Annual Report draft

# Our mission

APNIC serves as the Regional Internet Registry (RIR) for the Asia Pacific region, addressing the challenge of responsible Internet resource management in the region.

APNIC provides information, training, events, and supporting services that assist the community in building and managing the Internet.

APNIC supports critical Internet infrastructure where needed, to assist in creating and maintaining a robust Internet environment.

APNIC provides leadership and advocacy in support of our vision.

APNIC facilitates regional Internet development through a focus on the needs of developing economies.

APNIC is guided in its direction by the needs and requests of its membership.

# 2012 Key achievements

APNIC increased collaboration and partnership with other organizations to provide more high-quality education services to the Asia Pacific Internet community. This helped APNIC Training reach 30% more networking engineers in the region with hands-on, face-to-face training courses than in 2011.

The APNIC IPv6 Program supported continued strong IPv6 growth in the region: Simpler distribution procedures; increased outreach and participation at regional and global events; more hands-on training across the region and IPv6 content at APNIC Conferences; and presenting authoritative measurements on regional and global IPv6 deployment.

APNIC Research and Development became APNIC Labs, delivering resource distribution data and commentary straight to the community. APNIC Labs is a primary reference for global IPv6 data in several high-level regional forums, including APEC TEL.

APNIC and ISC worked together to perform critical hardware upgrades on several high traffic root server sites and successfully trialled a cost-effective site model for low traffic areas in Dhaka, Bangladesh.

New processes for IPv4 transfers in 2012 enable APNIC Members to put unused resources back into circulation, for those organizations that need them. APNIC Members can also receive IPv4 addresses from members of other Regional Internet Registries. This contributed to a 40% increase in IPv4 transfers from 2011, excluding mergers and acquisitions.

### Case study: Mongolia IPv6

ICT implementation faces unique challenges in Mongolia, with its sparse population and landlocked position. Despite these challenges, Mongolia is one of the fastest growing Asia Pacific economies and is quickly becoming an influential Internet stakeholder. APNIC has worked in collaboration with local Internet community experts to improve Internet growth, with emphasis on IPv6 deployment. The benefits of this approach are to expose local Internet communities’ current issues of global and regional importance and access to world-class training.

The Mongolia IPv6 workshop, which was held in October 2012 in Ulaanbaatar, attracted full participation with 40 local engineers in attendance. It was a great success thanks to the involvement of local hosts who conducted an opening and closing ceremony and provided training certificates. The local media covered the opening ceremony and CEO of Mobicom, Mongolia’s largest mobile phone operator, was present.

The workshop provided participants an understanding and hands-on exposure to IPv6, its structure, operation and technical features. The intensive nature of this course allowed IPv6 addressing and architectures to be discussed in detail, and the issues related to deployment, transition, and co-existence with IPv4 were examined. Participants expressed that the hands-on IPv6 network building lab exercises provided vital experience for real life IPv6 implementation.

*I must commend your concentration spans and how you continued to elaborate on each slide, point by point, accurately…What kept me tuned with the training was the fact that whether it is a complicated topic or fairly easier one, your persistence discussing the topic and elaborating and sharing examples would always broaden what I already know”.*

**Seorn Thomas**

**PBX Systems Engineer (Network Services)**

www.training.apnic.net

## APNIC Survey 2012

APNIC surveys our broad group of stakeholders every 18 months to make sure we are providing the services our community needs. The findings from these surveys inform APNIC’s planning framework.

This year we made some adjustments to the APNIC Survey, to best leverage the findings and continue to improve our services. Professor Ang Peng Hwa of the Singapore Internet Research Centre conducts each Survey, but this year the planning stages included a Focus Group of key stakeholders. The Focus Group helped us create a Survey that would capture our Member and stakeholder needs more effectively.

These improvements contributed to a total participation increase of 67.8% from the previous survey, with 1,333 valid responses from 42 of the 56 Asia Pacific economies. (pie chart to show 73.5% total respondents were Members?)

APNIC is an open, membership-based, non-profit organization that serves its Members and other stakeholders throughout the Asia Pacific region. Our broader community includes all Internet stakeholders, including individuals, organizations, governments, and other institutions with an interest in the Internet.

Our Members, who fund and support APNIC activities, include network operators, service providers, and other entities that rely on Internet resources and other APNIC services for their operations.

