DNSSEC Workshop

Jacques Latour, CIRA | ICANN61 | March 2018

ICANN

Program Committee

- Mark Elkins, DNS/ZACR
- Jean Robert Hountomey, AfricaCERT
- Jacques Latour, CIRA
- Xiaodong Lee, CNNIC
- Luciano Minuchin, NIC.AR
- Russ Mundy, Parsons
- Ondřej Filip, CZNIC
- Yoshiro Yoneya, JPRS
- Dan York, Internet Society
- Julie Hedlund, Andrew McConachie, and Kathy Schnitt, ICANN

DNSSEC Lunch Sponsors

- Afilias
- CIRA
- SIDN

- 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: Dan York, Internet Society -- DNSSEC Workshop Introduction, Program, Deployment Around the World – Counts, Counts, Counts** |
| **0915-1015 – Panel Discussion: DNSSEC Activities** |
| **Moderator: Jacques Latour, CIRA** |
| **Panelists:** |
| **Joe Crowe, Comcast** |
| **Jacques Latour, CIRA – DNSSEC Activities in Canada and .CA** |
| **Carlos Acosta, NIC.PR and Jim Galvin, Afilias -- .PR DNSSEC History and Experience and .PR - Transitioning Registry Services with DNSSEC** |
| **Frederico Neves, .BR -- .BR DNSSEC Algorithm Rollover** |
| **1015-1030 -- Coffee Break** |
| **DNSSEC Workshop – Part II** |
| **1030-1100 – Presentation: Warren Kumari -- A Sentinel for Detecting Trusted Keys in DNSSEC** |
| **1100-1120 – Presentation: Ondrej Filip, CZ.NIC -- Experience with DNSSEC Validation at CPE** |
| **1120-1140 – Presentation: Jake Zack, .CA/CIRA -- DNSSEC HSM, Signer and KSK Rollover** |
| **1140-1200 – Presentation: Joe Crowe, Comcast -- Negative Trust Anchors** |
| **1200--1215 – The Great DNSSEC/DNS Quiz – Jacques Latour, CIRA** |
| **1215-1315 Lunch Break – In the Terrace (3rd Floor) -- TICKETS REQUIRED** |
| **DNSSEC Workshop – Part III** |
| **1330-1415 – Presentation: Viktor Dukovni – Real World DANE Inter-Domain Email Transport** |
| **1415-1445 – Presentation and Panel Discussion: Current State of Root KSK Rollover and What's Next?** |
| **Moderator: Russ Mundy, Parsons** |
| **Panelists:** |
| **Joe Crowe, Comcast** |
| **Warren Kumari, Google** |
| **Matt Larson, ICANN – Root KSK Rollover Update** |
| **Jacques Latour, CIRA** |
| **1455-1500 – Presentation: Russ Mundy, Parsons -- DNSSEC How Can I Help?** |

DNSSEC Deployment Around
the World: Counts, Counts, Counts

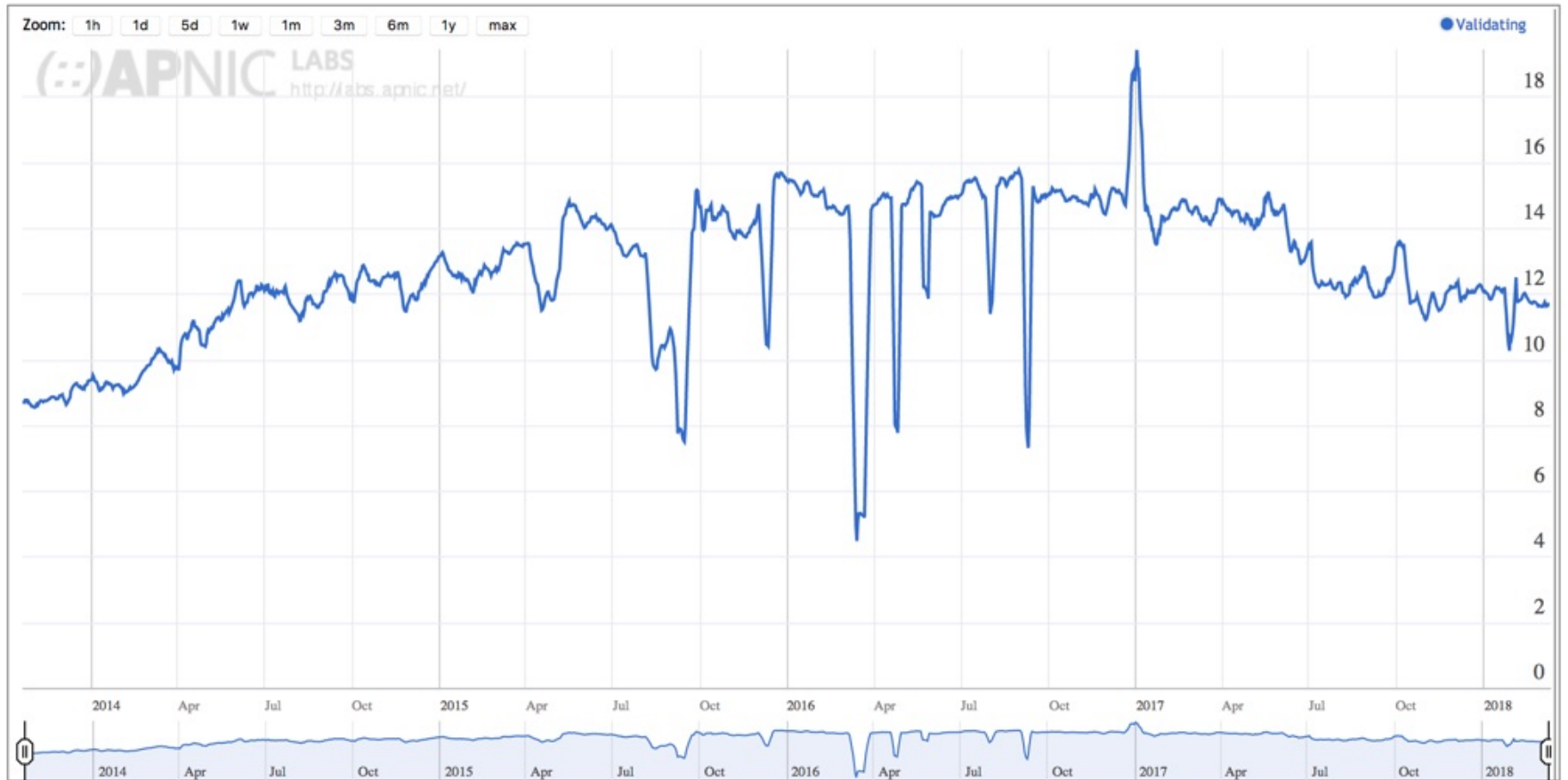Jacques Latour, CIRA | ICANN61 | March 2018

