

DNSSEC Workshop

Dan York, Internet Society | ICANN 53 | June 2015

First, a word about our host...



Program Committee

- Steve Crocker, Shinkuro, Inc.
- Mark Elkins, DNS/ZACR
- Cath Goulding, Nominet
- Jean Robert Hountomey, AfricaCERT
- Jacques Latour, CIRA
- Xiaodong Lee, CNNIC
- Luciano Minuchin, NIC.AR
- Russ Mundy, SPARTA, A Parsons Company
- Ondřej Surý, CZNIC
- Yoshiro Yoneya, JPRS
- Dan York, Internet Society
- Julie Hedlund and Kathy Schnitt, ICANN

Luncheon Sponsors

- Afilias
- CIRA
- Dyn
- .SE
- SIDN



NOTE: One new sponsor will be needed for 2016!

DNSSEC Implementer's Gathering Sponsors

The Program Committee held a DNSSEC Implementers Gathering on 22 June sponsored by:

- **CIRA**
- **NIC.AR**
- **SIDN**

DNSSEC Implementer's Gathering



Thanks to:

- **CIRA**
- **NIC.AR**
- **SIDN**

Who can sponsor the gathering at ICANN 54 in Dublin?

The DNSSEC Workshop and associated activities at ICANN are an organized activity of the:

- **ICANN Security and Stability Advisory Committee (SSAC)**



with additional assistance from the:

- **Internet Society
Deploy360 Programme**



Program

0900-0915 – Presentation: Dan York, Internet Society – *DNSSEC Workshop Introduction, Program, Deployment Around the World – Counts, Counts, Counts*

