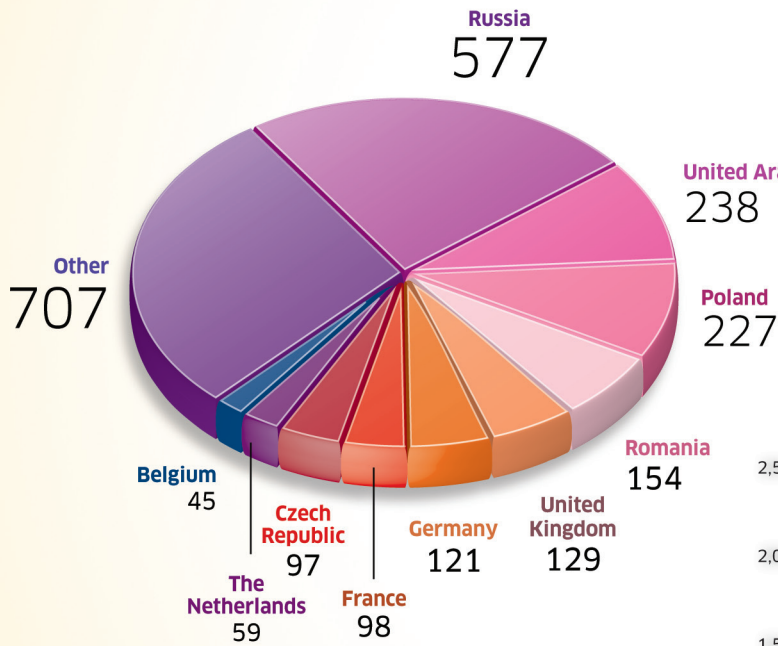
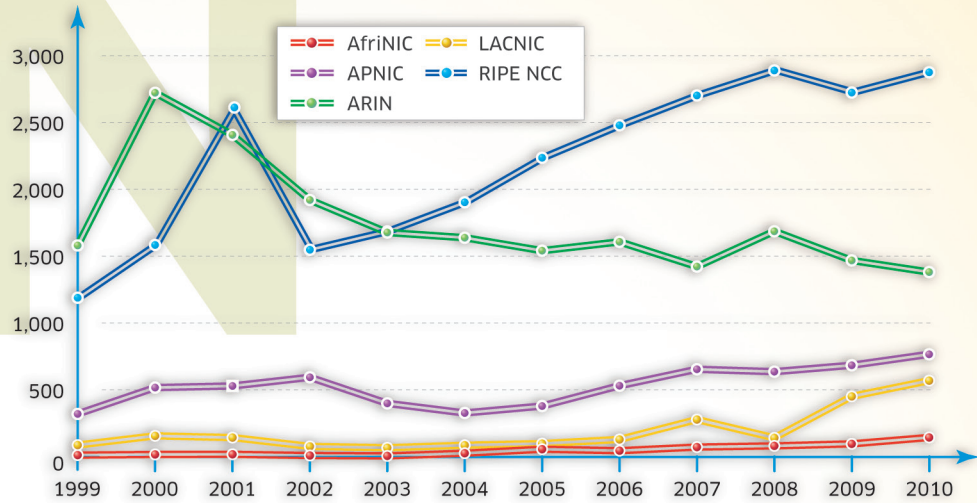
← Total number of IPv6 allocations made by the RIPE NCC in 2010 per country

↓ Total number of IPv6 allocations made by the RIPE NCC per year (1999-2010)



## Autonomous System (AS) Number Assignments in 2010

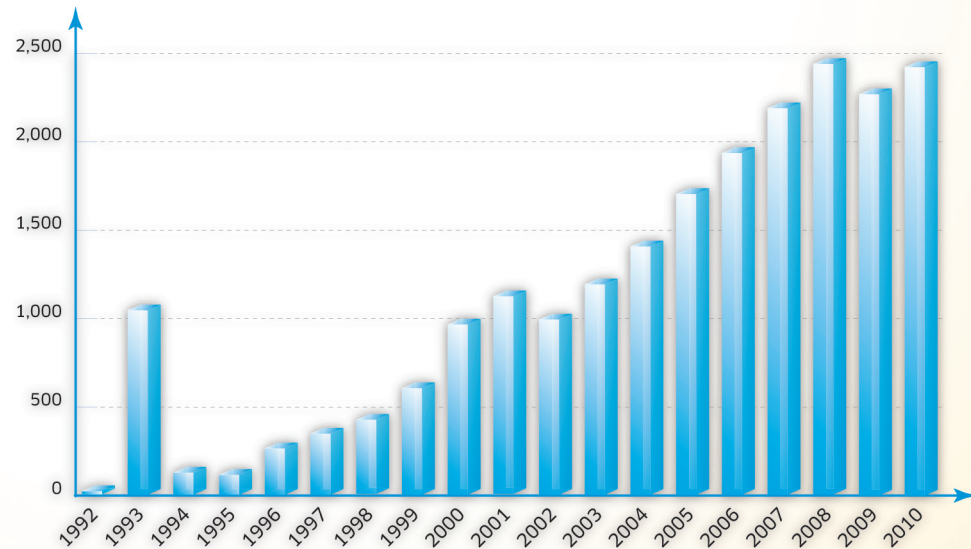
IANA did not allocate any ASNs to the RIPE NCC in 2010. **2,453** ASNs were assigned during the year, a **7%** increase on the amount assigned in 2009.



↑ Total number of AS Numbers assigned by all RIRs per year (1999-2010)

← Total number of AS Numbers assigned by the RIPE NCC in 2010 per country

↓ Total number of AS Numbers assigned by the RIPE NCC per year (1992-2010)



### Assignment and Allocation Policies Implemented in 2010

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 RIPE community-accepted policies into its operations and procedures.

In 2010, the RIPE NCC continued work to implement RIPE Policy Proposal 2007-01, "Direct Internet Resource Assignments to End Users from the RIPE NCC". The policy states that a contractual relationship must exist between an End User and a sponsoring LIR or the RIPE NCC. It also states that a contractual relationship must retrospectively be put in place for End Users of independent Internet number resources that were previously assigned.

Phase 1 of the implementation is ongoing and requires LIRs to provide an assignment agreement between the LIR and the End User as well as official company registration documents for the End User with every new assignment request for that End User.

Phase 2 gave LIRs the option to mark independent resources requested in the past as one of the following options:

- My Infrastructure (the resource holder is an LIR)
- My End User (the resource holder will sign an agreement with the LIR)
- Not My End User (the resource holder will not sign an agreement with the LIR)

By the end of 2010, **4,500** LIRs had participated in Phase 2 of the implementation, providing feedback for **24,235** independent Internet number resources.

Phase 3 of the implementation begins in January 2011, when the RIPE NCC will directly contact the End Users of independent Internet number resources who did not sign an agreement with a sponsoring LIR during Phase 2.

RIPE Policy 2010-04, "80% Rule Ambiguity Cleanup" was implemented in 2010. And the implementation of RIPE Policy 2009-03, "Run Out Fairly", continued throughout the year. More information about these proposals, the RIPE community and the RIPE Policy Development Process (PDP) can be found on pages 35-38.

### Returned Address Space

Over **954,000** unused IPv4 addresses were returned to the RIPE NCC during 2010. A total of **6,205,000** IPv4 addresses have now been returned over the last five years, contributing towards good stewardship of Internet number resources. The RIPE NCC re-allocates the addresses that have been returned after a quarantine period.

### Improving Data Consistency

As a Regional Internet Registry (RIR), the RIPE NCC strives to ensure that all Internet number resource allocation, assignment and registration data is correct and consistent. In 2010, the RIPE NCC continued to run the Registration Data Quality (RDQ) project to measure and improve the quality and accuracy of the registration data.

