

# Advanced Distributed Learning (ADL)

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**PART 1**

# **USA ADL Initiative**



Who are you, and why should I listen?

**PART 1**

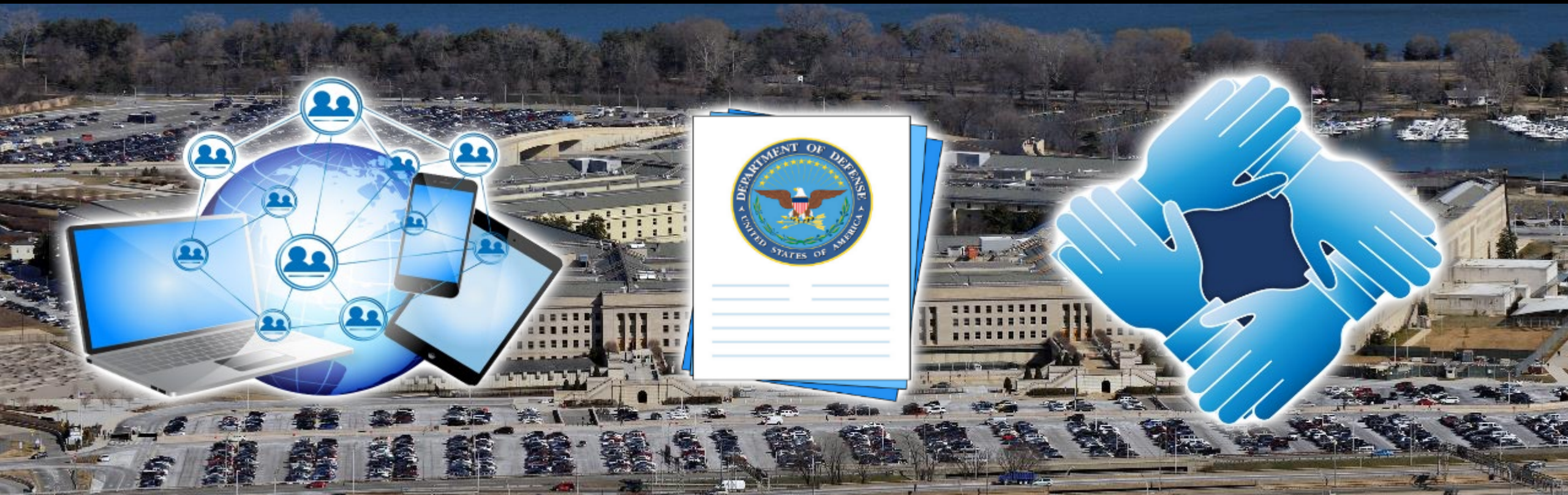
# **USA ADL Initiative**

# USA ADL Initiative



“The ADL Initiative is the principal steward for researching and facilitating the implementation of DL standards, specifications, and emerging technologies for DoD Components.” (See USA DoD Instruction 1322.26, *Distributed Learning*)

# USA ADL Initiative



**MODERNIZATION**

**DOCUMENTATION**


**COORDINATION**

**...for Distributed Learning**

ADL Initiative

adlnet.gov

An official website of the United States government. [Here's how you know](#)






Advanced Distributed Learning Initiative

Advanced Distributed Learning

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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**

IFEST 2020: New Features for an Engaging, Interactive Conference Experience

2020

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Research reports

Open-source code

Working groups

Videos and webinars

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2020

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The image shows a screenshot of the ADL Initiative website. The header includes the ADL logo, the text "Advanced Distributed Learning Initiative", and social media icons for Facebook, Twitter, YouTube, LinkedIn, and Instagram. A search bar is located on the right. The navigation menu contains "About", "Policy", "R&D", "Partners", "Resources", and "Contact". The main content area features a central graphic of a globe with people icons and a laptop, circled in red. Six red callout boxes point to this graphic, listing the following resources: "Research reports", "Open-source code", "DoD & NATO policies", "Working groups", "Videos and webinars", and "Software guides". Below the graphic is the text "Building the Future Learning Ecosystem". A flow diagram shows "R&D for Distributed Learning Modernization" leading to "Distributed Learning Policy and Technical Guidelines" (labeled "informs"), which then leads to "Implementation Support and Cross-Coordination" (labeled "guides"). The footer includes an "Announcements" section with a link to "IFEST 2020: New Features for an Engaging, Interactive Conference Experience" and the year "2020".

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**ADL** Advanced Distributed Learning Initiative

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**Building the Future Learning Ecosystem**

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IFEST 2020: New Features for an Engaging, Interactive Conference Experience

2020

*DoD & NATO policies*

*Software guidelines*

*IT/data specifications*

*DoD Community*

*NATO and PfPC*

*ADL Global Partnership*

<https://adlnet.gov>

# 2020 Annual Report

Defense Advanced Distributed Learning Advisory Committee

DADLAC

Prepared by the ADL Initiative  
March 2021

Distribution Statement A  
Approved for public release; distribution unlimited.

Click to see full  
2020 report

The USA Defense distributed learning community of practice is called the **Defense ADL Advisory Committee (DADLAC)**. Read this annual report to learn more about our 2020 activities.

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“The DADLAC enables connections among learning efforts and initiatives across DoD, elevating and enriching the efforts and results for everyone. The DADLAC is the ‘electricity’ that is powering transformational change for DoD!”

ADL Board  
Chief Learning Officer,  
Defense Civilian Personnel Advisory Service

## 2020 Technology Transfer and Modernization Success Stories

### Building the Total Learning Architecture Together

The ADL Initiative's TLA project, undertaken in collaboration with DADLAC members, plays a big part in establishing secure and interconnected data-sharing and transfer for DoD learning systems. The TLA serves as the critical backbone for how DoD learning systems will connect and share critical learning data, enterprise-wide. This data interoperability will help enable personalized learning, including at the point of need, for individuals across DoD—which is a primary goal shared across the DADLAC community. The past year saw great progress by the community to achieve the TLA vision.

In November 2020, the ADL Initiative completed a TLA prototype (“reference implementation”) in conjunction with DAU. This work includes a digital learning scaffold that supports writing and evaluation of different approaches for integrating TLA tools and standards into cloud-based technology stacks. Some of the TLA success stories being explored include the [Competency and Skills Systems \(CASS\)](#), [Data Standards for TLA \(DATASIN\)](#), [Personal eBook for Learning \(PEBL\)](#), and [Personal Learning Systems \(PLS\)](#).

Additionally, DGA (with support from the Naval Air Warfare Center Training Systems Division and the ADL Initiative) is using the TLA to help modernize the Military Health System (MHS) learning infrastructure. This work is progressing—into an integrated system. The MHS TLA effort establishes a MHS-specific data strategy, connects services, and makes medical education and training services interoperable across the participating Services. The DGA medical training “ecosystem” will support roughly 130,000 people. The ADL Initiative is supporting DGA on explanatory activities, including competency framework development, credentialing strategies, and the use of standard resources for testing and evaluating DGA's implementation of TLA tools.

Lastly, the ADL Initiative coordinated with the Army Synthetic Training Environment Cross Functional Team (SIT-CTF) and the Army Combat Capabilities Development Center (CCDC) on TLA standards in support of the Program Executive Office Simulation, Training, and Interconnection (PEO STRI). The team is reviewing inclusion of TLA standards into the STRI Rapid to Solution, currently in development. Iteration of the TLA standards into this connecting document will facilitate the integration of diverse digital learning systems with “virtual” connective simulations.

“The DADLAC supports a Distributed Learning collaboration across the Department of Defense. Collective benefits continue to be available in the efficient use of resources and information in a highly technical and evolving industry.”


Helen Rowley, The Army Distributed Learning Program

2020 Year in Review | ADL Initiati x +

adlnet.gov/news/2021/01/22/2020-Year-in-Review/

Videos Webmail ATAAPS (Timesheet) CVR Teams ALEC 2035 EDLM Taskers WAR Crystal Square ADL Web Staging Other bookmarks

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**News & Media**

- News**
- Events
- Webinars
- Videos

## 2020 Year in Review

January 22, 2021

Across the world, 2020 was filled with unprecedented challenges, but from crisis came opportunities—opportunities to reinvent the reputation, agility, and purpose of distributed learning. Across the Department of Defense and beyond, organizations accelerated and expanded their efforts by orders of magnitude. Similarly, the ADL Initiative pivoted in response to the pandemic, adapting research and coordination to virtual modes and answering a range of emerging questions on how to best deliver online learning. The program also made notable progress on its research, development, and coordination efforts. Here's a summary of key 2020 ADL Initiative accomplishments.

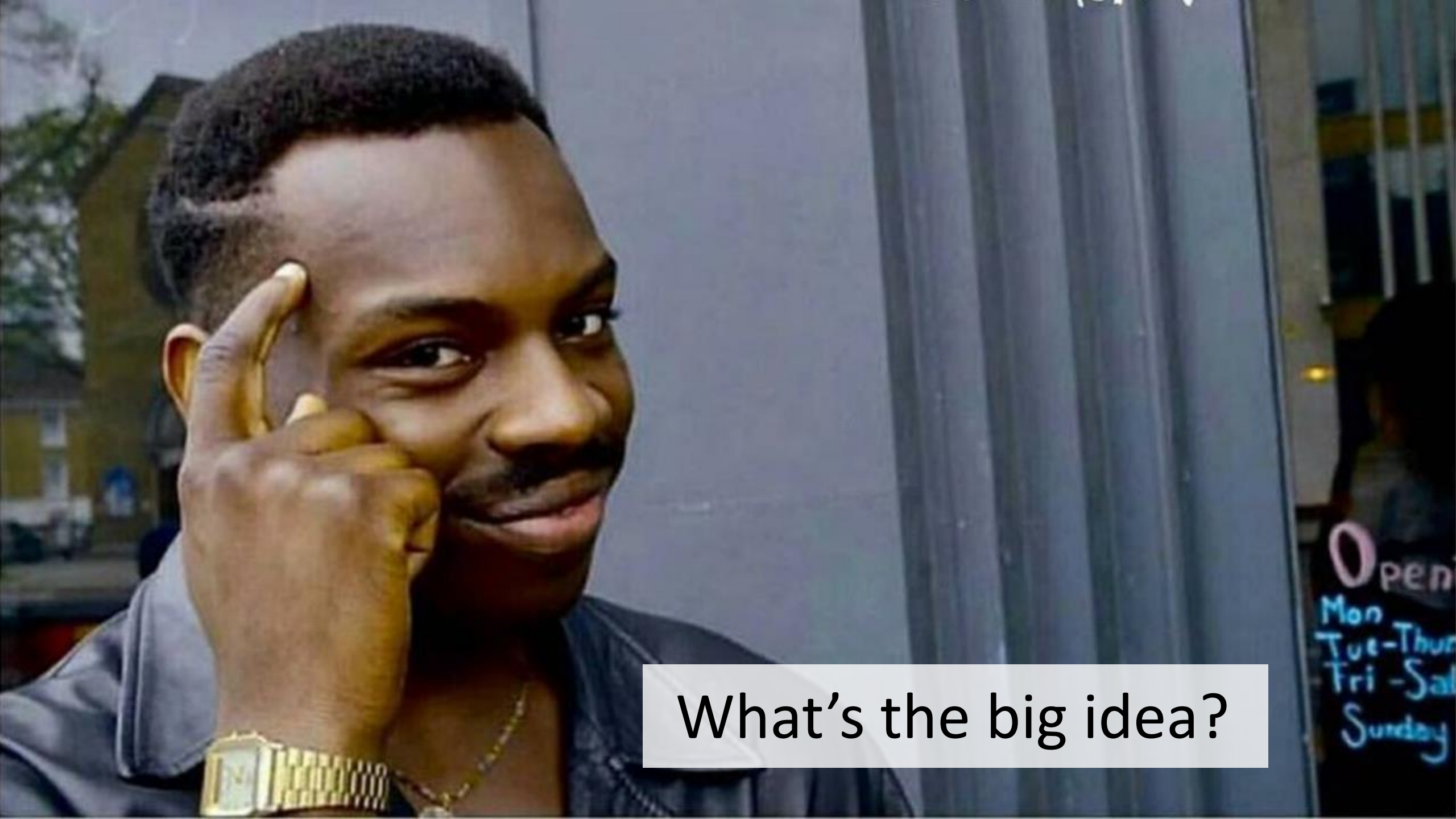
### DoD Enterprise Architecture for Learning Systems

