Guidelines and Tools for Measuring and Assessing Human Readiness

09 MAR 2021

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Agenda

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

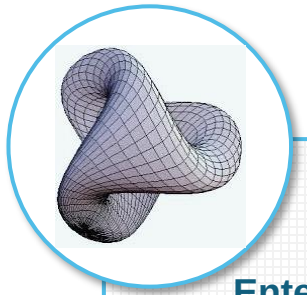
Silos

Data Silos

Formal Learning Experiences

One Size Fits Some

Manifolds



Enterprise Solutions

Pervasive Learning

Data Driven

Personalization

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

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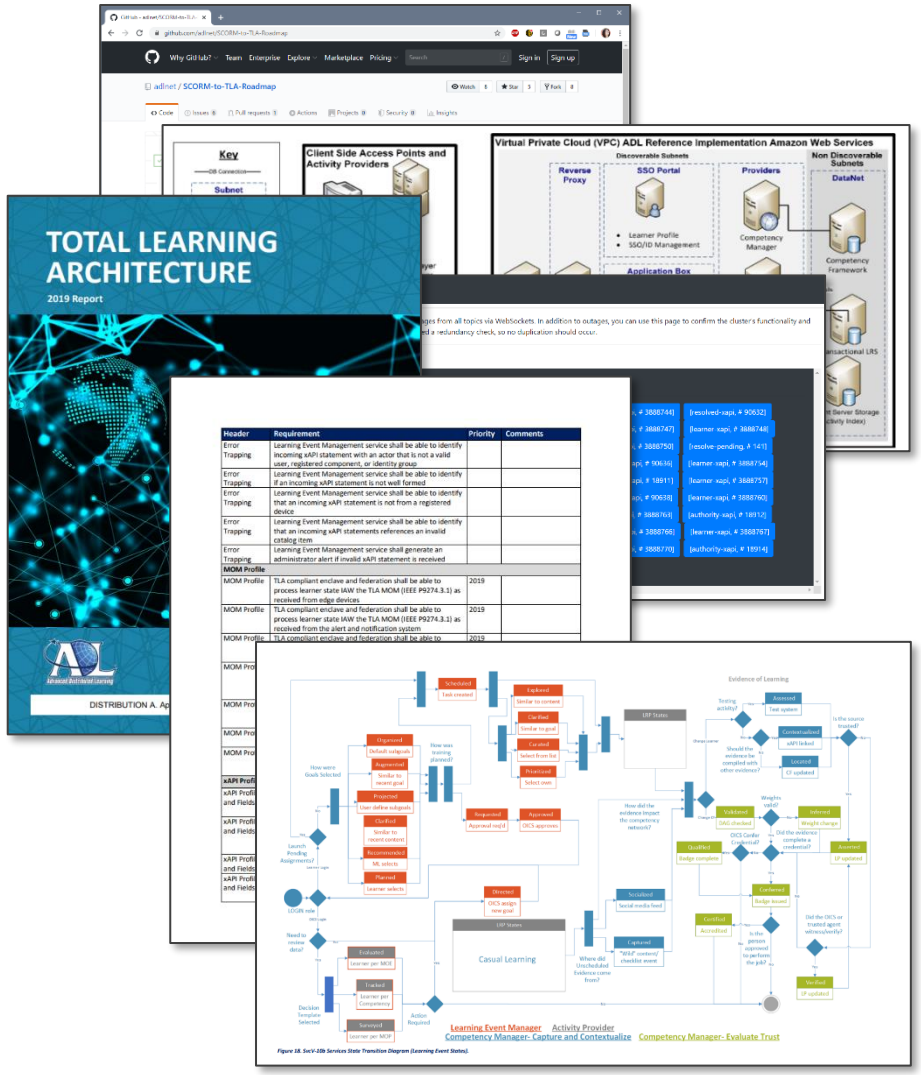
The Total Learning Architecture (TLA) is an R&D project to design a **business enterprise architecture** for learning (education/training) systems.

