DNSSEC Workshop

Jacques Latour, CIRA | ICANN60 | November 2017

ICANN

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DNSSEC Lunch Sponsors

- Afilias
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- Opportunity for a fourth sponsor for 2018! Please contact york@isoc.org

Support

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

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|---|
| **DNSSEC Workshop – Part I** |
| **0900-0915 – Presentation: Jacques Latour, CIRA -- DNSSEC Workshop Introduction, Program, Deployment Around the World – Counts, Counts, Counts** |
| **0915-1015 – Panel Discussion: DNSSEC Activities** |
| **Moderator: Jacques Latour, CIRA** |
| **Panelists:** |
| **Raed Al-Fayez, SaudiNIC/CITC – Implementing DNSSEC in Saudi Domain Names** |
| **Kadir Erdogan, NIC.TR – DNSSEC Activities in Turkey** |
| **Rajiv Kumar, NIXI -- .IN Registry DNSSEC Updates** |
| **Abdalmonem Tharwat Galila, MASR IDN -- DNSSEC Deployment Challenges** |
| **1015-1030 -- Coffee Break** |
| **DNSSEC Workshop – Part II** |
| **1030-1145 – Presentation and Panel Discussion: Current State of Root KSK Rollover and What's Next?** |
| **Moderator: Russ Mundy, Parsons** |
| **Panelists:** |
| **Jaap Akkerhuis, NLnet Labs -- Unbound and 5011: Ventures in the Unknown** |
| **Roy Arends, ICANN -- Root KSK Roll Delay Update and a Discussion About Roll Frequency** |
| **Cristian Hesselman, SIDN -- The Root Canary: Quantifying the Quality of DNSSEC Validation in the Wild** |
| **Geoff Huston, APNIC – Measuring KSK Roll Readiness** |
| **Duane Wessels, Verisign -- RFC 8145 -- Signaling Trust Anchor Knowledge in DNS Security Extensions (DNSSEC)** |
| **1145-1200 – The Great DNSSEC/DNS Quiz – Jacques Latour, CIRA** |
| **1215-1315 Lunch Break – TICKETS REQUIRED** |
| **DNSSEC Workshop – Part III** |
| **1330-1355 – Presentation/Demonstration: Wes Hardaker, ISI -- LocalRoot: Serve Yourself** |
| **1355-1420 – Presentation: Vittorio Bertola, Open-Xchange -- DomainID: Using DNSSEC for a Secure, Federated Digital Identity System** |
| **1420-1445 – Presentation: Ondrej Filip, CZNIC -- Automated KeySet Management** |
| **1445-1500 – Presentation: Russ Mundy, Parsons -- DNSSEC How Can I Help?** |

State of DNSSEC Deployment 2016

Detailed report on global deployment. Available for download now.

https://www.internetsociety.org/doc/state-dnssec-deployment-2016

State of DNSSEC Deployment 2016

December 2016

Internet Society
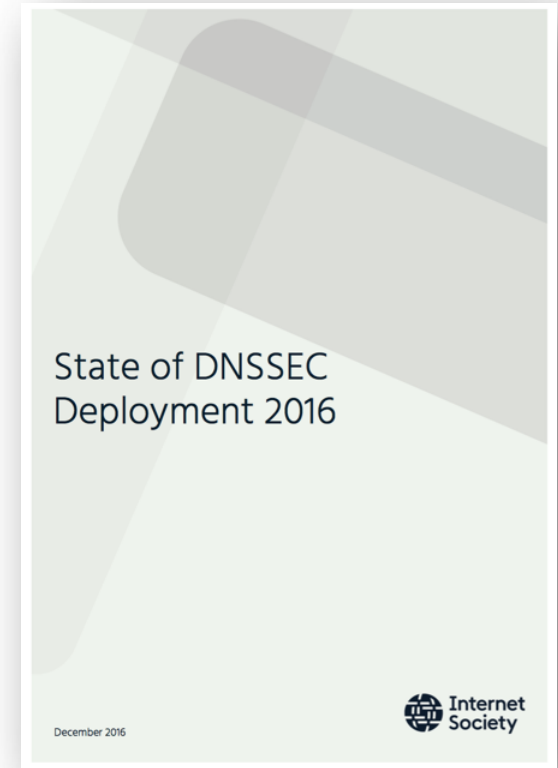
Use of DNSSEC Validation for World (XA)

