

ENGINEERING COUNCIL OF SOUTH AFRICA <i>Standards and Procedures System</i>			 E C S A
Processing of Applications for Registration as Candidate Engineering Technologist and Professional Engineering Technologist			
Status: Approved by Council			
Document : R-03-PT	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.

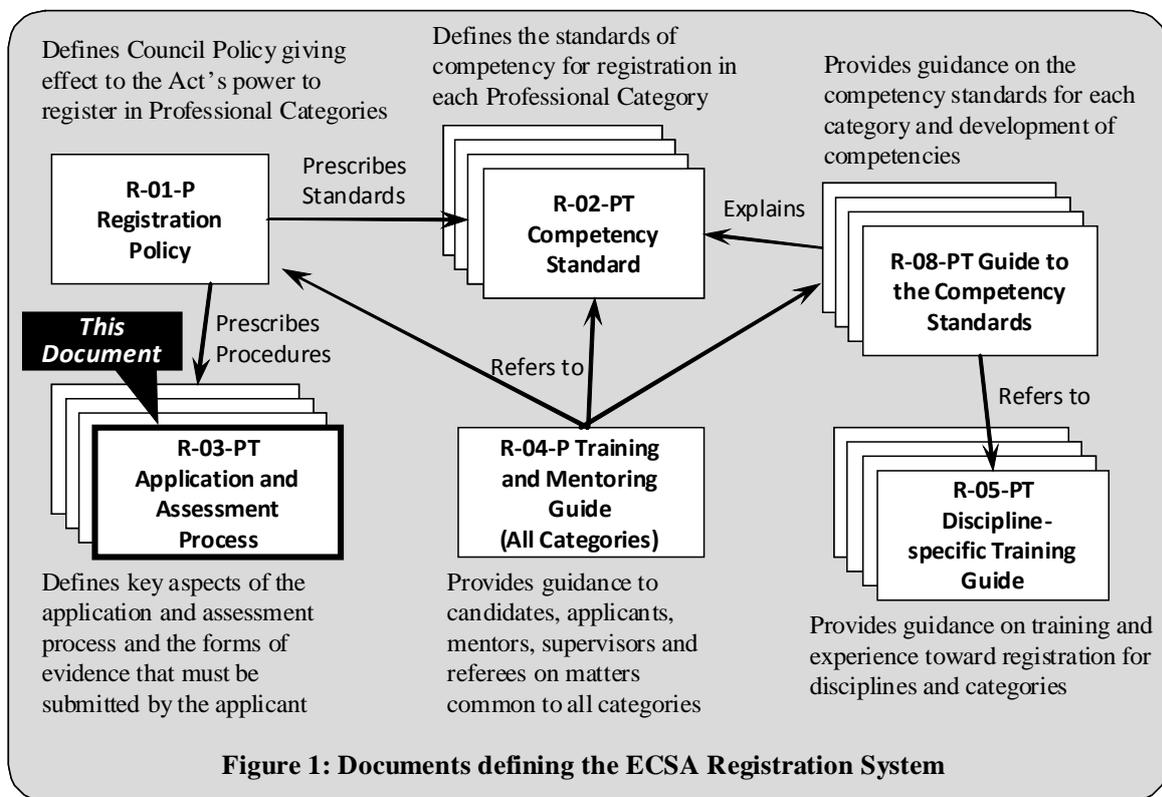


Figure 1: Documents defining the ECSA Registration System

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 Technologist and as a Professional Engineering Technologist.

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-PT. 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-PT) 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 R2/1B, supplemented by the Discipline-specific Guide (DSG) and the Competency Standard R-02-PT.
- 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, supplying the 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 Technologist four options are relevant:

- Apply for registration as a Candidate Engineering Technologist
- Apply for registration as a Professional Engineering Technologist
- 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 R2/1B: Acceptable Work for Candidate Engineering Technologists; 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-PT) 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 Technologists, in R2/1B section 5 with further requirements in the Discipline Specific Guidelines	<ul style="list-style-type: none"> • Competency Standard for registration as a Professional Engineering Technologist in document R-02-PT. • 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	The Technologist Alternate route allowed experience of a defined standard, duration and Initial Professional Development (IPD) achievement to be accepted in lieu of academic qualifications Development assessed on educational outcomes based claim to competency submitted by the Candidate.	<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	For all disciplines: <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 	Uniform requirements across disciplines: <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 deferments 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	Discipline Specific guidelines having force of standards/policy.	Layered set of guidelines: <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 Technologists (R-08-PT) • Discipline-specific Training Guide (R-05-PT)

Notes:

- a. Defined short form of TER, with clear rules when a TEO may be substituted by an experienced applicant.
b. Replaces Project Report, emphasis on demonstrating the applicant's engineering ability.

