

INCOSE ANNUAL OPERATING PLAN 2020

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1. Introduction

This INCOSE Annual Operating Plan (AOP) describes the planned activities funded by the INCOSE Budget in 2020. The purpose of this narrative is to guide the activities through the year and to ensure that INCOSE members understand the organization's priorities and how it intends to achieve them.

This 2020 AOP was created in the context of INCOSE's Vision, Mission, Goals, and Principles, as defined and promulgated on the INCOSE website. They are not repeated here but are reflected in this AOP.

To focus and guide our advancement as an organization are three Strategic Objectives (SOs), traversing five Value Streams (VSs). The three transversal SOs are:

- **Premier** – to be the premier choice everywhere for Systems Engineering professional **development** needs;
- **Future** - to lead the community in shaping the future of Systems Engineering;
- **Value** – to deliver ever greater value to a growing and increasingly diverse membership.

These INCOSE SOs guide policy and budgeting decisions. They are demanding and intended to allow us to make significant progress in evolving INCOSE. They are reviewed and refined on a regular basis as appropriate, in serving the execution of our mission and the achievement of our vision of “a better world through a systems approach”.

Augmenting these objectives are the five VSs of Certification, Events, Membership, Products and Education and Training (E&T). By definition these VSs are a series of activities required to design, produce and provide a specific product or service for the overall benefit of INCOSE and its members. Both the SOs and VSs are further defined and promulgated on the INCOSE website. They too are not repeated here but are reflected in this AOP.

As an annual plan, the AOP is executed by the Budget Owners from the Board of Directors. Any deviation from the approved budget is reviewed and assessed by the Budget and Planning Committee (BPC), following policy, prior to appropriate action being taken.

2. AOP Structure

The AOP is structured in two main sections as follows, detailing the INCOSE 2020 operating and budgetary considerations:

- **Value Streams (VSs)** – encompassing:
 - The products and services of Certification, Events, Membership (at two levels – individual and Corporate Advisory Board (CAB)), Products, and E&T;
 - Special Projects (SPs) which are specific, one-time projects known at the time of the writing of this AOP of which the output/outcome may result in supporting VSs or Shared Resources (SRs) activities in the future, guided by our SOs;
- **Shared Resources (SRs)** – detailing the Operational Support and Business' Support activities necessary for the running of INCOSE and the provision of shared support across the VSs.

3. Value Streams (VSs)

This section of the AOP focuses on the five VSs of Certification, Events, Membership, Products, and E&T, and any special projects in-work or planned for 2020.

3.1. Certification

The INCOSE Certification Program will continue to recognize individuals with knowledge, education, experience, and leadership in systems engineering through the three certification levels: Associate Systems Engineering Professional (ASEP), Certified Systems Engineering Professional (CSEP), and Expert Systems Engineering Professional (ESEP). More information about the program's history and current process are available at www.incose.org/certification.

The major initiative continuing in 2020 are academic equivalencies. Members of the INCOSE Academic Council who demonstrate that their courses assess the same knowledge areas as the INCOSE knowledge exam may now have their students bypass the knowledge exam on the path to becoming certified at the ASEP and CSEP level. These are described at <https://www.incose.org/systems-engineering-certification/certification-agreements/equivalency-programs>

The next near-term investment for the Certification Program is in expanding its knowledge exam item bank and, simultaneously, strengthening the processes used to generate new exam content. These activities are designed to mitigate risks associated with increased offering of the knowledge exam and to prepare for the exam update that will come alongside the SE handbook update in a few years.

3.2. Events

The Events Committee will continue to oversee the planning and execution of the International Workshop (IW) and International Symposium (IS) in 2020. The costs for the Conference Management Company (CMC) are expected to increase in 2020 as the CMC takes on creation of the IS technical program and coordination of sessions chairs under the guidance of INCOSE Technical Operations.

In line with our VS initiatives, in 2020 we will support additional events that we believe will be of great value to our members. We will introduce this initiative prudently with an expected commitment of one additional event in 2020, and INCOSE “mini” event focused around the topic of smart cities which will combine diverse presentations with goal-focused working session. Though the Events Committee is helping to oversee the planning and budget, and currently projects that the event will at least break even, this is a new event and carries all of the risks associated. Being a new and untested event, risk mitigations are being implemented in terms of revenue planning, partnerships, and implementation of best practices, to minimize the possibility that INCOSE may need to cover a loss on this event.

The Events Committee will also be working with MarCom and IT to create a new Events space on the INCOSE website. The costs associated with are included in the CIO’s IT budget.

3.3. Membership

3.3.1. Individual Membership

Membership engagement will continue to be a focus throughout the year as it is key in growing our membership base as well as retaining members. This will include but is not limited to website updates such as the new member landing page, communications to members and new members, and better understanding our member’s professional needs.