http://stats.labs.apnic.net/dnssec/XA?c=XA&x=1&g=0&r=0&w=7&r=1
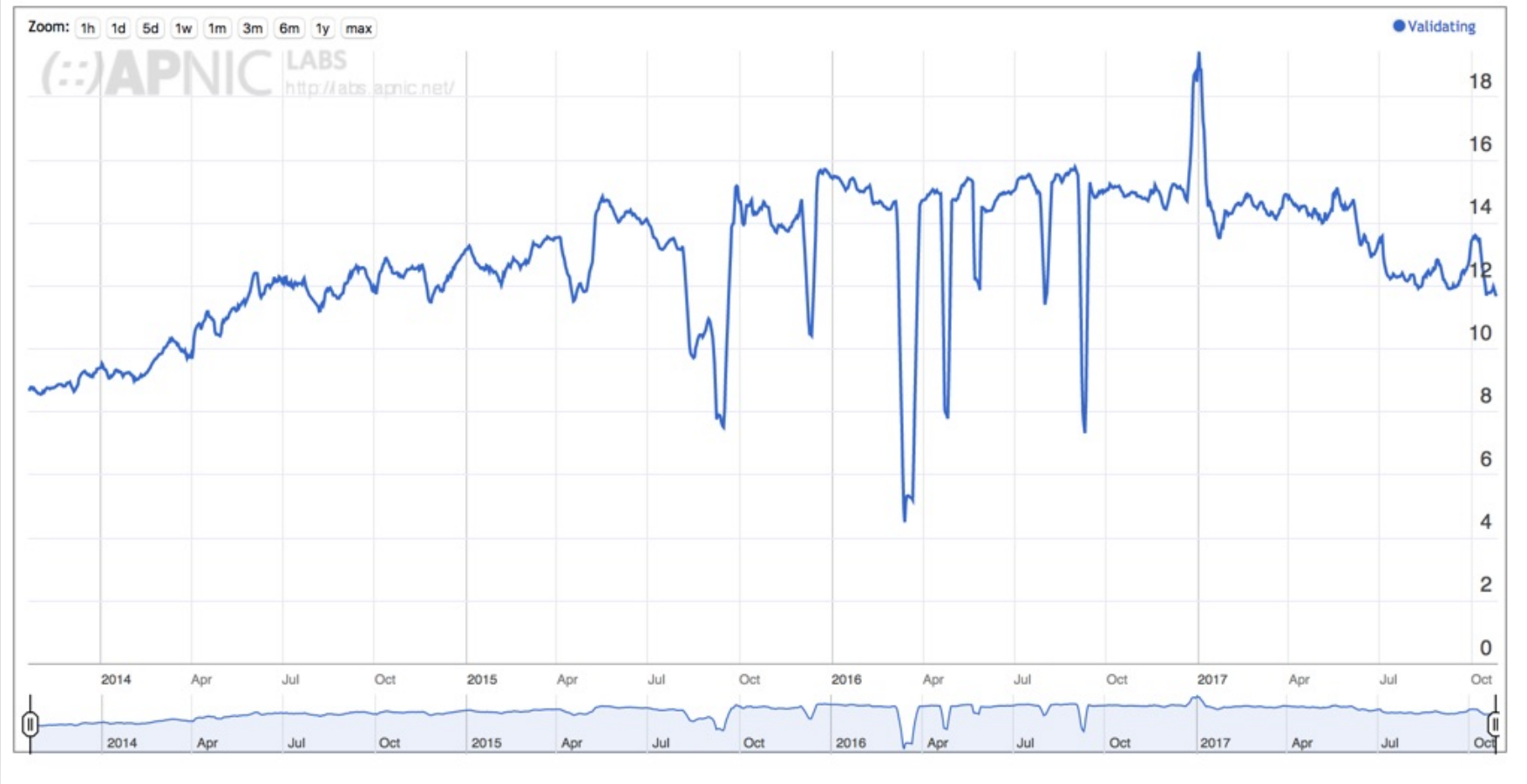
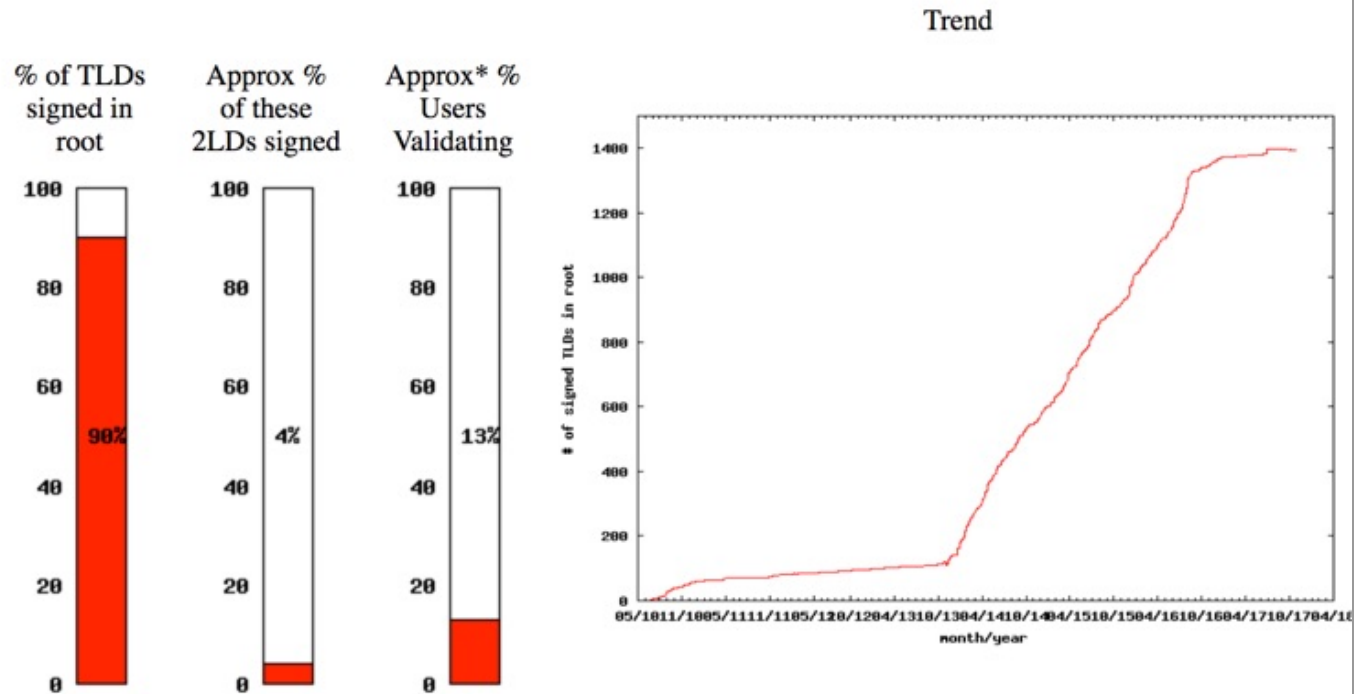| Code	SubRegion	DNSSEC Validates	Uses Google PDNS
XK	Southern Africa, Africa	38.43%	19.67%
QP	Australia and New Zealand, Oceania	31.21%	5.71%
XP	South America, Americas	25.44%	17.09%
QR	Micronesia, Oceania	24.90%	38.04%
QO	Western Europe, Europe	23.79%	6.65%
QQ	Melanesia, Oceania	23.26%	21.52%
XQ	Northern America, Americas	22.25%	9.99%
XH	Eastern Africa, Africa	21.95%	26.27%
QM	Northern Europe, Europe	21.65%	5.78%
XW	Eastern Europe, Europe	21.11%	13.96%
XN	Caribbean, Americas	17.13%	24.08%
QN	Southern Europe, Europe	15.66%	12.09%
XR	Central Asia, Asia	15.51%	15.88%
XV	Western Asia, Asia	13.06%	11.92%
XI	Middle Africa, Africa	11.74%	28.72%
XU	South-Eastern Asia, Asia	9.79%	13.47%
XO	Central America, Americas	8.18%	14.58%
XL	Western Africa, Africa	7.01%	33.28%
XJ	Northern Africa, Africa	6.86%	12.54%
QS	Polynesia, Oceania	6.82%	13.00%
XT	Southern Asia, Asia	6.50%	13.23%
XS	Eastern Asia, Asia	2.27%	4.75%

