SaRS I Eng. Statement of Competences V1-0

Statement of competences to be filled in by candidates for IEng to be returned with your application form

The following information provides examples showing how you consider that you meet the competences for **Incorporated Engineer** as set out in the Engineering Council Standard for Professional Competence.
Please contact SaRS for CEng-specific guidance on Competence and Commitment Criteria.

SaRS Guidance:

Introduction

1. This document supplements the SaRS Registration Application Form and is for the recording of the evidence of demonstrating compliance with the competence and commitment criteria detailed in the Engineering Council standard UK-SPEC Third Edition. Applicants should be familiar with UK-SPEC before completing this form. The form repeats the competence and commitment criteria from UK-SPEC then provides space to record the evidence for each.

2. The purpose of the Application Form and the Statement of Competences is to demonstrate for the purposes of the documentation review stage of the Professional Review (PR) that the educational qualifications and Initial Professional Development (IPD) (referred to as work-based learning and experience within the SaRS process) meet the requirements of UK-SPEC and that if a Professional Review Interview (PRI) is offered as a result there is the likelihood that this will confirm that the applicant meets the requirements and that registration for the applied for Register will be recommended.

3. The boxes below for each criterion include recommendations and suggestions for the evidence required. In many cases the descriptions and guidance in UK-SPEC are self-explanatory in terms of how the criteria are presented. UK-SPEC is however deliberately 'high level' or generic in the descriptions of the evidence required. It is not possible to specify in detail what a professional engineer does, only what knowledge, experience and professionalism is demonstrated; in addition, the criteria apply to engineers across the whole range of engineering disciplines and applications.

4. Guidance might be considered unnecessary; it might be assumed that the applicant will be able to understand what the competence and commitment statements are looking for, however the generic nature of the criteria has led to statements which are wide of the mark and could lead to the application being referred back to the applicant rather than a PRI being offered. What is entered for each criterion is however up to the applicant and their interpretation of the requirement however SaRS will advise if for an individual criterion, or taking the application as a whole, it is felt that a criterion has not been demonstrated. This is to reduce the possibility of an application submitted to SaRS failing to be offered a PRI.

5. An applicant through the SaRS route will be undertaking responsibility for activities involving safety engineering, reliability engineering, engineering risk management and specific or related activities such as human factors studies and functional safety. A SaRS applicant will therefore be looking at the requirements from this point of view and it is expected that the applicant demonstrates an expertise in their particular area of application and the tools and techniques which are applied, in addition to the 'higher level' criteria set out in UK-SPEC.

6. The information in each box below and the suggested keywords are a guide to help the applicant interpret the UK-SPEC requirements however UK-SPEC remains the applicable standard against which the application will be reviewed.

7. The evidence must be about your personal role, responsibilities and contribution. The more generic (and broad brush) style of a CV is not acceptable. Words such as 'we' and 'team' should be avoided. Where a team effort is involved your personal role must be identified. The evidence must be clear, words such as 'facilitated', 'contributed', 'assisted' should be avoided unless the personal contribution is clear.

8. Applications are reviewed by the SaRS Engineering Membership Committee (EMC) and comments fed back to the applicant, generally on the Statement of Competences, in order to strengthen the application prior to submission to the SaRS. This review is generally provided by a Professional Review Advisor (PRA) that has been allocated to the candidate. Where, after this process, there is still doubt as to the certainty of a PRI being offered, or where the applicant specifically requests, despite SaRS advising that the application requires further strengthening, the application will be forwarded to the next stage.

9. There is no single right way of approaching the completion of the statement of competences (other than the need to read UK-SPEC carefully). A suggested way is to record all safety and reliability experiences, project tasks and responsibilities, presentations, meetings etc. then assign then to the relevant competence or commitment criterion or criteria. This would help to organise the evidence into the appropriate criteria and highlight areas of strength and weakness. An option for this approach is to use the MyCareerPath recording software which is available to Members and which is set up with each criterion included.

Detailed Guidance:

1. The information below is a guide to the type of evidence expected for each competence and commitment criterion. The detailed content and style is up to the applicant.

