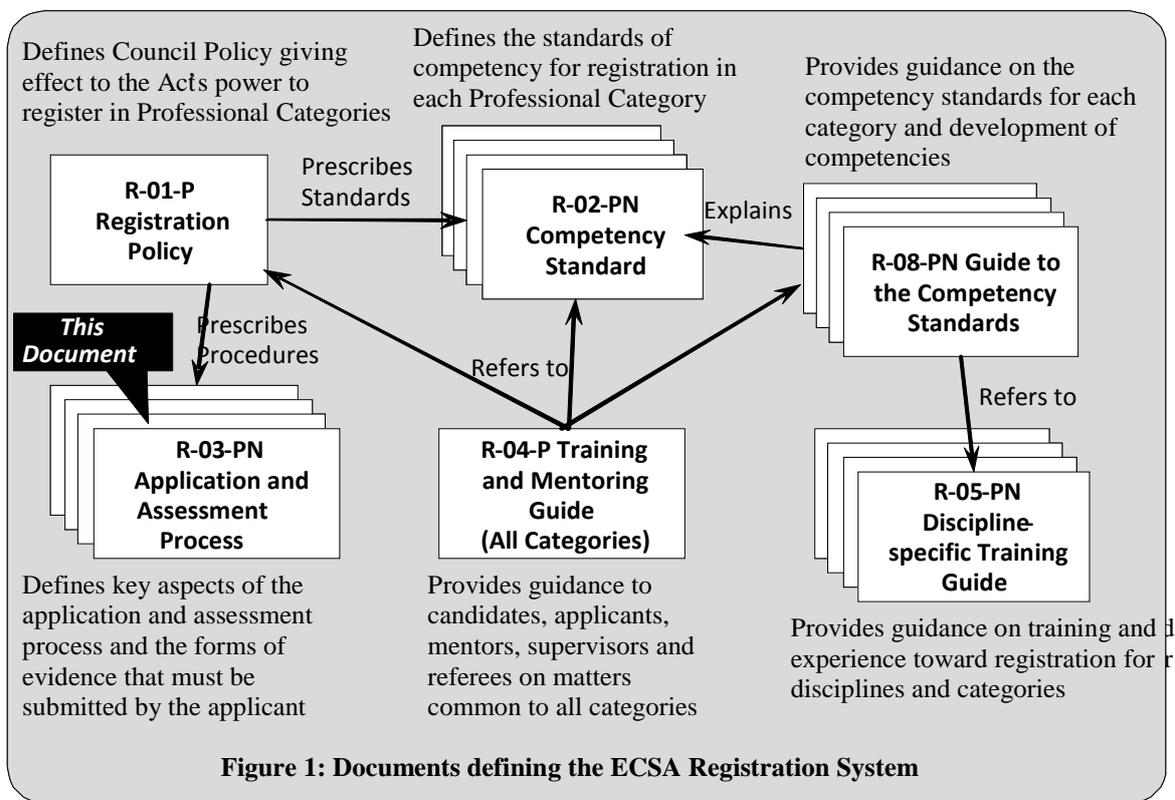


| | | | |
|--|----------------|---------------------|---|
| ENGINEERING COUNCIL OF SOUTH AFRICA <i>Standards and Procedures System</i> | | |  E C S A |
| Processing of Applications for Registration as Candidate Engineering Technician and Professional Engineering Technician | | | |
| Status: Approved by Council | | | |
| Document : R-03-PN | Rev-1.8 | 31 July 2014 | |

Background: The ECSA Registration System Documents

The documents that define the Engineering Council of South Africa (ECSA) system for registration in professional categories are shown in **Figure 1** which also locates the current document.



1. Purpose of this Document

This document defines the processes used by the ECSA to receive, process and make decisions on applications for registration as a Candidate Engineering Technician and as a Professional Engineering Technician.

These processes are carried out under the authority of the Engineering Profession Act (Act No. 46 of 2000) and registration policies defined in document R-01-P. This document supports the management of the registration process and assessment of applicants against the competency standard R-02-PN. Section 3 provides a high-level definition of the registration process resulting from the implementation of the policy defined in document R-01-P.

2. Changes introduced in this document

The ECSA Registration Policy (R-01-P), Competency Standards (R-02-PN) and Education Evaluation policy (E-17-P) approved in January 2010 and March 2011 respectively, and the processes defined in this document bring about a number of changes to the registration system, greater clarity as well as improvements to the application and assessment process. The main changes are summarized in **Table 1**. In summary:

- 2.1 It is not the intention to change the standard required for registration but to better define it in terms of the outcomes produced and the required level rather than specifying that the training must be such as to develop competence. See **Appendix A** for a comparison between the specification of R2/1C and the Competency Standard R-02-PN.
- 2.2 The forms of evidence of competence have been made uniform across the disciplines and provide evidence against all the outcomes. See **Appendix B** for the role of each form of evidence in relation to individual outcomes.
- 2.3 The assessment process is uniform across the disciplines.

3. Process Outline

The processes defined below are designed to handle the various cases that arise on the route to registration taking into account that applicants for professional registration do not necessarily register in a candidate category and that the educational requirement may be satisfied by several mechanisms, including educational evaluation.

The registration process is divided into two main sections:

- A secure system for applying on-line, entering the necessary data and uploading documents as required; and
- The core assessment process encompassing the Extended Experience Appraisal, Committee Decision and Administrative finalization.

3.1 Common User Identification and Login

Figure 2 shows the essentials of the application system. A new user must supply basic details before being given a User ID and a password. Basic Details are: First Name(s), Surname, Date of Birth, Title, South African ID number (or Passport number and Nationality if not in possession of an SA ID), e-mail Address, Mobile Phone Number. The person must also indicate whether he or she was previously or is currently registered or has previously applied and Registration/Application Number (if known).

After determining that the person is not already in possession of a User ID, the system will issue the user with a unique User ID and sets up a password. Existing users may login at any time. The user is presented with a menu which will ultimately contain all the services available. For applicants for Candidate and Professional Engineering Technician four options are relevant:

- Apply for registration as a Candidate Engineering Technician
- Apply for registration as a Professional Engineering Technician
- Apply for Educational Evaluation
- Continue with my application

Note: The acronyms and abbreviations used in the tables and flow diagrams following are listed in the Nomenclature on page 16.

Table 1: Changes introduced by 2011 policy, standards and procedures

| Aspect | Prior to this policy | Under this policy |
|--|--|---|
| Registration Policy | Embedded in Policy R2/1C: Acceptable Work for Candidate Engineering Technicians; does not consider other classes of applicants explicitly. | <ul style="list-style-type: none"> • Single, integrated policy R-01-P, defining registration and education policy, linking with standards (R-02-PN) and processes (this document), applies to all applicants. |
| Educational Requirements Policy | Accredited or recognized qualification or prior evaluation of qualification(s) as meeting educational requirements. | <ul style="list-style-type: none"> • No change to accredited or recognized qualifications. • Accelerated evaluation of listed qualifications. • Evaluation criteria defined in document E-17-P for qualifications and assessed learning. |
| Standard of Competency for Registration | Training requirements for Candidate Engineering Technicians, in R2/1C section 3 | <ul style="list-style-type: none"> • Competency Standard for registration as a Professional Engineering Technician in document R-02-PN. • Eleven outcomes, with definitions for the level of problem solving and engineering activities. • Professional Attributes included in the standard • Level descriptors differentiate between categories |
| Seeking registration without normal qualification | <p>The Technician Alternate route allowed experience of a defined standard and duration to be accepted in lieu of academic qualifications</p> <p>Development assessed on educational outcomes based claim to competency submitted by the Candidate.</p> | <ul style="list-style-type: none"> • Criterion-based method of meeting education requirements by evaluation and assessment defined in E-17-P. When educational requirements are complete, apply for registration in normal way. No additional time limits. Continuation of educational competency development assessment (Interim). • Identified methods of further learning and assessment. |
| Evidence of Training/ Competency | <p>For all disciplines:</p> <ul style="list-style-type: none"> • Training and Experience Summary • Training and Experience Reports • Project Report • Referee Reports • Educational Development Report for Alternative Route Applicants • Initial Professional Development (IPD) Report • Discretionary interview in individual cases | <p>Uniform requirements across disciplines:</p> <ul style="list-style-type: none"> • Training and Experience Summary (TES) • Training and Experience Reports (TER) • Training and Experience Outlines (TEO)^a • Engineering Report^b • Referee Reports • Pre-registration CPD-type activity – IPD • Educational Development Report for Alternative Route Applicants (Interim) • Discretionary interview in individual cases |
| Assessment of Competency | Done against Outcomes and Criteria applying evidence submitted mainly in the Project Report, Educational Development Report (if applicable) and IPD Report, supplemented by the Experience Reports and Referee Reports. Interviews if necessary. | <ul style="list-style-type: none"> • Policy (R-01-P) defines main stages and permitted decisions in the assessment process. Extended Experience Appraisal sanctioned by Council • Common assessment instruments addressing the outcomes and an integrative judgement, providing consistent trails through all stages |
| Decision Making | Delegation of decision to register or defer to the Registration Committee, reserve refusal to Central Registration Committee | <ul style="list-style-type: none"> • No change to delegation • Two deferrals permitted • Credit given for outcomes fulfilled |
| Application | Manual, paper-based | On-line (Transitional paper-based) |
| Process Definition | Embedded in part in other documents | <ul style="list-style-type: none"> • High level process definition (this document) • Detailed IT system specification. |
| Training and Mentoring Guidelines | | <p>Layered set of guidelines:</p> <ul style="list-style-type: none"> • Training and mentoring (all categories) (R-04-P) with defined responsibility levels. • Guide to competency standards for Professional Engineering Technicians (R-08-PN) • Discipline-specific Training Guide (R-05-PN) |

Notes:

a. Defined short form of TER, with clear rules when a TEO may be substituted by an experienced applicant.

b. Replaces Major Task Report, emphasis on demonstrating the applicant's engineering ability.

3.2 Data Entry System: Candidate and Professional Engineering Technician

Applications for registration require pre-conditions to be fulfilled including payment of the prescribed fee, submission of the personal information, qualification, and supporting documents, which may include documents prepared by third parties, for example referee reports which are uploaded directly by the referees. The process described in **Figure 2** ensures that the preconditions are fulfilled before the start of evaluation of the applicant's competence¹.

Applicants for Candidate Engineering Technicians (CN) and Professional Engineering Technicians (PN) are taken via the menu to the second part of **Figure 2** where the following sub-processes occur:

- Provide the rest of their required information: addresses, employment, phone numbers, demographic information, and voluntary association membership.
- Enter Qualifications with separate steps for:
 - 3.2.1 Accredited qualifications
 - 3.2.2 Dublin Accord Qualifications
 - 3.2.3 Other Qualifications

In case 3.2.1, the qualification is selected from the ECSA database. In case 3.2.2 details are captured and confidence checks are performed (Country is a signatory, is qualification listed by signatory, completion year in range of validity, etc.). A status Provisional Educational Requirements Complete (ERC) is issued, with a disclaimer that the qualifications will be checked at a later stage.

