

The activities carried out by the SADC MET secretariat over the period under review are summarised below.

1. SADC MET MASS METROLOGY COURSE

During August the National Metrology Laboratory of South Africa celebrated its 50th anniversary with a week of conferences, symposia, exhibitions, courses and workshops on metrology. One of the activities was a mass metrology course which ran from 25th to 29th August and was presented by Dr Michael Gläser and Mr Martin Furlis of the PTB, Germany. This course, which had been arranged by SADC MET and was sponsored by the PTB, was specially targeted at the metrologists in mass laboratories in the various SADC countries.

The flights and accommodation were arranged by Ireen Field (NML) and the NML (SA) was a hive of activity preparing venues, lunches, teas, busses, air transportation, bags, documentation and balances for the practical sessions. A sincere thanks to both the Mettler Toledo and Sartorius agents in South Africa for the loan of balances and posters for the occasion.

The course was supported by representatives from Namibia, Botswana, Zambia, Swaziland, Lesotho, Mozambique, Zimbabwe, Tanzania and South Africa. In spite of some language difficulties, the delegates seemed to follow the course contents and lots of encouragement was provided between delegates with respect to the course mathematics.

The documentation provided by the PTB was very clear with lots of examples which helped to break any language barriers.

The course was very intense and covered many aspects and should have been stretched over 2 weeks so that each delegate could get a more in depth understanding rather than a superficial glimpse of the aspects of mass measurement. However, the notes are there to fall back on and there is little doubt that the more often we get together in the SADC region the more we can help one another and reinforce good metrology practice.

Many thanks to the sponsors (PTB, Germany), to the NML (South Africa) for providing the venue and organising the event as well as to the lecturers for preparing the course material.

2. PTB SPONSORED SEMINAR ON PREPACKAGING CONTROL

This seminar was held at the South African Bureau of Standards from 18 to 22 August 1997 under the auspices of SALMEC and was aimed at legal metrologists. Mr Klaus Helmbold of Bremen, Germany, developed and presented the seminar which was attended by 14 delegates from Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. Lectures covered tolerances for pre-packaged goods, the application of the average packaging system and various related topics such as the measurement of traditionally difficult to measure products such as ice cream. Hands on experience was gained from measurements taken and calculations made in the lecture room as well as during a visit to a bottling plant. All delegates actively participated and there was unanimous agreement that the seminar was of great benefit and similar seminars should be arranged in the future.

SALMEC would like to thank the PTB for the sponsorship and encouragement, the SABS for arrangements and facilities and Microsep (Mettler) and Carl Zeiss (Sartorius) for the loan of instruments.

3. SADC MET MASS INTERCOMPARISON

SADC MET was invited by the PTB (Germany), to participate in a geographically widespread intercomparison of mass pieces. The National Metrology Laboratory (South Africa) is acting as the reference laboratory for the southern hemisphere countries participating in the exercise, with the PTB handling the northern hemisphere.

After a long wait and some anxious moments worrying about the possible loss of the two weight sets sent from PTB in Germany, the weights arrived in South Africa during October 1997.

The circulation route and status for the NML coordinated leg of the intercomparison is as follows:

Set One Status Set Two Status

South Africa Done South Africa Done
Swaziland Done Namibia Done
South Africa Done South Africa Done
Zimbabwe Sent March 98 Botswana Sent March 98
South Africa South Africa
Mauritius Zambia
South Africa South Africa
Tanzania Malawi
South Africa South Africa

PTB PTB

Each laboratory has approximately 2 weeks to do the measurements and return the weights to South Africa. The written measurement procedures and other requirements specified by the PTB are enclosed in the parcel. The documentation regarding customs for each country is attached and participants are requested to return the parcels and the measurement results to the NML (South Africa) after each leg.

The requirements of the PTB are quite clear and for participants who participated in the SADC MET / PTB mass metrology course the information in the notes should be useful with regard to the methods to be used.

A full evaluation of the results will be supplied to the participants after the completion of the intercomparison.

4. RECOGNITION OF THE EQUIVALENCE OF THE NATIONAL STANDARDS OF THE UNITED STATES AND THE REPUBLIC OF SOUTH AFRICA FOR THE SI UNIT OF LUMINOUS INTENSITY

An agreement recognising the equivalence of the candela as realised by the National Institute of Standards and Technology (NIST), USA and the National Metrology Laboratory (NML) of the CSIR, South Africa was signed between the two institutions on the occasion of opening of the NML's 50th anniversary Metrology Week on 26 August 1997. The text of the agreement is as follows:

As adherents to the Convention of the Meter, the United States of America and the Republic of South Africa realize their units of measurement in accordance with the definitions of the International System of Units (SI) adopted by the General Conference of Weights and Measures.