2. Use examples from your education and subsequent career development, (roles, projects, etc.) referred to as work-based learning and experience (part 3 on the application form), to provide evidence for demonstrating compliance with the 16 competence and commitment criteria below.

3. Evidence can be drawn from throughout the career development as not all competences are demonstrated on all projects however the more recent the example the better as you will have been more experienced and/or senior. There is no rule over how many examples should be used for each, it depends on how extensive the role and how good each example is as a demonstration.

4. Individual examples will probably show evidence for more than one criterion, describe them in the best way, however if the same example or project issued for more than one criterion try to make the specific evidence for each more prominent in the identified criterion. All evidence helps in the overall assessment as well as in the specific criteria as the assessor will gain an overall view of the applicant as well as considering each criterion.

5. The examples do not always have to describe success, not everything works however the criteria can still be demonstrated in projects which did not go ahead or designs that were not adopted.

6. The evidence overall should demonstrate the applicants understanding of the technical, financial and sustainability implications of decisions taken.

7. It is expected that evidence can be provided for each criterion, if not the applicant has probably not yet obtained sufficient experience. Evidence for some will inevitably be stronger than for others however the overall impression should be of operating across the range of criteria at the required level and that there are some criteria (perhaps only a small number) where the applicant can show some strength that is above the industry norm.

8. Be concise, aim for about 200-300 words per criterion. Maximum word limits are in place for each criterion. Over long background or project descriptions can make it difficult to identify the applicant's role and responsibility. Figures can be used sparingly where these are central to the evidence. Do not pad out the evidence, it should be possible to be concise-someone has to read it.

<div align="center">Competence and Commitment Criteria</div>

Incorporated Engineers must be competent throughout their working life, by virtue of their education, training and experience, to:

A. **Use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology**.

[The description of the A competences refers to the use of knowledge and understanding; A1 refers to 'maintain and extend a sound theoretical approach..' and 'enabling' hence A1 is not specifically looking for a project based description, rather the means to achieve this, A2 is concerned with the application, specifically in a creative or innovative way. Other aspects of the application of engineering knowledge and understanding are addressed in the B and C competences.

A1 is therefore concerned with gaining, maintaining and extending knowledge as is clear from the examples given in UK-SPEC. Where the applicant has what UK-SPEC refers to as 'exemplifying qualifications' i.e. an accredited M.Eng, an accredited B.Eng plus a Masters level qualification, or equivalent, the application will be progressed as a Standard Case and the base level of knowledge and understanding does not need to be demonstrated, only the maintenance and extension (keeping up to date, improving and extending).

Where the applicant does not have 'exemplifying qualifications' the application will be progressed as an Individual Case where the level of knowledge equivalent to the exemplifying qualification must be demonstrated through academic equivalence of the underpinning knowledge and understanding (UK&U). This is provided through a combination of education and qualifications (part 2 of the application form) work-based learning and experience (part 3 of the application form) and the statement of UK-SPEC competencies and commitment (part 6 of the application form). Additional information may be requested from the applicant to support the demonstration of academic equivalence.

UK-SPEC Page 30 ('Education' section) details the requirements. The applicant must describe the additional learning- further education, training with a knowledge element, work based (experiential) learning, and personal learning-meetings, journals, standards, websites, etc. The evidence provided in the other criteria should demonstrate or assure the assessor that the evidence is given in the context of a knowledge of the engineering aspects of what it is concerned with. Where this learning is not assessed as equivalent a Technical Report may be required, this can be of a similar style and scope to an M.Sc. dissertation or other equivalent report

A1 Maintain and extend a sound theoretical approach to the application of technology in engineering practice. This could include an ability to:
• Identify the limits of own personal knowledge and skills
• Strive to extend own technological capability

• Broaden and deepen own knowledge base through new applications

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A1 Keywords: 'Fundamental engineering knowledge' and '**engineering understanding'**- including scope and limits.

