



# DNSSEC Workshop

Jacques Latour, CIRA | ICANN65 | June 2019

# Program Committee

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

# DNSSEC Lunch Sponsors

- Afilias
- .AU
- .BR.
- CIRA
- Cloudflare
- CORE
- Donuts
- GoDaddy
- Google
- PIR
- SIDN
- Verisign



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

DNSSEC Workshop Program  
ICANN Meeting in Marrakech, Morocco  
Palmeraie Conference Center  
Room: Siroua

Monday, 24 June 2019 - 0900 to 1200

Key to Level of Difficulty:

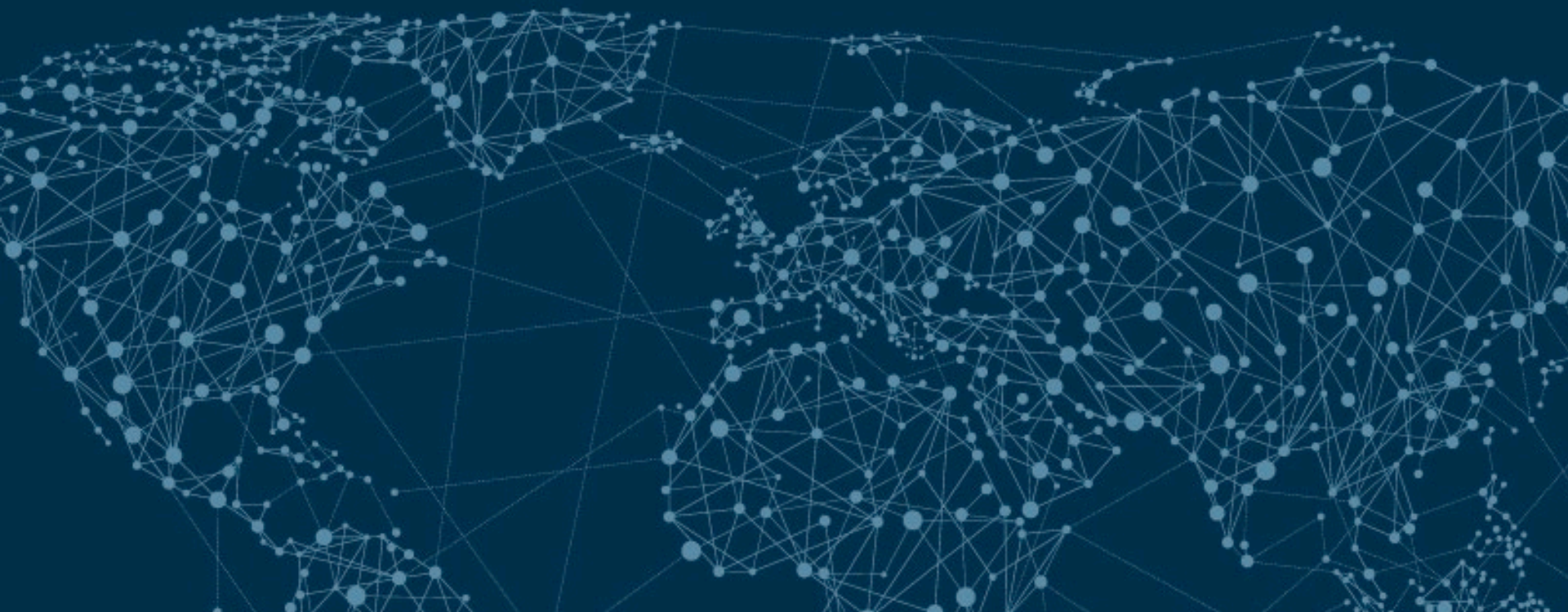
**NOVICE** = New to DNSSEC and want to learn more

