



# **Annual Operating Plan**

**Fiscal Year 2011**

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# 1 INTRODUCTION

The 2011 Annual Operating Plan (AOP) spans the period January – December 2011. The INCOSE AOP describes the significant planned activities and associated monetary resources for the forthcoming fiscal year, including recurring annual expenses. It also sets out the planned non-recurring investments in special projects. In Appendix A, a list of active contracts is provided.

## 2 ANNUAL OPERATING PLAN 2011

### 2.1 INCOSE Operations

INCOSE Operations covers those areas which are part of the on-going delivery of member benefits within the organisation. In most cases these are underpinned by support contracts, as detailed in Appendix A. INCOSE Operations covers the following categories: Major Events, Regular Publications, Certification, and General Support for Chapters, Marketing and New Operations.

#### 2.1.1 Scheduled Meetings/Major Events [BLI: 9.0]

*Responsible Director: Director for Strategy*

2.1.1.1 Currently planned events include:

- International Workshop 2011 in Phoenix, AZ
- Spring Board Meeting, 2Q 2011 in Los Angeles, CA - to align with the CSER Conference.
- International Symposium, Denver, CO
- Autumn Board Meeting, 4Q 2011 Italy

2.1.1.2 To support our geographic and domain diversification goals and better serve our member base, INCOSE intends to evolve to four annual conferences at the regional / international level to increase interaction and engagement opportunities: Americas SE Conference (ASEC), Asia-Pacific Conference on Systems Engineering (APCOSE), European SE Conference (EuSEC), and Conference on Systems Engineering Research (CSER). By commencing the planning effort now, INCOSE can begin to deploy an expanded event series in 2011.

This effort requires an expansion to the scope of the Events Committee to coordinate venue and theme identification across events to support the INCOSE strategy. Support contracts will also be expanded, taking on more logistical responsibilities and enabling volunteer teams to focus on the intellectual content of events. This has

been initiated and will be worked further. As a result, the intention will be to select the location of events to meet the strategic objectives rather than the availability of local volunteers. This has already been the basis for IW11 and IS11.

Required investment budget for IW 2011: \$50,000

Estimated Profit for IS 2011: \$75,000

### 2.1.2 Regular Publications

#### 2.1.2.1 INSIGHT [BLI 3.2]

*Responsible Director – Director for Communications*

INSIGHT remains the primary communications channel and newsletter of the INCOSE organization. It is now offered in electronic media as a member benefit; members may still subscribe to receive a paper copy at an additional cost.

The four theme issues for 2011 are listed below.

Issue	Submission Date	Theme	Theme Editor
1st Qtr 2011	15 Feb 2011	Knowledge Management for Systems Engineering	Regina Griego, Art Pyster, and Kevin Forsberg
2nd Qtr 2011	15 May 2011	Systems of Systems and Self-Organizing Security	Rick Dove, Ken Kepchar, and Jennifer Bayuk
3rd Qtr 2011	15 Aug 2011	2011 International Symposium Coverage: Denver, Colorado, USA	Doug Hamelin
4th Qtr 2011	15 Oct 2011	AFIS Doctoral Symposium: Systems Engineering Research Challenges in French Universities	Herve Panetto

Unfortunately, since the delivery of INSIGHT has changed, based on statistics, fewer than 15-25% of membership read a given issue online. Goals in 2011 are to integrate our delivery mechanisms with other community activities as one of the methods to return INSIGHT to one of INCOSE’s most popular and valued products. In addition, it has been agreed that the annual symposium-in-review issue will entail extra hardcopy printing to permit distribution of 10 copies to the chapters of the local project team assisting in the planning.

FY2011 Deliverables: the goal is to produce four editions of the INSIGHT magazine in softcopy and limited hardcopy production during 2011. The editor’s contract continues until March 2012.

Required budget for 2011: \$86,000

### **2.1.2.2 Journal of Systems Engineering [BLI 11.3]**

*Responsible – Director for Communications*

Wiley-Blackwell produces the Journal of INCOSE entitled, *Systems Engineering*. The Journal is offered in electronic format, but members can subscribe to a hardcopy for a nominal charge of \$45 per year / regular or student member or \$95 per year / senior or developing country member. Wiley-Blackwell has stated that they are more aggressively marketing the Journal and including it in library packages when compared to the previous efforts of Wiley before the union with Blackwell. In addition, they have offered free advertising to our CAB members beginning in 2010 as a way to increase the amount and quality of advertising in the journal, and to entice additional paid advertisers. The online access and author submission process have matured in the past two years as have demographics reporting from Wiley.

FY2011 Deliverables: \$100,000 has been provided for publication of the INCOSE Journal per Wiley contract.

### **2.1.2.3 Journal of Enterprise Transformation [BLI TBD]**

INCOSE is launching a new peer-reviewed publication called the Journal of Enterprise Transformation (JET) as part of a partnership with the Institute of Industrial Engineers. ([www.iienet.org](http://www.iienet.org)) Published quarterly beginning in 2010, JET is designed to provide a forum for original articles on trends, new findings, and on-going research related to enterprise transformation. JET's focus is on interdisciplinary research addressing enterprise transformation challenges within and across different domains such as aerospace, health care, financial services, government and public-private partnerships. JET promotes a holistic approach to advancing the understanding of enterprise transformation by addressing challenges from technical, behavioural, and social perspectives.

