

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.

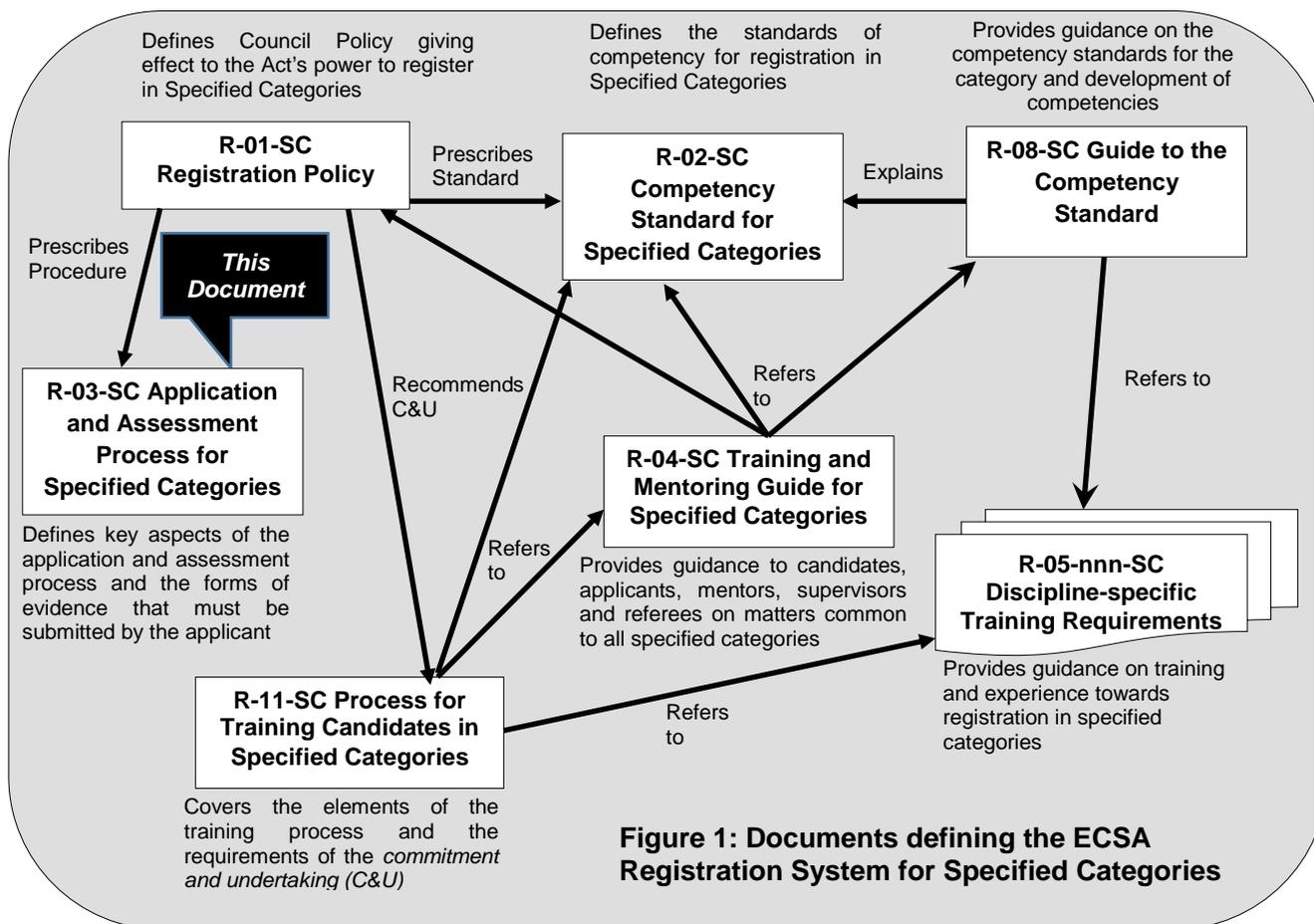


Figure 1: Documents defining the ECSA Registration System for Specified Categories

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 Specified Category Candidate and as a Specified Category Practitioner.

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-SC. This document supports the management of the registration process and assessment of applicants against the competency standard R-02-SC. Section 3 provides a high-level definition of the registration process resulting from the implementation of the policy defined in document R-01-SC.

2. Changes introduced in this document

The processes defined in ECSA Specified Category Competency Standards (R-02-SC) approved in November 2015 and the Registration Policy (R-01-SC) and Education Evaluation policy (E-17-SC) approved in March 2016, bring about a number of changes to the registration system and 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 R2/1Nnnnn (where Nnnnn is the designation for the particular specified category, e.g. F for Lift Inspectors) and the Competency Standard R-02-SC.
- 2.2 The forms of evidence of competence have been made uniform across the sub-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 sub-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 practitioner 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:

- An interim paper-based outcomes based application system in future replaced by 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 future 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 Specified Category Candidate and Practitioner four options are relevant:

- Apply for registration as a Specified Category Candidate
- Apply for registration as a Specified Category Practitioner
- 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 2015/16 policy, standards and procedures

