



The International Council on Systems Engineering

“SE VISION 2035”

Welcome Center Event (2022 April)



Presented By New Member Engagement Team (NMET) (nme@incose.net)



About New Member Welcome Center

- The Welcome Center is a social and virtual forum for INCOSE New Members
- Welcome Center cafes aim to onboard, orient and communicate with new members in their initial INCOSE journey
- Welcome Center New Member Yammer community is an online platform that can be used dynamically by members to connect and engage with other Members and locate INCOSE information

New Member Guides

- Senior/Experienced INCOSE members connect and engage with new members via Welcome Center Café events, online collaboration (Yammer) and informal communication avenues (email, MS Teams chat etc.)

New Member Welcome Center Café Event
Monday, April 25, 12:30pm Japan Time (Sunday, April 24, 11:30 pm US ET)
Thursday, April 28, 4:00pm London Time (8:00 am US Pacific)



Purpose and Agenda

Agenda

- Welcome/Introduction (5 minutes)
- Overview of SE Vision 2035 (30 minutes)
 - Dr. Barclay Brown
 - Dr. Shakila Khan
- Open Discussion/Breakout Session (15 minutes)
- INCOSE Overview (5 minutes)
- Welcome Center Café event Closeout (5 minutes)

SE Vision 2035 Overview



SE Vision 2035 Purpose

To inspire and guide the strategic direction of systems engineering across diverse stakeholder communicates including but not limited to the following:

- Engineering Leaders and Practitioners
 - Researchers
 - Educators
 - Students
 - Other professional organizations
 - Technology/Tools Vendors
-
- Desire to align systems engineering initiatives, address future system engineering challenges, broaden the base of systems engineering practitioners and promote systems engineering research
 - Evolved from Systems Engineering Vision 2020 (published in 2007) and Systems Engineering Vision 2025 (published in 2014)

Who Was Involved in Creating It?

Core Team – members represented from diverse backgrounds, domains and competencies

Support Team

Subject Matter Experts

The INCOSE Board of Directors sponsored the Systems Engineering Vision Project Team to develop this Vision. The team included:

Christopher Davey

Ford Motor Company

**Sanford Friedenthal
(Lead)**

SAF Consulting

Sky Matthews

IBM

David Nichols

NASA/Jet Propulsion Laboratory
California Institute of Technology

Paul Nielsen

Carnegie Mellon University
Software Engineering
Institute

Christopher Oster

Lutron Electronics

Taylor Riethle

Graphic Designer

Garry Roedler

INCOSE

Paul Schreinemakers

How2SE

Emma Sparks

Cranfield University

**Heinz Stoewer
(CTO)**

Space Associates and
Delft University of Technology

- Guy Andre Boy
- Paul Clements
- Hans Peter de Koning
- Rick Dove
- David Endler
- Lisa Hoverman
- Robert Karban
- Charles Kreuger
- Tom McDermott
- Paul Pearce
- Troy Peterson
- Art Pyster
- Bill Schindel

Why Does It Matter?

- In a changing and highly interconnected global environment with increasing pace of technological growth the nature of systems and solutions across a diverse set of domains requires evolution
- Solutions-oriented systems
- Adaptability and Evolution
- Complexity and Risk

