



# The Regional Internet Registry System and Internet Number Resources

*Industry Self Regulation in Practice*

Axel Pawlik  
Managing Director  
RIPE NCC

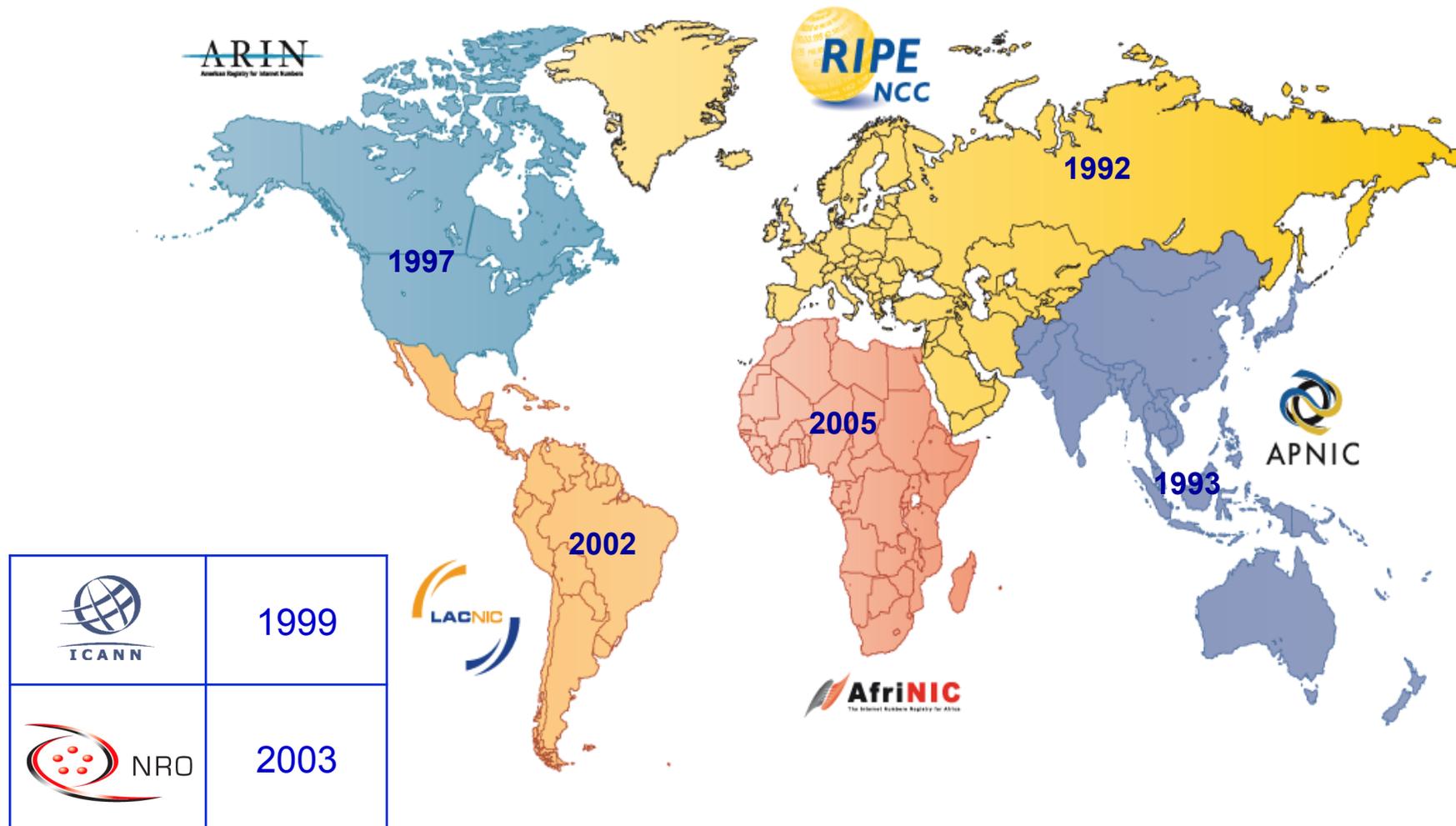


# Why?

- Historically to facilitate self-organisation of Internet operators (1987 – present)
- Manage Internet Numbering Resources (1992 – present)
  - IPv4, IPv6, ASN
- Consolidation of Internet Technical Community voices (2002 – present)