Under the [Total Learning Architecture](#) (TLA) project, the ADL Initiative matured the design for the enterprise architecture meant to serve as the core of the DoD learning ecosystem. This architecture

Click to see full 2020 article

PART 2

# Modernizing Learning



What's the big idea?

PART 2

# Modernizing Learning

Integrated Technology



Driven by Data



Learning Experience Informed



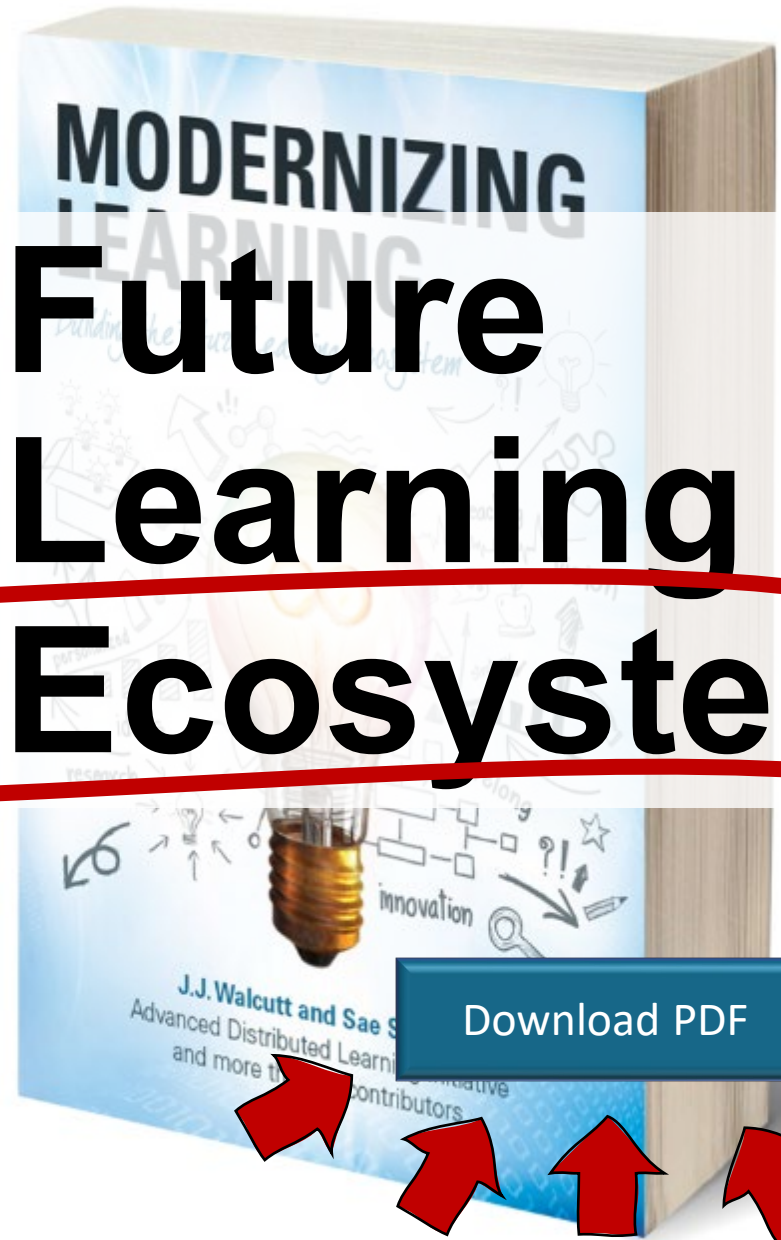
i can only be bothered to click the mouse once. maybe.



Individual



# Future Learning Ecosystem



Download PDF





**1**

**INITIAL  
BASIC MATURITY**



Disconnected learning experiences, one-size-fits-all, overreliance on expensive face-to-face, lack meaningful outcomes data, disconnect between training to ops, limited number of legacy digital learning tools

Resource innovative pilots, establish metrics for desired outcomes, show support for tech-enabled learning and learning engineering



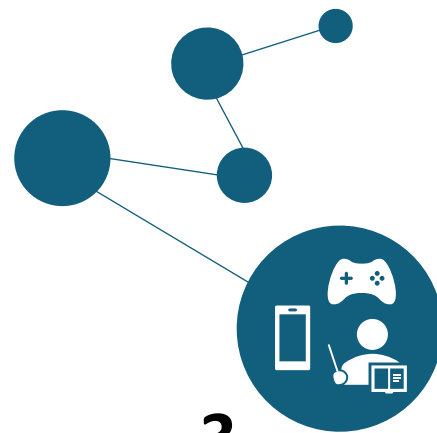
**2**

**EXPLORATORY  
POCKETS OF EXCELLENCE**



New technology-enabled learning explored, one-off examples of successful innovation, instructional quality regularly evaluated (but at local levels), still lack of meaningful data or enterprise-level controls

Establish enterprise quality control for content, elevate successful pilots, begin investing in enterprise infrastructure, establish data-centric processes



**3**

**SYSTEMATIC  
CONNECTED SYSTEMS**



Learning experiences begin to interconnect into a more cohesive continuum across diverse platforms, clear improvements in learning outcomes at organizational level, initial feedback loops among training, edu., ops

Show support during (ugly) shift from legacy to enterprise model, align intraorganizational goals, invest in AI pilots, establish ROI processes



**4**

**LEARNER-CENTRIC  
AND AUTOMATED**



Data drives tactical training and education decisions (learner-centric), flexible pathways for different people, individual and collective are connected, enterprise-level strategy, "ubiquitous learning"

Direct system integration across organizational silos, demand data for training/education decisions, use ROI analyses for functional-area decisions



**5**

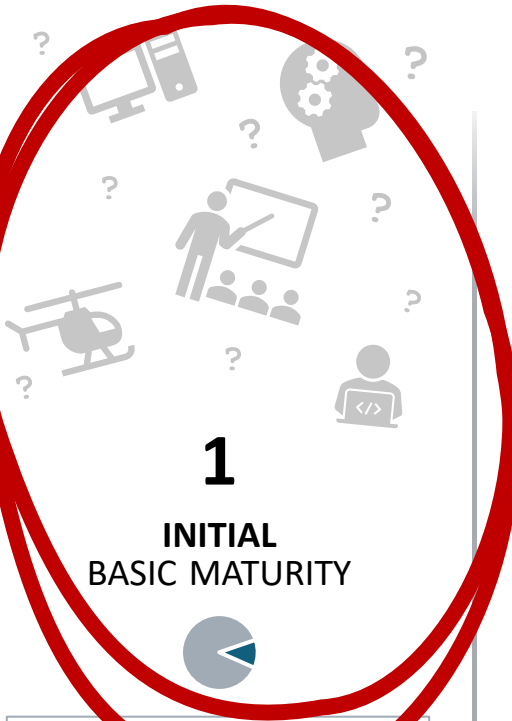
**INTERCONNECTED  
LEARNING ECOSYSTEM**



Data drives strategic talent management, manpower and personnel intertwined with training and education, AI used throughout, real-time data supports decisions, feedback loop between talent mgmt. and operations

Use data-driven processes to support continuous improvement across functions, echelons, and at the strategic enterprise level

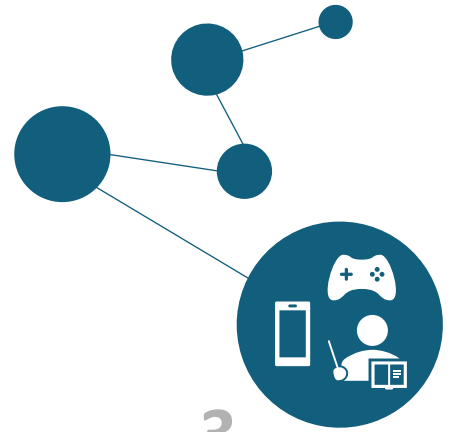
# Modernizing Learning: How do we get from *here* (status quo) to *there* (desired end state)?



**1**  
**INITIAL**  
**BASIC MATURITY**



**2**  
**EXPLORATORY**  
**POCKETS OF EXCELLENCE**



**3**  
**SYSTEMATIC**  
**CONNECTED SYSTEMS**



**4**  
**LEARNER-CENTRIC**  
**AND AUTOMATED**



**5**  
**INTERCONNECTED**  
**LEARNING ECOSYSTEM**

Disconnected learning experiences, one-size-fits-all, overreliance on expensive face-to-face, lack meaningful outcomes data, disconnect between training to ops, limited number of legacy digital learning tools

New technology-enabled learning explored, one-off examples of successful innovation, instructional quality regularly evaluated (but at local levels), still lack of meaningful data or enterprise-level controls

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Data drives tactical training and education decisions (learner-centric), flexible pathways for different people, individual and collective are connected, enterprise-level strategy, "ubiquitous learning"

Data drives strategic talent management, manpower and personnel intertwined with training and education, AI used throughout, real-time data supports decisions, feedback loop between talent mgmt. and operations

Resource innovative pilots, establish metrics for desired outcomes, show support for tech-enabled learning and learning engineering

Establish enterprise quality control for content, elevate successful pilots, begin investing in enterprise infrastructure, establish data-centric processes

Show support during (ugly) shift from legacy to enterprise model, align intraorganizational goals, invest in AI pilots, establish ROI processes

Direct system integration across organizational silos, demand data for training/education decisions, use ROI analyses for functional-area decisions

Use data-driven processes to support continuous improvement across functions, echelons, and at the strategic enterprise level



**GOAL**

It may feel like this big goal is far away. What are the initial steps you can take toward it?

