JOINT SYSTEM SAFETY STANDARDS WORKING GROUP MILITARY-STANDARD-882E INITIATIVE

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AGENDA

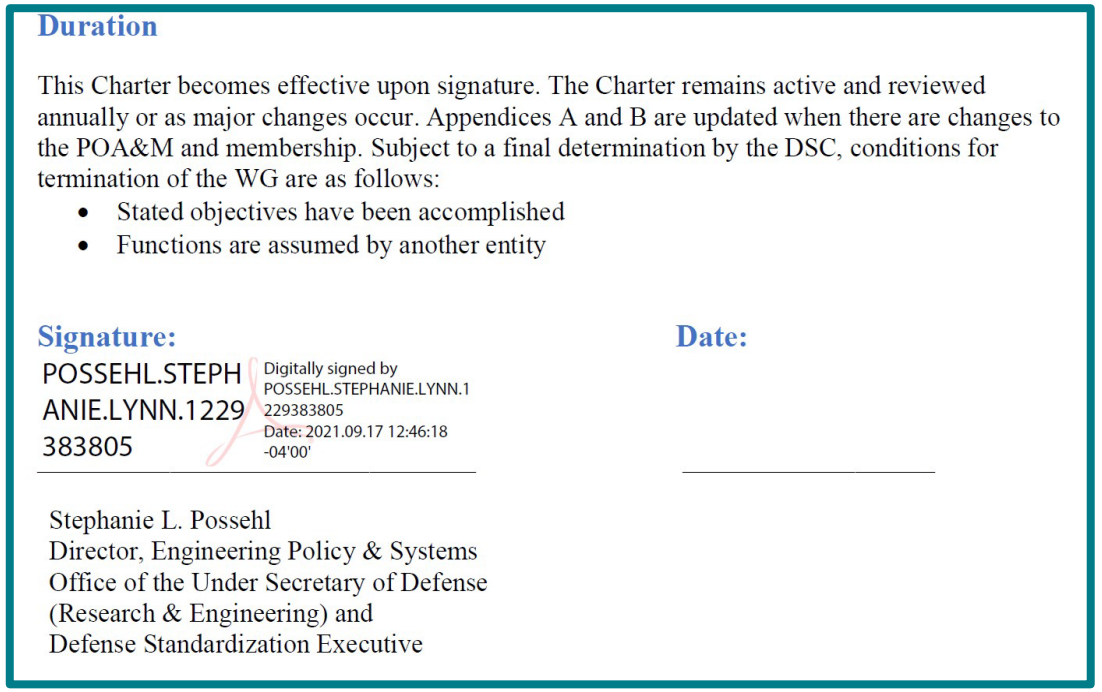
- BACKGROUND
- OBJECTIVES/RESPONSIBILITIES
- ORGANIZATIONAL STRUCTURE
- STATUS
- NEXT STEPS

BACKGROUND

- The Departmental Standardization Officers decided on 10 February 2021 to establish a Defense Standardization Council (DSC) chartered Working Group (WG) to:
  - Assess system safety Non-Governmental Standards (NGSs)
  - Coordinate the revision of Military-Standard (MIL-STD)-882E, “Department of Defense Standard Practice System Safety” of May 2012
- The Defense Standardization Program Office (DSPO) directed the WG to:
  - Identify and assess multiple types of standardization documents (i.e., both NGSs and MIL-STDs) and related documents (e.g., DoD policy).
- The Department of Defense (DoD) Acquisition Environment, Safety, and Occupational Health Integrated Product Team developed the Joint System Safety Standards Working Group (JSSSWG) Charter.

BACKGROUND (CONT.)

- JSSSWG Chair submitted final draft of the charter to the DSPO for review and approval on 9 June 2021
- JSSSWG Charter approved by the Defense Standardization Executive on 17 September 2021
- The JSSSWG Chair hosted an initial planning meeting with the Voting Members in October 2021.



Duration

This Charter becomes effective upon signature. The Charter remains active and reviewed annually or as major changes occur. Appendices A and B are updated when there are changes to the POA&M and membership. Subject to a final determination by the DSC, conditions for termination of the WG are as follows:

- Stated objectives have been accomplished
- Functions are assumed by another entity

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Date:

Stephanie L. Possehl
Director, Engineering Policy & Systems
Office of the Under Secretary of Defense
(Research & Engineering) and
Defense Standardization Executive

JSSSWG OBJECTIVES/RESPONSIBILITIES

- Review and update DoD system safety requirements contained in MIL-STD-882E
- Consider NGSs containing a system safety for adequacy in meeting DoD needs for a standard practice
- Assess and recommend a system safety standard that complies and aligns with DoD acquisition and sustainment policies
- Recommend solutions to the DSPO and DSC.
  - Adopt system safety NGS(s)
  - Cancel MIL-STD-882E
  - Revise MIL-STD-882E leveraging from other standards and guides