In all cases, the applicant now uploads certified copies of degree certificate(s) and academic record(s)/transcript(s)/diploma supplements. If the qualification certificate or transcript is not in English or is not printed in western characters, a certified translation must be supplied. In cases 3.2.1 and 3.2.2, the parallel qualifications check process is launched for peer verification of the qualifications. In case 3.2.3, the details of qualifications are captured and the applicant is referred to the educational evaluation process. For the interim, for applicants with known other qualifications an Educational Development report will be required and evaluated as part of the registration competency assessment process.

An applicant for Professional Engineering Technician (PN) then enters the Training and Experience Summary (TES) information on-line. A simple check on the number of weeks at different levels is used to detect premature applicants. An applicant who is warned of the premature nature of application may re-enter when further information on further experience is available. For each period shown in the TES, the applicant must supply a Training and Experience Report in the format shown in **Appendix D**.

The PN applicant then nominates Referees who are notified directly by the system. (CN Applicants are not required to nominate Referees.) The Applicant must provide full details of Referees who are not registered with ECSA.

¹ Note: An applicant re-entering the system and choosing "Continue with my application" will be taken to the next piece of missing information.

In the next phase required documents are uploaded as required for the two types of applicant:

| Candidate Technician Applicant | Professional Technician Applicant | Prescribed Format |
|---|--|-------------------|
| | Engineering Report | Appendix G |
| | Academic Record | Appendix H |
| | Initial Professional Development Report | Appendix I |
| | Educational Development Report (Interim) | Appendix X |
| Proof of Voluntary Association Membership or Application (Optional) | | - |
| Proof of Identity: Original copy of RSA ID book or Passport, certified by Commissioner of Oaths | | - |
| Declaration, signed by applicant in presence of Commissioner of Oaths | | - |

Payment is completed online or electronic fund transfer (EFT) or by direct deposit. In the last two cases proof of payment must be uploaded.

The referees complete their reports and upload the reports using their logins.

The application, including the referee reports, is checked by a registration officer. Incomplete information must be supplied by the applicant via the Continue My Application option. When the application is judged complete, and the Education Check has returned an ERC and the referee reports have been completed, the application is marked as complete. The application is progressed to the next stage.

Note: **Figure 2 and 3** do not show the mechanisms for detecting when the completion of a step is incomplete and the notifications that are sent.

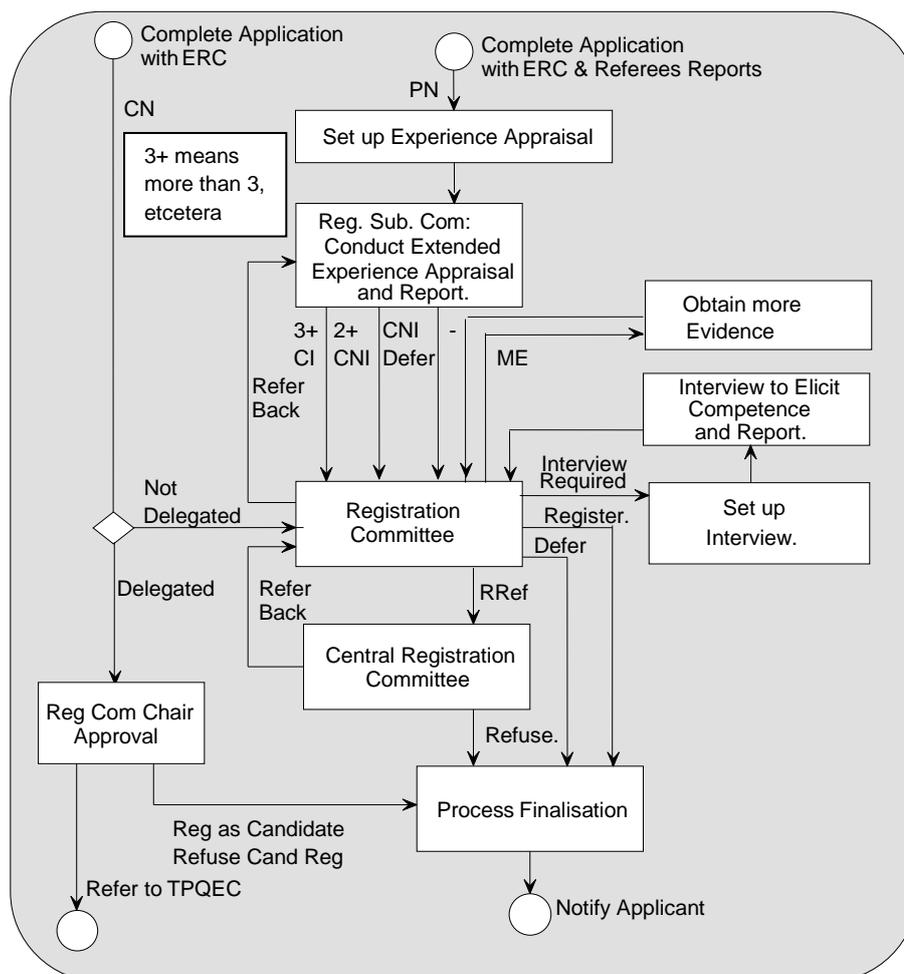


Figure 3: Assessment process for applications for Candidate and Professional Engineering Technicians

3.3 Core Process for Candidate and Professional Engineering Technician

The process in **Figure 3** gives effect to section 6 of the registration policy R-01-P in the case of Candidate and Professional Engineering Technicians. The Professional Engineering Technician Category has permission of Council to use the Extended Experience Appraisal method for assessing Applicants for registration. The process in **Figure 3** gives effect to section 6.12, 6.17 and 6.18 of the registration policy R-01-P.

3.3.1 Professional Engineering Technician Applicants

Once an application for professional registration is complete with education requirements fulfilled as determined in **Figure 2**, the evaluators for the Extended Experience Appraisal are selected and the appraisal starts. The evaluators perform individual evaluations on-line using the assessment form in **Appendix J**. The team leader of the sub-committee formulates a consensus recommendation for submission to the Registration Committee marking up his/her own **Appendix J** assessment form accordingly. In cases of Refusal, Interview, Deferral or More Evidence, the team leader also prepares a draft letter to the applicant reflecting the consensus assessment results. A template letter is used for this purpose to facilitate uniformity.

3.3.2 Professional Engineering Technician Applicants – Alternative Route

An interim arrangement for applicants not meeting the educational requirements will be applicable until ECSA examinations can be offered. An educational development experience appraisal will be done based on evidence submitted by the applicant in an Educational Development Report in the format shown in **Appendix X**.

The process flow is in accordance with the policy of R-01-P section 6 and contains the following main elements:

Experience Appraisal: is an assessment of the applicant's competence using the submitted documentation to determine whether the evidence submitted is *indicative* of competence against the standard

- If competence is indicated, proceed from Sub-committee to Registration Committee. This step is signed off by the chair of the Registration Committee.
- If competence is not indicated, refer to Registration Committee.

If the experience appraisal is not indicative of competency, the Registration Committee reviews the Sub-committee's recommendation and must adopt one of the following measures:

- If competence is not indicated with the information at hand, and it is felt that the applicant could remedy the deficiency / deficiencies by providing specific further information, select the recommendation to request more evidence (ME). Once the additional evidence is received, return to step 1 and/or:
- If competence is not indicated but further assessment is warranted, determine that an interview (I) is required. The team leader of the interview sub-committee prepares a report by marking up the consensus results from the original assessment on the assessment form (**Appendix J**). The report is considered by the Registration Committee and the recommendation is either accepted or amended.
- Defer the application for up to 12 months to give the applicant the opportunity to gain experience to fulfill outstanding competency requirements subject to a maximum of two deferments. This step is signed off by the chair of the Registration Committee.

- If refusal is recommended. The recommendations are considered by both the Technicians Registration Committee and the Central Registration Committee.

Table 2: Forms and Documents

| Ref | Appen | Components of Application | For Registration As | |
|-----|-------|---|----------------------------------|-------------------------------------|
| | | | Candidate Engineering Technician | Professional Engineering Technician |
| | | On-line application form | X | X |
| | | Declaration signed by applicant and Commissioner of Oaths | X | X |
| | | Proof of Identity (SA ID book or Passport) | X | X |
| TES | C | Summary of Training and Experience Reports | | X |
| TER | D | Training and Experience Reports (Generally more than one) Individual Reports to be signed by supervisor. Training and Experience Outlines may be used where permitted. (Evidence of responsibility) | | X |
| TEO | E | Training and Experience Outline for applicants with at least ten years of experience after ERC | | X |
| ER | G | Engineering Report. (Evidence of competency). | | X |
| AR | H | Academic Record/transcript (List of Subjects and Grades) | | X |
| IPD | I | Record of IPD (Pre-registration CPD) | | X |
| EDR | X | Interim Educational Development Report until ECSA examinations can be conducted for Alternate Route applicants only (Voluntary – evidence of development) | | X |
| | | Proof of Voluntary Association membership (Optional) (Copy of certificate or letter) | X | X |
| | | Qualification Certificates (if not already submitted) | X | X |
| REF | F | Referee report, signed by referees (Three or more) | | X |

4. Evidence and Assessment for Registration as a Candidate Engineering Technician or Professional Engineering Technician

4.1 General Requirement

The assessment system for applicants for registration as Professional Engineering Technicians must implement the requirement laid down in the competency standard R-02-PN section 2.1:

*Competence must be demonstrated within **well-defined** engineering activities, by integrated performance of the outcomes at the level defined for each outcome. Required contexts and functions may be specified in the applicable Discipline Specific Training Guides. (See Tables A1 and A2, Appendix A)*

The evidence used to demonstrate competency must therefore address the defined outcomes in the competency standard.

4.2 Information and Evidence of Competency to be provided

Table 2 lists the information and forms of evidence that the applicant for registration as a Candidate Engineering Technician or Professional Engineering Technician must provide.

4.3 Training and Experience Summary (TES, Appendix C)

The Training and Experience Summary (TES) is a factual record of distinct phases of training and work experience during the applicant's career up to the time of application. The TES must identify each phase of training and experience and the level of responsibility.

Periods during which the applicant is not engaged in activity that contributes to professional development must also be indicated, together with the reasons for inactivity.

A phase of training and experience corresponds to a period in which particular high level training objectives are to be fulfilled or a major task or project is completed. A phase typically ends when new training objectives are set, the type of work changes, the expected level of achievement changes, employment is terminated or engineering work is interrupted. See Table 4 for a list of events that demarcate a period of training and experience.

The nature of work and degrees of responsibility defined in document R-04-P (*Progression throughout the candidacy period*) are used here (and in the Training and Experience Reports):

Table 3: Nature of Engineering Work and Degrees of Responsibility

| A: Being Exposed | B: Assisting | C: Participating | D: Contributing | E: Performing |
|---|---|---|---|--|
| Undergoes induction, observes processes, work of competent practitioners. | Performs specific processes, under close supervision. | Performs specific processes as directed with limited supervision. | Performs specific work with detailed approval of work outputs. | Works in team without supervision, recommends work outputs, responsible but not accountable |
| Responsible to supervisor | Limited responsibility for work output | Full responsibility for supervised work | Full responsibility to supervisor for immediate quality of work | Level of responsibility to supervisor is appropriate to a registered person, supervisor is accountable for applicant's decisions |

Degree of responsibility E means performing at the level required for registration. This corresponds to the range statement in outcome 10 in the Competency Standard R-02-PN which requires that the applicant display the level of responsibility “for the outcomes of significant parts of one or more well-defined engineering activities”. The applicant may however not assume accountability for the work.

