Collaborative Security

Reflections about Security and the Open Internet

27th Annual First Conference
June 18, 2015

independent source of leadership for Internet policy, technology standards, and future development

Mission: To promote the open development, evolution, and use of the Internet for the benefit of all people throughout the world.

Founded in 1992 by Internet Pioneers

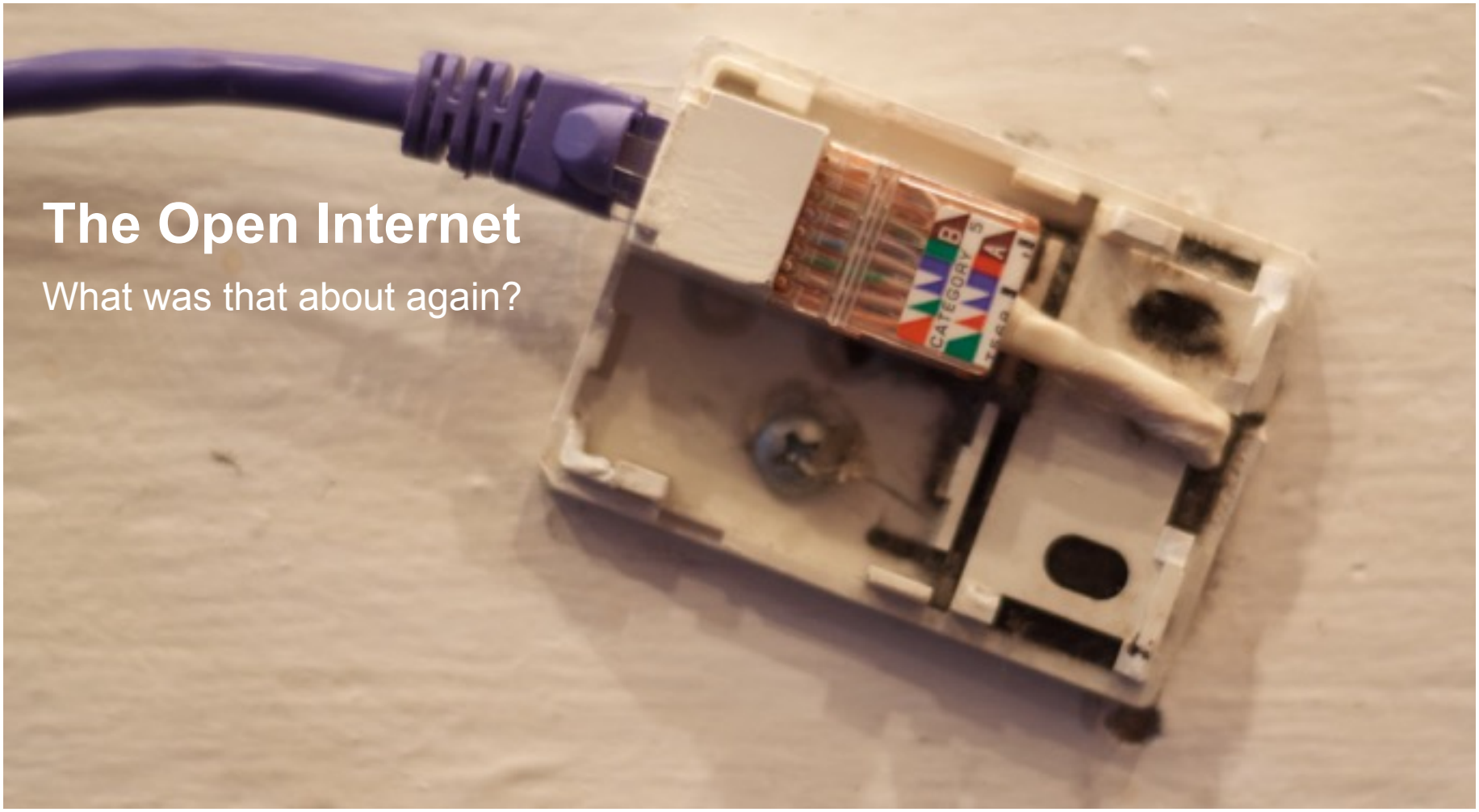
Global and Inclusive

Independent and Not-for-Profit

Organizational home for the IETF

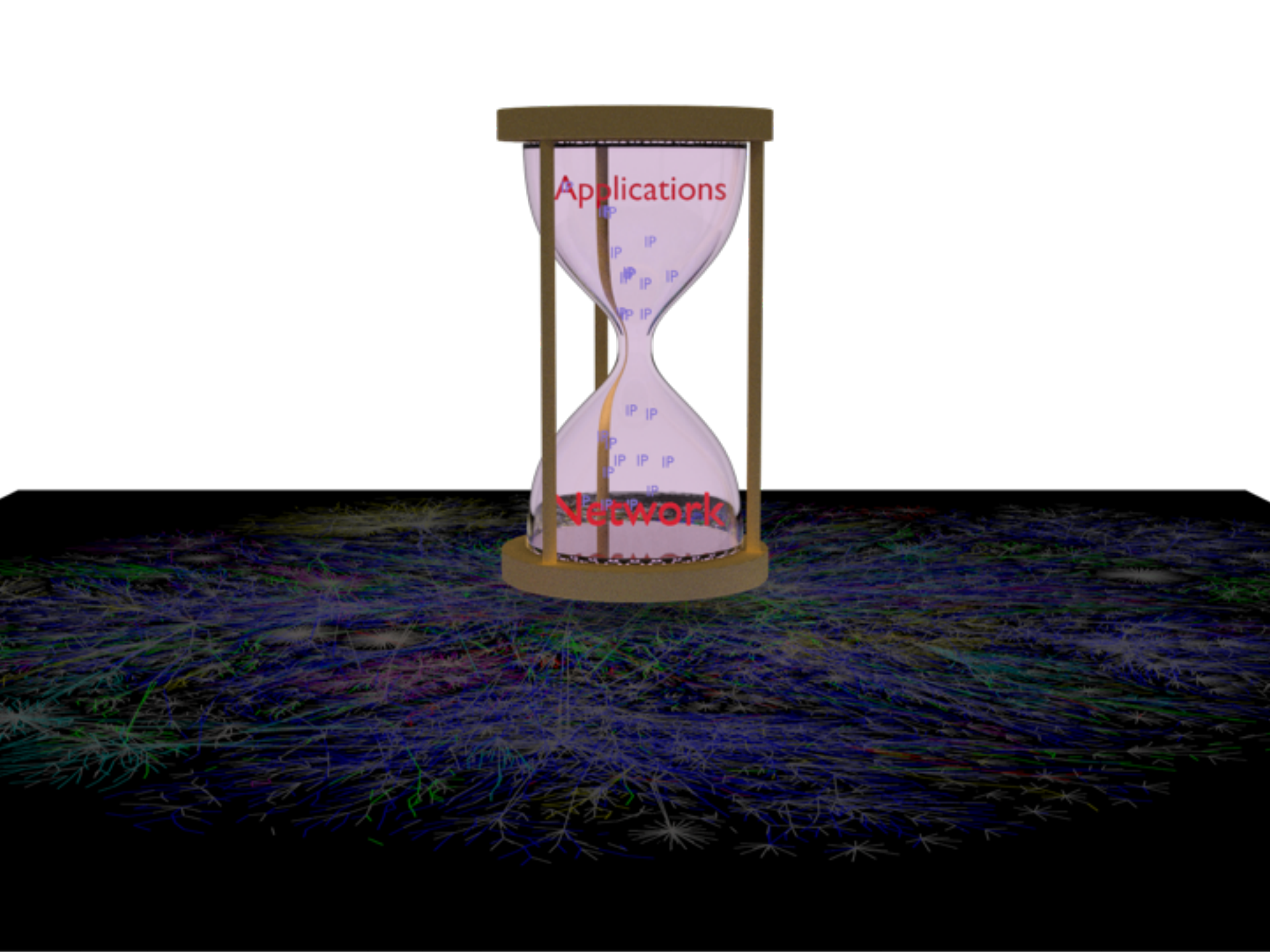
http://www.internetsociety.org/get-involved/individuals