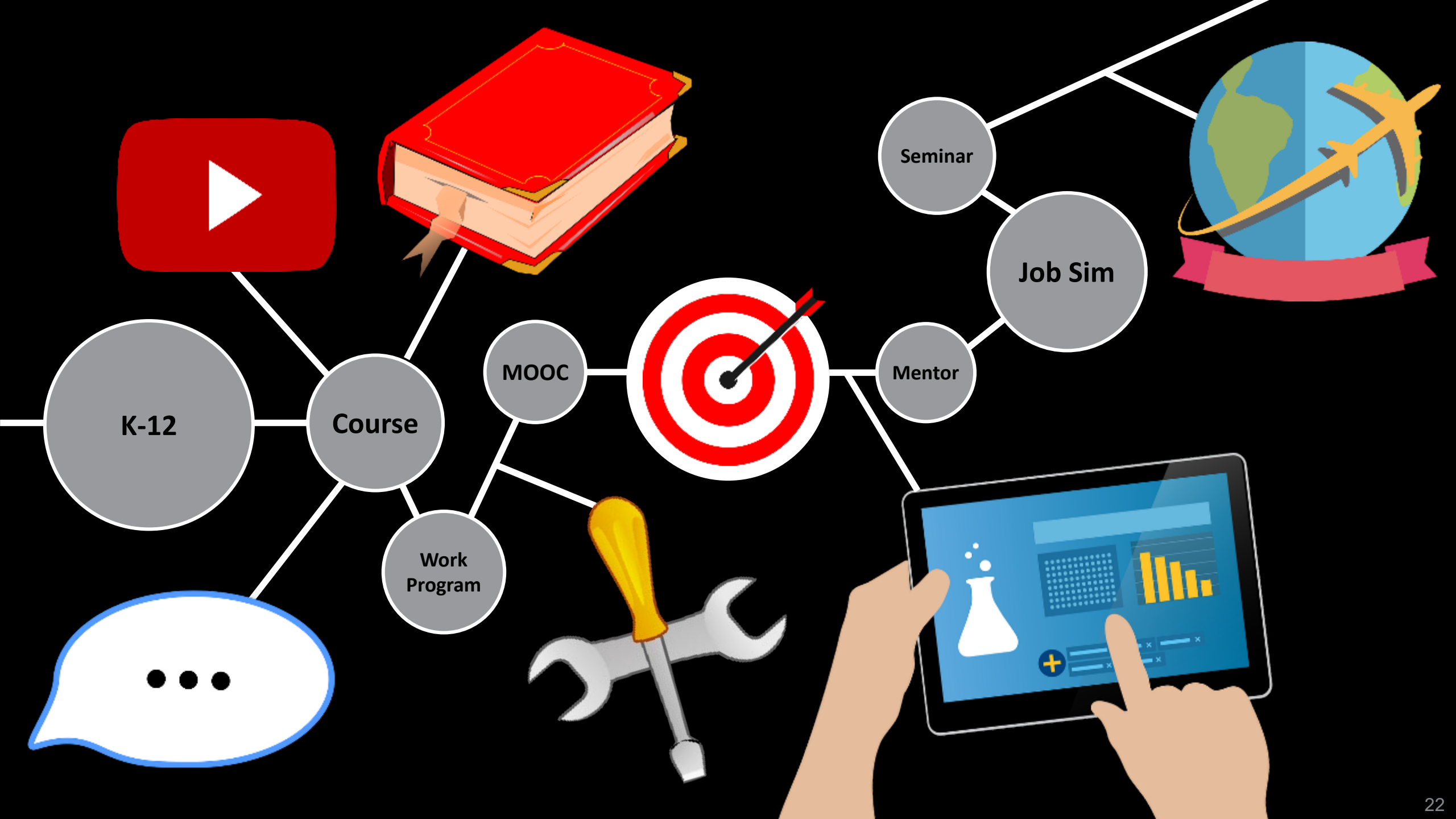


**YOU ARE HERE**

stop building  
learning islands !!

**1 CONTINUUM OF LEARNING**











INPUT



OUTCOME

Competencies  
Credentials



OUTCOME

PART 3

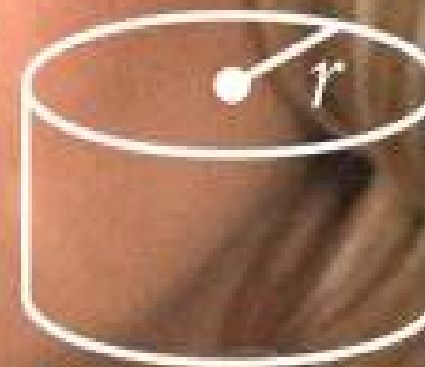
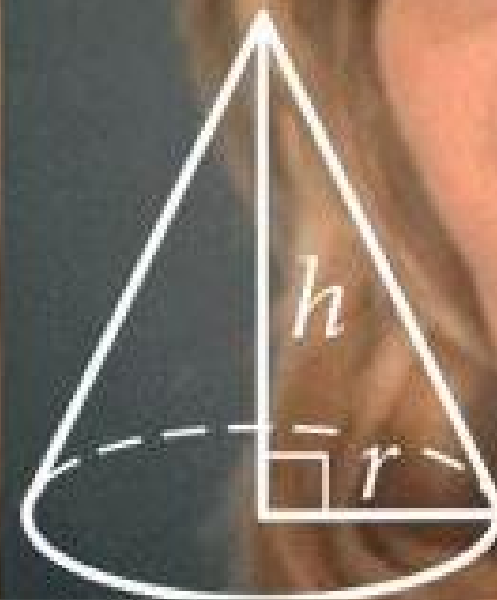
# Enterprise Architecture



$$A = \pi r^2$$

$$C = 2\pi r$$

$$V = \frac{1}{3} \pi r^2 h$$



$$V = \pi r^2 h$$

	30°	45°	60°
sin	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
cos	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$
tan	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$



$$\int \sin x dx = -\cos x + C$$

$$\int \frac{dx}{\cos^2 x} = \tan x + C$$

$$\int \tan x dx = -\ln|\cos x| + C$$



How does that work?

$$ax^2 + bx + c = 0$$
$$a(x^2 + \frac{b}{a}x + \frac{c}{a}) = 0$$

PART 3

# Enterprise Architecture

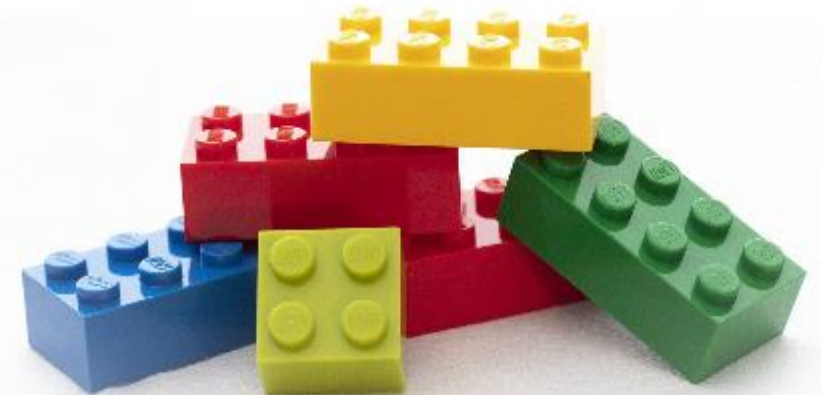
# What's an enterprise architecture?

“...a coherent family of parent and subsidiary architectures, to help modernize its nonintegrated and duplicative business operations and the systems that support them.” (SASC, 2012)

The “member architectures (e.g., Air Force, Army, and Navy) conform to an overarching corporate or parent architecture and utilize a common vocabulary...[and] governance across all business systems, functions, and activities.” Among other things this approach includes “data standards, policies, procedures, and performance measures that are to be applied throughout the Department” (GAO, 2013).

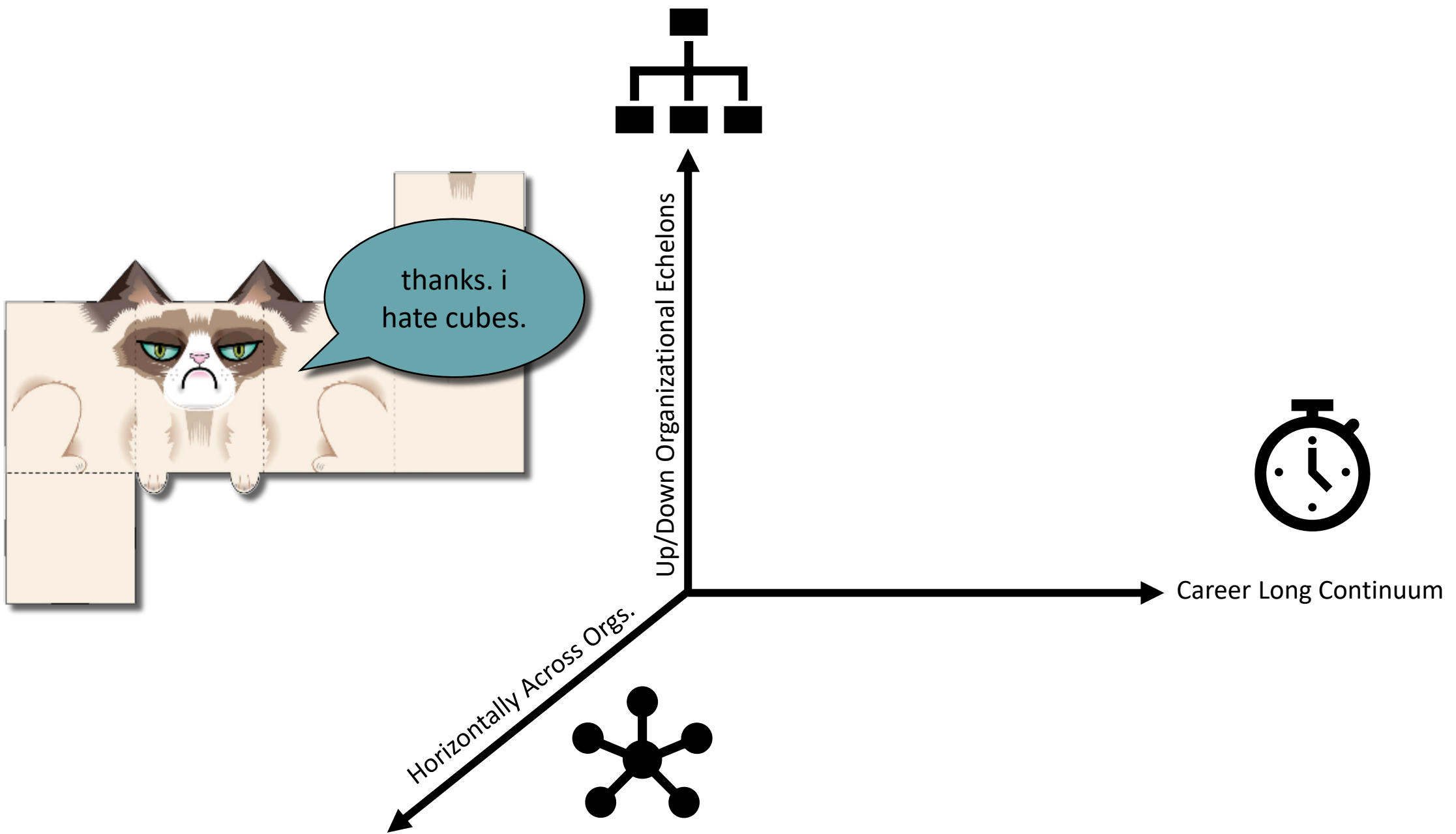
- ✓ Directed by Congress
- ✓ Directed by GAO
- ✓ Directed by DoD Policy
- ✓ Supports Digital Modernization
- ✓ Supports Data Strategy
- ✓ Best practices for IT/data