# Introduction from the Director General

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# EC Chair Letter

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# APNIC is the Asia Pacific Regional Internet Registry

APNIC’s core activities include distributing Internet number resources such as IPv4 and IPv6 addresses and Autonomous System Numbers (AS Numbers), maintaining a database of registration details for the organizations using those resources, and providing reverse DNS services.

As APNIC has evolved to meet the needs of its community, it has broadened its mission to incorporate other pursuits on behalf of the Asia Pacific community; however, the registry function remains vital. During 2012 APNIC made improvements to the processes that enable this function.

## IPv4 transfers

As IPv4 address space becomes scarce around the world, APNIC has worked to build procedures and processes to facilitate IPv4 transfers. The steady rise of the rate of IPv6 allocations means some APNIC Members will decommission blocks of IPv4 that are no longer needed in their networks as they progress their transitions. While IPv4 resources are still in demand, it is important they are used where needed to ease the burden of IPv6 transition on individual operators.

In 2012, the Asia Pacific Internet community created a policy that would be compatible with other inter-regional transfer policies. APNIC Members can now send or receive IPv4 resources to and from regions with compatible policies as needed. In October 2012, the first inter-regional transfer was processed from the ARIN (North America) region to an APNIC Member.

Additional facilities were put in place during 2012 to make transferring resources simple and easy:

### IP broker registration

Several IP brokers have entered into formal agreements with APNIC and ARIN, agreeing to abide by the policies of both regions when brokering transfers. A list of these brokers is available on apnic.net.

### Pre-approval requests

Any APNIC Member wishing to receive an IPv4 transfer from another APNIC Member, or from another region, can now apply in advance for the resources before locating a source. This way, APNIC Members or members of other RIRs can look at the list to see who in the APNIC region is seeking additional IPv4 addresses.

Pre-approval requests must demonstrate need for the resources under normal IPv4 allocation policies.

### Transfer mailing list

A public mailing list, apnic-transfers, was established to create a forum for any discussions about IPv4 transfers.

### Global procedure

The Resource Service Managers at all five RIRs collaborated to create a procedure for inter-regional transfers to align the operations required to make IPv4 transfers. Soon, inter-regional transfers will be available in all five RIR regions.

www.apnic.net/transfer

## Member services improvements

The APNIC Member Services is the first point of contact between the Secretariat and the community. The Helpdesk team is available after office hours, until 21:00 UTC +10, to accommodate Members in other time zones. The Helpdesk Team offer assistance to Members in several languages.

[www.apnic.net/helpdesk](http://www.apnic.net/helpdesk)

### IPv6 one-click

APNIC is committed to streamlining requests for Internet number resources, so that current and new Members can access the resources as quickly and readily as possible.

During 2012, the one-click IPv6 request process was extended to National Internet Registry (NIR) members, making IPv6 addresses easier to access for effectively twice as many organizations .The NIR memberships together are approximately equal to the number of APNIC Members.

Previously, NIR Secretariats made all resource requests on their members’ behalf. NIR Hostmasters can now make allocations to their members via MyAPNIC. This has significantly reduced the amount of time it takes to process an IPv6 request for NIR Members, from a full business day to a few minutes.

### New Member forms

The application process for APNIC Membership was updated in 2012, and the text-based forms were replaced with easy-to-use online forms. These web forms are easier to process, shortening the time between application and confirmation.

(Helpdesk stats go here:

MyAPNIC visitors new/returned

HD tickets received

Admin tickets resolved

New Member accounts opened)

## Statistics

An important part of the registry function is to provide regional statistics on resource distribution. Regional and global data are available on apnic.net.

These graphs represent APNIC Membership growth in 2012, as well as the year in resource distribution for IPv4, IPv6, and AS Numbers throughout the Asia Pacific region. More detailed information is available on apnic.net.

* + IPv4, IPv6, ASN cumulative
  + IPv4 by economy
  + IPv6 by economy
  + Membership growth

# APNIC provides services that assist the Internet community

Equipping network engineers with the technical skills required to build and maintain network infrastructure is a crucial factor in supporting effective Internet growth. In response to the needs expressed by our Members and stakeholders, APNIC Training collaborated with the RIPE NCC to expand and improve our IPv6 training content.

