The INCOSE SEP Program
Purpose and Benefits

- The INCOSE SEP program has been developed as the highest quality, independent assessment of system engineering professionals benefiting:
  - Systems engineering community:
    - Creates the standard to identify and develop systems engineering professionals.
    - Establishes a formal, recognized body of knowledge for the systems engineering community.
  - System engineering professionals:
    - Provides a portable standard of recognition for attainment of knowledge, education, and experience.
    - Its recertification requirements serve as a mechanism for continued professional development.
  - Organizations/institutions:
    - A universal, industry-approved measure of a professional’s knowledge—achieved through the independent evaluation of relevant tasks, projects, and programs.

INCOSE’s certification program continues to grow due to the increasing recognition of its value to professionals, to organizations/institutions, and to the overall systems engineering community.

SEP Program Overview
Topics

• What is certification and why is it important?
• Who is recognizing and supporting certification?
• What level of certification is right for me?
• How do I apply for certification?
• How do I renew my certification?
• Where can I find more information?
Topics

- **What is certification and why is it important?**
- Who is recognizing and supporting certification?
- What level of certification is right for me?
- How do I apply for certification?
- How do I renew my certification?
- Where can I find more information?
What is INCOSE?

- **The International Council on Systems Engineering (INCOSE)** is a not-for-profit membership organization founded in 1990 to develop and disseminate the interdisciplinary principles and practices that enable the realization of successful systems.

- **Mission**
  Share, promote and advance the best of systems engineering from across the globe for the benefit of humanity and the planet.

- **Vision**
  The world's authority on Systems Engineering.

Certification is just one of many INCOSE products and offerings.
What Is Certification?

- Certification is an **occupational designation**
  - Provides confirmation of an individual's competency (demonstrated knowledge, education, and experience) in a specified profession or occupational specialty

- Certification is a **formal process**
  - Issued by an organization

- Certification is **voluntary**
  - It is neither a barrier nor a gate to entering a job
  - However, it may be used as a qualifier in placement

**INCOSE’s Systems Engineering Professional Certification Program** is a formal process that recognizes individuals who have demonstrated a measurable level of comprehension (education and knowledge) and proficiency (experience) in performing tasks applicable to the systems engineering profession.
Origins of INCOSE Certification

• INCOSE members supported establishment of a certification program in their responses to a 2001 survey:
  o Certification will increase the credibility, marketability, and professional status of Systems Engineers
  o A certification program will benefit employers by providing an objective means for selecting candidates and assessing skills
  o More than half of the respondents indicated that they would participate in a certification program
  o Note: Similar sentiments were re-iterated in a 2003 member survey.

• The Board of Directors (BOD) of INCOSE recognized an industry-wide void and in 2002 responded to a request by its members to establish a program to certify the knowledge and experience capabilities of personnel who perform Systems Engineering

• Certifications have been offered by INCOSE since 2004
Successful Systems Engineering

Organizational Systems Engineering Processes

ISO, CMMI, etc. Certify SE Processes

INCOSE SEP Certifies SE Experience, Knowledge and Education

INCOSE SEP focuses on your people. It complements your organizational initiatives.

SEP Program Overview
Why is Certification Important?

For organizations...

• Formally recognizes the Systems Engineering capabilities of your professional staff
• Can provide a discriminator for your proposals
• Can be used as part of the hiring and promotion process
• Provides an independent external assessment
• Encourages employee participation in continuing education

INCOSE SEP sets your organization apart!
Why is Certification Important?

For individuals...

- Formally recognizes your Systems Engineering capabilities
- Provides a discriminator for job applicants
- Provides a competitive advantage in your career
- Provides a portable Systems Engineering designation that is recognized across industry domains
- Participation in continuing education indicates your commitment to personal development

INCOSE SEP sets you apart!
Why is Certification Important?

For your teams...

- Allows the team to level-set on Systems Engineering concepts and activities
- Helps establish a common Systems Engineering language for your team
- Helps break down...
  - geographic boundaries
  - organizational boundaries
  - cultural boundaries

INCOSE SEP is particularly useful for multi-organization, geographically distributed teams.
Ways to Leverage Certification

• **Individuals**
  o Recognition
  • Designation on business card, resume, signature, etc.
  o Performance objective

• **Organizations**
  o Performance expectation
  o Career ladder alignment
  o Job advertisement
  o Proposal discriminator
  o Supplier qualification
Topics

• What is certification and why is it important?
• **Who is recognizing and supporting certification?**
• What level of certification is right for me?
• How do I apply for certification?
• How do I renew my certification?
• Where can I find more information?
A growing number of organizations are recognizing the value of the INCOSE SEP.