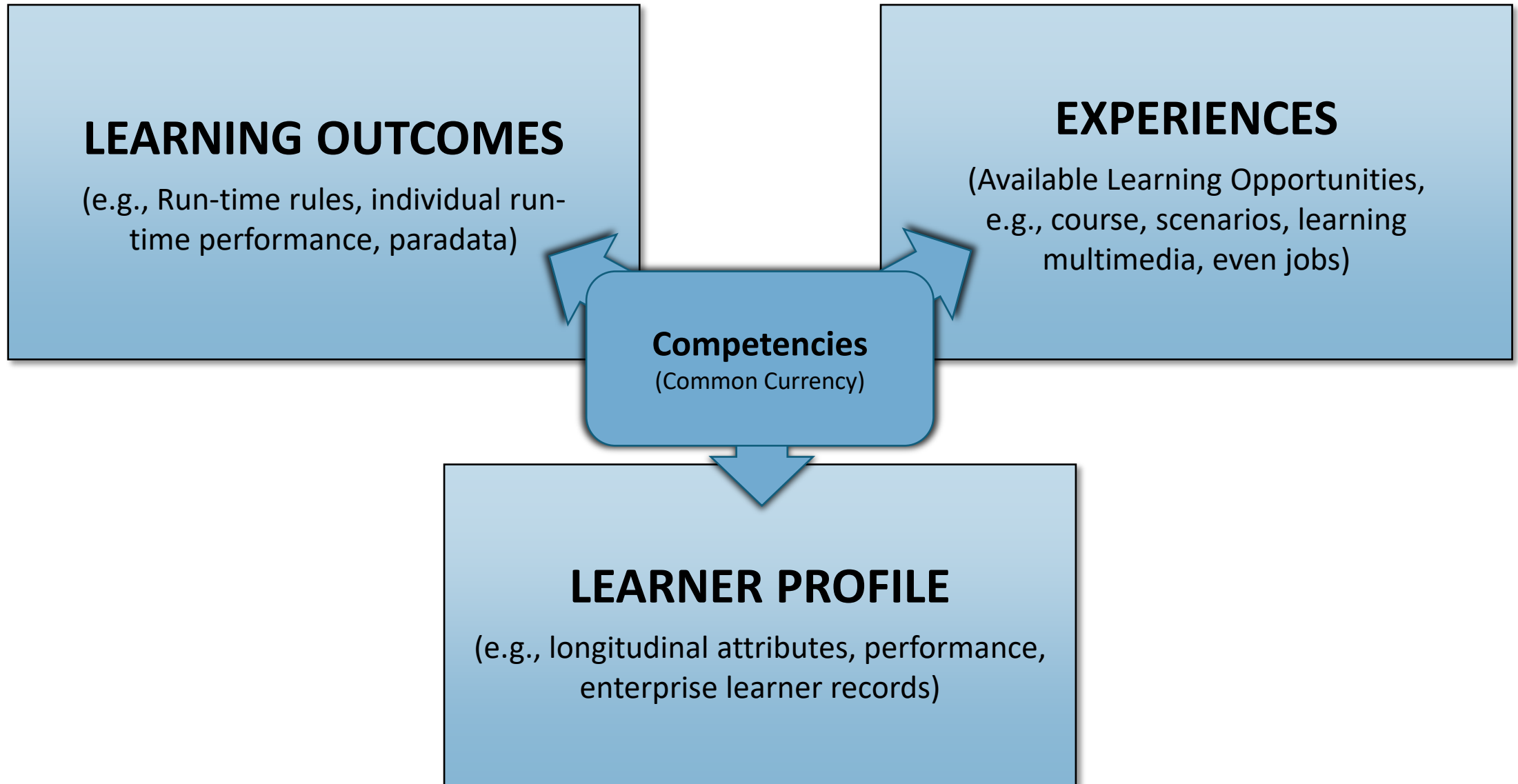
Why?