Aspect	Prior to this policy	Under this policy
Registration Policy	Embedded in Policy R2/1Nnnnn: Acceptable Work for Registration as Nnnnnn Specified Category does not consider other classes of applicants explicitly.	<ul style="list-style-type: none"> • Single, integrated policy R-01-SC, defining registration and education policy, linking with standard (R-02-SC) 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-SC for qualifications and assessed learning.
Standard of Competency for Registration	Registration requirements for Nnnnnn Specified Categories, in R2/1Nnnnn section 2	<ul style="list-style-type: none"> • Competency Standard for registration as a Specified Category Practitioner in document R-02-SC. • Eleven outcomes, with definitions for the level of problem solving and engineering activities. • Professional Attributes (Outcomes) and Level Descriptors included in the standard
Seeking registration without normal qualification	The Specified Category Alternate route allowed experience of a defined standard and duration to be accepted in lieu of academic qualifications Development assessed on educational outcomes based claim to competency submitted by the Applicant.	<ul style="list-style-type: none"> • Criterion-based method of meeting education requirements by evaluation and assessment defined in E-17-SC. When educational requirements are complete, apply for registration in normal way. No additional time limits. • Identified methods of further learning and assessment.
Evidence of Training/ Competency	For all sub-disciplines: <ul style="list-style-type: none"> • Training and Experience Summary • Training and Experience Reports • Major Task Engineering Report • Referee Reports • Sub-discipline Specific Development Report • Initial Professional Development (IPD) Report • Discretionary interview in individual cases 	Uniform requirements across sub-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 (ER)^b • Referee Reports (RR) • Sub-discipline Specific Requirement Report (SDSRR) • Pre-registration CPD-type activity – IPD • Discretionary interview in individual cases
Assessment of Competency	Done against Outcomes and Criteria applying evidence submitted mainly in the Major Task Engineering Report, Discipline Specific Development Report and IPD Report, supplemented by the Experience Reports and Referee Reports. Interviews if necessary.	<ul style="list-style-type: none"> • Policy (R-01-SC) defines main stages and permitted decisions in the assessment process. Extended Experience Appraisal sanctioned by Council • Sub-discipline Specific requirements In R-05-Nnnn-SC • 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 (RC), reserve refusal to Central Registration Committee	<ul style="list-style-type: none"> • Delegation to RC register or recommend refusal • Delegation to solicit more evidence by interview or by request and deferrals by sub-discipline specific Assessment Committee • 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) • Future detailed IT system specification.
Training and Mentoring Guidelines		Layered set of guidelines: <ul style="list-style-type: none"> • Training and mentoring (all sub-disciplines) (R-04-SC) with defined responsibility levels. • Guide to competency standards for Registration in a Specified Category (R-08-SC) • Sub-discipline-specific Training Guide (R-05-Nnnn-SC)

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.

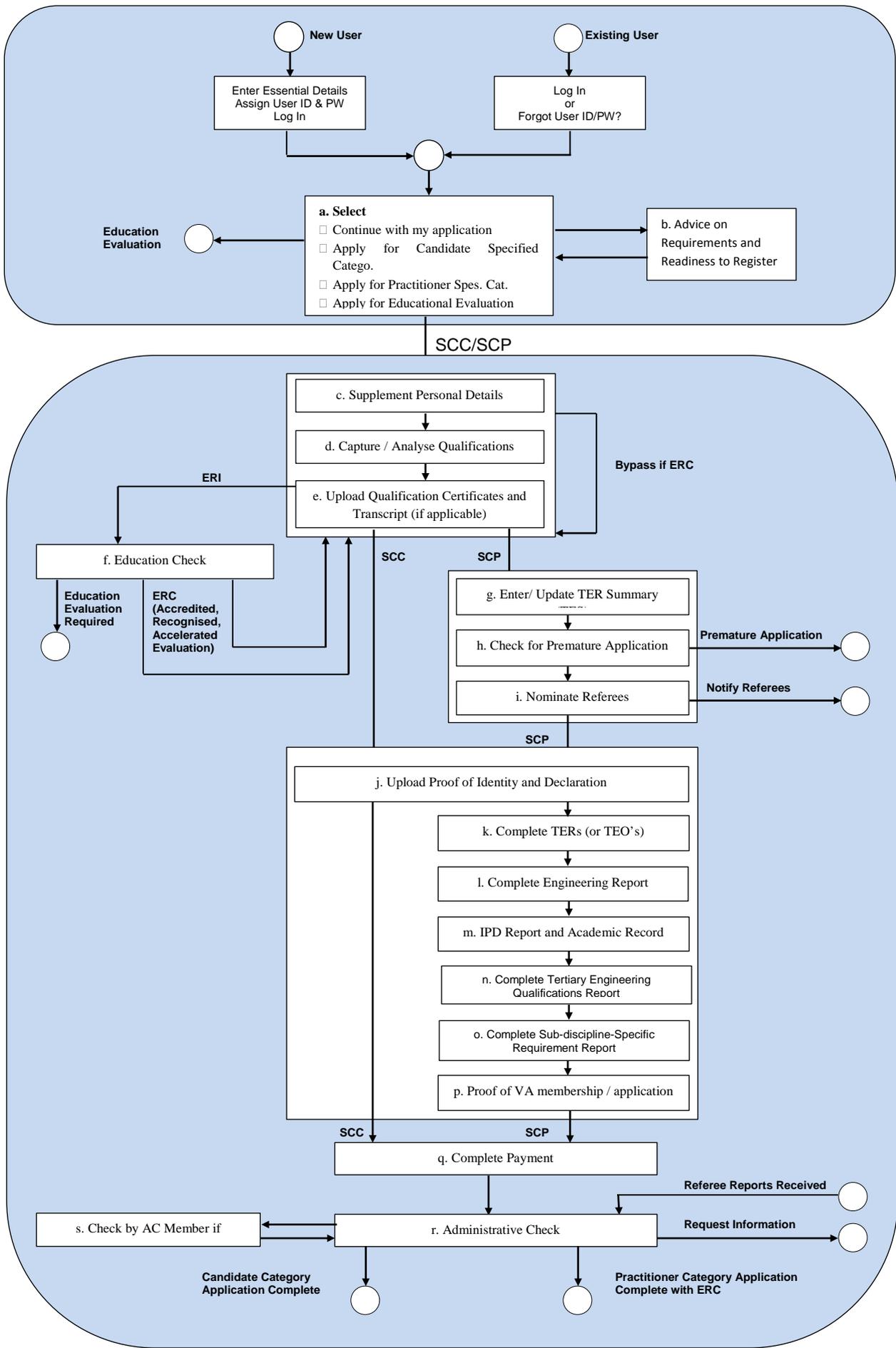


Figure 2: Common front-end and data entry for applications for Specified Category Candidate and Specified Category Practitioner

3.2 Data Entry System: Specified Category Candidate and Specified Category Practitioner

Applications for registration (both paper-based and on-line) 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 Specified Category Candidate (SCC) and Specified Category Practitioner (SCP) 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 case of the paper-based system, an application form is downloaded from the ECSA website, completed, signed and submitted, as specified in the data sheets which form part of the application form. (Additional to the application form, the Sub Discipline Specific Requirements Report (SDSRR), which forms part of document R-05-Nnnn-SC, must also be downloaded, completed, signed and submitted). The paper-based form for personal details is different to the form used for the on-line system. The remainder of the paper-based forms to be completed are identical to the forms listed below for the on-line system.