The Value Proposition initiative will continue through the year to define and communicate value to our members in relation to the five VSs. We will also continue to progress and refine activities in the following three key areas:

- **New Member Welcome Series** – a multi-year welcoming campaign, with targeted touch points for engaging members;
- **Membership Engagement Ambassadors** – a role for encouraging/assisting in engaging members and potential members at a local level, across the entire breadth of INCOSE, working closely with Chapters and Chapters and Sectors, Working Groups, Outreach and Events;
- **Systems Engineer Early Career Professional** – under the Early Career Professional (ECP) task team new opportunities will be identified for members with ten years or less experience in Systems Engineering, to shape their involvement in becoming active members and future leaders across the SE domain and within INCOSE. If you are interested in joining the ECP task team, please contact the INCOSE Secretary.

3.3.2. Corporate Advisory Board (CAB) Membership

Extensive work has been done in the area of the CAB needs over the last 18 months. Note - a CAB need is a systems engineering concern essential or very important to the collective CAB that requires some course of action by INCOSE to fulfill. A survey was sent out to all of the CAB members to identify and rank what the CAB sees as their current needs going forward. At the 2019 IW the needs were transformed beyond category statements to descriptions with each need being represented by a S.M.A.R.T (Specific, Measurable, Attainable, Realistic, Timely) goal.

CAB leadership will now work together with the Board and Technical Operations in allocating the needs across INCOSE’s various technical Working Groups, monitoring the progress of resolving the needs and maintaining a communication conduit with the CAB. We will continue

each year to survey our CAB organizations to determine whether additional needs should be included.

For 2020, there are no significant new initiatives or items that would impact the budget as the CAB continues to grow and mature. The alignment and support of both local CAB organizations and global CAB organizations will be reviewed and refined to best serve the CAB organizations and their Associate Members, Chapters and INCOSE overall.

3.4. Products

The Products Value Stream supports the creation of books, papers, videos, standards, tools and other tangible high value outputs created and distributed by INCOSE and its allies. In many cases, these products are created by the INCOSE Working Groups and Initiatives or in cooperation with other societies.

Main investments under the Products Value Stream are to support INCOSE's involvement in international standards such as ISO, IEEE, OMG, SAE, and others. Direct participation in topics like System of Systems, Product Line Engineering, Smart Cities, Cybersecurity, Architecture, and many more will strengthen INCOSE's position as an impactful professional society.

Likewise, following on from the initiatives of 2019, we will continue to update and develop the Systems Engineering Body of Knowledge (SEBoK) under its Editor-in-Chief. In addition, we will include a new thrust to update the Graduate Reference Curriculum on Systems Engineering (GRCSE) that is several years out of date. A new leadership team has been established for this purpose, and the revision will now be called "Systems Engineering Education Ecosystem" or SEEE for short.

Other investments under the Products Value Stream will be used to create impactful products (e.g. primers, reference models, guides) that will be made available to INCOSE members in the INCOSE store.

3.5. Education and Training (E&T)

This value stream consists of two major work products, the Professional Development Portal and education & training assets.

3.5.1. Professional Development Portal (PDP)

As one of the means for INCOSE to meet its strategic objective of being the premier choice everywhere for Systems Engineering professional development needs, we are creating a Professional Development Portal (PDP). The PDP is a whole solution for all of our users, leveraging assets of INCOSE and its partners. It will provide seamless access of requested content from wherever it resides.

This initiative started in late 2018 and in 2019 a beta version was previewed at the 2020 IS. For 2020, the development work continues in readiness to launch the minimal viable product in the near future.

The Professional Development Portal is intended to be part of INCOSE's IT infrastructure, but currently it is being developed and hosted separately. There are two possible paths to work the Professional Development Portal from a minimum viable product to completion. The first path involves completion of features that can be completed without integration with existing web properties. The second involves completion of a subset of features that must be integrated with

existing web content. For 2020 we will commence with Path1 until such a time it may be prudent to integrate with the existing web content.

3.5.2. Training & Education

The PDP requires good content in order to meet Systems Engineering professional development needs. This was a major comment received from the preview in 2019. Content work, therefore, will be a focus in 2020.

In addition to the webcasts, videos and documents currently in INCOSE's library, we will also develop and test other modern content distribution methods (e.g. blogs, on-line courses, podcasts) via the Portal as it exists today (or as it evolves over the year). Some or all the following types of content will be developed based on time available by the right personnel and budget. One to two pilots for each type will be developed. Data on usage will be collected to determine where interest lies. Future developments will be guided by user response.

