# Automated Indicator Sharing

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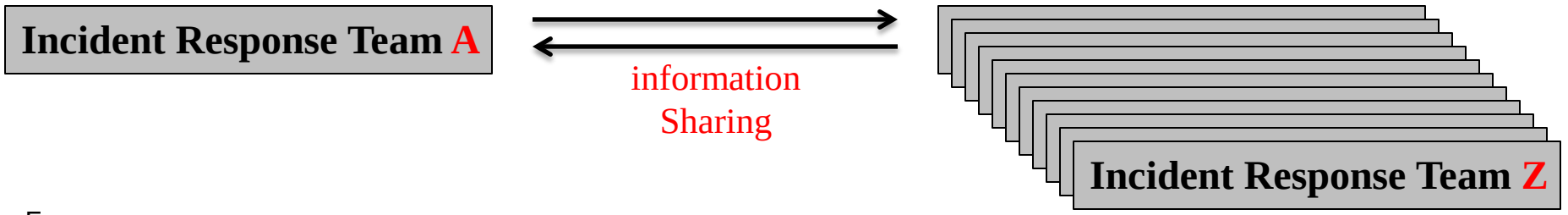
1. Why a standard?
2. How to choose the best standard?
3. Public and private roles?

# NIST project: Computer Security Incident Coordination*

**A Computer Security Incident** = A **violation** or **imminent threat of violation** of computer security policies, acceptable use policies, or standard security practices.

**Source: SP 800-61**




For us:

Indicator == observable-event-info + context-info

1. We are developing **SP800-150**, providing guidance on safe, effective information sharing.
2. This will supplement existing NIST guidance on incident handling, SP 800-61.

*Supported by DHS.

# Status

1. We are releasing an RFI as part of Incident Coordination due diligence.

2. We have held general conversations with practitioners.

**Jeff Carpenter** (former CERT CC)
**Ben Miller** (NERC)
**Pat Dempsey** (DCISE)
**Anton Chuvakin** (gartner)
**Mike Murray** (CERT CC)
**Dr. Johannes Ulrich** (SANS Institute)
**Garrett Schubert** (CIRT Team-Lead at EMC)
**Matthew Schuster** (Mass Insight & ASTC)
**James Caulfield** (Federal Reserve)
**Bob Guay** (Manager, Information Security, Biogen)
**Chris Sullivan** (Vice President, Product Planning, Courion)
**Jon Baker** (MITRE)

Organizational maturity varies a **lot**.

Estimating both trust and report-quality is currently subjective: have to work with this.

An indicator file reveals what we can see.

**A few observations (not consensus):**

SIMPLE facilitates sharing;
COMPLEX impedes sharing.
many-screens == bad
cheap-tools == good

DCISE: 80+ element xml schema and ZERO adoption, even by the authors.

A decline of average-maturity is natural as a community grows.

Expanded CSV is practical:
**(indicator, type, role, attack-phase, comments)**.
A taxonomy regarding roles and types is defined but closely held.

HARD PROBLEM: establishing trust relationships in a circle of sharing.

**NO HANDCUFFS!**

**Disclaimer:** any mention of companies, products, or services does not imply endorsement.

# Why a **“realistically ambitious”** Standard?

- **Lots of reasons:**
  - To support important use cases, not fascination with mechanisms.
  - To define quality: good-enough indicators.
  - To foster a market of indicator producers, consumers, and tools.
  - For interoperability, portability, speed.
  - To increase the feasibility of automation: less unstructured text helps; but probably can’t get rid of it.
  - To scale a defense of critical infrastructure.
  - To foster a common data model.
  - To reduce costs of CSIRTs.
- **However:**
  - Attack landscape is evolving, and **guidance** may be more durable and actionable than a complex standard.
  - Hard Problems such as **trust**, **procedure**, **legal issues** are difficult to address with techie-driven standards.
  - NO handcuffs please!

# How to Choose the Best Standard?

- **Use cases** should drive (actors; steps).
- **SIMPLE** facilitates sharing; COMPLEX impedes sharing.
- Support **incremental** adoption: training-wheels mode.
- Support easy **grep**-like search-based access.
- Prefer low **schema** complexity.
- Work across organizations with different **maturity levels**.
- Relate to open **legacy** tools (e.g., Snort rules).
- Scalable to many **thousands** of participants.
- Support **reputation** maintenance and info vetting.
- **Extensibility**.

# Public and Private Roles

- **NIST:**
  - Release guidance.
  - Facilitate open, consensus-based standards.
  - Technology-neutral.
  - Industry led if possible.
  - Competitions
  - NCCoE: collaborating with industry
    - leveraging existing commercially available capabilities to generate solutions to hard problems
- **Private Entities:**
  - Preferred: lead standards efforts.
  - Validate standards concepts via prototypes/products.

# Team Members

- NIST
  - Lee Badger, David Waltermire
- DHS
  - Tom Millar
- G2
  - Greg Witte, George M. Saylor, Matthew Smith
- MITRE
  - Clem Skorupta, Rick Murad, Karen Quigg,