## APNIC Training expansion

APNIC dedicated significant resources in 2012 toward increasing IPv6 deployment in the Asia Pacific region by providing training and educational services. Currently, about 30% of all APNIC training courses are related to IPv6, and IPv6 eLearning courses have almost doubled from 2011 – an indication that IPv6 is gaining significant traction in the industry.

### Improvements

* The number of face-to-face training increased by about 9 per cent, and the number of participants increased by 30 per cent, from 1813 to 2347 total participants.
* There was also a 9 per cent increase in the locations where training courses were held.
* The number eLearning sessions increased by about 22 per cent, and the number of participants rose by 19 per cent.

#### (2012 Training Statistics)

**Face-to-Face**

Total courses: 73

Locations (cities): 33

Number of economies: 25

Total participants: 2347

**IPv6 Training:**

Total courses: 24

Locations (cities): 23

Number of economies: 9

Total participants: 858

**eLearning**

Total courses: 93

Total participants: 932

#### 2011 Training Stats

**Face-to-Face**

Total courses: 67

Locations (cities): 36

Number of economies: 23

Total participants: 1813

**eLearning**

Total courses: 76

Total participants: 786

#### More web-based classes

Due to the popularity of web-based classes, APNIC Training increased the frequency and range of courses offered to reach more participants. eLearning is a flexible and cost-effective choice for APNIC trainees, with three one-hour courses delivered to three time zones fortnightly. The courses are timed to cater to the South Asia, Southeast Asia, and Pacific/Oceania subregions.

#### Virtual training environment

APNIC Training courses feature hands-on exercises, which require a practice network topology lab that is physically located on a server in the APNIC office in Brisbane. The lab has proved an effective way to introduce network planning to participants, but it requires a reliable Internet connection. Training courses are often held in remote or developing areas with low connectivity. The physical lab is also difficult to share during parallel sessions.

This year the lab was moved to a virtual environment on a MacMini server, which simulates 20 router instances and all connectivity requirements. The trainers have three small portable devices so they can build the lab in about 10 minutes on any local network. This enables the training team to hold three parallel sessions on the APNIC Training Lab, without disruptions due to poor connectivity.

The virtual labs are so effective that we are able to share that capability as part of the MoU agreements with Dhaka University and CNISP.

#### Customized training

In addition to the regular face-to-face sessions, APNIC offers exclusive training courses that can be tailored to suit any client’s needs. These sessions are charged on a cost-recovery basis, and no Member funds are used for exclusive training. In 2012, APNIC conducted three exclusive training sessions, two on DNSSEC and one on IPv6, for EGA Thailand and CAT Telecom respectively.

#### Engineering assistance

Engineering assistance is a new addition to APNIC Training, which provides guidance and consultation for participants following attendance at a training event. It aims to provide concentrated hands-on assistance on issues such as IPv6 deployment, network security, and infrastructure. A fee is applicable on a cost recovery basis, to cover travel and accommodation expenses for the trainers.

#### training.apnic.net

The increase in training courses and materials offered has led to the recent launch of training.apnic.net, which consolidates APNIC training materials to one easy-to-navigate portal. The new website aims to highlight training services and their availability, and cater to those individuals or organizations looking for training services in the Asia Pacific region.

#### Regional collaboration

This year’s training expansion was partly due to increased collaboration with new and continuing partners, hosts, and sponsoring organizations throughout the region. APNIC trainers and trainers from the Internet Systems Consortium (ISC) and Team Cymru conducted joint technical workshops during regional events, and APNIC signed four Memorandums of Understanding (MoU) in 2012:

* China Internet Service Provider Association (CNISP)
* Internet Society Bangladesh Chapter (ISOC-BD)
* Dhaka University (DU)
* International Training Institute PNG Centre for Advancement of Internet Technology (ICIT)

### APNIC Conferences

APNIC holds two Conferences each year: the first is held in conjunction with the Asia Pacific Regional Conference on Operational Technologies (APRICOT), and the second as a standalone event. The main purpose for both APNIC Conferences is to provide a forum for the community to hold regional addressing policy discussions that are open to anyone. Most APNIC Conference sessions are available by live webcast, so anyone can participate in live discussions remotely.