-Describe where knowledge and understanding has been gained:

- Formal qualifications- degrees, diplomas, certificates, etc plus motivation for undertaking these.
- Additional courses with learning content (not just training).
- Learning in order to carry out role and gained in the work environment (experiential learning), noting where self identified or self taught or responding to identified limit of current knowledge
- Where additional knowledge is continuously being gained and updated- e.g. meetings, books, journals, codes and standards, magazines, websites, in house activities, personal 'research'. -Plan for keeping up to date and any longer term plans.

A2. Use a sound evidence-based approach to problem-solving and contribute to continuous improvement

[A2 is concerned with the application of engineering knowledge specifically in innovative development.]

This could include an ability to:
• Use market intelligence and knowledge of technological developments to promote and improve the effectiveness of engineering products, systems and services
• Contribute to the evaluation and development of continuous improvement systems
• Apply knowledge and experience to investigate and solve problems arising during engineering tasks and implement corrective action

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A2 Keywords: Innovation, applied to engineering technology, or production and process systems including marketing,
Examples of Evidence:
 Personal involvement in or contribution to the development and application of new, novel, or innovative ideas, products, applications, technology transfer, etc. beyond a new variation or application of standard approaches or software.
- Describe need or opportunity (market research, problem encountered), development made-what's new; how identified; data analysis, testing, evaluation, etc; also whether accepted or implemented, any results or benefits gained, and any further applications.

B. **Apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and re-cycle engineering processes, systems, services and products**.

[The B competences are concerned with problem solving- the identification of problems and opportunities for improvement; the analysis, research, design and development of solutions or improvements; and their application to projects and systems.

B1. Identify, review and select techniques, procedures and methods to undertake engineering tasks. This could include an ability to:
• Establish users' requirements for improvement
• Select a review methodology
• Fully exploit and implement current technology
• Review the potential for enhancing engineering practices, products, processes, systems and services, using evidence from best practice
• Establish an action plan to implement the results of the review

> **B1 Keywords: Identifying opportunities: problem identification and analysis**.
> **Examples of Evidence:**
> Personal role in awareness of company or client's activities enabling the identification of problems or opportunities for improvement, additional projects or services which can be proposed, or application of new technology which could be employed. This includes the related specification, tendering, procurement and marketing activities.

B2 Contribute to the design and development of engineering solutions. This could include an ability to:
• Contribute to the identification and specification of design and development requirements for engineering products, processes, systems and services
• Identify operational risks and evaluate possible engineering solutions, taking account of cost, quality, safety, reliability, appearance, fitness for purpose, security, intellectual property (IP) constraints and opportunities, and environmental impact
• Collect and analyse results
• Carry out necessary tests.

> **B2 Keywords: Research, Design, Development**
> **Examples of Evidence:**
> - Describe requirements (research, design or development), specification, methods used and why, data required, how obtained, analysis, experiments, validation, trials, costing, etc.
> - Where possible also describe the outcome, application, evaluation, development and any further development.

B3. Implement design solutions and contribute to their evaluation. This could include an ability to:
• Secure the resources required for implementation
• Implement design solutions, taking account of critical constraints, including due concern for safety and sustainability
• Identify problems during implementation and take corrective action
• Contribute to recommendations for improvement and actively learn from feedback on results.

B3 Keywords: Implementation, Evaluation
Examples of Evidence:
- Involvement in the design process, defining requirements, carrying out assessments, implementing solutions, evaluation of outcome including specifying success criteria and means of measuring, addressing feedback, adoption, and extension to other applications,.

C. **Provide technical and commercial management.**

[The C criteria are concerned with the management of people and resources- project planning, project management, teams, and quality]

C1. Plan for effective project implementation. This could include an ability to:
• Identify factors affecting the project implementation
• Carry out holistic and systematic risk identification, assessment and management
• Prepare and agree implementation plans and method statements
• Secure the necessary resources and confirm roles in project team
• Apply the necessary contractual arrangements with other stakeholders (client, subcontractors, suppliers, etc).

C1 Keywords: Project Planning Examples of Evidence:
- Discussions with clients, agreement of specifications, requirements, timescales, costing, deliverables, criteria.
- Producing or setting out work requirements e.g. Cost,Time,Resources (CTR) paperwork, project risk assessments, tenders, equipment/ (sub) contractor selection, resource requirements, specifications, etc.
- Setting up systems- progress reporting, change management, etc
- Representing the project,
- Gaining approvals, acceptance of work plans, approval of expenditure, etc.