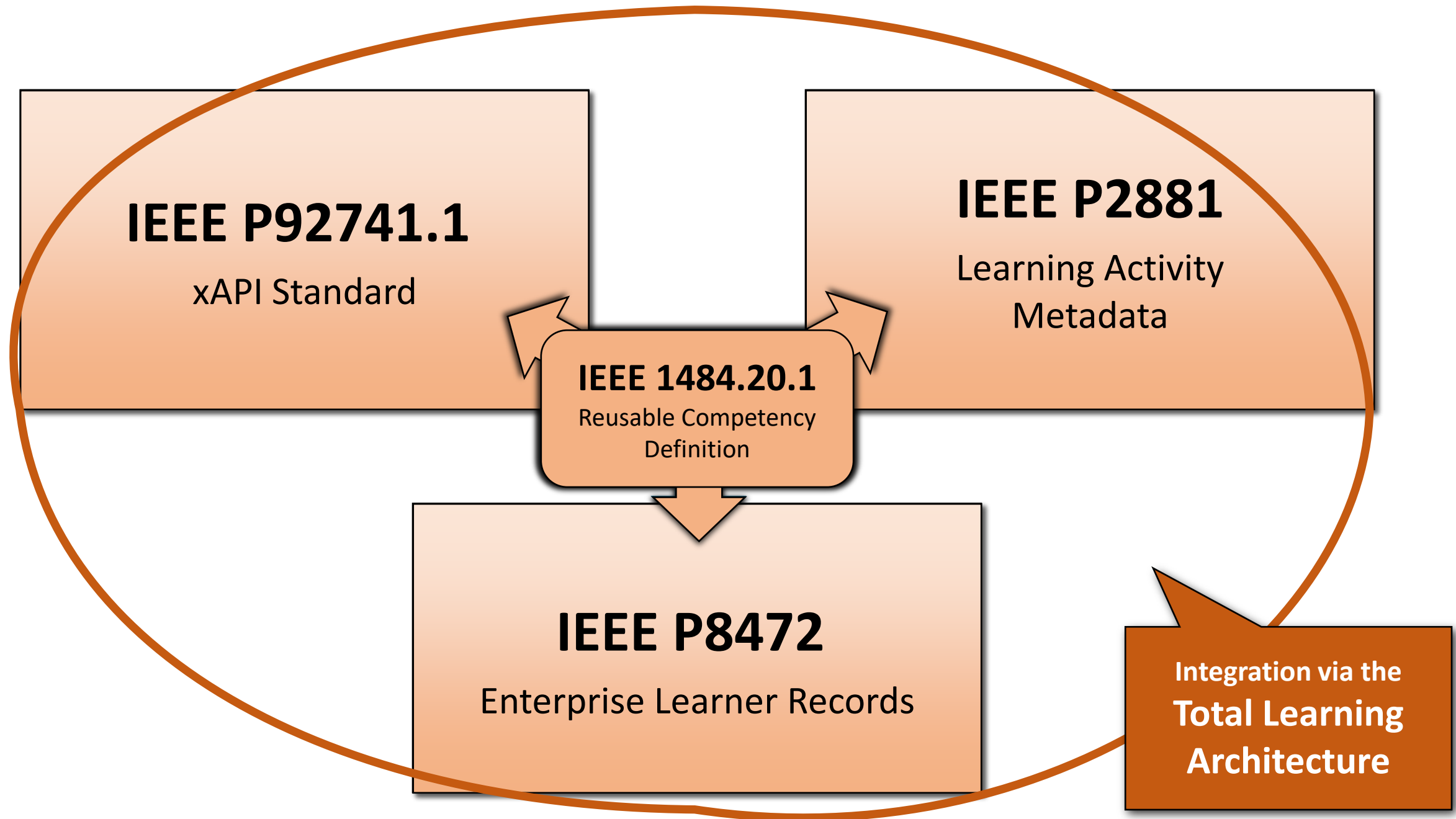


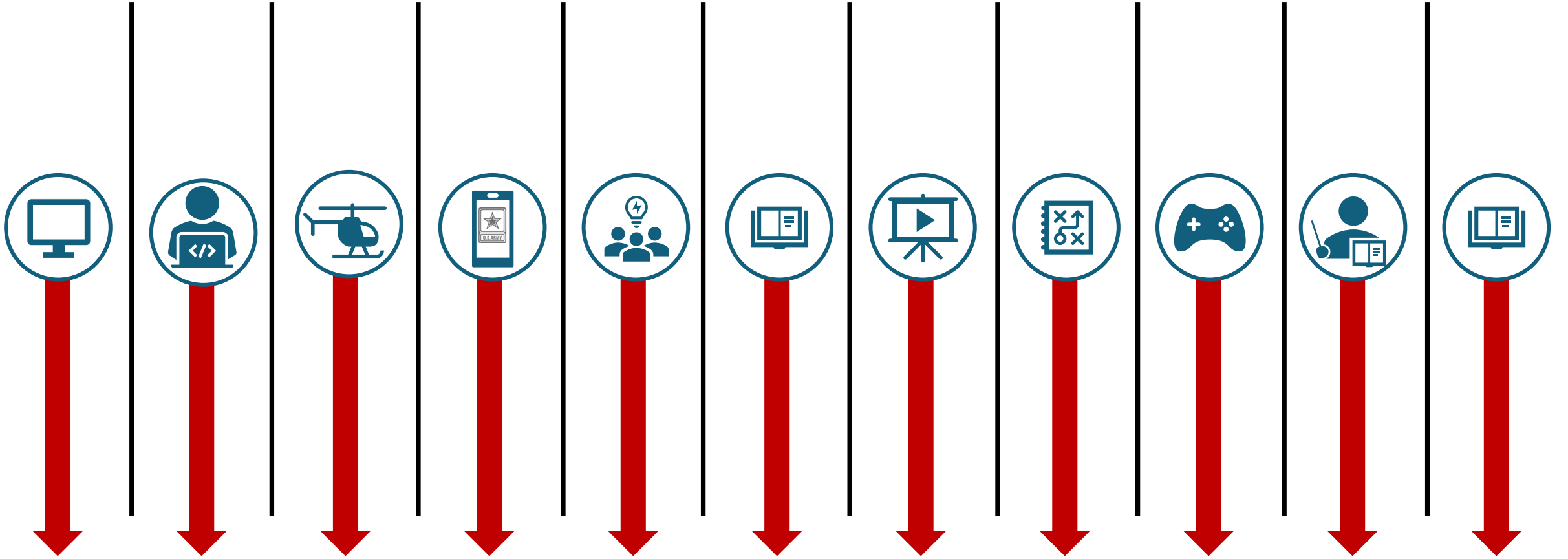
TRAINING AND EDUCATION

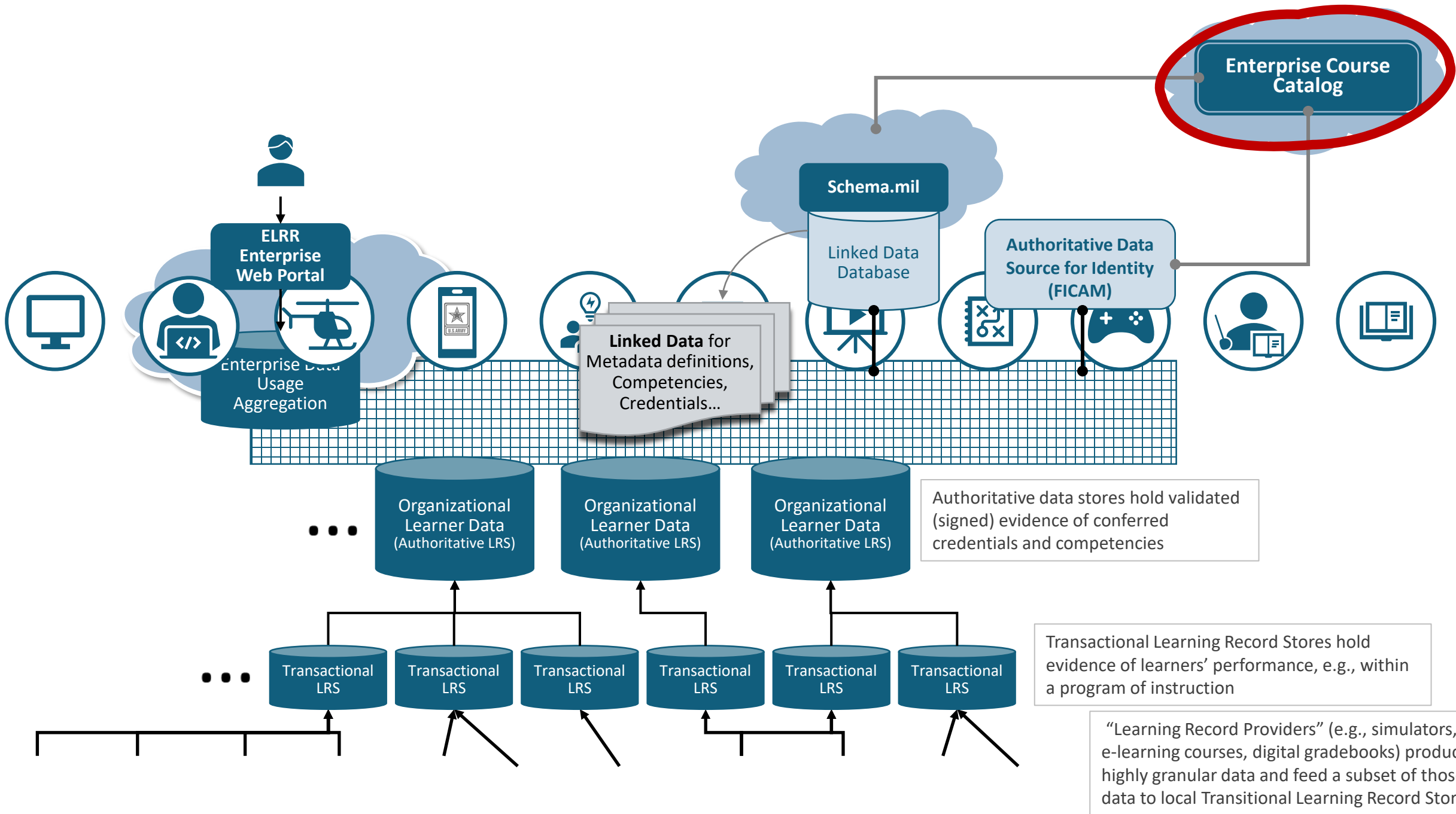
**DATA!**

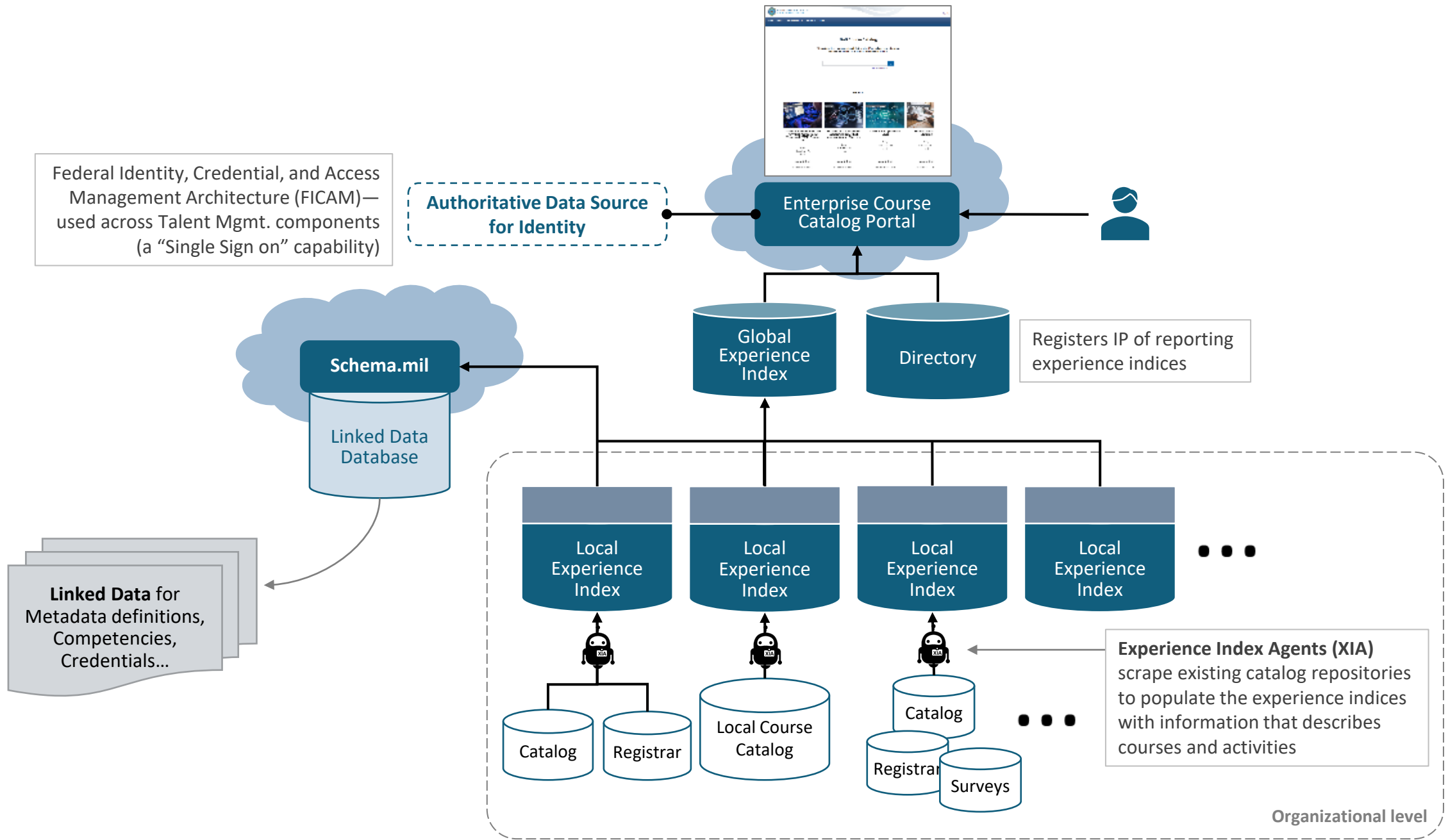


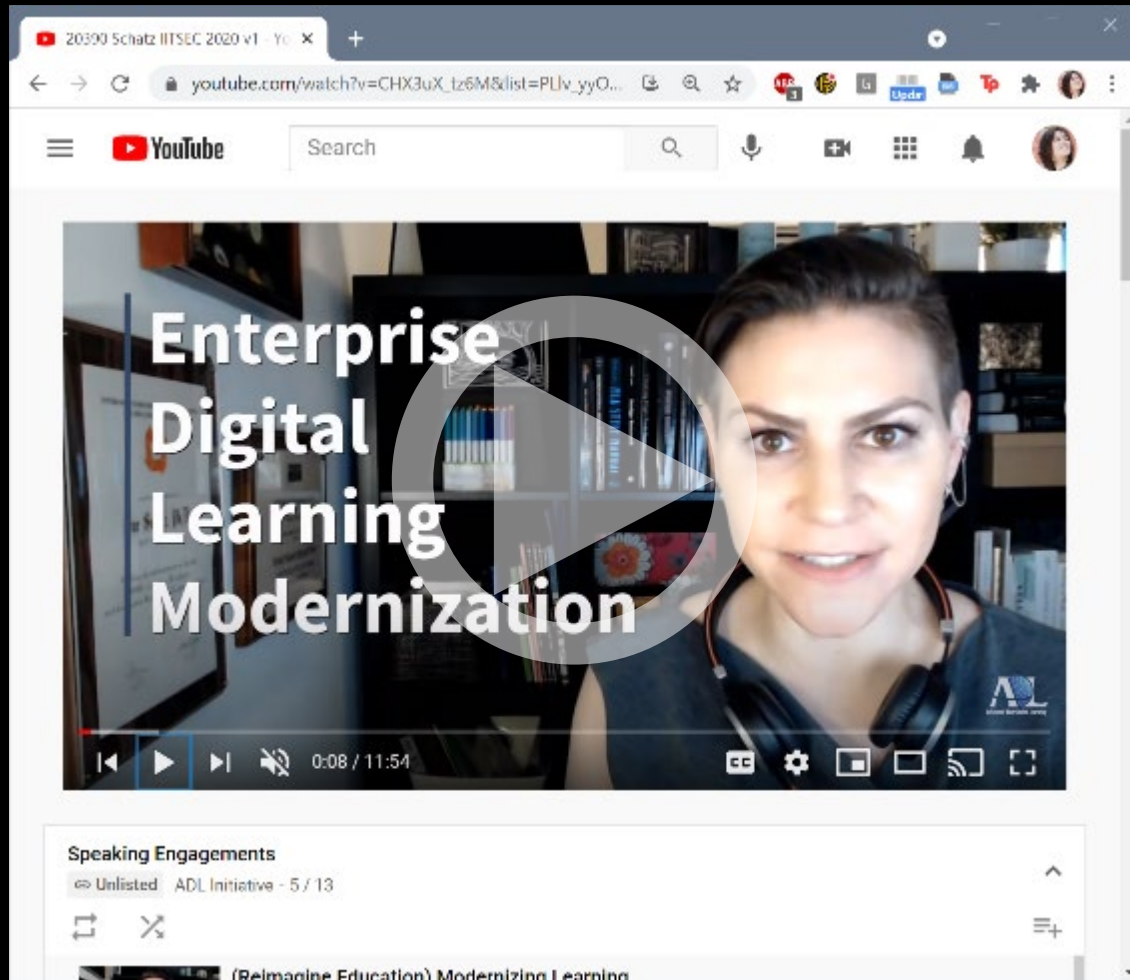




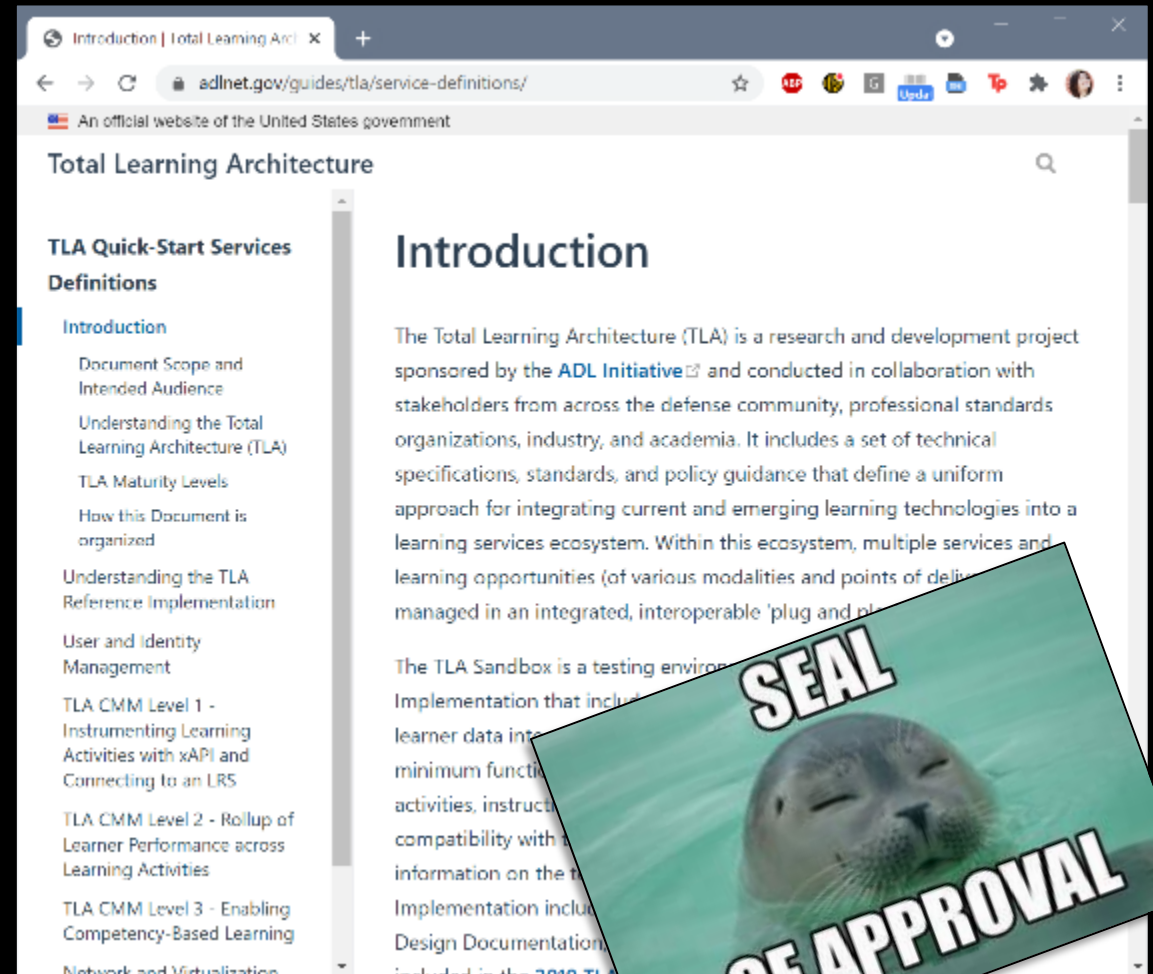








Watch: EDLM and Architecture (12 min.)



Read: System Admin Guide

PART 4

# Resources to Share

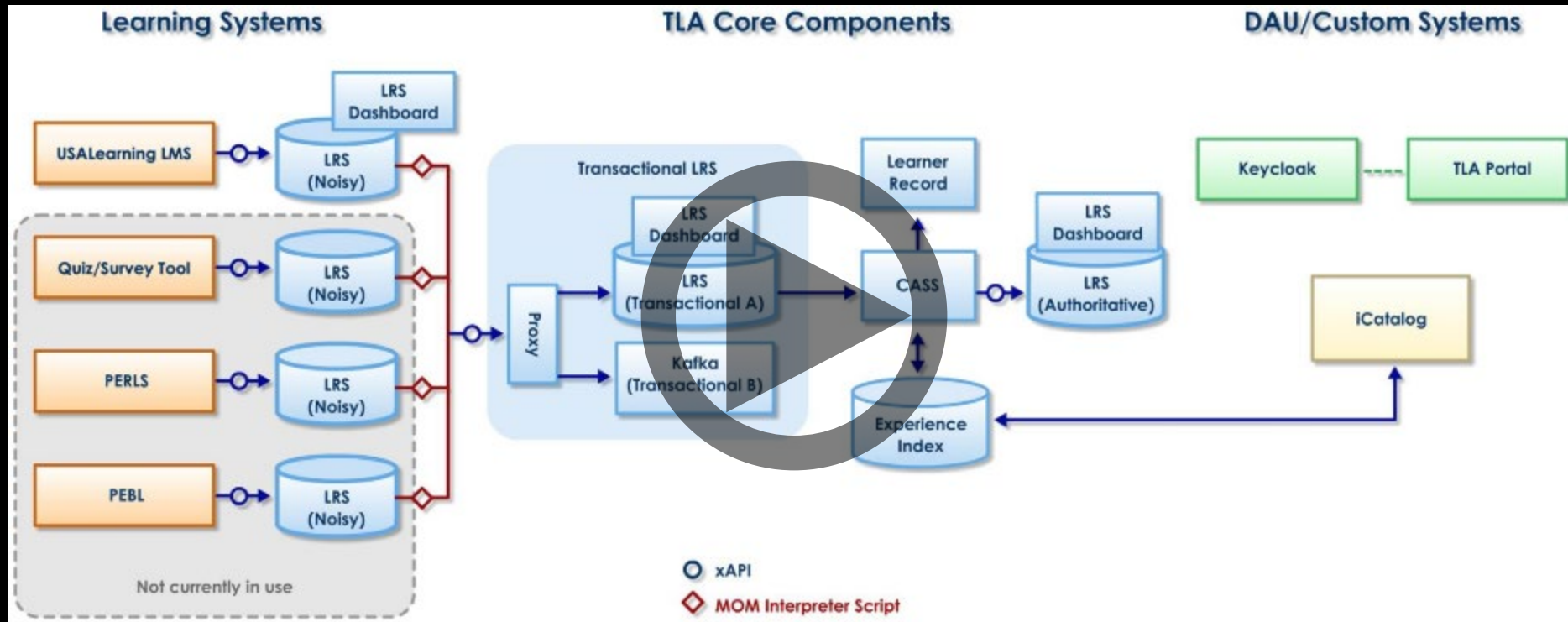


Stuff to for you!

PART 4

# Resources to Share

# Total Learning Architecture Demo



Watch the ADL-DAU Sandbox Demonstration

<https://youtu.be/V5bN93UKJyc>

# xAPI Data Simulator

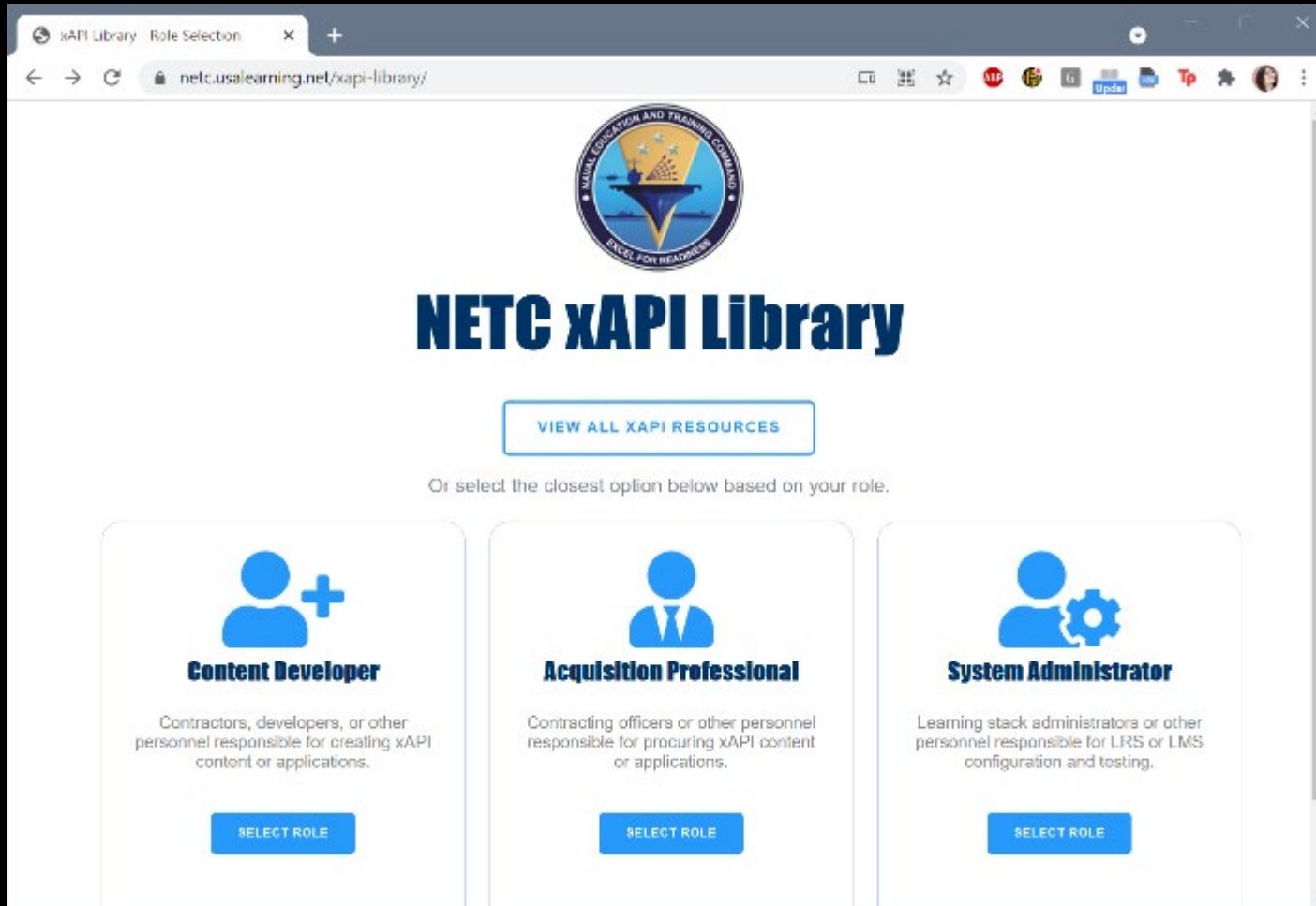
The screenshot shows the homepage of the Data Simulator for TLA (DATASIM) website. The browser address bar shows [adlnet.gov/projects/datasim/](https://adlnet.gov/projects/datasim/). The page features the logo for the Advanced Distributed Learning Initiative (ADLI) and navigation links for About, Policy, R&D, Partners, Resources, and Contact. A sidebar on the left lists R&D, Overview, Projects (with 'Data Simulator for TLA (DATASIM)' selected), BAA Solicitation, Working Groups, and GitHub. The main content area is titled 'Data Simulator for TLA (DATASIM)' and includes a 'DATASIM Total Learning Architecture' logo, a process flow diagram with steps '1 Create', '2 Build', '3 Personalize', and '4 Simulate', and a red box with a circular arrow icon labeled 'Simulate and Generate xAPI'. Below this, a blue box states: 'An open source application that provides distributed learning scientists and stakeholders with the ability to produce large simulated datasets to benchmark and stress test the Total Learning Architecture (TLA)'. At the bottom, there are sections for 'The Challenge' (Modernization efforts across the DoD require large) and 'Project Details'.