- U.S. Department of Defense, Office of the Undersecretary, Acquisition & Technology, Systems and Software Engineering
- Federal Aviation Administration, SE-2020 RFP
- U.S. Department of Homeland Security, Secure Border Initiative RFP
- National Research Council, Committee on Pre-Milestone A Systems Engineering: A Retrospective Review and Benefits for Future Air Force Systems Acquisition
- Federal Highway Administration and the California Department of Transportation Systems Engineering Guidebook
Chapter 7 Capabilities and Best Practices in System Development

- “Systems Engineering Technical Assistance [SETA] consultants or systems managers may not be currently considering any formal assessment to be performed. An internal assessment using continuous representation would be recommended. As an alternative, staff can demonstrate their expertise through professional certification programs like the INCOSE Certified Systems Engineering Professional [CSEP] and Project Management Institute [PMI] certification.”

Production of Systems Engineers by U.S. Industry

• “…The committee interviewed representatives from four major U.S. aerospace companies… common themes that emerged from the interviews…
  o Training, not just education, is crucial…
  o All the companies agree that mentoring is essential…
  o Subject matter expertise and/or domain knowledge are more important than is a knowledge of tools…
  o Both internal and external training are valuable; the most successful training approach is usually a hybrid…
  o Certification by and participation in INCOSE are considered essential. All the companies require certification (acquired through the right training and experience), and all participate in and support INCOSE.
  o Investment in SE training is necessary whether or not the return on investment can be directly estimated…
  o A systems engineering culture is essential…
  o Systems engineering organizations vary…
  o The “trigger” for a company’s emphasis on systems engineering is usually failing programs…”
WHAT'S NEW

- **DoD Collaborates with INCOSE on New Certification Program for Systems Engineers Working on DoD Acquisition Programs** *(Posted Jul 2008)*

The International Council on Systems Engineering (INCOSE) released an extension of its Systems Engineering Professional Certification program that targets systems engineers who work in or support the US Department of Defense acquisition environment. This effort was a collaboration between INCOSE and the ODUSD/A(AT) Systems and Software Engineering Directorate. Dr. Don Galash, an industry member of the SSE team, led and facilitated a team of experts that included Bob Skalski (former Deputy Director, Enterprise Development), and Dr. Karen Hunter, a well-known and respected consultant from the Institute for Defense Analyses. This team worked with INCOSE representatives over several months to develop the acquisition exam and helped proctor a beta test at the Defense Acquisition University in February.

The new certification program is referred to as the Certified Systems Engineering Professional with US Department of Defense Acquisition (CSEP-Acquisition or CSEP-Acq). In addition to the core CSEP examination, which is based on the INCOSE Systems Engineering Handbook (SEH), Version 3.1, the CSEP-Acq has additional questions based on the Defense Acquisition Guidebook, Chapter 4, Systems Engineering. The INCOSE SEH is available on the international systems engineering standard, INCOSE website. Version 3.1 is based on ISO/IEC 15288 Systems and Software Engineering Systems Life Cycle Processes. INCOSE also has launched a new Associate Systems Engineering Professional (ASEP) certification that targets junior systems engineers with less than five years of experience required for CSEP. ASEP uses the same core examination as CSEP. Visit INCOSE’s updated certification website to learn more about these exciting new certification opportunities.
Certification Magazine
Article by Meagan Polakowski

- Introduction to INCOSE’s Certification options
- Focus was on the new July 2008 offerings
- Interview with INCOSE Certification Program Manager