For the on-line system, the applicant 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 on-line and paper-based system, an applicant for Specified Category Practitioner (SCP) then enters the Training and Experience Summary (TES) (**Appendix C**) information on-line or on paper respectively. 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 (or Appendix E if applicable)**.

The SCP applicant then nominates Referees who are notified directly by the system in case of the on-line system. (SCC Applicants are not required to nominate Referees.) The Applicant must provide full details of Referees who are not registered with ECSA. For the paper-based system the instructions follow the instructions on Sheet SC 1.2.

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:

Specified Applicant	Category	Candidate	Specified Category Practitioner Applicant	Prescribed Format
			Engineering Report	Appendix G
			Academic Record	Appendix H
			Initial Professional Development Report	Appendix I
			Sub-discipline Specific Requirement Report	Appendix Nnnn
			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, or dispatch to ECSA.

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.

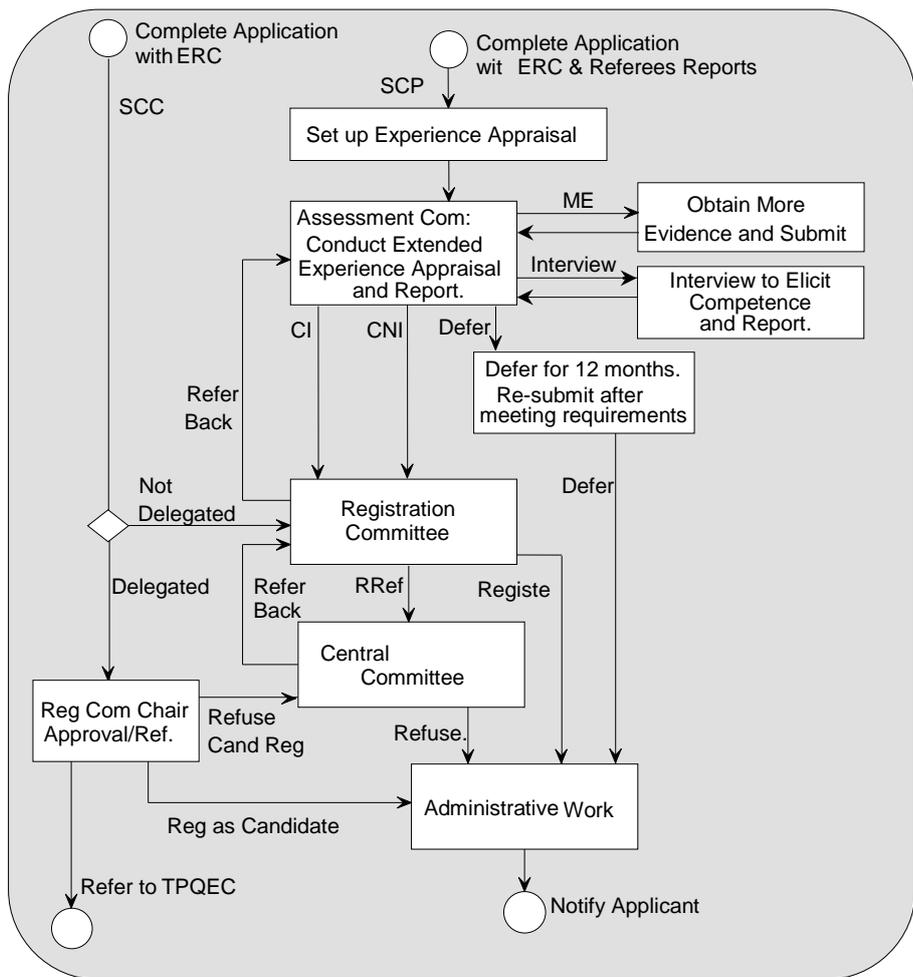


Figure 3: Assessment process for applications for Specified Category Candidate (SCC) and Specified Category Practitioner (SCP)

3.3 Core Process for Specified Category Candidate and Specified Category Practitioner

The process in **Figure 3** gives effect to section 6 of the registration policy R-01-SC in the case of Specified Category Candidate and Specified Category Practitioner. The Specified Category Practitioner 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 sections 6.9 to 6.20 of the registration policy R-01-SC.

3.3.1 Process Flow

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

3.3.1.1 Extended 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 (CI), proceed from Assessing Committee to Registration Committee. This step is signed off by the chairs of the Assessing Committee and the Registration Committee, or;
- 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). This step is signed off by the chair of the Assessing Committee. Once the additional evidence is received, the application is subjected to re-assessment by the Assessing Committee, or;
- If competence is not indicated but further assessment is warranted, determine that an interview (I) is required. This step is signed off by the chair of the Assessing Committee. The chairperson of the interview sub-committee prepares a report by marking up the consensus results from the original assessment on the assessment form (**Appendix J**). This step is signed off by the chair of the Interview Committee. The report is considered by the Assessing Committee and the recommendation is either accepted or amended, or
- If competence is not indicated the Assessing Committee may defer the application for up to 12 months (D1) 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 Assessing Committee.

3.3.1.2 If the Extended Experience appraisal is not indicative of competency (CNI), the Registration Committee reviews the Assessing Committee's recommendation and must adopt one of the following measures:

- Refer the application back to the Assessing Committee for re-consideration, providing complete information on the shortcomings and course of action recommended. This step is signed off by the chair of the Registration Committee, or;
- Approve the recommendation from the Assessing Committee that the applicant be refused registration (CNI), and recommend that the decision be submitted to the Central Registration Committee. This step is signed off by the chairs of the Assessing Committee and the Registration Committee, confirming that reasons given for the refusal are acceptable.