C2. **Manage tasks, people and resources to plan and budget. This could include an ability to:**
• Operate appropriate management systems
• Work to the agreed quality standards, programme and budget, within legal and statutory requirements
• Manage work teams, coordinating project activities
• Identify variations from quality standards, programme and budgets, and take corrective action
• Evaluate performance and recommend improvements.

> **C2 Keywords: Project Management**
> **Examples of Evidence:**
> - Operating planning and recording systems, managing and reporting progress, manage/ control work teams and finances.
> - Assigning work packages, budgets; receiving progress reports, reviewing work
> - Monitor progress against targets, timescales, budget, quality, legal requirements, etc.
> - Reporting progress to client
> - Change management; negotiate variations in specification, delivery, costs, timescale.
> - Manage delivery from suppliers and contractors
> - Manage the project risk register
>
> Liaise with regulators.

C3. **Manage teams and develop staff to meet changing technical and managerial needs.**
This could include an ability to:
• Agree objectives and work plans with teams and individuals
• Identify team and individual needs, and plan for their development
• Reinforce team commitment to professional standards
• Manage and support team and individual development
• Assess team and individual performance, and p

> **C3 Keywords: Leading Teams**
> **Examples of Evidence:**
> - Responsibility for people and teams- own team, contractors, or subcontractors.
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> Activities and responsibilities, for example selection, interviewing, training, organising work responsibilities, reviewing work, supporting, mentoring, appraisals, promotions, development, discipline

C4. Manage continuous quality improvement. This could include an ability to:
• Ensure the application of quality management principles by team members and colleagues
• Manage operations to maintain quality standards
• Evaluate projects and make recommendations for improvement.

> **C4 Keywords: Quality Management Examples of Evidence:**
> - Operating in compliance with quality systems e.g. ISO 9001 or company systems
> - Encouraging/ ensuring others e.g. subcontractors and clients to adhere to system.
> - Monitor and audit.
> - Making modifications to respond to events or progress.
>
> Developing, producing, extending, or introducing new or improved systems

D. **Demonstrate effective interpersonal skills.**

[The D criteria are concerned with personal qualities]

D1. Communicate in English with others at all levels. This could include an ability to:
• Contribute to, chair and record meetings and discussions
• Prepare communications, documents and reports on technical matters
• Exchange information and provide advice to technical and non-technical colleagues.

D1 Keywords: Communication
Examples of Evidence:
- Presentations- to team, staff, senior management, clients, contractors, regulators, at meetings and conferences.
- Contributions to technical discussions and meetings e.g. HAZOPs
- Chairing meetings- progress meetings, HAZID, HAZOP, etc
- Ad-hoc and informal exchanges- to team, management, clients, contractors, etc.
- Written communication- including e-mail, letters, progress reports, requirements, specifications, technical reports, conference and journal papers, etc.

D2. Present and discuss proposals.

This could include an ability to:
- Prepare and deliver appropriate presentations
- Manage debates with audiences
- Feed the results back to improve the proposals
- Contribute to the awareness of risk

D2 Keywords: Proposals
Examples of Evidence:
- Preparation and presentation of proposals, including- problem definition or opportunity, proposed work, approach, methodology, management, costs and benefits, outcomes, approvals, implementation
- Presenting company profile, record, experience, resources.
- Discussion and negotiation, reaching agreement and recording, resolving different views, agreeing options, recording management requirements, agreeing outcome and next steps.

D3. Demonstrate personal and social skills.

Demonstrate personal and social skills. This could include an ability to:
• Know and manage own emotions, strengths and weaknesses
• Be aware of the needs and concerns of others, especially where related to diversity and equality
• Be confident and flexible in dealing with new and changing interpersonal situations
• Identify, agree and work towards collective goals
• Create, maintain and enhance productive working relationships, and resolve conflicts.

