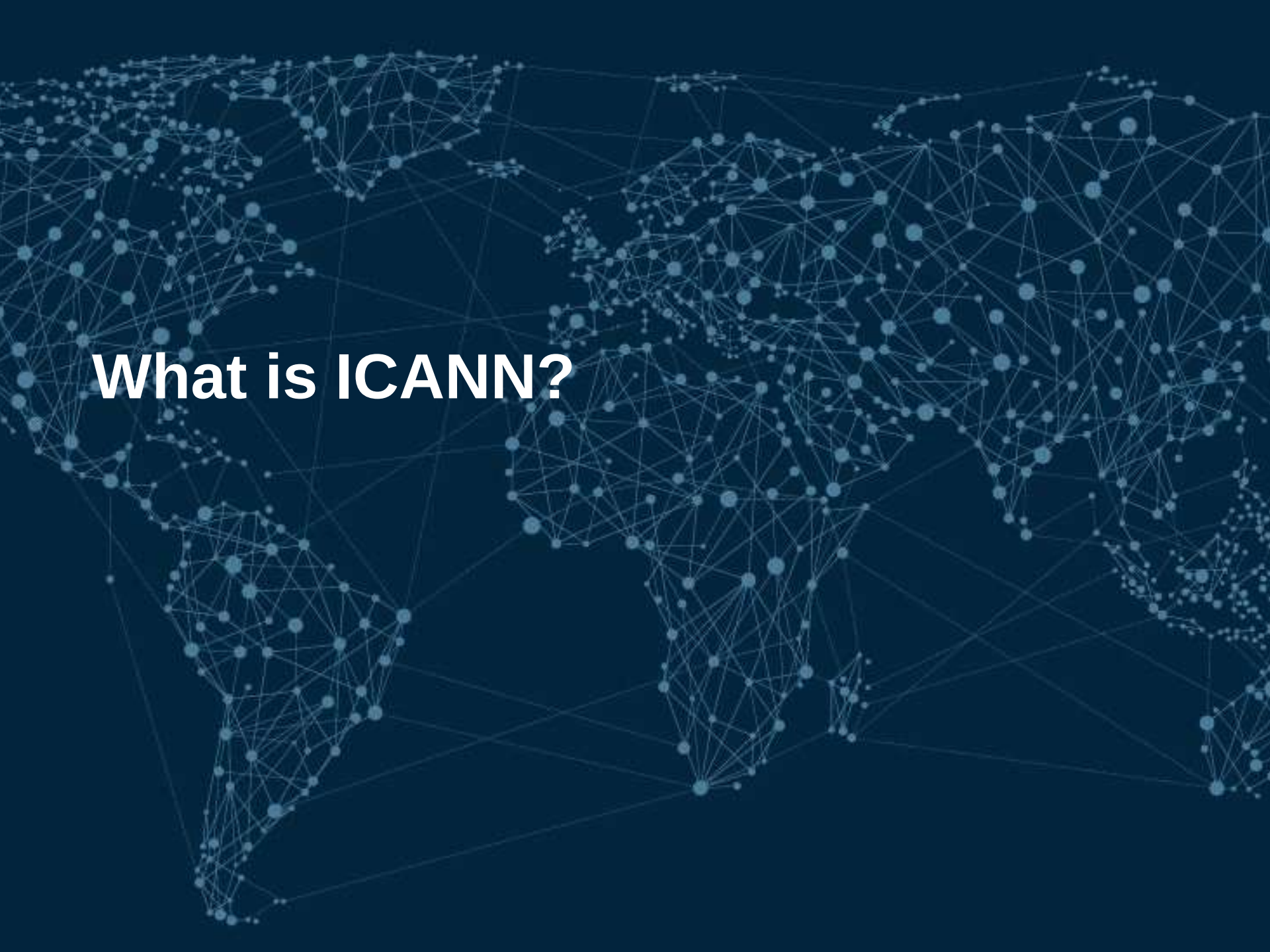
IANA Transition (2015): значення для глобального Інтернету і для України

Михайло Якушев | VI IGF-UA, Київ | 30 вересня 2015 р.

Agenda

1. ICANN
2. Internet Identifiers
3. IANA Stewardship Transition
4. Importance for Ukraine


What is ICANN?

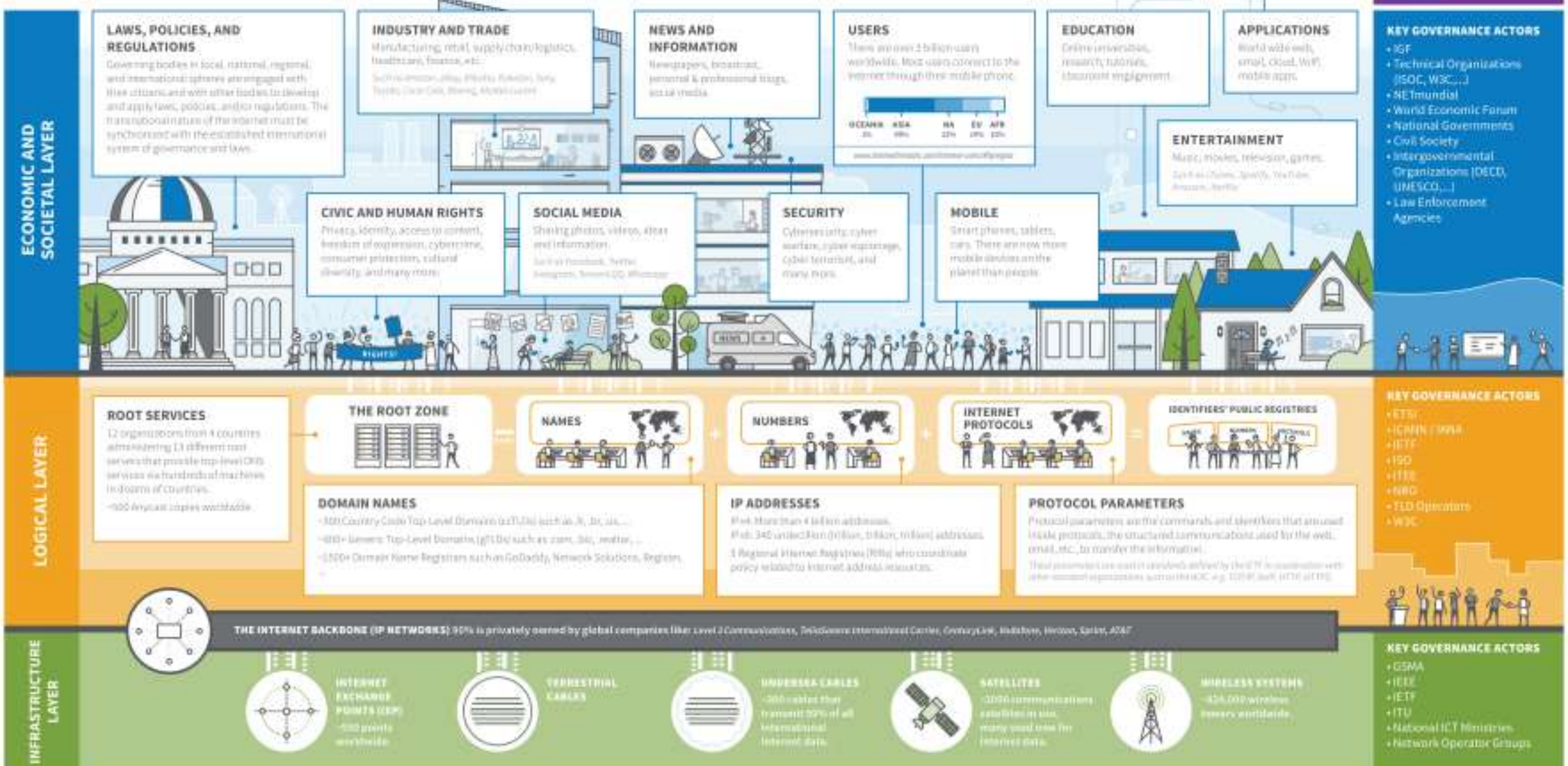

What is Internet?
What is Internet Governance?

