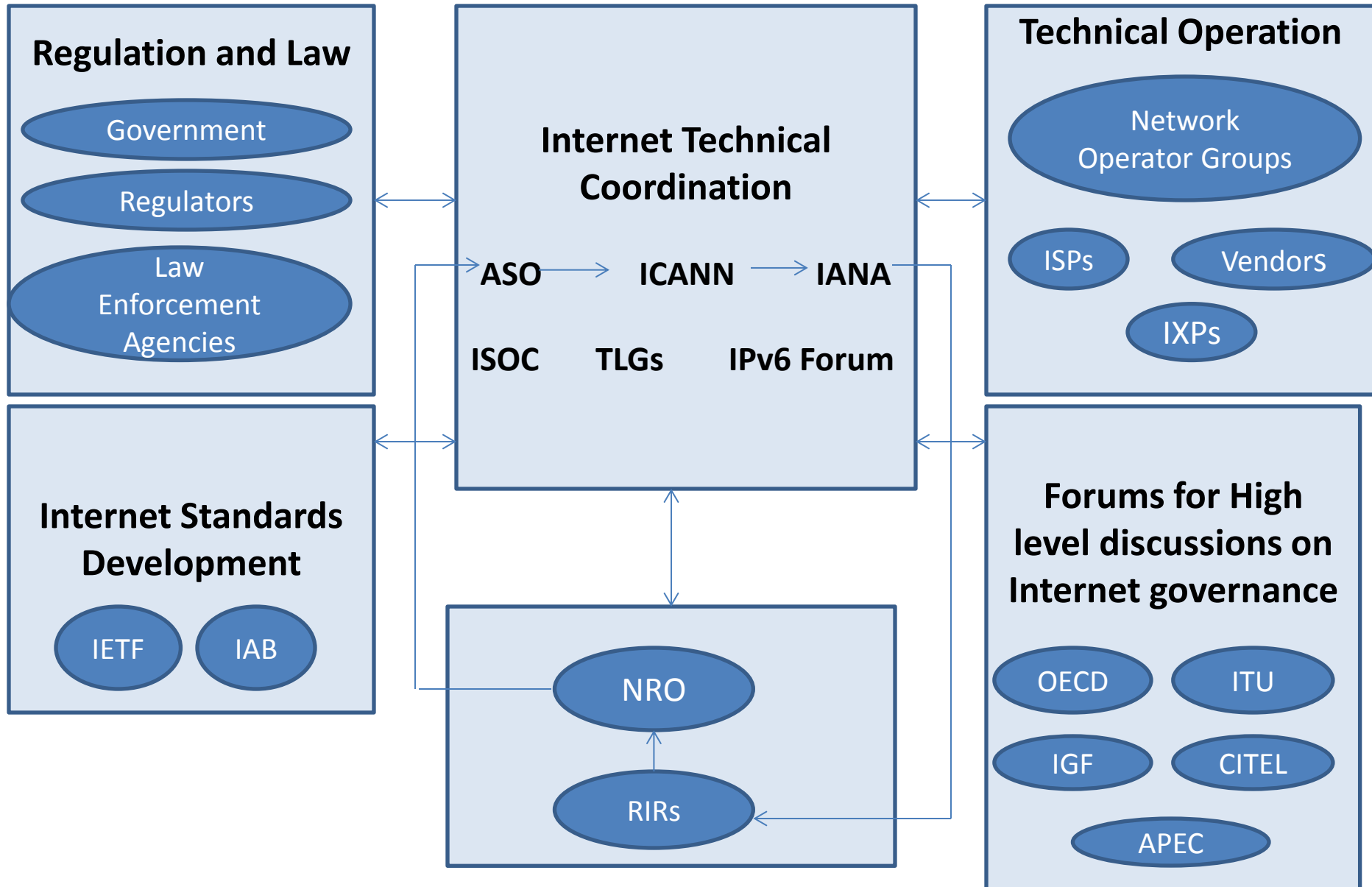