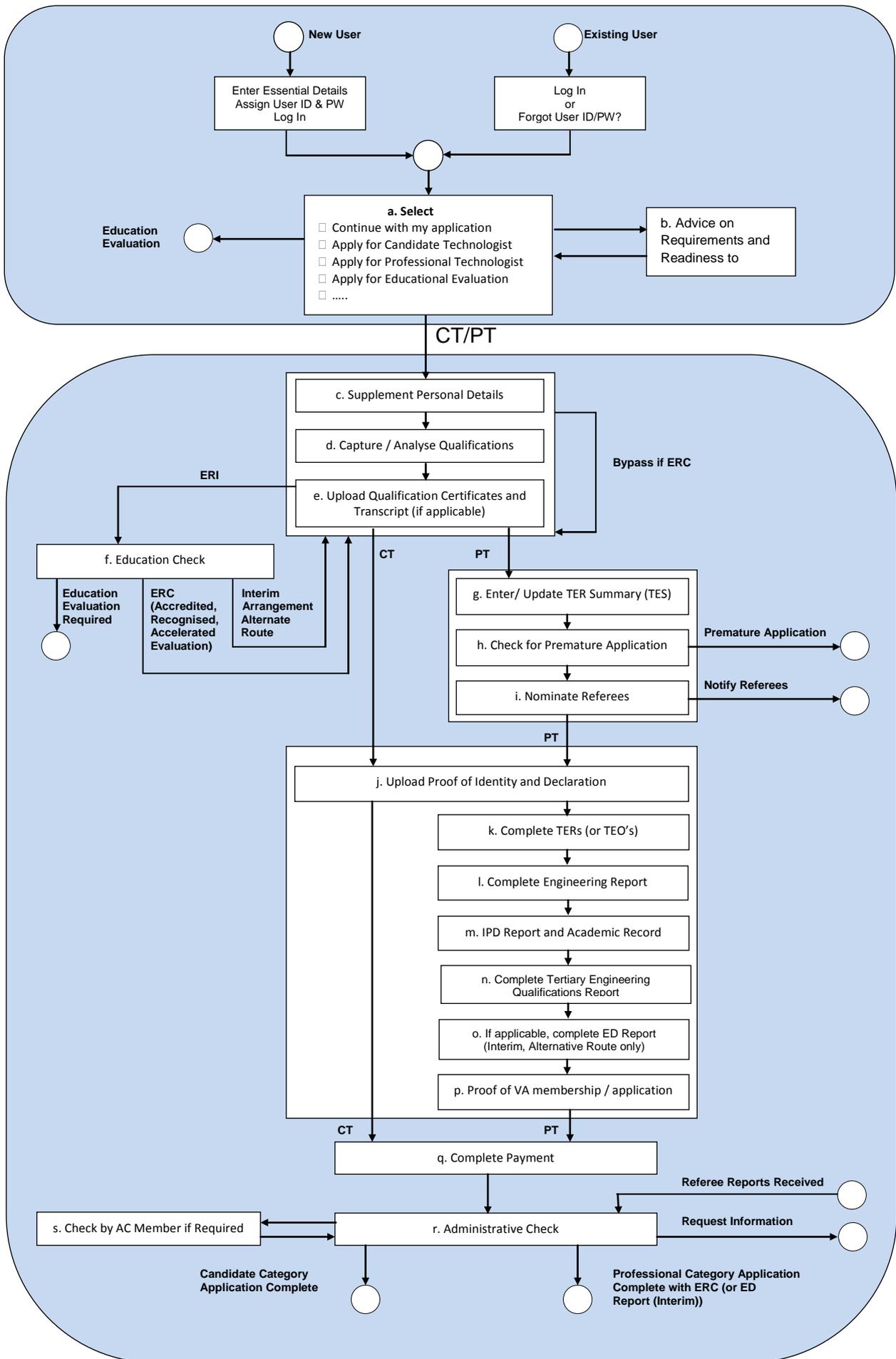


Figure 2: Common front-end and data entry for applications for Candidate Technologist and Professional Technologist

3.2 Data Entry System: Candidate and Professional Engineering Technologist

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 Technologist (CT) and Professional Engineering Technologist (PT) 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 Sydney 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 1 and 2, the parallel qualifications check process is launched for peer verification of the qualifications. In case 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 Technologist (PT) 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 PT applicant then nominates Referees who are notified directly by the system. (CT 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 Technologist Applicant	Professional Technologist 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.

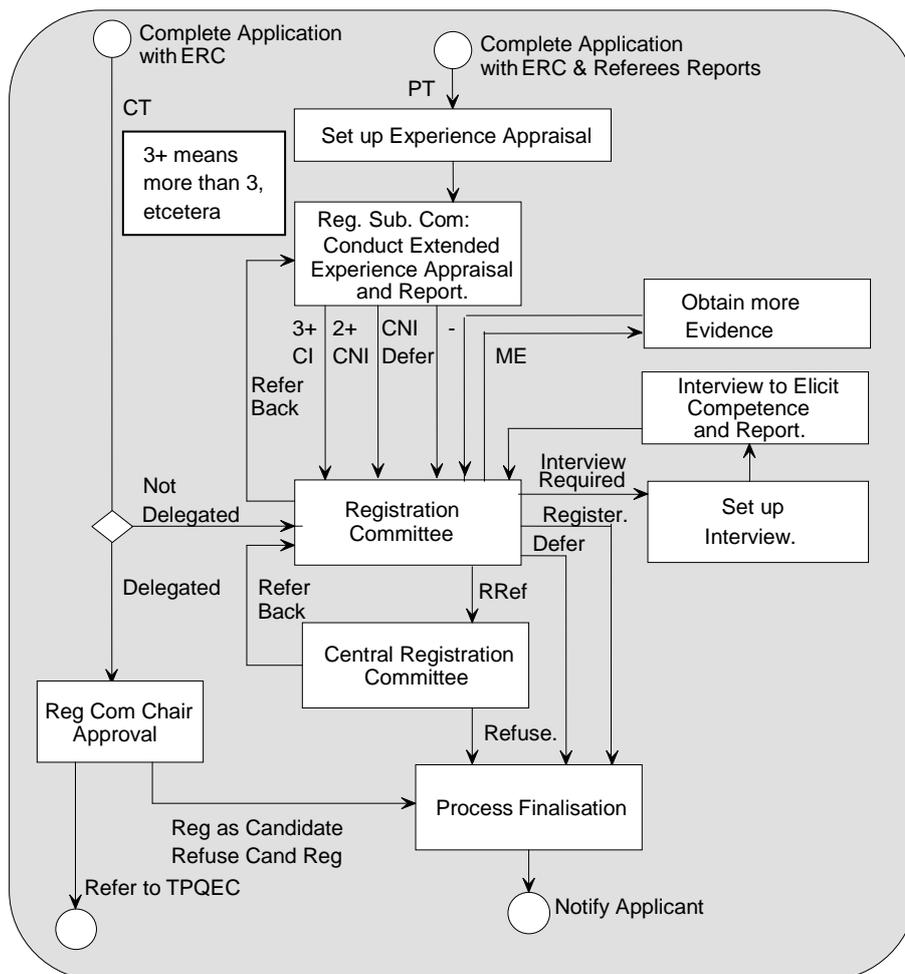


Figure 3: Assessment process for applications for Candidate and Professional Engineering Technologist

3.3 Core Process for Candidate and Professional Engineering Technologist

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

3.3.1 Professional Engineering Technologist 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.

3.3.2 Professional Engineering Technologist 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 Technologists Registration Committee and the Central Registration Committee.

Table 2: Forms and Documents

Ref	Appen	Components of Application	For Registration As	
			Candidate Engineering Technologist	Professional Engineering Technologist
		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
IPD	H	Academic Record/transcript (List of Subjects and Grades)	X	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 reports, signed by referees (Three or more)		X

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

4.1 General Requirement

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

*Competence must be demonstrated within **broadly-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 Technologist or Professional Engineering Technologist must provide.

4.3 Training and Experience Summary (TES See 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-PT which requires that the applicant display responsibility “for the outcomes of significant parts of one or more broadly-defined engineering activities”.

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, providing evidence of meeting the outcomes required at the same time. Reference must be made to the engineering report and the specific outcome met.

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 level 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 and experience history is shorter than three years, and has less than one year working at 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 technologist 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	<ul style="list-style-type: none"> • Nature of training or experience* 	<ul style="list-style-type: none"> • Nature of the training or work phase or related phases
	<ul style="list-style-type: none"> • Discipline of Engineering and Discipline Specific Fields* 	<ul style="list-style-type: none"> • Discipline of Engineering and Discipline Specific Fields*
	<ul style="list-style-type: none"> • Nature of problem(s) addressed, method of analysis, solution development and evaluation* 	<ul style="list-style-type: none"> • Nature of problem(s) addressed, method of analysis, solution development and evaluation*
	<ul style="list-style-type: none"> • Management of materials, machines, manpower, methods or money, contracts 	<ul style="list-style-type: none"> • Management responsibilities
	<ul style="list-style-type: none"> • Interaction with clients, stakeholders and other disciplines 	
	<ul style="list-style-type: none"> • Health and safety considerations; hazards and environmental; other legislation* 	<ul style="list-style-type: none"> • Legal and impact analysis*
	<ul style="list-style-type: none"> • The applicant's contribution to the task* • Nature of the applicant's responsibility (in addition to level A-E)* 	<ul style="list-style-type: none"> • The applicant's contribution to the task* • Nature of the applicant's responsibility (in addition to level A-E)*
Length limit	430 words/TER, 5160 total for all TERs	13 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 or Contribute responsibility level E that demonstrates that the applicant has fulfilled the required outcomes. The report has the following characteristics.