Table 2: Forms and Documents

Ref	Appen	Components of Application	For Registration As	
			Specified Category Candidate	Specified Category Practitioner
		On-line application form or Paper-based application forms	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
SDS RR	Refer R-05- Nnnn- SC	Sub Discipline Specific Requirement Report providing specific evidence of meeting Nnnn requirements		X
		Proof of Voluntary Association membership (Optional)	X	X
		Qualification Certificates (if not already submitted)	X	X
REF	F	Referee report, signed by referees (Three or more)		X

3.3.2 Specified Category Practitioner Applicants

Once an application for practitioner registration is complete with education requirements fulfilled (ERC) as determined in **Figure 2**, the evaluators for the Extended Experience Appraisal are selected and the appraisal starts. The evaluators perform individual evaluations paper-based, electronically or on-line using the assessment form in **Appendix J**. The chairperson of the Assessment Committee formulates a consensus recommendation for eliciting additional evidence (ME) or for submission to the Registration Committee marking up his/her own **Appendix J** assessment form accordingly. More evidence may be obtained by conducting an interview (I) or by a written request (ME). In some instances the Assessment Committee might decide to defer the application for a year (D1) to allow time for further development towards competence. After consideration of more evidence, results from conducting an interview or re-submission after a deferral, the Assessing Committee will recommend to the Registration Committee that the applicant should either be registered (CI) or be refused registration (CNI). In cases of Interview, Deferral or More Evidence, the team leader prepares a draft letter to the applicant reflecting the consensus assessment results. In case of a refusal a draft letter to the applicant via the Central Registration Committee is also prepared giving complete reasons for the refusal. A template letter is used in both cases for this purpose of uniformity.

3.3.3 Specified Category Practitioner Applicants – Alternative Route

An interim arrangement for applicants not meeting the educational requirements (ERI – Educational Requirements Incomplete) will be applicable until ECSA examinations can be offered. In addition to assessing the evidence of competence against the standards and the sub-discipline specific requirements (as for Benchmark and Engineering Management routes), Alternative Route applicants must also be assessed on the evidence submitted on the requirements in the Education Evaluation policy (E-17-SC) document as detailed in tables 1 and 2. The evidence indicating compliance with Table 2 must first be assessed, followed by assessing the evidence submitted to indicate competence against each attribute in Table 1. The evidence submitted can be referred to the

Technology Programme Qualifications and Examinations Committee (TPQEC) or Education Committee (EC) for evaluation. Also refer to Clause 4.4.3 below.

4. Evidence and Assessment for Registration as a Specified Category Candidate or a Specified Category Practitioner

4.1 General Requirement

The assessment system for applicants for registration as Specified Category Practitioner must implement the requirement laid down in the competency standard R-02-SC section 2.1:

*Competence must be demonstrated within **specifically-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 Sub 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 Specified Category Candidate or a Specified Category Practitioner 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 practitioner 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-SC (*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-SC which requires that the applicant display the level of responsibility “for the outcomes of significant parts of one or more specifically-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-SC must submit TERs for at least three years on specific experience applicable to the registration, including reports for a duration of one year applicable experience 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 must be submitted for the remaining periods before and/or after the three years to indicate compliance with the requirements for Alternative Route detailed in Table 2 of the Education Evaluation policy (E-17-SC) document. For Alternative Route applicants, it is important that evidence of meeting the educational development requirements be incorporated in the TERs and the TEOs as evidence to indicate competence developed against the attributes in Table 1 (Individual Assessment Criteria) of the Education Evaluation policy (E-17-SC) document. The development must be supported by meticulous completion of Form R-03-IPD-SC. The evidence required against attributes 6, 7 and 8 of Table 2 are already covered in the Engineering Report, and need not to be repeated. Basic calculations and explanations attached to the Engineering Report might also suffice to satisfy the requirements for attributes 1.1, 1.2, 1.3, 2, 3, 4 and 5.

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: When the on-line system becomes operational and the person is registered as a Specified Category Candidate 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)	Not required. Level of responsibility A-E inserted and stated by applicant)
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 C to D 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 one level 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"> Sub Discipline of Engineering and Sub Discipline Specific Fields* 	<ul style="list-style-type: none"> Sub Discipline of Engineering and Sub 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 responsibilities
	<ul style="list-style-type: none"> Interaction with clients, stakeholders and other disciplines 	<ul style="list-style-type: none"> Interaction with clients, stakeholders and other disciplines
	<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	200 words/TER, 2400 total for all TERs	8 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 will provide evidence of performance against the required outcomes.

The report must be based on problem solving and activities at a **specifically-defined** level, applying

specified category level educational theory. Basic 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 (technical) 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 basic 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 1100 to 1300 words (about 50 words per criterion). The total file size is limited to 0,5 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 rate the applicant's elementary problem analysis and solution synthesis abilities in relation to the desired level (specifically-defined engineering problems);
- To rate the applicant's knowledge of basic 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 specifically-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 specifically-defined level;
- The applicant's willingness and capacity to accept responsibility for engineering work at a specifically-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.

4.8 Sub Discipline Specific Requirements Report (Form R-05-SDSRR-Nnnn)

Specified Categories exist in every one of the nine disciplines recognised by ECSA, namely Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, and Mining. In each discipline, one or more sub disciplines can be identified, characterised by specific requirements in a narrow field, designated as Sub Discipline Specific Requirements. Apart from developing specifically defined level competency in the eleven generic outcomes in engineering, practitioners must also develop the specific competencies uniquely applicable to the sub discipline during his or her development. (Example: The Specified Category sub discipline of Lifting Machinery Inspectors in the discipline of Mechanical Engineering at specifically defined level). The sub discipline specific requirements are listed in the document Sub Discipline Specific Training Requirements (R-05-Nnnn-SC) for each Specified Category. Each applicant must submit a report providing specific evidence of meeting the Nnnn requirements using **Form R-05-SDSRR-Nnnn**

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.

In case of the on-line system, the following documents must be uploaded by the applicant (Hard copies must be provided in the case of using the paper-based system):

