



**Asia Pacific Advanced Network (APAN)
2003 Annual Report (2003.1-2004.1)**

2004.5.31

Common

To coordinate and promote R&D activities on networking including technology, applications and services

To provide an advanced networking environment for research and education communities in the Asia-Pacific region

<http://apan.net>

The APAN Community: Development and Outreach

Members: <http://apan.net/home/membership/members.htm>

APAN has become a major Internet organization in the Asia Pacific region driving the development of Research and Education(R&E) networks and high performance applications.

APAN Membership continued to grow during 2003 with thirteen primary members, two associate member, nine affiliate members, four liaison members, and two industry members by January 2004.

2003 is a milestone in APAN Membership development. During APAN Busan Meetings in August 2003, APAN Member Committee abolished the Intra-AP link requirement for Primary Membership. Following the abolishment, in Nov 2003, the decision of lower Minimum Primary Membership fee to allow emerging countries to be able to join APAN which is to be as inclusive as possible to cover Asia-Pacific was made by APAN Member Committee. By January 2004, HARNET /Hong Kong, ASTI/Philippines, LEARN/Sri Lanka, BAERIN/Bangladesh, ERNET/India joined APAN as primary members.

In addition, for the first time, APAN Member Committee added a new category- Industry Member. Juniper and Cisco joined as the Industry Member in 2003.

APAN also had a close collaboration with some international organizations through a series of MoU and mutual agreements. Six organizations joined APAN as Affiliate members in the year of 2003, which tripled the numbers of original affiliate members.

Here is APAN Members Demography:

Primary Members:

North Asia:

APAN-CN

Hong Kong Academic & Research NETwork (HARNET)/ HK

Advanced Network Forum (ANF) / KR

APAN-JP

APAN-TW

Southeast Asia:

APAN-MY

Advanced Science & Technology Institute (ASTI) /PH

APAN-TH

Singapore Advanced Research & Education Network (SingAREN) /SG

South Asia:

Bangladesh Advanced Education Research & Information Network
Foundation (BAERIN) /BD

Education & Research Network of India (ERNET) /IN

Lanka Education & Research Network (LEARN) /LK

Oceania:

Australia's Academic and Research Network (AARNet) /AU



Associate Members:

TransPAC/Indiana University.
US Pacific Consortium

Liaison Members:

Canada's Research and Innovation Network (CANARIE)
Delivery of Advanced Network Technology to Europe (DANTE)
Trans-European-Research and Education Networking Association (TERENA)
Internet2

Affiliate Members:

Asian Committee for Future Accelerators (ACFA)
Asia Pacific BioInformatics Network (APBioNet)
Asia Pacific Regional Technology Center (APRTC)
Asia Pacific Network Group (APNG)
Association of Pacific Rim Universities (APRU)
Consultative Group on International Agricultural Research (CGIAR)
International Development Research Center (IDRC)
National Grid Office, SG
Pacific Rim Applications and Grid Middleware Assembly (PRAGMA)

Industry Members:

CISCO
Juniper

Through its members, the APAN has done much to promote broadband networking and high performance applications in the Asia Pacific regional and international demonstration and representing the region in the Global Information Infrastructure podium.

The APAN Organizations: Committees, Working Groups, Regional Net Groups

Refer <http://apan.net/home/aboutapan/organization.htm> for detail information

Committees

We have the following Committees now:

Network Operations Center (NOC)

NOC coordinated for advanced network services as well as the basic connectivity services, to meet the requirements from both advanced network researchers and commodity users; both services should be provided consistently for helping developing networks grow up to be the advanced networks.

As to the advanced networking, NOC coordinated for improving end-to-end performance jointly with Grid group, and helped them get three awards at SC2003 Bandwidth Challenge. NOC also coordinated for lambda networking, and joined TransLight project, connecting SURFnet with Gigabit Ethernet via StarLight Facility.

During Busan Meetings in August 2003, Engineering Team was absorbed to NOC. Resource Allocation Committee was also merged to NOC as a subcommittee during January 2003 Honolulu Meetings.

Backbone Committee

The Backbone committee is designed to coordinate the creation of the Asia backbone. IEEAF Committee was merged to this committee during APAN Busan Meetings.