Purpose: The Engineering Report submitted by applicants for registration as a Professional Engineering Technologist enables the applicant to synthesise and present evidence structured in the prescribed format of his or her competence by describing the work he or she performed at the above responsibility level.

Type of Report: Consistent with its purpose, this report must be written specifically for the application for registration. It is not a conventional project report, for example of the type that would be submitted to an employer or client in the course of a project. The work described may be drawn from a major project or a series of projects. In the report, the applicant must reflect on his or her engineering activity in a way that demonstrates the required competence at a *broadly-defined* level.

Format of Report: The report must be included in the template provided. The template prescribes the heading and closure of the report, the outcomes and criteria to be met and cross-reference to the Training and Experience Report (or Training and Experience Outline) to be inserted in the space provided.

Style of Writing: The report must be written in the first person (except when describing the actions of another person or agency), in proper structure, style and English language. The report is a test of written communication ability both from a structure, style and language point of view as well as logical development.

Length: The report body, including headings and subheadings, must be in the range 2800 to 3000 words (100 words per criterion). Diagrams, tables and pictures appropriate to the purpose defined above, not exceeding two A4 pages in total area may be included (in addition to the word count). The total file size is limited to 1 Mbyte.

How to write this report: 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 against the required outcomes.

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

Checklist: The report should touch on:

- Theoretical and practical methods used to analyse and solve engineering problems encountered in the work
- The engineering and contextual knowledge and understanding, both from the applicant's education and that acquired subsequently, for effective performance of the work;
- The planning, organising, leading and controlling of human and other resources required to achieve the goals of engineering work.
- Handling of regulatory 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.
- Risk 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 exercised.
- The nature of the responsibility carried by the applicant and identification of the person to whom the applicant was responsible.

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 (broadly-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 broadly-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 broadly-defined level;
- The applicant's willingness and capacity to accept responsibility for engineering work at a broadly-defined level;
- To comment on the applicant's commitment and attention to competency and career development;

4.7 Academic Record and IPD Report (See Appendix 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) and/or design reports. 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

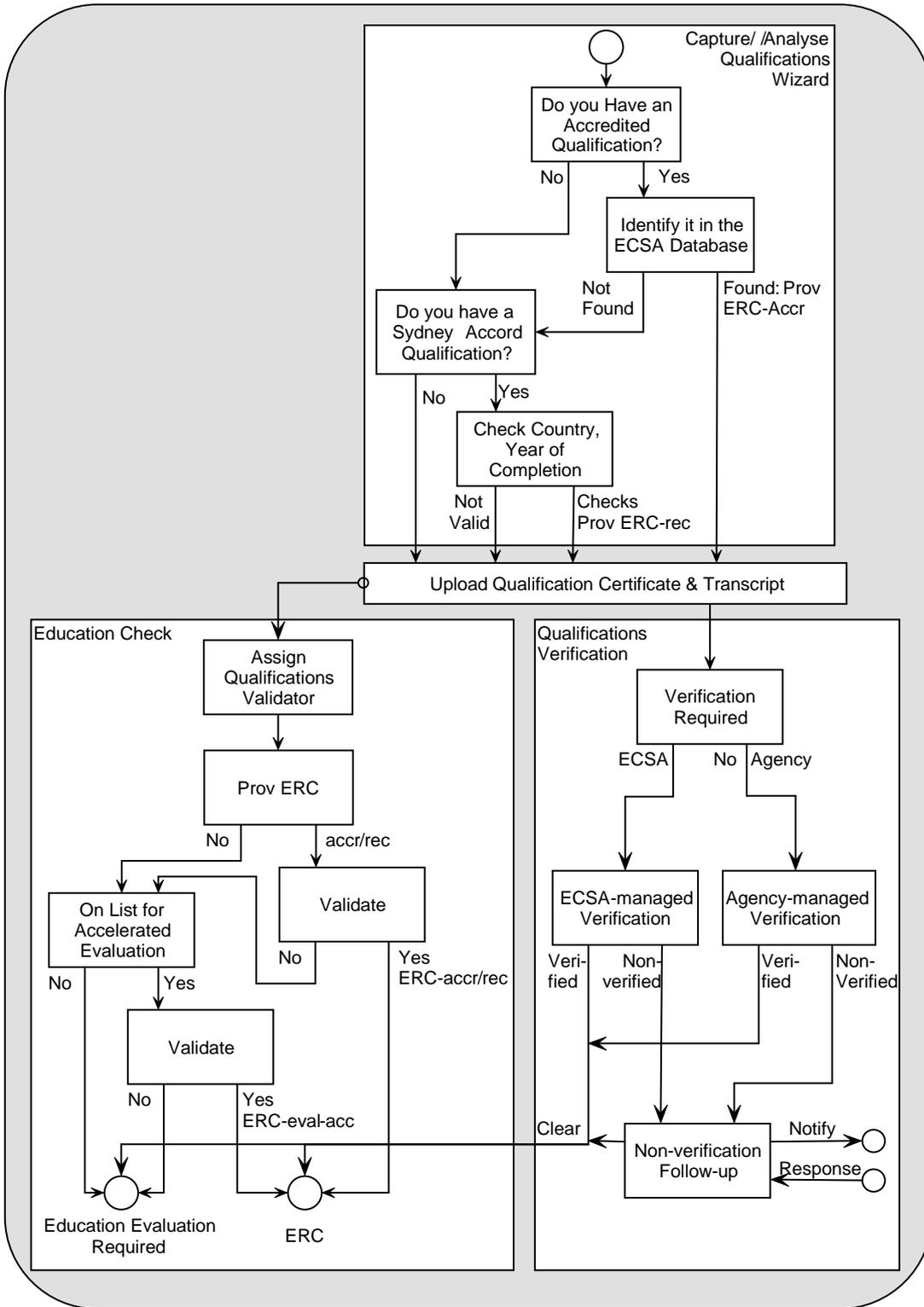


Figure 4: Detail of Capture/Analyse Qualification and Education Check in Figure 1

