Cybersecurity Orchestration and Machine Speed Information Sharing to Defend State and Local Networks

JOHNS HOPKINS APPLIED PHYSICS LABORATORY

MS-ISAC® Multi-State Information Sharing & Analysis Center®

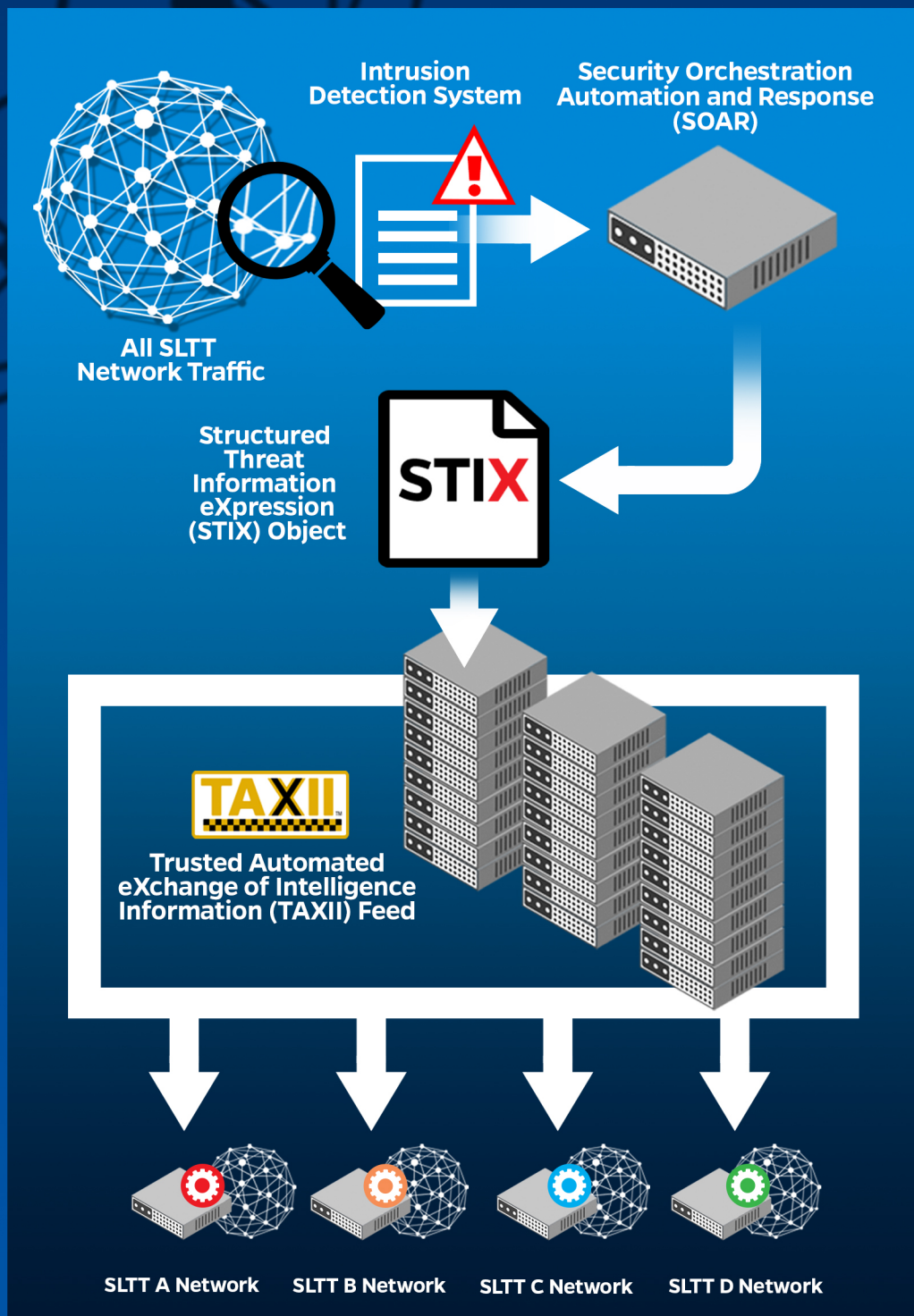
Pilot Design

Orchestration at MS-ISAC

- Extract indicators from intrusion detection systems
- Identify potential malicious indicators
- Filter on “low-regret” indicators
- Convert to STIX
- Submit to TAXII feed

Orchestration at State, Local, Tribal, and Territorial (SLTT) Partners

- Pull Indicators from TAXII feed
- Identify courses of action in accordance with SLTT policy
- Execute courses of action