Fellowship Program Committee

APAN Fellowship Program gives fellowship support to encourage participations from member economies, especially from developing members to attend APAN's twice yearly conferences. During January 2003 Fukuoka Meetings, 44 fellows from 9 economies were awarded. For August 2003 Busan Meetings, the committee not only gave the fellowship award to 18 general applicants, but also supported 24 winners from Network Research Workshop Paper Competitions. During January 2004 Honolulu Meetings, 39 applicants from 10 economies were granted fellowship.

Event Committee

Starting from Busan Meetings, the Event Committee was designed to select the site for APAN Meetings and other APAN related events. The 18th APAN Meetings (July 2004) were decided to be held in Cairns, Australia; the 19th APAN Meetings (January 2005) were approved to be held in Bangkok, Thailand by Member Committee upon Event Committee's recommendations in 2003.

Election Committee

The Election Committee was founded in Busan Meetings with the objective of seeking nominations in APAN and to arrange elections by the Primary Members from among nominated candidates for the positions.

Training Committee (pending)

Training committee is to coordinate the Internet technological training for advanced networks on behalf of APAN. The committee adopts an open policy where training model could be in the form of conventional face-to-face and hands-on whenever appropriate while remote classes and E-learning should also be adopted. The main activities in 2003 included AIT/Internet2 Multicast Hands-on Training, NetSA by SANOG, IPv6 Training Workshop, and Access Grid Training Workshop during Busan Meeting. After Busan Meetings, the committee processed the merging issue with Education WG and planed to update its role after the formal merging.

IPv6 Task Force

Aim at the deployment of gigabit native IPv6 production service, promotion of IPv6 development and IPv6 applications, the APAN IPv6 Task Force was established in Aug 2003 at the APAN Busan Meetings.

The IPv6 Task Force is working to deploy native IPv6 Gigabit network. They are starting to deploy it among China, Japan and Korea. China started R&E network with 3 node 2.5Gbps and with 45M link to Japan. The Japan-Korea link of 1Gbps is of dual stack. They may expand these domestic and international networks to form native Gigabit IPv6 network in the Asia Pacific region, which in turn, collaborate with other regional effort. The TransPAC Tokyo-Seattle link is also dual-stack. So, it is possible to have native IPv6 connectivity and support v6 experiments from APAN (China-Korea-Japan) to the US over TransPAC and Europe today; They encourage having IPv6 network and developing new application using this network.

The IPv6 Task Force is currently composed of three areas which are IPv6 Engineering and Technology group (IPv6 Working Group), Operation group (NOC) and Application group.

Adhoc Committees

- eScience Committee

eScience is broadly defined as science activities that rely on high bandwidth network connections. This may include the transfer of data, building / operating distributed archives, distributed data processing, access to documents or training, remote operation of facility instruments, and interactive collaborations. APAN has a natural role in eScience through providing bandwidth and network operating tools.

The first eScience Workshop and eScience Committee Meeting were held during August 2003 Busan Meetings. The workshop was held with the objective of promoting the development eScience in the APAN community through a combination of presentations on the status and future plans for building cyber-infrastructure, government support for eScience, enabling tools / technological advances, and scientific applications. The second Workshop in Honolulu Meeting was a continuation of Busan APAN Meeting; however, this workshop was jointly held with North America and Pacific Europe to have further cooperation.

- Grid Activity Adhoc Committee

Several groups related to APAN are involved in Grid activities either partially or fully. Considering the importance and perspective of the promising concept and technologies of Grid, it's needed to consider how to approach it as APAN and how to coordinate these groups within the APAN framework. The APAN Grid Activities Committee was created in August 2003 in order to discuss the APAN efforts against grid activities.

During 2003, the committee was developing the position paper- *APAN's Efforts to Support Grid Activities in Asia-Pacific*. This position paper summarizes discussion in the Grid Activities Committee and presents the current status and the future role of Grid activities in APAN.

- Bylaws Committee (pending)

It's created in Busan Meetings with the objective of drafting APAN Bylaws.

- Structure Committee (pending)

It's created in Busan Meetings for the APAN Transition.

Coordinating Committee for Intercontinental Research Networking (CCIRN)

CCIRN provides a forum for members to agree and progress a set of activities to achieve inter-operable networking services between participating international entities to support open research and scholarly pursuit.