- Blogs – Example: Work with volunteer(s) to write a blog on SE professional development.
- Podcasts – Examples: Work with volunteer(s) to develop a “Conversations with Architects” series. Likewise, a “Dealing with Complex Systems” podcast will be developed.
- “Ask the Expert” Forum – Where the community is guided to ask questions about systems engineering and INCOSE members volunteer to write a succinct answer. Given that we gain enough questions and answers, this will become a searchable database.
- On-line course -- Working in conjunction with one or more Academic Forum leaders, create an on-line course in an area proposed by the CAB and/or attendees of the strategy session.
- Videos – Working with the MarCom team, create branded, short video clips that showcase an SE skill.
- Technical Leadership Institute – Work with the existing Technical Leadership Institute leaders to automate the application process and some of the learning delivery. Additionally, make the program scalable so that a streamlined version can be offered on demand.
- Work with the Director for Outreach to gain access to selected courses or other content partners may share with INCOSE.

3.6. Special Projects (SPs)

Detailed in the following subsections are the specific one-time projects either in-work or planned to commence in 2020. The outputs/outcomes of each special project may result in supporting VSs or SRs activities in the future.

3.6.1. Future of Systems Engineering (FuSE)

In order for INCOSE to influence and lead in Systems Engineering it is necessary for us to evolve the practice, instruction and perception of Systems Engineering (SE) to:

- Position SE to leverage new technologies,
- Enhance SE's ability to solve the emerging challenges, and
- Promote SE as essential for achieving success and delivering value.

As such we have established an international team to identify the needs, priorities and means of transforming SE under the banner of FuSE, and recommend principles, heuristics, practices and other guiding material for SE going forward.

In 2020 FuSE will focus on collating information gathered over the last two years and analyzing these with the goal of recommending actions going forward for the advancement of SE. Information gathering through participation at events and interviewing domain and discipline experts will continue. A draft of the findings, developments and recommendation is expected at the end of the 2020.

3.6.2. Systems Engineering (SE) Vision Update

SE Vision 2025 is an excellent document and is serving our members well, identifying the trends and expected path of SE up to and around 2025. However, what has occurred over the last few years is continuing accelerating changes, influences and impacts. The end result is the need to review and update this vision document out to 2035 for it to remain relevant in its role 'to inspire and guide the direction of systems engineering across diverse stakeholder communities'.

A team has been established to update the SE Vision 2025 document in the 2020-2021 timeframe. The effort will focus on updating each section of the SE Vision including the Global Context, the Current State, the Future State, and Realizing the Vision. This effort will elicit inputs from many sources including FuSE, domain experts, senior executives, and other sources. New formats for distributing the vision content will also be considered to complement the current SE Vision document format. For 2020 activities, the focus will be to elicit the inputs, identify the areas requiring change, and prepare draft updates, and to assess changes in distribution.

3.6.3. Grand Challenges – Clean Water and Sanitation

The mission of INCOSE is “a better world through a systems approach”, and as such it lends itself to truly align with the Grand Challenges, as perceived by the world. Thus, INCOSE is embarking on participating with other organizations and businesses in collaborative teaming arrangements to provide systems expertise to Grand Challenges. This will facilitate the fulfilment of our mission and at the same time increase the reputation of INCOSE and value of being a member of INCOSE.

In 2020 we will endeavor to work towards the sustainable development goal of Clean Water and Sanitation. This will involve reaching out to Water Industry Partners establishing a collaborative arrangement to work real world water problems as part of a bigger team. Activities may include meeting with government entities, exploring alternate solutions, participating in workshops, and so forth. In turn we will be reaching back into INCOSE to harness the capability and SE experience of our members in supporting this initiative.

We may also investigate the possibility of supporting one other grand challenge, yet to be determined at the time of publishing this report.

3.6.4. United Nations Sustainability

In 2019 Thales participated at the United Nations (UN) Civil Society Conference (CSC) for the first time, bringing Systems Engineering to the vast audience at this event. In 2020 we intend to build on this and expand our presence, influence and exposure of INCOSE at this event and at any related meetings that may emerge from the CSC discussions.

4. Shared Resources (SRs)

This section of the AOP is divided into two sub-sections outlining the operational and budgetary considerations for:

- Business' Support – covering Administration and Organizational Leadership considerations, including Sponsorship and Endorsements (S&Es); and
- Operational Support – encompassing the supporting activities of Academic Matters, Information Technology (IT), Marketing and Communication (MarCom), Outreach, Sectors, Technical Operations (TechOps), and Services Operations (ServOps).

4.1. Business' Support

4.1.1. Organization Administration

INCOSE Administration Office (Admin) provides salaried staff to support the execution of day-to-day operations of the organization. This includes general administration and member services for individual and CAB members, as well as Sectors and Chapters.

Admin supports the Board of Directors, Technical Operations, Service Operations, Corporate Advisory Board, Academic Matters, Certification, MarCom, Outreach, Information Technology (IT), Publications and various committees, including Events, Nominations & Elections, Budgeting and Planning, Policy Management, Honors and Awards, Fellows, Industry Outreach Board (IOB)) and Technical Review. As needed Admin support is provided for INCOSE special projects, such as the Future of Systems Engineering (FuSE), INCOSE SE Vision, and Grand Challenges.

