INCOSE ANNUAL OPERATING PLAN 2017

Contents

1. Introduction

This INCOSE Annual Operating Plan (AOP) describes the planned activities funded by the INCOSE Budget in 2017. The purpose of this narrative is to guide the activities through the year, and to ensure that INCOSE members understand the organisation's priorities and how it intends to achieve them.

This 2017 AOP was created in the context of INCOSE's Vision, Mission, Goals, and Strategy – described as a set of Five-Year Objectives. As an annual plan, this AOP is informed by the INCOSE Long Range Financial Planning process, which is led by the Budget and Planning Committee of the INCOSE Board of Directors.

2. INCOSE Mission, Vision, Goals, Values and Principles

These are promulgated on the INCOSE website. They are reflected in this AOP.

3. INCOSE Five Year Objectives

The five year objectives emerged in 2015 as a result of thoughtful strategy sessions before board meetings, and in cooperation with chapter and working group leadership and will guide policy and budgeting decisions for the years to follow. These objectives are demanding and may not all be achieved in a five-year timescale, but are intended to allow us to make significant progress in evolving INCOSE. Each objective is provided with its short title, the name of the current champion, and a brief description of the intended outcomes and supporting strategies.

3.1 Growth
Led by the Director for Strategic Integration

Objective: INCOSE membership doubles and embraces the healthcare, mobility, and energy business sectors.

Supported by four strategies:

- **Seek Other Professionals:** In targeted industries (healthcare, mobility, energy, national security), address professionals who do only a little systems engineering or who work with systems engineers but do no systems engineering themselves, and make them aware of the value of systems engineering; create a membership model that delivers impactful products and services to them at an attractive price.
- **Recruit More Systems Engineers:** In targeted industries, address those whose primary role is performing systems engineering, including those who are not called systems engineers, and make them aware of the full range of value that INCOSE offers them; attract them to INCOSE with customized offerings.
- **Define Value Streams:** Drive growth through higher value and impact by formalizing the primary product and service offerings of INCOSE (including professional certification, membership, publications, and events) into value streams; each value stream will have performance metrics, growth targets, incentive structures, budget, and a mix of paid and volunteer labor; revise IT, accounting, and other INCOSE internal systems to support the success of each value stream; invest resulting additional revenue to deliver much higher membership value, which will reinforce growth.
- **Integrate Objectives:** Clarify the relationships among all strategic objectives so INCOSE can explicitly leverage those relationships to achieve greater success for each individual objective and greater impact from the collective set of objectives.
- **Leverage Membership Demographics:** Focus membership expansion in geographical areas where INCOSE already has a strong presence (US, Western Europe, Australia, South Africa, Israel) through actions to encourage new individual members in Chapters and CAB companies as well as in some other countries such as China and India; also focus membership expansion in business sectors where INCOSE has a strong presence or seeks a strong presence (Aerospace, Defense, Healthcare, Energy and Transportation).

3.2 Alliances
Led by the Director for Outreach

Objective: INCOSE amplifies its ability to achieve its mission through diverse alliances.

Supported by two Strategies:

- **Chapter, et al Leverage:** Leverage synergies with allies at global, sector, regional, and chapter levels while ensuring specific benefits at each level
- **Industry Associations:** Develop and leverage alliances with industry associations representing targeted industries; seek active collaboration around the Systems Engineering Vision 2025

The primary desired outcomes from 2017 for Alliances are:

a. To focus on Outreach support to Growth, Membership, Certification and Marketing.
b. For each Outreach interface across the context boundary, to define and agree
    i. *What* is being exchanged or agreed.
    ii. *Why* it is in INCOSE's interests to set up and maintain the Alliance. It should be linked to one or more of our other Goals or Objectives; or otherwise show demonstrable "Impact". This should align with our guidelines for new potential Alliances; does the proposal fit with our direction and aspirations? Does it add value / membership / impact?
c. Exploitation of the contextual landscape based upon domains, disciplines and geography initially developed in 2016, in order to understand where there may be gaps in our Outreach activities, and to enable effective characterisation and targeting of Alliances.

See also Section 4.2 on Outreach activities and objectives for 2017 onwards.

3.3 Education
Led by the Director for Academic Matters

Objective: INCOSE curricular recommendations are widely adopted around the world, raising the quality of engineering education.

Supported by two strategies:

- **Engineering Programs**: Advocate for incentives that encourage university engineering programs to integrate systems engineering and systems thinking into their curricula; create mechanisms such as curricular materials, experience reports, and adoption workshops, to help universities implement such integration
- **GRCSE**: Advocate for GRCSE to encourage university systems engineering graduate programs to adopt GRCSE; create mechanisms, such as curricular materials, experience reports, and adoption workshops, to help universities to implement such adoption

The primary desired outcomes in 2017 related to the Education Outcome and the supporting two Strategies are:
a. The Worldwide Directory (WWD) of university systems engineering and industrial engineering programs will be transitioned to an online version. The directory will serve to increase the awareness of systems engineering programs among university administrators and faculty, potential engineering students and the public at large.
b. At least two workshops on integrating systems engineering and systems thinking into the education of all engineers will have been held, creating a broader and deeper understanding of what has been done in this area already and what can be done to accelerate such integration.
c. Awareness of INCOSE throughout ABET will be elevated through an outreach program at ABET events. Eventually, INCOSE wants to influence ABET

accreditation standards to incorporate systems-related criteria in engineering and cybersecurity

d. The Sigma Theta Mu honor society for university students with systems-related majors will expand by five to ten new universities in the US.

e. Other activities supporting the advancement of the field including research workshops and workshops supporting the development of new faculty will be undertaken.

