

# Guidelines and Tools for Measuring and Assessing Human Readiness

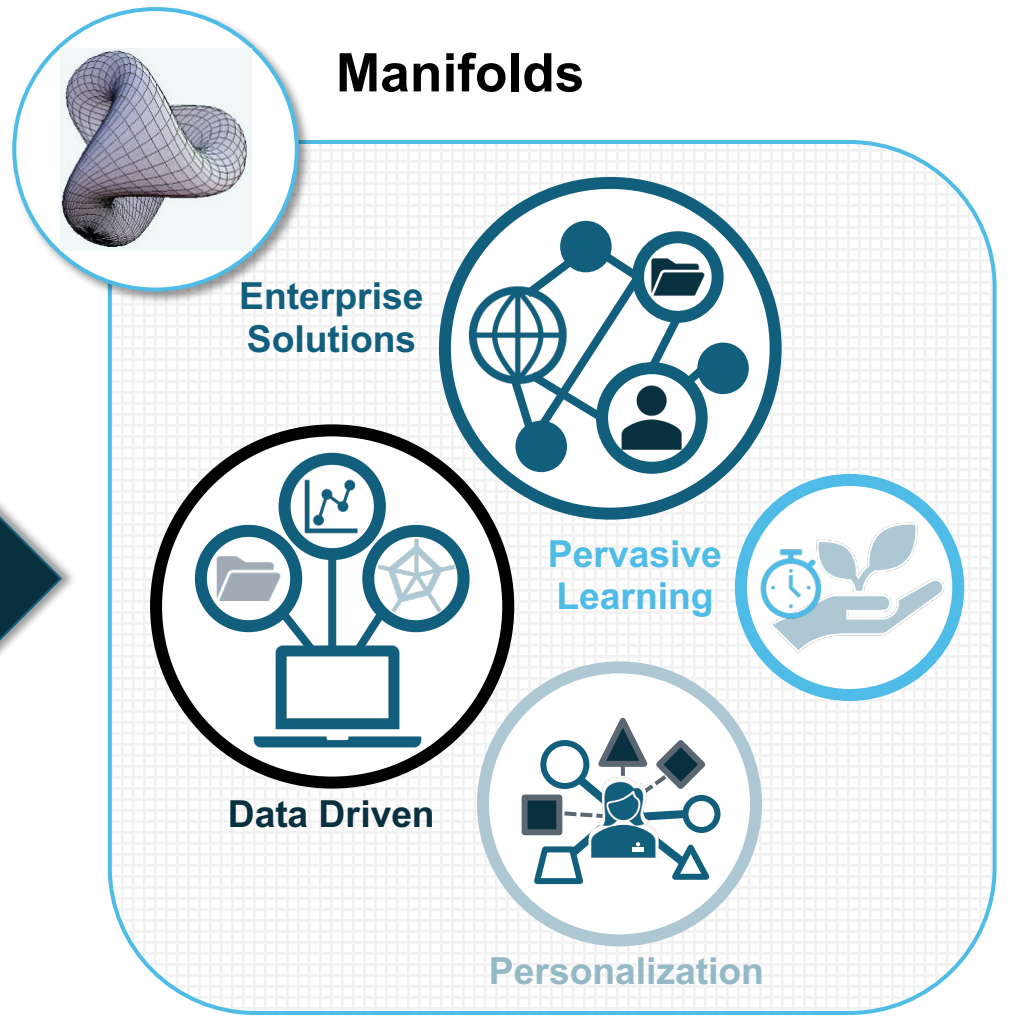
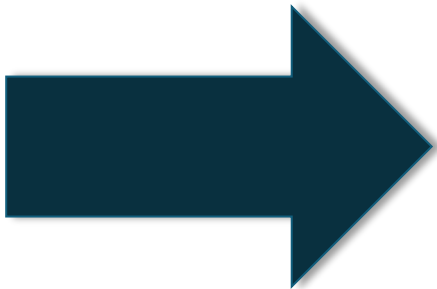
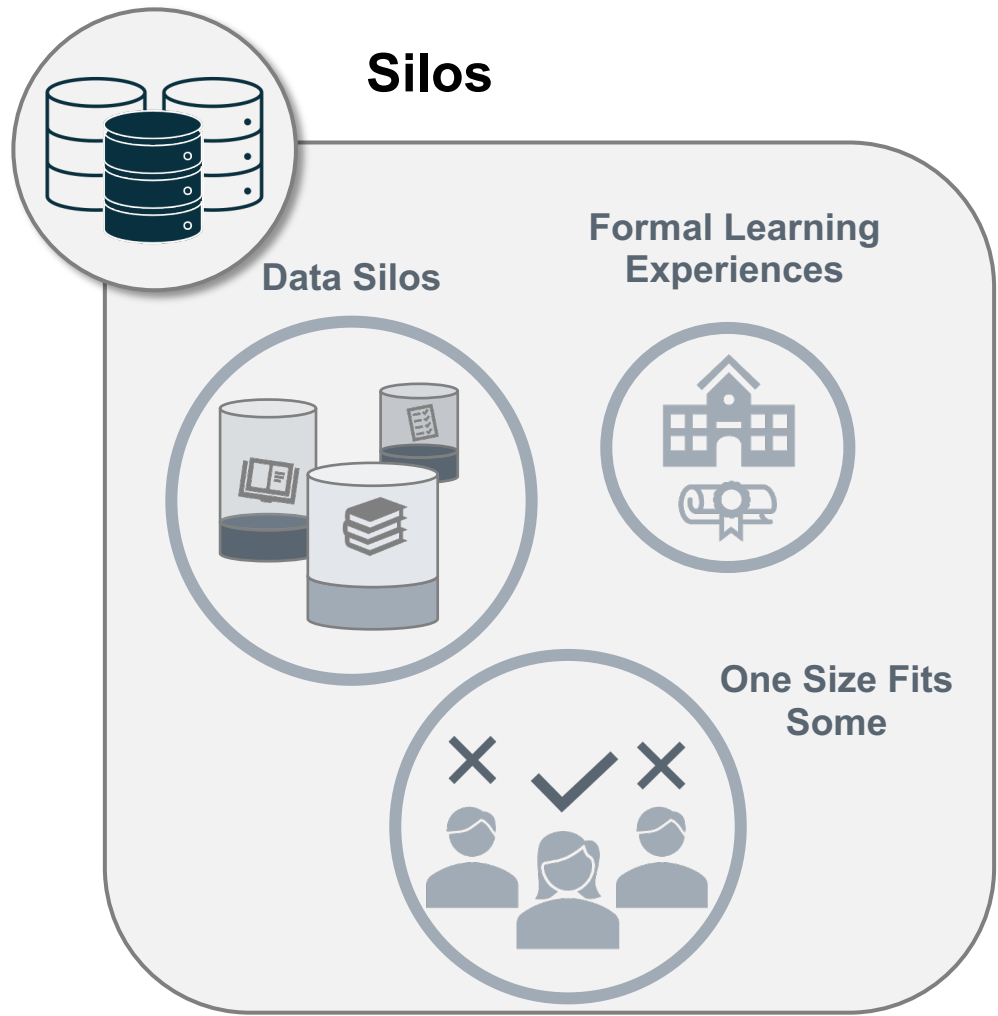
09 MAR 2021

