CASE Pathway 1 - Chartered Professional Engineer (CPEng) to Certified Systems Engineering Professional (CSEP)

Clarifications to minimum requirements for CPEng CSEP applicants:

The required 5 years of Systems Engineering experience, described at the minimum requirements section, can be either or both of

- experience presented in your CPEng application, or
- experience gained post achieving chartered status

Instructions

CSEP Application

Pay application fee (see Fees section)

Complete CASE Form 1, using guidance from Form 2, and submit to CASEAdmin@sesa.org.au. Within Form 1, the following are key points for CPEng CSEP applicants:

- In Section 4 - Experience, include in the P1 data entry fields, complete only the "Referees" and "Your Duties and Responsibilities" sections as follows
  - "Referees" field: Include one referee, that satisfies the criteria for a qualified referee in Form 4b, who is able to attest to one (1) year of claimed SE experience
  - "Your Duties and Responsibilities" field: Start entry with "CPEng Experience Cited". For each SE competency element being claimed, provide details of your position and the duration of SE experience, and cite the entry within CPEng application that supports the SE competency claim

- If necessary, use the data entry fields of P2 onwards, in Section 4, to provide any additional SE competency claims.

Send CASE Forms 4a and 4b to your referee. Have the referee complete Form 4b and return it to CASEAdmin@sesa.org.au.
INCOSE SE Handbook Knowledge Exam

Upon notification of CSEP acceptance from SESA, study the INCOSE SE Handbook

(SE Handbook is available through INCOSE see http://www.incose.org/ProductsPublications/section/6handbook).

OPTION:

You may choose to do the INCOSE SE Handbook Knowledge exam in advance of application completion (see INCOSE SE Handbook Knowledge exam for details).

Complete the SE Handbook Knowledge Exam. You are permitted a maximum of 3 examination attempts within period of application submission.

CPEng (SE Area of Practice)

Use the Application for College Membership process to provide Engineers Australia with:

- A completed application form, and
- Evidence of having attained CSEP credential
- A CV
- A CPD record showing at least 150 hours in the last 3 years (minimum 50 hours of Systems Engineering CPD)

The applicant will then be recognised by Engineers Australia as Chartered Engineers in the Systems Engineering area of practice.

CASE Pathway 2 - Experienced Professional Engineer (PEng) to CSEP to CPEng (SE)

Instructions
CSEP Application - Direct
Pay CSEP application fee (see Fees section)

Satisfy minimum application requirements described at the minimum requirements section.

Complete CASE Form 1, using guidance from Form 2, and submit to CASEAdmin@sesa.org.au.

Send CASE Forms 4a and 4b to your referees (minimum 3, each to cover different SE competency experience claims). Have the referees complete Form 4b and return it to CASEAdmin@sesa.org.au.

CSEP Application - ASEP to CSEP Transition

Pay ASEP to CSEP Transition application fee (see Fees section)

Satisfy minimum application requirements described at the minimum requirements section.

Complete CASE Form 1, using guidance from Form 2, and submit to CASEAdmin@sesa.org.au. Within Form 1, the following are key points for ASEP to CSEP Transition applicants:

- In Section 2 - SESA / Engineers Australia Membership Details - select “Transition from ASEP to CSEP” list item for the Type of Certification Requested with the Application

Send CASE Forms 4a and 4b to your referees (minimum 3, each to cover different SE competency experience claims). Have the referees complete Form 4b and return it to CASEAdmin@sesa.org.au.
INCOSE SE Handbook Knowledge Exam

Upon notification of CSEP acceptance from SESA, study the INCOSE SE Handbook

(SE Handbook is available through INCOSE - see http://www.incose.org/ProductsPublications/sehandbook).

OPTION:

You may choose to do the INCOSE SE Handbook Knowledge exam in advance of application completion (see INCOSE SE Handbook Knowledge exam for details).