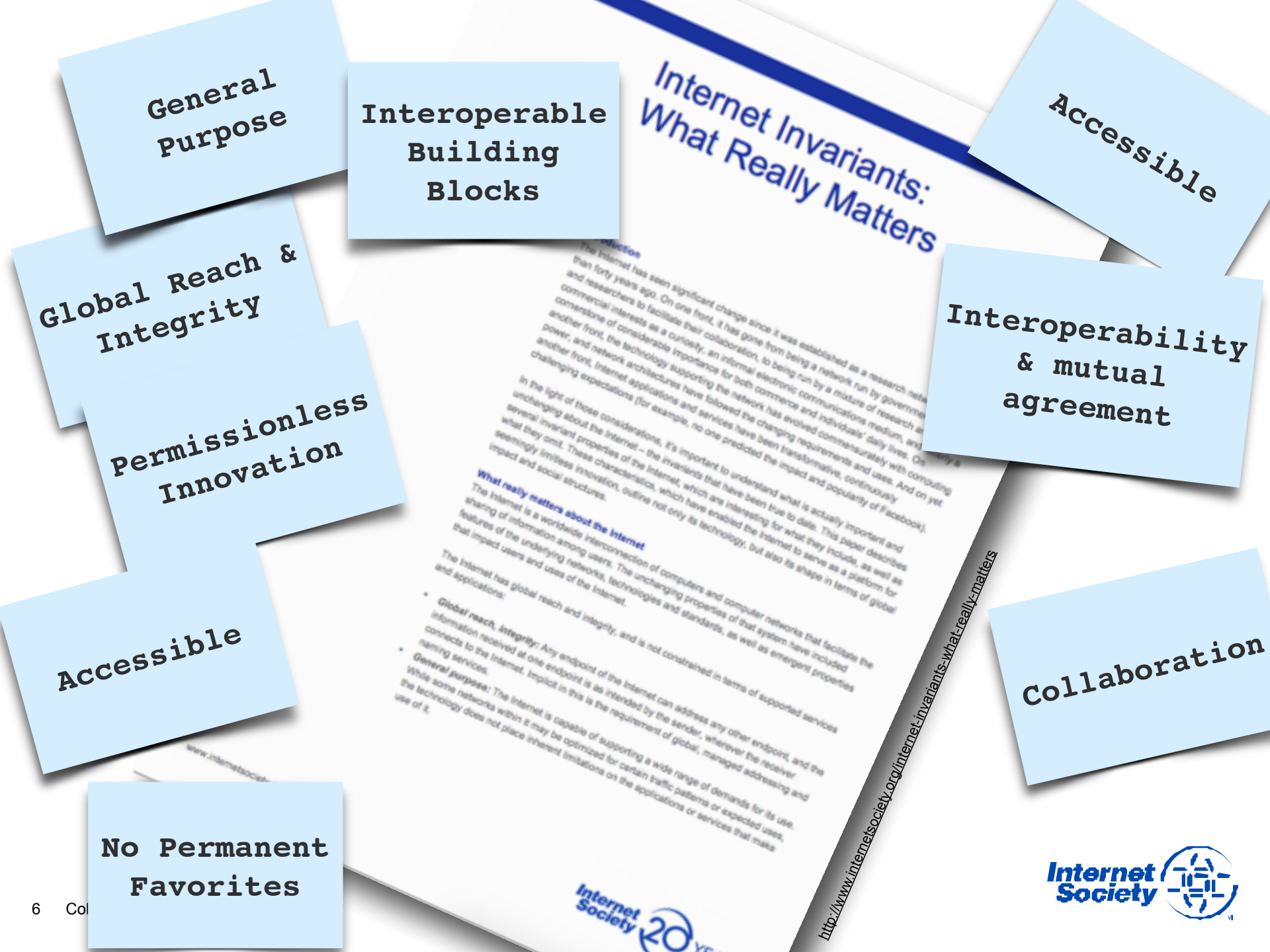
Internet Society



The Open Internet

What was that about again?