Ashley Howell and Hunter Smith, ADL Initiative (SETA Contractors)



# Agenda

- Total Learning Architecture
  - **Overview**
  - **Data Standards**
  - **Reference Implementation**
- Q&A



*Increased DoD-wide Education & Training interoperability and accessibility for more adaptable, strategic, and capable manpower.*

The Total Learning Architecture (TLA) is an R&D project to design a **business enterprise architecture** for learning (education/training) systems.

### TLA Business Enterprise Architecture includes:

- Digital learning data strategy
- Data and software interoperability standards
- Specifications for microservices
- Specifications for technology architecture implementations
- Recommendations for business rules and governance

### TLA R&D project also includes:

- “Reference Implementations” (i.e., exemplars like model homes)
- Associated Testing with methods and sandboxes

The collage illustrates various aspects of the TLA project:

- GitHub Repository:** Shows the 'adlnet / SCORM-to-TLA-Roadmap' project page.
- Technical Diagram:** A VPC architecture diagram showing 'Discoverable Subnets' (Reverse Proxy, SSO Portal, Providers, Competency Manager) and 'Non Discoverable Subnets' (DataNet, Competency Framework).
- Book Cover:** 'TOTAL LEARNING ARCHITECTURE 2019 Report' by AL (Assessment Laboratory).
- Table:** A table with columns: Header, Requirement, Priority, Comments. It lists various error messages and MCOM Profile requirements.
- Diagram:** A complex state transition diagram for a learning event, showing states like 'Need to create alert?', 'Fetched', 'Action Required', and 'Evidence of Learning'. It includes a legend for 'Learning Event Manager', 'Activity Provider', 'Competency Manager', and 'Evaluate Trust'.

**DATA!**

## LEARNING ACTIVITY

(e.g., Run-time rules, individual run-time performance, paradata)

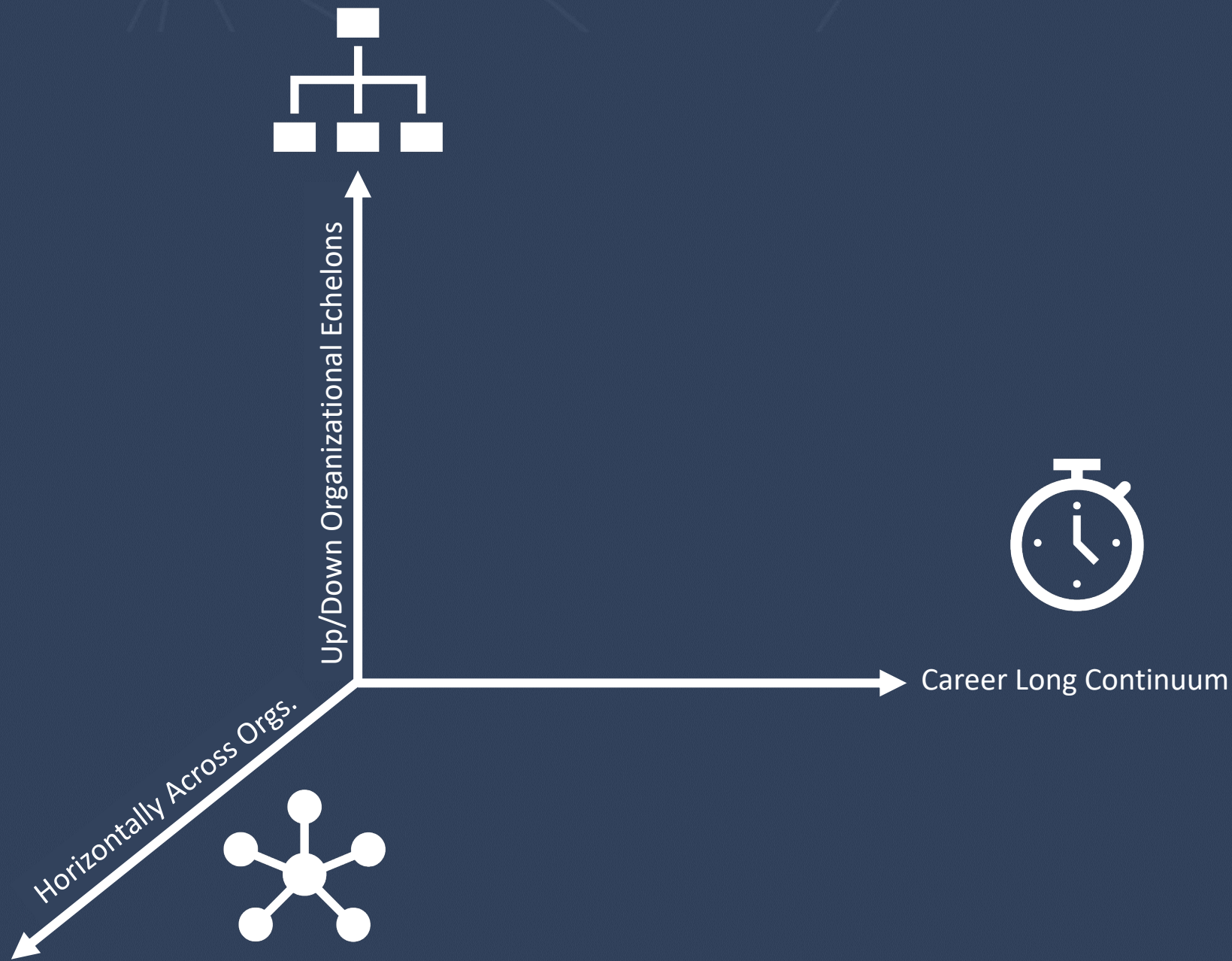
## “COURSES”