Over the years APNIC has added other features to the Conference, including training sessions, and panels of Internet networking experts on topics of interest to the regional Internet community. APNIC Conferences are hosted by various local organizations across the region. The location for each event is chosen in consideration for the benefit of the local Internet community.

APNIC 33: New Delhi, India (with APRICOT 2012)

Total on-site delegates: 573

Total remote participants: 72

Remote hubs: Bandar Seri Begawan, Brunei and Hanoi, Vietnam

APNIC 34: Phnom Penh, Cambodia

Total on-site delegates: 237

Total remote participants: 378

Remote Hubs: Medan, Indonesia and Kathmandu, Nepal

In response to Member Survey feedback, APNIC Conferences in 2012 featured more IPv6 transition content in workshops and full-day plenary sessions. These ‘IPv6 Days’ were the most popular features of both 2012 Conferences, each featuring panels of several internationally respected networking professionals and their personal IPv6 deployment experiences.

#### APNIC 34 IPv6 Plenary Day

#### Session 1: IPv6 Address Planning for an Operational Network

During this session, panellists answered common practical questions often received by APNIC, such as what prefix size is appropriate to assign to a network. Speakers shared best practices based on their own hands-on experiences.

#### Session 2: IPv6 LTE – is it happening?

Speakers and participants in this session explored IPv6 implementation on Long Term Evolution (LTE) networks, which is a high interest topic among network operators and engineers involved with building new and upgrading existing mobile networks.

Implementation of LTE networks is increasingly providing inclusive IP based services for voice, video, messaging, and data. Network operators left this session with practical knowledge handed down from experienced operators in dynamic and challenging environments.

#### Workshop week added to program

In 2012 APNIC Learning and Development trialled a workshop week before APNIC 34 in Phnom Penh, in response requests from the membership for more hands-on training. The workshop week was held at capacity, and immersed participants in one of the following topics:

* IPv4/IPv6 BGP Routing
* Network Infrastructure Security
* Campus Network Design and Management

APNIC will continue to conduct the workshop week at standalone meetings, and in conjunction with APRICOT workshops during combined conferences.

conference.apnic.net

#### 2012 Policy Outcomes

Internet number resource distribution policies are decided by community consensus, to be implemented by the APNIC Secretariat. Anyone may submit a proposal, and it is not necessary to be present on site at the APNIC Conference for the proposal to be considered.

Three proposals to amend regional Internet addressing policies were discussed and reached consensus during the Policy Special Interest Group (SIG) sessions at APNIC 33 and APNIC 34 in 2012.:

**prop-104:** Clarifying demonstrated needs requirement in IPv4 transfer policy

This proposal defines the period to be approved of IPv4 transfers for recipients under demonstrated needs.

**prop-101:** Removing multihoming requirement for IPv6 portable assignments

This is a proposal to change the “IPv6 address allocation and assignment policy” to allow portable (that is, provider independent or PI) assignments of IPv6 address blocks to be made by APNIC to any organization with due justification and payment of standard fees, removing the current requirement that the requestor is or plans to be multihomed.

prop-102: Sparse allocation guidelines for IPv6 resource allocations

This proposal requires that the details of any sparse allocation algorithm used for the allocation by APNIC of IPv6 resources must be published on the website, and any revisions should be handled inline with the procedures contained within APNIC-112.

www.apnic.net/policy

### APNIC Connect

APNIC Connect is a new initiative to share important and useful content with the community by consolidating information across areas of the organization and streamlining internal processes. During 2012, APNIC staff received training on how to leverage social media to reach out to and inform larger sections of the community.

# APNIC supports regional infrastructure development

In 2012 APNIC worked with local, national, and regional organizations to enhance accessibility in various parts of the region, with the overarching goal of increasing Internet penetration across the Asia Pacific.

## Root server upgrades

This year APNIC installed an I-Root instance in Ulaanbaatar, Mongolia and launched a project with ISC to perform critical upgrades to the F-Root mirrors in Chennai, Hong Kong, and Seoul. These sites account for around 50% of traffic through the F-Root in the APNIC region.

The upgrades ensure continued robust infrastructure and reliability for the next several years, which is especially important in the region’s emerging economies with increasing traffic.