4.4 Training and Experience Reports

The Purpose of the Training and Experience Report (TER) is to provide a factual record of the main periods in the applicant’s development from graduation to applying for registration and to identify the periods where the applicant took responsibility at the required level.

Two templates are available for reporting on the applicant’s training and experience and their use depends on the length and nature of that training and experience.

4.4.1 In general, an applicant must complete and submit a Training and Experience Report (TER) for each phase of training and work experience from the time of meeting the education requirements (ERC) to application for registration. TER(s) with total duration covering at least one year working at the degree of engineering responsibility E (Performing) must be submitted. Such periods need not be contiguous and need not include the last period reported.

4.4.2 The requirement in 4.4.1 may be relaxed in the case of an applicant who has at least ten years training and experience after completing the educational requirement and reports a total duration of at least three years at degree of engineering responsibility E (Performing) in detail in the TER format that are signed by the supervisor. Such periods

need not be contiguous and need not include the last period reported. Such an applicant may submit Training and Experience Outlines (TEO) for the remaining periods or groups of related periods.

4.4.3 An applicant who completes the education requirement by assessment under section 3.4(iv) of document R-01-P must submit TERs for at least three years, including reports for a total duration of one year at responsibility E. Such periods need not be contiguous and need not include the last period reported. Periods of experience may predate completing the education requirement. TEOs may be submitted for other periods. In addition to the information on experiential requirements an applicant must, in the interim period until ECSA examinations can be written, provide evidence of educational development by completion of the Educational Development Report **(Appendix X)**

Any applicant whose training an experience history is shorter than three years, and has less than one year working at a degree of responsibility E (Performing) will be notified that the application is premature and invited to submit further TES entries and TERs as they become available.

Note: Where the person is registered as a candidate engineering technician with ECSA, the TES can and should be updated online and the corresponding TER uploaded by the candidate as each phase of training or work is completed. This may be done without initiating an application.

The information to be provided in the TER and TEO format is defined in **Table 4**.

Table 4: Information to be provided in Training and Experience Reports and Outlines

| Aspect | Training and Experience Report (TER) | Training and Experience Outline (TEO) |
|--------------------------|---|--|
| Supervisor's signature | Required (indicates agreement with level of responsibility A-E inserted) | Required (indicates agreement with level of responsibility A-E inserted) |
| A period ends when: | <ul style="list-style-type: none"> the work environment has changed, e.g. when a major training phase, task or ends; the type of work has changed; the responsibilities or level of function have changed (for instance, as in a promotion); change of employer; training or employment is interrupted (for instance by study, unemployment or prolonged illness). | <ul style="list-style-type: none"> The level of responsibility changes from level B to C the level of responsibility changes from level D to E a promotion takes place change of employment training or employment is interrupted nature of work changes significantly |
| Position in Organisation | <ul style="list-style-type: none"> Supply an organogram, showing the names, position and registration (if any) and qualification (if not registered) of supervisor(s), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Always show the supervisor. | <ul style="list-style-type: none"> Simplified organogram: Identify yourself, your supervisor and state the number and level of persons supervised |
| Reporting Format | <ul style="list-style-type: none"> Write in the first person. Construct proper paragraphs dealing with key aspects from the list below | <ul style="list-style-type: none"> Use bulleted format covering the items below |

| | | |
|---|---|---|
| Topics to be covered: elements marked * are mandatory, others as applicable | • Nature of training or experience* | • Nature of the training or work phase or related phases* |
| | • Discipline of Engineering and Discipline Specific Fields* | • Discipline of Engineering and Discipline Specific Fields* |
| | • Nature of problem(s) addressed, method of analysis, solution development and evaluation* | • Nature of problem(s) addressed, method of analysis, solution development and evaluation* |
| | | • Management responsibilities |
| | • Interaction with clients, stakeholders and other disciplines | • Interaction with clients, stakeholders and other disciplines |
| | • The applicant's contribution to the task* • Nature of the applicant's responsibility (in addition to level A-E)* | • The applicant's contribution to the task* • Nature of the applicant's responsibility (in addition to level A-E)* |
| Length limit | 280 words/TER, 3360 total for all TERs | 11 bullet points per TEO |

4.5 Engineering Report (See Appendix G)

Each applicant must submit an Engineering Report covering aspects of work at the Perform responsibility level E that demonstrates that the applicant has fulfilled the required outcomes.

While the report may be based on a major task, series of tasks or a project, it is a report in which the applicant reflects on his or her engineering activity that demonstrates the required level of competence.

The work drawn on for the report does not have to be project based. In an operational engineering work environment, problem solving and engineering management may provide evidence of performance against the required outcomes.

The report must be based on problem solving and activities at a **well-defined** level, applying technician level educational theory. Calculations at this level, done by the applicant, must be attached to the report.

The report should be reflective rather than purely narrative, covering:

- The engineering and contextual knowledge and understanding, both from the applicant's education and acquired subsequently, required for effective performance of the work;
- The theoretical and practical methods used to analyse and solve engineering problems encountered in the work.
- The planning, organising, leading and controlling of human and other resources required to achieve the goals of the engineering work.
- Handling of legislative considerations, impacts of the work that were not necessarily covered by regulation and ethical issues, recognition of obligations to society, the profession and the environment.
- Risks and uncertainty associated with the work and its product.
- The recommendations, judgement calls and decisions that the applicant had to make, where the applicant's leadership skills were exercised.
- The nature of the responsibility carried by the author and identification of the persons to whom the author was responsible.

The report must be written in the first person (except when describing the actions of another person or agency), in a proper structure, style and English language. A template for the heading of the report is provided. The report body, including headings and subheadings,

must be in the range 2300 to 3000 words (100 words per criterion). The total file size is limited to 1 Mbyte. Diagrams, tables and pictures appropriate to the purpose defined above, not exceeding two A4 pages in total may be included (in addition to the word count). The report is a test of written communication ability both from a structure, style and language point of view as well as logical development.

4.6 Referee Report (See Appendix F)

The purpose of the Referee Report is to draw on observations of the applicant's performance in work conditions to obtain information on the applicant's competency. The referees are asked to identify periods in the applicant's career as itemised in the TES where the referee feels able to comment on the attributes of the applicant. In relation to these periods, the referee is asked to:

- To rate the applicant's problem analysis and solution synthesis abilities in relation to the desired level (well-defined engineering problems);
- To rate the applicant's knowledge of engineering principles and of the wider context of the engineering work;
- To comment on the applicant's engineering management ability, that is the ability to ensure the achievement of engineering results through management methods;
- To rate the applicant's communication ability;
- To comment on the applicant's abilities to handle the regulatory, economic, social and environmental issues arising from engineering activity at a well-defined level;
- To comment on the applicant's understanding of ethics and ethical behavior in relation to his engineering work;
- To rate the applicant's judgement in decision making and acceptance of responsibility for engineering work at a well-defined level;
- The applicant's willingness and capacity to accept responsibility for engineering work at a well-defined level;
- To comment on the applicant's commitment and attention to competency and career development.

4.7 Academic Record and IPD Reports (Appendices H and I respectively)

The Academic Record (AR) and Initial Professional Development (IPD) Report is a factual record that serves as evidence of proficiency development from academic base through CPD-type activities of Category 1 and other formal learning activities prior to registration, including in-house training. Reported activities do not require Continuing Professional Development (CPD) validation. **Appendix I** specifies the information required on each activity.

5. Process for Educational Evaluation

The blocks Capture and Analyse Qualifications and Education Check in **Figure 1** are expanded in more detail in **Figure 4**.

The education evaluation process is shown in **Figure 5**. This is a stand-alone process that may be entered from the menu in **Figure 1**. It requires documents to be uploaded and the evaluation fee to be paid.

The following documents must be uploaded by the applicant:

- 5.1 A curriculum analysis using the worksheet provided. This is an Excel worksheet where the applicant would enter data and upload a PDF version of the file.
- 5.2 Syllabi of the subjects studied. This would be scanned copies of relevant pages of the university handbook/rulebook or course descriptions as issued to the student.
- 5.3 Project report(s). These would be scanned copies.

5.4 Declaration and Proof of Identity.

The applicant must upload one set of items 1 to 3 for every qualification completed.

The applicant should be able to add documents relating to completion of learning of lesser extent than a full qualification. This would arise if an applicant completes further learning. This information is of the form:

5.5 Certification of completion of course/module and result achieved

5.6 Description of module including hours, breakdown of activity, syllabus, form of assessment

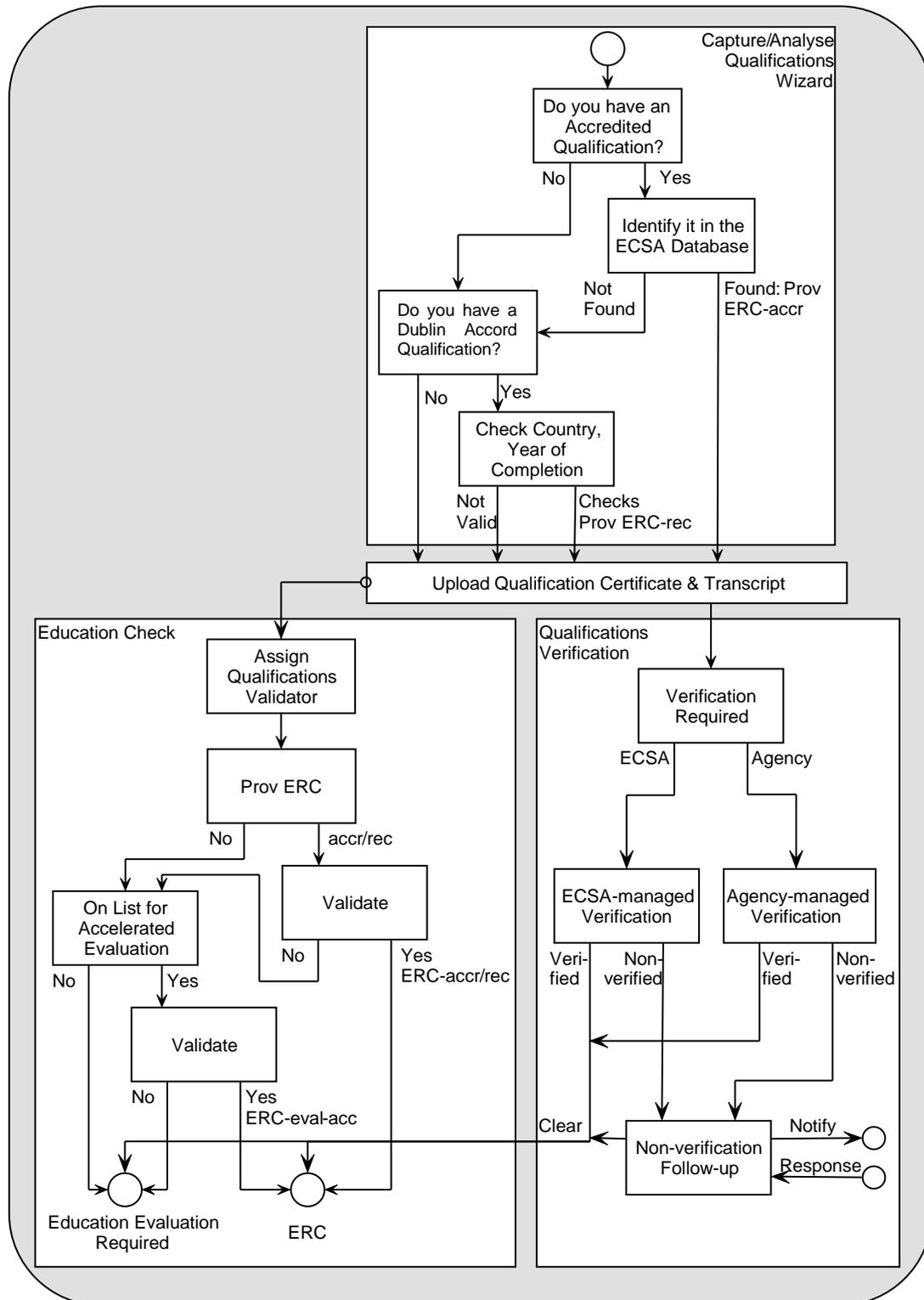


Figure 4: Detail of Capture/Analyse Qualification and Education Check in Figure 1

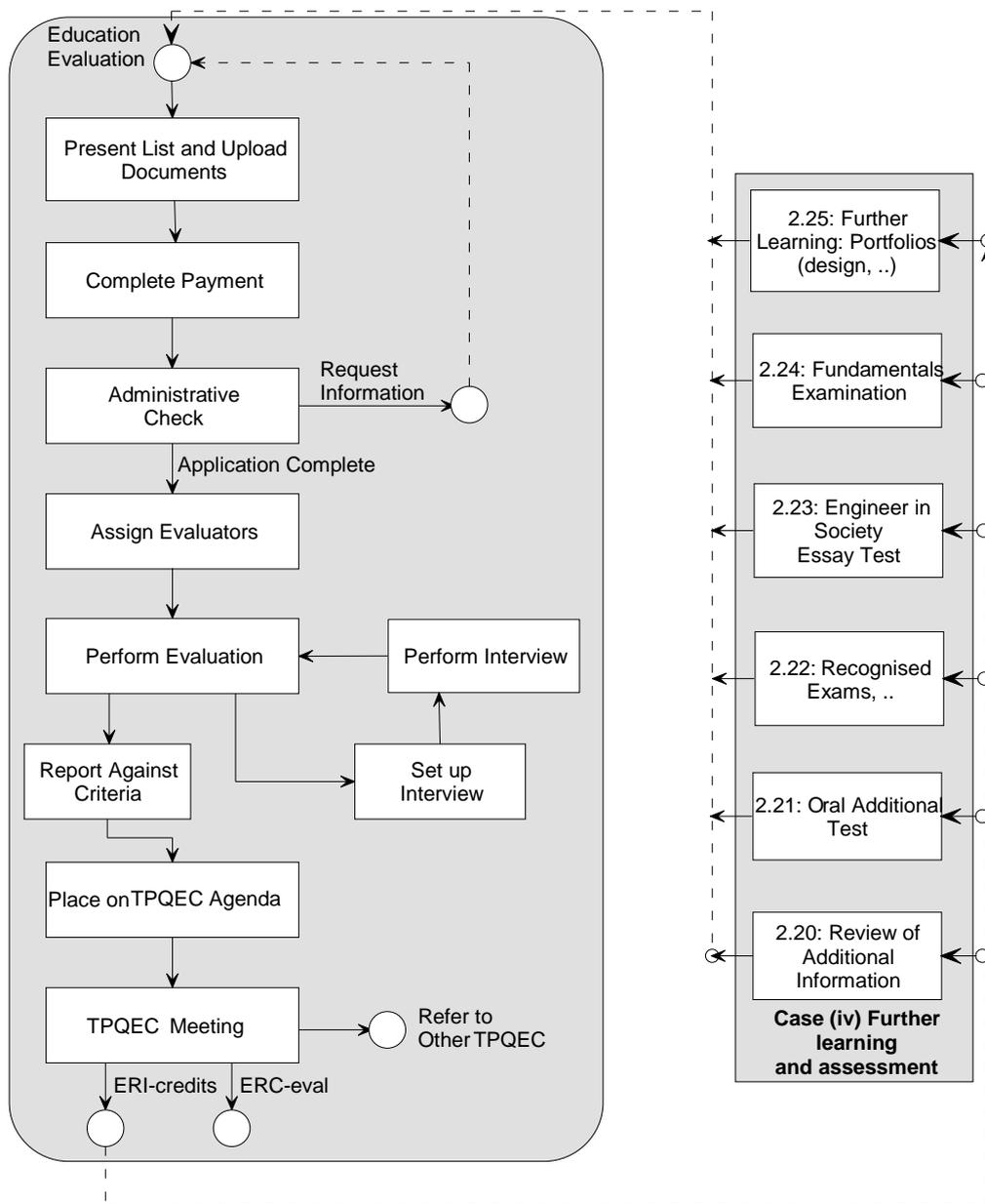


Figure 5: Education Evaluation process. The Further learning and assessment elements are shown for completeness: they do not form part of the Educational Evaluation process.

Appendix A: What Changes with the Introduction of Competency Standards?

Prior to the introduction of the competency standards, the requirements were expressed in terms of criteria for acceptable training in ECSA's policy document R2/1C. The requirements defined in section 5 of R2/1C are summarised in the first column of the following table. The outcomes embedded in the training requirements are extracted in column 2. The formal outcomes in R-02-PN are stated in column 3 while the level descriptor is in column 4. Table A1 relates to the Group A outcomes while table A2 relates to outcomes in Groups B, C and D.

Table A1: Transition from input-based training specifications to output-based competency specifications in Group A

| 1: R2/1C Essential Elements of Acceptable Practical Training | 2: Outcomes Embedded in Training Elements in Column 1 | 3: Corresponding Competency Standard Outcome | 4: Level descriptors for column 3 |
|---|--|--|--|
| <p>Acceptable practical training must provide satisfactory experience to Candidates in the implementation of novel engineering technology in an innovative manner and must include the practical training elements as stated in clause 3.1 at the level of responsible competence stated. Outcomes expressed in criteria to be met, judged by peer evaluators.</p> | | <p>Requirement (R-02-PN Section 2.1): Competence must be demonstrated within <i>well-defined engineering activities</i>, defined below, by integrated performance of the outcomes defined below at the level defined for each outcome. Note: Attributes of a professional person defined in outcomes</p> | |
| <p>Problem Investigation Not covered by R2/1C</p> | <p>Not covered by R2/1C</p> | <p>Group A: Engineering Problem Solving *1:- Define, investigate and analyse <i>well-defined engineering problems</i>. 3:- Comprehend and apply the knowledge embodied in established engineering practices and knowledge specific to the jurisdiction in which he/she practices.</p> | <p><i>Well-defined engineering problems</i> have the following characteristics: (a) can be solved mainly by practical engineering knowledge underpinned by related theory; <i>and one or more of:</i> (b) are largely defined but may require clarification; (c) are discreet, focused tasks within engineering systems; (d) are routine, frequently encountered, may be unfamiliar but in familiar context;</p> |
| <p>Problem Solution 3.3 (a) Application of known and novel technology. A variety of activities or functions to carry out engineering works within a specific discipline, sub-discipline or combination of disciplines of engineering and may include specialization. (b) There are a variety of activities or functions, which candidate engineering technicians may carry out in the execution of engineering work. These include: (i) Design and draughting, specifying, planning 3.4 (c) Problem solving requiring the use of fundamental principles, underlying techniques and calculations based on formulas</p> | <p>The applicant must demonstrate the ability to: Develop the suggested solution to the problem through a process of synthesis and design; (a) apply all information acquired during planning, (b) communicate by but not limited to drawing up of known plans, detailed designs, reports, specifications, (c) adjudicate tenders (d) take into account all practical, economic, social, environmental, quality assurance, safety and statutory factors.</p> | <p>2:- Design or develop solutions to <i>well-defined engineering problems</i>.</p> | <p><i>and one or more of:</i> (e) can be solved in standardized or prescribed ways; (f) are encompassed by standards, codes and documented procedures; requires authorization to work outside limits; (g) information is concrete and largely complete, but requires checking and possible supplementation; (h) involve several issues but with few of these imposing conflicting constraints and a limited range of and interested and affected parties; <i>and one or both of:</i> (i) requires practical judgement in practice area in evaluating solutions, considering interfaces to other role-players; (j) have consequences which are locally important but not far reaching (wider impacts are dealt with by others).</p> |

Table A2: Transition ... in Groups B, C, D and E

| | | | |
|--|--|--|---|
| <p>Execution / Implementation</p> <p>3.3 b) ii) Manufacturing, construction, installation, calibration, commissioning, operating, monitoring iii) Maintenance, modification, development iv) Operational management, economics and resource management 3.3 c) Social, economic, safety, health and environmental issues within engineering practice 3.4 g) Compliance with legislation</p> | <p>The applicant must demonstrate the ability to:</p> <p>a) Execute engineering tasks b) Make efficient use of people, materials, machines, equipment, funding c) Handle interactions d) Achieve end results within set parameters</p> | <p>Group B: Managing Engineering Activities 4:- Manage part or all of one or more <i>well-defined engineering activities</i> 5:- Communicate clearly with others in the course of his or her engineering activities Group C: Impacts of Engineering Activity 6:- Recognise the reasonably foreseeable social, cultural and environmental effects of <i>well-defined</i> engineering activities. 7:- Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her <i>well-defined</i> engineering activities.</p> | <p><i>Well-defined Engineering Activities (WDEA):</i> are characterised by several or all of:</p> <p>a) <i>Scope</i> of practice area is defined by techniques applied; change by adopting new techniques into current practice; b) Practice area is located within a wider, complex <i>context</i>, with well-defined working relationships with other parties and disciplines; c) Work involves familiar, defined range of <i>resources</i> (including people, money, equipment, materials, technologies); d) Require resolution of <i>interactions</i> manifested between specific technical factors with limited impact on wider issues; e) Are <i>constrained</i> by operational context, defined work package, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws; f) Have <i>risks</i> and <i>consequences</i> that are locally important but are not generally far reaching.</p> |
| <p>Level of Responsibility</p> <p>3.3 e) Independent work, teamwork supervision and management. f) Increasing responsibility and accountability for work 3.4 h) Compliance with the Code of Professional Conduct 3.3 Training must be developmental, building upon the knowledge and skill gained through the educational qualification. This is indicated through innovation in the application of technology, acquisition of knowledge through research, additional studies and continuing professional development, and increasing scope of work.</p> | <p>The applicant must demonstrate the ability to:</p> <p>a) Accept professional responsibility for taking engineering decisions. b) Ensure that sufficient cognisance is taken of economic considerations, social circumstances, environmental factors, quality assurance, safety and legal aspects c) Follow the code of professional conduct</p> | <p>Group D: Exercise judgement, responsibility and act ethically 8:- Conduct engineering activities ethically 9:- Exercise sound judgement in the course of <i>well-defined engineering activities</i>. 10:- Be responsible for making decisions on part or all of <i>well-defined</i> engineering activities.</p> <p>Group E: Manage Own Development 11:- Undertake professional development activities sufficient to maintain and extend his or her competence. *No direct counterpart in R2/1C work requirements</p> | |

