



APNIC Update

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**The First South Asian IPv6 Summit /
SANOG III**

Jan 15-22, 2004 – Bangalore, India

What is APNIC?

- RIR for the Asia Pacific
 - Regional Internet Registry
 - Regional authority for Internet Resource distribution
 - IPv4 & IPv6 addresses, ASNs, reverse dns delegation
- Industry self-regulatory body
 - Non-profit, neutral and independent
- Open membership-based structure

What does APNIC do?

1. Internet resource management
 - IP address allocation to LIRs (mainly ISPs) and NIRs
 - IP address assignment
 - AS number assignments
2. Resource registration
 - Authoritative registration server: *whois.apnic.net*
 - Internet Routing Registry: *irr.apnic.net*
3. DNS management
 - Delegate reverse DNS zones/domains
 - Authoritative DNS servers
 - *in-addr.arpa*, *ip6.arpa* (*ip6.int*)

What else does APNIC do?

- Policy development and coordination
 - APNIC Open Policy Meetings: 2 per year
 - SIGs, WGs, BOFs, Training
 - Liaison with other organisations
- Training and outreach
 - Frequent regional training courses
 - Presentations at seminars, conferences etc
- Publications
 - Newsletter, web site, mailing lists etc
 - Regional and global resource reports



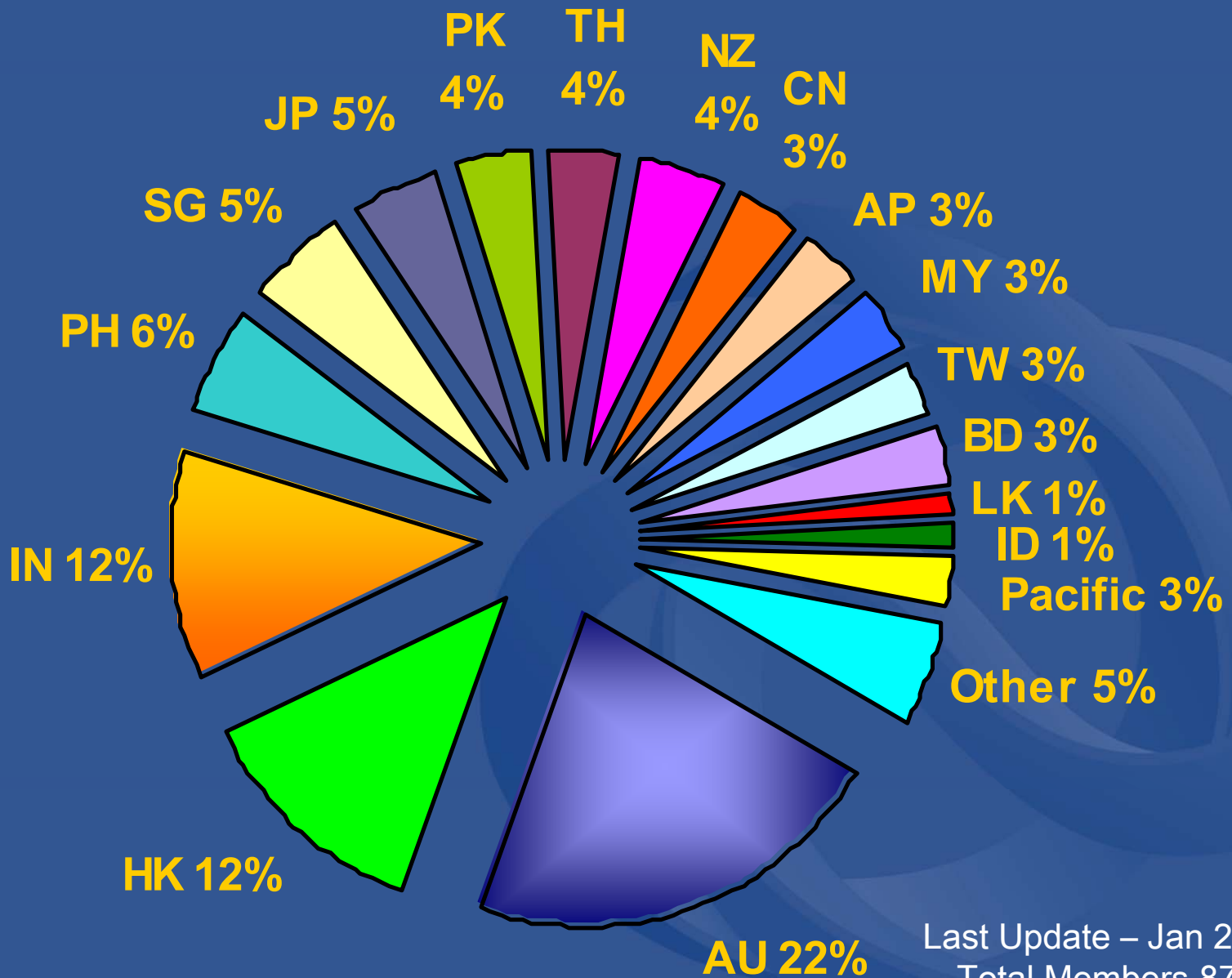
APNIC structure

- Industry self-regulatory structure
 - Participation by those who use Internet resources
 - Consensus-based decision making
 - Eg. Policy changes, db requirements etc
 - Open and transparent
- Meetings and mailing lists
 - Open to anyone

