PROJECT ARES

NEXT GENERATION CYBER SECURITY TRAINING

The Importance of Gamification in Cybersecurity Team Training and Readiness

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About the Speaker (

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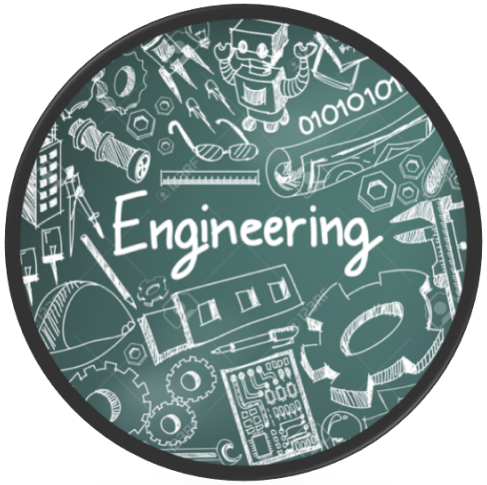

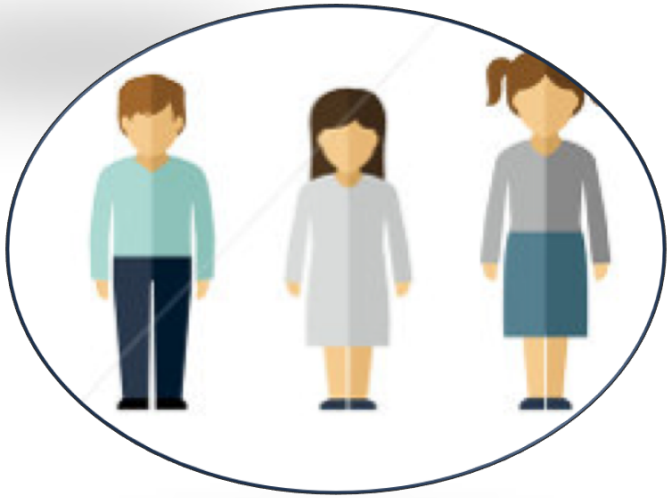

IDENTIFY

Key cyber terrain and risks

PROTECT

Organizational assets and data

DETECT

Unauthorized access & data breaches

RESPOND

To Cybersecurity Events and Attacks

RECOVER

Normal Operations and Services

IDENTIFY	PROTECT	DETECT	RESPOND	RECOVER
Perform Asset Management	Manage Access Control	Perform Anomaly Detection	Conduct Response Planning	Conduct Recovery Planning
Understand Business Environment	Conduct Awareness Training	Continuously Monitor for Security	Coordinate Response Activities	Improve Recovery Planning
Proceed under Proper Governance	Secure Data	Maintain Detection Processes	Conduct Analysis to Develop COA	Improve Response Capabilities
Conduct Risk Assessment	Employ Info Protection Processes		Perform Mitigation Activities	
Develop Risk Management Strategy	Manage Maintenance of Systems		Improve Response Capabilities	
Grey out are longer term tasks that are not part of an elite Cyber Defense Team	Employ Protective Technologies			

Perform Mitigation Activities

Report Attack	Prepare COAs	Conduct COA
ID Vector	Coordinate	Validate COA

Course of Action (COA)