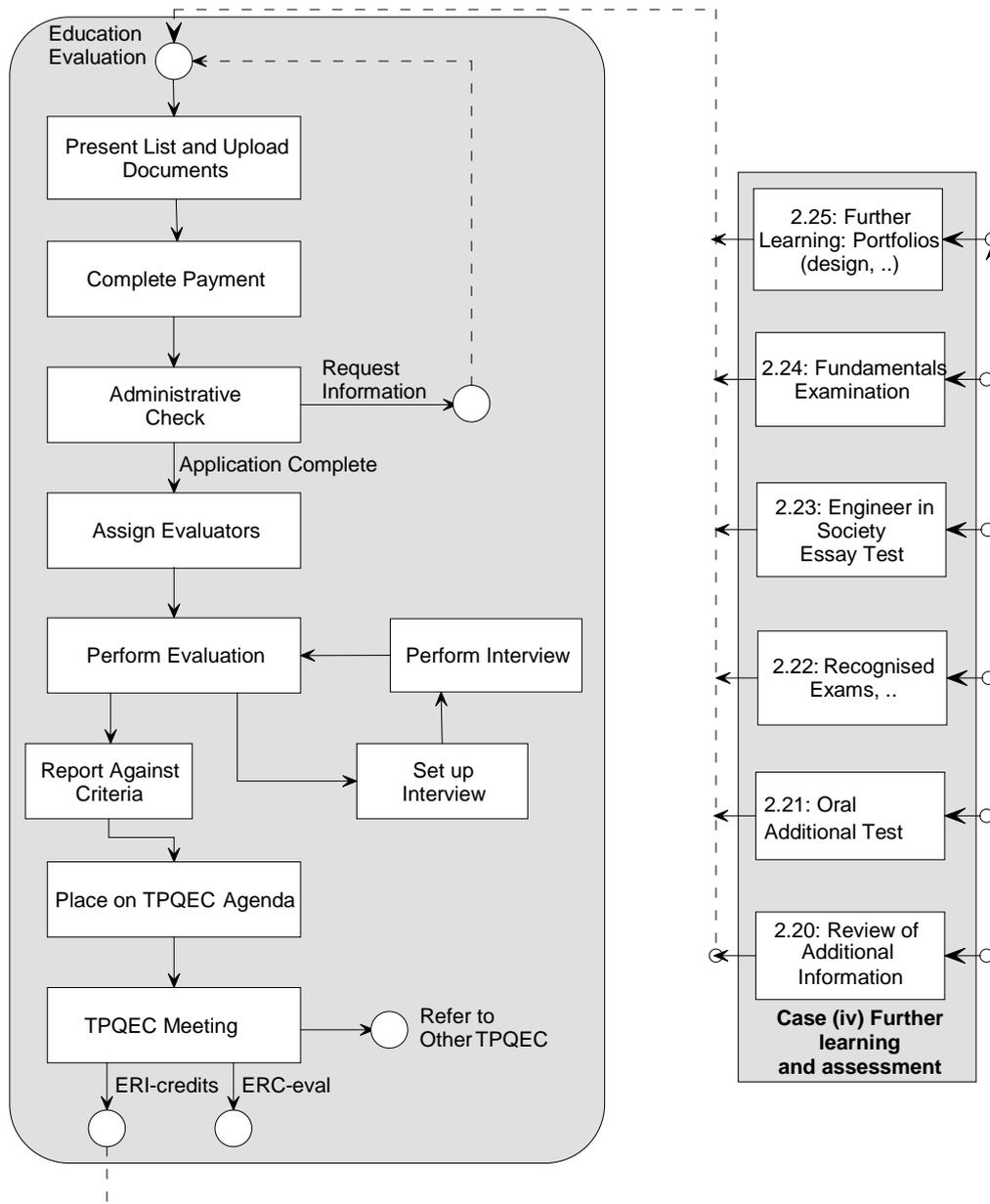


Figure 5: Education Evaluation process. The Further learning and assessment elements are shown for completeness: they do not form part of the Educational Evaluation process.

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 R2/1B. The requirements defined in section 5 of R2/1B 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-PT 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: R2/1B Essential Elements of Acceptable Practical Training	2: Outcomes Embedded in Training Elements in Column 1 or in DSG	3: Corresponding Competency Standard Outcome	4: Level descriptors for column 3
<p>Acceptable practical training must provide satisfactory experience to Candidates in the application of engineering principles and methods and must include the practical training elements as stated in clauses 8.1.1 to 8.1. 4 inclusive at the level of responsibility stated in the Discipline Specific Guidelines. Outcomes expressed in criteria to be met, judged by peer evaluators.</p>		<p>Requirement (R-02-PT Section 2.1): Competence must be demonstrated within <i>broadly-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>8.1.1 Problem Investigation The work must be aimed at investigating engineering problems and for which engineering judgement is required. The following practical engineering functions are contained in such work to a greater or lesser degree: a) problem identification and formulation; b) finding and selecting relevant information; c) evaluating, investigating, testing and research; d) analysis of all factors that influence the solution like relevant engineering and scientific principles; e) taking into account all practical, economic, social, environmental, quality assurance, safety and statutory factors.</p>	<p>The applicant must demonstrate the ability to: Investigate engineering problems, [at a level] that require[s] engineering judgement, performing the functions: : a) identify and formulate problem; b) find and select relevant information; c) evaluate, investigate, test and research; d) analyse all factors that influence the solution, including relevant engineering and scientific principles.</p>	<p>Group A: Engineering Problem Solving 1:- 1:- Define, investigate and analyse <i>broadly-defined engineering problems</i>. *3:- Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures, processes, systems or methodologies and those specific to the jurisdiction in which he/she practices.</p>	<p><i>Broadly-defined engineering problems</i> have the following characteristics: a) require coherent and detailed engineering knowledge underpinning the applicable technology area; <i>and one or more of:</i> b) are ill-posed, or under or over specified, requiring identification and interpretation into the technology area; c) encompass systems within complex engineering systems; d) belong to families of problems which are solved in well-accepted but innovative ways; <i>and one or more of:</i> e) can be solved by structured analysis techniques;</p>
<p>8.1. 2 Problem Solution The work must be aimed at the full development of the suggested solution to the problem through a process of synthesis, with the application of all information acquired during the problem investigation, also using design, development and communication. This includes but is not limited to the drawing up of plans, detailed designs, reports, specifications, adjudication of tenders taking into account</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 the problem investigation, b) communicate by but not limited to drawing up of 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>broadly-defined engineering problems</i>.</p>	<p>f) may be partially outside standards and codes (must provide justification to operate outside); g) require information from practice area and sources interfacing with practice area that is complex or incomplete; h) involves a variety of issues which may impose conflicting constraints: technical, engineering and interested or affected parties; <i>and one or both of:</i> i) requires judgement in decision making in practice area, considering interfaces to other areas; j) have significant consequences which are important in practice area, but may extend more widely.</p>