0915-1030 – Panel Discussion: *DNSSEC Activities in the Latin American Region*

1030-1100 – Presentation: *Update on DNSSEC KSK Root Key Rollover*

1100-1115 – Break

1115-1215 – Panel Discussion: *DNSSEC Automation*

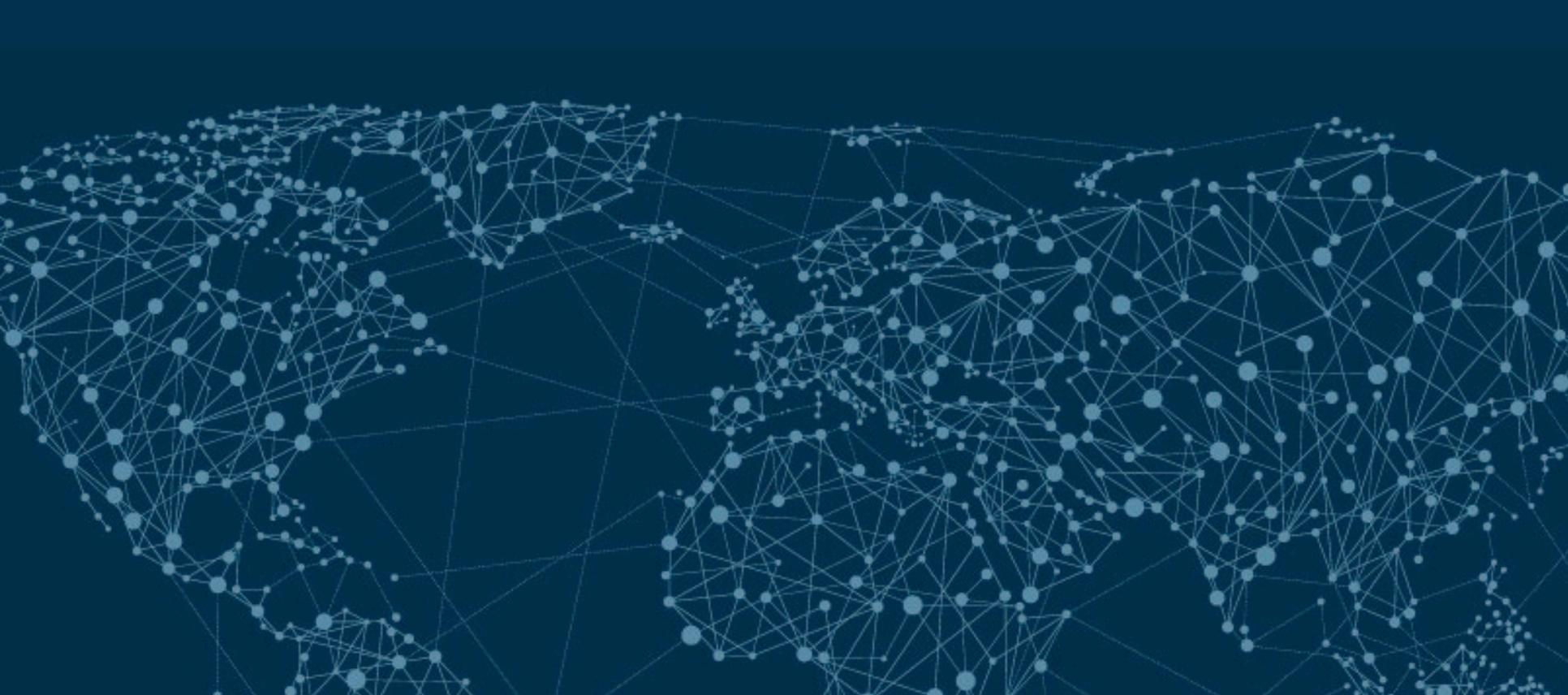
1215-1230 – Great DNS/DNSSEC Quiz

1230-1330 – Lunch Break

1330-1445 – Demonstrations and Presentations: *DANE and Applications*

1445-1500 – Presentation: *Deploying New DNSSEC Algorithms*

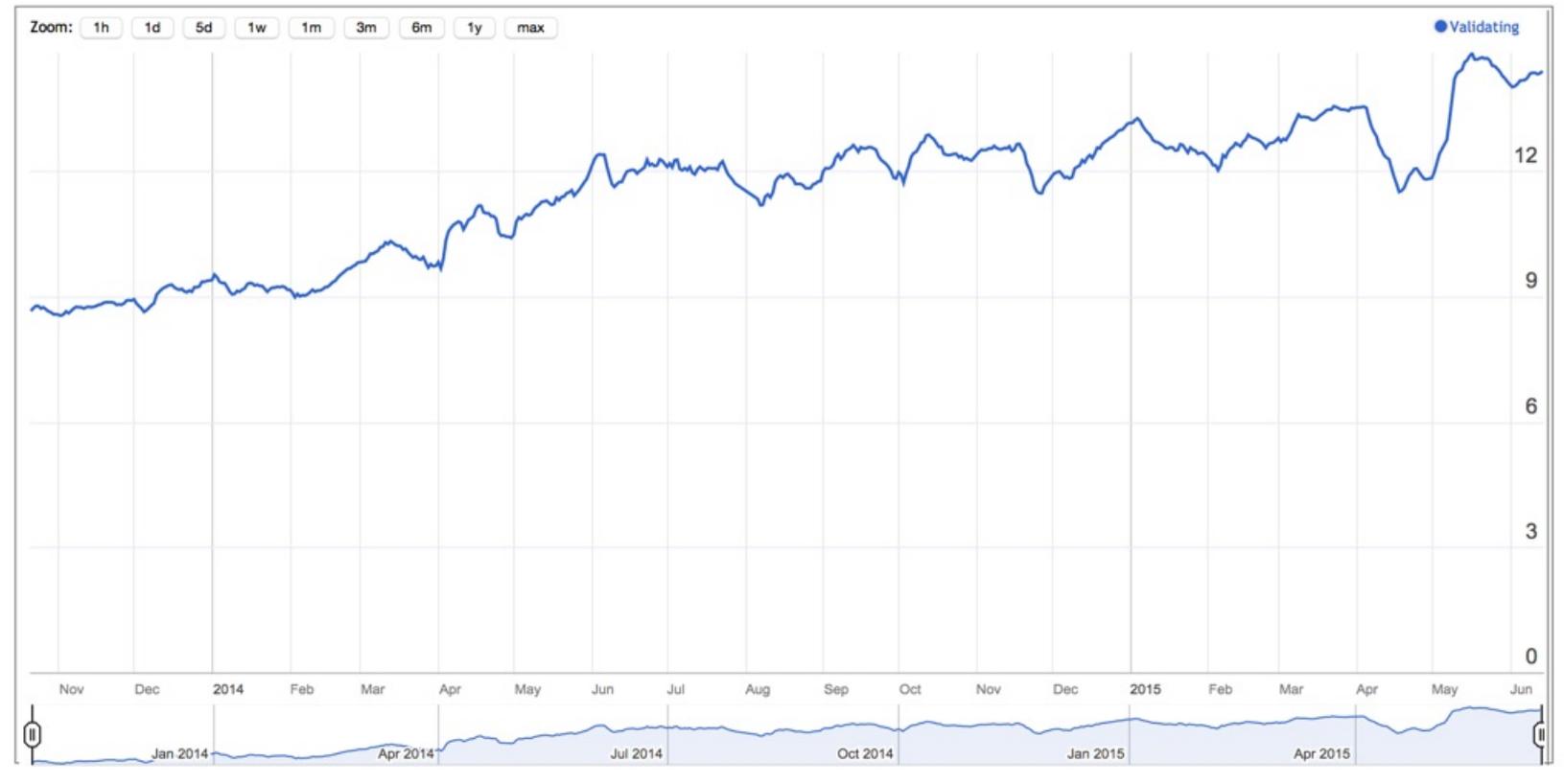
1500-1515 – Presentation: *DNSSEC - How Can I Help?*



DNSSEC Deployment Around the World: Counts, Counts, Counts

Dan York, Internet Society | ICANN 53 | June 2015

Use of DNSSEC Validation for World (XA)



<http://stats.labs.apnic.net/dnssec/XA?c=XA&x=1&g=0&r=0&w=7&r=1>

Code	SubRegion	DNSSEC Validates	Uses Google PDNS	Samples	Weight	Weighted Samples
XH	Eastern Africa , Africa	30.60%	25.55%	250980	10.07	2527584
XK	Southern Africa , Africa	28.64%	13.92%	128842	6.47	833686
QQ	Melanesia , Oceania	22.87%	29.89%	24455	1.35	32922
XQ	Northern America , Americas	21.70%	10.04%	3658719	2.64	9671710
XW	Eastern Europe , Europe	20.54%	11.50%	9180424	0.57	5240075
QM	Northern Europe , Europe	19.94%	6.43%	1654900	1.67	2769145
XP	South America , Americas	18.48%	15.68%	16900813	0.43	7195636
QO	Western Europe , Europe	17.09%	4.52%	2195884	2.29	5039091
XU	South-Eastern Asia , Asia	16.94%	24.13%	17463185	0.35	6176253
XV	Western Asia , Asia	16.69%	16.10%	6482191	0.55	3570590
QP	Australia and New Zealand , Oceania	15.36%	5.09%	329897	2.29	756906
XL	Western Africa , Africa	14.09%	41.37%	273080	9.75	2662860
XI	Middle Africa , Africa	13.71%	35.54%	34580	9.47	327643
XT	Southern Asia , Asia	13.44%	25.08%	7310756	1.57	11487581
XJ	Northern Africa , Africa	12.55%	17.39%	4634605	0.59	2739434
QN	Southern Europe , Europe	11.67%	11.55%	6110077	0.5	3068137
QR	Micronesia , Oceania	9.11%	33.51%	17776	0.31	5576
XN	Caribbean , Americas	8.33%	18.50%	517432	1	516829
XO	Central America , Americas	7.21%	15.27%	5320388	0.43	2310730
XR	Central Asia , Asia	5.71%	11.87%	366847	2.04	749475
XS	Eastern Asia , Asia	4.23%	8.28%	10655438	2.42	25830318
QS	Polynesia , Oceania	3.81%	10.92%	8380	0.9	7561