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
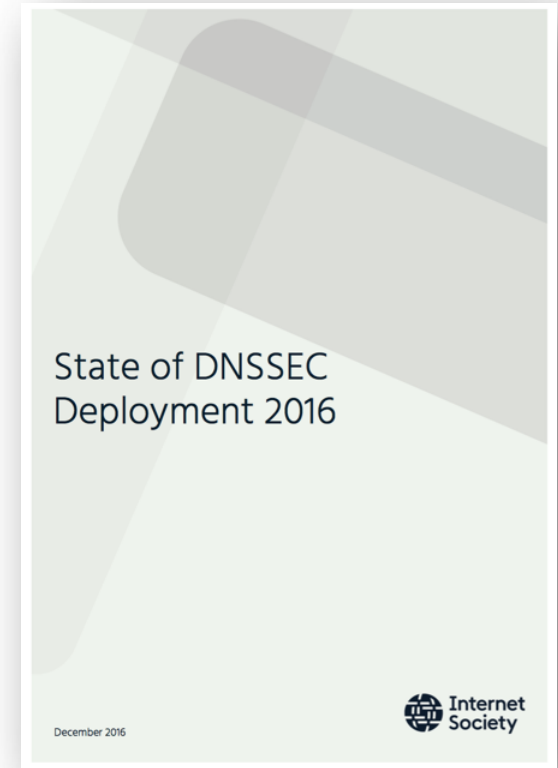
Use of DNSSEC Validation for World (XA)

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
QR	Micronesia, Oceania	58.58%	45.32%
XK	Southern Africa, Africa	45.82%	21.64%
QP	Australia and New Zealand, Oceania	29.16%	4.18%
XR	Central Asia, Asia	25.43%	21.44%
QQ	Melanesia, Oceania	25.06%	28.79%
QO	Western Europe, Europe	24.60%	7.46%
XQ	Northern America, Americas	23.17%	7.26%
XP	South America, Americas	23.15%	16.60%
QM	Northern Europe, Europe	23.10%	6.02%
XW	Eastern Europe, Europe	21.58%	13.54%
XN	Caribbean, Americas	15.39%	23.98%
QN	Southern Europe, Europe	14.88%	12.18%
XV	Western Asia, Asia	13.13%	12.65%
XH	Eastern Africa, Africa	12.84%	23.72%
XI	Middle Africa, Africa	9.51%	26.32%
QS	Polynesia, Oceania	9.29%	15.11%
XO	Central America, Americas	8.31%	14.61%
XU	South-Eastern Asia, Asia	8.00%	11.49%
XJ	Northern Africa, Africa	7.26%	15.89%
XL	Western Africa, Africa	5.35%	27.54%
XT	Southern Asia, Asia	5.20%	9.36%
XS	Eastern Asia, Asia	2.26%	4.80%