Low % of Google PDNS usage means more DNSSEC support by local ISPs.

High % of Google PDNS usage means ISPs are using Google for DNS versus operating their own DNS servers.

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

Region Map for Western Asia (145)
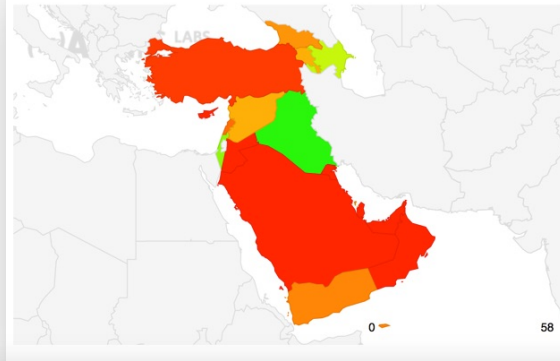
CC	Country	DNSSEC Validates	Uses Google PDNS
IQ	Iraq, Western Asia, Asia	57.38%	25.54%
PS	State of Palestine, Western Asia, Asia	53.14%	35.31%
IL	Israel, Western Asia, Asia	43.59%	10.54%
AZ	Azerbaijan, Western Asia, Asia	36.49%	39.79%
AM	Armenia, Western Asia, Asia	20.87%	19.35%
SY	Syrian Arab Republic, Western Asia, Asia	20.84%	31.18%
GE	Georgia, Western Asia, Asia	17.62%	12.76%
BH	Bahrain, Western Asia, Asia	16.34%	4.06%
YE	Yemen, Western Asia, Asia	15.83%	26.81%
LB	Lebanon, Western Asia, Asia	13.03%	10.23%
TR	Turkey, Western Asia, Asia	7.06%	8.59%
CY	Cyprus, Western Asia, Asia	3.95%	10.06%
OM	Oman, Western Asia, Asia	3.28%	6.88%
SA	Saudi Arabia, Western Asia, Asia	2.62%	3.16%
AE	United Arab Emirates, Western Asia, Asia	1.77%	5.64%
JO	Jordan, Western Asia, Asia	1.49%	4.12%
QA	Qatar, Western Asia, Asia	1.03%	4.38%
KW	Kuwait, Western Asia, Asia	0.50%	1.90%

Low % of Google PDNS usage means more DNSSEC support by local ISPs.