APNIC region

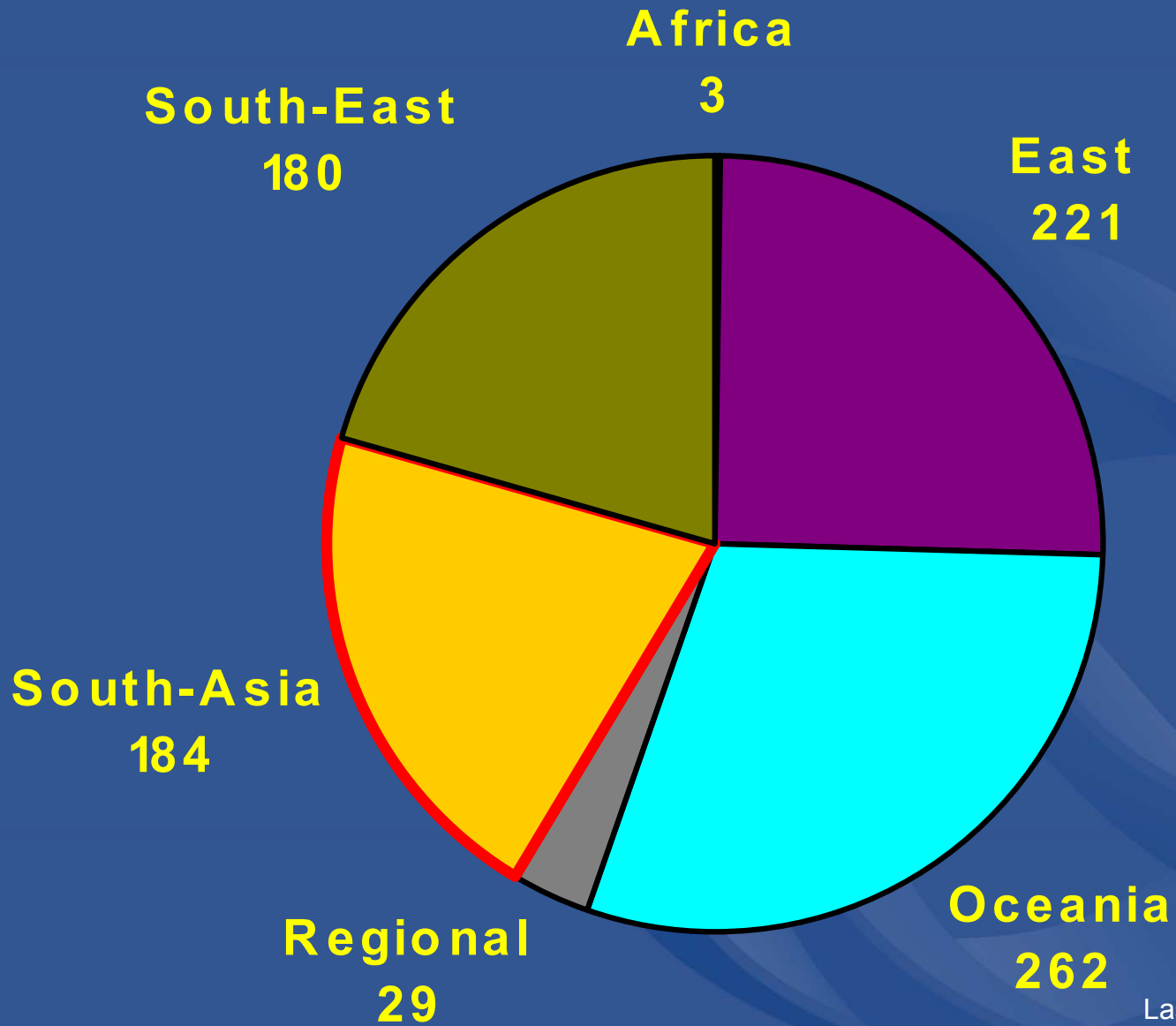


APNIC Membership

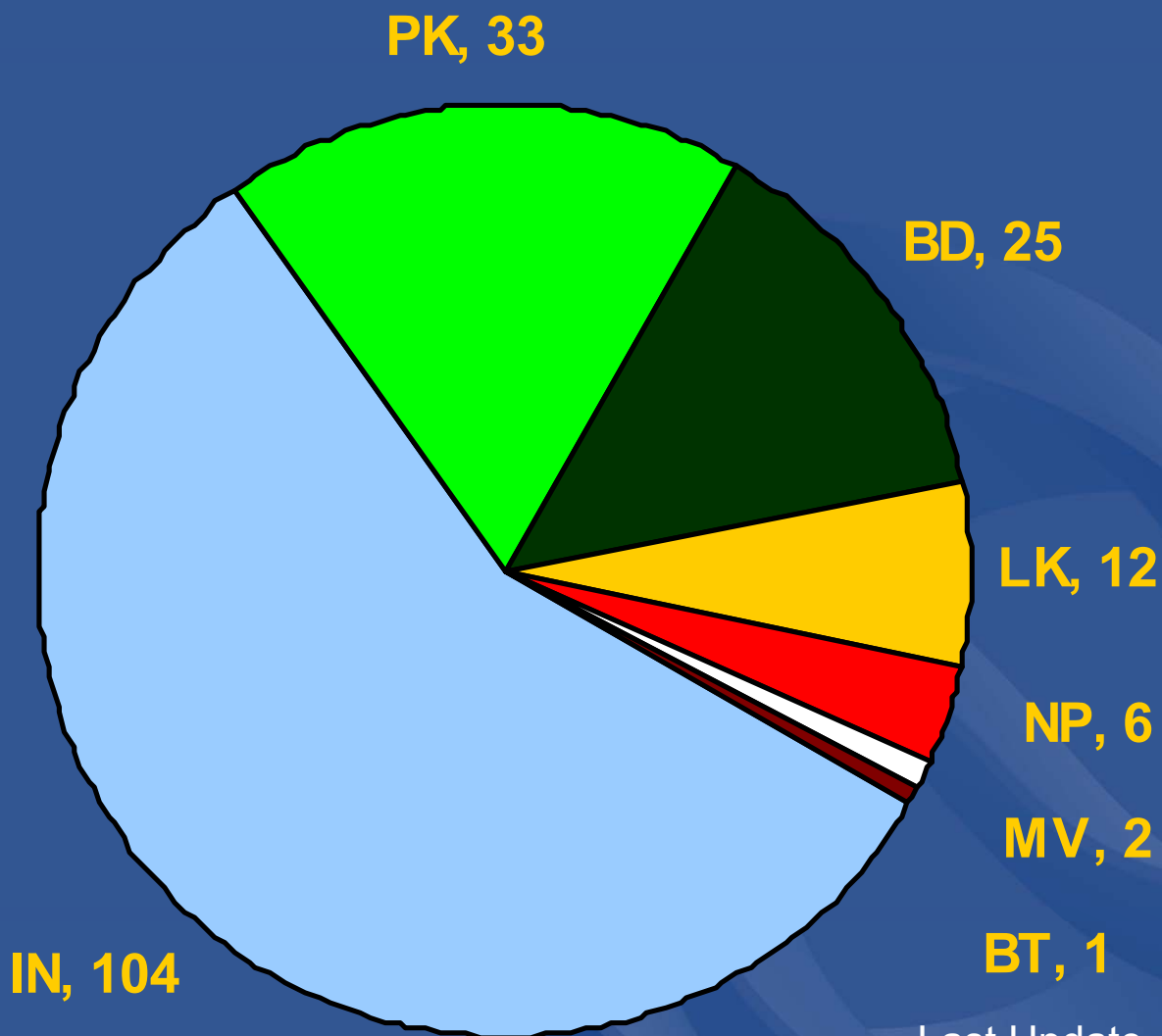


Last Update – Jan 2004
Total Members 879

APNIC Membership – Sub Regional



APNIC Membership - South Asia