RDQ is an ongoing project for the RIPE NCC. The next phase will involve incorporating the registration data from the public RIPE Database into the RIPE NCC's internal records. The ultimate goal is to achieve a high level of confidence about who is the legitimate holder of address space.

During the clean-up of the internal registry records, **1,097** prefix inconsistencies were corrected in the RIPE NCC's internal records, mostly related to transfer of legacy address space. This allows the RIPE NCC to have consistent internal records. Also, **2,126** AS Number resource inconsistencies between RIPE NCC internal records and the RIPE Database were updated. An independent third party also audits the RIPE NCC's Registration Services Department regularly to help ensure data accuracy.

### IPv4 Address Exhaustion

2010 was the final year before one of the key milestones in the history of the development of the Internet - IPv4 exhaustion. Over the last decade, the RIPE NCC, together with the other Regional Internet Registries (RIRs), has worked tirelessly to inform all stakeholders about the urgent need to adopt and deploy IPv4's successor, IPv6.

Throughout the year, the RIPE NCC continued to inform, educate and communicate to our members, the Internet community and the general public about the exhaustion of the IANA pool of available IPv4 addresses, which was predicted to occur within the first few months of 2011.

➔ [www.ripe.net/v4exhaustion](http://www.ripe.net/v4exhaustion)

### 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 2010, the RIPE NCC continued to use the LIR Portal to help implement RIPE Policy Proposal 2007-01, "Direct Internet Resource Assignments to End Users from the RIPE NCC", and RIPE Policy Proposal 2009-08, "IPv6

Provider Independent (PI) Assignments for LIRs". For RIPE Policy Proposal 2007-01, the LIR Portal let users declare which independent resources should remain with the LIR and allowed LIRs to upload copies of the End User Assignment Agreement they had signed with End Users as well as registration papers for those End Users. For RIPE Policy Proposal 2009-08, LIRs could use the LIR Portal to request IPv6 PI assignments in addition to IPv6 allocations.

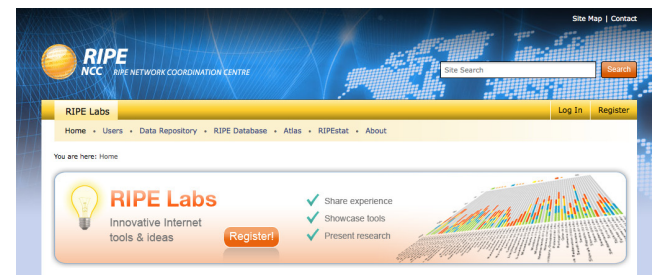
➔ <https://lirportal.ripe.net>

### RIPE Labs



Following its launch in September 2009, RIPE Labs grew considerably over 2010 in terms of the range of articles published and the audience reached. The RIPE NCC gathered feedback from the RIPE community on the layout of the RIPE Labs website, reviewed its structure and layout, and re-launched it with several improvements, including:

- Improved navigation and search, including tag clouds, life searches and long-term project pages
- Easier communication and participation: there is now no need to register to leave comments on the website and registration is only necessary for content submissions and data repository
- The new comments functionality encourages more feedback and discussion



There was a good mix of content from internal and external sources, covering areas such as IPv6 measurements, research results and prototype tools and projects.

RIPE Labs was presented at various meetings throughout the year. A number of RIPE NCC projects that were published as prototypes on RIPE Labs will soon become full services. At the end of 2010, RIPE Labs attracted around 10,000 unique visitors per month, with half of these being first-time visitors and half returning visitors. The number of articles increased significantly throughout 2010, and by the end of the year approximately 10-12 articles were being posted per month.

➔ <http://labs.ripe.net>

## RIPE NCC 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 2010, the Customer Services Team processed a total of **20,906** requests, compared to the **19,390** requests in 2009.

These requests relate to:

- RIPE Database
- DNS
- New RIPE NCC member queries and applications
- Billing and contracts
- General administration
- RIPE NCC Information Services
- Abuse complaints

The initial response time to requests was maintained at one working day.

## Training Services



The RIPE NCC's Training Services Team delivers training courses to members throughout the RIPE NCC's service region. The team assists members with the correct registration and administration of Internet number resources and provides further training on more specialised areas. The following training courses were offered in 2010:

### 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 the Routing Policy Specification Language (RPSL), the Routing Registry (RR) and related tools to experienced network operators.

### IPv6 for LIRs Course

Raises awareness about IPv6 and the current best practices for deploying it. It also covers IPv6 Internet addressing policies and how to obtain IPv6 address space.

In 2010, **86** courses were given:

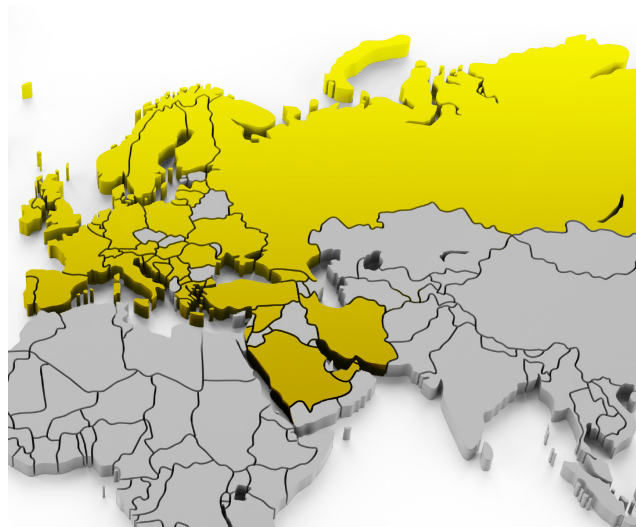
- **34** Local Internet Registry (LIR) courses
- **16** Routing Registry courses
- **36** IPv6 for LIRs courses



These courses were held in **35** countries throughout the RIPE NCC service region and attracted over **1,700** participants. The Training Services Team also conducts surveys with participants, allowing continual improvement to the training courses it delivers, and gives valuable feedback to the RIPE NCC from members throughout its service region.

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.

➔ [www.ripe.net/training](http://www.ripe.net/training)



*Countries in the RIPE NCC service region visited by Training Services in 2010*

### Training Seminars

In addition to the training courses, the RIPE NCC gave training seminars, which are condensed versions of the full training courses, at the following events in 2010:

- RIPE NCC Regional Meeting Moscow (IPv6 and Routing)
- MENOG 6, Riyadh and MENOG 7, Istanbul (IPv6 and Routing)
- RIPE 60, Prague and RIPE 61, Rome (IPv6 for LIRs)

The Training Services Team also gave several tailored seminars and presentations during industry conferences, operators groups and peering forums, such as the UK Network Operators Forum (UKNOF), the Norwegian Government IPv6 Day and the European Telecommunications Network Operators' Association (ETNO) Forum.

### Hosted Courses

Of the 86 training courses given throughout the year, 21 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 2010 hosts are available at:

➔ [www.ripe.net/training/hosting](http://www.ripe.net/training/hosting)

### 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 face-to-face training courses. In 2010, the E-Learning Centre webpages were redesigned and two "DNS for LIRs" modules were released.

➔ [www.ripe.net/training/e-learning](http://www.ripe.net/training/e-learning)

## 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 use it to update information relating to their Internet number resource allocations and assignments. During 2010, roughly five billion queries were served – an average of 165 queries per second, mostly for IP address lookups. This is an increase on 2009 of approximately 40%. 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 2010, several updates and improvements to the RIPE Database were made:

### All data secured by maintainers

With the support of the RIPE community, the RIPE NCC concluded a project to protect all data in the RIPE Database. It is now mandatory that all objects in the RIPE Database reference a maintainer.