Nomenclature Figures 1, 2, 3, 4 and 5:

| | |
|-------|--|
| AR | Academic Record |
| CI | Competency Indicated |
| CN | Candidate Engineering Technician |
| CNI | Competency Not Indicated |
| ED | Educational Development |
| ERC | Educational Requirements Complete |
| ERI | Educational Requirements Incomplete |
| ID | On-line user identification |
| IPD | Initial Professional Development |
| ME | More Evidence |
| P | Applicable to all professional categories |
| PN | Professional Engineering Technician |
| PW | On-line pass word |
| R | Registration |
| REF | Referee Report |
| RRef | Registration Refused |
| TEO | Training and Experience Outline |
| TER | Training and Experience Report |
| TES | Training and Experience Summary |
| TPQEC | Technology Programme Qualifications and Examinations Committee |
| VA | Voluntary Association |

Appendix B: Sources of Evidence against Outcomes

Notes: 1. *Well-defined* is the level identifier defined for the Professional Technician category in document R-02-PN.

1. Engineering Report claims are verified by the applicant's supervisor.

| No | Outcome | Training and Experience Reports | Engineering Report Incl claim to competency | Referee Reports (3) | IPD Report | | Discretionary Interview | |
|-----|---|---------------------------------|---|-----------------------------------|--------------------------------|--|-----------------------------------|--|
| A1 | Define, investigate and analyse <i>well-defined engineering problems</i> | Factual/ Verified | Factual/ Verified | Evaluative | | Information to the left is considered in the Experience Appraisal | Evaluative/ Verified | All information is used by Interview Panel when making their recommendation to the Registration Committee |
| A2 | Design or develop solutions to <i>well-defined engineering problems</i> | Factual/ Verified | Factual/ Verified | Evaluative | | | Evaluative/ Verified | |
| A3 | Comprehend and apply the knowledge embodied in established engineering practices and knowledge specific to the jurisdiction in which he/she practices | Factual/ Verified | Factual/ Verified | Evaluative | Factual: Knowledge Enhancement | | Evaluative/ Verified | |
| B4 | Manage part or all of one or more <i>well-defined</i> engineering activities | Factual/ Verified | Factual/ Verified | Evaluative | | | Evaluative/ Verified | |
| B5 | Communicate clearly with others in the course of his or her engineering activities | Tests Concise Writing. | Factual/ Verified | Evaluative | | | Evaluative/ Verified | |
| C6 | Recognise and address the reasonably foreseeable ... impacts of <i>well-defined</i> engineering activities. | May not be covered | Factual/ Verified | Evaluative | | | Evaluative/ Verified | |
| C7 | Meet all legal and regulatory requirements and protect the health and safety of persons in the course of <i>well-defined</i> engineering activities. | Factual/ Verified | Factual/ Verified | Evaluative | | | Evaluative/ Verified | |
| D8 | Conduct engineering activities ethically. | May not be covered | Factual/ Verified | Evaluative | | | Evaluative/ Verified | |
| D9 | Exercise sound judgement in the course of <i>well-defined engineering activities</i> . | May not be covered | Factual/ Verified | Evaluative | | | Evaluative/ Verified | |
| D10 | Be responsible for making decisions on part or all of <i>well-defined engineering activities</i> . | Factual/ Verified | Factual/ Verified | Evaluative | | | Evaluative/ Verified | |
| E11 | Undertake professional development activities sufficient to maintain and extend his or her competence. | | Factual/ Verified | Evaluative/ Verified (Commitment) | Factual | | Evaluative/ Verified (Commitment) | |

Appendix C:

This information will be held in an on-line form containing the elements shown. Links will be provided to Training and Experience Reports.

Engineering Council of South-Africa

Training and Experience Summary

Form R-03-TES-PN (2014-02-17)

Surname and Initials:

First complete a Training and Experience Report Form R-03-TER-PN, or a Training and Experience Outline Form R-03-TEO-PN for each period.

| No | From | To | Weeks | Work Details | | Respon- sibility A-E | TER or TEO |
|----|------|----|-------|---------------|------------|----------------------------|---|
| 1 | | | | Employed by: | Post held: | | Link TER1 or TEO1 |
| | | | | Type of Work: | | | |
| 2 | | | | Employed by: | Post held: | | Link TER2 or TEO2 |
| | | | | Type of Work: | | | |
| 3 | | | | Employed by: | Post held: | | Link TER3 or TEO3 |
| | | | | Type of Work: | | | |
| 4 | | | | Employed by: | Post held: | | Link TER4 or TEO4 |
| | | | | Type of Work: | | | |
| 5 | | | | Employed by: | Post held: | | Link TER5 or TEO5 |
| | | | | Type of Work: | | | |
| 6 | | | | Employed by: | Post held: | | Link TER6 or TEO6 |
| | | | | Type of Work: | | | |
| 7 | | | | Employed by: | Post held: | | Link TER7 or TEO7 |
| | | | | Type of Work: | | | |
| 8 | | | | Employed by: | Post held: | | Link TER8 or TEO8 |
| | | | | Type of Work: | | | |
| 9 | | | | Employed by: | Post held: | | Link TER9 or TEO9 |
| | | | | Type of Work: | | | |
| n | | | | Employed by: | Post held: | | Link TERn or TEOn |
| | | | | Type of Work: | | | |

When an applicant is not engaged in training and experience towards registration, the period must be reflected as follows:

| | | | | | | | |
|-----------------------------|--|--|--|---|------------|--|---|
| X | | | | Employed by: | Post held: | | Link TERx or TEOx |
| | | | | Not active | | | |
| | | | | Type of Work: <i>Insert reason here</i> | | | |
| Total years, months: | | | | | | | |

Signature of Applicant: _____ Date: _____

Appendix D:

| Engineering Council of South Africa | | | | |
|---|---|-----------------------|--|------------------------|
| Training and Experience Report | | | Form R-03-TER-PN (2014-02-17) | |
| As part of the Application for Registration as Professional Engineering Technician | | | | |
| Applicant's Name | | Applicant's Signature | | Date: |
| Period No: | Start date: | End date: | No of weeks: | Position held: |
| Employer's Name and Address for this period: (This is the employer and site at which the work took place, e.g. the site the applicant has been seconded to). | | | Did you train under a Commitment and Undertaking (CU)? | Yes No |
| | | | If yes, provide number of CU: | No: |
| Supervisor's Name and Address: | | | Supervisor's Signature: | |
| ECSA Registration No. (If not registered, qualify): | | | Date: | |
| Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining) | | | | |
| Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc.) | | | | |
| Organogram showing supervisor (person signing this report), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Give names, positions, qualification and registration (if any)*. Please do not colour in blocks. | | | | |
| Report: (Write in proper paragraphs in the first person singular in less than 280 words) | | | | |
| Nature of training or experience (stated in 20-30 words)* | | | | |
| Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in 120- 150 words)* | | | | |
| Interaction with clients, stakeholders and other disciplines (stated in 40-50 words) | | | | |
| Describe role and responsibility (in 40-50 words)* | Degree of responsibility: | | | Tick one <u>only</u> * |
| | A. Being exposed, under full supervision | | | |
| | B. Assisting, responsibility limited | | | |
| | C. Participating, supervision limited | | | |
| | D. Contributing, performs work, detailed approval | | | |
| E. Performing, limited guidance | | | | |

*Mandatory fields

Appendix E:

| Engineering Council of South Africa | | | | |
|--|---|------------------------------|---|------------------------------|
| Training and Experience Outline | | | Form R-03-TEO-PN (2014-02-17) | |
| As part of the Application for Registration as Professional Engineering Technician | | | | |
| Applicant's Name | | Applicant's Signature | | Date: |
| Period No: | Start date: | End date: | No of weeks: | Position(s) held: |
| Employer's and Supervisor Name and Address: | | | Did you train under a Commitment and Undertaking (CU)? | Yes No |
| ECSA Registration No. (If not registered, qualify): | | | If yes, provide number of CU: | No: |
| Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining) | | | | |
| Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc) | | | | |
| Organogram identifying yourself, your supervisor and persons supervised. Please do not colour in blocks*. | | | | |
| Outline Report: (Use bulleted form, using 8-11 bullets) | | | | |
| Nature of training or experience in the period(s) stated in bulleted format* | | | | |
| Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in bulleted format)* | | | | |
| Management responsibilities (stated in bulleted format) | | | | |
| Interaction with clients, stakeholders and other disciplines (stated in bulleted format)* | | | | |
| Describe role and responsibility (stated in bulleted format)* | Degree of responsibility: | | | Tick one <u>only</u>* |
| | A. Being exposed, under full supervision | | | |
| | B. Assisting, responsibility limited | | | |
| | C. Participating, supervision limited | | | |
| | D. Contributing, performs work, detailed approval | | | |
| E. Performing, limited guidance | | | | |

*Mandatory fields

Appendix F:

| | | | | | |
|--|-------------------------|--|----------|-------------------------------|-------------|
| Engineering Council of South Africa | | | | Form R-03-REF-PN (2014-02-17) | |
| Referee Report on an Application for Registration as Professional Engineering Technician | | | | | |
| Applicant's Name | | | | | |
| Referee Name: | | ECSA Registration Category (e.g. PrTechniEng): | | Registration Number: | |
| Referee Employer: | Referee Cell Phone No: | | | | |
| | Referee E-mail address: | | | | |
| My personal knowledge of the applicant's achievements extends: | From: | | To: | | |
| My personal relationship with the applicant is: (Mark one block) | Unrelated | | By birth | | By marriage |
| My professional relationship with the applicant is, for the period shown: (Mark one block) | Mentor | Supervisor | Employer | Colleague | Client |

Evaluation of the Applicant's Competence or state of Development

The level of competency required for registration as a Professional Engineering Technician is defined in the Competency Standards, document R-02-PN. Competency is defined in terms of eleven outcomes and two level definitions, namely *well-defined engineering problems* and *well-defined engineering activities*. The applicant is expected to have demonstrated performance at a degree of responsibility appropriate to a Professional Engineering Technician (E) for at least one year.

As a referee, you are requested to rate the applicant against the outcomes as well as make a holistic evaluation.