VALUE STATEMENT

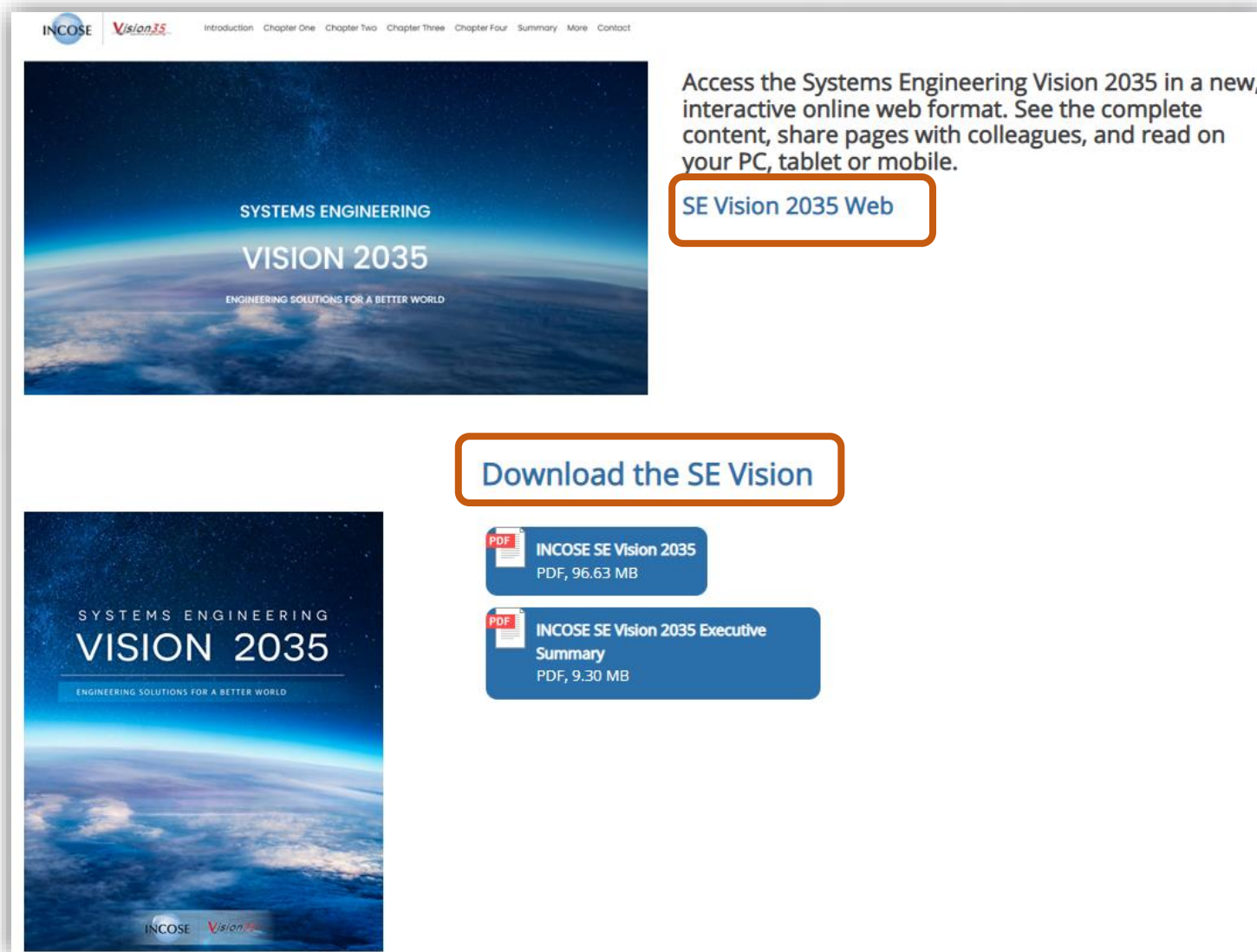


SYSTEMS ENGINEERING AIMS TO ENSURE THE PIECES WORK TOGETHER TO ACHIEVE THE OBJECTIVES OF THE WHOLE.

- ARCHITECT BALANCED SOLUTIONS THAT SATISFY DIVERSE STAKEHOLDER NEEDS FOR CAPABILITY, DEPENDABILITY, SUSTAINABILITY, SOCIAL ACCEPTABILITY, AND EASE OF USE
- ADAPT TO EVOLVING TECHNOLOGY AND REQUIREMENTS
- MANAGE COMPLEXITY AND RISK

Where Do I Find It?

- INCOSE site:
<https://www.incose.org/about-systems-engineering/se-vision-2035>
- On the Web: <https://violin-strawberry-9kms.squarespace.com/>
- Print version from INCOSE



The screenshot shows the INCOSE Vision 2035 website. At the top, there is a navigation menu with links for Introduction, Chapter One, Chapter Two, Chapter Three, Chapter Four, Summary, More, and Contact. The main content area features a large image of Earth from space with the text "SYSTEMS ENGINEERING VISION 2035" and "ENGINEERING SOLUTIONS FOR A BETTER WORLD". To the right of this image, there is a text box that reads: "Access the Systems Engineering Vision 2035 in a new, interactive online web format. See the complete content, share pages with colleagues, and read on your PC, tablet or mobile." Below this text is a button labeled "SE Vision 2035 Web". Below the main image, there is another image of the same cover, but smaller. To the right of this smaller image, there is a button labeled "Download the SE Vision". Below this button, there are two PDF download options: "INCOSE SE Vision 2035 PDF, 96.63 MB" and "INCOSE SE Vision 2035 Executive Summary PDF, 9.30 MB".

