



# INCOSE Knowledge Management Working Group

## Charter

### Scope:

Determine how technical INCOSE Knowledge Management needs are currently being met, and what the new state(s) should be. The focus of the WG is:

1. Identification of “all” areas of INCOSE’s *technical* knowledge needs, assets, and their management relevant to INCOSE membership. Administrative and organizational knowledge management needs such as membership support, accounting, or web site maintenance are excluded.
2. Identification of INCOSE technical knowledge sources and stakeholders, whether internal or external to INCOSE. Complete and maintain the KM Concept of Operations (CONOPS) document for this purpose.
3. Establish the means to effectively manage INCOSE's technical knowledge assets from creation through disposal. This will be done through establishment of KMWG projects or through coordination with existing Working Groups.

### Knowledge Management Working Group Projects:

Projects will be created to fulfill the INCOSE Knowledge Management needs. The initial projects include:

1. Project 1 - KMWG CONOPS –
  - a. TASK: COMPLETE the CONOPS partially developed over the past year by Regina Griego.
  - b. The document will be vetted with the WG team and approved by the Tech Ops sponsor, Regina Griego
2. Project 2 - SE Handbook v3.2 –

Project initiated in June 2009 to update the existing SE Handbook v 3.1 to be consistent with ISO/IEC 15288:2008. The current handbook was built on ISO/IEC 15288:2002. This update was initiated in June 2009. The schedule is to have the updated version ready for INCOSE Technical Operations review on 15 August, and the finished product ready for INCOSE BoD approval by 1 February 2010.

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### 3. Project 3 - SE Body of Knowledge

Project to be initiated in August 2009. It will involve (initially) coordinating with two efforts established and approved in other organizations:

- a. INCOSE Fellows SEBoK initiative - Joe Kasser, INCOSE Fellow, (currently living in Singapore) is leading a SEBoK project approved as a Fellows project (19 July 2009)
- b. Stevens Institute of Technology BKCASE Project – The BKCASE Project is a three-year SE BoK effort funded by US Government agencies. The start date is August 2009. Kevin Forsberg has been appointed by INCOSE Tech Ops as INCOSE representative in the project.

### 4. Project 4 - SE Competency Frameworks

Several competency frameworks exist and are in use in industry. The candidates to be considered are:

- a. INCOSE UK SE Competency Framework – Developed in 2004 and updated several times since, this robust product is available for use by INCOSE members. It has an excellent reputation.
- b. Raytheon SE Competency Model – To be evaluated by the INCOSE Fellows
- c. NDIA SE Competency Model – To be evaluated by the INCOSE Fellows

### 5. Project 5 - Searchable database of:

- a. Symposia papers: key words, abstracts, full paper, references
  - i. INCOSE IS
  - ii. INCOSE Chapter products (worldwide)
  - iii. IEEE SE papers
  - iv. AIAA SE papers
  - v. ASME SE Papers
  - vi. Other journals
- b. SE Journal articles: key words, abstracts, full paper, references
- c. INCOSE Insight articles
- d. From Project 7, key text list (build an annotated reference list; identify the number of citations made by others (i.e., exclude self references) and for the key books provide a “half-page summary”)
- e. From Project 4, Competency Frameworks
  - i. INCOSE UK Chapter



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- ii. Raytheon
  - iii. DAU
  - iv. Stevens
  - f. Other
6. Project 6 - Output from all 30 Working Groups within INCOSE – Each working group should have a defined output objective. These products should be captured by the Knowledge Management WG. The KMWG should look for conflicts with other WG or gaps in output, and work collaboratively in creating a plan for an appropriate path forward.
  7. Project 7 - Annotated Bibliography – This will be a valuable product if constructed properly. It will take a significant amount of time to do so properly. The concept is that in every book, scholarly article, or symposium article there is a list of references. By reviewing those lists of references, and excluding author self references, one can identify references that people have found most useful. For that useful subset a one-page summary could be created. This will guide INCOSE members looking for key insights into the literature.
  8. Project 8 - SE Handbook v4.0 – Develop requirements for SEHv4.0 by June 2010. Release a call for requirements by IW 2010 (January 2010). Since a hard copy version of a handbook is required to support the certification program, it is clear that a printed handbook update is required.
  9. Project 9 – Communication media – A major challenge is to assess the best media for communicating the INCOSE Knowledge assets to INCOSE members. The current vehicle is to use printed reports and electronic (Adobe) versions of these static products. Other means for a more dynamic and interactive communication, such as a Wiki, needs to be explored. All options should be considered. International needs must also be considered.
  10. Other

### **Focus:**

KMWG members will focus initially on clarifying the intent and scope of the WG activities. The broad focus will define the long range goals. The near-term activities will be developed within the context of the long-range goals. Because of external pressures, several projects (e.g., SEHv3.2) will be initiated before the long term framework and goals have been defined. External pressures may cause us to initiate some activities near term; for instance, the evaluation of the SE-BoK should be at least planned as the BKCASE project at Stevens Institute of Technology gets underway.



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It is intended that the scope and focus of this Working Group will be evolutionary in that as insights are gained the efforts may be redirected. The KMWG will include members from all INCOSE Regions to ensure international concerns are addressed.

#### **Relationship to the areas of interest of any other Working Groups, and any exclusions or boundaries:**

KMWG will build on the output from ALL of the INCOSE working groups, such as REGAL from the Requirements Management WG. The KMWG may, in fact, ask for certain work products from a WG that they might not otherwise have produced. However, only the affected WG(s) can judge the value of products and the consequent impact to their activities.