The custodians of the national measurement standards of the two countries, the U.S. National Institute of Standards and Technology (NIST) and the CSIR, collaborate in research to verify and improve measurement standards, both bilaterally and through the International Bureau of Weights and Measures.

On the basis of this collaboration, the Director of NIST and the Director of CSIR recognize that the national standards for the practical realization of the SI unit of luminous intensity in the United States and in the Republic of South Africa are equivalent to 7.4 parts in 10^3 , within a combined standard uncertainty of 3.3 art in 10^3 .

This recognition of equivalence will remain in effect for an unlimited period, but may be withdrawn by either party at any time. While acknowledging the equivalence of national standards for the SI unit of luminous intensity, neither NIST nor CSIR accepts any responsibility for the correctness of any particular measurement referred to the national standard for the unit of luminous intensity maintained by the other organization.

5. NML METROLOGY WEEK A BIG SUCCESS

South Africa's National Metrology Laboratory (NML) in Pretoria celebrated its 50th anniversary during 1997. The NML's anniversary year was celebrated with various activities, culminating in the Metrology Week from 25 to 29 August. The Week included an international conference, workshops and exhibitions held at the CSIR Conference Centre.

Monday 25 August was an Open Day on which delegates and other visitors, including school children, had the opportunity to tour the NML's laboratories, meet its scientists and gain insight into the role of the NML in South African industry.

The delegates were welcomed on Tuesday, 26 August by the President of the CSIR, Dr Geoff Garrett. In his Opening Address, Dr Zav Rastomje, Director General of the South African Department of Trade and Industry, congratulated the NML on its proud history of 50 years of service to South Africa. He stressed the importance for trade of international traceability of standards and expressed the hope that the recent extension of the metrology network to include all the countries of the Southern African Development Community would soon bear fruit in bringing increased prosperity for all to this part of the African continent.

Johann Ahlers, Director of Aerotek, then explained the significance of the cooperation agreement reached between the CSIR and the USA's National Institute for Standards and Technology (NIST).

This was followed by a fascinating lecture by Prof Phyllis Zungu of the University of Durban-Westville on "African Metrology - with special reference to time and counting". Dr Zungu told the audience that, traditionally, "to Africans, time is a composition of events. People cannot and do not reckon it in a vacuum." The time of day is estimated according to what the domestic animals would normally be doing at that time. For example, "Ziyophuza" is about 14:00, the time that the cattle would stir after the midday rest and make their way down to a river to drink. "In western or technological society, time is a commodity which must be utilised, sold and bought, but in traditional African life, time has to be created or produced. Man is not a slave of time; instead, he 'makes' as much time as he wants." The lunar months of the year are named for the climatic conditions usually associated with them. Measurements of length are based on parts of the human body: e.g. a yard is the length from the right shoulder to the tip of the middle finger of the outstretched right arm.

The Conference, Seminars and Workshops held during the week covered numerous aspects of metrology. Plenary Lectures were delivered by Dr Rob Kaarls of The Netherlands, Dr Stephen Carpenter of the USA, Dr Angela Samuel of Australia and Dr Peter Rohr of Switzerland. Local speakers represented South African organisations, universities, city councils, government departments, and private South African companies. Other speakers came from all over the world, including Egypt, Italy, Canada, Sweden, the UK, Finland, Russia, Mexico and Zimbabwe.

The social events included a Cheese and Wine Reception, an African Braai (barbeque) at the CSIR Recreation Site, and a formal banquet, at which the President of the International Bureau of Weights and Measures, Dr Terry Quinn, delivered a stimulating address on international measurement traceability.

Altogether, the Metrology Week and its events were a huge success, with delegates gaining new insights into the breadth of the field covered by metrology and what can be, and is being done in this area both locally and internationally.

6. SADC MET CHAIRPERSON AND REGIONAL COORDINATOR ATTEND SARAC COMMITTEE WORKSHOP IN HARARE

The purpose of the meeting was to discuss the content of a SARAC project proposal on the identification and evaluation of SADC options in establishing a regional accreditation infrastructure. The SADC MET officials was invited to the meeting because of the close ties between the working programmes of SADC MET and SARAC.