In 2020, Admin will continue to play a critical role in the implementation process of the SOs and VSs. Likewise, Admin will assist in the administration, communication, coordination, and project support of, including but not limited to:

- Scheduled meetings and major events,
- Virtual meetings and conferencing capability,
- INCOSE Online Store,
- Financial accounting,
- Contracts management,
- Legal and commercial arrangements.

4.1.2. Organizational Leadership

Organizational Leadership reflects the strategic and operational expenses for the INCOSE leadership to be effective. It includes the resources needed to conduct meetings for the Board of Directors and strategic planning, as well as the support requirements for the meetings. Other strategic needs are included, such as the general requirements for strategic integration or new opportunities that the President and President-Elect decide to support for the advancement of INCOSE and/or SE. The latter is managed through a President's discretionary budget line. Finally, this area includes any fees for legal counsel review and interactions.

4.1.2.1. *Sponsorship and Endorsements (S&Es)*

Organizational Leadership as part of its strategic and operational focus is responsible for the overall management of S&Es provided by INCOSE to external organizations, products and events. This subsection identifies the operational and budgetary considerations related to:

- Sponsorship – for event related sponsorship only, at the international and regional levels and at the local level where appropriate;
- Engaged Sponsorship Support – for the provision of resources (funding or otherwise) to engage in the conduct of the event, meeting or activity in a manner that helps to meet the established goals. Examples include but are not limited to, taking an active role in the technical program through in-kind labor, providing mentoring or coaching, being a judge, or, offering the prize or award;
- Endorsements – for product, services or event related endorsements provided by INCOSE.

4.1.2.1.1. Sponsorship

The Directors and INCOSE membership may identify conferences and events which provide a worthwhile venue for INCOSE to promote the discipline of Systems Engineering and afford the opportunity to increase membership. Such events may include conferences hosted by other professional societies and organizations, jointly hosted events sponsored by INCOSE and another organization, university events, and STEM outreach. On an annual basis, the Board of Directors will review and approve the list of events for sponsorship. Sponsorship preference will be given to events that span across sectors, incorporate multiple domain activities, and align with INCOSE objectives. This past year, for instance, INCOSE jointly sponsored the EnergyTech conference with NASA to promote the practice of Systems Engineering within the power and energy sector as well as reach out to local STEM students in middle and high school grade levels. Examples of possible sponsorship are provided in the following paragraphs.

Within Sector I, three chapter-sponsored regional events provide additional opportunities for member engagement in technical conference activities. To encourage member engagement, each conference will be sponsored by INCOSE to help keep ticket prices as low as possible:

- Western States Regional Conference, which will be in Seattle Washington;
- Texas Gulf Coast regional, which will be in Houston;
- Great Lakes Regional Conference.

Within Sector 3, sponsored chapter promotion and a sponsored event support will boost INCOSE visibility and member engagements across the sector via two channels:

- Local chapter promotion in chapters with limited financial backing;
- An event being planned in Japan with participation from other chapters.

4.1.2.1.2. Engaged Sponsorship Support

For budgeting purposes, some small to modest dollar amounts have been set aside and allocated to the INCOSE Directors (Technical, Sectors, MarCom, and Outreach) for engaged sponsorship support. This item will be managed and coordinated through the Director for Outreach. Should additional funding be required, it will be managed through the President's discretionary budget line.

4.1.2.1.3. Endorsements

At this point in time INCOSE does not provide endorsements of third-party products, services or events.

4.2. Operational Support

4.2.1. Academic Matters

A major effort to develop ABET criteria for systems engineering programs was spearheaded by INCOSE in 2018 and has been progressing ever since. It involves working with the six other professional societies that have a vote on the matter as co-lead societies. The goal is to submit a first draft of criteria that are acceptable to all co-lead societies by July 2020. In addition, INCOSE is continuing work to participate and contribute in support of the ABET program criteria for cybersecurity engineering.

The Academic Council will continue its support of the Body of Knowledge and Curriculum to Advance Systems Engineering (BKCASE) activities, with outputs contributing to the Product VS. In addition, three focus areas have been defined for 2020, as follows:

- A new project focusing on Systems Engineering Education for All Undergraduate Engineering Students (SE4AUES). The first year of the project will focus primarily on identifying stakeholders' needs.
- Standing up new student divisions, including the development of a web presence for student divisions, in collaboration with the INCOSE CIO.
- Materially contribute to updating the SE Vision and the Future of Systems Engineering (FuSE) project.

4.2.2. Information Technology (IT)

For 2020 the IT team will be continuing to build expertise and resource, both volunteer and paid, to provide the standard of IT services the membership is seeking. New part time resources for specific technologies (e.g. web, CMS, SharePoint, etc.) have already been engaged and will be complemented by additional IT Operations staff that will be fully defined and resourced during the 2020 AOP.