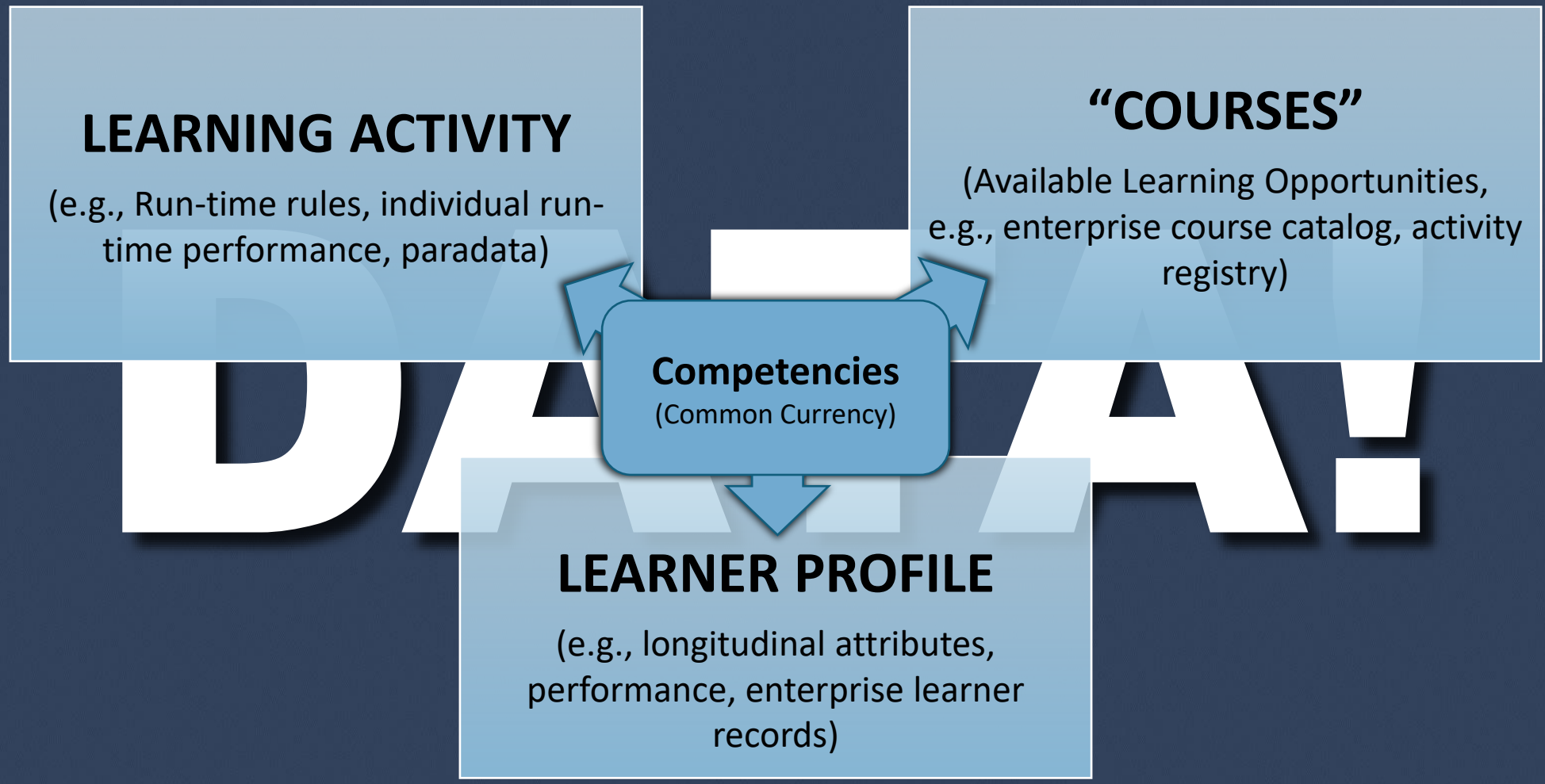


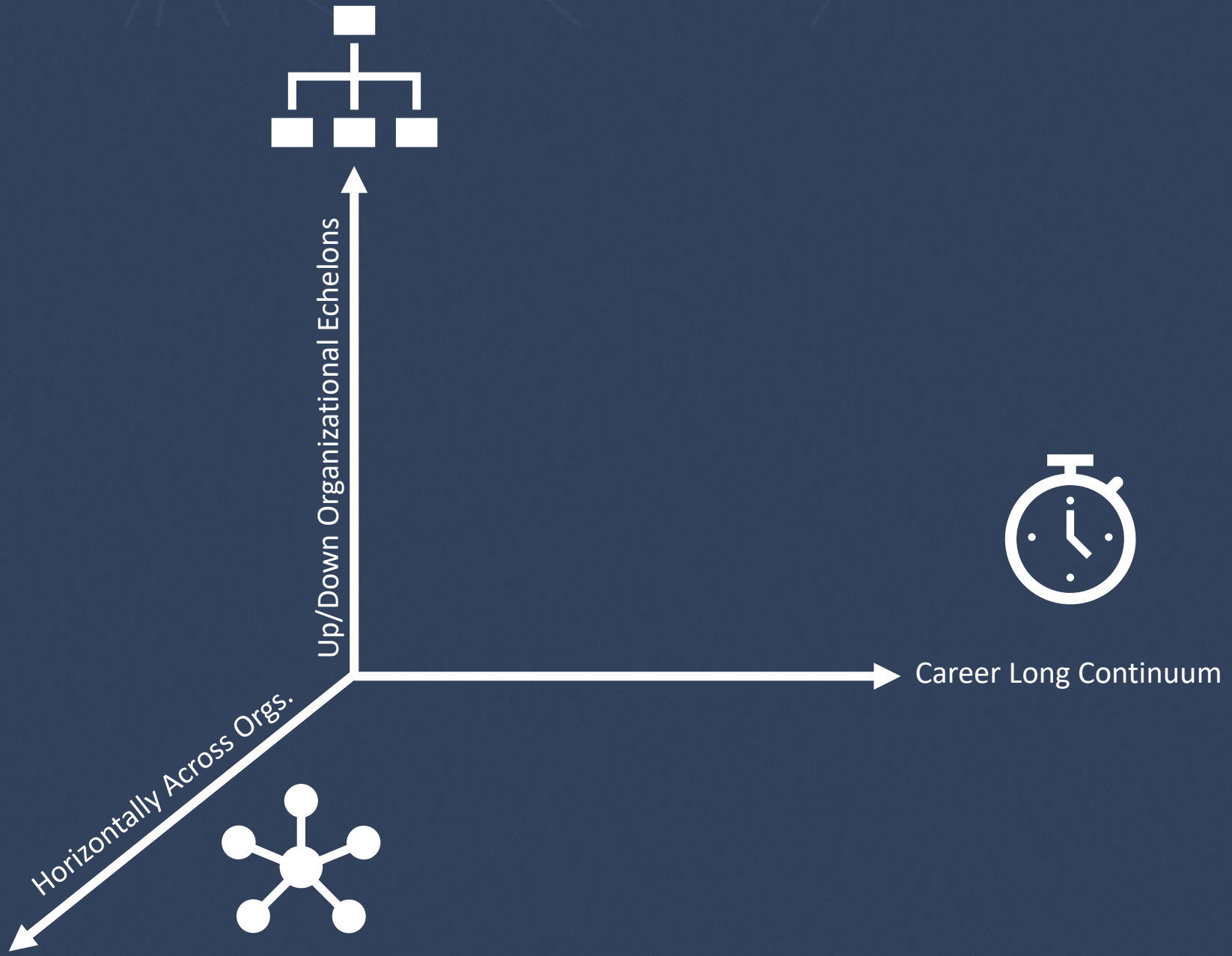
TLA Business Enterprise Architecture includes:

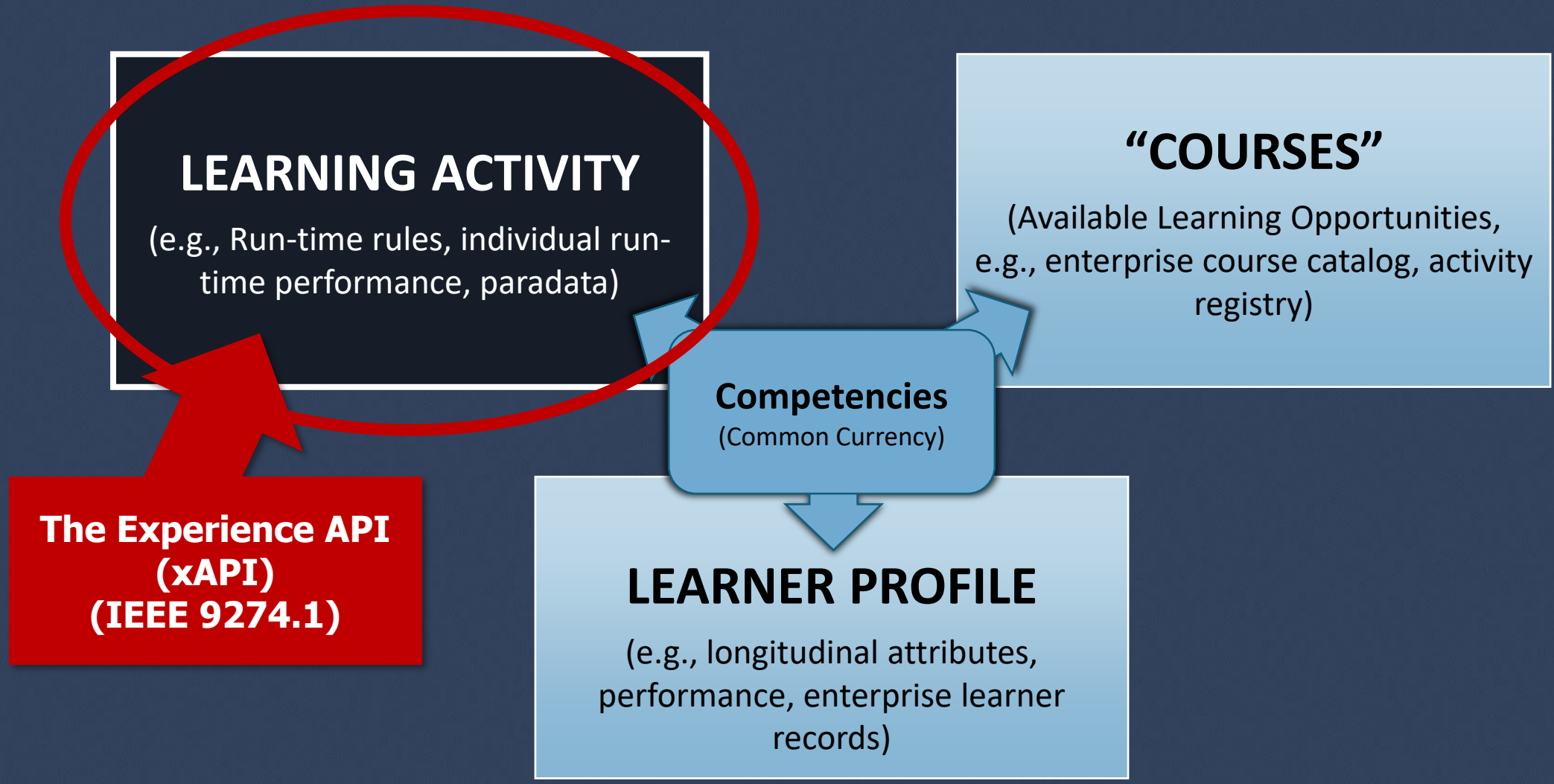
- Digital learning data strategy
- Data and software interoperability standards
- Specifications for microservices
- Specifications for technology architecture implementations
- Recommendations for business rules and governance

TLA R&D project also includes:

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


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)


Up/Down Organizational Echelons
Career Long Continuum
Horizontally Across Orgs.



