# CASE Form 2 – Instructions for Completing Form 1 (Application for INCOSE CSEP through SESA)

**General Instructions**

1. On the CASE / CSEP Applications page, under the Instructions link, information and a link is provided for submitttting applications to the CASE Administration Office (CASEAdmin@sesa.org.au).

2. The applicant is responsible for providing the information requested on the application, and for providing CASE Form 4A "Instruction Letter to CSEP Referees" and Form 4B "CSEP Referee's Comments and Recommendations" to his or her qualified referees for their use in submitting their endorsements. A qualified referee is a supervisor or associate fellow worker who is equal or at a higher level in abilities and qualifications "systems engineering wise," and, because of that can attest to the applicant's systems engineering knowledge and past experience in successfully performing systems engineering tasks.

   **For applicants, who are Professional Engineers (PEng) and not currently Chartered through Institute of Engineers Australia (IEAust), wanting to pursue Chartered status through CSEP certification** (referred hereafter as **PEng CSEP applicants**), the following is applicable:
   a. at least one referee should be a current or former supervisor.
   b. the applicant's experience reported and confirmed by the referees must cover the entire period of systems engineering experience needed by the applicant to qualify for certification.
   c. each individual referee does not have to confirm the entire period of the applicant's experience, but the collective set of referees must support the entire period of the applicant's required experience, including both depth and breadth of experience requirements.

   **For applicants, who are Chartered Professional Engineers within IEAust (CPEng) and want to pursue CSEP certification** (referred hereafter as **CPEng CSEP applicants**), the following is applicable:
   a. one referee is required to be nominated with an understanding of Systems Engineering who can directly verify at least 12 months of the required 5 years of qualifying experience.

   The applicant is also responsible for following up with his/her referees to ensure that they have submitted their recommendations in a timely manner, preferably within two weeks, to the CASE Administration Office.

3. The fees in Australian dollars that must accompany certification applications are listed at www.sesa.org.au under the CASE / CSEP Applications link: https://sesa.org.au/csep-fees

The application will be processed after the fee and all supporting materials are received.

**You have one year from the date of your payment to complete the entire CSEP certification process.** The applicant is responsible for any delays in application or referee submittals, delays due to incomplete or insufficient information, and successfully passing the examination. Failure to do so will result in your application for certification being denied.

4. A standard acknowledgement of receipt of application will be sent electronically. Any questions can be directed to CASE Administration Office at CASEAdmin@sesa.org.au

5. **All supporting documentation and information must be received before an application is considered complete.** If the application is incomplete or one of your items is missing, you will be notified of the corrective actions that you must take. If you are requested to submit additional information, you will have three months from the time of notification to provide this additional information. Failure to do so will result in your application for certification being denied.

**Section 1: General Information**
Name: Given (First) Name(s), Family (Last) Name, Middle Initial.
Address: Preferred permanent complete mailing address.
Permanent e-mail address and current phone number
Present organisation

**Section 2: SESA / Engineers Australia Membership**
Please indicate if you are applying directly to CSEP or if you are transitioning from ASEP. The application will be filled out the same.
Those who are an ASEP, already, do not have to retake the knowledge exam. If you are an ASEP, please provide your certification number.

Please indicate your membership status with Engineers Australia (MIEAust) and INCOSE (either directly or through SESA). Also indicate whether you have Chartered Engineer certification through Engineers Australia. If you are not a member of either Engineers Australia or INCOSE you can register for membership at the following websites:

- Institute of Engineers Australia - visit https://www.engineersaustralia.org.au/membership/join
- SESA (incorporating INCOSE): visit http://www.sesa.org.au/membership#ApplyMembership

**Section 3: Fee Payment**
Fees payable are identified via Form 1. An invoice for fees payable will be provided following receipt of the application. Provide a valid email address to facilitate this transaction.

**Section 4: Education**
NOTE 1: CSEP applicants are expected to have a qualifying degree - EA membership details from Section 2 will confirm this - Hence, this section is OPTIONAL for the CASE program.
NOTE 2: For CSEP applicants applying through the CASE program, a recent CV is REQUIRED to be supplied with the application.

**Section 5: Experience**
Applicants will be expected to possess, as a minimum, a qualifying Bachelor of Engineer degree and be able to demonstrate a minimum of five (5) years systems engineering experience to be considered for CSEP certification.