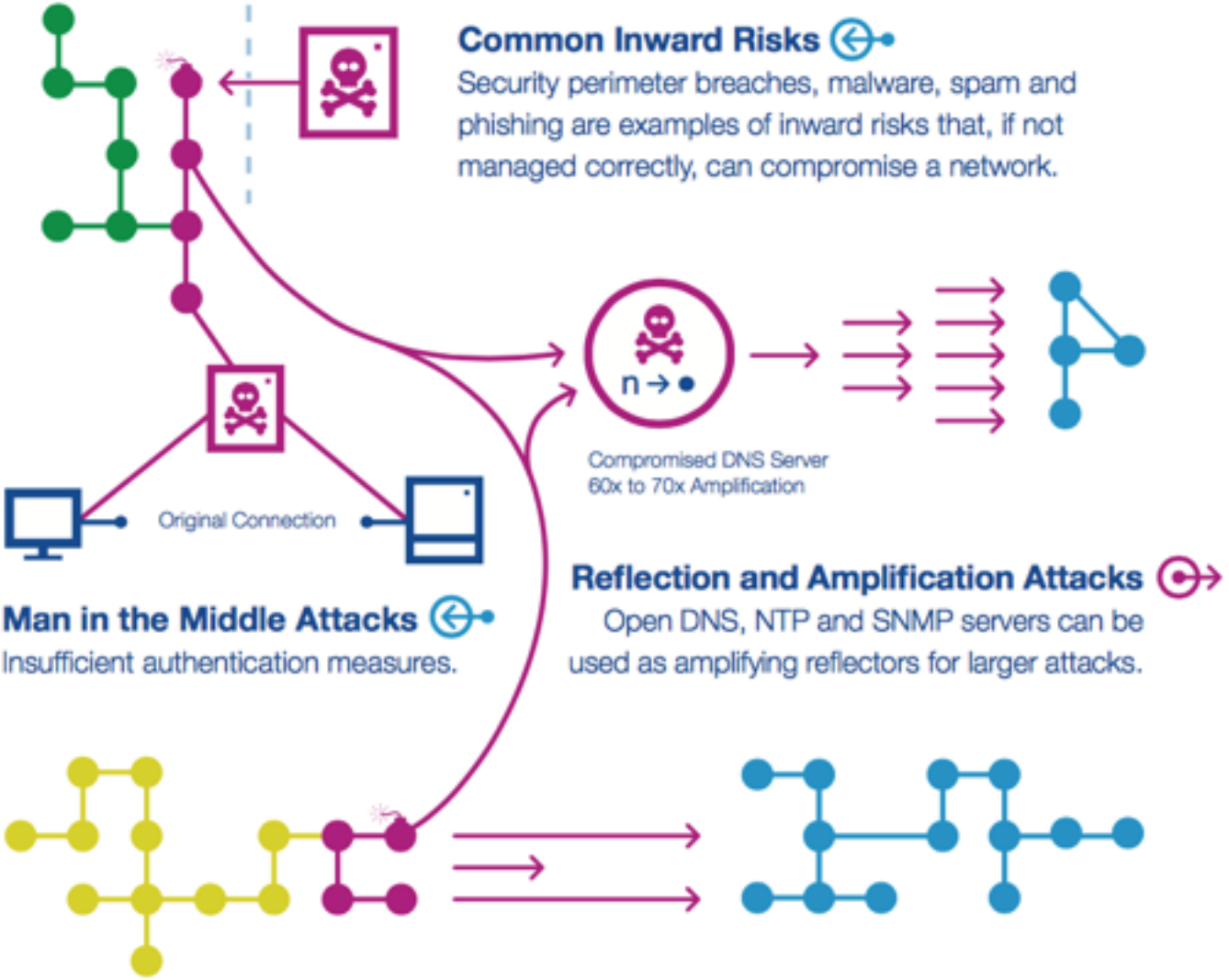

Applications
IP
Network



Internet Society

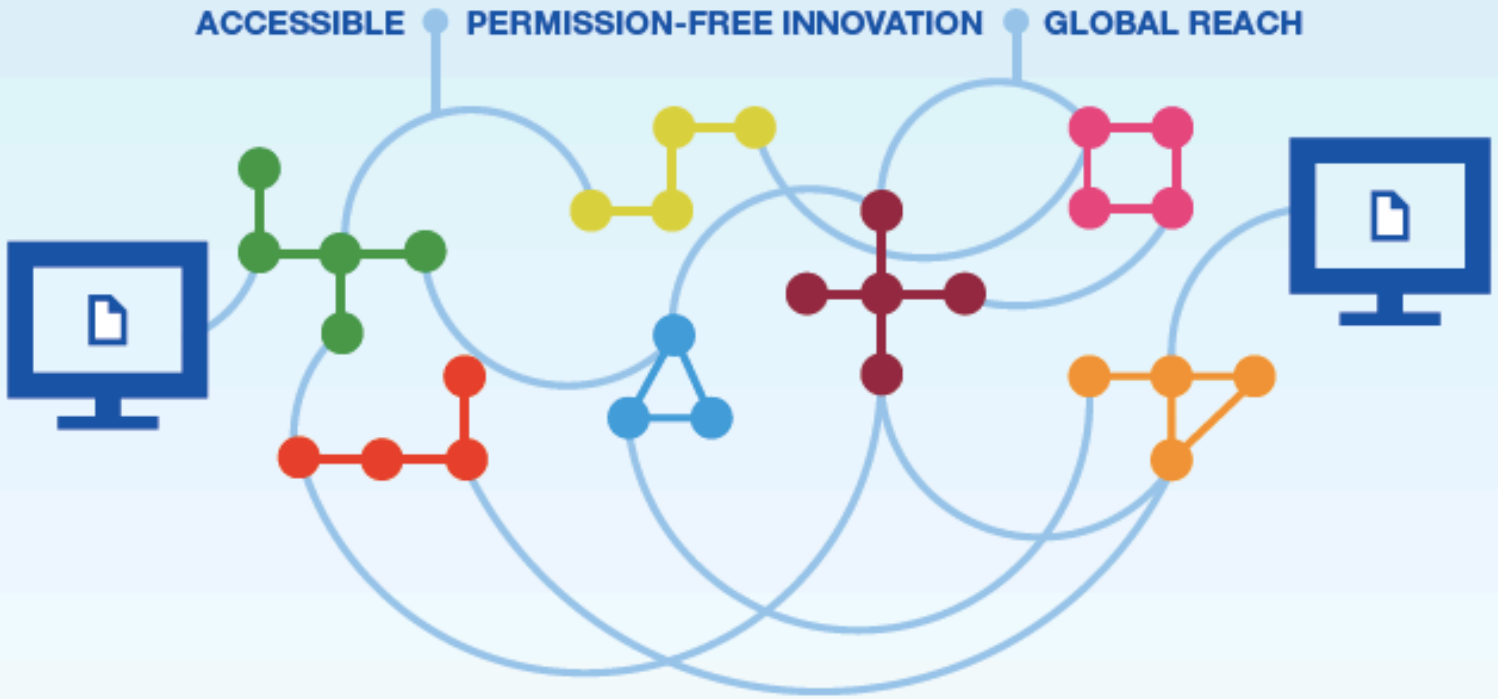
Security, stupid


Open Platform
Open for attack and intrusion
Permission less innovation
Malware development & deployment
Global Reach
Attacks and crime are cross-border
Voluntary collaboration
Hard to mandate


Common Inward Risks
Security perimeter breaches, malware, spam and phishing are examples of inward risks that, if not managed correctly, can compromise a network.
n→●
Compromised DNS Server
60x to 70x Amplification
Original Connection
Man in the Middle Attacks
Insufficient authentication measures.
Reflection and Amplification Attacks
Open DNS, NTP and SNMP servers can be used as amplifying reflectors for larger attacks.

