



# DNSSEC Workshop



*Cartagena, Colombia*  
*08 December 2010*



# Program Committee

- Markus Travaile, SIDN
- Simon McCalla, Nominet
- Russ Mundy, Cobham
- Steve Crocker, Shinkuro, Inc.
- Julie Hedlund, ICANN



# Sponsors



- Public Interest Registry
- OpenDNSSEC
- .SE
- Afiliás
- GoDaddy
- Dyn, Inc.
- Comcast
- SIDN
- Nominet



# Agenda

1. Capsule View of Deployment:  
Steve Crocker, Co-Chair, DNSSEC  
Deployment Initiative
2. Panel Discussion: DNSSEC Adoption  
-- Best Practices on the Stimulation of  
the Deployment of DNSSEC in ccTLD  
and gTLD's

Moderator: Markus Travaile, SIDN; Panelists:  
James Bladel, GoDaddy; Matt Mansell, Mesh  
Digital/Domain Monster; Pavel Tuma, CZ.NIC;  
Lance Wolak, Public Interest Registry; and  
Chris Wright, AusRegistry



# Agenda, Cont.

3. Incidents and Responses: Roy Arends, Nominet UK
4. DNSSEC Lessons Learned: Roland van Rijswijk, SURFnet
5. DNSSEC Tool Development:
  - Open Source Tools, Russ Mundy, Co-Chair, DNSSEC Deployment Initiative
  - DNSSEC for Humans, João Damas, Internet Systems Corporation (ISC)

# Agenda, Cont.

## 6. Panel Discussion: DNSSEC Implementation Approaches -- Experiences and Best Practices on the Variety of DNSSEC Deployments Around the World

Moderator: Simon McCalla, Nominet UK;  
Panelists: Ondrej Filip, CZ NIC; Matt Larson, VeriSign; Richard Lamb, ICANN; Ram Mohan, Afilias; Rickard Bellgrim, Internet Infrastructure Foundation (.SE); João Damas, Internet Systems Corporation (ISC)



# Agenda, Cont.

8. ISP Validation and Capability:  
Preparing for and Rolling Out  
DNSSEC: Jason Livingood, Comcast
9. Activities from the Region: Erick  
Iriarte Ahon, LACTLD; Ram Mohan,  
Afilias; Frederico Neves, NIC.br

# Capsule View of Deployment

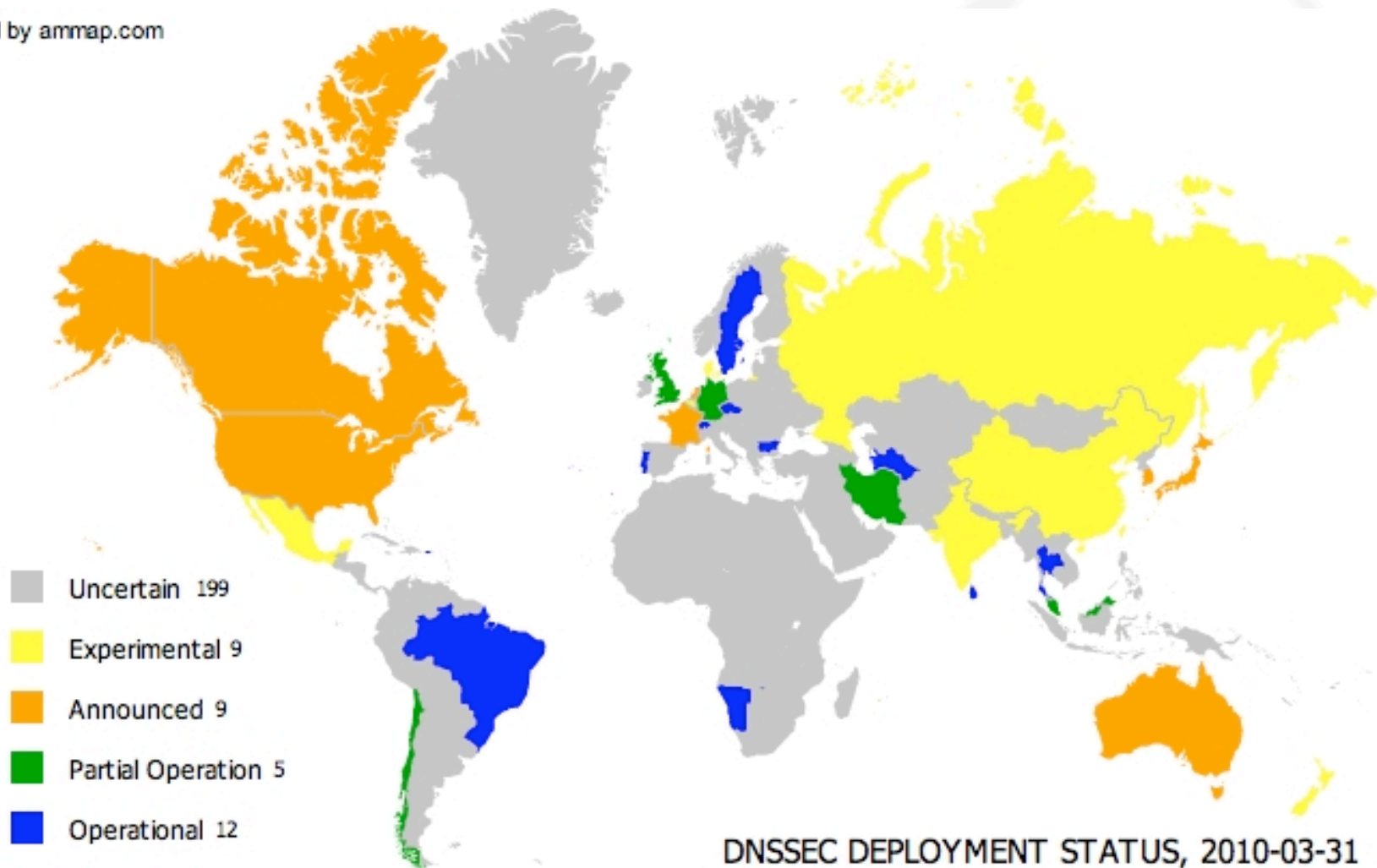
## ccTLD DNSSEC Deployment Mar 2010 through Dec 2011