Source: http://www.certmag.com/print.php?in=3583
Section H.16 Key Personnel

(b) **Key Personnel #2: Senior Systems Engineer**

“...The Contractor shall identify a Senior Systems Engineer (SE) for the Chief Engineer and the Mission Engineering Directorate to serve as the Government’s major Systems Engineer POC and to provide supervision and guidance for all engineering Contractor personnel assigned to the contract. **The Senior SE shall be Systems Planning, Research, Development and Engineering (SPRDE) Level 2 certified or possess an equivalent certification from private industry such as INCOSE CSEP.** The Senior System Engineer is ultimately responsible for the quality and efficiency of the Engineering program support. The Senior SE shall have at least 8 years experience in systems engineering; and educational experience and accomplishments appropriate to the discipline. The Senior SE should have demonstrably strong experience managing and overseeing the successful implementation of proven, disciplined systems engineering processes resulting in a total system solution that is robust to changing technical, production, and operating environments, adaptive to the needs of the user, and balanced among the multiple requirements, design considerations, design constraints, and program budgets.”

• Date: Oct 2009
• Systems Engineer ranked as #1 job in America
• Mentions INCOSE CSEP as a potential pre-requisite

L.19.2 Staffing and Recruitment
(b) The Offeror must also provide the following statistics indicating total number of employees and:

- Percentage of employees with four year degrees from a nationally accredited college;
- Percentage of employees with four year technical or scientific degrees (e.g. mathematics, biology, chemistry, human factors, engineering, physics, and computer science) from nationally accredited colleges;
- Percentage of employees with advanced degrees from a nationally accredited college;
- Percentage of engineering employees with Professional Engineering (PE) licensing;
- Percentage of technical employees with International Council on Systems Engineering (INCOSE) certification;
- Percentage of employees with Project Management Professional (PMP) certification; and
- List other accreditations and other corporate accomplishments.

M.4.2.8 Management Approach Factor (Volume V)
(b) Staffing and Recruitment

... Degree to which Offeror demonstrates through statistical data their corporate ability to recruit a talented workforce:

- Percentage of employees with four year degrees from a nationally accredited college;
- Percentage of employees with four year technical or scientific degrees (e.g. mathematics, biology, chemistry, human factors, engineering, physics, and computer science) from nationally accredited colleges;
- Percentage of employees with advanced degrees from a nationally accredited college;
- Percentage of engineering employees with Professional Engineering (PE) licensing;
- Percentage of technical employees with International Council on Systems Engineering (INCOSE) certification; and
- Percentage of employees with Project Management Professional (PMP) certification; and
- List other accreditations and other corporate accomplishments;

Source: US FAA, November 2009
Certification Agreements

- **Industry agreements**
  - EADS
  - Booz Allen Hamilton
  - ManTech
  - MITRE
  - Lockheed Martin
  - TASC
  - BAE Systems
  - Jacobs Technology
  - ASTER Technology & Engineering
  - LinQuest
  - Thales
  - OPS Consulting
  - L-3 Communications
  - The SI Organization

- **University agreements**
  - Stevens Institute of Technology
  - University of Texas – El Paso
  - École Polytechnique
  - ISAE/Supaero
  - University of New South Wales
  - Worcester Polytechnic Institute

- **Other agreements**
  - USA DAU
  - OMG OCSMP
  - IES, GfSE, and KCOSE
  - INCOSE UK Chapter
INCOSE has formed agreements with the following companies to collaborate in offering Systems Engineering Professional status to qualifying employees:

- **EADS** (June 2008)
- **Booz Allen Hamilton** (May 2009)
- **ManTech** (Aug 2009)
- **MITRE** (Jul 2010)
- **Lockheed Martin** (December 2010)
- **TASC** (June 2011)
- **BAE Systems** (June 2011)
- **Jacobs Technology** (October 2011)
- **ASTER Technology & Engineering** (January 2012)
- **LinQuest** (April 2012)
- **Thales** (July 2012)
- **Ops Consulting** (October 2012)
- **L-3 Communications** (November 2012)
- **The SI Organization** (June 2013)
INCOSE has formed agreements with the following universities to collaborate in offering Systems Engineering Professional status to qualifying students:

- **Stevens Institute of Technology, NJ, USA** (January 2009)
- **University of Texas – El Paso, USA** (March 2010)
- **École Polytechnique, Paris, France** (December 2011)
- **Institut Supérieur de l'Aéronautique et de l'Espace (ISAE)/Supaero, Toulouse, France** (April 2012)
- **University of New South Wales, Canberra, Australia** (July 2012)
- **Worcester Polytechnic Institute, Worcester, MA, USA** (July 2012)
Certification Agreements - Special

- **OMG Collaboration** (May 2009) – The Object Management Group (OMG) and INCOSE are collaborating on mutually promoting the SEP and OMG OCSMP certification programs.

