Interoperable Performance Assessment to Support Adaptive Learning

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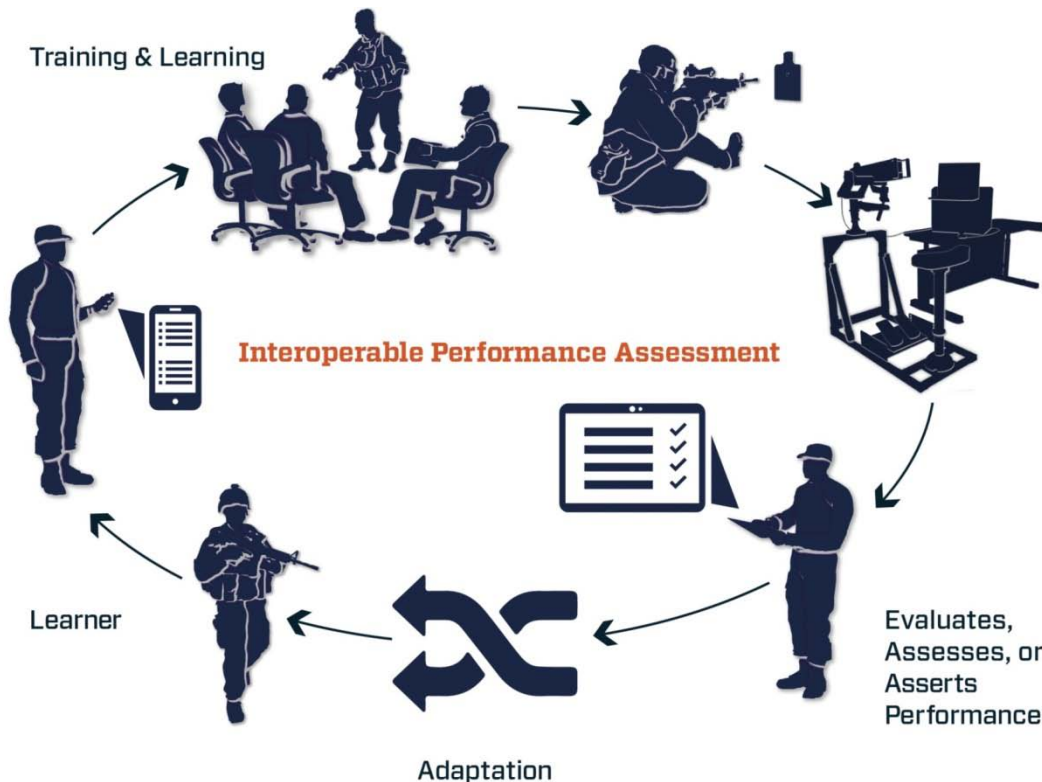Human Systems Conference, Washington, D.C.
February 4, 2014

Why the need for Interoperable Performance Assessment (IPA)?

- Training adaptation is valuable
- Cost of adaptation is high
- Data collection and storage is siloed
- Content interoperability is evolving
- Data is becoming more readily available
- Intersystem training adaptability is increasing

What is Interoperable Performance Assessment (IPA)?

- Method of *uniformly defining and describing experience and context* to assess learning and performance

- Ability to adapt training *across a variety of environments, systems, and modalities*

- Observe, assess, evaluate, or assert performance by systems or observers

Research Programs: SCALE and GIFT

- **Soldier-Centered Army Learning Environment (SCALE)**
  - Provides a data-driven architecture to support tailored training
  - Developed by Army Research Laboratory (ARL) and Army Research Institute (ARI)

- **Generalized Intelligent Framework for Tutoring (GIFT)**
  - Modular framework to support the instantiation of adaptive tutoring capabilities
  - Developed by Army Research Laboratory (ARL)

Solider Performance Planner (SP²)

- ## What is SP2?
  - Software tool for collecting and contextualizing Soldier performance from web data sources
  - Allows the user to interface and interact with data in a Learner Record Store (LRS)