Steve Crocker  
Co-Chair, DNSSEC Deployment  
Initiative

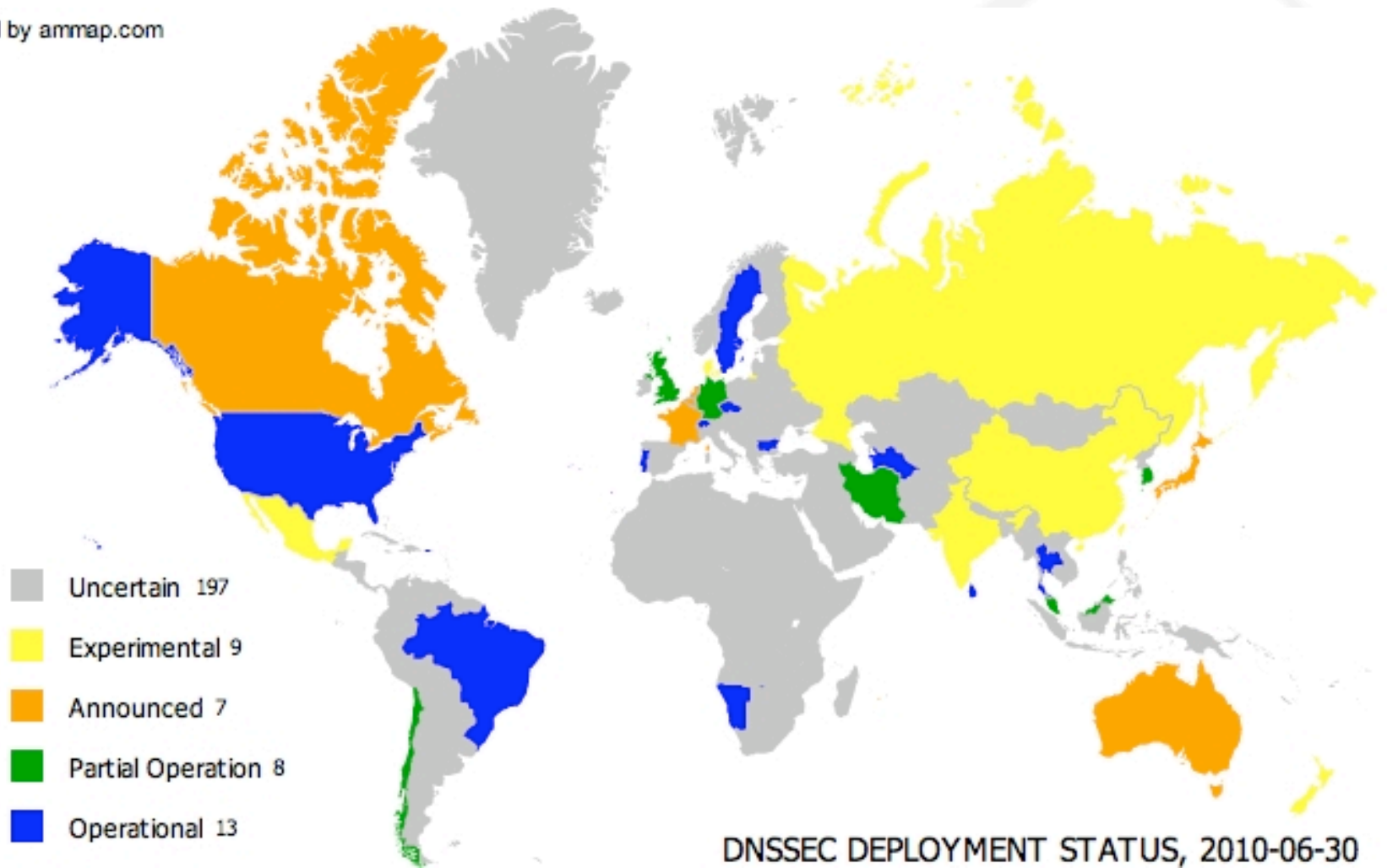




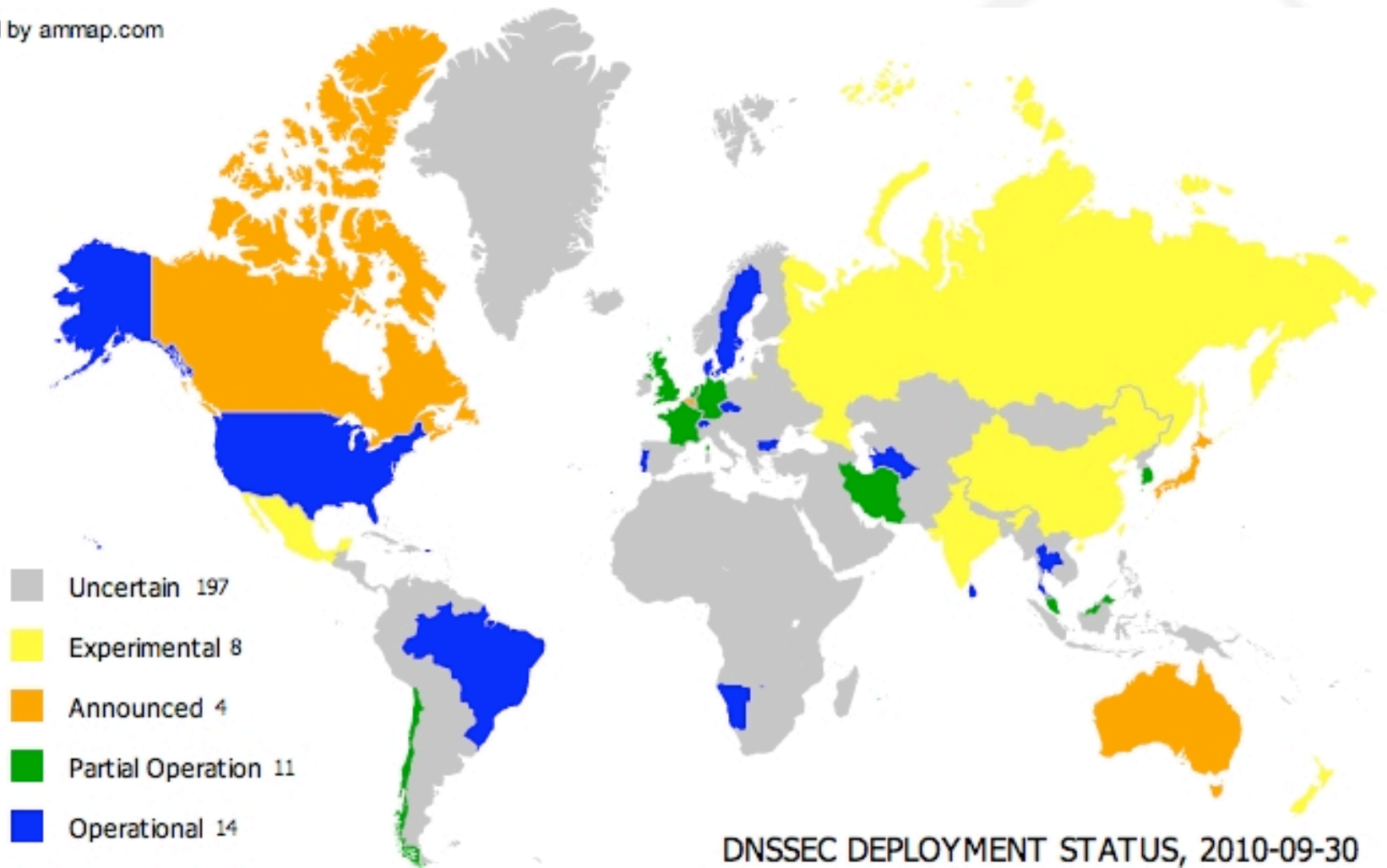