Complete the SE Handbook Knowledge Exam. You are permitted a maximum of 3 examination attempts within period of application submission.

CPEng (SE Area of Practice)

Using the Mutual Recognition Agreement (MRA) between INCOSE and Engineers Australia, applicants are to submit the following application material to the National Manager Stage 2 Assessments, outside of eChartered the following:

- Evidence of having attained CSEP credential,
- A CV,
- Payment,
- A CPD record showing at least 150 hours in the last 3 years (minimum 50 hours of Systems Engineering CPD)

Applicants will be required to attend a personal interview with the Stage 2 assessor and attending panellists.
If successful, the applicant will be recognised by Engineers Australia as Chartered Engineers in the Systems Engineering area of practice.

**CASE Development**

**Applicability**

This component of the CSEP application is applicable to Professional Engineers that have not yet attained the experience necessary to fulfil the minimum requirements for completing CASE Pathway 2.

The following guidance provides resources to support gaining knowledge in Systems Engineering. Experience will need to be gained through practical application of this knowledge.

**Guidance**

Support for gaining Systems Engineering knowledge:

- Systems Engineering training providers

- Refer to SE Training providers links page.

- CSEP preparation, including INCOSE SE Handbook knowledge exam training, support

- Refer to CSEP Preparation providers links page.

Whilst in this stage you may pay the fee and apply for, and undertake the INCOSE SE Handbook Knowledge exam to gain, Associated Systems Engineering Professional (ASEP) certification by INCOSE.

To apply for ASEP, complete CASE Form 1a and submit to CASEAdmin@sesa.org.au.
Once sufficient experience has been attained, you may then pay the fee (ASEP to CSEP transition) and apply for CSEP through CASE Pathway 2.

ASEP certification will remain valid for a period of 5 years allowing time to gain the experience to pursue CASE Pathway 2.

**INCOSE SE Handbook Knowledge Exam**

**Instructions and Guidance**

**CASE Pathways 1 and 2 - Early Exam Applicants**

Complete application as per CASE Pathway 1 or CASE Pathway 2 instructions, with the following exceptions:

- Within Form 1, the following are key points for Exam first applicants:
  - SESA need not have received Referee's contribution to, or confirmed acceptance of, your CSEP application - this will be expected to be done in parallel when this option is selected
  - Wait for your Eligibility ID from INCOSE.

**CASE Pathways 1 and 2 - ALL Applicants**

Once you have received your Eligibility ID from INCOSE you can arrange a date for the INCOSE SE Handbook Knowledge exam either by the following means:

- Computer based test. Schedule your test and locate your test centre via the Prometric website. NOTE: There are presently only two venues (Sydney and Melbourne) for this option. From the Prometric website complete the following actions:
- Search or select from the Test sponsor directory “INCOSE - International Council on Systems Engineering”
- Click on INCOSE - International Council on Systems Engineering
- Complete the "I WANT TO..." steps within the menu screen
- Follow instructions for each step
- Pay Fees as directed

- Paper based test. Refer to the Paper Based Test Program link for details of where and when paper based tests will be convened. Applicants will need to do the following:

  - Bring their Eligibility ID from INCOSE to the exam as well as proof of identity
  - Pay the examination fee prior to attending the exam.

Complete the INCOSE SE Handbook Knowledge exam

INCOSE will notify participants of the test results.

**CASE Development Participants**

Complete ASEP application Form 1a. Refer to Fees for the application fee.

Once you have received your Eligibility ID from INCOSE you can arrange a date for the INCOSE SE Handbook Knowledge exam either by the following means:

- Computer based test. Schedule your test and locate your test centre via the Prometric website. NOTE: There are presently only two venues (Sydney and Melbourne) for this option. Review following option for alternatives.