During 2020, web site upgrades driven by 2019 initiatives for greater outward attraction will be developed. New integrated features to support greater interactivity are in process or planned, supporting Volunteer opportunities, new access to shared resources and better organization and search.

Restructuring of the legacy content in our members-only web resource area referred to as "Connect" will be a big activity throughout this period. Key steps have already been taken with site upgrades, new presentation and additional functionality, such as the online Technical Project Plan (TPP) process, which is a basis for future needs for managed processes.

More work is being done to improve and better organize the information, help and background expertise available to move forward. This is being addressed for web based "public" information and resources, as well as for the "Connect" collaboration space, and AD responsibilities to help drive this activity are defined.

Hosting and vendor services are experiencing more costs, and the whole hosting environment is under review, considering the options for greater cloud service usage.

An INCOSE IT strategic plan will be developed in 2020 by the Chief Information Officer (CIO) and Associate Directors (AscDs,) to 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. This is also planned to provide transition support and continuity for the next CIO who will take office in 2021.

4.2.3. **Marketing and Communications (MarCom)**

Marketing and Communications will continue to extend and strengthen the INCOSE brand globally in 2020. We will achieve this through the following key initiatives:

- Strategic Sponsorship of High Impact Events (Central, Chapter, MOA and MOU partners, etc.);
- Exhibition at High Impact/Relevant Events (Central, Chapter, MOA and MOU partners, UN, etc.);
- Production and Dissemination of Quality INCOSE Marketing Products (eNote, Newsletter, Social Media, Strategic Marketing pieces, Website);
- Ramp up of carefully chosen advertisers for the INCOSE Central Marketing and Communications Products.

4.2.4. **Outreach**

INCOSE Outreach forms the conduit and interface to all external organizations, including work with industry, academic institutions, government organizations, non-profits, and other professional societies and organizations as well as work directly with INCOSE membership. In order to establish work with these organizations, Outreach employs Ambassadors (to other organizations, such as industry and professional societies) and Relationship Managers (to work alliances and agreements with other organizations).

Outreach will:

- Establish alliances through formalized agreements, including Memoranda of Understanding (MOUs) and Memoranda of Agreement (MOAs), with external entities, including but not limited to other professional societies, industry partners, academic institutions, government organizations, non-profits, and humanitarian organizations. In 2020, Outreach intends to complete alliance agreements with Association for the Advancement of Artificial Intelligence (AAAI), Object Management Group (OMG), Project Management Institute (PMI), SAE International, and Water and Sanitation for the Urban Poor (WSUP) as well as renewing international chapter membership agreements with South Korea.
- Provide outreach and external interface support, along with MarCom to both internal and external conferences, activities, and events. Specifically, Outreach will continue support and attendance at the EnergyTech conference (held in October of each year) since it involves multiple INCOSE Working Groups (Power & Energy Systems, Critical Infrastructure Protection and Recovery, and Telecommunications), and it is a jointly sponsored conference with the National Aeronautics and Space Administration (NASA).
- Work with INCOSE leadership, Fellows, Sector Directors, Marketing and Communications, and Academic Matters to increase INCOSE membership, especially in the area of student members and early career professionals. Outreach will develop a list of STEM and academic events which we will attend to promote student membership.
- Develop and update guiding policies and agreement templates to be approved by INCOSE leadership.

- Establish an organization structure and hierarchy for Outreach efforts, including positions for Assistant Directors (AstDs) for Outreach in the areas of industry and domain outreach and professional organization outreach.
- Along with the CIO, lead the establishment, facilitation, and maintenance of a customer relationship management system to track historical and upcoming alliances and agreements.

4.2.5. Sectors

4.2.5.1. *Sector I - The Americas*

In 2020, Sector I focus will continue to foster development and sustainment of healthy, robust chapters. Key activities intended to help achieve that goal include:

- Using a stakeholder survey where members assess the performance of their chapters;
- Finding opportunities for partnership, collaboration, and potentially consolidation between chapters;
- Supporting and encouraging chapter leaders through networking opportunities, awards, workshops, and recognition;
- Using Sector Leadership to work with struggling chapters to help them succeed.

4.2.5.2. *Sector II – Europe, Middle East and Africa (EMEA)*

The EMEA Sector continues to grow and build on a strong foundation. Many of its Chapters are collaborating across countries in sector wide Working Groups, Chapter and cross-Chapter events.