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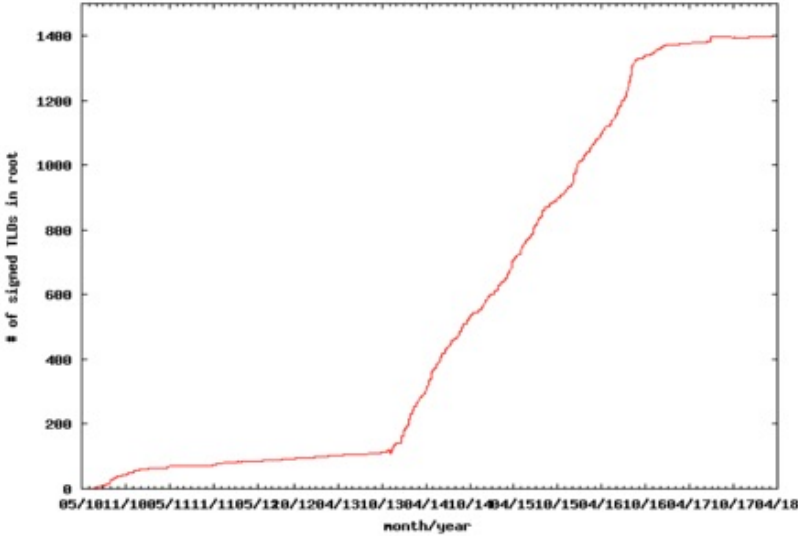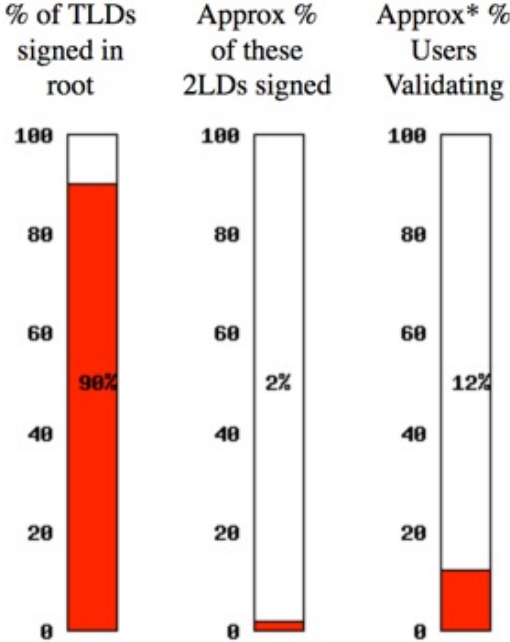
http://stats.labs.apnic.net/dnssec/XA?c=XA&x=1&g=1&r=0&w=7&r=1

DNSSEC Deployment Report

Mon Mar 12 05:07:01 UTC 2018
Total TLDs: 1544 / Signed TLDs in root: 1399 / Recently added: llc. (02/23/2018)

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

Top TLDs in Number of Signed Domains

TLD		Description	DS Date	% Signed	Signed/Total	AlgNo:Count
br.		Comite Gestor da Internet no Brasil	23-JUN-2010	26.13	1021177/3908308	
se.		The Internet Infrastructure Foundation	27-AUG-2010	50.20	864745/1722478	
com.		VeriSign Global Registry Services	31-MAR-2011	0.61	799411/130541929	1:106 2:32 3:51 5:8220 6:4 7:505737 8:148668 10:919 12:21 13:135407 14:234 253:3 254:9
cz.		CZ.NIC, z.s.p.o	24-JUN-2010	52.15	685441/1314338	
no.		UNINETT Norid A/S	15-NOV-2014	57.88	436242/753670	
hu.		Council of Hungarian Internet Providers (CHIP)	22-FEB-2015	19.52	141896/726949	
nu.		The IUSN Foundation	25-SEP-2010	27.63	136105/492565	5:65 7:5971 8:128338 10:22 13:1708 14:1
net.		VeriSign Global Registry Services	9-DEC-2010	0.80	114161/14223612	1:18 2:3 3:17 5:2366 6:2 7:74226 8:15734 10:271 12:3 13:21419 14:97 253:2 254:3
org.		Public Interest Registry (PIR)	22-JUL-2010	0.81	83925/10319569	1:5 2:3 3:8 5:1465 7:55466 8:11442 10:246 12:4 13:15223 14:56 15:1 253:1 254:5
info.		Afilias Limited	4-SEP-2010	0.49	31117/6335367	1:2 5:162 7:22509 8:2864 10:51 12:1 13:5522 14:6
ovh.		OVH SAS	19-JUN-2014	51.50	24469/47514	5:2 7:24319 8:23 10:5 13:116 14:4
dk.		Dansk Internet Forum	30-JUL-2010	1.76	23491/1334679	
biz.		Neustar, Inc.	7-AUG-2010	0.86	16821/1964846	1:2 3:4 5:171 7:12674 8:1415 10:22 13:2530 14:3