THE THREE LAYERS OF DIGITAL GOVERNANCE

No one person, government, organization, or company governs the digital infrastructure, economy, or society. Digital governance is achieved through the collaborations of Multistakeholder experts acting through polycentric communities, institutions, and platforms across national, regional, and global spheres. Digital Governance may be stratified into three layers to address infrastructure, economic, and societal issues with solutions. For a map of Digital Governance Issues and Solutions across all three layers, visit *https://map.netmundial.org*

MULTISTAKEHOLDER COLLABORATIONS

Solutions to issues in each layer include policies, best practices, standards, and specifications developed by the collaborations of expert stakeholders from actors in business, government, academia, technical, and civil society.



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ICANN

1

Not-For-Profit Public Benefit Corporation

ICANN is a not-for-profit public-benefit corporation with participants from all over the world dedicated to keeping the Internet secure, stable and interoperable

2

Identifier Management

Maintains the databases that ensure the uniqueness of Internet Identifiers.

3

Multistakeholder

At the heart of ICANN's policy-making is what is called a "**multistakeholder model**". This is a community-based consensus-driven approach to policy-making. The idea is that Internet governance should mimic the structure of the Internet itself- borderless and open to all.

4

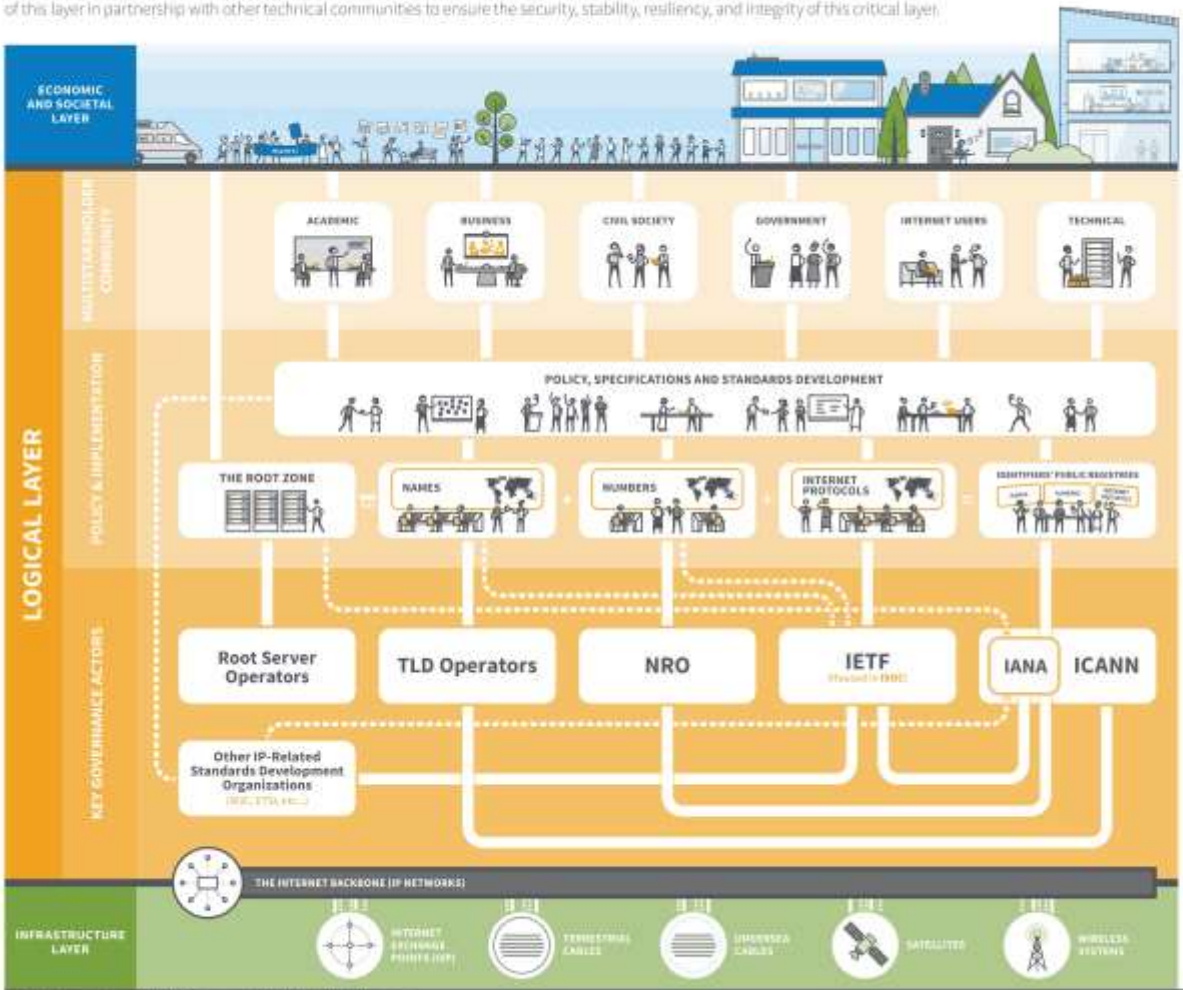
Policy body

Through its contracts with registries (such as **.com** or **.md**) and registrars (companies that sell domain names to individuals and organisations), we help define how the domain name system functions and expands.

What are Internet Identifiers?

THE LOGICAL LAYER OF DIGITAL GOVERNANCE

Layered on top of the Physical Infrastructure's thousands of networks and satellites, the Internet's Logical Infrastructure is what delivers One Internet for the world through Unique Identifiers (Names, Numbers, and Protocol Parameters). ICANN coordinates the administration of this layer in partnership with other technical communities to ensure the security, stability, resiliency, and integrity of this critical layer.



TECHNICAL OPERATIONS

The technical operating community is made up of multiple independent actors bound by common principles and mutual commitments that ensure the security and stability of the Internet infrastructure. Each actor's community develops policies and standards in an open, inclusive, and consensus-based approach.

KEY GOVERNANCE ACTORS

ICANN *Internet Corporation for Assigned Names and Numbers*

Helps coordinate the Internet's systems of unique identifiers including domain names and IP addresses, as well as manages the IETF's protocol parameter registries.

www.icann.org

IANA, the Internet Assigned Numbers Authority, is a set of functions housed and operated within ICANN. It acts as the top-level allocator for blocks of IP addresses and AS numbers, proposes creation of and changes to DNS top-level domains, and manages lists of unique identifiers used in Internet protocols.

www.iana.org

IETF *Internet Engineering Task Force*

Develops and promotes a wide range of Internet standards dealing in particular with standards of the Internet protocol suite. Their technical documents influence the way people design, use, and manage the Internet. The IETF operates under the Internet Society (ISOC) with architectural oversight provided by the Internet Architecture Board (IAB).

www.ietf.org

ISO *International Organization for Standardization*

Standardizes, among many other things, the official names and postal codes of countries, dependent territories, special areas of geographic significance.

www.iso.org

NRO *Number Resource Organization*

A coordinating body for the five Regional Internet Registries (RIRs). The RIRs manage the distribution of IP addresses and Autonomous System Numbers in their regions of the world.

www.nro.net

AFRINIC www.afrinic.net
APNIC www.apnic.net
ARIN www.arin.net
LACNIC www.lacnic.net
RIPE NCC www.ripe.net

TLD Operators *Top Level Domain Operators*

Organizations which have been assigned the management of Top-Level Domains such as Generic TLDs (.com, .edu, .info, .name etc...), Country Code TLDs (.fr, .us, .gh, .cn etc...) and non-ASCII alphabet TLDs (in languages such as Chinese, Korean, Arabic, Russian, French etc...) —among others.