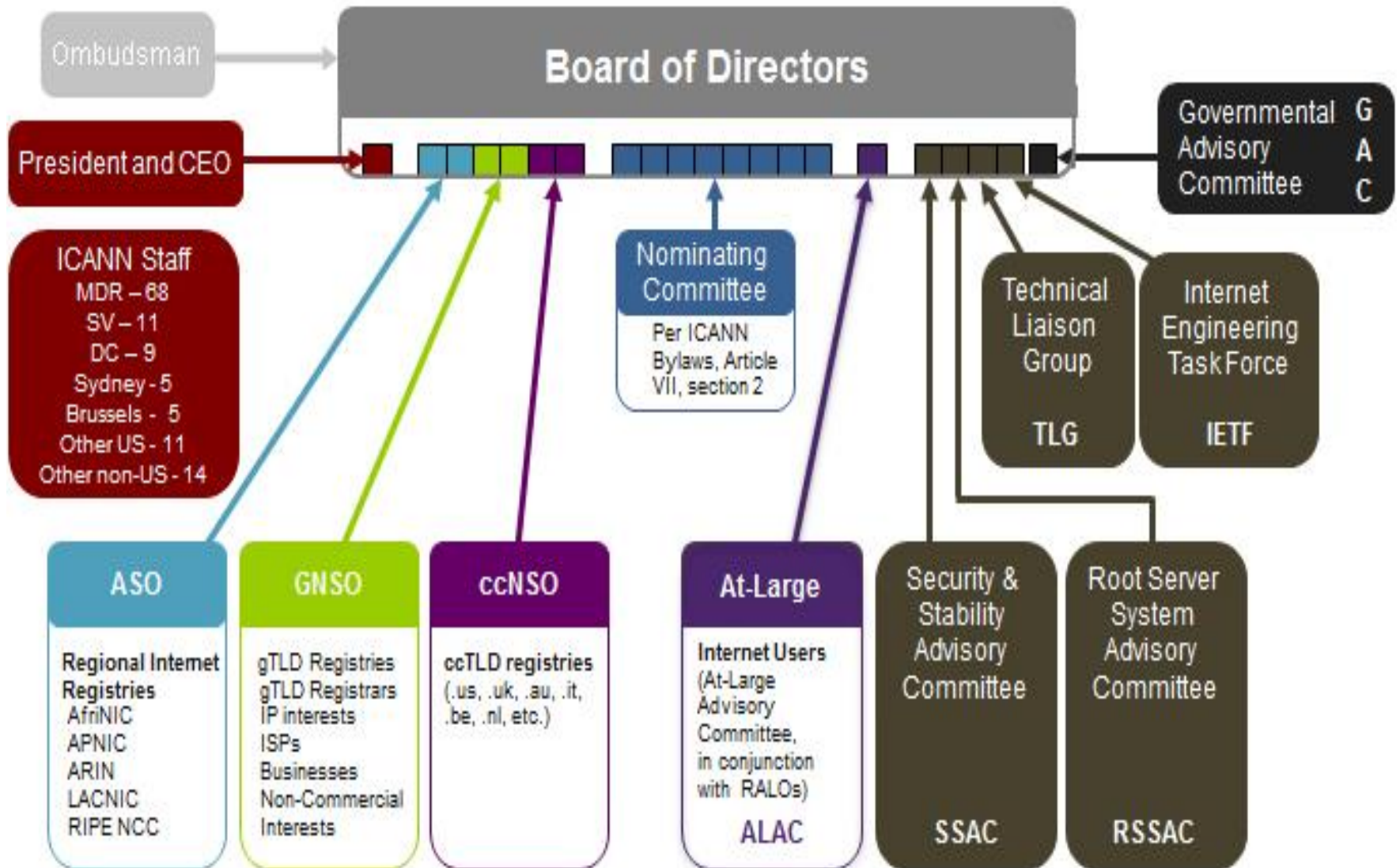