3.4 Impactful Products
Led by the Technical Director

Objective: INCOSE produces and brokers the most impactful systems engineering information in the world, grounded in effective practice and research.

Key Definitions:

Impactful - Broad interest across the globe and across domains; and/or clearly a topic that will advance the skill of Systems Engineering; and/or information that is critical to the growth of Systems Engineering; as decided by the Impactful Product Committee chartered by the BoD

Products – Webinars, Video clips, Presentations, White Papers, Guidelines, Booklets, Books, databases, software tools and other re-useable artifacts.

Brokered Products – Not made by INCOSE directly but instead: worked on by INCOSE members, or cited by INCOSE made products, or used with permission by INCOSE, or linked on the INCOSE website, or put in the INCOSE store, put on INCOSE connect, or made available through INCOSE social media (twitter, Facebook, LinkedIn) or distributed through other INCOSE (or INCOSE partner) channels

Supported by two Strategies:

- **Bottom Up:** Harvest high impact products initiated and developed by chapters and working groups
- **Top Down:** Sponsor technical initiatives, including funding and other resources, selected by the Impactful Products Committee, as strategically important to both individual and corporate members

The key intended outcomes in 2017 for the Impactful Products initiative include:

- First Anthology publications
- Develop new non-profit publisher relationship for small publishing jobs
- Migration of products to new bookstore
- IS presentations on Connect with links to Wiley proceedings
- Marketing campaign plan to be made for emerging products, with some cadence
- Establish collection and reporting of metrics – include data from 2015 and beyond
- Create overall INCOSE Product Development Policy
- Updates of existing procedures with lean principles

Critical dependencies to achieving the five-year objective are as follows:

a. Teach INCOSE that Products come in many forms: video webinars & plenaries, standards, white papers, guidelines, & books
b. Define the life cycle process for all INCOSE product development
c. Increase public awareness of INCOSE products
d. Drive a user friendly, product-centric INCOSE website (especially bookstore)
e. Select & monitor metrics & surveys related to satisfaction, access, citations & awareness from INCOSE website, bookstore, Wiley, membership & social media

To support these goals, 2017 funding is planned for these tasks:

1) Anthology Volumes
2) Outside software support for IS Presentations & Value of SE Libraries
3) Small publishing project to develop relationship with small on-profit publisher.
4) Netherlands 2025 Vision as Example for Chapters
5) Product Marketing Campaigns

3.5 Impactful Forums
Led by the Associate Director for Events

Objective: INCOSE produces and supports the most impactful forums in the world on systems engineering practice, policy, education and research.

Supported by three strategies:

- Encourage and coordinate global forums that address targeted audiences and expand face-to-face and virtual participation; forums include those that are INCOSE-branded, as well as events held in conjunction with allied organizations.
- Explore innovative ways to bring SE knowledge to members rather than members to centrally located events (example: Nordic SE Tour model).
- Research a distributed model for forums for greater collaboration and information exchange when co-location is not always financially possible for participants. Look to sponsor/promote a new event type in 2019.

3.6 Competency
Led by the Chair of the Corporate Advisory Board

Objective: INCOSE teams with academia, government, and industry to raise systems engineering competency.

Interdependency: There are a number of activities within INCOSE that have a high degree of interdependency with this objective. They are:

- Competency Framework
- Professional Development Steering Committee
- Professional Development Portal
- Systems Engineering Certification
- Professional Training Initiative
- Technical Leadership Institute

- Mentoring
- Academic Council
- Outreach

Supported by two strategies:

- **Define and Establish:** Define and build a comprehensive capability within INCOSE and across the industry to facilitate the professional development of systems engineering competencies
- **Collaborate and Tailor:** Collaborate with targeted industry leaders and targeted industry associations to develop tailored offerings to mutually enhance industry systems engineering competency

3.7 Transformation

Led by the Technical Director (Delegated to the Assistant Director for Transformational Enablers)

Objective: INCOSE accelerates the transformation of systems engineering to a model-based discipline.

Supported by one strategy:

- **Community:** Build a broad community that promotes and advances model-based engineering and the role that model-based systems engineering plays in it
  - o Encourage and promote collaboration and model based methods within and across INCOSE
  - o Develop and support MOUs with institutions that will help move the transformation effort forward (NAFEMS, BIM, INFORMS, Others)
  - o Develop diverse stakeholder representative group to solicit needs, provide feedback and help move the transformation effort forward
  - o Engage practitioners and universities to advance model based methods

The key intended outcomes in 2017 include:

a. Follow Transformation strategic plan and execute key activities to achieve objectives.
b. Further integration of Working Groups and the production of more model products from these collaborations.
c. Develop a product that contains a collection of compelling storylines and case studies that help change agents within organizations make the case for transformation.
d. Roll out the assessment roadmap to the broader stakeholder community. Develop migration paths to share with organizations
e. Publish Transformation primer which summarizes developed products (stakeholder community, roadblocks and enablers, assessment roadmap, etc.
f. Use MBSE Initiative as an incubator to increase engagement in key areas to promote transformation

To support these goals, 2017 funding is planned to be spent on the following tasks:

- Africa Meetings
- Asia Meetings

- Desktop Publishing
- Europe Meetings
- JPL MBSE
- Promotional Materials
- Quarterly Meetings
- CIMDATA, ASSESS, NAFEMS and OMG Meetings
- Domain Specific Support (SAE, BIM, CI et al)
- INCOSE Great Lakes Regional Conf.
- NDIA SE Conference
- NO Magic World Symposium
- Systems Engineering Research Center (SERC) Meeting
- Transformation Industry/Corporate meetings

4. INCOSE Budget Lines

This section of the AOP provides a short description of the main activities in each line.