APNIC also successfully trialled a small form factor site in Dhaka that runs on one router and one server. In the future, these smaller sites can be deployed in low traffic areas for cost effectiveness. These sites are about one-third the cost of a traditional node, making it a great option for small island economies and developing economies.

The APNIC root server project has assisted the installation and maintenance of root server instances across the region, in partnership with other organizations, since 2002.

**What is a root server?**

Root servers answer requests for the Domain Name Service (DNS), by referring them to the authoritative name severs for the RIR reverse delegations (.arpa) and various Top Level Domains (gTLDs and ccTLDs).

APNIC supports several “root mirror” sites across the region, in partnership with other organizations, to enhance connectivity to communities in the Asia Pacific. Root mirrors increase DNS performance by allowing requests to travel a shorter distance, and add resiliency against disruptions.

http://www.apnic.net/rootserver

## Collaboration and partnerships

### RIPE NCC Memorandum of Understanding

This year APNIC and the RIPE NCC formalized a long and close working relationship with a Memorandum of Understanding (MoU) to support continued collaboration.

While all five RIRs and their respective communities coordinate certain activities and work to create global policies, the RIPE NCC and APNIC have shared resources on key infrastructure and Research and Development projects. What does this sharing mean? Leveraging materials/ why does this matter?The MoU represents a formal agreement to continue operational coordination on activities that will benefit both communities, as well as the global Internet community, such as:

* Resource certification
* Research and Development
* Training
* Root server deployment

#### Resource Certification

Resource Public Key Infrastructure (RPKI) is a security framework that uses a public-private key certification hierarchy to validate attestations about IP addresses. It is a global initiative that relies on several Trust Anchors as the cryptographic “relying parties” that establish chains of trust between the various Certificate Authorities and the particular certificate being validated. Each RIR is a Certificate Authority and is carrying out work toward digitally “signing” the entire IP address space with these keys.

APNIC was the first RIR to integrate a production RPKI subsystem into its portal in 2009. This year APNIC continued collaborative work on resource certification to align the APNIC RPKI model with the overall administrative and associated registry structure of number resources in the Internet. APNIC now has trust material split across five Trust Anchors, which are aligned to reflect the various inheritance chains from other registry bodies. Those five subsets represent resources that have been assigned to APNIC by IANA, and those resources that have been transferred to APNIC from the other four RIRs.

This work is part of wider enhanced cooperation with the RIPE NCC, where the two RIRs are sharing technical and material resources for several training and development initiatives including resource certification. APNIC’s split trust material is included in the RIPE NCC validation tools, and a new user interface for APNIC Members, called MyRPKI, is operationally similar to the RIPE interface making it easier for organizations that use resources in both regions.

The MyRPKI interface offers APNIC Members a simpler, more consistent way to manage resource certification with automatic updates and “real routing” notifications.

www.apnic.net/rpki

### Measuring IPv6 uptake

In 2012 APNIC Labs continued and expanded initiatives to measure end-user IPv6 readiness. These capabilities have been augmented through collaboration with the Internet Software Consortium (ISC) and the RIPE NCC, with financial and in-kind sponsorship from Google and the Internet Society (ISOC). Data is collected through paid advertising, website placement, and in-browser testing.

The result has been to achieve global measurement coverage, providing mostly high-confidence figures for around 130 economies. The aim of this work is to publish aggregate information that shows IPv6 uptake on a global scale, by economy, and by individual network, over time across as much of the Internet as possible.

The Asia Pacific measurements in particular are now considered authoritative. These data are significant for address management and long-term strategic planning. Updated statistics and analysis are presented regularly to international forums such as the OECD, APEC TEL, and national and regional IPv6 summits.

http://labs.apnic.net/measureipv6

### Securing the Domain Name System

The same technology developed to improve IPv6 measurements can be leveraged in other research areas. This year, these capabilities were used to begin mapping the presence of DNS Security (DNSSEC) worldwide. Collaboration with the RIPE NCC has laid groundwork for employing measurement techniques in the Asia Pacific region that have been successful in the RIPE region.

The DNS is a global Internet service that provides forward and reverse lookup translation for domain names and IP addresses. APNIC contributes to global DNSSEC by enabling Members to digitally sign their resources, which certify them as the rightful users of those ranges.

www.apnic.net/dnssec

### Alternative Whois service protocol

APNIC is contributing to the Internet Engineering Task Force (IETF) efforts to design a new protocol for the Whois Database service, called the Registration Data Access Protocol (RDAP). This new protocol will address a number of shortcomings in the current WHOIS protocol. A working group was formed this year and several drafts are in progress, with APNIC’s Technical Director Byron Ellacott as one of the key authors.

