

BCS Guidance notes for Professional members seeking Chartered status registrations

Chartered Engineer (CEng)
Incorporated Engineer (IEng)

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These guidance notes are for the use of BCS Professional members applying for registration for Chartered Engineer or Incorporated Engineer and apply to the technical report submitted as part of the application.

1. Purpose of the Report

The technical report you submit for the award of Chartered Engineer (CEng) **must** demonstrate that you:

- possess knowledge and understanding at Masters Level of learning.

The technical report you submit for the award of Incorporated Engineer (IEng) **must** demonstrate that you:

- possess knowledge and understanding at the level of Bachelor's degree level

In both cases the report **must** demonstrate that you

- have detailed knowledge and understanding in the field of computer science and/or information technology
- are able to deal with complex issues both systematically and creatively; and show originality in tackling and solving problems.
- can show sound judgement, personal responsibility and initiative, in complex and unpredictable professional environments

The report will need to cover a specific Engineering/ Technological project.

Please refer to QAA qualification descriptors¹ for further information on Master's and Bachelor's level learning.

2. Style

The Technical Report should be written in well-structured English and demonstrate the level of written and verbal communication required by the Engineering Council.

The report should be written in the first person (e.g. "I chose the design approach" or "the design approach was chosen by me"). It **must not** be written in the third person (e.g. if your name is John Smith you should not be describing what "John Smith did").

The font size **must** be no less than 12-point and the report **must** be formatted to print on A4 paper.

3. Technical Report Synopsis

A Technical Report Synopsis represents your report proposal. It should be a brief two page summary and your final report should follow the same structure. The synopsis will be reviewed by an assessor and their feedback will inform how you should proceed.

Further guidance on the structure is given in sections 4 and 6.

4. Format and Structure

The report **must** be structured under the following headings:

1. Overview and Responsibilities
2. Information Systems practice
3. Other Issues

¹ <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/The-framework-for-higher-education-qualifications-in-England-Wales-and-Northern-Ireland.aspx>

Guidance on the content of these structural headings is given in section 6. An appendix showing the structure and relationships of those who worked on the project **must** be included.

Further annexes and appendices are not normally needed, but may be included to show:

- Examples of reports/screen formats if produced and if applicable
- Data Models, Networking Diagrams ETC.
- Illustrations and diagrams
- Mathematical calculations only if it will assist the reader
- A glossary of terms relevant to the report

Notes:

- a. The technical report should not compromise confidentiality agreements. If a confidentiality agreement is in place please note that it is the engineering principles that you have employed and not specific details that are required to be assessed. The report you submit should not infringe any confidentiality agreement.
- b. Copyright of any diagrams used from other published sources must be acknowledged appropriately. It is **not** acceptable to include diagrams from other published sources unless credit for the sources is included.

5. Size

The length of the report should be **no less than 3000 words** and should not exceed 5000 words; this excludes any appendices.

The last line in the body of the report **must** give the actual word count.

6. Content

The following sections provide guidance on how to structure your report.

The report should outline your part in “the story” of one project. However, if the scope of a single project does not allow you to demonstrate all the competencies required a second project may be included.

6.1. Overview and Responsibilities

This section sets the scene by describing the context in which the project has been implemented. You should include: -

- The aims of the project
- An overview of the project
- The “organisation” used to control and develop the project
- The other IT professionals involved
- Other professionals involved
- Identify your role in the project
- Identify the level of technical responsibility taken by you for particular activities.

6.2. Information Systems Practice

This is the most important part of the report. The emphasis **must** be on Information Systems practice, covering engineering activities such as; analysis, design, construction, testing, installation, project management and life-cycle support.

You **must** focus on describing, explaining, analysing, justifying, and comparing your options and decisions throughout.

You **must** describe substantial activities using recognised techniques; selected and applied in a disciplined manner. For example:

- Analysis / Design technique – explain the rationale for your chosen technique and justify this it against other options
- Development / Implementation technique – explain the rationale for your chosen technique and justify it against other options
- The methods for validating the work; how you validated the product within the time constraints and any constraints on available resources. Ask yourself the question: “Did the product meet its objectives?”
- The risk management approaches at each stage of the project.
- A disciplined approach to implementation (from applying techniques, to doing the work – building, testing, refining – according to the plan).
- The application of quality assurance techniques at each stage (verification techniques).
- The interface with other professional staff, end users and non-professional staff; how you worked with them and any challenges you had to overcome.

For engineering or managerial decisions, you **must** demonstrate that you were aware of the range of solutions available. You **must** show you considered each solution and explain how you applied your knowledge and experience to select an optimal solution.

You should explain what led you to make your decisions including both technical and non-technical factors. If a solution is chosen on the basis of cost rather than technical merit then the choice necessitates critical examination. What was done is of far less significance than how it was done. Most important of all is the reasoning that led to determining the course of action.

Examples should be given so that your assessors can properly assess your capabilities.

6.3 Other Issues

This section **must** describe how you dealt with non-IT issues. For example it may cover:

- legal
- ethical
- environmental
- non IT risk
- health and safety
- welfare considerations

As computing and IT cover a wide spectrum of users and tasks, the project(s) on which the Technical Report has been based may not cover all of these topics. If the project does not cover one or more of the topics, these will be discussed at the interview.

7 Check List

The Assessors work to strict guidelines and have to comment on the following points in your report. Ensure that these points are covered clearly:

- Your contribution to projects
- Your level of management or financial responsibility
- Decision making for solutions
- Use and understanding of fundamental principles
- Level of technical responsibility
- Interface with other professionals
- Interface with non-technical people
- Awareness of professional issues in IT.