Main Sections of Vision 2035

CHAPTER 1

Provides the global context for systems engineering. It summarizes some of the key trends and influencing factors that are expected to drive changes in the practice of systems engineering. These factors include:

- the societal and environmental condition,
- technology,
- nature of systems,
- stakeholder expectations,
- enterprises and the workforce.

CHAPTER 2

Highlights the current state of systems engineering including systems engineering competencies, practices, foundations, and current challenges. It points to the fact that basic elements of systems engineering apply to all kinds of systems, small and large, but that there is significant variation in maturity across industries and organizations.

CHAPTER 3

Describes the future state of systems engineering needed to address the changing global context and the current challenges. It addresses the digital transformation and the direction towards a fully model-based systems engineering environment. It touches upon theoretical foundations, and the education and training needed to develop the competent systems engineering work force of the future. It also provides an example of how the daily life of a systems engineer could look in 2035.

CHAPTER 4

Describes what is needed to realize the vision. It identifies a set of systems engineering challenges, and the high-level roadmaps needed to transition systems engineering from the current state to the future state. It also highlights the need for collaboration among the global systems community to evolve and implement the roadmaps.

- PDF version ~ 76 pages
- Executive summary ~ 12 pages
- 4 main chapters



Let's View The SE Vision 2035!

Open this link to view the web version: incose.org/seivision

Chapter One

The Global Context For Systems Engineering
Human & Societal Needs
Global Megatrends
Technology Trends
Stakeholder Expectations
The Enterprise Environment
Chapter 1 Summary

Chapter Two

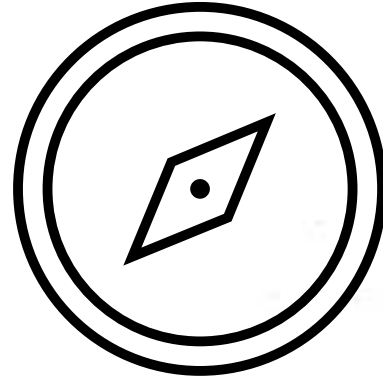
The Current State of Systems Engineering
Historical Perspectives
Roles & Competencies
Practices
Industry Adoption
Foundations
Education & Training
Challenges
Chapter 2 Summary

Chapter Three

The Future State of Systems Engineering
Overview & Introduction
Impacts of The Digital Transformation
Model-Based Practices
Theoretical Foundations
Systems Engineering Applied to Major Societal Challenges
Building the Systems Engineering Workforce of the Future
A Day in The Life of a Systems Engineer in 2035
Chapter 3 Summary

Chapter Four

Realizing The Vision
The Path Forward
Collaboration
Changing The Engineering Ecosystem
Systems Engineering Challenges
Specific Recommendations (to Systems Engineering Community)
Top Level Roadmap



Guide Breakout Session or Main Group Discussion

Discuss the topic presented today or ask about other inquiries

Welcome Center Poll

We want YOUR Feedback on today's Welcome Center event (e.g., chat poll)

1. What did you like about this Welcome Center event today?
2. What can be improved for future Welcome Center events?
3. How else do you want to be supported to become more involved within INCOSE?

Contact Us @ nme@incose.net

New Member Welcome Center Event



INCOSE Overview



Vision, Mission & Goals

- Vision
 - A better world through a systems approach.
- Mission
 - To address complex societal and technical challenges by enabling, promoting, and advancing Systems Engineering (SE) and systems approaches.
- Goals
 - Be a focal point for dissemination of systems engineering knowledge
 - Promote international collaboration
 - Assure the establishment of professional standards in systems engineering
 - Improve the professional status of all Systems Engineers
 - Encourage governmental and industrial support for System Engineering
- Visit <https://www.incose.org/about-incose> to view the vision, mission and goals