**INTERMEDIATE** = Familiar with DNSSEC and how it works, but not of all concepts

**EXPERT** = Expert understanding of DNSSEC and extensive experience in deployment/implementation

<b>DNSSEC Workshop – Part I</b>
<b>0900-0915 – Presentation: Jacques Latour, CIRA – <i>DNSSEC Workshop Introduction, Program, Deployment Around the World – Counts, Counts, Counts</i></b>
<b>09:15-09:45 – Tim April, – The DNS Transparency Project</b>
<b>09:45-10:15 – Wes Hardaker, USC – Differences between SMTP/DANE vs MTA-STS (RFC8461)</b>
<b>1015-1030 -- Coffee Break</b>
<b>DNSSEC Workshop – Part II</b>
<b>10:30-11:00 – Tim April, – That KSK Roll</b>
<b>11:00-11:30 – Wes Hardaker, USC – DANE Development</b>
<b>1130-1145 – Presentation: <i>DNSSEC: How Can I Help?</i> Russ Mundy, Parsons</b>
<b>1145-1200 – <i>The Great DNSSEC/DNS Quiz</i> Jacques Latour, CIRA</b>
<b>1215-1315 <i>DNSSEC/Tech Day Lunch – TICKETS REQUIRED</i></b>





# DNSSEC Deployment Around the World: Counts, Counts, Counts

Russ Mundy | ICANN65 | June 2019

# 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	66.46%	61.86%
QQ	Melanesia, Oceania	52.23%	53.31%
XK	Southern Africa, Africa	48.04%	16.25%
XR	Central Asia, Asia	39.75%	25.49%
XV	Western Asia, Asia	34.82%	12.18%
QO	Western Europe, Europe	33.55%	6.10%
XT	Southern Asia, Asia	32.15%	23.07%
QP	Australia and New Zealand, Oceania	29.24%	5.65%
XP	South America, Americas	26.98%	15.66%
QM	Northern Europe, Europe	24.94%	5.34%
XQ	Northern America, Americas	24.92%	6.45%
XN	Caribbean, Americas	22.86%	17.63%
XI	Middle Africa, Africa	22.53%	18.10%
XW	Eastern Europe, Europe	22.25%	12.17%
XH	Eastern Africa, Africa	19.08%	20.89%
XJ	Northern Africa, Africa	16.40%	19.79%
QN	Southern Europe, Europe	14.40%	9.07%
XU	South-Eastern Asia, Asia	12.88%	16.70%
XL	Western Africa, Africa	12.09%	30.99%
XO	Central America, Americas	8.55%	13.05%
QS	Polynesia, Oceania	6.17%	10.19%
XS	Eastern Asia, Asia	2.58%	6.86%

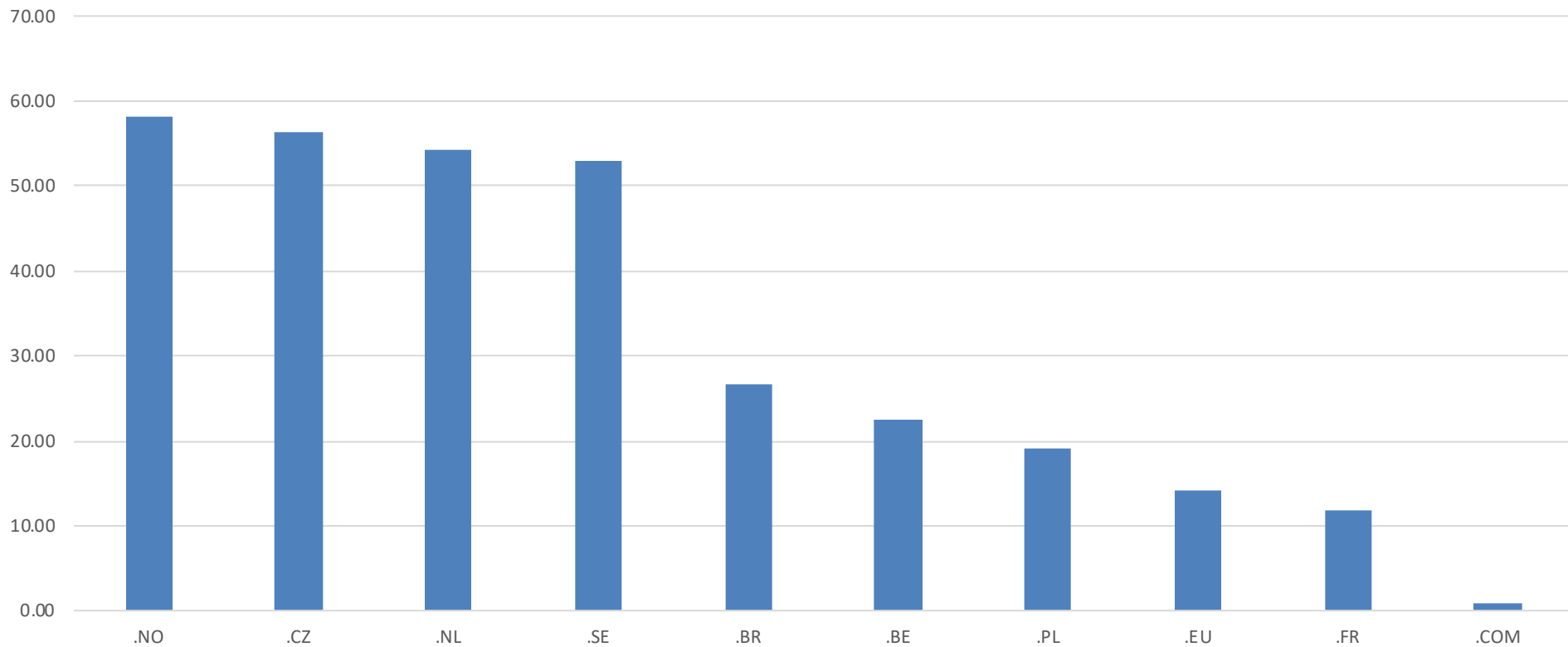
Low % of Google PDNS usage means more DNSSEC support by local ISPs.

