SERC Talks: "Secure Cyber Resilient Engineering for the Era of Competition"

June 15, 2022 | 1:00 PM ET

Ms. Melinda K. Reed, Director, Systems Security, Science and Technology Program Protection (STPP) Office in the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E))

CYBER RESILIENCE

- ❑ Today's session will be recorded.
- ❑ An archive of today's talk will be available at: www.sercuarc.org/serc-talks/ as well as on the SERC YouTube channel.
- ❑ Use the Q&A box to queue up questions, reserving the chat box for comments, and questions will be answered during the last 5-10 minutes of the session.
- ❑ If you are connected via the dial-in information only, please email questions or comments to SERCtalks@stevens.edu.
- ❑ Any issues? Use the chat feature for any technical difficulties or other comments, or email SERCtalks@stevens.edu.

SYSTEMS ENGINEERING RESEARCH CENTER

SERC TALKS

SERC Talks: "How Can We Model Cyber Attacks and Systems to Characterize Resilience of Critical Infrastructure Systems?"

Ms. Melinda K. Reed
Director, Systems Security, Science and Technology Program Protection (STPP) Office in the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E))

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Secure Cyber Resilient Engineering In the Era of Competition

Engineering Cyber-Resilient Weapon System Workforce Development

Problem Statement:

- *The evolving and complex nature of the challenges presented by critical systems operating in contested cyberspace environments requires unique skills beyond those addressed by information technology security education.*
- *DoD must develop the ability to engineer and assess the combined safety, security, and resilience in current and future systems in the presence of determined cyber adversaries.*

Workshop 6 (Jul 31– Aug 2 2018)
State of the Engineering Workforce; Cybersecurity Engineering

Goal: Identify skill sets and curriculum needs for our current and future engineering workforce

- **Understand engineering education gaps related to cybersecurity**
- **Develop Need's for today's engineering workforce**
- **Develop Need's for tomorrow's engineering workforce**

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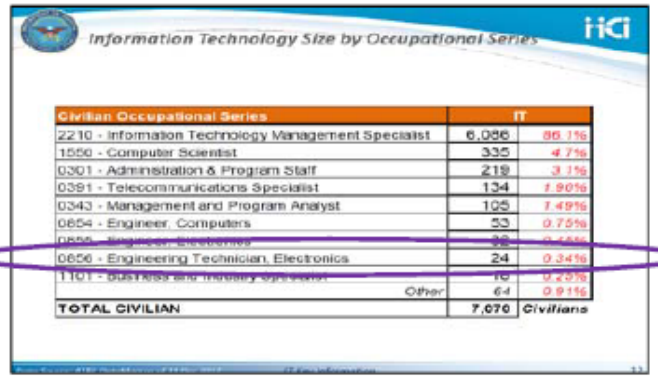
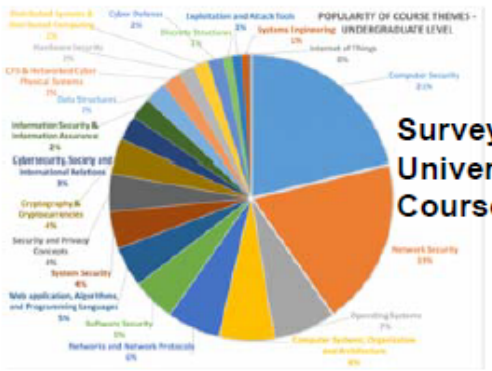