INCOSE Reach



18000+
MEMBERS



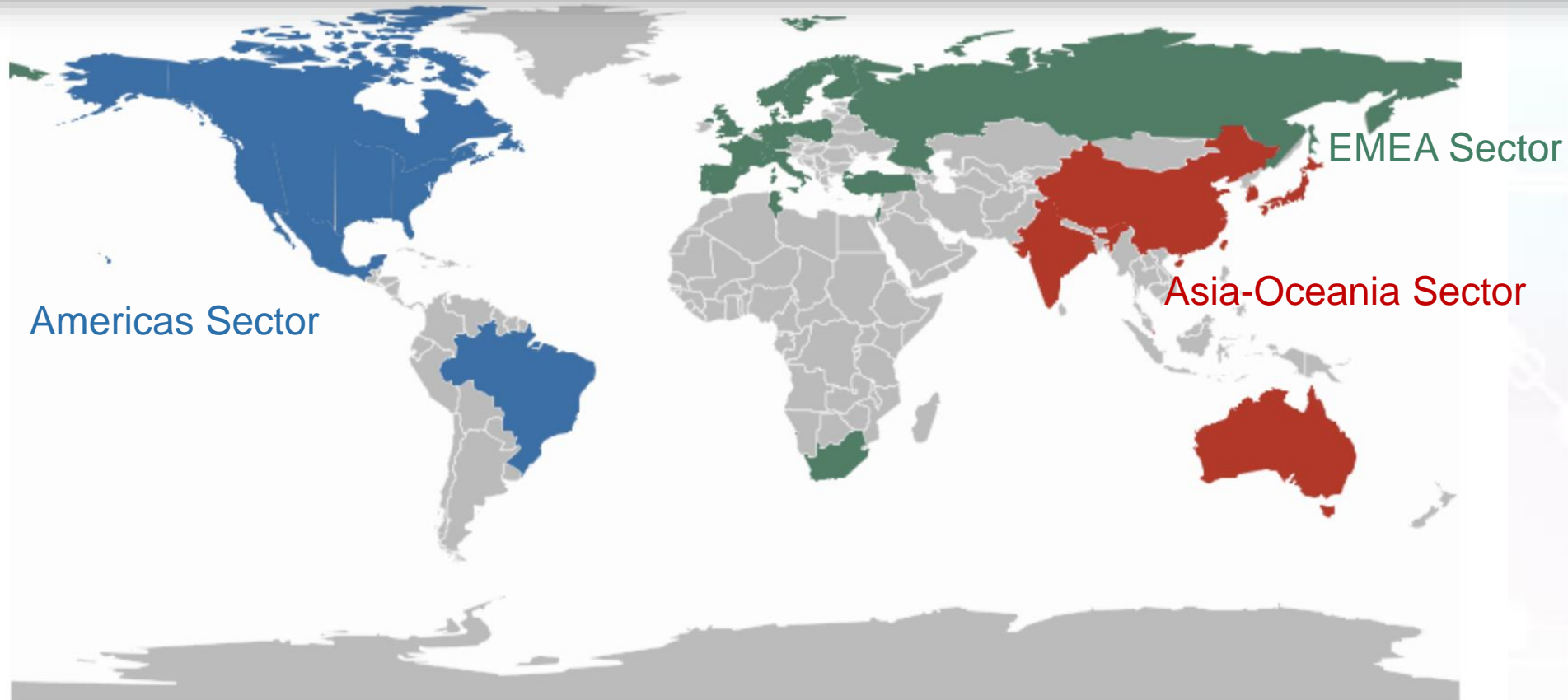
74+
CHAPTERS



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WORKING GROUPS



3182
CERTIFIED





Certification

Become a certified to advance your recognition in SE

Working Groups

Join a working group to help lead, guide and advance technical knowledge

Chapter Involvement

Become involved in your local chapter STEM programs to support the upcoming generation of SE's

Leadership

Grow, advance and leave an impact by becoming an INCOSE volunteer

Why INCOSE?

incose.org/career

Professional Development

Increase technical knowledge through INCOSE webinars, publications, papers and your chapter tutorials

Improve your knowledge and skills

Professional Networking

Connect and engage with your SE peers various INCOSE, sector and chapter events to expand your professional network

Create friendships

Professional Prominence

Advance visibility and impact by becoming involved in developing, publishing, and presenting on SE topics

Share technical knowledge and ideas with the community and across professional organizations