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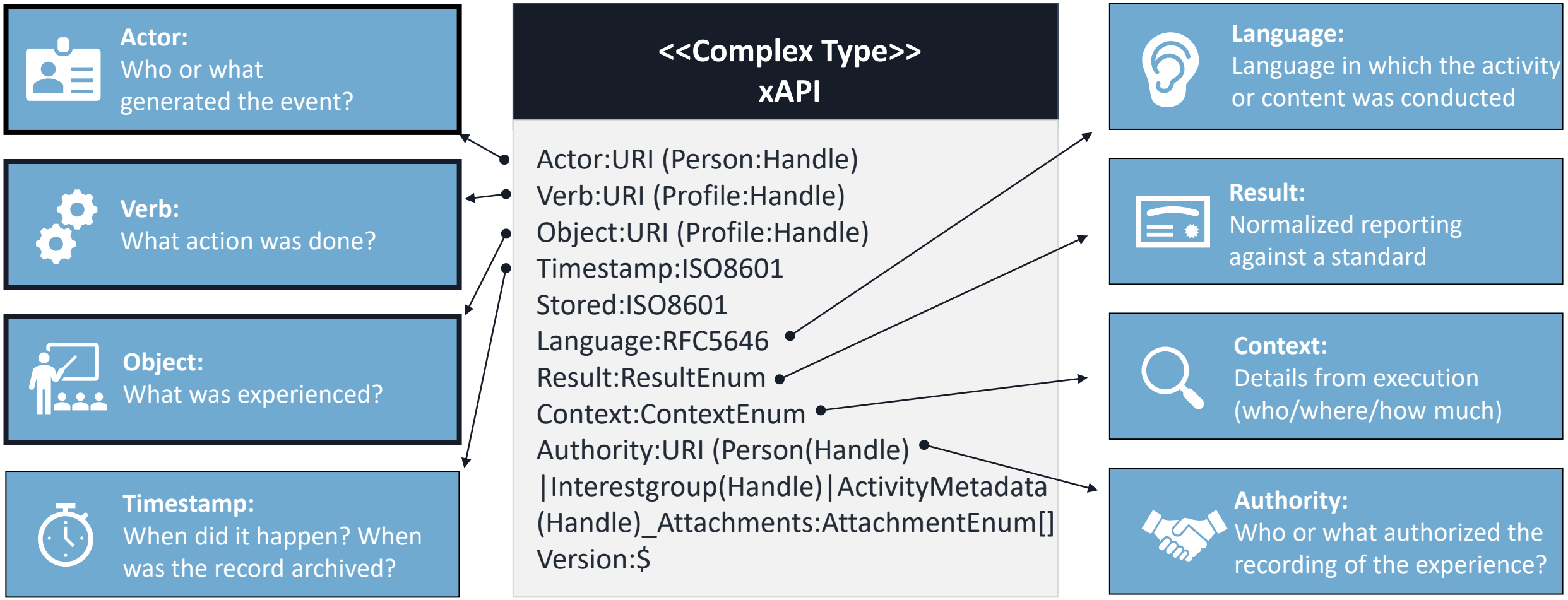
Why xAPI?