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https://stats.labs.apnic.net/dnssec/XV?o=cXAw7x1g0r1

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

Top TLDs in Number of Signed Domains

TLD		Description	DS Date	% Signed	Signed/Total	AlgNo:Count
nl.		SIDN (Stichting Internet Domeinregistratie Nederland)	11-NOV-2010	48.98	2832659/5783202	
br.		Comite Gestor da Internet no Brasil	23-JUN-2010	23.59	925470/3923636	
com.		VeriSign Global Registry Services	31-MAR-2011	0.58	751366/129716232	1:124 2:31 3:54 5:10165 6:4 7:490748 8:130147 10:813 12:21 13:119089 14:159 253:3 254:8
se.		The Internet Infrastructure Foundation	27-AUG-2010	44.41	697367/1570272	
cz.		CZ.NIC, z.s.p.o	24-JUN-2010	51.50	671168/1303304	
no.		UNINETT Norid A/S	15-NOV-2014	55.55	412445/742447	
hu.		Council of Hungarian Internet Providers (CHIP)	22-FEB-2015	19.02	136494/717760	
net.		VeriSign Global Registry Services	9-DEC-2010	0.74	108575/14642868	1:19 2:3 3:18 5:2581 6:1 7:71596 8:14143 10:251 12:3 13:19876 14:80 253:2 254:2
nu.		The IUSN Foundation	25-SEP-2010	21.35	87513/409845	5:81 7:6043 8:79815 10:8 13:1566

Note: Only includes the TLDs for which Rick Lamb can get statistics. (Example, .GOV is not listed.)

NEW! Rick is now tracking the number of domains using specific DNSSEC crypto algorithms

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

TLD DNSSEC Implementation Status

Experimental – internal experiments
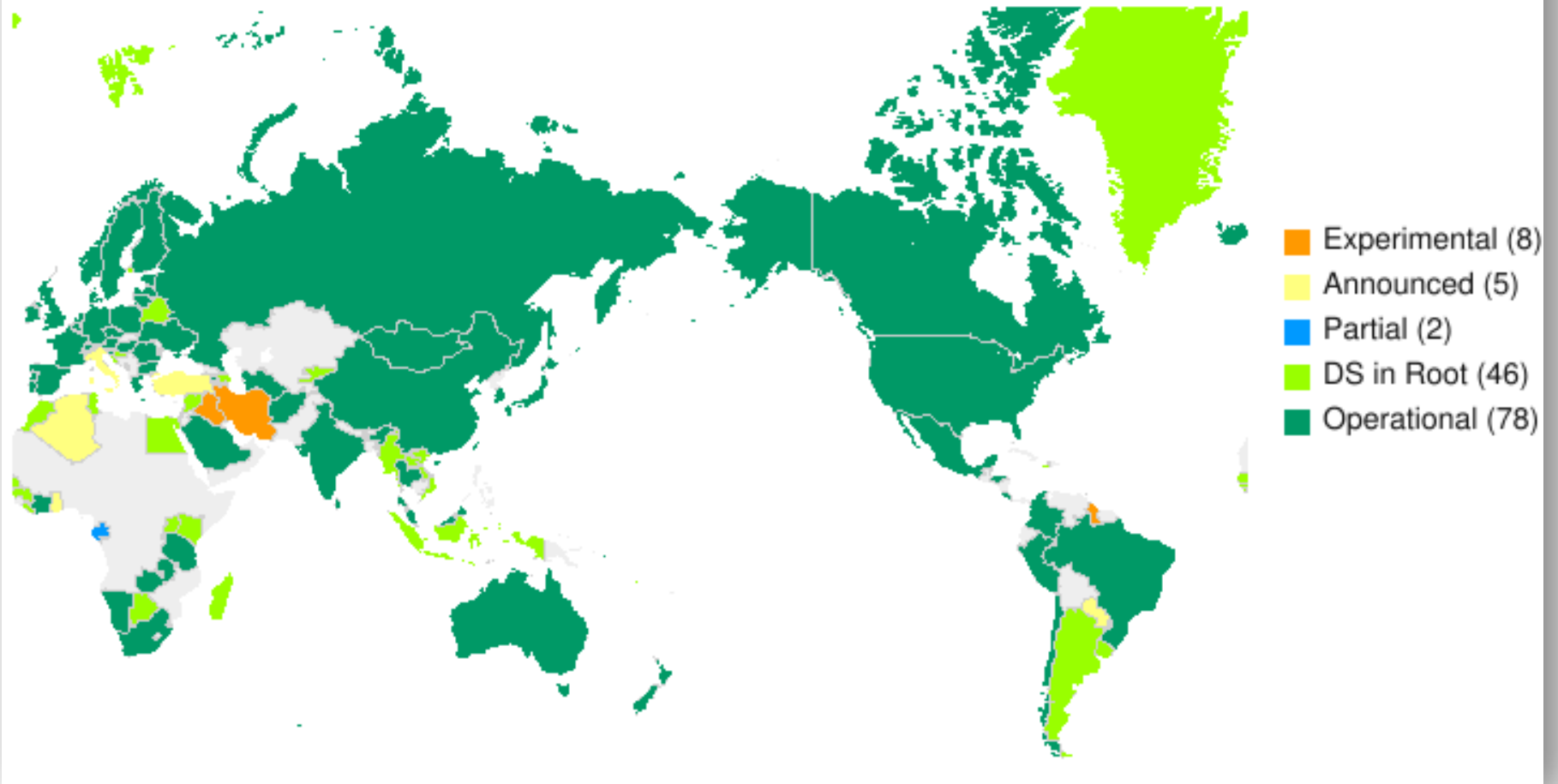
Announced – Public commitment to deploy