The annual CCIRN meeting was held at Indianapolis, USA, during 2003.10.16~17 with participants from many economies in APAN including Japan, Korea, Malaysia, Taiwan, Australia, China, Singapore, and Sri Lanka. The TransPac link supports APAN and was increased significantly over 2003. The Korea to Japan link was increased to 1 Gbps. Under the Winds program, high-speed satellite links were planned for 2005 with fixed beam dynamic coverage and an ATM switch on the satellite.

* *Retreat Committee successfully completed its activities with the final report in August 2003.*

Working Groups (WGs)

Working Groups are under the following Areas:

Application Technology Area

- Education WG

The Education WG was set up to enhance the utilization of more advanced technologies in education & to provide a testbed for borderless learning. The working group successfully organized a series of sessions during APAN Meetings in 2003, and processed to merge with Training Committee after Busan Meeting.

- Grid WG

The Grid WG plays the role as an interface between APAN and Grid Communities. E.g. APGrid, PRAGMA, and APEC-TEL. The WG collaborated the third PRAGMA Workshop during January 2003 Fukuoka Meetings. It also drafted the MoU for the partnership between APAN and PRAGMA, and in August 2003 PRAGMA joined APAN as an Affiliate Member.

- Multimedia WG

The Multimedia WG was created as Multimedia is one of the most important areas of research current being supported by High Bandwidth and Broadband networks. Its main objective is to support and encourage research and development of multimedia applications that support/need the usage of high bandwidth networks.

- HDTV WG

The HDTV WG cooperated with Research Channel for demonstrating HDTV over IP technology in the 16th APAN Busan Meetings. Studio quality HDTV stream which consumes about 220Mbps was sent from Portland in USA, and delivered to APAN Meeting venue in Busan. It traversed 8000km using IEEAF link, WIDE network, JGN, APII link between Japan and Korea, and KOREN. This demonstration showed the performance of IP network to support extremely high quality video.

HDTV WG is also working on HDV (High-Definition Digital Video) over IP Technology using JVC HDV camcorder which can take 720/30p video compressed by MPEG2. HDTV WG developed HDV over IP system and demonstrated it in the 17th APAN Honolulu Meetings. They are exploring applications using HDV over IP technology.

Network Technology Area

- IPv6 WG

The IPv6 WG will create an environment for exchange and dialog among members concerning the development of IPv6. This WG is also playing a significant role as a subgroup of APAN IPv6 Task Force since Busan Meeting.

- Measurement WG

The Measurement WG works for measuring the performance of APAN network and collaborate with other high performance network projects of world wide performance measuring.

- Satellite WG

The Satellite WG is working for APAN to capture the ongoing satellite internet trends and participate in the extension and evolution of this technology.

- Security BoF

The Security BoF was held with the objectives of preparing policies and guidelines for the security architecture for APAN Organization and raising the security awareness and knowledge within APAN community.

- Lambda BoF

The Lambda BoF was proposed in Honolulu Meeting to carry on research, development, deployment and management of the lambda networking and it is the first step toward the ubiquitous deployment of the lambda networking in APAN community with stable operation coming later after many experiments through research and development.

- SIP BoF

Voice and Video communications has been growing within the Research and Education institutions for several years based on H.323 and the new and popular SIP protocols within APAN to help coordinate efforts. The SIP BoF in Honolulu Meeting proposed the plan of starting of a WG in APAN.

Network Research Group

Network Research Group was established in Busan meeting specially to encourage graduate students and young researchers in APAN and related communities to present and publish their research results. The new Committee successfully organized the 1st Network Research Workshop during the 16th APAN Meetings. 31 papers were selected and published in the proceedings.

Natural Resource Area

Nature Resource Area has three WGs:

- Agriculture WG

The Agriculture WG is to accelerate agricultural information research, utilizing the APAN network. It also promotes research and educational projects in agricultural fields and attempts to bridge institutes and start up new collaborations.

- Earth Observation & Disaster Monitoring WG

The Observation WG is to facilitate access and utilization of satellite remote sensing data within the Asia Pacific region for the promotion of sustainable economic development, preservation of the region's biotic resources, and early identification of events or conditions which may lead to disasters.