Learning can be recorded wherever it occurs

Learning analytics

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

IEEE 9274.1 xAPI



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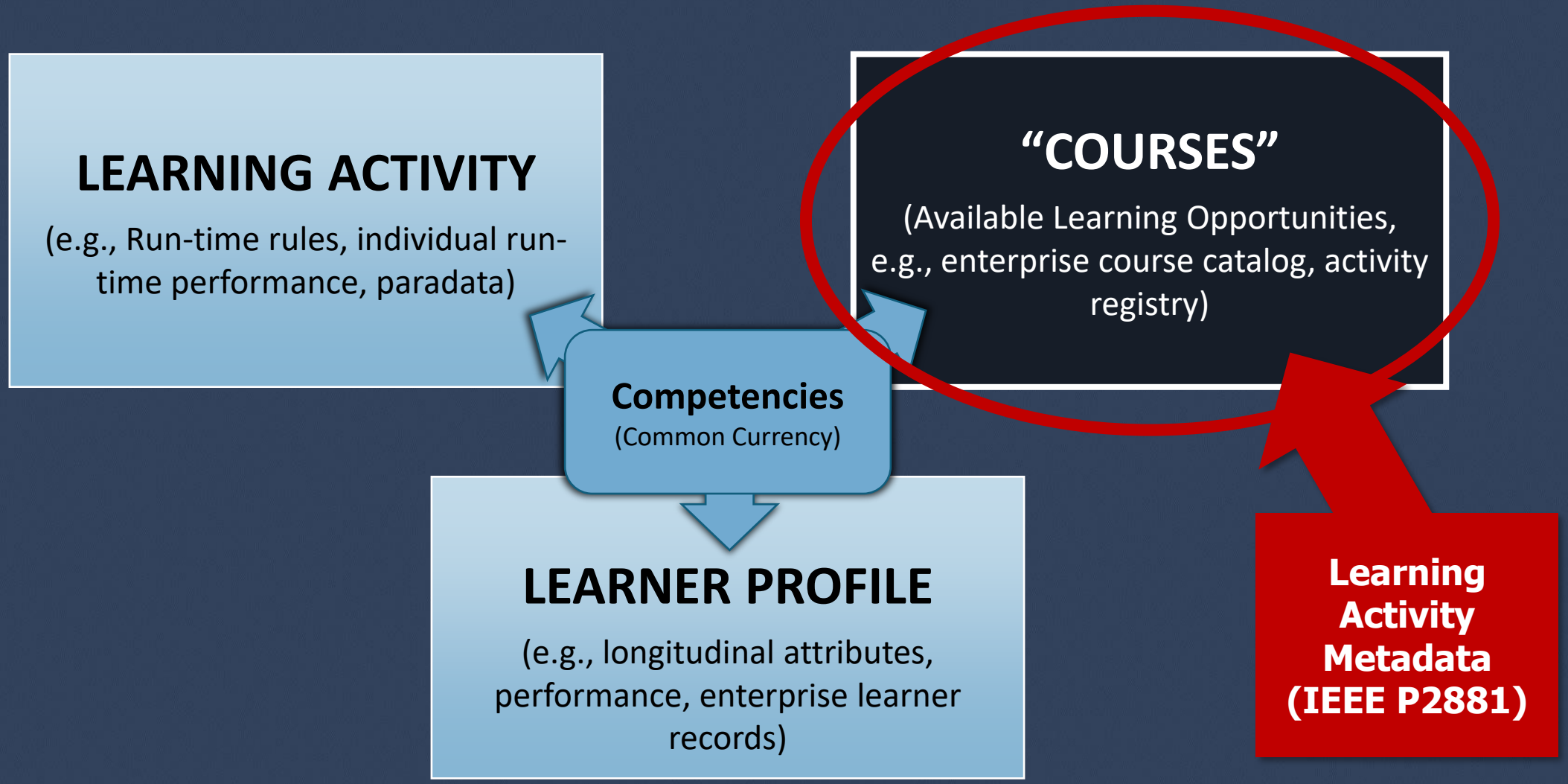
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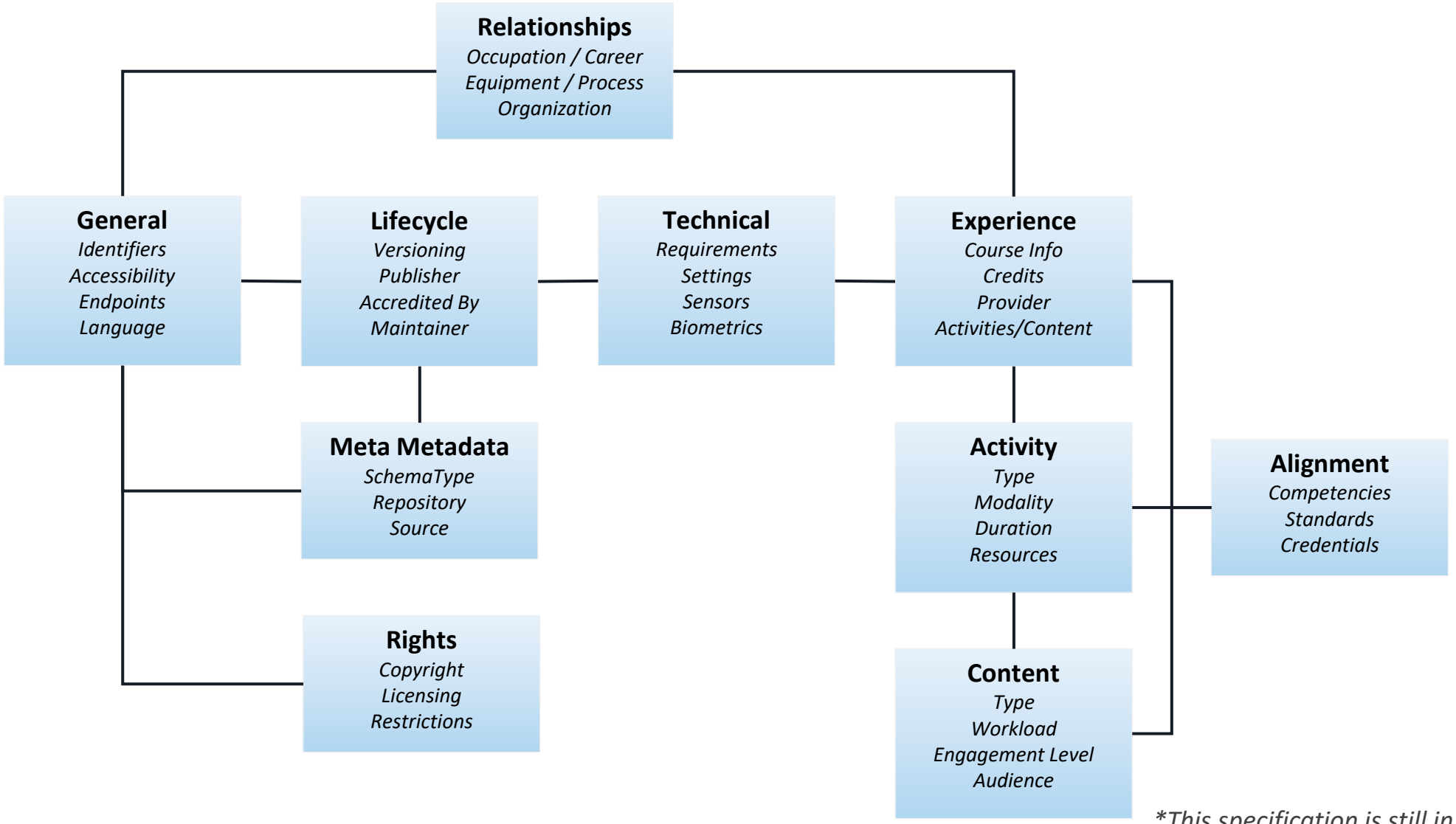
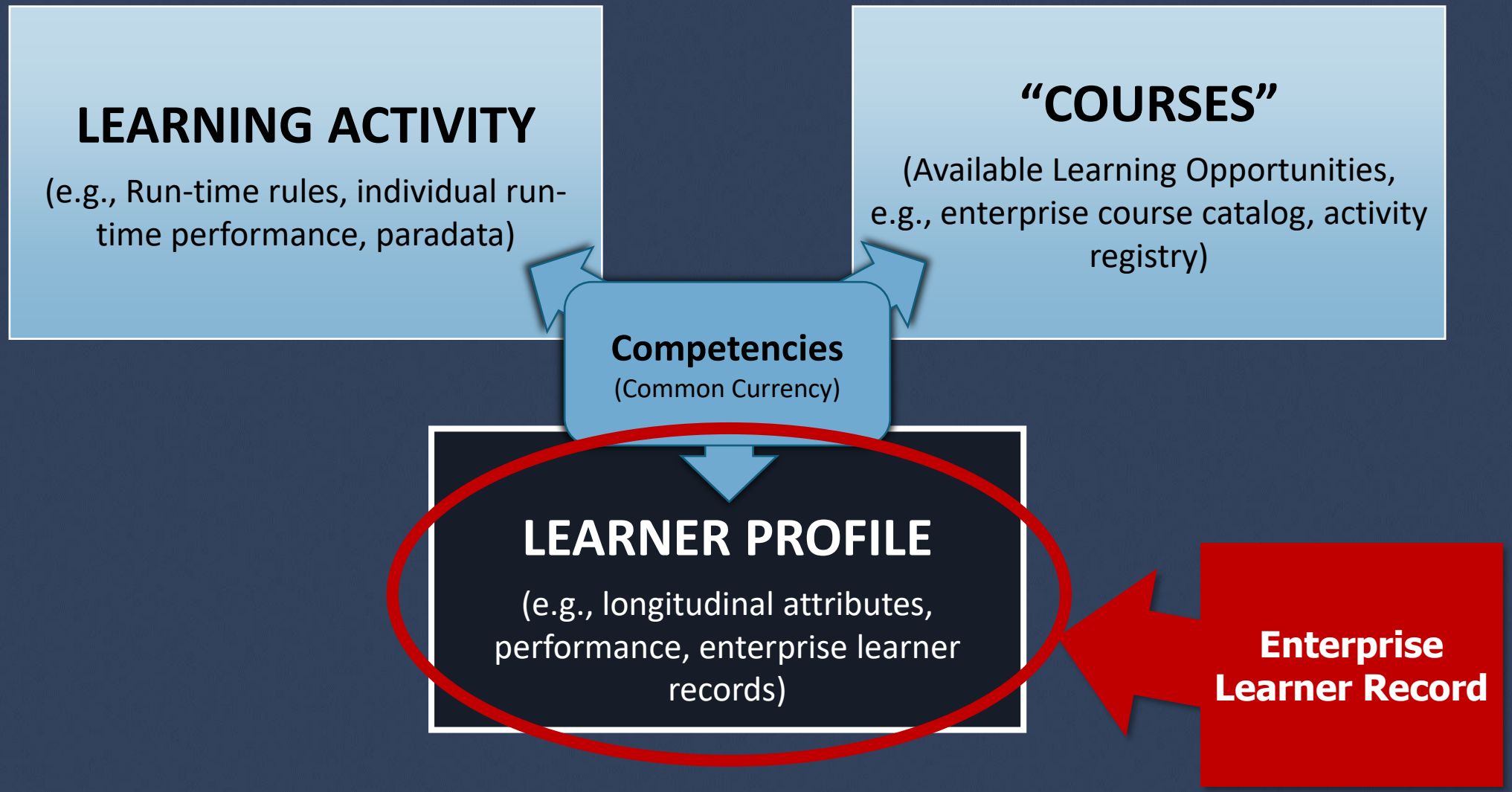
Learning Activity Metadata (IEEE P2881)