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

<https://stats.labs.apnic.net/dnssec/XA?hc=XA&hx=1&hg=0&hr=1&w=30&g=1>



# Top 10 TLDs by % of signed zones



# TLD DNSSEC Implementation Status

**Experimental – internal experiments**

**Announced – Public commitment to deploy**

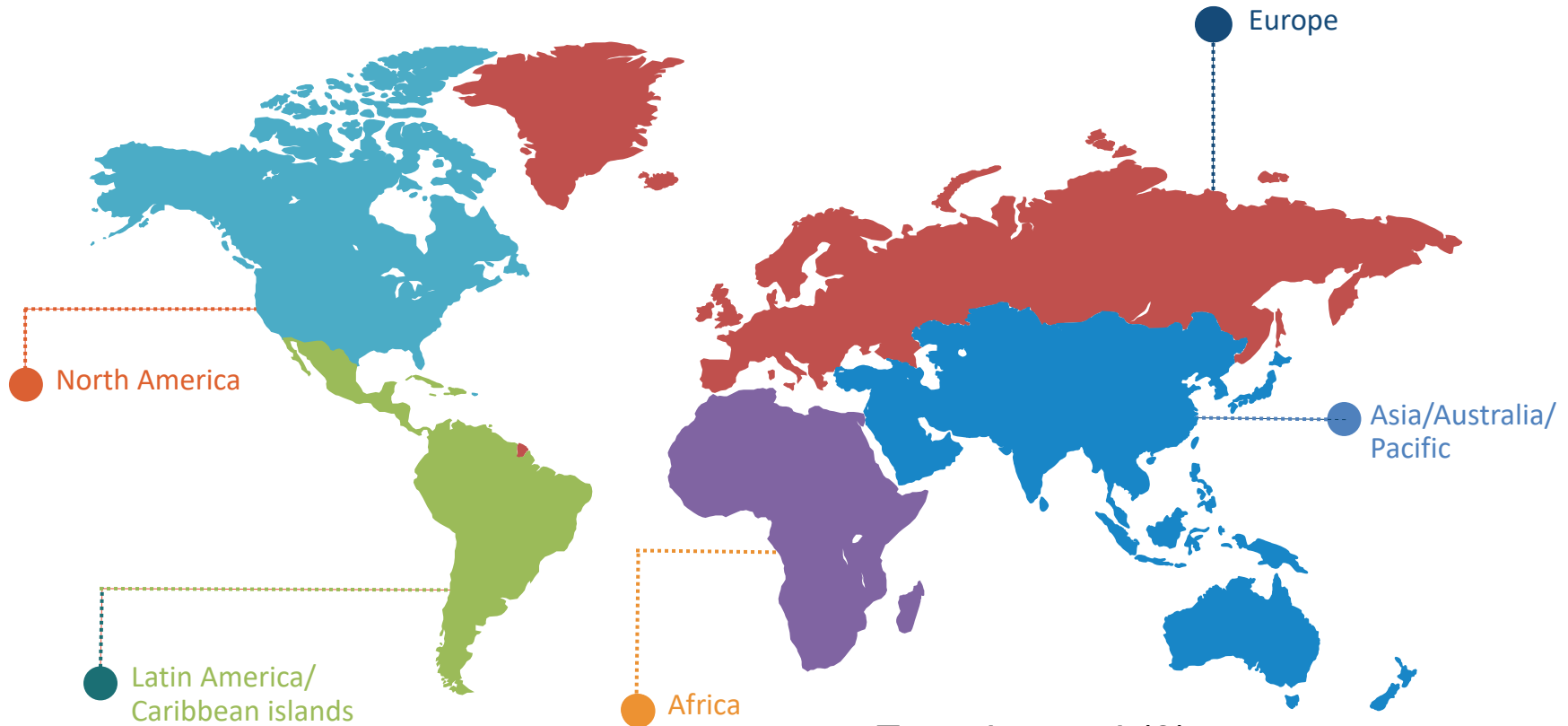
**Partial – Zone is signed but not in operation**