4.1 Events

The Events committee will ensure the effective and financially sound conduct of the International Workshop and International Symposium in 2017, as well as any early planning and contractual activities necessary for the same events in 2018 and 2019.

In addition, the committee will look at the range of events taking place at chapter, national, and sector levels and encourage the development of new Events that capitalize on these initiatives.

4.2 Outreach

INCOSE Outreach seeks to engage across geographic and application domain boundaries in order to contribute to the development and practice of systems engineering. This includes the identification and definition of outreach strategies and initiatives; coordination with other INCOSE entities on the execution of outreach campaigns; the identification, facilitation, and management of alliances; and the establishment and leadership of an appropriate supporting volunteer structure.

The main Outreach activities planned in 2017 are:

- Outreach to an increasingly wide range of Industries where Systems Engineering is applicable; this is managed by the Industry Outreach Board (IOB).
- Ongoing management of existing relationships, including assessment of existing MOUs to establish whether they should be refreshed or retired, exploiting the generic MOU structure developed in 2016 to support future Alliances.
- Instigation of a local chapter outreach initiative, providing seed-corn funding for local chapter leaders to engage in outreach activities with the other professional bodies and communities which are dominant players in their local geographic area.

4.2.1 Industry Outreach

Industry Outreach seeks to grow and establish a sustainable membership of INCOSE members in industries where SE is applied, even when it is described using different

language. This is achieved by directed initiatives aligned with the INCOSE strategic 5 year objectives that are carried out by dedicated resources and in collaboration with other INCOSE entities.

The approach taken is to work along four major areas of initiatives:

- Create visibility and attract new industry members via an effective value proposition;
- Empower leaders (e.g. Ambassadors) to engage industry members;
- Improve industry member value and engagement, including attractive industry IS programs;
- Enhance SE knowledge & practices among the widening industry community.

The industries in focus for 2017 are aligned with INCOSE objectives and include Automotive, Healthcare, Infrastructure, Power & Energy and (Ground) Transportation. There is also a proposal to develop a session around "Future Mobility" for IS2017, which would provide a focal point for several of the target industries.

4.2.2 Management of Strategic Relationships

INCOSE needs to formalise its Strategic Relationships in Memorandums of Understanding (MOU) and other equivalent agreements, and use a pro-active approach to identify and manage relationships based on understanding of mutual value and costs. This will include assessing current MOUs to determine whether they need to be refreshed or retired.

The newly defined generic modular MOU will be essential to act as a basis for future Alliance development.

4.3 Corporate Advisory Board

The main activities for the Corporate Advisory Board during 2017 will be:
- Development of the INCOSE Competency Framework
- A continued strong focus on determining and fulfilling the CAB's Top Needs
- CAB Evolution

4.3.1   Development of the INCOSE Competency Framework

The CAB's highest priority is to develop guidelines for how to get and how to maintain skilled Systems Engineering employees.

4.3.2   A continued strong focus on determining and fulfilling the CAB's Top Needs

Strategic insight of the CAB will allow more strategic interaction with other INCOSE entities which will result in products/services much faster than in the past. The CAB leaders will provide guidelines to the working groups in order to enable suitable products and services.

4.3.3   CAB Evolution

The CAB Management will update the CAB-101 Policy and restructure the membership and associated dues to focus to make the advisory role and Associate Member benefits clear

4.4 Sectors and Chapters

4.4.1 Americas Sector
The Director for the Americas Sector has identified the following activities and outcomes for 2017:

- Support INCOSE Growth objective through chapter membership initiative, support of struggling chapters and chapter partnerships to maintain momentum and support involvement in INCOSE by using a dashboard to help identify issues and problems encountered by the chapters
- Develop marketing and membership development initiatives to energize two activities utilizing association expert resources and proven best practices
- Support Chapters in producing better programs through speaker/session database and related resources (depends on new IT, and info from Events Committee)
- Revitalize the USA geographic Assistant Directors to provide greater information flow between INCOSE and the Chapters
- Continue to use sector budget to support chapter and regional activities and events to further the INCOSE strategic goals
- Continue to engage CIO to resolve on-going IT issues identified by Chapters

4.4.2 EMEA Sector
The EMEA Sector efforts will be focused in 2017 on the contribution to the Growth Strategic objective through support to Chapters in term of travel cost mainly to attend to global or regional events, to organize visits to emerging chapters and encourage their participation to events, to support participation to the leadership training programme and to facilitate the translation of documents (English to other language and vice-versa).