(Available Learning Opportunities, e.g., enterprise course catalog, activity registry)

**Competencies**  
(Common Currency)

## LEARNER PROFILE

(e.g., longitudinal attributes, performance, enterprise learner records)



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The Experience API  
(xAPI)  
(IEEE 9274.1)



# Why xAPI?



Learning can be recorded  
wherever it occurs

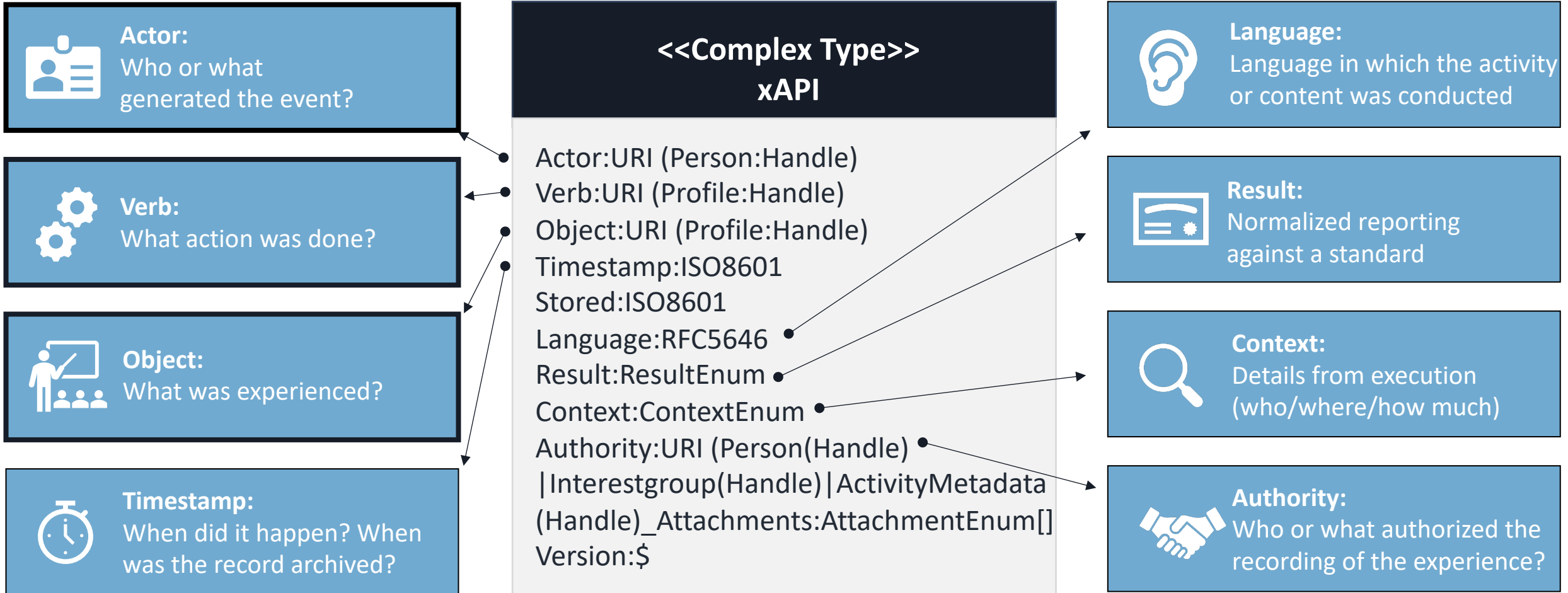


Learning analytics



Learning does not have to  
be “launched” from an LMS