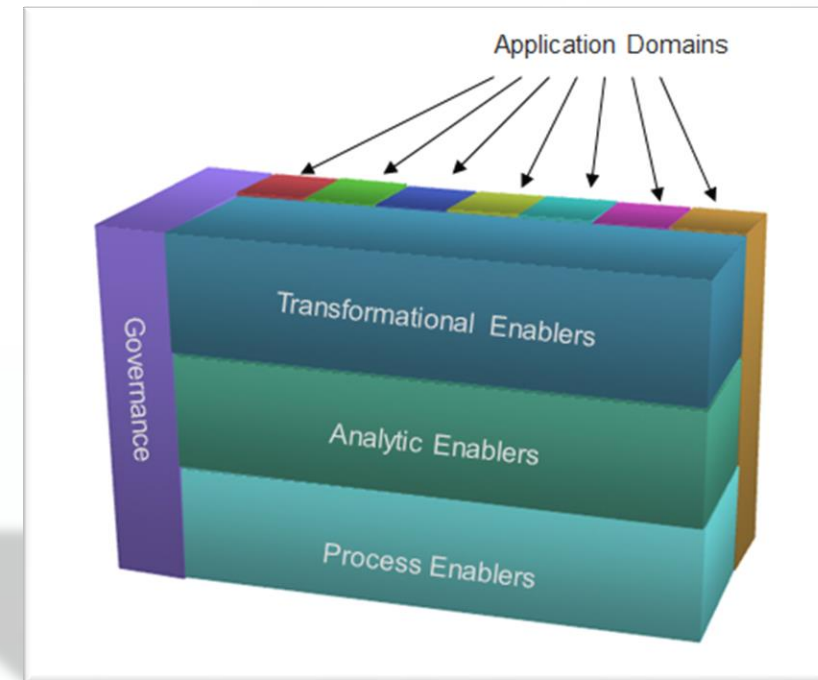
INCOSE Products

- Technical Publications/Products
 - SE Journal,
 - INSIGHT Magazine
 - INCOSE Newsletter
 - Members have access to free soft copy downloads: www.incose.org/pubs
 - **NEW!** Member discount code for all Wiley publications www.incose.org/wiley
- SE Body of Knowledge (SEBOK)
 - <https://www.sebokwiki.org>
- Periodicals
 - www.incose.org/periodicals
- Proceedings/Papers
 - www.incose.org/papers
- INCOSE Store
 - Purchase and order INCOSE products via connect.incose.org/store



Working Groups

- Working Groups (WGs) are the resource practitioners need.
- Participants discuss, collaborate, share in person, and online across more than 60 WGs in INCOSE with a wide diversity of interests.
- INCOSE WG members create products, present panels, develop and review standards.
- View the INCOSE Working Groups - www.incose.org/workinggroups





Working Group Members

- Bring value to other INCOSE stakeholders in your interest area
- Build expertise and contacts
- Help develop and review international standards
- Create products to advance the state, art and practice of Systems Engineering.
- How to Join a Working Group (found on the working group page)
 - Membership in Working Groups is open to any INCOSE member. To join a group:
 - <http://profile.incose.org>
 - Scroll to the bottom left section titled "My Committees and Working Groups"
 - Click the link for "Browse / Join a Working Group"
 - Find the desired Working Group and click on View to see roster; the Join option is at the bottom of the page
 - Additionally, email the Working Group leaders by clicking on their name(s) from the Working Groups page and sending them an email expressing your interest!

The screenshot displays a grid of 20 working groups, each with a title, member names, and a category. An orange arrow points from the 'How to Join a Working Group' section to the URL at the bottom of the page.

Resilient Systems	Risk Management	SE in Early Stage Research & Development	SE Tools Database	Small Business Systems Engineering
Ken Cureton / John Briss	Bob Parro / Jack Stein	A. Hodges / N. Lombardo / H. Hahn / M. M.	John Nallon	Angela Robinson / Claude Laporte / Ken Prackl
Analytic Enablers	Process Enablers	Transformational	Transformational	Transformational
Smart Cities Initiative	Social Systems	Soft Skills	Space Systems	System of Systems
Jennifer Russel	Erika Palmer	Sean McCoy / J. Wojcik / C. Whitcomb	David Kaslow	Alan Harding
Initiative	Analytic Enablers	Transformational	Application Domains	Analytic Enablers
System Safety	Systems and Software Interface	Systems Engineering Quality Management (SEQM)	Systems Science	Systems Security Engineering
Duncan Kemp / Meaghan O'Neil / Russell Kubycheck	Nick Guertin	Barclay Brown	Javier Calvo	Rick Dove
Analytic Enablers	Transformational	Process Enablers	Transformational	Analytic Enablers
Telecommunications	Tools Integration & Model Lifecycle Management	Training	Transportation	Value Proposition Initiative
John Risson	John Nallon	Gabriela Coe / John Clark	Dale Brown / Denis Simpson / Allison Ruggiero	Juan Amenabar / Ken Harmon
Application Domains	Transformational	Analytic Enablers	Application Domains	

How to Join a Working Group

Membership in Working Groups is open to any INCOSE member. To join a group:

- Log into your INCOSE account
- Go to your Profile Page, and scroll to the bottom left section titled "My Committees and Working Groups"
- Click the link for "Browse / Join a Working Group"
- Find the desired Working Group and click on View to see roster; the Join option is at the bottom of the page
- Additionally, email the Working Group leaders by clicking on their name(s) from the Working Groups page and sending them an email expressing your interest!