### Free-text search of the RIPE Database

The RIPE NCC launched a new system for free text-based search of the RIPE Database using the latest standards. Searches are now faster and have new functionality, such as searching within a specific set of objects or Routing Policy Specification Language (RPSL) attributes. Also, search results now return large sets of objects that can be easily filtered.

## Global Resource Service

The RIPE NCC redesigned and improved the way it mirrors other databases and it is now possible to access (among others) data from the Latin America and Caribbean Network Information Centre (LACNIC), one of the other five Regional Internet Registries (RIRs). This means that the RIPE Database now contains the most complete set of operational data in RPSL format that has ever been available on one platform.

## RIPE Database Prototypes

Several prototype services were also developed during 2010, including:

- Refinements to the RIPE Database Query API
- The Abuse Finder tool, which makes finding abuse contact details in the RIPE Database much easier
- A RIPE Database prototype that shows a clearer distinction between what is registry data and what is resource holder data in the RIPE Database

These prototype services, experiments and new features related to the RIPE Database can be viewed in the dedicated section on RIPE Labs:

 <http://labs.ripe.net/ripe-database>

## 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 translate 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 some 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 27).

### 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 (see page 25).

In 2010, the RIPE NCC consolidated all its forward and reverse zones into an anycast cluster. This improved the quality and reliability of the reverse DNS service that the RIPE NCC provides. Currently, there are two sites running authoritative DNS clusters, one at the Amsterdam Internet Exchange (AMS-IX) and one at the London Internet Exchange (LINX).

In June 2010, the RIPE NCC switched to new DNSSEC signers that allow the RIPE NCC to reliably sign all its zones and allow secure and stable DNSSEC operations. A new DNSSEC Policy and Practice Statement was published in 2010.

Also, the RIPE NCC began to gradually include delegation signer records of some of its domains as their parents are signed. This allows stakeholders to determine the level of trust they wish to grant to the RIPE NCC DNSSEC management.

### Secondary DNS

The secondary DNS service ensures the reliability and robustness of the general DNS infrastructure. The RIPE NCC provides a secondary DNS service for other Regional Internet Registries' reverse zones and for some ccTLD organisations, mainly those in developing countries or those who have difficulty obtaining and paying for commercial DNS services. At the end of 2010, a stable secondary DNS service was provided to 77 ccTLDs, including two internationalised domain name (IDN) ccTLD domains for Syria and Jordan.

### 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 DNS infrastructure. The RIPE NCC has operated the K-root server since 1997, when the first server was installed at the London Internet Exchange (LINX). Currently, K-root consists of 18 nodes, all of which are operated by the RIPE NCC. K-root operations were stable throughout 2010.

Early 2010 saw the preparation of K-root for the roll-out of a signed root zone. The RIPE NCC installed a reply-size tester application at the global instances and released a client-side tool that users could use to test for path Maximum Transmission Unit (MTU) problems in their networks. The RIPE NCC began collecting priming data queries to share with the DNS Operations, Analysis and Research Center (OARC) and other root name server operators so any problems could be detected at an early stage.

Transit connections were upgraded at all the global instances to handle the increased outgoing bandwidth due to larger packet sizes of DNSSEC-signed responses. On 15 July 2010, the signed root zone was rolled out successfully, and K-root has been successfully serving this signed zone since then.



Work in 2010 also began on preparations to introduce more instances of K-root in Africa and Latin America to further improve the reach of this root server.

➡ <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 Architecture Board (IAB).

➡ [www.ripe.net/enum/instructions.html](http://www.ripe.net/enum/instructions.html)

ENUM is an Internet standard defined in RFC 3671 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.

In August 2010, the RIPE NCC introduced the delegation signer record of the ENUM zone to the parent ARPA zone, thus enabling building the full chain of trust to the root zone trust anchor.

➡ [www.itu.int/ITU-T/inr/enum/procedures.html](http://www.itu.int/ITU-T/inr/enum/procedures.html)

## Information Services

The RIPE NCC's Information Services support the RIPE community with operational information and provide data about the state of the Internet in the RIPE NCC service region and beyond. Most of these services, tools and data are offered free of charge to everyone. Because the RIPE NCC is neutral and impartial, the data and reporting is widely trusted.

In 2010, the RIPE NCC focused on the features and usability of its DNS Monitoring system (DNSMON), closer community interaction through the newly formed RIPE Measurements, Analysis and Tools (MAT) Working Group, and collaborations with RIR partners on various data analysis projects.

## 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 hosts and measurement traffic is sent between them.

During 2010, the RIPE NCC deployed seven new TTM test-boxes in Bangladesh, Taiwan, India, Nepal, Cambodia, Germany and Switzerland. Five of these deployments were part of a successful partnership with APNIC, the RIR for the Asia Pacific area, to increase the distribution of TTM in the Asia Pacific region.

➡ <http://www.ripe.net/ttm>

### Domain Name System Monitoring (DNSMON)

The DNSMON uses the TTM 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 originally launched in April 2005, and received a significant overhaul to its front-end user interface during 2010. Subscribers can now construct more detailed queries, and benefit from clearer and more interactive plots. Troubleshooting is now easier as a result of a new feature enabling traceroutes between the test-boxes and monitored DNS servers.

By the end of 2010, 32 TLDs were using DNSMON, including the first Middle East subscriber, Iran (.ir).

➔ <http://dnsmon.ripe.net>

### Routing Information Service (RIS)

The RIS keeps track of changes in the global Internet routing system by collecting and storing Border Gateway Protocol (BGP) routing information using 15 Remote Route Collectors (RRCs) located at major Internet exchanges around the world. In 2010, these RRCs held over 600 peering sessions.

The RIS holds a complete routing history of the Internet for the past decade, which is available as a raw data download, while the most recent three months of data can be queried via a variety of tools. During 2010, the RIPE NCC began to work on a powerful new back end for RIS data that will enable near real-time tracking of routing updates, as well as live searching of the entire ten year dataset.

➔ [www.ripe.net/projects/ris/tools](http://www.ripe.net/projects/ris/tools)  
➔ [www.ripe.net/projects/ris/rawdata.html](http://www.ripe.net/projects/ris/rawdata.html)

### Hostcount

The RIPE NCC coordinates the collection of data from the DNS zones of the Top-Level Domains (TLDs) in its service region and publishes summary statistics. The Hostcount service has been performed since 1993, making it one of the world's longest-running data collection projects on, and about, the Internet.

➔ [www.ripe.net/hostcount](http://www.ripe.net/hostcount)

These information services were provided in the NetSense portal in 2010. The decision was made during the year to discontinue NetSense, although the underlying services it hosted will remain.

After no objections were heard from the RIPE community, the Hostcount service was also discontinued in 2010. The aim of this project was to gain insight into the size and the growth rate of the Internet, and it was decided by management that Hostcount has been superseded by other RIPE NCC Information Services.

Full and further details on all the RIPE NCC's Information Services are available on our website:

➔ <http://is-portal.ripe.net>

The background is a vibrant blue gradient. In the upper left, a world map is rendered in a dotted, halftone style. The lower half of the image features a perspective grid of white lines on a blue floor, with white diamond shapes interspersed. Two globes are present: a larger one in the upper right with yellow and orange bands, and a smaller, semi-transparent one in the lower right.

# RIPE NCC in the Internet Industry

### External Relations

In 2010, the RIPE NCC continued to work with Racepoint Group, a global public relations consultancy, to raise awareness of the RIPE NCC as a key player in the Internet community and to highlight how the organisation supports the infrastructure of the Internet along with the other RIRs.

The RIPE NCC works with Racepoint Group to:

- Develop and distribute press releases
- Provide support for press activities at RIPE NCC and industry events
- Identify opportunities to get key messages into industry-related publications and the global media
- Liaise and foster relations in multi-stakeholder environments (governments, regulators etc.)
- Respond to industry news with expert comment and informed opinion

Public relations activities in 2010 resulted in over 900 pieces of coverage in targeted media (national, technology, business and public sector publications). This represents an increase of over 50% on the 2009 campaign.

