Homeland Security

If It's Worth Sharing, It's Worth Sharing Right— Technical, Policy and Legal Considerations of Cyber Threat Intelligence Sharing

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NCCIC

- Strives for a safer, strong Internet for all Americans by responding to major incidents, analyzing threats, and **exchanging critical cybersecurity information with trusted partners around the world**
- We are *not* regulators or law enforcement or intelligence or defense
- We are specially trained in handling private, sensitive and proprietary data, protecting it and sharing it appropriately to improve cybersecurity and infrastructure protection

Some Assumptions…

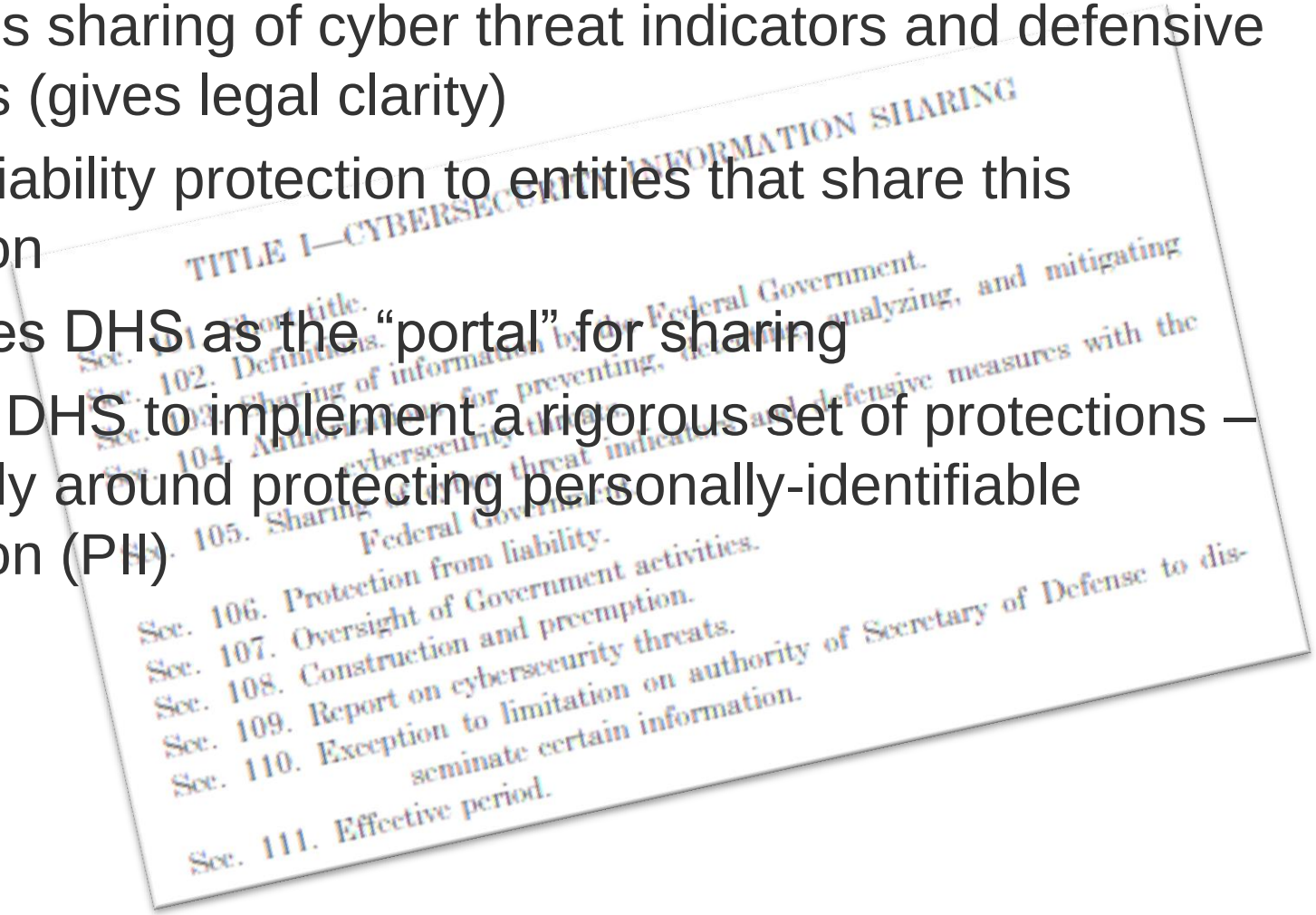
- You already know you *need* to share cyber threat intelligence (CTI)
- You already know you *want* to share CTI
- You want to benefit from the lessons learned by others

