

# INCOSE ANNUAL OPERATING PLAN 2016

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### 1. Introduction

This INCOSE Annual Operating Plan (AOP) describes the planned activities funded by the INCOSE International Budget in 2016. 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 2016 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 Sector Directors, current Champion is Sector Director for Europe, Middle East and Africa (EMEA)

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

Supported by two strategies:

- **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
- **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

Among the 13 different levers for Growth which were identified during the Strategy workshop at IS 2015, the top 3 priorities for the Growth objective during 2016 (agreed the BoD at Q4 2015) are:

1. To expand membership in areas where we have 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
2. To become more professional at recruitment and member retention
3. To expand membership in Aerospace & Defence, Healthcare, Energy and Transportation application domains

### 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 2016 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 lead to a set of guidelines for new potential Alliances; does the proposal *align* with our direction and aspirations? Does it add value / membership / impact?
- c. Definition of a contextual landscape based upon domains, disciplines and geography, 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 2016 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 2016 related to the Education Outcome and the supporting two Strategies are:

- a. The second edition of the worldwide directory of university systems engineering and industrial engineering programs will be published and broadly disseminated to university deans of engineering and other academic leaders to increase their awareness of systems engineering programs.
- b. At least three 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.
- d. A new honor society for university students with systems-related majors will be operational at five to ten universities in the US.
- e. A new release of GRCSE will be published to reflect feedback from usage updates to the Systems Engineering Body of Knowledge, and other sources.

### 3.4 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.

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 Board of Directors as strategically important to both individual and corporate members

The key intended outcomes in 2016 include:

- a. Revised tutorial based on Systems Engineering Handbook 4<sup>th</sup> Edition
- b. Revised SE Competency Guidelines in collaboration with the UK Chapter
- c. Support release of BKCASE versions
- d. Harmonize INCOSE position on tailor-able and scalable systems standards
- e. Make INCOSE technical products and technical data more accessible to members.

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

- a. Revised Technical Operations technical review procedure responsive to differentiation of different types of products and data, and a more inclusive constituent review process.
- b. Operationalize the Knowledge Management Working Group to more fully perform the knowledge management function for technical products and data.

### 3.5 Forums

Led by the Assistant 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).
- Benchmark how other technical associations fund their global events.

### 3.6 Competency

Led by the Chair of the Corporate Advisory Board

**Objective:** INCOSE teams with industry to raise systems engineering competency across their supply chains.

Supported by one strategy:

- **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

**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
  - Develop and support MOUs with institutions that will help move the transformation effort forward (NAFEMS, BIM, INFORMS, Others)
  - Develop diverse stakeholder representative group to solicit needs, provide feedback and help move the transformation effort forward

The key intended outcomes in 2016 include:

- a. Develop succinct strategic plan that outlines Transformation key activities and status to plan
- 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. Begin the development of a self-assessment framework from which migration paths can be developed for transformation within organizations
- e. Publish the list of common roadblocks and enablers obtained through working sessions capture the voice of the customer – use these to drive transformation efforts

## 4. INCOSE Budget Lines

INCOSE's main activities are funded through its 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 2016, as well as any early planning and contractual activities necessary for the same events in 2017 and 2018.

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 2016 are:

- Outreach to an increasingly wide range of Industries where Systems Engineering is applicable; this is managed by the Industry Outreach Board (IOB).
- Management of existing relationships, including assessment of existing MOUs to establish whether they should be refreshed or retired, and development of a generic MOU structure to support future Alliances.

#### 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 2016 are aligned with INCOSE objectives and include Automotive, Healthcare, Infrastructure, Power & Energy and (Ground) Transportation.

#### **4.2.2 Management of Strategic Relationships**

INCOSE needs to formalise its Strategic Relationships in Memorandums of Understanding (MOU) and other equivalent agreements, and create a new 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 definition of a generic modular MOU, potentially underpinned by legal advice, 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 2016 are:

- Development of an industry SE competency framework
- A continued strong focus on the CAB's top five needs
- Focused outreach activities
- Networking and information sharing among CAB members and other INCOSE members
- Updating the existing CAB membership value proposition

##### **4.3.1 Development of an industry SE 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 Strong focus on the CAB's Top 5 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 Target new possible CAB members**

The CAB Management will plan for targeted outreach activities in order reach new possible CAB members e.g. invite special companies and organization to participate in a CAB function during IS/IW.