Joint System Safety Standards Working Group (JSSSWG) Charter

Objective

The Joint System Safety Standards Working Group (JSSSWG) is to update requirements currently contained in Defense Standard (MIL-STD)-882E, "Department of Defense Standard Practice System Safety," dated May 2012. Prior to updating the requirements, the JSSSWG will consider Non-Government Standards (NGSs) on system safety for adequacy in meeting Department of Defense (DoD) needs and recommend solutions to the Defense Standardization Council (DSC). The JSSSWG will recommend whether to revise MIL-STD-882, cancel MIL-STD-882 and adopt an updated system safety NGS, or replace some material in MIL-STD-882 with references to adopted NGSs. If it is determined MIL-STD-882E requires a revision, the JSSSWG will be responsible for drafting the update.

JSSSWG ORGANIZATIONAL STRUCTURE

- Comprised of co-chairs with voting and non-voting members

VOTING MEMBERS	
SERVICE	ORGANIZATION
Office of the Secretary of Defense	OUSD(A&S)/ODASD(E&ER)
	OUSD (P&R)/ODASD(Readiness)
	OUSD Research & Engineering (R&E)/Directorate of Defense Research and Engineering for Advanced Capabilities
Army	Office of the United States Assistant Secretary of the Army for Acquisition, Logistics, and Technology
	Chair, Army Weapon System Safety Review Board
Marine Corps	Marine Corps Systems Command (00T)
Navy	Assistant Secretary of the Navy Research, Development and Acquisition/Deputy Assistant Secretary of the Navy for Research Development Test and Engineering
	Office of the Assistant Secretary of the Navy (Energy, Installations and Environment)/Office of the Deputy Assistant Secretary of the Navy (Environment)
Air Force	Secretary of the Air Force/ Science, Technology, and Engineering Leadership, Lead Standardization Agency
	Air Force Materiel Command Preparing Activity
Space Force	Systems and Missile Systems Center/ECS
United States Special Operations Command	USSOCOM AT&L
Missile Defense Agency (MDA)	MDA/QSS

Co-Chairs:

- **ODASD (Environment & Energy Resilience)**
- **OUSD (Research & Engineering) Specialty Engineering**

NON-VOTING MEMBERS	
SERVICE	ORGANIZATION
Office of the Secretary of Defense	OUSD(R&E)/DDRE(AC)
	Department of Defense Explosives Safety Board
Army	Department of the Army System Safety Council
Marine Corps	MARCORSYSCOM (00T)
Navy	Department of Navy Acquisition Safety Steering Committee
Air Force	Air Force Safety Center
Space Force	SMC/DCE
Missile Defense Agency	GMD Safety Division
Specialty Workgroups (WG)	Joint Human Systems Integration
	Joint Weapon Safety
	Joint Services Software System Authorities
	Joint Artificial Intelligence Center

APPROACH/DIRECTION

- Identify potential NGSs for evaluation
  - Must be a standard practice/process for system safety
  - Must be practical for use across DoD
- Development of NGS review criteria
  - Define minimum essential criteria for a DoD system safety standard practice
  - Value-added criteria for determination if practicable for use across DoD
  - Develop standardized form to use in the evaluation
- Compare essential criteria against available NGSs
  - “Go/No Go” assessment
  - Must meet all criteria

STATUS

- Series of brainstorming sessions with the Voting Members to determine criteria/elements of a DoD system safety standard practice
  - Focus to determine must have “essential core elements”
  - Solicited and received input from the JSSSWG members on key issues and concerns to consider in developing the NGS review criteria
  - Use the “essential core elements” to determine practicability of a NGS as a DoD system safety standard practice (i.e., replacement for MIL-STD-882E)
  - Use any secondary criteria/elements in further evaluation of a NGS or to consider if MIL-STD-882E is updated
- JSSSWG Voting Members established ten System Safety Standard Practice Core Elements
  - Approved on 3 August 2022

STATUS (CONT.)

- JSSSWG Support Team screened approximately 31 NGSs identified by JSSSWG members and the International System Safety Society
  - Reviewed to determine whether the standard/reference was a “true” standard practice
  - Two NGSs identified for consideration in “core elements” evaluation
    - GEIA-STD-0010 Rev A, “Standard Best Practices for System Safety Program Development and Execution” by SAE International
    - “Def Stan 00-56 Safety Management Requirements for Defence Systems” by United Kingdom
- JSSSWG Voting Members determined only one of the two NGS as practicable
  - GEIA-STD-0010 Rev A
  - United Kingdom standard a non-starter; DPSO advised that DoD is prohibited from using foreign government standards
  - JSSWG Voting Members agreed on 24 August 2022 to move forward with evaluation of GEIA-STD-0010 Rev A
  - SAE Director provided copies of GEIA Standard on 1 September 2022 to JSSSWG members

STATUS (CONT.)

