# ICANN: Structure and Issues

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# ICANN: The Basic Idea

**ICANN =**

*An Experiment in*

*Technical Self-Management*

*by the global Internet community*

# ICANN: The Basic Bargain

**ICANN =**

*Internationalization*
of Policy Functions for DNS and IP Addressing systems

+

*Private Sector*
(non-governmental) Management

# What does ICANN do?

Coordinates policies relating to the unique assignment of:

- Internet Domain Names
- Numerical IP Addresses
- Protocol Port and Parameter Numbers

Coordinates the DNS Root Server System

- through Root Server System Advisory Committee

# Domain names & IP addresses

- Domain names are the familiar, easy-to-remember names for computers on the Internet
  - e.g., amazon.com, icann.org, nic.or.kr
- Domain names correlate to Internet Protocol numbers (IP numbers) (e.g., 98.37.241.130) that serve as routing addresses on the Internet
- The domain name system (DNS) translates domain names into IP numbers needed for routing packets of information over the Internet

# Categories of Internet Domains - 1

- Generic Top Level Domains (gTLDs)
  - <.com>, <.net>, <.org> open to all persons and entities on a global basis
  - <.int> for international treaty organizations
  - <.arpa> for Internet Infrastructure purposes
  - <.gov>, <.mil> for U.S. government, military
  - <.edu> for US universities

# Categories of Internet Domains - 2

- Country Code Top Level Domains (ccTLDs)
  - <.cn>, <.hk>,<.jp>, <.uk>, <.ca>, <.br>, <.de>, <.tv>, <.cc> . . .
  - Imprecise name: ccTLD includes *countries* and *geographically distinct territories*
  - Derived from ISO 3166-1 list
  - Registration requirements vary by domain
    - Residency requirement
    - Price (or no charge)
    - Ability to transfer
    - Dispute resolution policy

# Internet Addressing

- IPv4 - 32 bits
  - <192.34.0.64>
- Initially, 256 networks … then mix of:
  - Class A (128 with 16 M hosts)
  - Class B (16,384 with 65K hosts)
  - Class C (2M with 256 hosts)
- Now, Classless Inter-Domain addresses
  - up to 4 Billion hosts, hundreds of thousands of networks

# Next Generation Internet

- IPv6 - 128 bits of addressing
- Theoretically $10^{38}$ hosts
- Significant transition effort needed (sort of like changing engines on aircraft while in flight)
- IANA officially announced allocations (July 14, 1999)

# Regional Internet Registries (RIR)

- **ARIN**
  - North America
  - Latin America
  - Caribbean Islands
  - Sub-Saharan Africa
- **RIPE NCC**
  - Europe
  - Middle East
  - North Africa
  - Parts of Asia
- **APNIC**
  - Most of Asia
  - Australia/New Zealand
  - Pacific Islands

# Emerging RIRs

AfriNIC - Africa

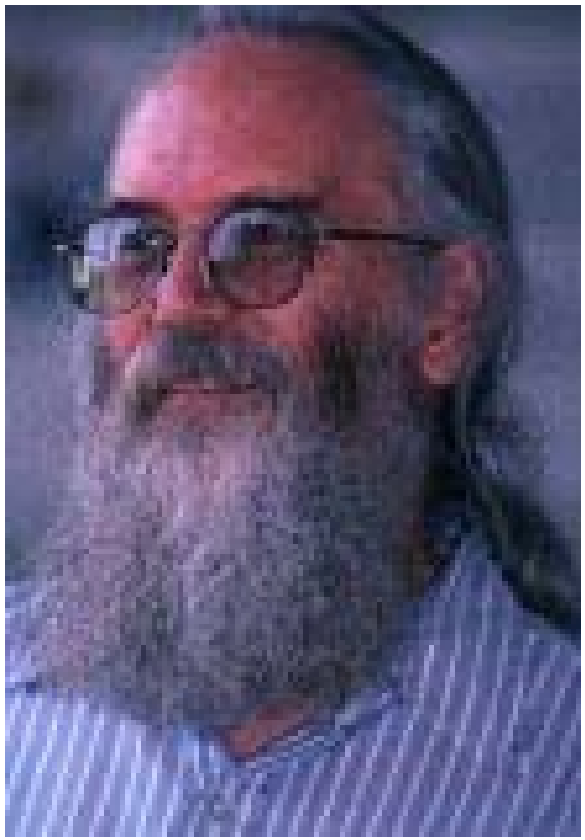
LACNIC - Latin America/Caribbean

# Status Quo Ante ICANN

Most Internet DNS and IP Address coordination functions performed by, or on behalf of, the US government:

- **Defense Advanced Research Projects Agency (DARPA)**
  - Stanford Research Institute (SRI)
  - Information Sciences Institute (ISI) of University of Southern California
- **National Science Foundation (NSF)**
  - IBM, MCI, and Merit
  - AT&T, General Atomics, Network Solutions, Inc. (NSI)
- **National Aeronautics and Space Administration (NASA)**
- **US Department of Energy**

# IANA



*Internet Assigned Numbers Authority*

*Jon Postel*
*1943-1998*

# Need for Change

- Globalization of Internet
- Commercialization of Internet
- Need for accountability
- Need for more formalized management structure
- Dissatisfaction with lack of competition
- Trademark/domain name conflicts

# White Paper Principles

White Paper:  new policy/management structure must promote 4 goals:

- Stability
- Competition
- Private, bottom-up coordination
- Representation

# White Paper Implementation

- Internet community to form non-profit corporation meeting White Paper's 4 criteria
- US Government (through Commerce Department) to transition centralized coordination functions
- Amendment of Network Solutions agreement to require competitive registrars in gTLD registries
- Request to WIPO to study & recommend solutions for trademark/domain-name conflicts

# Status of Transition from USG

- ✓ 1998
  - ✓ November - ICANN recognized in MoU
- ✓ 1999
  - ✓ June - Cooperative agreement among ICANN, US Government, root server operators
  - November - ICANN and Network Solutions (NSI) sign gTLD registry and registrar agreements; USG transfers root authority over gTLDs to ICANN
- ✓ 2000
  - ✓ February - Contract with US Government to complete transfer of IANA functions
  - ✓ November- Selection of 7 new Top-Level Domains
- ✓ 2001
  - ✓ January - Transfer of InterNIC functions from NSI to ICANN