**For CPEng CSEP applicants**, where experience is being claimed from your Chartered Engineer (CPEng) application, cite "Evidence provided CPEng Application" within P1 SE experience area fields of this form including details of the episodes (citations) in which SE experience is claimed. In addition refer to the positions within which the CPEng experience was gained with reference to the supplied CV.
Provide additional systems engineering experience for P2 onwards (as necessary).

**For PEng CSEP applicants**, please start with your current position for P1 and continue in reverse chronological order. The form will expand to submit additional SE experience areas within each position using the "+" symbol. If you need more than 7 positions, please submit an additional application form to cover the additional positions.

Provide the organisation name and dates of experience (from/to month & year). The form will round to the first date of each month and will calculate the elapsed time in position. This is important, as you must claim fewer or equal months of work experience than the calendar months of experience. You will see a pop-up until you have this corrected, and these dates are key to that calculation.

Include the name of your immediate supervisor/peer and how he/she may be contacted, though such contact is not standard. List your title/position and the reference(s) for that work experience. This list of references will help your application review team know whether they have received a reference to validate the experience. Only validated experience can count toward meeting the depth and breadth requirement. If you have no references for a position, type "None" in that field.

Begin each position by summarizing your role and system of interest. This is an optional section that may be useful for you to give context to the functional descriptions that follow. In this section, you may explain if your role changed. You are not required to name the specific system on which you worked.

Using the SE experience area drop-down, choose a systems engineering type of work you did. Next to that, type the number of months during which you did this work. Because you may only count each calendar month once, you will need to consider how you are allocating time to each SE experience area. If you worked for 12 months and did two different types of systems engineering, you will allocate X months to one type and (12 – X) months to the other type. If your time was equally split between the two, you will give 6 months to each type.

In the expandable text box below the drop-down, include the full depth of detail about the SE tasks/ functions you performed and the products you produced. Describe in detail your role in leading/ performing systems engineering tasks, the products produced, and the duration of your efforts in producing those products. The Certification Application Review Team makes its assessments based on the information provided in the application and is looking for your direct contributions to a work effort. For example:
a. Identify and describe the products or services for which SE was applied.
b. Describe the sub-level activities performed in SE experience areas, such as what parts of requirements engineering were done – requirements elicitation, definition, decomposition, allocation, control, management, etc. It is too vague to just state "I worked on requirements for the system."

Describe your qualifications in more detail than just saying that you were involved with an effort, led an effort, or contributed to an effort. Simply stating a job title or position is not a description of experience. Non-technical roles/tasks in program management, resource management and business development are not regarded as SE functions and do not count as appropriate experience. Also, describe additional years of engineering experience required due to your educational situation. Applications with insufficient detail may result in denial.

A Certified Systems Engineering Professional must have a demonstrated breadth and depth of systems engineering experience. In order to ensure a sound systems engineering technical foundation, the systems engineering experience documented in the application needs to include one-year or greater increments in at least three of the following areas of systems engineering. These areas are further defined in Attachment A:

a. Requirements Engineering
b. System and Decision Analysis
c. Architecture/ Design Development
d. Systems Integration
e. Verification and Validation
f. System Operation and Maintenance
g. Technical Planning
h. Technical Monitoring and Control
i. Acquisition and Supply
j. Information and Configuration Management
k. Risk and Opportunity Management
l. Lifecycle Process Definition and Management
m. Specialty Engineering
n. Organizational Project Enabling Activities
o. Other

A summary table has been provided for the applicant to identify that he or she has the required depth and breadth of systems engineering experience. This summary table is broken down by the 14 SE experience areas listed in Attachment A to this form. Check that the number of full-time equivalent calendar months (rounded to the nearest whole month and no credit for overtime work/penalty for vacation time) worked in each of the system engineering experience areas confirms the depth and breadth requirement by looking for a number greater than or equal to 12 in the right-hand column of the summary table. You must have at least three rows greater than or equal to 12, and confirmed by references, to meet the depth and breadth requirement.

The time for each period of performance in the summary table must be less than the respective period of performance calendar time claimed on your application. As an example, assume you worked in 4 different SE experience areas in a 7-year period and the total of all your SE experience amounted to 5 years. The summary table breakout should reflect your equivalent full-time experience, such as: Requirements Engineering for 18 months; Systems Integration for 15 months; Information and Configuration Management for 15 months; and Technical Planning for 12 months; thus equaling 60 months of SE experience for the 7-year period. As another check, the total amount of SE experience in the summary table must be less than the calendar time of your claimed periods of performance on the application. A pop-up will display if any positions violate this rule. Please identify employment periods at different organisations, or significant changes of responsibilities within the same organisation as separate positions. Do not differentiate between different projects or various placements within the same organisation unless there was a significant change in responsibility. Also, time in school as a student does not count as experience. It is recommended that you fit all your work experience into seven positions. If that is not possible, you may submit a second application form addressing additional positions.

