JTA Approach to Autonomous Vehicle Cyber-readiness Testing

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Key Presentation Takeaways

- Understand why transit agencies must prepare for cyber threats.
- Learn JTA's testing approach for AV cyber-readiness in a transit environment.
- Identify how transit agencies can use information sharing and analysis organizations (ISAOs/ISACs) to achieve industry resilience.

Why perform AV testing?

- Public feedback
- Operational “fit” with public transit
- Safety, risk, & liability issues

JTA AV Testing: Eight Testing Categories

1. Human interaction
2. Universal access
3. Acceleration/ Deceleration
4. Obstacle navigation
5. Safety
6. Connected vehicle communications
7. Reliability
8. **Cybersecurity**

Cybersecurity Testing & Monitoring: What is the attack & who is the attacker?

With the Community Transportation ISAO, JTA has set up a process for its AV partner vendors to share real-time attacks on AV ecosystems:

- Traffic lights
- Command centers
- Monitoring systems

Why should transit agencies care about cyber-readiness?

More transportation information ecosystems (e.g., operational, enterprise information, and subscribed systems) are now being used for technology-driven service delivery models, connected vehicles, & AVs

Why should transit agencies care about cyber-readiness?

Risks

- Confidentiality & compliance
- Reputation & integrity
- Availability of needed information & communication systems
- AV safety

Why should transit agencies care about cyber-readiness?

Transit agencies must:

- Be **proactive** with cybersecurity risks
- Address three key areas of IT infrastructure: **operations, people, and facilities**
- **Rely on collaborative forums that enable knowledge sharing** to promote awareness of new attacks

~APTA Standards Development Program Recommended Practice

What is the Community Transportation ISAO?

A cyber intelligence community for transit agencies and vendors working together to meet:

- Regulatory requirements
- Reduce cyber risk
- Identify cyber threats

COMMUNITY TRANSPORTATION

Information Sharing & Analysis Organization

ISAO Executive Order

Through Executive Order 13691, the Community Transportation ISAO is to:

- Protect privacy & civil liberties
- Preserve business confidentiality
- Safeguard shared information

Why is JTA using the Community Transportation ISAO to help with AV cybersecurity testing?

Community Transportation ISAO technological platform:

- Automatically identifies and manages cyber exploits
- Provides REAL threat intelligence data that can be used to understand where agencies (or their vendor partners) stack up against peers

Secure Together Dashboard

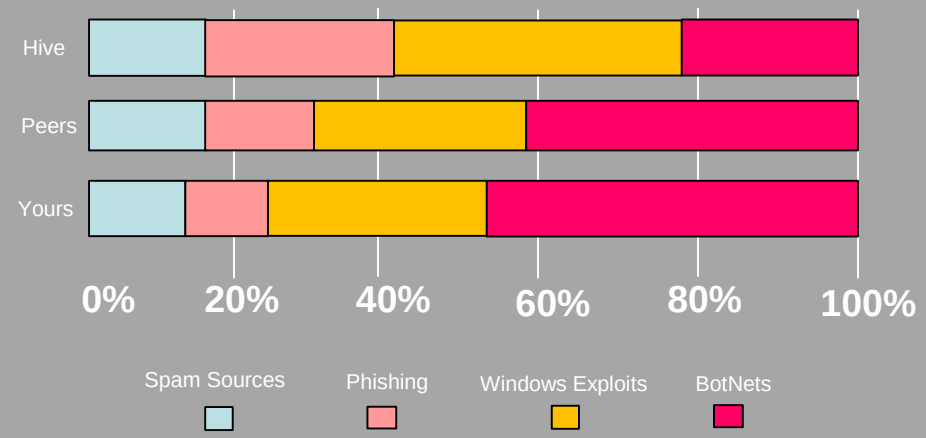
ATTACKS LEVEL	
YOURS	HIGH
HIVE	AVERAGE

SMART HIVE INTEL	
YOURS	34
PEERS	54

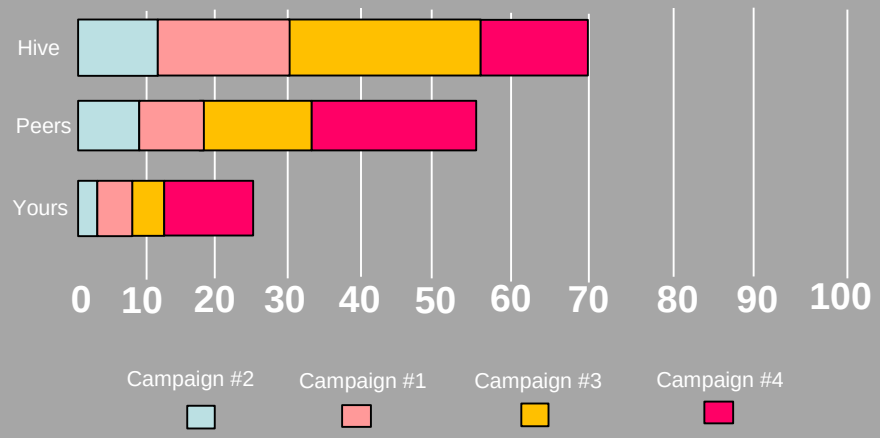
SMART HIVE INTEL
4

ATTACKS PREVENTED	
YOURS	712
HIVE	1922

TOP ATTACKS



Campaigns



What information is collected and analyzed for testing?

Factors

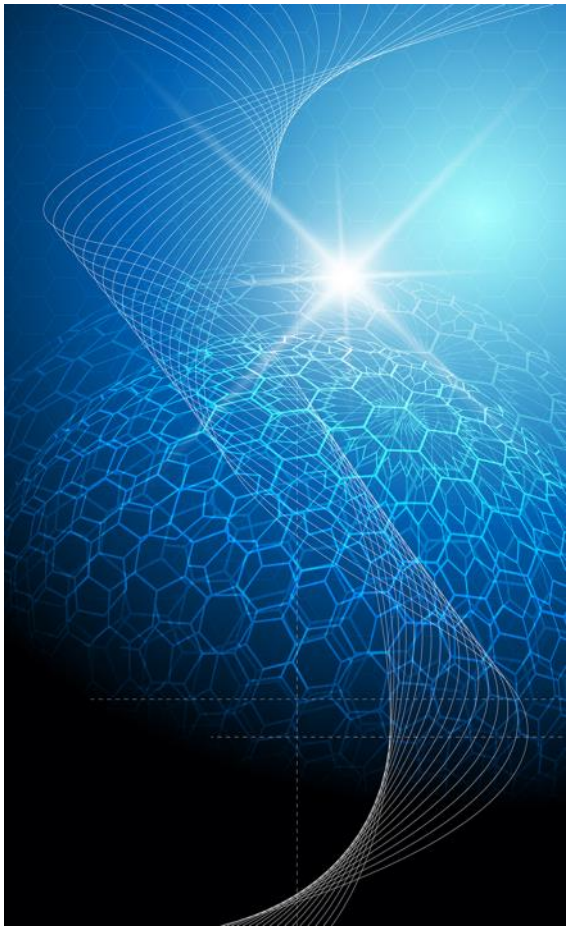
Time (when)
Who (IP address/threat actor)
Why – IDS – (What Expression did they use?)

Isolate

Everything else is dropped - take it to the Cloud for analysis

Analyze

Look for patterns, “expressions” or indicators



Thank you!

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