<http://stats.labs.apnic.net/dnssec/XA?c=XA&x=1&g=1&r=0&w=7&r=1>

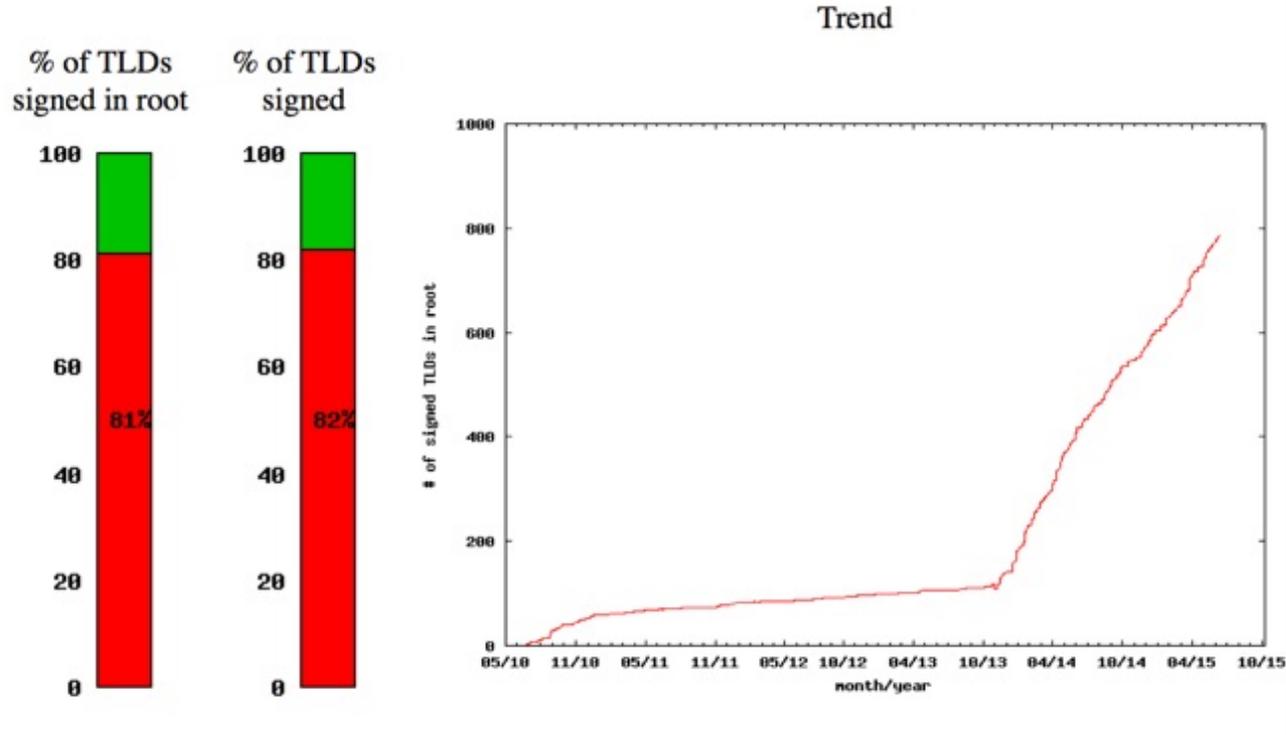
CC	Country	DNSSEC Validates	Uses Google PDNS	Samples	Weight	Weighted Samples
PM	Saint Pierre and Miquelon, Northern America, Americas	88.99%	99.05%	527	0	0
AI	Anguilla, Caribbean, Americas	88.54%	14.93%	576	0.5	289
YT	Mayotte, Eastern Africa, Africa	84.65%	4.56%	241	14.69	3539
DM	Dominica, Caribbean, Americas	77.53%	47.18%	1028	1.27	1309
GL	Greenland, Northern America, Americas	75.56%	6.42%	716	2.2	1577
SE	Sweden, Northern Europe, Europe	70.50%	7.34%	152901	1.84	280685
AG	Antigua and Barbuda, Caribbean, Americas	64.59%	8.27%	6738	0.34	2274
SI	Slovenia, Southern Europe, Europe	61.69%	7.37%	154806	0.3	46203
IM	Isle of Man, Northern Europe, Europe	58.42%	62.38%	101	11.96	1207
IQ	Iraq, Western Asia, Asia	57.81%	20.50%	286598	0.34	98271
AD	Andorra, Southern Europe, Europe	56.08%	9.15%	4460	0.52	2318
EE	Estonia, Northern Europe, Europe	55.16%	4.56%	71642	0.44	31286
YE	Yemen, Western Asia, Asia	50.71%	23.35%	21143	7.19	152056
GQ	Equatorial Guinea, Middle Africa, Africa	49.65%	66.64%	1283	3.27	4198
DK	Denmark, Northern Europe, Europe	48.29%	7.62%	83123	1.97	163616
PS	Occupied Palestinian Territory, Western Asia, Asia	48.09%	16.32%	203552	0.41	84128
RO	Romania, Eastern Europe, Europe	44.87%	9.37%	1447471	0.23	328373
CZ	Czech Republic, Eastern Europe, Europe	44.39%	16.03%	486819	0.5	244109
BJ	Benin, Western Africa, Africa	43.61%	37.87%	4309	9.1	39207
KE	Kenya, Eastern Africa, Africa	43.47%	28.44%	43184	15.63	675179
PA	Panama, Central America, Americas	42.79%	49.09%	68572	0.94	64197
BB	Barbados, Caribbean, Americas	42.37%	5.27%	23203	0.28	6585
DJ	Djibouti, Eastern Africa, Africa	41.97%	47.86%	14607	0.19	2719

<http://stats.labs.apnic.net/dnssec/XA?c=XA&x=1&g=1&r=0&w=7&r=1>

DNSSEC Deployment Report

Wed Jun 17 00:12:55 UTC 2015

Total TLDs: 966 / Signed TLDs in root: 788 / Recently added: xxx. (06/16/2015)



<https://rick.eng.br/dnssecstat/>

The TLDs – DS or Operational

Current

	gTLD	ccTLD	Regional	Total
Classic	617(629)	100(247)	2(2)	719(878)
IDN	51(51)	18(39)		69(90)
Total	668(680)	118(286)	2(2)	788(968)

- Measured: June 19, 2015
- Status: DS in the Root or Operational
- “Regional” TLDs are SU and EU
- Total (788) does not include signed root