All experience is useful for reviewers to understand your work experience, but only that confirmed by references can count toward meeting the minimum experience requirements. Your references must cover the same time periods and describe the same types of work in their statements as you have described in your application (see NOTE A). They must not use identical wording to your application and to each other.

NOTE A: **For CPEng CSEP applicants**, identify at least one qualified referee who can directly verify at least 12 months of the required 5 years of qualifying experience claimed to be covered by CPEng career episode citation. Experience claimed separate from the CPEng citation are to be referenced as per the instructions of the previous paragraph.

**Section 6: Affidavit**
Read, check, sign, and date your decision on accepting the affidavit. Your typed name is accepted as a signature on an electronically submitted application.

You must sign the affidavit to have your application processed.

**Section 7: Optional Information**
Your birth year and gender are useful for our internal analysis but will not affect your application processing. You may choose whether you submit this information.

If recognised as an INCOSE Systems Engineering Professional, your name along with your organisation/division, city, state, and country will be posted on the INCOSE public web site and may be otherwise communicated by INCOSE.

# Attachment A - Experience Applicable for Certification

Applicants for certification as a Certified Systems Engineering Professional are required to submit evidence of a minimum of five years of systems engineering experience in addition to having a qualifying Bachelor of Engineering degree.

Systems engineering experience to satisfy the minimum requirements for initial certification includes performing systems engineering functions, but does not include time spent in receiving a technical education, or teaching full time. (Teaching experience may be included to satisfy re-certification requirements.)

Systems engineering functions include but are not limited to the following:

1. **Requirements Engineering:** Preparing for or managing a Business or Mission analysis; Defining a Problem or opportunity space; Characterizing a solution space; Evaluating alternative solution classes; Preparing for Stakeholder Needs & Requirements Definition; Defining stakeholder needs; Developing Operational Concept and other Life Cycle concepts; Transforming needs into stakeholder requirements; Analyzing Stakeholder Requirements; Managing Stakeholder needs and requirements definition; Preparing for System Requirements Definition; Defining System Requirements; Analyzing System Requirements; Managing System Requirements.
2. **System and Decision Analysis:** Preparing, performing and managing a system analysis; Decision Management, including Preparing for System Engineering Decisions; Analyzing decision information; Making and managing SE decisions.
3. **Architecture/ Design Development:** Preparing for architecture definition; Developing architecture viewpoints; Developing models and views of candidate architectures; Relating architecture to design; Assessing candidate architectures; Managing the selected architecture; Preparing for design definition; Assessing alternatives for obtaining system elements; Establishing design characteristics and design enablers; Managing a system design.
4. **Systems Integration:** Preparing, performing and managing system element implementation; Identifying, agreeing and managing system-level interfaces; Preparing and performing Integration; Managing integration results.
5. **Verification and Validation:** Preparing and performing Verification; Managing verification results; Preparing and performing Validation; Managing Validation results; Preparing for, and performing System Transition; Managing results of System Transition; Obtaining Qualification, Certification and Acceptance.
6. **System Operation and Maintenance:** Preparing for Operation; Managing results of Operation; Performing and supporting System/Product Operation; Preparing for and performing Maintenance; Performing Logistics Support; Managing results of maintenance and logistics; Preparing for, performing and finalizing system disposal.
7. **Technical Planning:** Defining an SE project; Planning an SE project and its technical management; Activating an SE project; Identifying and recording tailoring influences and mandated structures; Obtaining input from parties affected by the tailoring strategy; Making Tailoring decisions and selecting life cycle processes.

8 **Technical Monitoring and Control:** Planning for SE project assessment and control; Assessing SE projects; Controlling projects from an SE perspective; Preparing for and performing System Measurement; Preparing for system Quality Assurance; Performing system product or service evaluations.

9 **Acquisition and Supply:** Acquisition, including: Preparing for system/element acquisition; Advertising the acquisition and selecting the supplier; Establishing, maintaining and monitoring an acquisition agreement; Accepting a product or service from a supplier; Supply, including: Preparing for supply; Responding to a tender; Establishing, maintaining and executing a supply agreement; Delivering and supporting a product or service.