RDAP will improve the global Whois service in the following ways:

* Standardize query and response
* Standardize various access classes
* Provide international language support
* Make provision for different types of registries

APNIC hosts a pilot service on rdap.apnic.net and will deliver a production RDAP service during the second half of 2013.

[www.apnic.net/rdap](http://www.apnic.net/rdap)

### Continued support for IRINN

In March 2012, several years of collaboration among APNIC, the National Internet Exchange of India (NIXI), and the Government of India culminated in the establishment of a new National Internet Registry (NIR) for India, the Indian Registry for Internet Names and Numbers (IRINN).

APNIC continues to give IRINN technical and operational support as a National Internet Registry. In late 2012, APNIC staff accompanied IRINN staff to several major cities in India to present IRINN to prospective members and increase awareness of IRINN’s services to the Indian Internet community.

# APNIC provides leadership and advocacy for the AP Internet community

APNIC is an active participant and voice in various regional and global forums, on behalf of the Asia Pacific Internet community. We represent our entire membership at these events, pursuing agendas for the benefit of the entire Internet ecosystem. APNIC places value on issues that benefit our Members and stakeholders and works to disseminate those messages.

APNIC believes in:

* An ideal model of the Internet as a single, connected, global infrastructure that is open and accessible, stable and secure, neutral and non-discriminatory
* An open and competitive business environment, as the best one for healthy Internet development
* The established multi-stakeholder model for Internet development, management, and governance
* Bottom-up decision making, in which members of stakeholder communities are directly engaged in decisions that affect them
* Business practices that are responsible and sustainable in all respects: financial, technical, environmental, and ethical
* Transparency, openness, and accountability to stakeholders in all activities
* The value of human potential and capacity, both within and outside of the organization
* The proven power of the Internet for social and economic development worldwide

## Representing the AP Internet community

In response to the findings of past Member surveys, APNIC maintains a constant presence at Internet-related regional and global forums and events, on behalf of the Asia Pacific Internet community. During the past three years, APNIC participated in more than 100 different events and other bodies. To cope with the increased participation, a new External Relations platform was introduced in 2012 to manage the associated requirements for increased participation and diversity of events attended by staff.

These new internal procedures allow us to represent the community with a strong, consistent voice on topics such as regional and global Internet governance, IPv4 exhaustion, IPv6 deployment, IPv4 transfers, and regional policy development.

Each external activity is evaluated according to how effectively APNIC can represent its stakeholders. Approximately one-third of APNIC staff has representation responsibilities at such events. The External Relations program improves coordinated efforts and information sharing among staff. The improvements allow us to better communicate a clear position on a number of topics on behalf of the community.

(map) In 2012 APNIC participated in 90 events in xx cities in xx economies:

**WCIT process**

**Internet Governance Forum**

This year APNIC continued its commitment to the continuation of the Internet Governance Forum (IGF) and contributed to the increased financial contribution by the NRO to USD 75,000.

In July 2012 APNIC participated in the third Asia Pacific IGF (APrIGF) in Tokyo, Japan as part of the Program Committee. APNIC staff also represented the AP Internet addressing community in several panels.

**OECD**

APNIC’s Chief Scientist, Geoff Huston, has been working with the Organisation for Economic Co-operation and Development (OECD) Working Party on Communication Infrastructures and Services Policy to develop a document to examine in depth the challenges for the Internet associated with IPv6 adoption. This document will be used to inform OECD member states about the potential consequences in terms of the future of the Internet economy.

IPv6 adoption still poses some challenges for the Internet. It was originally anticipated that the effective exhaustion of IPv4 would be a sufficient catalyst for the industry to take action toward deploying IPv6 services. The OECD document explores what effect the use of middleware such as Network Address Translation (NAT) to prolong the life of IPv4 could have on the global Internet economy.

**2012 NRO Secretariat**

APNIC works closely with the other four RIRs through the Number Resource Organization (NRO) on joint activities including Resource Certification, global statistics reports, Internet governance activities, and global policy coordination.