CYBER DEFENSE AS A TEAM SPORT

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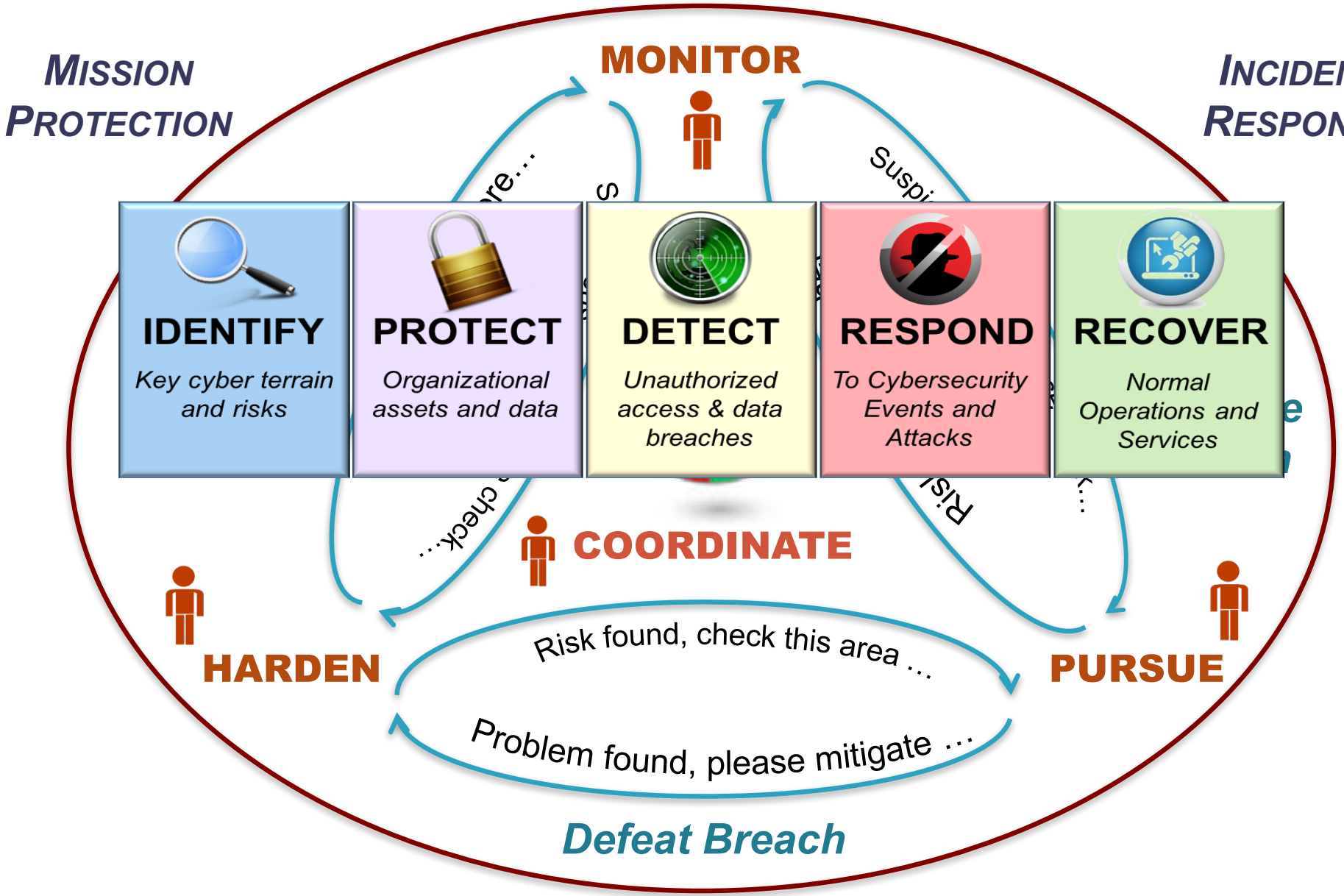

CHALLENGES FOR TRAINING CYBERSECURITY PROFESSIONALS

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HIGH COSTS **SCALABILITY** **AVAILABILITY** **SKILLS RETENTION**

"As technology changes the skills needed for each profession, workers will have to adjust….[requiring] a greater emphasis on lifelong learning and on-the-job training, and wider use of online learning and video-game-style simulation."

June 25, 2016
The Economist

PROJECT ARES KEY TECHNOLOGIES

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EDISON AWARDS

2016 CYBER GOLD WINNER

CYBER SECURITY DOMAIN

GAME ENVIRONMENT

VIRTUALIZED NETWORK

ARTIFICIAL INTELLIGENCE

Types of Project Ares Activities

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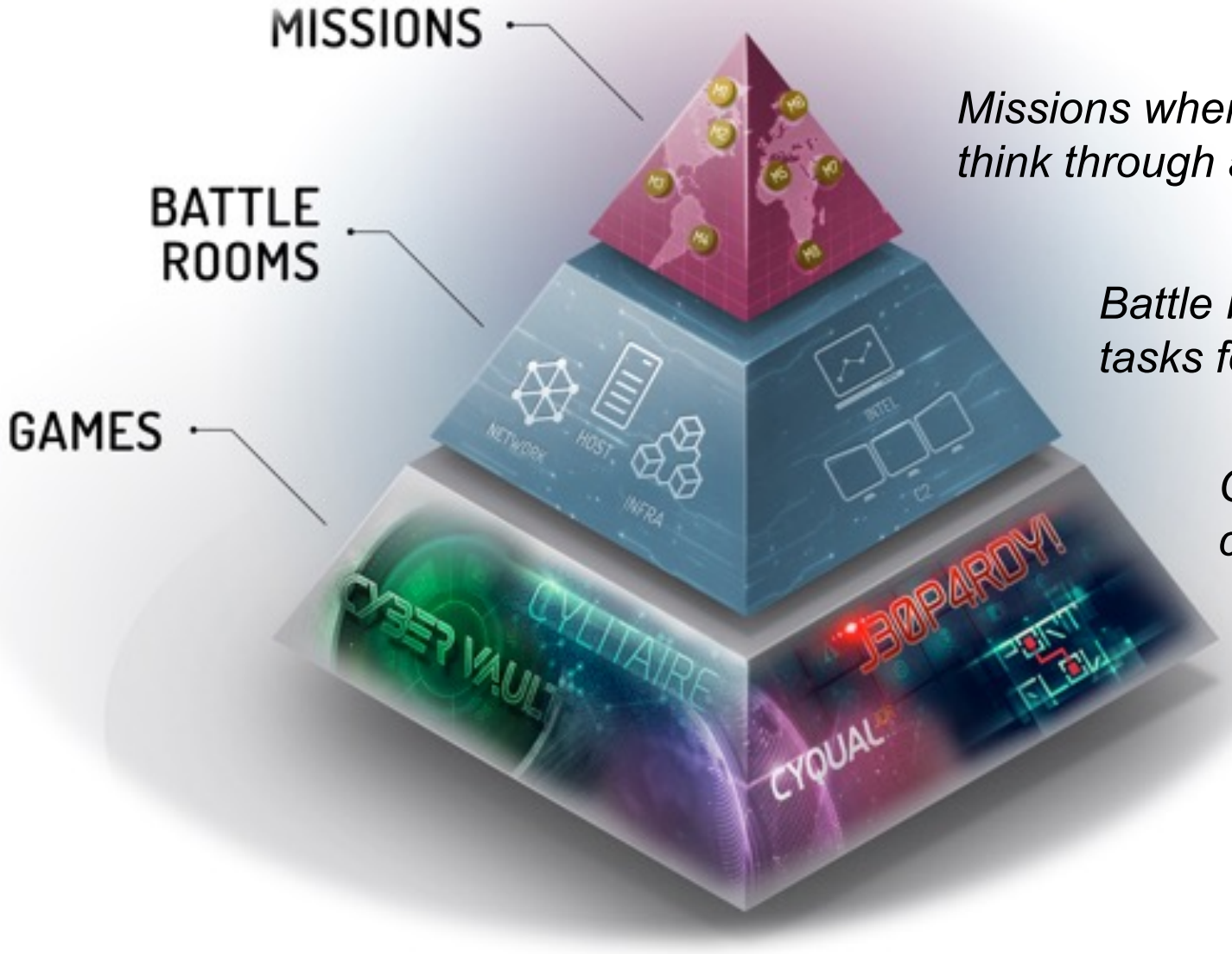

