

1 PURPOSE

The purpose of the International Council On Systems Engineering (INCOSE) Defense Systems Working Group (DSWG, originally the Aerospace and Defense (A&D) Working Group) is to create an international forum for defense acquirers and providers that provides a "neutral" body that works on issues that impact specifying, developing and acquiring defense systems and services and to promote the development of systems engineering best practices in a manner that recognizes the special issues faced by the Defense Systems Engineering (SE) practitioners and managers in the changing global market for defense related systems.

The Defense Systems WG is to become a conduit for networking, establishing a Web presence, and creating and exchanging explicit and tacit best practice SE knowledge for the defense systems community.

2 GOAL

The specific goals for the DSWG include:

1. Approval of the Charter of the DSWG
2. Obtain commitments from the DSWG members
3. Near term objectives
 - a. Develop approach to solicit more input from Aerospace and Defense Corporate Advisory Board (CAB) members and SE Forum
 - b. Solicit ideas, actions, products, and activities for the DSWG (e.g.: Commercial-Off-The Shelf (COTS), Security, Extended lifecycle costs, System-of-Systems Architecture, Program Execution Processes)
 - c. Localize ideas for action in the DSWG
 - d. Socialize chosen actions and products with other WGs for collaboration
 - e. Establish plans to collaborate with other working groups on activities related to the defense industry
 - f. Initiate chosen actions and products
 - g. Identify Customer(s)/Stakeholder(s) through defense systems CAB members and SE Forum
 - h. Present intended outcome(s)/product(s)/services(s)
 - i. Socialize expected completion date(s) or time-frame (e.g. short, mid or long-term)
4. Long term objectives
 - a. Become a conduit for networking
 - b. Establish a Web presence
 - c. Deliver ideas, actions, products, and activities for use throughout INCOSE
 - d. Become the focal point for the creation and exchange of explicit and tacit best practice Systems Engineering knowledge for defense systems
 - e. Create an international forum for defense acquirers and providers that provides a "neutral" body that works on issues that impact specifying, developing and acquiring defense systems and services
 - f. Develop repository of knowledge for defense systems
 - g. Develop repository for defense systems standards from international sources
 - h. Establish a Community of Practice for defense systems engineers

3 SCOPE

The DSWG will accomplish its purpose through the shared understanding and advancement of systems engineering knowledge and products in areas that are of particular interest to the Defense community. The DSWG will act much like the other existing WG's and will coordinate and involve all INCOSE Technical Committee's (TC) (where possible) in the selection, evaluation and solution of the initiatives to be addressed by INCOSE.

The objectives include, but are not limited to, improving the people, processes, and resources used in addressing defense systems challenges as follows:

- People
 - Systems Engineering Educators
 - Systems Engineering Practitioners
 - Other educators of engineering
 - Other educators of related fields
 - Involve all INCOSE Technical Committee's where possible
 - Invite qualified systems engineers and multi-discipline individuals to membership and action
 - Sponsor professional programs at INCOSE meetings to exchange systems engineering techniques and practices used in defense systems challenges
 - Benefit the entire INCOSE membership through their involvement in the successful application of the systems engineering approach to defense systems challenges
- Processes
 - Apply the systems engineering principles, techniques, and practices to defense systems challenges
 - Improve the systems engineering decisions, artifacts and processes from the experiences gained in their application to defense systems challenges
 - Maintain forums at symposia, workshops and chapter meetings to exchange status on successful practices and processes used in addressing defense systems challenges
- Resources
 - Complete most defense systems projects with voluntary support
 - Support from Customer(s)/Stakeholder(s) in defense systems
 - Designers and manufacturers of defense systems
 - Maintain a list of resources useful to systems engineers who agree to participate in the DSWG
 - Identify automated tools and their capabilities useful in addressing defense systems challenges
 - Facilitate interaction with other groups and WGs external to INCOSE also interested in addressing the defense systems challenges

4 SKILLS AND EXPERTISE REQUIRED

The DSWG is a volunteer group of INCOSE members who are engaged in the practice of systems engineering that include Federal and non-Federal international government agencies, small and large businesses in various government and commercial industries, and the teaching of systems engineering practices in universities throughout the world.

The challenge to increase interest in engineering and science is complex and involves many facets of human activity and expertise including the following:

- Ability to utilize SE tools for the creation and sustainment of defense systems products
- Ability to synthesize component models into expected defense systems characteristics
- Ability to understand and utilize Situation awareness, diagnosis and assessment
- Informatics (including telecommunications and computer technologies and engineering)
- Requirements Engineering
- Human social dynamics
- Teleonomics (human motivation and performance engineering)
- Human systems integration
- Man-machine interfaces
- Defense Systems technologies and engineering
- Safety engineering
- Reliability and maintainability engineering
- Test engineering

Expertise and study in these types of disciplines and some yet to be identified skills will be useful in understanding the motives, objectives, strategies and operations of Defense Systems activities.

5 MEMBERS, ROLES AND RESPONSIBILITIES

List the names of members and briefly describe their responsibilities.