The screenshot shows a YouTube video player for a 'Technical Webinar: DATASIM'. The video content displays the DATASIM application interface with a large play button overlay. A text box at the bottom of the video frame contains the text: 'It is an LRS draw it out of the LRS and create queries and visualizations on'. The video player includes standard controls like play/pause, volume, and a progress bar.

The screenshot shows the GitHub repository banner for 'yetanalytics / datasim'. It features the GitHub logo on the left and the repository name 'yetanalytics / datasim' in a blue font on the right.

<https://adlnet.gov/projects/datasim>

# US Naval Education and Training Command xAPI Guides



The screenshot shows a web browser window with the URL [netc.usalearning.net/xapi-library/](https://netc.usalearning.net/xapi-library/). The page features the NETC logo at the top, which includes the text "NAVAL EDUCATION AND TRAINING COMMAND" and "EXCEL FOR READINESS". Below the logo is the heading "NETC xAPI Library". A button labeled "VIEW ALL XAPI RESOURCES" is positioned below the heading. Underneath, a sub-heading reads "Or select the closest option below based on your role." Three role selection cards are displayed in a row:

- Content Developer**: Represented by a person icon with a plus sign. Description: "Contractors, developers, or other personnel responsible for creating xAPI content or applications." Button: "SELECT ROLE".
- Acquisition Professional**: Represented by a person icon in a suit. Description: "Contracting officers or other personnel responsible for procuring xAPI content or applications." Button: "SELECT ROLE".
- System Administrator**: Represented by a person icon with a gear. Description: "Learning stack administrators or other personnel responsible for LRS or LMS configuration and testing." Button: "SELECT ROLE".

## NETC xAPI Implementation Guidelines

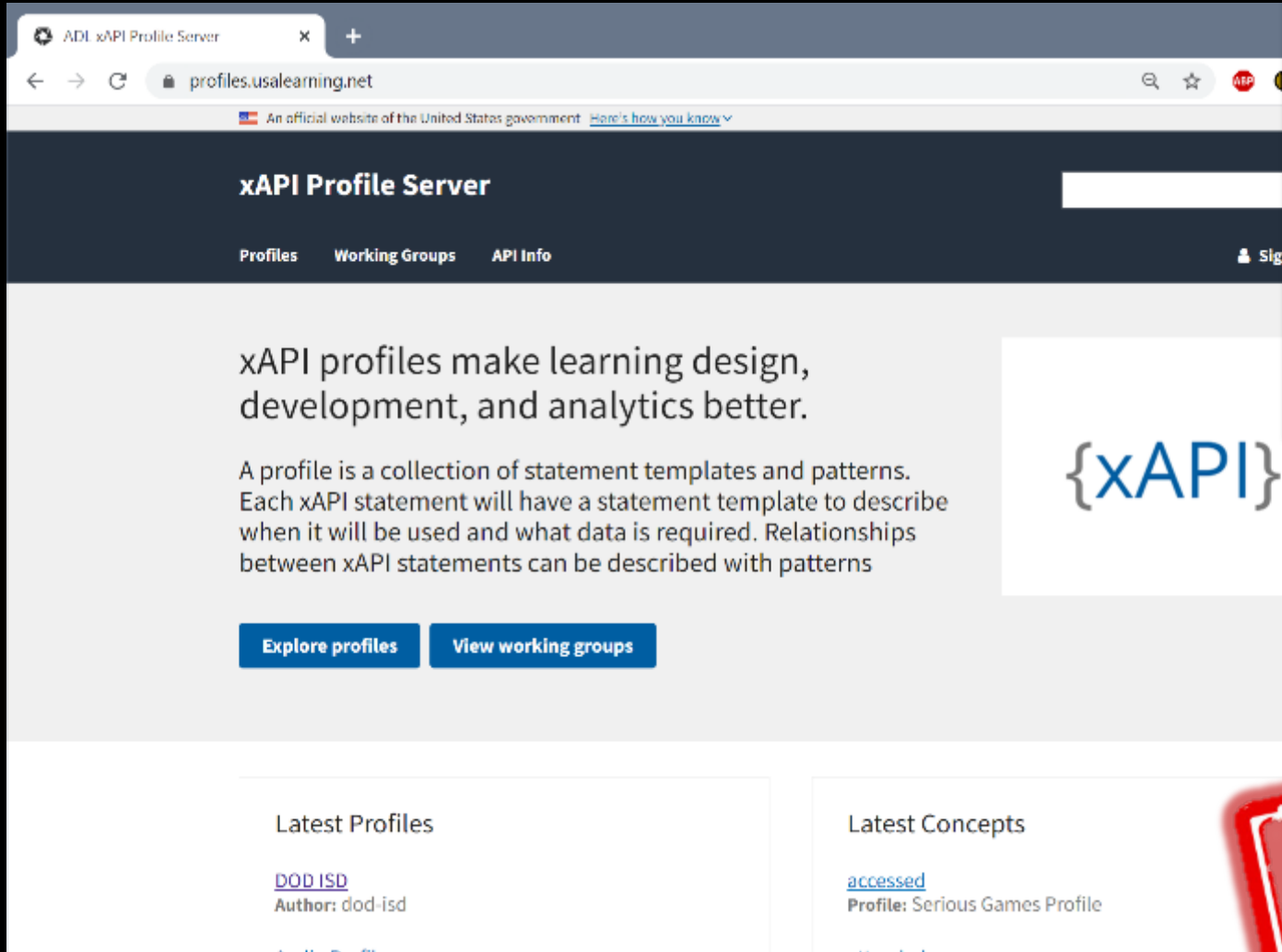
*Requirements and Guidelines for Implementing xAPI*



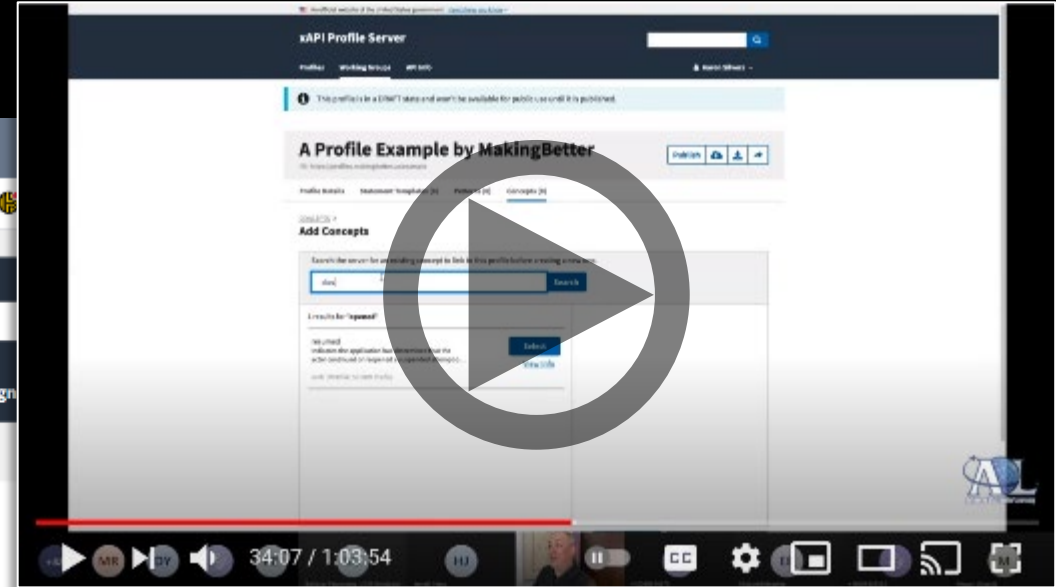
Document Version: 1.0

<https://netc.usalearning.net/xapi-library>

# NEW xAPI Profile Server



The screenshot shows the homepage of the xAPI Profile Server. The browser address bar displays "profiles.usalearning.net". The page header includes "xAPI Profile Server" and navigation links for "Profiles", "Working Groups", and "API Info". A main heading states "xAPI profiles make learning design, development, and analytics better." Below this, a paragraph explains that a profile is a collection of statement templates and patterns. Two blue buttons, "Explore profiles" and "View working groups", are positioned below the text. The page also features sections for "Latest Profiles" (listing "DOD ISD" by "dod-isd") and "Latest Concepts" (listing "accessed" for "Serious Games Profile").



The video player shows a video titled "A Profile Example by MakingBetter". A large play button is overlaid on the video. The video player interface includes a progress bar at 34:07 / 1:03:54 and various control icons.