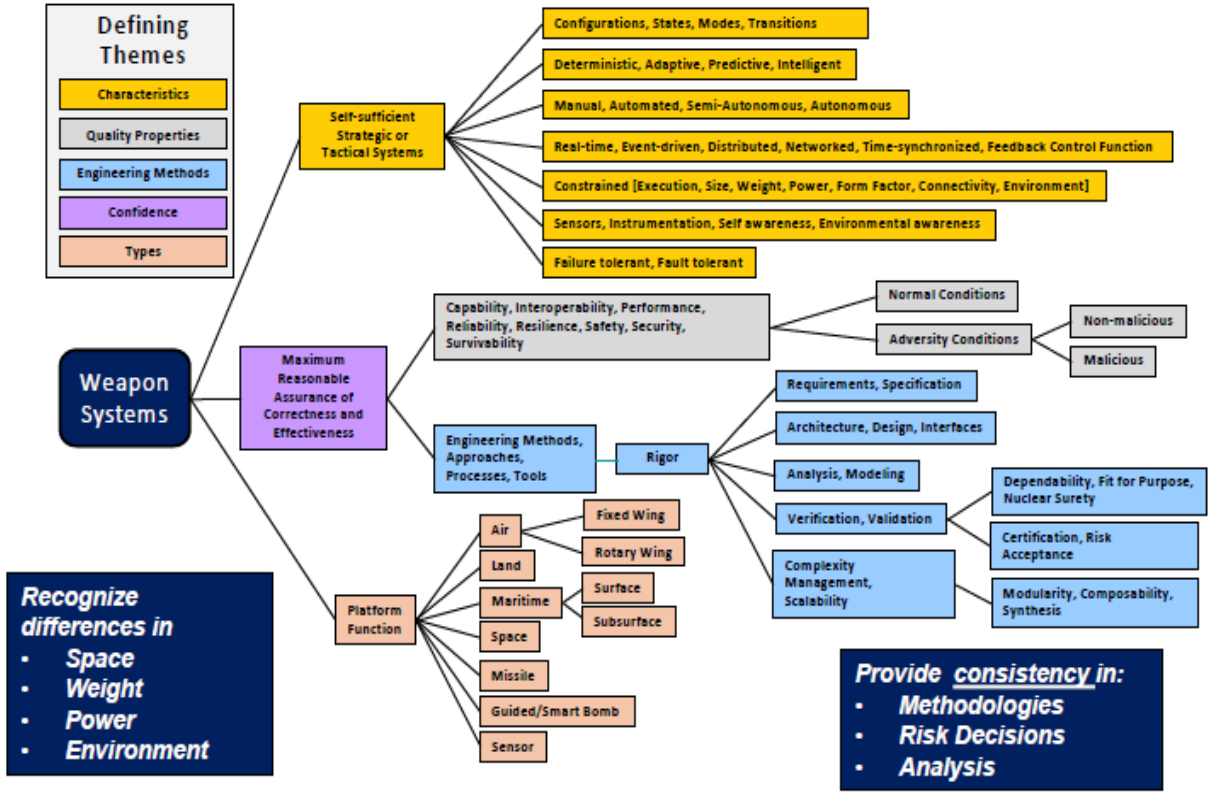
Civilian Occupational Series	IT	
2210 - Information Technology Management Specialist	6,086	86.1%
1550 - Computer Scientist	335	4.7%
0301 - Administration & Program Staff	219	3.1%
0391 - Telecommunications Specialist	134	1.90%
0343 - Management and Program Analyst	105	1.49%
0854 - Engineer, Computers	53	0.75%
0856 - Engineering Technician, Electronics	24	0.34%
Other	64	0.91%
TOTAL CIVILIAN	7,070	Civilians



Survey of 104 Universities by Course Themes

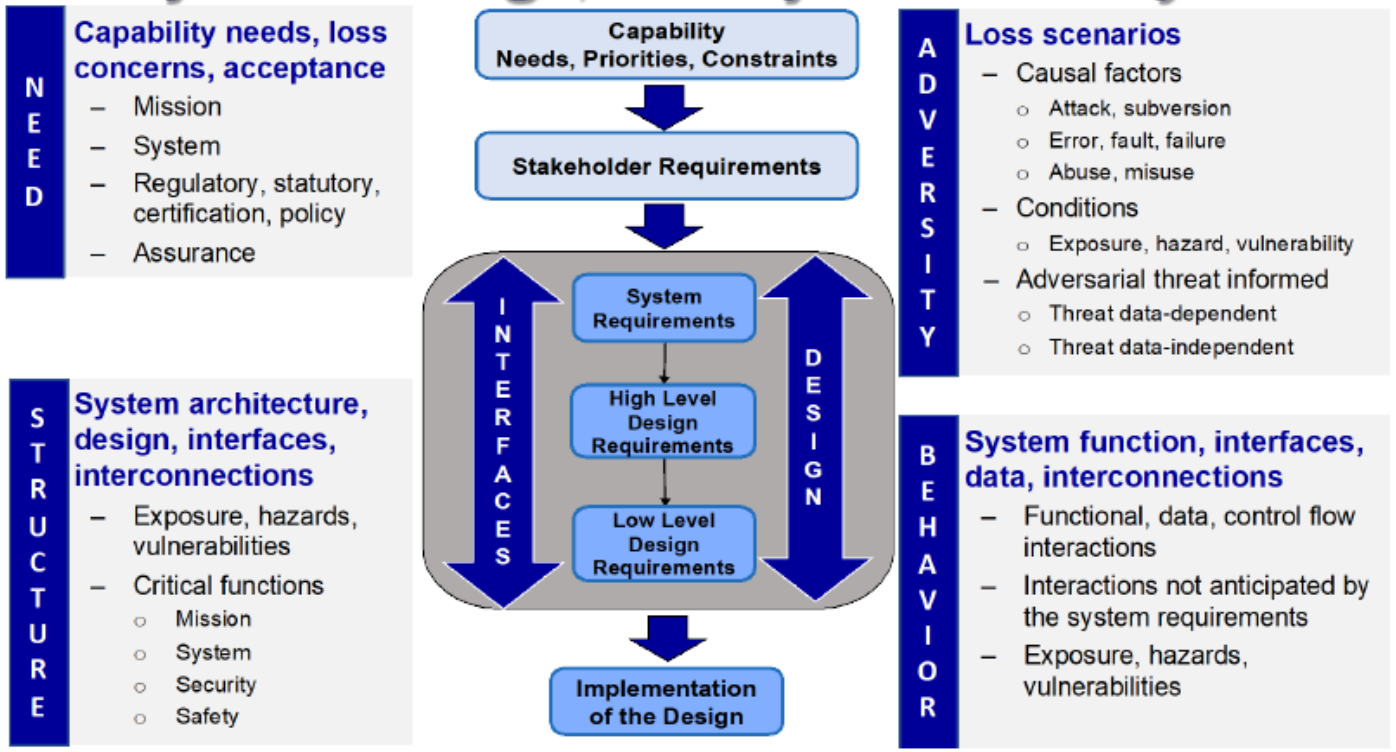
Secure Cyber Resilient Engineering Considerations