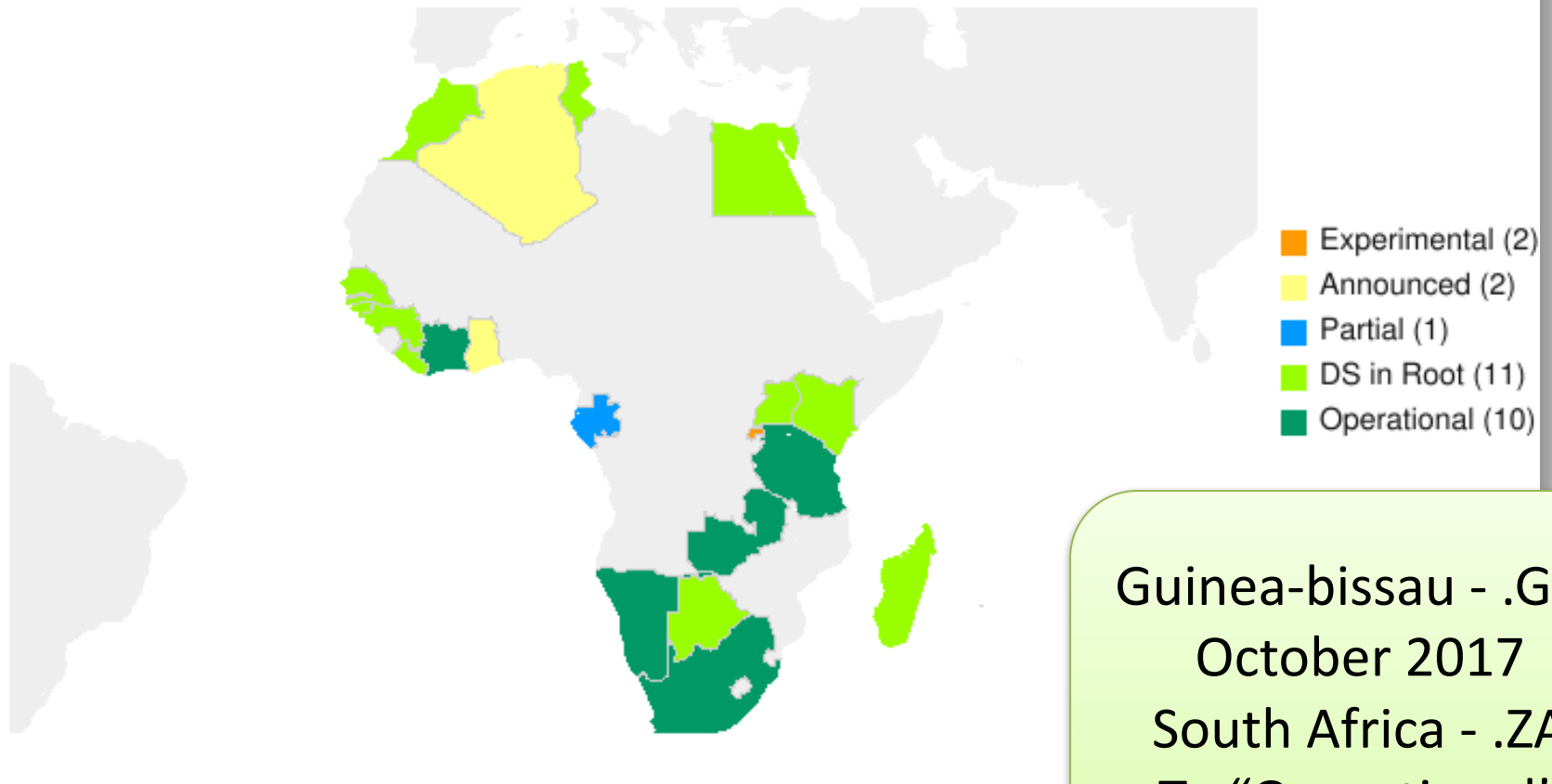**Partial – Zone is signed but not in operation**

DS in Root

**Operational – Accepting signed delegations**

ccTLD DNSSEC Status on 2017-10-28

Experimental (8)
Announced (5)
Partial (2)
DS in Root (46)
Operational (78)

AF ccTLD DNSSEC Status on 2017-10-28

Experimental (2)
Announced (2)
Partial (1)
DS in Root (11)
Operational (10)

Guinea-bissau - .GW
October 2017
South Africa - .ZA
To "Operational"