# **ADMINISTRATIVE & TECHNICAL ORGANISATIONS OF INTERNET**

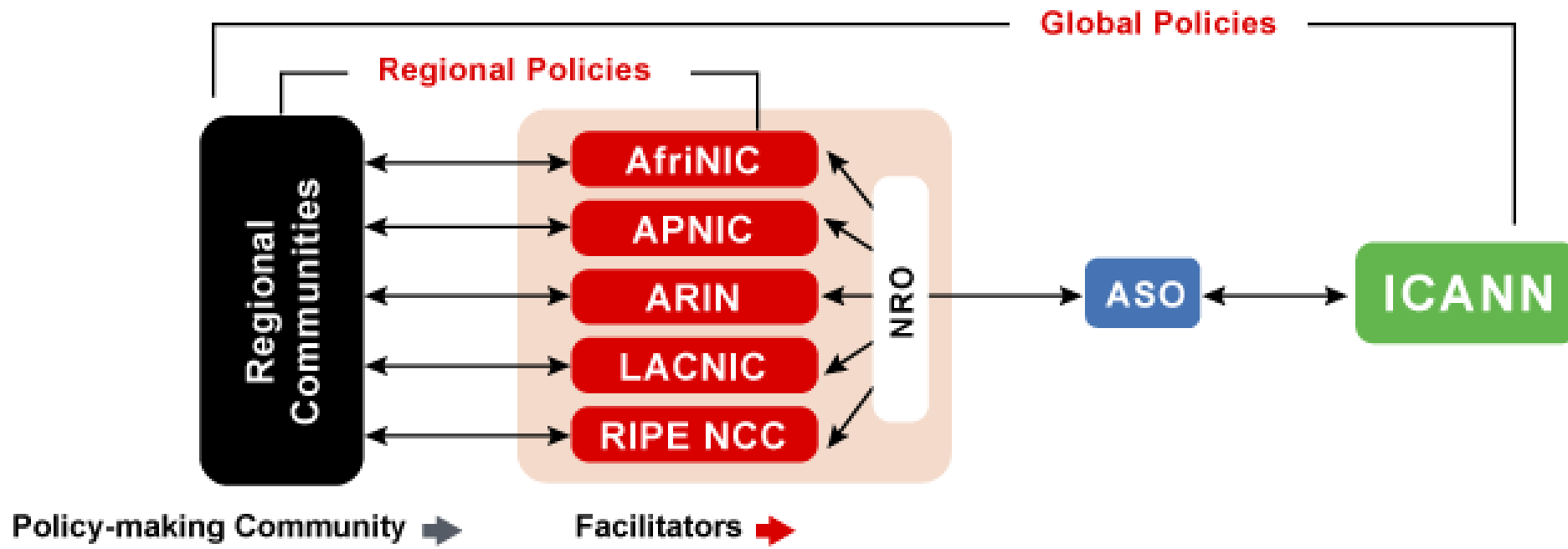
# Internet related organizations and relationship



