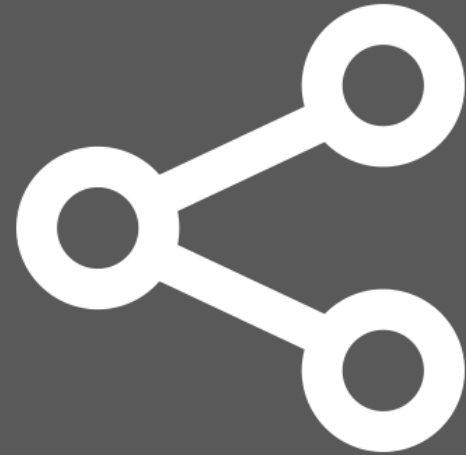# xAPI Cybersecurity

IEEE Learning Technology Standards Committee P9274.4.2 Working Group

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How do systems and applications in a learning ecosystem securely share xAPI data?

xAPI will soon be an IEEE global standard.

It is in the 9274 suite of the LTSC portfolio.

IEEE

Advancing Technology for Humanity

Easter Egg…

"9274" = "xAPI"

xAPI Cybersecurity = P9274.4.2 Working Group.

P9274.4.2 Purpose

To provide cybersecurity guidance to technical implementers of xAPI.

Includes best practices in:

- **xAPI implementation**
- **LRS communication**
- **Mitigations of common cybersecurity issues**
- **Cybersecurity lifecycle**

Common Misconceptions

- xAPI is "different"
- "Security" & "Content Policy" are the same
- Cybersecurity is static

Common Issues

- **API Implementation**
- **LRP-to-LRS communication**

Common Issues

- **Transport Level Security**
- **Network Security**

Common Issues

- **DOS Attack**
- **Malicious Payload**

Common Issues

- **Zero-trust Complications**
- **Certificates**

Common Issues
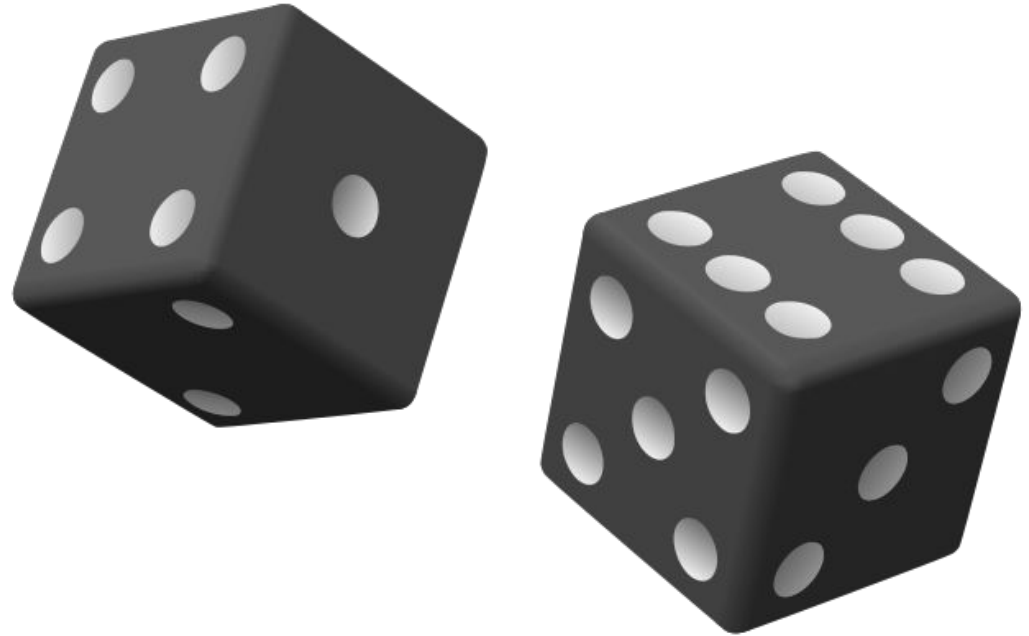
- **Profile Server**
- **Activity Control**