AP ccTLD DNSSEC Status on 2017-10-28

Legend:
- Experimental (4)
- Announced (1)
- Partial (0)
- DS in Root (17)
- Operational (24)
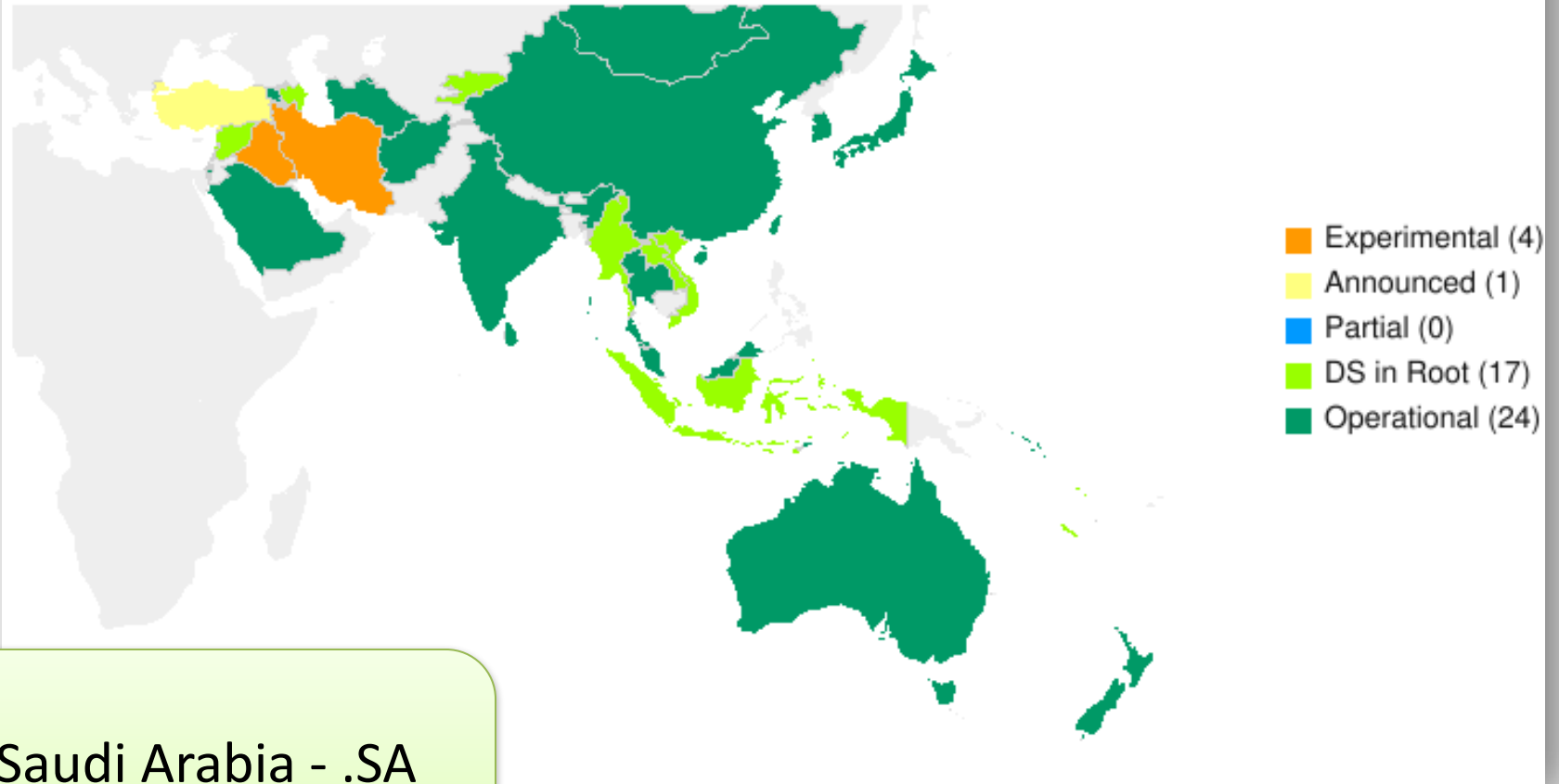
Saudi Arabia - .SA
To "Operational"