The Internet is open, interconnected and interdependent

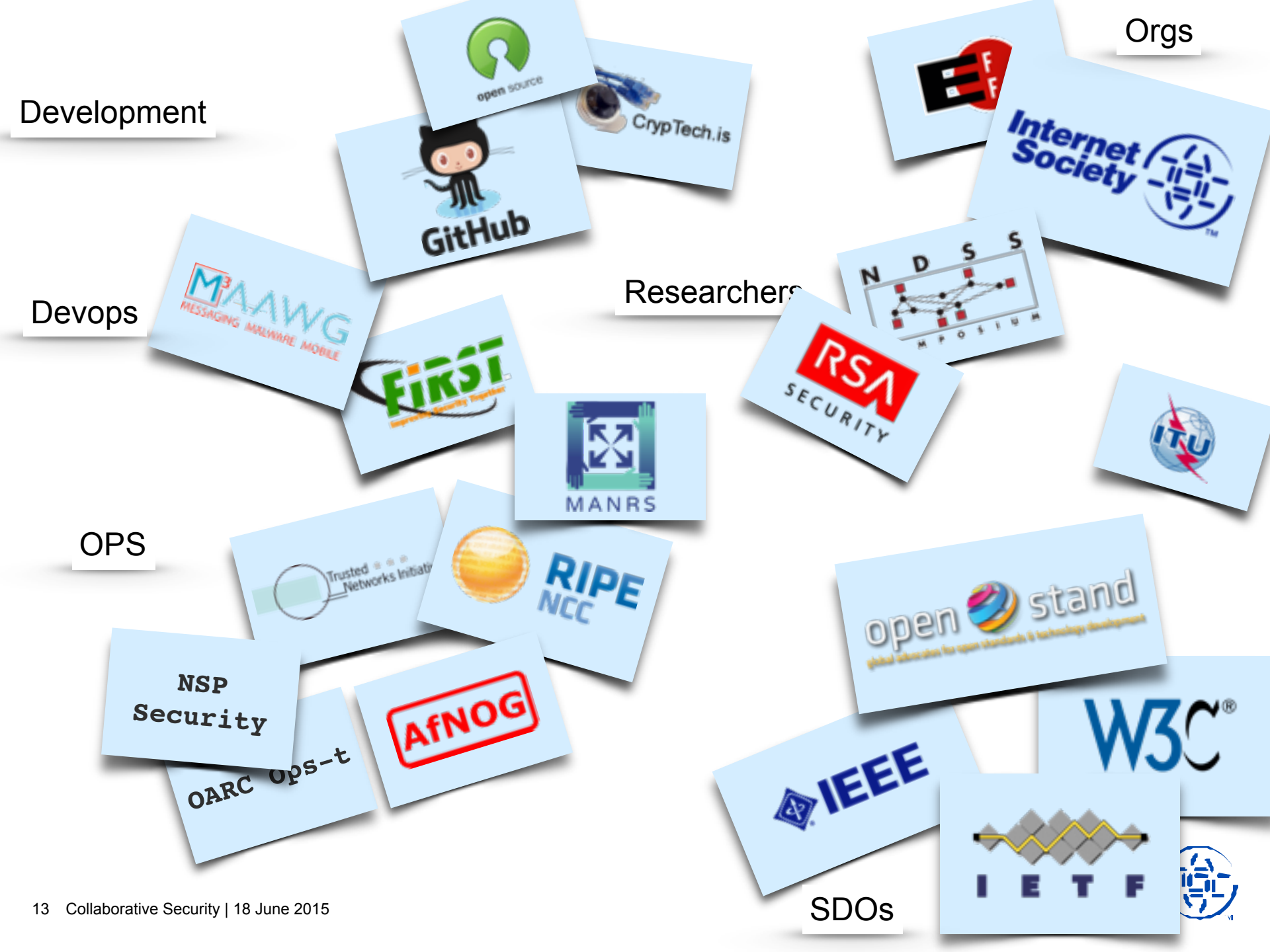
It's an ecosystem based on collaboration and shared responsibility



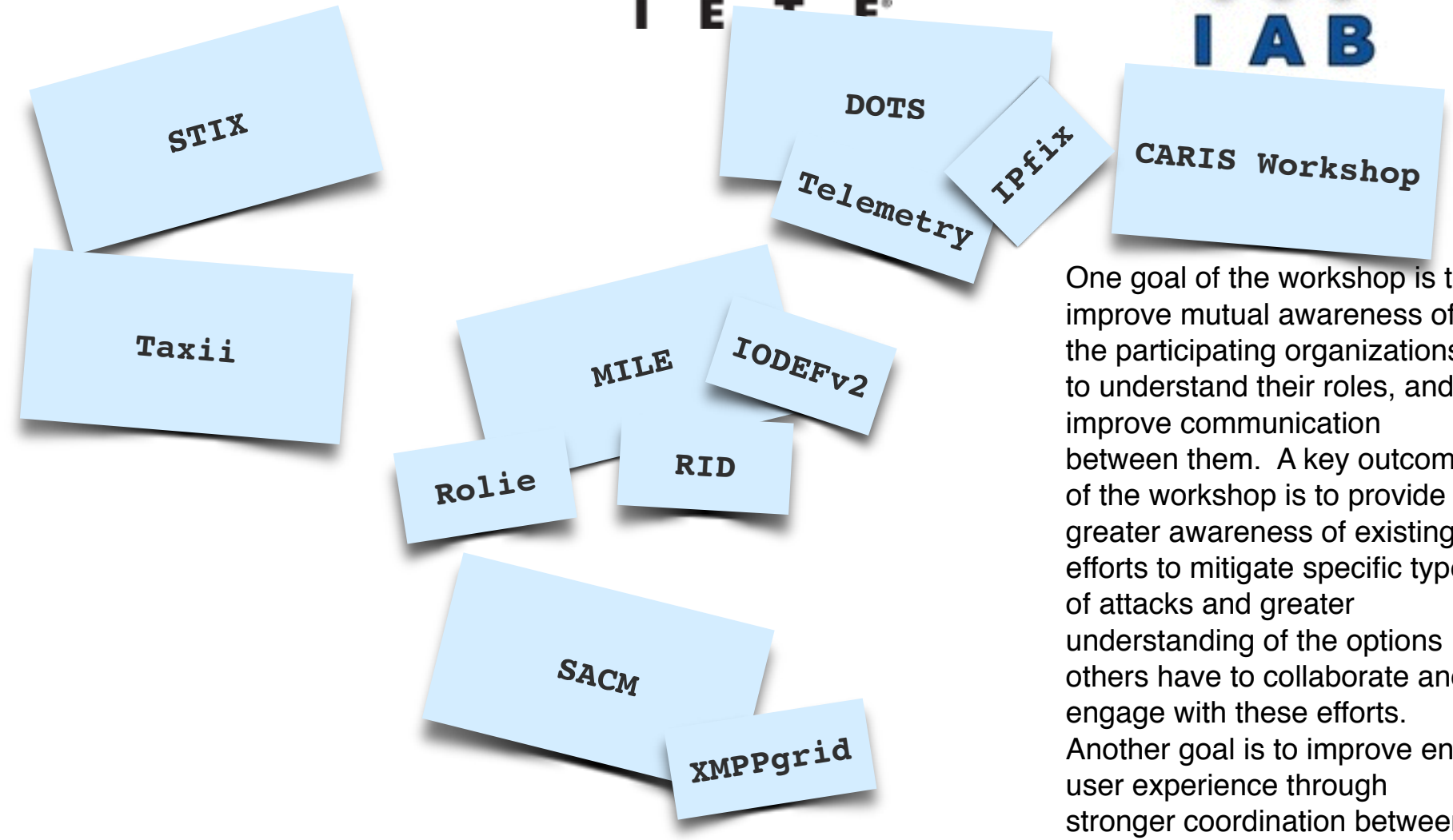
Each network is responsible not only for its own security, but also contributes to the overall security of the medium. The challenge is to create a culture of collective responsibility to make the Internet more secure and resilient.