Missions where you prove you can think through a problem end-to-end

Battle Room with certification tasks for different work roles

Games on concepts in cyber that need repetition

PROJECT ARES V3.0 (MAY 2017) (

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PROJECT ARES CASUAL CYBER GAMES (

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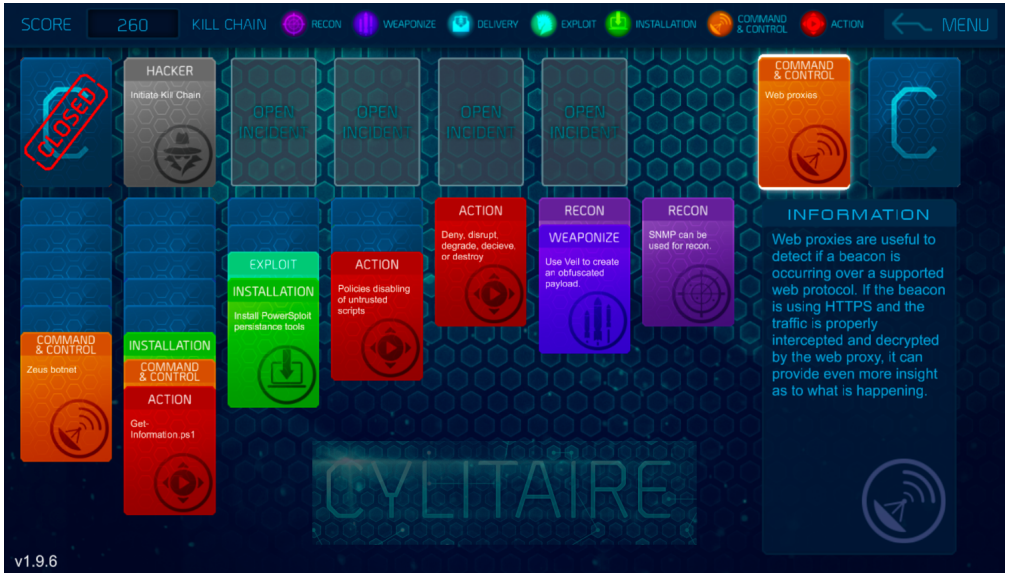