# Regional Internet Registries (RIRs)





# The Number Resource Organization (**NRO**)

- The five RIRs form the **NRO**
- The **NRO** enables the RIRs to act collectively to:
  - Facilitate technical coordination of the Internet at a **global** level
  - Protect the unallocated pool of Internet number resources
  - Act as a single point of contact for the **global** Internet community
  - Ensure the global cooperation necessary for the continuing stability and integrity of the Internet





# About the RIPE NCC

- Bottom-up, self-regulated, **membership** association
- Open to everyone
- Not-for-profit
- Incorporated in the Netherlands, governed by Dutch law
- Funded entirely by members; fully autonomous
  - ✓ Open
  - ✓ Transparent
  - ✓ Neutral
  - ✓ Impartial

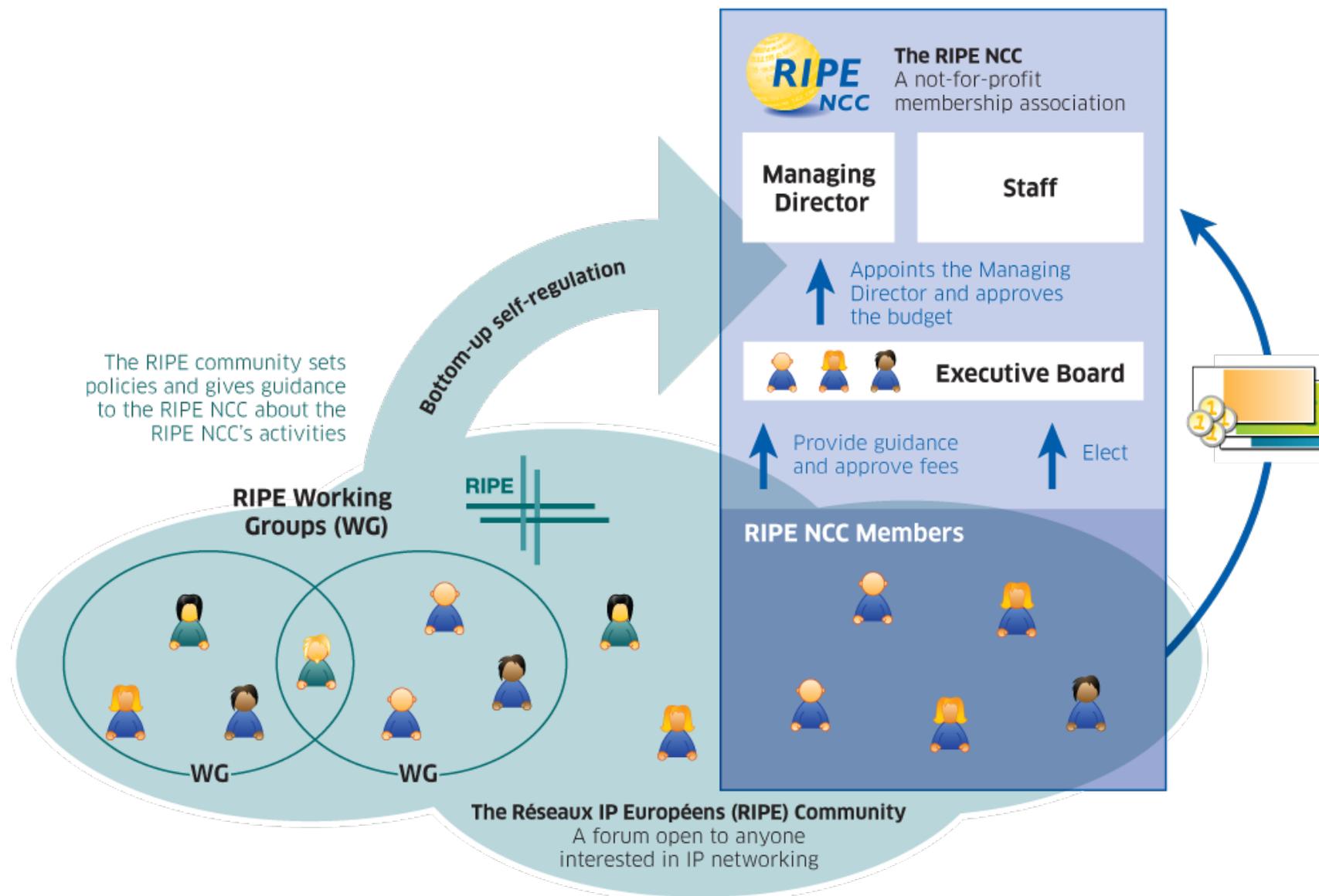


# The RIPE NCC's Tasks

- Facilitate technical coordination of the Internet
- Support for the activities of **RIPE**
- Services for RIPE NCC members
  