tool by ammap.com



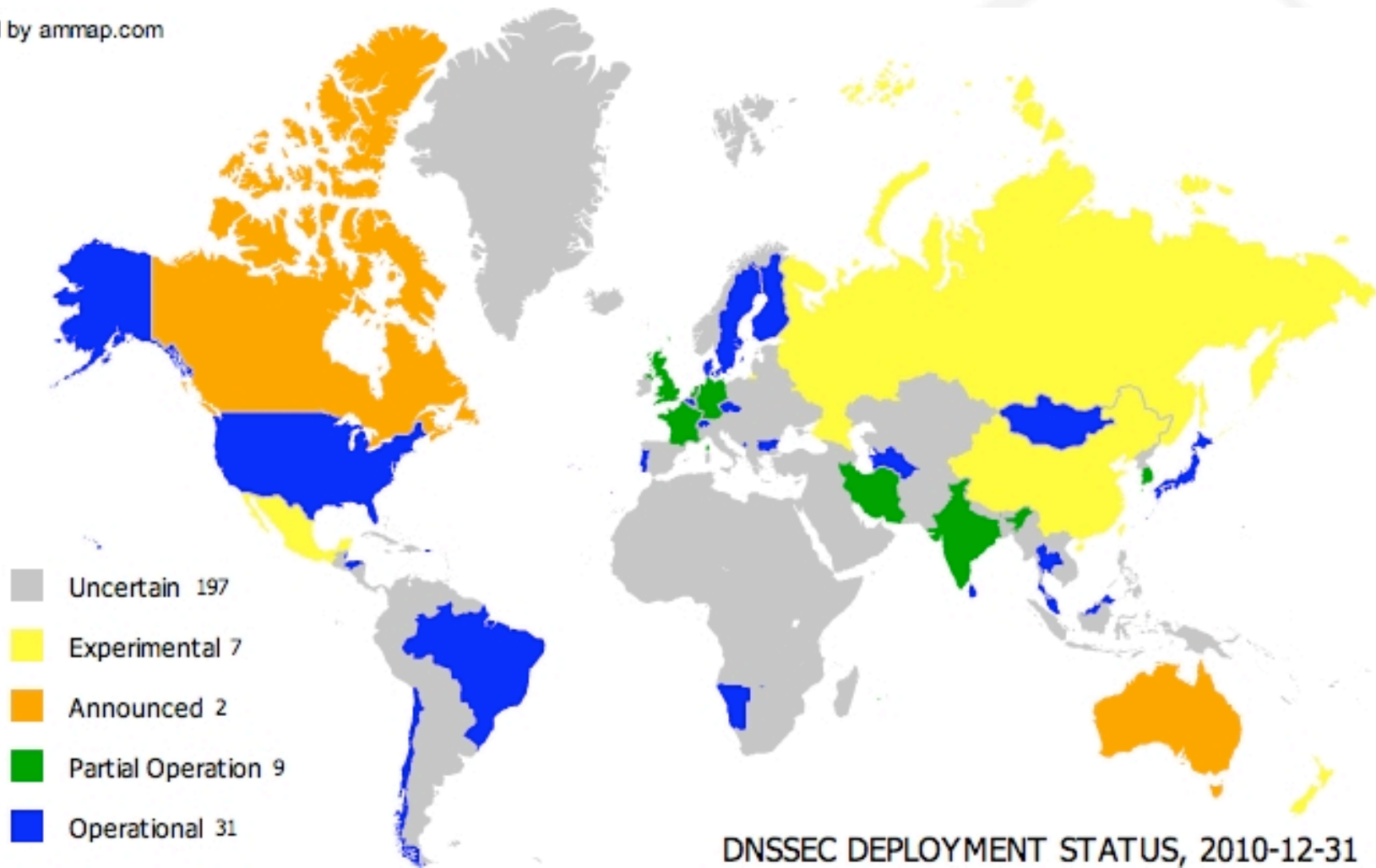