- INCOSE has entered agreements to jointly develop a certification recognition scheme by which national/local certification programs can be internationally recognized through INCOSE.
  - IES – The Institution of Engineers, Singapore (July 2010)
  - GfSE – The German Chapter of INCOSE (June 2011)
  - KCOSE – The Korean Council on Systems Engineering (October 2011)

- **INCOSE UK Chapter Collaboration** (July 2012) – The INCOSE UK Chapter and INCOSE are collaborating such that the chapter will be delegated to grant SEP certifications to its members.
Topics

• What is certification and why is it important?
• Who is recognizing and supporting certification?
• What level of certification is right for me?
• How do I apply for certification?
• How do I renew my certification?
• Where can I find more information?
Multi-Level Base Credentials
The base ASEP, CSEP, and ESEP credentials cover the breadth of systems engineering at increasing levels of leadership, accomplishments, and experience.
The SEP Aligns with the Typical Levels of a Systems Engineering Career

SEP Candidates

**ESEP focused on:**
- LEADERSHIP
- SE ACCOMPLISHMENTS
- SIGNIFICANT SE EXPERIENCE

**CSEP focused on:**
- SE EXPERIENCE
- APPLIED SE KNOWLEDGE

**ASEP focused on:**
- SE KNOWLEDGE

**INCOSE ASEP**

**INCOSE CSEP**

**INCOSE ESEP**

You can enter at whatever SEP level is appropriate and can seamlessly transition between levels when ready.
Entry Level ASEP
Associate Systems Engineering Professional

• Targeted towards junior/maturing systems engineers and recent college graduates with limited systems engineering work experience
• ASEP is certified against knowledge requirements
• Knowledge confirmed through an exam based on the INCOSE SE Handbook
• ASEP must be, and remain, INCOSE member
• Renewal every 5 years through ongoing professional development, maximum duration of 15 years
• Available since 2008
Foundation Level CSEP
Certified Systems Engineering Professional

- Targeted towards systems engineers with five or more years of systems engineering work experience
- CSEPs are certified against substantiated experience, education, and knowledge requirements
- Experience must be substantiated by 3-5 work-related references
- Knowledge confirmed through an exam based on the INCOSE SE Handbook
- INCOSE membership not required
- Renewal every 3 years through ongoing professional development
- Available since 2004
**Senior Level ESEP**

**Expert Systems Engineering Professional**

- Targeted towards senior systems engineering leaders with recognized systems accomplishments, who have many years of systems engineering work experience
- ESEPs are certified against substantiated professional leadership, systems engineering accomplishments, experience, and education requirements
- At least 10 years of experience must be substantiated by 3-5 work-related references
- Interviews used to validate leadership and significant systems accomplishments
- ESEPs must be, and remain, INCOSE members
- No renewal requirements other than INCOSE membership
- Available since 2010
INCOSE provides a measurable standard of certification consistent with ISO guidelines.
CSEP/ASEP Certification
Knowledge Requirements

• CSEP/ASEP Exam Basis
  o INCOSE SE Handbook v3.2.2 (or 3.2.1, 3.2)
  o Free download available to INCOSE members

• Exam is
  o 2 hours in length
  o 120 questions
  o Administered electronically at world-wide Prometric locations
  o Pass/Fail results provided immediately upon exam completion

• Candidates are eligible for two re-tests within one year of application submittal

The INCOSE Systems Engineering Handbook is the basis for the CSEP & ASEP exams.
Representative Exam Questions

• Which three of the following are methods to express functional behavior? (Choose three)
  □ Network Tree (NT)
  □ Behavior Diagram (BD)
  □ Allocated Requirement Diagram (ARD)
  □ Functional Flow Block Diagram (FFBD)
  □ Integrated Definition for Functional Modeling (IDEF) Diagram

• Which are three justifications for Configuration Management? (Choose three)
  □ facilitates communication
  □ forces change evaluations
  □ prevents requirements changes
  □ controls requirements changes
  □ encourages requirements changes

Note: These questions ARE NOT from the INCOSE Certification Exam. The format and content are similar (based on SEH v2A). They were created by CSM and Prometric and are used with permission.
Representative Exam Questions