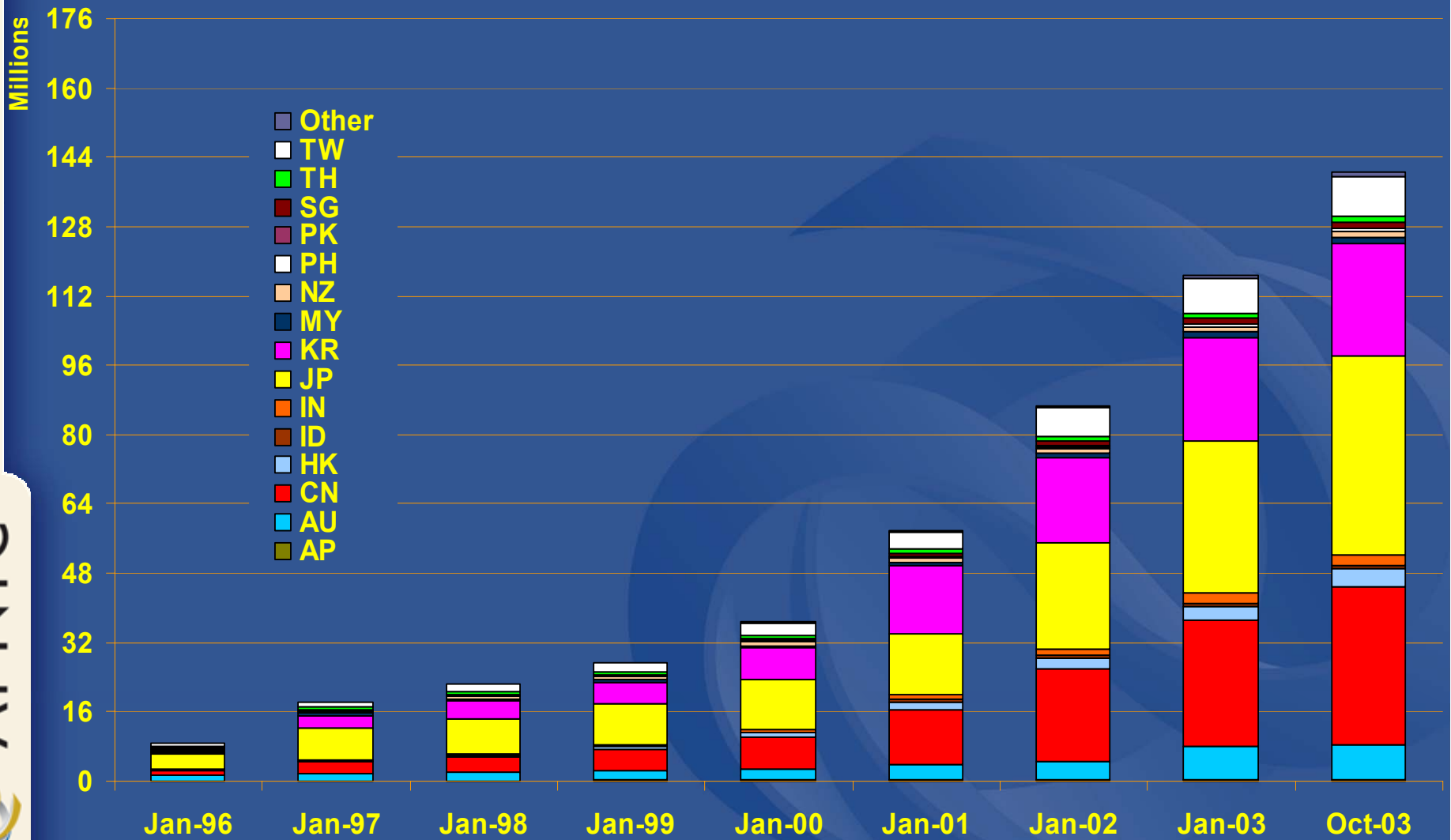


Last Update – Jan 2004
Total Members in SA – 183
Total APNIC members - 879

RIR Allocations per Year – IPv4



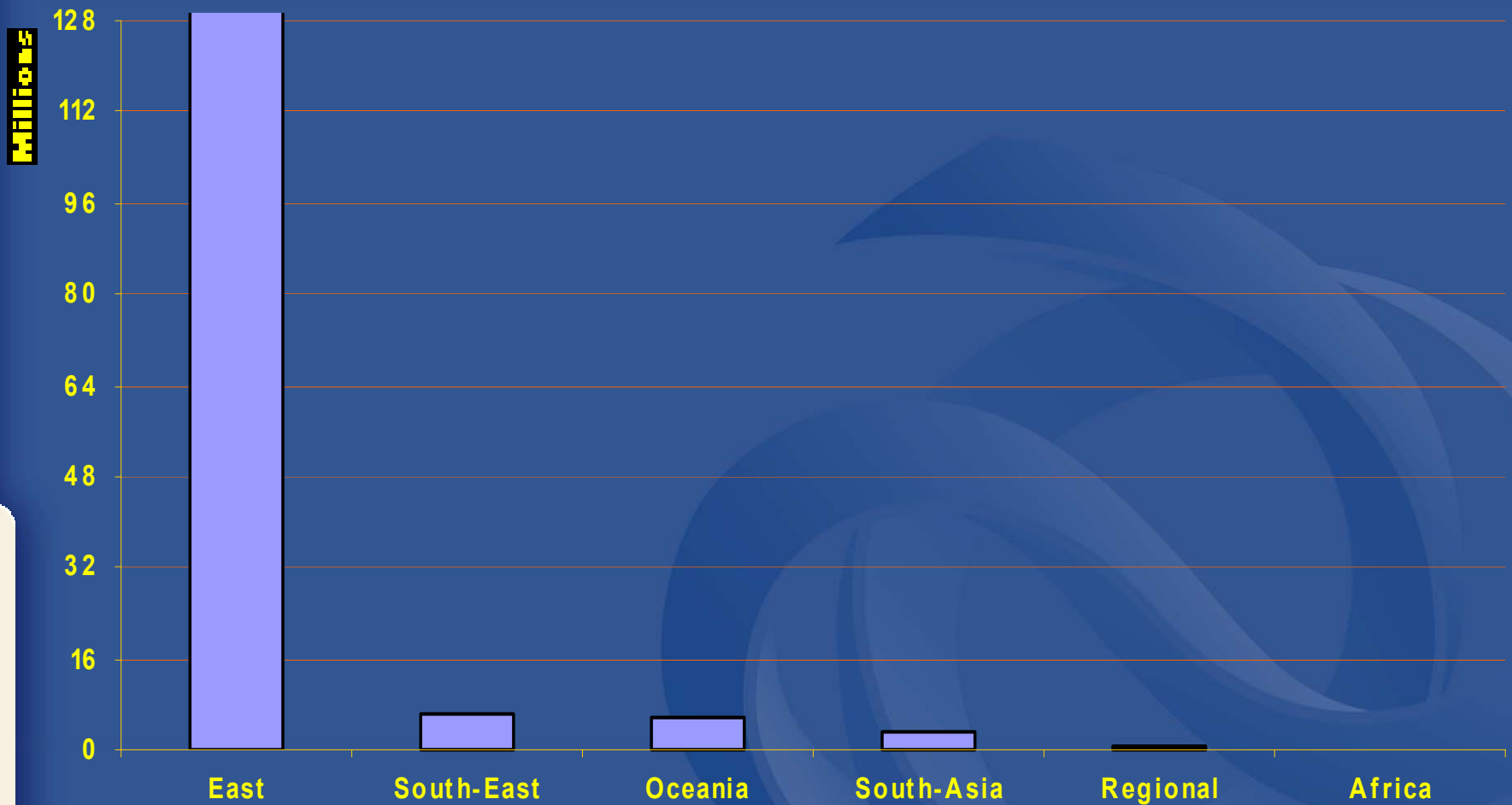
IP Growth in Asia Pacific