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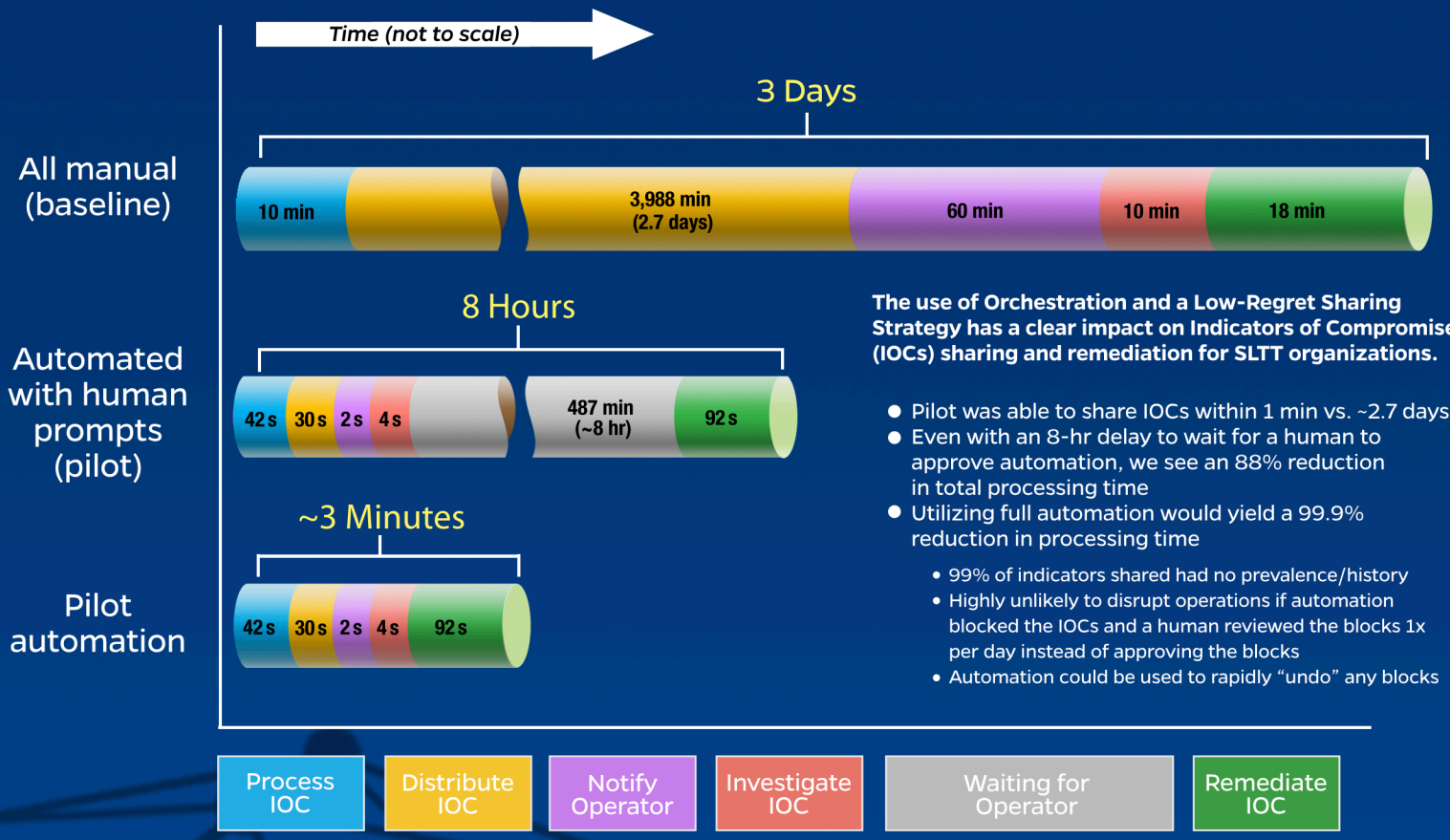
Pilot Performance Against Baseline



The use of Orchestration and a Low-Regret Sharing Strategy has a clear impact on Indicators of Compromise (IOCs) sharing and remediation for SLTT organizations.

- Pilot was able to share IOCs within 1 min vs. ~2.7 days
- Even with an 8-hr delay to wait for a human to approve automation, we see an 88% reduction in total processing time
- Utilizing full automation would yield a 99.9% reduction in processing time
  - 99% of indicators shared had no prevalence/history
  - Highly unlikely to disrupt operations if automation blocked the IOCs and a human reviewed the blocks 1x per day instead of approving the blocks
  - Automation could be used to rapidly "undo" any blocks

Attempted attacks from feed IOCs that were blocked (results from one SLTT partner)