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

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

TLD DNSSEC Implementation Status

Experimental – internal experiments
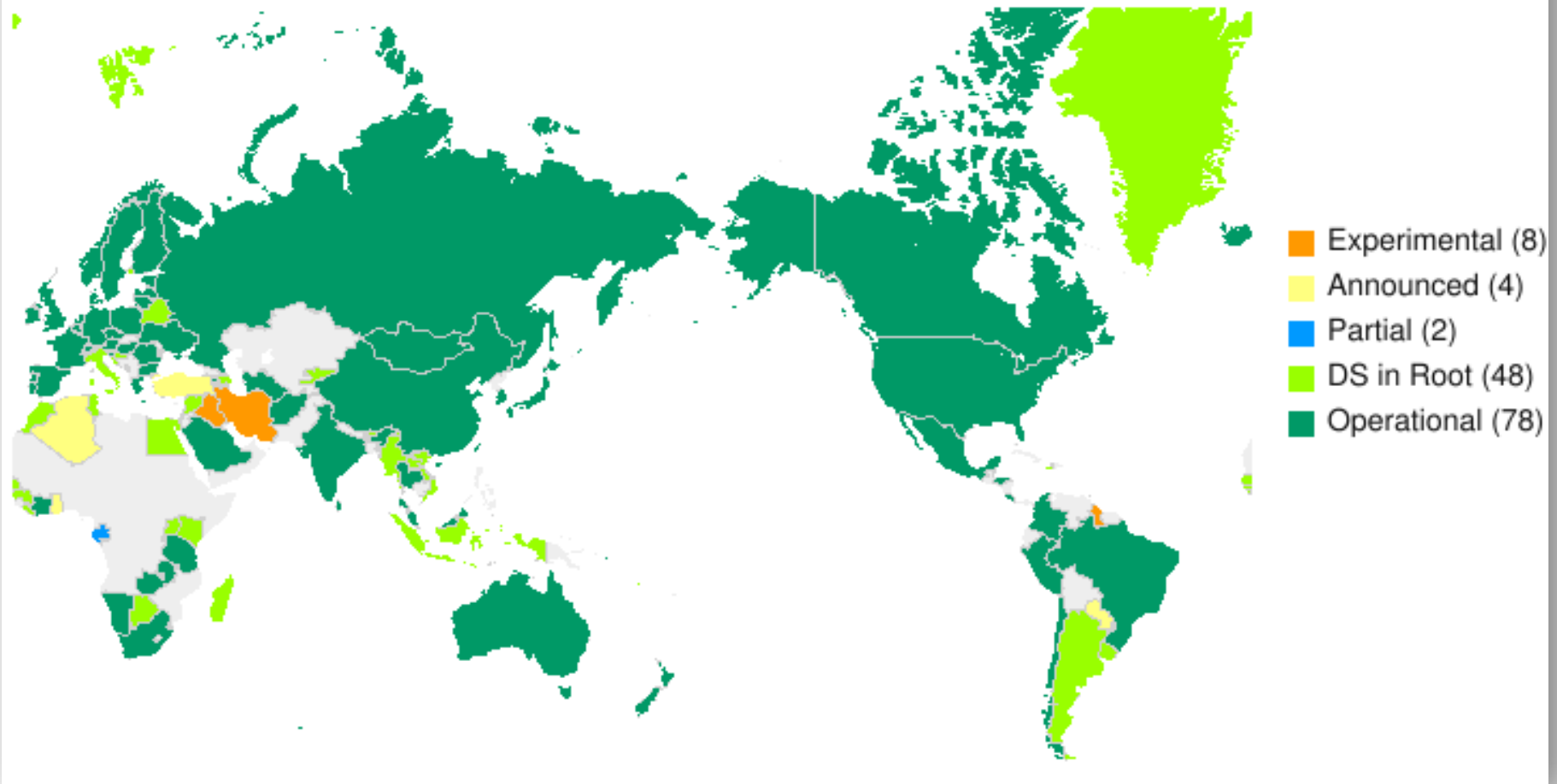
Announced – Public commitment to deploy

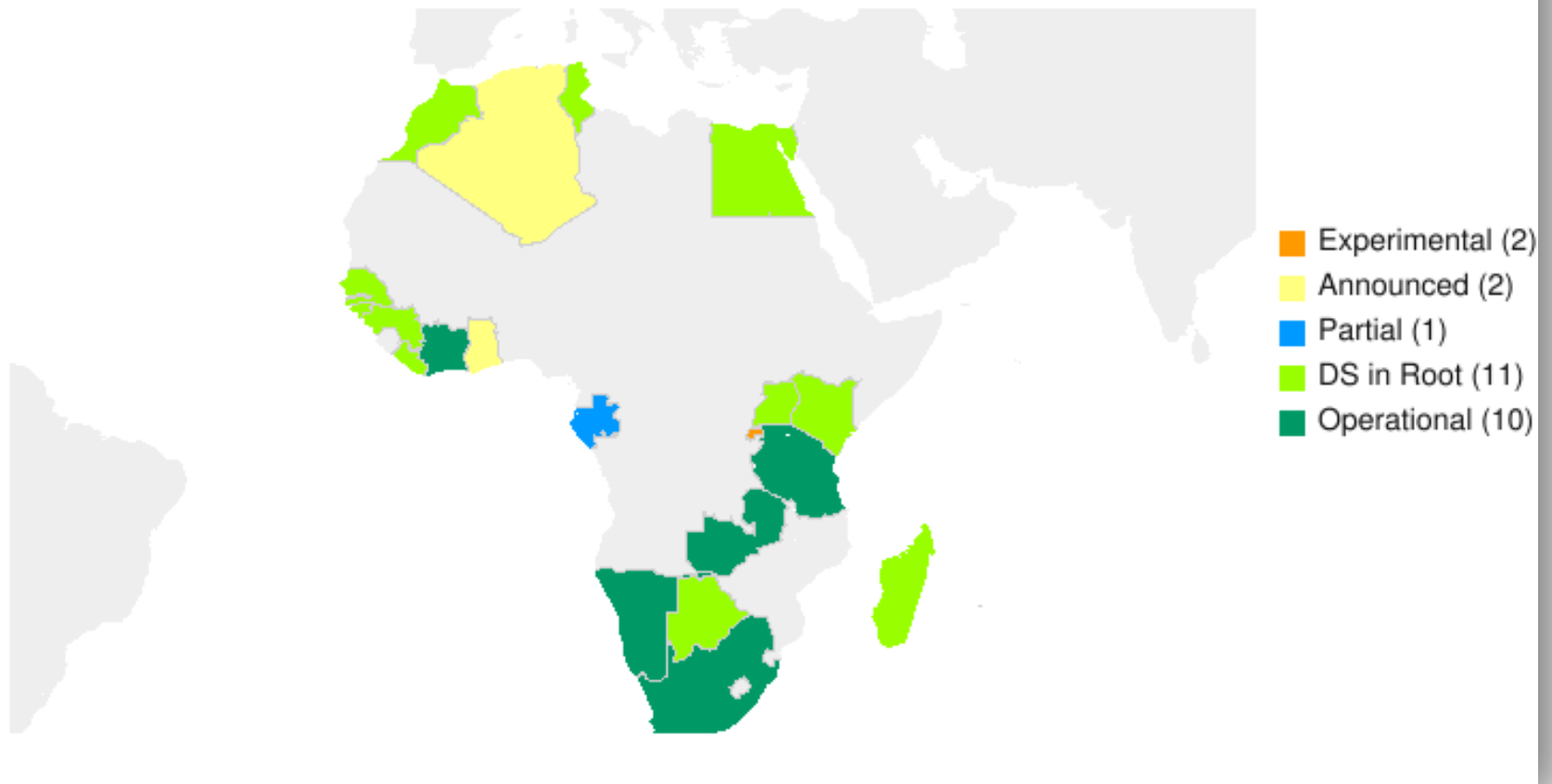**Partial – Zone is signed but not in operation**