Root Server Operators

12 independent organisations operate the 13 authoritative name servers (A through M) that serve the Domain Name System (DNS) root zone. The name servers are a network of hundreds of physical servers located in many countries around the world.

www.root-servers.org

W3C

The World Wide Web Consortium (W3C) is an international community where Member organizations, a full-time staff, and the public work together to develop Web standards. W3C's mission is to lead the Web to its full potential.

www.w3.org

MULTISTAKEHOLDER COMMUNITY

Academic
- Institutions of higher learning
- Academic thought leaders
- Professors & students

Business
- Private sector companies from across industries
- Industry and trade associations

Civil Society
- International organizations
- Non-governmental organizations
- Non-profit organizations
- Think Tanks

Government
- National governments
- Distinct economies recognized in international fora
- Multinational governmental and treaty organizations
- Intergovernmental organizations
- Public authorities (with a direct interest in global Internet Governance)

Internet Users
- Private citizens interested in regional or global Internet Governance

Technical
- Internet engineers
- Computer engineers
- Software developers
- Network operators

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ONE WORLD, ONE INTERNET

WHAT DOES ICANN DO?

To reach any device or thing connected to the Internet, you (or your search engine) must know their address – a name or a number. That address must be unique, so you can reliably find and connect to other devices, things, or information sources no matter where you are in the world. That's how the tens of thousands of physical networks appear and operate as 'One Internet'.

In concert with the technical operating community, ICANN maintains and administers the registries containing these unique addresses across the world ensuring the security, stability, and integrity of One Internet where we can reliably find each other.

Community-Driven Global Policy Development

To keep pace with dynamic technologies and rapid innovation, ICANN facilitates an open, consensus-driven, multistakeholder policy development process that is run from the bottom up.

Multistakeholder Model

Civil Society & Internet Users, the Private Sector, National & International Organizations, Governments, Research, Academic and Technical Communities are all represented.

Competition & Choice

From accrediting over 1000 registrars, to introducing new Top Level Domains (TLDs), ICANN works to expand consumer choice by fostering competition and innovation in the domain name marketplace.

WHICH FUNCTIONS DOES ICANN COORDINATE?

DNS

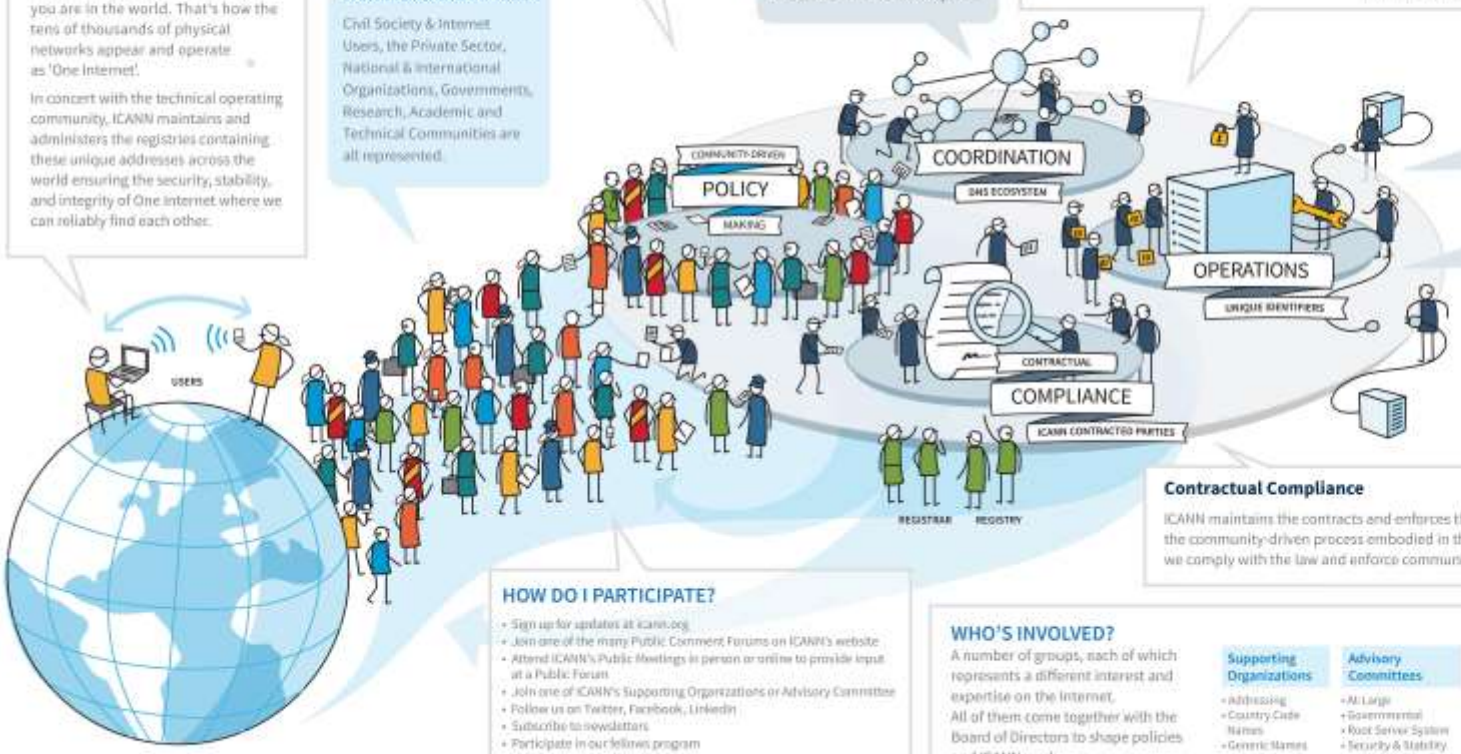
- Development of generic TLD policy
- Facilitation of country code TLD policy discussions
- Delegation of and changes to Top-level domains
- Management of the root's DNSSEC trust anchor
- Facilitating Root Server System discussions

Internet Numbers

- Approval of global number allocation policies
- Allocation of top-level blocks of Internet numbers
- Recognize Regional Internet Registries

Protocol Parameters

- Creation of and changes to protocol parameter registries
- Management of the Time Zone Database



Security & Stability

ICANN supports DNS security by supporting a secured DNS infrastructure (DNSSEC) and managing the top-level key of that infrastructure, requiring close coordination and collaboration with the community and volunteers around the world.

Interoperability

ICANN's work plays a role in helping the community to develop new technologies that flourish while maintaining interoperability across the global Internet. For example, the central publication point of unique protocol identifiers maintained by ICANN makes it easier for protocol developers to create protocols that allow communications using secure connections between users.

Contractual Compliance

ICANN maintains the contracts and enforces the consensus policies developed through the community-driven process embodied in those contracts. While we are not a regulator, we comply with the law and enforce community policies through contractual obligations.

HOW DO I PARTICIPATE?

- Sign up for updates at icann.org
- Join one of the many Public Comment Forums on ICANN's website
- Attend ICANN's Public Meetings in person or online to provide input at a Public Forum
- Join one of ICANN's Supporting Organizations or Advisory Committee
- Follow us on Twitter, Facebook, LinkedIn
- Subscribe to newsletters
- Participate in our fellows program
- Join a regional engagement group

WHO'S INVOLVED?

A number of groups, each of which represents a different interest and expertise on the Internet. All of them come together with the Board of Directors to shape policies and ICANN work.