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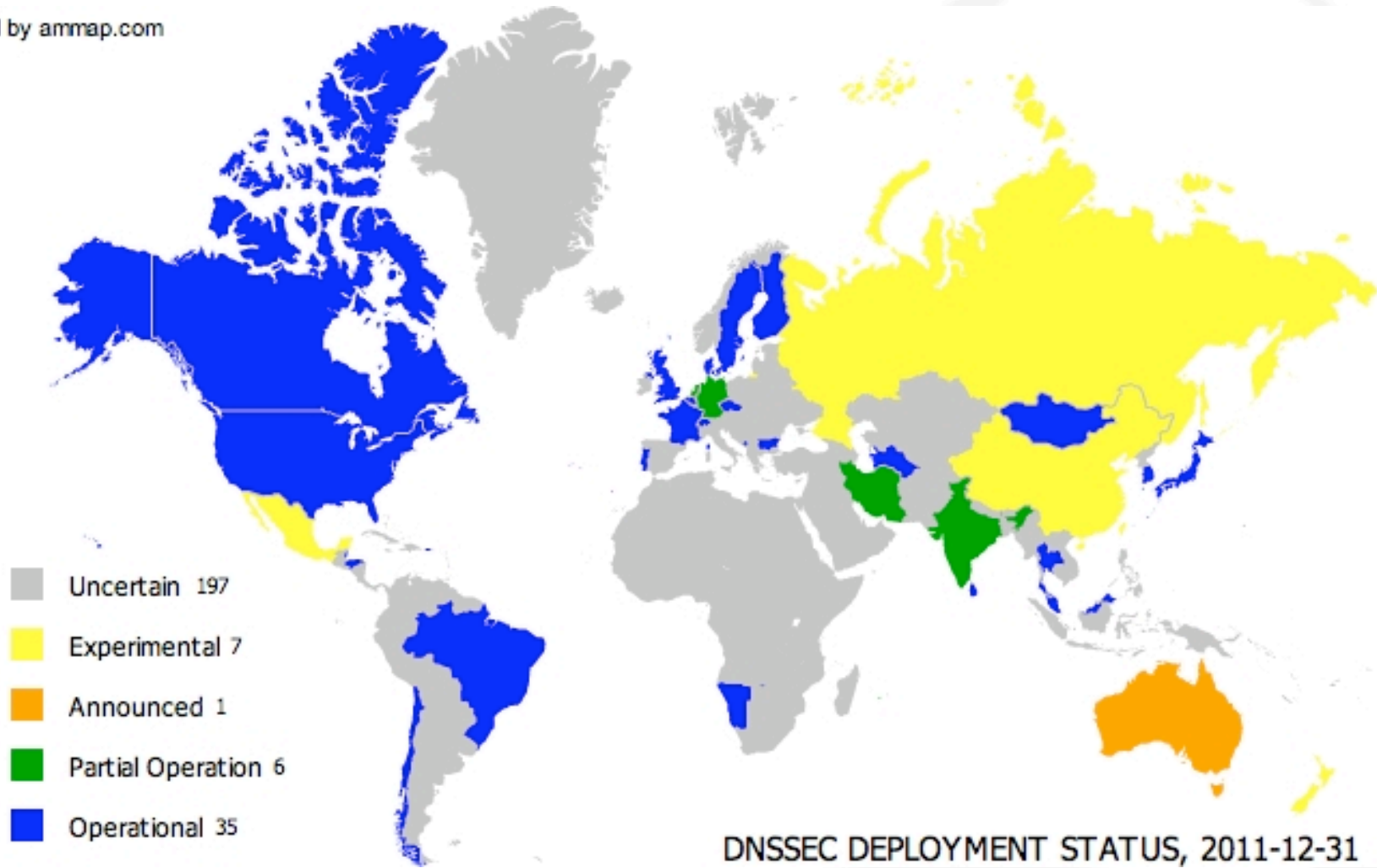