**DS in Root**

**Operational – Accepting signed delegations**



# ccTLD DNSSEC Status on 2019-06-23



Experimental (8)  
Announced (4)  
Partial (1)  
DS in Root (53)  
Operational (80)

# AF ccTLD DNSSEC Status on 2019-03-12

Experimental (2)  
Announced (2)  
Partial (1)  
DS in Root (12)  
Operational (10)



Algeria - .DZ – Apr 2019



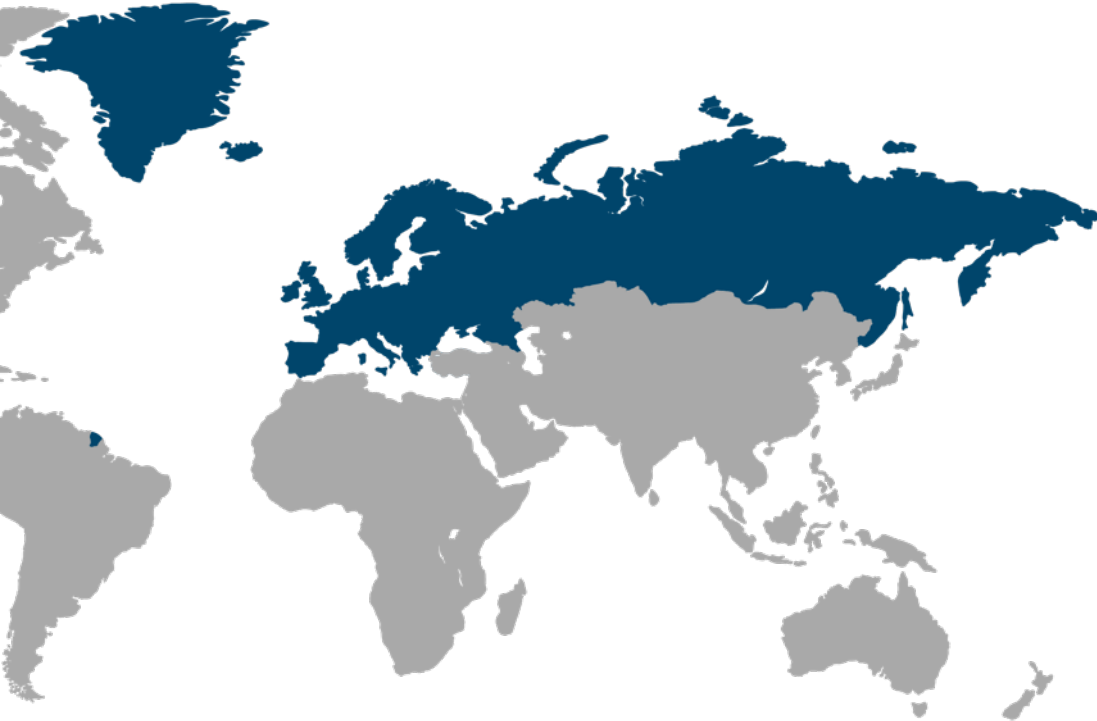
# AP ccTLD DNSSEC Status on 2019-06-23



Experimental (4)  
Announced (1)  
Partial (0)  
DS in Root (19)  
Operational (24)

Kuwait - .KW – Mar 2019

# EUR ccTLD Status on 2019-06-23



Experimental (0)  
Announced (0)  
Partial (0)  
DS in Root (10)  
Operational (32)

