

# **What hijinks has Packet Clearing House been getting up to lately?**

**Thursday, June 22, 2023  
Finnish Network Operators Group**

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Executive Director  
Packet Clearing House**

# A Short History of PCH

Started in 1993-1994 to build IXPs in the United States

Built five IXPs on the west coast 1994-1995

Started assisting with IXP construction internationally in 1995

Expanded to providing TLD nameservice in 1997

Started deploying root nameservice in 2000

Began providing services over IPv6 in 2001

Started Internet infrastructure security work in 2002

Became fully IPv4/IPv6 dual-stack in 2009

Started providing FIPS 140-2 L4 DNSSEC signing in 2011



## **We mainly work in four areas:**

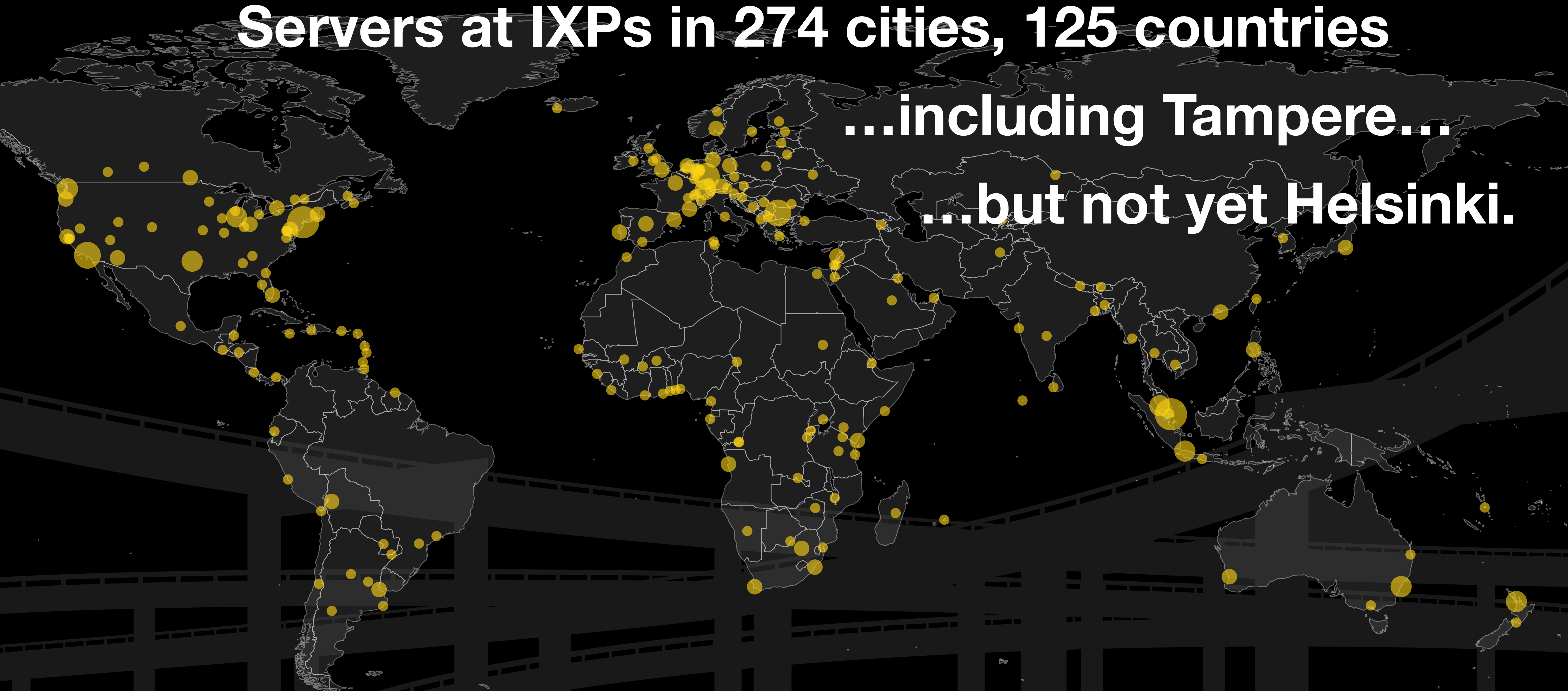
Support for Internet exchange points and routing resilience