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CSEP/ESEP Certification

Education Requirements

• Education
  o Technical Bachelor’s Degree (or international equivalent)
    • Acceptable engineering fields of study include: aeronautics, biomedical, chemical, civil, computer, electrical, environmental, mechanical, nuclear, software, systems
    • Acceptable other fields of study include: chemistry, computer science, mathematics, physics
    • If the Bachelor’s degree does not come from the above fields, then a Masters or Doctorate degree (or international equivalent) in those fields is acceptable
    • INCOSE is the final authority on degree applicability

• Additional Experience Can be Substituted
  o Minimum of 5 additional years of general engineering experience for non-technical Bachelor’s degree
    • Minimum of 10 years (with at least 5 in SE) for CSEP
    • Minimum of 25 years (with at least 20 in SE) for ESEP w/ CSEP
    • Minimum of 30 years (with at least 25 in SE) for ESEP w/o CSEP
  o Minimum of 10 additional years of general engineering experience if no Bachelor’s degree
    • Minimum of 15 years (with at least 5 in SE) for CSEP
    • Minimum of 30 years (with at least 20 in SE) for ESEP w/ CSEP
    • Minimum of 35 years (with at least 25 in SE) for ESEP w/o CSEP
14 SE Functional Areas Recognized for Experience

- **SE Technical Areas**
  - Requirements Engineering
  - Design Development
  - System Integration
  - Qualification, Verification, and Validation

- **SE Management Areas**
  - Technical Planning
  - Technical Effort Assessment
  - Risk and Opportunity Management
  - Baseline Control

- **SE Support Areas**
  - Specialty Engineering
  - Process Definition
  - Training
  - Tool Support
  - Quality Assurance

- **Plus “Other”**
  - To allow for the variety of SE across domains
  - Applicants should describe what they are claiming as other experience

Successful candidates must have balanced experience across multiple areas
CSEP Certification
Experience Requirements

• CSEP Systems Engineering Experience
  o **Minimum 5 years** of professional level experience in multiple SE functional areas (and any additional general years of experience necessary due to education status)
  o Minimum of **at least 1 year** of professional level SE experience in each of **3 or more** of the 14 SE functional areas
  o Must be documented on the INCOSE application form

• Experience Confirmation
  o Recommendations from **at least 3** colleagues / peers / managers
  o References must cover **at least 5 years and 3 areas** of SE experience claimed by the applicant (including any additional years)
  o References must be knowledgeable in **Systems Engineering** (or general engineering for any additional years)
  o Must be documented on the INCOSE reference form

CSEPs should have experience in performing some, but not necessarily all, of the SE functional areas
ESEP Certification
Experience Requirements

- **ESEP Systems Engineering Experience**
  - **Minimum 25 years** (20 if already a CSEP) of professional level experience in multiple SE functional areas (and any additional general years of experience necessary due to education status)
  - Minimum of at least **2 years** of professional level SE experience in each of 6 or more of the 14 SE functional areas
  - Must be documented on the INCOSE application form

- **Experience Confirmation**
  - Recommendations from **at least 3** colleagues/peers/managers
  - References must cover **at least 10 years** of SE experience claimed by the applicant
  - References must be knowledgeable in Systems Engineering
  - Must be documented on the INCOSE reference form

ESEPs should have experience in performing most, but not necessarily all, of the SE functional areas
ESEP Professional Leadership Requirements

- Minimum of **5 years** of professional leadership.
  - **Product Development Leadership** Years
    - Years of leadership in a product development position, such as chief engineer or development team lead
    - 1 year credit for each year in a leadership position - no limit
  - **Technical Society Leadership** Years
    - Leadership of a professional technical society, such as elected officer, appointed committee chair, editor, or thought leader
    - 0.5 year credit for each year of service - no limit
  - **Advanced Academics** Years
    - Technical Master’s degree (or international equivalent)
      - 1 year credit
    - Technical Doctoral degree (or international equivalent)
      - 2 years credit if separate credit is given for a Master’s degree
      - 3 years credit if separate credit is not given for a Master’s degree
    - Systems engineering graduate-level teaching
      - 1 year of credit for each 500 hours of classroom instruction spread over a 3 year time period, limited to a maximum of 3 years
    - Category limited to a maximum of 4 years credit