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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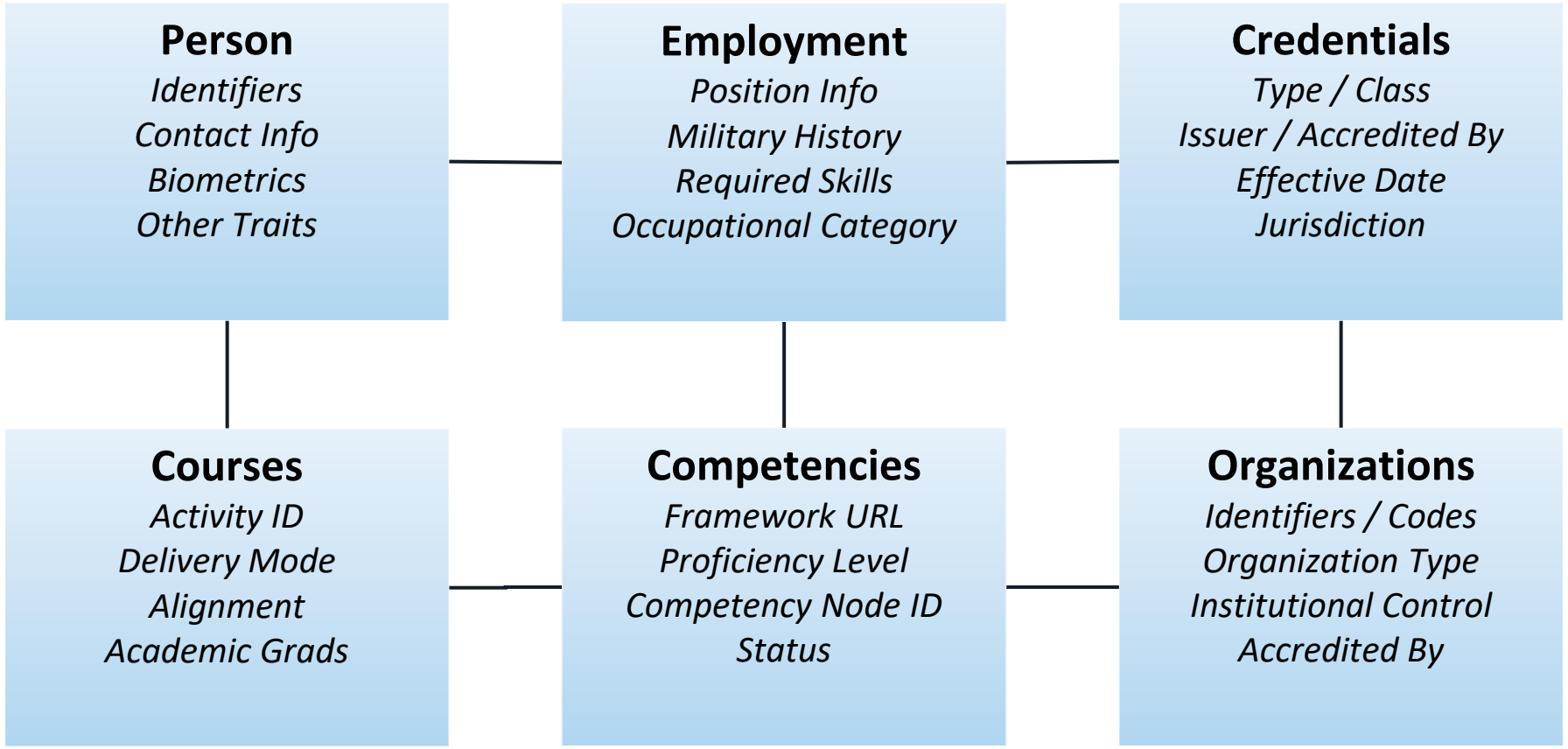
Enterprise Learner Record

DRAFT IEEE Enterprise Learner Record



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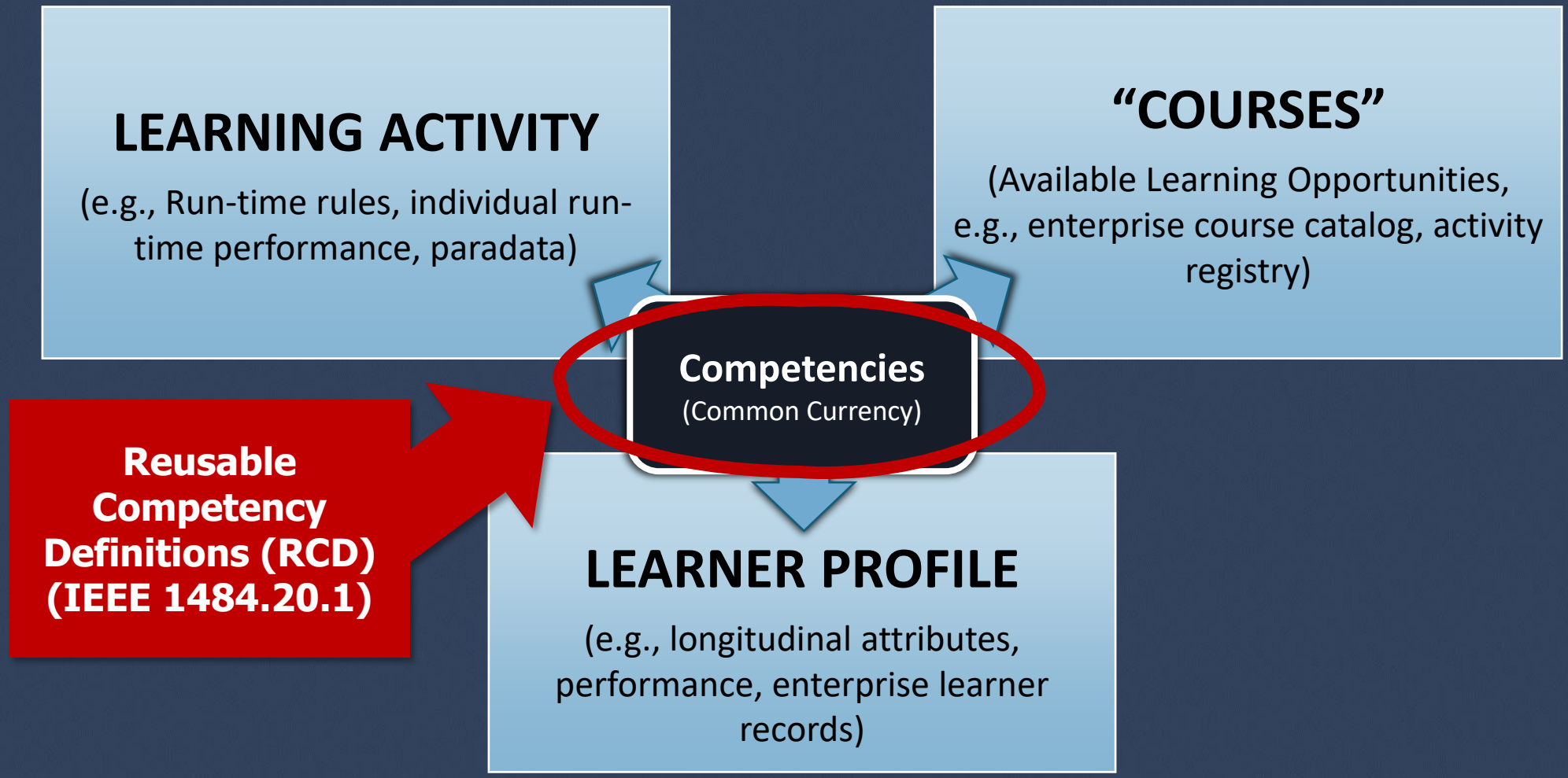
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Competencies
(Common Currency)
Reusable Competency Definitions (RCD) (IEEE 1484.20.1)
LEARNER PROFILE
(e.g., longitudinal attributes, performance, enterprise learner records)