The following actions have been proposed in the AOP for the year 2017:

- Travel support to visit chapters:
  This activity will foster growth in the sector by creation of new Chapters and cooperation/synergies between big/mature and small/emerging Chapters
- Travel support to IW/IS for small or emerging Chapter leaders:
  This will help small or emerging chapters to be more visible and active with Central. This will also enable small or emerging Chapter to better participate to global events and therefore help them to grow.
- Travel support for representing INCOSE at external conference (IEEE, PMI, ...):
  This activity will clearly impact our alliance objective through direct exchanges with External Organisations (IEEE, PMI, OMG, ...)
- Support for translation of documents:
  This activity will allow a better dissemination of INCOSE products within the sector by translation from English to others languages. SME and VSE are particularly targeted but also non-English spoken countries, a huge population in EMEA sector
- Travel support to present an approved paper at a regional event (3 for EMEA sector) :
  It will encourage participation in EMEA sectors from different countries, particularly for those who are not supporting by a company or those belonging to a small/emerging Chapter
- Travel support for up to 2 student members to attend IS/IW :

To encourage student participation at INCOSE global event, and therefore encourage student membership and development of student division in various chapters

- Regional (Sector) conference support through sponsorship or travel support :
  To support organisation or regional or sector level events, by either direct sponsorship or participation to travel
- Travel Support for Leadership Program (up to 5 candidates) :
  To encourage participation of sector candidates to the Leadership Program
- Travel support for EMEA Workshop 2017 in Germany :
  To support a good level of participation from Chapters for the EMEA Workshop event

This budget will therefore enable direct support to:

- Growth strategic objective by :
  - Expanding the mature chapters :
    - Diversification of domains, new CAB/AC members
    - Encouragement of VSE
    - Local Chapters / Groups
  - Entering new chapters :
    - Tunisia,
    - Portugal
- Active participation to IW 2017
- Active participation to IS 2017 in Adelaide
- European Academic Network for SE (AFIS-EMEA Workshop outcome)
- Support EMEA participation to New WGs : Ontology, PM-SE Integration initiated at IS 2016
- Promotion of Chapter Products

EMEA will also consider a way to promote an International Workshop in 2017 similarly to what was done in 2015 with the AFIS-EMEA Workshop in Paris. The idea is to have an event open at EMEA sector level, co-sponsored and hosted by a big Chapter, GfSE in 2017, as it was the case with AFIS in 2015.

It is now anticipated to have this EMEA workshop recurring, happening every 2 years (not the year of EMEASEC) and to have a rotation within EMEA chapters in order to encourage a maximum of members to attend and cross the network.

EMEA Sector is also very enthusiastic to host the INCOSE International Workshop from 2019 or beyond with its present format and dates, looking for different potential sites in Europe with the support of our Chapter in full coordination with the Events Committee.

4.4.3 Asia-Oceania Sector

The Asia-Oceania Sector continues to grow and build on the foundation of the previous two years. Chapters are collaborating across countries and within the region, providing a richer field for all members to participate in. As such, the focus will continue to facilitate the promotion of INCOSE in the region and support to individual chapters' activities at both the local and regional level. With the success of a number of Chapter events and local regional group events in India, Singapore and China in 2016, the Sector will continue to support similar initiatives at each Chapter in 2017. This provides small but multiple contributions across sector thereby maximizing the outreach to members and non-members alike. In turn, this will support the INCOSE Growth and Competency objectives.

The big event in 2017 in the Asia-Oceania sector is IS2017, being held in Adelaide Australia. As such Asia-Oceania will be specifically targeting support and participation at the symposium.

Based on both the regional and international activities for the Sector, the AOP for Asia-Oceania will focus on the following:

- Support to local chapters in the promotion of Systems Engineering and INCOSE.
- Advice/support for people presenting an approved paper/material at a regional event.
- Support to regional conferences.
- Support to IS2017, Adelaide Australia.
- Promotion of the INCOSE Leadership program.
- Facilitation of Certification training and exam access in the sector.

Finally, in preparation for 2018 onwards, effort will be conducted to establish an events committee and build up this expertise for the future of the sector. The Asia-Oceania Systems Engineering Conference (AOSEC), formerly known as APCOSEC, will be held every 2 years and will be the primary conference event for the region. For alternate years support and promotions will be on selected events in the region, not run by INCOSE. The events committee will be instrumental in providing quality events for members and non-members alike.

4.4.4 Chapter Support
Sector directors provide periodic support to individual chapters to promote excellence in chapter operations or intervene for struggling chapters. Additional support is provided to existing and start-up chapters, such as:
- Keys to Effective Chapters
- New Chapter Coordination

4.4.5 Chapter Awards
Sector Directors sponsor various awards to promote excellence in chapter and membership activities. Budget is used to provide chapter awards for the chapter awards program, and past-president recognition pins.

4.5 Technical Operations

4.5.1 Overview of Budget
The Technical Operations 2017 budget was created by a bottom-up/top-down process. Working Groups generated their plans to meet their objectives, prioritizing them into 4 levels. The requests were reduced through an iterative approach that weighed priorities versus available budget resources. The Technical Director submitted only the top 2 priorities to the BoD. A decision was also made to re-allocate BKCASE funding to Academic Matters.

4.5.2 Analytic Enabler Working Groups
Led by Assistant Director for Analytic Enablers

Analytic Enablers are those WGs that address the SHE v4 crosscutting and Specialty Engineering activities. Also, those WGs that focus on the analytic capabilities, required for good Systems Engineering, can be found in this grouping. Examples of WGs in this grouping are: Decision Analysis, Competency and Complex Systems.

To support these goals, 2017 funding is for these tasks:

1) Product Lines WG Participation to ISO committees on portfolio management and PLE tools
2) Product Lines WG translation of PLE work products
3) Decision Analysis   WG participation in The MORS Affordability Analysis Workshop
4) Product Lines Participation to System and Software Product Line Conference
5) Product Lines Promotional material for the PLE program of activities at IS2017

4.5.3   Application Domain Working Groups
Led by Assistant Director for Application Domains

The Domain Specific Working Groups form the last grouping. These are the working groups that tailor and develop knowledge from/for the Process Enablers, Analytic Enablers and Transformational Enablers, to the domain specific needs and the application. Examples of related WGs are: Transportation, Oil & Gas, Defense Systems and Critical Infrastructure Protection & Recovery.