ESEPs must show a history of professional leadership
ESEP Certification Oral Review

- Applicant must be willing to participate in an oral review
  - Purpose of the oral review is to confirm the applicant is a Systems Engineering leader and to verify the applicant’s accomplishments and experience
  - The oral review questions are in behavior-based format
- At least two (2) of the references must be willing to participate in an oral review (if required)
  - Purpose of the reference oral review(s) is to confirm/supplement the applicant’s information
- The oral reviews
  - Are done via phone
  - Typically do not exceeding 60 minutes (30 minutes for references)
  - Are in the English language
  - Are conducted by an evaluation panel consisting of INCOSE ESEPs trained as Certification Application Reviewers (CARs)

The oral reviews focus on verifying the applicant’s leadership, accomplishments, and experience.
The Key Elements of INCOSE Certification
(What is Certified?)

<table>
<thead>
<tr>
<th>SE Knowledge</th>
<th>Education</th>
<th>SE Experience</th>
<th>SE Leadership &amp; Accomplishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Via an exam based on the INCOSE SE Handbook</td>
<td>Via confirmation of technical degree (or additional experience, if required)</td>
<td>Via confirmation of applicant’s and references written experience claims</td>
<td></td>
</tr>
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<tr>
<td></td>
<td>Via confirmation of technical degree (or additional experience, if required)</td>
<td>Via confirmation of applicant’s and references written experience claims</td>
<td>Via oral review of applicant (and references, if required)</td>
</tr>
</tbody>
</table>

These four elements (knowledge, education, experience, and leadership & accomplishments) allow for a variety of SE certifications to be earned.
So What Certification is Right for You?

- If you have just started (or plan to start) practicing systems engineering or have recently graduated and are interested in systems engineering

- If you are a practicing Systems Engineer with more than five years of systems engineering professional work experience

- If you are a systems engineering leader with recognized systems accomplishments and have many years of systems engineering professional work experience

- If you support or are working in a US DoD acquisition environment
Topics

- What is certification and why is it important?
- Who is recognizing and supporting certification?
- What level of certification is right for me?
- **How do I apply for certification?**
- How do I renew my certification?
- Where can I find more information?
ASEP Application Process

**Study**

INCOSE SE Handbook

**Application Development**

1. Applicant Information

   Applicant’s own pace

   Submit Completed Application And Fee

   $  

   Notify Applicant

   Two weeks

   Applicant’s own pace

   Pay test fee

   Schedule & Take Exam

   (Prometric Test Center)

   Applicant’s own pace

**Timeline**

Pass

Notify Applicant

Two weeks

Pass

Notify Applicant

Two weeks

Applicant has up to one year to pass the test. Test is scheduled directly with Prometric.

5 year Certification

Applicant has up to one year to pass the test. Test is scheduled directly with Prometric.
CSEP Application Process

**Study**

INCOSE SE Handbook

**Application Development**

1. Verifiable Education
2. Verifiable Experience
3. Applicant’s Advocates (three references knowledgeable about SE)

**INCOSE Application Center**

Submit Completed Application And Fee $46

**INCOSE Evaluation**

Applicant’s own pace

Four to six weeks

Notify Applicant

Pass

Pay test fee Schedule & Take Exam (Prometric Test Center)

**Timeline**

Two weeks

Applicant’s own pace

Notify Applicant

Applicant has **up to one year** to pass the test. **Test is scheduled directly** with Prometric.
## CSEP Application Process

### Exam First Option

1. **Study**
   - INCOSE SE Handbook

2. **Application Development**
   - 1. Verifiable Education
   - 2. Verifiable Experience
   - Applicant’s own pace

3. **Reference Submittal**
   - 3. Applicant’s Advocates (three references knowledgeable about SE)
   - References’ own pace

4. **Exam**
   - Pay test fee
   - Schedule & Take Exam (Prometric Test Center)
   - Applicant’s own pace

5. **INCOSE Evaluation**
   - Four to six weeks

6. **Notify Applicant**
   - Two weeks

7. **INCOSE Application Center**

**Timeline**
- **Submit Completed Application And Fee**: Applicant’s own pace
- **Notify Applicant**: Two weeks
- **Pass**: Applicant has **up to one year** to pass the test. **Test is scheduled directly** with Prometric.