##### **4.3.4 Networking and information sharing**

CAB members are motivated to learn how to utilize INCOSE's products within their own organization as well as to be involved in the development of good Systems Engineers, therefore, the CAB organizes one dinner at IS for its members as well as being a sponsor to INCOSE Foundation's scholarship activity during the IW.

##### **4.3.5 Updated CAB value proposition**

The CAB has a growth target that requires an updated CAB value proposition information package. The information package shall also be available and used by local chapters and other outreach activities. It will be accessible as a download from INCOSE's homepage and may be delivered as a brochure at the IS/IW.

## 4.4 Sectors and Chapters

### 4.4.1 Americas Sector

The Director for the Americas Sector has identified the following activities and outcomes for 2016:

- 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 above 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)
- Add Assistant Directors for Latin America and Canada to aid in working with those countries outside the United States of America
- Revitalize the USA geographic Assistant Directors to provide greater information flow between INCOSE and the Chapters
- Use budget to support activities associated with 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 2016 on the contribution to the Growth Strategic objective through support to Chapters and in particular looking at support for the translation of documents.

The following actions have been proposed to EMEA Chapter Leaders during the EMEA meeting at IW 2016 for the year 2016:

- Growth :
  - Expanding the mature Chapters :
    - Diversification of domains, new CAB members
    - Role of VSE
    - Local Chapters / Groups
  - Entering new Chapters :
    - Tunisia,
    - Portugal
- Active participation in IW 2016
- Active participation in IS 2016 in Edinburgh
- European Academic Network for SE (AFIS-EMEA Workshop outcome)
- New WGs : Ontology, PLM-SE – Target IS 2016
- Promotion of Chapter Products (PLE Handbook for example but other should follow)



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 would be to have an event open at EMEA sector level, co-sponsored and hosted by a big Chapter as it was the case with AFIS. The best would be to have a rotation within EMEA chapters in order to encourage a maximum of members to attend and cross the network. It would be envisaged to organise the EMEA International Workshop every 2 years and not the year of the EMEA International Conference.

The EMEA Sector is also very enthusiastic about exploring how it might host the INCOSE International Workshop from 2019 or beyond with its present format and dates, looking for Southern locations of Europe (Spain or Italy) as expected by the event committee. Close discussion with Event Committee will occur to continue this conversation.

#### **4.4.3 Asia-Oceania Sector**

Asia-Oceania Sector will focus on facilitating the promotion of INCOSE in the region and support to individual chapters' activities at both the local and regional level. In turn, this will support the INCOSE Growth and Competency objectives. Activities include the conduct of regular meetings, the execution of mutually agreed action plans and common activities, the sharing and promotion of regional events, and co-support from the more established chapters to the newer/smaller chapters.

Based on this support the Sector will be specifically targeting the following:

- Advice/support for people presenting an approved paper/material at a regional event.
- Support to regional conferences.
- Promotion of the INCOSE Leadership program.
- Support to local chapters in the promotion of Systems Engineering and INCOSE.
- Facilitation of the SE Handbook Translations (Chinese, Japanese and Korean).
- Promotion and coordination of INCOSE Academic Forum, Bangalore Nov 2016.
- Promotion and coordination of APCOSEC 2016, Bangalore Nov 2016.
- Facilitation of Certification training and exam access in the sector.

Specific attention will be given to the Indian Chapter who will be hosting 2 INCOSE events – the Academic Forum in Nov, followed by APCOSEC 2016 in the same week. This is the first time INCOSE has organised these events in this chapter and as such it will be used as a driver to promote Growth and Competency.

Such activities are intended to facilitate a stronger base for growth in the sector, will strengthen regional alliances, and better support SE in the education and academia arena, particularly those seeking CSEP status. Once this base is established the Asia-Oceania sector will broaden its focus to other events and support, aligning initially with the promotion of growth, alliances, education and forums in the sector.

#### **4.4.4 Chapter Support**

Sector directors provide periodic support to individual chapters to promote excellence in chapter operations or intervene for struggling chapters. Chapter Marketing and Promotion provides brochures, publications, and give-aways that can be used by chapters for INCOSE promotional activities.

To better support this Chapter Marketing and Promotion, we strongly encourage Chapters to designate a Point of Contact within their respective Chapters and whenever possible someone responsible for Marketing and Communications to liaise directly with INCOSE's Central Marketing & Communications team. A list of the existing points of contact is given in the Sector Quarterly report

One key aspect is support to Chapters for translation of documents.