<https://www.incose.org/incose-member-resources/working-groups>



Chapters & Groups



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CHAPTERS



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COUNTRIES



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WORKING GROUPS

- At the heart of INCOSE is the ability to connect people.
- Whether you are interested in increasing your circle of influence, or in working on an issue, INCOSE Chapters and Working Groups offer unparalleled points of connection.
- Search for an INCOSE chapter - www.incose.org/chapters



New Member Yammer Community

- New Yammer community will be created
- This is a community for YOU, INCOSE New Members to network and discuss topics of interest
- www.yammer.com and login with your @incose.buzz account when assigned

A screenshot of the Yammer interface for a community named "New Members". The page has a green header banner with illustrations of people in speech bubbles and a purple "NM" badge. Below the banner, there are tabs for "Conversations", "About", "Files", and "Events". A "Start a discussion" button is visible, along with icons for "Discussion", "Question", "Praise", and "Poll". On the right side, there is a "Members 5" section with profile pictures and a "Pinned" section with a plus sign. A "Create Live Event" button is at the bottom right. The left sidebar shows navigation options like "Home Feed", "Inbox", "Notifications", and "My communities".

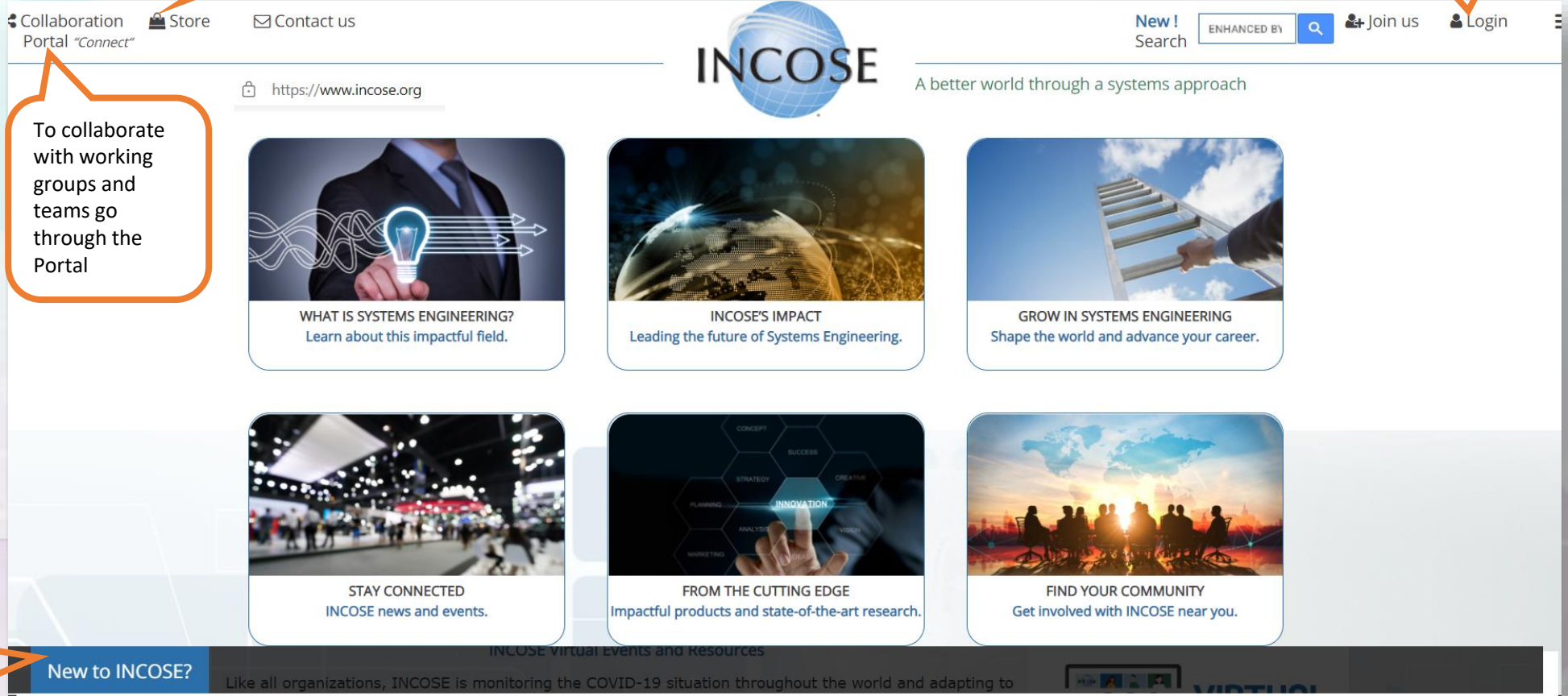


INCOSE Web Site – www.incose.org

- The INCOSE website IS the way to access the latest information and resources
- Visit www.incose.org to log into your INCOSE account, access your profile, assign your INCOSE chapter, access publications and so much more!

Purchase and download INCOSE publications

Use your login ID and password to access the intranet