IEEE 1484.20.1 RCD

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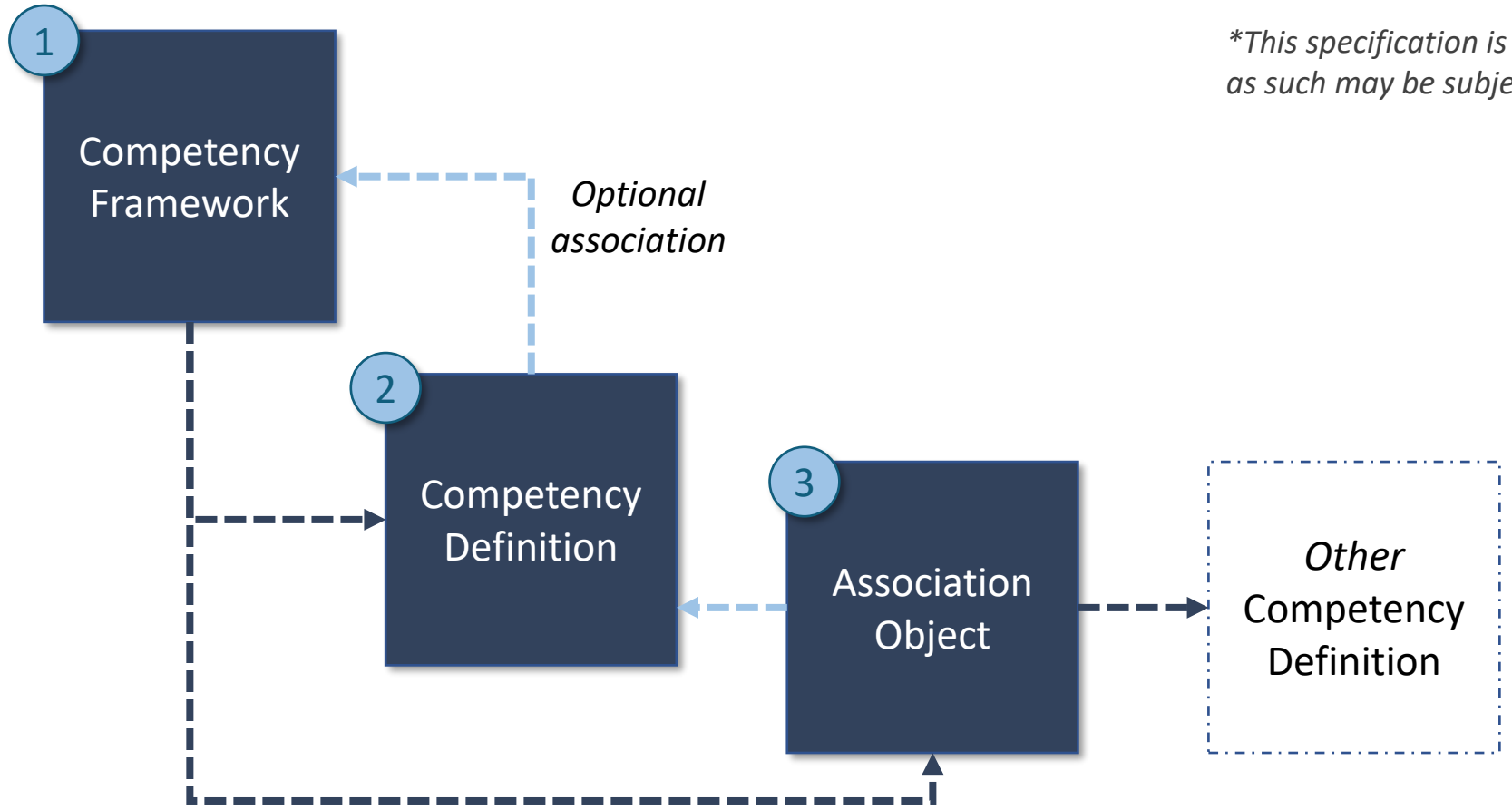

1. **Overall "Packaging"** of reusable Competency Definitions. They contain pointers to all included Competencies and Associations.

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.

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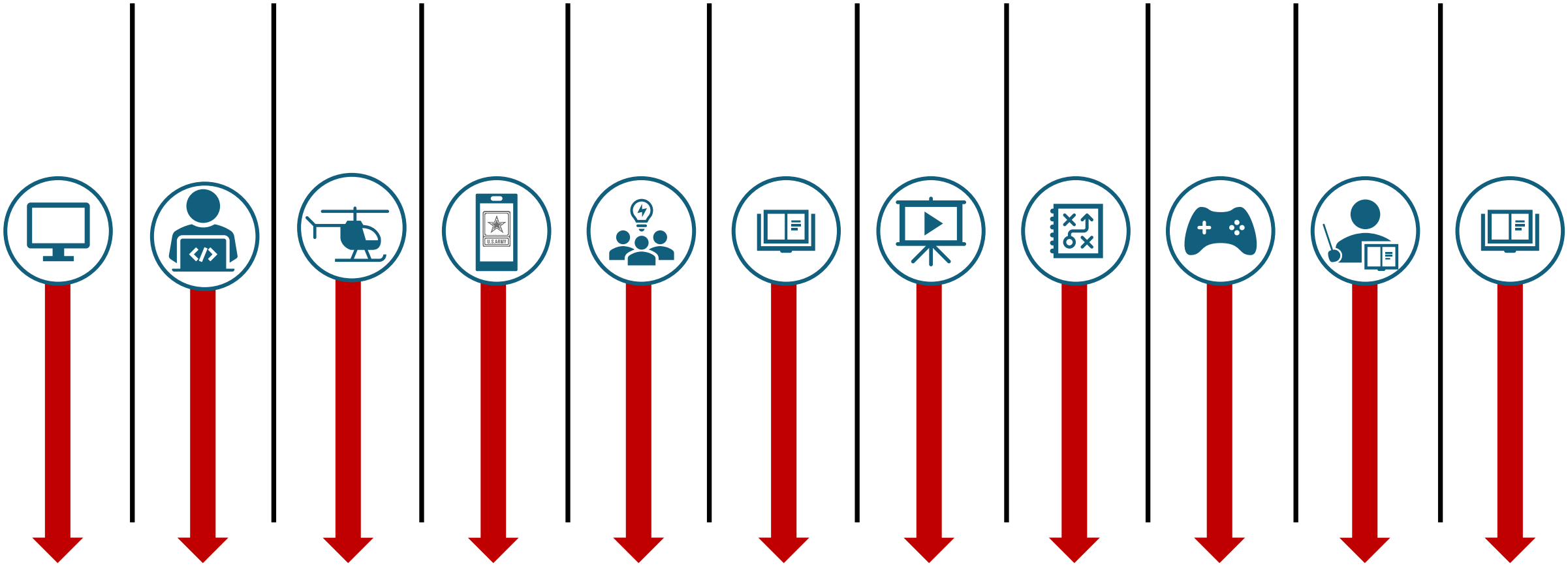