EUR ccTLD DNSSEC Status on 2017-10-28

Experimental (0)
Announced (1)
Partial (0)
DS in Root (7)
Operational (30)
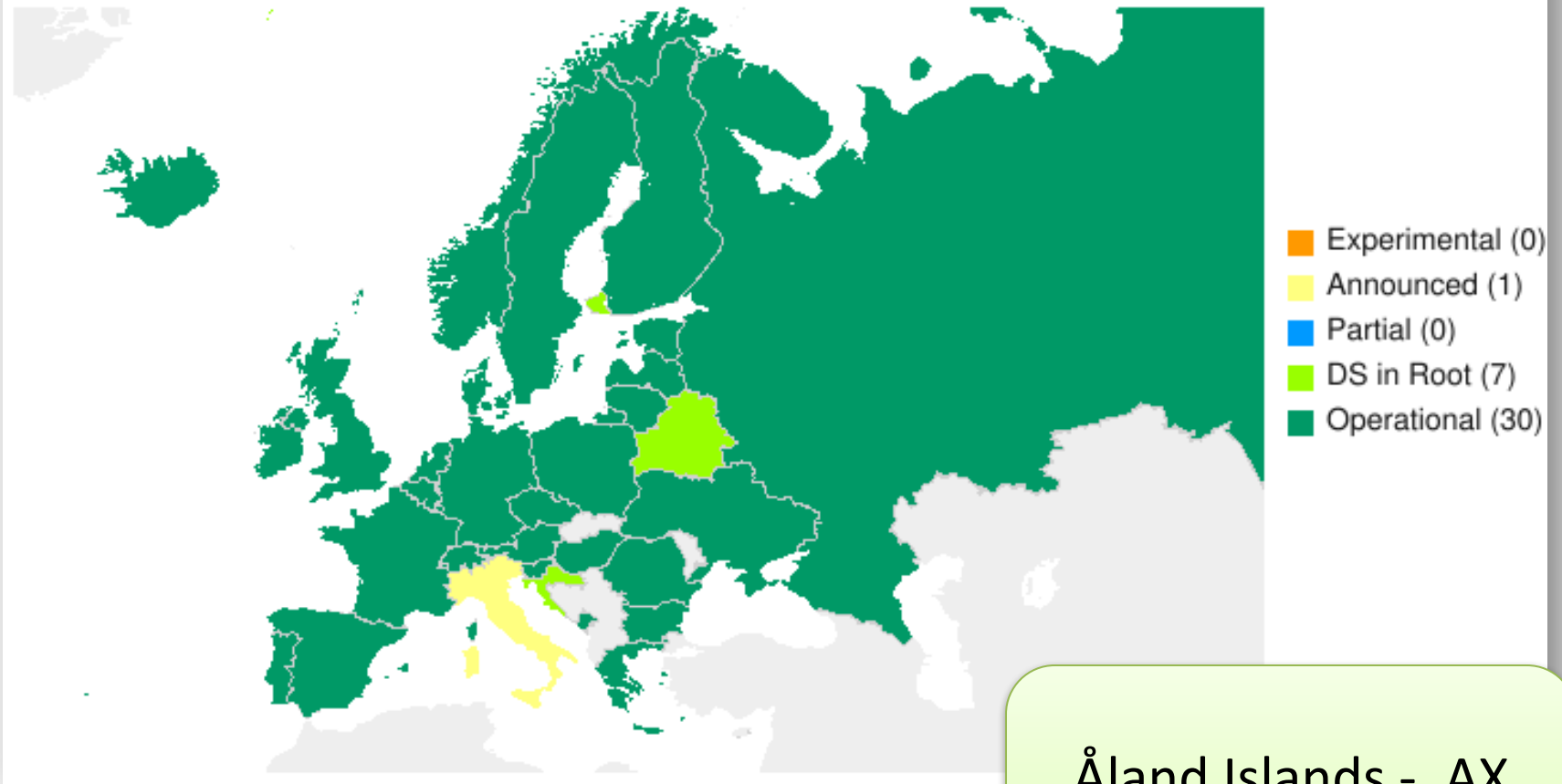
Åland Islands - .AX
August 2017

LAC ccTLD DNSSEC Status on 2017-10-28

Experimental (2)
Announced (1)
Partial (1)
DS in Root (9)
Operational (11)

Bermuda - .BM
June 2017

NA ccTLD DNSSEC Status on 2017-10-28

Legend:
- Experimental (0)
- Announced (0)
- Partial (0)
- DS in Root (2)
- Operational (3)
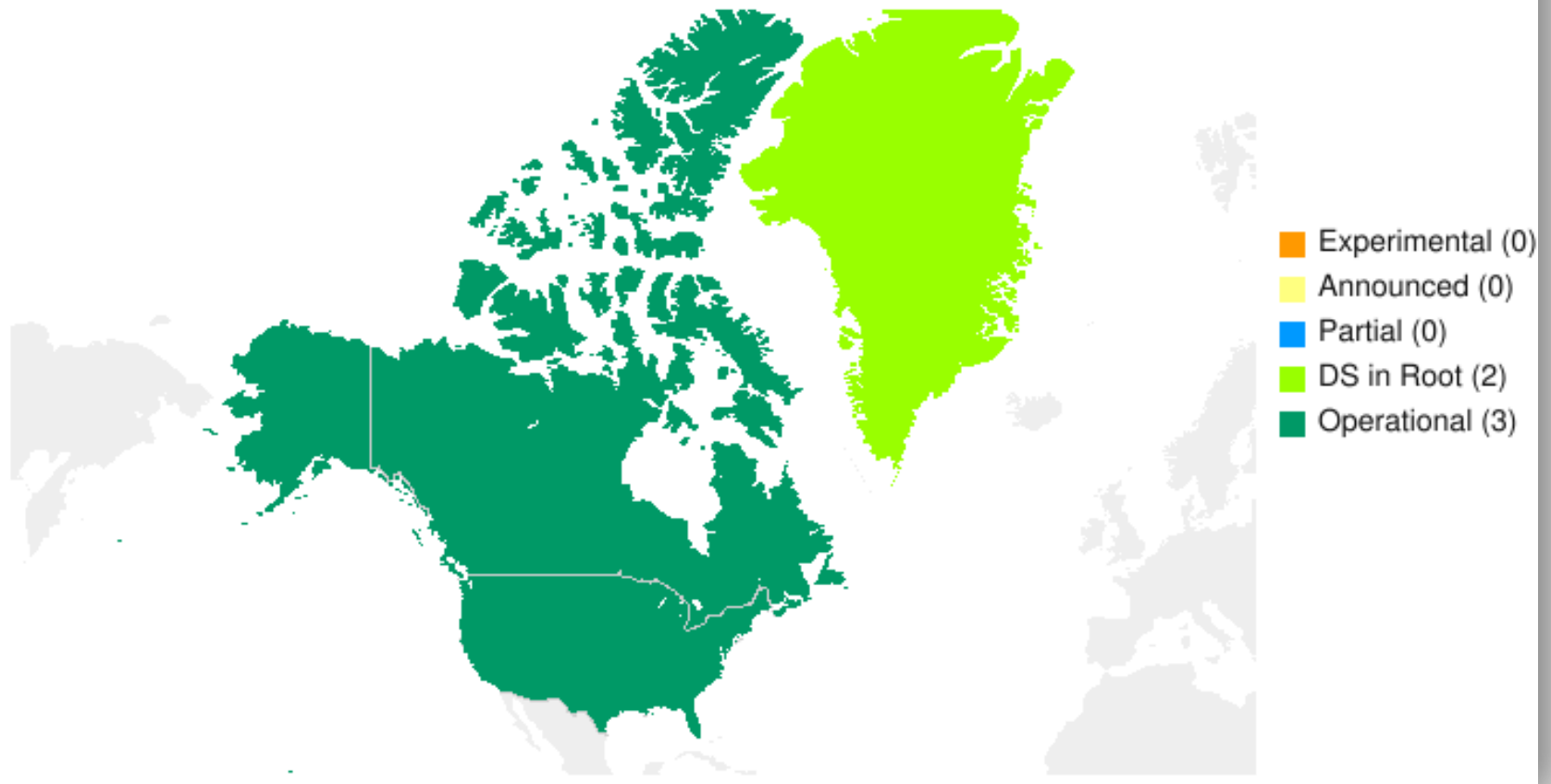
Receiving the DNSSEC Deployment Maps

