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## DEVELOPMENT OF METROLOGY INFRASTRUCTURE IN AFRICA

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**Abstract** – The development of metrology infrastructure in African Member States has been the mandate given to ARSO by the African Union (AU) previously the Organization of African Unity (OAU) in its Treaty. ARSO fulfils this role through coordination mechanism that harmonizes the sub-regional metrology programmes, arrangements of training of personnel with the support of cooperating partners and African Governments. ARSO ensures, through its programmes the maximum sharing of facilities among African Member States in order to enhance the measurement capabilities of countries in the African economies for better competitiveness of goods and services.

**Keywords:** ARSO's role in African metrology.

### 1. BASIC INFORMATION

The African Regional Organization for Standardization (ARSO) is the body mandated to take care of MSTQ activities on the whole African Continent. ARSO operating under the auspices of the African Union (AU), having been assisted by the UN Economic Commission for Africa (UN ECA), has direct observer status at the AU.

The AU, in its Treaty establishing the African Economic Community, Chapter XI, and Article 67 of the treaty sets out the common policy on standardization and measurement systems. The AU is to develop a Protocol concerning Standardization, Quality Assurance, Accreditation and Measurement Systems. In this context the role of ARSO on the development of African economies will be enhanced.

Africa is subdivided into economic sub-regions or groupings such as SADC, COMESA, ECOWAS, CEMAC, EAC and UEMOA. The AU regards these as building blocks for the whole economic community for Africa. The role of ARSO in the MSTQ area is to act as the apex body that works to coordinate and integrate the activities of these economic sub groupings. This role is to ensure that there is:

- synergy in the development of these economies as well as some uniformity
- harmonization of practices, procedures, standards and measurement systems
- promotion of international practices that will bring about competitiveness within and without the African continent

- promotion of the development of infrastructures for MSTQ in the African member states

ARSO has the role to encourage all sub-regional groups to undertake MSTQ activities and to bring them together in order to enhance the continental application of the practices.

The coming into being of the African Union enhances the role of ARSO further. It is the Vision of ARSO, through the current Presidency, to bring this enhanced role to the fore during early 2003. The 29th Meeting of Council held in Blantyre, Malawi, 29-31 October 2002 already mapped out this strategy for this enhanced role.

It is also the vision of the current Council of ARSO that the Technical Programme of ARSO be strengthened as plans for this are underway through various strategies including the strengthening of staffing at the ARSO Secretariat in Nairobi, Kenya, and the gaining of more support from both the African Governments and International Cooperating partners.

### 2. ARSO TECHNICAL PROGRAMME

The Chapter XI of the Treaty Establishing the African Economic Community, is on "Standardization and Measurement Systems" and Article 67 of this chapter is titled "Common Policy on Standardization and Measurement Systems". This chapter states that:

**"Member States agree to:**

- (a) adopt a common policy on standardization and quality assurance of goods and services among Member States;
- (b) undertake such other related activities in standardization and measurement systems that are likely to promote trade, economic development and integration within the community; and
- (c) strengthen African national, regional and continental organizations operating in this field.

**For the purposes of this Chapter, Member States agree to cooperate in accordance with the provisions of the Protocol concerning Standardization, Quality Assurance and Measurement Systems”.**

### *2.1. Main Activities*

On the basis of this Chapter of the Treaty and the related Protocol, ARSO established Technical Programmes that are aimed at fulfilling the mandate for **achieving the quality assurance of goods and services on the African continent as well as economic development and integration of the regional community**. The main elements of this technical programme are:

- **Development of African Regional Standards (ARS);**
- **ARSO Certification System (ARSO-CERT);**
- **African Regional Accreditation Scheme (ARAS);**
- **ARSO Documentation & Information System (ARSO-DIS and ARSO-DISNET)**
- **ARSO Training & Technical Advisory Services; and**
- **ARSO Regional Programme on Metrology (ARSO-TMICNET).**

The main objective of these programmes are to provide technical guidelines and facilitation to African States in the development of infrastructures for standardization, quality and metrology that will enhance the quality of goods and services throughout the continental economy and thereby contribute further to general competitiveness of African products both regionally and internationally. ARSO, through these programmes provides the coordination and harmonization role that brings the various sub-regional economies to build up to the continental goals.

### *2.2. Coordination of Inter-comparisons*

One of the main functions of ARSO has been the coordination of inter-comparisons of measurement standards whose objective is to establish the levels of competence in metrology and develop confidence in the national metrology institutions of the Member States. This activity, carried out with the help and assistance of cooperating partners has worked well and assisted the developing metrology institutions place themselves in positions where they are able to assess their own levels of competences. Cooperating partners that have been most helpful are such as the PTB of Germany. Through the ARSO/PTB cooperation and assistance, ARSO Member States have exchanged over the past few years mass standards of known accuracy of 100mg, 10g, 50g and 1kg, determined their values and sent the results to PTB for evaluation. The relevant institutions in the Member States were then provided with the evaluation reports which have then been used to determine the gaps that need attention and further development.

### *2.3. Training, Awareness and Advisory Services*

One of the very important functions of ARSO in the area of development of measurement systems on the African

continent is that of training of personnel needed for this purpose. ARSO is in the central position to coordinate training together with cooperating partners as well as the various experts available on the continent. Training courses are therefore held from time to time in the different subject areas of metrology. A number of cooperating partners have worked with ARSO over the years in developing the personnel and African expertise in metrology. Among these have been the International Organization for Standardization (ISO) and the PTB of Germany. The latter has provided much assistance over the past number of years and have enabled ARSO train so many personnel from the continent in the various subject areas of metrology.

Through the ARSO Advisory Services, technical support is given to Member States who require them to establish their national measurement systems. The objective of this is to provide guidelines and encouragement for them to establish the required minimum infrastructure in metrology that will enable them gain an understanding of the importance of measurement traceability to the production of quality goods and services and the achievement of competitiveness of their economies. An important element of ARSO's role in this area is the promotion of awareness among the policy and political players on the continent on the importance of measurement capability for the African economies. The promotion of this awareness is done through the various fora and organs of the African Union and the regional sub-groupings.

### *2.4. The Infrastructure*

Through the ARSO Training and Advisory Services, Member States are appraised of the need to develop the appropriate infrastructure for measurement capabilities. An important element of ARSO's coordinating role is the facilitation of availability of metrology facilities to Member States from within the continent. This arrangement ensures that Member States are made aware of facilities available within the continent that can be shared and used to enhance measurement traceability. This arrangement recognizes the limited resources African states have in financing or investing in the metrology equipment and training of personnel. Emphasis therefore is also made on the sharing and exchange programmes among Member states and promotion of bilateral as well as multilateral cooperation among the Member States.

## 3. CONCLUSION

ARSO has an important key role in promoting the development of metrology infrastructure on the African continent. ARSO's central coordination of the various sub-regional economic groupings and the mandate given to it by the African Union, as well as the recent NEPAD initiative that aim at making the continental economic community more self reliant, is indeed indisputable. The assistance ARSO gets from cooperating partners in fulfilling this role goes a long way in contributing to the development of the metrology infrastructure on the African continent.

With the realization by African Governments of the importance of quality in the production of goods and services and in achieving competitiveness so essential for the survival of their economies and reduction of poverty among the populous, the road towards the development of infrastructures for measurement systems is certain.

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