Moldova - .MD – Mar 2019  
Slovakia - .SK – Apr 2019  
Monaco - .MC – Jun 2019

# LAC ccTLD Status on 2019-06-23

Experimental (2)  
Announced (1)  
Partial (0)  
DS in Root (11)  
Operational (11)



Guyana - .GY – May 2019  
Anguilla - .AI (*Experimental*)  
– Mar 2019

# NA ccTLD Status on 2019-06-23

Experimental (0)  
Announced (0)  
Partial (0)  
DS in Root (1)  
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:

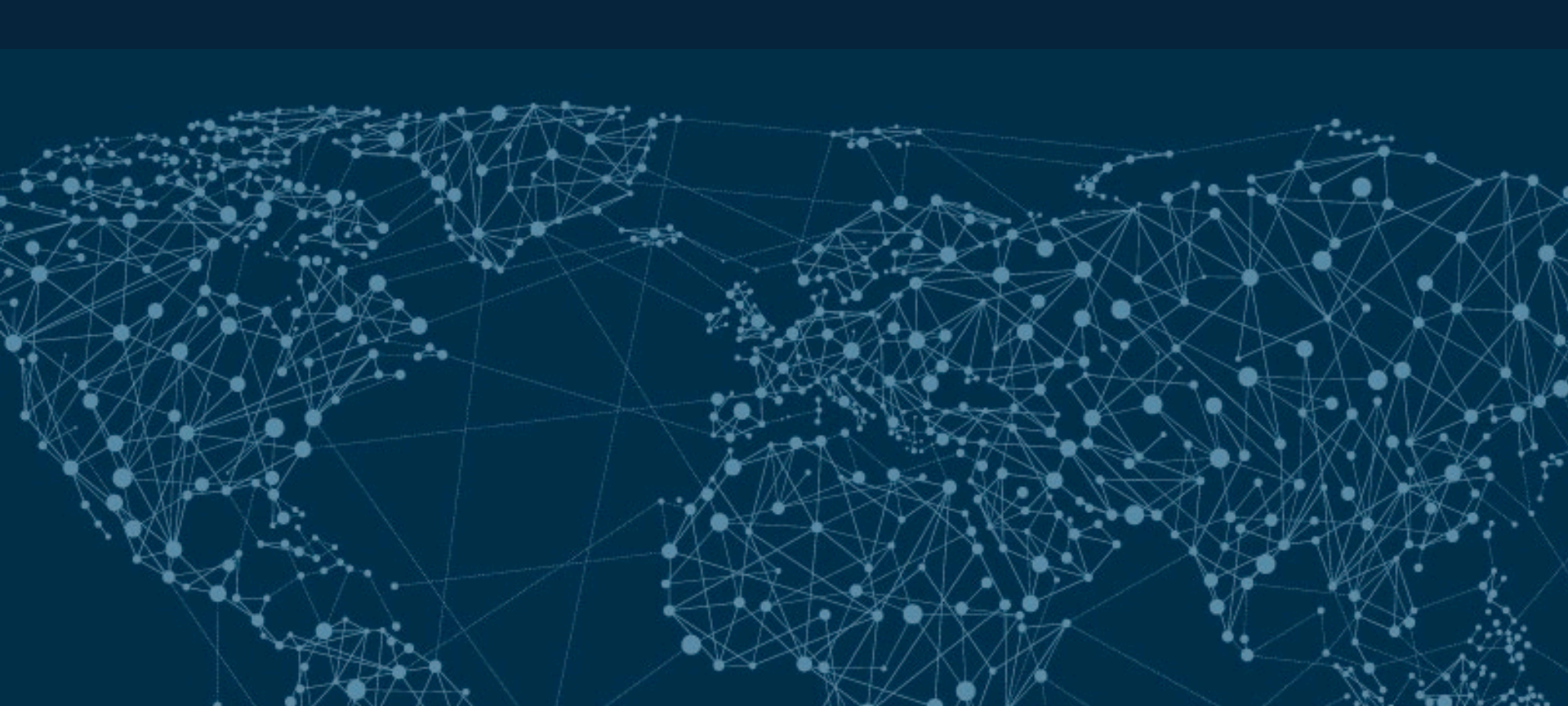
**[www.internetsociety.org/deploy360/dnssec/maps/](http://www.internetsociety.org/deploy360/dnssec/maps/)**

Please report any updates or corrections to Dan York,  
[york@isoc.org](mailto:york@isoc.org)

# 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