Apart from the SADC MET representatives, the meeting was attended by the following persons:

Mr A C Hurdoyal Chairman: SARAC, Mauritius Standards Bureau
Mr M A Peet Regional Coordinator: SARAC, NLA, South Africa
Mrs M J Chilcott NLA secretariat, South Africa
Dr A Goromonzi Fumasy-International, South Africa
Mrs T L Silva IANORQ, Angola
Mrs M B Marobela Botswana Bureau of Standards
Mrs E Steyn DTI, South Africa
Mr R A Kaakunga Ministry of Trade and Industry, Namibia
Dr F Hengstberger Regional Coordinator: SADC MET, NML, South Africa
Mr D J Mwakymbe Tanzania Bureau of Standards

Mrs M P Mutasa Standards Association of Zimbabwe
Mr E Kruger DTI, South Africa
Mr B Budoo National Laboratory Accreditation Council, Mauritius
Mr S Mashingaidze ETTC, Zimbabwe
Mr A Jonsson SIDA, Sweden
Mr B Henderson Resource, UK

A generic discussion was held on accreditation and the role of government. Mr Jonsson then gave a presentation on the role of metrology, standards and accreditation. The practical implementation of accreditation was discussed and a number of action points were identified.

When discussing the tabled project proposal, further action points emerged.

Mr Kruger (DTI, South Africa) presented information on the impact of the SADC Trade Protocol and WTO on regional and international trade. This was followed by a presentation of Mr Peet on the operation of the NLA and its interactions with global organisations. Mr Peet also explained the three SARAC scenarios identified and discussed in Mauritius.

Mr Jonsson, representing SIDA (Sweden), then offered a fourth scenario by showing how Iceland operated its accreditation system in cooperation with SWEDAC. He also addressed the role of conformity assessment procedures in EU legislation.

Dr Goromonzi discussed the proposed "road map" of the SARAC project proposal.

There was consensus that SADC needs:

- harmonised technical regulations
- a regional accreditation body to accredit other bodies in member states
- a transparent accreditation system recognised by the governments

It was agreed that the next stage of the project would be an empirical study of certification and accreditation systems currently prevailing in the SADC region and a document review. The project proposal will be amended in accordance with the discussions. The chairman and the regional coordinator were tasked with identifying sources of donor funding for the further phases of the project.

7. SITCD TASK TEAM PREPARES A DRAFT SADC MOU ON STANDARDISATION, QUALITY ASSURANCE, ACCREDITATION AND METROLOGY

The SADC Industry and Trade Coordinating Division (SITCD) in Dar es Salaam has created a task team of experts during November 1997 to prepare a first draft of a regional MOU covering the areas of Standardisation, Quality Assurance, Accreditation and Metrology. The task team, which included the Regional Coordinator of SADC MET, was led by Mr Austin Khulumula (Malawi Bureau of Standards) and met for two weeks during November / December 1997, consulting in the process with the institutions involved in these areas, the business community and government departments. Countries visited by the task team included Zimbabwe, Zambia, Mozambique and South Africa.

Although a final version of the SADC MET MOU had already been prepared for possible signing by member organisations in March 1998, the SITCD move to draft a single MOU for all aspects covered by SADC MET, SARAC, SALMEC and SADCSTAN was apparently aimed at fast-tracking the process in all four areas simultaneously. This urgency is understandable in terms of the tight eight-year time-table within which the SADC free trade area has to be implemented once the SADC Protocol on Trade is ratified.

8. 13TH APMP COMMITTEE MEETING AND APMP SYMPOSIUM ON INTERNATIONAL TRACEABILITY OF MEASUREMENT

Although it had been hoped that Dr Bruce Foulis of NML (South Africa) would be able to represent SADC MET at this important meeting, he had to cancel his trip at the last minute due to illness. However,

a progress report from SADC MET was presented by Dr Angela Samuel of APMP and the minutes of the meetings were received by the SADC MET secretariat.

9. RESISTANCE INTERCOMPARISON INVOLVING SADC COUNTRIES

A resistance intercomparison was carried out during November 1997 between South Africa, India and Mauritius. The SADC MET secretariat is currently involved in discussions to extend this intercomparison to other SADC countries.

10. FUNDING PROPOSALS FOR SADC SQAM PROJECTS

A funding proposal for various SADC SQAM projects was submitted to a South African Government Department and has a high probability of being accepted in the very near future. The projects include:

- compilation of a database on SADC R&D institutions,
- compilation of a database on SADC SQAM legislation and regulations,
- compilation of a database on SADC SQAM organisations,
- compilation of a database on SADC calibration and test facilities,
- compilation of a database on SADC SQAM training requirements and training courses,
- assessment of possible SADC accreditation models,
- assessment of various possible SADC traceability models.