DHS Automated Indicator Sharing (AIS) Initiative

- Automated, near real-time indicator sharing ecosystem built on STIX/TAXII
- Designed to foster widespread sharing of CTI – specifically indicators
- Launched in 2014
- Updated as a result of the Cybersecurity Information Sharing Act of 2015 (CISA)

CISA Highlights

- Authorizes sharing of cyber threat indicators and defensive measures (gives legal clarity)
- Extends liability protection to entities that share this information
- Designates DHS as the "portal" for sharing
- Requires DHS to implement a rigorous set of protections – specifically around protecting personally-identifiable information (PII)


TITLE I—CYBERSECURITY INFORMATION SHARING

Sec. 102. Definitions.

Sec. 104.

Federal Government

Sec. 105. Sharing

Sec. 106. Protection from liability.

Sec. 107. Oversight of Government activities.

Sec. 108. Construction and preemption.

Sec. 109. Report on cybersecurity threats.

Sec. 110. Exception to limitation on authority of Secretary of Defense to disseminate certain information.

Sec. 111. Effective period.

Protecting Privacy and Civil Liberties

DHS has taken careful measures to ensure appropriate privacy and civil liberties protections are fully implemented in AIS and are regularly tested. The Department has published a Privacy Impact Assessment of AIS.

To ensure that personally identifiable information (PII) is protected, AIS has processes which:

- Perform automated analyses and technical mitigations to delete PII that is not directly related to a cyber threat;
- Incorporate elements of human review on select fields of certain indicators to ensure that automated processes are functioning appropriately;
- Minimize the amount of data included in a cyber threat indicator to information that is directly related to a cyber threat;
- Retain only information needed to address cyber threats; and
- Ensure any information collected is used only for network defense or limited law enforcement purposes

So What Did We Learn?

- Everything depends on trust
- The technical stuff is important but must serve the legal/policy-based goals
- Designing and documenting scalable and repeatable processes is essential
- Metrics, metrics, metrics

The Legal Front…

- Engage counsel early in the process
- Don't pre-judge what are “legal issues” – explain the whole process
- Be clear on what you are sharing, who you are sharing with and the purpose of the sharing
- Be on the lookout for intellectual property concerns
- Craft agreements that set out general principles and guidelines where possible (avoid excessive specificity)

The Policy Front…

- Some key questions:
  - Who “owns” the data you want to share?
  - Who decides what to share and who to share it with?
  - What do you want recipients of the data to be able to do with it – what restrictions apply?
  - What about anonymization?
  - Are there restrictions on what data you can/will accept from others?

The Technical Front…

- Need to implement according to legal and policy decisions
- Build on top of open standards
- Public Key Infrastructure (PKI) will be harder than you think
- Your sharing infrastructure will be a target – build security in from the beginning and at every layer of the stack (you will spend more on security than you expected to)
- Engineer to collect/generate metrics from the beginning
- But be careful about logging and how it might run afoul of policy
- Think ahead about how the system will be audited

Connecting to AIS

AIS is available for free to all private sector entities; federal departments and agencies; state, local, tribal, and territorial governments; information sharing and analysis centers (ISACs) and information sharing and analysis organizations (ISAOs); and foreign partners and companies.

Steps:

- Agree to a short Terms of Use.
- Set up a TAXII client: organizations that do not already have a TAXII capability can use the specification documentation to build their own, use the open-source DHS TAXII client available on GitHub or purchase a commercial capability.
- Technical connectivity activities: purchase a PKI certificate from a commercial provider, provide your IP address to DHS, and sign an Interconnection Security Agreement.
- Connect directly to the DHS-managed system. You can also share indicators with DHS through a participating ISAC or ISAO.

For More Information…

www.us-cert.gov/ais

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