An agreement has been entered with IIE and Taylor-Frances wherein the latter absorbs all expenses of the publication of the journal. A nominal expense line has been entered to account for unanticipated minor expenses throughout the year.

Required budget for 2011: \$1,000 has been budgeted to support publication of the Journal of Enterprise Transformation.

### **2.1.3 Certification [BLI: 21.0]**

*Responsible Director – President Elect*

**2.1.3.1** INCOSE has made a significant long-term investment in this initiative over the past 6 years. The expectation is that the certification effort will transition from an investment to a source of additional revenue within the next two years.

**2.1.3.2** In 2008 the INCOSE Certification Office updated the core Certified Systems Engineering Professional (CSEP) to the INCOSE Systems Engineering Handbook Version 3.1, added a new Associate Systems Engineering Professional (ASEP) for junior/emerging systems engineers, and added the first CSEP extension for the US Department of Defense (DoD) acquisition environment (CSEP-Acq). In 2010, the INCOSE Certification Office introduced the Expert Systems Engineering Professional (ESEP) for senior systems engineers, updated the Core certification exam to the INCOSE Systems Engineering Handbook Version 3.2 and began the process of updating the Acq extension exam to the latest version of the Defense Acquisition Guidebook Chapter 4. In 2011, the certification program will be enhanced as follows:

- Update and release the Acq extension exam and investigate aligning it with the United States Department of Defense (US DoD) career fields
- Work with the Object Management Group (OMG) to establish mutually beneficial ways to leverage the OMG Systems Modelling Language (SysML) certifications and INCOSE's certifications.
- Work to establish a cooperative agreement with the International Systems Safety Society to make INCOSE certification attractive to their membership.

*(Traces to Strategic Action(s): V3.1, V3.2)*

**2.1.3.3** The Certification Office will seek to establish several new agreements (agreements allow corporations or agencies to commit to a specific number of certifications for their members at a reduced cost) across industry, academia, government, countries/regions, and with other professional societies. In 2008, the INCOSE Certification Office established its first strategic agreement, and then went on to create nine more. Building upon this success, several additional strategic agreements will be established in 2011. None of these agreements will diminish the quality and reputation of the certification program. In fact, it will help increase adoption among employers of systems engineers worldwide.

*(Traces to Strategic Action(s): V3.1, V3.15, V3.2)*

**2.1.3.4** In anticipation of certification program growth, the Certification Office will continue to improve the certification application and renewal processes. Administrative and volunteer staffing considerations will be used to shape decisions for automation of the certificate application process.

*(Traces to Strategic Action(s): V3.7)*

**2.1.3.5** The Certification Office and INCOSE Marketing team will continue to refine the framework for marketing the certification program. One of the key responsibilities of the Program Manager includes oversight of marketing, including reaching out to other market segments.

*(Traces to Strategic Action(s): V3.4)*

**2.1.3.6** Efforts were initiated in 2008 through 2010 to better engage the current certified professionals. The goal is to build a better sense of community among the professionals to ensure that the value of certification is recognized, and to proactively take actions that should increase the chances of certification renewal. Engaged professionals should be encouraged to enhance the external reputation of the certification programs thus enabling further growth. The previous initiatives will be expanded in 2011 to better engage our community of certified professionals. Efforts will also be made to increase the size and diversity of the pool of Certification Application Reviewers (CARs) to meet the needs of the certification program.

*(Traces to Strategic Action(s): V3.6, V3.7)*

**2.1.3.7** A major goal of the certification program is to be ISO 17024 compliant by 2011, with a run time of two years before ISO accreditation in 2013. This is supported by Standards liaison work on the ISO 17024 itself.

*(Traces to Strategic Action(s): V3.2)*

**2.1.3.8** Significant FY10 deliverables:

- Updated Acq Exam Available – IW11
- New Strategic Agreements In Place – Goal of at least two (2) new MOAs at each of the Spring and Fall Board Meetings

Required budget for 2011: \$220,000 estimated revenue and \$290,354 of expenses (implies a budget investment of \$70,354).

Of this budget, \$8,000 will be used for PM travel.

Of this budget, \$19,000 will be used for travel and fees associated with conferences with a certification booth presence.

## **2.2 Strategic Initiatives**

The INCOSE Board of Directors (BoD) has launched a number of strategic initiatives aimed at developing the breadth of membership and the influence of the organisation as a whole. Voting director positions have been established to focus on both international and commercial outreach, and specific initiatives in these areas are included in sections below. Outreach to Young People is included in Academic Matters. The strategic initiatives are underpinned by the SE Vision, BKCASE, and Certification.

Whilst they contain specific actions, these strategic initiatives are not projects in their own right. They act as a framework for the development of INCOSE's operations, its infrastructure and the new member benefits addressed in section 2.2 and 2.3.