# IEEE 9274.1 xAPI



**LEARNING ACTIVITY**  
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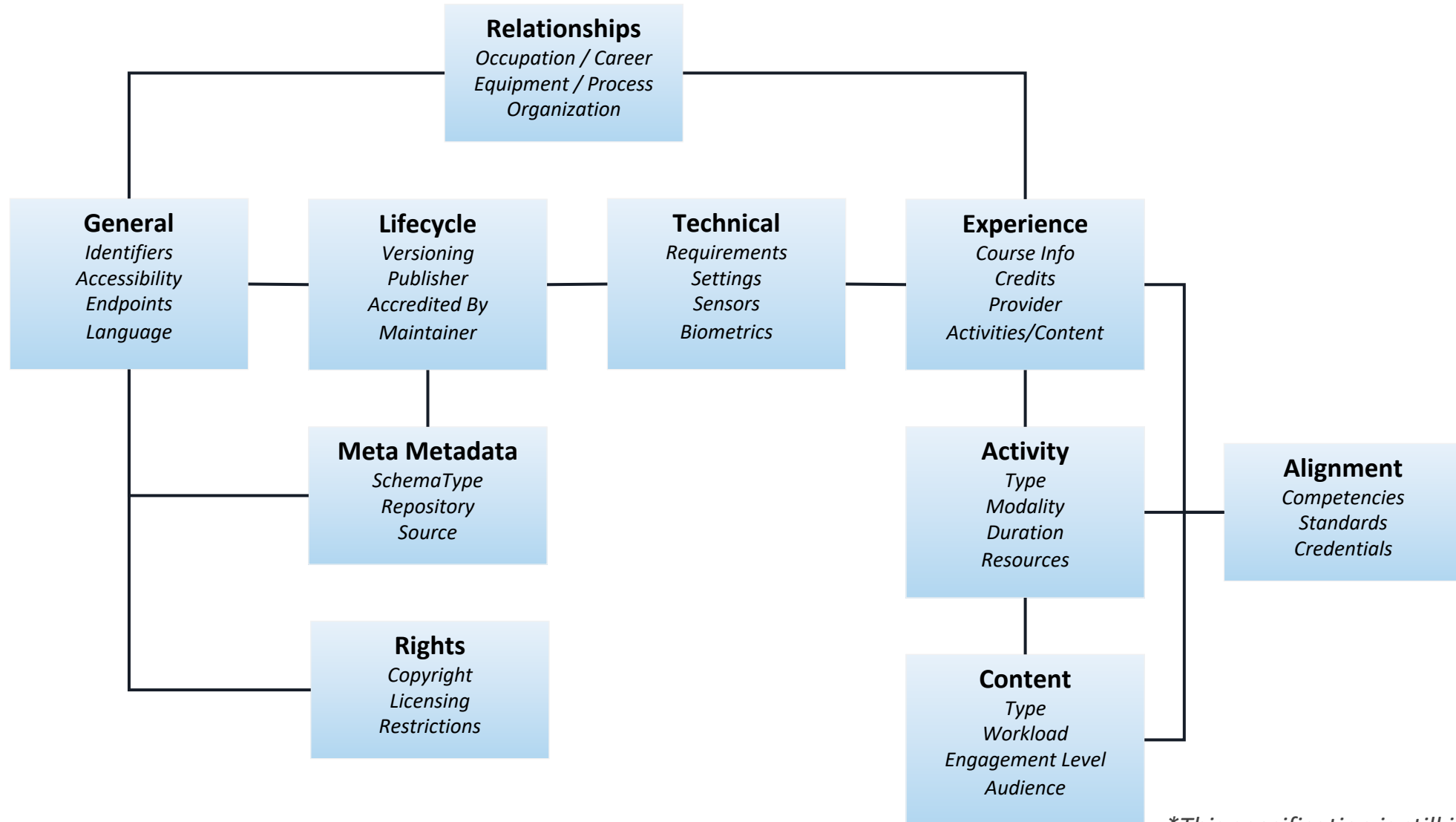
**Competencies**  
(Common Currency)

**LEARNER PROFILE**  
(e.g., longitudinal attributes, performance, enterprise learner records)

**Learning Activity Metadata (IEEE P2881)**



# DRAFT IEEE P2881 Learning Activity Metadata



*\*This specification is still in draft form, and as such may be subject to change*

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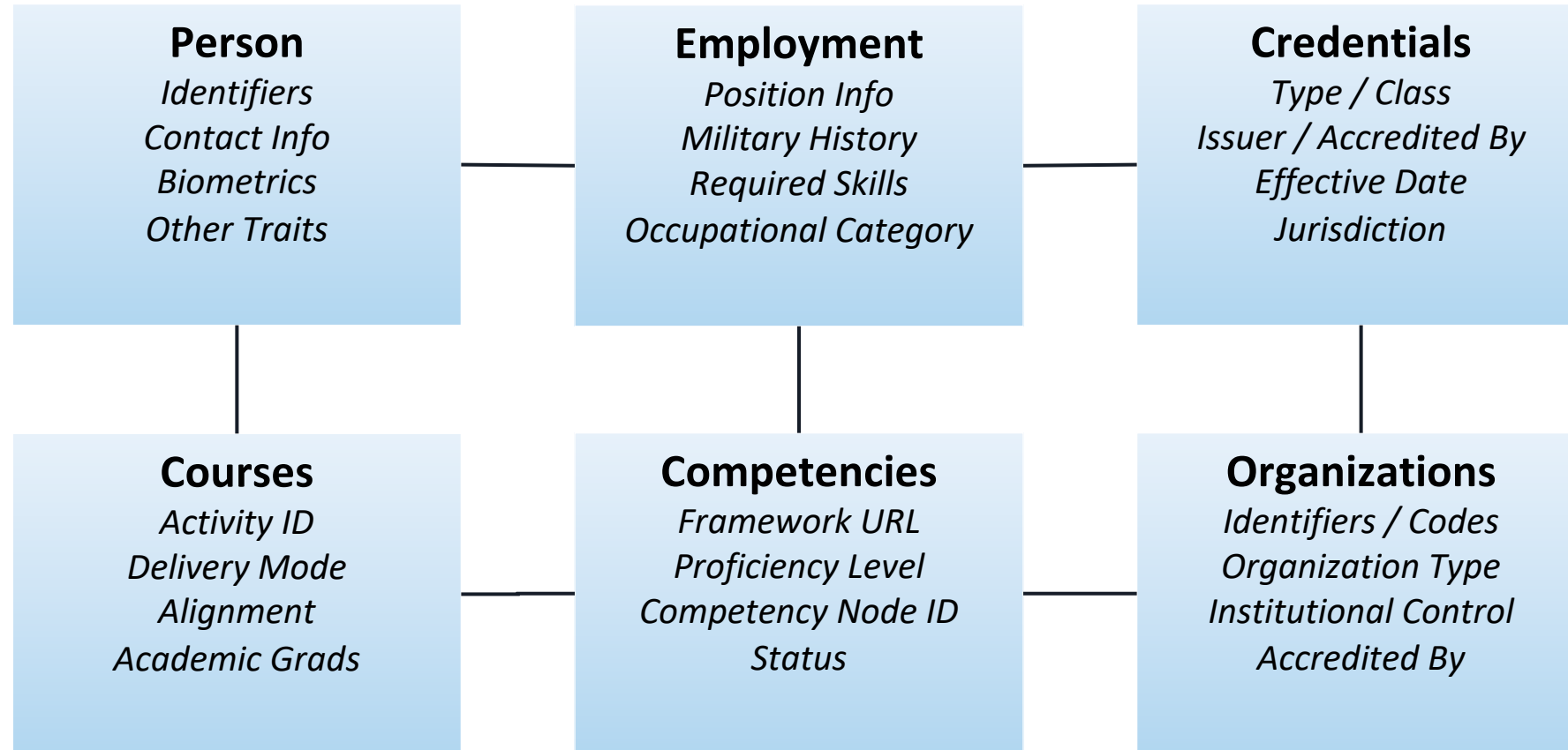
**Competencies**  
(Common Currency)