Supporting Organizations

- Addressing
- Country Code Names
- Generic Names

Advisory Committees

- At-Large
- Governmental
- Root Server System
- Security & Stability

Technical Advisory Bodies

- Technical Experts Group
- Technical Liaisons from IETF, ETSI, W3C, ITU

Board of Directors

- 16 Community Appointed Board Members

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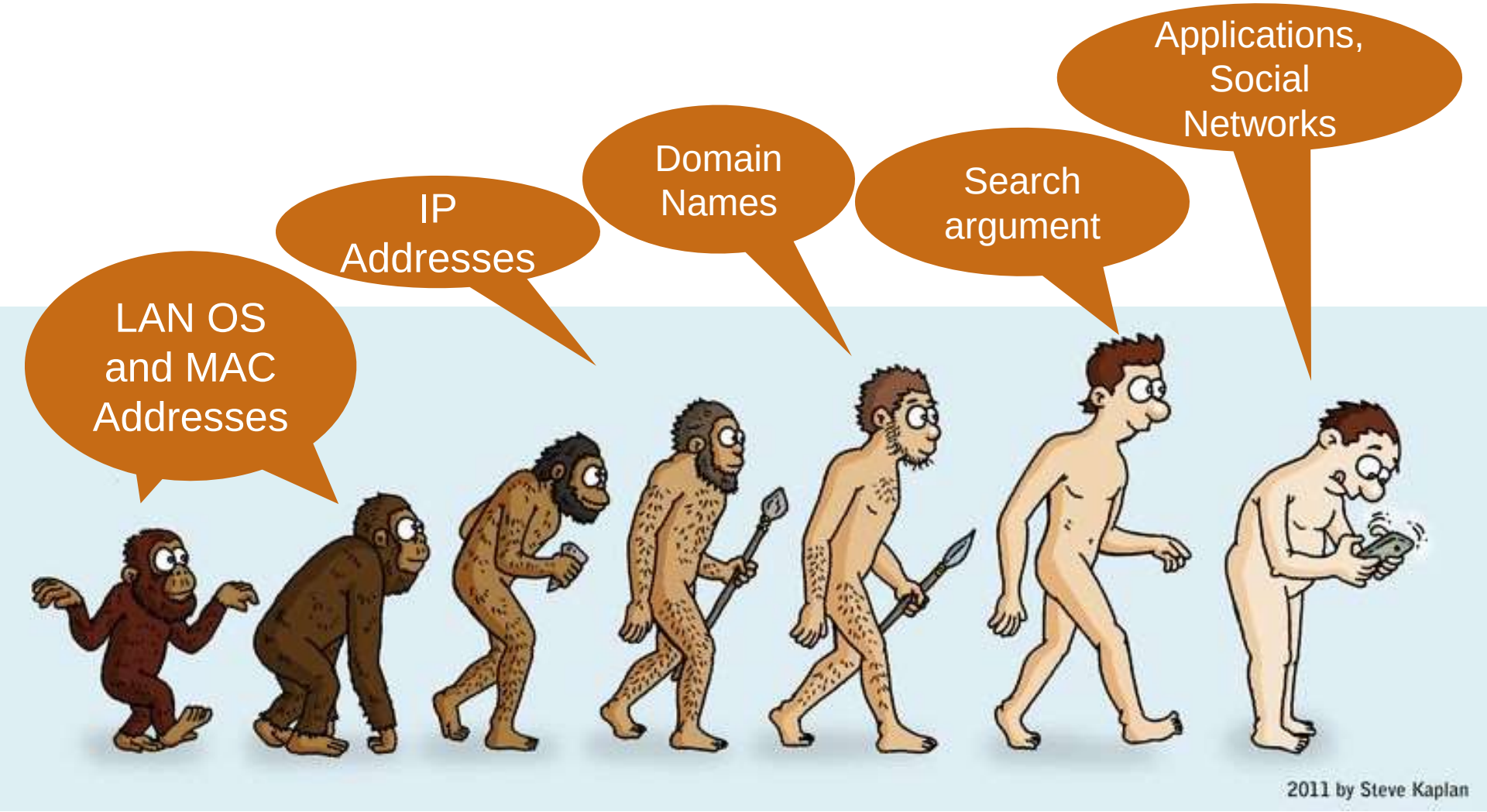
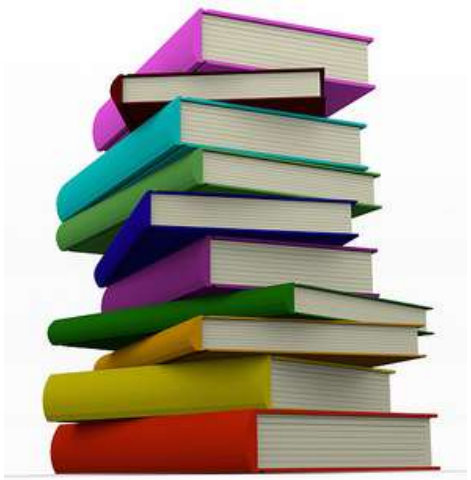
Evolution of Global Identifiers



One Internet, Many Identifier Systems



*ICANN coordinates the administration of **global identifier systems***

- Addresses identify locations of Internet devices or hosts
  - IP version 4
  - IP version 6
- Domain names provide user friendly identification of hosts
  - Latin script (A-Z, 0-9, and hyphen)
  - Internationalized Domain Names accommodate non-Latin languages or scripts (***.укр***)

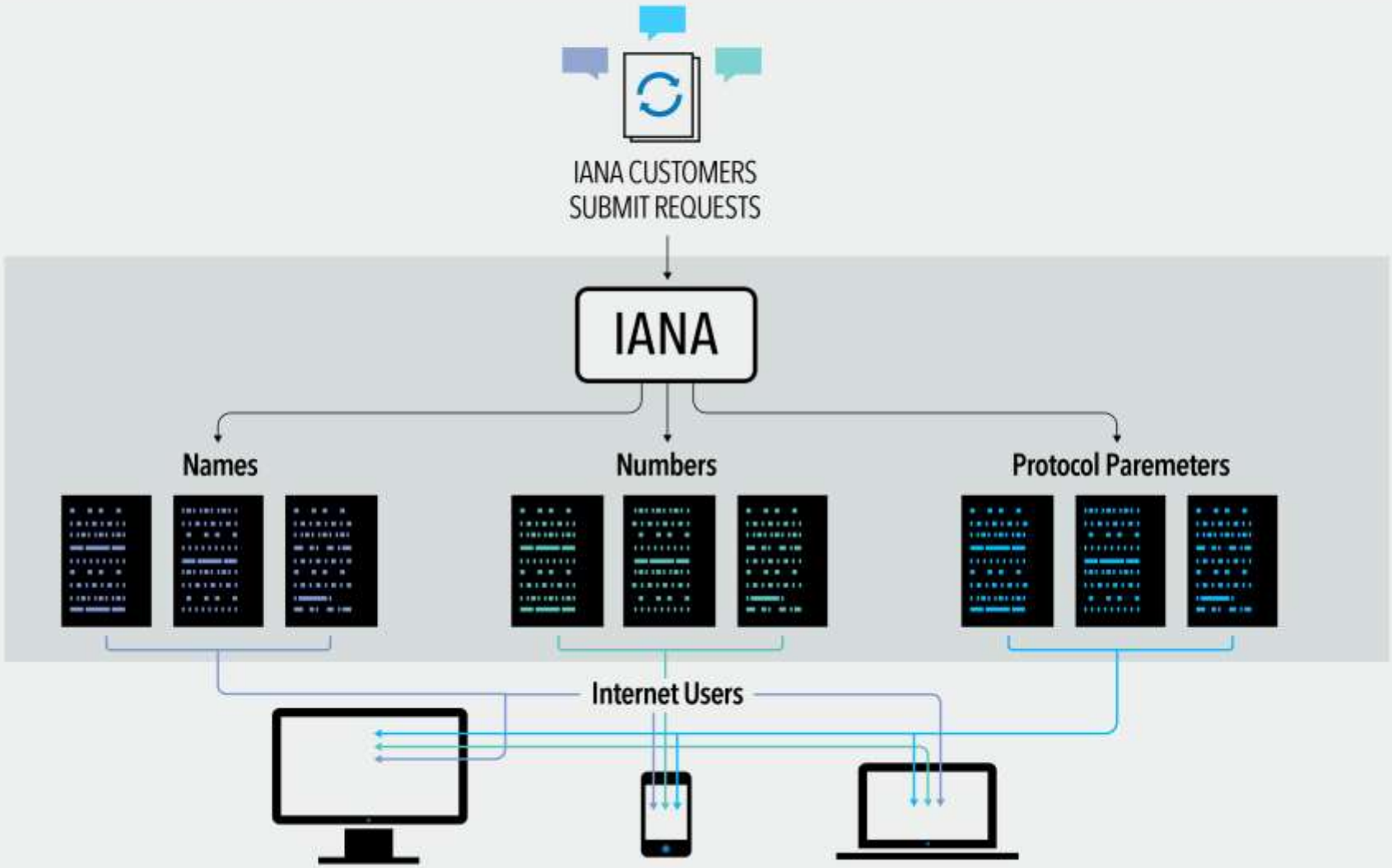
One Internet, Many Identifier Systems (contd.)