### **2.2.1 International Outreach [BLI 16.47]**

*Responsible Director: Director for International Growth*

- 2.2.1.1** Asia and the Far East represent an area of the world where systems engineering is practiced extensively but where INCOSE has yet to develop a significant presence. There are many challenges to be faced in this effort, amongst which is developing a better understanding of the cultural differences among our nations.
- 2.2.1.2** Close collaborations have been established, especially with the Taiwan, Japan, and Korea Chapters. Japan hosted the Asia-Pacific Conference on Systems Engineering 2008, and Singapore hosted it in 2009, Taiwan hosted APCOSE in 2010 and Korea will be hosting it in 2011. Japan will host APCOSE 2012, hopefully, together with IS12. An agreement with KCOSE was signed in September 2008, effective 2009. A second agreement on CSEP will be negotiated soon. Agreement with China's CAST is also in its final stage. India formed a chapter in 2010.
- 2.2.1.3** INCOSE is targeting growth in two other areas of the world. A group focussed on expansion into Latin America and the Caribbean has been active for some time. Their efforts are bearing fruit; membership and SE activity are gradually increasing. There are many new activities in Latin America such as the appointment of an Associate Director for International Growth based in Brazil. International Growth is sponsoring events and conferences in that region.
- 2.2.1.4** FY11 Deliverables. \$10,000 has been provided for:
- A visit to China - \$3500
  - A visit to Korea - \$3500
  - Sponsorship and other expenses to help establish Brazil chapter - \$2,000
  - Cost of translating INCOSE promotional materials - \$1,000

## 2.2.2 Commercial Outreach [BLI 16.57]

*Responsible Director: Director for Commercial Outreach*

**2.2.2.1** The Commercial Steering Board (CSB) is supporting the Board to define the new INCOSE commercial outreach strategy, and will work with Technical Operations to support CSB strategy. In addition, the CSB will pursue a range of other initiatives:

- A higher priority will be to expand the CSB with members from best practice commercial companies. The key action is to encourage high level visits (board members) to selected industries.
- Supporting activities which will lead to the publication of the shared values in systems engineering, product and process development across different application areas to illustrate the commercial industry best practices.
- Supporting activities which will allow involvement with the local chapters. (Experience has shown that it appears to be very difficult to have commercial companies (because INCOSE is new to them) directly involved at INCOSE international level (IS, IW and working groups). Some success at the more local level was made when the CSB established contacts with the organisation committee of EUSEC, the European symposium on SE (symposium was held in Stockholm, May 2010). CSB works together with the EUSEC people to work out plans to have commercial industry (Nokia, Ericsson, Volvo, Scania, etc) on board).
- Taking initiatives and supporting CAB initiatives for regional forums and/or to assist in the organization of a technical event with local chapters.
- To assist Tech Ops in coordinating WG's with 'commercial intentions'.
- To develop an approach to better incorporate SME's in INCOSE
- Initiate a full day CSB meeting at IW2011:
  - Meet with several CAB members out of DoD and Aerospace industry and invited commercial industry representatives
  - Meet with the commercial industry representatives only to discuss the 'needs' and the 'values from INCOSE to commercial industry' and the 'values from commercial industry to INCOSE' ;
- Create initiatives towards the Financial World and oil industry. The approach will be to have an INCOSE presence (booth at the exhibition and the delivery of a key note speech) at international events of these industries. Assistance will be sought from the local chapters to give the required local manpower to man the booth, and support will be sought from INCOSE Central. Budget is to be made available for the costs involved and the travel expenses for BOARD/CSB representation at these events. In addition, the CSB will approach selected companies in these domains through Chapter Presidents in order to facilitate further expansion in these 'unknown' domains.
- Proposing and providing a commercial track and panel at IS11. Besides the more technical panels, strategic panels should be organized. One idea is to organize a track for beginning practitioners from commercial industry.

- To assist in the further development of the NYC Transit 'model' to have it applied in other big cities

**2.2.2.2** Required budget for 2011: \$5,000

### **2.2.3 Outreach to Young People [BLI: 16.56]**

*Responsible Director: Director for Academic Matters*

The following initiatives, which are aimed at outreach to young people, are focused in two areas, ages 5-18 (K-12) and at the university level from Bachelors – PhD. The first category is intended to foster and grow an interest in systems awareness and all engineering disciplines at a much earlier age. The second is intended to promote systems engineering by enabling the affiliation of young/new engineers with INCOSE.

#### **2.2.3.1** Age 5-18 (K-12) Outreach [BLI 16.56]

At IW 2011, hold an INCOSE Engineering Education for Ages 5-18 (K-12) asset review workshop to evaluate the quality of existing classroom materials within INCOSE. At the same workshop we will review the draft INCOSE Strategy and Implementation Plan for Age 5-18 (K-12) and University Level Youth Outreach. The expenses are estimated at a total of \$2000.

In 2011, the Youth Outreach Ambassador plans to attend the AASE Conference and participate on the K-12 Education Panel to raise the awareness of INCOSE's activities in this arena and potentially identify other organizations with whom we may want to establish partnerships. The associated costs are estimated at a total of \$1725.

In 2011 we plan to continue INCOSE's involvement in the International Science and Engineering Fair. The associated tasks include finalizing the judging criteria with the Chapters, Fellows, and other interested members; coordinating the identification/selection of INCOSE judges with the Fellows and local Chapters; and coordinating on-site judging, logistics and travel for the INCOSE judges.