- 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

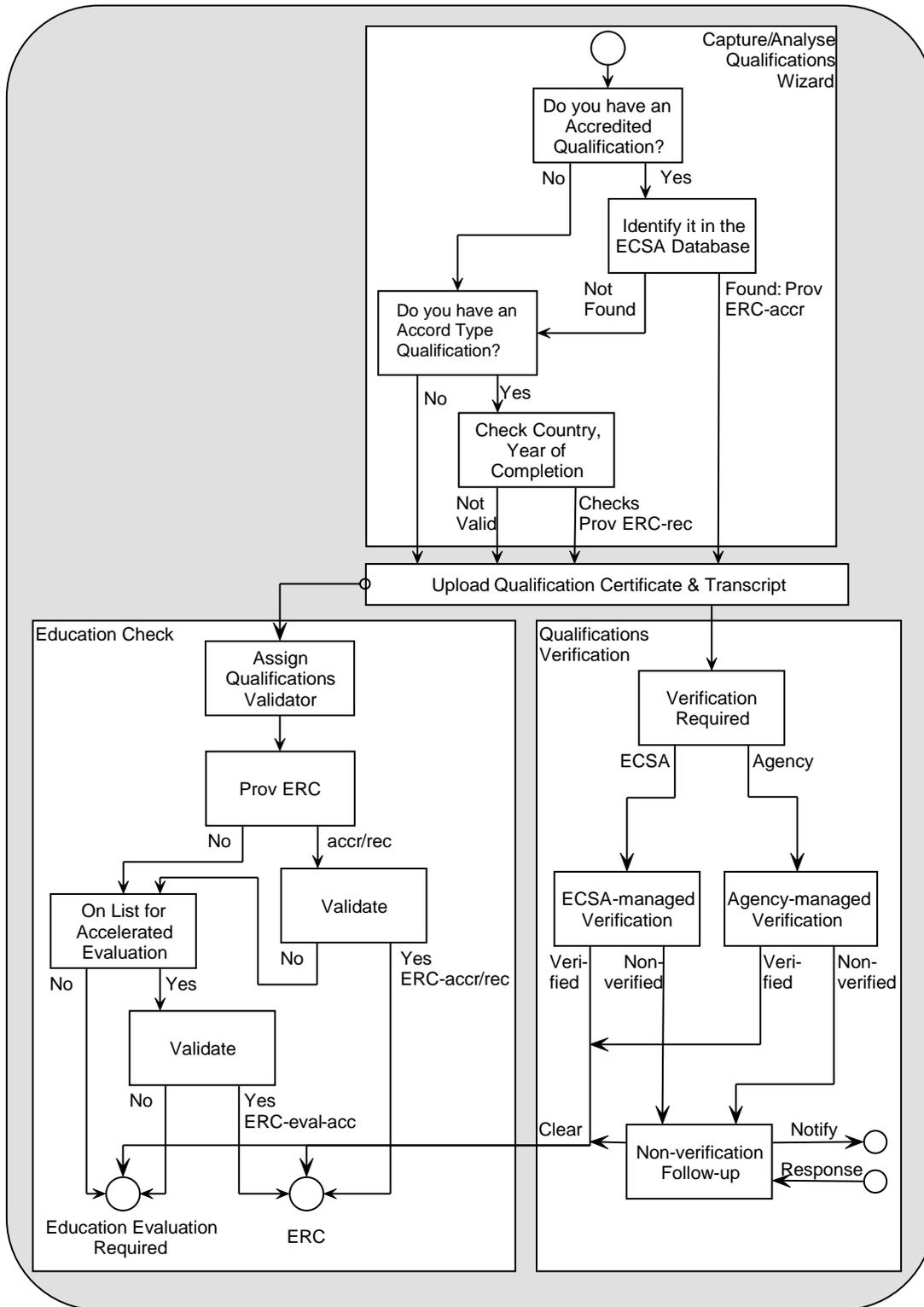


Figure 4: Detail of Capture/Analyse Qualification and Education Check in Figure 1

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 R2/1Nnnn. The requirements defined in section 2 of R2/1Nnnn 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-SC 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: R2/1Nnnn 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 practical engineering techniques in an innovative manner and must include the practical training elements as stated in clause 2 at the level of responsible competence stated. Outcomes expressed in criteria to be met, judged by peer evaluators.</p>		<p>Requirement (R-02-SC Section 2.1): Competence must be demonstrated within <i>specifically-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 practitioner defined in outcomes</p>	
<p>Problem Investigation 2. First bullet and third bullet.</p>	<p>Identify and/or interpret the activity agreeing on a problem statement. Gather and evaluate information. Analyse information and express solution requirements.</p> <p>Display mastery of Stage 1 development by applying underpinning knowledge in doing practical work.</p>	<p>Group A: Engineering Problem Solving *1:- Define, investigate and analyse <i>specifically-defined engineering problems (tasks)</i>.</p> <p>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>Specifically-defined engineering problems</i> have the following characteristics: (a) can be solved mainly by specific practical engineering knowledge underpinned by related theory; <i>and one or more of:</i> (b) are fully defined but may require clarification; (c) are discreet, specifically focused tasks within engineering systems; (d) are routine, frequently encountered and in familiar specified and sustainable context; <i>and one or more of:</i> (e) can be solved in standardized or prescribed ways; (f) are encompassed by specific standards, codes, legislation and documented procedures; requires authorization to work outside limits; (g) information is concrete, specific and largely complete, but requires checking and possible supplementation; (h) involve specific issues but few of these imposing conflicting constraints and a specific range of and interested and affected parties; <i>and one or both of:</i> (i) requires practical judgement in specific practice area in evaluating solutions, considering interfaces to other role-players; (j) have consequences which are locally important but within a specified category (wider impacts are dealt with by others).</p>
<p>Problem Solution 2. Second bullet</p>	<p>Synthesise alternative ways to do the activity. Apply underpinning Stage 1 knowledge to develop and evaluate the best approach seeking advice if necessary.</p>	<p>2:- Design, develop, plan or practice solutions to <i>specifically-defined engineering problems (tasks)</i>.</p>	