Identifier systems are managed in databases or "registries"

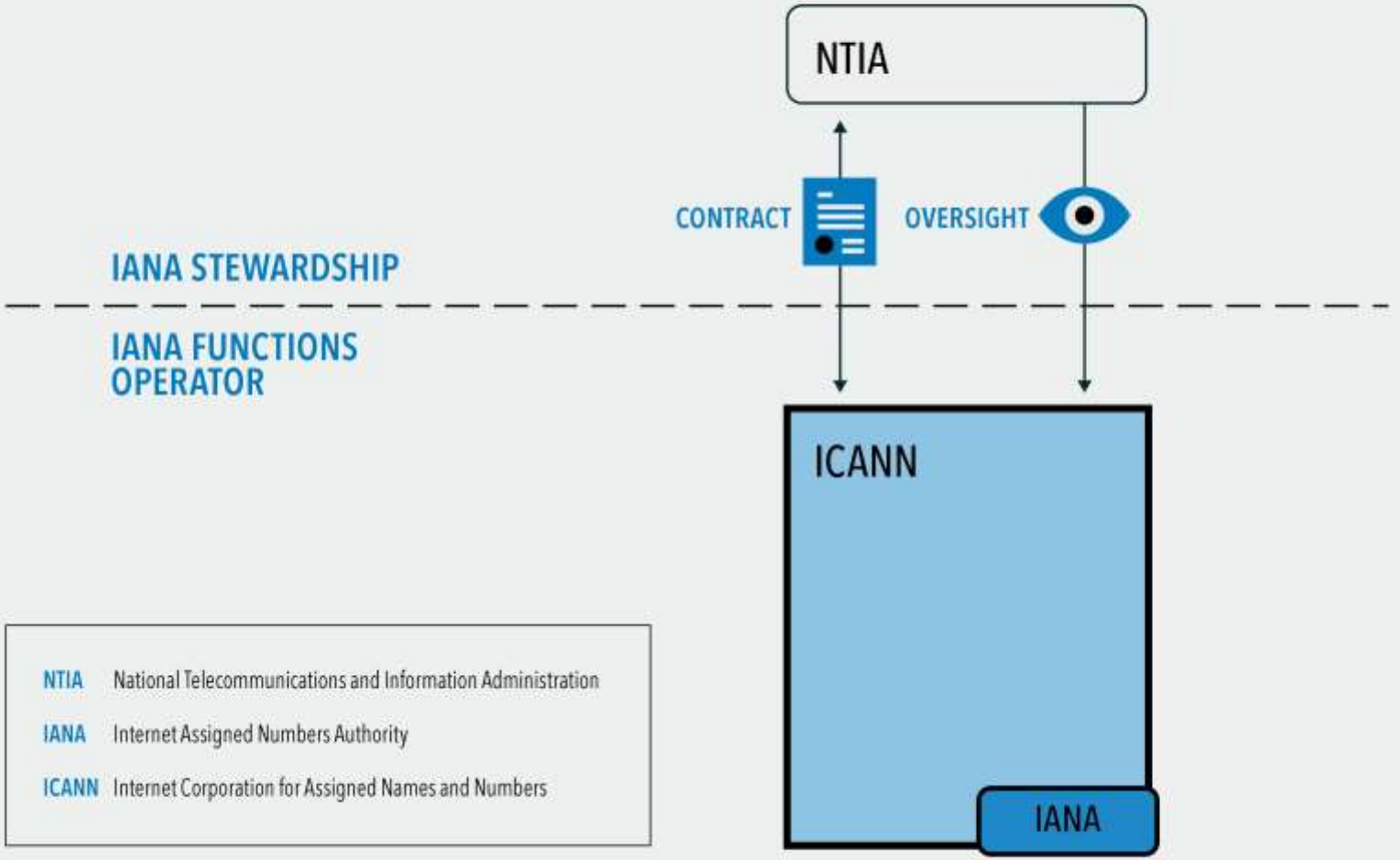
- Port numbers identify Internet application endpoints, e.g.,
  - A browser and a web server
  - Called and calling parties of an Internet telephony connection
- Parameters identify numbers that Internet protocols need to operate correctly
  - Uniform resource identifiers
  - Character encodings
  - Values for specific protocol fields

IANA Stewardship Transition

What are the IANA functions?



Roles of NTIA (US Government), ICANN, and IANA



What is the IANA stewardship transition?

- **March 2014 –**
  NTIA announced transition of IANA stewardship
- Asked ICANN to convene a process to develop transition proposal

NTIA's Criteria

Support and enhance the multistakeholder model

Maintain the security, stability, and resiliency of the Internet Domain Name System (DNS)

Meet the needs and expectation of the global customers and partners of the IANA services