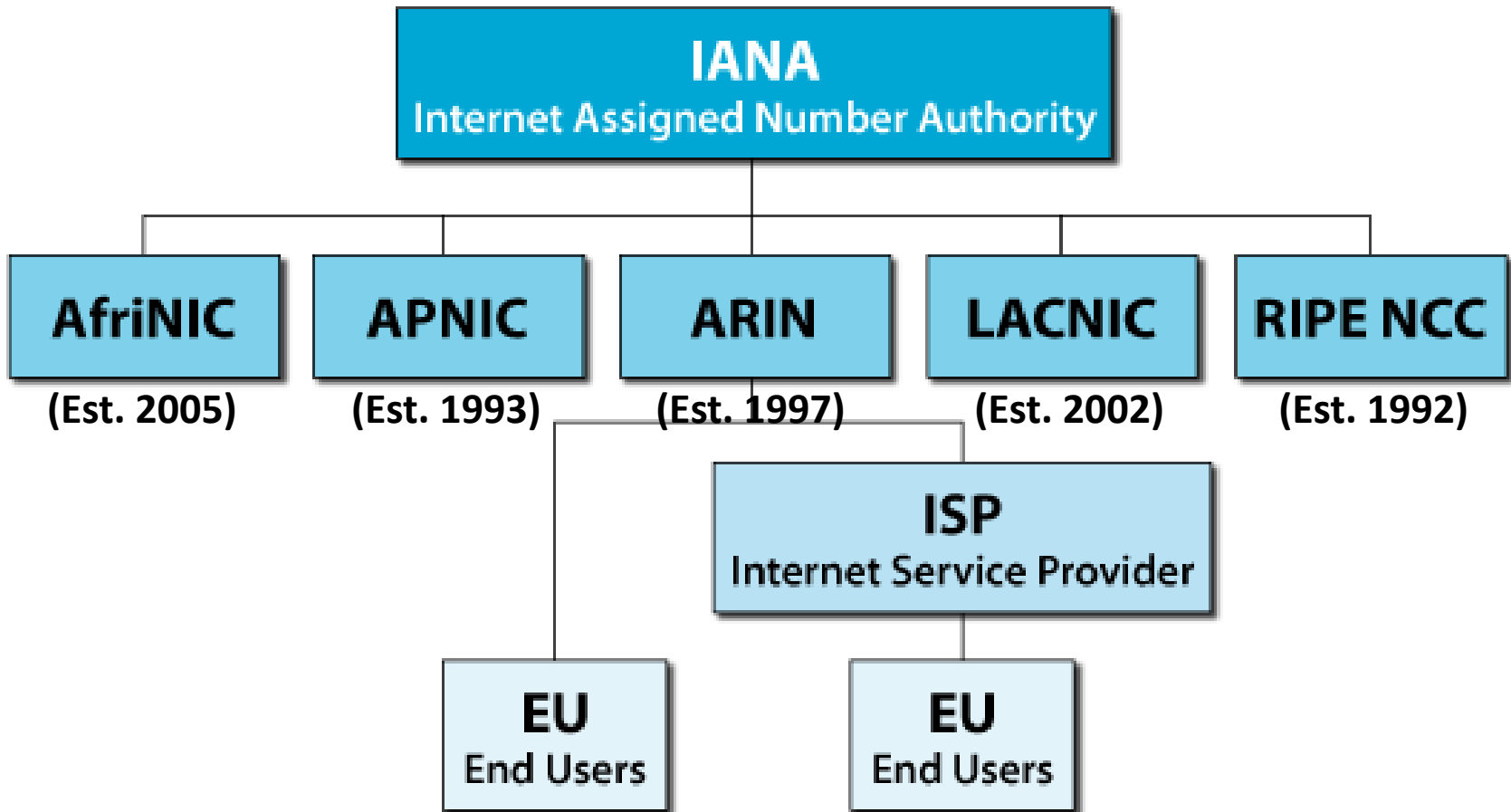
# ICANN Multi-Stakeholder Model



# Addressing Policy Formulation



# IP Address Allocation



# Where do IP addresses come from?



Standards

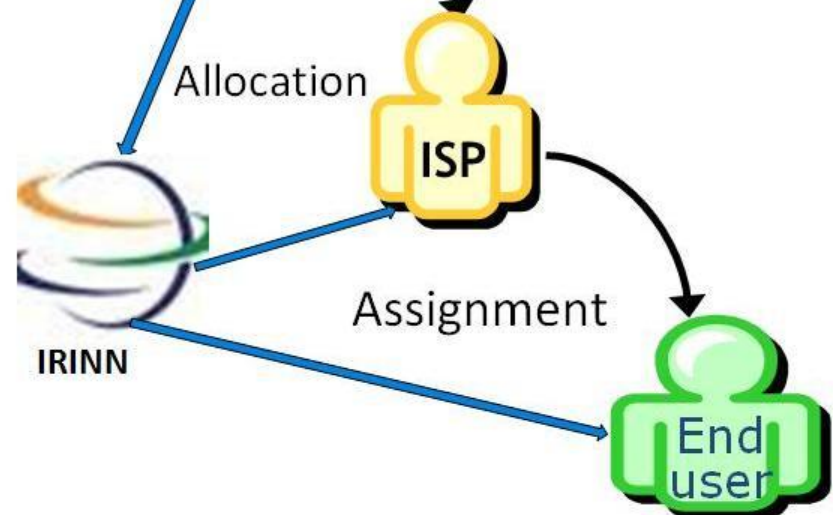


Allocation



Regional Internet Registries (RIRs) distribute IPv4 and IPv6 addresses to the Internet community

RIRs maintain accurate registration of Internet resource usage for the community



# Internet Governance Bodies

- ❑ ICANN : Internet Corporation for Assigned Names and Numbers
- ❑ IANA : Internet Assigned Numbers Authorities
- ❑ RIRs : Regional Internet Registries
  - ❖ ARIN: American Registry of Internet Numbers
  - ❖ RIPE NCC : Reseau IP Europeans Network Coordination Centre
  - ❖ APNIC: Asia Pacific Network Information Centre
  - ❖ LACNIC : Latin American and Caribbean Network Info. Centre
  - ❖ AFRINIC : Africa Region Information Centre
- ❑ NRO : Number Resource Organization
- ❑ IETF : Internet Engineering Task Force
- ❑ IAB : Internet Architecture Board
- ❑ ISOC : Internet Society
- ❑ IGF : Internet Governance Forum

# Internet Related Organisations

## ICANN : Internet Corporation for Assigned Names and Numbers

- A not for profit public benefit corporation, formed in 1998
- Oversees generic Top Level Domain names as well as operation of DNS Root Servers
- Oversees IANA
- Publishes Policies, Bylaws, Plans, major Agreements etc.



# Internet Related Organisations

## IANA : Internet Assigned Numbers Authorities

- Oversee the DNS Root Zone
- Allocation & management of IPv4 and IPv6 addresses.
- Manages AS numbers for Internet routing hierarchy
- Allows people to reserve and register port numbers and other assigned numbers related to Internet Protocols.