Thirty-two media briefings took place and 25 articles were written on behalf of RIPE NCC's Senior Management and placed in key media, positioning the RIPE NCC as a thought leader on IPv6 deployment, DNSSEC and other key Internet industry issues.

To maximise opportunities for engagement with the Internet community, the RIPE NCC has undertaken a targeted social media campaign. Increasing the RIPE NCC's presence on key social media platforms (Twitter, Facebook, YouTube and SlideShare) has kept the organisation at the centre of conversations regarding the future of the Internet, further raising its profile as a key industry influencer.

You can find the RIPE NCC on these social media platforms:

- ➔ [www.twitter.com/ripe\\_ncc](http://www.twitter.com/ripe_ncc)
- ➔ [www.facebook.com/ripenncc](http://www.facebook.com/ripenncc)

IPv6 Act Now was launched in June 2009. Designed as a one-stop resource for IPv6-related information, the website seeks to engage a wide-ranging audience, including business, government and the technical communities. The site features news items, multimedia interviews with members of the community, statistics and discussion forums. In 2010, the IPv6 Act Now site expanded the range of statistics and educational information regarding IPv6 deployment.

- ➔ [www.ipv6actnow.org](http://www.ipv6actnow.org)

The logo for IPv6 Act Now, featuring the text "IPv6 ACT NOW" in a bold, blue, sans-serif font. The "v" in "IPv6" is stylized with a blue square background.

### The Internet Governance Forum (IGF)

The fifth IGF was held from 14-17 September 2010 in Vilnius, Lithuania. The event, organised by the United Nations, has taken place annually for the last five years, and this was the final event of its initial remit from the UN General Assembly. The RIPE NCC has participated in the IGF from its inception, on its own behalf and together with the other Regional Internet Registries as the Number Resource Organization (NRO).

The forum, while not a decision-making body, provides an opportunity for the many different stakeholders in the Internet community to come together and discuss Internet governance issues.

Under the theme of "Developing The Future Together", the IGF event drew almost 1,500 participants to Vilnius, as well as more than 600 people who connected to the talks

via 32 remote hubs set up around the world. The event was structured around main plenary sessions and 113 workshops, best practice forums, dynamic coalition meetings and open forums.

The Number Resource Organization organised two sessions:

- IPv6 Around The World: Surveying the Current and Future Deployment of IPv6
- Enhancing Transparency in Internet Governance

RIR representatives also contributed to the following sessions:

- Routing and Resource Certification: Self-governance and security at the core of Internet operations
- A Proposal for Setting a Standard of Care in International Law for Cross-Border Internet
- Priorities for the long term stability of the Internet
- Managing the Critical Internet Resources
- Internet governance in Africa: Impact on Africa/The Impact of Good Governance of Internet for Human and Sustainable Development
- Policy and Practice Work on Data Protection and Privacy
- Public-Private Cooperation on Internet Safety/Cybercrime
- Internet Governance for Development
- Use of Latin and Native American Languages on the Internet
- The Internet and FOSS: Applications and Challenges for Africa

For more information on the IGF and the NRO's participation, see:

- ➔ [www.nro.net/governance](http://www.nro.net/governance)
- ➔ [www.intgovforum.org](http://www.intgovforum.org)

### Organisation for Economic Co-Operation and Development (OECD)

The RIPE NCC has been involved with the work of the OECD's committee for Information, Computer and Communication Policy (ICCP) and the Working Party on Communication, Infrastructures and Services Policy (WP CISP) since 2007, working on its own behalf as well as together with the other Regional Internet Registries (RIRs) and through the recently formed Internet Technical Advisory Committee (ITAC).

At the end of 2010, the RIPE NCC was nominated by ITAC to become ITAC's formal point of contact for the WP CISP, a role that the RIPE NCC is eager to fulfill in 2011.

Over the year, the RIPE NCC sent representatives to the following OECD Meetings and workshops held at the OECD headquarters in Paris, France:

- Committee for Information, Computer and Communication Policy (ICCP) Meeting, March 2010
- The Working Party on Communication, Infrastructures and Services Policy (CISP) Meeting, June, 2010
- The Working Party on Communication, Infrastructures and Services Policy (CISP) & Working Party on the Information Economy (WPIE) Joint Workshop on Internet Intermediaries, 2010
- The Working Party on Communication, Infrastructures and Services Policy (CISP) Meeting, September 2010
- Committee for Information, Computer and Communication Policy (ICCP) Meeting, 2010

The RIPE NCC also contributed to the formal document "Evolution of the Internet's Address Distribution Function, IPv6 and the Role of Government", distributed to the delegates at the Committee for Information, Computer and Communication Policy (ICCP) Meeting held in March.

## RIPE NCC in the Internet Industry

This document can be found online at:

➔ [www.internetac.org/?attachment\\_id=467](http://www.internetac.org/?attachment_id=467)

Information about ITAC can be found online at:

➔ [www.internetac.org](http://www.internetac.org)

## RIPE NCC Roundtable Meetings

The RIPE NCC has been holding Roundtable Meetings for Governments and Regulators since 2005. Since 2009, these meetings have been supplemented with adjacent Roundtable Meetings for Law Enforcement Agencies (LEAs). These meetings are designed to enhance cooperation between the technical community in the RIPE NCC service region and local governments, regulators and LEAs. Attendance at these meetings is by invitation only.

The RIPE NCC Roundtable Meeting for Governments and Regulators was held on 22 February 2010. There were 38 attendees from 12 countries, and topics discussed included:

- The technical community as a trusted source of data for intergovernmental organisations
- IGF renewal and IGF 2010 – looking forward to Vilnius
- Internet governance leading up to ITU Plenipot 2010

➔ [www.ripe.net/meetings/roundtable](http://www.ripe.net/meetings/roundtable)

## RIPE NCC and Law Enforcement Agencies (LEAs)

On 17 March 2010, the RIPE NCC hosted a Roundtable Meeting for LEAs. Over 100 LEA representatives and cybercrime units were in attendance, as well as representatives from the other Regional Internet Registries and the RIPE community. Topics covered during the meeting included the legal framework that the LEAs work under with regard to Internet

## RIPE NCC Roundtable Meetings

number resources, and tools from the technical community that LEAs can use to assist them in their work.

During the year, the RIPE NCC also participated in various events organised by the European Commission and the Council of Europe regarding cybercrime and took part in the activities of the Cybercrime Working Party (CCWP). The CCWP was created to enhance cooperation between LEAs and the technical community in the RIPE NCC service region.

## RIPE Cooperation Working Group

The RIPE Cooperation Working Group was established in 2008 on the recommendation of the RIPE Task Force on Enhanced Cooperation, and held its first session at the RIPE 57 Meeting. The Cooperation Working Group is actively involved in the RIPE NCC's Roundtable Meetings for Governments and Regulators and provides valuable input from the RIPE community about issues that affect governments, regulators and law enforcement agencies. The Cooperation Working Group met twice in 2010, and discussed subjects including IPv6 deployment, Internet governance structures such as the Internet Governance Forum and relevant developments in the activities of the International Telecommunications Union (ITU).

## The Number Resource Organization (NRO)



The NRO serves as a coordinating mechanism for the Regional Internet Registries 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. In 2010, the RIPE NCC took over the role of NRO Chair.