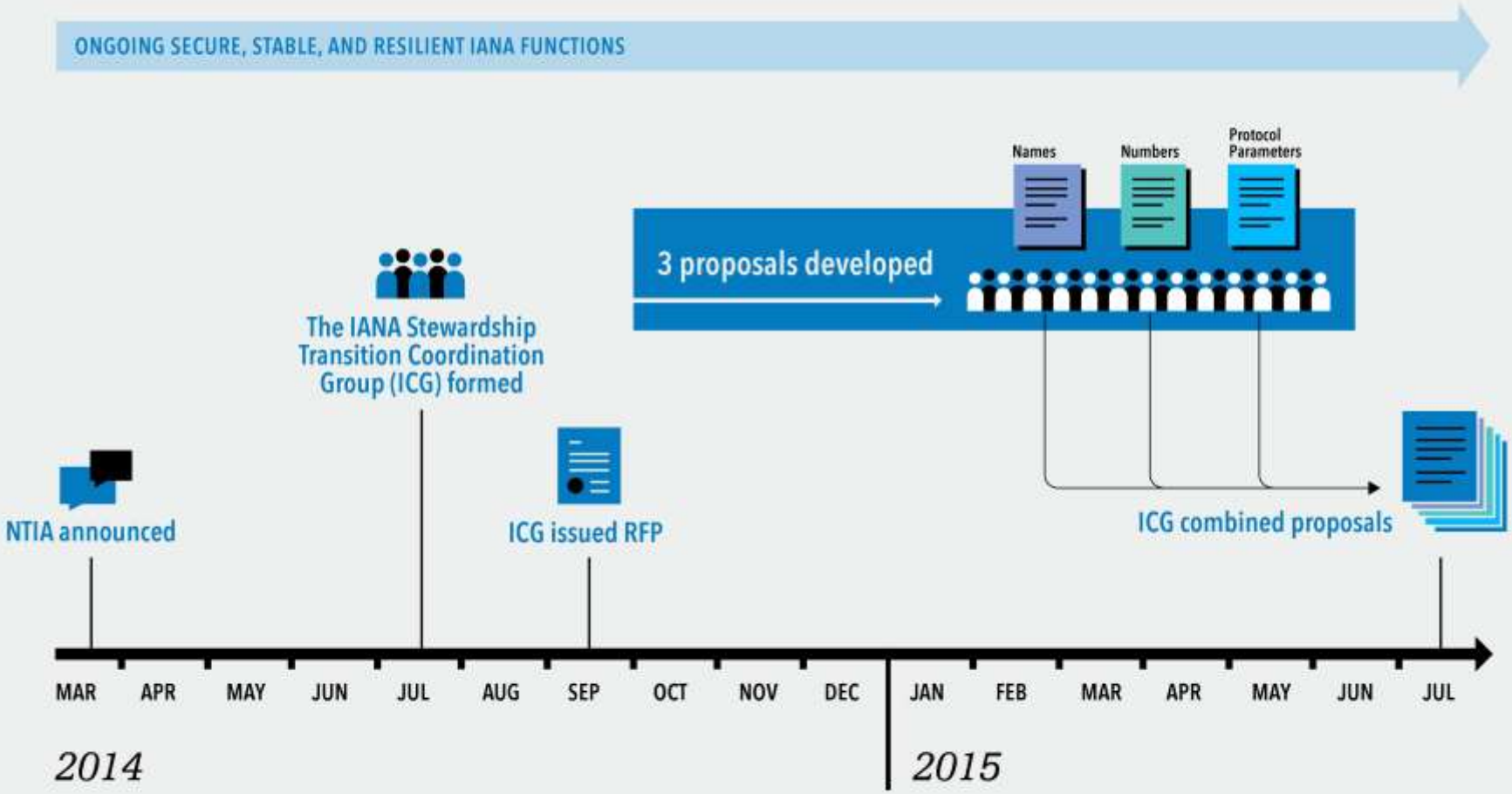
Maintain the openness of the Internet

NTIA's Expectations

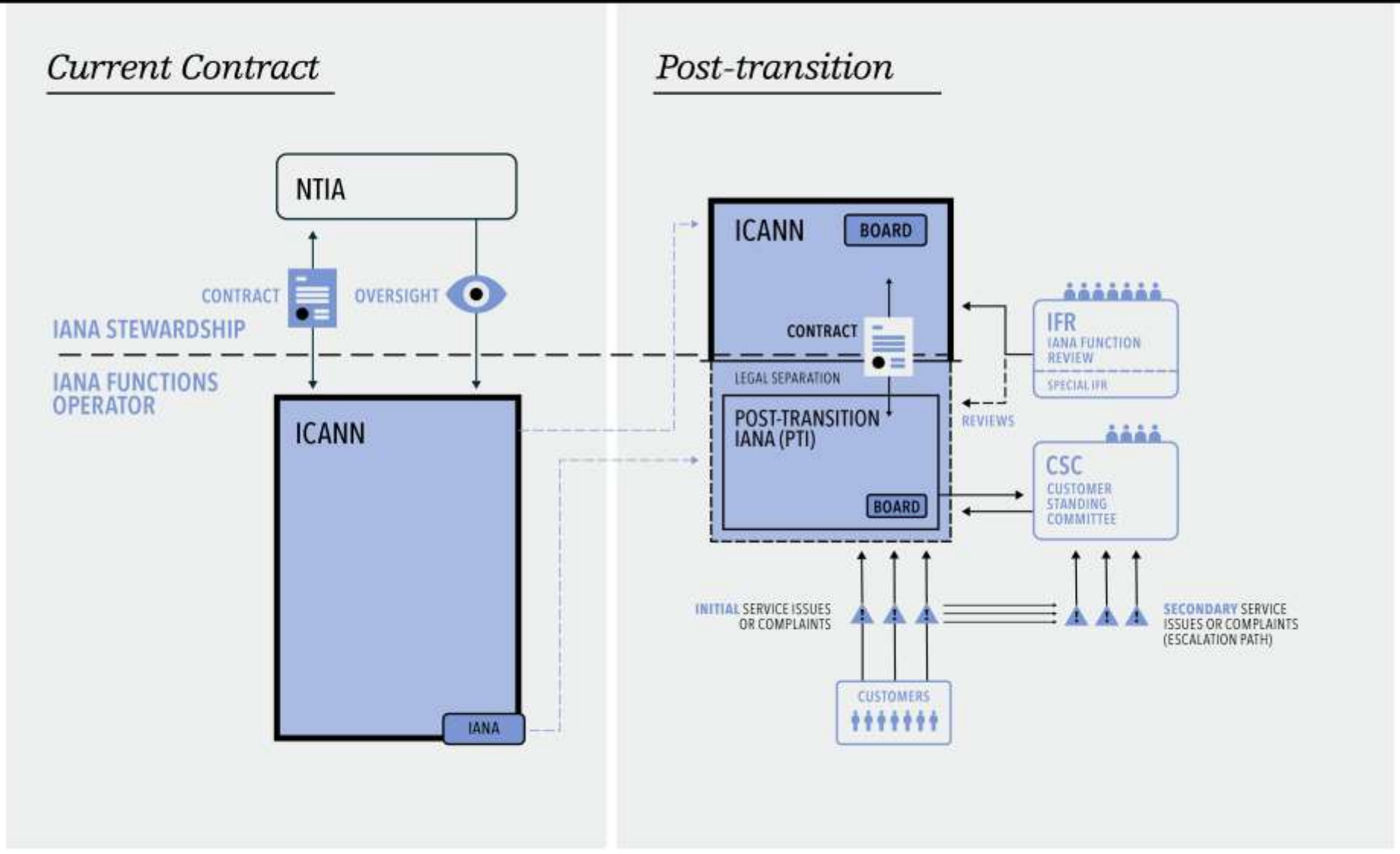
Broad community support

Does not replace NTIA role with a government-led or an inter-governmental organization solution