To support these goals, 2017 funding is planned for these tasks:

1) Automotive WG Edition of the Automotive Vision 2025 document
2) Critical Infrastructure WG EnergyTech2017 Conference Support
3) Critical Infrastructure WG Grant campaign for MBSE Initiative matching grant
4) Critical Infrastructure WG ICS Conference support (ISA, ICS)
5) Critical Infrastructure WG Preliminary: SPECIAL Request - MBSE in Energy Initiative (1)
6) Global Earth Observation System of Systems WG Attend GEO Plenary
7) Healthcare WG AAMI Summit, modelling in intensive care
8) Healthcare WG Agile SE in Healthcare Conference sponsorship
9) Healthcare WG FDA meeting on Infusion Pump Reference Model
10) Healthcare WG INCOSE invited speaker travel to strategic conferences (typically AAMI)
11) Healthcare WG IW2017 Support (registration: FDA, KP Med. Doctor)
12) Healthcare WG Outreach tools - Improving our marketing communication
13) Healthcare WG Society for Academic Emergency Medicine Conference
14) Healthcare WG Solution Sharing forum support
15) Healthcare WG Tech writer support for a value proposition/Brochure production (collaboration with Rachel Leblanc)
16) Healthcare WG Training/Education/Certification Summit
17) Infrastructure WG Development of new infrastructure-related SE Tri folds
18) Infrastructure WG NETLIPSE Collaboration Meetings
19) Infrastructure WG Reprints of Year 2015 infrastructure-related SE Tri folds
20) Power & Energy Systems WG EnergyTech2017 Conference Support
21) Power & Energy Systems WG Grant campaign for MBSE Initiative matching grant
22) Power & Energy Systems WG Preliminary: SPECIAL Request - MBSE in Energy Initiative (1)
23) Space Systems WG Conference on Systems Engineering Research
24) Space Systems WG IEEE Aerospace Conference
25) Space Systems WG No Magic World Conference
26) Space Systems WG OMG Workshop

27) Space Systems WG Small Sat Conference

4.5.4 Process Enabler Working Groups
Led by Assistant Director for Process Enablers

Process Enablers are the WGs that address the topics and processes as defined in the SE Handbook and ISO/IEC/IEEE 15288:2015. Among others, the Process Enablers consists of WGs like Architecture, Measurement, Risk Management and Requirements.

To support these goals, 2017 funding is planned for these tasks:

1) Architecture FEAPO Plenary -WG reports, product decisions
2) Architecture FEAPO Summit - topic focused event
3) Risk Management PMI-INCOSE Risk Mgmt. standards development
4) Risk Management Attend PMI Events (e.g. PMI Global Congress 2017-North America)
5) Architecture ISO TC184/SC5/WG1 - ISO 15704 revision - Berlin WG
6) Risk Management tools evaluation

4.5.5 Transformational Enabler Working Groups
Led by Assistant Director for Transformation

Transformational Enablers are leading the way to future developments of Systems Engineering. Also the WGs and initiatives that mainly focus on the 5-year objective "Transformation" topics and the Vision 2025 can be found in this group. Examples of Initiatives and WGs are: MBSE Patterns, Model-Based Conceptual Design, Process Improvement and the MBSE Initiative.

To support these goals, 2017 funding is planned for these tasks:

1) VSE Develop MBSE platform for VSE
2) VSE IT Support for transfer of website to INCOSE space
3) Systems Science Comps for ISSS members at IS per MOU
4) Systems Science Comps for ISSS members at IW per MOU
5) Systems Science IFSR workshop on Systems Literacy
6) Agile Systems and Systems Engineering INCOSE-PROJ-2014-01 (ASELCM Project) co-chair travel. 4 workshops planned with expense coverage for two co-chairs each ws
7) MBSE Initiative meetings
8) Tools Integration & Model Lifecycle Management PDES Inc. Semi-Annual SE Project WG Offsite
9) Tools Integration & Model Lifecycle Management Virtual Machine subscription fees for Collaborative Systems Engineering environment for WG
10) Systems Science WG reps to ISSS conference per MOU

4.5.6 Standards Initiative
Led by Assistant Director for Standards

The Standards Initiatives group is working to advance and harmonize systems engineering standards used worldwide. INCOSE liaises with existing standards developing organizations, contributing to the development of standards and technical reports and participating in the planning for new work items related to systems engineering standards.

To support these goals, 2017 funding is planned for participation in these standards committees & working groups:

1) ISO/IEC JTC1 SC27 - IT Security Techniques - Ken Kepchar
2) ISO/IEC JTC1 SC7 WG07 - Requirements Editor - Bill Bearden
3) ISO/IEC JTC1 SC7 WG24 – Life Cycle for Very Small Enterprise - K. Ptack
4) ISO/IEC JTC1 SC7 WG42 - Architecture - James Martin
5) Object Management Group (OMG) - Sandy Friedenthal
6) ISO/IEC JTC1 SC7 WG04 - SE Tools (Product Line) - Charles Krueger
7) ISO/IEC JTC1 SC7 WG07 - 16085 – Risk Management - Jack Stein
8) ISO/IEC JTC1 SC7 WG07 - 24748 – SE Management Editor - R. Kitterman
9) ISO/IEC JTC1 SC7 WG07 - 24748 – System Integration Ed. - A. Faisandier
10) ISO/IEC JTC1 SC7 WG20 - Certification Editor - Kevin Forsberg

4.5.7 Internal Operations
Led by Assistant Director for Internal Operations

The AD for TechOps Internal Operations has the goal to keep our business practices, processes & policies up to date and synchronized with the rest of INCOSE.