The winner of the science fair will receive \$1000 to help defray the cost of attending the 2011 INCOSE Symposium. The expenses are estimated at a total of \$5800.

At IS 2011, we will host an Engineering Education for Ages 5-18 (K-12) Panel Following the user needs panel, a Workshop will be held focused at reviewing and sharing classroom curricula and educational artefacts. The Workshop will include invited attendees from INCOSE and external organizations currently engaged in this type of outreach. The expenses are estimated at a total of \$14,300.

**2.2.3.2** SEANET - The funds will come from two sources: registration fees collected by INCOSE-LA through the CSER registration process and INCOSE Central through its contribution to SEANET via the Director for Academic Matters.

**2.2.3.3** University level (Bachelors – PhD) outreach [BLI 16.10]

For IW 2011 update the university program listing database and department head contact information. Updates will be completed no later than IW 2011. Expenses are estimated at \$3000.

For 2011, prepare and mail invitations to the 2011 Academic Forum to all universities listed in the university program listing database and to select military educators. Expenses are estimated at \$500.

For IS 2011, research and prepare a reference curriculum for bachelors level systems engineering programs. This activity will be based on similar efforts expended in prior years for PhD and Masters level degree programs. The reference curricula will be available for review at IS 2011. Expenses are estimated at \$6,000.

The doctoral student network plans to hold its ninth CSER at Stevens Institute in Los Angeles, CA 14 – 16 April 2011. The network has been steadily growing and building a support structure for doctoral students worldwide. This activity provides continued support to SEANET workshops. Expenses are estimated at \$3000.

## **2.2.4 Systems Engineering Vision [BLI: 16.12]**

*Responsible Director– Director for Strategy*

**2.2.4.1** The Systems Engineering Vision (SEV) is a collaborative forecast of the expected trends and implications of systems engineering theory and practice. Having produced the document, a major effort is foreseen to further develop it and to engage with other organizations and institutions having an interest in SE to develop a broad consensus on the future of our discipline and agree and implement collective action to bring this about.

**2.2.4.2** The SE Vision will remain a key planning document for INCOSE and a key document of consensus in a future federated approach.

Required budget for 2011: No Budget Allocated.

## **2.2.5 Strategic Liaisons [BLI 12.2]**

*Responsible Director – Technical Operations*

### **2.2.5.1 National Defense Industrial Association.**

INCOSE established reciprocal Liaison with the National Defense Industrial Association (NDIA) Systems Engineering Division (SED) in 2000. The SED was formed to address the systems engineering technical and management issues related to the DoD acquisition process and improving delivered system performance. Together INCOSE and the SED promote the widespread use of systems engineering within the DoD to facilitate the development of affordable and supportable weapon systems. Via this liaison, INCOSE provides technical review, comments and information to support the efforts of the Director, Systems & Software Engineering, Office of the Under Secretary of Defense for Acquisition, Technology & Logistics. Eric Honour will be taking over this Liaison responsibility from Ken Ptack who has provided this Liaison since 2003 and INCOSE has supported travel and participation expenses.

**2.2.5.2** Additional liaison activities will take place on strategic projects with: Global Earth Observation System of Systems, Institute of Industrial Engineers, and the U.S. DoD Office of the Secretary of Defense.

FY 2011 fiscal commitment is managed as part of the Technical Operations Projects

## **2.3 Enhancing Member Benefits**

This major area of expenditure within the 2011 AOP is aimed at the development of new member benefits, either through the provision of new infrastructure or the development of new technical assets.

### **2.3.1 General Support for Chapters [BLI 17.5]**

*Responsible Director: Member Board Chair*

**2.3.1.1** The Member Board coordinates and delivers a range of support for Chapters, both in their administration and in support of events and technical activities. Examples are the provision of the Speakers Bureau (needs rejuvenation in 2011), subsidising the travel arrangements for event speakers, chapter Past-President pins, and chapter banner replacement. New in 2009, Chapter charter grants (ref: CHP-100) are also covered in this line item; it is assumed that 3 new chapters will be chartered in 2011.

Required budget for 2011: \$7,500

### **2.3.2 Member Recruiting [BLI 17.1]**

*Responsible Director: Member Board Chair*

**2.3.2.1** Identify, procure and publicize availability of INCOSE promotional items to chapters to aid in member recruiting.

**2.3.2.2** FY11 Proposed Deliverables: “Introduction to INCOSE” and “Value of Systems Engineering” presentations to help Chapters articulate the value of SE as a technology and INCOSE as a professional organization.