# Internet Related Organisations

## RIRs : Regional Internet Registries

- Five Top Level Registries directly below IANA.
- IPv4 and IPv6 Address space allocation
- AS number allocations
- Online information about registration transaction as well as about routing (Internet Routing Registry)
- Manages RDNS for addresses assigned by RIR
- Maintains policy discussions and publish policy documents.

# Internet Related Organisations

## NRO : Number Resource Organization

- Formed in 2003 by RIRs
- Executive Council consists of CEOs of RIRs
- Goal : To protect unallocated number resource pool
- Acts as a focal point for Internet Community input into the RIR system
- Coordinates & supports joint activities of RIRs
- Input to ASO for final decision by ICANN & IANA

# Internet Related Organisations

## IETF : Internet Engineering Task Force

- Oversees Standardization process of Internet
- Maintains Internet Drafts and RFCs
- Responsible for identifying operational problems and devising solutions for Internet
- Consists of various Working Groups focused on - Applications, Internet protocols, Routing, Network management, Internet protocol next generation, Security etc

# Internet Related Organisations

## IAB : Internet Architecture Board

- Responsible for architectural oversight of IETF activities, Internet Standards Process Oversight and Appeal
- Manages the IETF Protocol parameter registries
- Acts as a Committee for IETF as well as Advisory Body of ISOC

# Internet Related Organisations

## ISOC : Internet Society

- A non-profit organization
- Formed in 1992
- Leads Internet related standards, education, policy etc. as well as facilitates and coordinates Internet related initiatives around the world
- Acts as Organizational home for IETF, IAB etc.

# Internet Related Organisations

## IGF : Internet Governance Forum

- Established by UN summit of Information Society in 2005
- Initial mandate of 5 years extended for further five years in 2010
- An open Forum
- To maximise opportunities, identify emerging trends and address risks and challenges in the Internet environment.
- Annual summit meet for discussion amongst all the stakeholders.

## Role of Different Stakeholders

Functional Area	Tasks	Primary Institutional Actor
<b>Control of "Critical Internet Resources"</b>	<b>Central Oversight of Names and Numbers</b>	<b>ICANN, IANA, US DoC</b>
	<b>Technical Design of IP Addresses</b>	<b>IETF</b>
	<b>New Top-Level Domain Approval</b>	<b>ICANN</b>
	<b>Domain Name Assignment</b>	<b>Internet Registrars</b>
	<b>Oversight of Root Zone File</b>	<b>US DoC/NTIA</b>
	<b>IP Address Distribution (allocation/assignment)</b>	<b>IANA, RIRs, LIRs, NIRs, ISPs</b>
	<b>Management of Root Zone File</b>	<b>IANA</b>
	<b>Autonomous System Number Distribution</b>	<b>IANA, Regional Internet Registries</b>
	<b>Operating Internet Root Servers</b>	<b>VeriSign, Cogent, others</b>
	<b>Resolving DNS Queries (Billions per Day)</b>	<b>Registry Operators (VeriSign, others)</b>
<b>Setting Internet Standards</b>	<b>Protocol Number Assignment</b>	<b>IANA</b>
	<b>Designing Core Internet Standards</b>	<b>IETF</b>
	<b>Designing Core Web Standards</b>	<b>W3C</b>
	<b>Establishing Other Communication Standards</b>	<b>ITU, IEEE, MPEG, JPEG, ISO, others</b>



# Role of Different Stakeholders

Functional Area	Tasks	Primary Institutional Actor
Access and Interconnection Coordination	Facilitating Multilateral Network Interconnection	Internet Exchange Point Operators
	Peering and Transit Agreements to Interconnect	Private Network Operators, Content Networks, CDNs
	Setting Standards for Interconnection (e.g. BGP)	IETF
	Network Management (Quality of Service)	Private Network Operators
	Setting End User Access and Usage Policies	Private Network Operators
	Regulating Access (e.g. Net Neutrality)	National Governments/Agencies
Cybersecurity Governance	Securing Network Infrastructure	ISPs, Network Operators, Private End User Networks
	Designing Encryption Standards	Standards-Setting Organizations
	Cybersecurity Regulation/Enforcement	National Statutes/Multilateral Agreements
	Correcting Software Security Vulnerabilities	Software Companies
	Software Patch Management	Private End Users
	Securing Routing, Addressing, DNS	Network Operators, IETF, Registries
	Responding to Security Problems	CERTs/CSIRTs
	Trust Intermediaries Authenticating Web Sites	Certificate Authorities (CAs)

**THANK YOU**