## LEARNER PROFILE

(e.g., longitudinal attributes, performance, enterprise learner records)

**Enterprise  
Learner Record**

# DRAFT IEEE Enterprise Learner Record



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(e.g., Run-time rules, individual run-time performance, paradata)

## “COURSES”

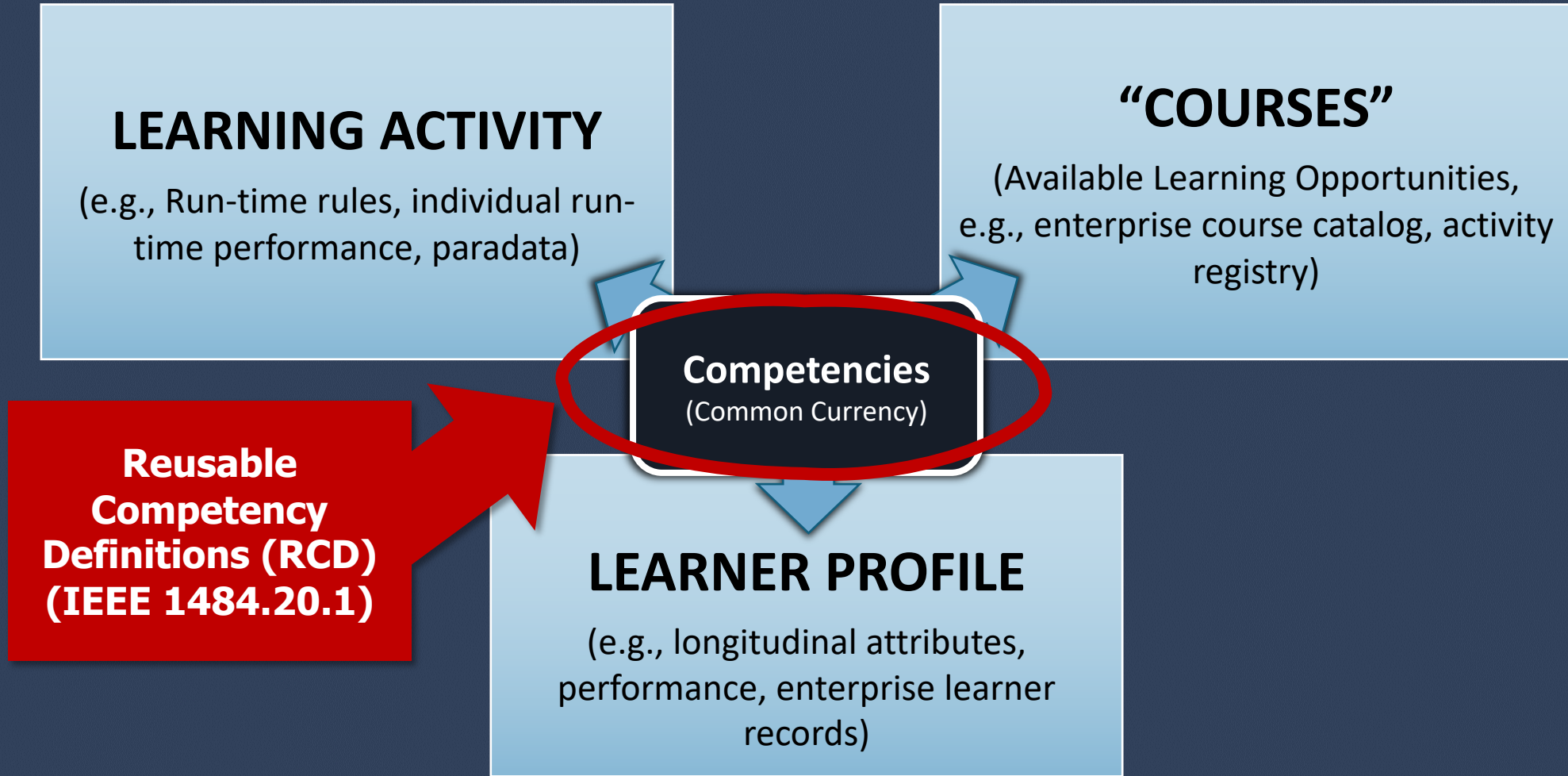
(Available Learning Opportunities, e.g., enterprise course catalog, activity registry)