To collaborate with working groups and teams go through the Portal

Locate New Member information



Corporate Advisory Board

- The INCOSE Corporate Advisory Board (CAB) is the voice of the industry to the INCOSE leadership, leading to the development of systems engineering products and input to standards to meet their needs.
- Learn more about the CAB and access application forms at www.incose.org/cab
- Why should a **company** join the INCOSE CAB?
 - CAB membership allows your organization to guide the direction of the discipline.
 - Employees can gain access to the state-of-the-art products.
 - Align with peers and fellow industry leaders, grow your global footprint, and learn about how other industry leaders are applying systems engineering to solve business problems.
 - Gain better access to talent – find and hire competent, certified Systems Engineers through your INCOSE connection.



INCOSE Events

- INCOSE conferences events and news information is located at www.incose.org/events
- At this site, you will find a listing of upcoming informational sessions, a link to the annual International Working Group (IW) and the International Symposium (IS) conferences.

INCOSE Events

INCOSE keeps you connected with news from the field and a variety of ways to meet and network with the largest global systems engineering community throughout the year.



32nd Annual **INCOSE**
international symposium

hybrid event

Detroit, MI, USA
June 25 - 30, 2022

To find regional or specialized events, search here:

Upcoming Events

- | | |
|----------|--|
| Mar 2022 | San Diego Chapter Presents Southern California Edison's Vision for Reimagining the Grid
Mar 30, 2022 - Mar 30, 2022 |
| Mar 2022 | INCOSE/GfSE Webinar 5: Lessons Learned of the introduction of Systems Engineering
Mar 30, 2022 - Mar 30, 2022 |