DS in Root

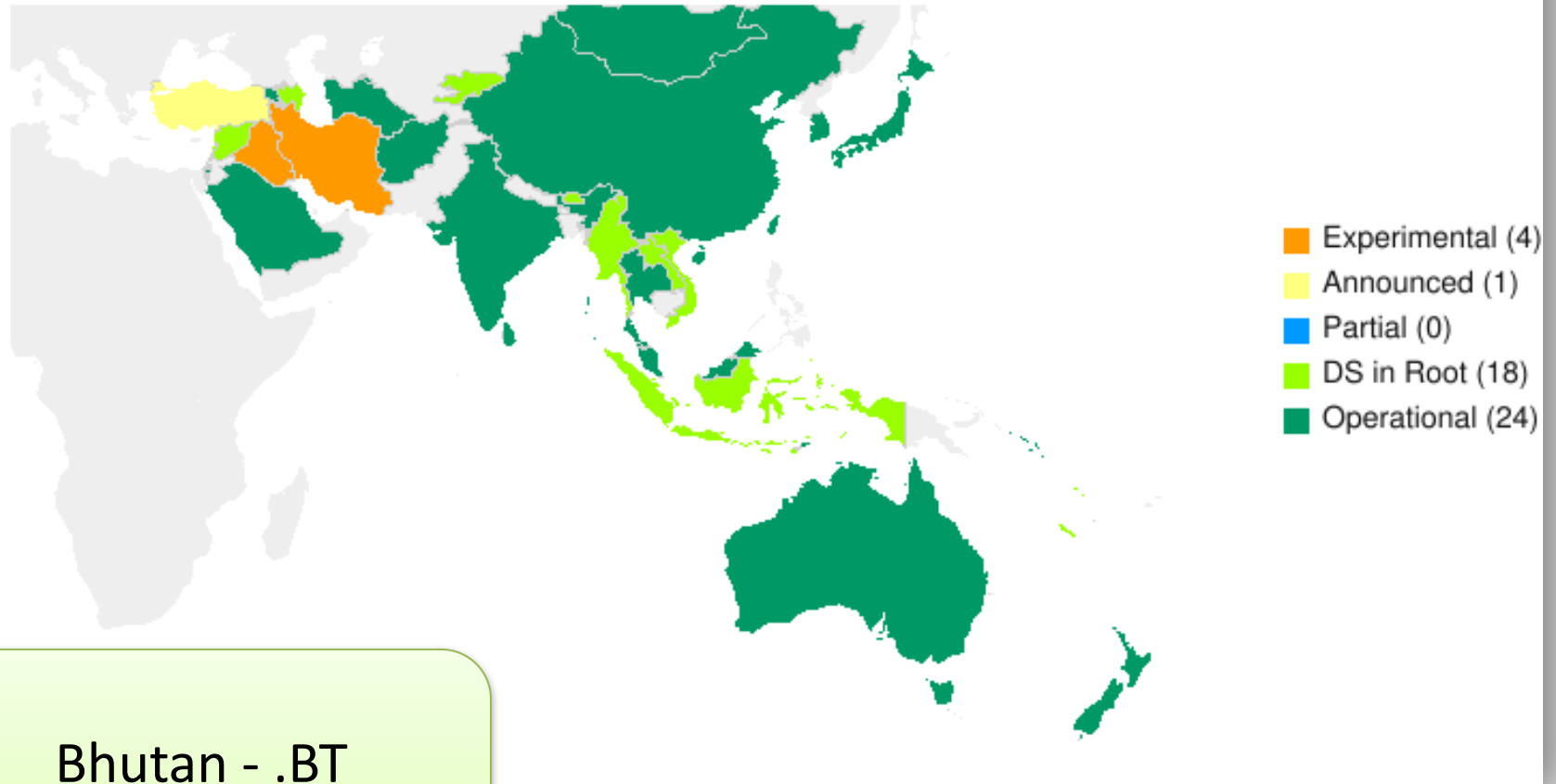**Operational – Accepting signed delegations**

ccTLD DNSSEC Status on 2018-03-12

Legend:
- Experimental (8)
- Announced (4)
- Partial (2)
- DS in Root (48)
- Operational (78)