- Translation from English to another language
- Translation from National Language to English

#### **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.

#### **4.4.6 Sectors, Chapter and Member Shared Services (CAMSS)**

The purpose of CAMSS is to provide a collaborative environment where chapters can share with each other. Meetings are held at the International Workshop (IW) and the International Symposium (IS). As well as providing routine support, CAMSS undertakes to increase value to chapters and members, such as the Keys to Effective Chapters, Speaker's Bureau, Sector configuration of IT services, Membership Retention Initiative, Chapter Calendars, and provision of Promotion Items.

### **4.5 Technical Operations**

#### **4.5.1 Technical Infrastructure**

Internal Technical Operations activities are broken into:

- Special initiatives for Internal Technical Operations
- Support of Technical Events
- Performance of Technical Reviews
- Conduct of Technical Information Management and Control
- Support of Technical Communications and development and maintenance of Technical Policies, Procedures and Plans.

The Associate Director for Technical Reviews oversees the reviews of documents produced by each Working Group (WG) to create Technical Data and INCOSE Products, IS papers, and other publications as needed.

The Assistant Director for Technical Events oversees the quality level of the technical program of the consecutive INCOSE International Symposia (IS). This role also is the Project Leader for the annual International Workshop (IW).

The Assistant Director for Working Group integration oversees the alignment of Tech Ops' Working Group activities where needed. This role also links the Chapter Working Group activities and products to the Tech Ops activities.

#### 4.5.2 Standards Liaison

Standards development will continue, but under a defined schema for planning longer range efforts aligned with the Systems Engineering Vision 2025, interoperating with Working Groups and other parts of INCOSE, and ensuring maximum visibility of plans and results to INCOSE stakeholders. This is in support of ISO, IEEE, and OMG standards. In 2016, we intend to align participation in standards with working group activities and set up a more strategic approach to participation in standards activities as we continue to liaise with standards development bodies.

- ISO/IEC JTC1 SC7 WG04 - SE Tools (Product Line
- ISO/IEC JTC1 SC07 WG07 - System of Systems study group.
- ISO/IEC JTC1 SC7 WG07 - 16085 -- Risk Management
- ISO/IEC JTC1 SC7 WG07 - 24748 -- System Integration Editor
- ISO/IEC JTC1 SC7 WG07 - 24748 -- SE Management Editor.
- ISO/IEC JTC1 SC7 WG07 - Requirements Editor.
- ISO/IEC JTC1 SC7 WG10 - Process Assessment
- ISO/IEC JTC1 SC7 WG20 - Certification Editor
- ISO/IEC JTC1 SC7 WG24 - LifeCycle for Very Small Enterprise
- ISO/IEC JTC1 SC7 WG42 - Architecture
- Object Management Group (OMG) Support for modelling standards including SysML, UPDM, SysML/AP233 mapping and other model-based systems engineering. Provide inputs to INCOSE MBSE Initiative. Also, chair of the OMG systems engineering domain special interest group (SE DSIG).
- ISO/IEC JTC1 SC27 – IT Security Techniques.
- ISO TC184 SC5 Object Process Methodology (OPM).
- PMI Practice Standard for Requirements

#### 4.5.3 Technical Projects

##### 4.5.3.1 *BKCASE Initiative*

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

##### 4.5.3.2 *MBSE Initiative*

MBSE Initiative continues to develop and implement the roadmap for MBSE in direct support of the SE Vision. The MBSE Initiative continues to conduct workshops and LiveMeeting webinars.

The Assistant Director for Transformation of Systems Engineering to a Model Based Discipline oversees the wide variety of activities, throughout the INCOSE organization and including relevant Memoranda of Understanding with third parties, which affect the transformation.

##### 4.5.3.3 *PMI / INCOSE Initiative*

Expand beyond the closed PMI/INCOSE MOU to establish a global project management / systems engineering community of practice. Both INCOSE and PMI are working on a PM-SE book, which is expected to be published later this year.