To support these goals, 2017 funding is planned for these tasks:

1) Selected graduate intern travel to attend IW to meet the stakeholders & kick-off the work
2) Intern stipend for TechOps policy requirements analysis & tech writing

4.5.8 Technical Review
Led by Associate Director for Technical Reviews

The AD for Technical Review has the goal to assure fair and tailored reviews of potential INCOSE products in order assure the expected quality levels, especially those related to the symposia proceedings.

To support these goals, 2017 funding is planned for these tasks:

1) Easychair License
2) IS Language Support

4.5.9 TechOps Development
Led by the Technical Director

Some 2017 funding has been reserved for tasks and events that will help to develop and maintain a healthy TechOps volunteer organization as well as respond to emerging opportunities.

4.6 Academic Program

4.6.1 Education
Academic Matters will continue to sponsor Academic Forum workshops outside the IW and IS, producing tangible products and influence thinking by academics and others. Academic Forums focused on education in 2017 are planned for the US and the UK. These forums will

likely be centered around the INCOSE Education Objective to bring systems thinking and systems engineering into the education of all engineers. The American Society of Engineering Education will co-sponsor some of these events. Other workshop topics such as the integration of emerging areas within a systems engineering education are also under consideration.

GRCSE, the Graduate Reference Curriculum for Systems Engineering, will be updated and a significant release published by the end of 2017. That update will incorporate at least feedback from usage and the current content of the SEBoK.

4.6.2 Academic Research

INCOSE is a co-sponsor of the Conference on Systems Engineering Research (CSER). Also, INCOSE will sponsor one or two research-oriented Academic Forums in 2017. The first of those to be held in conjunction with the CSER will focus on Future Systems Engineering Research Directions.

INCOSE may significantly expand its focus to facilitate and support the development of the theoretical foundations of Systems Engineering, an effort that will help keep INCOSE at the forefront of systems engineering research.

4.6.3 Accreditation

As a member of ABET, INCOSE supports accreditation visits and seeks to influence their direction through our membership on their Board. The Assistant Director for Accreditation leads these activities. Labor activities associated with ABET are volunteer. In 2017, a primary activity to raise INCOSE visibility within ABET will be concerted outreach at ABET events including the ABET Annual Conference. Updates to ABET criteria are being considered that will integrate greater demand for all engineering students to understand the fundamentals of systems engineering. INCOSE will encourage the adoption of those criteria changes and support their implementation at universities. In addition INCOSE is working to participate and contribute in the development of ABET program criteria for cybersecurity engineering. The Assistant Director for Accreditation will seek to raise the visibility of INCOSE among other accreditation organizations and universities as well.

4.6.4 Youth Outreach

Youth Outreach has primarily sponsored high school students participating in FIRST competitions. The Assistant Director for Youth Outreach leads these efforts. In 2017, INCOSE may step back from such sponsorships and re-evaluate how it can best provide influence and leadership in this area.

4.6.5 Academic Communications

INCOSE will seek to raise the awareness of SE in non-SE academic publications and professional societies. The Assistant Director for Academic Communications will greatly enlarge the academic community's presence on the INCOSE website and include academically-oriented articles in the INCOSE newsletters.

4.6.6 Student Divisions

Student divisions have been growing well over the past several years. The Assistant Director will work to strengthen the ties between local INCOSE chapters and student divisions that are housed at nearby universities.

4.6.7 Systems Engineering Honor Society

Sigma Theta Mu, the new Honor Society for college students in systems-related majors has started for universities in the US with the first four chapters being launched in 2016. Additional chapters are expected to be added throughout 2017.

4.6.8 Faculty Support and Development

A new initiative aimed to provide resources to new systems engineering faculty will be launched. The "New Faculty Colloquium" will be designed to provide new faculty with information to successfully navigate the challenges of an academic career. The first Colloquium will most likely be held in the UK. The event will include presentations from seasoned academics on issues such as: effective teaching, research and publication, securing grants, university and professional service, tenure, mentorship, establishing collaborations, ethics and difficult situations, and work-life balance.

4.6.9 BKCASE Initiative

This includes stewardship of the Systems Engineering Body of Knowledge (SEBoK) and Graduate Reference Curriculum for Systems Engineering (GRCSE).

4.7 Systems Engineering Certification

The INCOSE SE Certification Program draws individuals in to the organization and promotes INCOSE as the global source of knowledge about Systems Engineering. It offers three levels of recognition for Systems Engineering Professionals: Associate Systems Engineering Professional (ASEP), Certified Systems Engineering Professional (CSEP), and Expert Systems Engineering Professional (ESEP). New certification recipients at all levels are expected to participate in INCOSE activities as part of their ongoing, individual professional development.

The INCOSE SE Certification Program draws individuals in to the organization and promotes INCOSE as the global source of knowledge about Systems Engineering. It offers three levels of recognition for Systems Engineering Professionals: Associate Systems Engineering Professional (ASEP), Certified Systems Engineering Professional (CSEP), and Expert Systems Engineering Professional (ESEP). New certification recipients at all levels are expected to participate in INCOSE activities as part of their ongoing, individual professional development.

The Certification Program will support the awareness and use of the INCOSE Systems Engineering Handbook 4th Edition by offering the Certification Knowledge Exam based on this product. Hundreds of SE Handbooks will continue to be sold each year to individuals and organizations preparing for the knowledge exam.