D3 Keywords: Personal and Social
Examples of Evidence:
- Interaction with people at all levels within organisation or projects. Examples of issues and outcomes, examples showing ability to interact, dealing with conflict, contribution to meetings, workshops, decisions, etc.
- Knowledge of and adherence to diversity and anti discrimination legislation.
- Activities involving people outside the workplace, both work related (institution, society, etc) and other (sport, hobby, pastime, charity, etc)

E. Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.

[The E criteria are concerned with personal commitment]

E1. **Comply with relevant codes of conduct.**

This could include an ability to:
• Comply with the rules of professional conduct of own institution
• Manage work within all relevant legislation and regulatory frameworks, including social and employment legislation

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E1 Keywords: Professional Standards
Examples of Evidence:
- Knowledge of and adherence to (with examples where possible) Institution and industry Codes and Rules of Conduct e.g. SaRS (the Rules are based on UK-SPEC guidance), company or client codes.
- Involvement in, and contribution to, professional bodies.
- Knowledge of and adherence to relevant legislation, codes and standards for work area- HSW Act, OSCR, DSEAR, DEFSTANs, JSPs, etc.

E2. **Manage and apply safe systems of work.**
Manage and apply safe systems of work. This could include an ability to:
• Identify and take responsibility for own obligations for health, safety and welfare issues
• Manage systems that satisfy health, safety and welfare requirements
 • Develop and implement appropriate hazard identification and risk management systems and culture
• Manage, evaluate and improve these systems.
• Apply a sound knowledge of health and safety legislation.

E2 Keywords: Health and Safety (safe systems of work)
Examples of Evidence:
- Concerned with safe systems of work and safety culture rather than technical safety (HAZOP, QRA, etc), since this criterion applies to all engineers not just safety engineers.
- Contribution, in safety studies, to safety of workers, safe systems, provision of safety equipment.
- Developing and promoting a safety culture and risk management approach.
- Adherence to workplace health and safety procedures.
- Producing, operating, supervising, auditing, safe operations, including work plans, permits to work, safety inspections and testing, notices, training, toolbox talks.

E3. **Undertake engineering activities in a way that contributes to sustainable development.**
Undertake engineering activities in a way that contributes to sustainable development. This could include an ability to:
• Operate and act responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously
• Provide products and services which maintain and enhance the quality of the environment and community, and meet financial objectives
• Understand and encourage stakeholder involvement in sustainable development
• Use resources efficiently and effectively

E3 Keywords: Sustainability
Examples of Evidence:
- Contribution to sustainability in technical studies- for example loss prevention (personal injury, property, resources), reliability (reduction in downtime, spares, waste), optimising of resources (equipment, materials, spares, maintenance),
- Inherent safety.
- Contribution to option selection for sustainability.
- Environmental assessments, audits.
- Personal, day to day, and outside workplace contribution.

E4. Carry out and record CPD necessary to maintain and enhance competence in own area of practice including:
• Undertake reviews of own development needs
• Plan how to meet personal and organisational objectives
• Carry out planned (and unplanned) CPD activities
• Maintain evidence of competence development
• Evaluate CPD outcomes against any plans made
• Assist others in their own CPD

E4 Keywords: Personal Development, CPD
Examples of Evidence:
- Current CPD activities for keeping up to date and extending experience- meetings, publications, websites, involvement with professional body and contribution to activities, etc
- Review career position and progress
- Plans for ongoing development and actions being taken to progress, both short term and long term e.g. academic courses, training, secondment,
- Maintaining records e.g. MyCareerPath
- Monitoring progress against plan
- Helping others

E5.   Exercise responsibilities in an ethical manner.

Give an example of where you have applied ethical principles as described in the Statement of Ethical Principles.
Give an example of where you have applied/upheld ethical principles as defined by your organisation or company, which may be in its company or brand.

E5 Keywords: Ethics
Examples of Evidence:
- Awareness of and compliance with the Statement of Ethical principles in UK-SPEC Third Edition plus supporting Engineering Council/RAEng document, and familiarity with the RAEng document 'Engineering Ethics in Practice: a guide for engineers.
- Personal examples of applying or upholding the ethical principles