The proposal also includes the provision of Internet access to the databases via the SADC MET website and funding for SADC task teams working on the above projects.

Another funding proposal was submitted to the United Nations Development Programme (UNDP) to strengthen the traceability of SADC measuring standards in mass, volume and length.

11. SADC MET NEWSLETTER AND PUBLICITY

In an arrangement with the new journal TQM (Test, Quality & Measurement), the first SADC MET newsletter was published as a pullout supplement to the first issue of TQM and circulated to over 5000 people, including the complete SADC mailing list of the SADC MET secretariat. A message of the SADC MET chairman, Dr M T Musarurwa, was also carried in the journal.

It is intended to publish further issues of the newsletter in every issue of TQM, which appears quarterly. The publishers have agreed to continue to supply the journal plus the newsletter to all persons on the SADC MET mailing list. They are also willing to publish additional review articles on SADC SQAM matters. The first of these will be an article on "Legal metrology in Mozambique", which will appear in the May issue.

SADC SQAM news was also published in the quarterly "NML News", the CSIR's monthly publication "Technobrief" and in the quarterly "PTB News" (Germany). It would be very desirable if the dissemination of the news could be leveraged further, both within SADC and internationally.

12. SADC MET INTERNET SITE

The SADC MET Internet site (<http://www.nml.csir.co.za/~sadc>) was updated after the last SQAM meetings in Mauritius. It contains a description of the SADC SQAM Programme and its constituent

regional bodies as well as contact information for every regional body and member country. Copies of SADC MET newsletters can now also be viewed.

It was also only the second website of a regional metrology organisation (RMO), after EUROMET, to have a link from the new website of the International Bureau of Weights and Measures (BIPM). Since then, the Interamerican System of Metrology (SIM) has become the third RMO with such a link.

13. REGIONAL COORDINATOR ATTENDS GENERAL ASSEMBLY OF ARSO

The African Regional Organisation for Standardisation (ARSO) is the African intergovernmental body mandated to promote standardisation activities in Africa. It was established in January 1977. ARSO's working programme is based on the blueprint for Africa's economic development as outlined in the Lagos Plan of Action for the Economic Development of Africa. This document envisages the establishment of an African Common Market through the integration of the various sub-regional economic groupings on the continent.

ARSO's programme is therefore designed to assist in the removal of technical barriers to intra-African trade. It encompasses programme elements on African Regional Standards; quality control, inspection and testing; certification; metrology; documentation and information; training; the strengthening of National Standards Bodies and consultancy services.

The General Assembly, consisting of representatives of the member states, is the supreme organ in ARSO. Its sessions are held every three years and provide general policy directions, programme priorities, progress review and approval of future policy. A Council, consisting of a President, a Vice-President, a Treasurer and six elected members guides the organisation in its work between General Assemblies, subject to the policy of the General Assembly. It directs the implementation of the resolutions, approves annual programmes of work and the budget, and reviews progress. The Secretariat, headed by a Secretary-General and currently situated in Nairobi (Kenya), is responsible for the day-to-day work of the organisation.

The Southern African Development Community (SADC) is an economic subregion of the African continent. Economic subregions are considered building blocks of an eventual African Common Market. In practice, it seems clear that the subregions need to progress much further along the path towards their own economic and political objectives, before the focus can shift to the wider continental objectives. This does not mean, however, that they should do so in complete isolation and without regular consultation. Any harmonisation, which can be achieved between subregions now, will eliminate the need for many future continental harmonisation activities. One way of ensuring this benefit, is for each subregion to use international standards wherever possible and to participate in regular continental consultations and information exchange.

For this reason, several members of SADC (Malawi and Mauritius) are also ARSO members. With recent developments in the SADC SQAM programme, it also makes sense for the regional structures formed under that programme to start liaising with their continental counterparts, while remaining firmly focussed on the achievement of the SADC objectives as a building block for an eventual African Common Market.

It was with these considerations in mind that the Regional Coordinator, on behalf of the NML, accepted an invitation by the President of ARSO to attend the Tenth General Assembly meetings in Nairobi (Kenya) on 26 and 27 January 1998. There were two further considerations, which made the attendance of the meeting desirable. The first was that metrology was a focus of the 10th General Assembly and that the PTB, a major supporter and sponsor of SADC SQAM activities, was presenting its plans for supporting the establishment of technical infrastructures for metrology, standardisation, testing, quality and accreditation on the African continent. The PTB was also going to outline its past involvement with metrology in Africa and was giving a presentation on "The role of metrology in economic and social development".