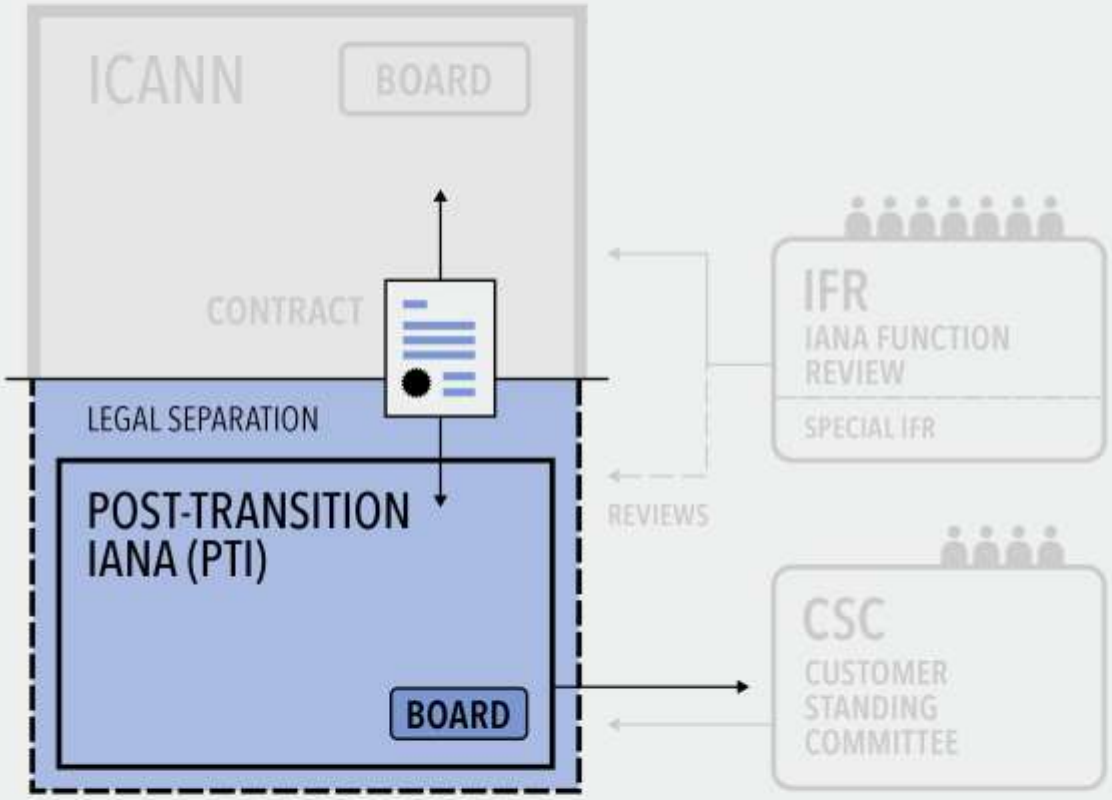
Transition proposal



Names proposal overview



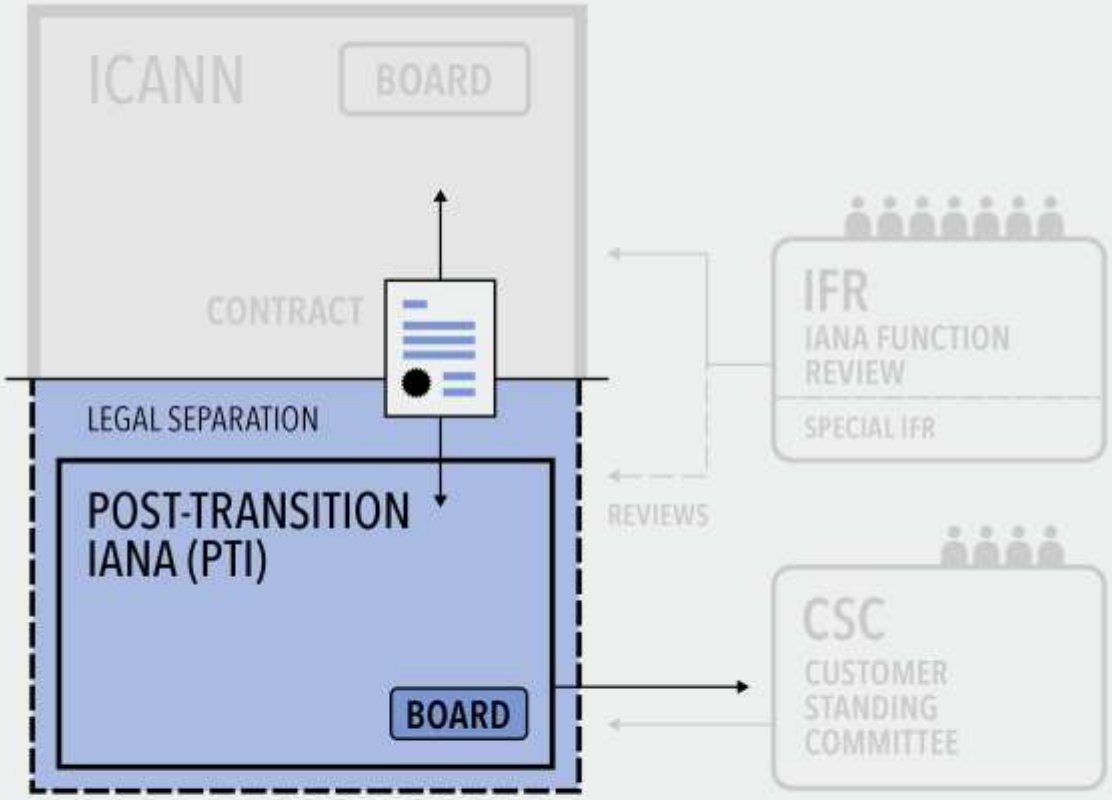
Post-transition IANA (PTI)



MISSION

Established to perform all the existing (pre-transition) IANA functions.

Post-transition IANA (PTI)

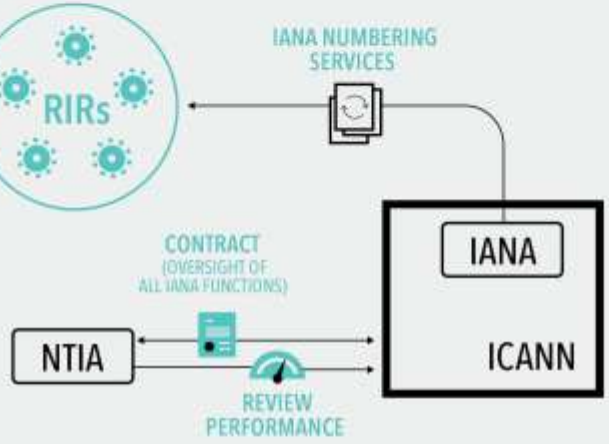


MISSION

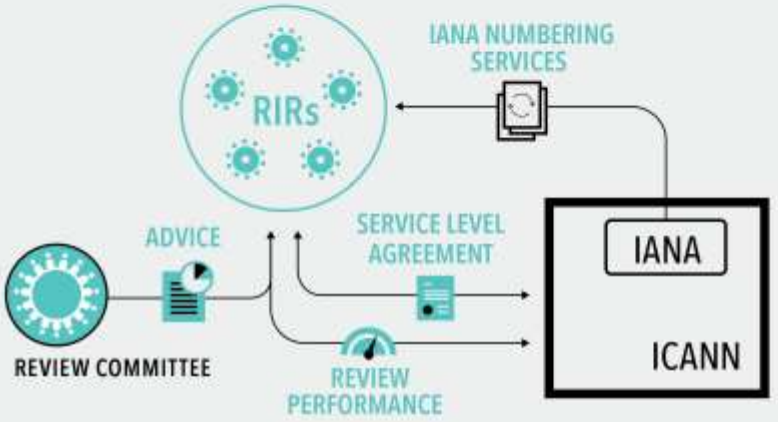
Established to perform all the existing (pre-transition) IANA functions.

Numbers proposal overview

Current



Post-transition

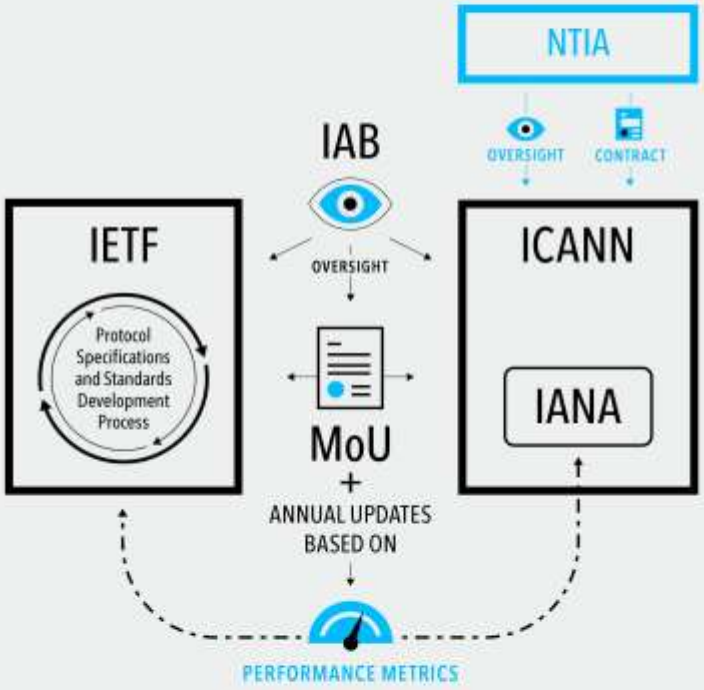


The RIRs have been very satisfied with the performance of ICANN in the role of the IANA Numbering Services Operator, and their communities have expressed a strong desire for stability and a minimum of operational change. The following proposals reflect these factors.