Required budget for 2011: \$5,000

### **2.3.3 Member Board Travel [BLI 17.51]**

*Responsible Director: Member Board Chair*

**2.3.3.1** The Member Board (MB) requires funding to be available for:

- Funding INCOSE MB to visit chapters, start-ups (e.g. Canada start-up) to help them organize, work through problems, present INCOSE pitch, value of SE, etc. This is a crucial part of maintaining chapter health and in growing global membership.
- Funding INCOSE MB presenting at external events (e.g. IEEE conferences) [case-by-case]. This is a key part of outreach to perspective INCOSE members and communicating value of INCOSE in partnership with other organizations.
- Funding INCOSE Admin personnel attending INCOSE events in support of the MB, with INCOSE BOARD approval.
- In case of hardship, funding chapter representatives to attend IS to accept special awards (e.g. president’s award, most improved award, etc.). This is a crucial cushion in hardship cases, particularly with our global presence.
- Funding MB dinners at the IW and IS

**2.3.3.2** The Member Board requires funding for Regional Meeting Support:

Member Board Regional Representatives sponsor regional meetings for the purpose of providing speaker presentations to chapters, and training chapter leaders to aid chapter operations. Costs beyond virtual meeting conference capabilities are covered in this line item

Required budget for 2011: \$10,000

### **2.3.4 Virtual Meeting / Conference Capability [BLI 1.12]**

*Responsible Director: Member Board Chair*

- 2.3.4.1** To encourage and enable geographically large Chapters to include members who are not able to travel to a centralized meeting/event site, and to facilitate collaboration between members and between chapters on various activities a virtual meeting capability was required, and an early rollout in 2009 proved to be successful and desired.
- 2.3.4.2** The objective of this activity is to continue making the selected technology available, monitor its use by chapters and working groups and refine the requirements for understanding this tool suite. Other INCOSE groups such as Tech Ops/working groups and CAB may also take advantage of this capability.
- 2.3.4.3** One hundred licenses are distributed amongst the leadership. FY11 Deliverables: Funding for a full-year to continue making this capability available (Premier Global Services); licenses for 2011, with the remainder of the budget allocated to voice conferencing; large seminars, coordinated by the CAB, will continue to be provided.

Required budget for 2011: \$32,000

### **2.3.5 Webinar Series [BLI 1.12.4]**

*Responsible Director: Corporate Advisory Board Chair*

- 2.3.5.1** INCOSE will continue its internal webinar series in 2011. 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 will deliver a 60 minute presentation. Each presentation will also be recorded for later viewing. The webinar program was extended in 2009 to include an opportunity for candidates for INCOSE President-Elect to present their Position Statements and respond to questions. This service will be provided in future election years.
- 2.3.5.2** FY11 Deliverables: It is assumed that the costs for the access to Live Meeting (\$8,000) are covered in item 2.3.4 above (Virtual Meeting / Conference Capability [BLI 1.12]) and that only an additional \$8,000 will be required to support any incidental expenses incurred in providing the twelve webinars planned for 2011.

Required budget for 2011: \$8,000

### **2.3.6 INCOSE Marketing [BLI: 3.4 – Promotional materials] BLI: 16.7 – Marketing Director]**

*Responsible Director: President-elect*

A Marketing Director has been hired for FY 2011. His major priorities are to market the Certification program and IS 2011, with a goal to increase awareness internally and externally. The MD will also produce the FY 2010 Annual Report under the supervision of INCOSE Admin.

Promotional materials are developed under this budget.

Required budget for 2011: \$9,000/promotional materials; \$30,000/marketing director

### **2.3.7 Technical Infrastructure [BLI 7.6]**

*Responsible Director: Technical Director*

- 2.3.7.1** The Internal Technical Operations activities are broken into special initiatives for Internal Technical Operations overall, 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 Internal Technical Operations initiatives include development of sales mechanisms for INCOSE papers in conjunction with the Communications Committee. Support of Technical Events is supporting the International Symposia, and monitoring INCOSE Chapter and Regional Conferences to ensure consistency and release ability of their products. The Associate Director for Technical Reviews oversees the reviews of new/updated ISO standards, IS papers, and other publications as needed. Internal Operations oversees the technical management and control by improving and maintaining the flow of INCOSE Technical Products and Data to members and ensuring that all INCOSE Technical Intellectual Property is properly released and controlled. Technical Communications is focusing on improving the flow of information internal to the Technical Infrastructure and between the Technical Infrastructure and the rest of INCOSE to enable members to gain improved insight into technical capabilities INCOSE can offer them. The Technical Policies, Procedures and Plans is focusing on standardizing and improving the INCOSE Organizational Standard Processes so that they are clearer, more complete and more useful to members.
- 2.3.7.2** Several internal structures operate cooperatively. The Technical Policies, Procedures and Plans area is responsible for maintaining consistency of procedures governing operation of Technical Events, Technical Reviews, Information Management and Control and Technical Communications. However, each of these areas is responsible for implementing the standard procedures and providing feedback to the Technical Policies, Procedures and Plans. Technical Communications works closely with the

Communications Committee and INCOSE Admin to ensure consistency, support to booths at INCOSE IS and conferences, and improve communications with members. While Technical Reviews oversees reviews of IS papers, the reviews and paper database are implemented by Technical Events. Technical Reviews oversees reviews of standards and compiles and releases the results, however, the Standards Initiative implements the standards reviews.

Required budget for 2011: \$6,000 (approx. \$4,000 will be travel costs)

### **2.3.8 Standards Liaison [BLI 7.5]**

*Responsible Director: Technical Operations*

**2.3.8.1** Standards development will continue, but under a defined schema for planning longer range efforts aligned with the Systems Engineering Vision, 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 standards for ISO, OMG, and AIAA, with the majority being ISO standards. In 2011 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.