- Search or select from the Test sponsor directory “INCOSE - International Council on
Systems Engineering
- Click on INCOSE - International Council on Systems Engineering
- Complete the "I WANT TO..." steps within the menu screen
- Follow instructions for each step
- Pay Fees as directed

- Paper based test. Refer to the Paper Based Test Program link for details of where and when paper based tests will be convened. Applicants will need to do the following:
  - Bring their Eligibility ID from INCOSE to the exam as well as proof of identity
  - Pay the examination fee prior to attending the exam.

Complete the INCOSE SE Handbook Knowledge exam

INCOSE will notify participants of the test results.

Forms for CASE Pathways 1 and 2 Applications
- CASE Form 1 - Application for INCOSE CSEP through SESA
- CASE Form 1a - Application for INCOSE ASEP through SESA
- CASE Form 2 - Instructions for Completing Form 1
- CASE Form 4a - Instructions to INCOSE CSEP Application Referees
- CASE Form 4b - Referee for Application for INCOSE CSEP through SESA

Forms can be downloaded from here

Experience Applicable for Certification
Requirements Engineering
- Analyse customer and stakeholder needs,
- Generate/develop requirements,
- Perform functional analyses,
- Derive requirements,
- Ensure requirements quality,
- Allocate requirements,
- Control requirements,
- Maintain requirements database,
- Develop and implement requirements management plans,
- Develop measures of effectiveness and performance

Risk and Opportunity Management

- develop and implement Risk and Opportunity Management Plans,
- identify risk issues and opportunities,
- assess risk issues and opportunities,
- prioritise risks and opportunities,
- develop and implement risk mitigation and opportunity achievement plans,
- track risk reduction and opportunity achievement activities

Baseline Control

- develop and implement Configuration Management Plans,
- establish and update baselines for requirements and evolving configurations/products,
- establish and implement change control processes,
- maintain traceability of configurations,
- participate in Configuration Control Boards,
- participate in configuration item identification and status accounting,
- participate in functional and physical configuration audits

Technical Planning

- identify program objectives and technical development strategy;
- prepare Systems Engineering Management Plans,
- program Work Breakdown Structures,
- product Breakdown Structures,
- Integrated Master Plans,
- and Integrated Master Schedules;
- identify program metrics including product technical performance measures and key performance parameters,
- identify program resource needs in terms of equipment, facilities, and personnel capabilities

Technical Effort Assessment

- collect, analyse, track, and report program metrics including product technical performance measures and key performance parameters;
- conduct audits and reviews;
- assess process and tool usage compliance;
- conduct capability assessments;
- recommend and implement process and product improvements

**Architecture/Design Development**

- identify baseline and alternate candidate concepts and architectures,
- prepare Trade Study Plans,
- conduct and document trade studies,
- evaluate and optimise candidate concepts and architectures,
- prepare system/solution description documents

**Qualification, Verification, and Validation**

- develop and implement Qualification, Verification, and Validation Plans;
- develop verification requirements and pass/fail criteria;
- conduct and record results of qualification, verification, and validation efforts, and corrective actions;
- prepare requirements verification matrix and qualification certificates
- Process Definition
- define enterprise processes and best practices,
- tailor enterprise processes for program/project applications

**Tool Support**

- specify requirements for, evaluate, select, acquire, and install SE computer programs/tools

**Training**

- develop and implement Training Plans, develop and give training courses on processes and tools

**Systems Integration**

- define technical integration strategy, develop Integration Plans, develop integration test scripts, develop and implement integration test scenarios, conduct and document integration tests, track integration test results and retest status

**Quality Assurance**

- develop and implement a Quality Assurance Plan,
- perform quality audits,
- report quality audits,
- define and track quality corrective actions
Specialty Engineering

- develop and implement Specialty Plans as part of, or an addendum to, the Systems Engineering Management Plan to cover such specialties as reliability, maintainability, supportability, survivability, logistics support, security, safety, human factors, electromagnetic environmental effects, environmental engineering, packaging and handling, etc.

Other

- describe other functions that you have performed and can justify as system engineering activities.