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

<p>Execution / Implementation</p> <p>2. Fourth bullet, fifth bullet, sixth bullet and seventh bullet.</p>	<p>Manage self, people, work priorities, work processes and resources and participate in teams during practical activities. Write clear, concise, effective, technically correct reports, read technical items, receive and interpret instructions. Issue clear instructions and present point of view effectively. Identify interested and affected parties and environmental impacts of activities. Propose mitigating measures and communicate with stakeholders. Identify applicable legal, regulatory and health and safety requirements. Select safe and sustainable materials, components and systems. Apply risk management.</p>	<p>Group B: Managing Engineering Activities 4:- Manage part or all of one or more <i>specifically-defined engineering activities</i> 5:- Communicate clearly with others in the course of his or her specifically-defined engineering activities Group C: Impacts of Engineering Activity 6:- Recognise the reasonably foreseeable social, cultural, environmental and sustainable effects of <i>specifically-defined engineering activities</i>. 7:- Meet all legal and regulatory requirements and protect the health and safety of persons and adhere to sustainable practices in the course of his or her <i>specifically-defined engineering activities</i>.</p>	<p><i>Specifically-defined Engineering Activities</i> are characterised by several or all of:</p> <ol style="list-style-type: none"> Scope of practice area is defined by specific techniques applied; change by adopting new specific techniques into current practice; Practice area is located within a wider, complex <i>context</i>, with specifically-defined working relationships with other parties and disciplines; Work involves specific familiar, <i>resources</i> including people, money, equipment, materials, technologies; Require resolution of <i>interactions</i> manifested between specific technical factors with limited impact on wider issues; Are <i>constrained</i> by operational context, defined work package, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws; Have <i>risks</i> and <i>consequences</i> that are locally important but are specifically defined.
<p>Level of Responsibility</p> <p>2. Eight bullet, ninth bullet, tenth bullet and eleventh bullet.</p>	<p>Conduct activities ethically at least complying with ECSA's Code of Conduct. Adopt a systematic approach in resolving ethical issues. Consider applicable factors and their relation. Foresee consequences of actions and evaluate the situation in absence of full evidence. Draw on experience and underpinning knowledge. Demonstrate a professional approach showing due regard for the effect of the activity. Seek advice from a responsible person and take responsibility for own work. Plan own development strategy and select appropriate development activities. Display independent learning ability.</p>	<p>Group D: Exercise judgement, responsibility and act ethically 8:- Conduct engineering activities ethically 9:- Exercise sound judgement in the course of <i>specifically-defined engineering activities</i>. 10:- Be responsible for making decisions on part or all of <i>specifically-defined engineering activities</i>. Group E: Manage Own Development 11:- Undertake independent learning 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
CNI	Competency Not Indicated
CPD	Continued Professional Development
EC	Education Committee
ED	Educational Development
ER	Engineering Report
ERC	Educational Requirements Complete
ERI	Educational Requirements Incomplete
ID	On-line user identification
IPD	Initial Professional Development
ME	More Evidence
PW	On-line pass word
R	Registration
REF	Referee Report
RRef	Registration Refused
SDSRR	Sub Discipline Specific Requirements Report
SC	Applicable to all specified categories
SCC	Specified Category Candidate
SCP	Specified Category Practitioner
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. *Specifically-defined* is the level identifier defined for the Specified Category Practitioner in document R-02-SC.

2. 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>specifically-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>specifically-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>specifically-defined engineering activities</i>	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>specifically-defined engineering activities</i> .	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>specifically-defined engineering activities</i> .	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>specifically-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>specifically-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:

On-line and paper-based. In the on-line form, the information will be held containing the elements shown and providing links to the Training and Experience Reports and/or the Training and Experience Outlines.

Engineering Council of South-Africa

Training and Experience Summary

Form R-03-TEs-SC (2015-12-20)

Surname and Initials:

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

No	From	To	Weeks	Work Details		Responsibility 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-SC (2015-12-20)		
As part of the Application for Registration as a Specified Category Practitioner					
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 the applicant train under a Commitment and Undertaking (C&U)?	Yes No	
			If yes, provide number of C&U:	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)					
Sub Discipline Specific Field: (e.g. LMI, Lift Inspector, Clinical Technician, Laboratory Technician, Engineering Manager, etc.)					
Organogram showing supervisor (person signing this report), co-workers and those the applicant 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 225 words)					
Nature of training or experience (stated in 15-25 words)*					
Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in 100- 120 words)*					
Interaction with clients, stakeholders and other disciplines (stated in 30-40 words)					
Describe role and responsibility (in 30-40 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-SC (2015-12-20)	
As part of the Application for Registration as a Specified Category Practitioner				
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 the applicant train under a Commitment and Undertaking (C&U)?	Yes No
ECSA Registration No. (If not registered, qualify):			If yes, provide number of C&U:	No:
Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining)				
Sub Discipline Specific Field: (e.g. LMI, Lift Inspector, Clinical Technician, Laboratory Technician, Engineering Manager, etc.)				
Organogram identifying the applicant, supervisor and persons supervised. Please do not colour in blocks*.				
Outline Report: (Use bulleted form, using 7-9 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 Referee Report on an Application for Registration as Specified Category Practitioner				Form R-03-REF-SC (2015-12-20)	
Applicant's Name					
Referee Name:		ECSA Registration Category (e.g. LMI, PrTechniEng, etc):		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	
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 Specified Category Practitioner Technician is defined in the Competency Standards, document R-02-SC. Competency is defined in terms of eleven outcomes and two level definitions, namely *specifically-defined engineering problems* and *specifically-defined engineering activities*. The applicant is expected to have demonstrated performance at a degree of responsibility appropriate to a Specified Category Practitioner (E) for at least two years.

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 specifically-defined engineering problems		
2. Design or develop solutions to specifically-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 specifically-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 specifically-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 specifically-defined engineering activities		
8. Conduct engineering activities ethically		

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

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-SC 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 the applicant 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 specifically-defined level. Please also provide a sample relevant calculations, drawings, etc. as an addendum which is limited to two A4 pages. Use Appendix A of the Discipline Specific Training Guide R-05-Nnnn-SC to assist in the interpretation of the criteria

Name of Applicant:

<u>Detail of Equipment Applicable and/or Work Responsibility:</u> (<30 words)	
<u>Date of Work Done:</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/ management problems; solutions in < 30 words)	
<u>Budget:</u> (<10 words)	
<p><u>Specifically-defined engineering problems</u> have the following characteristics:</p> <ul style="list-style-type: none"> a) can be solved mainly by specific practical engineering knowledge, underpinned by related theory; <i>and one or more of:</i> b) are largely defined but may require feedback; c) are discrete, specifically focused tasks within engineering systems; d) are routine, frequently encountered and in familiar specified and sustainable context; <i>and one or more of:</i> e) can be solved by standardised or prescribed ways; f) are encompassed by specific standards, codes, legislation and documented procedures; requires authorisation to work outside limits; g) information is concrete specific and largely complete, but requires checking and possible supplementation; h) involve specific issues but few of these imposing conflicting constraints and a specific range of interested and affected parties; <i>and one or both of:</i> i) requires practical judgement in specific practice area in evaluating solutions, considering interfaces to other role-players; j) have consequences which are locally important but within a specified category (wider impact are dealt with by others). <p><u>Specifically-defined engineering activities</u> have several of the following characteristics:</p> <ul style="list-style-type: none"> a) <i>Scope</i> of specific practice area is defined by specific techniques applied; change by adopting new specific techniques into current practice; b) Practice area is located within a wider, complex <i>context</i>, with specifically-defined working relationships with other parties and disciplines; c) Work involves specific familiar <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 generally not far reaching. 	