The knowledge exam based on INCOSE SE Handbook 4th Edition replaced the handbook based on SEHv3.2 for all ASEP and CSEP candidates in 2016, except those in China, Germany, and Korea, where the transition will occur once SEHv4 is translated and published. 2016 was also notable for the full operational status of the INCOSE UK certification process and the agreement to create a similar program in Australia. Other global support of INCOSE's Certification Program came from China, where individual memberships in INCOSE are increasing as part of a push for certification there.

The INCOSE SE Certification Program draws individuals in to the organization and promotes INCOSE as the global source of knowledge about Systems Engineering. It offers three levels

of recognition for Systems Engineering Professionals: Associate Systems Engineering Professional (ASEP), Certified Systems Engineering Professional (CSEP), and Expert Systems Engineering Professional (ESEP).

4.8 Information Technology

The goal of the IT function is to help INCOSE be recognized as the definitive source for the best information about systems engineering, its practice and practitioners by making that information available and accessible, both to members and prospective members. Maintaining the requisite impactful nature of this great resource demands immediacy and currency that is challenging to achieve and even more difficult to sustain.

The facilities initially installed for the "new" INCOSE IT are now largely stable, and the focus has moved towards effectiveness improvement.

During the 2017 AOP, the web site will be upgraded to offer a more attractive member and non-member experience, with the help and cooperation of the content providers. The collaboration space in Connect will also be upgrade with a newer template, more interactive features and continuing organization of data to maximize the value of this resource for all members.

Tools and resources are now available to the chapters and accessible by the membership as required. Knowledge about and understanding of these capabilities needs to be at the fingertips of any member, and reachable through effective and comprehensive online facilities. More work is being done to improve the information, help and background expertise available to move forward.

The IT Team continues working with the three primary vendors to improve the new platform for web site, membership administration and collaboration, addressing issues and adding improved and new functionality. The member management continues to present challenges, and will be fully addressed at the expiration of the current contract in 2018.

During the current AOP, a new web-based INCOSE Store will be put in place, enabling population with current and new products, and offering wider access to members and non-members – at the appropriate fee as required.

Hosting and vendor services have exhibited some price increases, and we anticipate more as we continue to use these resources, and build out the structure and content. I continue to monitor these closely.

Once more – this is a journey, and will take time to reach a level to satisfy a majority of users and stakeholders.

The INCOSE IT strategic plan will now be developed and presented this year, and will maximize the accessibility and usability of this resource, ensure applicability to the ever-evolving needs of the consumers of this material, and the essential growth over the duration of our next strategic period. It is anticipated that assistant director roles will be defined and filled during the period.

A tactical, annually renewed plan to manage the IT infrastructure, implementation and resources complements the longer term strategy with achievable initiatives that can be realized by central and chapter teams - together and independently, and contributes to the effectiveness of the overall strategy

4.9 Marketing and Communications
In 2017, MarCom will focus on building consistent messaging and branding for INCOSE Central. Continuation of branding efforts with the website, print, and e-materials will accelerate in FY17 because a contractor resource has been identified. Expenses to increase awareness and exposure include:
- Booth for IS2017
- Video production for YouTube channel
- Content writing for website, brochures, and other marketing materials
- Non-INCOSE tradeshows
- Posting press releases on paid PR sites to increase visibility
- Build standard templates for use by membership that provide consistent messaging and branding

4.10 Central Admin
INCOSE Administration Office provides salaried staff to support the execution of day-to-day operations of the organization: General Administration and Member Services for both Individual and CAB members as well as and Chapters.

Admin supports the Board of Directors, Technical Operations, Corporate Advisory Board, Academic Matters, Certification, Publications and various committees: Events, Nominations & Elections, Budgeting and Planning, Ways & Means, Honors and Awards, Fellows, IOB, Technical Review, and IT.

Admin will play a critical role in the implementation process of the strategic objectives and are the paid staff assisting with the communication, coordination, etc. through support of:

- Scheduled Meetings/Major Events
- INCOSE Online Store
- Virtual Meeting / Conference Capability
- Marketing
- Certification Process Support
- IT Infrastructure Support
- Membership Database Maintenance
- Working Group Support
- Chapter, Individual and Corporate Member Support

4.11 Publications Office
The Publications Office is led by the Associate Director for Publications, supported by a staff Publications Office manager. Some of the primary areas of responsibility for the Publications Office includes the following:

INCOSE Publications:

- INCOSE Systems Engineering Handbook and its translations

- INSIGHT, The INCOSE Practitioner's Magazine
- Systems Engineering, the journal of INCOSE
- Proceedings from the INCOSE International Symposium and selected regional conferences
- Journal of Enterprise Transformation

While the Publications Office has a nominal relationship with the Journal of Enterprise Transformation, the relationship with Wiley is primary all other publications. INCOSE derives revenue through its contract with Wiley including several advertising programs within the Wiley framework: System Engineering, INSIGHT, and direct e-mail (known as eBlasts). The Publications Office monitors and reports on revenue derived through publications.

Goals for 2017:

- Explore producing translations of the SE Handbook into desired languages; work with chapters, INCOSE Central and Wiley to achieve maximum exposure for the SE Handbook.
- Continue to develop relationship with Wiley to maximize exposure and sales of INCOSE existing and new products.
- Explore relationships with other publishers/distributors for other INCOSE products, as appropriate, or other areas of publication that could provide benefit for INCOSE.
- Work with other INCOSE functions to define/update publication related guidelines.

