

# Identifier Technology Health Indicators (ITHI)

<https://ithi.research.icann.org>

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# ITHI: an ICANN Initiative

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- ◎ **ITHI**, or Identifier Technologies Health Indicators 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

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- ⊙ **ICANN (Internal Data)**

- Compliance department (M1)
- DAAR (M2)
- IMRS data (M3)
- Root zone (M7)

***This is  
where we  
need your  
help!***

- ⊙ **White box measurements with partners**

- Measurements at recursive & authoritative servers
- M4, M6, M8

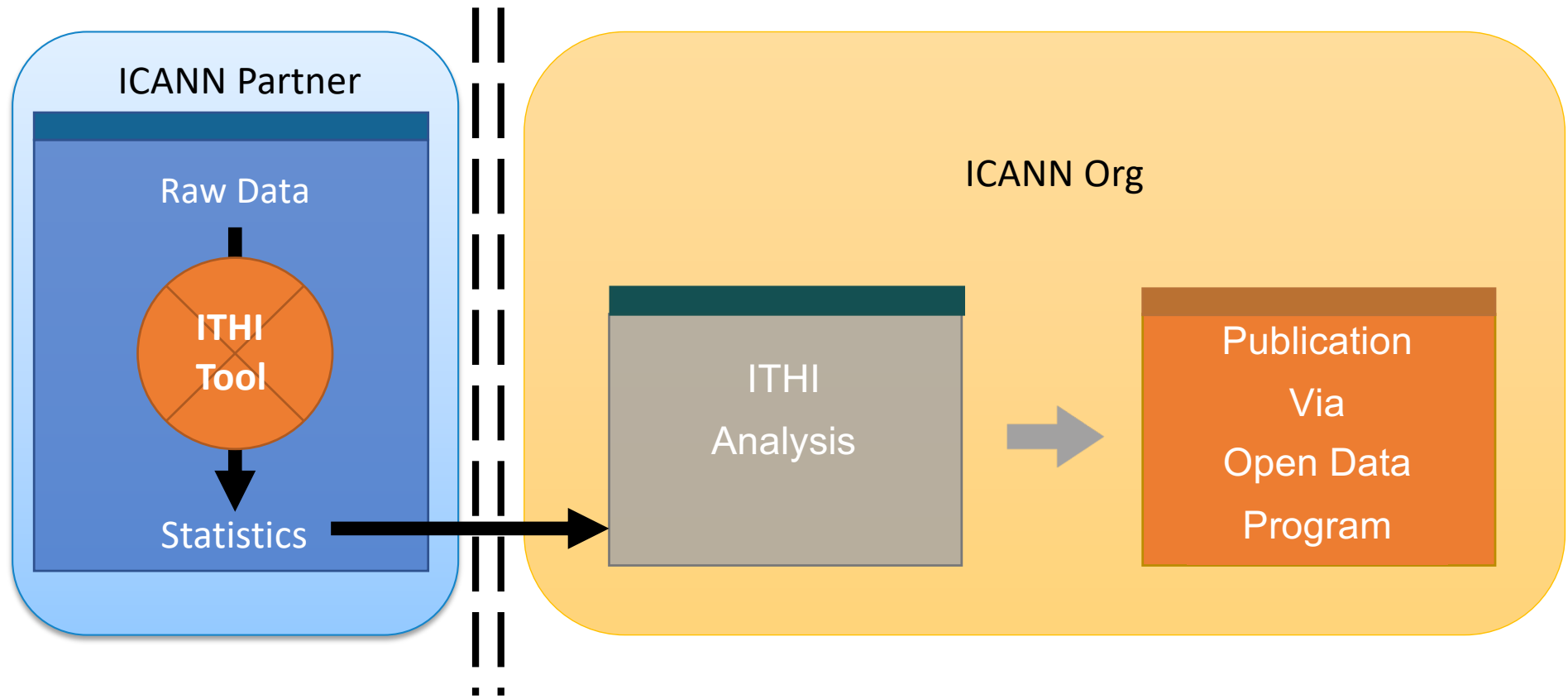
- ⊙ **Black box measurements**

- APNIC/Google Ads platform
- Eyeball view of resolvers M5

# Some ITHI Results

	Indicator	July 2020	Past 3 months	Historic Low	Historic High	
<b>Root Server DGA</b>	<a href="#">% of DGA queries seen by root servers</a>	<b>44%</b>	40%	35%	49%	
<b>DNSSEC</b>	<a href="#">% of resolvers that perform DNSSEC validation</a>	<b>32%</b>	32%	23%	34%	
<b>Resolver Concentration</b>	<a href="#">Number of resolvers seeing 50% of first queries</a>	<b>212</b>	217	206	240	
	<a href="#">Number of resolvers seeing 90% of first queries</a>	<b>2149</b>	2133	2036	2231	
<b>Name collision</b>	<a href="#">%requests to top 3 names at the root</a>	<b>.LOCAL</b>	<b>4.4%</b>	4.6%	2.4%	5.1%
		<b>.HOME</b>	<b>3.0%</b>	3.1%	2.5%	3.7%
		<b>.LAN</b>	<b>1.0%</b>	1.2%	0.5%	1.3%
	<a href="#">%requests to top 3 names at resolvers</a>	<b>.LOCALDOMAIN</b>	<b>0.2%</b>	0.0%	0.00%	0.1%
		<b>.LOCAL</b>	<b>0.0%</b>	0.0%	0.0%	0.1%
		<b>.WORKGROUP</b>	<b>0.0%</b>	0.0%	0.0%	0.1%

# Privacy



No PII, only statistics,  
are sent to ICANN org

No “naming and  
shaming”

# Benefits for Partners

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- 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

Visit us at <https://ithi.research.icann.org>

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