Weapon Systems Characteristics



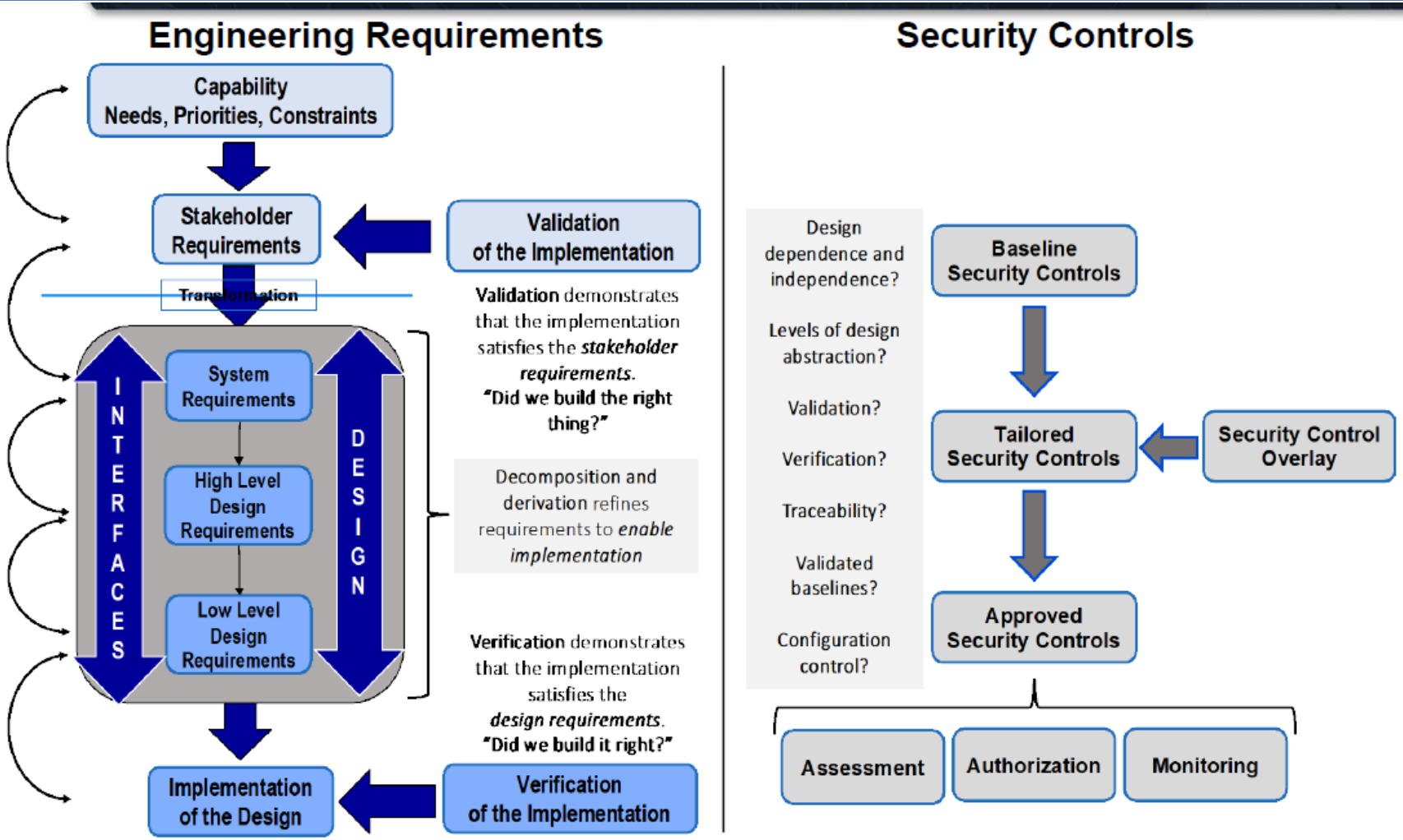
Secure Cyber Resilient Engineering Approach to Requirements Derivation

Requirements Derivation, System Design, and Systems Analysis



Applied with rigor necessary to achieve the targeted level of confidence

Secure Cyber Resilient Engineering
Security Considerations



Questions and Discussion

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THANK YOU FOR JOINING US!

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