**Competencies**  
(Common Currency)

**Reusable  
Competency  
Definitions (RCD)  
(IEEE 1484.20.1)**

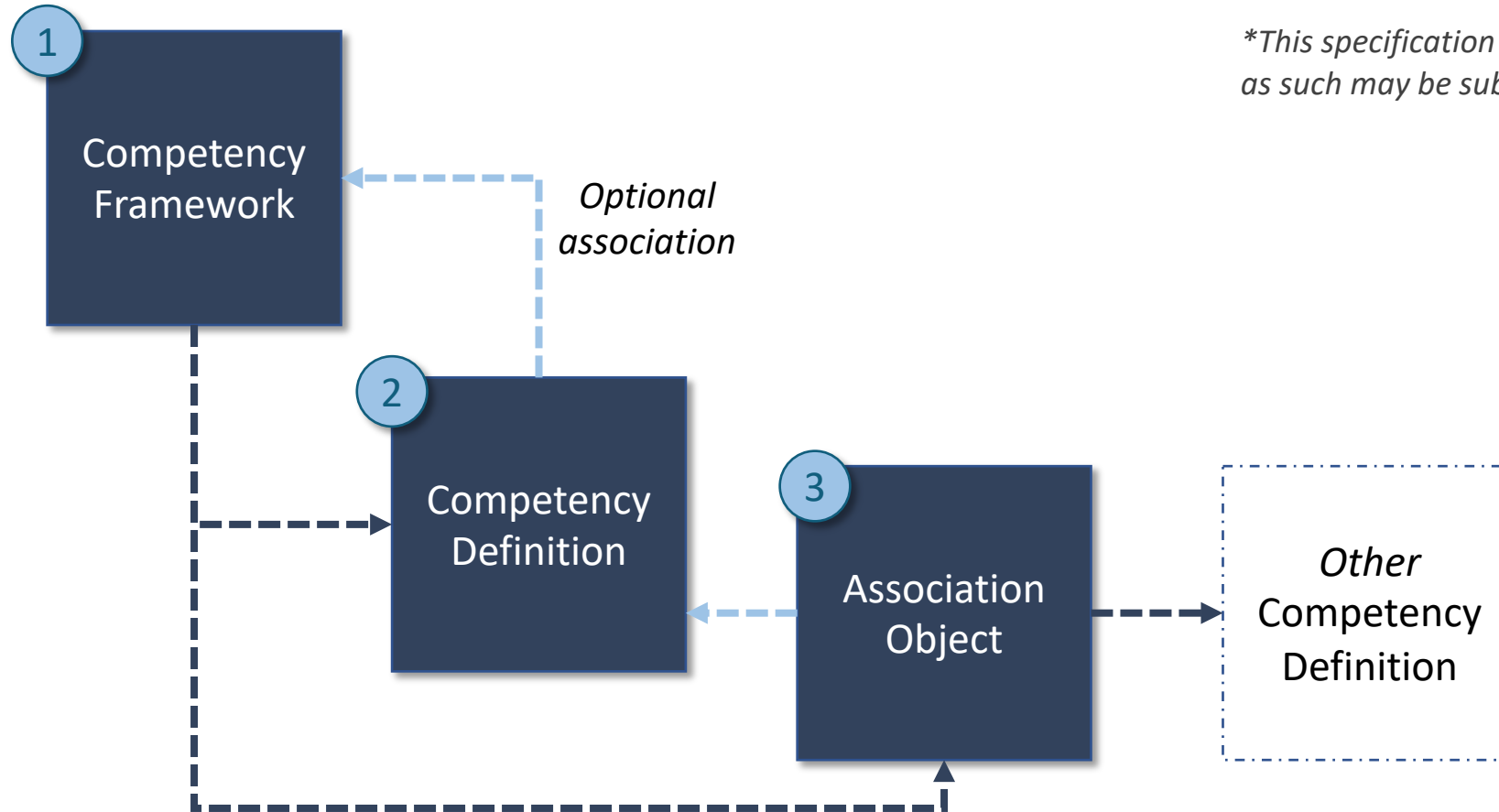
## LEARNER PROFILE

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# IEEE 1484.20.1 RCD

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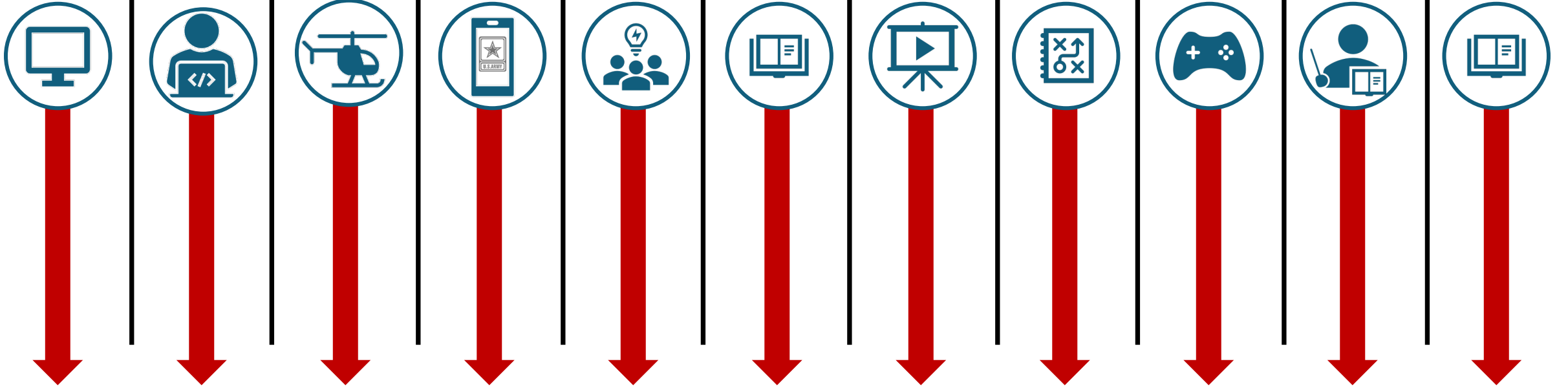