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**Notes**
- SEP Program Overview

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**Certified INCOSE SE**
**ESEP Application Process**

1. **Verifiable Education**
2. **Verifiable Experience**
3. **Applicant’s Advocates (three references knowledgeable about SE)**
4. **Verifiable Professional Development**

**INCOSE Application Center**

- **Submit Completed Application And Fee $**
- **Four to six weeks**
- **Two weeks**
- **Mutual Agreement**

**Pass**

- **Notify Applicant**
- **Conduct Oral Review with Applicant and Up to Two References (Via telephone conference)**
- **Certification**

**Timeline**

Applicant has **up to one year** to complete the entire process.

**SEP Program Overview**
All of the Application Material is Available On-line

Systems Engineering Professional Certification

The International Council on Systems Engineering has established a multi-level Professional SEP Certification Program to provide a formal method for recognizing the knowledge and experience of systems engineers, regardless of where they may be in their career.

Multi-Level Base Credentials

The base ASE, CSEP, and ESEP credentials cover the breadth of systems engineering at increasing levels of leadership, accomplishments, and experience.

Extensions

Extensions cover a specific domain or subset of systems engineering in more detail. A base SEP credential must first be earned.

What is certification?

Certification is a formal process whereby a community of knowledgeable, experienced, and skilled representatives of an organization, such as INCOSE, provides confirmation of an individual’s competency (demonstrated knowledge, education, and experience) in a specified profession or occupational specialty and provides formal recognition that a person has achieved competency in specified areas (demonstrated by education, experience, and knowledge). Certification differs from licensing in that licenses are permissions granted by a government entity for a person to practice within its regulatory boundaries. Certification also differs from a certificate that documents the successful completion of a training or education program.
How Long Will It Take to Get CSEP?  
There is no one answer. Much depends on the applicant.

**INCOSE**
- Receives application & fee
- Checks completeness of submittal
- Notifies applicant by e-mail that application was received and is complete or has missing material

**Reference**
- Submit recommendations via e-mail to INCOSE. 
**Applicant** submits missing material.

**Applicant**
- Downloads information from INCOSE web page
- Collects information
- Fills out and submits forms via e-mail
- Pays fee on-line

**INCOSE**
- Receives application & fee
- Checks completeness of submittal
- Notifies applicant by e-mail that application was received and is complete or has missing material

**Applicant**
- Schedules exam with test organization
- Takes exam at test site
- Receives results immediately
- Schedules exam, if needed

---

While the times vary, the average time for CSEP is ~200 days.
Topics

• What is certification and why is it important?
• Who is recognizing and supporting certification?
• What level of certification is right for me?
• How do I apply for certification?
• **How do I renew my certification?**
• Where can I find more information?
Certification Renewal Requirements

• Certification is Valid for
  • 3 Years for CSEP
  • 5 Years for ASEP and must maintain INCOSE membership
  • Indefinite for ESEP, but must maintain INCOSE membership
  • Extensions (e.g., Acq) are renewed concurrent with the base certification, regardless of when earned

• Certification renewal requires
  • Minimum of 120 Professional Development Units (PDUs)
  • Renewal application
  • Continuing education log submittal
  • Must be submitted before current certification period ends
  • Up to 30 “excess” PDUs can be “carried forward”

INCOSE certified professionals have an ongoing growth and learning obligation
## Professional Development Activities
(All must be relevant to the practice of systems engineering)