TLD DNSSEC Implementation Status

Experimental – internal experiments

Announced – Public commitment to deploy

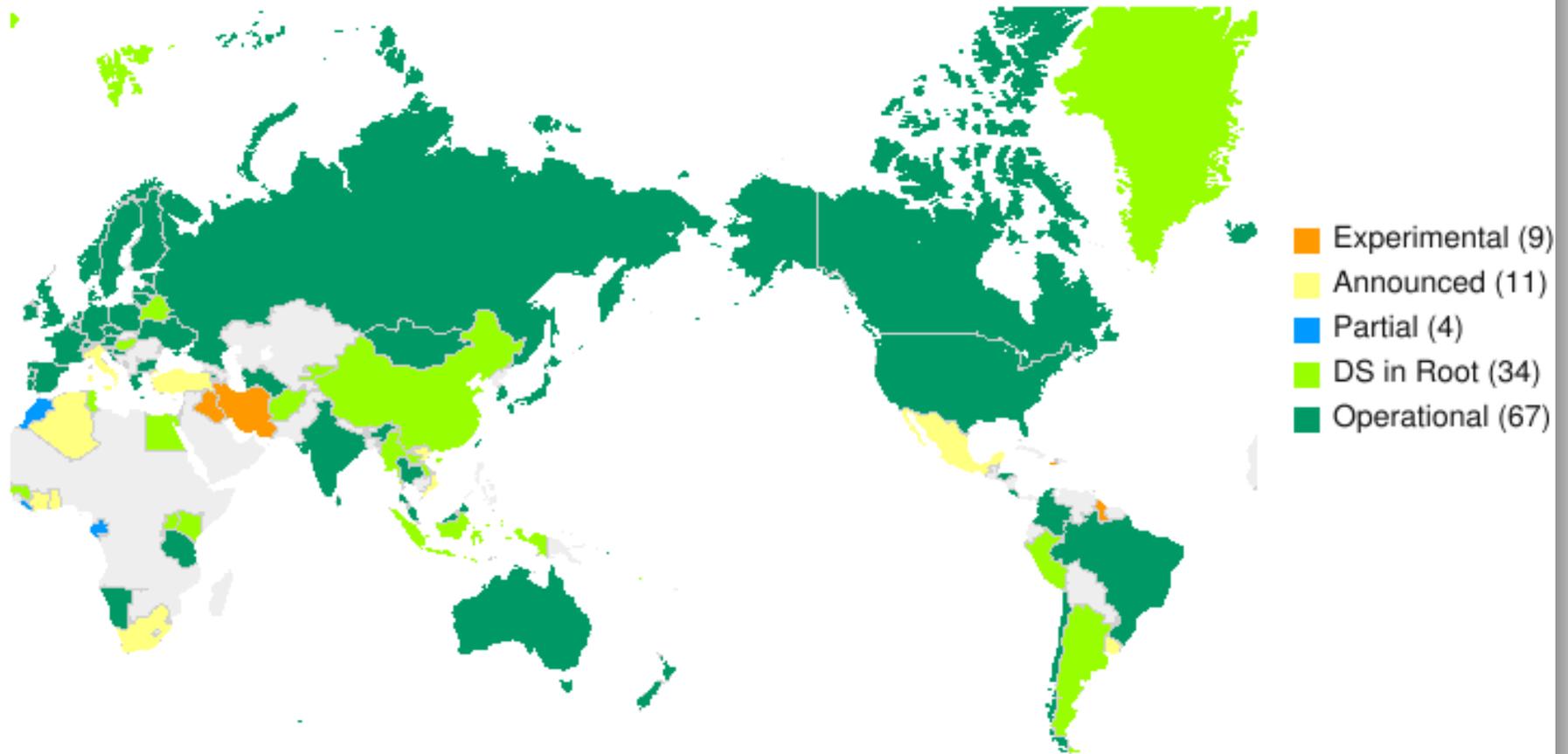
Partial – Zone is signed but not in operation

DS in Root

Operational – Accepting signed delegations

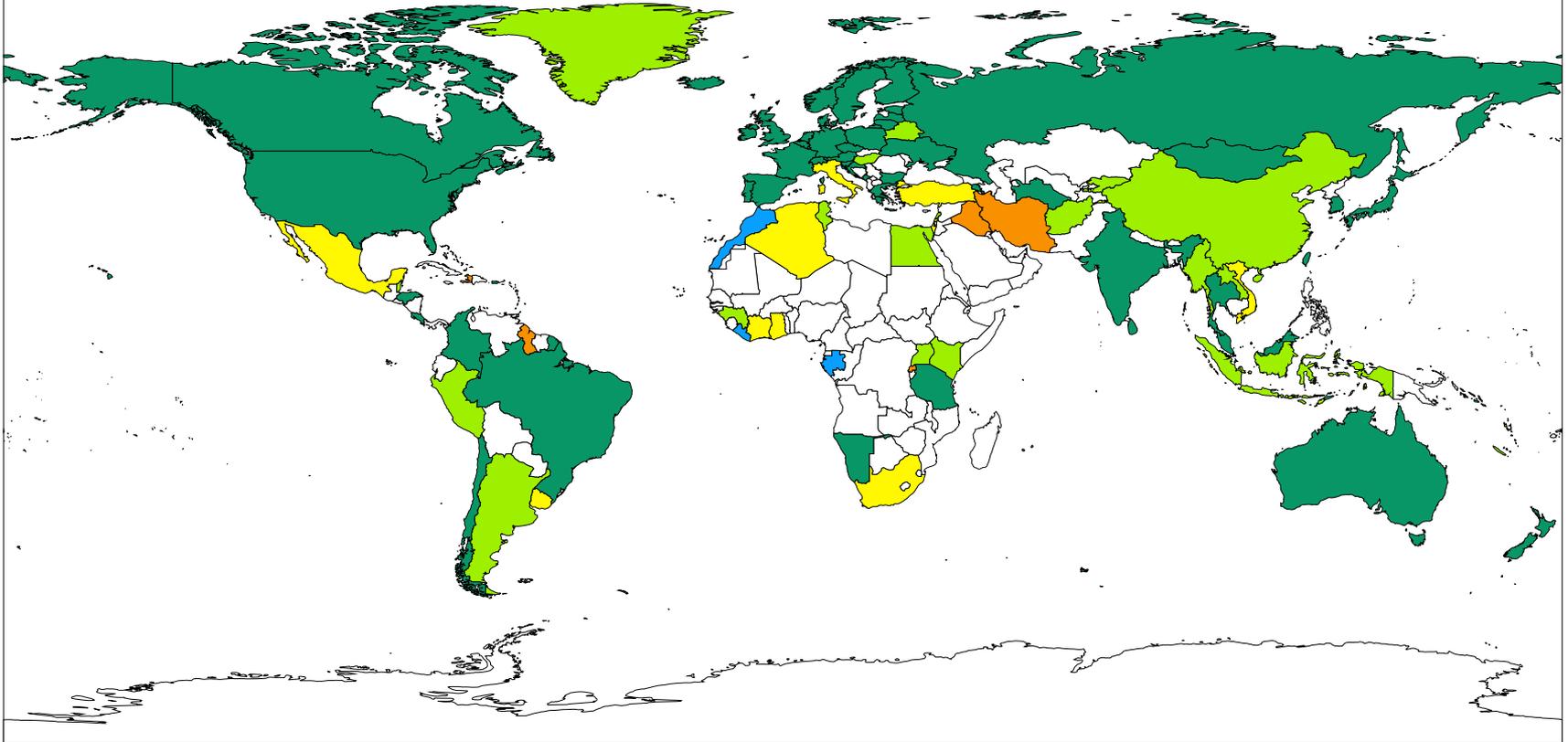


ccTLD DNSSEC Status on 2015-06-19



ccTLD DNSSEC Adoption as of 2015-06-19

Experimental ● Announced ● Partial ● DS in Root ● Operational ●



Experimental -- Internal experimentation announced or observed (9):

Announced -- Public commitment to deploy (11):

Partial -- Zone is signed but not in operation (no DS in root) (4):

DS in Root -- Zone is signed and its DS has been published (34):

Operational -- Accepting signed delegations and DS in root (67):