This year APNIC served as the NRO Secretariat, supporting coordination for several activities including global IGF, World Conference on International Telecommunications (WCIT-12), and ICANN meetings. As the Secretariat, APNIC elaborated on correspondence to the ITU and ICANN and prepared NRO documentation and materials for the IGF in Baku, Azerbaijan.

This support also included assisting the ICANN Address Supporting Organization (ASO) in their ICANN Board election procedures, providing announcements, website maintenance, teleconference facilitation, election software, and logistical support.

# APNIC facilitates regional Internet development

To promote and support Internet growth across the Asia Pacific, APNIC places emphasis on meeting the needs of developing economies in the region. APNIC values human potential and capacity, as well as the proven power of the Internet for social and economic development in the Asia Pacific region and worldwide.

APNIC administers the Information Society Innovation Fund (ISIF Asia), a program that stimulates creative solutions to ICT challenges in developing Asia Pacific economies. ISIF Asia Grants and Awards play a crucial part in facilitating Internet growth in the region by aiding projects that bring about social change through improved infrastructure. Investment in development in the form of small grants and awards can represent a highly effective means of stimulating innovation and technology adoption at a local level. By encouraging the actioning of successful ideas, the grants and awards also create a positive chain reaction of stimulating local growth, which leads to wider benefits.

Any public or private sector organization may apply for project funding, including APNIC Member organizations. Applications for ISIF 2013 will be open in January 2013. This year, thanks to additional funding from generous sponsors, there will be 10 grants available.

### New Community Choice award

The 2012 ISIF Awards were presented at the 7th IGF in Baku, Azerbaijan in November. Winners from all three regional programs attended and the Community Choice award winners were given a chance to showcase and promote their projects to an audience of key Internet stakeholders. Due to the success of the Community Choice award in 2012, the Seed Alliance will continue to fund this award in the future.

www.isif.asia

## ISIF expanded and joined the Seed Alliance

In 2012 ISIF Asia joined forces with small grants and awards programs FIRE, managed by AFRINIC, and FRIDA, managed by Lacnic, to form the Seed Alliance, to promote innovation and social development solutions on a wider scale. In addition to a generous donation of AUD 1.3 million from the International Development Research Centre (IDRC) of Canada, the three RIR partners (Lacnic, AFRINIC, and APNIC) will also contribute funds and share administration systems.

The Seed Alliance’s main focus is to facilitate regional Internet development in developing economies. The new platform will offer a space for RIR program partners, as well as their sponsors, to identify and build communities of practice, scale up existing relevant initiatives, and promote networking and mentoring among project groups.

### Sida funding

The Seed Alliance was formed to facilitate collaboration among similar regional initiatives, to share resources and attract more significant funding to benefit all three regions. In November 2012 the Seed Alliance received a grant of AUD 1.5 million from the Swedish International Development Cooperation Agency (Sida). The grant will be used over three years to further support Internet innovation projects in developing economies in the Asia Pacific, African, and Latin American regions.

### ISIF Asia case study: Development of Emergency Networks Training and Tools Kit

Internet Education and Research Laboratory (intERLab), Asian Institute of Technology (AIT), Thailand

Total grant received: AUD 29,776.07

#### Project summary

Every year, millions of people face disaster and its terrifying consequences. Disaster situations often result in the loss of traditional communication systems such as fixed telephone and mobile communications, and local Internet access may be rendered unusable.

The aim of this project is to develop an easily manageable emergency communication system.

DUMBO (Digital Ubiquitous Broadband OLSR) is an emergency communication system that turns ordinary laptops/ PDAs into network devices without relying on any fixed infrastructure and gives a platform for effective rescue and recovery operations.

#### Objectives

1. Address infrastructure and technology-related connectivity problems
2. Educate the community to make this platform accessible as open source
3. Create a website to disseminate information on how to build and deploy a DUMBO system
4. Develop an out-of-box tools package (software), reference guide/manuals, training materials, and case study
5. Identify and manage relationships with local technical personnel

#### Preliminary findings

* Wireless equipment performance is highly affected by the surrounding environment.
* Basic technical knowledge about IP network and wireless equipment was lacking from some participants and as a result, there were issues when it came to installation and system use training.
* The terminal nodes need to be recharged at regular intervals; there must be a power supply.
* Different wireless chipsets or different operating systems (Linux/ windows) cannot form a MANET (mobile ad hoc network).