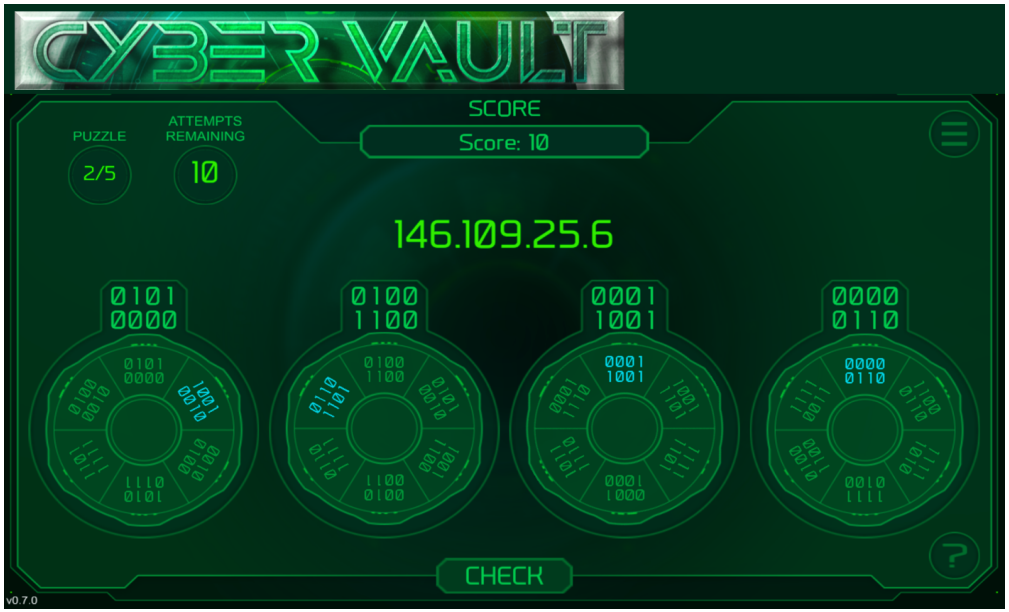

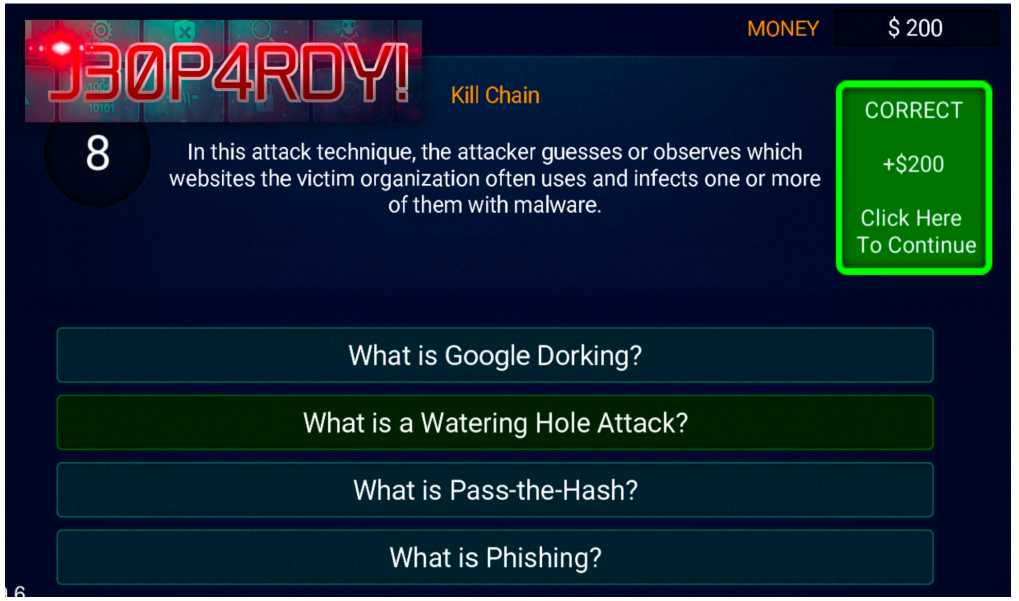

BATTLE ROOMS FOR WORK ROLES (

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BATTLE ROOM INDIVIDUAL SKILLS (

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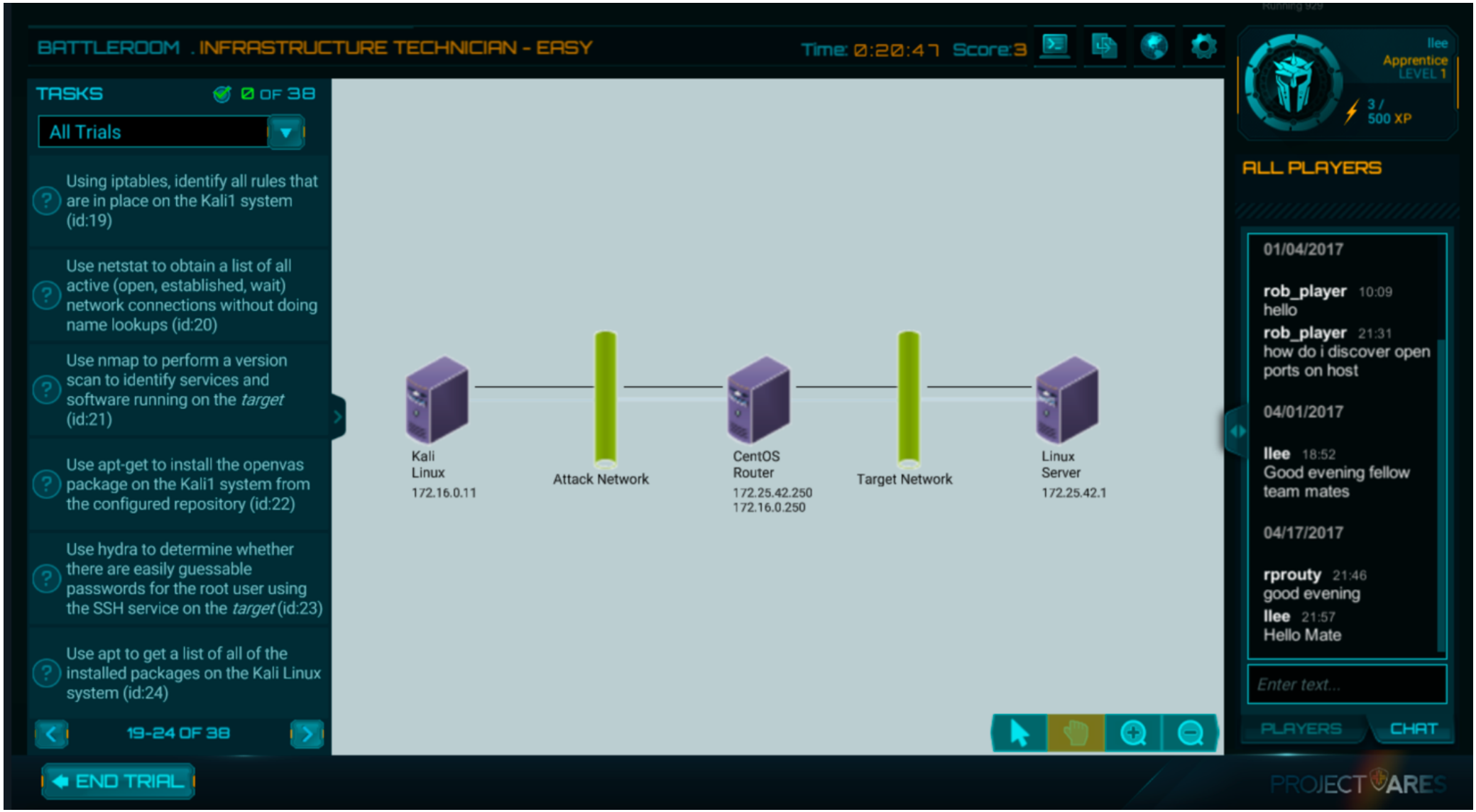