GY HK HT IQ IR MS MU RW TO

CI DZ GH IL IT MX SG TR UY VN ZA

GA LR MA VC

AD AF AG AR AW BY BZ CC CN EG FO GD GI GL GN HU ID KE KG KI KY LA LB LC MM

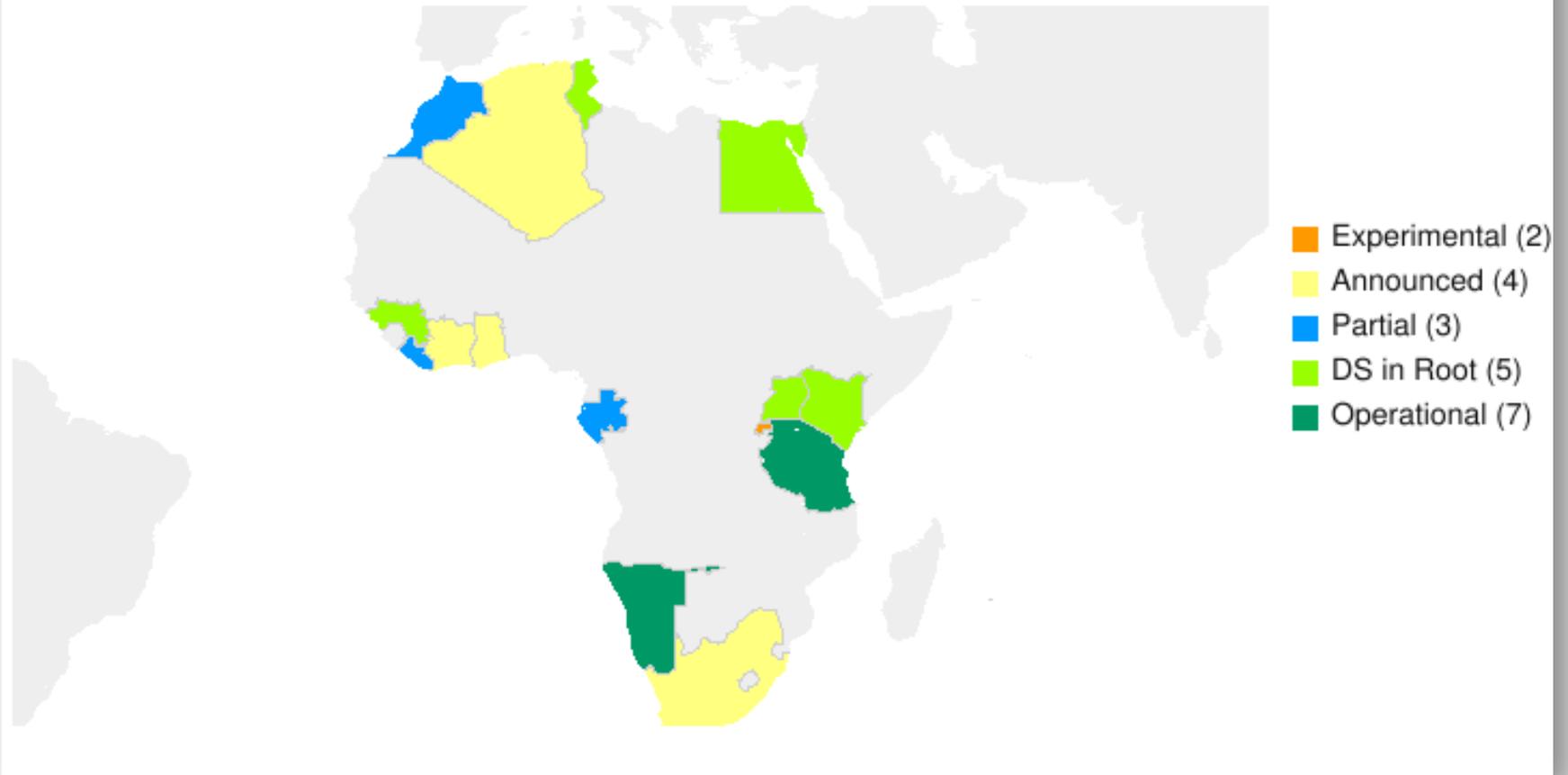
NC NU PE PW SJ TN TV UG VU

AC AM AT AU BE BG BR CA CH CL CO CR CX CZ DE DK EE ES FI FR GR GS HN HR IE

IN IO IS JP KR LI LK LT LU LV ME MN MY NA NF NL NO NZ PL PM PR PT RE RU SB

SC SE SH SI SX TF TH TL TM TT TW TZ UA UK US WF YT

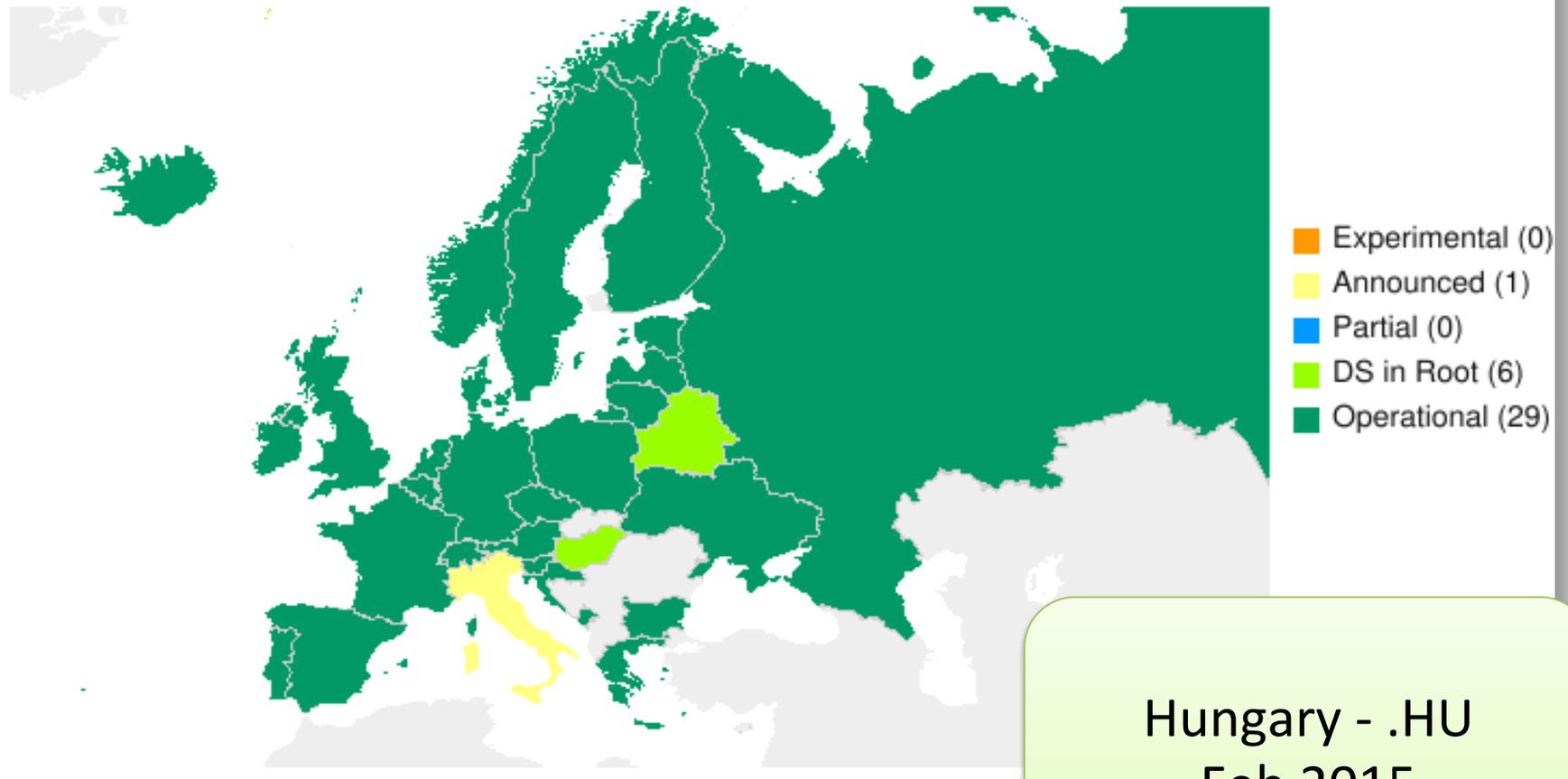
AF ccTLD DNSSEC Status on 2015-06-19



