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SaRS CEng. Application Form Part 6: Statement of Competence and Commitment

The following information provides examples showing how you demonstrate the Competence and Commitment the competences for **Chartered Engineer** as set out in the Engineering Council Standard for Professional Competence (UK-SPEC).

For information about signatures, proposers and sponsors please see the SaRS website for further guidance on IEng-specific guidance.

<https://www.sars.org.uk/section-membership/registration/>

SaRS Guidance:

Introduction

1. Part 6 is for recording the demonstration of meeting the Competence and Commitment requirements as detailed in the Engineering Council Standard UK-SPEC Fourth Edition. **Applicants should be familiar with UK-SPEC before completing the application form.** The application 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 is to provide evidence for the documentation review stage of the Professional Review (PR) that the educational qualifications and work-based learning and experience 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 each competence 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 Standard applies 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, in order to strengthen the application. This screening review is generally provided by a Professional Review Advisor (PRA) that has been allocated to the applicant. Where, after this process, there is still doubt as to the certainty of a PRI being offered, or where the applicant specifically requests to continue, despite SaRS advising that the application requires further strengthening, the application will be still forwarded to the next stage. If the applicant requests not to continue their decision will be upheld.
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 them to the relevant criterion or criteria. This would help to organise the evidence into the appropriate criteria and highlight areas of strength and weakness. Please see the SaRS website for CPD guidance and resources <https://www.sars.org.uk/section-membership/continuing-professional-development-cpd/>
10. 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 new, evolving, complex, challenging non-standard or higher risk situations. 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 'recognised 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 Recognised Qualifications Route 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 'recognised qualifications' the application will be progressed as an Individual Assessment Route where the level of knowledge equivalent to the recognised 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 competences 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 13-14 ('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

Detailed Guidance:

1. The information below is a guide to the type of evidence expected for each 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 17 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 is used 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, minimum and maximum word limits of 200 and 500 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. Please do not change the order of the template boxes when completing.

Competence Criteria

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

A. Knowledge and understanding

Chartered Engineers shall use a combination of general and specialist engineering knowledge and understanding to optimise the application of advanced and complex systems. The applicant shall demonstrate that they:

A1 Have maintained and extended a sound theoretical approach to enable them to develop their particular role. This could include:

- Formal training related to your role
- Learning and developing new engineering knowledge in a different industry or role
- Understanding the current and emerging technology and technical best practice in your area of expertise
- Developing a broader and deeper knowledge base through research and experimentation
- Learning and developing new engineering theories and techniques in the workplace

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 Are developing technological solutions to unusual or challenging problems, using their knowledge and understanding and/or dealing with complex technical issues or situations with significant levels of risk. This could include:

[A2 is concerned with the application of engineering knowledge specifically in novel, challenging or complex situations.]

This could include:

- Carrying out technical research and development
- Developing new designs, processes or systems based on new or evolving technology
- Carrying out complex and/or non-standard technical analyses
- Developing solutions involving complex or multi- disciplinary technology

- Developing and evaluating continuous improvement systems
- Developing solutions in safety-critical industries or applications

A2 Keywords: Novel, complex, unusual, challenging, higher risk

Examples of Evidence: Personal involvement in or significant contribution to the development and application of new ideas, products, methodology or applications. The application of safety and /or reliability technology to technically complex, unusual, challenging or higher risk situations. The evidence should go beyond the routine application of methodology and show evidence of understanding, analysis and application specific to the situation.

- Describe need or opportunity (market research, problems 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. Design, development and solving engineering problems

Chartered Engineers shall apply appropriate theoretical and practical methods to the analysis and solution of engineering problems. The applicant shall demonstrate that they:

[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 Take an active role in the identification and definition of project requirements, problems and opportunities. This could include:

- Identifying projects or technical improvements to products, processes or systems
- Preparing specifications, taking account of functional and other requirements
- Establishing user requirements
- Reviewing specifications and tenders to identify technical issues and potential improvements
- Carrying out technical risk analysis and identifying mitigation measures
- Considering and implementing new and emerging technologies

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 Can identify the appropriate investigations and research needed to undertake the design, development and analysis required to complete an engineering task and conduct these activities effectively. This could include:

- Identifying and agreeing appropriate research methodologies

- Investigating a technical issue, identifying potential solutions and determining the factors needed to compare them
- Identifying and carrying out physical tests or trials and analysing and evaluating the results
- Carrying out technical simulations or analysis
- Preparing, presenting and agreeing design recommendations, with appropriate analysis of risk, and taking account of cost, quality, safety, reliability, accessibility, appearance, fitness for purpose, security (including cyber security), intellectual property constraints and opportunities, and environmental impact

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 Can implement engineering tasks and evaluate the effectiveness of engineering

solutions. This could include:

- Ensuring that the application of the design results in the appropriate practical outcome
- Implementing design solutions, taking account of critical constraints, including due concern for safety, sustainability and disposal or decommissioning
- Identifying and implementing lessons learned
- Evaluating existing designs or processes and identifying faults or potential improvements including risk, safety and life cycle considerations
- Actively learning from feedback on results to improve future design solutions and build best practice

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 leadership.