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

<p>8.1. 3 Execution / Implementation The work must be aimed at the execution of engineering tasks or projects (for example construction, manufacturing, transformation, processing, production, commissioning, testing, certification, quality assurance, operation, maintenance and closure) encompassing the efficient utilisation of people, materials, machines, equipment, means and funding with due regard for their interaction, to achieve the end result within the set parameters.</p>	<p>The applicant must demonstrate the ability to:</p> <ul style="list-style-type: none"> 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>Group B: Managing Engineering Activities 4:- Manage part or all of one or more <i>broadly-defined engineering activities</i>. Engineering activities 5:- Communicate clearly with others in the course of his or her engineering activities Group C: Impacts of Engineering Activity 6:- Recognise and address the reasonably foreseeable social, cultural and environmental effects of <i>broadly-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>broadly-defined</i> engineering activities.</p>	<p><i>Broadly-defined Engineering Activities (BDEA):</i> are characterized by several or all of:</p> <ul style="list-style-type: none"> a) <i>Scope</i> of practice area is linked to technologies used and changes by adoption of new technology into current practice; b) Practice area is located within a wider, complex <i>context</i>, requires teamwork, has interfaces to other parties and disciplines; c) Involve the use a variety <i>resources</i> (including people, money, equipment, materials, technologies); d) Require resolution of occasional problems arising from <i>interactions</i> between wide-ranging or conflicting technical, engineering or other issues; e) Are <i>constrained</i> by available technology, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws; f) Have <i>significant risks</i> and <i>consequences</i> in practice area and in related areas.
<p>8.1. 4 Responsibility The work must be aimed at increasing engineering and managerial responsibility until Candidates are clearly able to accept full professional responsibility for taking engineering decisions. Part of their responsibility should also be to ensure that sufficient cognisance is taken of economic considerations, social circumstances, environmental factors, quality assurance, safety and legal aspects as well as of the Code of Conduct.</p>	<p>The applicant must demonstrate the ability to:</p> <ul style="list-style-type: none"> 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>Group D: Exercise judgement, responsibility and act ethically 8:- Conduct engineering activities ethically 9:- Exercise sound judgement in the course of <i>broadly-defined engineering activities</i>. 10:- Be responsible for making decisions on part or all of <i>broadly-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.</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. *Broadly-defined* is the level identifier defined for the Professional Technologist category in document R-02-PT

(a) 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>broadly-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>broadly-defined engineering problems</i>	Factual/ Verified	Factual/ Verified	Evaluative			Evaluative/ Verified	
A3	Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures, processes, systems or methodologies and those 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>broadly-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>broadly-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>broadly-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>broadly-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>broadly-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-PT (2014-03-10)

Surname and Initials:

First complete a Training and Experience Report Form R-03-TER-PT, or a Training and Experience Outline Form R-03-TEO-PT 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: Insert reason here			
Total years, months:							

Signature of Applicant: _____ Date: _____

Appendix D:

This form must be used for applicants who have completed and are submitting a report for each phase of training and work experience from the time of meeting the education requirements to application for registration. Consult the Information Sheet (Sheet B2) before completing this report.

Engineering Council of South Africa				
Training and Experience Report			Form R-03-TER-PT (2014-03-10)	
As part of the Application for Registration as Professional Engineering Technologist				
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 430 words)				Refer to Engineering Report Outcome
Nature of training or experience (stated in 20-30 words)*				Outcomes: Criteria:
Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in 120-150 words)*				Outcomes: Criteria:
Management of materials, machines, manpower, methods or money, contracts (stated in 40-50 words)				Outcomes: Criteria:
Interaction with clients, stakeholders and other disciplines (stated in 40-50 words)				Outcomes: Criteria:
Health and safety considerations; hazards and environmental considerations; other legislation (stated in 40-50 words)*				Outcomes: Criteria:
Describe role and responsibility (in 80-100 words)*			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	
				Tick one <u>only</u> *

*Mandatory fields

Appendix E:

This form must be used for 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 a degree of engineering responsibility E (Performing) in detail TER format. For the remaining periods or groups of related periods the report can be in this TEO format. Consult the Information Sheet (Sheet B2) before completing this report.

Engineering Council of South Africa				
Training and Experience Outline			Form R-03-TEO-PT (2014-03-10)	
As part of the Application for Registration as Professional Engineering Technologist				
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
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 10-13 bullets)				Refer to Engineering Report Outcome
Nature of training or experience in the period(s) stated in bullet format*				Outcomes: Criteria:
Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in bullet format)*				Outcomes: Criteria:
Management responsibilities (stated in bullet format)				Outcomes: Criteria:
Interaction with clients, stakeholders and other disciplines (stated in bullet format)				Outcomes: Criteria:
Legal and impact analysis (stated in bullet format) *				Outcomes: Criteria:
Describe role and responsibility (stated in bullet format)*			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	
Tick one <u>only</u> *				

*Mandatory fields

Appendix F:

Engineering Council of South Africa				Form R-03-REF-PT (2014-03-10)	
Referee Report on an Application for Registration as Professional Engineering Technologist					
Applicant's Name					
Referee Name:		ECSA Registration Category (e.g. PrTechEng):		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 Technologist is defined in the Competency Standards, document R-02-PT. Competency is defined in terms of eleven outcomes and two level definitions, namely *broadly-defined engineering problems* and *broadly-defined engineering activities*. The applicant is expected to have demonstrated performance at a degree of responsibility appropriate to a Professional Engineering Technologist (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 broadly-defined engineering problems		
2. Design or develop solutions to broadly defined engineering problems		
3. Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures, processes, systems or methodologies and those specific to the jurisdiction in which he/she practices		
Group B: Management of Engineering Activities		
4. Manage part or all of one or more broadly-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 and address the reasonable foreseeable social, cultural and environmental effects of broadly 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 broadly-defined engineering activities		
8. Conduct engineering activities ethically		

Group D: Exercise judgement, take responsibility		
9. Exercise sound judgement in the course of broadly-defined engineering activities		
10. Be responsible for making decisions on part or all of broadly-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 Technologist		

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-PT 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 submit a report in about 100 words per criterion under Outcomes 1 to 11 below on recent engineering work to which you have made a significant contribution. The report may cover conceptualisation, design and analysis, specification, tendering and adjudication, manufacturing, project and construction management, commissioning, maintenance, measurement and testing or planning at a broadly-defined level. Please cross-refer the item reported upon to the relevant evidence in the Training and Experience Report (TER) or Training and Experience Outline (TEO). Provide sample relevant calculations and drawings as an addendum.

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

Name of Applicant:

Consult the Information Sheet (Sheet B2) before completing this report.