## Video Overview

<https://youtu.be/nv4LXYsxhZA>

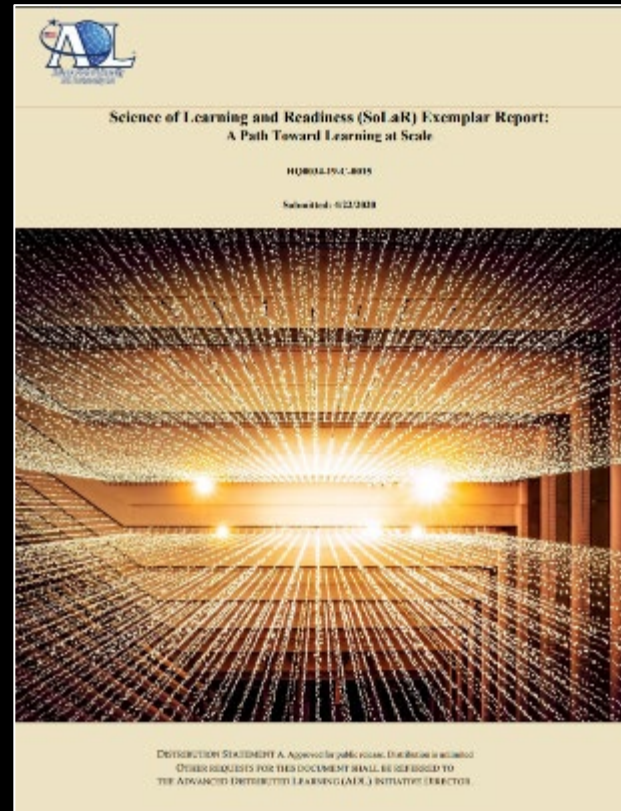


<https://profiles.usalearning.net>

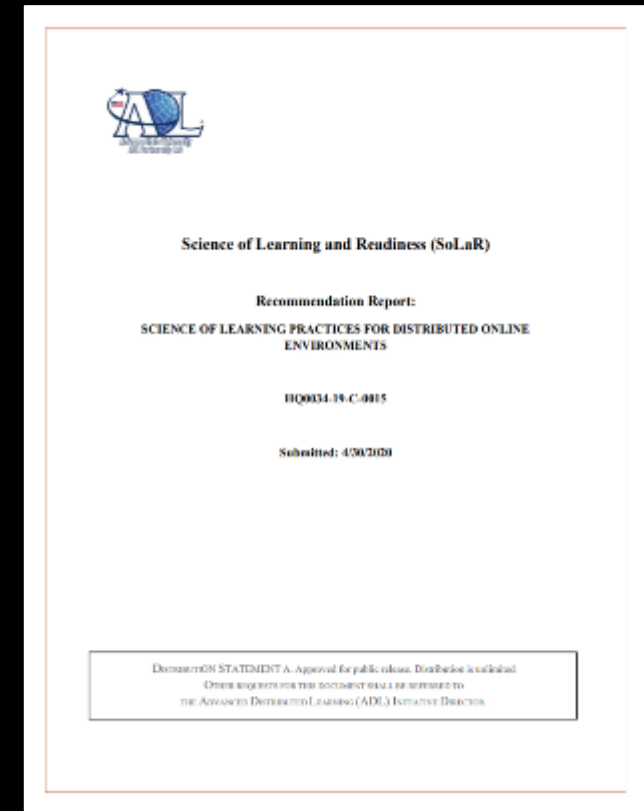
# Science of Learning and Readiness (SOLAR) Pedagogy Reports



Learning Science for  
Distributed/Blended Learning



Case studies from industry and  
post-secondary education



Case studies from industry and  
post-secondary education

<https://adlnet.gov/projects/solar>

# Capability Maturity Model – Self-Assessment



Background Research

The image is a screenshot of a spreadsheet titled 'DESIGN' with the subtitle 'Design of learning components, systems, and environments for learning science and learning engineering'. The spreadsheet is organized into a grid with columns labeled 'PART 1', 'PART 2', 'PART 3', and 'PART 4'. The rows represent different design components, including 'FUNCTIONALITY', 'USABILITY', and 'INTEGRATION'. Each cell contains detailed criteria and performance indicators for that specific component and part.

Interactive Assessment Rubric

<https://adlnet.gov/news/2020/07/22/A-New-Model-for-Gauging-Distributed-Learning-Maturity>

# 2021 Calendar

## Webinars

<https://adlnet.gov/webinars>

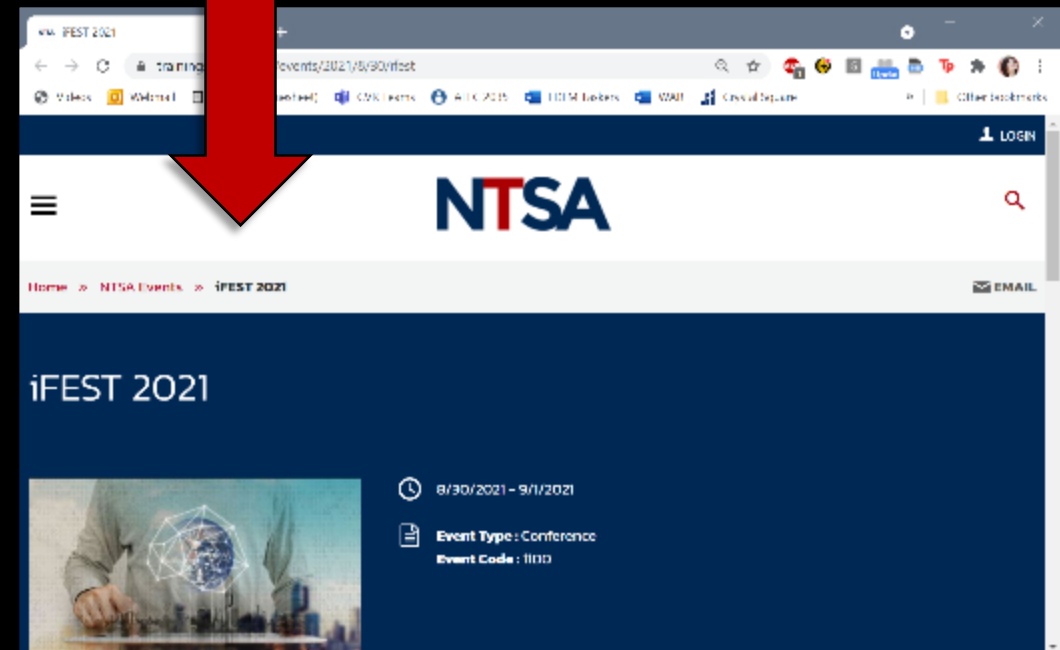
- 18 MAY Impactful Specifications and Standards from the Total Learning Architecture
- 21 JUN Designing and Testing xAPI Profiles Using the xAPI Profile Server and DATASIM
- 18 AUG PERLS: Transitioning New Learning Opportunities to the DoD Workforce
- 15 SEP NATO Standards for ADL in Exercises
- 17 NOV An Overview of the DoD's DevSecOps Reference Design and its Intersection with the Learning Technology Warehouse

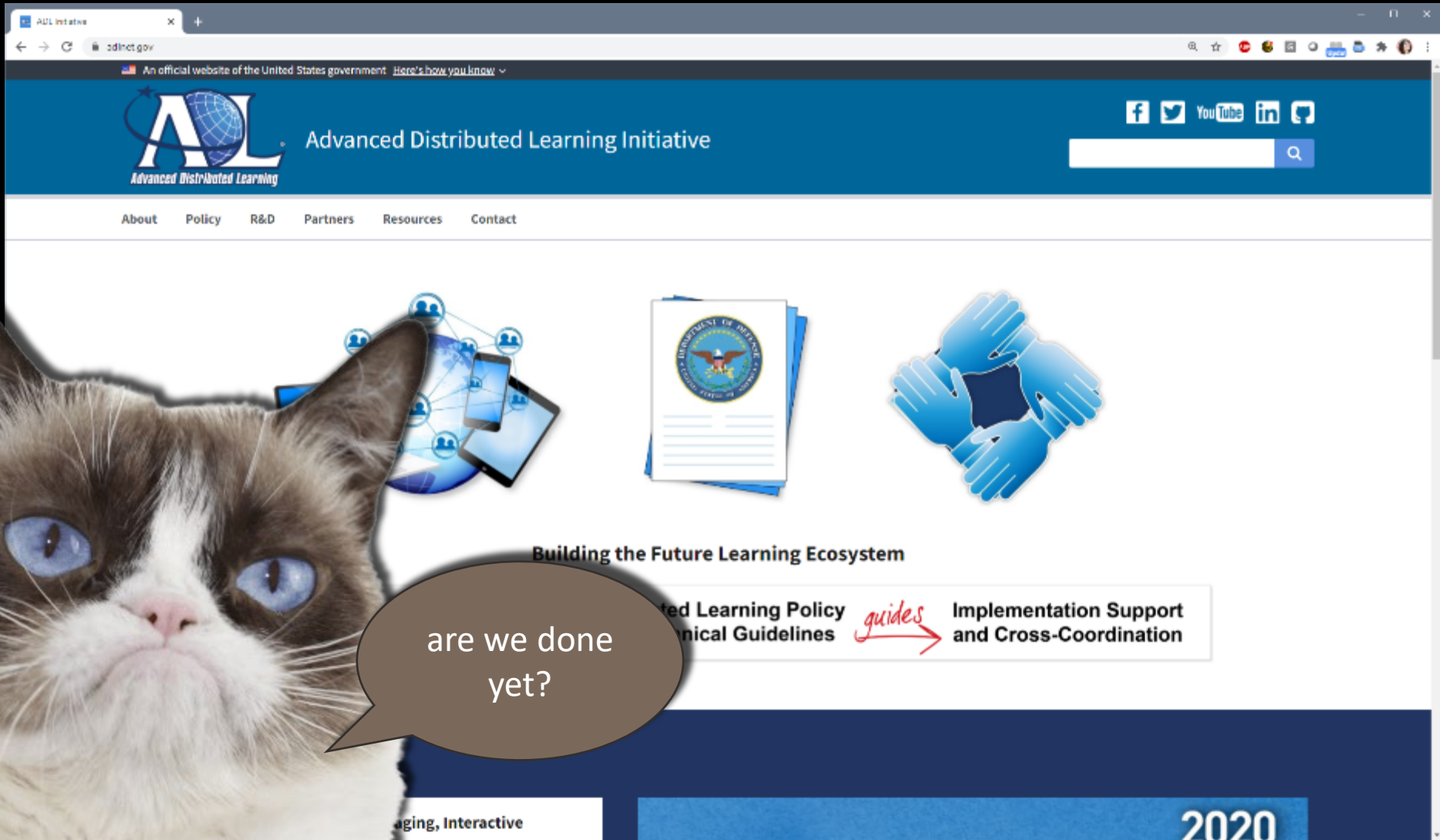
## Events

<https://adlnet.gov/events>

30 AUG – 1 SEP iFEST

29 NOV – 3 DEC I/ITSEC





are we done yet?

<https://adlnet.gov>