Fostering Confidence and Protecting Opportunities
Fundamental Properties and Values
Collaborative Security
An approach to tackling Internet Security issues
APRIL 2015
Collective Responsibility
Think Globally Act Locally
Evolution and Consensus
Internet Society

Where the rubber meets the road.


Development
Orgs
Devops
Researchers
OPS
SDOs
open source
GitHub
CrypTech.is
Internet Society
M3AAWG
MESSAAGING MALWARE MOBILE
FIRST
MANRS
NDSS
SYMPOSIUM
RSA SECURITY
ITU
Trusted Networks Initiative
RIPE NCC
NSP Security
OARC Ops-t
AfNOG
open stand
IEEE
W3C
IETF

Examples of Standardization



One goal of the workshop is to improve mutual awareness of the participating organizations, to understand their roles, and improve communication between them. A key outcome of the workshop is to provide greater awareness of existing efforts to mitigate specific types of attacks and greater understanding of the options others have to collaborate and engage with these efforts. Another goal is to improve end user experience through stronger coordination between the security, operations, and research communities.

RDAP

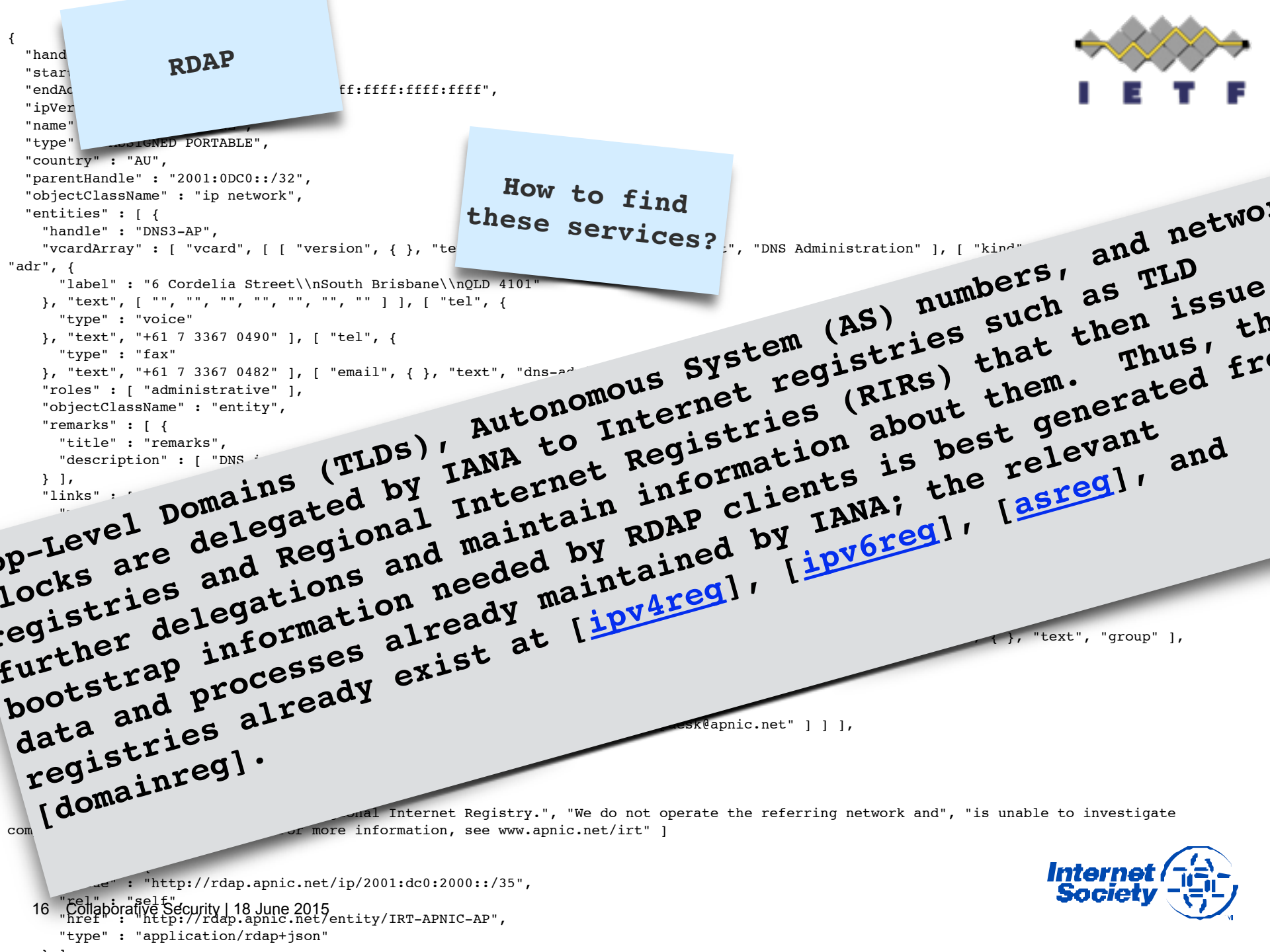
Query and Response are standardized, structured and parseable