MISSION PLAY (
(INDIVIDUAL, CREW AND TEAM PLAY) (

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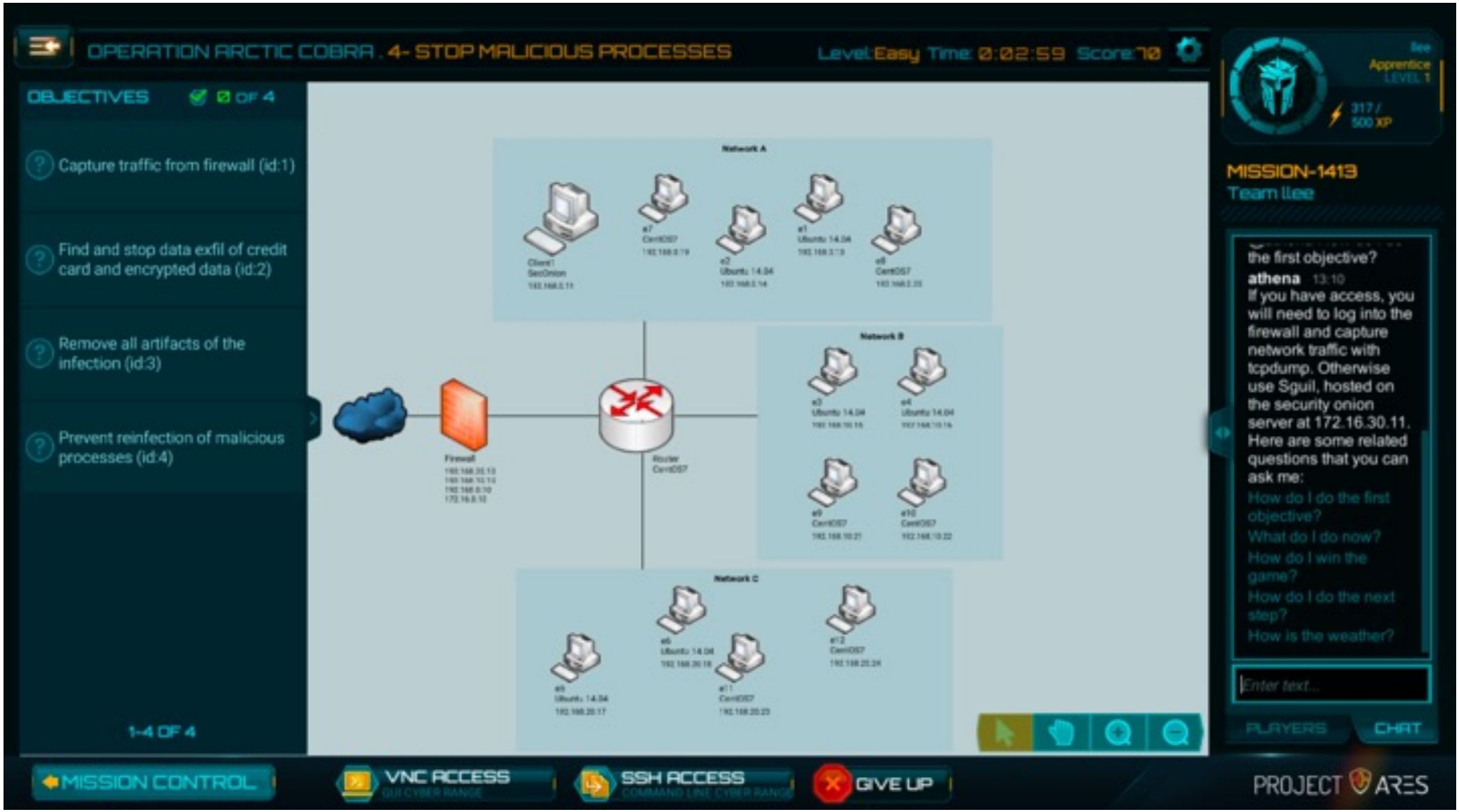