AF ccTLD DNSSEC Status on 2018-03-12

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

AP ccTLD DNSSEC Status on 2018-03-12

Experimental (4)
Announced (1)
Partial (0)
DS in Root (18)
Operational (24)

Bhutan - .BT
December 2017

EUR ccTLD DNSSEC Status on 2018-03-12

Experimental (0)
Announced (0)
Partial (0)
DS in Root (8)
Operational (30)
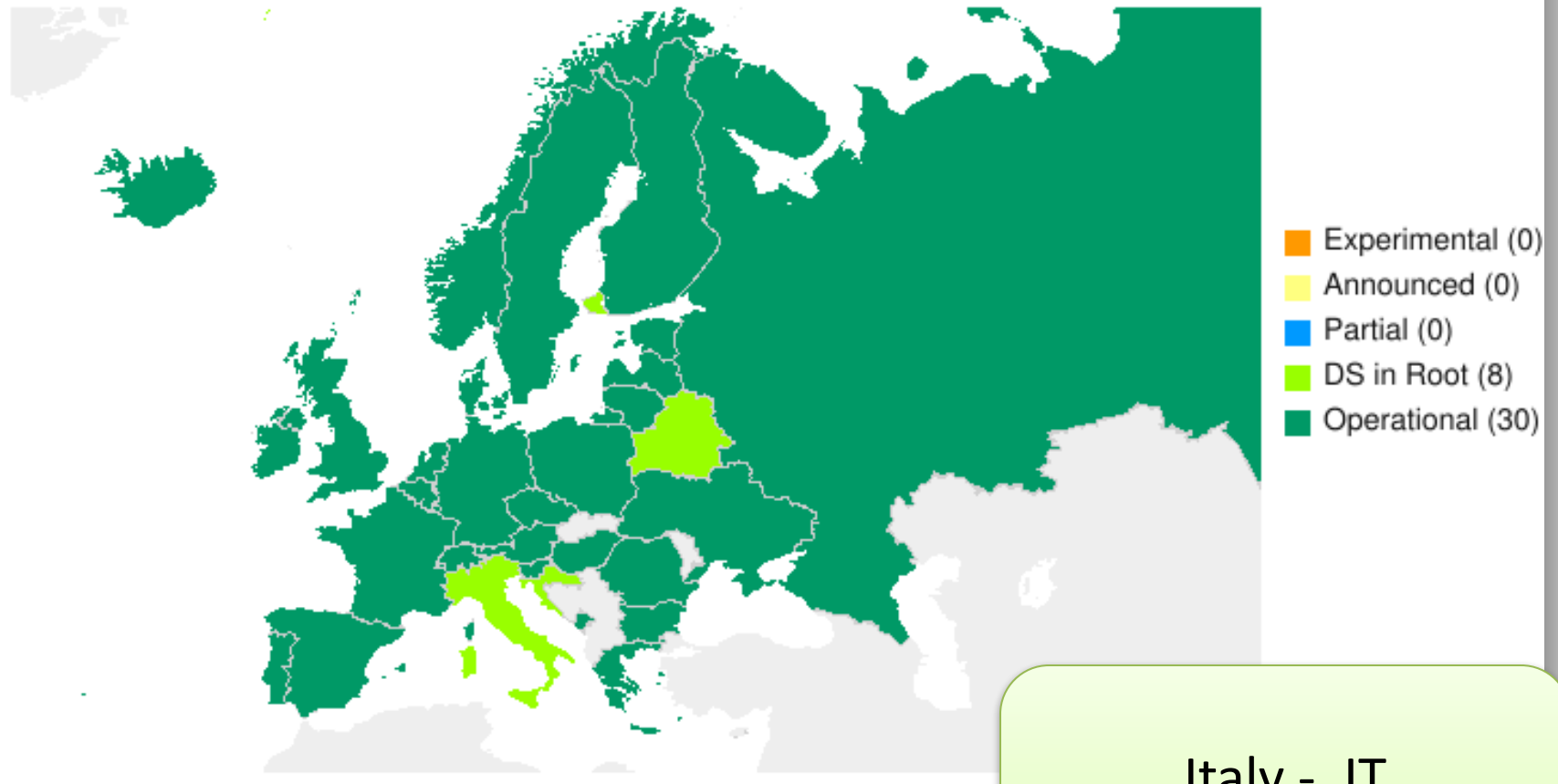
Italy - .IT
November 2017

