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The NLA-SA Personnel Certification Scheme for Metrologists, MetCert

General Information

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1. Purpose

This document describes the NLA-SA Personnel Certification Scheme for Metrologists, (MetCert).

2. Scope

MetCert is a personnel certification scheme for Metrologists, run by the National Laboratory Association of South Africa (NLA-SA).

It offers formal recognition of the knowledge, experience and skills of Metrologists working in metrology laboratories in the following fields:

Acoustics	Liquid Flow
Dimensional	Mass
Electrical (DCLF)	Photometry
Fibre Optics	Pressure
Fluid Dynamics / Viscosity	Radio Frequency
Force	Radiometry
Gas Flow	Temperature
Gas Metrology	Time & Frequency
Hardness	Torque
Humidity	Vibration
Ionizing Radiation	Volume
Other discipline(s), not specified above	

Simply put, certification involves a process whereby applicants provide a portfolio of evidence demonstrating that they meet specified criteria, undertake to abide by a code of ethics, and then once certified, from time to time provide evidence that their skills are kept up to date in order to remain certified.

Initially all applications are administratively evaluated against specified criteria by the Scheme Administrator. A selected Review Panel is responsible for a technical evaluation, and to make a recommendation to an independent Approval Committee for final certification. Once certified, the Metrologist is then required to submit evidence on a three yearly basis in order to demonstrate that the Metrologist continues to meet the criteria while simultaneously indicating that the Metrologist's skills sets remain relevant and up to date with modern times. (See NLA-MC-I-03-XX for Metcert Continuing Professional Development)

3. References

NLA-MC-I-03-XX	Continuing Professional Development
NLA-MC-I-09-XX	Pricelist
NLA-MC-F01-XX	Application form

4. Areas of responsibility

Changes to this document can only be approved by the Director of the NLA-SA.

5. Background

The original National Laboratory Accreditation Certificate of Competence (CoC) was taken over by SANAS in 1998 and continued to run until 2009. The number of new CoC's issued

began to dwindle for various reasons, but principally because the CoC was no longer a prerequisite to becoming a Technical Signatory in a Calibration Laboratory.

In principle ISO17025 only requires proof of competence of the individual in a laboratory. The old CoC provided a system where the assessor was able to know that the technical signatory had at least passed the pre-requisite theoretical examination and had demonstrated practically in a laboratory, their ability to apply the theory to the real work being done. This base line “qualification” of a CoC assisted in maintaining a high level of competence in our laboratories. This is no longer the case and many technical signatories have demonstrated during assessments that they are not competent to do the calibrations at the level expected of them.

International regulations do not allow SANAS to be involved in such a certification scheme as well as being the relevant assessor of the competence of that individual in the laboratory, during assessment by SANAS. In principle, the two activities need to be totally separate, where there is no chance of a conflict of interest. In addition to the above requirements, there has also been a raised profile with regard to various regulatory requirements of certified personnel in various areas such as the Natural Scientific Professions Act of 2003, which requires formal assessment and registration of laboratory personnel as well as a scheme of continuous training to ensure that they remain up to date with current technology and practices.

With this as a background the NLA-SA was approached to consider establishing a suitable Certification of Persons scheme and has established Metrologist Certification (MetCert) with the view that it will replace the CoC. It is also envisaged that the NLA-SA will in due course be accredited to ISO/IEC 17024, an International standard for Certification of Persons, which will bring greater value to the MetCert Scheme. It will provide laboratory owners with a formalised scheme to rate their employees and demonstrate that they have taken reasonable precautions to ensure that their staff are appropriately qualified for the tasks in the laboratory.

6. Benefits of being certified

- Provides an opportunity for independent 3rd party recognition of competence,
- Provides an internationally benchmarked assessment which can be used by HR to justify level and salary scales,
- Improves marketability as a Metrologist,
- Registration is in line with the “Identification of Work for Compulsory Registration” as envisaged by government,
- Enables SANAS to implement a more harmonised approach to technical competence evaluations whilst conducting calibration laboratory assessments,
- Recognises the difference in skills and competence by having a multi-level system,
- Helps to provide a career path for Metrologists,
- Assessment criteria are in line with SAQA registered standards,
- Encourages ethical behaviour.