#### **4.5.3.4 Government Domain**

- Technical participation in GEOSS Architecture & Data Committee meetings. INCOSE now has the leadership responsibility for architecture definition in this area, led by GEOSS Working Group Chair Participation in the annual GEOSS Plenary session by the INCOSE GEOSS representative.
- Power and Energy Systems Working Group support to EnergyTech conference.
- Transportation Systems Working Group continues to outreach to companies in the ground transportation industry as well as governmental institutions.
- Space Systems Working Group support for MBSE Space Systems Challenge Project.
- Critical Infrastructure, Anti-Terror, Defence Systems Working groups all sustain their on-going activities

#### **4.5.3.5 Industry Domain**

- The Automotive Working Group reports on the state of SE practice in the industry; entity-relation diagram with respect to other INCOSE entities; world map of automotive initiatives. They also support the automotive version of the Vision 2025, an activity which is lead by Ford Corp.
- The Healthcare Working Group objectives include PCAST Response, MBSE Challenge, Case Study Library, SE Value, Technical Education, and Safety Cases.
- Very Small and Micro-sized Enterprises (VSME) continues to support Systems Engineering and Management guides for very small entities, as well as the definition of deployment packages.
- Infrastructure Working Group objectives include MBSE application to infrastructure (connect the MBSE and the Building Information Modelling (BIM) [http://en.wikipedia.org/wiki/Building\\_information\\_modeling](http://en.wikipedia.org/wiki/Building_information_modeling) development teams), Guide to the Application of Systems Engineering in Large Infrastructure Projects, NETLPISE collaboration, develop a meta model for infrastructure, and bring construction companies into INCOSE.
- Product Lines Working objective includes evolving Product Lines in the Enterprises.

#### **4.5.3.6 Processes Enablers**

The Systems Security Engineering Working Group objectives include Support for Systems Security Engineering and An Integrated Approach to Building Trustworthy Resilient Systems; NIST Special Publication 800-160

#### **4.5.3.7 Technology Enablers**

- Participation in PDES and OSLC to further tools interoperability.

#### **4.5.3.8 Knowledge Enablers**

- The Agile Systems and Systems Engineering Working Group is in its second year of the Agile SE Life Cycle Model (ASELCM) Fundamentals Project.
- The Systems Science Working Group (SSWG) will continue collaboration with the International Society for the Systems Sciences (ISSS), conducting joint workshops and participation in each organization's annual events.
- Architecture Working Group continued collaboration with FEAPO.

#### **4.5.3.9 Academia Liaison**

- Technical Operations liaison to the Academic Council

#### **4.5.3.10 Technical Director Development Activities**

- NDIA Coordination
- Contingency Development
- 2016 IW Expenses
- Identification of available and initiation the new impactful products. This activity also focuses on improving the accessibility of currently available products and information.

#### **4.5.4 Webinar Series**

INCOSE will continue its internal webinar series in 2016. First offered in October 2008, the webinar series brings internationally recognized speakers to our members' desktops in synchronous and recorded format. Each month, a different speaker delivers a 60-minute presentation. Each presentation is recorded for later viewing.

### **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 2016 are planned for the US, UK, and India. These forums will likely all 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 and the SERC will co-sponsor some of these events.

GRCSE, the Graduate Reference Curriculum for Systems Engineering, will be updated and a significant release published by the end of 2016. 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 and a co-sponsor of a US National Science Foundation workshop on the Theoretical Foundations of Systems Engineering. Also, INCOSE will sponsor a research-oriented Academic Forum in the US in 2016 on a topic to be selected. 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 2016, the primary activity to raise INCOSE visibility within ABET will be concerted outreach at ABET events including the ABET Annual Conference and also by hosting the ABET Executive Director for meetings and presentations at the INCOSE IS.

The Assistant Director for Accreditation will seek to raise the visibility of INCOSE among other ABET-affiliated organizations and universities in order to increase requests for

INCOSE to participate in certification and to grow our influence within ABET. In 2016, the primary activity to raise INCOSE visibility will be concerted outreach at ABET events.

#### **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 2016, 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 Academic Council Leadership**

Sigma Theta Mu, the new honor society for college students in systems-related majors has started for universities in the US with the first three chapters being announced at the 2016 IW. Additional chapters are expected to be added throughout 2016.

### **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 certificants 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 4<sup>th</sup> 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 4<sup>th</sup> Edition, new forms for use by certification applicants and by the internal review teams, and a new website through which SEP applicants will be able to upload application materials and track the status of the certification approval process were introduced in 2015. New strategic agreements with industrial organizations and INCOSE chapters supporting certification are being developed in 2016.

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).