LAC ccTLD DNSSEC Status on 2018-03-12

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

NA ccTLD DNSSEC Status on 2018-03-12

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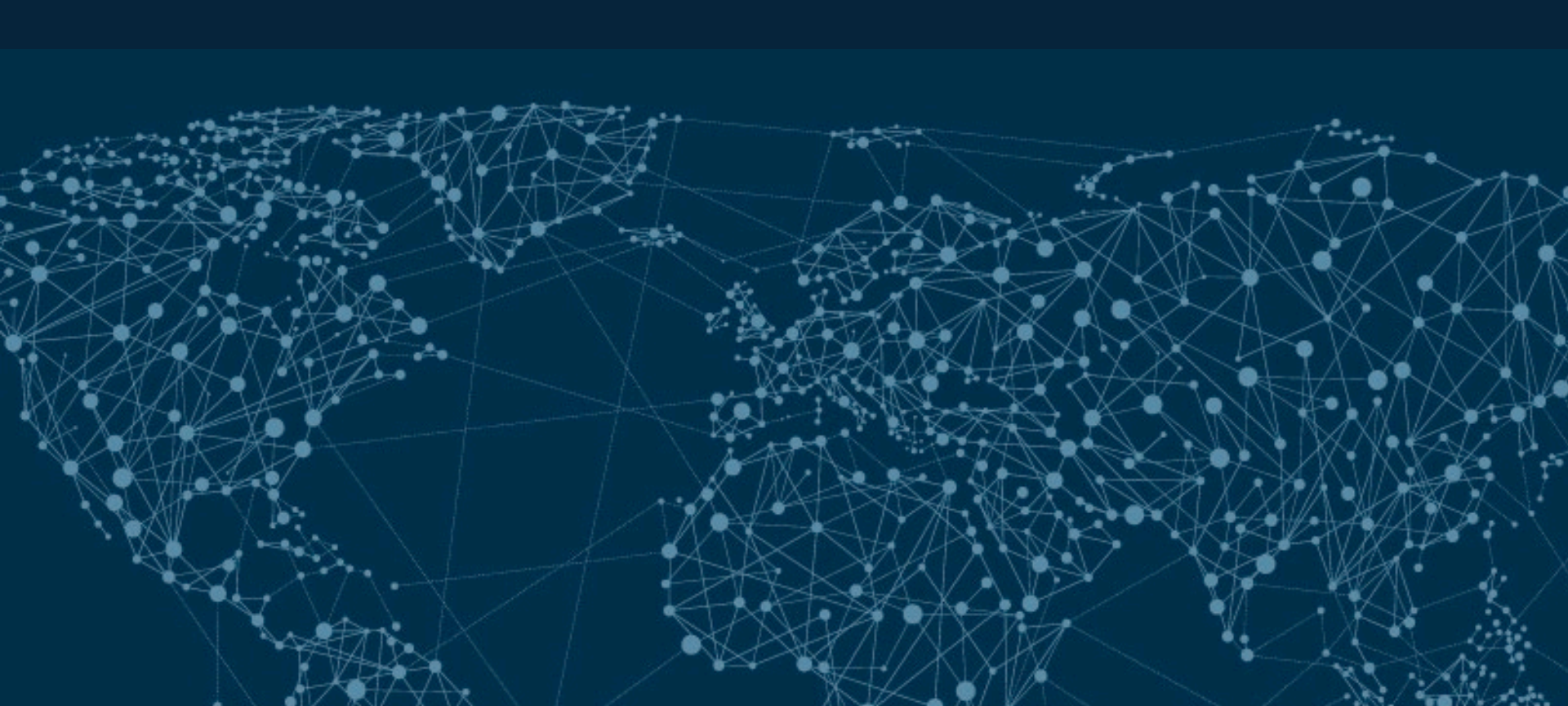Operational (3)