Outcomes and Criteria

Outcome 1: Define, investigate and analyse specifically-defined engineering problems encountered in the applicant's work:	
1.1 State how <u>the applicant</u> understood the activity as agreed to with the client (or your supervisor).	
1.2 Describe how <u>the applicant</u> analysed and clarified information, drawings, codes, procedures, etc.	
Outcome 2: Design, develop, plan or practise solutions to specifically-defined engineering problems (tasks) encountered in the applicant's work:	
2.1 Describe how <u>the applicant</u> developed and analysed alternative approaches to do the work. Impacts and sustainability checked. (Calculations attached)	
2.2 State what the final solution to perform the work was, client or the applicant's supervisor in agreement.	
Outcome 3: Comprehend and apply knowledge embodied in established specific engineering practices and knowledge specific to the field in which the applicant practice:	
3.1 State what Higher Certificate level <u>engineering standard procedures and systems the applicant</u> used to execute the work, and how Higher Certificate level theory was applied to understand and/or verify these procedures.	
3.2 Give <u>the applicant's</u> own Higher Certificate level theoretical calculations and/or reasoning on why the application of this theory is considered to be correct (Actual examples attached).	
Outcome 4: Manage part or all of one or more specifically-defined engineering activities embodied in the applicant's work:	
4.1 State how <u>the applicant</u> managed him or herself, priorities, processes and resources in doing the work (e.g. bar chart).	
4.2 Describe <u>the applicant's</u> role and contribution in the work team.	
Outcome 5: Communicate clearly with others in the course of the applicant's engineering activities (specifically-defined engineering work):	
5.1 State how <u>the applicant</u> presented his or her point of view and compiled reports after completion of the work.	
5.2 State how <u>the applicant</u> compiled and issued instructions to subordinates working on the same task.	
Outcome 6: Recognise the reasonably foreseeable social, cultural, environmental and sustainability effects of the applicant's specifically-defined engineering activities generally:	
6.1 Describe the social, cultural, long term sustainability and environmental impact of this engineering activity.	
6.2 State how <u>the applicant</u> communicated mitigating measures to affected parties and acquired stakeholder engagement.	
Outcome 7: Meet all legal and regulatory requirements, protect the health and safety of persons and adhere to sustainable practices in the course of the applicant's specifically-defined engineering activities:	
7.1 List the major laws and regulations, safety requirements, standards and sustainability practices applicable to this particular activity.	
7.2 State how <u>the applicant</u> did risk management and used safe and sustainable materials, components and systems, obtaining advice if necessary.	
Outcome 8: Conduct engineering activities ethically in executing the applicant's work:	

8.1 State how <u>the applicant</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>the applicant</u> is conversant and in compliance with ECSA's Code of Conduct and why this is important in his or her work.	
Outcome 9: Exercise sound judgement in the course of specifically-defined engineering activities encountered in the applicant's work:	
9.1 State the factors applicable to the work, their interrelationship and how <u>the applicant</u> applied the most important factors.	
9.2 Describe how <u>the applicant</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 one or more specifically-defined engineering activities included in the applicant's work:	
10.1 Show how <u>the applicant</u> used Higher Certificate level theoretical calculations to justify decisions taken in doing engineering work. (Attach actual calculations).	
10.2 State how <u>the applicant</u> took responsible advice on any matter falling outside your own education and experience.	
10.3 Describe how <u>the applicant</u> took responsibility for your own work and evaluated any shortcoming in his or her output.	
Outcome 11: Undertake independent learning activities sufficient to maintain and extend the applicant's competence.	
11.1 State what strategy <u>the applicant</u> have independently adopted to enhance his or her own development.	
11.2 State the philosophy of <u>the applicant's</u> employer in regard to your development.	
Evidence of the applicant's competency development plan and independent learning ability must be given in the Initial Professional Development Report, Form R-03-IPD-SC.	

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 Specified Category Practitioner

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

Appendix J:

	ENGINEERING COUNCIL OF SOUTH AFRICA	Form R-03-AF-SC
Assessment Form: Specified Categories		(2015-12-20)

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

2	Qualifications and Development: (Degrees, Diplomas and Certificates, Form AR, Form IPD and TERs and/or TEOs)	Engineering 1:		Date obtained		Discipline:	
		Engineering 2:		Date obtained		Discipline:	
		Other:		Date obtained		Discipline:	
				Date obtained		Discipline:	
		Evaluation of Educational Development from IPD Report, TERs and/or TEOs or TPQEC:		Development up to Higher Certificate level evident: Yes/No			
		Previous Reg:		Date obtained		Category:	

3	Referee Reports: (R-03-REF-SC)	No:	Registered as:	Work Relationship ¹²⁾ :	Evaluation ³⁾ :	Remarks: (e.g. contact details of referee.)			
		1:							
		2:							
		3:							
		Holistic Evaluation (Cross applicable block = X) ³⁾			CDC:	CDI:	CNDD:	CND:	X:

4	Training and Experience Reports: (Forms TES, TER and/or TEO) Mark with an X if applicable (Periods 1 to 9, columns 4 to 7 only) For "SC Experience Required" refer to Table 1, Page 3.	Period No:	Practically Defined ⁴⁾ :	Specifically Defined ⁵⁾ :	Well-defined ⁶⁾ :	Engineering Management ⁷⁾ :	Responsibility for Work at Level E ⁸⁾ :	Duration in Years: (Enter years/months)	
		1						Total	
		2						WR⁸⁾ >E	
		3							
		4							
		5							
		6							
		7							
		8							
		9							
		SC Experience Required (yrs):			With Responsibility (Level E) (yrs):				
		Actual SC Experience (yrs):			0	Actual With Level E Responsibility (yrs):			0
		Remarks:							