The WG accomplishments in 2003 include the following:

FTP transfer of 252 GB of satellite data from NOAA-NGDC (USA) to MAFFIN (JAPAN)

FTP transfer of 19 GB of satellite data from NOAA-NGDC (USA) to CRISP (Singapore)

FTP transfer of 493 GB of TRMM satellite real-time data from NASA/GSFC (USA) to JAXA/EORC (JAPAN).

Transfer of complete collection (1992-2003) of day-night DMSP-OLS satellite data (3.6 TB) from NOAA-NGDC (USA) to MAFFIN (Japan).

- Earth System WG (pending)

The pending WG is proposed with the objective of establishment of Grid-enabled Meteorological R&D infrastructure by mobilizing available resources under dispersed computing environments for future Earth System development, which is of great concern for international scientific communities.

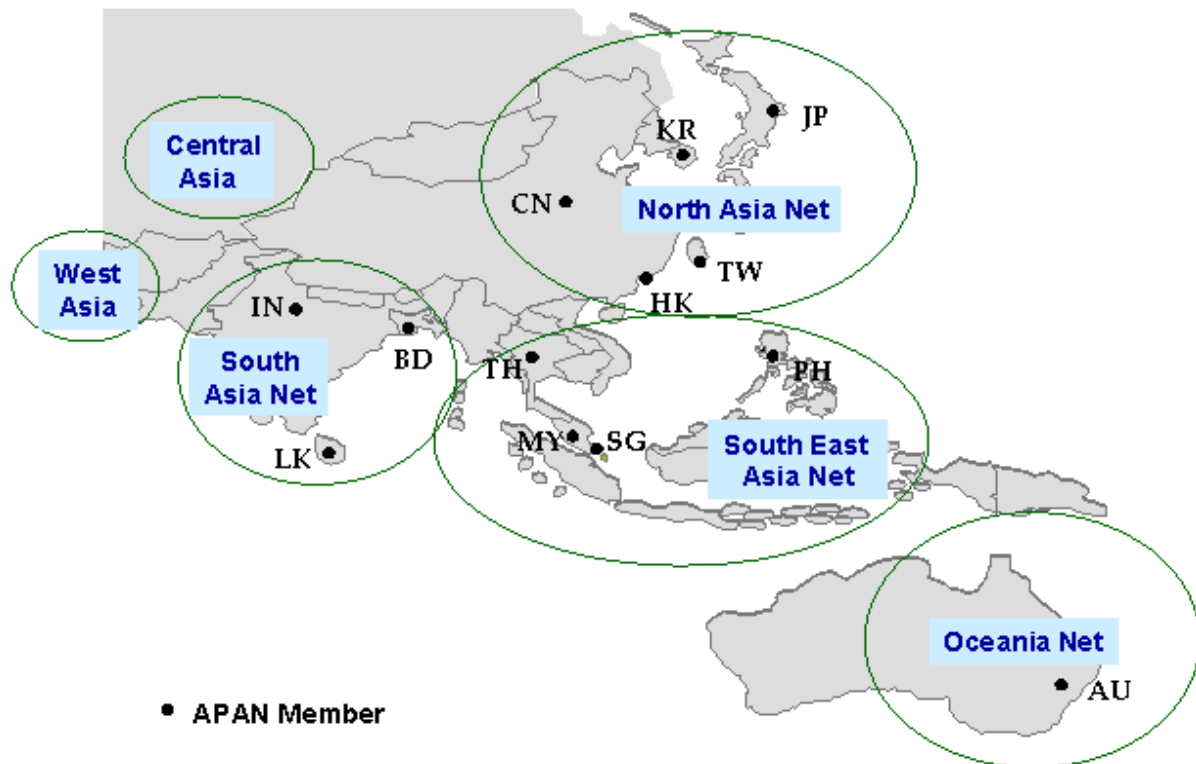
** Bioinformatics WG, P2P WG and QoS WG were closed in 2003.*

Regional Net Groups

By Jan 2003 Fukuoka Meeting, three clusters- North Cluster, South Cluster, Oceania Cluster worked as subcommittees of Backbone Committee. In Fukuoka Meeting, South Cluster was renamed as South East Cluster with Singapore, Malaysia and Thailand as the cluster for South East Asia. In the following months, APAN endeavored at the formation of Regional Net Groups. Gigabit network in North Asia was proposed with 2.5 Gbps between Japan and Korea. Native Network IPv6 Gigabit was also proposed. Alongside the SANOG meeting in Colombo, the APAN leaders and representatives from BD, IN, LK, NP and PK held the 1st APAN South Asia Meeting, discussed and approved the formation of South Asia Net Group. Besides, various efforts were being made to network island countries in the Pacific through APAN, Australia, USA, and others. Australia took the role as the hub to connect countries in Oceania.