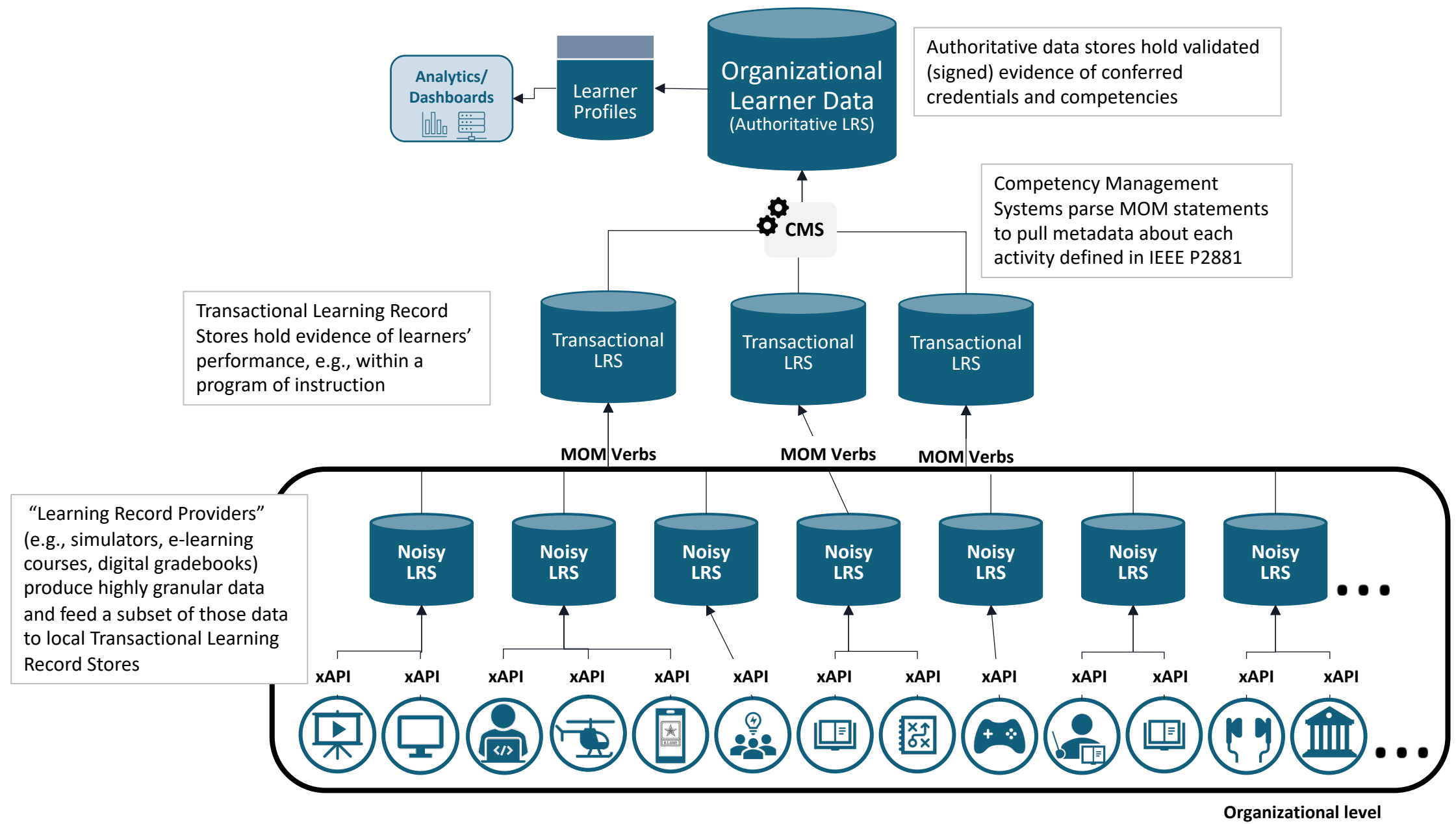
① **Overall "Packaging"** of reusable Competency Definitions. They contain pointers to all included Competencies and Associations.

② **Description of a Knowledge, Skill, Ability, or Other behavior (KSAO) a person can have.** It MAY point to the framework that contains it, and it can be part of multiple Competency Frameworks.

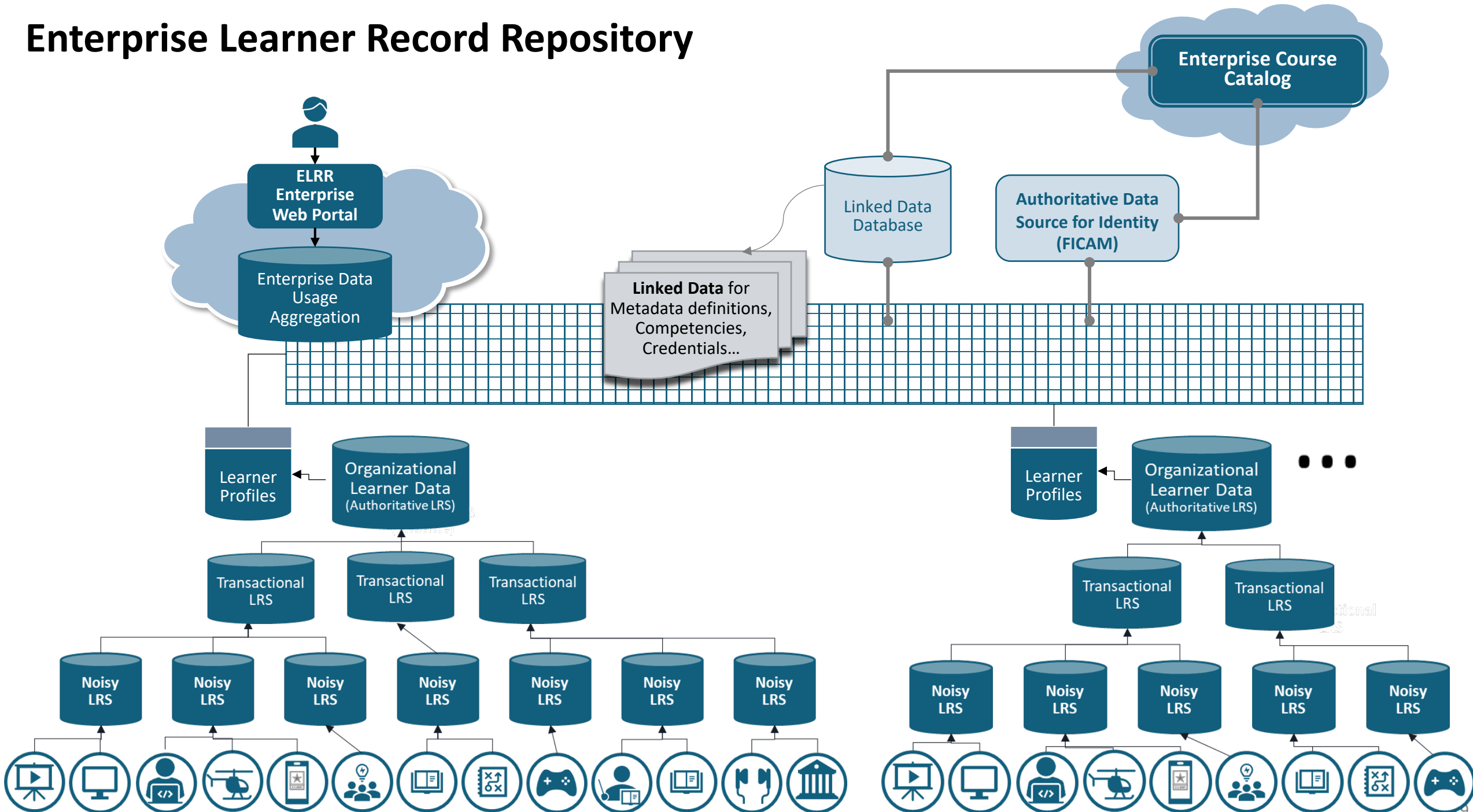
③ **Defines how competencies relate to each other.** It can link competencies with external resources.