<u>Area of Employment:</u> (<small><15 words</small>)	
<u>Dates Undertaken:</u>	
<u>Engineering brief and objective:</u> (<small><30 words</small>)	
<u>Environment:</u> (Industry; Laboratory; Theory; Simulation) (<small><15 words</small>)	
<u>Short Summary:</u> (State engineering problems; solutions in <small>< 30 words</small>)	
<u>Budgets</u> <small>⊗</small> <small><10 words</small>)	
<p><i>Broadly-defined engineering problems</i> have the following characteristics:</p> <ul style="list-style-type: none"> a) require coherent and detailed engineering knowledge underpinning the applicable technology area; <i>and one or more of:</i> b) are ill-posed, under- or over specified, requiring identification and interpretation into the technology area; c) encompass systems within complex engineering systems; d) belong to families of problems which are solved in well-accepted but innovative ways; <i>and one or more of:</i> e) can be solved by structured analysis techniques; f) may be partially outside standards and codes; must provide justification to operate outside; g) require information from practice area and sources interfacing with practice area that is complex and incomplete; h) involves a variety of issues which may impose conflicting constraints: technical, engineering and interested or affected parties; <i>and one or both of:</i> i) requires judgement in decision making in practice area, considering interfaces to other areas; j) have significant consequences which are important in practice area, but may extend more widely <p><i>Broadly-defined engineering activities (BDEA)</i> have several of the following characteristics:</p> <ul style="list-style-type: none"> a) <i>Scope</i> of practice area is linked to technologies used and changes by adoption of new technology into current practice; b) Practice area is located within a wider, complex <i>context</i>, requires teamwork, has interfaces with other parties and disciplines; c) Involve the use of a variety <i>resources</i>, including people, money, equipment, materials, technologies; d) Require resolution of occasional problems arising from <i>interactions</i> between wide-ranging or conflicting technical, engineering or other issues; e) Are <i>constrained</i> by available technology, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws; f) Have significant <i>risks</i> and <i>consequences</i> in the practice area and in related areas. 	

<u>Outcomes and Criteria</u>		<u>Cross-reference to B2.1 TER or B2.1 TEO</u>
Outcome 1: Define, investigate and analyse broadly-defined engineering problems.		
1.1 State how <u>you</u> performed or contributed in defining engineering problems leading to an agreed definition of the problems to be solved.		Period No:
1.2 State how <u>you</u> performed or contributed in investigating engineering problems including collecting, organising and evaluating information.		Period No:
1.3 Describe how <u>you</u> performed or contributed in analysing engineering problems, using conceptualisation, justified assumptions, limitations and evaluation of results.		Period No:
Outcome 2: Design or develop a solution to broadly-defined engineering problems.		
2.1 Describe how <u>you</u> designed or developed solutions to broadly-defined engineering problems.		Period No:
2.2 Indicate how <u>you</u> systematically synthesised solutions and alternative solutions or approaches to the problem by analysing designs against requirements, including costs and impacts on outside parameters. (requirements).		Period No:
2.3 State <u>your</u> part in the drawing up of detailed specification requirements and design documentation for implementation to the satisfaction of the client.		Period No:
Outcome 3: Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures and processes, systems or methodologies and those specific to the jurisdiction in which you practice.		
3.1 State what engineering principles, practices, technologies, including the application of BTech theory <u>you</u> apply in your practice area.		Period No:
3.2 Indicate <u>your</u> working knowledge of areas of practice that interact with <u>your</u> practice area to underpin team work.		Period No:
3.3 Describe <u>your</u> applied related knowledge of finance, statutory, safety and management.		Period No:

7.2 State in what circumstances <u>you</u> have assisted in, or demonstrated awareness of the selection of save and sustainable materials, components and systems and have identified risk and applied risk management strategies.		Period No:
Outcome 8: Conduct engineering activities ethically.		
8.1 Confirm that <u>you</u> are conversant and operate in compliance with ECSA's Rules of Conduct for registered persons.		Period No:
8.2 State how <u>you</u> identified ethical problems, the affected parties and select the best solution to resolve the problem.		Period No:
Outcome 9: Exercise sound judgement in the course of broadly-defined engineering activities.		
9.1 Within the application of <u>your</u> technologies and their interrelationship to other disciplines and technologies, state what judgement you exercised in arriving at a conclusion.		Period No:
9.2 State what factors <u>you</u> took into consideration bearing in mind, risk, consequences in technology application and affected parties.		Period No:
Outcome 10: Be responsible for making decisions on part or all of broadly-defined engineering activities.		
10.1 In discharging <u>your</u> responsibilities for significant parts of one or more activities, please state what engineering, social, environment and sustainable development you took into consideration.		Period No:
10.2 State what advice <u>you</u> sought from a responsible authority on matters outside your area of competence.		Period No:
10.3 State what academic knowledge of at least BTech level combined with past experience <u>you</u> used in formulating <u>your</u> decisions.		Period No:
Outcome 11: Undertake professional development activities sufficient to maintain and extend his or her competence.		
11.1 State what strategy <u>you</u> have independently adopted to enhance your own professional development.		Period No:

11.2 State <u>your</u> philosophy in regard to your professional development.		Period No:
Evidence of your competency development plan and independent learning ability must be given in the Initial Professional Development Report, Form R-03-IPD-PT (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 Technologist

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	<u>INSTRUCTIONS</u>		
	<p>1. Applicants not in possession of an ECSA accredited B Tech (Eng) 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 <i>broadly-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>Broadly-defined engineering problems have the following characteristics:</i></p> <p style="padding-left: 40px;">g) require coherent and detailed engineering knowledge underpinning the applicable technology area; <i>and one or more of:</i></p> <p>b) are ill-posed, under- or over specified, requiring identification and interpretation into the technology area;</p> <p>c) encompass systems within complex engineering systems;</p> <p>d) belong to families of problems which are solved in well-accepted but innovative ways; <i>and one or more of:</i></p> <p>e) can be solved by structured analysis techniques;</p> <p>f) may be partially outside standards and codes; must provide justification to operate outside;</p> <p>g) require information from practice area and sources interfacing with practice area that is complex and incomplete;</p> <p>h) involves a variety of issues which may impose conflicting constraints: technical, engineering and interested or affected parties.</p>			
B.	<u>APPLICANT'S PERSONAL DETAILS</u>		
	Name:		Technical Qualifications:
C.	<u>EDUCATIONAL DEVELOPMENT REPORT (OUTCOMES BASED, DURING WORK EXPERIENCE)</u>		
<u>Exit Level Outcome 1.</u> The applicant displays understanding of and the ability to apply the fundamentals of engineering in a selected sub-discipline together with the underpinning fundamentals of mathematics and natural science.			
<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>broadly-defined engineering problem</i> . State which theories and principles were used.		
1.2	Describe how <u>you</u> analysed and modelled 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 engineering specialist fields of a selected engineering sub-discipline at the 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 modelled, 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 sub-discipline.

<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 Level Outcome 4. The applicant demonstrates design proficiency through substantial project work. The design problem meets the requirements of a *broadly-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 an engineering report.	

Exit Level Outcome 5. The applicant displays proficiency in experimental or investigative and information handling methodology

<u>Item</u>	<u>Criteria</u>	<u>Development Report</u>
5.1	Describe the plan <u>you</u> devised to perform the investigation stating what information was used.	

<u>Item</u>	<u>Criteria</u>	<u>Development Report</u>
5.2	Describe the methodology <u>you</u> used to perform the analysis stating how the equipment and/or software was selected and used.	
5.3	From the data available, describe how information was derived, critically analysed and interpreted to reach conclusions.	
5.4	Describe how the purpose, process and outcomes of the investigation are recorded in an engineering report.	