The focus for the Sector activities for 2020 will be on the following four areas:

- **Chapter collaboration and Membership growth -**
 - Premier focus will be on increasing collaboration between the EMEA Chapters.
 - Actively support emerging Chapters (e.g. Portugal, UAE, and Belgium) and encourage the initiation of new Chapters in countries with a high potential.
 - Support cross-Chapter Working Groups in the EMEA Sector.
 - Support Chapters that lack sufficient financial means, to let somebody from their leadership team represent the Chapter at the IS or IW
- **Sector-level events -**
 - Support the IS2020 Project team to host the Cape Town International Symposium.
 - Where needed, support the cross-Chapter events (e.g. SE Tours).
 - Select a venue for the 2021 EMEA Workshop (hosted by an EMEA Chapter).
- **Sector-level products -**
 - Support the development of Sector and Chapter-level products and publications
 - Support translations of SE products from non-English languages to English, for wider dissemination of that knowledge.
- **Chapter MOA roll-out -**
 - After the updated MOA has been implemented in 2019, the role-out to additional Chapters can be done in 2020.

One of the responsibilities of the Sector Director is to represent INCOSE at external organizations. Connecting towards governmental organizations like the European Union (EU) is an activity that has our focus of interest. For 2020, our objective is to:

- Continue making connections to European Union governmental organizations to which SE appeal and reach out to those organizations that already apply SE and sense to what extend SE should develop to better serve their current and future challenges. Where needed, these activities are supported by Chapters.
- Where requested, support Chapters in reaching out to their country level governments to achieve similar objectives as towards the EU.

4.2.5.3. *Sector III – Asia-Oceania (AO)*

Geographically wide-spread and multi-cultural, the vast Asia-Oceania sector remains underserved relative to the other two sectors, despite a strong membership growth in the past five years. To increase INCOSE's influence in the sector, funding for 2020 will be allocated in alignment with the Strategic Objectives at three levels simultaneously, i.e. locally, regionally and internationally, as follows:

- **Locally -**
 - Chapters with support from the Sector level will strive to bring value to members (and potential members, therefore promoting Membership) through activities such as student competitions, hosting regular evening Events, hosting annual conferences and workshops, co-hosting events with other technical societies and organizations, and meeting with industry and domain leaders;
 - Support to participation in Working Groups activities towards ensuring a local applicability to Products.
- **Across the sector -**
 - Regional (Sector) events support through direct sponsorship or travel support, with a special focus on encouraging Sector and Chapter Leaders and Members to contribute across the Sector, including reaching out to countries where a potential exists for emerging chapters (Indonesia, Mongolia, New Zealand and Thailand),
 - Support to participation in Working Groups activities towards tweaking Product to a regional context.
 - Support the Good Neighbor Award.
- **Internationally -**
 - Support Sector and Chapter leaders' participation and contribution to IS and IW, to ensure a strong link between Chapters and INCOSE Central ensuring that the Value of central benefits streams back to the chapters.
 - Encouraging student participation at INCOSE international events, therefore encouraging student membership and the development of student division in chapters.
 - Support to participation in Working Groups activities, towards creating world-wide Products.

Finally, Asia-Oceania will continue to promote and support the INCOSE Certification Program and exams, Leadership Program and Training opportunities. These programs are deemed essential for the advancement of INCOSE in the Sector, for the professional development of our members, and for the benefit of Systems Engineering in our communities.

4.2.6. *Technical Operations (TechOps)*

Due to the introduction of VSs many of the typical investments under TechOps are moved to the Products Value Stream to support the creation of impactful products. Similarly, other budget requests from INCOSE's Working Groups are reallocated to MarCom for event sponsorships and Outreach for alliance sponsorships.

The remaining investments under TechOps are to manage the entire TechOps portfolio, and to support emerging Working Groups and the integration of Chapter and International Working Groups. Other investments cover expenses for Working Group members to travel to and attend events organized by partner organizations. The investments also include important funds under direct oversight of the Technical Director to support emerging opportunities.

4.2.7. **Services Operations (ServOps)**

The Services Operations area is headed by the Services Director and includes the VSs of Events, Certification and E&T.

ServOps believes the key to advancement of INCOSE as a Professional Society is knowledge – knowledge creation, discovery, and transfer – all contributing to the state-of-the-art for Systems Engineering. While each of the three VSs under ServOps deal with certain perspectives of knowledge, all three work together in a synergistic fashion to enhance all the facets of knowledge, thereby enhancing the overall value of INCOSE to its members and the Systems Engineering community.

2020 funding for ServOps will be to manage the entire ServOps portfolio. This will include but not limited to:

- Support to Certification in their efforts on academic equivalencies and expanding their knowledge exam item bank and strengthening the processes used to generate new exam content;
- Support to the expansion of the Events VS with new events that facilitate the discovery and transfer of new knowledge, including risk mitigation as necessary to ensure event success;
- Support to E&T efforts, especially as they move forward to complete the development of the Professional Development Portal (PDP), and the subsequent deployment of, the PDP being a major player in knowledge discovery and transfer;
- Support to TechOps to enhance the Product VS, as each of the three VSs under ServOps depend on products to provide value to INCOSE members and others.