The 2010 officers were:

- Chairman – Axel Pawlik (RIPE NCC)
- Secretary – Raúl Echeberriá (LACNIC)
- Treasurer – Paul Wilson (APNIC)
- Members – John Curran (ARIN) and Adiel Akplogan (AfrinIC)

## The NRO Number Council (NRO 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).

## 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 2010, the representatives from the RIPE NCC's service region, and their three-year terms, were:

- Wilfried Woeber\* (UniVie/ACOnet): Jan 2009-31 Dec 2011
- Dave Wilson (HEAnet): Jan 2010-31 Dec 2012
- Hans-Petter Holen (Visma IT): Jan 2011-Dec 31 2013

\*Selected by the RIPE NCC Executive Board

➔ [www.aso.icann.org](http://www.aso.icann.org)





# **RIPE and the RIPE Policy Development Process**



### RIPE NCC and the RIPE Community

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 and stable 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 36). All of RIPE's activities are documented, archived and available to the public.

➔ [www.ripe.net/ripe](http://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.

### RIPE Working Groups

- Address Policy Working Group
- Anti-Abuse Working Group
- Cooperation Working Group
- Database Working Group
- DNS Working Group
- EIX Working Group
- ENUM Working Group
- IPv6 Working Group
- MAT Working Group
- RIPE NCC Services Working Group
- Routing Working Group

➔ [www.ripe.net/ripe/wg](http://www.ripe.net/ripe/wg)

### RIPE Task Forces

Task forces are groups of individuals who have a collective interest in performing specific tasks for the good of the RIPE community. Task forces designate a coordinator, who is responsible for making sure that progress is made and that results are achieved within the time frame that the task force has agreed.

The outcome of the work of a task force is usually a report with recommendations. The recommendations are discussed by the RIPE community and implemented when agreement is reached.

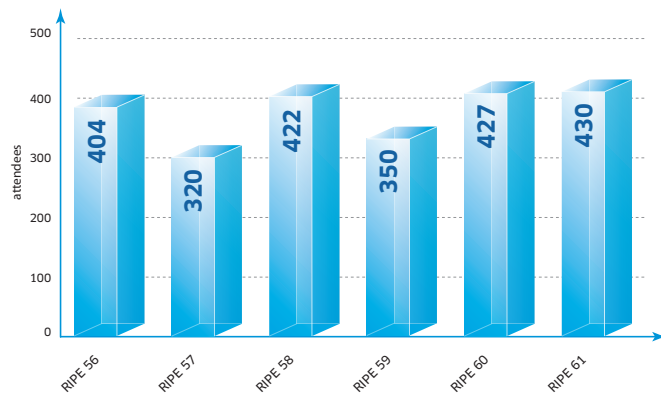
The following RIPE Task Forces were active during 2010:

- The RIPE Certification Task Force
- The RIPE Task Force

### 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.

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). Live transcripts of the sessions are also provided for attendees.



Meeting attendance

### The RIPE Policy Development Process (PDP)

The RIPE community develops and sets policies for the technical coordination of the Internet and the distribution of the 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.

➔ [www.ripe.net/ripe/policies](http://www.ripe.net/ripe/policies)

### Proposal Overview 2010

Ten new proposals were submitted during 2010:

**2010-01, "Temporary Internet Number Assignment Policies"** proposed to expand the RIPE NCC's ability to assign number resources for temporary purposes and to allow the RIPE NCC to reserve pools of IP addresses and Autonomous System (AS) Numbers, which could be used by the RIPE NCC to make temporary assignments to End Users.

Key to this proposal is that all temporary resources assigned under this policy proposal are assigned on a strictly temporary basis, ensuring that they can be quickly re-assigned to other End Users after the assignment period expires.

**2010-02, “Allocations from the last /8”**, proposed to describe how the RIPE NCC should distribute address space from the last /8 of IPv4 address space it is allocated by IANA. 2010-03, “Global Policy State in RIPE PDP” proposed the introduction of a new state in the PDP specific to global policies; “Accepted pending consensus in other RIR communities”.

**2010-04, “80% Rule Ambiguity Cleanup”**, aimed to solve the ambiguity in the current wording of the IPv4 Allocation Policy (ripe-491) regarding the “80% utilisation rule”.

**2010-05, “Global Policy for IPv4 Allocation by the IANA post exhaustion”**, proposed to define the policies by which IPv4 address space will be allocated after the depletion of the IANA IPv4 address pool.

The proposal defined a “Reclamation Pool” to be used by RIRs to request from and return IPv4 address space to. It also defined the eligibility conditions for an RIR to request IPv4 address space.

**2010-06, “Registration Requirements for IPv6 End User Assignments”**, proposed to clarify a potential ambiguity in the current IPv6 addressing policies and aimed to introduce a new status attribute in the RIPE Database for IPv6 objects. The method of registration was loosely based on the current IPv4 practice. When organisations want to make multiple IPv6 assignments out of their allocations, they would have to register them in the database with the specific new status that defines the assignment to their End Users and the size of the assignments.

**2010-07, “Ambiguity cleanup on IPv6 Address Space Policy for IXP”**, aimed to clarify the ambiguity of some wording in the IPv6 Address Space Policy for Internet Exchange Points (ripe-451) regarding the requirements to join an IXP.

**2010-08, “Abuse contact information”**, proposed to introduce a mandatory reference to irt objects in the inetnum, inet6num and aut-num objects in the RIPE Database. The purpose is to improve the efficiency and accuracy of abuse reporting.

**2010-09, “Frequent Update Request”**, defined a regular procedure for the RIPE NCC to contact RIPE Database object holders to double-check and update their details.

**2010-10, “Adding reference to sponsoring LIR in inetnum, inet6num and aut-num objects”**, aimed to add a new condition in ripe-452, “Contractual Requirements for Provider Independent Resource Holders in the RIPE NCC Service Region,” in order to better reference the relationship with the sponsoring LIR in the RIPE Database.

One proposal submitted in 2006 and two proposals submitted in 2008 were still in the PDP at the end of 2010:

**2006-05, “PI Assignment Size”**, proposed to allow for End Users who request a Provider Independent IPv4 address assignment to be assigned limited additional address space to make the assignment size a multiple of /24. The End User must demonstrate the intention to multihome the assignment.

**2008-07, “Ensuring Efficient Use of Historical IPv4 Resources”**, proposed to require documentation of all address resources held when assessing a RIPE NCC member’s 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 holdings and how these certificates should be maintained when the RIPE NCC deploys a certification service.

### Concluded Proposals

One proposal completed the PDP during 2010 and was accepted with the RIPE community's consensus:

#### **2009-01, "Global Policy for the Allocation of IPv4 blocks to Regional Internet Registries"**

The acceptance of this Global Policy Proposal provided a mechanism for the RIRs to retro-allocate recovered IPv4 address space to IANA. It also provided IANA with a policy to allocate the space back to the RIRs on a needs basis.

Not all of the RIRs' communities reached consensus on the same version of the proposal. The Internet Corporation for Assigned Names and Numbers (ICANN), on notification by the NRO Executive Council, declared the policy abandoned, noting that concurrently other proposals may advance to fulfill a similar function to the abandoned one.

### Withdrawn Proposals

Six proposals were withdrawn in 2010:

#### **2010-03, "Global Policy State in RIPE PDP"**

The proposer decided to withdraw the proposal based on the feedback received at RIPE 60.

#### **2008-06, "Use of Final /8"**

This proposal merged with Policy Proposal 2009-04 to become Policy Proposal 2010-02.

#### **2009-04, "IPv4 Allocation and Assignment to Facilitate IPv6 Deployment"**

This proposal merged with Policy Proposal 2008-06 to become Policy Proposal 2010-02.

#### **2008-04, "Using the Resource Public Key Infrastructure to Construct Validated IRR Data"**

This proposal aimed to introduce a new registry that augments IRR data with the formally verifiable trust model of the Resource Public Key Infrastructure (RPKI) and provide ISPs with the tools to generate an overlay to the IRR that can be much more trusted. The proposer decided to withdraw the proposal.