Please use the following scale:

- CDC: The applicant consistently demonstrates competence
- CDI: The applicant demonstrated competence but not consistently
- CNDD: The applicant has not demonstrated competence but is developing
- CND: The applicant has not demonstrated competence
- X: I am unable to comment

Please enter your comments in the third column, giving your reasons for assigning the particular rating. When a rating CDI, CNDD, or CND is given, please clearly state the reason(s) for assigning this rating

| Outcomes | Rating | Reason |
|--|--------|--------|
| Group A: Engineering Problem Solving | | |
| 1. Define, investigate and analyse well-defined engineering problems | | |
| 2. Design or develop solutions to well defined engineering problems | | |
| 3. Comprehend and apply the knowledge embodied in established engineering practices and knowledge specific to the jurisdiction in which he/she practices | | |
| Group B: Management of Engineering Activities | | |
| 4, Manage part or all of one or more well-defined engineering activities | | |
| 5. Communicate clearly with others in the course of his or her engineering activities | | |
| Group C: Impacts of Engineering Activity | | |
| 6. Recognise the reasonable foreseeable social, cultural and environmental effects of well-defined engineering activities | | |
| 7. Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her well-defined engineering activities | | |

| | | | |
|---|---|--|--|
| 8. | Conduct engineering activities ethically | | |
| Group D: Exercise judgement, take responsibility | | | |
| 9. | Exercise sound judgement in the course of well-defined engineering activities | | |
| 10. | Be responsible for making decisions on part or all of well-defined engineering activities | | |
| Group E: IPD | | | |
| 11. | Undertake professional development activities sufficient to maintain and extend his or her competence | | |

Optional: Further comments or additional information on the Applicant:

| | | |
|--|--|--|
| Viewed Holistically: | | |
| The applicant has demonstrated competence to be registered as a Professional Engineering Technician | | |

Declaration by Referee: I declare that the information provided is correct to the best of my knowledge. I hereby confirm that I am conversant with the Council's requirements for registration as set out in the Competency Standards, document R-02-PN as well as the instructions on this referee report, and that I am prepared to substantiate my view expressed herein at an interview, should the Council require me to do so. I also confirm that I submit this information to ECSA on the understanding that it will be treated as confidential. I understand that the information will not be disclosed by ECSA unless required by law.

Name of Referee:

Title of Position held:

Signature of Referee: _____ **Date:**

Please post to:

⇒ **The Chief Executive Officer ● Engineering Council of South Africa**
Private Bag X691 ● BRUMA ● 2026

Engineering Report

Use this form to report in about 100 words per criterion under Outcomes 1 to 11 below on a recent engineering task, part of a project or complete project to which you have made a significant contribution. The report may cover conceptualization, design and analysis, specification, tendering and adjudication, manufacturing, project and construction management, commissioning, maintenance, measurement and testing or planning at a well-defined level. Please also provide a sample relevant calculations and drawings as an addendum which is limited to two A4 pages.

Use Appendix A of the Discipline Specific Training Guide R-05-PN to assist in the interpretation of the criteria

Name of Applicant:

| | |
|---|--|
| <u>Designation of Work:</u> (<15 words) | |
| <u>Date of Work:</u> | |
| <u>Engineering brief and objective:</u> (< 30 words) | |
| <u>Environment:</u> Industry; Laboratory; Theory; Simulation, etc. in (<15 words) | |
| <u>Short Summary:</u> (State engineering problems; solutions in < 30 words) | |
| <u>Budget:</u> (<10 words) | |

Well-defined engineering problems have the following characteristics:

- a) can be solved mainly by practical engineering knowledge, underpinned by related theory;
and one or more of:
- b) are largely defined but may require clarification;
- c) are discrete, focused tasks within engineering systems;
- d) are routine, frequently encountered, may be unfamiliar but in familiar context;
and one or more of:
- e) can be solved by standardised or prescribed ways;
- f) are encompassed by standards, codes and documented procedures; requires authorisation to work outside limits;
- g) information is concrete and largely complete, but requires checking and possible supplementation;
- h) involve several issues but few of these imposing conflicting constraints and a limited range of interested and affected parties;
and one or both of:
- i) requires practical judgement in practice area in evaluating solutions, considering interfaces to other role-players;
- j) have consequences which are locally important but not far reaching (wider impact are dealt with by others).

Well-defined engineering activities (WDEA) have several of the following characteristics:

- a) *Scope* of practice area is defined by techniques applied; change by adopting new techniques into current practice;
- b) Practice area is located within a wider, complex *context*, with well-defined working relationships with other parties and disciplines;
- c) Work involves familiar, defined range of *resources*, including people, money, equipment, materials, technologies;
- d) Require resolution of *interactions* manifested between specific technical factors with limited impact on wider issues;
- e) Are *constrained* by operational context, defined work package, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws;
- f) Have *risks* and *consequences* that are locally important but are generally not far reaching.

Outcomes and Criteria

Outcome 1: Define, investigate and analyse well-defined engineering problems encountered in your work:

1.1 State how you interpreted the work instruction received, checking with your client or supervisor if your interpretation is correct.

1.2 Describe how you analysed, obtained and evaluated further clarifying information, and if the instruction was revised as a result.

Outcome 2: Design or develop a solution to well-defined engineering problems encountered in your work:

2.1 Describe how you designed or developed and analysed alternative approaches to do the work. Impacts checked. Calculations attached

2.2 State what the final solution to perform the work was, client or your supervisor in agreement.

Outcome 3: Comprehend and apply the knowledge in established engineering practices and knowledge specific within your practice area as applied in your task:

3.1 State what NDip level engineering standard procedures and systems you used to execute the work, and how NDip level theory was applied to understand and/or verify these procedures.

3.2 Give your own NDip level theoretical calculations and/or reasoning on why the application of this theory is considered to be correct (Actual examples).

Outcome 4: Manage part or all of one or more well-defined engineering activities embodied in your work:

4.1 State how you managed yourself, priorities, processes and resources in doing the work (e.g. bar chart).

4.2 Describe your role and contribution in the work team.

Outcome 5: Communicate clearly with others in the course of your engineering activities (well-defined engineering work):

5.1 State how you presented your point of view and compiled reports after completion of the work.

5.2 State how you compiled and issued instructions to entities working on the same task.

Outcome 6: Recognise the reasonably foreseeable social, cultural and environmental effects of your well-defined engineering activity (task):

6.1 Describe the social, cultural and environmental impact of this engineering activity.

6.2 State how you communicated mitigating measures to affected parties and acquired stakeholder engagement.

Outcome 7: Meet all legal and regulatory requirements and protect the health and safety of persons in the course of your well-defined engineering activity (task):

7.1 List the major laws and regulations applicable to this particular activity and how health and safety

| | |
|--|--|
| matters were handled. | |
| 7.2 State how <u>you</u> obtained advice in doing risk management for the work and elaborate on the risk management system applied. | |
| Outcome 8: Conduct engineering activities ethically in executing your work: | |
| 8.1 State how <u>you</u> identified ethical issues and affected parties and their interest and what you did about it when a problem arose. | |
| 8.2 Confirm that <u>you</u> are con-versant and in compliance with ECSA's Code of Conduct and why this is important in your work. | |
| Outcome 9: Exercise sound judgement in the course of well-defined engineering activities encountered in your work: | |
| 9.1 State the factors applicable to the work, their interrelationship and how <u>you</u> applied the most important factors. | |
| 9.2 Describe how <u>you</u> foresaw work consequences and evaluated situations in the absence of full evidence. | |
| Outcome 10: Be responsible for making decisions on part or all of well-defined engineering activities included in your work: | |
| 10.1 Show how <u>you</u> used NDip theoretical calculations to justify decisions taken in doing engineering work. Attach actual calculations | |
| 10.2 State how <u>you</u> took responsible advice on any matter falling outside your own education and experience. | |
| 10.3 Describe how <u>you</u> took responsibility for your own work and evaluated any shortcoming in <u>your</u> output. | |
| Outcome 11: Undertake professional development activities sufficient to maintain and extend your competence. | |
| 11.1 State what strategy you have independently adopted to enhance your own professional development. | |
| 11.2 State the philosophy of your employer in regard to your professional development. | |
| Evidence of your competency development plan and independent learning ability must be given in the Initial Professional Development Report, Form R-03-IPD-PN (Appendix H). | |

Signature of Applicant: _____

Date:

Signature of Mentor / Supervisor: _____

Name of Mentor/Supervisor printed:

Tel. No.:

Detailed information on

TERTIARY ENGINEERING QUALIFICATIONS

As part of the Application for Registration as a Professional Engineering Technician

Name of Applicant:

Name of Qualification:

| All subjects passed | Year Obtained | Marks obtained <i>(if available)</i> |
|---|---------------|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Extra subjects passed for incomplete qualifications | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Total Credits | | |

Signature of Applicant

Date

EDUCATIONAL DEVELOPMENT REPORT

| | | | |
|--------------------|---|----------------------------------|---------------------------|
| A | <p>1. INSTRUCTIONS</p> <p>1. Applicants not in possession of an ECSA accredited National Diploma in Engineering should complete this work based (experience) learning report. <u>WRITE A REPORT IN ABOUT 100 WORDS ON EACH CRITERION LISTED.</u></p> <p>2. Reports must include reference to any <i>well-defined</i> practical examples in the work place demonstrating how the competencies were satisfied, and is not restricted to a single task or project. (Additional supporting evidence may be attached, if necessary – limited to two A4 pages).</p> <p>3. This information can be provided from education or experience, or a combination of both.</p> <p>4. The applicant must sign the completed report and also obtain a signature from his/her supervisor.</p> <p>5. The applicant may be invited to an interview to expand and/or confirm this report.</p> <p><i>Well-defined engineering problems have the following characteristics:</i></p> <p>a) can be solved mainly by practical engineering knowledge, underpinned by related theory; <i>and one or more of:</i></p> <p>b) are largely defined but may require clarification;</p> <p>c) are discrete, focused tasks within engineering systems;</p> <p>d) are routine, frequently encountered, may be unfamiliar but in familiar context; <i>and one or more of:</i></p> <p>e) can be solved by standardised or prescribed ways;</p> <p>f) are encompassed by standards, codes and documented procedures; requires authorisation to work outside limits;</p> <p>g) information is concrete and largely complete, but requires checking and possible supplementation;</p> <p>h) involve several issues but few of these imposing conflicting constraints and a limited range of interested and affected parties.</p> | | |
| B. | <u>APPLICANT'S PERSONAL DETAILS</u> | | |
| | Name: | | Technical Qualifications: |
| C. | <u>EDUCATIONAL DEVELOPMENT REPORT (OUTCOMES BASED, DURING WORK EXPERIENCE)</u> | | |
| | <p><u>Exit Level Outcome 1.</u> The applicant displays understanding of and the ability to apply a coherent range of discipline specific fundamental principles in engineering science and technology supported by established mathematical formulas to solve <i>well-defined</i> engineering problems.</p> | | |
| <u>Item</u> | <u>Criteria</u> | <u>Development Report</u> | |
| 1.1 | State what mix of mathematical, natural science and engineering knowledge <u>you</u> applied in the solution of the <i>well-defined engineering problem</i> . State which principles and laws were used. | | |
| 1.2 | Describe how <u>you</u> analysed the engineering materials, components, systems or processes used and provide the motivation for the specific selection. | | |
| 1.3 | Describe the procedures applied for dealing with uncertainty and risk applicable to <u>your own</u> theoretical limitations and the use of specialists to do the work. | | |