- ## What does it do?
  - Tracks soldier performance data from multiple data sources
  - Allows a person to evaluate, assess, or assert learner performance
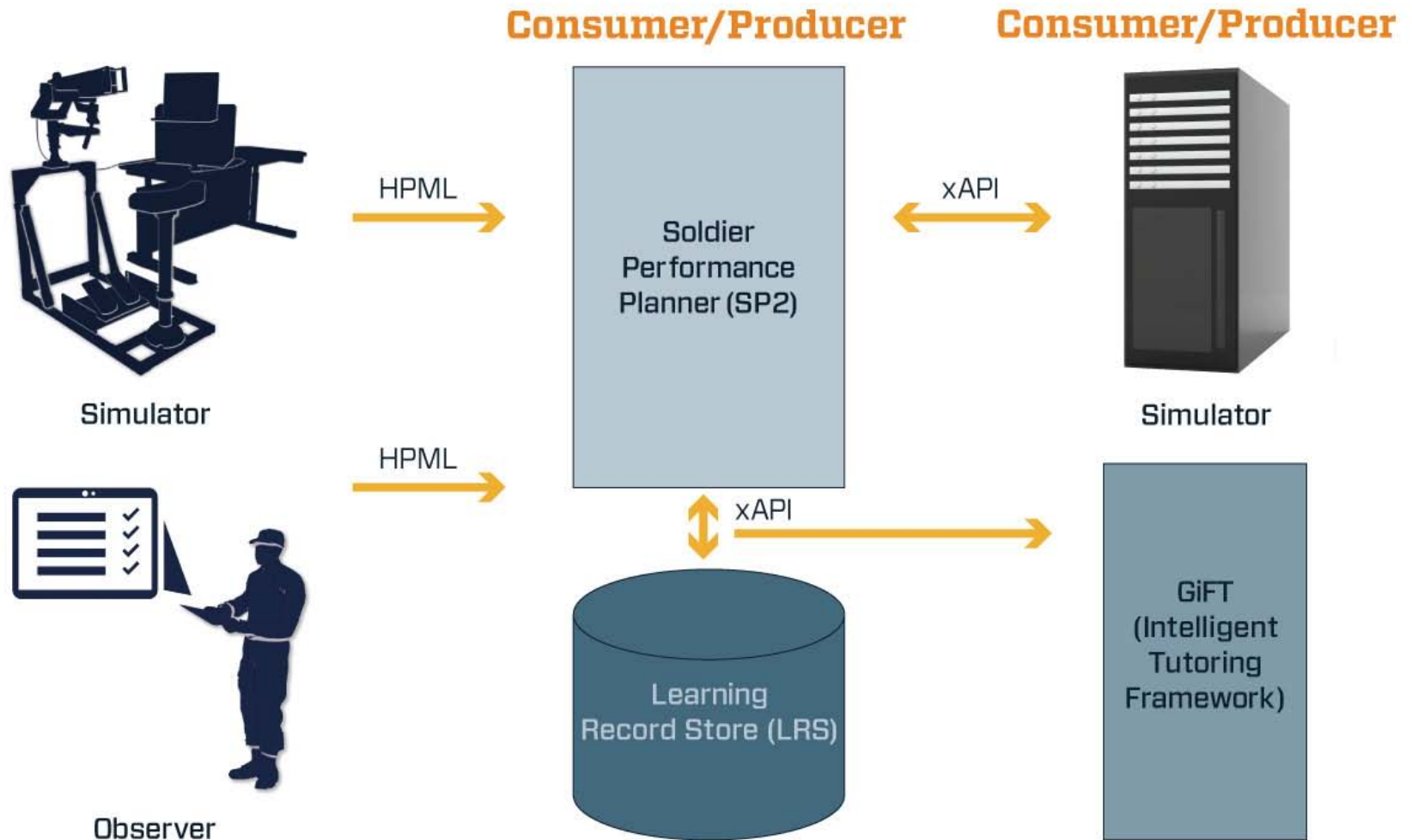 - Synchronizes various web services and LRSs

SP² System Features

- **Human Performance Measurement Language (HPML)**
    - Extensible Markup Language (XML) schema
    - Designed to express performance measurement concepts in a format that is both machine and human readable

- **Experience API (xAPI)**
    - 1.0 Specification developed by the Advanced Distributed Learning (ADL) Initiative, April 26, 2013
    - Defines a method to track data about learning experiences

Visual Source: @LizBurow
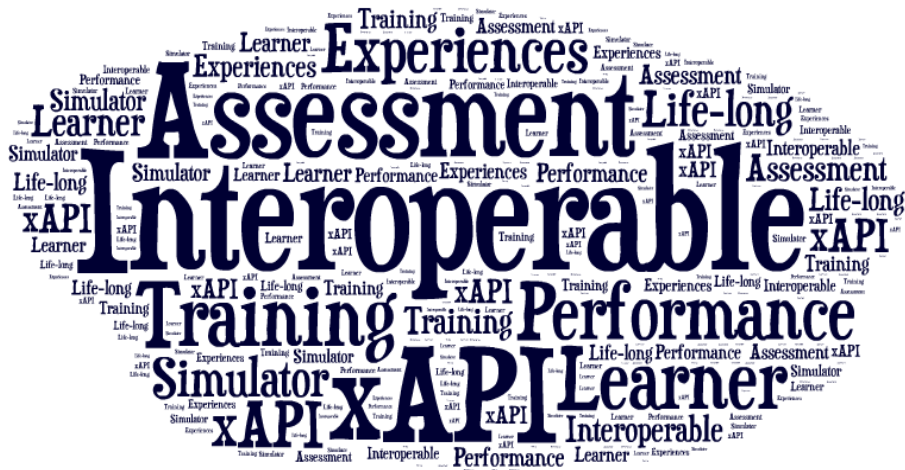
Current SP² Framework

Summary of Current Efforts

- Developed an architecture for synergy between ADL's xAPI, ARL's SCALE and GIFT.

- Defined best practices for encoding individual performance from both system-based and observer-based measures.

- Developed requirements for tools to view this data.

- Built a proof of concept using existing performance assessment technologies.

Upcoming Efforts & Next Steps

- Define best practices for encoding team performance data.

- Identify additional consumers and producers of data.

- Engage community partners and early adopters.

- Generate new data sources and validate best practices.

Our goal:

To define a path ahead to interoperable tracking of *individual and group performance* to support *adaptive and tailored learning*.

Questions?

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