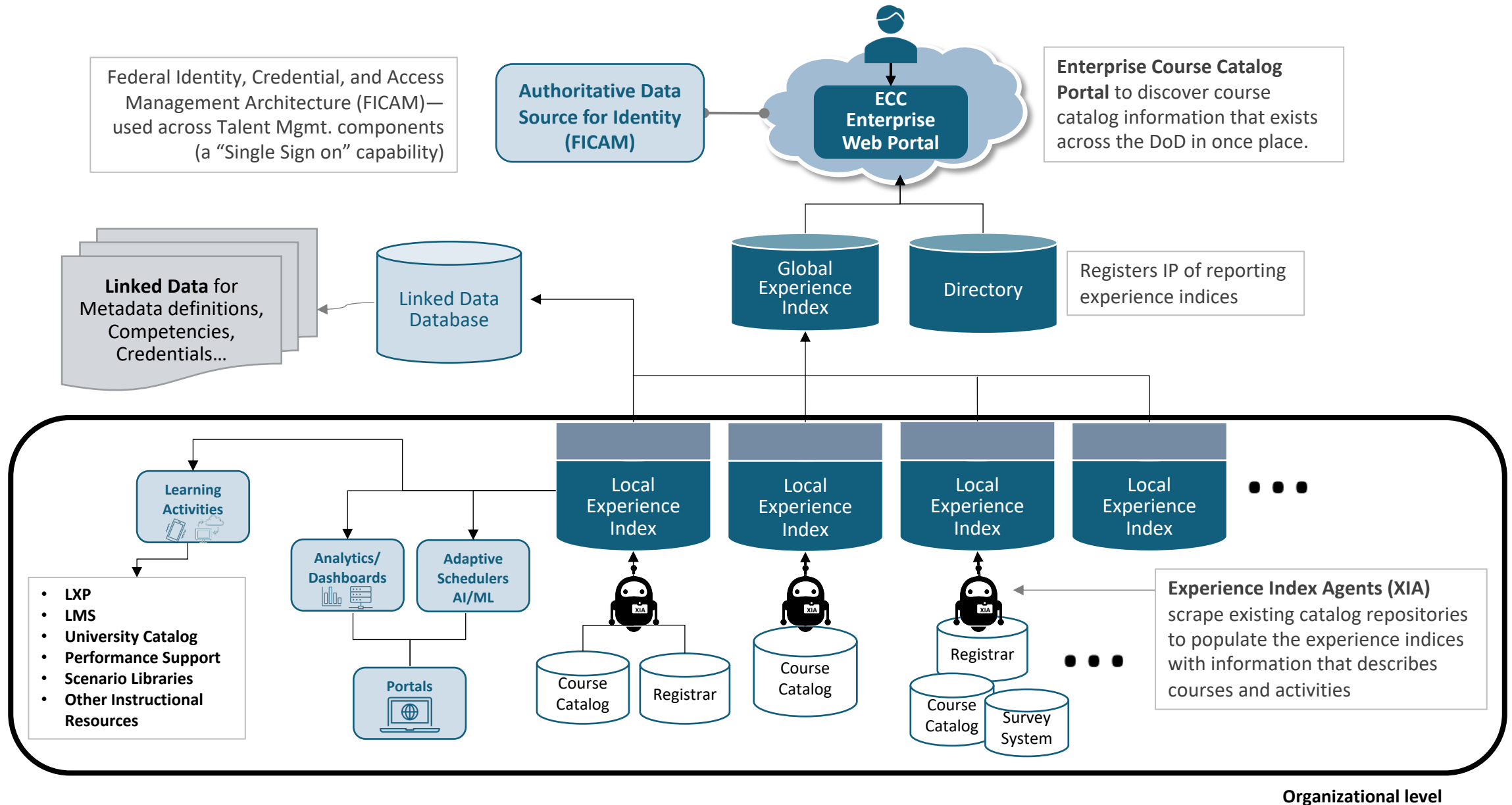




# Enterprise Learner Record Repository



# Enterprise Course Catalog




# Resources

- **Building the Infrastructure for DoD Digital Learning Modernization:**  
<https://www.adlnet.gov/news/2020/07/30/Building-the-Infrastructure-for-DoD-Digital-Learning-Modernization/>
- **2019 Total Learning Architecture (TLA) Report:**  
<https://www.adlnet.gov/resources/publications/2020/04/2019-Total-Learning-Architecture-Report/>
- **2019 ADL Report on Competency-Based Learning:**  
<https://www.adlnet.gov/resources/publications/2019/08/Competency-Based-Learning/>
- **2020 Institute for Defense Analyses TLA Report:**  
<https://www.adlnet.gov/resources/publications/2020/07/ADLs-Total-Learning-Architecture-IDA-Report-2020/>
- **ADL GitHub:** <https://github.com/adlnet>

ADL Initiative x +  
adlnet.gov

An official website of the United States government Here's how you know






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## Building the Future Learning Ecosystem

R&D for Distributed Learning Modernization *informs* Distributed Learning Policy and Technical Guidelines *guides* Implementation Support and Cross-Coordination

### Announcements

<https://adlnet.gov> iFEST 2020: New Features for an Engaging, Interactive Conference Experience 2020

<https://adlnet.gov>

# Questions?