ICANN
DNS Root Scaling Study

July 25, 2009

Root Zone Expansion

- New resource records for DNSSEC

- Internationalized Top-level Domain Names

- New address records and glue for IPv6
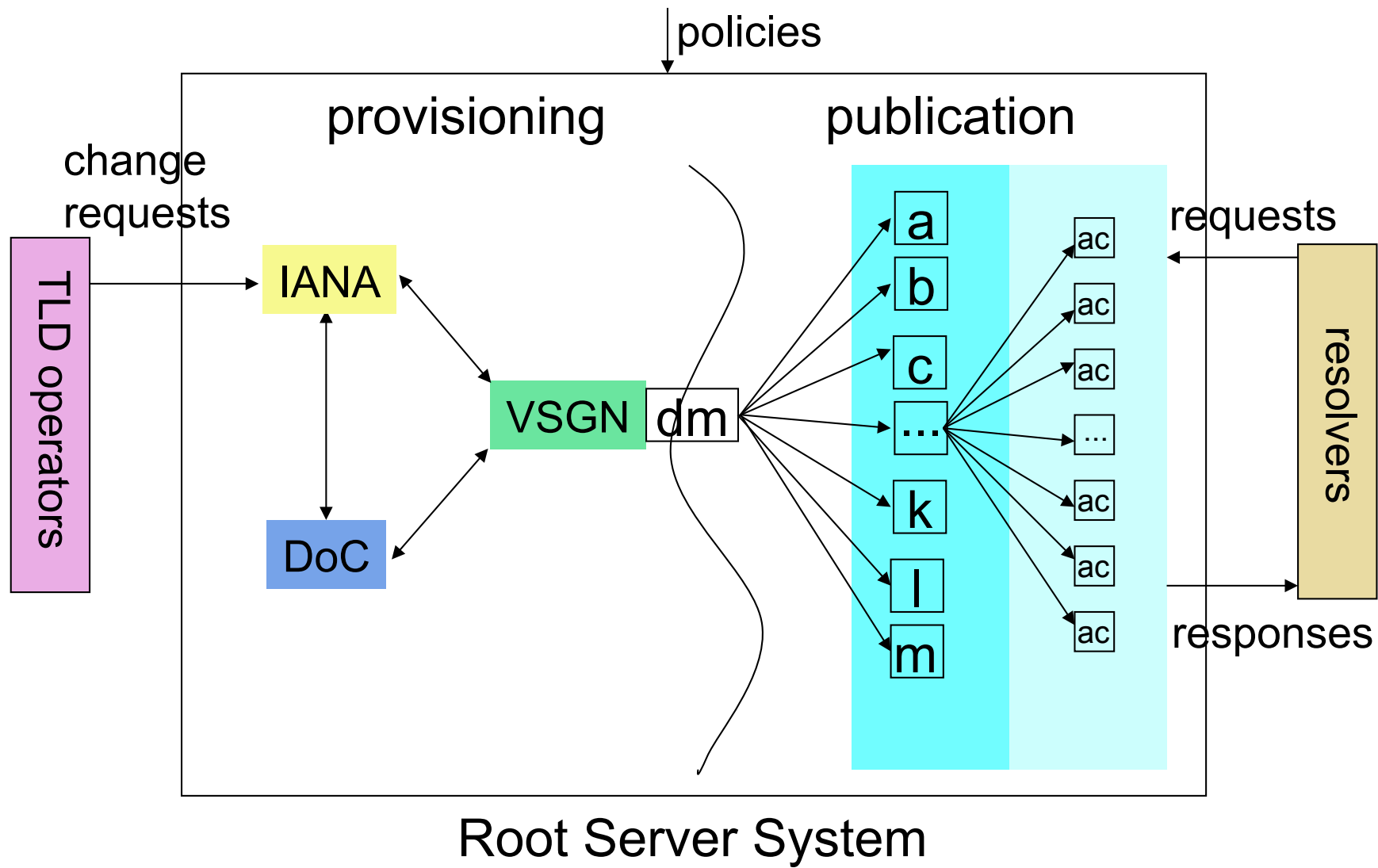
- New gTLDs