Restful Queries

JSON responses

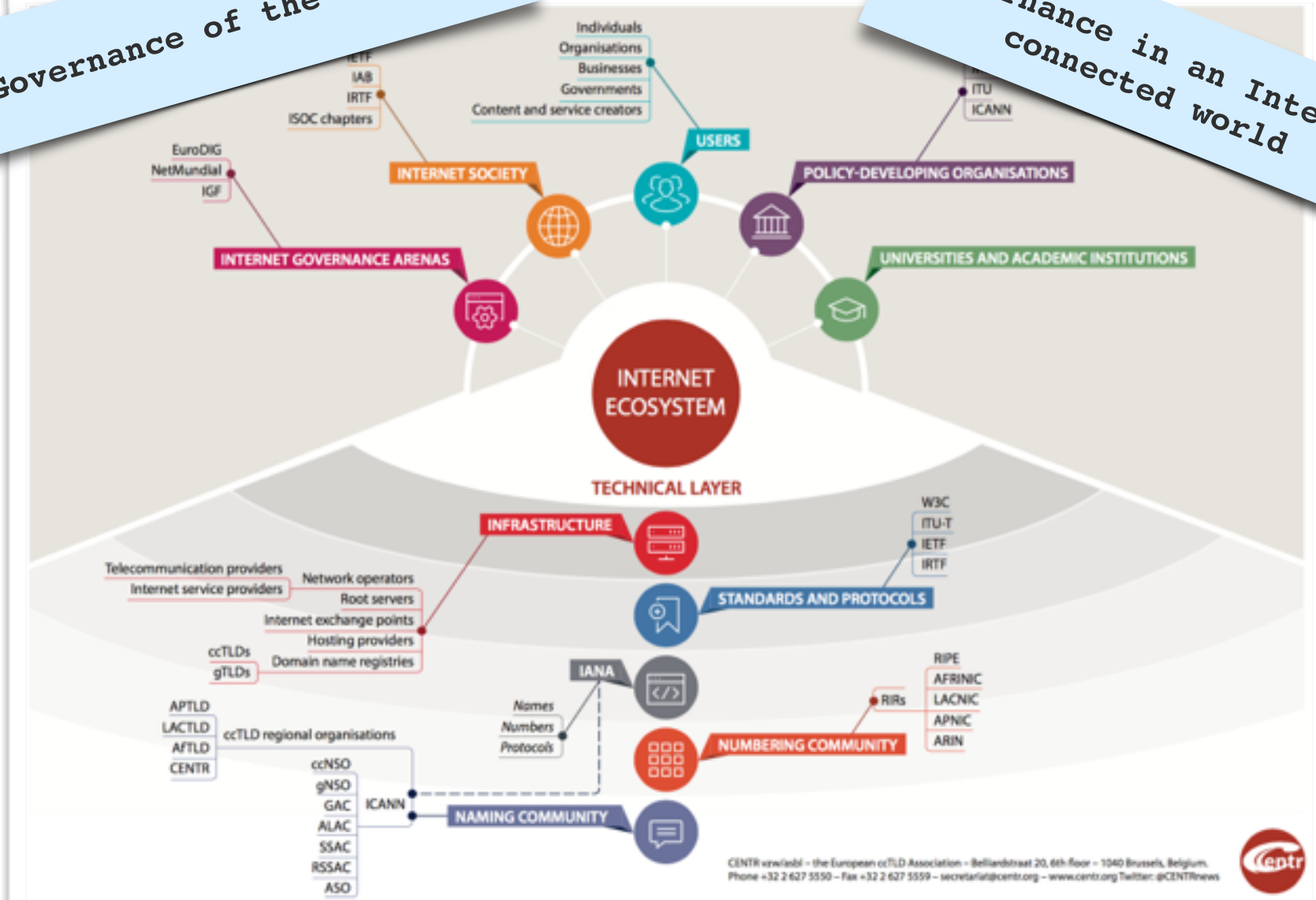
RFC 7480-7485

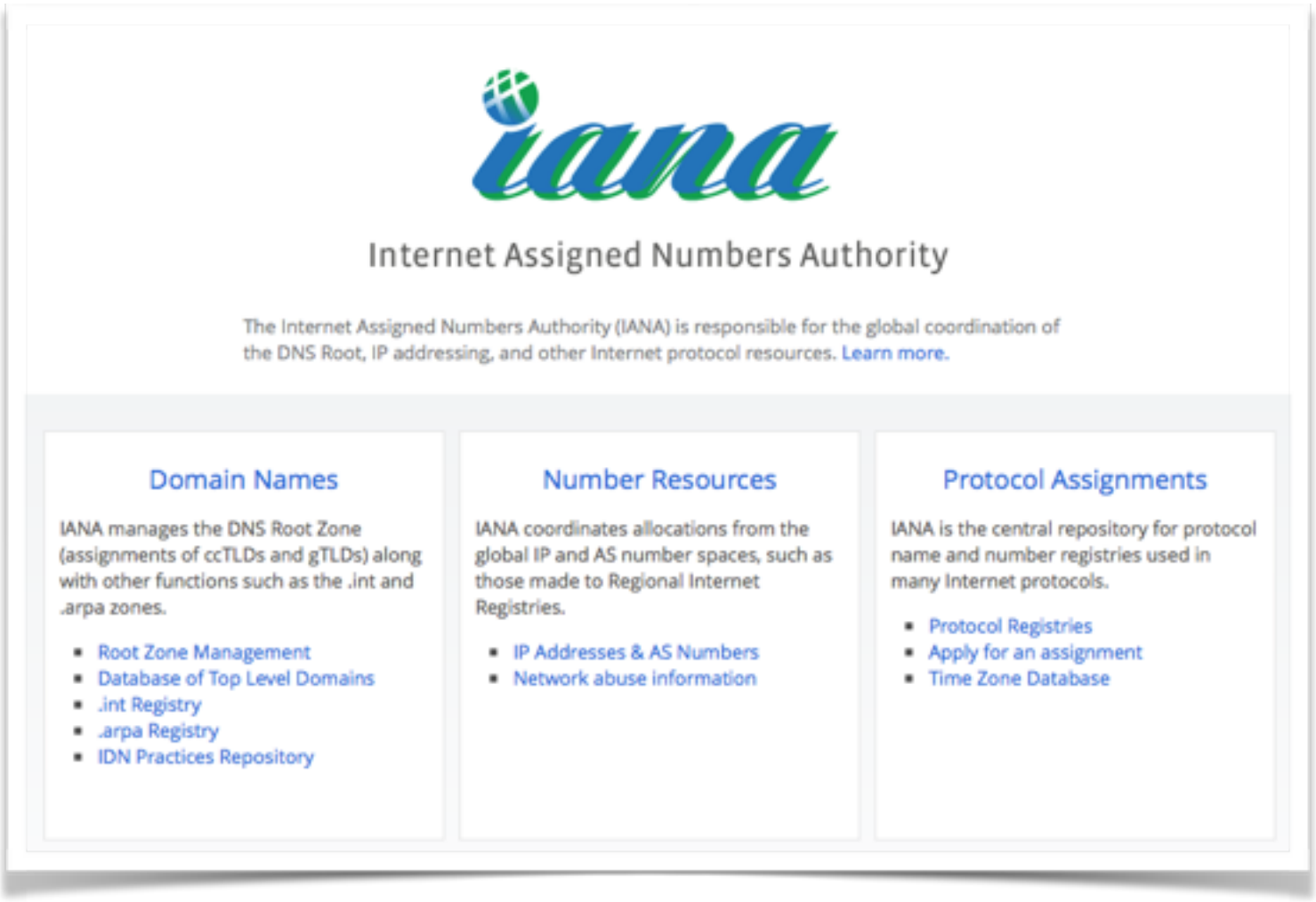
"Registry Operator shall implement a new standard supporting access to domain name registration data (SAC 051) no later than one hundred thirty--five (135) days after it is requested by ICANN if: 1) the IETF produces a standard (i.e., it is published, at least, as a Proposed Standard RFC as specified in RFC 2026); and 2) its implementation is commercially reasonable in the context of the overall operation of the registry."