CYBER TOOLS AVAILABLE ON MISSION (

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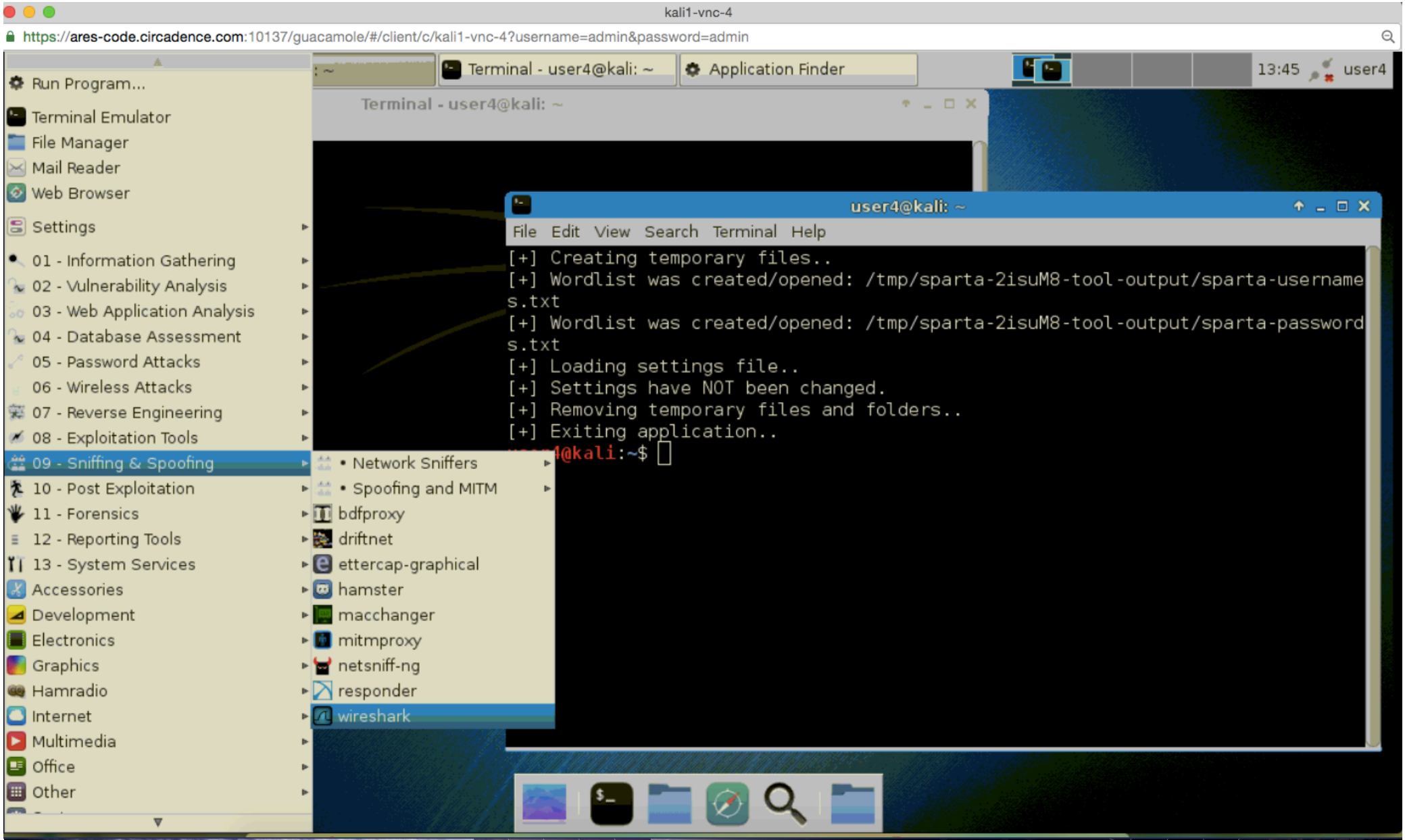

MISSION ASSESSMENT

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Replay of user commands, chat and opponent actions

Mission Score

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MISSION COMPLETE: TROPHY CENTER