During the 16th APAN Busan Meetings, North Asia Net Group and Oceania Net Group were formed. South East Cluster remained as a Cluster and till Jan 2004 Honolulu Meeting the South East Regional Net was formed. The APAN Committee promoted the cooperation between South Asia and South East Asia. In December, the 1st joint South Asia Net/South East Cluster meeting was held in Bangkok, Thailand, where, the regional networking projects and intercontinental networking projects were discussed.

APAN Regional Net- Map



The APAN Meetings: Updating global research networks

Refer <http://apan.net/meetings/past.htm> for detail information

APAN Meetings

The APAN Meetings are held every half year hosted by its members. The Meetings bring together people from the research and higher education community from many economies in the Asia Pacific region, North America and Europe with the objective of fostering interaction on enhancing advanced network infrastructure and applications. It provides an excellent opportunity for people to meet and establish collaborative relationships with their colleagues in this region.

- 15th APAN Meetings in Fukuoka, Japan

The 15th APAN Meetings were held in Fukuoka, Japan, cooperated with the 3rd PRAGMA Workshop during 2003.1.20-25, which attracted 264 participants from 13 economies.

- 16th APAN Meetings in Busan, Korea

The 16th APAN Meetings were held in Busan, Korea 2003.8.24 through 2003.8.29. Over 300 people from 17 economies participated the meeting.

- 17th APAN Meetings in Honolulu, United States

The 17th APAN Meetings were held in conjunction with Internet2 Joint Techs Workshop through 2004.1.25-2004.1.30 in Honolulu, which attracted over 240 participants.

APAN Meetings during other international meetings

- 2003.4.9-11 APAN Related Meeting during Internet 2 Meeting, Arlington, United States
- 2003.6.21 APAN Related Meeting during Broadband Summit, Beijing, China
- 2003.7.24-26 The first APAN South Asia Net Meeting during SANOG, Colombo, Sri Lanka
The meeting was a first of a kind to be held in the South Asia region.
- 2003.10.23 APAN Chairs Meeting during Internet 2 Meeting, Indianapolis, United States
- 2003.12.18-19 APAN Related Meeting during CRL Symposium, Bangkok, Thailand
This meeting promoted the network collaboration between South Asia and South East Asia.

APAN North Asia Net Group Meetings

- 2003.1.21 North Cluster Subcommittee Meeting, Fukuoka, Japan
- 2003.1.25 9th G-H Meeting, Fukuoka, Japan
- 2003.5. 30-31 10th G-H Meeting, Kwangju, Korea
- 2003.8.27 North Cluster Subcommittee Meeting, Busan, Korea
- 2003.8.30 11th G-H Meeting, Busan, Korea
- 2003.9.5-6 Korea-Japan (Core University Meeting), Daejeon, Korea
- 2003.9.25-26 China-Japan Link Meeting, Hong Kong
- 2003.10.24-25 Japan-Korea Meeting, Sapporo, Japan
- 2003.10.28-31 China- Korea Meeting, Beijing China
- 2003.10.31-11.1 12th G-H Meeting, Nagasaki, Japan
- 2004.1.25 13th G-H Meeting, Honolulu, United States
- 2004.1.29 North Asia Net Group Meeting, Honolulu, United States

Appendix:

- I. Link Information
- II. APAN Officer List
- III. Finance - 2003 Revenue & Expenses