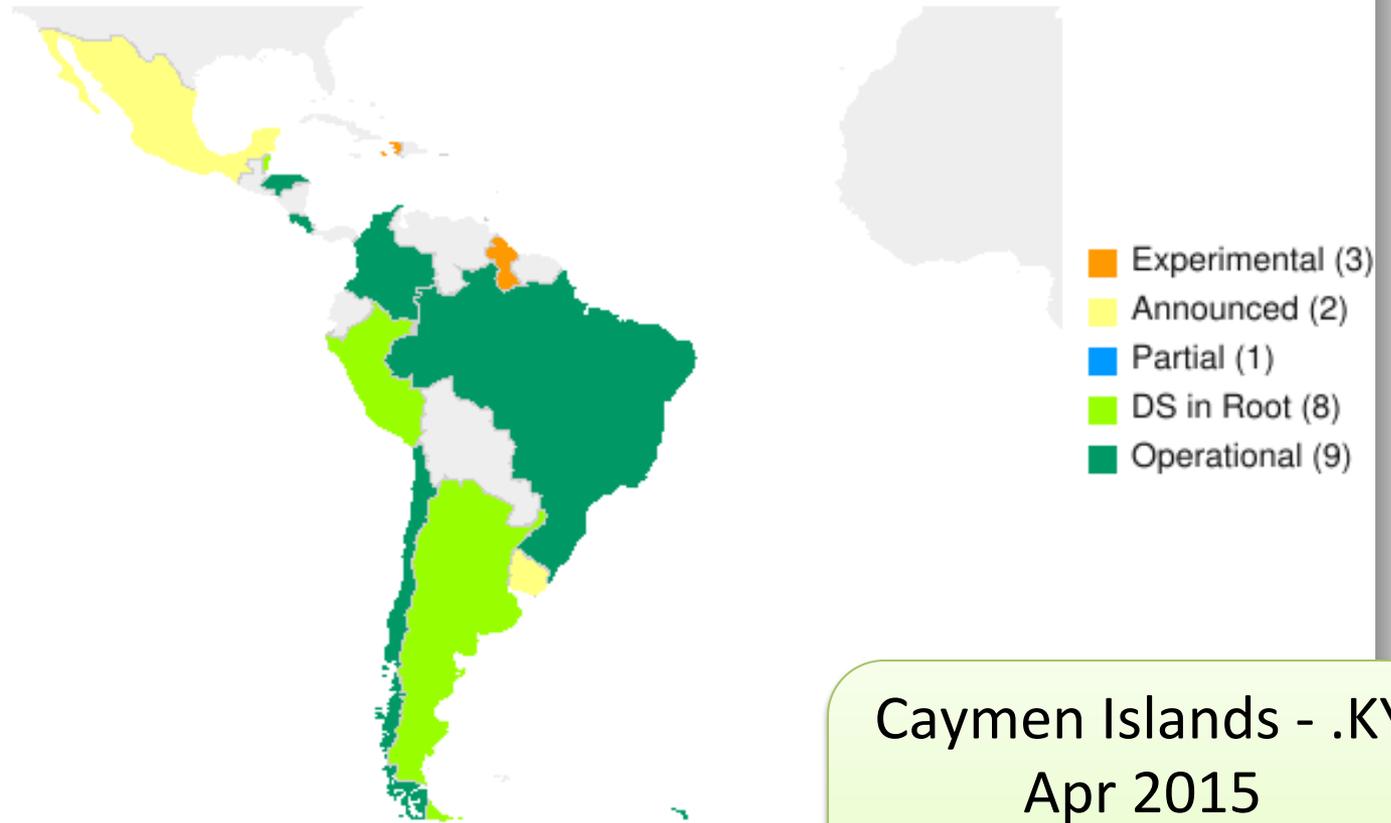
AP ccTLD DNSSEC Status on 2015-06-19



EUR ccTLD DNSSEC Status on 2015-06-19

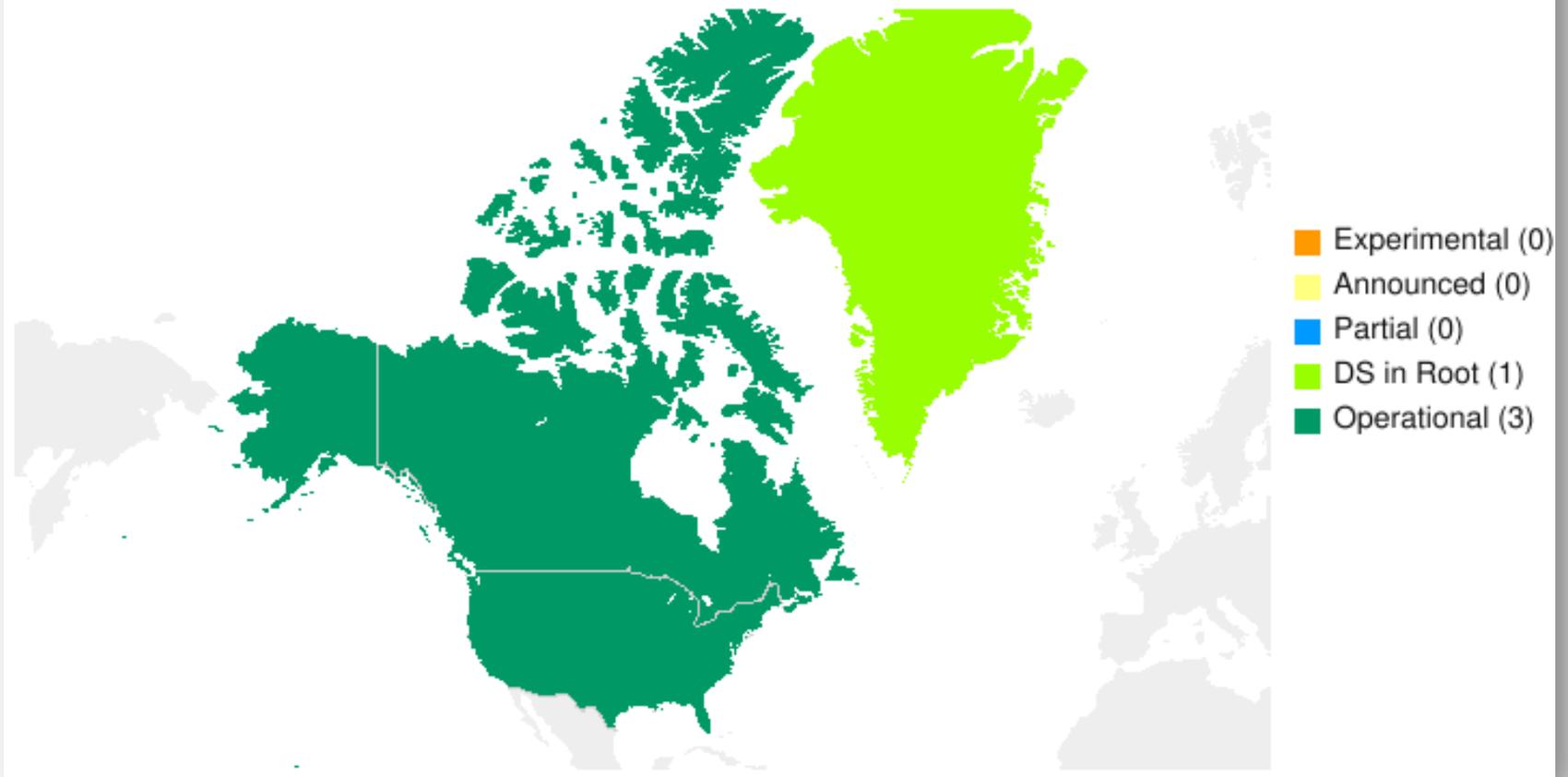


LAC ccTLD DNSSEC Status on 2015-06-19



Caymen Islands - .KY
Apr 2015
Argentina - .AR
June 2015

NA ccTLD DNSSEC Status on 2015-06-19



Receiving the DNSSEC Deployment Maps

The DNSSEC Deployment Maps are now published via email every Monday morning through the Internet Society Deploy360 Programme. To subscribe, visit:

www.internetsociety.org/deploy360/dnssec/maps/

DNSSEC Maps – Next Steps

Second-level domains?

- Rick Lamb's site

- <http://rick.eng.br/dnssecstat/>
- New columns: “% Signed” and “Signed/Total”
- Sort on column headings
- NewgTLDs and some ccTLDs and gTLDs
- Deploy360 post: <https://wp.me/p4eijv-5UI>

- nTLDStats

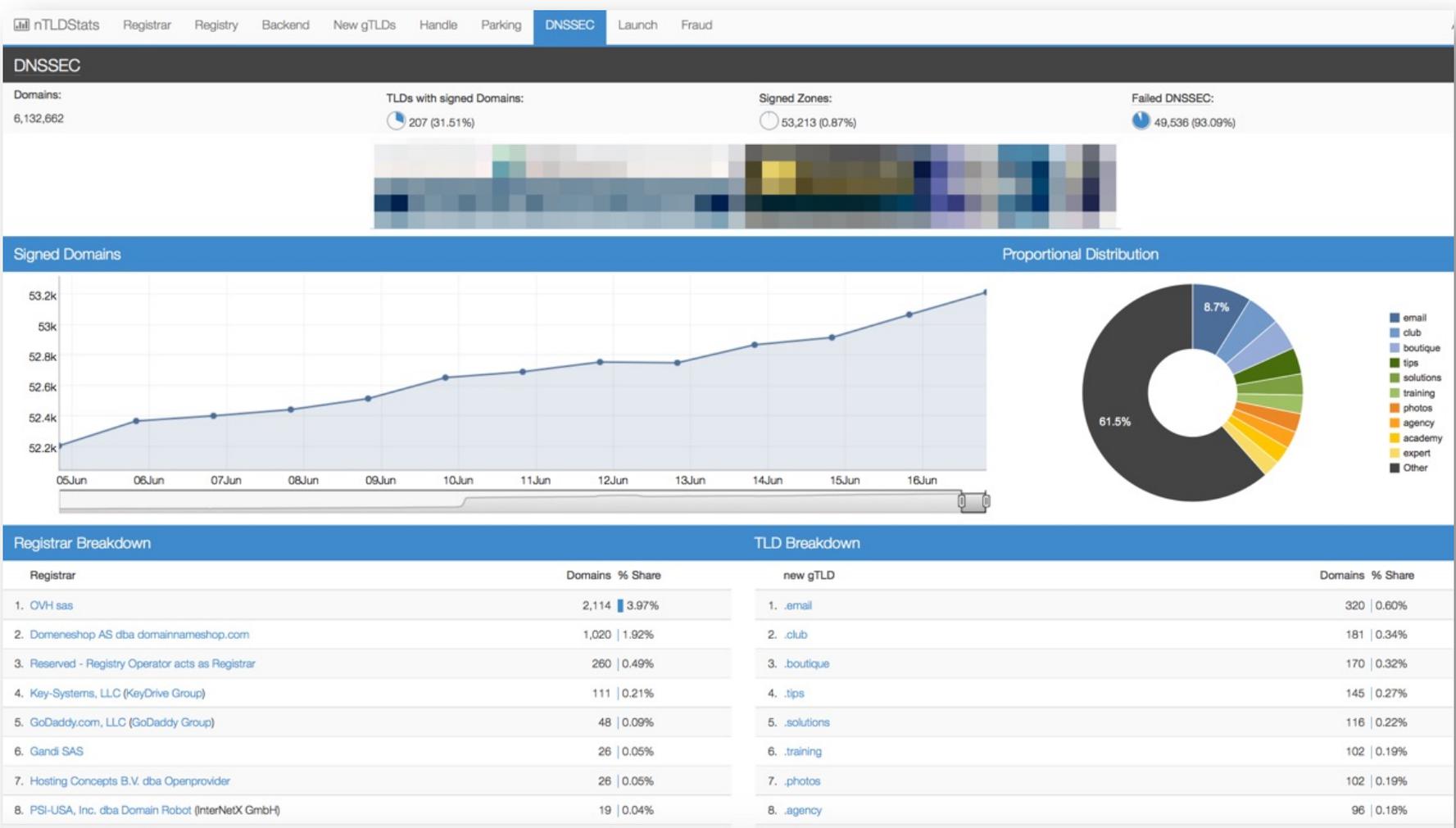
- <https://ntldstats.com/dnssec>
- New tab with graphs, and more
- Only for newgTLDs
- Deploy360 post: <https://wp.me/p4eijv-5Ui>