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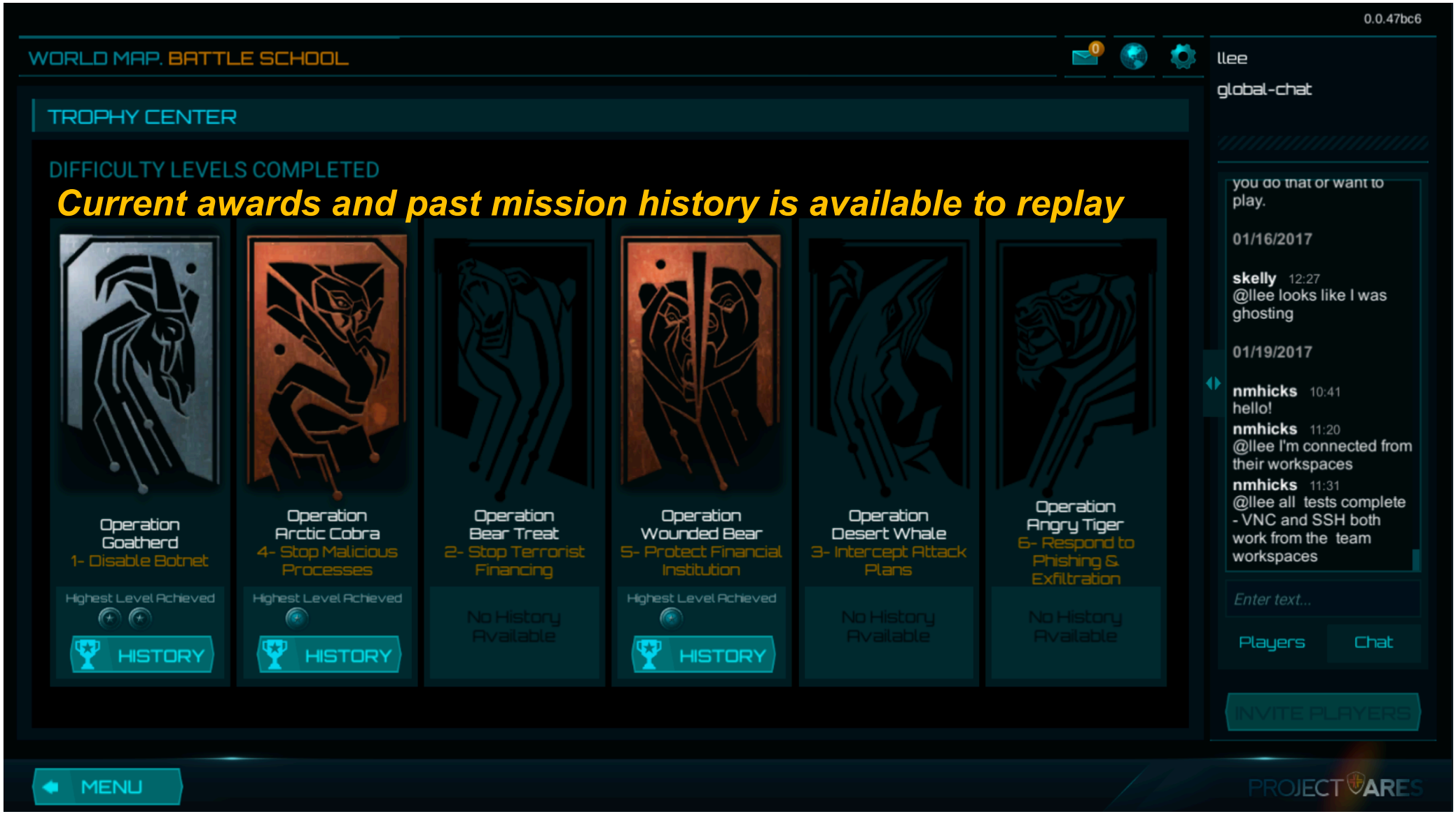