Last Update Jan 2004

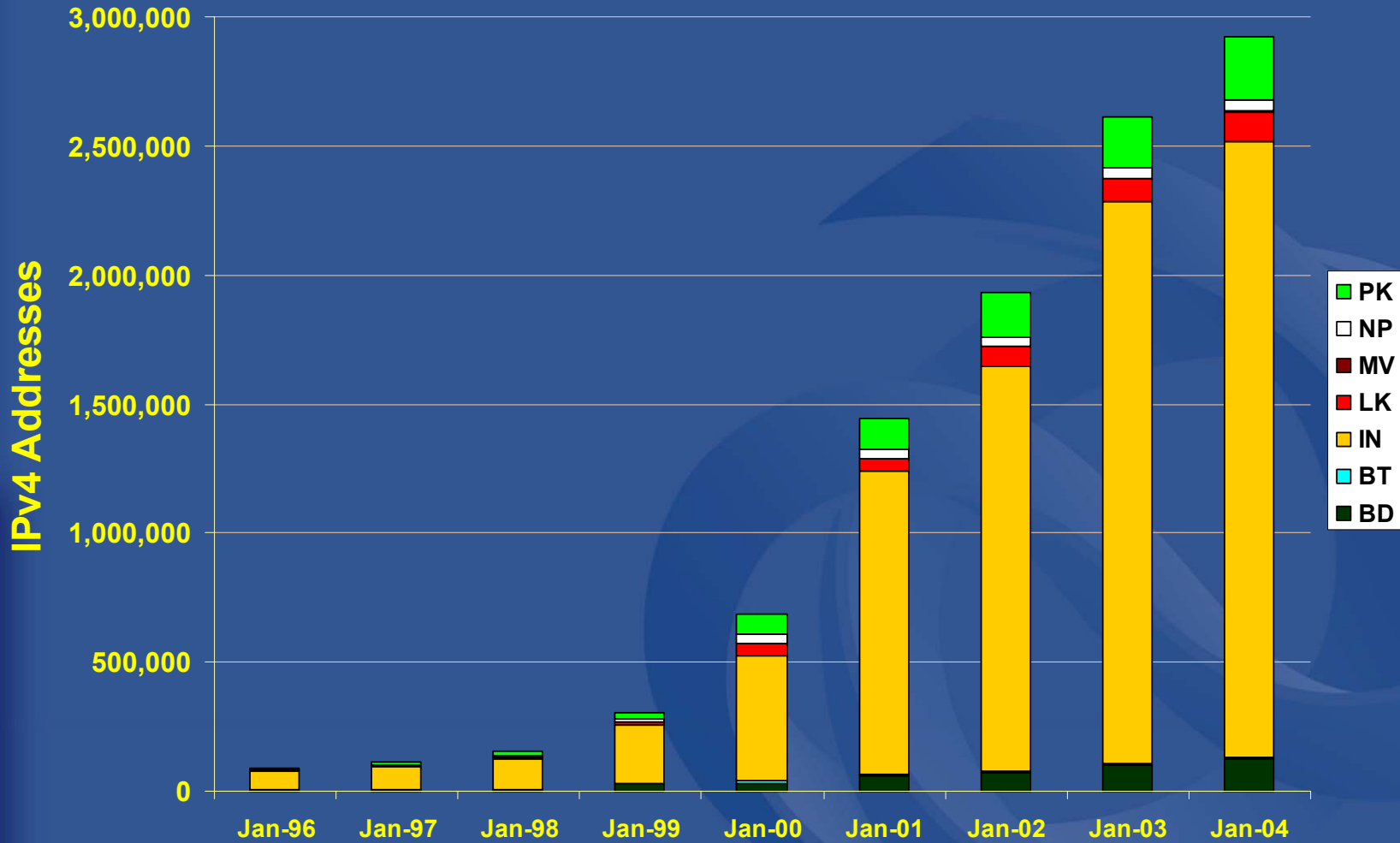


IP Utilisation – Sub regions

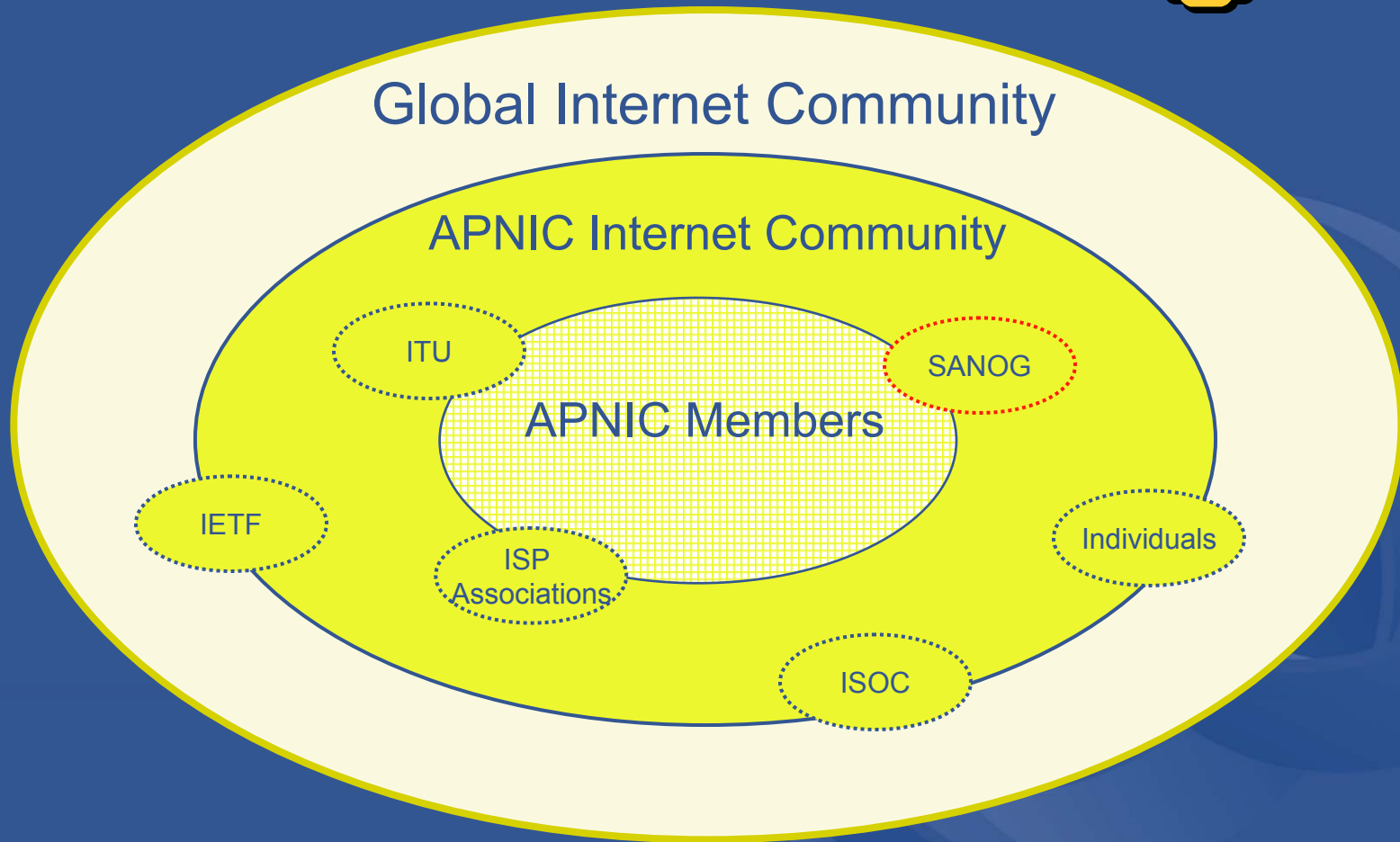




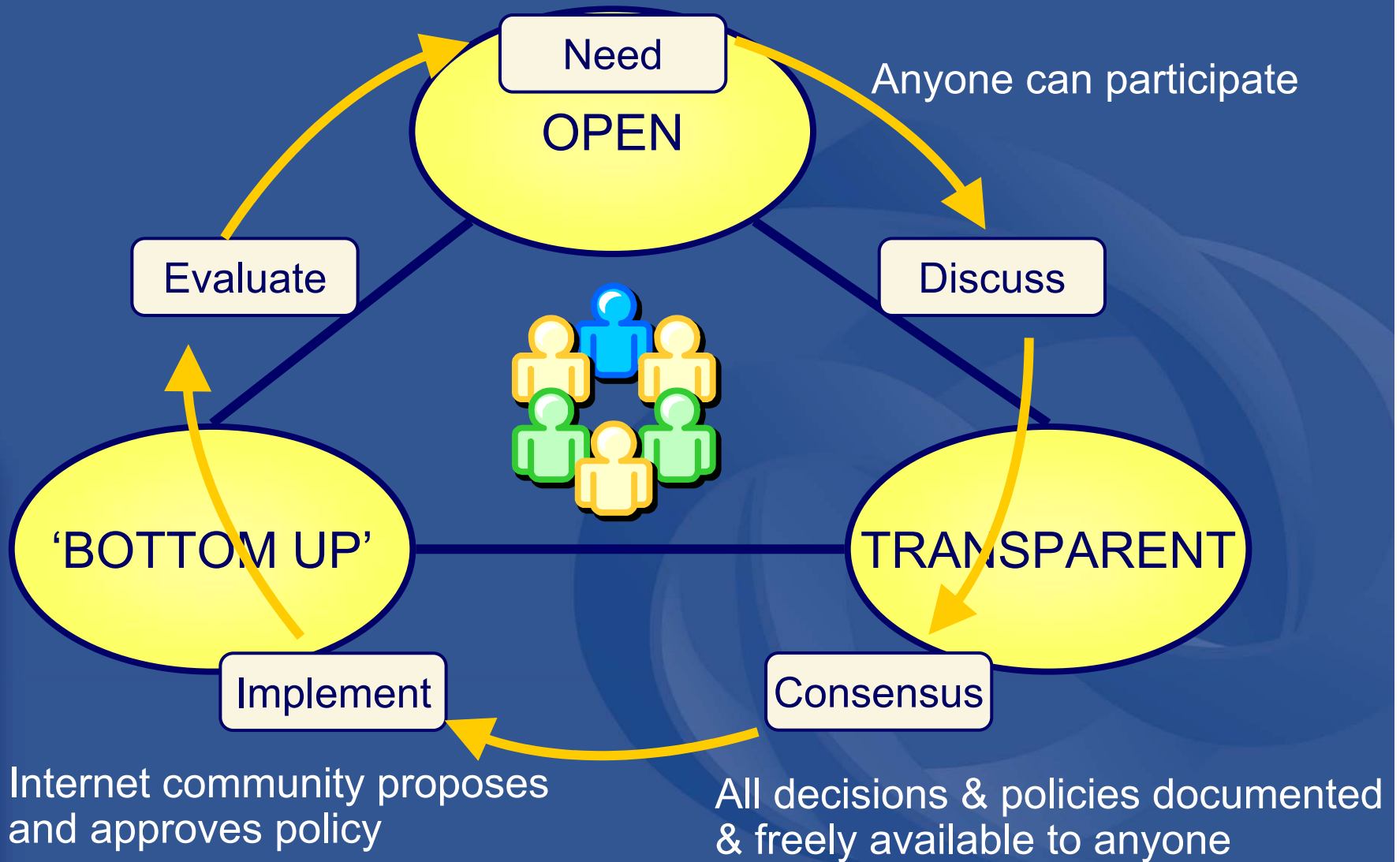
IP Growth in South Asia



“Internet Community”