<table>
<thead>
<tr>
<th>Technical Society Participation Category</th>
<th>Credit</th>
<th>3/5 Year Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be an INCOSE individual, senior, or student member</td>
<td>5 PDU/year</td>
<td>15 PDU</td>
</tr>
<tr>
<td>Attend professional technical society local event/chapter presentation/exhibit</td>
<td>1 PDU/hour attendance</td>
<td>30 PDU</td>
</tr>
<tr>
<td>Attend professional technical society conference/symposium</td>
<td>1 PDU/hour attendance</td>
<td>72 PDU</td>
</tr>
<tr>
<td>Participate on professional technical society working groups, committees, etc.</td>
<td>1 PDU/hour of effort</td>
<td>No limit</td>
</tr>
<tr>
<td>Perform leadership role in professional technical society at local, national or international level</td>
<td>1 PDU/hour of effort</td>
<td>No limit</td>
</tr>
<tr>
<td>Volunteer activities with youth in schools or community related to science, technology, engineering, and math (STEM)</td>
<td>1 PDU/hour of effort</td>
<td>72 PDU</td>
</tr>
<tr>
<td>Volunteer activities with community, school, or non-profit organizations that help them accomplish their technical needs</td>
<td>1 PDU/hour of effort</td>
<td>30 PDU</td>
</tr>
<tr>
<td>Earn an SE-relevant, exam-based, professional certification other than INCOSE SEP</td>
<td>5 PDU/certification (Up to 2 per renewal period)</td>
<td>10 PDU</td>
</tr>
<tr>
<td>Professional Development Activities</td>
<td>Credit</td>
<td>3/5 Year Limit</td>
</tr>
<tr>
<td>-------------------------------------</td>
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<td>---------------</td>
</tr>
<tr>
<td><strong>SE Course Work &amp; Publication Category</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete a technical graduate level course</td>
<td>2 PDU/class hour</td>
<td>No limit</td>
</tr>
<tr>
<td>Attend educational course, tutorial, or seminar</td>
<td>1 PDU/hour</td>
<td>No limit</td>
</tr>
<tr>
<td>Teach professional development coursework, including presentations not part of job function.</td>
<td>2 PDU/hour (prep) 1 PDU/hour (teach)</td>
<td>40 PDU</td>
</tr>
<tr>
<td>Write &amp; publish SE article</td>
<td>5 PDU/article</td>
<td>No limit</td>
</tr>
<tr>
<td>Write &amp; publish SE book</td>
<td>30 PDU (primary author)/book 10 PDU (contrib. author)/book</td>
<td>No limit</td>
</tr>
<tr>
<td>Attend vendor presentation with educational value</td>
<td>1 PDU/hour attendance</td>
<td>15 PDU</td>
</tr>
<tr>
<td><strong>SE Job Function Participation Category</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receive patent award</td>
<td>10 PDU/award</td>
<td>No limit</td>
</tr>
<tr>
<td>Serve as designated lead systems engineer for a system, product or service</td>
<td>15 PDU/year</td>
<td>45 PDU</td>
</tr>
<tr>
<td>Lead organization to increase INCOSE systems engineering certifications</td>
<td>5 PDU/year</td>
<td>15 PDU</td>
</tr>
<tr>
<td>Volunteer (i.e., non-compensated) activities within your organization related to engineering and science</td>
<td>1 PDU/hour of effort</td>
<td>30 PDU</td>
</tr>
</tbody>
</table>
All of the Renewal Material is Available On-line

Systems Engineering Professional Certification

The International Council on Systems Engineering has established a multi-level Professional SEP Certification Program to provide a formal method for recognizing the knowledge and experience of systems engineers, regardless of where they may be in their career.

Multi-Level Base Credentials
The base ASE, CSE, and ESEP credentials cover the breadth of systems engineering at increasing levels of leadership, accomplishments, and experience.

What is certification?
Certification is a formal process whereby a community of knowledgeable, experienced, and skilled representatives of an organization, such as INCOSE, provides confirmation of an individual's competency (demonstrated knowledge, education, and experience) in a specified profession or occupational specialty. It provides formal recognition that a person has achieved competency in specified areas (demonstrated by education, experience, and knowledge). Certification differs from licensing in that licenses are permissions granted by a government entity for a person to practice within its regulatory boundaries. Certification also differs from a 'certificate' that documents the successful completion of a training or education program.
Topics

- What is certification and why is it important?
- Who is recognizing and supporting certification?
- What level of certification is right for me?
- How do I apply for certification?
- How do I renew my certification?

Where can I find more information?
Where Do I Find More Information?

INCOSE Certification web site at http://www.incose.org
Where Do I Find More Information? (cont.)

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Extensions

Extensions cover a specific domain or subset of systems engineering in more detail. A base SEP credential must first be earned.

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The INCOSE Certification Advisory Group is responsible for the oversight & governance of the Systems Engineering Professional program.
Email Contacts

Certification Office: certification@incose.org

Courtney Wright, CSEP
Certification Program Manager: Courtney.Wright@incose.org

For more information visit: www.incose.org/educationcareers/certification/
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