Appendix A: INCOSE Memorandums of Understanding

INCOSE's Memorandums of Understanding (MOU) are managed by the Director for Outreach, and are held on file in Connect at the following link:

https://connect.incose.org/Organization/BOD/Pages/home.aspx?RootFolder=%2FOrganizati on%2FBOD%2FINCOSE%20Shared%20Documents%2FMemoranda%20of%20Agreement s%20%28MOA%20and%20MOUs%29&FolderCTID=0x0120008803DF521D690A44A94800 173BDA76DF&View={82EB27E9-2C56-4DE7-98AB-F77A9DAB8192}

Attached is a summary list of the current active MOUs,

Summary list of
active MOUs for 2017

Appendix B: INCOSE Support Contracts

All contracts referred to in this AOP are maintained in the INCOSE Admin office and are held in the INCOSE Connect Contracts folder under the Board of Directors. Please contact Christine Kowalski: christine.kowalski@incose.org for more information.

B.1 Contracts reporting directly to the President-Elect

B.1.1 Administrative Support
- Contractor: Universal Management Services

The contract with UMS provides administrative support, member services and IT support. Services delivered by UMS. This contract also allows for additional tasks to be performed at agreed rates.

B.1.2 Certification Program Manager
- Contractor: V1 Decisions

A contract has been put in place with V1 Decisions to provide a Certification Program Manager to support the INCOSE Certification program.

B.2 Contracts reporting to the President-Elect in conjunction with the Publications Office

B.2.1 INSIGHT Practitioners Magazine Chief Editor
- Contractor: William Miller dba WDM Systems

INCOSE has a two-year contract with WDM Systems for editorial support for the INSIGHT Practitioners Magazine. Contract renewed in 2017.

B.2.2 INSIGHT Practitioners Magazine Sub Editor
- Contractor: Lisa Hoverman

INCOSE has a contract with Lisa Hoverman for editorial support for the INSIGHT Practitioner's Magazine

B.2.3 INCOSE Typesetter / Graphics
- Contractor: Kerry Quinlan / Chuck Eng

Contract is for typesetting and graphics as needed for INCOSE publications. Also coordinates with MARCOM Director.

B.2.4 Systems Engineering, the Journal of INCOSE
- Contractor: Wiley & Sons Inc

A contract was let in 1998 for the publication of the SE Journal and amended in 2002. A renegotiation was managed in 2012 to a much lower contract value and expanded to provide a royalty sharing arrangement which now includes SE Journal, INSIGHT and INCOSE Online Proceedings Library in 2014.

B.2.5 Journal of Enterprise Transformation
- Contractor: Taylor & Francis

A contract was let in 2009 with Taylor & Francis for the publication of the Journal of Enterprise Transformation. This is a joint publication with the Institute of Industrial Engineers.

B.3 Contracts reporting to the Treasurer

B.3.1 International Workshop 2017
- Contractor: KMD Partners Events Management

INCOSE contracts annually for administrative support for the annual International Workshop.

B.3.2 International Symposium 2017
- Contractor 1: KMD Partners Events Management

Each year, INCOSE awards contracts for the support of the annual International Symposium. The support tasks have been carefully identified and allocated.

B.3.3 International Symposium 2018 Site Selection
- Contractor: KMD Partners Events Management

Each year, INCOSE awards contracts for the site selection of the future annual International Workshops. The contract includes the identification and assessment of candidate host sites for the workshop.

B.3.4 International Workshop 2019 Site Selection
- Contractor: KMD Partners Events Management

Each year, INCOSE awards contracts for the site selection of the future annual International Workshops. The contract includes the identification and assessment of candidate host sites for the workshop.

B.4 Contracts reporting to the Certification Program Manager

B.4.1 Certification Testing Services
- Contractor: Prometric

Contract is to provide certification testing at sites around the world.

B.5 Contracts reporting to the CIO

B.5.1 IT Support
- Contractor: CGTS (server support)

B.5.2 Web Hosting Services
- Contractor: CGTS for SharePoint License and Server

B.5.3 Email Services
- Contractor: IceWarp/Mail Channels

B.5.4 Web Site Development/Platforms
- Contractor: Vanguard (Sitefinity)

B.5.5 SharePoint Services (INCOSE Store and Connect)
- Contractor: Invenio

B.5.6 Association Membership System
- Contractor: MemberSuite

B.6 Contracts reporting to the INCOSE Admin

B.6.1 GlobalMeet Service
- Contractor: PGi (Teamings)

GlobalMeet and Webex accounts are assigned by Admin upon request by various INCOSE group leaders (chapters, working groups, committees, board). The GlobalMeet Platform allows for 125 users on the webinar and 300 on audio. Webex Event account is for webinar use and allows125 webex attendees. Webex small meetings is for small groups up to 25.

B.6.2 Election Support Contract
- Contractor: Votenet – Three year billing freeze starting 2015

INCOSE has a 3 year rate freeze starting in 2015 and ending 2017.

B.6.3 Insurance
- Contractor: DMA Insurance: Directors & Officers Liability Insurance – Old Republic
- Contractor: DMA Insurance: Commercial Liability Insurance – Liberty Mutual/Ohio Security Insurance Co
- Contractor: DMA Insurance: Professional Liability Policy – Evanston Insurance Co

- Contractor: DMA Insurance: Foreign Liability Policy – AIG WorldSource/Insurance Company of the State of PA

All policies are contract year: March 2016 to March 2017 / New contract year March 2017 to March 2018.