Identifier

Technology

Health

Indicators   (ITHI)

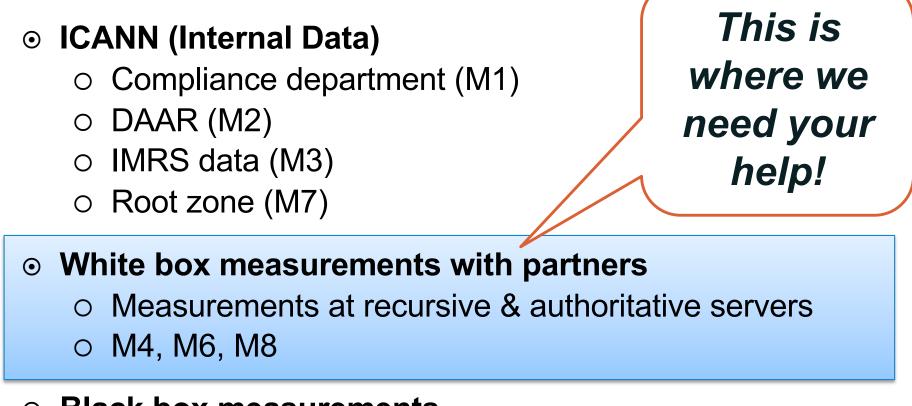**https://ithi.research.icann.org**

Save Vocea

Presented at PacNOG 28, June 2021

ICANN

ITHI: an ICANN Initiative

- **ITHI**, or **I**dentifier **T**echnologies **H**ealth **I**ndicators is an ICANN initiative to "**measure**" the "**health**" of the "**identifier system**" that "**ICANN helps coordinate**".

- The goal is to produce a set of **indicators** that will be **measured and tracked over time** that will help determine if the system of identifiers is overall doing better or worse.

- This is a long-term project, expected to run for a number of years.
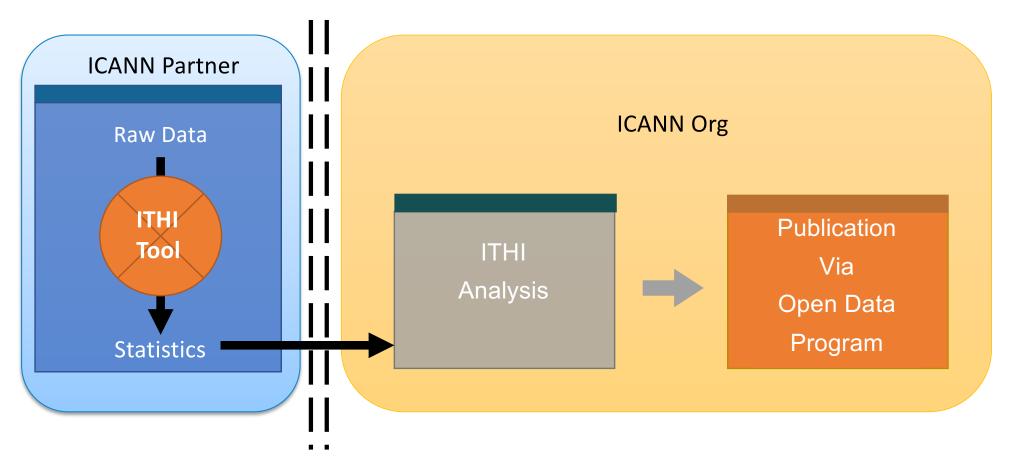
ITHI Data: ICANN + Partners + Contracts

- ⊙ **ICANN (Internal Data)**
  - ○ Compliance department (M1)
  - ○ DAAR (M2)
  - ○ IMRS data (M3)
  - ○ Root zone (M7)

- ⊙ **White box measurements with partners**
  - ○ Measurements at recursive & authoritative servers
  - ○ M4, M6, M8

- ⊙ **Black box measurements**
  - ○ APNIC/Google Ads platform
  - ○ Eyeball view of resolvers M5

This is where we need your help!

Some ITHI Results

	Indicator	May 2021	Past 3 months	Historic Low	Historic High
Chromioïds	% of DGA queries seen by root servers	**23%**	25%	35%	49%
DNSSEC	% of resolvers that perform DNSSEC validation	**32.8%**	32%	23%	34%
Resolver Concentration	Number of resolvers seeing 50% of first queries	**170**	185	206	240
	Number of resolvers seeing 90% of first queries	**2172**	2133	2036	2231
Name collision	%requests to top 3 names at the root — .LOCAL	**7.7%**	7.6%	2.4%	7.8%
	%requests to top 3 names at the root — .HOME	**3.7%**	3.8%	2.5%	3.8%
	%requests to top 3 names at the root — .internal	**2.6%**	2.3%	0.5%	2.8%
	%requests to top 3 names at resolvers — .LOCALDOMAIN	**0.1%**	0.0%	0.00%	0.1%
	%requests to top 3 names at resolvers — .LOCAL	**0.0%**	0.0%	0.0%	0.1%
	%requests to top 3 names at resolvers — .WORKGROUP	**0.0%**	0.0%	0.0%	0.1%

Privacy

ICANN Partner

Raw Data

ITHI Tool

Statistics

ICANN Org

ITHI Analysis

Publication Via Open Data Program

No PII, only statistics, are sent to ICANN org

No "naming and shaming"

Benefits for Partners

- Comparing current results to baseline can serve as an **anomaly detection system**.

- Partners can decide to share their data with others in exchange for reciprocity.

    - if a collection point observes a divergence from its baseline but others point don't, it might be an indicator that an attack is under way.

Engage with ICANN

Thank You and Questions

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