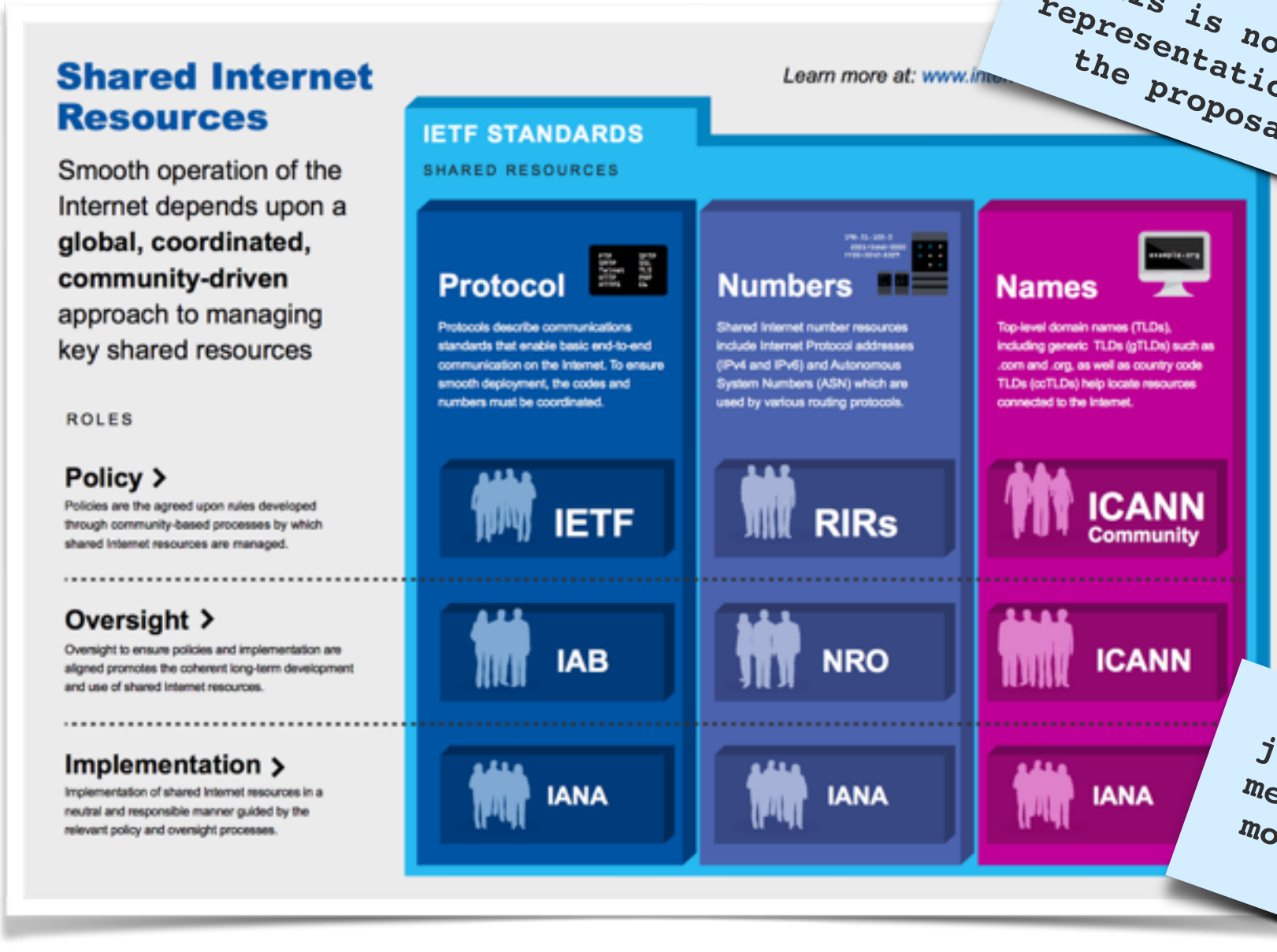

RDAP
How to find these services?
op-Level Domains (TLDs), Autonomous System (AS) numbers, and netwo
locks are delegated by IANA to Internet registries such as TLD
egistries and Regional Internet Registries (RIRs) that then issue
further delegations and maintain information about them. Thus, th
bootstrap information needed by RDAP clients is best generated fr
data and processes already maintained by IANA; the relevant
registries already exist at [ipv4reg], [ipv6reg], [asreg], and
[domainreg].