Appendix I : Link Information

Economies	Network	Bandwidth(Mbps)	Availability	AUP/Remark
AU-US	AARNet	340	Now	R&E
CN-HK	CERNET/HARNET	2	Now	R&E
CN-JP	CERNET	10	Now	R&E
CN-JP	CERNET	45	Now	Native IPv6
CN-UK	CERNET	45	Now	R&E
CN-US	CERNET	10	Now	Research
CN-US	CERNET	200	Now	R&E
HK-US	HARNET	45	Now	R&E
HK-TW	HARNET/TANET	10	Now	R&E
JP-HK	APII	45	Now	R&E
JP-ID	AI3(ITB)	2/1.5	Now	R&E
JP-KR	APII	2 Gbps	Now	Research (APII)
JP-MY	AI3 (USM)	1.5/0.5	Now	R&E
JP-PH	AI3 (ASTI)	1.5/0.5	Now	R&E
JP-PH	MAFFIN	2	Now	Research
JP-SG	AI3 (SICU)	1.5/0.5	Now	R&E
JP-TH	AI3 (AIT)	1.5/0.5	Now	R&E
JP-TH	SINET (ThaiSarn)	2	Now	R&E
JP-US	TransPac	5 Gbps	Now	R&E
JP-VN	AI3 (IOIT)	1.5/0.5	Now	R&E
KR-CN	APII	45-155	2004	R&E
KR-FR	KOREN/RENATER	34	Now	Research (TEIN)
KR-SG	APII (KOREN)	8	Now	R&E
KR-US	KOREN/KREONet	155	Now	R&E
LK-JP	LEARN	3	Now	R&E
MY-TH	TEMAN/ThaiSarn	8-45	2004	R&E
SG-US	SingaREN	90	Now	R&E
TH-US	Uninet	155	Now	R&E
TW-HK	ASNET/TANET2	155	Now	R&E
TW-JP	ASNET/TANET2	155	Now	R&E
TW-US	ASNET/TANET2	622	Now	R&E
TW-UK	ASNET/TANET2	155	Now	R&E, through US

Appendix II : APAN Officer List

APAN Member Committee	Chair: Kilnam Chon Vice Chairs: Shigeki Goto / Jianping Wu / George McLaughlin
Secretariat	Deputy (program) Director: Bok-Gyu Joo
Committees	<p>NOC - Director: Kazunori Konishi</p> <p>Backbone Committee - Dae Young Kim Fellowship Committee - An Jie Event Committee - Akira Mizushima Election Committee - George McLaughlin Training Committee (pending) – Kanchana Kanchanasut</p> <p>IPv6 Task Force - Coordination: Jianping Wu IPv6 WG - Yan Ma/ Hiroshi Esaki / Seung Yun Lee Operation - Li Xing/ Yoshinori Kitatsuji/ Jaehwa Lee/KT Applications - Nan Kai/ Hiroshi Esaki / Yo-Jung Kim</p> <p>Adhoc Committees eScience - Chris Elvidge Grid Activities -Seishi Ninomiya/ Kento Aida Bylaws Committee (pending)- Lawrence Wong Structure Committee (pending) - Shigeki Goto</p> <p>CCIRN(2004.8 - 2007.8) Co-Chair: Li Xing (Shigeki Goto for 2001.8-2004.8) Information Officer: An Jie(Yon Jin Park for 2001.8-2004.8)</p>
Working Groups (WG)	<p>Application Technology Area - Director: Koji Okamura Education WG – An Jie (Interim) Grid WG – Kento Aida Multimedia WG - Omar Abouabdalla HDTV WG - Jongwon Kim</p> <p>Network Technology Area - Director: Sures Ramadaswaran IPv6 WG – Yan Ma Measurement WG - Yasuichi Kitamura Satellite WG – Lim Seow San Security BoF- Rahmat Budiarto Lambda BoF - Jysoo Lee/ Akira Kato (Interim) SIP BoF – Stephen Kingham</p> <p>Network Research Group- Director: Li Xing</p> <p>Natural Resource Area - Director: Seishi Ninomiya Agriculture WG - Pitsuth Paiboonrat Earth Monitoring WG - Chris Elvidge Earth System WG - Jai-Ho Oh / Yihui Ding</p>
Regional Net Groups	<p>North Asia Net Group – Chair: DaeYoung Kim South East Asia Net Group - Chair: Royol Chitradan (Interim) South Asia Net Group – Chair: Hakikur Rahman (Interim) Oceania Net Group – Chair: George McLaughlin</p>

Appendix III: Finance <2002.10-2003.9>

Revenue (US\$)	
Balance from 2002	3,475
Member Due	30,850
Other contribution	51,950
Total	86,275

Expenses (US\$)	
Meeting support	2,000
Fellowship	11,100
Staff Salary	36,500
Business Trip	9,050
Incorporation	5,420
Office and General	9,461
Total	73,291