Policy development - Industry self-regulation



Participation in policy development

- Why should I bother?
 - Responsibility as an APNIC member
 - To be aware of the current policies for managing address space allocated to you
 - Business reasons
 - Policies affect your business operating environment and are constantly changing
 - Ensure your ‘needs’ are met
 - Educational
 - Learn and share experiences
 - Stay abreast with ‘best practices’ in the Internet

Elements of the process

WGs: semi formal, volunteer group tasked by a SIG to work on a particular project until completed eg. 'Broadband'

Member Meeting

MM: forum specific to APNIC business eg. fee structure, election of executive council & endorsement of policy decisions

Working Groups

Open Policy Meeting & Mailing Lists

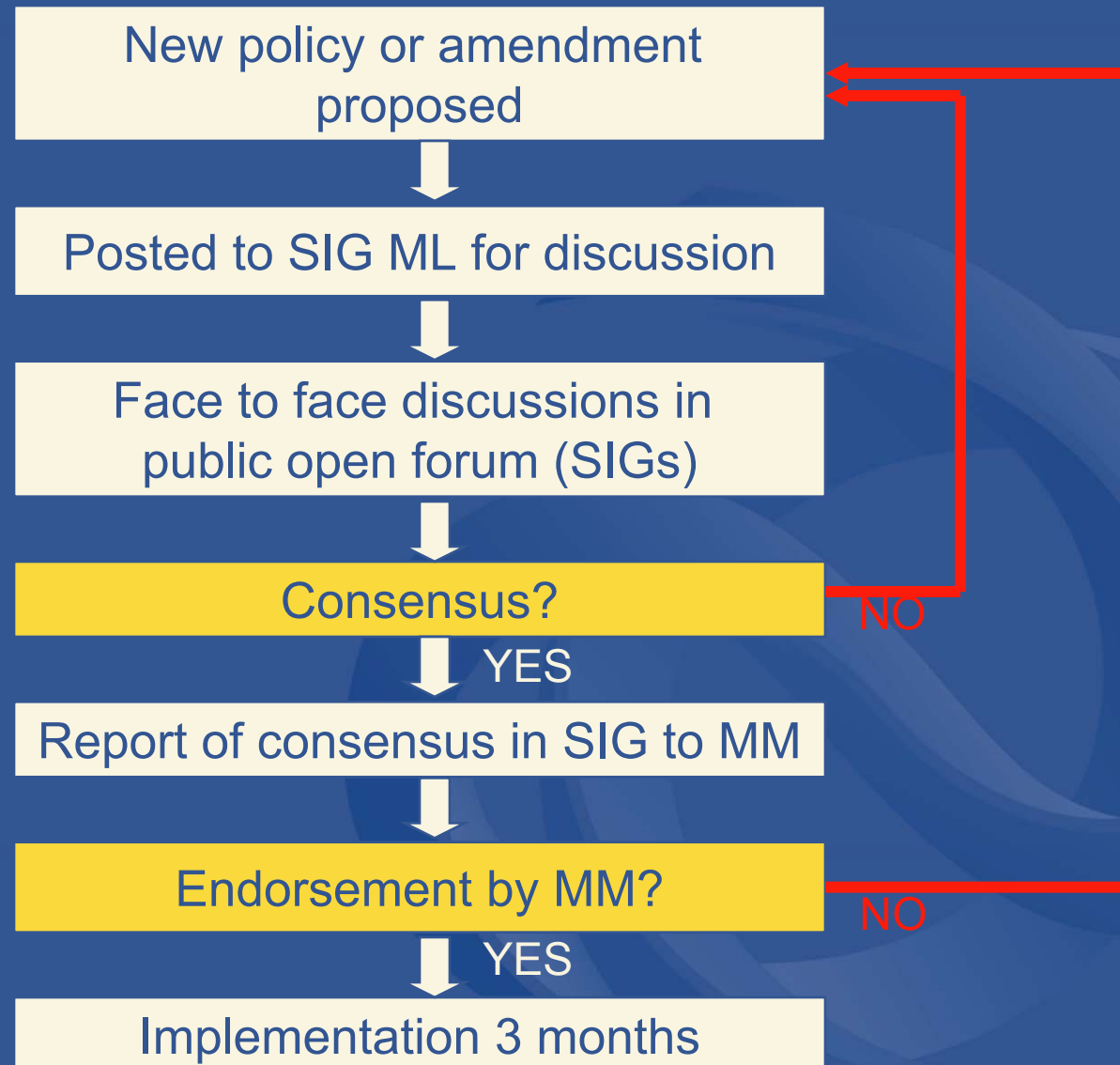
Special Interest Groups

SIGs: Formal groups which discuss broad areas of policy relevant to the APNIC internet community

BOFs: Informal meetings to exchange ideas eg. CA BOF, Network Abuse BOF, Training Need to hold at least one to form new SIG

Birds of a Feather

How does it work? Self regulation in practice



How to get your voice heard

- Contribute on the public mailing lists
 - <http://www.apnic.net/community/lists/index.html>
- Attend meetings
 - Or send a representative
 - Gather input at forums like SANOG
- Give feedback
 - Training or seminar events
- APNIC17, Kuala Lumpur, MY, 22-27 February 2004 : In conjunction with APRICOT 2004
 - Listen to multicast, stay informed
 - <http://www.apnic.net/meetings>

Address management objectives

Conservation

- Efficient use of resources
- Based on demonstrated need

Aggregation

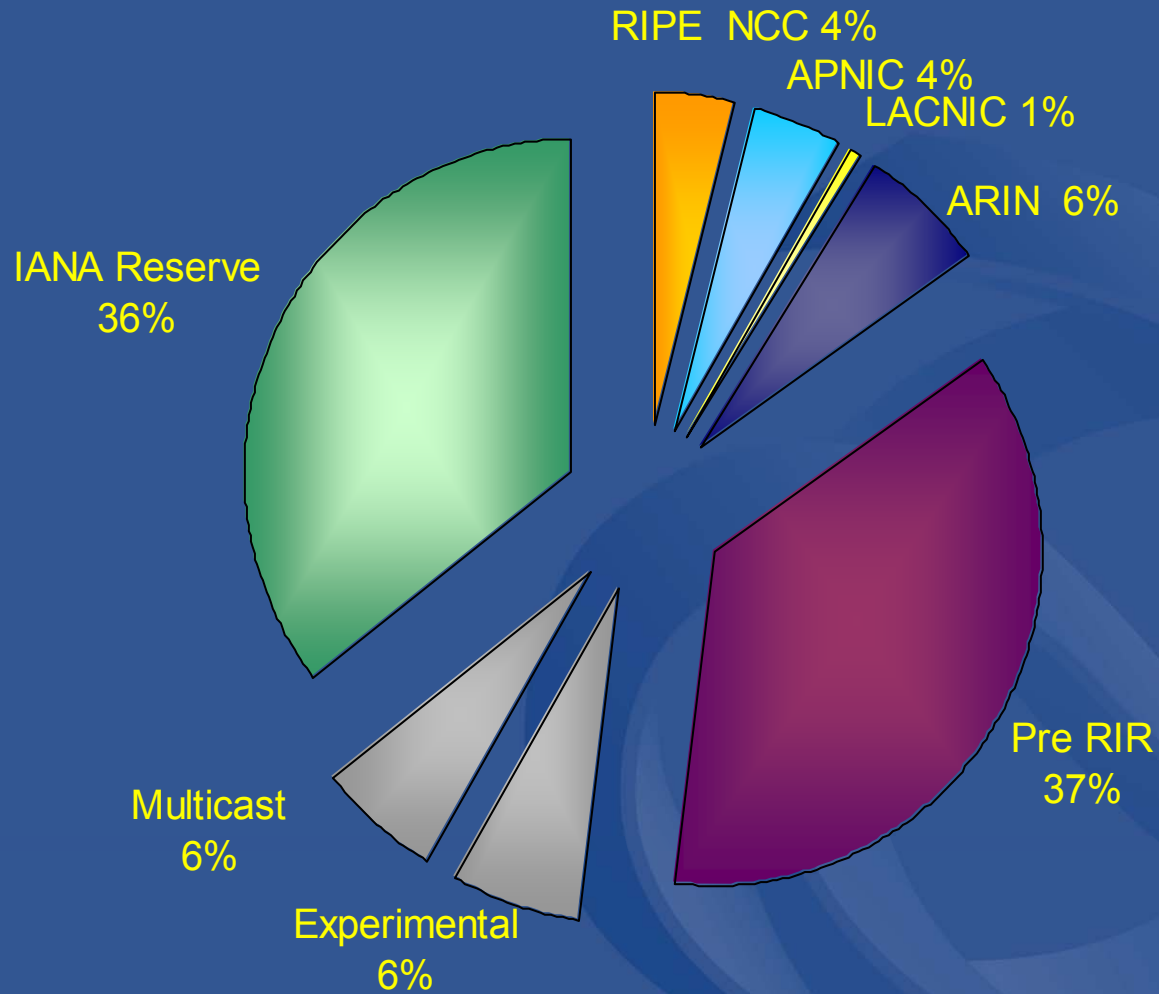
- Limit routing table growth
- Support provider-based routing

