

ICANN Domain Metrica

The next generation of ICANN
measurements



I C A N N
Domain Metrica

Dr. Siôn Lloyd

Principal Security, Stability & Resiliency Specialist

ICANN Office of CTO

Domain Metrica is a project within OCTO's SSR team

One of our measurement projects, the Domain Abuse Activity Reporting (DAAR) project, is showing its age

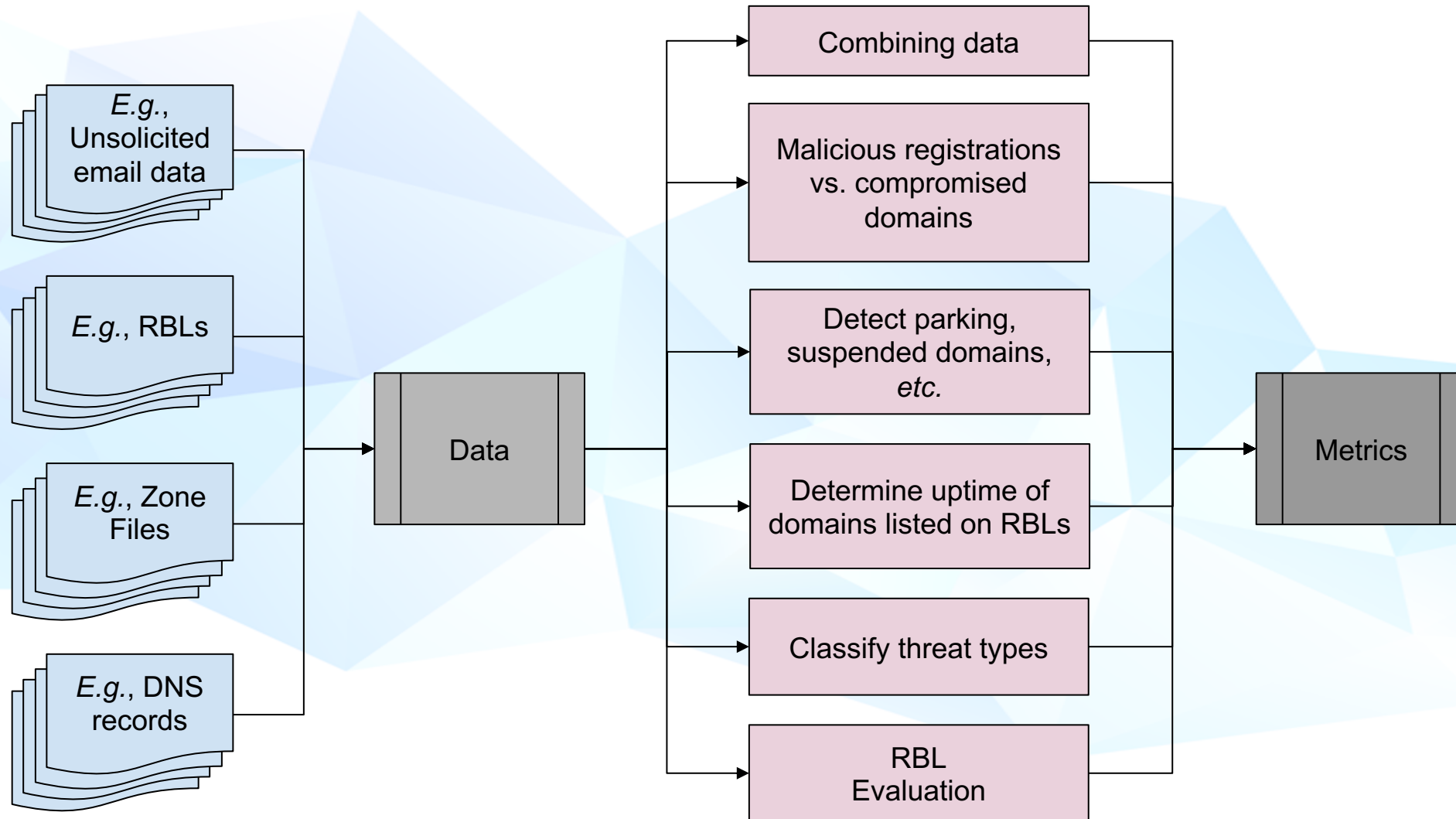
- DAAR was built to a specific set of requirements
 - as such it is difficult to add new functionality over time.
- If we were to build DAAR today it would look different
 - Lessons learned from DAAR
 - Community requested changes and improvements to DAAR
 - SSR 2 recommendation asking ICANN to share more detailed data
 - CCT-RT review
- World, and ICANN, have moved on

We have new requirements that are not being met by DAAR as it stands today

- We want a platform which satisfies new requirements
- We also anticipate these requirements evolving
- Domain Metrica is more than just an evolution of DAAR
 - although in the first instance it implements DAAR functionality
 - plus additional measures to address community comments

We are looking to improve the metrics we have for domain names

- **Higher quality data**
 - data with fewer false positives
- **More precise definitions of what is measured**
 - e.g., Spam as a unsolicited email vs Spam as a delivery mechanism for malware
- **Incorporating measurement errors**
 - acknowledging and understanding the limitations of the metric used
- **Transparent and reproducible**
 - can the figures be independently validated, or can the method be reused elsewhere



ICANN Domain Metrica is:

- A measurement platform
 - SSR works on researching to find/improve rigorous methods to collect certain domain related data
 - Maps related data collected carefully from multiple sources
 - Creates metrics and statistics that provide information about various aspects of domains names
- Modular
 - Designed to have new metadata about domain names added over time as modules
 - The output of OCTO research projects can feed in
- Flexible
 - It can be used in multiple ways depending on the user
 - Built to be updated as new requirements arise
 - The system remains relevant over time
- Transparent
 - Methodologies and sources used will be public
 - Data will be shared (where allowed by licencing)

Module 1 of ICANN Domain Metrics includes:

- More useful/granular data
 - Provide domain level sharable RBL data
 - Registrar level metrics as well as TLD level
 - Provide interactive visualizations and statistics
- More access to raw data
 - Dynamic web UI
 - API
- Fully Native Cloud solution
 - Compute & resources can grow based on actual demand

- New metrics and datasets added over time
 - The system remains relevant for longer
- Registrar level data (for gTLD domains) in addition to TLD level
 - Can show where concentrations of abuse lie or where patterns have changed
- Registries and registrars get access to lists of domains with reported abuse
 - Allowing deeper investigation which is not possible from statistics alone
- Users can apply filters
 - Show just the data they are interested in

- Research can feed in for **future modules**, by design
 - Domain popularity metrics
 - Near real-time Malicious vs. Compromised classification
 - Uptime (Security Threat Persistence Metrics)
 - Security Threat Prediction
- New measurement methodologies
- *E.g.* Stability and Resilience issues
 - How well is a domain provisioned in the DNS
 - Do we see patterns of use that may indicate issues
 - *Etc.*
- Other relevant metadata
- Context around data

- First release expected third quarter this year
 - Incremental releases will follow
 - No strict schedule, work released when ready
- Access is via ICANN account
 - Registry / Registrar verification via NSp
 - Registry / Registrar specific data via MoSAPI

THANK YOU



ICANN
Domain Metrics