#### **2010-09, "Frequent Update Request"**

The proposer decided to withdraw the proposal based on the feedback received at RIPE 61. A task force will be organised to solve the implementation issues pointed out by the proposal discussion.

#### **2010-10, "Adding reference to sponsoring LIR in inetnum, inet6num and aut-num objects"**

The proposer decided to withdraw the proposal based on the feedback received at RIPE 61. A task force will be organised to solve the implementation issues pointed out by the proposal discussion.

# Financial Report

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### Introduction to the Financial Report



2010 was a very positive year for the RIPE NCC, with financial stability achieved against a background of IPv4 depletion as well as challenging economic times globally.

The RIPE NCC accumulated a surplus in 2010 while a deficit was forecast. This unexpected surplus can be attributed to a higher-than-expected

income from service fees and due to careful management of accounts by the RIPE NCC Management and the Executive Board.

The stability is also reflected in the membership growth of 584 members in 2010, a 9% increase on the 2009 figures. As the IPv4 address pool depletes and many economies in the RIPE NCC service region continue to experience the effects of the global financial crisis, it is satisfying to see that the growth in membership continues. This growth was crucial to establish a positive year-end result for the RIPE NCC in 2010.

The RIPE NCC's cash management is based on the principle of security, with holdings spread over several accounts in a number of banks. The methods used ensure security and mean that there was no undue loss of funds in 2010.

The depletion of the IPv4 address pool, and the RIPE NCC's efforts to promote adoption of IPv6, were significant factors in the increased costs experienced by the RIPE NCC in 2010. The RIPE NCC also continued to make investment in

software to facilitate improved services and to expand the service offering provided by the RIPE NCC. A good example of this is the effort spent during the year on creating a fully operational certification system by the end of 2010 and raising awareness of certification in the community.

Additional costs were also seen in the area of external relations and outreach activities on behalf of the membership. This outreach to such stakeholders as governments, regulators and law enforcement agencies greatly enhanced the RIPE NCC's standing as one of the key organisations in the Internet. There were costs for the two RIPE Meetings and the RIPE NCC Regional Meetings held in the Middle East and Russia, but this was offset by the large attendances at all meetings held during 2010.

The Executive Board approved the increase in the number of full-time equivalents to 124 to cater for the additional technical and external relations activities.

These can be seen as uncertain times for the Internet community generally and the RIPE NCC in particular, as the IPv4 address pool nears exhaustion. Both the RIPE NCC's management and Executive Board are committed to ensuring financial stability in the short term and for the many years ahead. There will be challenges ahead, but we are confident that the RIPE NCC is prepared financially to meet whatever may arise in the coming years.

**Axel Pawlik**  
Managing Director, RIPE NCC

## Statement of Income and Expenditure 2010

(in kEUR)

	Actual Year 2010	Budget 2010	Actual Year 2009	Variance 2010 vs Budget 2010		Variance 2010 vs 2009	
<b>Income</b>							
Service Fees	14,778	14,786	12,727	(8)	0%	2,051	16%
Sign-up Fees	1,750	1,300	1,636	450	35%	114	7%
RIPE Meeting	250	281	209	(31)	-11%	41	20%
Other Income	150	215	190	(65)	-30%	(40)	-21%
<b>Total Income</b>	<b>16,928</b>	<b>16,582</b>	<b>14,762</b>	<b>346</b>	<b>2%</b>	<b>2,166</b>	<b>15%</b>
<b>Expenditures</b>							
Personnel	9,149	9,259	8,557	(110)	-1%	592	7%
General Operating Expenses	4,256	4,651	3,770	(395)	-8%	486	13%
RIPE Meetings	948	809	598	139	17%	350	59%
Training Courses	286	337	264	(51)	-15%	22	8%
Regional Meetings	257	160	192	97	61%	65	34%
Financial Expenses	111	98	74	13	13%	37	50%
<b>Subtotal Operational Expenses</b>	<b>15,007</b>	<b>15,314</b>	<b>13,455</b>	<b>(307)</b>	<b>-2%</b>	<b>1,552</b>	<b>12%</b>
Miscellaneous Expenses	135	370	161	(235)	-64%	(26)	-16%
Depreciation	1,419	1,621	1,067	(202)	-12%	352	33%
<b>Total Expenses</b>	<b>16,561</b>	<b>17,305</b>	<b>14,683</b>	<b>(744)</b>	<b>-4%</b>	<b>1,878</b>	<b>13%</b>
<b>Surplus/Deficit Before Interest Income</b>	<b>367</b>	<b>(723)</b>	<b>79</b>	<b>1,090</b>		<b>288</b>	
Interest Income	347	400	742	(53)	-13%	(395)	-53%
<b>Surplus/Deficit</b>	<b>714</b>	<b>(323)</b>	<b>821</b>	<b>1,037</b>		<b>(107)</b>	
<b>Full Time Equivalents (FTEs)</b>	<b>124</b>	<b>123</b>	<b>116</b>	<b>1</b>	<b>1%</b>	<b>8</b>	<b>7%</b>



## Notes to the RIPE NCC Statement of Income & Expenditure 2010

### General

In accordance with Article 13 of the RIPE NCC's Articles of Association, the Financial Report is prepared to account for the RIPE NCC's financial position at year end and the financial results for the year then ended to its members. Consequently, the applied basis of accounting is designed to meet the financial information needs of the entity's members and therefore do not constitute a generally accepted financial framework. The applied basis of accounting is disclosed in the notes to the Financial Report. As a result, the Financial Report may not be suitable for another purpose. At the RIPE NCC General Meeting, the Executive Board submits the Financial Report to the entity's members for approval.

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

The financial year 2010 resulted in a surplus of 714 kEUR. This positive result is substantially above the forecasted deficit of -323 kEUR. This surplus will accumulate in the RIPE NCC's Clearing House. As a result of the increase in costs in 2010, the RIPE NCC's capital/expense ratio equated to 110% of total expenses, compared to a percentage of 119% at the end of 2009, taking the capital/expense ratio towards the target level set by the RIPE NCC. The RIPE NCC's Executive Board and the management aim to keep a minimum of one year's total expenses in reserve to ensure the financial stability and operational continuity of the RIPE NCC.

### Revenues

Revenues were above budget by 2% and 15% above the revenue for 2009. This growth results from a change in the Charging Scheme 2010, in which an additional fee of EUR 50 per Independent Internet number resource was introduced, and from the strong membership growth of 9%.

In 2010, the total number of members increased to 7,167, a growth of 584 or a 9% increase on the 2009 figure. The net growth of 584 takes into account closed members and applicants that never became members. The total service fees were on budget and increased by 16% compared to 2009. The total number of membership applications was 1,059, in line with the figure for 2009 (1,058). As a result of this higher-than-expected influx of new members, the sign-up fee income was up 35% from the budget.

Income concerns the proceeds from the delivery of services after deducting taxes on sales. Income and expenses are attributed to the period to which they relate.

Income from the two RIPE Meetings increased 20% from 2009 as a result of changes in the number of attendees. This was below budget for 2010 by 11%.

Other income includes fees from the Test Traffic Measurement (TTM) service, the DNS Monitoring (DNSMON)

Revenues (In kEUR)	2010	Budget 2010	2009
Service fees	14,633	14,619	12,611
Sign-up fees	1,750	1,300	1,636
Direct End User fees	145	167	116
RIPE Meeting	250	281	209
DNSMon	119	125	122
Other income	31	90	68
<b>Total Revenues</b>	<b>16,928</b>	<b>16,582</b>	<b>14,762</b>

service, EU VAT reclamations from 2009 that were submitted in 2010 and a revaluation of the Internet Corporation of Assigned Names and Numbers (ICANN) accrual. In 2010, other income decreased compared to 2009 as a result of a negative exchange rate effect of 43 kEUR versus 2009.