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

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

Exit Level Outcome 7. The applicant explains and analyses impacts of engineering technologies of the sub-discipline.

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

Exit Level Outcome 8. The applicant explains ethical principles and analyses ethical issues.

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

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 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-PT).

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 the Initial Professional Development Report (Form R-03-ER-PT).

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 Technologists	Form R-03-AF-PT (2014-04-14)
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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-PT)	No:	Registered as:	Work Relationship¹⁵⁾:	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: ✓ if applicable <i>(Periods 1 to 12, columns 4 to 7 only)</i>	Period No:	Specifically Defined (Spec. Cat)	Well-Defined (Technician)	Broadly-defined (Technologist)	Complex Defined (Engineer)	Degree of Responsibility A to E¹⁰⁾:	Duration in Years: <i>(Enter years/months)</i>		
								Total	WR¹¹⁾ >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 E (yrs.):						

5. Individual Experiential Assessment:¹³⁾	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-PT 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:¹⁴⁾	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-PT 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:¹⁴⁾	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-PT to address lacking evidence indicated (Dx): (x = 1 or 2)
Competence Not Indicated (CNI) on the criteria as shown, do not register:		

8.	Chairperson Technologist Committee (Experiential): Signed:	Date:
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9. Assessment Results All Applicants: Score according to ^{4) - 8)} in Nomenclature below for Engineering Report or Interview						
Outcomes and Criteria	Indiv. Assess	Group Assess	Inter-view	Weight-ing⁹⁾	Final Result¹²⁾	Remarks
Group A: Engineering problem solving:						
<u>Outcome 1: Define, investigate and analyse broadly-defined engineering problems</u>						
1.1 Performed or contributed in defining engineering problems leading to an agreed definition of the problems to be solved.				5		
1.2 Performed or contributed in investigating engineering problems including collecting, organising and evaluating information.				4		
1.3 Performed or contributed in analysing engineering problems, using conceptualisation, justified assumptions, limitations and evaluation of results.				5		
Normalised sub-total for Outcome 1 (Total final result and divide by 14):						=
<u>Outcome 2: Design or develop solutions to broadly-defined engineering problems</u>						
2.1 Designed or developed solutions to broadly-defined engineering problems.				5		
2.2 Systematically synthesised solutions and alternative solutions or approaches to the problem by analysing designs against requirements, including costs and impacts on outside parameters. (requirements).				5		
2.3 Drawing up of detailed specification requirements and design documentation for implementation to the satisfaction of the client.				4		
Normalised sub-total for Outcome 2 (Total final result and divide by 14):						=
<u>Outcome 3: Comprehend and apply B Tech theory</u>						
3.1 Applied engineering principles, practices, technologies, including the application of B Tech theory in the practice area.				5		
3.2 Indicated working knowledge of areas of practice that interact with practice area to underpin team work.				3		
3.3 Applied related knowledge of finance, statutory, safety and management.				3		
Normalised sub-total for Outcome 3 (Total final result and divide by 11):						=
Group B: Managing Engineering Activities:						
<u>Outcome 4. Manage activity</u>						
4.1 Managed self, people, work priorities, processes and resources in broadly-defined engineering work.				3		
4.2 Role in planning, organising, leading and controlling broadly-defined engineering activities evident.				4		
4.3 Knowledge of conditions and operation of contractors and the ability to establish and maintain professional and business relationships evident.				3		
Normalised sub-total for Outcome 4 (Total final result and divide by 10):						=
<u>Outcome 5. Communicate during the activity</u>						
5.1 Ability to write clear, concise, effective technical, legal and editorially correct reports shown.				3		
5.2 Ability to issue clear instructions to stakeholders using appropriate language and communication skills evident.				4		
5.3 Oral presentations made using structure, style, language, visual aids and supporting documents appropriate to the audience and purpose.				4		
Normalised sub-total for Outcome 5 (Total final result and divide by 11):						=
Group C: Impacts of Engineering Activity:						
<u>Outcome 6. Social, cultural and environmental impact of the activity</u>						
6.1 Ability to identify interested and affected parties and their expectations in regard to interactions between technical, social, cultural and environmental considerations shown.				3		
6.2 Measures taken to mitigate the negative effects of engineering activities evident.				3		
Normalised sub-total for Outcome 6 (Total final result and divide by 6):						=

<u>Outcome 7. Legal, regulatory and health and safety requirements</u>						
7.1 Identified applicable legal and regulatory requirements including health and safety requirements for the engineering activity.				3		
7.2 Circumstances stated where applicant assisted in, or demonstrated awareness of the selection of save and sustainable materials, components and systems and have identified risk and applied risk management strategies.				3		
Normalised sub-total for Outcome 7 (Total final result and divide by 6):						=
Group D: Exercise judgement, take responsibility and act ethically:						
<u>Outcome 8. Conduct engineering activities ethically</u>						
8.1 Conversance and operation in compliance with ECSA's Rules of Conduct for registered persons confirmed.				2		
8.2 How ethical problems and affected parties were identified, and the best solution to resolve the problem selected.				2		
Normalised sub-total for Outcome 8 (Total final result and divide by 4):						=
<u>Outcome 9. Exercise sound judgement</u>						
9.1 Judgement exercised in arriving at a conclusion within the application of technologies and their interrelationship to other disciplines and technologies.				4		
9.2 Factors taken into consideration given, bearing in mind, risk, consequences in technology application and affected parties.				4		
Normalised sub-total for Outcome 9 (Total final result and divide by 8):						=
<u>Outcome 10. Take decisions responsibly</u>						
10.1 Engineering, social, environment and sustainable development taken into consideration in discharging responsibilities for significant parts of one or more activities.				4		
10.2 Advice sought from a responsible authority on matters outside your area of competence.				3		
10.3 Academic knowledge of at least B Tech level combined with past experience used in formulating decisions.				5		
Normalised sub-total for Outcome 10 (Total final result and divide by 12):						=
Group E: Continued Professional Development:						
<u>Outcome 11. Undertake learning activities</u>						
11.1 Strategy independently adopted to enhance professional development evident.				3		
11.2 Awareness of philosophy in regard to professional development evident.				1		
Normalised sub-total for Outcome 11 (Total final result and divide by 4):						=
SUB-TOTAL SUMMATIVE ASSESSMENT:						TOTAL(÷100)
10	<u>Comment and Instructions:</u>					
11	<u>Training Detail:</u>	Training under a C&U as detailed in Policy R-01-P Clause 7.4 (Y/N)				
		Name of organisation training the applicant				
		ECSA Registered Mentor (Y/N)				