The Certification Program will support the awareness and use of the INCOSE Systems Engineering Handbook 4<sup>th</sup> Edition by transitioning the Certification Knowledge Exam to be 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 4<sup>th</sup> Edition, new forms for use by certification applicants and by the internal review teams, and a new website through which SEP applicants will be able to upload application materials and track the status of the certification approval process were introduced. New strategic agreements with industrial organizations supporting certification are being developed in 2016.

#### 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. 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 essential web site and related packages are now largely operating as required, and so the focus of the IT team is moving on to the Custodial role, continuing to review the major content, overall presentation and detailed user interaction, with a view to continual upgrade of capabilities and a more attractive member *and non-member* experience, with the help and cooperation of the content providers.

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 this year 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.

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 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.

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**

As of January 2016, INCOSE has redefined this area from Communications to Marketing and Communications (MARCOM). This revised scope now provides enhanced support for many of the other operational areas and all of the Five Year Objectives. This approach will allow greater flexibility to delivering promotional material and content to the wider audience while continuing to support and expand communications within INCOSE.

The MARCOM priorities for 2016 are:

- Develop a community of communications leaders within INCOSE to share best practices and identify areas of need for chapters, working groups, the CAB, and other stakeholders.
- Support the Five Year Objectives by developing marketing and communications assets.
- Determining a brand strategy for INCOSE with supporting marketing assets.
- Progress existing value proposition efforts.
- Working on further developing operations and governance for marketing and communications activities.

#### **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 Assistant Director for Publications, supported by a staff Publications Office manager. The Publications Office is responsible for the following INCOSE Publications:

- INSIGHT, The INCOSE Practitioner's Magazine
- Systems Engineering, the journal of INCOSE
- Journal of Enterprise Transformation
- INCOSE Systems Engineering Handbook and its translations

The Publications Office is also responsible for providing professional advice on intellectual property and copyright to INCOSE members.

INCOSE derives revenue through its contract with Wiley including several advertising programs within the Wiley framework: SE Journal, INSIGHT and eBlasts on a two/month basis. The Publications Office monitors the eBlast program; and, reports on revenue as it relates to income projections in the overall contract.

## **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=%2FOrganization%2FBOD%2FINCOSE%20Shared%20Documents%2FMemoranda%20of%20Agreements%20%28MOA%20and%20MOUs%29&FolderCTID=0x0120008803DF521D690A44A94800173BDA76DF&View={82EB27E9-2C56-4DE7-98AB-F77A9DAB8192}>

## **Appendix B: INCOSE Support Contracts**

All contracts referred to in this AOP are maintained in the INCOSE Admin office and will be held in the new INCOSE Connect. Please contact Christine Kowalski: [christine.kowalski@incose.org](mailto:christine.kowalski@incose.org) for more information.

### **4.12 Administrative Support**

- Contractor: Universal Management Services
- Contract Value: \$378,000 for 2016
- Contract Dates: Contract in place for 2016.
- Contract Manager: Treasurer
- 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.

### **4.13 International Workshop 2016**

- Contractor: KMD Partners Events
- Contract Value: \$42,000 in IW16 budget
- Contract Dates: December 2015 until finalisation of IW finances: approx. April 2016
- Contract Manager: Treasurer
- INCOSE contracts annually for administrative support for the annual International Workshop.

### **4.14 International Symposium 2016**

- Contractor 1: KMD Partners Events
- Contract Value: \$126,000 in IS16 budget
- Contract Dates: December 2015 until finalisation of IS finances: approx. October 2016
- Contract Manager: Treasurer

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

### **4.15 International Symposium 2017**

- Contractor: TBD
- Contract Value:
- Contract Dates:
- Contract Manager: Treasurer

### **4.16 International Symposium 2018**

- Contractor: TBD
- Contract Value:
- Contract Dates:
- Contract Manager:

### **4.17 INSIGHT Practitioners Magazine Chief Editor**

- Contractor: William Miller dba WDM Systems
- Contract Value: \$25,000 in INCOSE budget for 2016
- Current Dates: 1 January 2016 – 31 December 2017

- Contract Manager: President-Elect/Publications Office

INCOSE has a contract with WDM Systems for editorial support for the new INSIGHT Practitioners Magazine

#### **4.18 INSIGHT Practitioners Magazine Sub Editor**

- Contractor: Lisa Hoverman
- Contract Value: \$17,000 in INCOSE budget for 2016
- Current Dates: 1 January 2016 – December 2017
- Contract Manager: President-Elect/Publications Office