Paragraph 5.1.3 of SANAS R03 states the following:

5.1.3 In the case of accredited Calibration Laboratories, technical signatories shall be either:

- a) Certified as a Metrologist or expert Metrologist by the National Laboratory Association – South Africa (NLA-SA) as part of the “MetCert” certification program. The “Metcert” certification programme replaces the SANAS “Certificate of Competence”;
- b) Registered with the Engineering Council of South Africa (ECSA) as either a professional engineering technician, technologist, engineer, or certificated engineer in an applicable discipline;

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- c) Registered with the South African Council for Natural Scientific Professions (SACNASP) as either a professional or certified natural scientist (level A or B) in an applicable field of practice; or
- d) Registered with the Health Professions Council of South Africa (HPCSA) as a Medical Physicist

Applicants should notice that current SANAS Technical Signatories who fail to complete and maintain the NLA-SA MetCert registration/certification process and not complying with one of the other options in the document will have their technical signatory status revoked by SANAS as per the SANAS R 03 document.

7. Scheme Structure

Essentially the scheme currently consists of three levels as follows:-

“Trainee Metrologist”

This is for individuals who are newly employed into a laboratory position with little or no metrology experience in a laboratory. Furthermore, it is aimed at recognising the start of a Metrologist’s career and employer support for career growth according to a structured career path plan.

“Metrologist”

This is for Metrologists who meet both the knowledge and practical task measurements requirements, as per the application form (NLA-MC-F-01-XX) for “Metrologist Level”. This is typically applicable for Metrologists who perform unsupervised calibrations on a daily basis in a calibration laboratory, but in limited metrology fields and not at the smallest measurement uncertainties.

“Expert Metrologist”

This is for Metrologists who meet both the knowledge and practical task measurement requirements, as per the application form (NLA-MC-F-01-XX) for “Metrologist Level” and additionally meet the specific practical task measurements, as per the application form (NLA-MC-F-01-XX) for “Expert Metrologist Level”. This is typically applicable for Metrologists who perform unsupervised complex calibrations on a daily basis in a calibration laboratory, at the smallest measurement uncertainties. They also typically perform many additional roles eg. Lecture on various Metrology training courses, are technical assessors for SANAS and mentor other Metrologists.

8. Certification Process

Step 1: The applicant should establish what role they currently fulfil in the laboratory. This will provide a very good indication as to what level they might be in a position to be certified.

Step 2: The applicant completes, signs and submits the NLA-SA MetCert application form (NLA-MC-F01-XX) as well as the field specific discipline form(s) (NLA-MC-F-G01-XX - NLA-MC-F-G23-XX). Copies of the following evidence shall be submitted electronically or as hard copies to the NLA-SA Offices:

- Updated CV applicable to the application
- Relevant academic & other applicable theoretical qualifications
- Signed “Code of Conduct” on application form
- Relevant Training (Core courses and Metrology discipline(s))
- Previous SANAS CoC (if available)
- Calibration tasks/certificates
- Detailed calculation of Uncertainty of Measurement for at least one calibration task, traceable to the applicant for conducting the calculations.

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Inter Laboratory Comparison (ILC) report, traceable to the applicant as the participant, for at least one calibration task

A letter of support and a projected training plan for “Trainee Metrologist” applications

Step 3: The Scheme Administrator will arrange for an appropriate registration invoice to be sent to the applicant, and when payment is received, the application will be administratively evaluated by the Scheme Administrator. Should there be any information or evidence missing, the applicant will be notified by e-mail to submit the missing evidence. Once all evidence is on file to comply with the specified requirements, the Scheme Administrator will submit the application to the Review Panel.

Step 4: The Review Panel, which comprises of discipline specific competent reviewers, is responsible for a technical review. This evaluation will be conducted against the requirements at the specific level pertaining to the application.

Step 5: If the Review Panel is satisfied that there is sufficient evidence that all the requirements are met, they make a recommendation to the Approval Committee for a final Certification decision.

Step 6: The Scheme Administrator will arrange for certification invoice to be sent to the applicant, and when payment is received, a Certificate will be produced and sent to the applicant.

The process, graphically displayed in Annexure A should be followed in order to be certified in accordance with the requirements of the NLA-SA MetCert Scheme.