- Chair: Karl C. Geist, kgeist@gryphonLC.com
 - o Responsibilities
 - Direct DSWG membership meetings
 - Coordinate logistics for such meetings
 - Ensure meeting minutes, agendas, and newsletters are prepared and distributed
 - Establish the annual goals for the DSWG
 - Prepare council reports as required

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- Interface with the INCOSE Technical Operation Team and other working groups
- Support coordination of the DSWG activities
- Appoint ad-hoc positions as required with consent of the membership
- Represent the DSWG at INCOSE events, as required
- The Chair shall be responsible for representing the DSWG at INCOSE events, as required and reporting DSWG Status to the Assistant Director for Government Applications.)
- Deputy Chair: David Jacques, David.Jacques@afit.edu
 - Responsibilities
 - Lead efforts delegated to them by the DSWG Chair
 - Direct DSWG membership meetings, as required
 - Coordinate logistics for such meetings, as required
 - Ensure meeting minutes, agendas, and newsletters are prepared and distributed, as required
 - Establish the annual goals for the DSWG, as required
 - Prepare council reports, as required
 - Interface with the INCOSE Technical Operation Team and other working groups, as required
 - Support coordination of the DSWG activities, as required
 - Represent the DSWG at INCOSE events, as required
 - The Deputy Chair shall be responsible for representing the DSWG at INCOSE events, as required and reporting DSWG Status to the Assistant Director for Government Applications in the absence of the lead.
- Deputy Chair: Don Gelosh, Donald.Gelosh@osd.mil
 - Responsibilities
 - Lead efforts delegated to them by the DSWG Chair
 - Direct DSWG membership meetings, as required
 - Coordinate logistics for such meetings, as required
 - Ensure meeting minutes, agendas, and newsletters are prepared and distributed, as required
 - Establish the annual goals for the DSWG, as required
 - Prepare council reports, as required
 - Interface with the INCOSE Technical Operation Team and other working groups, as required
 - Support coordination of the DSWG activities, as required
 - Represent the DSWG at INCOSE events, as required
 - The Deputy Chair shall be responsible for representing the DSWG at INCOSE events, as required and reporting DSWG Status to the Assistant Director for Government Applications in the absence of the lead.
- DSWG Champion: Carl Landrum carl.landrum@incose.org
 - Responsibilities

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- Lead and Communicate the DSWG needs and activities to the Technical Committee
- Inform and training the DSWG of the Technical Committees requirements
 - The DSWG Champion shall help the DSWG seek a Board sponsor to be responsible for resource advocacy and status reporting to the INCOSE BOD and external stakeholders.
- Membership: Open to all INCOSE Members – Currently approximately 47 members

6 OUTCOMES (PRODUCTS/SERVICES)

This is a list of the intended deliverables (products/services) that will be produced by those participating in the DSWG. Details applicable to these types of deliverables shall be defined in separate Technical Project Plans (TPP's). TPP's shall be developed, submitted and tracked as defined by the applicable Technical Operations procedure.

- Intended products and services may include but are not limited to:
 - a. Develop a repository of knowledge for defense systems
 - b. Develop a repository for defense systems standards from international sources
 - c. Establish a Community of Practice for defense systems engineers

Additionally, the DSWG will host and call for contributions to a community on the INCOSE Connect site. The tempo and topics of contribution will be determined by the level of participation by the community and availability of contributed content. The DSWG will also be available as an active participant for communications forums for discussing potential topics of presentation at the annual International Workshops (IW) and International Symposia (IS).

7 APPROACH

The chief means the DSWG accomplishes its purpose is through development and sponsoring of activities within INCOSE during its symposia, workshops and via collaboration forums such as INCOSE Connect. The virtual collaboration forum would present an opportunity for members to post information for the use when desired. The IW and IS would present opportunities for members to discuss issues with a group of their peers. The general approach that will guide the DSWG includes:

- Meeting frequency of the entire WG: Quarterly, as a minimum
- Decision making: General consensus of the Membership - However, final decisions on what activities to pursue shall be made by those willing to contribute to such activities. At the time activities are initiated, the volunteers shall choose their own decision-making model such as by consensus or majority vote. While consensus on major issues will be sought, from a practical standpoint it is necessary to weight inputs given by individual community members by their levels of participation in WG activities.
- Norms or ground rules: Standard Meeting procedure will prevail
- Accountability: Maintain within the DSWG
- Communications: To facilitate the very busy and productive members of the Working Group, virtual collaboration will be the main mode of interaction outside these meetings.

- DSWG outreach: The DSWG will engage in community outreach to other systems engineering groups within INCOSE and other professions in defense systems, at minimum by attending the INCOSE IW and IS. Some suggested areas for outreach are to sponsor students in the defense system fields to attend INCOSE symposia, or mentor students involved in the Science Technology Engineering Mentoring (STEM) program.

8 MEASURES OF SUCCESS

Some overall measures of success for the DSWG may include:

- Size of the DSWG membership and participating members
- Number of enterprises involved in the DSWG
- Number of products/services under development by the DSWG (as defined by individual TPP's)
- Number of products/services delivered by the DSWG
- General impact achieved by the DSWG on INCOSE and the SE defense systems community
- Results of surveys developed and administered to its membership on the DSWG performance

9 RESOURCE REQUIREMENTS

Minimal overall financial resources are required to attain success because this is a volunteer effort. However, infrastructure support (e.g. telecoms, Microsoft LiveMeeting) provided by INCOSE are expected to make the formulation and success of the DSWG much more achievable.

Financial resources for DSWG outreach efforts (e.g. hotels accommodations, meals, and registration for IW and IS participation) normally provided by INCOSE for both Regional and International participation would be welcomed by the DSWG.

10 DURATION

This Charter will remain in effect until rescinded by the signatory.

11 SIGNATURES



Karl C. Geist ESEP-Acq

Date **30 March 2011**

1st Level of Approval

Technical Director, INCOSE

Date

2nd Level of Approval (Note this will be added by the INCOSE Technical Director when deemed appropriate.)

Chairman, INCOSE Board of Directors

Date

Revision History

<u>Date</u>	<u>Revision</u>	<u>Description</u>	<u>Author</u>
30 March 2011	1.0	Initial Draft.	Karl C. Geist

12 MEMBERSHIP

Karl C. Geist - Chair
David Jacques - Deputy Chair
Don Gelosh - Deputy-Chair

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INCOSE Defense Systems Working Group Charter

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 Raytheon
 British Aerospace Systems
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