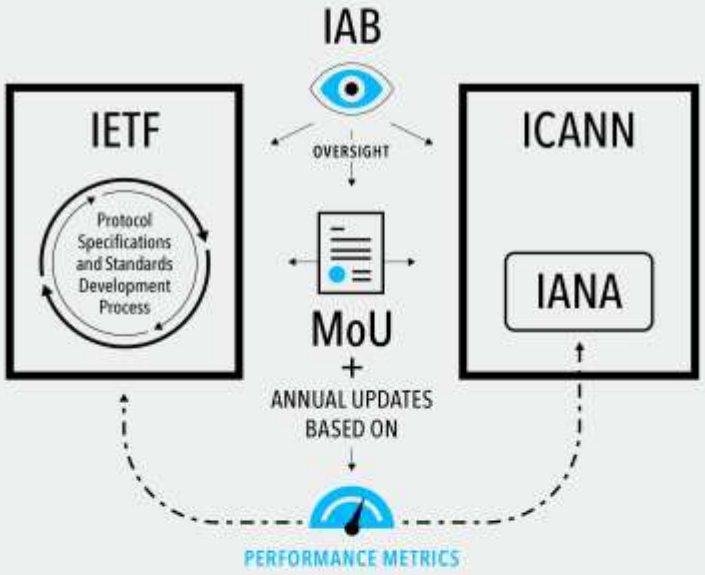
1. ICANN to continue as the IANA Functions Operator for the IANA Numbering Services via a Service Level Agreement (SLA) with the RIRs
2. The rights over any intellectual property related to provision of the IANA services should reside with the community
3. A Review Committee, with representatives from each RIR community, should be formed to advise the RIRs on the IANA functions operator's performance in meeting identified service levels

Protocol parameters proposal overview

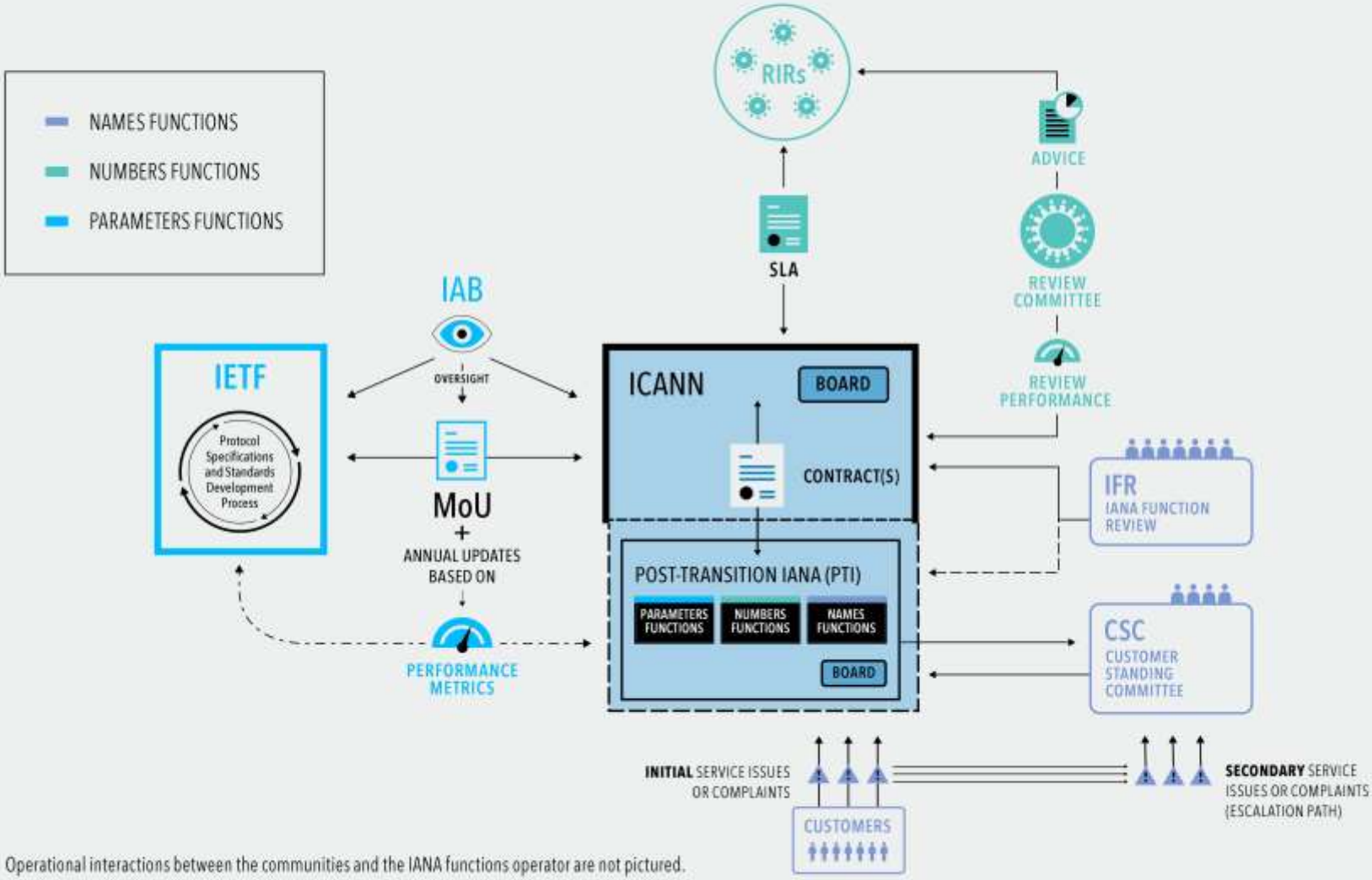
Current Contract



Post-transition



Oversight components in the combined proposal



Operational interactions between the communities and the IANA functions operator are not pictured.

Last Remark: U.S.DoC Announcement

- On 17 August 2016, the National Telecommunications and Information Administration (NTIA) announced that it had informed the U.S. Congress that it planned to extend the IANA Functions Contract with ICANN for one year until **September 30, 2016**
- "*Beyond 2016, we have options to extend the contract for up to three additional years if needed. This one-year extension will provide the community with the time it needs to finish its work.*"

IANA Stewardship Transition: Importance for Ukraine

What may be done
(1) FOR Ukraine and (2) BY Ukrainians

- **Protocol Parameters**
  - More active participation in IETF. Standards and RFC. Cyrillic e-mails. Universal acceptance.
- **IP-Addresses**
  - Amendments to the existing regulatory documents on IP (WHOIS), IPv4->IPv6 transition
- **Domain Name System**
  - Active role needed for the Ukrainian Government Representatives in ICANN's GAC (Government Advisory Committee)
  - Possible Strategic Plan (MoU) with ICANN, IDN + new gT:D Program implementation

Further Reading

- https://www.icann.org/stewardship
- https://www.icann.org/ru/stewardship
  (Russian version)

Engage with ICANN

Thank You and Questions

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Website: icann.org

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