- Standards WG-ISO/IEC JTC1 SC7 SWG5 – SC7 Architecture and Harmonization.
- Standards WG-ISO/IEC JTC1 SC7 WG7 – 24748 (Guide for Life Cycle Management) Editor. ISO/IEC 15288, 24748, the editorial team is providing input to version 2.
- Standards WG-ISO/IEC SC7 WG04 – SE Tools and tool environment. - This represents the effort from the INCOSE tools working group.
- Standards WG-ISO SC7 WG20 - Certification. This includes developing initial SE criteria in 2011. Preparation for preparing standard for SE Certification. Also preparing the INCOSE SE Handbook for ISO Tech Report.
- Standards WG-ISO SC7 WG24 – Life Cycles for Very Small Enterprises. Provides INCOSE exposure to smaller international companies and inserting SE processes into SW development. Serve as project editor.
- Standards WG-ISO/IEC SC7 WG42 - Architecture. This includes participation in developing IEEE 1471 and ISO/IEC 42010. This work was supported by the Architecture Workshop.
- Standards WG - Object Management Group (OMG) Support for modeling 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).
- Standards WG-ISO TC184 SC5 WG1 - Enterprise Architecture. These include architecture modeling standards and Object Process Methodology

- ISO/IEC SC7 WG7 - Requirements Editor.
- ISO/IEC SC7 WG2 System Documents. These are in support of standards for SYS/SW documents.
- National Defense Industries Association (NDIA) for Systems Engineering Effectiveness

Required budget for 2011: \$81,000 (all travel costs)

### **2.3.9 Technical Projects [BLI 7.7]**

*Responsible Director: Technical Director*

**2.3.9.1** There are a number of projects assigned to the Assistant Directors of the related domains which include:

#### ***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 Larry McGovern.
- Participation in the annual GEOSS Plenary session by the INCOSE GEOSS representative
- Transportation Systems Working Group continues to outreach to companies in the ground transportation industry. They are planning to attend events and represent INCOSE
- Power and Energy Systems Working Group continue to outreach to companies and government agencies in the power and energy industries. They are planning to attend events and represent INCOSE.

Required budget for this domain in 2011: \$15,000

#### ***Industry Domain:***

- Net-centric Operations as an initiative to support another area of Vision 2020 is being planned. The Technical Operations is working on developing a viable concept. Initially led out of the Net-centric Operations Working Group could follow a path similar to that of the MBSE initiative.
- The Biomedical Working Group continues to outreach to companies in the medical industry. They are planning to attend events and represent INCOSE.
- An extension of REGAL is planned for Very Small and Micro-sized Enterprises (VSME). It is being worked with the VSME working group. REGAL also continues to be expanded to more areas of Systems Engineering.

Required budget for this domain in 2011: \$14,000

***Processes Enablers:***

- The Human Systems Integration Working Group (HSIWG) is developing information products to facilitate better understanding of human system element representation in systems engineering activities and contributing to products of many of the other working groups. They are assisting from a review perspective as well as providing HSI specific input.
- The Lean SE working group developed a product for use in organizations that use Lean processes. They will continue their work in developing products for the use in these organizations.
- The In-Service Systems Working Group is working towards a report which will include guidance on performing SE of in-service systems as well as recommendations on how additional guidance on performing SE on in-service systems should be integrated with existing SE guidance.
- The Systems Security Engineering Working Group is developing pathfinder architectural patterns of self-organizing security concepts under the belief that these will illuminate direction and form a necessary foundation for next generation system security strategies. The objective is to catalyze self-sustaining broader community activities in systems engineering and security research and engineering

Required budget for this domain in 2011: \$6,000

***Technology Enablers:***

This budget is allocated to continued maintenance of the Tools Database. This includes a new project that is working on configuration management tools for model-management.

Required budget for this domain in 2011: \$4,000

***Knowledge Enablers:***

- The Architecture Working Group (AWG) will continue developing their website and the architecture content of the SE BOK. The AWG is collaborating on architecture standards with ISO and with the IEEE for the Systems of Systems Conference. The AWG drives the Model-Driven Architecture (MDA) and supports the Tools WG within the MBSE initiative. The AWG also collaborates with external organizations on architecture processes and methods and is driving internationalization of architecture processes and methods.
- The Complex Systems Working Group (CxSWG) conducts (almost) monthly webinars to advance the knowledge base and cataloging matrices of complex systems approaches.

- The Intelligent Enterprises Working Group (IEWG) will continue work with the Knowledge Management, Complex Systems and Architecture Working Groups to derive cross-cutting attributes of Intelligent Enterprises.
- The Knowledge Management Working Group (KMWG) is executing their development plan of 9 focus areas complementing the BKCASE initiative.
- The Resilient Systems Working Group (RSWG) continues work on the Resilience Guidebook and contributing as a member to The Infrastructure Security Partnership (TISP).
- The Systems Science Work 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.
- The modeling effort to support the ISO standards harmonization effort has completed the ISO/IEC 15288 model. Next steps are to model the ISO/IEC 12207 software standard and then assess the harmonization with 15288.