Exit Level Outcome 2. The applicant displays proficiency in discipline specific engineering techniques at exit level.

| <u>Item</u> | <u>Criteria</u> | <u>Development Report</u> |
|-------------|--|---------------------------|
| 2.1 | Describe how <u>you</u> analysed and defined a problem and identified the engineering knowledge and skills required for solving the problem. | |
| 2.2 | Describe how <u>you</u> generated possible solutions to the problem and how they were analysed and prioritised. | |
| 2.3 | State how <u>you</u> selected, formulated and presented the preferred solution. | |

Exit Level Outcome 3. The applicant displays proficiency in the use of engineering tools and IT support appropriate to the discipline for the solution of *well-defined* engineering problems.

| <u>Item</u> | <u>Criteria</u> | <u>Development Report</u> |
|-------------|---|---------------------------|
| 3.1 | Describe how <u>you</u> assess the method, skill or tool (including computer applications) for applicability to solving problems. | |
| 3.2 | Describe how <u>you</u> applied the method, skill or tool correctly to achieve the required result, and how this tested against the required results. | |

Exit Learning Outcome 4. The applicant demonstrates procedural design proficiency through project work. The design problem meets the requirements of a *well-defined engineering problem* and the design approach is properly structured.

| <u>Item</u> | <u>Criteria</u> | <u>Development Report</u> |
|-------------|---|---------------------------|
| 4.1 | Describe how <u>you</u> formulated the design problem and how the design process was managed. | |
| 4.2 | Describe how user needs, legislation, standards and resources were acquired and evaluated. | |
| 4.3 | Describe how <u>you</u> performed the design task, selecting a preferred solution out of alternatives, subject to relevant premises, assumptions and constraints. | |
| 4.4 | Describe how the selected design was evaluated in terms of impact and benefits and how this information was communicated in a technical report. | |

Exit Level Outcome 5. The applicant displays proficiency in standardised experimental and research methodology

| Item | Criteria | Development Report |
|-------------|---|---------------------------|
| 5.1 | Describe the plan <u>you</u> devised to perform the investigation stating what information was used. | |
| 5.2 | Describe the methodology <u>you</u> used to perform the analysis stating the equipment and/or software used. | |
| 5.3 | From the data available, describe how information was derived, analysed and interpreted to reach conclusions. | |
| 5.4 | Describe how the purpose, process and outcomes of the investigation are recorded in a technical report. | |

Exit Level Outcome 6. The applicant communicates in writing at the exit level of a Ndip programme

No entry required. Assessment will be done against evidence submitted in item 5 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 7. The applicant explains and analyses impacts of engineering activity addressing issues by defined procedures.

No entry required. Assessment will be done against evidence submitted in item 6 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 8. The applicant understands and commits to professional ethical principles in engineering.

No entry required. Assessment will be done against evidence submitted in item 8 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 9. Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a technical team and to manage projects.

No entry required. Assessment will be done against evidence submitted in item 4 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 10. Engage in independent and life-long learning through well-developed learning skills.

No entry required. Assessment will be done against evidence submitted in item 11 of the Engineering Report (Form R-03-ER-PN) and the Initial Professional Development Report (Form R-03-IPD-PN).

Signature of Applicant: _____ **Date:** _____

Signature of Mentor / Supervisor: _____

Name of Mentor/Supervisor printed: _____

Tel. No.: _____

Appendix J:

| | | |
|---|--|--|
|  | ENGINEERING COUNCIL OF SOUTH AFRICA Assessment Form: Professional Engineering Technicians | Form R-03-AF-PN (2014-02-17) |
|---|--|--|

| | | | |
|----------|--------------------------------------|--------------------|------------|
| 1 | Applicant's Personal Details: | Name: _____ | Age: _____ |
| | Employer: _____ | ECSA Ref No: _____ | |

| | | | | |
|----------|--|----------------------|------------------------|-------------------|
| 2 | Qualifications and Development: | Engineering 1: _____ | Date obtained: _____ | Discipline: _____ |
| | | Engineering 2: _____ | Date obtained: _____ | Discipline: _____ |
| | | Other: _____ | Date obtained: _____ | Discipline: _____ |
| | | | | |
| | | Previous Reg: _____ | Date registered: _____ | Category: _____ |

| | | | | | | | | |
|--|---------------------------------------|------------|-----------------------|---|---------------------------------|--|-----|---|
| 3 | Referee Reports: (R-03-REF-PN) | No: | Registered as: | Work Relationship¹⁴⁾: | Evaluation³⁾: | Remarks: (e.g. contact details of referee.) | | |
| | | 1: | | | | | | |
| | | 2: | | | | | | |
| | | 3: | | | | | | |
| Holistic Evaluation (cross applicable block) ³⁾ | | | | CDC | CDI | CNDD | CND | X |

| | | | | | | | | | | |
|------------------------------------|---|-------------------|--|---|--|--|--|--|-------------------------------|--|
| 4 | Training and Experience Reports: | Period No: | Practically Defined⁴⁾: <i>(Artisan)</i> | Specific-Defined⁵⁾: <i>(Spec. Cat)</i> | Well-defined⁶⁾: <i>(Technician)</i> | Broadly Defined⁷⁾: <i>(Technolog)</i> | Degree of Responsibility Enter A to E⁸⁾: | Duration in Years: <i>(Enter years/months)</i> | | |
| | | | | | | | | Total | WR⁹⁾ > E | |
| | | 1 | | | | | | | | |
| | | 2 | | | | | | | | |
| | | 3 | | | | | | | | |
| | | 4 | | | | | | | | |
| | | 5 | | | | | | | | |
| | | 6 | | | | | | | | |
| | | 7 | | | | | | | | |
| | | 8 | | | | | | | | |
| | | 9 | | | | | | | | |
| | | 10 | | | | | | | | |
| | | 11 | | | | | | | | |
| | | 12 | | | | | | | | |
| Experience Required (yrs.): | | | | | With Responsibility E (yrs.): | | | | | |
| Actual Experience (yrs.): | | | | | Actual Responsibility at E (yrs.): | | | | | |

| | | |
|--|----------------------------------|---|
| 5. Individual Experiential Assessment:¹¹⁾ | Name and Signature: _____ | Date: _____ |
| Competence Indicated, register (CI): | | Request more evidence as indicated (ME): |
| An additional ECSA registered referee in a supervisory capacity required I: | | Defer and update Engineering Report R-03-ER-PN to address lacking evidence indicated (Dx): (x = 1 or 2) |
| Competence Not Indicated (CNI) on the criteria as shown, do not register: | | Interview to obtain evidence indicated (I): |

| | | |
|--|-------------------------------------|---|
| 6. Group Experiential Assessment:¹²⁾ | Signature Chairperson: _____ | Date: _____ |
| Group Members: | | |
| Competence Indicated, register (CI): | | Request more evidence as indicated (ME): |
| An additional ECSA registered referee in a supervisory capacity required I: | | Defer and update Engineering Report R-03-ER-PN to address lacking evidence indicated (Dx): (x = 1 or 2) |
| Competence Not Indicated (CNI) on the criteria as shown, do not register: | | Interview to obtain evidence indicated (I): |

| | | |
|--|-------------------------------------|---|
| 7. Interview Experiential Assessment:¹²⁾ | Signature Chairperson: _____ | Date: _____ |
| Interview Team Members: | | |
| Competence Indicated, register (CI): | | Request more evidence as indicated (ME): |
| An additional ECSA registered referee in a supervisory capacity required I: | | Defer and update Engineering Report R-03-ER-PN to address lacking evidence indicated (Dx): (x = 1 or 2) |
| Competence Not Indicated (CNI) on the criteria as shown, do not register: | | |

| | | |
|--|---------------|-------------|
| 8. Chairperson Technician Committee (Experiential): | Signed: _____ | Date: _____ |
|--|---------------|-------------|

| 9. Assessment Results All Applicants: Score according to ^{4) - 7)} in Nomenclature below for Engineering Report or Interview | | | | | | |
|--|---|---|-------------------|------------------|-----------------------------------|-------------------|
| Outcomes and Criteria | ¹¹⁾Indiv. Assess | Group Assess | Inter-view | Weigh-ing | Final Result¹⁰⁾ | Remarks |
| Group A: Engineering problem solving: | | | | | | |
| <u>Outcome 1: Define, investigate and analyse well-defined engineering problems</u> | | | | | | |
| 1.1 Interpret the problem given to solve | | | | 4 | | |
| 1.2 Investigate and analyse further information obtained | | | | 3 | | |
| <u>Outcome 2: Design or develop solutions to well-defined engineering problems</u> | | | | | | |
| 2.1 Design or development of alternative solutions. Impacts | | | | 5 | | |
| 2.2 Select of the best solution, agreed to by the recipient. | | | | 2 | | |
| <u>Outcome 3: Comprehend and apply NDip theory</u> | | | | | | |
| 3.1 NDip level procedures and systems used to solve problems | | | | 5 | | |
| 3.2 Theoretical reasoning behind procedures & systems used | | | | 5 | | |
| Group B: Managing Engineering Activities: | | | | | | |
| <u>Outcome 4. Manage activity</u> | | | | | | |
| 4.1 Manage self, priorities, processes, resources | | | | 2 | | |
| 4.2 Participate in team-work. Role evident. | | | | 2 | | |
| <u>Outcome 5. Communicate during the activity</u> | | | | | | |
| 5.1 Present point of view, write reports correctly | | | | 2 | | |
| 5.2 Compile and issue clear instructions | | | | 3 | | |
| Group C: Impacts of Engineering Activity: | | | | | | |
| <u>Outcome 6. Social, cultural and environmental impact of the activity</u> | | | | | | |
| 6.1 Social and environmental impact of work realised | | | | 2 | | |
| 6.2 Mitigating measures interacted with stakeholders | | | | 2 | | |
| <u>Outcome 7. Legal, regulatory and health and safety requirements</u> | | | | | | |
| 7.1 Major laws and regulations known and applied. | | | | 3 | | |
| 7.2 Advice on risk management obtained and applied | | | | 2 | | |
| Group D: Exercise judgement, take responsibility and act ethically: | | | | | | |
| <u>Outcome 8. Conduct engineering activities ethically</u> | | | | | | |
| 8.1 Ethical issues and affected parties noted and utilised | | | | 1 | | |
| 8.2 ECSA's Code of Conduct identified and appreciated | | | | 1 | | |
| <u>Outcome 9. Exercise sound judgement</u> | | | | | | |
| 9.1 Factors applicable to the work and interrelationship applied | | | | 4 | | |
| 9.2 Work consequences foreseen and situation evaluated | | | | 3 | | |
| <u>Outcome 10. Take decisions responsibly</u> | | | | | | |
| 10.1 Theory applied to justify decisions taken | | | | 4 | | |
| 10.2 Advice taken on matters outside own ability. | | | | 3 | | |
| 10.3 Take responsibility for own evaluated work | | | | 4 | | |
| Group E: Continued Professional Development: | | | | | | |
| <u>Outcome 11. Undertake learning activities</u> | | | | | | |
| 11.1 Strategy independently adopted to enhance professional development evident. (IPD ¹⁾ report) | | | | 2 | | |
| 11.2 Awareness of philosophy of employer in regard to professional development evident. | | | | 4 | | |
| SUB-TOTAL: | | | | | | TOTAL (÷2) |
| 10 | <u>Comment and Instructions:</u> | | | | | |
| 11 | <u>Training Detail:</u> | Training under a C&U (Y/N) | | | | |
| | | Name of organisation training the applicant | | | | |
| | | ECSA Registered Mentor (Y/N) | | | | |