DNSSEC – Signed SLDs

TLD		Description	DS Date	% Signed	Signed/Total
nl.		SIDN (Stichting Internet Domeinregistratie Nederland)	11-NOV-2010	43.61	2436217/5586548
br.		Comite Gestor da Internet no Brasil	23-JUN-2010	20.96	760842/3629910
se.		The Internet Infrastructure Foundation	27-AUG-2010	45.93	574500/1250711
com.		VeriSign Global Registry Services	31-MAR-2011	0.43	500857/117460222
cz.		CZ.NIC, z.s.p.o	24-JUN-2010	61.92	460021/742935
net.		VeriSign Global Registry Services	9-DEC-2010	0.61	91033/14894552
org.		Public Interest Registry (PIR)	22-JUL-2010	0.48	50796/10501086
ovh.		OVH SAS	19-JUN-2014	46.92	29854/63633
info.		Afilias Limited	4-SEP-2010	0.25	13056/5141986
paris.		City of Paris	19-APR-2014	13.86	2573/18567
immo.		Auburn Bloom, LLC	27-AUG-2014	10.40	1112/10697
website.		DotWebsite Inc.	30-MAY-2014	1.31	945/71941
club.		.CLUB DOMAINS, LLC	18-JAN-2014	0.27	713/261154
science.		dot Science Limited	15-NOV-2014	0.22	672/309589
email.		Spring Madison, LLC	3-JAN-2014	1.26	636/50557
bzh.		Association www.bzh	17-JUN-2014	12.92	595/4607

- Missing some with high %, ex. .GOV, .NO

DNSSEC – Signed newgTLDs



DNSSEC Event Calendar

New calendar to track DNSSEC/DANE-related events.
Two views – event listing:

<https://www.dnssec-deployment.org/events/>

Calendar view:

<http://www.dnssec-deployment.org/calendar/>

Send event submissions to york@isoc.org

IETF 93 Hackathon

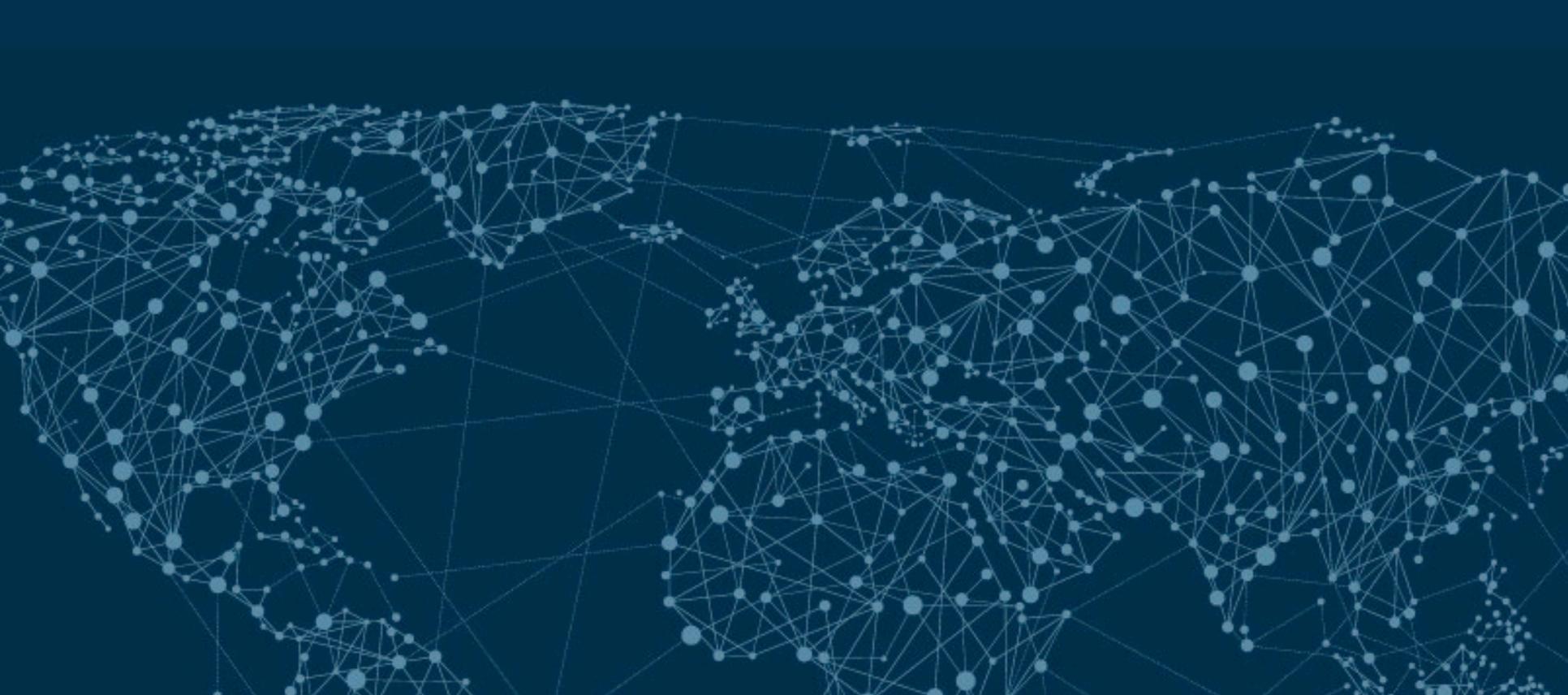
Sat/Sun, June 18/19, 2015 – Prague – IETF 93

- <https://www.ietf.org/hackathon/93-hackathon.html>
- <https://www.ietf.org/registration/MeetingWiki/wiki/93hackathon>
- Opportunity to work on new tools or services for DNSSEC / DANE / DNS Privacy
- Join us!

DNSSEC History Project

The DNSSEC History Project is an ongoing project to collect and record the history of the work that went into bringing about the deployment of DNSSEC. To view – or to contribute – please see:

https://wiki.tools.isoc.org/DNSSEC_History_Project



Thank you and Questions

Dan York, Internet Society | ICANN 53 | June 2015