Required budget for this domain in 2011: \$500

***MBSE Initiative:***

MBSE Initiative continues to develop and implement the roadmap for MBSE in direct support of the SE Vision. Initiative now has an organizational structure based on increasing the knowledge base using activity leads for key areas related to MBSE and challenge teams that apply the knowledge. The MBSE Initiative continues to conduct workshops and LiveMeeting webinars.

Required budget for this initiative in 2011: \$2,000

Required budget for Tech Ops Projects in 2011: \$41,500 (approx. \$22,000 will be travel costs)

### **2.3.10 Research & Education [BLI 7.8]**

*Responsible Director: Academic Matters*

**2.3.10.1** There are two primary efforts in this area, the first is the continued support and training for ABET, including ABET fees, training, and travel expenses. The second and new area is the support of the BKCASE project being led by the Systems Engineering Research Center (SERC). The BKCASE project will develop two primary deliverables: a taxonomy for SE Knowledge and a Recommended Graduate Curriculum for SE. The taxonomy will be a product that will be used by the new Knowledge Management working group to begin to properly manage information within INCOSE. The BKCASE effort will primarily pay for travel for three representatives and is \$18,000.

Required budget for 2011: \$30,000

### **2.3.11 IT Re-Architecting [BLI: 16.4]**

*Responsible Director: Director for Communications*

This budget is allocated to expenses for maintaining the servers and software that support the communications infrastructure of the INCOSE organization, and for copying or printing services to produce INCOSE hardcopy publications, such as the SE Handbook, or metrics guidelines. At this time, the budget supports the monthly and periodic payments to supporting vendors, including communications-related activities from INCOSE Admin. In 2010 a major transition to significantly improved operating conditions was completed. This update and professional maintenance of the facilities will continue in 2011 under existing contracts. This budget item also includes the iPub database which will be updated and expanded to include more regional conference proceedings.

Required budget for 2011: \$70,000

Travel for Connect training and INCOSE Admin staff database testing activities may be up to \$5,000 in 2011.

### **2.3.12 New Operations**

Planning will be undertaken during 2011 for two new areas of INCOSE Operations: Web-based Product Sales, Registered Educational Providers.

#### **2.3.12.1 Web-based Product Sales**

*Responsible Director: Technical Director*

**2.3.12.2** The Technical Operations will work with the Director of Communications, President-elect, INCOSE Admin and the Board in establishing a business model and software application to allow web-based product sales.

#### **2.3.12.3 Registered Learning Providers**

*Responsible Director: President Elect*

During 2010, INCOSE established a team to define a registration and endorsement program for systems engineering education providers and products. The initial focus will be on Certification training. This service will be of interest to training suppliers and industry and will also be of interest to INCOSE members seeking education, including certification preparation training. It is also anticipated that this could become a source of revenue for INCOSE. Led by Ken Kepchar, five options were presented to the board at the fourth quarter meeting held in Taiwan. The Board directed Ken, through the president-elect, to single out one or two, and show how they would be carried out, satisfying the criteria, or requirements, set by the Board. This will be done at the BoD meeting at IW and a path forward for 2011 activities will be determined.

#### **2.3.12.4 Academic Matters [BLI 15.4]**

*Responsible Director: Academic Matters*

Academic Council and Forum will be revitalized to improve the image of INCOSE in the academic arena. Further work, meetings and discussion are planned at IW and IS 2011 to build upon the start-up meeting that was held in 2010 at the International Symposium.

Required budget for 2011: \$30,000

### **2.3.12.5 Balloting**

*Responsible Director – Board liaison to Nominations & Elections Committee*

In 2011, INCOSE will continue to use a hybrid balloting system where members have the choice between paper and electronic ballots. INCOSE will also continue the services of a support contractor to ensure the professionalism and credibility of the balloting system. New bids will be requested in 2011. The Board will determine which Board member will participate as a full member of the Nominations and Elections Committee representing the INCOSE Board of Directors

Required budget for 2011: \$4,000

## **Appendix A – INCOSE Support Contracts**

*Responsible Director: President Elect*

### **Administrative Support**

*Contractor: Universal Management Services*

*Contract Value: \$348,000 in INCOSE budget for FY2011*

*Contract Dates: Indefinite duration. Funding is distributed across multiple functions in the budget (Certification, IT, Member Board, events, etc.)*

*Contract Manager: Treasurer*

The contract with UMS provides administrative support and member services for INCOSE. The services to be delivered by UMS and the level of funding are decided annually as part of the budgeting process. This contract also allows for additional tasks to be performed at agreed rates.

### **Marketing Director**

*Contractor: Universal Management Services*

*Contract Value: \$30,000 in INCOSE budget for FY2011*

*Contract Dates: 1 January 2011 through 31 December 2011*

*Contract Manager: Treasurer*

The contract with UMS provides a part-time Marketing Director.