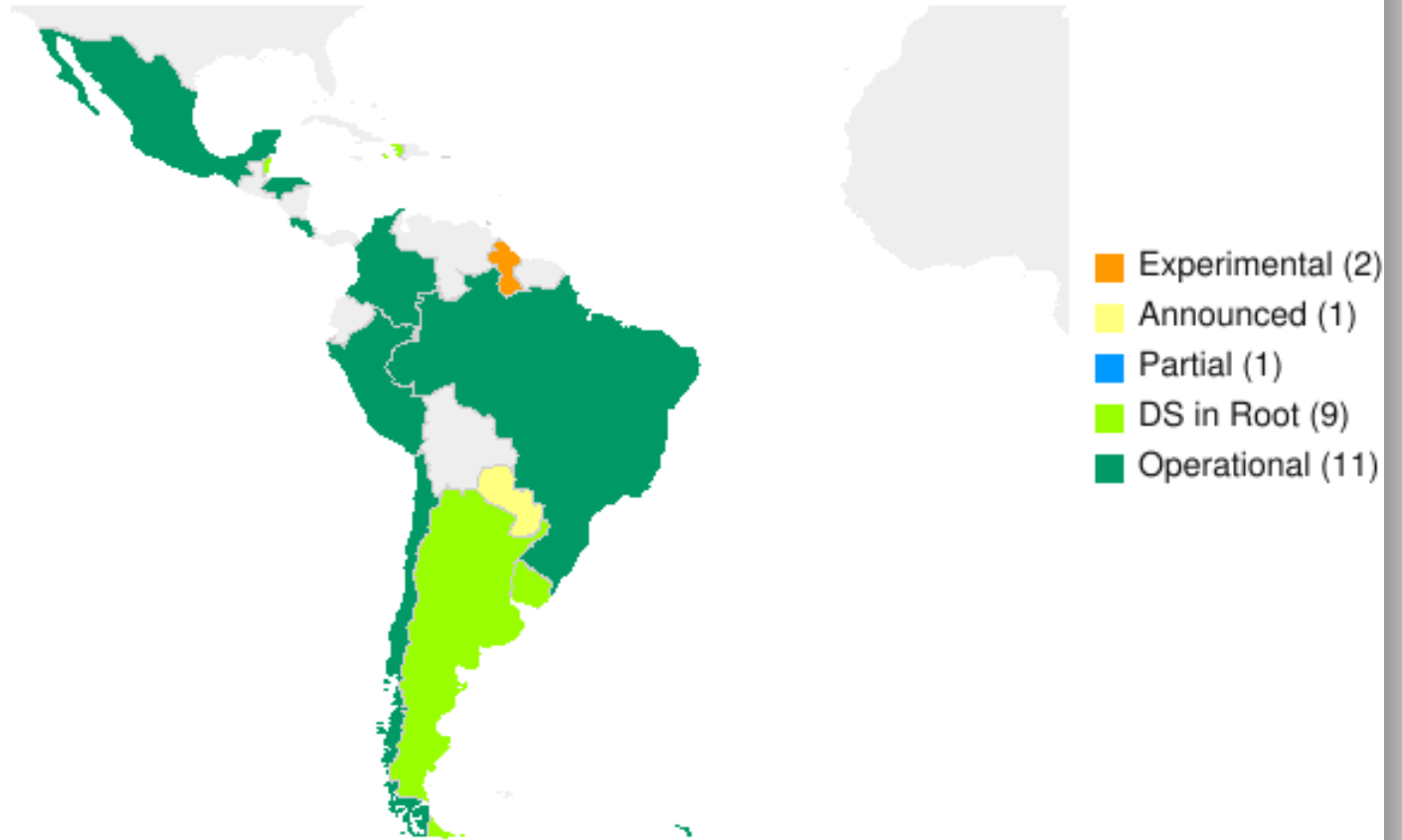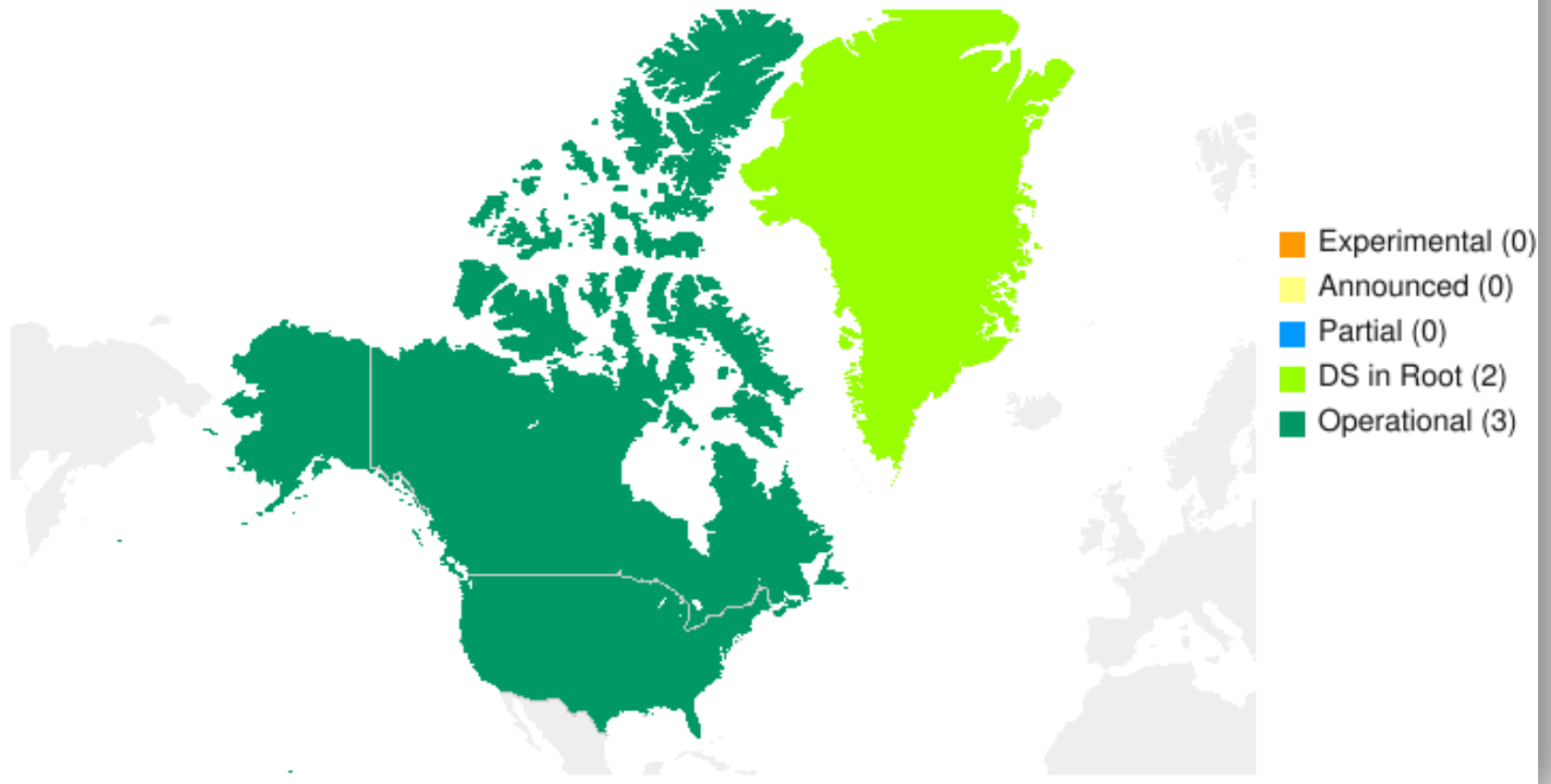
Receiving the DNSSEC Deployment Maps

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/

Thank you and Questions

ICANN