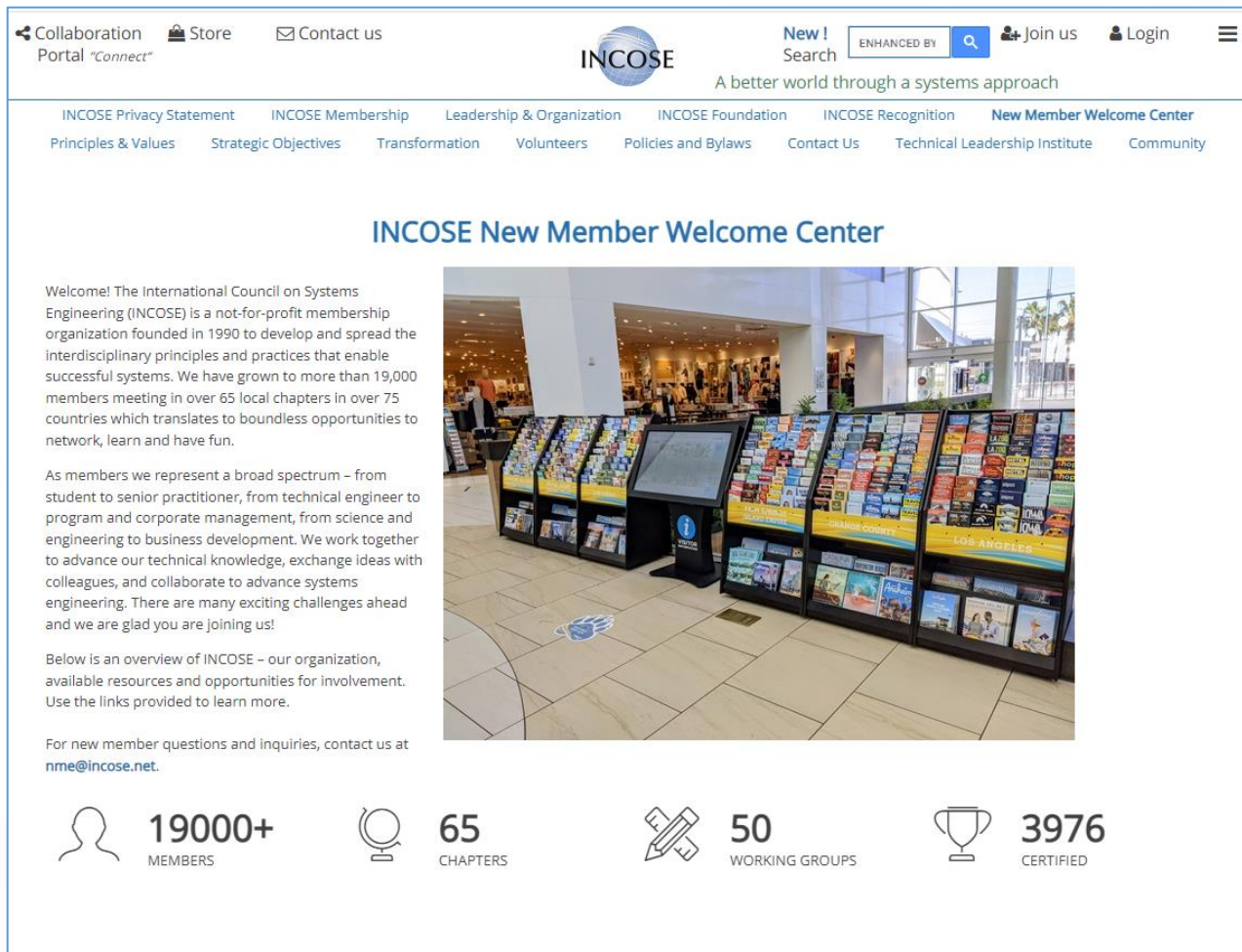
News Highlights

- Message from the President No. 1 – Update on INCOSE Travel for Operations
Mar 23, 2022
Update on INCOSE Travel from Marilee Wheaton, INCOSE President.
- Joint INCOSE-ASME Standards Development Effort
Feb 14, 2022
- Latest Issue of the Journal Systems Engineering Published

New Member Welcome Center

Many Resources for New Members

- Recordings and presentations from past New Member Café Events
- About INCOSE Overview
- Ways to engage in INCOSE
- Learning and Development
- Publications
- Growing your Career



The screenshot shows the INCOSE website's New Member Welcome Center. At the top, there are navigation links for Collaboration Portal "Connect", Store, and Contact us. The INCOSE logo is prominently displayed with the tagline "A better world through a systems approach". A search bar and links for "Join us" and "Login" are also visible. A secondary navigation menu includes links for INCOSE Privacy Statement, INCOSE Membership, Leadership & Organization, INCOSE Foundation, INCOSE Recognition, and the highlighted "New Member Welcome Center". Other links include Principles & Values, Strategic Objectives, Transformation, Volunteers, Policies and Bylaws, Contact Us, Technical Leadership Institute, and Community.

The main content area is titled "INCOSE New Member Welcome Center". It features a welcome message: "Welcome! The International Council on Systems Engineering (INCOSE) is a not-for-profit membership organization founded in 1990 to develop and spread the interdisciplinary principles and practices that enable successful systems. We have grown to more than 19,000 members meeting in over 65 local chapters in over 75 countries which translates to boundless opportunities to network, learn and have fun." Below this, a paragraph describes the organization's broad spectrum of members and their collaborative efforts. A note provides an overview of INCOSE and its resources. At the bottom, contact information for new member questions is given as nme@incose.net.

Accompanying the text is a photograph of a physical welcome center display. It consists of several black racks filled with colorful brochures and a central digital tablet. The racks are arranged in a semi-circle on a light-colored tiled floor. The background shows a modern, well-lit interior space with large windows and other people in the distance.

At the bottom of the page, four statistics are presented with icons: 19000+ MEMBERS (person icon), 65 CHAPTERS (globe icon), 50 WORKING GROUPS (pencil icon), and 3976 CERTIFIED (trophy icon).

www.incose.org/newmember