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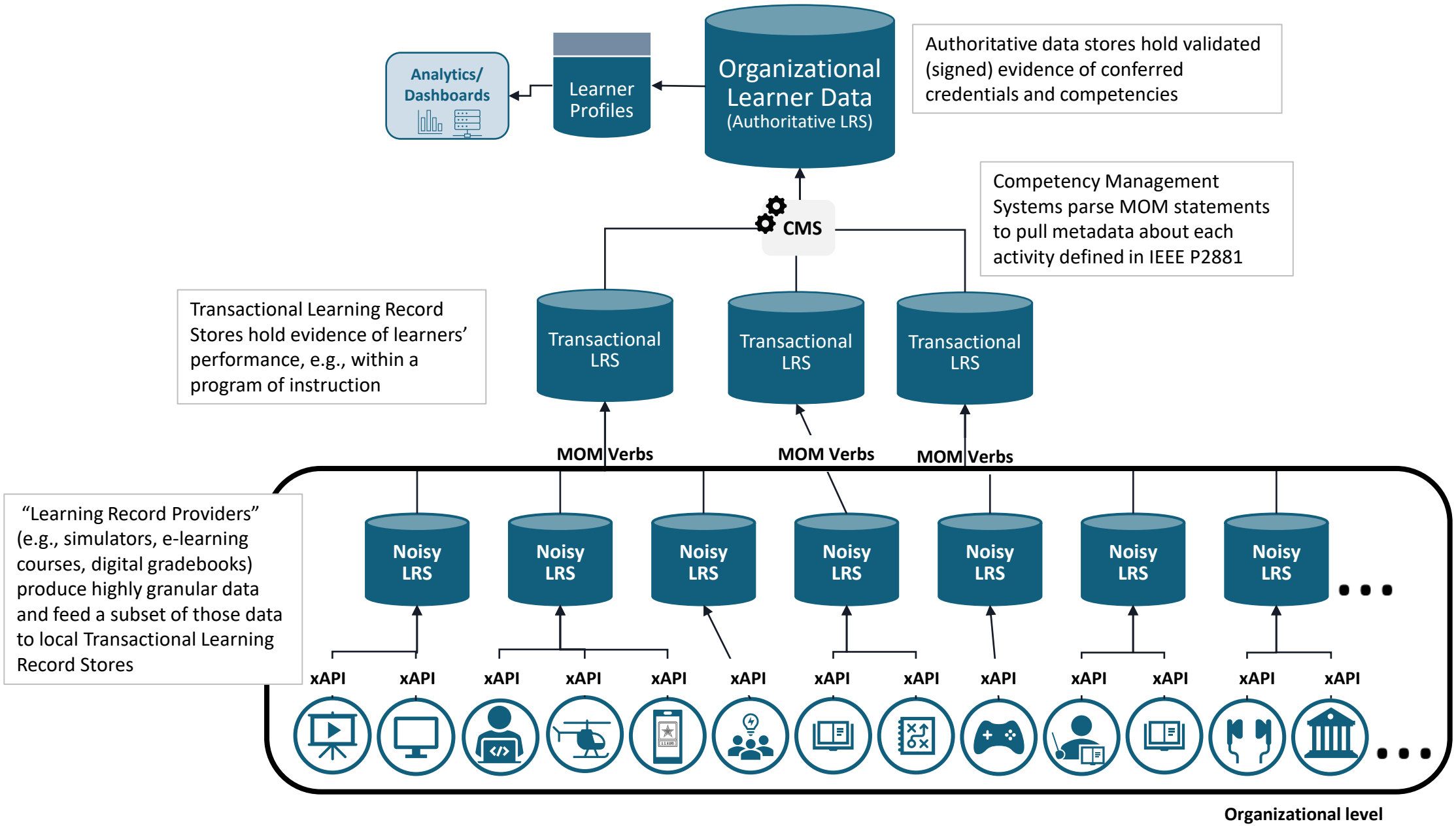
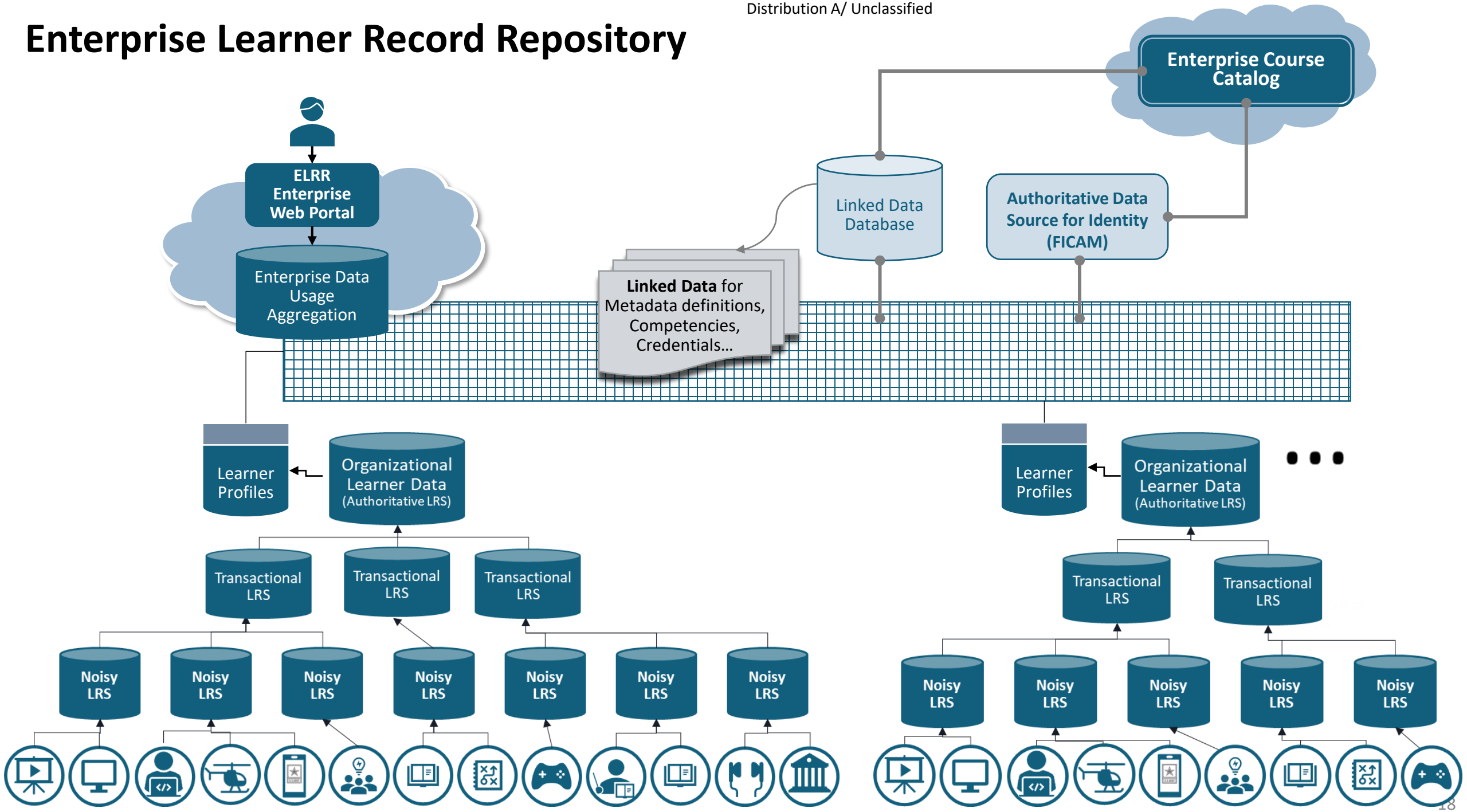
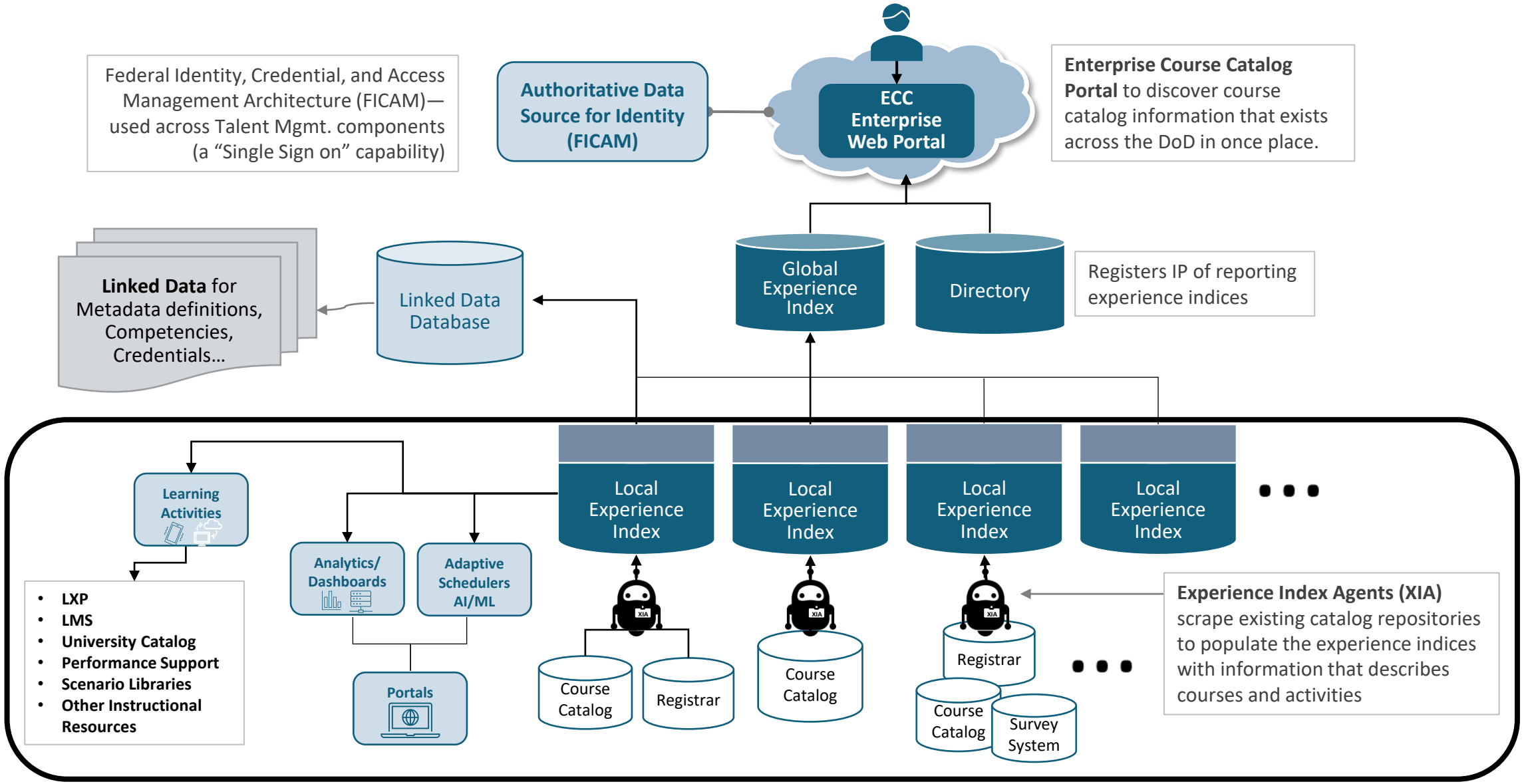