tool by ammap.com

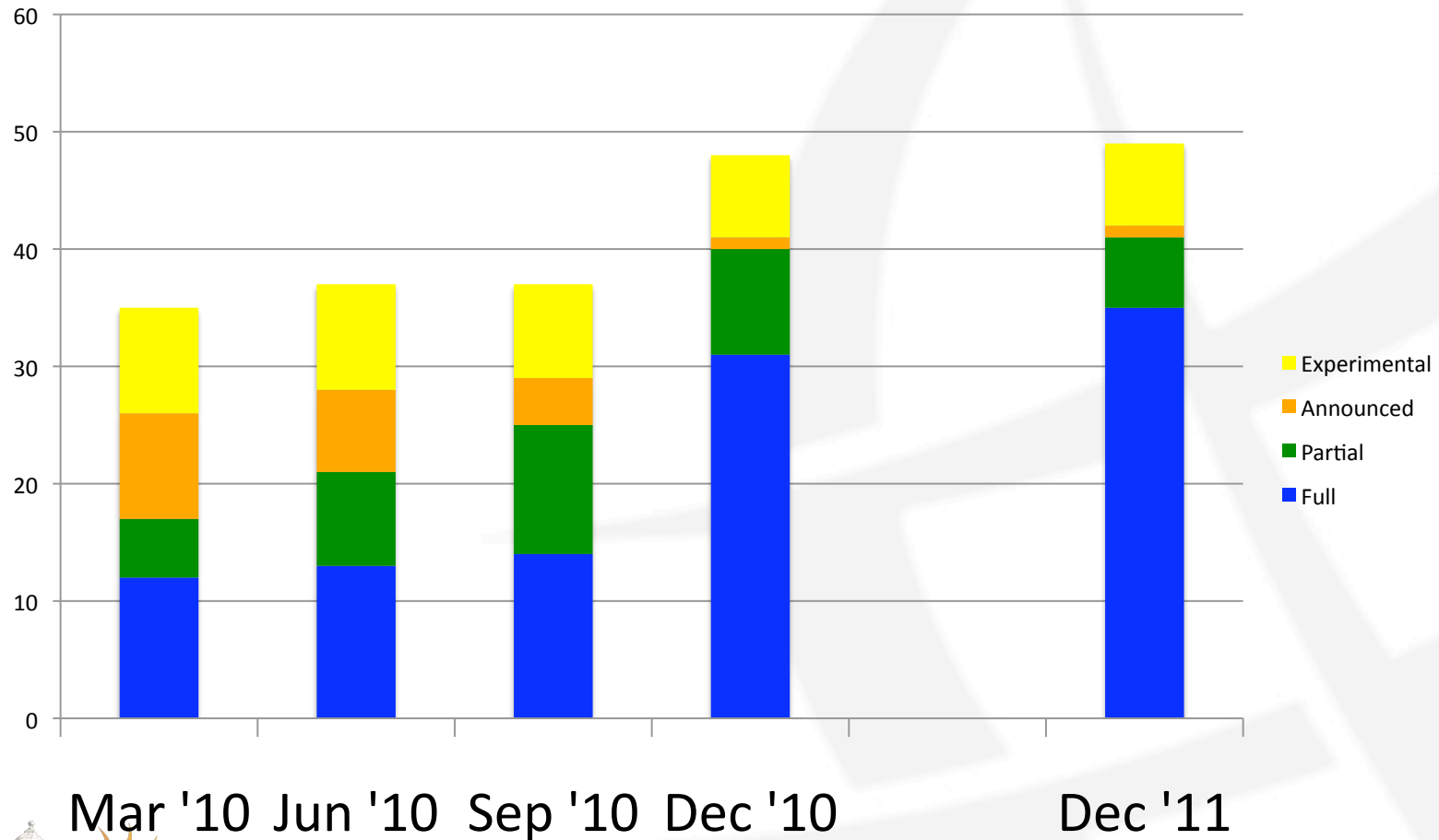




tool by ammap.com



# ccTLD DNSSEC Adoption



# Measurement of DNSSEC Uptake

Steve Crocker  
Co-Chair, DNSSEC Deployment  
Initiative





# Tracking DNSSEC Uptake

- TLDs are getting signed
- Registrars and Registrants – still very early
- Resolver software – reasonably good
- Resolvers in the field – early days
- Telia in Sweden, Comcast in the U.S. are leaders
- Actual Validation – very early days

# Actual Validation

- A number resolvers are automatically requesting signed responses.
- Only some of the answers are actually validated.
- From the authoritative name server's perspective, is there a way to tell which requests for signed answers are likely to be actually validated?
- Yes. Look at the requests for the keys.

