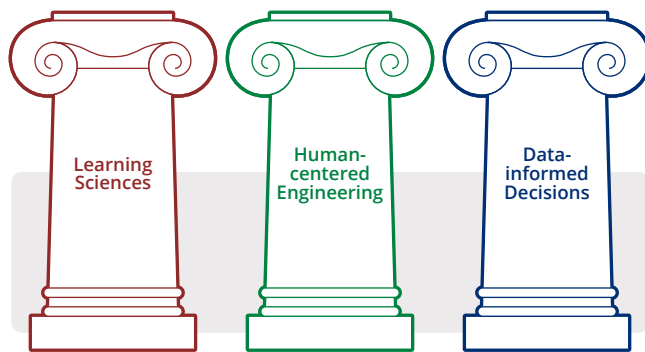


# Cyber Assessment and Validation (CAV) Team

## Part of the Cyber Mission Readiness (CMR) Directorate

**OUR MISSION:** We advance cyber readiness by solving core challenges—talent selection, mission readiness, and mission alignment—through data-driven, human-centered, and science-based innovation, to bridge the gap between today's training and tomorrow's fight.



### Talent Selection

*Finding the Right People*

#### Problem

Ongoing cyber personnel shortfalls caused by limited career development pathways and outdated training approaches.



#### Solution

Find the right people. Apply evidence-based *learning-engineering principles* to develop and deploy diagnostic assessments like the *Air Force Cyber Aptitude and Abilities Test (AFCAAT)* and adaptive training environments. These tools identify aptitude, accelerate individual growth, and sustain long-term cyber talent.

### Mission Readiness

*Human-Centered Engineering*

#### Problem

Limited fidelity and actionable data on individual and team readiness hinders commanders' ability to assess and predict performance in operational missions.



#### Solution

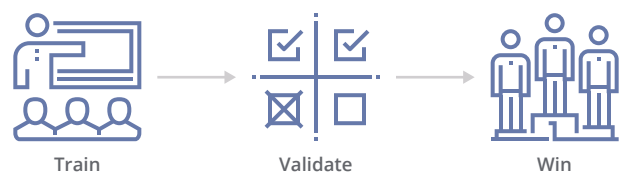
Integrate *human-centered engineering* and *instrumented cyber range environments* to capture real-world performance metrics. Understanding these metrics aligns human performance with mission requirements.

### Mission Alignment

*Train as You Fight*

#### Problem

Off-the-shelf training often fails to reflect the complexity and scale of real missions, leaving operators underprepared for modern warfare.



#### Solution

Modernize range capabilities, create content-as-code pipelines, and leverage *data-informed decision frameworks* using open standards (xAPI, cmi5) and realistic mission data to bridge the gap between training and operations.

## What We Do

We deliver measurable results by prototyping and scaling interoperable systems that link assessment, training, and validation.

We combine behavioral science, learning engineering, and cyber operations expertise to

- Identify and cultivate cyber talent
- Build and deliver gold-standard mission-aligned training
- Validate individual and team capabilities in realistic environments

## Our Bid for Success

We strive for measurable, hands-on, open, and mission-aligned solutions that ensure operational readiness and long-term success.

- **Objective Metrics:** Use validated assessments to predict success and guide workforce development.
- **Applied Learning:** ≈70%+ of content is hands-on to ensure mission-ready operators.
- **Open Standards:** Build on open source tools and interoperable frameworks for flexibility and scalability.
- **Mission Alignment:** All capabilities support Joint Force readiness and evolving operational requirements.

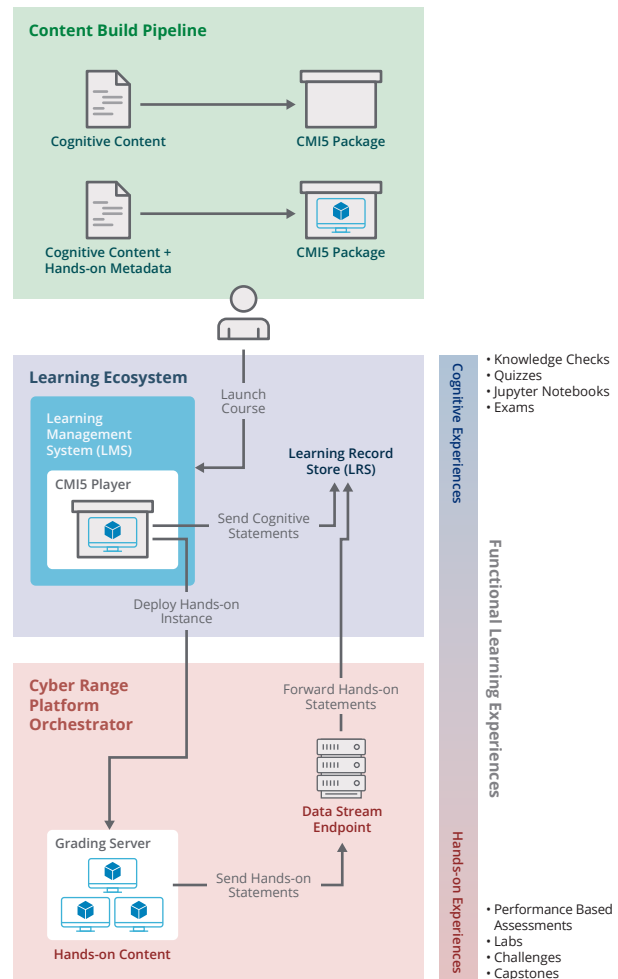
## Why it Matters

Achieve faster qualification, higher mission performance, and reduced operator burnout.

The risk of inaction is capability shortfalls, and fragmented readiness insight.

- **Approach:** Data + Learning + Human-Centered
- **Payoff:** Measurable mission readiness
- **Impact:** Predictive, scalable, interoperable

Our work ensures cyber operators are trained, tested, and lethal—ready to meet the demands of modern warfare.



## Work with the CAV Team

Partner with us to develop Cyber Learning Data Toolsets and Capabilities, modernized capability validation frameworks that ensure mission-ready operators, and to accelerate use of additional CMR areas of expertise.

## About the CERT Division

The CERT® Division of Carnegie Mellon University's Software Engineering Institute conducts valued, relevant, and trusted evidence-based research that fortifies the cyber ecosystem and protects national security and prosperity.

## Contact Us

CARNEGIE MELLON UNIVERSITY  
SOFTWARE ENGINEERING INSTITUTE  
4500 FIFTH AVENUE; PITTSBURGH, PA 15213-2612  
sei.cmu.edu  
412.268.5800 | 888.201.4479  
info@sei.cmu.edu