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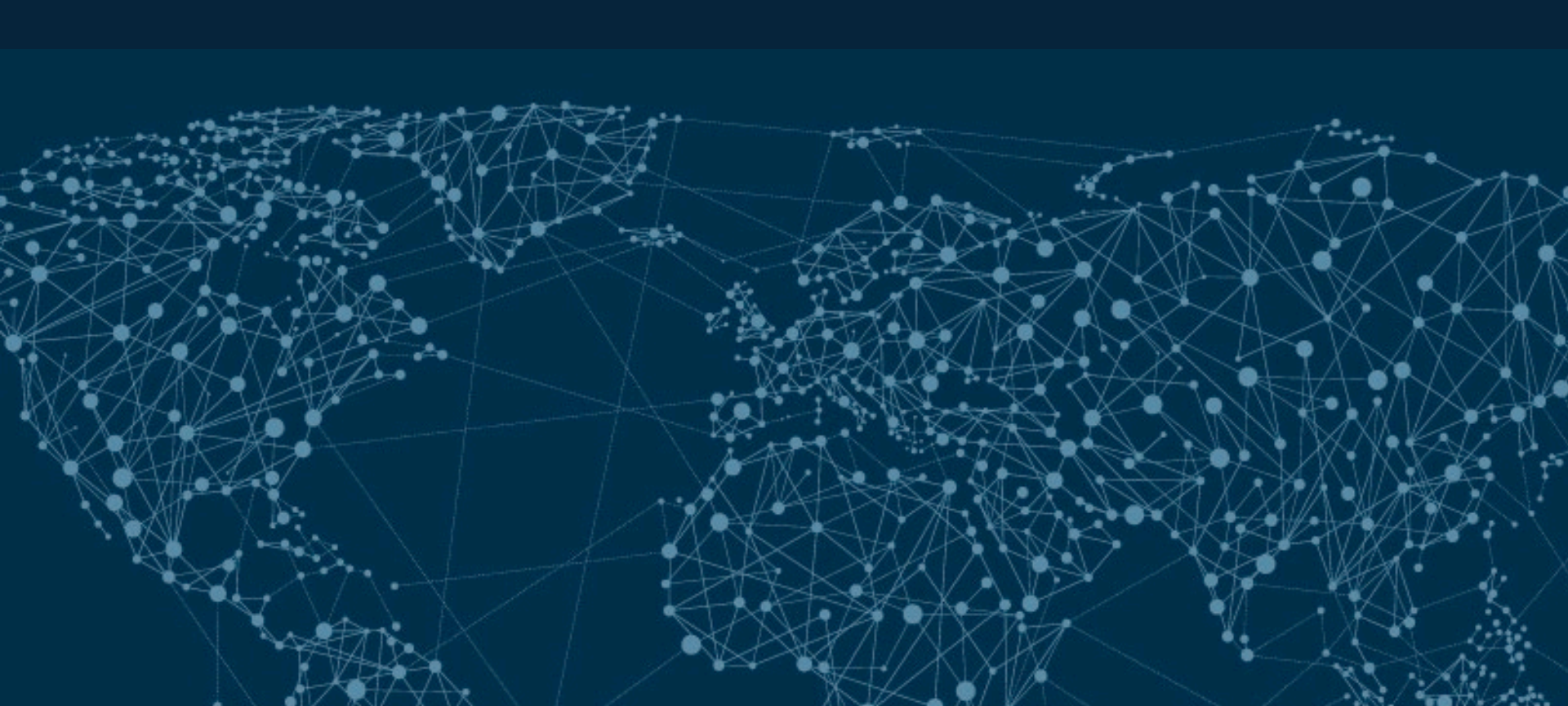To subscribe, visit:

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

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://www.dnssec-deployment.org/history/

NEW URL!

Thank you and Questions