A. Appendix A: INCOSE Memorandums of Understanding and INCOSE Memorandums of Agreement

The list of current INCOSE's Memorandums of Understanding (MOUs) and Memorandums of Agreements (MOAs) are provided below. These are managed by the Director for Outreach and are held on file in "Connect" at the following link:

[Memorandum of Understanding and Memoranda of Agreements](#)

Each MOU or MOA can be made available to members on request to Christine.kowalski@incose.org

Descriptive Title	Agreement Type	Category
Asociacion Espanola de Ingenieria de Sistemas (AEIS) - INCOSE MoU	MoU	Chapter
American Institute of Aeronautics and Astronautics (AIAA) Professional Working Agreement	Organizational Agreement	Professional Society
American Institute of Aeronautics and Astronautics (AIAA) Liaison Advisory	Liaison Advisory	Liaison Advisory
AP233 Liaison Advisory	Liaison Advisory	Liaison Advisory
ASTER Technology and Engineering Certification MoA	MoA	Certification
MoU between the Institution of Engineers Australia and INCOSE	MoU	Chapter
AVIC Information Technology Company (AVICIT) Certification MoA	MoA	Certification
BAE Systems Certification MoA	MoA	Certification
Cape Tron International (to support AVICIT/INCOSE MoU) and INCOSE	Contract	Certification
Defense Acquisition University (DAU) - INCOSE MoU	MoU	Strategic Alliance
Defense Acquisition University (DAU) Certification Equivalency MoU	MoU	Certification
Institute of Engineers Australia Affiliate Member MoU	MoU	Chapter
European Aeronautic Defense and Space Company (EADS) Certification MoA Amendment	MoA	Certification
Electronic Industries Association (EIA) Government Division Professional Working Agreement	Organizational Agreement	Professional Society
MoA between Engility and INCOSE regarding Certification of Professional Systems Engineers	MoA	Certification
Federation of Enterprise Architecture Professional Organizations application for organizational Membership	Membership	Professional Society
Government Electronic and Information Technology Association (GEIA) Liaison Advisory	Liaison Advisory	Liaison Advisory
GfSE Certification MoA	MoA	Certification
International Ergonomics Association (IEA) and INCOSE MOU for HSI 2019 Conference	MoU	Strategic Alliance
IEEE System, Man and Cybernetics (SMCS) and INCOSE MOU	Organizational	Professional Society
Institute of Engineers, Singapore (IES) MoU	MoU	Professional Society
International Federation for Systems Research (IFSR) Membership Letter	Membership Letter	Professional Society
Institute of Industrial Engineers (IIE) MoU for Journal of Enterprise Transformation (JET)	MoU	Publications
The Israeli Users' Association of Advanced Tech in Hi-Tech Integrated Systems (ILTAM) MoU	MoU Amendment	Chapter
The Israeli Users' Association of Advanced Tech in Hi-Tech Integrated Systems (ILTAM) MoU	MoU	Chapter
InterNational Committee for Information Technology Standards (INCITS) Agreement for Standards Work	Membership	Standards
INCOSE Foundation and INCOSE Mutual Agreement	MoA	Foundation
Booz Allen Hamilton (BAH) Certification (MoA) Agreement	MOA	Certification
SAE International and INCOSE MoU	MoU	Professional Society
iPub MoU	MoU	Publications
Institut Superier de l'Aeronautique et de l'Espace (ISAE) Certification MoA	MoA	Certification
International Information Systems Security Certification Consortium MoU	MoU	Certification
International Organization for Standardization (ISO) Copyright License Agreement	Collaboration Agreement	Publications
International Organization for Standardization (ISO) MoA	MoA	Publications
International Organization for Standardization (ISO/IEC JTC1/SC7 Procedure for Coordination	Procedure	Publications
ISO/IEC/JTC1/SC7/WG7 Liaison Advisory	Liaison Advisory	Liaison Advisory