### **International Workshop 2011**

*Contractor: ASK International Conference*

*Contract Value: \$35,500 in IW11 budget (24325 euros w/travel)*

*Contract Dates: 1 October 2010 until finalisation of IW finances: approx April 2011*

*Contract Manager: Associate Director for Events*

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

**International Symposium 2011**

*Contractor 1: ASK International Conference*

*Contract Value: \$131,500 in IS11 budget (76750 + 13975 travel / euros)*

*Contract Dates: 15 April 2010 until finalisation of IS finances: approx October 2011*

*Contract Manager: Associate Director for Events*

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

**International Symposium 2012**

*Contractor: ASK International Conference*

*Contract Value: \$0 in IS11 budget (site inspection)*

*Contract Dates: 2011 until finalisation of contract*

*Contract Manager: Associate Director for Events*

In preparation for IS12 in Italy, a contract was let with ASK International Conference for the site selection.

**INSIGHT Chief Editor**

*Contractor: Kenley Consulting LLC*

*Contract Value: \$51,600 in INCOSE budget for 2011*

*Contract Dates: 28 May 2010 for two years (quarterly issues, eight over two years)*

*Contract Manager: Director for Communications*

INCOSE has a contract with Kenley Consulting LLC for editorial support for INSIGHT.

**Certification Program Manager**

*Contractor: Sysnovation LLC*

*Contract Value: \$129,600 in INCOSE budget for 2011*

*Contract Dates: July 2009 through June 2011*

*Contract Manager: President Elect*

A contract has been put in place with Sysnovation, LLC to provide a Certification Program Manager to support the INCOSE Certification program.

**Certification Testing Services**

*Contractor: Prometric*

*Contract Value: N/A (applicants pay testing fee directly to Prometric)*

*Contract Dates: Master Services Agreement dated 1 May 2003, for three years with automatic one year renewals thereafter. Amendment No. 1 dated 15 May 2006 (changed to applicant paying Prometric direct). Amendment No, 2 dated 1 July 2008 (added the CSEP-Acq exams).*

*Contract Manager: Certification Program Manager*

**IT Support**

*Contractor: CGT Support (server support)*

*Contract Value: \$130 - \$160 Hourly rates*

*Contract Dates: Began 11/1/2009 and continues*

*Contract Manager: Director for Communications / INCOSE Admin*

*Contractor: Site Street (Database and Content Management)*

*Contract Value: \$150 Hourly rates*

*Contract Dates: Began 11/1/2009 and continues*

*Contract Manager: Director for Communications / Admin*

**Live Meeting Service**

*Contractor: Premier Global Services*

*Contract Value: \$8,400 (Licenses: 5 professional @ \$20 and 100 standard @ \$5 x 12) - Does not include toll-free phone usage (currently \$2-3,000/mo.)*

*Contract Dates: July 7, 2008 to July 2009 – Renews automatically in July*

*Contract Manager: Director for Communications*

The Professional Edition allows up to one thousand, two hundred fifty (1,250) meeting participants per meeting and the Standard Edition allows up to fifteen (15) meeting participants per meeting.

**Web Hosting Services**

*Contractor: CGTS/Adhost*

*Contract Value: \$24,000*

*Contract Dates: 9/1/2010 – 8/31/2012*

*Contract Manager: Director for Communications*

BLI 3.3 (World Wide Web)

**Journal of Systems Engineering**

*Contractor: Wiley & Sons Inc*

*Contract Value: \$100,000 in INCOSE budget for 2011*

*Contract Dates: 14 January 1998. Amended 1 July 2002 – ends 2012*

*Contract Manager:*

A contract was let on 1998 with Wiley & Sons Inc for the publication of the SE Journal. This was most recently amended 2002 to include a revised cost structure.

**Journal of Enterprise Transformation**

*Contractor: Taylor & Francis*

*Contract Value: \$0 in INCOSE budget for 2011*

*Contract Dates: October 2009 – September 2017*

*Contract Manager: Bill Miller*

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.

**Election Support Contract**

*Contractor: Votenet*

*Contract Value: \$4,000 plus email*

*Contract Dates: 24 Sept 2009 to 24 Sept 2011*

*Contract Manager: Chair, Nominations & Elections*

INCOSE has a two year contract with Votenet for complete election support for the 2010 (completed) and 2011 international elections. Contract will need to be renegotiated for 2012 elections.

**Insurance**

*Contractor: Tyrisco: Directors & Officers Liability Insurance - Arch*

*Contract Value: \$2,680*

*Contract Dates: February 17, 2010 to February 17, 2011*

*Contractor: Tyrisco: Professional Liability Policy – Evanston Insurance Co.*

*Contract Value: \$5,419 in 2011 (in renewal process – covers Certification)*

*Contract Dates: June 14, 2010 to June 14, 2011*

*Contractor: Tyrisco: Foreign Liability Policy - AIG*

*Contract Value: \$2,500 in 2010*

*Contract Dates: August 1, 2010 to August 1, 2011*

*Contractor: Tyrisco: Precision Policy – Zurich (covers symposium)*

*Contract Value: \$2,330*

*Contract Dates: March 24, 2010 to March 24, 2011*

**Merchandise**

*Nothing in Progress.*

Note: all contracts referred to in this AOP are maintained in the INCOSE Admin office. Please contact Christine Kowalski: [christine.kowalski@incose.org](mailto:christine.kowalski@incose.org) for information.