Registration

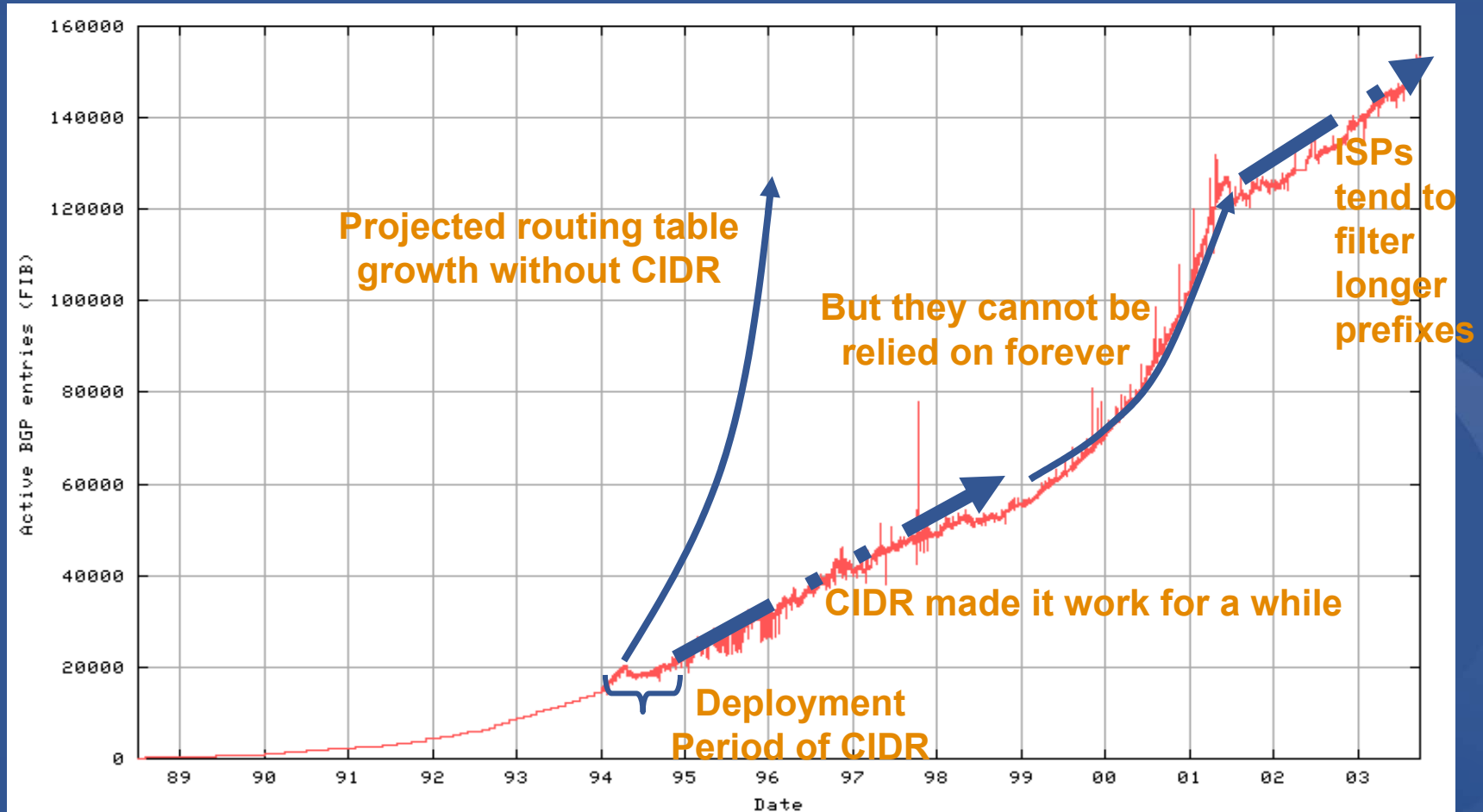
- Ensure uniqueness
- Facilitate trouble shooting

Why do we need policies?