12. Assessment Results Alternative Route Applicants: Score according to ^{4) - 8)} in Nomenclature for R-03-EDR-PT Report or Interview						
Outcomes and Criteria	Indiv. Assess	Group Assess	Inter-view	Weight-ing⁹⁾	Final Result¹²⁾	Remarks
1. <u>The applicant displays understanding of and the ability to apply the fundamentals of engineering in a selected sub-discipline together with the underpinning fundamentals of mathematics and natural science.</u>						
1.1	Mix of mathematical, natural science and engineering knowledge applied in the solution of the broadly-defined engineering problem stated. Principles and laws used, stated.			5		
1.2	How engineering materials, components, systems or processes used were analysed, stated, and the motivation for the specific selection provided.			5		
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.			2		
2. <u>The applicant displays proficiency in engineering specialist fields of a selected engineering sub-discipline at the exit level.</u>						
2.1	Analysed and defined a problem and identified the engineering knowledge and skills required for solving.			5		
2.2	Generated possible solutions to the problem and how they were modelled, analysed and prioritised.			5		
2.3	Selected, formulated and presented the preferred solution.			3		
3. <u>The applicant displays proficiency in the use of engineering tools and IT support appropriate to the sub-discipline.</u>						
3.1	How the method, skill or tool (including computer applications) was assessed for applicability to solving problems, described.			3		
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			3		
4. <u>The applicant demonstrates design proficiency through substantial project work. The design problem meets the requirements of a broadly-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.			4		
4.2	How user needs, legislation, standards and resources were acquired and evaluated, described.			4		
4.3	How the design task was performed, selecting a preferred solution out of alternatives, subject to relevant premises, assumptions and constraints, described.			5		
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.			5		
5. <u>The applicant displays proficiency in experimental or investigative and information handling methodology</u>						
5.1	The plan devised to perform the investigation described, stating what information was used.			3		
5.2	The methodology used to perform the analysis described, stating the equipment and/or software used.			5		
5.3	How information was derived, critically analysed and interpreted from the data available to reach conclusions.			5		
5.4	How the purpose, process and outcomes of the investigation were recorded in an engineering report.			3		
6. <u>The applicant communicates in writing at the exit level of a Btech programme. (Use score from section 9 above, 5.1, 5.2 and 5.3)</u>						
6.1	Ability to write clear, concise, effective technical, legal and editorially correct reports shown.			3		
6.2	Ability to issue clear instructions to stakeholders using appropriate language and communication skills evident.			4		
6.3	Oral presentations made using structure, style, language, visual aids and supporting documents appropriate to the audience and purpose.			4		
7. <u>The applicant explains and analyses impacts of engineering technologies. (Use score from section 9 above, 6.1 and 6.2)</u>						
7.1	Ability to identify interested and affected parties and their expectations in regard to interactions between technical, social, cultural and environmental considerations shown.			3		
7.2	Measures taken to mitigate the negative effects of engineering activities evident.			3		
8. <u>The applicant explains ethical principles and analyses ethical issues. (Use score from section 9 above, 8.1 and 8.2)</u>						
8.1	Conversance and operation in compliance with ECSA's Rules of Conduct for registered persons confirmed.			2		
8.2	How ethical problems and affected parties were identified, and the best solution to resolve the problem selected.			2		
9. <u>Demonstrate knowledge and understanding of engineering management principles. (Use score from section 9 above, 4.1 and 4.2)</u>						
9.1	Managed self, people, work priorities, processes and resources in broadly-defined engineering work.			3		
9.2	Role in planning, organising, leading and controlling broadly-defined engineering activities evident.			4		
9.3	Knowledge of conditions and operation of contractors and the ability to establish and maintain professional and business relationships evident.			3		
10. <u>Engage in independent lifelong learning through well-developed learning skills. (Use score from section 9 above, 11.1 and 11.2)</u>						
10.1	Strategy independently adopted to enhance professional development evident.			3		
10.2	Awareness of philosophy in regard to professional development evident.			1		
SUB-TOTAL SUMMATIVE ASSESSMENT:						TOTAL(±100)

13. Individual Educational Assessment: ¹³⁾	Name and Signature:	Date:
Development to B Tech 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-PT Report to address lacking evidence indicated (Dx): (x = 1 or 2)
Development to B Tech level not evident, Competence Not Indicated (CNI):		Interview to obtain evidence indicated (I):

14. Group Educational Assessment: ¹⁴⁾	Signature Chairperson:	Date:
Group Members:		
Development to B Tech 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-PT Report to address lacking evidence indicated (Dx): (x = 1 or 2)
Development to B Tech level not evident, Competence Not Indicated (CNI):		Interview to obtain evidence indicated (I):

15. Interview Educational Assessment: ¹⁴⁾	Signature Chairperson:	Date:
Interview Team Members:		
Development to B Tech 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-PT Report to address lacking evidence indicated (Dx): (x = 1 or 2)
Development to B Tech level not evident, Competence Not Indicated (CNI):		

16. Chairperson Technologist Committee (Educational):	Signed:	Date:
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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) Very Low in meeting outcome and criterion: Results Assessment Form 9 and 12, **SCORE=1**
- 5) Low in meeting outcome and criterion: Results Assessment Form 9 and 12, **SCORE=2**
- 6) Outcome and criterion met (Acceptable level): Results Assessment Form 9 and 12, **SCORE=3**
- 7) High in meeting outcome and criterion: Results Assessment Form 9 and 12, **SCORE=4**
- 8) Very high in meeting outcome and criterion: Results Assessment Form 9 and 12, **SCORE=5**
- 9) Weighing:
 - 1: Very low importance
 - 2: Low importance
 - 3: Medium importance
 - 4: High importance
 - 5: Very high importance
- 10) Degree of Responsibility:
 - A – Being exposed
 - B – Assisting
 - C – Participating
 - D – Contributing
 - E – Performing
- 11) With responsibility – WR degree E
- 12) Final result: Multiply “Score” with the “Weight”. **Note that if no evidence found, the score is 0, then Final Result=0.**
- 13) Individual Assessment is the assessment done by a single assessor (“homework”)
- 14) Group Assessment is done 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
- 15) Work Relationship: Mentor; Supervisor; Employer; Colleague; Client

Revision History

Version	Date	Revised/Approved by	Nature of Revision
Rev 0: Concept A	5 March 2012		Initial attempt by PME based on R-03-PE, technologists forms incorporated
Rev 0: Concept B	5 April 2012	Revised by JIC	Technologists forms revised as recommended
Rev 0: Concept C	12 May 2012	Revised by JIC	Technologists forms revised as recommended
Rev 1.1	15 July 2013		Revised by PME 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.
Rev 1.4	10 March 2014	Revised by Erasmus	Aligned with comments by JIC members moving away from technicians' model and closer to engineers' model.
Rev 1.5	24 March 2014	Revised by JIC	Remove Qualification Table, Weighting Factors and Standard Letter
Rev 1.6	7 April 2014	Revised by Dr Stidworthy	Blank weighting columns inserted and related corrections.
Rev 1.7	14 April 2014	Revised by JIC	Weights in R-03-AF-PT reinstated. Submit to TC, CRC and Council.
Rev 1.8	8 May 2014	Approved by JIC on 14 April 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