### Expenditures

Total expenditure in 2010 was 4% below the budget for 2010, or -744 kEUR. Operational expenses were just 2% below the budgeted figure and were 12% above the total expenditure 2009. This shows careful management of the growth in expenses.

Personnel expenses were within the budget (-1%) and increased by 7% compared to 2009. Additional full-time equivalents (FTEs) were approved by the Executive Board to initiate new information services development such as RIPE Atlas. For 2010, 124 FTEs were employed compared to the 123 budgeted for and the 116 employed in 2009.

The number of FTEs is calculated on the basis of the actual number of hours worked.

General operating expenses were 8% below the budget for 2010 and 13% above the 2009 figures. The cost increase

#### General Operating Expenses (In kEUR)

	2010	Budget 2010	2009
Housing/Office Costs	1,206	1,207	1,105
External Relations/ICANN	903	1,049	790
IT Infrastructure	738	804	551
Travel	725	784	623
Consultancy, incl. Legal	684	807	701
<b>Total General Operating Expenses</b>	<b>4,256</b>	<b>4,651</b>	<b>3,770</b>

was lower than planned due to lower than expected costs for external relations efforts and contributions, efficient use of consultants and the IT infrastructure enhancements that were less expensive than planned for.

As in previous years, two RIPE Meetings were held, one in Prague, the Czech Republic and one in Rome, Italy. RIPE Meeting expenses were above expectation. This was caused by higher-than-expected location costs at both venues and higher support costs for items such as the provision of stenography.

Costs for Training Services were below budget even though more trainings were provided than planned. This was caused by the more efficient scheduling of trainings: holding them back-to-back and adjacent to events.

There was an enhancement of regional support. Three meetings were supported, one in Moscow, Russia and two MENOG Meetings, one in Riyadh, Saudi Arabia and one in Istanbul, Turkey.

Financial expenses are bank charges and credit card charges. As a result of an increase in payment transactions caused by the later-than-usual sending of invoices pertaining to 2010, the number of transactions in 2010 increased compared to 2009. The average transaction cost level was the same as in previous years.

Miscellaneous expenses consists of bad debts. Bad debts were lower than 2009 and reflect the low number of membership closures.

The average amount of cash on hand over the course of 2010 was higher than in 2009, but because the average interest received over the cash reserves decreased to below 1.5%, the interest income dropped to 347 kEUR.

**Balance Sheet 31 December 2010**

(in kEUR)

31 December 2010

31 December 2009

**Assets****Fixed assets**

Computers	1,174	1,084
Infrastructure	110	103
Office Equipment	62	83

**Total Fixed Assets****1,346****1,270****Intangible Fixed Assets**

Software Development	1,656	1,143
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**Total Intangible Fixed Assets****1,656****1,143****Current Assets**

Accounts Receivable	5,692	7,964
VAT	(19)	(21)
Miscellaneous Receivables	1,112	1,266

**Total Current Assets****6,785****9,209****Cash On Hand****22,935****18,803****Total Assets****32,722****30,425**

31 December 2010

31 December 2009

## Liabilities

**Capital**

Reserves	477	477
Clearing House	16,932	16,111
Surplus	714	821

**Total Capital****18,123****17,409****Current liabilities**

Creditors	1,018	488
Wage Taxes and Social Securities	384	340
Unearned Revenues	12,049	11,212
Miscellaneous Payables	1,148	976

**Total Current Liabilities****14,599****13,016****Total Liabilities****32,722****30,425**

**Notes to the RIPE NCC Balance Sheet as per 31 December 2010**

**General Information**

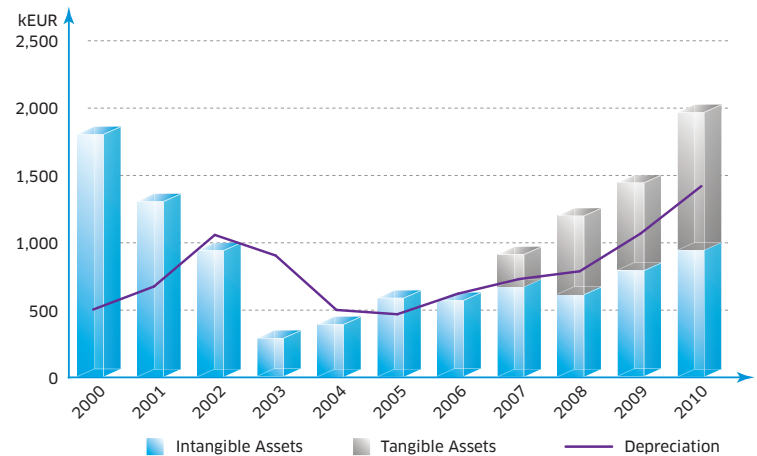
All amounts are expressed in kEUR. Foreign currencies are converted at the daily exchange rate at the date of transaction or valuation. Historic costs have been used throughout unless otherwise stated. In general, the balance sheet reflects the growth in membership and in investments. In addition payments for the invoices of 2011 have been coming in quicker than in 2010. This resulted in a decrease of the accounts receivable at year end 2010.

**Fixed Assets and Intangible Fixed Assets**

Assets are valued at historical costs and are depreciated on a straight-line basis, starting from the month after acquisition. Computers consist of hardware and purchased activated software. Fixed assets are depreciated for the actual period of economic use. Hardware is written off after three years and software is written off after two years. Infrastructure is written off after three years and office equipment after five years. All items under EUR 500 are expensed.

Software development costs are capitalised insofar as they are incurred in respect of potentially profitable projects and are stated at cost. These costs mainly comprise the cost of

*Purchase Costs and Depreciation*



direct labour. Upon termination of the development phase, the capitalised costs are written down over their expected useful life, which is three years. Depreciation takes place on a straight-line basis.

In 2010, the expenses, personnel and consultancy costs associated with some software development projects such as Internet number resource Certification and the new internal registration software, were taken as an intangible fixed asset. In 2010, there was no addition for consultancy costs for projects that are work in progress. Intangible fixed assets are valued at historical costs and are depreciated on a straight-line basis, starting from the month after acquisition. Intangible fixed assets are written off after three years.

<b>Fixed Assets</b> (In kEUR)	<b>Computers</b>	<b>Infrastructure</b>	<b>Office Equipment</b>	<b>Software Development</b>
Book Value 1 January 2010	1,084	103	83	1,143
Purchase Costs	883	80	33	1,012
Depreciation	793	73	54	499
<b>Book Value 31 December 2010</b>	<b>1,174</b>	<b>110</b>	<b>62</b>	<b>1,656</b>

**Current Assets**

At year end 2010, accounts receivable consisted of approximately 95% of invoices pertaining to 2011. In comparison to 2010 payments for the year 2011 have come in at a higher rate than in 2010. This explains the lower amount of accounts receivable for the year end 2010.

In contrast to previous years, the bad debts are based on the actual written off invoice amounts. In previous years, a provision for bad debts was accounted for based on the level of accounts receivable. The RIPE NCC actively contacts members regarding extra payments and overpayments of settlements. However, an amount of kEUR 68 was accounted for that could not be settled. This is reported as Creditors.

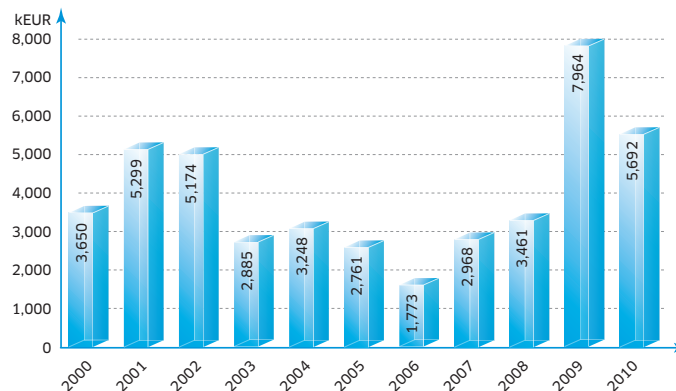
Accounts Receivable includes those payments that could not be identified and attributed to any specific member. At year end, this amounted to 102 kEUR. Other debtors, such as Test Traffic Measurement (TTM) and DNS Monitoring (DNSMON) customers, accounted for 7 kEUR at year end 2010.