Indian Society of Systems for Science and Engineering (ISSE) and INCOSE MoU to promote mutual professional areas of interest through events, training, etc..	MoU	Strategic Alliance
International Council for Systems Sciences (ISSS) and INCOSE Agreement	MoU	Strategic Alliance
Associazione Italia di Systems Engineering (AISE) MoU	MoU	Chapter
International Test and Evaluation (ITEA) MoA (V & V WG)	MoA	Professional Society
Jacobs Certification MoA	MoA	Certification
Japan Chapter Handbook Translation Agreement	Translation Agreement	Publications
Korean Chapter SE Handbook Translation Agreement	Translation Agreement	Publications
Purchase Order between INCOSE and KMD Partners Events Management Inc for IW2019	Purchase Order	Event
L-3 National Security Solutions Inc. Certification MoA	MoA	Certification
LinQuest Corporation Certification MoA	MoA	Certification
Lockheed Martin Corporation (LMCO) Certification MoA	MoA	Certification
Man Tech Certification MoA	MoA	Certification
MIT-PMI-INCOSE Addendum to Collaboration Agreement, The Guide to Lean Enablers for Managing Engineering Programs	Collaboration Agreement	Publications
Mitre Certification MoA	MoA	Certification
NonDisclosure Agreement Certification Boot Camp Development 2009	Non-Disclosure Agreement	Certification
Netherlands Chapter MoU	MoU	Chapter
The Object Management Group (OMG) Certification Implementation Plan	Implementation Plan	Certification
The Object Management Group (OMG) Certification MoA	MoA	Certification
Object Management Group (OMG) Liaison Advisory	Liaison Advisory	Liaison Advisory
PDES Inc. MoU	MoU	Strategic Alliance
Project Management Institute (PMI) Strategic Alliance	Strategic Alliance Agreement	Strategic Alliance
Certification MoA with Ecole Polytechnique University, 2012	MoA	Certification
Project Performance International (PPI) and INCOSE MoU for joint collaboration on creation of New Tools Database	MoU	Strategic Alliance
Raytheon Certification MoA	MoA	Certification
Certification MoA with Roche Diagnostics	MoA	Certification
SAE Committees and INCOSE Working Groups	SAE Committees and INCOSE Working Groups	Professional Society
Points of Contact between INCOSE and SAE International	Points of Contact	Professional Society
MoA between Science Applications International Corporation (SAIC) and INCOSE	MoA	Certification
Systems Engineering Body of Knowledge and Graduate Reference Curriculum for Systems Engineering Agreement: INCOSE, IEEE and Stevens Institute	MoU	Publications
The Systems Engineering Society of Australia (SESA) and INCOSE MoU	MoU	Chapter
Sigma Theta Mu and INCOSE agreement to offer one year complimentary student membership to inductees	MoU	Strategic Alliance
MoU with SIT, Singapore Land Authority to Advance SE in Singapore transportation sector	MoU	Strategic Alliance
Certification MoA with Stevens Institute	MoA	Certification
MoU between Stevens Institute SERC and INCOSE	MoU	Strategic Alliance
MoU for collaborative research between Stevens Institute and INCOSE on the Helix Project	MoU	Research Project
Nondisclosure agreement between INCOSE and Stevens Institute of Technology re: the Helix Project	Non-Disclosure Agreement	Research Project

Contract between INCOSE and Lefei Li for translation of Survey of MBSE Methodologies, 2014	Agreement	Translation
Taiwan Chapter Systems Engineering Handbook v 3.2.1 Translation Agreement	Agreement	Translation
TASC Inc. Certification Agreement	MoA	Certification
Taylor and Francis MoA for Journal of Enterprise Transformation (JET) publishing, 2011	MoA	Publications
Thales UK Limited Certification Agreement	MoA	Certification
The SI Organization Certification Agreement	MoA	Certification
UK Chapter Internal Agreement - Certification	Internal Agreement	Certification
University of New South Wales Certification Agreement	MoA	Certification
University of Texas El Paso Certification Agreement	MoA	Certification
Worcester Polytechnic Institute (WPI) and INCOSE Certification Agreement	MoA	Certification

B. Appendix B: INCOSE Support Contracts

The list of current INCOSE related contracts are provided below. These are maintained by the INCOSE Administration Office and are held on file in "Connect".

Contract Area	Organization	Year
Admin Office	UMS	2018
Certification	Prometric	2008
Certification	V1 Decisions LLC	2018
Communications	GlobalMeet and Webex	2013
Communications	Pgi Audio	2015
Events	IS - IW - Other Events KMD	2019
Insurance	Crime	2019-2020
Insurance	Directors and Officers for INCOSE and US Chapters	2019-2020
Insurance	Errors and Omissions - Certification	2019-2020
Insurance	Events	2019-2020
Insurance	General Liability	2019-2020
Miscellaneous	VoteNet	2012
Publications	MIT, PMI	2015
Publications	SEBoK - Nicole Hutchison EA	2018
Publications	SEBoK - Robert Cloutier EIC	2018
Publications	INSIGHT Editor - WDM Systems	2015
Publications	Wiley INSIGHT	2015
Publications	Wiley Royalty Agreement	2014
Publications	Wiley Online Symposium Library	2014
Publications	Wiley Handbook	2014
Publications	Wiley Handbook Author Agreement	2013
Publications	Wiley SE Journal	2012
Website/IT	Portal Design - Klew Williams	2018
Website/IT	Portal - Merthin	2018
Website/IT	Sitefinity - Vanguard	2018
Website/IT	SharePoint - Kintivo	2019
Website/IT	INCOSE Server - CG Tech Services	2019
Publications	INSIGHT - HSMC Assistant Editor	2015
Membership	Newsletter HSMC Editor	2015

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