- Global IPv4 Delegations



Growth of global routing table

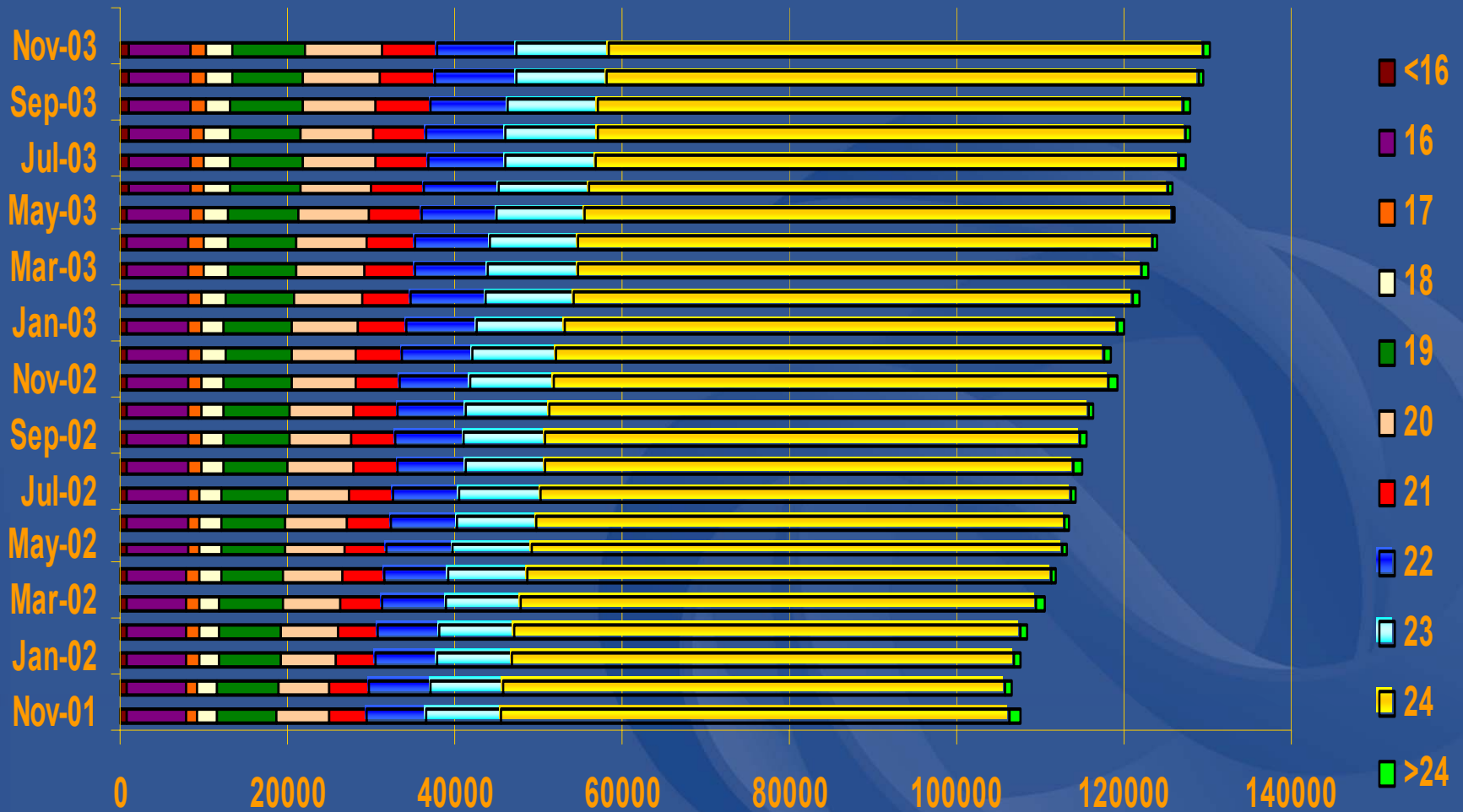


<http://bgp.potaroo.net/as1221/bgp-active.html>

last updated 29 Sep 2003



Routing table prefix distribution



Last updated 20 Nov 2003



APNIC policy environment

“IP addresses not freehold property”

- Assignments & allocations on license basis
 - Addresses *cannot* be bought or sold
 - Internet resources are public resources
 - ‘Ownership’ is contrary to management goals

“Allocations and assignments based on demonstrated need”

- Detailed documentation required
 - Assignment should maximise utilisation

IPv4 initial allocation criteria

- 1a. Have used a /22 from upstream provider
 - Demonstrated efficient previous address usage
- OR
- 1b. Show immediate need for /22
 - Can include customer projections & infrastructure equipment
2. Detailed plan for use of /21 within a year
3. Renumber to new space within 1 year

Small multihoming assignment policy

1a. Applicants currently *multihomed*

OR

1b. Demonstrate a plan to *multihome within 1 month*

2. *Agree to renumber* out of previously assigned space

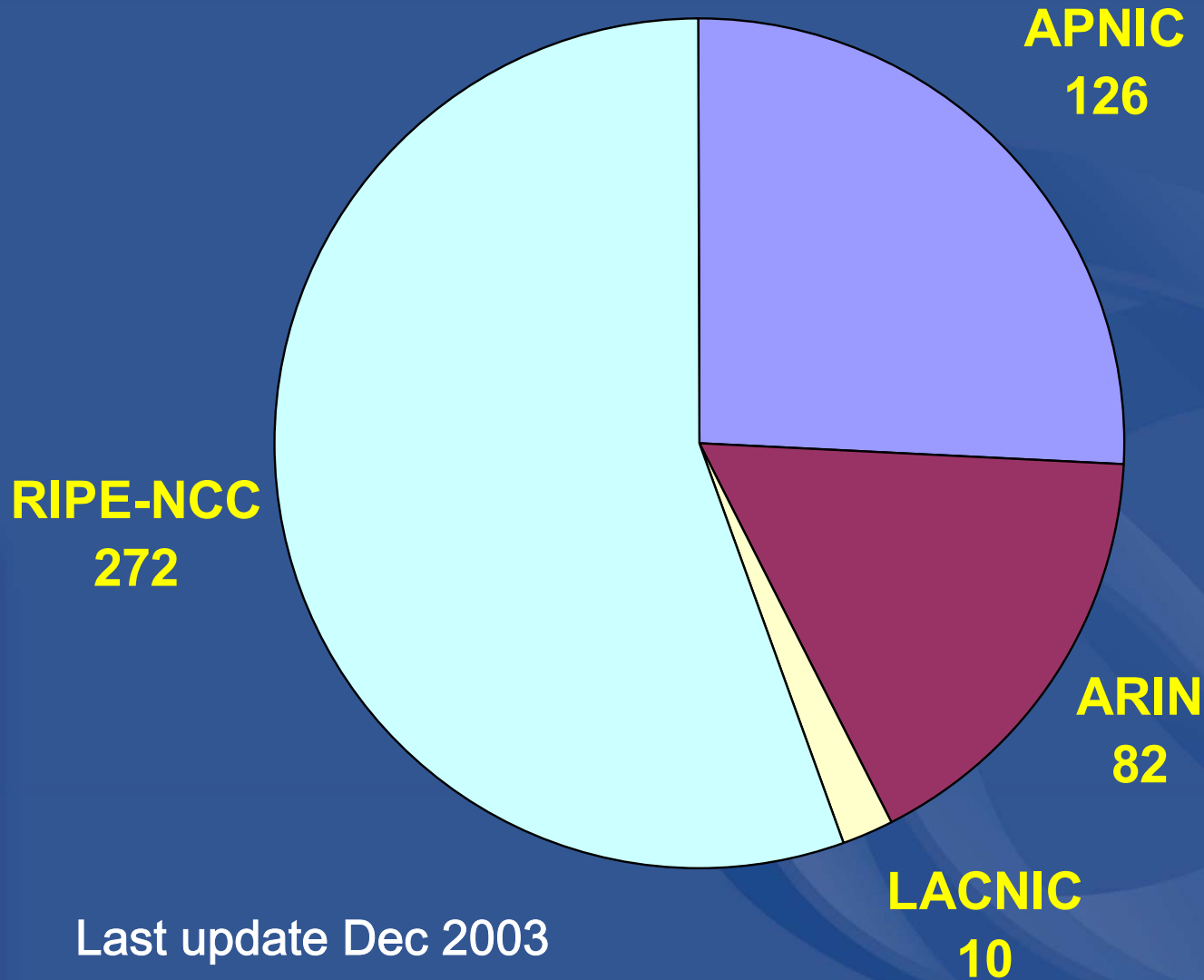
- Demonstrate need to use 25% of requested space immediately and 50% within 1 year

IPv6 initial allocation criteria

- Be an LIR
 - Not be an end site
- Plan for at least 200 /48 assignments to other organisations within 2 years
- Plan to provide IPv6 connectivity to organisations and to end sites
 - Initial allocation size: /32