Support for the core of the domain name system and DNS security

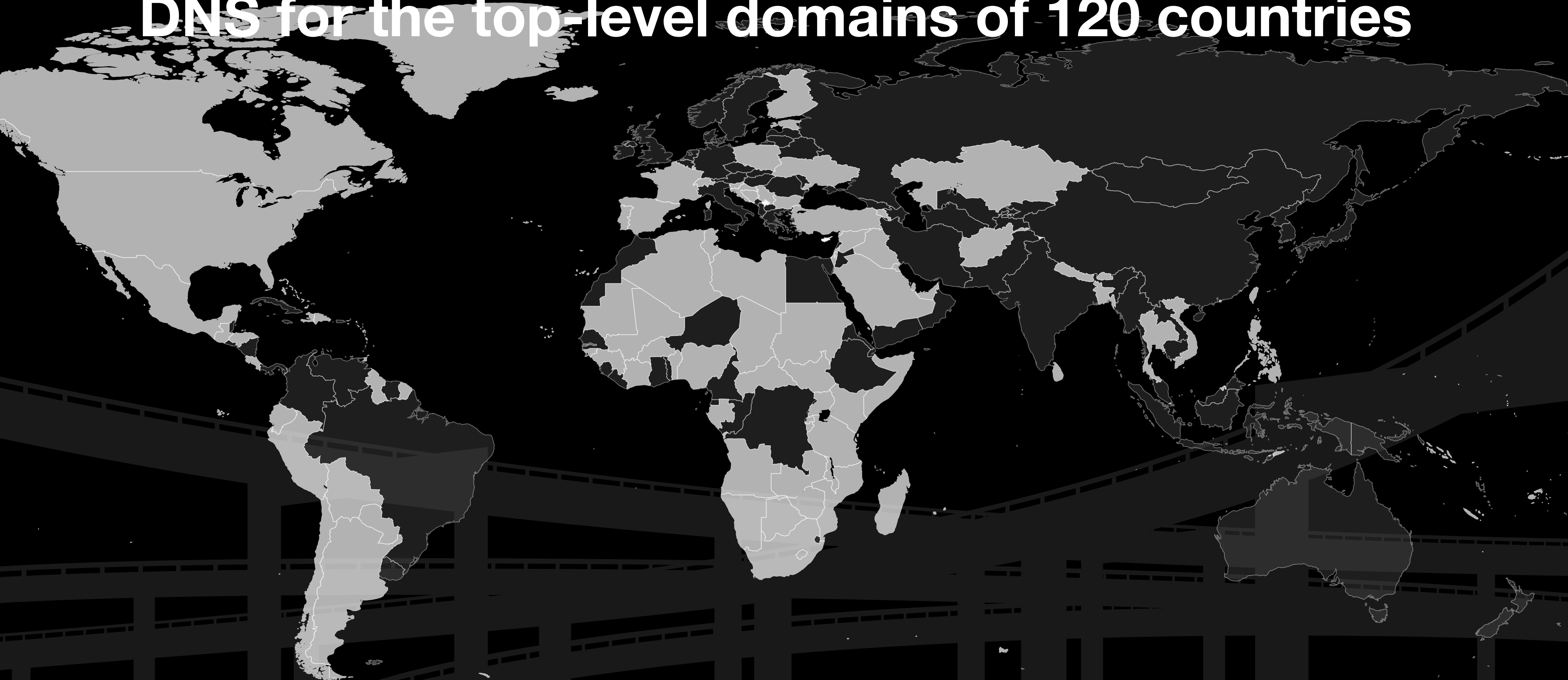
Regulatory and policy support to governments