Governance of the Internet

Governance in an Internet connected world

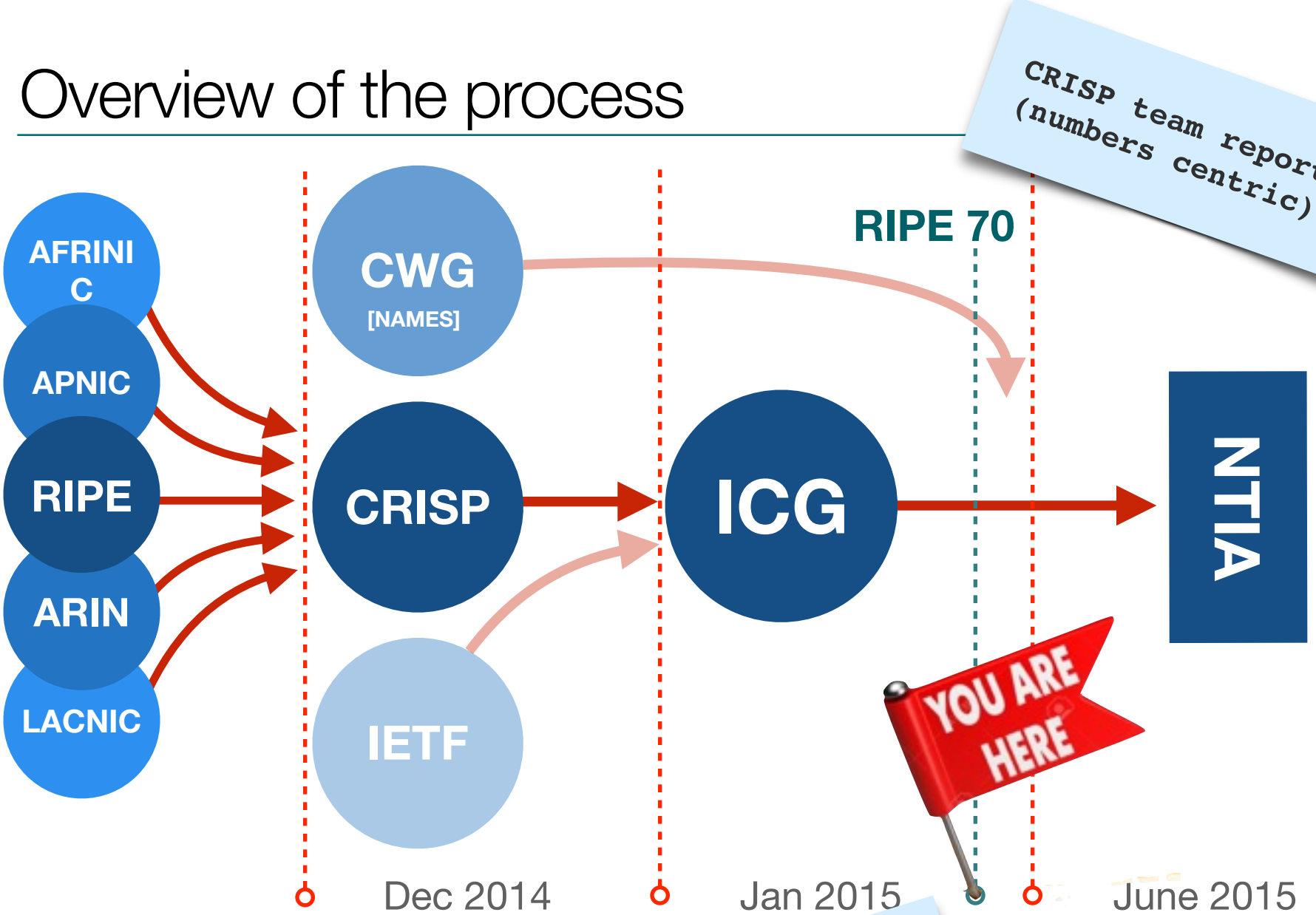



iana
Internet Assigned Numbers Authority
The Internet Assigned Numbers Authority (IANA) is responsible for the global coordination of the DNS Root, IP addressing, and other Internet protocol resources. Learn more.
Domain Names
IANA manages the DNS Root Zone (assignments of ccTLDs and gTLDs) along with other functions such as the .int and .arpa zones.
Root Zone Management
Database of Top Level Domains
.int Registry
.arpa Registry
IDN Practices Repository
Number Resources
IANA coordinates allocations from the global IP and AS number spaces, such as those made to Regional Internet Registries.
IP Addresses & AS Numbers
Network abuse information
Protocol Assignments
IANA is the central repository for protocol name and number registries used in many Internet protocols.
Protocol Registries
Apply for an assignment
Time Zone Database



http://www.internetsociety.org/who-makes-internet-work-internet-ecosystem

Overview of the process



Mutually Agreed Norms for Routing Security (MANRS)

Stimulate visible improvements in security and resilience of Internet Routing by changing towards a culture of collective responsibility

MANRS

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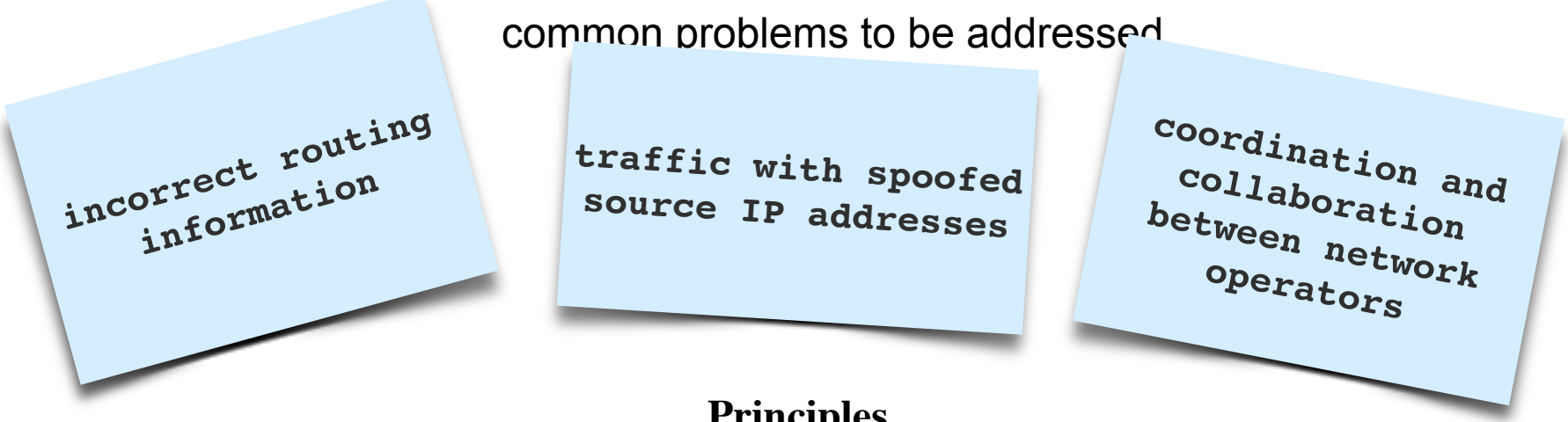
common problems to be addressed



Principles

1. The organization (ISP/network operator) recognizes the interdependent nature of the global routing system and its own role in contributing to a secure and resilient Internet.
2. The organization integrates best current practices related to routing security and resilience in its network management processes in line with the Actions.
3. The organization is committed to preventing, detecting and mitigating routing incidents through collaboration and coordination with peers and other ISPs in line with the Actions.
4. The organization encourages its customers and peers to adopt these Principles and Actions.

MANRS

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Action 1

Prevent propagation of incorrect routing information.

Action 2

Prevent traffic with spoofed source IP addresses.

Action 3

Facilitate global operational communication and coordination between network operators.

Advanced Action 4

Facilitate validation of routing information on a global scale.

MANRS

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Please have this conversation with your stakeholders

http://www.routingmanifesto.org/

or

http://manrs.org/

Contact routingmanifesto@ISOC.org

MANRS

Internet Society

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