Due to the fact that the invoices pertaining to 2011 were sent in December 2010, the outstanding amount of VAT receivable from the tax authorities was negative.

**Miscellaneous Receivable** (in kEUR)

	31/12/2010	31/12/2009
Prepayments	578	691
Interest Receivable	219	280
Other Receivables	315	295
<b>Total Miscellaneous Receivable</b>	<b>1,112</b>	<b>1,266</b>

**Accounts Receivable**



Pre-payments are for rent, equipment, IT service contracts, pensions, health and deposits for RIPE Meeting venues. The increase of pre-payments is attributable to a deposit paid to guarantee the RIPE Meeting venue for 2010.

The RIPE NCC has a pension system of defined contribution with a pensionable age of 65 years, in accordance with Dutch fiscal requirements.

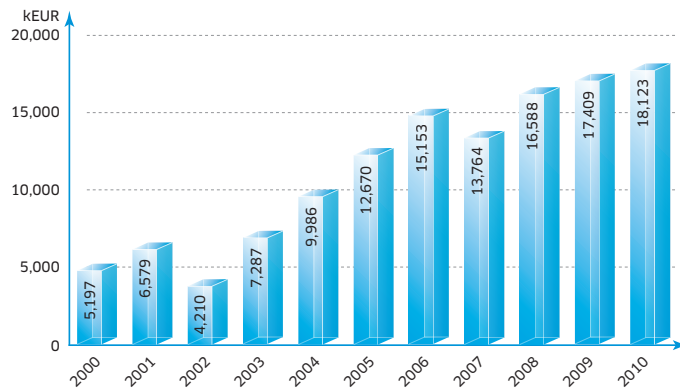
Other items listed under miscellaneous receivable are interest receivables, credit card payments to be received and payments in transit. In addition, miscellaneous receivable includes a small inventory for the sale of Test Traffic Measurement (TTM) equipment. Interest receivable is lower at year end 2010 as a result of a decrease in the average interest rate received in deposits.

## Notes to the RIPE NCC Balance Sheet as per 31 December 2010

### 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 2010, the Capital had increased to 18,123 kEUR. This represents a decrease from 1.15 times to 1.04 times the service fee level for the pertaining year. The Executive Board has earmarked 100 kEUR of this reserve for research cooperation and supporting technological developments.

### Capital



### Current Liabilities

The creditor level at the end of 2010 increased compared to 2009. This difference is because at year end 2010, the invoices for rent were outstanding while at the end of 2009 this was not the case. There was no restatement from

creditors to accounts receivable for outstanding credit notes with suppliers at 31 December 2010.

### Wage Taxes and Social Securities

The increase in wage taxes and social securities at year end 2010 versus year end 2009 is due to a higher number of staff employed at 31 December 2010.

### Miscellaneous Payable

Miscellaneous Payable (in kEUR)	31/12/2010	31/12/2009
Accrued ICANN Contribution	92	102
Holiday Allowance/Vacation Days	608	542
Other Payables	448	332
<b>Total Miscellaneous Payable</b>	<b>1148</b>	<b>976</b>

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 2010 valued on the December 2010 salary.

At year end 2010, only six months of the contribution for the ICANN fiscal year 2010/2011 were outstanding.

Other payables are other accruals and receivable discounts on the rental agreements.



**Items Not Shown in Balance Sheet**

The RIPE NCC rents office space in two connected buildings and has separate rental agreements for these. These rental agreements were re-negotiated in 2008 and have been extended until December 2014. For these rental agreements, two bank guarantees have been issued for an amount of 144 kEUR. The amount due in rent for both rental agreements will amount to 570 kEUR in 2011. The total obligation for these rental agreements amounts to 2,280 kEUR over the remaining contract period.

At 31 December 2010, the RIPE NCC had no financial liability or obligation towards any industry partner that is not reflected in the Balance Sheet. There was no capital or financial interest in the any industry organisation 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 inflow reflects the fact that payments for the invoices of 2011 are coming in earlier than in the previous year. This has increased the cash inflow from service fees by more than 80%. This is a one-time effect. The cash outflow increased in line with the growth of the cost base in 2010. The RIPE NCC's cash flow increased over 2010 and at year end the cash amounted to 22,935 kEUR.

The RIPE NCC's Treasury is identical to the cash management of previous years and is based on the basic principle of security. In 2010, the cash was held in several deposit accounts that were spread evenly between three different banks. At the last Executive Board meeting of 2010, the RIPE NCC Executive Board and the RIPE NCC Management concluded a Treasury Statute that documents the management of its reserve.

	Total 2010	Total 2009
<b>Begin Cash Balance 1 January 2010 (In kEUR)</b>	<b>€ 18,803</b>	<b>€ 21,449</b>
<b>Cash Inflow</b>		
Sign-up Fees	€ 2,351	€ 1,820
Service Fees	€ 17,404	€ 9,560
TTM/DNSMON	€ 223	€ 201
RIPE Meetings	€ 236	€ 189
Interest Received on Deposits	€ 408	€ 862
Other	€ 510	€ 532
<b>Total Inflow</b>	<b>€ 21,132</b>	<b>€ 13,164</b>
<b>Cash Outflow</b>		
Salary	€ 4,763	€ 4,251
Wage Tax and Social Security	€ 3,057	€ 2,658
Pension and Health	€ 927	€ 744
RIPE and Regional Meetings	€ 548	€ 606
ICANN Contribution	€ 234	€ 219
Creditors	€ 7,471	€ 7,332
<b>Total Outflow</b>	<b>€ 17,000</b>	<b>€ 15,810</b>
<b>Total Cash Inflow Balance</b>	<b>€ 4,132</b>	<b>€ (2,646)</b>
<b>End Cash Balance 31 December 2010 (In kEUR)</b>	<b>€ 22,935</b>	<b>€ 18,803</b>

## Independent auditors' report

To: Réseaux IP Européens Network Coordination Centre

We have audited the accompanying Financial report 2010 as set out on pages 41 to 50 of Réseaux IP Européens Network Coordination Centre, Amsterdam, which comprise the statement of income and expenditure for the year 2010, balance sheet as at 31 December 2010 and the notes, comprising a summary of the accounting policies.

### Management's responsibility

Management is responsible for the preparation of the Financial report in accordance with the accounting policies selected and disclosed by the entity, as set out in the notes of the Financial report. Furthermore, management is responsible for such internal control as it determines is necessary to enable the preparation of the Financial report that is free from material misstatement, whether due to fraud or error.

### Auditor's responsibility

Our responsibility is to express an opinion on the Financial report based on our audit. We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing. This requires that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the Financial report is free from material misstatement.

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

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 report is prepared, in all material respects, in accordance with the accounting policies selected and disclosed by the entity, as set out in the notes of the financial statements.

### Basis of accounting

We draw attention to the note on page 42 of the Financial report, which describes the special purpose of the Financial report and the basis of accounting. The Financial report is mainly prepared for the entity to comply with Article 13 of the entity's Articles of Association. The accounting policies used are selected and disclosed by the entity. As a result, the Financial report may not be suitable for another purpose. Our opinion is not qualified in this respect.

Amstelveen, 31 March 2011  
KPMG ACCOUNTANTS N.V.  
W. Tjoelker RA

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