Cybersecurity coordination

**Servers at IXPs in 274 cities, 125 countries**  
**...including Tampere...**  
**...but not yet Helsinki.**



# DNS for the top-level domains of 120 countries



# DNSSEC key management for 25 countries

# Repatriation of African ccTLDs

| Country                  | CC TLD | Admin                  | DNSSEC |
|--------------------------|--------|------------------------|--------|
| Seychelles               | .sc    | Afilias                | yes    |
| Angola                   | .ao    | Associação DNS.PT      | no     |
| Cabo Verde               | .cv    | Associação DNS.PT      | no     |
| Guinea-Bissau            | .gw    | Associação DNS.PT      | yes    |
| Sao Tome and Principe    | .st    | Bahnhof AB             | no     |
| Central African Republic | .cf    | Freenom                | no     |
| Equatorial Guinea        | .gq    | Freenom                | no     |
| Gabon                    | .ga    | Freenom                | no     |
| Mali                     | .ml    | Freenom                | no     |
| Congo (RDC/Brazzaville)  | .cg    | Interpoint Switzerland | no     |
| Gambia                   | .gm    | Jorn Grotnes           | no     |
| Guinea                   | .gn    | Randy Bush             | yes    |
| Liberia                  | .lr    | Randy Bush             | yes    |



# Repatriation of African ccTLDs

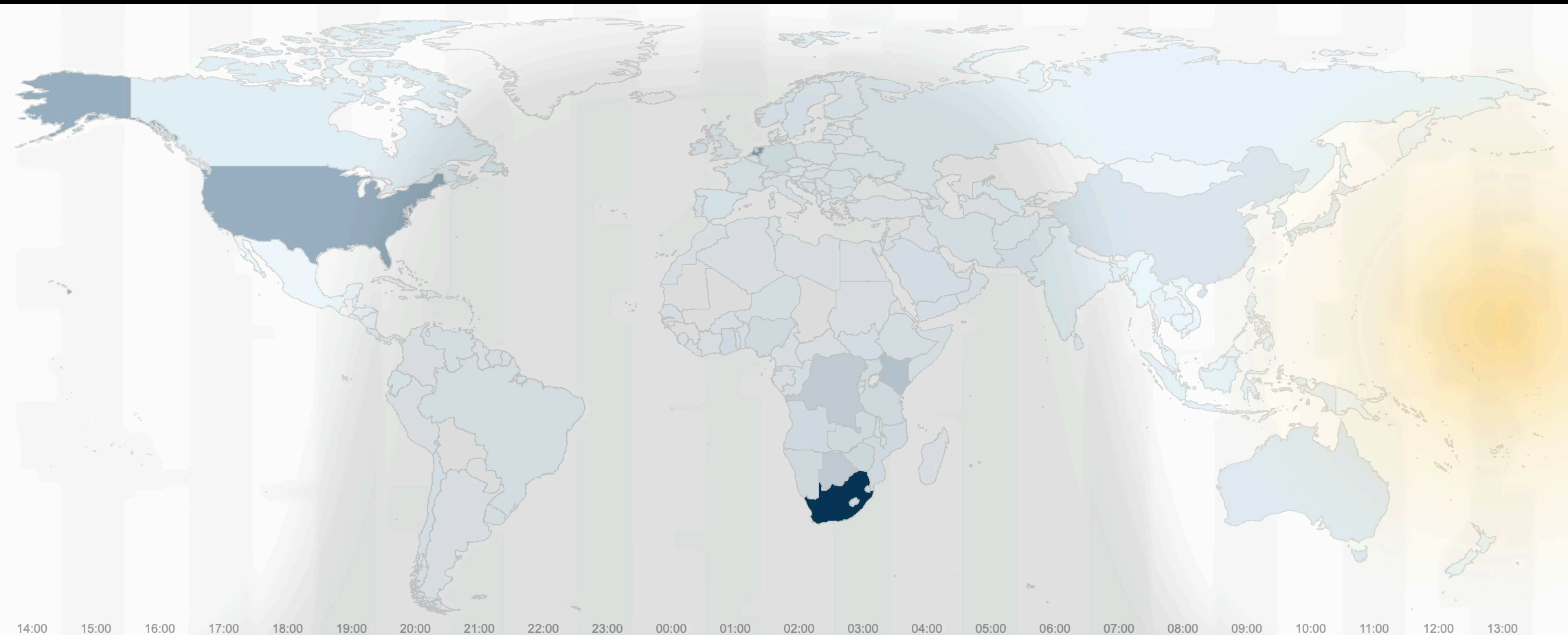
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# IIFO