- JSSSWG Technical Working Group (TWG) (i.e., Non-Voting Members) kick-off meeting held on 15 September 2022 to provide direction regarding the evaluation of GEIA-STD-0010 Rev A
- Evaluation of this standard is in process with the TWG
  - Proceeding through October and November 2022

All ten Core Elements must be met for a NGS to be considered practical and adequate as a replacement of MIL-STD-882E.

SYNOPSIS OF THE ESSENTIAL DoD SYSTEM SAFETY CORE ELEMENTS

- Address hazard analyses involving hardware, software, and the human
- Applicable to any type of DoD system (i.e., Cyber, Land, Sea, Air, and Space domains)
- Accommodate the risk assessment of DoD systems (i.e., compatible risk assessment matrix and include formal risk acceptance requirement)
- Include primary hazard tracking criteria and data element requirements
- Provide multi-step methodology that easily explains the system safety process
- Include a system safety order of precedence
- Allow for DoD participation in updates and inclusion of DoD specific guidance
- Have an existing licensing agreement to use the standard
- Address the incorporation of system safety into the development process
- Allow content of the standard, as written, to be contractually binding

NEXT STEPS

- TWG meeting scheduled for 9 November 2022
- TWG will advise JSSSWG Voting Members on the results of the NGS evaluation
  - Recommendation targeted for mid-November 2022
- If the recommendation is to adopt the GEIA NGS, then:
  - JSSSWG will enter negotiation with the NGS Owner to determine whether/how JSSSWG participates in updates to the standard and
  - Explore with NGS Owner potential for development and inclusion of DoD specific system safety process in the NGS
- Depending on the outcome of the negotiations with the NGS Owner, the JSSSWG will develop a final report to the DSC with a recommendation to either:
  - Select and adopt the GEIA NGS and cancel MIL-STD-882E or
  - Retain and revise MIL-STD-882E

NEXT STEPS (CONT.)

- If recommendation is to retain and revise revise MIL-STD-882E, then:
  - Approved written direction from the DSC to the MIL-STD-882E Preparing Activity to incrementally revise, staff, and publish
    - Air Force Safety Center (AFSC)
  - Prioritize changes to the Standard in REV F (AFSC and JSSSWG)
    - TWG identifies gaps, issues, and revisions needed (e.g., software safety, other mature technology specific guidance as practical)
- TWG reports to and receives guidance/approvals from the Voting Members on MIL-STD-882F development and finalization
- JSSSWG to provide recommendations to the DSC, after publication of MIL-STD-882F, on next increment of changes (i.e., 882G)
  - Collaborate with AFSC and monitor development of G and other increments as identified

QUESTIONS?

CONTACT INFORMATION

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BACK UP – ESSENTIAL DoD SYSTEM SAFETY CORE ELEMENTS

ESSENTIAL DoD SYSTEM SAFETY CORE ELEMENTS

(1) Is the NGS applicable to addressing hazard analyses involving hardware, software, and the human?

(2) Is the NGS applicable to any type of DoD system in the Cyber, Land, Sea, Air, and Space domains?

(3) Does the NGS accommodate the risk assessment of DoD systems?

a. Is there a Risk Assessment Matrix consistent with 882E (must be compatible with what DoD uses now and supports traceability of risk levels across DoD)?

b. Does the NGS have a requirement for formal risk acceptance by the appropriate risk acceptance authority, prior to exposing people, equipment, or the environment to a known hazard, consistent with applicable DoD policy?

(4) Does the NGS have primary hazard tracking criteria and data element requirements that include all the elements currently required in accordance with MIL-STD-882E, Section 4.3.1D?

ESSENTIAL DoD SYSTEM SAFETY CORE ELEMENTS (CONT.)

(5) Does the NGS provide multi-step methodology (like 882E) that easily explains/ addresses the system safety process (Comparable to the MIL- STD-882E, Section 4.3, 8-step process)?

(6) Does the NGS include a system safety order of precedence that is comparable to MIL-STD-882E, Section 4.3.4?

(7) Will the organization owning the NGS allow for:

a. DoD participation in updates/changes?

b. DoD to be a voting member on all proposed changes to the NGS?

c. Allow for DoD specific guidance in the standard (e.g., IEE 15288.1, “The Institute of Electrical and Electronics Engineers (IEEE) Standard for Application of Systems Engineering on Defense Programs”, and IEE-15288.2-2014, “IEEE Standard for Reviews and Audits on Defense Programs”)?

ESSENTIAL DoD SYSTEM SAFETY CORE ELEMENTS (CONT.)

(8) Does the DoD have an existing licensing agreement to use the NGS?

(9) Does the NGS address the incorporation of system safety into the development process?

(10) Is the NGS written in a manner where the content of the NGS, when placed on contract, are contractually binding?