9. Application Requirements

The detailed requirements for certification are described in the “MetCert registration Application Form” (NLA-MC-F-01-XX) and Field Specific Disciplines Forms (NLA-MC-F-G01-XX - NLA-MC-F-G23-XX); downloadable from the NLA-SA website.

In summary, the certification of Metrologists consists of three main components. Firstly, a foundational knowledge and code of conduct adoption component, secondly a practical competence component and thirdly a continuous professional development component required to maintain certification.

The requirements are divided into the areas as described below. It is important to note however, that since the Review Panel and Approval Committee are required to assess the applicants’ technical compliance with the requirements purely on the paperwork evidence submitted, it is critical that sufficient detail is available from the documentation submitted.

9.1 Qualifications and experience

The applicant is required to provide evidence of having obtained a **complete** tertiary qualification **and/or** demonstrate sufficient years of experience working in a metrology laboratory.

Copies of certificates, diplomas or degrees of **completed** qualifications from recognised institutions are required. In cases where the institution is not well known, the Review Panel/Approval Committee reserve the right to request additional evidence to support the credibility of the institution.

Years of experience claims must be supported by evidence of having worked actively in a metrology laboratory. Any evidence is acceptable, including a letter signed by another employee with knowledge of the claims.

9.2 Knowledge based Training

The applicant Metrologist is required to provide evidence of having satisfactorily acquired sufficient knowledge in the field of Metrology being applied for. Typically these courses would have been presented by SANAS, NMISA, SRCME, the NLA-SA and Technicon Pretoria. If the applicant Metrologist attended an applicable course by another provider, a NLA-SA examination needs to be written and passed by the applicant Metrologist, in order to meet the requirements of MetCert Certification requirements. This examination will be administered by MetCert scheme.

9.3 Required abilities

No specific physical abilities are specified for MetCert applicants.

9.4 Practical Metrology Requirements

Members of the various SANAS Specialized Technical Committees (STC's) prescribe the practical task requirements for the specific disciplines, Metrologists need to comply with. The practical tasks are reviewed during the annual STC meetings to ensure the tasks remain relevant and up to date. Changes, if any, will be updated by the MetCert Scheme Administrator and published on the NLA-SA website.

The applicant Metrologist is required to provide evidence demonstrating that the specific practical task requirements for the metrology discipline being applied for have been met. The application forms for the field specific disciplines (NLA-MC-F-G01-XX - NLA-MC-F-G23-XX) contains detailed examples of the types of evidence that are required.

Applicants must bear in mind that since these requirements relate to metrology competence, evidence of measurements having been performed and the correct result having been obtained are paramount. Consequently, one of the easiest ways of demonstrating compliance with this requirement is to provide evidence of satisfactory participation in Inter-Laboratory Comparison activity (ILC). The link between the applicant and the results must however be clear.

In most cases, submitting evidence demonstrating that **all** the practical task requirements have been met, will not be possible. Applicants should therefore note that as a minimum, evidence should be submitted to demonstrate that all the requirements as specified on the application form have been met.

It should also be noted that for some metrology fields, the practical task requirements have not yet been prescribed. This is primarily as a result of some fields of metrology having very few practicing Metrologists. In these cases, applicants should complete the application form NLA-MC-F-01-XX and the specific field of metrology as "other discipline(s)" on the front page and then complete form NLA-MC-F-G23 (As yet undefined Metrology Field). The onus is then on the applicant to provide sufficient evidence, taking the practical task requirements in other metrology fields as guidance, to convince the MetCert Review Panel that registration at the level being applied for is justified.

The certification process is an independent 3rd part evaluation/confirmation of competence of the person applying for certification based on the evidence supplied by the applicant. The Review Panel may ask for additional information or clarification if the evidence submitted is not complete or not sufficiently clear.

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- 9.4.1 This evaluation process allows for 2 requests for additional/clarifying information to be sought by the Review Panel.
- 9.4.2 In the event that the panel believes that the applicant is not yet deemed competent, after the submission of the clarifying information, then an additional period of time will need to be spent by the applicant gaining the competence required before re-submitting any information and asking for a review to be conducted.
- 9.4.3 The period of time before re-submission any information will be as follows:
 - a) If the applicant has more than 2 years calibration laboratory experience – 6 months.
 - b) If the applicant has less than a year calibration laboratory experience - 12 months.
 - c) If the applicant has between 12 – 24 months calibration laboratory experience, the review panel will make a recommendation as to the period that they consider appropriate and this will be no shorter than 6 months and no longer than 12 months.

