

**Brief Report to the 6th meeting
of the
Consultative Committee for Acoustics, Ultrasound and Vibration

NMISA
Acoustics, Ultrasound and Vibration Laboratory**

1. ACCREDITATION

The Acoustics, Ultrasound and Vibration Laboratory (AUV) of the National Metrology Institute of South Africa (NMISA) was re-assessed by the South African National Accreditation System (SANAS) in February 2008. This was a full re-assessment of the laboratory and therefore included a technical assessor, Dr Takashi Usuda from the National Metrology Institute of Japan, (NMIJ). During the assessment, the scope of accreditation was extended in both the Acoustic as well as the Vibration fields. Mr Moses Temba obtained technical signatory status in the field of vibration as part of the assessment and the scope of technical signatory for Mr Riaan Nel was extended in acoustics.

In the field of Acoustics, the laboratory added calibration of microphone using the actuator method as well as the realization (using secondary methods) and dissemination of sound intensity equipment to its schedule of accreditation.

In the area of Vibration, the laboratory extended the frequency range for primary and secondary sensitivity calibration of accelerometers to include frequencies from 1 Hz to 10 Hz.

2. ACOUSTICS

The laboratory is the process of replacing and upgrading aging equipment relating to all areas of standard realisation and dissemination. Through this planned upgrade of the laboratory will further extend its calibration service to its clients to include calibration of acoustical equipment in conformance of current IEC standards. The upgrade of the system will provide the laboratory the capability to realise the standard for sound pressure in air for LS1P as well as LS2P microphones using primary methods with reduced uncertainties of measurement and extended frequency ranges. Currently the laboratory can only realise the standard using LS1P microphones.

3. VIBRATION

The national standard for vibration has been re-located from the laboratory on the first floor to a laboratory, dedicated for the realisation of the standard, on the ground floor. As part of the re-location, a primary low frequency system was developed to extend the frequency range in which the standard is realised down to 1 Hz.

Based on this system, new CMCs will be submitted for inclusion in Appendix C of the BIPM database in the near future.

4. COMPARISONS

No International nor Regional comparisons were conducted or participated in by the laboratory during the past 2 years. The laboratory has expressed interest to participate in the SIM regional low frequency vibration comparison as well as the APMP regional comparison of a multi frequency sound source.

5. REGIONAL ACTIVITIES

In the SADC MET region, emphasis is placed on ensuring that all SADC member countries have some metrology capabilities, with the focus on metrology parameters relating to trade such as mass, volume and length. Further developments are in progress and member countries are actively improving their metrology infrastructure. These improvements include the implementation of quality systems and obtaining third party accreditation, mainly provided by SANAS.

In related fields, the Kenyan Bureau of Standards (KEBS) has received equipment to establish and to disseminate measurement standards for Acoustics as well as Vibration. The NMISA has send a delegation to KEBS to ascertain their capabilities and future needs as part of the ongoing support the NMISA provides in SADC and Africa.

5.1 AFRIMETS

On the 24th March, 2006 at Midrand, South Africa, a workshop was held to launch a system of AFRIMETS. At this workshop the following resolutions were undertaken:

- To create the Inter-Africa Metrology System (AFRIMets), as the umbrella body for Metrology Cooperation in Africa, encompassing legal, scientific and industrial metrology.
- The AFRIMets will be an open non-exclusive partnership to stimulate collaboration in the area of Measurement standards and Measurement in Africa.

A separate presentation on AFRIMETS will be presented.