Root Zone Expansion

- New resource records for DNSSEC
  - http://www.dnssec-deployment.org
  - https://ns.iana.org/dnssec/root.zone.signed
- Internationalized Top-level Domain Names
  - http://www.icann.org/en/topics/idn
- New address records and glue for IPv6
  - http://www.iana.org/reports/2008/root-aaaa-announcement.html
- New gTLDs
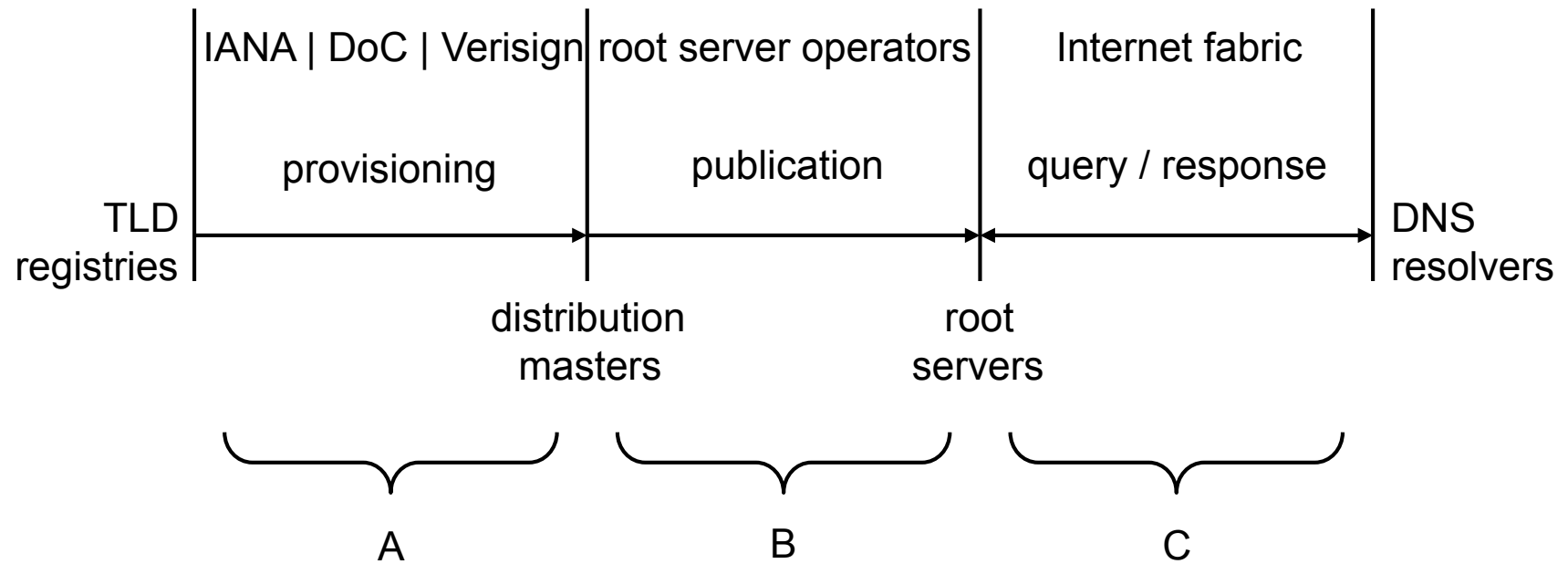 - http://www.icann.org/en/topics/new-gtld-program.htm

Root Scaling Study

- Requested by ICANN Board
- Study team assembled early May 2009
  - Lyman Chapin (lead)
  - Jaap Akkerhuis, Glenn Kowack, Patrik Fältström, Lars-Johan Liman, Bill Manning
- Announcement and public comments
  - http://www.icann.org/en/public-comment/#root-scaling
- Draft report 31 August 2009
  - public review and comment prior to ICANN annual meeting in late October 2009
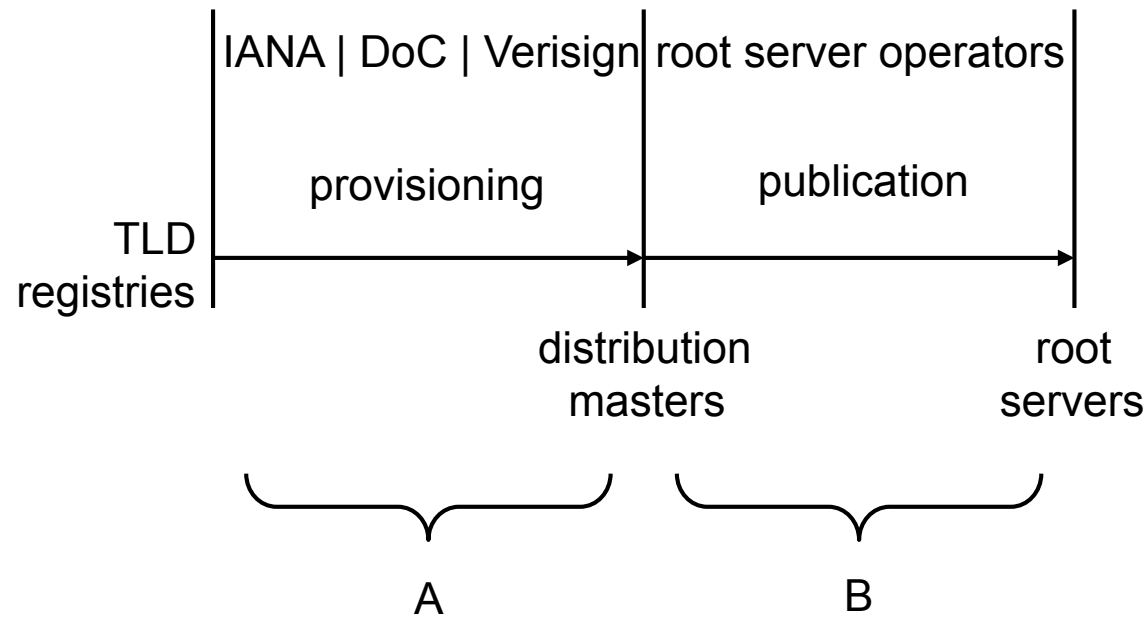
How will root zone expansion affect the operation of the root server system?

- Model-based analysis of root zone scaling issues
  - Compile a description of the complete root server system
    - Provisioning side (update) and query side (lookup)
    - Technical infrastructure and operational procedures
  - Model the relationships among different parts of the system
    - How does changing something in one part affect each other part?
    - Goal is quantitative model (as timeframe of study allows)

- Factual/analytical tool for resolving concerns about root server system security and stability as the root grows

policies

provisioning   publication

change
requests

TLD operators

IANA

VSGN dm

DoC

a
b
c
...
k
l
m

ac
ac
ac
...
ac
ac
ac

requests

resolvers

responses

Root Server System

6

Dynamic range and agility associated with each component
of the root zone management process

IANA | DoC | Verisign   root server operators

provisioning   publication

TLD registries

distribution masters   root servers

A   B

Dynamic range and agility associated with each component
of the root zone management process

http://www.icann.org/en/committees/dns-root/
root-scaling-study-tor-05may09-en.htm

Public Comments

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