9.5 Code of Conduct

Since metrology relies heavily on the integrity of the Metrologists performing the measurements, ethical behaviour is a critical component of being a “Certified Metrologist”. It is therefore a requirement of the MetCert scheme that applicants undertake to abide by a code of conduct, and confirm this willingness by signing a copy of the Code of Conduct contained in the application form.

Should a certified Metrologist be found to be conducting themselves in a manner contrary to the adopted Code of Conduct, a disciplinary process could lead to their de-certification.

9.6 Recertification/Continuous Professional Development

Initial certification under the MetCert scheme is valid for a 3 year period from the date of successful certification. Thereafter the Metrologist needs to re-apply should they wish to renew their certification. Retaining certification status relies heavily on submitted evidence to prove that the certified Metrologist is not only still actively practicing metrology, but also that they have taken appropriate steps to ensure their knowledge and competence remains current.

One of the requirements to demonstrate this is a process called Continuous Professional Development (CPD), in which points are allocated to specific components of evidence such as active employment in a calibration laboratory, attendance and participation in conferences, further training, technical assessments, membership and active contribution on Technical Metrology Committees and lecturing on Metrology courses.

The CPD point allocation to such tasks, as well as the minimum number of points required, is detailed in NLA-MC-I-03-XX, and can be downloaded from the NLA-SA website.

10. Assessment methods

An evaluation is done of evidence provided for examinations completed for knowledge based training and tasks completed for practical metrology experience as detailed in the application forms for the field specific disciplines (NLA-MC-F-G01-XX - NLA-MC-F-G23-XX). Evaluation for recertification is done in a similar manner where evidence of requirements as detailed in NLA-MC-I-03-XX is provided.

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11. Criteria for suspension or withdrawal of certification

Certification may be suspended or withdrawn or scope of certification reduced in cases where a certified person:

- is found to have acted in an incompetent or unethical manner;
- has impaired ability due to physical or mental impairment;
- does not comply with the requirements of the Certification Scheme;
- makes unauthorised or misleading claims or statements regarding his/her certification;
- uses his/her certification in a misleading manner;
- fails to resolve issues that have resulted in suspension in the timeframe established by the NLA-SA.

12. Criteria for changing the scope or level of certification

A MetCert certified Metrologist may apply for additional disciplines or upgrade the current specified certification level at any time, as long as the applicable fees are paid and the applicant is able to demonstrate that the requirements are met. Once approved, an updated certificate will be issued to include the changes.

13. The Applicant’s rights

The applicant, candidate or certified person has the right to appeal in writing any decisions made regarding certification or recertification within one calendar month (30 days) of the event leading to the appeal. The appeals procedure can be downloaded from the NLA-SA website.

A certified person, upon being granted certification status and whilst the certificate is current, will be entitled to make claims in accordance with the scope of certification awarded.

14. Duties and responsibilities of the certified person

A certified person:

- shall sign an agreement to be bound by the Code of Conduct as part of the application process and shall be committed to:
 - respect the dignity of other individuals
 - act on the basis of well-informed conscience
 - act in the interest of the community
 - uphold the principles of the Code.
- shall comply with the requirements of the MetCert certification Scheme.
- may make claims regarding his/her certification only with respect to the scope for which certification has been awarded.
- shall not use his/her certificate in a misleading manner.
- shall not make any unauthorised or misleading statements regarding his/her certification.
- may not use his/her certification in such a manner as to bring the NLA-SA into disrepute.
- shall inform the NLA-SA without delay of matters that may affect his/her capability to fulfil certification requirements.
- shall maintain skills in the scope for which certification has been awarded to remain certified.
- shall immediately discontinue any claim to hold certification upon suspension, withdrawal or expiry of his/her certification and shall return all certificates to the NLA-SA under such circumstances.

15. What does it cost?

The costs associated with being certified and re-certified can be found in the most recent version of the MetCert Scheme Pricelist, NLA-MC-I-09-XX, which can be downloaded from the NLA-SA website.

16. Flow Chart (Annexure A)