Chartered Engineers shall demonstrate technical and commercial leadership

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

C1 Plan the work and resources needed to enable effective implementation of a significant engineering task or project. This could include:

- Preparing budgets and associated work programmes for projects or tasks
- Systematically reviewing the factors affecting the project implementation including safety, sustainability and disposal or decommissioning considerations
- Carrying out a task or project risk assessment and identifying mitigation measures
- Leading on preparing and agreeing implementation plans and method statements
- Negotiating and agreeing arrangements with customers, colleagues, contractors and other stakeholders, including regulatory bodies
- Ensuring that information flow is appropriate and effective

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 (organise, direct and control), programme or schedule, budget and resource elements of a significant engineering task or project. This could include:

- Operating or defining appropriate management systems including risk registers and contingency systems
- Managing the balance between quality, cost and time
- Monitoring progress and associated costs and cost forecasts, taking appropriate actions when required
- Establishing and maintaining appropriate quality standards within legal and statutory requirements
- Interfacing effectively with customers, contractors and other stakeholders

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 Lead teams or technical specialisms and assist others to meet changing technical and managerial needs. This could include:

- Agreeing objectives and work plans with teams and individuals
- Reinforcing team commitment to professional standards
- Leading and supporting team and individual development
- Assessing team and individual performance, and providing feedback
- Seeking input from other teams or specialists where needed and managing the relationship
- Providing specialist knowledge, guidance and input in your specialism to engineering teams, engineers, customers, management and relevant stakeholders
- Developing and delivering a teaching module at Masters level, or leading a University research programme

C3 Keywords: Leading Teams

Examples of Evidence:

- Responsibility for people and teams- own team, contractors, or subcontractors.
- Activities and responsibilities, for example selection, interviewing, training, organising work responsibilities, reviewing work, supporting, mentoring, appraisals, promotions, development, discipline.

C4 Bring about continuous quality improvement and promote best practice. This could include:

- Promoting quality throughout the organisation as well as its customer and supplier networks
- Developing and maintaining operations to meet quality standards eg ISO 9000, EQFM

- Supporting or directing project evaluation and proposing recommendations for improvement
- Implementing and sharing the results of lessons learned

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. Communication and interpersonal skills

Chartered Engineers shall demonstrate effective communication and interpersonal skills. The applicant shall demonstrate that they:

[The D criteria are concerned with personal qualities]

D1 Communicate effectively with others, at all levels, in English. This could include:

- Preparing reports, drawings, specifications and other documentation on complex matters
- Leading, chairing, contributing to and recording meetings and discussions
- Exchanging information and providing advice to technical and non-technical colleagues
- Engaging or interacting with professional networks

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/ leading 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 Clearly present and discuss proposals, justifications and conclusions. This could include:

- Contributing to scientific papers or articles as an author
- Preparing and delivering presentations on strategic matters
- Preparing bids, proposals or studies
- Identifying, agreeing and leading work towards collective goals.

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 and awareness of diversity and inclusion issues.

This could include an ability to:

- Knowing and managing own emotions, strengths and weaknesses
- Being confident and flexible in dealing with new and changing interpersonal situations
- Identifying, agreeing and working towards collective goals
- Creating, maintaining and enhancing productive working relationships, and resolving conflicts
- Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion

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. Quote, and be familiar with, the SaRS Diversity and Inclusion Policy
- Activities involving people outside the workplace, both work-related (institution, society, etc) and other (sport, hobby, pastime, charity, etc)

E. Personal and professional commitment

Chartered Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment. The applicant shall demonstrate that they:

[The E criteria are concerned with personal commitment]

E1 Understand and comply with relevant codes of conduct. This includes:

- Demonstrating compliance with your Licensee's Code of Professional Conduct
- Identifying aspects of the Code which are particularly relevant to your role
- Being aware of the legislative and regulatory frameworks relevant to your role and how they conform to them

- Leading work within relevant legislation and regulatory frameworks, including social and employment legislation

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 Understand the safety implications of their role and manage, apply and improve safe systems of work. This could include:

- Identifying and taking responsibility for your own obligations and ensuring that others assume similar responsibility for health, safety and welfare issues
- Ensuring that systems satisfy health, safety and welfare requirements
- Developing and implementing appropriate hazard identification and risk management systems and culture
- Managing, evaluating and improving these systems
- Applying a sound knowledge of health and safety legislation, for example: HASAW 1974, CDM regulations, ISO 45001 and company safety policies.

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 Understand the principles of sustainable development and apply them in their work. This could include:

- Operating and acting responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously
- Providing products and services which maintain and enhance the quality of the environment and community, and meet financial objectives
- Recognising how sustainability principles, as described in the Guidance on Sustainability on page 48, can be applied in your day-to-day work

- Understanding and securing stakeholder involvement in sustainable development
- Using resources efficiently and effectively in all activities
- Taking action to minimise environmental impact in your area of responsibility

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 the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice including:

- Undertaking reviews of your own development needs
- Planning how to meet personal and organisational objectives
- Carrying out planned and unplanned CPD activities
- Maintaining evidence of competence development
- Evaluating CPD outcomes against any plans made
- Assisting others with 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 Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner. This could include:

- Understanding the ethical issues that you may encounter in your role

Giving an example of where you have applied ethical principles as described in the UK-SPEC Statement of Ethical Principles.

Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company

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