Analytics/ Dashboards
Learner Profiles
Organizational Learner Data (Authoritative LRS)
Authoritative data stores hold validated (signed) evidence of conferred credentials and competencies
CMS
Competency Management Systems parse MOM statements to pull metadata about each activity defined in IEEE P2881
Transactional Learning Record Stores hold evidence of learners' performance, e.g., within a program of instruction
Transactional LRS
Transactional LRS
Transactional LRS
MOM Verbs
MOM Verbs
MOM Verbs
"Learning Record Providers" (e.g., simulators, e-learning courses, digital gradebooks) produce highly granular data and feed a subset of those data to local Transactional Learning Record Stores
Noisy LRS
Noisy LRS
Noisy LRS
Noisy LRS
Noisy LRS
Noisy LRS
Noisy LRS
xAPI
Organizational level
Evidentiary Chain

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

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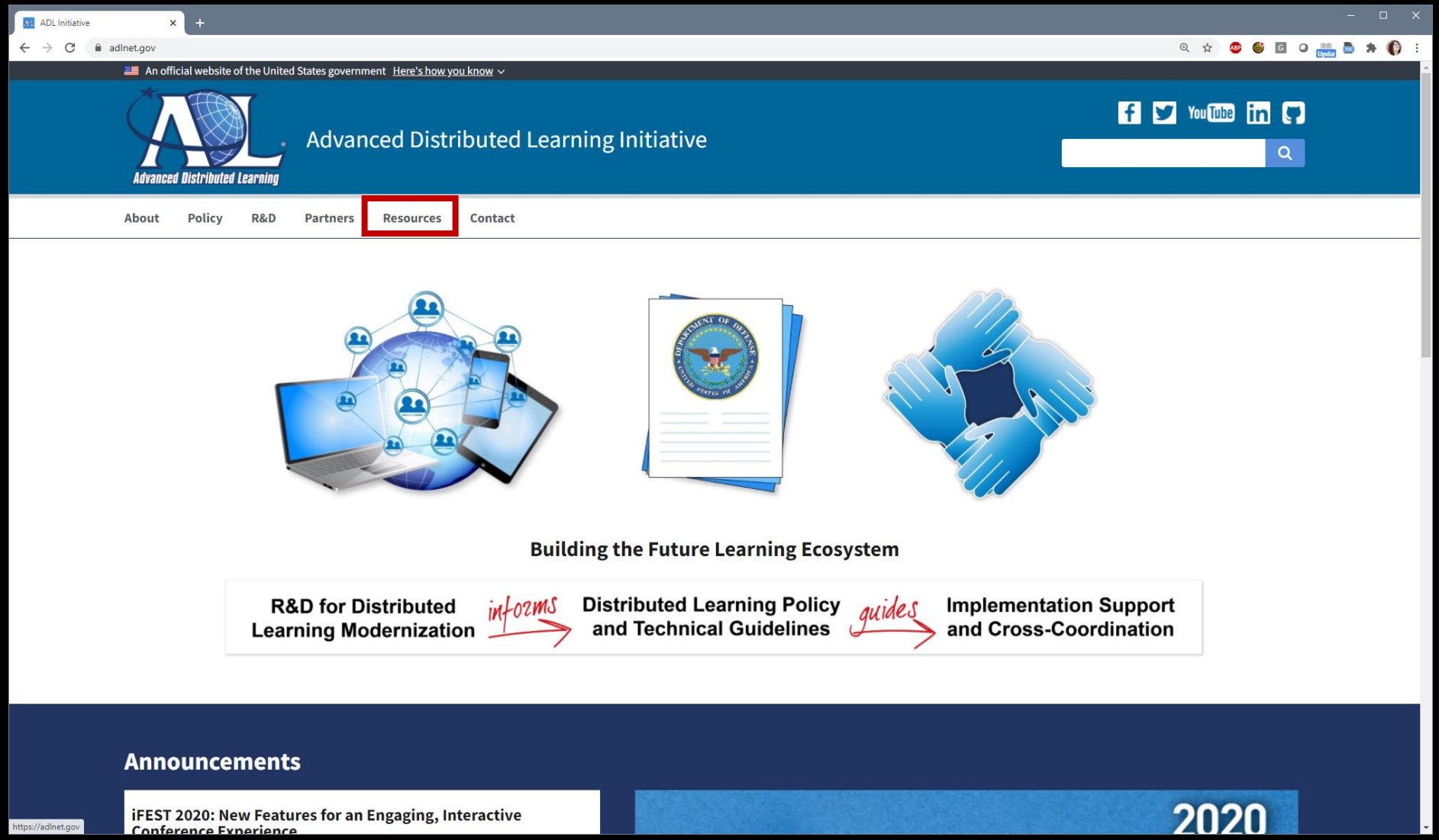

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Questions?