International Internet  
Flow Quantification

SWITCH

# Where does South African bandwidth go?





# Decentralizing Social Media



**BIGBUTTFET**

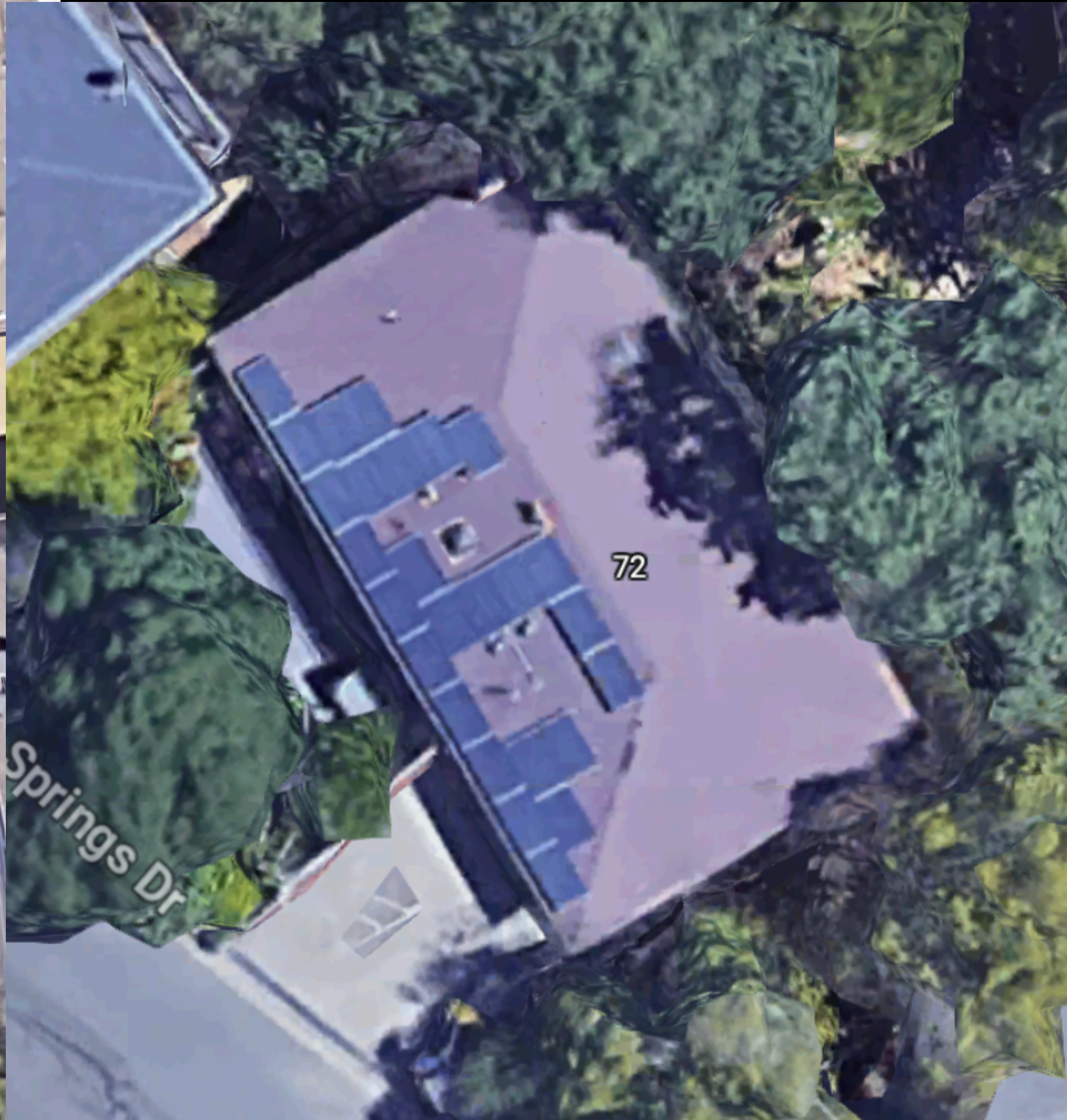


# Becoming a Treaty Organization





# Energy and Carbon Balancing







# Supporting Other Organizations

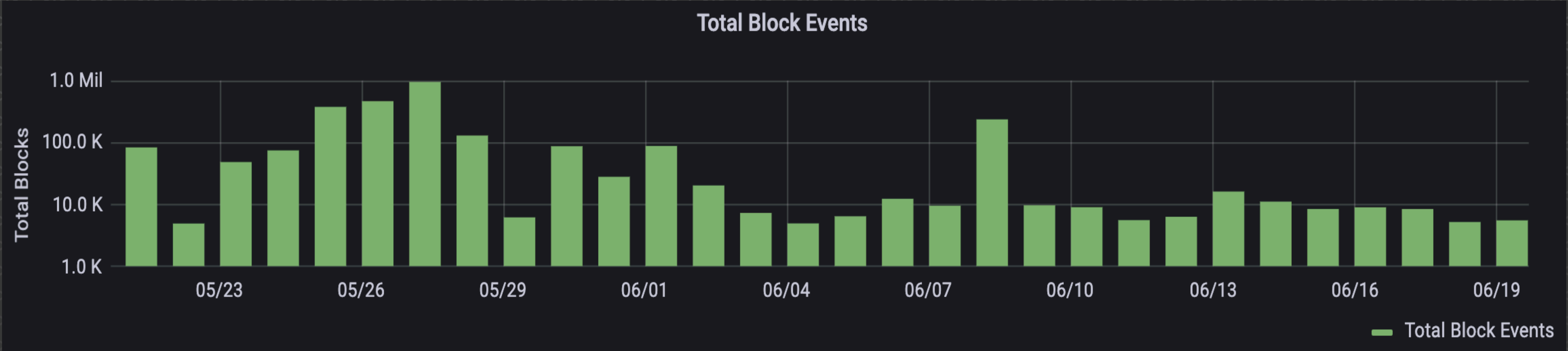








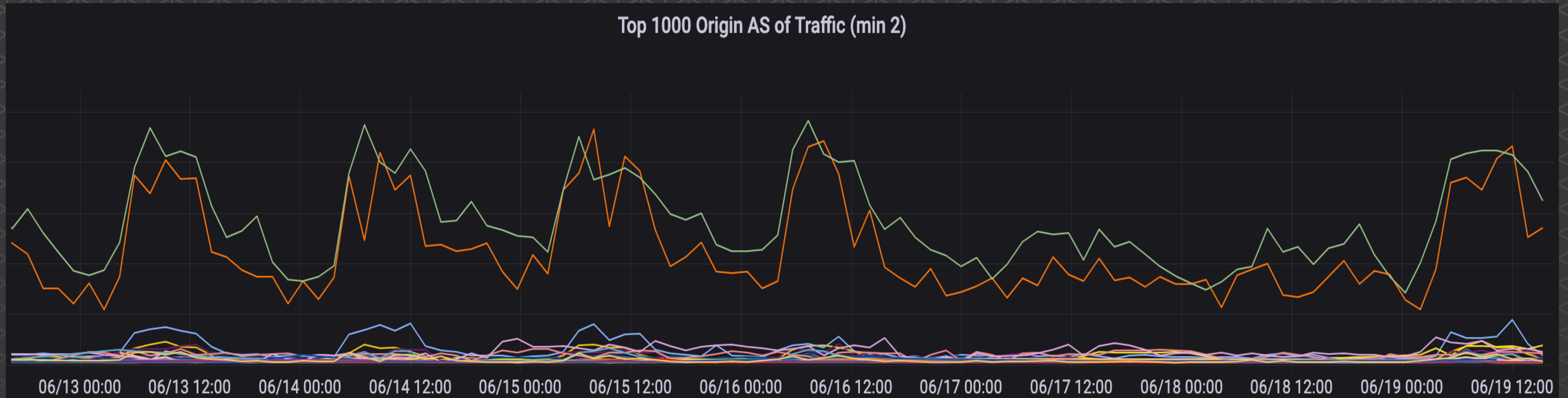
Threat landscape varies drastically day-to-day - depends on active campaigns & data from TI partners



Blocks seen @ TMP node

*note: scale is log10*

**Most TMP traffic is from .fi and vice versa - good work, TRES!**



**Largest AS origins: 719 (Elisa Finland), 1759 (Telia Finland), 1741 (CSC/Funet)**

**Typical 1m origin prefixes: ~300**

**Typical 1m AS origins: ~60**

**Typical 1m AS transit (next-hop): 13**



# Thanks, and Questions?

<https://pch.net>

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