#### **How establishing the KMWG addresses specific needs of INCOSE stakeholders and stakeholders outside of INCOSE:**

The advent of the KMWG will increase and “organize” systems engineering knowledge (INCOSE Goal 1), involve participants world-wide (INCOSE Goal 2), create meaningful enhancements to professional standards (INCOSE Goal 3), highlight the implications of ignoring viability as a system attribute and a facet of SE practice, thereby encouraging improvement of the practice of SE (INCOSE Goal 5).

#### **Value basis of the Working Group:**

*(activities, projects and products that come from the Working Group and the specific value each brings to INCOSE members and other stakeholders):*

The information, products and services delivered by KMWG members will be used by SE professionals world-wide. The products will be used to support

- SE Certification
- Companies and organizations who develop internal SE handbooks and procedures
- Universities and other training organizations
- Individual INCOSE members



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#### Measures of success for the Working Group:

- Level of enthusiasm
  - The existence of goals
  - The achievement of goals
- Value of output. Inherent Worth of output plus services to help clients realize the worth. Papers, panels, tutorials, focused regional or other events
- Span of beneficiaries.
- Participant experience beyond collaboration into co-celebration, co-learning and co-evolving.

#### Working Group placement within Technical Operations:

The Deputy Director for Technical Operations, Regina Griego, will champion the KMWG

#### Officers of the Working Group *(titles; responsibilities; qualifications; terms of office; succession; causes and means for removal):*

##### A. Leadership Team

- Chair: Kevin Forsberg
- Co-chair: Garry Roedler (subject to his acceptance)
- Tech Operations Sponsor: Regina Griego
- Structure of the WG will depend upon the identification of specific projects. The initial list includes:
  - Project 1 – KMWG CONOPS: Co-chairs: Kevin Forsberg and Garry Roedler. The document will be vetted with the WG team and approved by the Tech Ops sponsor, Regina Griego
  - Project 2 – SEHv3.2: Co-chairs: Mike Krueger and Dave Walden (project initiated in June 2009, with completion targeted for January 2010)
  - Project 3 – SEBoK Scope and Plan: Kevin Forsberg and (TBD)
    - Joe Kasser, INCOSE Fellow, (currently living in Singapore) is leading a SEBoK project as part of the INCOSE Fellows initiative
    - INCOSE team lead in the Stevens Institute of Technology BKCASE Project (a SE BoK effort funded by US Government agencies): Kevin Forsberg

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- Project 4 – SE Competence Frameworks: TBD
- Project 5 – Searchable Database: TBD
- Project 6 – Output from 30 INCOSE Working Groups: TBD
- Project 7 – Annotated Bibliography: TBD
- Project 8 – SEHv4.0: Chair TBD; Candidates: Eric Aslaksen, INCOSE Fellow; Ken Kepchar, principle author of the US FAA Systems Engineering Handbook
- Project 9 – Communication Media: TBD

- Web Site Liaison: tbd
- Publications Liaison: tbd

### B. Terms of Office

- All terms of office shall be for two years commencing at the start of the IW in each even-year, subject to the rules of succession (paragraph “C”) and the rules of removal from office (paragraph ‘D’)

### C. Method of Succession

- Soliciting volunteers and electronic balloting.

### D. Causes and Means of Removal

- WG Measures of Success not being met.
- WG Member Satisfaction Survey (quarterly) indicating majority need for change.
- Majority of Members petition for new leadership.
- Tech Ops withdraws WG permission to claim affiliation with INCOSE.

**Operations of the Working Group** *(planning; coordination and integration within and outside of Technical Operations; project establishment; member recruitment and involvement; leadership identification, development and evaluation; elections (at IW10); reporting within and external to the Working Group; value basis review; basis of termination of the WG):*

The KMWG was launched at the IS09. The initial meeting was held on 19 July 2009 in Singapore with 10 people present (listed in the appendix). Another three four people expressed interest but could not attend:

Karen Bausman, INCOSE Member, USAF Institute of Tech, Dayton, Ohio, USA

Sven-Olaf Schulze, German INCOSE Chapter President, Hamburg, Germany



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Eric Aslaksen, INCOSE Fellow, Perth, Australia

Robert Halligan, INCOSE Member, Project Performance International, Australia

### **Specific initial project(s) and resulting value basis, with timetable:**

Members will refine following target list by 1 October 2009

- Clarify the bounds and focus of the KMWG
- Submit article to INSIGHT defining KMWG and inviting *working* participation
- Assess INCOSE WG interfaces
  - Guidance from Tech Ops Champion (8/09)
  - Cross-WG Briefing on KMWG scope and goals at IW10
  - Initiate survey (end of Aug 09)
  - Complete Survey Findings (6/10)
- Describe Value Proposition (9/09)
- Demonstrate viability of approach (12/09).

### **Specific initial and long-term resource needs, with cost: TBD**

- Travel expenses: Most business will be conducted by e-mail and periodic (monthly) teleconferences, with face-to-face meetings at the INCOSE IW and IS. However, occasions will arise when travel by WG members is required and INCOSE needs to reimburse the individuals involved for airfare, car, meals, and incidentals. At present (July 2009) only one such trip is envisioned:
  - KMWG Project 1 – SEHv3.2
    - Mike Krueger and Dave Walden must travel to Denver for a meeting on 27 July 2009 for a one-day working session with the editor of the SEHv3.2.
- Web presence
- Accommodation of non-members in the WG
- Monthly teleconference/web meeting for 15 participants.



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Approved

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Jean-Claude Roussel

Technical Director

\_8/23/11\_

Date