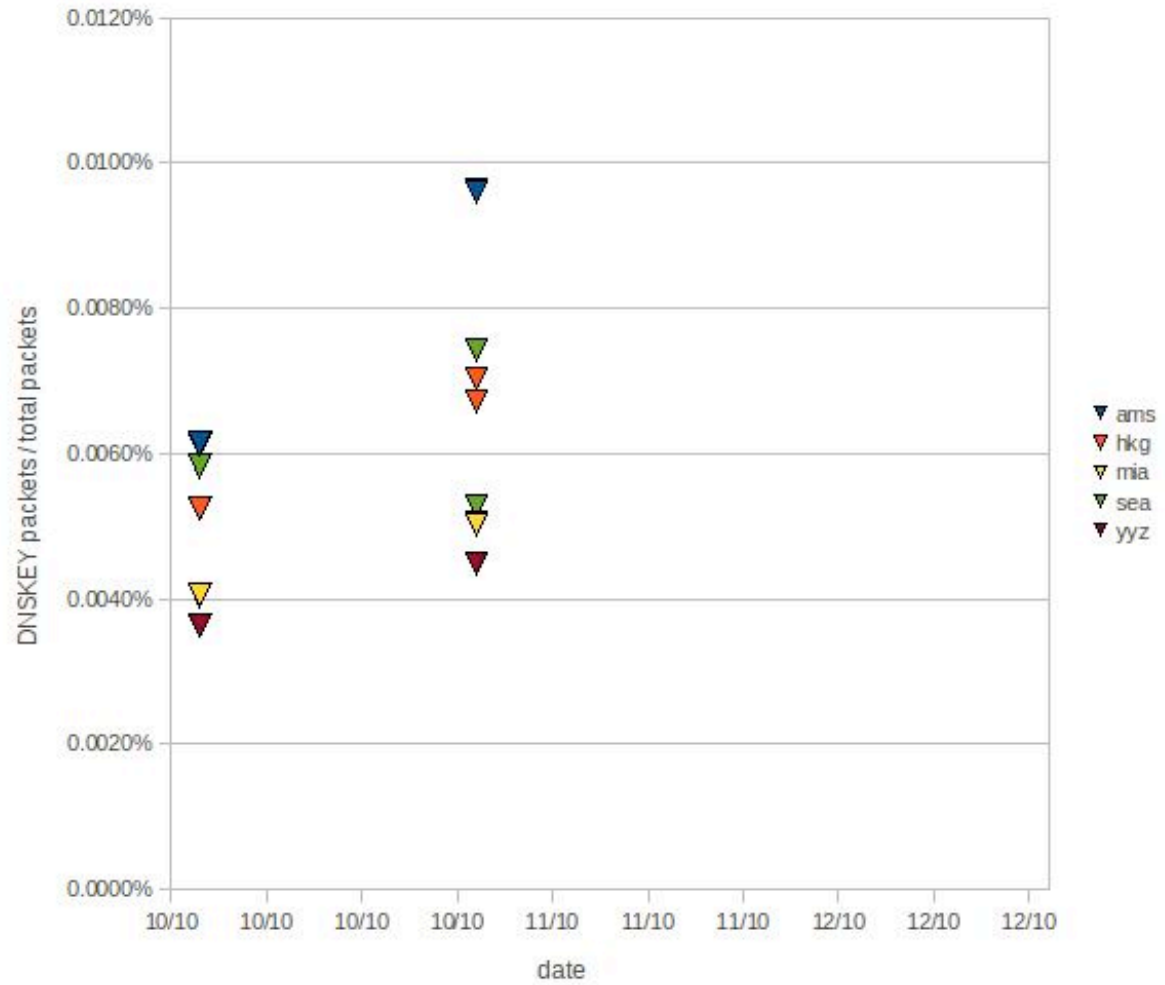
# Measuring Requests for Keys

- Need regular measurement in place in multiple places. This is in progress in multiple TLDs.
- Shinkuro working with PIR & Afilias re .ORG.
- The following slides show fraction of total queries and answers that are for keys.
  - Multiple locations, a couple of samples from each.
  - Each sample is 30 to 40 minutes, tens of millions of queries.