10 **Information and Configuration Management:** Planning Configuration Management; Performing Configuration Identification; Performing Configuration Change Management; Performing Configuration Status Accounting; Performing Configuration Evaluation; Performing Release Control; Information Management, including Preparing for and performing information management.

11 **Risk and Opportunity Management:** Planning technical risk and opportunity management; Managing the technical risk profile; Analyzing, Treating and Monitoring technical risks and opportunities

12 **Lifecycle Process Definition and Management:** Establishing Lifecycle Processes including defining and implementing Lifecycle Models; Assessing Lifecycle Processes and Models; Improving Lifecycle Processes and Models.

13 **Specialty Engineering:** Performing professional-level systems engineering activities associated with one or more Specialty Engineering area(s). Typical Specialty Engineering areas include but are not limited to those identified in the INCOSE SE Handbook V4.0, namely: Affordability/Cost-Effectiveness/Life Cycle Cost analysis; Electromagnetic Compatibility Analysis; Environmental Engineering/Impact Analysis; Interoperability Analysis; Logistics Engineering; Manufacturing and Produceability Analysis; Mass Properties Engineering; Reliability, Availability and Maintainability analysis; Resilience Engineering; System Safety Engineering; System Security Engineering; Training Needs Analysis; Usability Analysis/Human Systems Integration; Value Engineering.

14 **Organisational Project Enabling Activities:** Infrastructure Management, including establishing and maintaining the Infrastructure; HR Management, including identifying and developing SE Skills, acquiring and providing SE skills for projects; Quality Management including planning and assessing Quality Management, Performing Quality Management corrective and preventative actions; Knowledge Management, including Planning Knowledge Management, Sharing Knowledge and skills throughout the organization, Managing Knowledge, skills and knowledge assets; Project Portfolio Management at Organizational level, including defining and authorizing SE projects, evaluating a portfolio of SE projects and terminating SE projects.

15 **Other:** Other functions and activities performed that you can justify as Systems Engineering activities.

Certification at the foundation level will indicate that the individual has a balance between the depth and breadth of SE experience in performing some, but not all, SE functions. To achieve the desired depth and breadth in the minimum 5 years of SE experience, the CSEP candidate must have at least one year of SE experience in each of three or more of the 14 systems engineering functional areas listed above. The acceptability of experience distributions outside these guidelines is subject to the decision of the Certification Program Office.

# Attachment B - Colleagues/Peers Used for Referees

A "Colleague/Peer" used as a referee is a supervisor, associate, or fellow worker who is equal or at a higher level in abilities and qualifications "systems engineering wise," and, because of that can attest to your "systems engineering knowledge" and past experience in successfully performing "systems engineering tasks."

Part of the process in certifying an applicant as a Certified Systems Engineering Professional is to obtain data from qualified referees that the applicant performed the tasks as described in the application. A qualified referee is an associate or fellow worker who is equal or at a higher level in abilities and qualifications "systems engineering wise," and, because of that can attest to the applicant's systems engineering knowledge and past experience in successfully performing systems engineering tasks.

In addition to being qualified to serve as a reference based on systems engineering knowledge, a reference must also have specific knowledge of the applicant's SE work. The reference should have known the applicant during the time when the work was performed and been aware of the work during that time. The reference should have no family or blood relationship to the applicant.

All of the following categories of people should qualify as credible referees:

- Supervisors for whom you work and/or who provide your systems engineering performance rating
- Program Managers/Task Leaders for whom you work and/or who provide input for your systems engineering performance rating
- Chartered Australian Systems Engineers (CASE), INCOSE CSEPs and ESEPs who are acquainted with your work (experience), knowledge, leadership, and contributions to systems engineering.
- INCOSE Fellows who are acquainted with your work (experience), knowledge, leadership, and contributions to systems engineering
- INCOSE Leadership who are acquainted with your work (experience), knowledge, leadership, and contributions to systems engineering

**For PE CSEP applicants**, an applicant should provide referees from a mixture of these categories. Thus, an applicant should limit referees to two from any one category.
**For CPEng CSEP applicants**, the referee should be from one of the bottom three (3) categories listed above.
Referees provide information to support an applicant and their reasons for the recommendation and will be requested to submit information on their own work experience, knowledge, leadership, and contributions to systems engineering.