Common Issues

- **Lifecycle**
- **Auditing and Response Practices**

Risk Management

- PREPARE
- CATEGORIZE
- SELECT
- IMPLEMENT
- ASSESS
- AUTHORIZE
- MONITOR

- NIST RMF

PII: IEEE Approaches

- **IEEE P7002 Data Privacy Process**
- **IEEE P7004 Standard for Child and Student Data Governance**
- **IEEE P7004.1 Recommended Practices for Virtual Classroom Security, Privacy and Data Governance**
- **IEEE P7005 Standard for Transparent Employer Data Governance**
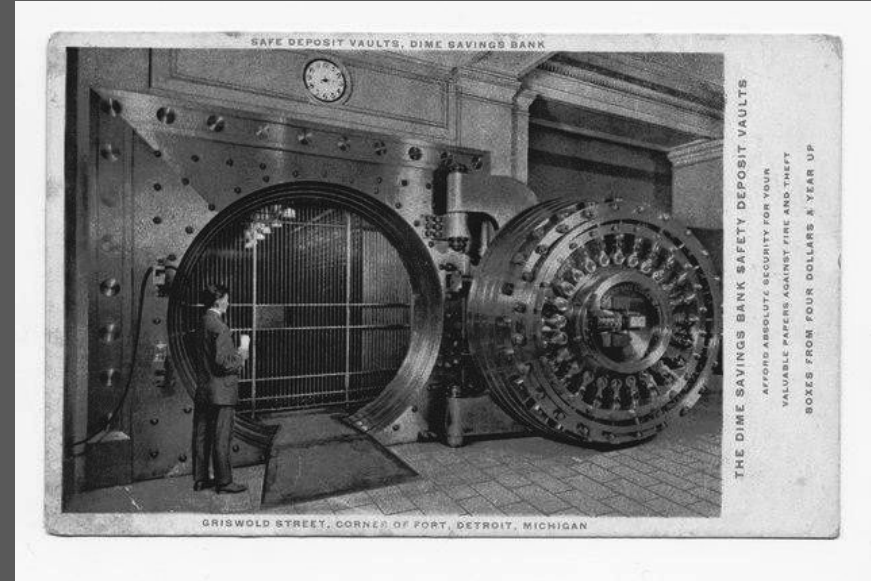- **IEEE P7012 - Standard for Machine Readable Personal Privacy Terms**

xAPI Data Conformance

- **LRS: ADL Test Suite**
- **LRP: ADL conformant LRS**
- **xAPI Profiles: DATASIM**
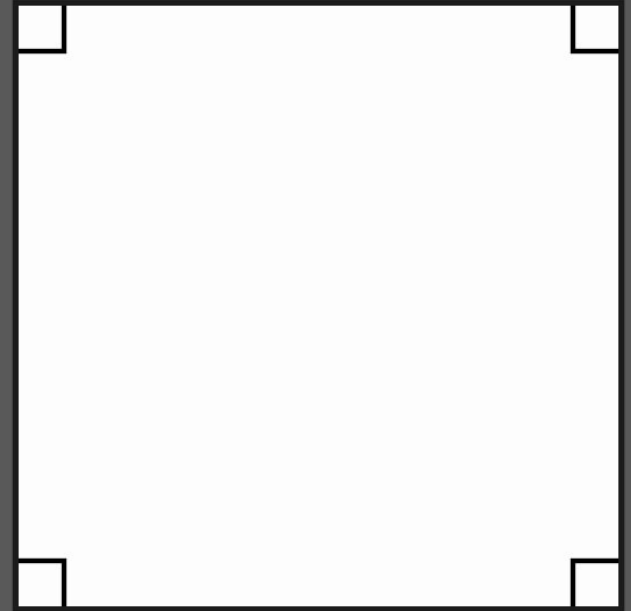
xAPI & DevSecOps

- **Open Source Apache 2.0 SQL LRS is available on Platform One's Iron Bank**
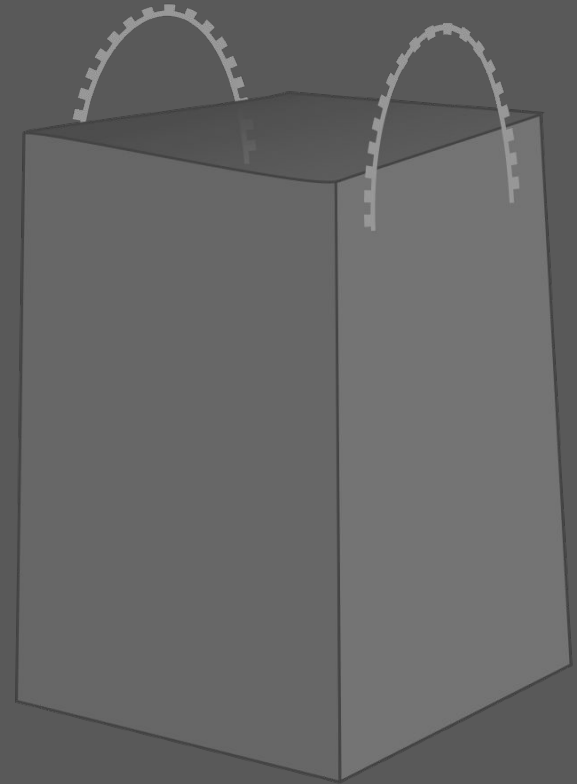- **Find more secure ADL resources there**

Take Aways

- **xAPI fits into common security practices**
- **Communication between LRP and LRS is foundational**

Take Aways

- **LRS conformance ensures system integrity**
- **Secure implementations should leverage capabilities with DevSecOps chops**

**To join the IEEE xAPI Cybersecurity Working Group, contact:
shelly@yetanalytics.com**

Participation is free and open to the public.