#### Best practices achieved

* Additional wireless technologies were found and adopted as alternative solutions. These are required as redundancy for emergency communications support.
* DUMBO training delivery to the community on technical knowledge and educational material distribution during training sessions.
* Networking with related research and development institutions and funding organizations for sustainability and growth.

#### Continued success

Since 2011, DUMBO has been used in new ways to use the mobile routers for daily life scenarios, in addition to post disaster recovery.

The team at intERLab, AIT have also provided numerous DUMBO training sessions to promote the application to younger generations, and to show them how to build an emergency network. This training helps to promote independence among individuals and groups to be able to coordinate their own efforts and increase the impact of emergency response.

Phase Three of the DUMBO Project is about creating simplified configurations and router deployment, accommodating smartphones and tablets to connect to DUMBO routers, connection of social networking services, and improvement in network disruptions. The greater aim here is to bridge the digital divide and present a relevant solution to disaster preparation in rural communities.

The project has gained attention from sponsors and partner organizations. More importantly, DUMBO has been deployed in real life disaster situations with great results.

For more information on DUMBO, visit http://dumbo-isif.interlab.ait.asia

# APNIC corporate infrastructure and business process improvements

This year, the APNIC Office and Infrastructure Services units continued the Enterprise Resource Management (ERM) implementation, which further improved internal processes including recruitment and technical infrastructure and hardware upgrades. These new additions and processes will increase productivity across the organization and allow resources to be more efficiently utilized. Staff training and development focused on a range of external and in-house training sessions with the objective of providing better customer service among internal and external clients and suppliers.

As a membership-funded organization, APNIC works to ensure it operates efficiently and professionally with full accountability to its Members and stakeholders.

## Systems streamlined

The ERM implementation has led to a significant reduction in our internal systems requirements, and in the complexity of processes. A number of separate, manual processes have been automated and integrated into a single application. Productivity improvements from this initiative allow resources to be more efficiently utilized. Some of the key features of the solution are:

* Real time reporting
* Automated workflow and approval process
* All finance functionality in a single integrated application
* Full integration with APNIC’s travel expenses management application
* Full audit trail of all transactions and users

## Human Resources

### Introducing KPI methodology

During 2012, APNIC adopted the methodology of measuring organizational Key Performance Indicators (KPIs). This was achieved through in-house training facilitated by a specialist in the field and followed by a project team who are working to implement visible measurement of APNIC’s performance across all areas, taking into account feedback from APNIC’s 2012 Survey. This project is ongoing and will continue into 2013.

### Recruitment improvements

To improve recruitment processes, APNIC introduced a Competency Management Framework in 2012. The exercise initially involved consulting with staff about the competencies required for performance in all roles and revising role descriptions. This will help APNIC Human Resources in future recruitment, training, and career development, and to attract and retain the best staff for the APNIC Secretariat.

#### Social media for recruitment

APNIC’s social media presence has been extended to LinkedIn and Seek for recruitment purposes. This improves our reach across the region to attract the best candidates with relevant language skills to better serve our Members. For more information, see <http://au.linkedin.com/company/apnic>

## Operations infrastructure improvements

### New event management system

Increased training and other event registrations prompted collaboration between the Training and Events units to identify requirements for a new events management system. The analysis resulted in the selection of a more robust product that would better serve both teams in the future.

### Virtual machines

All APNIC services are hosted separately on dedicated physical machines. This year, a powerful virtualization layer was added, which emulates the same complete operating systems. The virtual machines help the Infrastructure Services unit manage computing resources more efficiently, in energy consumption, time, and cost.

Services can now be easily moved across a few powerful virtual machines to enhance our capabilities in performing backups, disaster recovery, new deployments, and basic system administration tasks.

### Co-lo relocation

APNIC Infrastructure Services moved our primary servers to a new location in 2012 to provide better hosting and network infrastructure facilities. The relocation of 92 servers was completed in two months with no related service interruptions. The new facility, powered by Next DC in Brisbane, features improved reliability, room for expansion, and reduced complexity, allowing us to offer improved services for APNIC Members and stakeholders.

[Financial info]