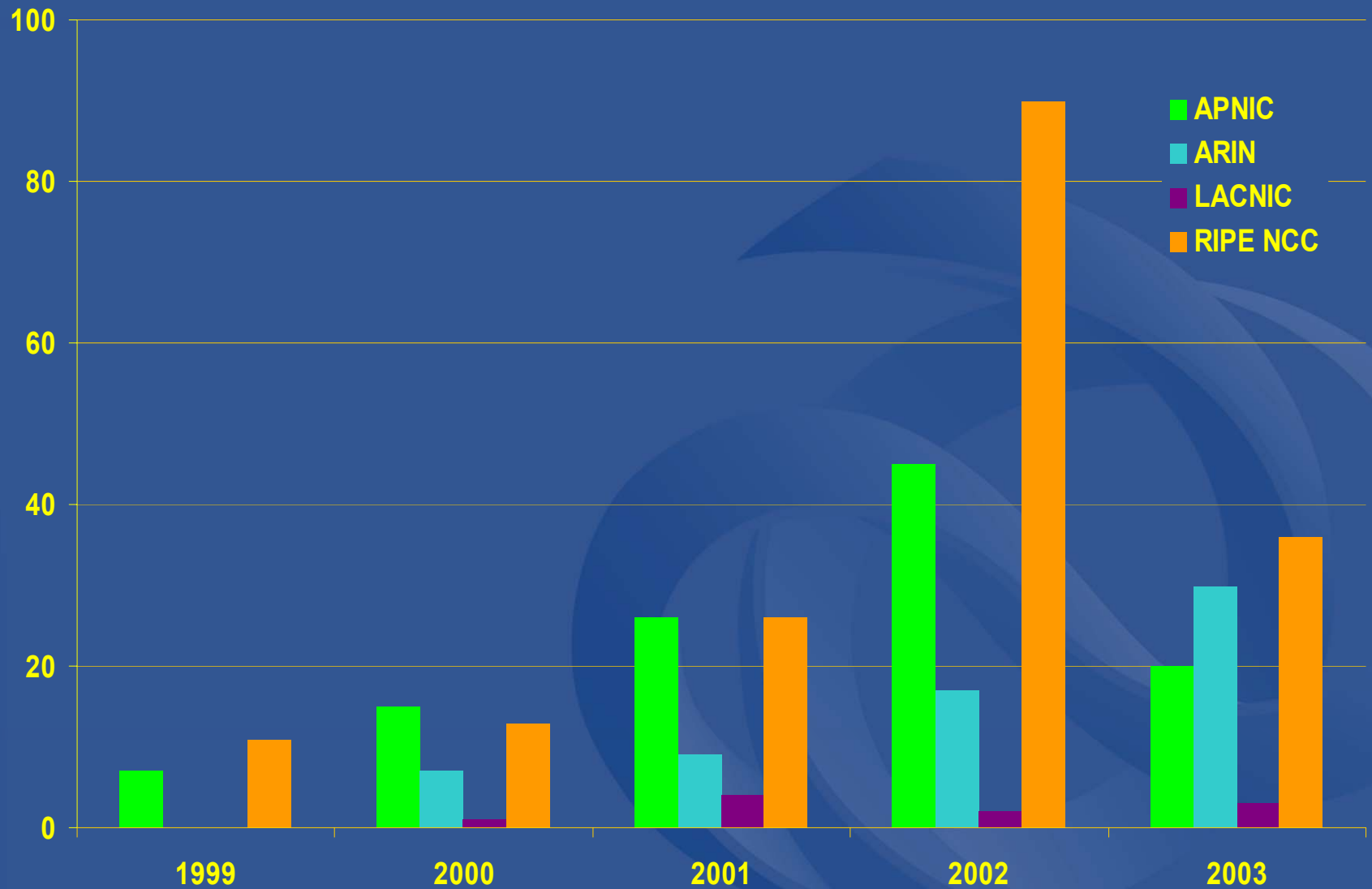


IPv6 RIRs distribution

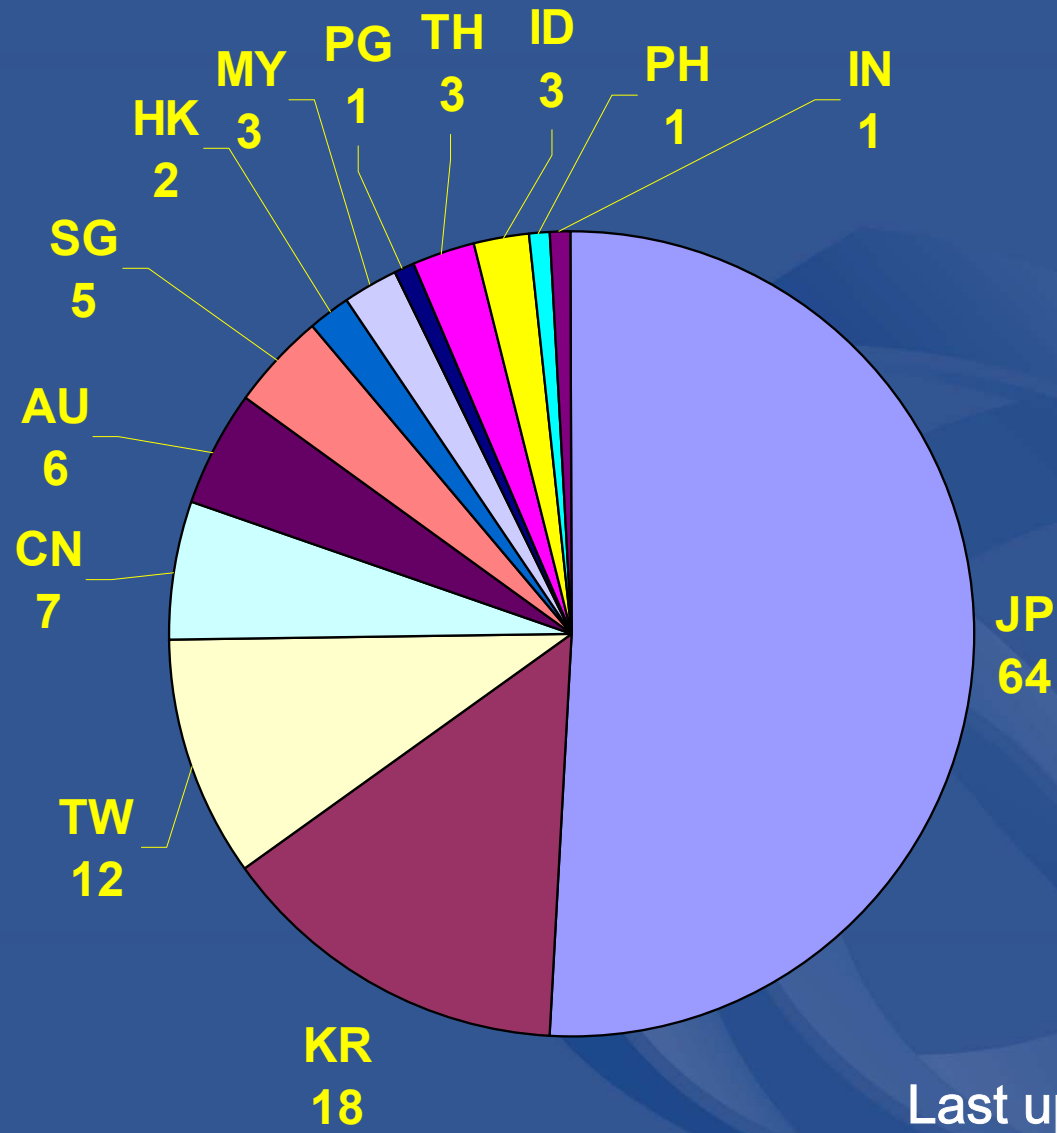


Last update Dec 2003

RIR Allocations per Year – IPv6



IPv6 allocation in AP



Last update Dec 2003

APNIC16 policy update

16th APNIC Open Policy meeting took place the 19th – 22nd August, Seoul, Korea

- Policy development proposal
 - **Prop-001-v001**: Revised policy development process
 - Text proposal on ML 1 month before meeting
 - ‘Comment period’ on ML 2 months after meeting
- IPv4 policy proposal
 - **Prop-006-v001**: Historical resource transfers
 - Allows transfers from ‘historical’ to ‘current’ status
 - Recipient must be an APNIC member
 - Address space subject to current policy framework

consensus

consensus

APNIC16 policy update

- IPv4/IPv6 policy proposal
 - **Prop-011-v001**: Revised IXP assignment policy
 - Definition amended, restriction on routing lifted
 - Further discussion required for remainder of proposal
- IPv6 informational proposal
 - Create a guidelines document to explain existing IPv6 policy

Come to the next APNIC Meeting!



17th APNIC Open Policy Meeting
23-27 February 2004 Kuala Lumpur - Malaysia

with

APRICOT 2004

Kuala Lumpur, Malaysia, 18-27 February 2004

2nd round Fellowship application: 11-17 Jan 04

- Participate in policy development
- Attend workshops, tutorials & presentations
- Exchange knowledge and information with peers
- Stay abreast with developments in the Internet
- View multicast online
- Provide your input in matters important to you

<http://www.apnic.net/meetings/>



APNIC

Asia Pacific Network Information Centre

Thank You