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

#### **4.19 INCOSE Typesetter / Graphics**

- Contractor: Chuck Eng
- Contract Value: \$45/hr
- Current Dates: as needed
- Contract Manager: President-Elect/Publications Office

#### **4.20 Certification Program Manager**

- Contractor: V1 Decisions
- Contract Value: \$144,000 in INCOSE budget for 2016
- Contract Dates: July 2015 through June 2017
- Contract Manager: President- Elect

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

#### **4.21 Certification Testing Services**

- Contractor: Prometric
- Contract Value: \$3,300 for 2016
- Contract Dates: Master Services Agreement dated 1 April 2010, for three years with automatic one year renewals thereafter. Statement of Work (SOW) dated 1 April 2010. Contract Manager: Certification Program Manager

#### **4.22 IT Support**

- Contractor: CGTS (server support)
- Contract Value: \$130 - \$160 Hourly rates
- Contract Dates: Began 11/1/2009 and continues
- Contract Manager: CIO supported by INCOSE Admin
- Estimated Use of Support: \$10,000

#### **4.23 GlobalMeet Service**

- Contractor: PGi (Teamings)
- Contract Value: \$12,000 (Licenses: 15 GlobalMeet accounts @ \$30ea / 5 Webex accounts @\$52/ea and 1 Webex Event account @\$278) - Does not include phone usage (currently \$4,500/mo.)

- Contract Dates: April 2013 – Renews automatically / [Webex: July 2015](#)
- Contract Manager: INCOSE Admin supported by CIO

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

#### **4.24 Web Hosting Services**

- Contractor: CGTS for SharePoint License and Server
- Contract Value: \$73,500 includes hosting for old sites until discontinued at a cost of \$1700/mo
- Contract Dates: 8/1/2014 –
- Contract Manager: INCOSE Admin supported by CIO

#### **4.25 Email Services**

- Contractor: IceWarp/Mail Channels
- Contract Value: \$50/mo IceWarp License renewal is about \$1,800
- Contract Dates: Tentative
- Contract Manager: INCOSE Admin supported by CIO

#### **4.26 Web Site Development/Platforms**

- Contractor: Vanguard (Sitefinity)
- Contract Value: \$10,000
- Contract Dates: May 2014 – May 2017
- Contract Manager: INCOSE Admin supported by CIO

#### **4.27 Contractor: Invenio (SharePoint)**

- Contract Value: \$150/hr
- Contract Dates: May 2014 –
- Contract Manager: INCOSE Admin supported by CIO

#### **4.28 Contractor: MemberSuite (AMS)**

- Contract Value: \$27,000
- Contract Dates: May 2014 – May 2017 (contract ends 2018)
- Contract Manager: INCOSE Admin supported by CIO

#### **4.29 Systems Engineering, the Journal of INCOSE**

- Contractor: Wiley & Sons Inc
- Contract Value: \$25,000 in INCOSE budget for 2015
- Contract Dates: February 2013
- Contract Manager: President-Elect/Publications Office

A contract was let on 1998 for the publication of the SE Journal. This was most recently amended 2002 to include a revised cost structure and renegotiated in 2012 with renegotiations to expand to include INCOSE Online Proceedings Library in 2014.

#### **4.30 Journal of Enterprise Transformation**

- Contractor: Taylor & Francis
- Contract Value: \$0 in INCOSE budget for 2015
- Contract Dates: October 2009 – September 2017
- Contract Manager: President-Elect /Publications Office

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

#### **4.31 Election Support Contract**

- Contractor: Votenet – Three year billing freeze starting 2015
- Contract Value: \$4,000
- Contract Dates: September 2015 -
- Contract Manager: INCOSE Admin supported by Chair, Nominations & Elections

INCOSE has a 3 year rate freeze starting in 2015.

#### **4.32 Insurance**

- Contractor: Tyrisco: Directors & Officers Liability Insurance - Arch
- Contract Value: \$3,700
- Contractor: Tyrisco: Professional Liability Policy – Evanston Insurance Co.
- Contract Value: \$10,700 in 2015 (covers Certification increase due to blanket coverage of contractors)
- Contractor: Tyrisco: Foreign Liability Policy - AIG
- Contract Value: \$2,650 in 2015

All policies are contract year: March 2015 to March 2016 / New contract year March 2016 to March 2017.