The General Assembly meeting was opened on Monday, 26 January, 1998 with some welcoming remarks by the Secretary-General, Dr A O Oyejola, who then introduced the ARSO President, Mr S K Gudjahur (Mauritius), who delivered the official welcoming address. This was followed by a few words by the Managing Director (Eng. P O Okundi) of the host organisation, the Kenya Bureau of Standards, and of the Permanent Secretary (Mr P Mayaka) of the Ministry of Industrial Development, who introduced the Minister of Industrial Development (Hon. Dr Y F O Masakhalia) to deliver the opening address.

The following observers were present:

Mr Bernard Vaucelle, President of AFNOR (Association Francaise de Normalisation),
Mr M H Chirambo, the Director-General of ARIPO (African Regional Industrial Property Organisation),
Mr A Ogundeyi, the Deputy Executive Director of ARCEDEM (African Regional Centre for Engineering, Design and Manufacturing),
Mr G Pataconi, of the Quality Group, Enterprise Development and Restructuring Branch, UNIDO,
Mr E P G Seiler, Group Head: Technical Cooperation, PTB,
Dr C Jarzombeck, Section Head: Africa and Middle East, Group: Technical Cooperation, PTB,
Mr M Wolf, Manager: Marketing & Business Development, Standards Institute of Israel,
Mr Daniel Otieno, International Food Technology in Africa,
Mr Israel Nhlengethwa, Chief Inspector of Weights and Measures, Swaziland,
Mr G Karl, UNCHS (Habitat),
Mr A Sasahara, UNCHS (Habitat),
Mr D J Mwakymbe, Director: Tanzania Bureau of Standards,
Mr P B Vitta, UNESCO,
Mr W K Kiiru, UNDP,
Mr Bernard Athane, Director of the International Bureau for Legal Metrology (OIML),
Mr H Kapacha, First Secretary (Economics), Zambia High Commission,
Mr Libere Buzingo, Director of the OAU Division for Industry, Energy and Mineral Affairs, Addis Abeba,
Mr S Z Zahwi, Egyptian National Institute for Standards,
Dr F Hengstberger, National Metrology Laboratory, South Africa.

The following ARSO member countries were officially represented:

Egypt, Ethiopia, Guinea, Kenya, Malawi, Mauritius, Nigeria, Sudan, Uganda.

During the proceedings the SADC MET Regional Coordinator was given an opportunity to give a presentation on the SQAM developments in SADC. He also distributed the first SADC MET newsletter. On the basis of this information, several applications to join the four SADC SQAM structures (SADC MET, SARAC, SALMEC and SADCSTAN) as Associate Members were received. These applications will be discussed at the next round of SADC SQAM meetings in Luanda (Angola) during March 1998. F Hengstberger also undertook to arrange for the interested organisations to be invited as observers to these meetings.

While in Nairobi, the Regional Coordinator also had fruitful discussions with Drs Seiler and Jarzombeck of PTB (Germany) about their continued sponsorship of SADC metrology training courses.

14. SADC MET OFFICIALLY REPRESENTED ON THE JOINT COMMITTEE OF THE REGIONAL METROLOGY ORGANISATIONS AND THE BIPM

Over the past few years the member countries of the Metre Convention have been working towards a new system, which would enable them to mutually recognize members' national measurement standards and the calibration certificates issued by them. They have committed themselves to the objectives of the drafted Mutual Recognition Agreement (MRA) document and to the aim of signing the document formally during the General Conference on Weights and Measures in 1999. This agreement will be a technical agreement between the directors of national metrology institutes and not a diplomatic treaty. Its ultimate purpose will be to facilitate trade agreements, since not recognising other countries' national measurement standards constitutes a technical trade barrier.

In order to make the new system work, the BIPM has introduced a new forum, the "*Joint Committee of the Regional Metrology Organisations and the BIPM*". A first meeting of this body was held on 21 February 1998 at the BIPM and SADC MET asked the NML representative to the BIPM meeting of directors of national metrology laboratories, Dr Bruce Foulis, to represent its interests at this inaugural meeting. By virtue of being represented at this meeting, SADC MET now has the option of becoming a member of this international inter-regional forum. New regions would in future have to apply to the forum before being considered for membership.

These and other matters arising from these developments will be discussed at the next meeting of the SADC MET Governing Body in Luanda (Angola) in March 1998.