5	Detail of Equipment Applicable and/or Work Responsibility: (Taken from the first page of the Engineering Report)

6. Individual Assessment: ¹⁰⁾	Name and Signature:	Date:	
Competence Indicated, register (CI):			Request more evidence as indicated (ME):
An additional ECSA registered referee in a supervisory capacity required (R):			Defer & update Engineering Report R-03-ER-SC and TERs/TEOs to address lacking evidence (Dx):
Competence Not Indicated (CNI) on the criteria as shown, do not register:			Interview to obtain evidence indicated (I):

7. Group Assessment: ¹¹⁾	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 (R):			Defer & update Engineering Report R-03-ER-SC and TERs/TEOs to address lacking evidence (Dx):
Competence Not Indicated (CNI) on the criteria as shown, do not register:			Interview to obtain evidence indicated (I):

8. Interview Assessment: ¹¹⁾	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 (R):			Defer & update Engineering Report R-03-ER-SC and TERs/TEOs to address lacking evidence (Dx):
Competence Not Indicated (CNI) on the criteria as shown, do not register:			Interview to obtain evidence indicated (I):

9.	Chairperson Registration Committee:	Date:	
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Notes:

10. Assessment Results: Score according to 4) – 7) in Nomenclature below for Form ER, Form R-05-SDSRR-Nnnn or Interview								
Outcomes and Competency Indicators	Indiv. Assess ¹⁰⁾	Group Assess ¹¹⁾	Inter-view ¹¹⁾	Weighing	Final Result ⁹⁾	Final Result ⁹⁾	Final Result ⁹⁾	Remarks
Group A: Engineering problem solving:								
Outcome 1: Define, investigate and analyse specifically-defined engineering problems								
1.1 Understood the activity as agreed to with the client (or supervisor)				1	0	0	0	
1.2 Analysed and clarified information, drawings, codes, procedures, etc				2	0	0	0	
Outcome 2: Design, develop plan or practise solutions to specifically-defined engineering problems								
2.1 Development of alternative solutions. Impacts. Calculations				4	0	0	0	
2.2 Select of the best solution, agreed to by the recipient.				3	0	0	0	
Outcome 3: Comprehend and apply knowledge embodied in established specific engineering practices and knowledge specific to the field of practice								
3.1 Engineering procedures and systems used and understood to execute work				4	0	0	0	
3.2 Reasons why application is considered to be correct (Examples)				3	0	0	0	
Group B: Managing Engineering Activities:								
Outcome 4. Manage activity								
4.1 Managed self, work priorities, processes and resources.				3	0	0	0	
4.2 Participate in team-work				2	0	0	0	
Outcome 5. Communicate clearly during the activity								
5.1 Express point of view and write reports correctly.				2	0	0	0	
5.2 Issue clear written instructions.				2	0	0	0	
Group C: Impacts of Engineering Activity:								
Outcome 6. Social, cultural, environmental and sustainability effects of the activity								
6.1 Social and environmental impact and long term sustainability realised				3	0	0	0	
6.2 Mitigating measures communicated				2	0	0	0	
Outcome 7. Legal, regulatory and health and safety requirements								
7.1 Major laws and regulations listed.				3	0	0	0	
7.2 Advice on risk management				2	0	0	0	
Group D: Exercise judgement, take responsibility and act ethically:								
Outcome 8. Conduct engineering activities ethically								
8.1 Ethical issues and affected parties noticed				2	0	0	0	
8.2 ECSA's Code of Conduct identified				2	0	0	0	
Outcome 9. Exercise sound judgement								
9.1 Task factors and interrelationship stated and how it is applied				3	0	0	0	
9.2 Evaluated task consequences				3	0	0	0	
Outcome 10. Take decisions responsibly								
10.1 Theory applied to justify work				5	0	0	0	
10.2 Advice taken on matters outside own ability.				2	0	0	0	
10.3 Take responsibility for own evaluated work				5	0	0	0	
Group E: Continued Professional Development:								
Outcome 11. Undertake learning activities								
11.1 Competency development plan evident				3	0	0	0	
11.2 Independent learning ability				1	0	0	0	
Outcome 12: Sub Discipline Specific Requirements as reflected in Form R-05-SDSRR-Nnnn								
TOTAL SUMMATIVE ASSESSMENT OUT OF 100:					0	0	0	
11	Comment and Instructions:							
12	Training Detail:	Training under a C&U (Y/N):						
		Name of organisation training the applicant:						
		ECSA Registered Mentor (Y/N):						

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 engineering artisan categories (poor to part answer): Results Assessment Form 10 and 13, SCORE=1 or 2
- 5) **Specifically defined (Acceptable level):** Typically applicable to the specified categories (specifically defined) (full answer): Results Assessment Form 10 and 13, SCORE=3
- 6) Well-defined (Acceptable level): Typically applicable to engineering technicians (exceeding full answer): Results Assessment Form 10 and 13, SCORE=4 or more
- 7) Engineering management: Typically applicable to engineering managers (exceeding the full answer): Results Assessment Form 10 and 13, SCORE=4 or more
- 8) WR>E: Degree of Responsibility performing work with limited guidance (E):

	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) Final result: Multiply “Score” with the “Weight”. **Note that if no evidence found, the score is 0, then Final Result=0**
- 10) Individual Assessment is the assessment done by a single assessor (“homework”)
- 11) Group Assessment is done at by an assessing committee (AC) at a meeting or at an interview where a consensus decision is made which is confirmed by the chairperson of the AC.
- 12) Work Relationship: Mentor; Supervisor; Employer; Colleague; Client
- 13) A total score of >80% is required if a recommendation that “competency is indicated” (CI) can be made.

Notes:

Table 1: Qualifications (E-17-SC Table 2)	NQF 1	NQF 2	NQF 3	NQF 4	NQF 5	NQF 6-8
Total Engineering Experience Required	20 years	15 Years	10 years	5 years	3 years	3 years
Of which with responsibility at level E	2years	2 years				

Revision History

Version	Date	Revised/Approved by	Nature of Revision
Rev 1 Ver A	20 December 2015	JIC Working Document	Initial attempt based on R-03-PN, R-01-SC, R-02-SC, E-17-SC and R-05-LMI-SC
Rev 1 Ver B	11 April 2016	JIC approved	Minor editing. To be submitted to TC and Council
Rev 1 Ver B	25 April 2016	TC Approved	No amendments
Rev 1 Ver B	25 August 2016	Council Approved	No amendments
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