| 12. Assessment Results Alternative Route Applicants: Score according to ^{4) - 7)} in Nomenclature for R-03-EDR-PN Report or Interview | | | | | | |
|--|------------------------------------|---------------------|-------------------|------------------|-----------------------------------|----------------|
| Outcomes and Criteria | ¹¹⁾Indiv. Assess | Group Assess | Inter-view | Weigh-ing | Final Result¹⁰⁾ | Remarks |
| 1. <u>The applicant displays understanding of and the ability to apply a coherent range of discipline specific fundamentals principles in engineering science and technology supported by established mathematical formulas to solve well-defined problems.</u> | | | | | | |
| 1.1 Mix of mathematical, natural science and engineering knowledge applied in the solution of the <i>well-defined engineering problem</i> stated. Principles and laws used, stated. | | | | 3 | | |
| 1.2 How engineering materials, components, systems or processes used were analysed, stated, and the motivation for the specific selection provided. | | | | 2 | | |
| 1.3 The procedures applied for dealing with uncertainty and risk applicable to own theoretical limitations and the use of specialists to do the work described. | | | | 1 | | |
| 2 <u>The applicant displays proficiency in discipline specific engineering techniques at the exit level.</u> | | | | | | |
| 2.1 Analysed and defined a problem and identified the engineering knowledge and skills required for solving the problem. | | | | 1 | | |
| 2.2 Generated possible solutions to the problem and how they were modelled, analysed and prioritised. | | | | 3 | | |
| 2.3 Selected, formulated and presented the preferred solution. | | | | 1 | | |
| 3. <u>The applicant displays proficiency in the use of engineering tools and IT support appropriate to the discipline for the solution of well-defined problems.</u> | | | | | | |
| 3.1 How the method, skill or tool (including computer applications) was assessed for applicability to solving problems, described. | | | | 1 | | |
| 3.2 How the method, skill or tool was applied correctly to achieve the required result described, and how this tested against the required results | | | | 1 | | |
| 4. <u>The applicant demonstrates procedural design proficiency through project work. The design problem meets the requirements of a well-defined engineering problem and the design approach is properly structured.</u> | | | | | | |
| 4.1 How the design problem was formulated and how the design process was managed, described. | | | | 1 | | |
| 4.2 How user needs, legislation, standards and resources were acquired and evaluated, described. | | | | 1 | | |
| 4.3 How the design task was performed, selecting a preferred solution out of alternatives, subject to relevant premises, assumptions and constraints, described. | | | | 3 | | |
| 4.4 How the selected design was evaluated in terms of impact and benefits described, and how this information was communicated in an engineering report. | | | | 1 | | |
| 5. <u>The applicant displays proficiency in standardised experimental or investigative and information handling methodology</u> | | | | | | |
| 5.1 The plan devised to perform the investigation described, stating what information was used. | | | | 1 | | |
| 5.2 The methodology used to perform the analysis described, stating the equipment and/or software used. | | | | 1 | | |
| 5.3 How information was derived, critically analysed and interpreted from the data available to reach conclusions. | | | | 2 | | |
| 5.4 How the purpose, process and outcomes of the investigation were recorded in an engineering report. | | | | 1 | | |
| 6. <u>The applicant communicates in writing at the exit level of a NDip programme. (Use score from 9 above, 5.1 and 5.2)</u> | | | | | | |
| 6.1 Present point of view, write reports correctly | | | | 1 | | |
| 6.2 Compile and issue clear instructions | | | | 1 | | |
| 7. <u>The applicant explains and analyses impacts of engineering activity addressing issues by defined procedures. (Use score from 9 above, 6.1 and 6.2)</u> | | | | | | |
| 7.1 Social and environmental impact of work realised | | | | 1 | | |
| 7.2 Mitigating measures interacted with stakeholders | | | | 1 | | |
| 8. <u>The applicant understands and commits to ethical principles in engineering. (Use score from 9 above, 8.1 and 8.2)</u> | | | | | | |
| 8.1 Ethical issues and affected parties noted and utilised | | | | 1 | | |
| 8.2 ECSA's Code of Conduct identified and appreciated | | | | 1 | | |
| 9. <u>Demonstrate knowledge and understanding of engineering management principles. (Use score from 9 above, 4.1 and 4.2)</u> | | | | | | |
| 9.1 Manage self, priorities, processes, resources | | | | 1 | | |
| 9.2 Participate in team-work. Role evident. | | | | 1 | | |
| 10. <u>Engage in independent lifelong learning through well-developed learning skills. (Use score from 9 above, 11.1 and 11.2)</u> | | | | | | |
| 10.1 Strategy independently adopted to enhance professional development evident. (IPD ¹⁾ report) | | | | 1 | | |
| 10.2 Awareness of philosophy of employer in regard to professional development evident.) | | | | 1 | | |
| TOTAL: | | | | | | |

| | | | | |
|---|----------------------------|--|--------------|--|
| 13. Individual Educational Assessment: ¹¹⁾ | Name and Signature: | | Date: | |
| Development to NDip level evident (CI): | | Request more evidence as indicated (ME): | | |
| An additional ECSA registered referee in a supervisory capacity required I: | | Defer and update R-03-EDR-PN Report to address lacking evidence indicated (Dx): (x = 1 or 2) | | |
| Development to NDip level not evident, Competence Not Indicated (CNI): | | Interview to obtain evidence indicated (I): | | |

| | | | | |
|---|-------------------------------|--|--------------|--|
| 14. Group Educational Assessment: ¹²⁾ | Signature Chairperson: | | Date: | |
| Group Members: | | | | |
| Development to NDip level evident (CI): | | Request more evidence as indicated (ME): | | |
| An additional ECSA registered referee in a supervisory capacity required I: | | Defer and update R-03-EDR-PN Report to address lacking evidence indicated (Dx): (x = 1 or 2) | | |
| Development to NDip level not evident, Competence Not Indicated (CNI): | | Interview to obtain evidence indicated (I): | | |

| | | | | |
|---|-------------------------------|--|--------------|--|
| 15. Interview Educational Assessment: ¹²⁾ | Signature Chairperson: | | Date: | |
| Interview Team Members: | | | | |
| Development to NDip level evident (CI): | | Request more evidence as indicated (ME): | | |
| An additional ECSA registered referee in a supervisory capacity required I: | | Defer and update R-03-EDR-PN Report to address lacking evidence indicated (Dx): (x = 1 or 2) | | |
| Development to NDip level not evident, Competence Not Indicated (CNI): | | | | |

| | | | | |
|--|---------|--|--------------|--|
| 16. Chairperson Technician Committee (Educational): | Signed: | | Date: | |
|--|---------|--|--------------|--|

Nomenclature:

- 1) IPD – Initial Professional Development, CPD – Continued Professional Development
- 2) Y – Yes, N – No
- 3) Holistic Evaluation:

| | |
|------|---|
| CDC | The applicant consistently displays competence |
| CDI | The applicant demonstrated competence but not consistently |
| CNDD | The applicant has not demonstrated competence but is developing |
| CND | The applicant has not demonstrated competence |
| X | I am unable to comment |
- 4) Practically Defined: Typically applicable to the engineering artisan categories Results 9 and 12, **SCORE=1**
- 5) Specifically Defined: Typically applicable to the engineering specified categories Results 9 and 12, **SCORE=2**
- 6) Well-defined: Typically applicable to professional engineering technicians Results 9 and 12, **SCORE=3**
- 7) Broadly-defined Typically applicable to engineering technologists Results 9 and 12, **SCORE=4**
- 8) Degree of Responsibility:

| | |
|---|--|
| A | Being exposed, under full supervision |
| B | Assisting, responsibility limited |
| C | Participating, supervision limited |
| D | Contributing, performs work, detailed approval |
| E | Performing, limited guidance |
- 9) Duration in years with responsibility – WR degree E
- 10) Final result: Multiply "Score" with the "Weight". **Note that if no evidence found, the score is 0, then Final Result=0**
- 11) Individual Assessment is the assessment done by a single assessor ("homework")
- 12) Group Assessment is done at by a sub-committee at a meeting or at an interview where a consensus decision is made which is confirmed by the chairperson of the sub-committee
- 13) Competence on Outcomes 6-10 is based on evidence in the Engineering Report (R-03-ER-PN) and the IPD Report (R-03-IPD-PN).
- 14) Work Relationship: Mentor; Supervisor; Employer; Colleague; Client

Technician Registration Committee 20130924

Revision History

| Version | Date | Revised/Approved by | Nature of Revision |
|---------------------------------|-------------------|---|---|
| Rev 0: Concept A | 28 March 2012 | Erasmus | Initial attempt based on R-03-PE, technician forms incorporated |
| Rev 0: Concept B | 5 April 2012 | Revised by JIC | Technician forms revised as recommended |
| Rev 0: Concept C | 12 May 2012 | Revised by JIC | Technician forms revised as recommended |
| Rev 1.1 | 14 July 2013 | Erasmus | Based on R-03-PE Rev 1.3 Draft A |
| Rev 1.2 | 24 September 2013 | Revised by JIC Task Team | Improved alignment of Flow Diagrams and Annexures with R-03-PE Rev 1.3 Draft A |
| Rev 1.3 | 14 October 2013 | Revised by Dr Stidworthy, Mr Moncur and Mr Erasmus | Further alignment with R-03-PE, but deviations confirmed and included. Inclusion of Annexure J for Technicians confirmed. |
| Rev 1.4 | 12 December 2013 | Revised by Erasmus | Designation of Appendices updated in accordance with NRS Application Form. |
| Rev 1.5 | 21 December 2014 | Revisions by JIC | Minor clarifications, editing and Annexure K added |
| Rev 1.6 | 17 February 2014 | Approved by JIC | Minor editing – submit to TC and Council. |
| Rev 1-7 | 24 March 2014 | Revisions by JIC | Removing Appendix K “Standard Letters” and part of Appendix J – Qualifications Table. Submit to TC, CRC and Council. |
| Rev 1.8 | 8 May 2014 | Approved by JIC on 17 February 2014. Approved by TC on 5 May 2014. Approved by CRC on 8 May 2014. | Submit for approval to SAC (Stakeholder involvement), and Council (Provided stakeholder involvement is undertaken) |
| Rev 1.8 | 31 July 2014 | Approved by Council | Not revised |
| ECSA CONTROLLED COPY | | Executive: Policy Development and Standards Generation |  <hr/> John Cato 2016-08-17 <hr/> Date |