- Acts as one of the world's five Regional Internet Registries (RIRs):
  - Registration and allocation/assignment of
    - IPv4 addresses
    - IPv6 addresses
    - Autonomous System Numbers (ASN)



# Structural Overview





# Why Manage IP Address Space?

*Address space constraints  
require good stewardship*

- Technical requirements
  - Uniqueness of numbers
  - Network topology realities
- Prevent wasteful consumption
- Ensure fair distribution to all



# How to Manage Address Space?

- Community agrees on rules
  - Community: Anybody with an interest in the management of the Internet
  - Making the rules is described in the RIPE Policy Development Process (PDP)
- RIPE NCC follows rules



# Policy Development Principles

## Open

- Anyone can participate:
  - Including Governments
- Policy fora
- Mailing lists

## Transparent

- Mailing list archives
- Minutes:
  - Policy fora
  - RIR Executive Boards

## Developed Bottom-Up

- Internet community
- Technology changes
- Internet Engineering Task Force (IETF)

## Documented

- Formal policy documents
- Implementation procedures

# RIPE Policy Development Process

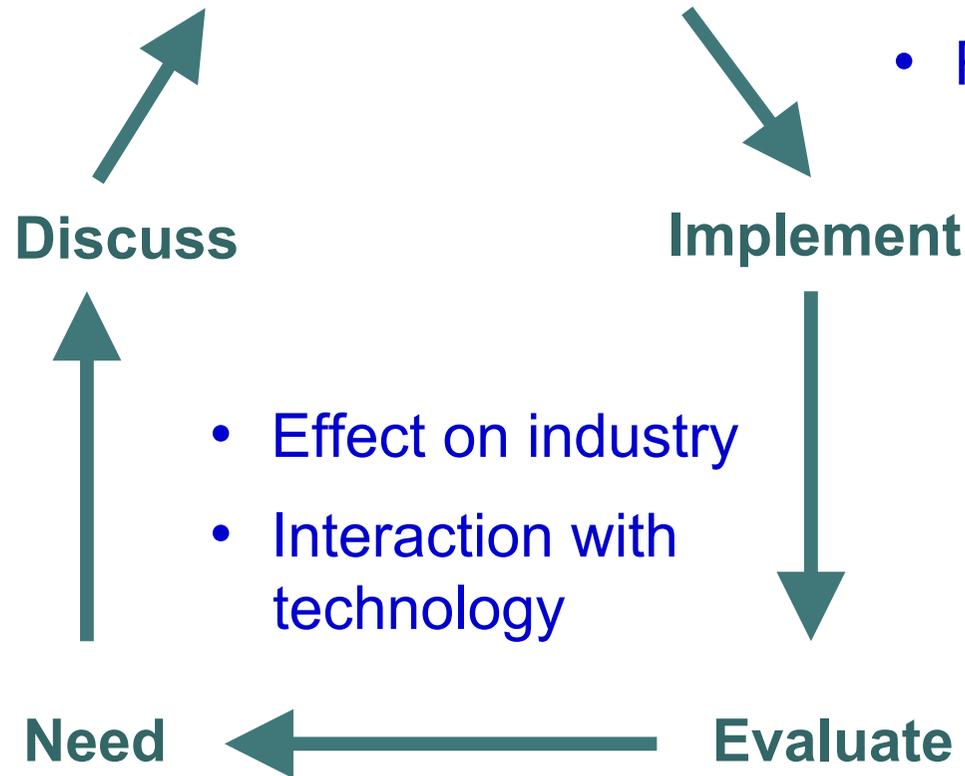
- Mailing lists

- Open policy meetings

**Consensus**

Put into practice:

- RIPE NCC
- RIPE community



- Technology changes
- Industry requirements

- Effect on industry
- Interaction with technology

- Structured assessment process



# Address Management Policy

## Conservation

- Efficient use of resources
- Allocation based on need

## Aggregation

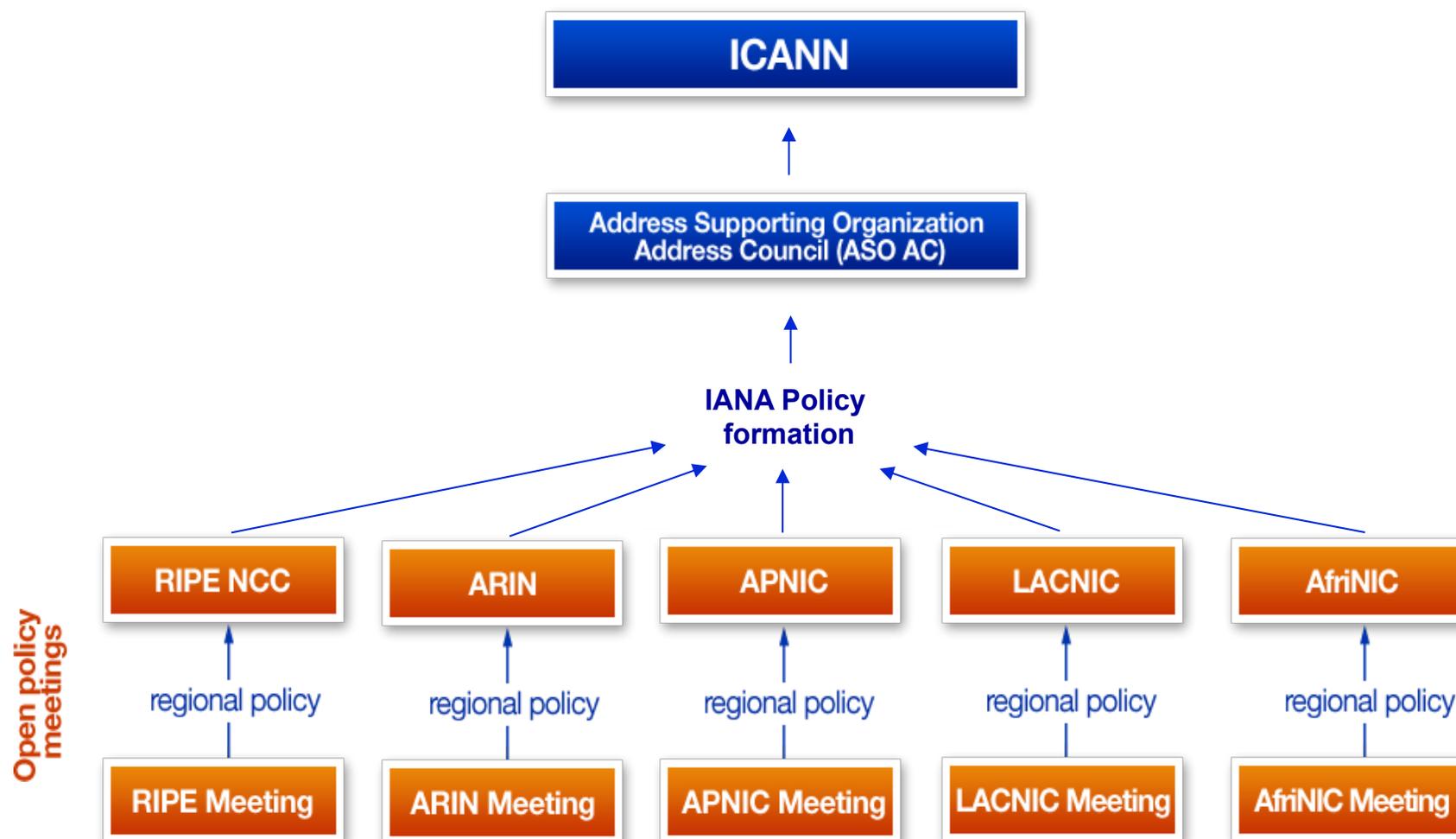
- Limit routing table growth
- Support provider-based routing policies

## Registration

- Ensure uniqueness
- Trouble-shooting



# IANA Policy Formation



# How Policies Affect IP Address Distribution

- PDP efficiently addresses needs of changing environment
  - Classful → CIDR
  - Initial IPv6 allocation policy
  - Simplified IPv6 allocation policy
  - Preparing for IPv4 depletion
    - Fair Run-Out, Transfer policies
  - IANA – RIR Policies



# Facilitating IPv6 Deployment

- Simplifying IPv6 allocation policies
- Outreach to all stakeholders
  - Government, press, enterprise, ...
- IPv6 trainings, conferences, workshops, ...
- IPv6ActNow.org
- Joint efforts with ITC partners
  - Raise awareness
  - Capacity building
  - Education

***You are the Community,  
you decide what you need.***

***We are here to serve you...***



# Links



<http://www.afrinic.net>



<http://www.apnic.net>



<http://www.arin.net>



<http://www.lacnic.net>



<http://www.ripe.net>



<http://www.nro.net>



<http://www.iana.org>

# Questions?