BADGES AND SKILLS

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THE NATIONAL CYBERSECURITY WORKFORCE FRAMEWORK

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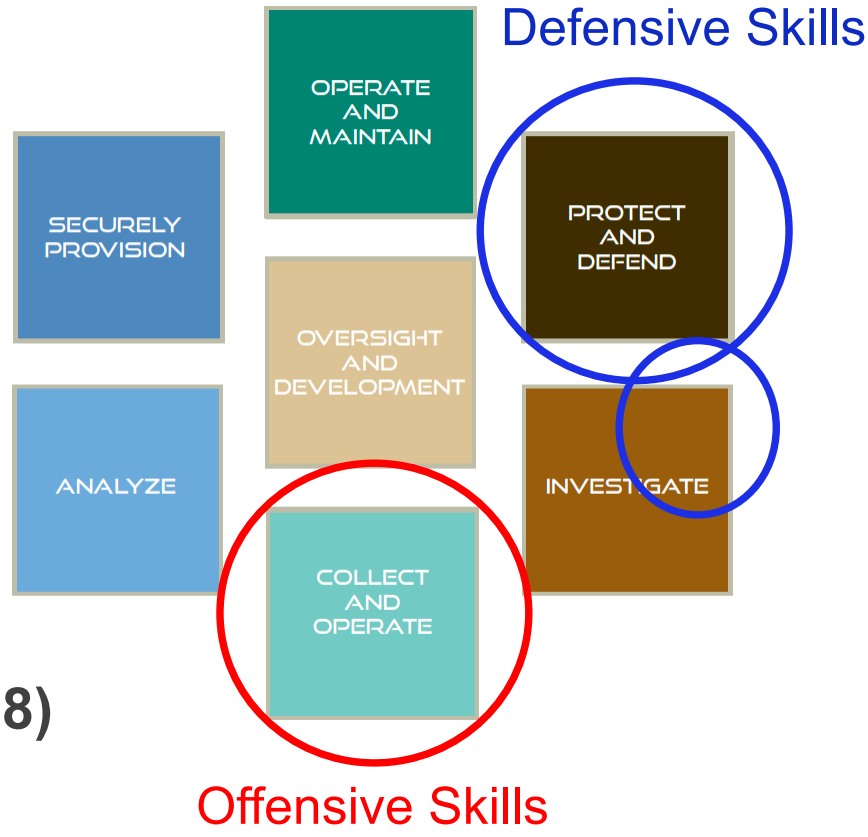
- **Categories – Protect & Defend, Investigate (Digital Forensics)**
- **Specialty Areas (4)**
  - Enterprise Network Defense Analysis
  - Incident Response
  - Infrastructure support
  - Vulnerability Assessment and Mgmt
- **Work Roles (45)**
  - Security Analyst
  - Incident Analyst
  - Penetration Tester….
- **Competencies (~200 combined into 18)**
- **Tasks (~115)**



Games Can Provide an Effective Method of Teaching Cyber (

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Generation-Z is Well Suited for Cybersecurity

- %Raised with DIY education and crowd sourcing
- %Digital Natives experienced in research and collaborating with others on-line
- %Talk about making an impact in the world
- %Routinely Multi-task across five screens
- %Over 60% list gaming as their primary form of entertainment
- %Not just “tech-savvy” – they are ”tech-innate”

Everything I learned, I learned from Ender's Game

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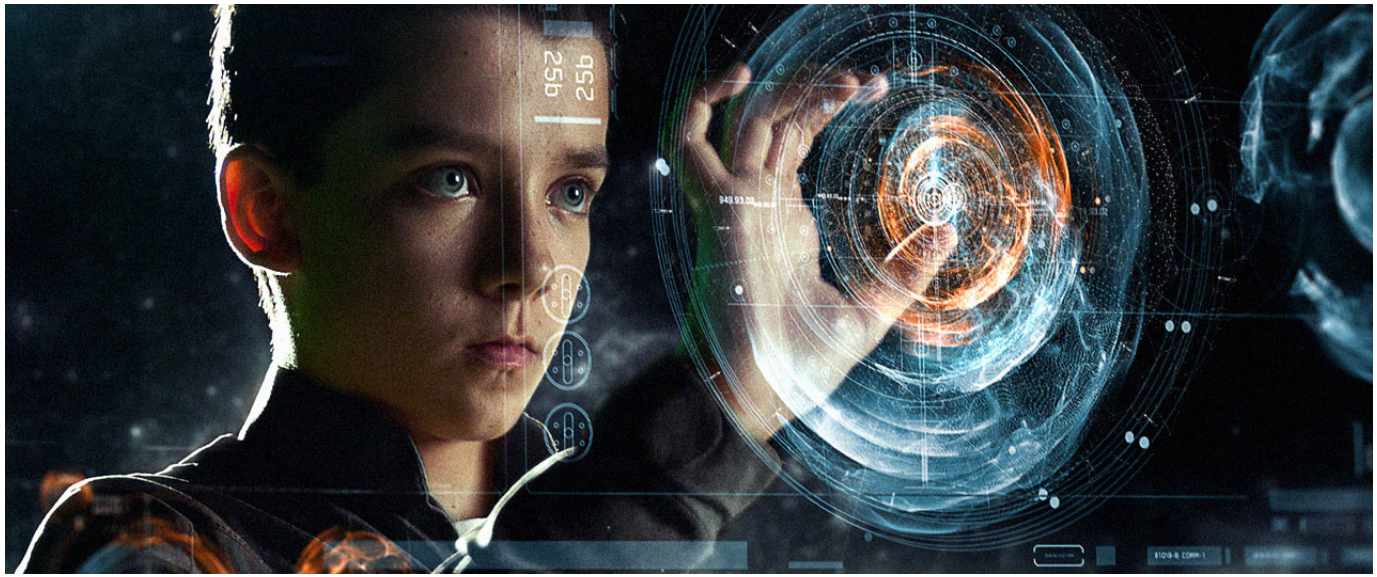

"I need you to think of solutions to problems we haven't seen yet. I want you to try things that no one has ever tried because they're absolutely stupid."
-- Ender Wiggins

The games are designed to harness the creativity of children and channel that to mold them into skilled soldiers, tacticians, and leaders to save the world.

Ender's Game is a 1985 military science fiction novel by American author Orson Scott Card and 2013 LionsGate Film.

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