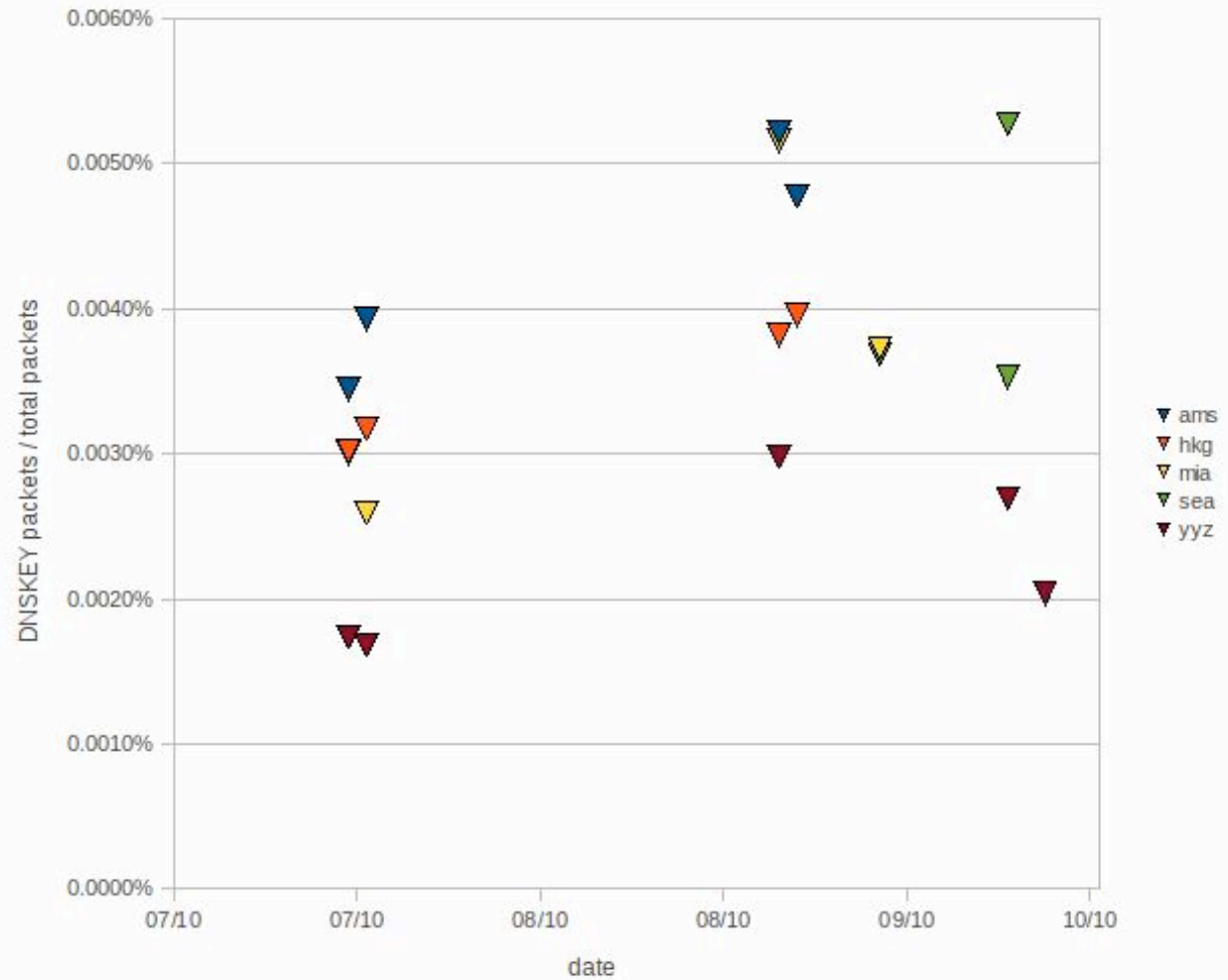
# “Results”

- DNS key queries are in the range of 1/100 of 1% or less.
- Some variation with geography.
- Measurable changes over time.
- Actual usage is obviously quite small, BUT
- There is actual usage and it’s measurable.

### Requests for org DNSKEY



Responses containing org DNSKEY



# Onward!





# Panel Discussion

## DNSSEC Adoption -- Best Practices on the Stimulation of the Deployment of DNSSEC in ccTLD and gTLD's

Markus Travaile, SIDN,  
Moderator

# Topics for Discussion

1. Demand for DNSSEC domains from domain owners
  - Benefits for domain owners?
  - How to market these benefits and create a business case?
2. Visibility of DNSSEC for internet users
  - How to improve this?
  - Role of software vendors?
3. Business case for DNSSEC validation
  - Tools to reduce complexity?
  - How to avoid unnecessary support calls?
  - Validation at the client as a solution?

# Incidents and Responses

Roy Arends, Nominet UK

# DNSSEC Lessons Learned

Roland van Rijswijk, SURFnet



DNSSEC Tool  
Development:  
Open Source Tools  
Russ Mundy, Co-Chair  
DNSSEC Deployment Initiative

# DNSSEC Tool Development: DNSSEC for Humans

João Damas, ISC

# Panel Discussion DNSSEC Implementation Approaches -- Experiences and Best Practices on the Variety of DNSSEC Deployments Around the World

Simon McCalla, Nominet UK  
Moderator





# Topics for Discussion

The panelists will debate and discuss four key questions, the various merits of each approach, and how these might apply to different sized organizations and their position in the DNSSEC 'chain of trust':

1. What is the high-level design of your DNSSEC implementation (tools & technologies)?
2. How did you implement and introduce DNSSEC into your live environment?
3. What were the challenges you faced during implementation?
4. What were the lessons you learned from the experience?

# ISP Validation and Capability: Preparing for and Rolling Out DNSSEC

Jason Livingood  
Comcast

# Activities from the Region

Erick Iriarte Ahon, LACTLD

Ram Mohan, Afiliat

Frederico Neves, NIC.br

Thank you and questions