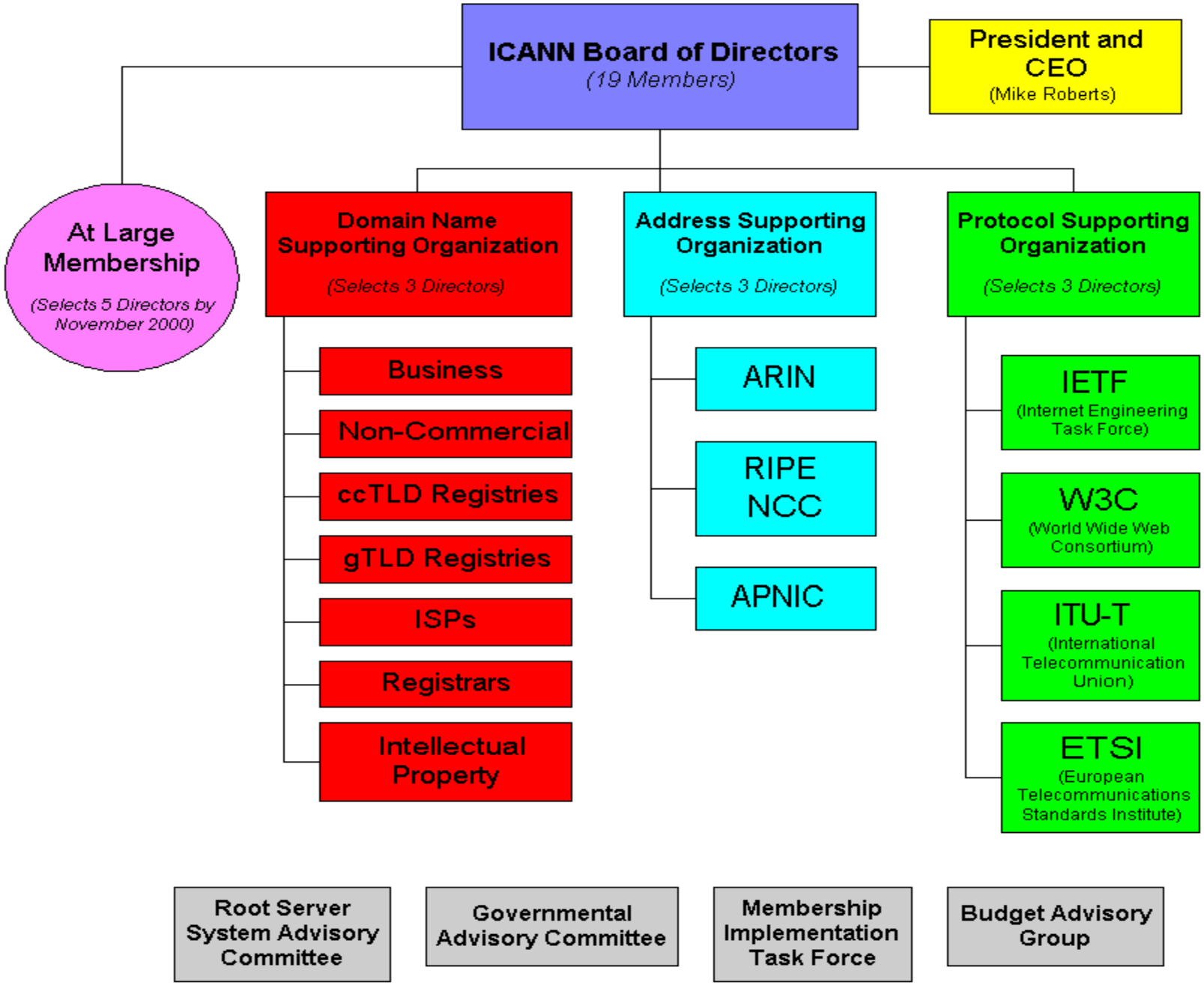
# New Top-Level Domains

- First group chosen in November 2000
  - <.info>, <.biz>
  - <.name>, <.pro>
  - <.musuem>, <.aero>, <.coop>
- Proof of Concept - Launch with caution, observe carefully, learn from experience
- If successful, there will be future rounds
- Biggest challenge:  Launch phase
  - *Intellectual Property & Cybersquatting fears*
  - *Opening day rush & Fairness to everyone*
- Beware of pre-registration offers!!!

# Policy Objectives for Year 2000

- Successful introduction of New Top-Level Domains
- Completion of agreements:
  - ccTLD registry agreements
  - IP Address registry agreements
  - Root server operator agreements

# Structure of ICANN


ICANN Board of Directors
(19 Members)
President and CEO
(Mike Roberts)
At Large Membership
(Selects 5 Directors by November 2000)
Domain Name Supporting Organization
(Selects 3 Directors)
Address Supporting Organization
(Selects 3 Directors)
Protocol Supporting Organization
(Selects 3 Directors)
Business
Non-Commercial
ccTLD Registries
gTLD Registries
ISPs
Registrars
Intellectual Property
ARIN
RIPE NCC
APNIC
IETF
(Internet Engineering Task Force)
W3C
(World Wide Web Consortium)
ITU-T
(International Telecommunication Union)
ETSI
(European Telecommunications Standards Institute)
Root Server System Advisory Committee
Governmental Advisory Committee
Membership Implementation Task Force
Budget Advisory Group

# ICANN Board of Directors

**At Large Directors:**

- Karl Auerbach (USA)
- Ivan Moura Campos (Brazil)
- Frank Fitzsimmons (USA)
- Masanobu Katoh (Japan)
- Hans Kraaijenbrink (Netherlands)
- Andy Mueller-Maguhn (Germany)
- Jun Murai (Japan)
- Nii Quaynor (Ghana)
- Linda S. Wilson (USA)

**ASO Directors:**

- Rob Blokzijl (Netherlands)
- Ken Fockler (Canada)
- Sang-Hyon Kyong (South Korea)

**DNSO Directors:**

- Amadeu Abril i Abril (Spain)
- Jonathan Cohen (Canada)
- Alejandro Pisanty (Mexico)

**PSO Directors:**

- Helmut Schink (Germany)
- Vint Cerf (USA) - Chairman
- Phil Davidson (U.K.)

# ICANN Staff

New Model: Lightweight

(minimal staff = minimal bureaucracy)

Current Staff:

- President and CEO (Mike Roberts)
- Vice President/General Counsel (Louis Touton)
- Chief Policy Officer/CFO (Andrew McLaughlin)
- Registrar Liaison (Dan Halloran)
- IANA staff (Joyce Reynolds, Michelle Schipper, Bill Huang)
- Office Manager (Diane Schroeder)
- Network Administrator (Jim Villaruz)
- Technical Advisor (Suzanne Woolf)

# What ICANN is NOT

- Technical Standard-Setting Body
- Internet Police Force
- Consumer Protection Agency
- Economic Development Agency
- Legislature or Court

# Message to You:

# BE INVOLVED!

*You Must Speak, In Order To Be Heard*

ICANN Wants You!

# For Further Information:

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http://www.icann.org